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GEORGE H. SIMMONS, M.D., LL.D.

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VOLUME 75 : : : : : : JULY—DECEMBER, 1920

AMERICAN MEDICAL ASSOCIATION, CHICAGO, 1920

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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, NO. 1 CHICAGO, ILLINOIS JULY 3, 1920

A VALUABLE METHOD OF EMPLOYING ARSPHENAMIN IN SYPHILIS *

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CHICAGO

One of the great problems of medicine today is the control of syphilis. Its control and restriction are the only conditions we can hope to strive for, as eradication is not in the realm of human possibilities, owing to its peculiar method of transmission. The importance of the disease was emphasized during the recent World War, when in spite of the enormous amount of work done to prevent its dissemination it has greatly increased throughout the world. In this country we are not likely to suffer the increase noted in Europe, but even here the disease will occupy a commanding place for years to come. In a recent communication, Leredde [1] stated that syphilis has vastly increased in France during the war. Brocq and others agree that there has been an increase, but not to the extent stated by L redde. The campaign of public education regarding venereal diseases, which began before the war and was greatly augmented during that period, together with measures being taken since these diseases have become problems of public health, are contributing to the limitation of syphilis; but the problem of its successful treatment is still of great importance. The rapid sterilization of persons likely to disseminate the disease immediately shows results.

In the many excellent clinics now established all over this country where persons are treated who are ignorant of the possibilities of the disease, good work has been done through the social service departments as well as otherwise in the modern management of the disorder.

For more than 400 years, mercury stood practically alone as the sheet anchor in the treatment of the disease, and it still holds an important position. A long list of remedial agents have arisen, been tried and abandoned, always in favor of mercury. The one drug that has successfully vied with mercury is arsphenamin, and after ten years of employment its importance is universally recognized. The two factors that have stood in its way have been the difficulties attending its administration and its possible dangers. The former apparently cannot be overcome and is a fairly serious matter, as syphilis occurs everywhere and not all physicians can equip themselves properly; nor do they care to undertake to acquire the technical skill required for its proper administration. While individually each of these sees only a limited number of patients so infected, yet, in the aggregate it amounts to a large number. In the larger centers of population this difficulty does not apply, as a sufficient number of qualified men can be found to do the work successfully; and within a reasonable time, through education of the younger men, this factor will be overcome. The second condition, that of the dangers attending its employment, has been so far reduced through improvement in technic of administration and manufacture of the drug, that the dangers attending its employment have been so far reduced that it is likely that if statistics were available the untoward results of arsphenamin would be found to be no greater than those of mercury.

The early hope of a single dose eradicating the disease was soon shattered: but the marked effect of the drug on the disease compelled its continuance, and intensive work has been done all over the world to devise the best method for its employment. That this problem is not solved is evident by a survey of the diverse methods now in use. In its earlier days, arsphenamin was administered only once in two weeks, with mercury in the interim; later, the interval was reduced to ten days, and for some time before the war most clinicians had been giving the injections in a series of from five to eight or from five to seven day intervals, combined with mercury. This is practically the standard method used today, and was successful in the American army.

In 1916, Pollitzer [2] outlined a method he had employed successfully and apparently without danger, of using three injections of arsphenamin, each consisting of 0.1 gm. for from 25 to 30 pounds body weight, on successive days, following this with eight weekly injections of 2½ grains each of mercuric salicylate. Three series in a year were employed, with a rest period of two months between the series. This method was founded on the scientific theory of fractional sterilization as employed in the laboratory. The principle is alluring, as it includes a concentrated attack on the micro-organisms in such a manner that their development between treatments is not possible to any degree. From clinical experience it is evident that a single injection of a size compatible with safety cannot destroy all of the spirochetes present; and when the interval is prolonged between injections, the remaining micro-organisms reproduce so that it is possible that almost, if not quite, as many are present at the second injection as at the first, so that other factors would necessarily have to intervene before the

*Chairman's address, read before the Section on Dermatology and Syphilology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Leredde: Bull. Soc. franç. de dermat. et de syph., 1919, p. 1.

2. Pollitzer, Sigmund: The Principles of the Treatment of Syphilis, J. Cutan. Dis. 34: 633 (Sept.) 1916.

infection is overcome. In this method it is supposed that at the first injection the major portion of the micro-organisms are destroyed; and as the second injection follows so soon, many of those remaining are overcome and the few that escape this are reached with the third. That this is not literally true is evident; but the fact remains that many patients thus treated early do not show further signs of the disease. The possible dangers attending this method were discussed by many, but most observers agree that if it were safe it offered possibilities more promising than other methods.

Late in 1916, I began using arsphenamin in selected cases at first, and later in practically all by a similar procedure. I found that the clinical and serologic results were practically the same when an interval of one day was allowed between the injections, and the few patients who felt somewhat depressed by the treatment when given daily were able to take it every second day without discomfort.

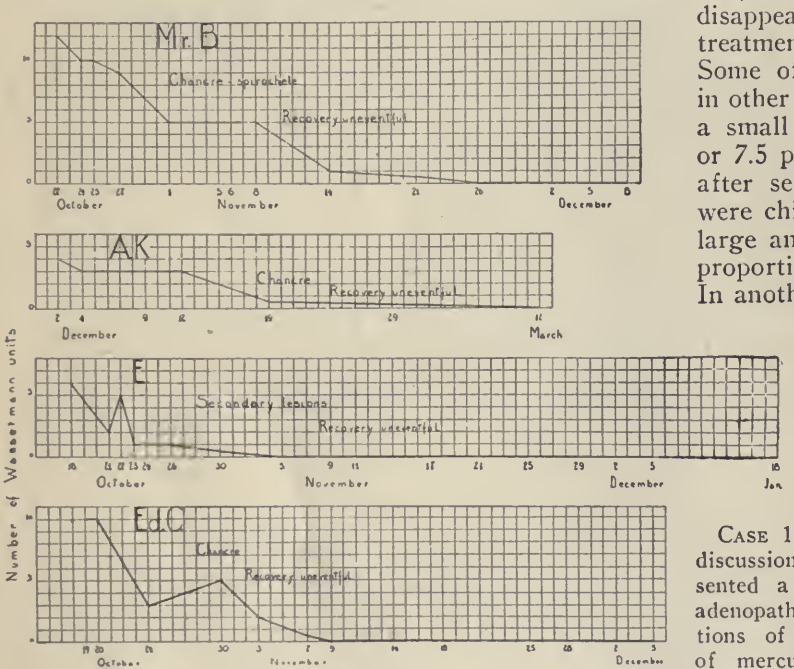


Chart 1.—Wassermann curve in four patients treated by the method described in this paper; no clinical relapses. Routine treatment: first day, 0.2 gm. arsphenamin; third day, 0.4 gm. arsphenamin; fifth day, 0.4 gm. arsphenamin; twenty mercury injections; arsphenamin injections repeated.

TECHNIC

In the early stage, before generalization has occurred, three injections of arsphenamin are given with an interval of one day between the injections. The average dose is 0.4 gm., but in some instances 0.5 or 0.6 gm. are given when the patient is large and vigorous. In patients not previously treated, the first dose is never more than 0.2 gm. Following this, one month's treatment with mercury, either by injection or inunction, is employed. Six weeks from the last arsphenamin injection, three more are given. It appears important to give the second series in six weeks, as at that time the Wassermann reaction is apt to be negative and is more likely to remain so if treatment is then employed. If two or more months elapse before the second series, a Wassermann relapse is probable. In well developed cases not previously treated, the same procedure is employed, except that after the second series of arsphenamin twelve injections of mercuric salicylate are given at weekly intervals, or their equivalent in inunctions over a period of three months, when a third series of arsphenamin is given as before, this being followed by another three months of mercury. In the second year two series of treatments are given in the Wassermann negative cases as a prophylactic measure. In the Wassermann positive cases the procedure is as outlined for the first year.

RESULTS

In a series of 160 private cases these results were noted after from two to five courses had been given: Sixty, or 37.5 per cent., remained clinically well and Wassermann negative as tested for periods varying from one to three years; thirty-six, or 22.5 per cent., were identical with the foregoing except that they were watched only for a period of from six to nine months after finishing the treatment. There has been no opportunity for testing these cases further. Fifty-two, or 32.5 per cent., I class as doubtful, as they disappeared after receiving two or more periods of treatment, and I have not made subsequent tests. Some of these have been reported from colleagues in other cities as remaining negative. It is likely that a small proportion are serologically free. Twelve, or 7.5 per cent., failed to respond serologically even after several periods of treatment. The 160 cases were chiefly late and latent, and all had had quite a large amount of treatment previously; only a small proportion were active or so-called secondary cases. In another small group seen and treated in the early chancre stage, before the Wassermann test became positive, 100 per cent. were apparently entirely relieved. Some of these have presented negative findings for over two years. Three case records are of sufficient interest to note:

REPORT OF CASES

CASE 1.—This illustrates the value of the method under discussion. The patient was first seen in 1914 and then presented a primary lesion of five weeks' duration, general adenopathy and a positive Wassermann reaction. Two injections of arsphenamin followed by twenty-two injections of mercuric salicylate composed his first course. Clinically the patient was then and has since remained well. Thirty and sixty days after the termination of this period, the Wassermann reaction was positive. Then three injections of arsphenamin and twenty of mercuric salicylate were given. The Wassermann reaction was still positive at the expiration of thirty and sixty days following this period, when a third course of treatment was given consisting of four injections of arsphenamin and twenty of mercury. After a two months' rest, the Wassermann reaction still being completely positive, the patient was given two injections of arsphenamin on successive days, after which the Wassermann reaction was reduced to mildly positive, where it remained for three months. This was late in 1916, and it was decided to employ the method described in this paper; but before the treatment was instituted, the blood findings were confirmed by Dr. Stillians. At this date the patient had been under treatment for more than two years, was clinically well but serologically positive, and had been given eleven injections of arsphenamin and sixty-three of mercury, in addition to some internal treatment. Three injections of arsphenamin on alternate days were now employed. Three weeks later the Wassermann reaction was still positive, but became negative in six weeks, when a second series of three injections of arsphenamin were given. In three months a third series of three injections were given, even though the test remained negative, and six months later a fourth series. One and a half years after this

series a provocative injection was given, which did not change the negative reaction. During the last two years and nine months, eight tests have been made, the last one, April 10, 1920, all of which have been negative.

CASE 2.—This illustrates the reversal of the Wassermann reaction after it had been persistently positive under long-continued treatment, chiefly mercurial. The patient was first seen in 1910, and presented a syphilitic glossitis and a positive Wassermann reaction. For one and a half years, mercury and potassium iodid were administered, together with local treatment. During the next five years, nine injections of arsphenamin and seventy-one injections of mercury were given in courses; in addition, potassium iodid and mercurial inunctions were employed. Early in 1917, one period of arsphenamin, consisting of three injections given on alternate days, reversed the reaction and it has been negative since, the last being made two years and eight months after this treatment.

CASE 3.—This illustrates a delayed development of symptoms. The patient was seen in October, 1916, when he presented a typical primary lesion of twenty-one days' duration. No spirochetes were demonstrable, as calomel had been used as a local application. There was beginning inguinal adenopathy, and the Wassermann reaction was negative. Four injections of arsphenamin at ten day intervals, together with ten injections of mercury, composed a period of treatment lasting two months. The Wassermann reaction was negative at the end of the third, fourth and fifth month. At the end of the sixth month a generalized maculopapular eruption of syphilis developed, and coincidentally the Wassermann reaction became positive for the first time. During the following three months five injections of arsphenamin and twenty of mercury were employed, after which the Wassermann reaction became negative. During the following two and a half years, nine injections of arsphenamin and much mercury had been employed, and the patient had remained clinically free and Wassermann negative.

STUDIES AT RUSH MEDICAL COLLEGE

In a group of 258 cases treated at Rush Medical College by Dr. Shafer, in which the method outlined above was adhered to, 110, or 42 per cent., responded to three courses or less, while 148 failed to respond and required more treatment. Of the 258, twenty-one were primary; and of these, twenty, or 95 per cent., responded to three courses or less. Of the total number, 104 were early secondary, of which fifty, or 40.3 per cent., responded; 134 were late and latent, of which forty, or 29.9 per cent., responded. Of the 110 recorded as responding to the treatment, forty-two were negative from six to twelve months after treatment, and sixty-two less than six months. A sufficient time, therefore, had not elapsed to make definite statements as to the ultimate results. Judging from the history of the forty-two cases remaining negative, it seems likely that in a year a majority of the sixty-two will show similar results.

In order to determine, if possible, the effect of different sized doses and varying intervals, several groups of cases have been studied at the clinic at Rush Medical College. Quantitative Wassermann tests have been made in these cases by Dr. Retinger, and the treatment has been administered by Dr. Shafer. As this study is now in progress, only a few observations are permissible here. The technic of the Wassermann work was conducted in such a way in the series of experiments as to determine the smallest quantity of the patient's serum which was able completely and exactly to deviate one unit of complement in the presence of the optimum quantity of a standard antigen, the same antigen being used through the series and proved to retain its optimum within the same limits of dilution during the whole period of time.

Ten complete reports are included here. In four, the method described in this paper was employed and all the patients made rapid and good recoveries. In a series of six patients, two were given 0.1 gm. every second day; one was given the same size dose daily; two were given 0.15 gm. every second day and one 0.15 gm. every third day, all over a period of from two to four months. Five of the six developed symptoms of the disorder while under treatment. This method, therefore, of giving small but frequent doses was soon abandoned. It was interesting to note from the Wassermann standpoint that the curve falls during the first five days of treatment, and rises again to reach a high point at the seventh to tenth day, when it begins again to fall slowly until a negative test is reached. The development of symptoms was not accompanied by any marked change in the appearance of the Wassermann curve.

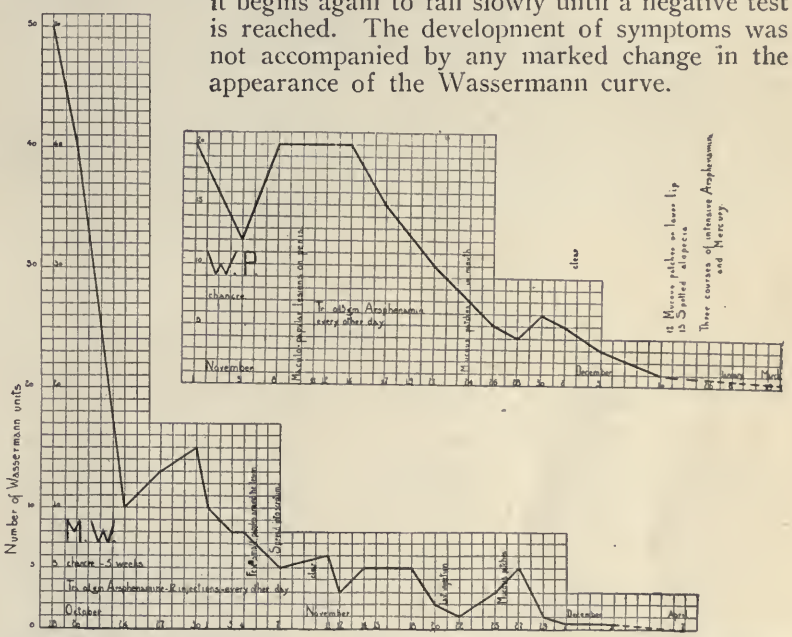


Chart 2.—Wassermann curves of two patients treated with small doses of arsphenamin at short intervals, with date and character of clinical relapses.

PUBLISHED REPORTS OF OTHER METHODS

It cannot be proved statistically that the method described in this paper gives a greater number of negative cases clinically and serologically than other methods, as statistics are not available. It appeared successful to us, as a large proportion of the cases recorded here had not responded to other methods and did respond when treated in this manner. In a communication on the abortive treatment of syphilis, Altman [3] has given the statistical results of the treatment of 300 chancres in which a portion received two to three injections of arsphenamin in a dosage of 0.4 to 0.5 gm., combined with intramuscular injections of mercury, and later four to six injections of arsphhenamin together with eight to twelve injections of mercuric salicylate. Of the 300 cases, eighty-one were under observation from one to four years; and of these, 95 per cent. were clinically and serologically cured. In his review of other workers, the percentage of cures in similar cases varied from eighty-seven to 100.

3. Altman: Dermat. Ztschr. **23**: 257 (May) 1916.

In a recent contribution, Gibson[4] recorded the results of treatment in two series of patients. In the first series, consisting of eighty-nine, he gave what he termed a concentrated course. This consisted of weekly injections of the kharsivan brand of arsphenamin in a dosage of 0.6 gm., except the first dose, which was 0.3 gm., and continued the injections until 2.7 gm. had been given. The interval between the third and fourth injections was two weeks in place of one. The entire course lasted from five to six weeks. If the Wassermann reaction remained positive after this course, potassium iodid was given for two weeks, when two more injections of kharsivan were given at weekly intervals. With this method, 52.80 per cent. became negative with 3 gm., and 15.73 per cent. with 4 gm., while 25.84 per cent. remained positive after 4 gm. and 5.61 per cent. were doubtful after 4 gm. In 100 cases treated with what he termed "a prolonged course," the results recorded were given as 68 per cent. negative after 3 gm.; 38 per cent. after 4 gm., and only 4 per cent. were positive after 4 gm. This course consisted of three injections each of 0.3 gm., then two of 0.4 gm., and two of 0.5 gm., at weekly intervals except between the third and fourth injections, when a two week interval was allowed. The entire course required eight weeks for its completion. The criterion of cure in these series was a negative Wassermann reaction. As it was impossible to follow the cases, no figures were given as to recurrence or end-results.

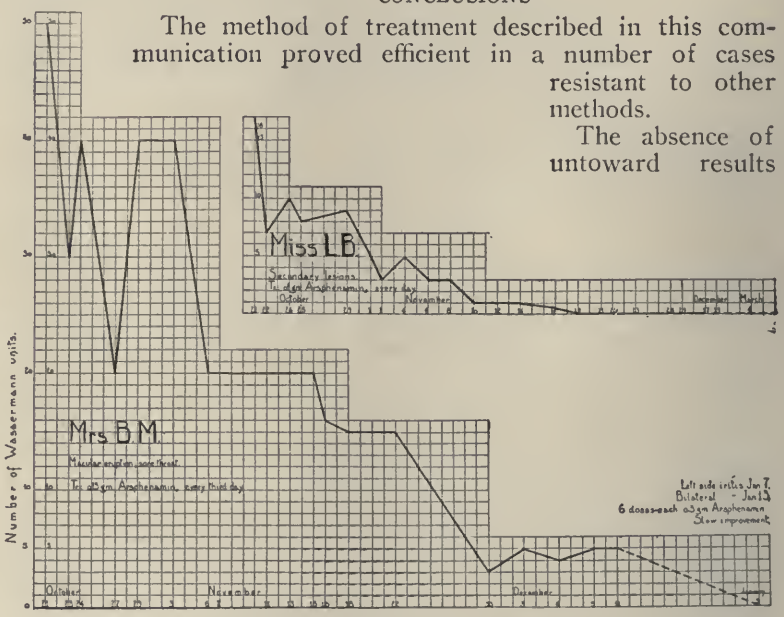


Chart 4.—Wassermann curves of two patients treated with small doses of arsphenamin at short intervals, with date and character of clinical relapse in one.

IMPORTANCE OF EARLY TREATMENT

From the results obtained in early cases and those obtained in later ones, as recorded in this paper, the fact is emphasized that the time to treat syphilis is in its beginning. Unfortunately, the major portion of our cases were first seen in the later stages, when its eradication is most difficult. The study of our records strongly impresses the fact that it is essential to disseminate the information that a venereal sore, no matter how insignificant in appearance, should be examined by a competent man and never treated in any manner until its nature is demonstrated by a microscopic examination. If all druggests would refrain from prescribing for such lesions, and all physicians not equipped to make the proper examination microscopically would see to it that the patient was directed immediately to a place where such examination could be made, the prevalence of syphilis would be greatly reduced.

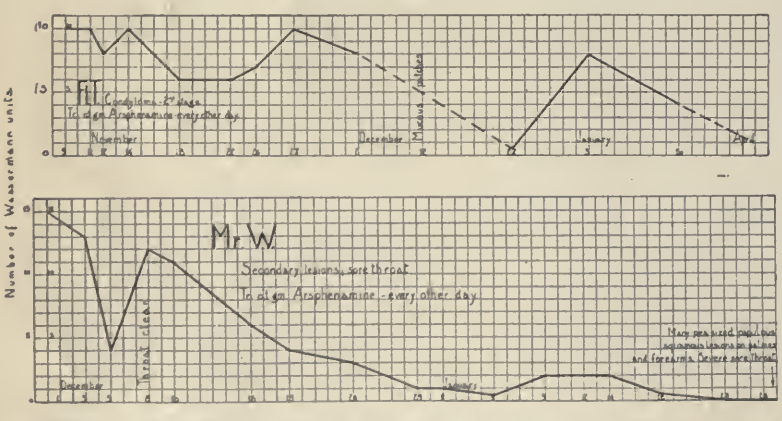


Chart 3.—Wassermann curves of two patients treated with small doses of arsphenamin at short intervals, with date and character of clinical relapses.

CONCLUSIONS

The method of treatment described in this communication proved efficient in a number of cases resistant to other methods.

The absence of untoward results and reactions of any moment in the large number treated makes it appear as safe as other methods.

The percentage of cases remaining Wassermann negative and clinically free over a period of from one to three years is not large, as many of the patients, after having two or three negative tests over a period of from six to nine months after the termination of treatment, have not since reported for examination.

A comparison with results from other methods cannot be made, owing to lack of extended reports of cases treated by other methods, the major portion only having been watched for less than one year.

Several reports are available of cases treated in the chancre stage, and they are similar to ours in end-results.

It appears evident from experimental work herein reported that frequently repeated small doses, that is from 0.1 to 0.5 gm., are inefficient. The combined use of arsphenamin and hydrargyrum in periods either as herein described, or by the method commonly employed today in which arsphenamin is administered every five to seven days in periods of five to eight injections, appears at present to be the method of choice.

The promptness with which many patients become clinically free and Wassermann negative, often with a single course, is encouraging, but should not lead to the conclusion that the disease is eradicated, as Wassermann relapses occur from six months to a year or more after having been continuously negative in the interim. It is therefore necessary to continue treatment for from one to two years, even though it may seem superfluous in some cases.

4. Gibson, H. E.: Brit. M. J. 1: 114 (Jan. 24) 1920.

The length of time that a Wassermann positive should be treated, and the amount of treatment that should be given, cannot be stated. When a patient is clinically well and has been for years, and has had a large amount of treatment without permanently affecting the blood reaction, it is difficult to say how far we are justified in pushing treatment. In certain of these a spinal fluid examination reveals findings that are significant; in many it does not.

Finally, it can safely be stated that with arsphenamin and mercury together we have a method of combating syphilis that is better than any method previously employed; and until more efficient drugs are found these should be used at the earliest possible moment, and continued a sufficient length of time to eradicate the disease, or demonstrate the inability of the drugs to accomplish this result.

25 East Washington Street.

PENETRATION OF THE INTESTINE BY ENDAMEBA HISTOLYTICA*

KENNETH M. LYNCH, M.D.
CHARLESTON, S. C.

As a contribution to the pathology of amebic dysentery, I present certain observations that have been made during the examination of several cases in my necropsy service. The particular point on which these observations bear is the means by which the ameba gains entrance to the tissues of the wall of the intestine. Since this question appears still to be unsettled, it is thought that the apparently clear trail of *Endameba histolytica* into and through the wall of the intestine in these typical chronic cases is worthy of study.

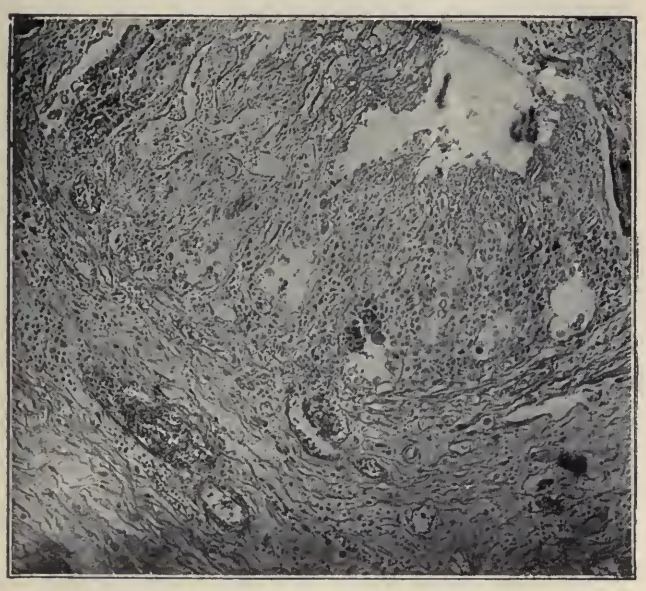


Fig. 1.—Nests of amebas in crypts; epithelial destruction; beginning penetration.

In the first place, there is encountered no evidence that the ameba passes through the surface of the mucosa even though there may be large denuded areas where the epithelial covering has been lost. The ameba is not seen within the first part of the mucosa, and except at the edges of ulcers is not seen within the mucosal tissues above the base of the gland crypts, save the occasional straggler.

One does see, however, a marked invasion into the glands. In this there may be seen individual cells that have penetrated to the bottom of glands in which the epithelium remains intact and in good condition;

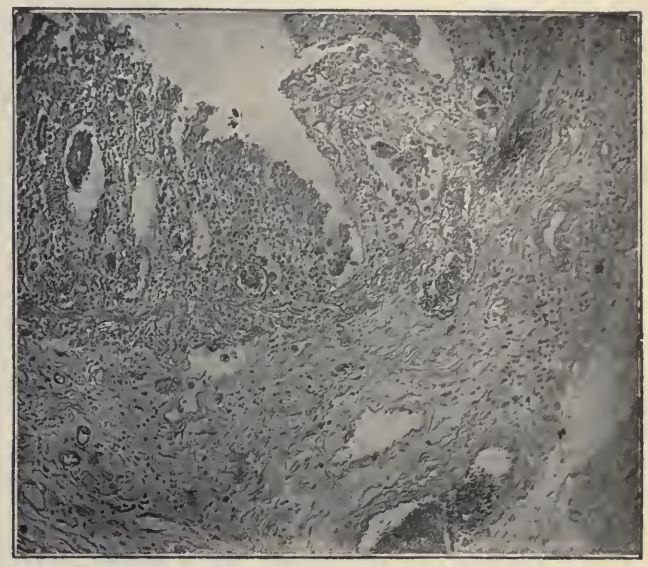


Fig. 2.—Nests of amebas in crypts; epithelial destruction; penetration and migration.

but what is more significant is the common accumulation of amebas, groups of three or four or as many as seven or eight in the bottom of crypts in which the epithelium has been partially or wholly destroyed. The common picture is that of several amebas hugging the basement of a crypt surrounded by some granular detritus which appears to be remnants of decomposed epithelium, the lining of the crypt at this place being lost but the epithelium of the neck of the gland partially or wholly intact (Fig. 1).

The next development appears to be a migration of amebas from this nest through the basement of the gland, into and through the intervening tissues and muscularis and on into the submucosa. One may actually see the cell fixed in the act of penetrating from the crypt and on into the tissues below (Figs. 1 and 2).

When this nest of amebas and this port of entry has been established, there occurs a fairly wide migration for a considerable radius in all directions except toward the lumen of the intestine. There occurs a thrombosis of blood vessels of submucosa or muscularis (Fig. 3) and a necrosis of the tissues above with the development of the ulcer leading to the surface. The characteristic wandering of the cells downward and laterally and not into the mucosa is apparently responsible for the extension of the ulceration beneath the mucosa with the production of the undermining so peculiar to this infection.

Large numbers of amebas accumulate with an ever widening field of operation in the submucosal tissues beneath these ports of entry, and their accumulation is attended by a low grade inflammatory reaction in which there is an edema, a collection of lymphocytes, and some fixed tissue proliferation (Fig. 4). Straggling members of the colony wander far afield, but

* From the Department of Pathology of the Medical College of the State of South Carolina.
* Read before the Section on Pathology and Physiology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

when not in force seem to create little disturbance. In numbers they are most active in the submucosa, but may invade the muscular coats and may even pass through the wall and into surrounding parts.

This series of events appears to constitute the real pathology of amebic intestinal infection as seen in these cases.

Now, while in the main the ulcers do not go beyond the submucosa, the process may extend through the wall, and, in several long standing cases I have encountered, as a sequel to this, a characteristic ramifying abdominal abscess formation which I have not seen described in detail.

There was one case (Path. 169-14-84) in which the whole large intestine was riddled with ulcers of various stages, and the process had extended for a short distance above the ileocecal valve. There were two complete erosions of the colon, one of the transverse colon and one of the first part of the descending colon. There were old, dense, fibrous adhesions binding the viscera of these localities together into an almost inseparable mass.

From the erosion of the transverse colon a large abscess, containing pus with a distinct hydrogen sulphid odor, ran in a tortuous course behind the peritoneum, through the retro-abdominal tissues to the right and over to the root of the liver, where the foramen of Winslow was closed by adhesions. There was a large amebic abscess without any evidence of bacterial infection in the liver just over the retroperitoneal



Fig. 3.—Ameba migration; thrombosis and early ulceration.

abscess, the two not being continuous, but there being adhesions between.

From the erosion of the descending colon a similar tortuous abscess ran up to and involved the lower half of the spleen, the course being transperitoneal and walled off by fibrous tissue, and downward behind the peritoneum into the pelvis.

Sections from various parts of the tracts of these abscesses show a granulation tissue wall with surface

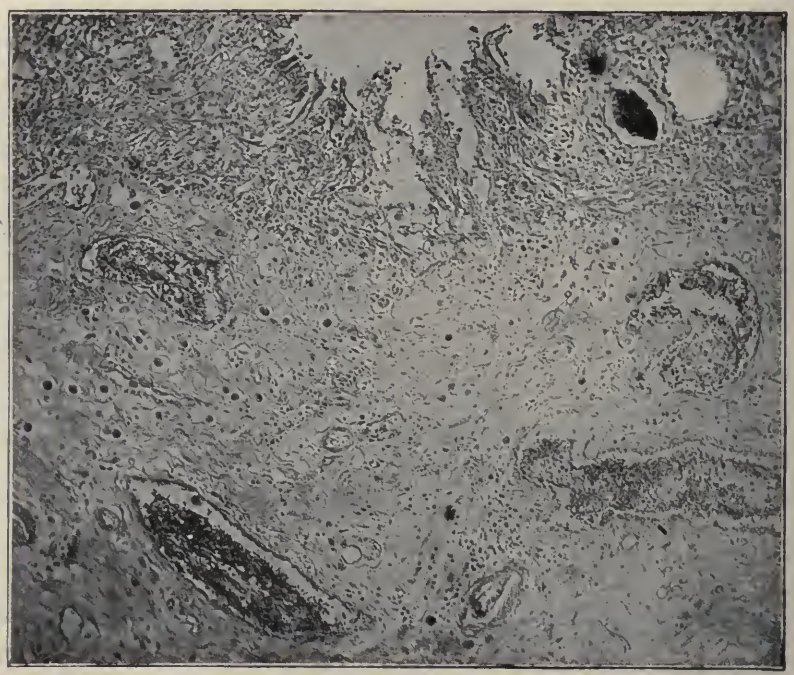


Fig. 4.—Extension of ulcer; amebic penetration and infiltration of submucosa; reaction in submucosa.

necrosis and pus formation. In this necrotic surface no amebas may be found, but they are encountered at several places in the loose tissues beyond the active inflammation, a characteristic of amebic abscess and ulcer. Always they are the vanguard, the destruction taking place behind them.

This abscess development must be considered along with the extension of the infection to the peritoneum, liver and lung, as an important complication of intestinal endamebiasis.

Compulsory Health Insurance.—The *Medizinische Klinik* reproduces the communications that have been published in The Journal on the subject of compulsory state health insurance and in American journals and chamber of commerce reports, etc., the Berlin journal adding editorial comment as follows: "We must admit that these American expressions of opinion portray with sharpness and one-sidedness, but not without a certain justification the influence which compulsory state health insurance and the legislation in regard to it, in Germany, has had on the practice of medicine and which they continue to exert along the same lines, so that the representatives of a free profession are being forced into the position of paid public servants. . . . It is interesting for the German physician to read these antagonistic views of the American profession in the matter. It remains to be seen whether America will succeed in finding a way to solve the problem of protecting against sickness and caring for the sick without introducing the dreaded 'German system' of compulsory health insurance." The contracts with the sickness insurance companies in Germany expire July 1, and the Leipzig League is conducting negotiations for renewal. The representatives of the former left the room when the fee of 12 M. per visit and 8 M. per office call was suggested by the League. Recent proposals to enlarge the scope of state insurance had a tendency to eliminate private practice almost entirely.

PNEUMOPERITONEAL ROENTGEN-RAY DIAGNOSIS *

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A quarter of a century has not yet elapsed since the discovery of the roentgen ray, but during this relatively short interval the adaptation of roentgenography to diagnostic purposes has rapidly progressed and many new fields of investigation have been opened up. After a period characterized by many additions to and improvements on the apparatus and technic, an entirely new combined method of diagnosis has been found which assists the roentgen ray in the revelation of obscure diseased conditions by the inflation of body cavities with air or gas, thereby increasing to an extent hitherto unobtainable its scope and diagnostic efficiency. Experience with this procedure, although as yet necessarily brief, would appear to justify the statement that its adoption already means a great step forward, and will probably come to be regarded as an epochal advance in diagnostic roentgenology.

The development of this method has already been shortly outlined by us in a preliminary report.[1] Since our adoption of this promising method in the spring of 1919, we have endeavored by improving on the technic to show distinctly the parenchymatous organs



Fig. 1 (patient referred by Dr. J. F. Connors).—Details of the abdominal organs in a child, aged 7 years: *A*, liver; *B*, *B*, diaphragms; *C*, heart; *D*, spleen; *E*, coils of small intestine.

themselves and their mutual relations, as well as pathologic changes of these organs, and our experience with the application of this method of abdominal inflation to roentgenographic purposes has yielded very satisfactory results, and has more than justified our expectations as to its diagnostic value. The procedure has been utilized by us in eighty cases, and



Fig. 2 (patient referred by Dr. Willy Meyer).—This roentgenogram, taken without oxygen inflation, shows a circular tumor in the lower portion of left chest. Question: Is the diaphragm above or below the tumor? *A*, tumor; *B*, heart; *C*, right diaphragm.

without untoward effects. The list includes patients varying in age from 4 to 74 years. The feasibility of the method with children is well shown by a recent diagnostic inflation of a 9 year old boy with a possible indefinite right-sided mass in the region of the diaphragm, two weeks after the performance of an appendectomy. The inflation was accomplished without the slightest difficulty and with no pain whatever to the patient, and it proved that no subdiaphragmatic condition was present. The patient left the hospital cured, three weeks after the operation.

We believe that the method should be reserved for those obscure cases in which a clearer outline than that which can be secured under the ordinary roentgenographic arrangements is desired.

TECHNIC

Since our last publication on this subject we have further simplified the application of this method and by so doing have added to its safety, simplicity and efficiency. Practically the only accessories now required are the lumbar puncture needle, rubber tube and oxygen tank. In this respect we are in accordance with Rautenberg [2] who, in his latest contribution to this subject, has further simplified the technic of the method, the implements mentioned above being all that he now requires in its application.

* Read before the Section on Surgery, General and Abdominal, at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Stein, Arthur, and Stewart, W. H.: Ann. Surg. **70**: 95 (July) 1919; Am. J. Roentgenol. N. S. **6**: 533 (Nov.) 1919.

2. Rautenberg, E.: Pneumoperitoneale Roentgendiagnostik, Deutsch. med. Wchnschr. **45**: 203 (Feb. 20) 1919; Neues zur Roentgenologie der Leber, ibid. **46**: 123 (Jan. 29) 1920.

The lumbar puncture needle and the rubber tube are thoroughly sterilized. The tube is then connected with the oxygen tank and the apparatus is ready for application.

The patient is prepared for this procedure as for any roentgen-ray examination by a thorough cleaning



Fig. 3 (same patient as in Figure 2, inflated with oxygen).—Diaphragm is below the tumor. Roentgen diagnosis, cyst of lung: operative diagnosis, tuberculous cyst of lung. *A*, tumor; *B*, heart; *C*, right diaphragm; *D*, liver; *E*, left diaphragm; *G*, spleen.

out of the bowels and emptying of the bladder just before inflation. We have also found it advisable to administer one-sixth grain of morphin half an hour before pneumoperitoneum is established.

The usual point at which the needle is to be inserted is about one to two finger breadths below the umbilicus in the median line. The skin in this vicinity is thoroughly cleaned with tincture of iodin. Existing scars are to be avoided when inserting the needle, and that location should be selected where it is reasonable to expect that no adhesions will be encountered.

We have found that a local anesthetic before introduction of the needle is entirely unnecessary. Merely taking a fold of the skin tightly between the fingers is sufficient to counteract any pain on introduction of the needle.

The needle should be slowly inserted as far as the fascia, the thickness of the abdominal wall being easily gaged by any surgeon. A very gentle pressure will then ease the needle through the fascia and peritoneum into the abdominal cavity. It is our custom to insert the needle always at a slightly oblique angle so that the point of the needle after entering the abdominal cavity remains as near to the parietal peritoneum as possible. The free end of the rubber tube having been connected with the needle, the oxygen is then allowed to flow gently into the abdominal cavity. The amount of gas varies from 2 to 4 liters according to individual conditions. Observation of the patient's general condition will assist the surgeon to judge the fulness of the abdominal cavity. We regard this method as strictly surgical and one that should be attempted only by one with surgical experience.

The air or gas used in the application of this method does not necessarily need to be sterilized. Rautenberg in his latest contribution [2] points out that the atmospheric air or oxygen which is introduced into the abdomen does not need to be filtered or sterilized; and Schmidt,[3] who in his application of the method uses ordinary unsterilized air, emphasizes the fact that such air never gives rise to the slightest infection or even irritation of the peritoneal cavity. Our experience, based on eighty cases, fully confirms these statements.

DANGERS

The whole method stands and falls with the question of any untoward effects or dangers that may be connected with it. Experiments and our own practical experience have shown that the elasticity of the living intestine permits it to recede before a sharp intruding body such as a needle, and no trouble in this respect has ever been encountered by us. The nonoccurrence of injuries when this method is used was demonstrated in Rautenberg's preliminary animal experimentation on guinea-pigs, nor were lesions of the omentum or small intestine demonstrable in a few patients who came to necropsy or operation some days after the



Fig. 4 (patient referred by Dr. Willy Meyer).—Cyst of liver, proved at operation to be echinococcus cyst: *A*, liver; *B*, cyst; *C*, stomach filled with barium; *D*, oxygen; *E*, descending colon.

employment of this procedure. We ourselves have looked for intestinal lesions in patients at the time of operation, but have invariably found the intestine unharmed. The entire freedom from danger is also

3. Schmidt, Adolf: Ein neues Verfahren zur Roentgenuntersuchung der Bauchorgane, Deutsch. med. Wchnschr. **45**: 201 (Feb. 20) 1919.

emphasized by Alvarez [4] on the basis of personal experience.

PAIN

We have noticed that about one third of our patients complain of marked pain in the shoulders following distention of the abdomen to its full capacity. No



Fig. 5 (patient referred by Dr. Jacob Kaufmann).—Atrophic cirrhosis of liver; *A*, small, contracted liver; *B*, oxygen.

heart symptoms have accompanied the inflation except a slight rise in pulse. Before using the deflation method, we found that occasionally the pain did not begin until late in the evening. In this event, it is advisable to elevate the foot of the patient's bed in accordance with the principle that air always rises to the highest point, thereby confining the oxygen to the lower pelvis and reducing the pressure against the diaphragm. If the deflation method is not used, the absorption of the gas within the abdominal cavity varies individually from several hours to a few days.

That there is some discomfort to patients we do not deny. However, we must refuse to accept as contraindicative to the method the slipshod application of it by physicians who are either too indifferent or too inexperienced to follow the technic carefully.

DEFLATION

Of late, we have employed an extremely simple method to relieve the patient of any real or imaginary pain which might be connected with the procedure. It is simply to deflate the abdomen after the roentgen-ray examination has been completed. After the patient has been brought back to bed, the lumbar puncture needle is reinserted in the same manner as before, and the air is allowed to pass out through the needle. This eliminates any possible discomfort to the patient, and adds distinctly to the simplicity of the method. We have employed this procedure in all of our cases, to the full satisfaction of the patients and ourselves, since Feb. 16, 1920. Tierney [5] has adopted a similar procedure.

The need of careful technic with the adoption of strict aseptic precautions is illustrated by Hyman's [6] observation of a low grade peritonitis among his first patients. We have had no similar experience, and in conformity with others who are utilizing the procedure we consider it entirely safe and devoid of danger when properly employed.

ADVANTAGES OF PNEUMOPERITONEUM

The esential feature of the new method, aside from the introduction of a contrasting agent in the form of air or gas, consists in the resulting change in the position of the viscera in the distended abdominal cavity, the mass of intestinal coils in particular, which interfere with free inspection, being permitted to slip away as far as possible, regardless of whether the patient stands or is recumbent.

This method of gas inflation of the abdominal cavity enables us at the present time to show all the parenchymatous organs which heretofore have not been rendered visible or plainly brought out on the roentgenogram. We have shown the liver and, in many instances, pathologic enlargements and defor-



Fig. 6 (patient referred by Dr. Jacob Kaufmann).—Splenomegalia: *A*, enlarged spleen; *B*, liver; *C*, right kidney; *D*, left kidney; *E*, transverse colon filled with barium.

mities of the gallbladder, and in several cases gallstones. We believe, however, that even with the aid of oxygen inflation, it is difficult to detect many cases

4. Alvarez, W. C.: The Radiographic Study of the Abdominal Organs After Inflation of the Peritoneal Cavity, California State J. Med. **18**: 42 (Feb.) 1920.

5. Tierney, J. L.: Pneumoperitoneum, J. Missouri M. A. **27**: 137 (April) 1920.

6. Hyman, A. S.: Radiography in Artificial Pneumoperitoneum, Med. Rec. **97**: 100 (Jan. 17) 1920.

of cholelithiasis, especially when the gallstones are of the same density as the surrounding tissues.



Fig. 7 (patient referred by Drs. Max Einhorn and Frederick Kammerer).—Roentgen diagnosis, tumor behind stomach: operative diagnosis, retroperitoneal tumor, probably glandular; inoperable. *A*, tumor; *B*, left kidney; *C*, spleen; *D*, liver; *E*, coils of intestines.

The different varieties of splenic enlargement have been beautifully shown. The diaphragm and subdiaphragmatic spaces have been clearly outlined. In



Fig. 8 (patient referred to us by Dr. F. J. Echeverria). Enlarged kidney; hydronephrosis from kinked ureter (patient in lateral position): *A*, liver; *B*, renal pelvis injected with thorium; *C*, outline of enlarged kidney; *D*, kink in ureter; *E*, oxygen; *F*, lateral abdominal wall; *G*, right ilium.

many instances we were able to bring out the details of enlarged mesenteric glands, and in one or two cases the branches of the mesenteric artery were demonstrated.

Cysts of the liver, pancreas and ovaries have been clearly shown, and malignancies involving the large and small intestine easily detected. The female genital organs in their entirety, including tumors of those organs, have been visualized.

Probably one of the most beautiful reproductions is the renal outline. Pneumoperitoneum, when used in conjunction with pyelography, accurately outlines the renal pelves and calices, and at the same time shows with detail the renal structure, its enlargements and deformities.

Changes of the vertebral column are also much more clearly revealed by this method than by the ordinary one. One of the most valuable findings has been the actual demonstration of adhesions. With special reference to adhesions, postoperative or the result of chronic inflammatory processes, we are inclined to believe, on the basis of personal findings,



Fig. 9 (patient referred by Dr. F. J. Echeverria).—Prolapse of right kidney with rotation: *A*, prolapsed and rotated kidney; *B*, right renal pelvis injected with thorium; *C*, opaque catheter in right ureter; *D*, liver; *E*, spleen; *F*, left kidney; *G*, left renal pelvis injected with thorium; *H*, left ureter.

that their existence involves no serious danger of perforating the intestine. The clinical material at Harlem Hospital is rather abundant in this respect, and our list includes patients who have undergone three or even four laparotomies.

CONTRAINDICATIONS

As to actual contraindications, the existence of acute abdominal conditions, such as acute appendicitis or peritonitis, naturally prohibits the employment of the method of abdominal inflation. Nor should this procedure be carried out in known cases of valvular disease of the heart, for more work is required of this organ when the abdomen is inflated than under ordinary conditions. Our experience has shown that a certain type of elderly persons, notably men who

have used alcohol in excess, does not readily lend itself to the employment of this method. On the other hand, the average man, woman or child is a perfectly satisfactory subject and with the adoption of the deflation method described above, which will naturally follow as the method enters into more general practice, the performance of entirely painless inflations will soon become the rule.

INDICATIONS

The indications for air inflation of the abdomen in connection with roentgenology have been slowly but considerably extended on the basis of growing experience as regards the harmlessness of the method and its wide sphere of usefulness. Entirely new vistas have undoubtedly been opened up, and when the method is demonstrated it never fails to convey the impression of a new and promising domain in diagnosis. At its present stage of development, however, the method should be reserved for the elucidation of diagnostic problems which have so far baffled the ingenuity of the clinician. The roentgen-ray examination will in some of these cases reveal a distinctly surgical situation demanding operative interference for its relief. In

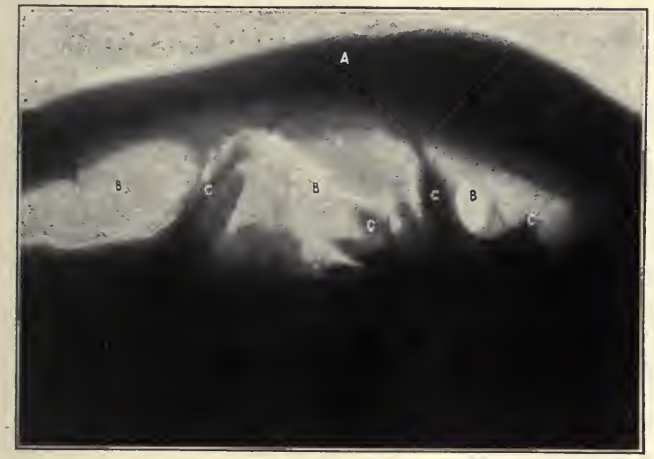


Fig. 10 (patient from Dr. A. Stein's service).—Postoperative adhesions: *A*, anterior abdominal wall; *B*, oxygen; *C*, adhesions.

other instances many futile, inefficient or actually harmful operations will be abandoned on reception of the illuminating information furnished by the roentgen ray.

The method should not be employed indiscriminately. Its application should be reserved for suitable cases in which great advantage is seen to attend its adoption. All new methods fall heir to the common fate of being held responsible for all accidents and untoward occurrences due to lack of practical experience. In trained hands and with the employment of proper technic, there is every reason to anticipate the most gratifying results from this new adjuvant to abdominal diagnosis.

48 East Seventy-Fourth Street—222 West Seventy-Ninth Street.

ABSTRACT OF DISCUSSION

DR. GEORGE E. PFAHLER, Philadelphia: In practically all instances we can demonstrate the lower border, sides and general outline of the spleen and liver by ordinary fluoroscopy or by plate methods. But the pneumoperitoneal method is of a distinct advantage in demonstrating irregularities on the lower border of the liver, or on the right border of the spleen. Its great advantage is in differentiating these dense shadows in the lower part of the chest from the solid tissues in the abdomen, the liver or the spleen; also, in outlining any solid tumor, enlarged glands or adhesions within the abdomen. It seems to be safe. When we have once eliminated the possibility of filling defects in the gastro-intestinal tract,

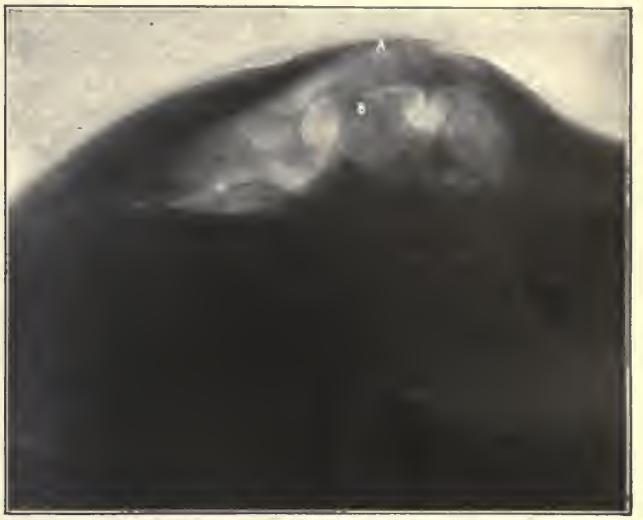


Fig. 11 (patient referred by Dr. I. S. Haynes).—Marked adhesions in large ventral hernia: *A*, thinned abdominal wall; *B*, intraperitoneal adhesions.

and still must determine the pathology within the abdomen, this method is of distinct advantage. What is done with the needle during the time that the patient is lying on the abdomen, and how is the air withdrawn from the abdomen later?



Fig. 12 (patient from Dr. A. Stein's service.)—*A*, uterus; *B*, tumor of ovary; *C*, adhesions between uterus and ovary and between ovary and pelvic wall. Operative findings: cyst of ovary the size of a walnut; omental adhesions between uterus and ovary and between ovary and pelvic wall.

DR. B. H. ORNDOFF, Chicago: I wish to draw attention to five points: (1) Pneumoperitoneum is of the greatest value when used in the preparation of a patient for further diagnostic investigation. (2) Having produced pneumoperi-

toneum more than four hundred times myself in connection with various pathologic conditions and without having a case where reaction of a serious character has been noted as the result of it, I am thoroughly convinced that when care is observed with regard to the technic of administration, it is a comparatively safe procedure. (3) Pneumoperitoneum may be produced for therapeutic purposes, such as tuberculous peritonitis and other inflammatory conditions of the peritoneum, for the relief and prevention of peritoneal adhesions and in conjunction with radiotherapy, etc. (4) For diagnostic purposes, pneumoperitoneum facilitates greatly the study of the abdominal viscera by means of the roentgen-rays. (5) The necessity for special equipment designed to meet the requirements of a careful and complete study of the abdominal organs after pneumoperitoneum has been produced.

DR. WLLIAM H. STEWART, New York: Dr. Pfahler mentioned the importance of this method of diagnosis only in those cases in which the information cannot be obtained by ordinary means. This point cannot be emphasized too



Fig. 13 (patient from Dr. A. Stein's service).—Uterine myoma with double (old) pyosalpinx: *A*, large myomatous uterus; *B*, right and left pyosalpinx (roentgen-ray diagnosis confirmed at operation).

strongly. By deflation we mean a reinsertion of the needle, after the roentgen-ray examination has been completed, for the purpose of drawing off the gas from the peritoneal cavity. The needle is not left in situ after inflation on account of the damage that might be done to the viscera during the change of posture necessary in making the roentgen-ray examination. Deflation relieves the tension and pain when present to such an extent that we now have hopes of making the method an office procedure. We still insist that simplicity of the apparatus is essential. Dr. Rothenberg, one of the very early workers with this method, has now discarded filtration or sterilization of the gas as well as the use of any apparatus for measuring the pressure. If one has the proper surgical experience there will be no difficulty in reaching the peritoneal cavity; we have never felt the necessity of injecting salt solution to ascertain this fact. Our successful examination of eighty cases, without a fatality occurring, is largely due to the simplicity of the method.

SQUAMOUS CELL CARCINOMA OF THE KIDNEY

REPORT OF A CASE OCCURRING IN A HORSESHOE KIDNEY COMPLICATED BY A CALCULOUS PYONEPHROSIS *

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TORONTO, ONT.

Primary cancer of the kidney is not of frequent occurrence. This is particularly true if we exclude hypernephroma, which in the literature of the past has frequently been described as a carcinoma of renal origin, but which most authorities now believe to be derived from suprarenal rests as first suggested by Grawitz. Accepting this theory regarding the origin of hypernephromas as correct, we may state that a primary cancer originating in kidney tissue is derived from the epithelium of the renal tubules.

The occurrence of a squamous cell carcinoma in the kidney is excessively rare, and it becomes a subject not only of interest but of considerable practical value to trace its origin and to study the etiologic factors which lead to its production. Kundrat [1] described the condition in 1891. A perusal of the literature leaves no doubt in one's mind that such tumors arise from the transitional epithelium of the renal pelvis. We may accept the classification of Graupner,[2] who, in studing the histogenesis of primary renal cancers, divided them into two groups: (1) infiltration carcinoma, and (2) adenocarcinoma. The former are derived from the renal pelvis primarily, and the latter from the renal tubules.

The case herewith recorded is of further interest because it was associated with a calculous pyelitis. The presence of stone in the kidney plays an important rôle in the production of cancer; thus, in the Mayo Clinic not less than 50 per cent. of all cases of epithelial cancer of the kidney which have come to operation were superimposed on extensive renal calculous formation. In addition, my patient exhibited the unusual anomaly of a horseshoe kidney, a condition which, according to Adami,[3] is present in 0.4 per cent. of necropsies.

REPORT OF CASE

Examination.—Mrs. F. J. S., aged 58, came to me in January, 1919, complaining of pain in the back and right side. She stated that since early childhood, or as long as she could remember, she had had some distress in that region. She had an abdominal tumor visible to the eye. Its most prominent portion was behind the right rectus muscle, below and to the right of the navel. It could be palpated through to the loin; there was dulness in the flank and resonance on percussion over the outer portion of the tumor. There was also a definite projection of the tumor across the middle line to the left side, extending fully 7 cm. to the left of the linea alba. Percussion over this part of the tumor elicited resonance. An area of resonance existed above, between the tumor and the liver. One could detect fluctuation through the tumor from the anterior portion back to the loin. The patient had some slight evening elevation of temperature, and she had lost 20 pounds in weight.

* Read before the Section on Surgery, General and Abdominal, at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Kundrat: Wien. klin. Wchnschr. **4**: 949, 1891.
2. Graupner, R.: Zur Histogenesis des primären Nierencarcinoms, Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's) **24**: 399, 1898.
3. Adami, J. G., and Nicholls, A. G.: The Principles of Pathology, Ed. 2, Philadelphia, Lea and Febiger **2**: 728, 1909.

My colleague, Dr. W. W. Jones, made a cystoscopic examination and found the bladder healthy in appearance. Urine flowed freely from the left ureter and proved to be normal on analysis. The phenolsulphonephthalein test came through in six minutes. It was impossible to pass the catheter into the right ureter more than half an inch. There was absolutely no flow of urine from the right ureteral orifice. The roentgenogram showed a stone about the size of a filbert in the center of the tumor behind the outer part of the right rectus muscle. A second shadow of a stone, somewhat larger, was seen in the middle line or slightly to the left of the middle line.

Operation and Results.—Jan. 13, 1919, an oblique incision was made over the anterior surface of the tumor. When the peritoneum was opened, the tumor was found to be retroperitoneal and to extend across the spinal column into the left lumbar region. Its main bulk, however, was to the right of the spine, where it lay in the right lumbar space as an elastic mass obviously containing fluid. A very careful inspection was then made of the entire tumor. It consisted of two portions, one occupying each lumbar region and connected by a broad thick bridge of tissue. The bridge was so thick and broad that there was little differentiation between it and the two masses which it connected. The left lumbar region was carefully explored to make certain that there was no further evidence of a left kidney behind. It became obvious that we were dealing with a horseshoe kidney. I then incised the posterior parietal peritoneum over the face of the cyst to the right of the ascending colon, after which I marsupialized this by uniting with suture the margins of the incision in the posterior peritoneum to that in the anterior peritoneum. Thus the general peritoneal cavity was completely closed off from the field of operation. I cut through a further covering of the cyst consisting of the fatty capsule which was about 2 mm. in thickness. I inserted a large trocar and drew off yellow purulent looking material which was watery in consistency. I then incised the cyst. I found a mulberry calculus about the size of a filbert lying free in the cyst cavity. I explored the interior of the cyst with my finger and discovered another stone projecting into the cyst cavity from a solid part of the tumor which lay anterior to the spine. This was fixed in position. While attempting to mobilize this with my finger I fractured a piece from a portion which lay still deeper and which I could not dislodge. The patient was a poor operative risk, and I desisted from any further extensive operative interference. I dissected out a considerable portion of the cyst wall, including a thickened band of tissue which lay across it obliquely. The remaining portion of the cyst wall was uniformly about 3 mm. in thickness. I overcast the cut edge of the cyst wall with catgut for hemostatic purposes, and inserted a drainage tube before closing the wound. During the operation I found on the outer surface of part of the cyst wall an area about 2 cm. in diameter and raised from the surrounding surface for about 3 mm. This was yellowish gray, and possessed a tubercular surface. During the operation, 40 ounces of physiologic sodium chlorid solution were administered interstitially.

The fluid content of the cyst was analyzed by Professor Hunter, who reported: "The fluid had a specific gravity of 1.010 and a faintly alkaline reaction. It contained traces of urea and other urinary constituents, but its chief soluble component was protein. The total quantity of this present was 1.75 per cent. It was partly nucleoprotein, but chiefly coagulable protein (albumin)."

Subsequent to the operation, drainage was maintained, and after the lapse of two months the patient's general condition had improved, but there was still a considerable amount of discharge and some absorption, as indicated by an evening rise of temperature to 100 or 101 F. A roentgenogram taken at this stage showed a shadow cast by stones near the middle line of the body, but in consequence of the contraction of the pyonephritic sac toward the opening in the right abdominal parietes to which it had been sutured, the shadow was drawn well to the right of the middle line and therefore appeared to be quite accessible to the finger introduced into the sinus opening, thus making it possible to remove it with safety by a comparatively slight operation. Accordingly, March 20, under gas anesthesia, I enlarged the drainage opening sufficiently to admit two fingers. I located the stones and by scratching through the kidney substance surrounding them, using the bare ungloved finger for the purpose, I succeeded in enucleating from its bed a calculus the size of a large walnut. It was surrounded by many small calculi varying in size from a grain of rice to a small pea. These were removed along with a considerable amount of gritty material, which was taken out by curetting with a scoop, followed by gauze on forceps. Presumably, the stones lay in the pelvis of the right kidney.

On the posterior wall of the cavity, adjoining the pocket that had contained the stones, I detected a somewhat prominent mass of tissue which I took to be kidney substance. I attempted the removal of a portion of this tissue in order that I might determine, by microscopic section, the nature of the condition present. I enucleated a piece about the size of a walnut. This was preserved for future examination. Hemorrhage was slight and was easily controlled. I closed the wound, still maintaining drainage as before. There was no evidence of metastases.

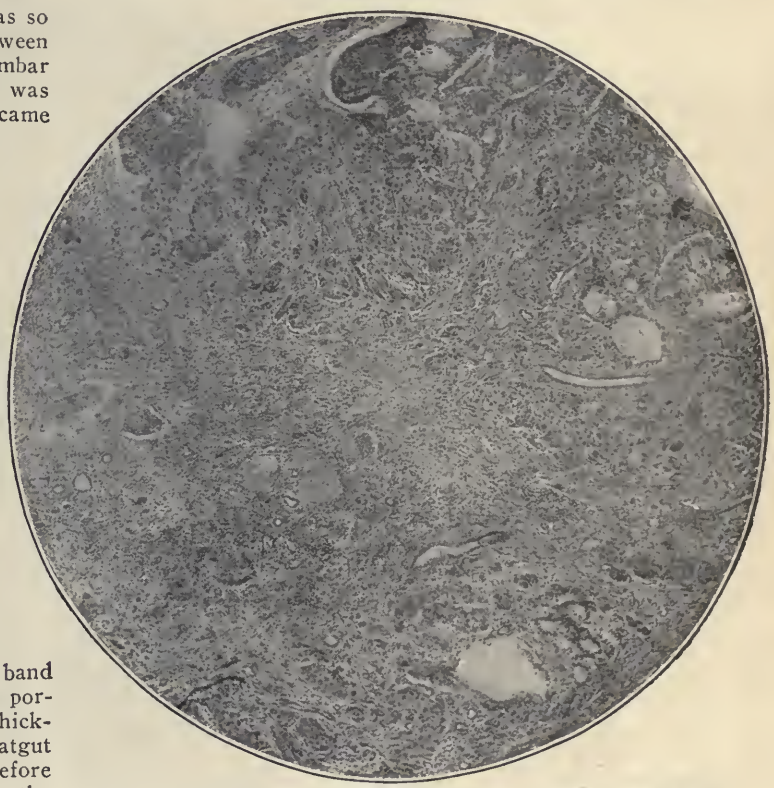


Fig. 1.—Squamous cell cancer of the kidney: tumor growth at the margin, and a number of sclerosed and partially sclerosed glomeruli; also tubules invaded by the growth; × 50.

At the time of the first operation, a guinea-pig was inoculated from the pus contained in the cyst. The pig was killed eight weeks subsequently, but was found negative for tubercle bacilli.

The sinus continued to discharge, but the patient's general nutrition was maintained for about five months after the operation, when she began to fail. Toward the latter part of her illness, she developed a fecal fistula, while a tumor growth of a very hard consistency developed. She died eight months subsequent to her first opertion. It was impossible to obtain a necropsy.

Microscopic Examination.—The tissue removed at the second operation proved to be a squamous cell carcinoma. The kidney substance in this section was infiltrated and almost destroyed by epithelial cells, which showed marked pearl formation (hornification); several areas showed epithelial cells growing in the dilated lumen of the tubules surrounding the epithelial cell nests. A marked fibrosis had

occurred which replaced most of the kidney substance. Dotted through the section were dilated glomeruli showing atrophic changes, and around several of these glomeruli there was a round cell and plasma cell infiltration, as shown in the accompanying photomicrographs. The condition was one with which we had hitherto been unfamiliar.

ORIGIN OF THE DISEASE

We may assume at the outset that squamous cell cancer of the kidney has its origin in the pelvis or calices of the kidney. We can better understand the validity of this assumption by a study of the conditions antecedent to its production.

The normal histologic structure of the mucous membrane of the renal calices, pelvis and ureter is a transitional epithelium, of a character similar to that found in the bladder. It is therefore not surprising that the histologic structure of new growths originating from the mucous membrane of these urinary passages has very similar characteristics. A villous papilloma is a benign growth of frequent occurrence in the bladder, and has also been found as a primary growth in the ureter, pelvis and calices. That a villous growth may develop into a malignant tumor was demonstrated by Virchow. Villous tumors of the ureters have been described by Poll,[4] de Josselin de Jong,[5] Stoerk,[6] Kohlhardt,[7] and others. The epithelium in these cases may resemble that of the normal mucous membrane, or may vary within wide limits, being cylindric, cubical, spindle shaped or polygonal; not infrequently different types of cell are present in the same tumor. On the other hand, a malignant squamous cell cancer has been found in the urinary passages without villous formation. A notable example of this was placed on record by Rundle.[8] In his case, the lower 3 inches of the right ureter were involved in a large growth which extended down to within 1 inch of the bladder; a small polypoid growth the size of a pea protruded into the bladder through the ureteral orifice. The interior of the ureter, almost up to the renal pelvis, contained numerous small, isolated nodules. These multiple tumors presented the histologic picture of a squamous cell cancer. Wilson[9] of the Mayo Clinic describes a similar squamous cell epithelioma of the renal pelvis, resembling histologically a cancer of the hip. Hektoen[10] records a case of primary cancer of the lower end of the ureter containing cells of different types, oval, spindle and club shaped; he states that, in places, masses of cells showed degenerative changes which might in some instances be mistaken for epithelial pearls.

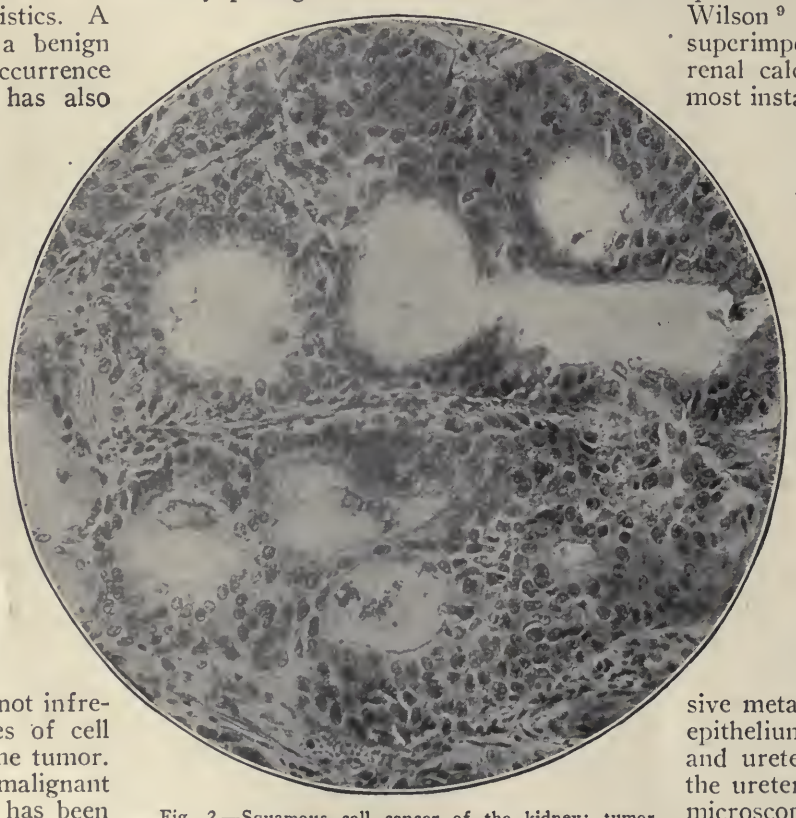


Fig. 2.—Squamous cell cancer of the kidney: tumor growth and renal tubules; × 200.

The occurrence of new growth in the calices and the pelvis of the kidney is associated with chronic inflammatory changes due to some form of irritant. The frequent association of stone with this condition is noteworthy. Calculi were present in the case here recorded. Hartman[11] describes a case of primary cancer of the renal pelvis associated with calculous pyelitis. Kischensky[12] found the ureter blocked with calcareous concretions, and Scheel,[13] although he did not find a stone, suspected one had been present at an earlier date from the previous history of pain, etc. Wilson[9] mentions two cases superimposed on extensive renal calculous formation. In most instances, the subepithelial connective tissue exhibited a round cell inflammatory infiltration (Scheel,[13] Kischensky,[12] Stoerk,[6] and others). The most noticeable feature in this regard, however, is the associated proliferation of the transitional epithelium of the ureter, pelvis and calices. This was present to an exaggerated degree in Kischensky's case in which, associated with a squamous cell cancer of the calices of the kidney, there were extensive metaplastic changes in the epithelium of the calices, pelvis and ureter. Thus the wall of the ureter presented, under the microscope, a cutis-like formation with extensive cornification of the superficial layers of cells; the deeper layers were more or less cylindric, while the superficial layers were composed of pavement epithelium, exhibiting cornification on the surface. Some of the cells of the deeper layers exhibited bridges, giving the appearance of prickle cells. In the renal pelvis, there was a calcareous incrustation, over which were found pus cells. Rokitansky[11] describes a condition in the renal pelvis in which from the proliferated epithelium there is much desquamation; these desquamated cells are massed together with much detritus and cholesterin crystals, producing the condition which he describes as cholesteatoma.

4. Poll, B.: Ein Fall von multipler Zottengeschwulst im Ureter und Nierenbecken, Beitr. z. klin. Chir. (Brun's) **23**: 822, 1899.
5. De Josselin de Jong: Ein Fall von Carcinoma papillare des Nierenbeckens, Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's) **35**: 205, 1904.
6. Stoerk, Oskar: Ein Fall von Papillomatose des Nierenbeckens, des Ureters und der Blase, Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's) **26**: 368, 1899.
7. Kohlhardt, H.: Ueber eine Zottengeschwulst des Nierenbeckens und des Ureters, Virchows Arch. f. path. Anat. **148**: 565, 1897.
8. Rundle, H.: Epithelioma of the Ureter Causing Hydronephrosis, Tr. Path. Soc. London **47**: 128, 1896.
9. Wilson, L. B.: The Embryogenetic Relationships of Tumors of the Kidney, Suprarenal and Testicle, Collected Papers of the Mayo Clinic, 1912, p. 304.
10. Hektoen, Ludvig: Observations on Gumma of the Hypophysis and Primary Careinoma of the Ureter, J. A. M. A. **26**: 1115 (June 6) 1896.
11. Quoted by Kischensky (Footnote 12).
12. Kischensky, D. P.: Primärer Plattenepithelkrebs der Nierenkelche und Metaplasie des Epithels der Nierenkelche, des Nierenbeckens und des Ureters, Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's) **30**: 348, 1901.
13. Scheel, P. F.: Ueber ein eigenartiges Kankroid der Niere, Virchows Arch. f. path. Anat. **201**: 311, 1910.

Baselin [14] records a similar condition, which he calls cholesteatomatous desquamation of the cells of the pelvis associated with primary tuberculosis of the kidney.

The epidermization of the transitional epithelium in the ureter, pelvis and calices may thus proceed with a high degree of cell proliferation, in which the superficial layers are hornified. Halle [11] has suggested for this condition the name leucoplasie urinaire, resembling the so-called leukoplasia of the mouth cavity, which is not infrequently recognized as a precancerous condition.

The fact that squamous cell cancer of the kidney is due to the invasion of the kidney substance by a growth which is primary in the pelvis and calices is attested by the findings in certain of the reported cases. Scheel,[13] for example, records a case of a tumor which presented the characters of a squamous cell epithelioma of the kidney substance, showing pearls and hornification. This was in direct continuity with a tumor of the kidney pelvis in which the cells were mostly cylindric in type, and which developed as a villous growth; these cells were supported on a vascular connective tissue which was infiltrated by a growth of squamous cells with pearl formation and basal cells. Between the squamous cell growth of the kidney substance and the tumor of the pelvis there was almost everywhere a sharply defined barrier of connective tissue, but in certain places this barrier was broken down and the two growths become continuous. Scheel considers the two growths of common origin, and concludes that the original tumor was an epithelioma arising probably in connection with the kidney calices and developing, on the one hand, as a cylindric cell papilloma invading the kidney, pelvis, and on the other hand, as a squamous cell cancer of the kidney substance. Hildebrandt [15] describes a large growth which in its pelvic portions was papillary and in the renal substance scirrhous (Ewing [16]). Cylindric cell papillomas in the pelvis and ureters have been described by several writers. Rundle's case, already quoted, gives us an example of a squamous cell growth ocurring in the ureter without villous formation.

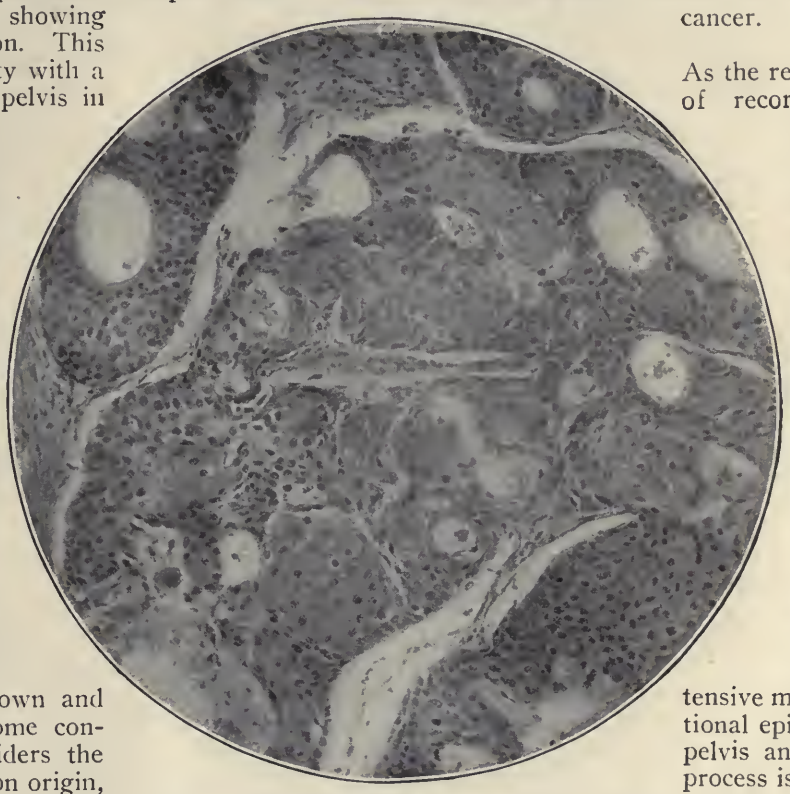


Fig. 3.—Squamous cell cancer of the kidney; masses of squamous epithelial cells with pearl formation; also renal tubules; × 130.

Busse [17] describes a case of squamous cell cancer of the bladder associated with papillomatous growths in the ureter.

It would appear, therefore, that squamous cell cancer of the kidney substance is derived from a primary growth in the calices or pelvis; this in turn may be accompanied, as in Kischensky's case, with extensive metaplasia and epidermization of the epithelium of the calices, pelvis and ureters.

These squamous cell carcinomas of the kidney or pelvis are accompanied by extensive metastases. In the case recorded in this paper it was impossible to establish the existence or nonexistence of these, as it was impossible to obtain necropsy. In Scheel's [13] case, metastases occurred in the liver, the lung and the hilum glands. In Kischensky's [12] case they were present in the liver, the hilum glands and in the lower end of the femur. In all instances the metastatic growth exhibited the characteristic structure of squamous cell cancer.

CONCLUSIONS

As the result of a critical study of recorded cases we may arrive at the conclusion that the usual form of renal tumor described as squamous cell cancer is a growth having its origin in the transitional epithelium of the calices and renal pelvis with subsequent invasion, by direct extension, of the kidney substance. Its development is closely associated with the production of villous growths which, at first benign, may develop malignancy. In certain instances also there may be extensive metaplasia of the transitional epithelium of the calices, pelvis and ureter. The entire process is probably preceded by chronic inflammatory changes produced by some irritant, such as the presence of stone.

ABSTRACT OF DISCUSSION

DR. ARTHUR DEAN BEVAN, Chicago: Twenty-five years ago we did not have the same conception of kidney tumors that we have today. I had an opportunity to work in Birch-Hirschfeld's pathologic institute in Leipzig when he was doing a great deal of work on hypernephroma. He coined the word. A large series of cases reported by Israel then were mostly considered carcinoma, then sarcoma; but after the work of Birch-Hirschfeld, Israel studied his specimens again, and instead of reporting carcinoma as a common type of malignant tumor of the kidney, he labeled these cases hypernephroma. For a number of years we have accepted the view that hypernephroma is a common type of malignant tumor of the kidney. Of more than one hundred cases of malignant tumors of the kidneys in my own service, hypernephromas numbered more than 80 per cent. of the total cases; sarcoma, occurring early in life, formed the second group. Carcinomas are exceedingly rare. I have had only four cases in which the microscope showed carcinoma. The type of carcinoma has been for the most part the same

14. Baselin, Otto: Cholesteatomartige Desquamation im Nierenbecken bei primärer Tuberkulose derselben Niere, Virchows Arch. f. path. Anat. **99**: 289, 1885.
15. Hildebrandt: Arch. f. klin. Chir. (Langenbeck's), quoted by Ewing (Footnote 16).
16. Ewing, James: Neoplastic Diseases, Philadelphia, W. B. Saunders Company, 1919, p. 743.
17. Busse, Otto: Geschwulstbildung in den grossen Harnwegen, Virchows Arch. f. path. Anat. **164**: 119, 1901.

as is found in the bladder and, occasionally, in the ureter. It is not at all surprising that under certain conditions metaplasia takes place. Years ago it was pointed out that metaplasia occurred in the epithelium of the gallbladder and that squamous carcinoma developed. Today that is a well-recognized fact. Another interesting fact is the development of leukoplakia in the bladder, ureter and pelvis of the kidney, especially in the presence of chronic irritation. A number of cases of epithelioma of the body of the uterus from chronic irritation from the stem pessary have been reported.

DR. WILLIAM J. MAYO, Rochester, Minn.: We can get a better idea of the solid tumors of the kidney by going back to the embryology of the organ. I agree with Cushny that the kidney is essentially a filter. That part of the kidney which rises from the diverticula of the wolffian duct and is lined originally by pavement epithelium forms the part of the kidney that collects the urine, that is, the pelvis, the calices and the straight tubules, and from these tissues originate the transitional forms of carcinoma Dr. Primrose described. I agree with Dr. Bevan as to the great frequency of the so-called hypernephroma. These tumors are mesotheliomas derived from the filter part of the kidney as shown by Wilson, and not hypernephromas. Merely because it was noted that their structures were arranged in parallel columns and were yellow, they were believed to have their origin in suprarenal rests. The little yellowish bodies believed to be suprarenal rests are found in the capsule, while the tumors themselves are found in the substance of the kidney. The case that Dr. Primrose reported is exceedingly interesting because the tumor occurred in a horseshoe kidney which would add greatly to the difficulties of removal. We have observed a small number of such tumors, but none in horseshoe kidneys. The operations have been exceedingly difficult. In some of our cases, in which the right kidney was involved, the retroperitoneal part of the duodenum was injured in an attempt to remove it. In one case, the injury was due to rat toothed forceps hastily applied to check hemorrhage; necrosis and leakage followed and in two weeks the patient lost almost all the superficial epithelium of the body. The patient died. In the second case, after the fistula had occurred, I made an incision in front, dissected the duodenum up, closed the fistula, and tucked the omentum around it; this patient recovered. I have since seen two similar cases and have known of a number of other cases of this type of malignant disease involving the pelvis of the kidney in which the accident happened in attempts to perform nephrectomy, and, except in the cases in which a second operation was made in front and the fistula closed by suture, the patients died. The vena cava may be injured in the removal of these tumors on the right side. This accident is not necessarily a fatal one. It is surprising how readily the vena cava may be mended; it can be picked up between the fingers and can be sutured with catgut, care being taken that the endothelium on the inside of the vessel is brought into contact. In exactly the opposite of the method of suturing the intestine, big notches involving nearly a half of the lumen may be left without harm.

DR. JOHN J. GILBRIDE, Philadelphia: There may be considerable difficulty in making a diagnosis because of the absence or almost complete absence of local signs or symptoms in the early stages of the disease, even after one has been able to palpate a definite mass in cases of hypernephroma or sarcoma of the kidney. There may be an absence of blood or other changes in the urine until the case is so far advanced that the patient practically dies of suppression of urine and the symptoms are those of uremic coma. In malignant disease of the kidney one frequently finds a slight elevation of temperature, perhaps 99 or 99.5 or a little higher, together with an increase in the pulse rate —up to 80, 90 or even 100—suggesting the presence of an infection. Even after extensive study and careful roentgen-ray examination I have seen cases of malignant disease of the kidney in which a diagnosis of infection had been made.

DR. ALBERT J. OCHSNER, Chicago: I wish to direct attention to the physiologic reason why the squamous cancers of the kidney are so rare. Three conditions help to favor the production of cancer. One of these is the irritation which we have here in the presence of stone in the pelvis of the kidney constantly. The second one is the stasis found in the production of cancer in every cavity where it occurs. The third is the acid medium. In the kidney an acid medium is present all the time so long as the urine is normal; but so long as the urine is normal even in the presence of uric acid stone or oxalate of calcium stone, the irritation is slight because there is constant washing away of the surface by normal urine. On the other hand, as we have the development of stasis we have alkaline urine and the condition is no longer favorable to the formation of cancer. If we could have stasis and irritation and an acid urine at the same time, in this location, there can be no doubt that squamous carcinoma of the pelvis of the kidney would be common.

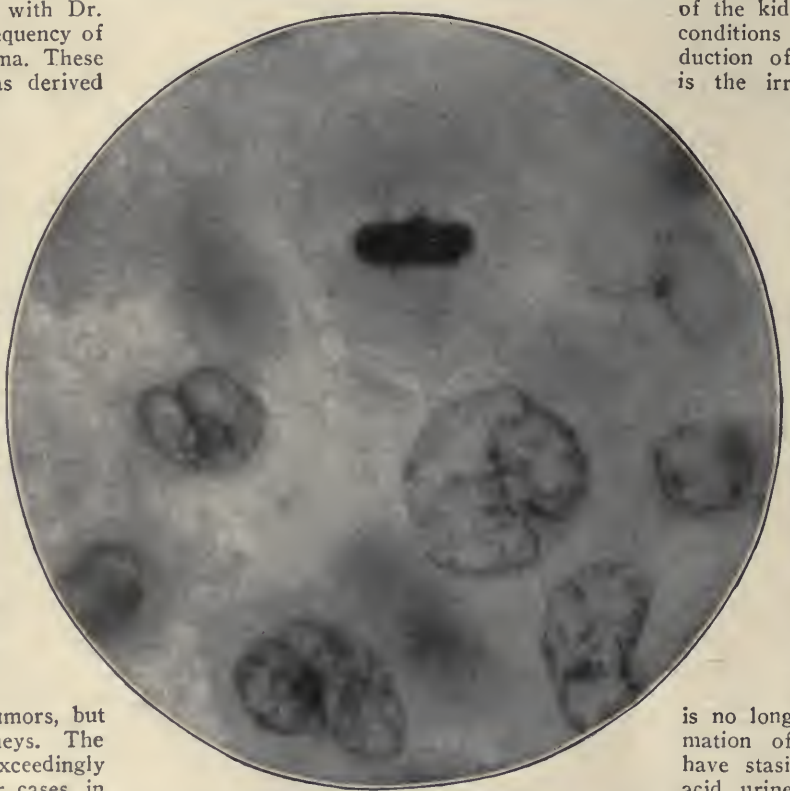


Fig. 4.—Squamous cell cancer of the kidney: a number of mitotic figures (monaster); a number of these are found throughout the tumor showing a fairly rapid growth; × 2,000.

Symptoms of Breast Cancer.—The so-called classical symptoms of the textbooks are positively dangerous from the point of view of prognosis. To wait for their appearance is, in many cases, to wait till the disease is well-nigh incurable. The early signs of breast cancer are symptomless; the accidental discovery of a lump in the breast is usually the first sign of trouble. Pain is very rarely present at this stage, and here be it noted how extraordinarily difficult it is to convince many women of the very serious nature of a lesion which is causing no discomfort! The only other sign of breast cancer with which I am acquainted is dimpling of the skin of the breast over the tumor; this is never to be seen over nonmalignant tumors unless they have become infected. On the presence of a single hard lump in the breast of any woman over thirty years of age I am prepared to suspect cancer; if the skin dimples over the lump, I believe she has cancer, and that the least possible delay should take place in operating if our patient is to have a permanent cure.—W. Doolin, *Med. Press,* April 28, 1920.

SYPHILIS OF THE KIDNEY*

LOYD THOMPSON, M.D.
HOT SPRINGS, ARK.

The majority of textbooks on general medicine give but scant attention to the subject of syphilis of the kidney. Even the latest edition of Osler,[1] that great storehouse of medical information, devotes only two short paragraphs to its consideration. The same statement may be made concerning most textbooks on genito-urinary diseases, although in Cabot's [2] "Modern Urology" there appears a quite comprehensive description of renal syphilis. Even in the periodical literature of the last decade are to be found comparatively few references to the subject. It is therefore apparent that the importance of syphilis of the kidney is often overlooked, both by the internist and by the genito-urinary specialist, so it seems opportune at this time to review rather completely our knowledge of the subject and to add some personal observations.

INCIDENCE

The incidence of syphilis of the kidney is difficult of determination, as statistics concerning its frequency are not common. Spiess,[3] in 1877, published the necropsy findings in 220 syphilitics in which the kidneys were affected as indicated in the accompanying tabulation.

CONDITION OF KIDNEY IN TWO HUNDRED AND TWENTY SYPHILITICS

	No.
Parenchymatous nephritis	21
Interstitial nephritis	16
Sclerogummatous nephritis	7
Sclerosis	18
Atrophy	11
Amyloid degeneration	42
Various inflammations only partly attributable to syphilis	16

Warthin [4] found changes in the kidneys, chronic passive congestion, atrophy, infarctions, and local and diffuse inflammations in practically all kidneys of syphilitics. In the first forty-one cases studied, there were seventeen cases of acute, subacute and chronic parenchymatous nephritis, and three cases of interstitial nephritis. This author states, however, that the relation of the syphilis to these conditions is not apparent.

Osler [1] states that it has been estimated that acute syphilitic nephritis occurs in 3.8 per cent. of all syphilitics in the so-called secondary stage. This figure would seem to be entirely too high, as it has been shown by Karvonen,[5] Cole [6] and others that acute syphilitic nephritis is a comparatively rare condition. In an observation of several hundred cases of early syphilis, I have seen but one case of acute involvement of the kidney, although a number of cases have shown mild transient albuminuria.

* Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Osler, William, and McCrae, Thomas: The Principles and Practice of Medicine, Ed. 8, New York and London, 1918, p. 276.
2. Cabot, Hugh: Modern Urology, Philadelphia, Lea & Febiger **1**: 184, 1919.
3. Spiess, F.: Ueber die verschiedenen Nierenaffektionen bei Syphilis constitutionalis, Berlin, 1877, pp. 20, 29.
4. Warthin, A. S.: The New Pathology of Syphilis, Am. J. Syph. **2**: 425, 1918.
5. Karvonen, J. J.: Munuaissyfillomlista, Duodecim, Helsinki **14**: 425, 1898; **15**: 1, 1899; translated in Dermat. Ztschr. **5**: 602, 1898; **7**: 37, 183, 460, 770, 903, 1900.
6. Cole, H. N.: Acute Syphilis of the Kidney, Report of a Case, Am. J. Syph. **4**: 46 (Jan.) 1920.

HISTORICAL

The early syphilographers apparently did not recognize syphilis of the kidney, and even Astruc,[7] whose "De morbis venereis," published in 1736, contains many references to visceral syphilis, is silent on the subject. And although Morgagni [8] as early as 1761 pointed out that the kidney could be attacked by the syphilitic process, John Hunter,[9] in 1786, wrote that he had never seen the kidney and other viscera involved, but that such cases had been described.

To Rayer,[10] however, in 1840, belongs the honor of first recognizing syphilis of the kidney clinically; although, according to Lancereaux,[11] Wells, Blackwell and Gregory of England had already observed changes in these organs in venereal disease which they attributed to the action of mercury used in treatment rather than to the syphilis itself. Lancereaux, himself, recognized three forms of syphilis of the kidney, namely, diffuse interstitial nephritis, gummas and cicatrices, which are the end-results of the preceding forms.

Since the time of Lancereaux, the knowledge of kidney syphilis has been gradually increasing, both from the anatomic and the clinical points of view, and I will now attempt to describe the various types that have been observed.

PATHOLOGY

Syphilis of the kidney may be divided into these varieties:

I. Early involvement.
   1. Transient albuminuria.
   2. Acute and subacute nephritis.

II. Late involvement.
   1. Chronic interstitial and parenchymatous nephritis.
   2. Amyloid kidney.
   3. Gummas.

The pathology of the transient albuminuria, seen early in the course of syphilis, is comparable to similar conditions observed in other infectious diseases. It is probably not due to the actual invasion of the kidney by spirochetes, but is due to the toxins generated by these organisms during the course of the general infection. The condition represents the response of the tissues to the irritation, and there are degenerative changes in the epithelium of the convoluted tubules, and small quantities of coagulated serous exudate in the glomeruli.

Acute syphilitic nephritis presents a pathologic picture similar to that found in other types of acute nephritis. The kidneys are enlarged (large, white kidney), the cortex thickened; and the capsule strips easily. On section, the parenchyma is seen to be of a gray, homogeneous color. Histologically, the lining epithelium of the convoluted tubules is swollen, granular and often completely destroyed. There is a marked infiltration of lymphocytes and some polymorphonuclears, while the arteries usually show a beginning endarteritis. The glomeruli are usually not markedly involved, but sometimes they are increased in size and consist almost entirely of polymorphonuclear leukocytes in various stages of degeneration. There is a more or less marked interstitial edema. Spirochetes have been demonstrated by LePlay and

7. Astruc, J.: De morbis venereis, Paris, 1736.
8. Morgagni, J. B.: De Sedibus et Causis Morborum, Venetiis, 1761.
9. Hunter, John: A Treatise on the Venereal Disease, American Edition, Philadelphia, 1786, p. 279.
10. Rayer, P.: Traité des maladies des reins, Paris **2**: 485, 1840.
11. Lancereaux, E.: Traité de la syphilis, Paris, 1866, p. 290.

Sézary [12] in the kidney of a patient dying of acute nephritis; while Dreyer and Toepel,[13] and later Hoffmann,[14] found these organisms in the urine of patients suffering with syphilitic nephritis.

The picture in the subacute type of syphilitic nephritis is similar to that found in the acute, but the glomeruli are involved more severely in the process.

Chronic syphilitic nephritis occurs both in the interstitial and the parenchymatous forms, although the two are more or less associated. The kidneys are usually of normal size, although they may be either increased or diminished, and are of pale color and firm consistency. Histologically, the picture does not differ from chronic nephritis due to other causes.

Amyloid kidney is the result of long-continued toxemia, and that due to syphilis differs in no respect from amyloid kidney of other etiology. Faroy [15] was able to demonstrate spirochetes in small numbers in the amyloid kidneys of a woman in whom other evidences of syphilis were found at necropsy.

Gummas of the kidney are rather rare, but do occur either as single or multiple tumors, and vary in size from 1 or 2 mm. to several centimeters. In Bowlby's [16] case a gummatous tumor of the right kidney, weighing 17 ounces, was removed at operation. Gummas are found both in the cortex and in the medulla, and appear as pale, yellowish nodules. Histologically they are the same as gummas of other locations.

Not infrequently the kidneys of syphilitics present a sclerogummatous process in which, in addition to small multiple gummas, there is a diffuse atrophic sclerosis with hyaline degeneration of the glomeruli, and atrophy of the convoluted tubules. There are also fatty degeneration of the epithelium of the tubules and endarteritic changes in the blood vessels, even complete obliteration.



Double refractile lipoids, as seen through a Nichols polariscope, from a case of subacute syphilitic nephritis.

CLINICAL HISTORY

There is little or no symptomatology connected with the early transient albuminuria of syphilis other than the small amount of albumin in the urine. This is of quite frequent occurrence, and would probably be more often recognized if the urines in all cases of early syphilis were examined. It is observed during the second incubation period, but more frequently as an accompaniment of the early cutaneous manifestations. Casts are rarely demonstrated, and other urinary findings are nil.

Acute syphilitic nephritis may occur at any time following the chancre, in some instances before the cutaneous manifestations. Audry [17] reported two such cases. Of twenty-six cases occurring during the first year seen by Fournier,[18] eleven developed in the second month, while Mauriac [19] states that acute syphilitic nephritis may occur as late as three years after infection. However, the average date of onset is about the fifth month, which was the date of my case, and this disorder is rarely seen after the first year.

The onset is generally insidious, although rarely it may be sudden. The first symptom to be observed is usually edema, which may develop rapidly, producing general anasarca and even ascites and hydrothorax. There is moderate asthenia, though the general condition of the patient is remarkably good, in view of the kidney involvement. Anemia and loss of weight are sometimes more or less prominent symptoms. In those cases which develop suddenly there are usually severe pains in the lumbar region, anorexia, fever and perhaps nausea and vomiting.

The urinary findings are similar to those observed in other types of acute nephritis. Oliguria is usually present, the total quantity of urine excreted during twenty-four hours sometimes running as low as 300 c.c. or less. It may be smoky, but more frequently is clear, amber and of high specific gravity. The most striking feature is the enormous quantity of albumin, sometimes being so great as to coagulate on boiling so that the urine cannot be poured from the tube. Hoffmann [14] has seen the albumin content from 3 to 13 per cent., while in Cole's [6] case it was 15 per cent. In my case it was 3.2 per cent. Tube casts of all kinds, particularly the fatty variety, are observed in the sediment, although the number of casts is not nearly so striking as the quantity of albumin. A few red blood cells and leukocytes to a greater or less extent are also found. Epithelium cells usually are numerous. Munk called attention to the presence of lipoids observed as fine droplets or in packets, either in the epithelial cells or in the casts which are doubly refractive through a Nichols polariscope. Under the ordinary microscope these droplets resemble neutral fat globules, varying in diameter from that of an erythrocyte to three or four times that size; but when examined with the polariscope they show a dark central cross separating four bright peripheral quadrants. While Munk [20] found these lipoids in the urine of several cases of nephritis of nonsyphilitic origin, they were more abundant in syphilitic nephritis. This is in accord with the findings of Stengel and Austin,[21] as well as my own.

Renal function seems to be considerably less impaired than in acute nephritis of other etiology.

12. LePlay, A., and Sézary, A.: Constatation du tréponème dans la néphrite syphilitique secondaire, Sem. méd. **31**: 238, 1911.
13. Dreyer and Toepel: Spirochaete pallida im Urin bei syphilitische Nephritis, Dermat. Centralbl. **9**: 172, 1906.
14. Hoffmann, Erich: Ueber akute syphilitische Nierenentzündung in der Frühperiode (Nephritis syphilitica acuta praecox), Deutsch. med. Wchnschr. **39**: 353, 1913.
15. Faroy, M. G.: Constatation du tréponème pale dans la syphilis tertiare du rein avec degenerescence amyloide, Sem. méd. **31**: 527, 1911.
16. Bowlby, A. A.: Gummatous Disease of the Kidney Causing a Large Renal Tumor, Tr. Path. Soc. London **48**: 128, 1897.
17. Audry, C.: Ann. de dermat. et de syph. **3**: 277, 1912.
18. Fournier, A.: Traité de la syphilis, Paris **1**: 735, 1899.
19. Mauriac, C.: Syphilose des reins, Arch. gén de méd. **2**: 385, 1886.
20. Munk, F.: Diagnostik und Therapie syphilitischer diffuser Nierenerkrankungen (syphilitische Nephritis), Dermat. Ztschr. **21**: 391, 1914.
21. Stengel, A., and Austin, J. H.: Syphilitic Nephritis, Am. J. M. Sc. **149**: 12, 1915.

In my case the phenolsulphonephthalein excretion was 50 per cent. in the first hour and 25 per cent in the second (subcutaneous).

Chronic syphilitic nephritis is of comparatively infrequent occurrence, and is usually seen from three to ten years following the infection. It may, however, occur earlier. In one of my cases albumin was found in the urine eighteen months after the appearance of the chancre, and in another one eight and one-half years. The symptoms will depend on whether the interstitial or the parenchymatous variety predominates. In the former case it is characterized by polyuria, small amounts of albumin, few hyaline casts, and little or no edema, but high blood pressure. In parenchymatous nephritis the urine is scanty, of high specific gravity, and contains more or less albumin, and usually hyaline and granular casts. There is usually edema, and the blood pressure is increased, while anemia is more or less marked.

Amyloid kidney is also of late occurrence in syphilis, and is characterized by a large amount of albumin in the urine, which is usually diminished in quantity, but may be increased. There is generally more or less anemia and edema of the face and legs. The blood pressure is normal or low.

Gummas of the kidney occur late in the course of the disease, rarely before the fourth or fifth year, and will cause symptoms depending on their size and location. They may sometimes cause symptoms resembling renal calculus. Occasionally they develop to such a size that they are palpable.

In Bowlby's [16] case a woman, aged 40, had noticed a swelling in the right renal region for three months, which caused some discomfort. The right kidney was movable, usually hard, and a little enlarged. Except for a trace of albumin, the urine was normal and the patient was otherwise in good health. A year later the tumor had grown considerably larger and was more painful, while the urine was normal in quantity, but contained a trace of albumin. At this time a definite history of syphilis twenty-one years previous was obtained. Nephrectomy was performed, a tumor weighing 17 ounces removed, and the patient made an uneventful recovery.

DIAGNOSIS

The diagnosis of the early transient albuminuria of syphilis, when occurring as an accompaniment of the cutaneous manifestations, is, as a rule, easy, and this condition should be recognized in all cases. That occurring prior to the cutaneous outbreak, however, may be more difficult of recognition, although a slight albuminuria with few or no casts without other obvious etiology should arouse suspicions of syphilis, and a thorough investigation for that disease should be instituted.

Acute syphilitic nephritis must be differentiated from acute nephritis of other etiology, and, as with the transient albuminuria, when it occurs as an accompaniment of cutaneous lesions this is usually easy, although the fact must not be lost sight of that acute nephritis of other etiology may occur in a syphititic. And, furthermore, as Hoffmann [14] has pointed out, the edema may be so great as completely to mask the skin and mucous membrane eruptions.

A nephritis occurring in an individual without the cutaneous manifestations of syphilis, of insidious onset, with marked edema and large quantities of albumin, with few casts, comparatively little general disturbance and only moderate lowering of renal functions, should arouse suspicions of syphilis. The finding of double-refractile lipoids or spirochetes in the urine, or a positive Wassermann test would be most suggestive, although, as pointed out above, double-refractile lipoids are found in other types of nephritis, and it must be remembered that spirochetes in the urine need not necessarily come from the kidneys. However, if found in a specimen of urine obtained by ureteral catheterization, the diagnosis of syphilitic nephritis would be almost certain.

Probably the most valuable point in the diagnosis of acute syphilitic nephritis is the result of specific therapy, particularly arsphenamin.

A nephritis developing in a syphilitic who is undergoing mercurial treatment may be confusing, and a true syphilitic nephritis must be differentiated from a mercurial nephritis. As a rule, the latter improves on the suspension of the mercury, which is not true of the former.

The diagnosis of chronic syphilitic nephritis may be most difficult, but it seems to me that if all nephritics were examined for syphilis, both clinically and by laboratory methods, more cases of syphilitic nephritis would be found. Of course other evidences of syphilis and positive laboratory tests would not be absolute proof that the nephritis was syphilitic, but the improvement of the condition under carefully administered specifics would be strong presumptive evidence that such is the case.

Amyloid kidney due to syphilis can be diagnosed only by finding other evidences of a long-standing syphilis in a patient with a scanty urine, large quantity of albumin, anemia and edema of the face and legs. A low blood pressure would also be significant.

Gummas of the kidney may sometimes cause symptoms resembling renal calculus, but the two conditions should be differentiated by the presence or absence of other manifestations of syphilis and the use of the roentgen ray.

Gummas of palpable size have been mistaken for malignant tumors. However, the history and other evidences of syphilis, including a positive Wassermann test, in gummas should clear up the diagnosis. Malignant tumors also usually occur later in life and produce more cachexia than do gummas.

A renal tumor occurring in a patient with other evidences of syphilis would be an indication for specific therapy; and if improvement in the kidney conditions did not occur, a microscopic examination following nephrectomy would reveal the true nature of the tumor.

PROGNOSIS

The prognosis of the early transient albuminuria of syphilis is good, as such conditions readily clear up under specific therapy.

The outlook for acute syphilitic nephritis is much more grave, although in even markedly severe cases recovery occurs under careful treatment, and undoubtedly the prognosis is better in this type of case than is acute nephritis of other etiology.

Chronic syphilitic nephritis possibly presents a more favorable outlook than does the acute variety, although in most instances a prognosis should be reserved until the effect of antisyphilitic therapy can be noted.

Amyloid kidney is most resistant to treatment, and death with increasing cachexia is the usual outcome.

Most cases of gummas of the kidney which have been recognized clinically have been cured by specific therapy.

TREATMENT

In kidney syphilis the treatment should be twofold, that is, directed toward the syphilis and toward the kidney condition. In the transient albuminuria occurring early in the course of syphilis, specifics and general treatment alone are indicated. Specifics, however, must be administered with extreme caution in all nephritic conditions, the urine being examined for albumin and casts, and the phenolsulphonephthalein test being performed at frequent intervals.

In acute syphilitic nephritis, rest in bed is imperative. Diuretics, such as digitalis and potassium citrate, as well as cathartics, should be administered. Hot packs to promote diaphoresis should be applied, especially in severe cases. The diet should be nourishing, and consist largely of carbohydrates, while a strict milk diet is desirable in some cases. Mercury should be withheld until the urine is free from albumin or nearly so, while arsphenamin should be administered in doses not to exceed from 0.1 to 0.2 gm. at weekly intervals. Slight exacerbations following the injection of arsphenamin should be disregarded and the dose repeated at the proper time.

In chronic syphilitic nephritis, after the diagnosis has been established by the improvement of the condition under the administration of a small dose of arsphenamin, specifics should be pushed as intensively as possible, particularly the arsenicals, which are much better tolerated than the mercurials.

The treatment of syphilitic amyloid kidney is symptomatic, although specifics may be administered, but with little hope of success.

Large and increasing doses of potassium iodid, as well as arsphenamin and mercury, are indicated in gummas of the kidney.

ABSTRACT OF DISCUSSION

DR. WILLIAM H. MERCUR, Pittsburgh: A few years ago Sir Rose Bradford, discussing a case of chronic nephritis, stated that when an unusually large amount of albumin was present in the urine it might be due to syphilis. Such patients do not usually show the customary clinical signs of being very ill.

DR. J. B. MCELROY, Memphis, Tenn.: I have seen several of the cases described by Dr. Thompson, and there seems to be nothing specific, so far as the syphilis is concerned. They are the same cases which present the clinical syndrome which we recognize as degenerative nephropathies, nephroses, symptoms which are characterized by the absence of high blood pressure, the occurrence of considerable edema, and a large quantity of albumin in the urine, with an absence of red blood cells.

This syndrome is characteristic of degenerative nephropathies and occurs in other conditions as well as in syphilis. We must drop the terms parenchymatous, interstitial, etc., which occur in connection with nephritis.

Insecticides.—Naphthylamin crystals are used to kill body lice by sprinkling them down a man's neck between his shirt and skin. Powdered sulphur, generally in the form of an ointment, is used against the itch mite. Mercurial ointment is used against the pubic louse by rubbing it in the affected part night and morning. Various solutions, such as 1:500 solution of mercury bichlorid and 5 per cent. phenol, are used to kill insects and liquor formaldehydi is used quite extensively in fly traps, although the gas formaldehyd is not an insecticide.—*U. S. Nav. M. Bull.*, January, 1920.

CURE OF PANCREATIC FISTULA BY THE ROENTGEN RAY

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Two cases of pancreatic fistula under my observation have permanently closed after treatment by the roentgen ray. They are reported for the information of those likely to encounter such conditions. No attempt will be made to explain this action of radioactivity, which was used in these cases in the purest empiric manner. If the application of the roentgen ray inhibits pancreatic secretion, the reason for the favorable outcome in both cases is plain.

CASE 1.—A French soldier was wounded about Dec. 15, 1916, by a machine gun bullet that passed through his body at the umbilicus. I saw this man three days after the receipt of the injury, at a repartition station. The wound of entrance was ulcerated and excavated, and all fatty tissues about the wound were necrosed. A copious discharge looked like thin mayonnaise dressing, indicating digestion of fatty tissues deeper than the abdominal wall. The patient had been kept narcotized by opiates, and no food or water had been taken since he was wounded. The surgical consultant on duty at the repartition station suggested roentgen-ray treatment, stating that he had heard of favorable influence in similar cases. Exposure for five minutes to a very soft tube with the skin protected by sole leather resulted in complete cessation of discharge of pancreatic juice after five daily treatments, with subsequent healthy granulation and complete healing of the wound.

CASE 2.—A. B., a retired soldier, aged 66, admitted to the Army and Navy General Hospital with the diagnosis of gastric ulcer, which was concurred in, was found, on laparotomy, to have a carcinoma involving the lesser curvature of the stomach, pylorus, duodenum and head of the pancreas. I performed a posterior gastro-enterostomy with the greatest difficulty because of friability and comparative immobility of the tissues. The immediate postoperative course was stormy, and about the fourth day all catgut sutures in the operation wound parted, allowing the wound to gape widely. Accompanying this unaccountable wound disaster was a profuse discharge, which my assistant described by an exclusive remark that "it was not blood, pus or serum." Had it not been for the experience with Case 1, I should probably not have recognized this as a case of fat necrosis due to escape of pancreatic juice, which was brought to the wound area and surface by a small rubber tissue drain. The break into the pancreas no doubt occurred during the manipulations of this organ while the extent of the carcinomatous growth was being outlined, or from handling during the performance of gastro-enterostomy. Fat necrosis proceeded very rapidly, with destruction of all fatty tissues in and around the wound, with a profuse discharge from the depths of the wound, indicating intra-abdominal fat necrosis.

The roentgen ray was applied in this case in the same manner as in Case 1, a soft tube being used, backing up a 1½ inch spark gap, with the target 15 inches from the wound, and the skin protected by sole leather. After the third daily roentgen-ray application of five minutes' duration the discharge of emulsified fat entirely ceased and healthy granulations began, which quickly proceeded to complete healing. The patient appears to be almost entirely well, although carrying with him a widespread gastro-intestinal carcinoma.

The very pronounced beneficial changes following the use of the roentgen ray in both these cases suggests a trial of this expedient on all patients with pancreatic fistula, since it appears that the activity of the pancreas can be inhibited or at least put in abeyance by radioactivity.

TYPES AND TREATMENT OF PELLAGRA *

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Two cases of pellagra were reported in America in 1864,[1] and one case, of Italian origin, in 1883. Harris, of Georgia, reported a case in 1902, and since then it has been increasingly studied and reported until it is now found in probably every state in the Union, in the Hawaiian Islands, Mexico, Yucatan and Panama; indeed, from Canada[2] to Chile.[3] As clear cut and typical pellagra is found in Maine[4] and Massachusetts as in Georgia and Texas. It is no longer a disease merely of the Southern states, and practitioners everywhere should be on their guard against its insinuating presence, for no disease can be diagnosed unless it is first suspected.

DECREASE IN NUMBER OF CASES

It is a comment on public health work in America, as well as on the relative youth and vastness of our country, that accurate vital statistics are lacking. All figures in their totals are, therefore, estimates. It is probable that from 1902 to 1920 there have been 500,000 cases, with 50,000 deaths. In 1916, the disease ranked fourth as a cause of death in Mississippi, with 840 deaths; third in Alabama, with 677 deaths; second in South Carolina, with 627 deaths; 607 in Tennessee, and 452 in Texas, or 3,700 deaths in six states.[5] The epidemic has shown years of increase, as from 1902 to 1910; years of severity, from 1911 to 1916, and years of decline, from 1917 to the present. There is a prevailing feeling among the profession in the South that the number of cases has decreased from 75 to 25 per cent., depending on the locality. Even a greater percentage of decrease is reported by a few communities. A few statements from official and private communications confirm this estimate of decrease:

(*a*) Illinois: Decreasing as well as becoming less virulent in character. As a menace to the public health, the disease seems to have disappeared. All institutions on a standard ration based on calories. Diseases due to dietary insufficiencies will not recur.—Dr. George A. Zeller.

(*b*) Mississippi: In 1915, 15,831 cases, and 1,535 deaths; in 1918, 8,340 cases, and 746 deaths. Decided decrease in number of cases and deaths from pellagra.—Dr. W. S. Leathers.

(*c*) Florida: Distinctly on decrease, of less violent type.—Dr. F. Clifton Moor.

(*d*) Virginia: In 1914, there were 396 cases, and 249 in 1919. Becoming milder.—Dr. E. G. Williams.

(*e*) Arkansas: Becoming more mild as it is becoming understood that proper diet both prevents and cures most cases.—Dr. C. W. Emerson.

(*f*) Alabama: During eleven months of 1919, there were 660 cases. Far fewer cases than five years ago.—Dr. J. H. Bowman.

(*g*) North Carolina: In 1914, 831 deaths; in 1918, 634, and to October, 1919, 323.—Dr. P. M. Register.

(*h*) New York City: In 1916 eleven cases; 1917, thirteen cases; 1918, nine cases; 1919, four cases.—Dr. L. I. Harris.

(*i*) Boston: In 1919, thirteen cases with fifteen deaths.—Dr. B. W. Carey.

(*j*) South Carolina: Averaging 550 deaths per year in 1916, 1917 and 1918. In November, 1919, during ten months, only 303 deaths. Marked decrease both as to deaths and cases reported. Disease decidedly more mild and chronic.—Dr. James A. Hayne.

(*k*) Louisiana: Constant decrease in number of cases from 1915 to date.—Dr. M. W. Swords.

(*l*) Kentucky: One hundred and seven deaths in 1913; 148 in 1914; 144 in 1915; 120 in 1916; 198 in 1917; 148 in 1918. This is one Southern state in which the disease has not noticeably decreased, but there have been relatively far fewer cases in Kentucky.—Bulletin by Kentucky State Board.

(*m*) Georgia: Far fewer cases, estimated 50 per cent. decrease. Vital statistics not available for comparison. Disease more mild, rapidly lessening.

It may therefore be said that, entering on the third decade of its activity in America, the disease is already on the wane as regards the number of cases. This is a striking comment when compared with its far larger activity in Italy. In the United States this is due to several factors: (1) the early and widespread knowledge of the disease due to the conferences on pellagra in South Carolina by Babcock, the widespread discussion in medical societies and literature, and the activity of the various state boards of health; (2) the accent laid by Goldberger and his associates of the Public Health Service on an improper and unbalanced food as a cause, and on a proper and balanced food as a cure; the Thomson-McFadden Commission and the work of Lavinder, Siler and Garrison were aids in the numerous positive and negative facts deduced by their studies; (3) the magnitude of the evidence against any idea or proof of infection or insect transmission; (4) the ease with which good food is both grown and obtained in America, the general prosperity, high wages, and the good food enjoyed by the people, and (5) a wide awake medical profession, eager to learn, cooperating in their early recognition of the disease, and emphasizing proper diet and not indiscriminate drugs as the proper treatment.

DECREASE IN SEVERITY OF THE DISEASE

Pellagra is decreasing not only in the number of cases but also in the severity of the types. The history of the disease in Spain, France, Italy and America shows four well defined tendencies, after it has passed its crest of severity in each regional epidemic: (1) a tendency to decrease in the number of cases; (2) a tendency to increasing chronicity; (3) a tendency to increasing mildness, and (4) a cumulative tendency to extinction. In 1911 in northern Spain, the disease was practically extinct, and one could not find in northern Italy in the same year the acute, malignant and early fatal cases so common then and since in the Southern states.

The disease is also decreasing in the severity of cases. There is much to be said on this point. By virtue of the decrease in number, the malignant cases have proportionately decreased. It is probably true also that relatively the severe cases are more than proportionately less. The bizarre dermatitis so common in the beginning is largely absent. I looked for Casal's cravat in northern Italy in 1911 and failed to find it, but such cases were often seen in Georgia. Now they are extremely rare in Georgia. Typhoid pellagra with

*Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

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2. Pinault, L. G.: Canad. M. Assn. J. **6**: 228 (March) 1916. Rolph, F. W.: Ibid., **6**: 323 (March) 1916.
3. Tuttle, H. K.: Pellagra in Chile, J. A. M. A. **69**: 2105 (Dec. 22) 1917.
4. Bartlett, H. M.: J. Maine M. A. **5**: 8, 1915.
5. Goldberger, Joseph: Reprint 441, Public Health Reports, p. 4; Pellagra: Causation and a Method of Prevention, J. A. M. A. **66**: 471-476 (Feb. 12) 1916.

its dermatitis, fever, diarrhea, prostration and early death is rarely seen now. We depended then probably too much on the dermatitis or the history of a dermatitis, to clinch a diagnosis; now we depend on lesser, more general and more constitutional symptoms.

Not to have known the disease in its severity is to miss much in its mildness. For example, there is a type occurring now among married women which for lack of a better name may be called pellagra in multipara. A mother of several children, doing a great deal of hard work, with no vacation or servants, suffering from perineal laceration, constipation, visceroptosis, loss of appetite, and none too varied or appetizing diet —here is a pellagrous candidate. Too often flurries of diarrhea, loss of subcutaneous fat, pinkish face and hands, roughened elbows and knees, raw tongue tip, weakness, low pressure and rising pulse, but no definite or typical eruption—this is pellagra sine pellagra (Cases 16 and 21).

Type changes and tendencies at present may be thus summed up:

1. Acute typhoid pellagra is becoming comparatively rare.

2. We encounter such cases of severe pellagra even less frequently than formerly, as Cases 2, 6 and 10 reported herewith.

3. Cases without typical dermatitis, the so-called pellagra sine pellagra, are increasingly common and call for careful diagnostic scrutiny.

4. Milder cases with early improvement and evidence of cure are increasingly frequent.

The work of Goldberger probably marks the beginning of the final solution of the etiology of the disease. We are dealing to all evidence with a nutritional disease, to be placed in the group with scurvy and beriberi. Whether the food lack, or food "fault" as Goldberger terms it, shall be a vitamin deficiency, a protein amino-acid problem, a mineral ash disproportion, an unknown food fault beyond the ken of our present knowledge, or a combination of two or three of these dystrophias, future researches must determine. Certainly we are forever away from the idea of an unknown infectious agent, and the other idea that the fault is a food, one food, namely, corn. The great idea that Goldberger has forced and proved is that the disease can be caused by lack of a proper food balance, and can be cured by a proper food balance. His researches may be thus summed up:

1. Pellagra was produced in six of eleven white male convicts at the Mississippi State Penitentiary Farm in 1915 on a diet of white wheat flour, corn meal, hominy, grits, corn starch, white rice, sucrose, syrup, sweet potatoes, pork fat, cabbage, collards, turnips, turnip greens and coffee.

2. At the insane asylum of Georgia, physicians, nurses and helpers who lived with pellagrins never developed the disease. The former lived on a better diet, with more milk and meats; the inmates had little or no milk and meats. When the latter had a better diet, the same as the attendants in general, they ceased developing pellagra. If put back on the former poorer diet, pellagra recurred.

3. In the two orphanages at Jackson, Miss., 214 cases developed in 1914 on an unbalanced diet. When milk, eggs and meats were added, 172 completed the anniversary date of attack without a recurrence. There was only one recurrence, and there were no new cases among the nonpellagrins of whom 168 were under observation for one year.

4. A study [6] of seven cotton mill villages in South Carolina in 1916 showed that "nonpellagrous households enjoyed a more restricted supply of the foods of the animal protein group, i. e., lean meat, milk, including butter, cheese and eggs. Increasing supplies of milk or of fresh meat were found associated, one independently of the other, with a decreasing pellagra incidence."

It is noted that all Goldberger's studies have been among convicts, in insane asylums, orphanages, and the homes of cotton mill operatives. The question naturally arises as to the explanation of pellagra in rural and urban homes of the well-to-do and the affluent, where food is abundant, varied, and pleasingly prepared, and to be had for the mere reaching and swallowing. The twenty-five patients whose cases are reported here are all from private practice, and without exception are pellagrins who had an abundance of well balanced food on their tables, or obtainable, and yet who developed the disease.

REPORT OF CASES

Case 1.—Mrs. E. A., aged 55, well-to-do widow, who lived in a rural community and who was peculiar about food, for two years had felt a repulsion toward eggs, meats, chicken, peas and beans. She lived alone with her daughter, and ate cereal, bacon, cabbage, spinach and crackers, and drank coffee. Often she would eat practically nothing all day. She had lost 24 pounds. She had eaten no bread, only crackers. She said that she just did not want to eat. She had had flurries of diarrhea from September, 1919, to February, 1920. When a frank outbreak of pellagra, with glossitis, discolored hands, and diarrhea, occurred, she was put to bed and given an antipellagra diet, following which there was rapid improvement.

Case 2.—Mrs. E. H., aged 68, wife of a wealthy planter, who lived in a rural community with a luxurious home and food, a book lover, who had collected thousands of books, and who had read all her life, for years had had peculiar tastes for food. She would skip meals, would eat a little fruit, corn cakes or salad, had lost 25 pounds, had suffered with insomnia, and had begun taking whisky for sleep. She refused wholesome food, and for months had lived on knick-knacks, coffee and whisky, and had read in her room or in bed. She developed acute pellagra in February, 1919, and died in two months.

Case 3.—Mrs. R. P. E., aged 31, lived in a rural community. Her home had burned two years before, and her brother had been killed in France during the war. She had worried a great deal, was constipated and irregular and peculiar in her appetite, desiring chiefly pork, greens, cabbage, bread and coffee, and being averse to chicken, eggs and milk, though she raised an abundance of vegetables and had her own chickens and cows. She developed pellagra in July, 1919, was taken to the hospital, put on an antipellagrous diet, and rapidly improved.

Case 4.—Mrs. J. P., aged 52, who lived in the city, had two years before, in December, 1917, passed through the menopause, during which she had worried a great deal, had suffered from insomnia and loss of appetite over domestic trouble. Her family considered her a knick-knack eater. She preferred cereal, coffee, grits, toast and occasionally a rare steak, but was averse to milk and eggs. She had frank severe pellagra in September, 1919, which developed into pellagrous insanity.

Case 5.—Mrs. J. K. H., aged 53, living in an elegant home in the city, with no work and no exercise, had been enterop-

6. Goldberger, Joseph; Wheeler, G. A., and Sydenstricker, Edgar: A Study of the Diet of Nonpellagrous and of Pellagrous Households, J. A. M. A. 71: 944 (Sept. 21) 1918.

totic and constipated, had a poor appetite, and had lost 20 pounds in weight. This patient with mild chronic pellagra, showed marked and rapid improvement on an antipellagrous diet, and gained 20 pounds.

CASE 6.—Miss M. K., aged 42, a housekeeper in the city, who did all her own work for a family of three, said that the preparation of food lessened her appetite. She ate bread, syrup, pork, a few vegetables, drank coffee but no milk, and occasionally ate an egg. She suffered the first attack in July, 1918, and a second and more severe attack following influenza, from which effect and loss of appetite she had not recovered. Her brother said she was a "nibbler" at the table. She was emaciated in appearance. She developed manic-depressive insanity, and died in six weeks.

CASE 7.—Mrs. B., a widow, aged 50, who was living with her niece in the city in March, 1920, prepared her own food, lived on vegetables, fruit, coffee, a small amount of meat or none. Her niece said she had eaten little since her husband's illness, three years before. She had had typical diarrhea and stomatitis; her weight had decreased from 170 to 140 pounds. There was rapid improvement with rest and proper diet.

CASE 8.—Mrs. J. M. B., who lived in the city, suffered the first attack in May, 1917. She weighed 92 pounds. Hers was a case of typical severe pellagra. Under proper food, she gained 30 pounds. In November, 1919, she had another attack. In January, 1920, she weighed 107, and after hospital rest and food, 127 pounds. Her appetite had always been peculiar and variable. "The kitchen turned her against eating." She would talk through a meal and eat little. Coffee, bread, syrup, pork and greens comprised her diet. Most marked improvement was on milk and eggs and all symptoms disappeared.

CASE 9.—Mrs. W. L. F., aged 38, who lived in a luxurious home in a rural community, who had weighed 120 pounds and had lost 15 pounds, had very little appetite, ate little of meat and eggs, and was easily repelled by food. Everything had to be "just so" before she would eat or before she would have a good appetite. She gained 13 pounds and was a normal woman after proper food.

CASE 10.—Mrs. F. F. B., a widow, aged 70, who lived in the city, and who weighed 100 pounds, had lost 30 pounds. Her diet consisted of cereals, occasionally an egg, coffee, jam or marmalade, gravy, rice and grits. For a year she had been a devotee of a no meat diet, and used proprietary foods, chiefly from a well known establishment. She was notably varied and peculiar as to food. The verdict of the family was that she "hardly ate anything," although she had an elegant home and table. She had two attacks of pellagra, and died in October, 1919, one year after the beginning of the disease.

CASE 11.—Miss F. N. C., aged 43, who lived in the city and who had weighed 103 pounds, had lost 12 pounds. She lived with a niece and did all the cooking, and often did without or ate prepared foods. She ate meats and eggs very rarely; usually bread, grits, rice, cereals, spinach and cabbage. Typical eruption and mild pellagra appeared, followed by rapid improvement on an antipellagrous diet.

CASE 12.—Mrs. J. H. P., aged 59, who lived in a rural community amid splendid circumstances, had a son in the army. She worried much and lost her appetite, had had some indigestion for nine months, and for the last four months had eaten very little. Her diet consisted of bread, toast, crackers, buttermilk, one egg daily, soup, tomato, rice, grits and a cereal preparation. She was taken to a hospital, and under an antipellagrous diet improved.

CASE 13.—Mrs. C. H. R., aged 32, who lived in a rural community and whose diet consisted of bread, pork, grits, cereals, vegetables, such as cabbage and spinach, rare meat and eggs or milk, and whose mind was involved, showed very little improvement on an antipellagrous diet.

CASE 14.—Mr. W. G. M., aged 55, who lived in a rural community, complained of indigestion, weakness and diarrhea. He had lost 9 pounds in three months and was suffering from mild pellagra. His diet for years had consisted of hog meat, two eggs weekly, beans, corn, syrup, spinach, bread and canned beans occasionally. He ate meat once monthly, drank no sweet milk, had eaten no mutton in the last six years, and drank buttermilk once daily. He ate no cabbage. This man was financially in good circumstances, but economized in everything including diet. On an antipellagrous diet, he gained 25 pounds.

CASE 15.—Miss F. S., aged 30, who lived in a rural community, suffered from pellagra amounting to manic-depressive insanity. Her usual diet consisted of bread, syrup, fat meat, vegetables, such as corn, spinach and peas, rare meat and eggs or milk. She was a small eater. Since suffering from pellagrous symptoms, she had eaten very little food and had been difficult to feed.

CASE 16.—Mrs. A. F. W., who lived in a rural community, developed pellagra during convalescence from a fourth miscarriage in 1915. She was very nervous, and had taken drugs and morphin to induce sleep. She was a most peculiar and irregular eater, would skip meals, and only bite at meals. Her diet consisted of breads, syrup, marmalade and jams. She felt a repulsion toward meats, milk, eggs and really wholesome vegetables. On an antipellagrous diet, this nervous, pellagrous woman of 107 pounds gained 40 pounds, and in 1920 is looking well, and runs a large house. Her husband, who is a physician, says that when she hesitates concerning her food, the nervous symptoms appear.

CASE 17.—Mr. J. C. N., aged 62, who lived in a rural community, had suffered from chronic pellagra, which began in 1905 at the aged of 52. He was a rich farmer who worked hard and ate little. His diet consisted of breads, fat meat, ham, syrup, buttermilk, vegetables, such as peas, cabbage, turnip greens and potatoes, and little meat, eggs or milk. The disease had made inroads into his strength and weight. The symptoms remained in abeyance and he lived until 1918, when he died of pneumonia at 65. He had been under treatment for the last six years, he had taken two eggs daily, from two to four glasses of milk, peas, beans, meats and oatmeal.

CASE 18.—Mrs. M. L. R., aged 42, an elegant woman from a splendid home in the city, who had undergone operations in 1896 and a posterior gastro-enterostomy in 1909, and a cholocystectomy in 1916. Adhesions and contractions of the pylorus with dilatation of the duodenum below had followed. She had suffered from constant indigestion, nausea and vomiting, had been repelled by food, and had taken morphin for relief of pain. Pellagra developed during one of her prolonged vomiting attacks, followed by an attack in December, 1919. She died in February, 1920.

CASE 19.—Mrs. J. F. H., aged 66, who lived in the city in the best of homes and who had the best of food, had always been in her husband's opinion a very light eater. She ate batter cakes and eggs or drank a glass of milk for breakfast, ate sparingly of vegetables for dinner, and for supper ate clabber and toast or a biscuit. She seldom ate meat. Since the war had begun she had had a great deal of trouble with cooks. She said preparing food gave her "cookitis," i. e., took away her appetite. She had eaten very little the last few months. Acute pellagra developed. She was seen Oct. 22, 1919, and died in four weeks.

CASE 20.—Mrs. H. H. C., aged 50, a city dweller, who was very nervous and a very light, uncertain eater, who picked at the food rather than ate it, developed chronic pellagra with no appetite and with mental symptoms. She rarely ate meat, eggs or drank milk. On an antipellagra diet and rest she gained 25 pounds. At first she refused to eat, asserting that her stomach would not hold much food, apparently a psychic inhibition to food. "Never hungry" was a frequent statement.

CASE 21.—Mrs. W. M. F., aged 41, who lived in a rural community, had fairly good nutrition. Chronic mild pellagra developed, manifested chiefly by rather continuous dermatitis and nervous symptoms. The appetite was fair, but she ate no meats, rarely an egg, and drank milk. She never used sugar, breads, syrup, vegetables and fruits. There was improvement under an antipellagrous diet, but it was almost impossible to get the patient to eat regularly and persistently. Any worry, real or imaginary, would destroy her appetite.

CASE 22.—Mr. J. K. O., aged 44, who lived in a rural community where food was plentiful, ate rather a monotonous diet, and for four months had eaten very little; he was not a large eater at any time. He lived on bread, coffee, syrup, vegetables, hog meat and buttermilk, and had lost 14 pounds in weight. There was marked improvement under an antipellagrous diet. He now weighs 6 pounds more than ever before, and is in active charge of a large farm.

CASE 23.—Miss M. O., aged 30, a city dweller, was 9 pounds below her normal weight. She had mild chronic pellagra. She had felt a peculiar repulsion toward food since an attack of typhoid fever when she was 23 years old. She refused ordinary vegetables, bacon and ham, milk and cheese. These things caused vomiting, a purely psychic effect. Her sister said she was "a skimpy eater." Her brothers asserted she was weak because "she did not eat enough for a baby." She ate eggs, a little bread, fruit and syrup and drank buttermilk. Improvement followed an antipellagrous diet and rest.

CASE 24.—Mr. J. W. C., aged 74, a city dweller, had had pellagra for five years in the form of an annual spring attack, with increasing weakness. He was a rich man, absorbed in business, who worked from twelve to eighteen hours a day. He ate canned goods around his stores. He was a man who ate lightly and irregularly, drank some whisky daily, and asserted that he was never hungry. He died after five years.

CASE 25.—Mrs. C. H. M., aged 36, a city dweller with severe pellagra, was emaciated and prostrated. Her usual weight had been 120 pounds. It was 96 when seen March, 1916. From her childhood she had been very peculiar at the table and "finicky" about her food. She would not eat meat of any kind, not even chicken, except occasionally a ham sandwich. She never ate eggs, drank milk, or ate wholesome vegetables. She was a dietary devotee of syrup, salads, breads, cakes, desserts and butter. She believed she had had a sore mouth occasionally for years. Under antipellagrous diet, she gained 32 pounds, reaching 128. A light attack occurred in the spring of 1919. Her weight now is 150 pounds, or 22 pounds more than ever before in her life. She eats regularly and freely of all foods she had refused for a lifetime.

COMMENT

These cases speak for themselves. Not one of the patients ate a well rounded, balanced diet of meat, milk, eggs or wholesome vegetables. In Cases 1, 3, 6, 7, 8, 10, 11, 12, 13, 14, 15, 17, 21 and 22 the patients ate practically the same diet Goldberger used in producing pellagra in the Mississippi convicts, or that the orphanages and asylums previously used. There seems, therefore, to be a pellagrous diet. In Cases 2, 4, 5, 9, 19, 20, 21, 23 and 25 the patients ate less than this diet, were "skimpy," knick-knack, psychic eaters. Case 18 is remarkable in that this patient was emaciated from an average of ten attacks of nausea and vomiting in twenty-four hours. It was impossible to nourish her, and pellagra developed under our very eyes in the midst of an unsuccessful attempt to feed her. Rolph reports a case of pellagra developing in cancer of the stomach. In both cases it was impossible to nourish the patient.

Case 25 is worthy of note. This woman had all that money could give, was reared in the same environment as her healthy sister and athletic brother, and differed from them in her peculiar and unexplainable repulsion toward the ordinary articles of wholesome diet. She sank to 96 pounds; now she weighs 150, drives her own car, and eats all she formerly refused. Why she grew with such strange food repulsions, it is difficult to understand.

The outstanding facts with regard to these twenty-five pellagrins may be thus summarized:

1. Only two of these patients were naturally plump to abnormal adiposity, Cases 2 and 8. The leanness of most of the others was striking. Fat people rarely become pellagrous.

2. Pellagra develops as easily among the affluent and the urban as among the poor and rural. It is the food that is eaten that counts. Thirteen were city dwellers and twelve lived in rural communities.

3. All of them had the best food. With relation to food they may be regarded as of two classes: (*a*) one class ate an unbalanced diet; (*b*) the other, not only an unbalanced, but a "skimpy," starvation diet. These patients were undernourished.

4. As soon as put on a diet which they formerly refused for psychic or imaginary reasons, they ate it continuously, improved and led active lives (Cases 1, 5, 14, 17 and 25).

5. There is apparently among the better classes a small proportion who have a natural or acquired antipathy to a well rounded, balanced diet. Is there a dietary hysteria? Some persons pride themselves on never getting hungry. Grief, monotony, disease, domestic worries, the preparation of food, constipation are agents in depriving women more than men of their appetites. In this series there were only four men and twenty-one women.

TREATMENT

1. *Diet.*—Here food is of consuming importance, but it is of no importance unless it is consumed. Therefore, the dietary cooperation of the patient must be obtained. The disease should be named and explained to the patient, and with it the necessity for eating. Especial accent should be laid on directions for eating: directions and not appetite are to be followed. This is one reason why Goldberger has had such good results with his penitentiary, asylum and orphanage cases; these patients have been under control, under institutional routine, and the balanced food has been taken to them, and persistently taken to them month after month. Some such remarks as these should be made by the physician to his patient: "There are three things about your diet: First, we will look after what is brought you to eat. Second, you eat what is brought you whether it appeals to your appetite or not. If you swallow it, it will go down. Nature will do the rest. Third, we shall all rejoice at the results." During the attack, or for the first few days, feeding mouthful by mouthful may be necessary. Great harm is often done the patient by neglecting to feed during the extreme weakness of the severity of the disease, and just waiting until the patient "feels like" eating. Here, less food means more pellagra; more food, less pellagra.

2. *Rest.*—Pellagrins during the attack or when weak or below their normal weight should be put to bed like a "rest cure" patient, and kept there on a high calory diet until their weight is 10 per cent. above the normal if this can be done. Food, flat and fat are triple alliterative therapeutics for pellagrins.

3. *Liquid Diet.*—Chiefly for an acute attack, with "sore mouth," esophagitis, rectitis and difficulty in chewing or swallowing, a liquid diet should be employed. To feed all the articles included in the appended list in twenty-four hours gives an intake above 3,000 calories. It may be unwise or impossible to feed so much in a given case. However, 2,000 calories or above is a good rule, with three meals a day, and milk and eggs between and at night. Articles

from the general diet should be added as soon as the condition permits.

4. *General Diet.*—In general a fresh, lean meat, two eggs, two glasses of milk either sweet or buttermilk, and butter should be eaten daily, along with vegetables and breads to make a well balanced diet. The following is a brief outline from which a choice may be made:

Breakfast: Fresh fruit or oatmeal, with milk and butter. One or two eggs or a meat. Grits, bread, gravy. Milk or coffee or tea.

Dinner: A meat of any kind, including roast, steak, mutton, chicken, fish, pork, game. Bread of any kind. Vegetables, including especially peas and beans, fresh vegetables of 3, 6, 10 and 20 per cent. carbohydrate content. These can vary on different days; potatoes, rice, and 3 per cent. alternating with peas, beans, butterbeans, corn, macaroni, onions, beets, etc. Milk, butter, desserts, jellies, salads.

Supper: Bread, butter, milk, eggs, a meat, fruit, clabber, cheese, gravy, grits, syrup and jam or preserves occasionally.

There are two pocket diet slips that are invaluable for the practitioner who treats pellagra or the patient who has pellagra: "Food Values in Household Measures," obtained from Franklin W. White, Boston; or Joslin's diet slip, obtained from Thomas Groom & Co. of Boston. Each is of great service in feeding, and the patient is easily interested. The aim should be to feed from 30 to 35 calories to the kilogram of body weight.

DIET LIST FOR USE DURING AN ATTACK OF PELLAGRA

Food	Ounces	Measure	Proteins, per Cent.	Fat, per Cent.	Carbohydrate, per Cent.	Calories
Eggs (6)	...	.....	36	36	..	460
Milk	48	6 glasses	48	48	72	912
Cream	16	2 glasses	16	96	16	990
Sugar	½	Heaping tablespoonful	..	..	8	33
Cocoa	1	Tablespoonful	6	9	11	150
Milk toast	2	2 slices	6	..	36	180
Oat meal, cream wheat	3	3 heaping tablespoonfuls	5	2	20	120
Apple sauce	1½	Heaping tablespoonful	..	1	16	72
Butter	1	3 balls or patties	..	25	..	225
Totals			117	217	179	3,142

5. *Psychic Factors.*—Regular morning toilets, baths, psychic peace, accent on clean teeth and mouth, the avoidance of exhaustion and encouragement are all essential aids.

6. *Drugs.*—These are of rather minor importance. In the mild cases, particularly in children or in those who eat well, they are usually unnecessary. Pellagra is not cured by drugs. The time honored arsenic and iron seem of little value. It takes food to make blood and flesh and strength. Drugs are nearly useless in the diarrhea of pellagra. It is probably an effort of nature to rid the system of something. Bed, rest and food are the help for diarrhea. I have known a weak woman with ten liquid stools a night to drop in forty-eight hours to one or two after bed and feeding.

(*a*) The tincture of nux vomica, in doses of from 15 to 25 drops after meals, is of value as an appetizer and stimulant.

(*b*) Dilute hydrochloric acid in doses of from 20 to 30 drops is often of value with low gastric acidity or persistent diarrhea, which is often an accompaniment of the diarrhea.

(*c*) An endocrine mixed gland tablet, thymus, thyroid, suprarenal and pituitary, seems to help in certain cases with marked somasthenia, hypopressure and muscular weakness.

(*d*) Zinc oxid ointment or cold cream aids in smoothing and softening the rough, scaling or inflamed or fissured skin.

(*e*) Sedatives and opiates are rarely indicated. Acetylsalicylic acid or a capsule containing 1 grain of caffein, 2 grains of phenacetin, and 3 of acetylsalicylic acid aids in relieving the multiple little pains and complaints with which the nervous pellagrin is afflicted.

7. *Hospital Treatment.*—Pellagrins during an attack do better in a hospital or institution than at home. A change of table aids the appetite. Eating at regular hours is essential. The diet list should be written. Surgery should be avoided unless a real surgical emergency arises.

CONCLUSIONS

1. Pellagra has been reported from Canada to Chile, and the profession in the Western Hemisphere should be on the lookout for it.

2. It has probably caused 500,000 cases and 50,000 deaths in the United States in the last twenty years.

3. The number of cases appears to be decreasing, and the types tend to be more mild and chronic.

4. Pellagra sine pellagra is of importance because it is more difficult to diagnose than when the eruption is present.

5. Goldberger has shown that the disease can be caused by an improperly balanced diet and cured by a balanced diet, with accent on lean meats, eggs, butter, milk and vegetables containing proteins.

6. Cases of pellagra occur in families that have abundant food of great variety. There are certain people who, although they have such a diet, do not eat it and develop the disease.

7. In treatment, diet is of consuming importance, and two diet lists have been given, one for the attack and one general diet. The cooperation of the patient must be obtained. Drugs are of minor importance, but in certain cases are valuable.

20 Ponce de Leon Avenue.

ABSTRACT OF DISCUSSION

DR. MARVIN L. GRAVES, Galveston, Texas: Dr. Roberts is too enthusiastic in attaching "*quod erat demonstrandum*" to the demonstration made by Dr. Goldberger. The fact that Dr. Goldberger produced certain forms of dermatitis of a more or less atypical form in patients submitting to experiments on a limited protein and a high carbohydrate diet does not conclusively establish the fact that this deficiency in diet was the cause of pellagra. Those who have attempted to produce the disease by contact with flies that have had access to latrines where pellagrous patients have visited, and those who have made other efforts to determine some infectious agent, have so far failed; but it appears to me that in the consideration of the subject today, one must give the Scotch verdict of "not proven," so far as the etiology of pellagra is concerned. In regard to the diminution of the activity of the disease, I am quite in accord with Dr. Roberts. I do not know that the types of the disease have changed so much as that there has been a gradual and progressive diminution in the intensity of the disease. A decade or more ago, it was quite possible to see in Texas many cases of pellagra presenting the tripod of diagnostic symptoms, dermatitis, diarrhea and the many nervous phenomena, principally insomnia, with depression. The typical cases have been steadily decreasing in number. In Galveston we

see two types of cases: one abdominal or gastric, presenting a syndrome something like that of gastric ulcer. In three cases I have had operations performed for gastric ulcer. In two, large gastric ulcers were found. Within forty-eight hours following the performance of the operation the patient developed an acute active pellagra, with dermatitis, and with marked gastro-intestinal symptoms; so that the diagnosis was plain. The second type of case presents a nervous syndrome, consisting now largely of insomnia, of depression with anxiety neurosis, or anxiety psychosis, in which the patient has, first of all, indefinite apprehension, and finally a fully developed anxiety, with marked depression and insomnia, frequently going on to a toxic delirium before the termination of the cases.

Dr. Allen Eustis, New Orleans: I have been particularly interested in the diet of pellagra patients on account of the relation of a low protein intake to the incidence of the disease. Even before Goldberger called our attention to this fact, I had a patient develop symmetrical dermatitis of the dorsum of both hands and forearms, which was pronounced typical of pellagra by Dr. Menage. I had placed this patient on a very low protein diet in the treatment of her asthma. Receiving relief from the latter condition, she had adhered to a diet of cereals and fruits, as fresh green vegetables were unobtainable at that time of the year. I did not hear from her for two and one-half months, when she presented herself at my office with the typical skin lesions of pellagra, but without any of the usual gastro-intestinal symptoms. She was given a prescription for 1 grain pills of sodium cacodylate and instructed to eat more liberally of eggs, milk and chicken, as her physical condition denoted decided undernutrition. She wrote me in one week that she had only just received the pills as they were not to be had in her home town, and asking if she should take them, as the eruption on her hands was entirely well. This seemed so incredible that I wired her to come in to see me at once, and I was able to verify the fact that a typical pellagrous eruption had disappeared in one week, without any medication, but only after increasing the protein intake by the addition of eggs and milk to the diet Since then I have had two other cases, one a case of visceroptosis and the other a case of arterial hypertension and nephritis. This patient developed pellagrous skin lesions, as well as a severe stomatitis, after following a low protein diet without green vegetables for a period of two months. Both these patients promptly recovered after adding milk and eggs to their diet. None of these patients have had any recurrence. Are we justified in stating that these were cases of pellagra? In the absence of the putrefactive diarrhea, suggestive of some infection of the gastro-intestinal canal, I do not consider that they can be termed "pellagra." We must decide, first, what constitutes pellagra, and whether or not the cutaneous lesions seen so often in the disease are evidence of malnutrition and absence of vitamins in the diet, of a person rendered particularly susceptible to a particular form of gastro-intestinal infection from his lowered nutrition. On the other hand, no one can dispute the fact that Goldberger has proved that from an epidemiologic standpoint the diet is the most essential factor in the control of the disease and its incidence in any given locality. Certainly, the disease has practically disappeared from this state since he first advocated feeding a community a full diet and since the physician even in the most remote rural settlements became acquainted with his work. That it is not merely a question of protein deficiency is suggested by the fact that I have been advocating the low protein diet in various diseases for the past seventeen years and have had only three patients develop any symptoms of pellagra and each of these withheld green vegetables from the diet.

Dr. Henry S. Plummer, Rochester, Minn.: In the last two years I have seen three cases diagnosed as pellagra that came from the South. They all had basal rates from twenty to twenty-four points below normal. We have a group of hysterical dysphagias without the history of any other stigmas. The patients simply cannot swallow. I have seen them strain all their food through a cheese cloth, with no meat in it, for thirteen or fourteen or fifteen years. They develop an enlarged spleen. I have seen the preliminary diagnosis of cancer made. Slip a filiform bougie into the throat, tell the patient to swallow, and that he will be able to swallow the next morning, and I have never seen one that did not. They recover fully on a mixed diet. The enlarged spleen is definite. They have a dry skin, but I have never seen in that group a definite dermatitis.

Dr. George Dock, St. Louis: I agree with Dr. Eustis in the fact that there are certain conditions in the skin of the extremities, either trophic disturbances or symmetrical dermatitis, that are very difficult to distinguish from pellagra, and sometimes it is impossible to do so, but which are not cases of pellagra. In 1909 I visited the Pellagrarium of Rovereto in the Austrian Tyrol, a very large institution, where they had a great many pellagrins. To my surprise, none of them had skin changes; and the physicians told me that they never had. They said that if they waited for the skin lesions to make a diagnosis of pellagra, they never would make it. They based their diagnoses on the condition of the mucous membrane of the mouth, the appearance of the tongue, the mental condition, and the general cachectic condition of the patient. They cured them all by giving mixed diet. One should remember that pellagra is not merely an eruptive skin disease, that there are many kinds of dermatitis, affecting the hands, some in deficiency diseases and some in other conditions.

Dr. W. G. Sheddan, Columbia, Tenn.: Pellagra is not so modern a disease in this country as we have been taught. I recall seeing cases thirty or thirty-five years ago which I am sure were pellagra, cases which were diagnosed as something else then. I think many cases occurred in the hands of other men and were overlooked or called something else. At least one half of the cases I have seen have shown no dermatitis. The initial symptoms are the nervous and mental symptoms. In many cases the psychic symptoms are most evident and predominate; I believe that the original pathology is in the central nervous system, and that the gastro-intestinal disturbances come next. Many of these patients either die or get well before they ever have dermal symptoms.

Dr. Stewart R. Roberts, Atlanta, Ga.: The statement of Dr. Plummer, that the basal metabolic rate is low, is to be expected. If one sees great numbers of these pellagrins, they are thin, with low blood pressure, and weak, poor appetite and eat little food. I agree with Dr. Sheddan in regard to the fact that at the present time, if we wait to base a clinical diagnosis of pellagra on the dermatitis or on the skin condition, we would miss most of the cases of pellagra. Before Goldberger came we were more or less helpless before pellagra, particularly the more severe cases. We can now promise these patients some definite improvement on the basis of a mixed diet. We try to put them on a caloric intake above 3,000. Some of them can go up to 4,000; and it is true, whatever the idea of etiology or diagnosis may be concerning the disease, that with these unfortunate patients, the less food the more pellagra, and the more food the less pellagra and the greater improvement.

Narcotic Dispensaries.—Death does not result from sudden deprivation of the drug in the case of a healthy addict—an addict without any therapeutic reason for addiction—a case of cancer, painful tic, etc., naturally not being included in our consideration, as all of these cases are under either suitable institutional or private physicians' care. The suffering caused by the sudden deprivation is not as severe as it may appear on the surface, and it is of short duration. If hospital facilities can be provided, there is no excuse for a public or private narcotic dispensary. If they cannot, it might be desirable to make arrangements for personal administration of drugs to addicts as a temporary measure of relief. A dispensary where the drugs are dispensed to the addicts for self-administration is so harmful in its effects that it cannot be recommended under any circumstances.—S. D. Hubbard, *Pub. Health Rep.*, March 26, 1920.

A STUDY OF MALNUTRITION OF SCHOOLCHILDREN *

MAUD A. BROWN
KANSAS CITY, MO.

This piece of experimental health work was carried on in the grade schools of Kansas City, Mo., in the spring of 1919. Following the influenza vacation, the children of fifty-five grade schools were weighed and measured by the classroom-weight-chart method of the Child Health Organization. The percentage of underweight, when computed, indicated that the general estimates as to the prevalence of malnutrition among schoolchildren in the country over were applicable, without exaggeration, to the children of Kansas City.

It was determined to take the school that showed the highest percentage of children who were more than 10 per cent. under weight by the standard table of Dr. Wood, and see what would be the effect of an intensive health service for these so-called "malnourished" children. This school was the Lowell School, which showed 41 per cent. of its children more than 10 per cent. underweight.

THE PLAN

Kansas City is fortunate in having an antituberculosis society which furnishes ideal health service for 200 anemic schoolchildren. This service

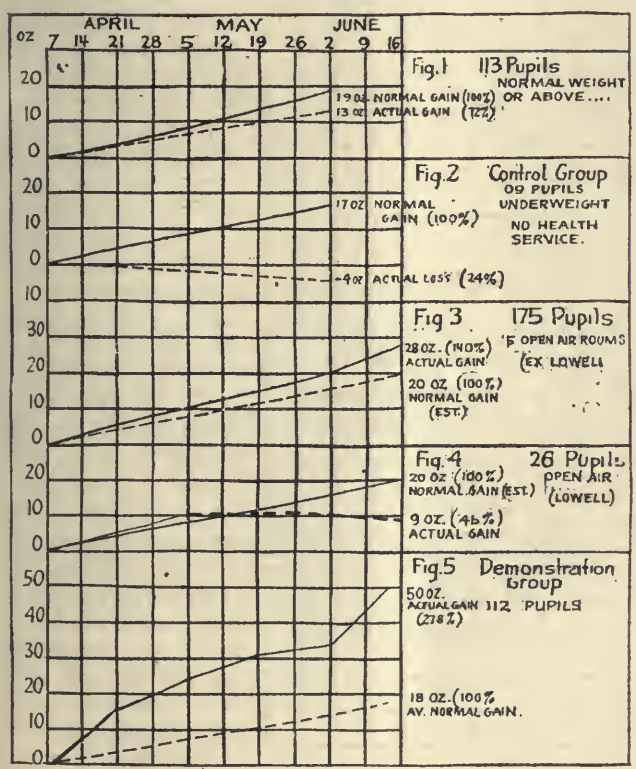


Chart 1.—Composite curve.

includes medical and dental attention, nurse's service, open-window schoolroom, shower baths, and midmorning and midafternoon lunch, followed by naps. The improvement of the fortunate few is so marked as to emphasize the responsibility of the community toward the rest of its malnourished schoolchildren. Manifestly the expense of extending this service to all in need of it would be prohibitive for this agency and there was no other source for the supply of the necessary personnel and equipment. The antituberculosis society determined to establish an ideal health service for a limited number of pupils, in the hope that the comparative study of results would determine which elements gave greatest return in health for the money expended. The health study was conducted by the supervisor of hygiene of the department of physical education of the Kansas City public schools.

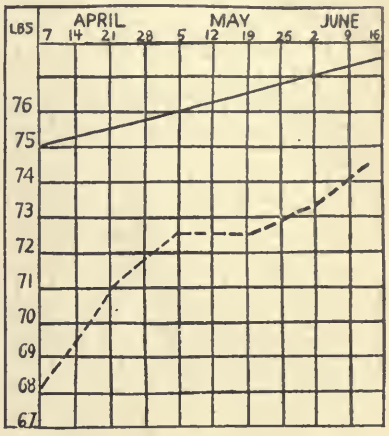


Chart 2.—Curve of a boy, aged 11; height, 55¾ inches; normal rate of growth, 12 ounces a month; normal weight, 75 pounds, total expected gain, 28½ ounces; actual gain, 100 ounces. This was a plain case of undernourishment; another two weeks would have put him over the top.

Lowell School is located at the corner of Twenty-Seventh and Madison streets, in a residence district. The families are those of wage earners, ranging from $50 to $200 a month in income. The district is almost entirely American.

The building is one of the oldest in the city. It is brick and frame with cracked and splintered floors and torn wall paper, so old that the best of janitor service is necessary to supply the minimum standards of sanitation. The playground is very small, and the rainy day play space in the basement is so small as to be useless.

THE METHOD

(*a*) All pupils were weighed and measured; those under weight were examined by the physician for the open air room.

(*b*) Blanks for permission of parent for feeding, dental attention and operations on tonsils or adenoids were sent home by the pupils.

(*c*) All who returned the permits for school feeding were enrolled in the demonstration group.

(*d*) This happened to divide the underweight pupils into two almost equal groups, 112 who were given school feeding and 109, identical in respect to physical condition as nearly as could be determined, who were considered the "control group.'

(*e*) The demonstration group were weighed every two weeks, in muslin weighing slips only. The control group were weighed once a month in indoor clothing except coats and shoes.

(*f*) A trained nurse was employed for this health study who gave her entire time to this demonstration group, visiting every home, carrying the recommendation of the physician and soliciting the cooperation of the mother. The home dietary was investigated, and such instructions given the mother as conditions seemed to warrant.

(*g*) Midmorning and midafternoon nourishment were given the demonstration group. The food was planned to supplement the home dietary, and to supply about half (from 1,000 to 1,200 calories) of the neces-

* Owing to lack of space, certain charts and illustrations have been omitted. These will be included in the reprints, a copy of which may be obtained on application to the author.

sary day's ration. The principle of "protective feeding," as developed by McCollum of Johns Hopkins University, was rigidly followed. Each child received from 1 to 2 pints of milk with cereal and fruit every day. The rest of the 1,000 to 1,200 calories was variously supplied in soups, vegetables and sandwiches. Cocoa was frequently served, with occasional treats of cookies and milk chocolate. The nurse induced the mothers to give the children greens at home. The cost of the food averaged 6⅓ cents a meal.

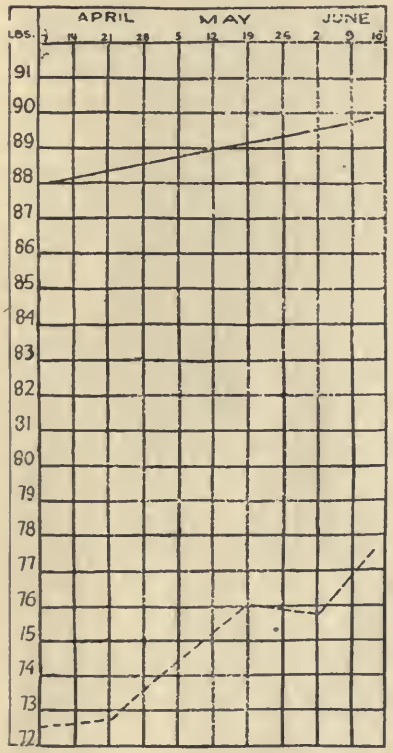


Chart 3.—Curve in the case of a girl, aged 13; height, 58½ inches; positive tuberculin reaction; d'Espine's sign, fifth dorsal vertebra; rise of temperature in afternoon; tonsils badly diseased. Solid line, normal gain, 28½ ounces; broken line, actual gain, 80 ounces; a gratifying gain in spite of heavy handicap.

(*h*) Clinical service was secured for children who needed treatments or operations, especially for tonsils and adenoids.

(*i*) A dental chair was set up in the school, and service was supplied free to every child in the group found to be in need of it.

(*j*) Instruction in "health habits" was given all pupils in the school, the Junior Red Cross health crusade being faithfully carried on here as in the other schools of the city. A first prize of a volley ball and a second prize of an indoor baseball and bat were offered to the rooms which lowered their average of underweight by the greatest percentage.

TABLE 1.—PHYSICAL CONDITION OF CHILDREN

	Per Cent.
Teeth, defective	92
Tonsils, normal or already removed	28
Enlarged or cryptic, not seriously infected	34
Removal advised	37
Removed during period	20
Enlarged glands (cervical)	82
Epitrochlear	3
Thyroid	3.5
Conjunctivitis:	
Mild	60
Granular	4.4
D'Espines sign, third dorsal or lower	5.3
Râles	3
Wassermann test positive, 2 cases	..
Tympanitic abdomen	25
Poor posture	87

(*k*) After each weighing, the nurse revisited the mothers of the pupils who had lost weight, and, after the first month, each pupil who lost weight was given an extra cup (½ pint) of milk. During the last month each child who had lost weight was given, in addition to the half pint of milk, 100 calories of dates, raisins or chocolate, some of the group by this time receiving up to 1,800 calories a day.

(*l*) The pupils represented all grades from the kindergarten to the sixth grade. The kindergarten pupils had but one feeding a day, because of single sessions, and the upper grade (seventh) did not supply any pupils to the demonstration group.

(*m*) *No child was dropped from this group for any reason whatsoever.*

(*n*) A curve was kept for each pupil. The nurse and the conductor of the experiment kept individual records in order to check possible inaccuracies.

The physical condition of the children, as revealed by examination of the physician, the dentist and the corrective specialist, is given in Table 1.

The social status of the children as discovered by the nurse in visiting the homes is given in Table 2.

Fourteen children failed to make normal gain for the period.

Of these, four were in the hospital from four to six weeks for tonsil and adenoid operations. They gained after their return 100, 200, 200 and 340 per cent., respectively, as compared with the normal rate of gain for the same period.

Three were out with contagious diseases (measles, mumps, diphtheria) for several weeks each. The two who returned (after mumps and diphtheria) made 200 and 400 per cent., respectively, for the short time they were in class.

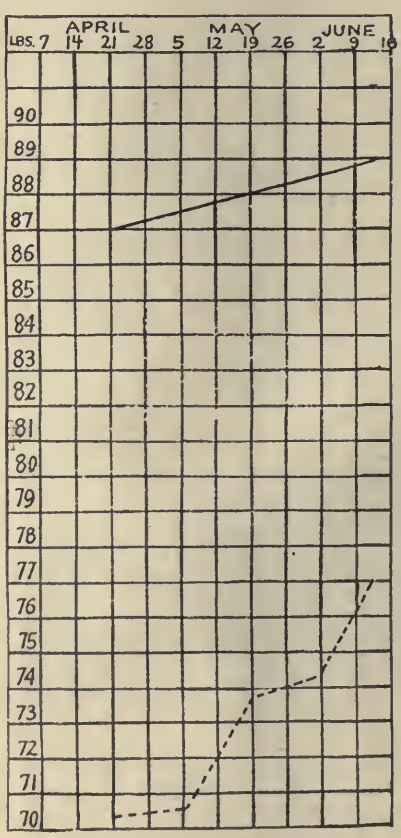


Chart 4.—Curve of boy, aged 13; height, 58 inches; normal rate of growth, 16 ounces a month; normal weight, 87 pounds; total expected gain, 26 ounces; actual gain, 108 ounces. This is an instance illustrating what perfect cooperation will do. The boy literally took on a new lease of life. His changed appearance was startling.

One made 300 per cent. gain for the first five weeks, then was out of school two weeks during which time he lost more than his gain. He was unable to catch up during the last two weeks.

One girl had badly diseased tonsils, which her parents refused to have removed. She made little gain.

Two failures were directly traceable to adverse home conditions. In one case these were circumvented, and the child made 400 per cent. gain over normal rate in the last month. In the other case the difficulty was insurmountable.

The twelfth case was lost because of the natural perversity of the child and her mother. Both were untruthful and persistently broke all known health rules. This was the only case in which we were sorely tempted to break our rule of dropping no one from the group for any reason. The family moved to Chicago at the end of four

weeks, the child having made 50 per cent. gain for the month.

The thirteenth case was difficult to account for. The only adequate reason for failure to gain seemed to be the fact that she had too little rest and play, as she attended a religious school after public school hours.

TABLE 2.—SOCIAL STATUS OF CHILDREN

	Number
Home:	
Owned, clear	3
Being paid for in instalments	9
Rented	100
Less than $10 monthly	8
From $10 to $20 monthly	42
More than $20 monthly	2
No data on amount of rent	50
Income, monthly:	
Good (from $150 to $200)	28
Fair (from $50 to $150)	63
Poor ($50 to less)	13
No data	8
Wage earner of family:	
Father	79
Mother (whole or part, keeping her away from home)	19
Older brothers or sisters helping	22
Stepfather	3
Grandfather	1
Child himself working out of school hours	1
Health of parents:	
Both said to be good	68
One said to be poor	22
No record	22
Nationality of parents:	
American born	103
Swedish	1
Italian	2
Mexican	1
Jewish	1
No record	4
Number of rooms in home per members of family:	
One each	21
Less than one each	34
More than one each	23
No record	34
Children sleeping alone	9
Children sleeping with others	103
Cleanliness of home:	
Good	58
Fair	29
Bad	14
No record	11
Ventilation:	
Good	31
Fair	41
Bad	22
No record	18
Water in house	89
No water in house	23
Bath tubs	47
No bath tubs	65

The fourteenth boy absolutely refused to gain. The more he ate, the thinner and stronger he became. He played on the baseball team and was apparently in tip-top health. We decided that he was one of the "naturally thin" children we hear about.

THE RESULTS

Chart 1, a composite curve containing five subdivisions, shows the results. Figure 1 shows that the 113 pupils of normal weight who were present at both weighings made an average of 13 ounces gain each, or 72 per cent. of the normal rate of gain. These pupils received none of the school service. Figure 2 shows that the 109 underweight pupils of the control group not only made no gain, but actually lost an average of 4 ounces each. These pupils received no school health service. Figure 3 shows that the 175 pupils of the other five open-air rooms of the city gained an average of 28 ounces, or 40 per cent. above the normal rate of gain. Figure 4 showed that the twenty-eight pupils of the open-air room who received the same food and physician's services and, in addition, shower baths and rest periods (sleep) after each feeding, but whose nurse was employed for part time only and had little time, consequently, for home visiting, gained only 45 per cent. (the normal gain being 100). Figure 5 shows that the 112 pupils of the demonstration group gained 278 per cent, or 50 ounces, each, (the normal gain, 100 per cent. for the group, being 18 ounces each). This, added to the 24 per cent. loss of the control group, gives an advantage of 302 per cent. over the control group.

The curve of the "feeders" shows three striking features:

1. The initial rise. Nearly all the "feeders," no matter what the condition as to teeth, tonsils, adenoids or home care, made an immediate gain, this being before the nurse had had time to reach the homes and before defects of any sort had been corrected. No reasonable doubt can exist that this initial gain was the response of the underfed tissues to food.

2. The slump in May. This was a most discouraging time for all concerned. The weighing, May 15, showed fifteen of the group to have lost weight. The amount of milk given to each of these was doubled, and 100 calories of chocolate, dates or raisins added to the meals. May 19, these had gained, but still more of the pupils had lost. By June 2, half the group were receiving the extra food.

3. The rise in June. During the ten days in June the curve starts upward with the "almost perpendicular" rise which Dr. Hendee Smith says may be expected from children after obstructions to proper assimilation have been removed.

Several elements enter into the explanation of the May loss and the June gain.

(*a*) The weather. May had nine sunny days. It was a drizzly, cold month, following a few warm sunny April days, whose deceptive promise caused the children to emerge from their winter underwear as from cocoons. The beginning of the barefoot season means no more shoes to be bought until next fall's cold weather makes it imperative. Many children wear no underwear worthy the name during the summer. Tonsils reddened, colds sniffled. Small, undernourished bodies had no resistance with which to combat the chill. The first warm days of June had much to do, it seems reasonable to suppose, with the hopeful tilt shown by the curve.

TABLE 3.—WEIGHT OF LOWELL SCHOOL PUPILS, ALL ROOMS EXCEPT OPEN-AIR ROOM

No.	Per Cent.
1	63
1	58
1	53
2	36-40
0	31-35
1	26-30
1	21-25
7	16-20
18	11-15
24	6-10
57	0- 5
5	Normal
84	0- 5
72	6-10
74	11-15
46	16-20
36	21-25
4	26-30

(*b*) The nurse, by superhuman effort, revisited the home of every "loser," and by the sheer force of personality, to which more than to any other element the success of the whole undertaking was due, secured a revival of effort on the part of the mothers. Many busy, overworked mothers, supposing no news to be good news, had relaxed their efforts.

(*c*) The extra food. In some cases the additional milk and the chocolate, dates or raisins added daily

probably furnished just the help needed to start the curves upward.

(*d*) Those children who had had defects corrected were just ready to show the benefit of the health service. It is unfortunate that the earlier closing of school made it impossible to carry the feeding on till the end of June as originally planned.

STUDY AND INTERPRETATION OF RESULTS

A careful study of the results forces the conclusion that the two factors chiefly responsible for the interesting showing are the work of the nurse in securing home cooperation, and the selection of food with reference to supplying the dietary deficiencies of the home on the "protective feeding" plan.

One of the most interesting observations was that these children cheerfully stowed away from 1,000 to 1,800 calories in addition to their customary three meals. The mothers reported that they were eating more at home also. It is probable that the amount of food needed by growing children has been underestimated.[1]

No correlation has been found between the rate of growth of these children and any of the social conditions.

The time was too short to show the favorable results of the other elements of the health service. Doubtless, a few weeks longer would show a decided advantage in favor of those pupils who had defects of teeth and tonsils corrected and adenoids removed.

Two facts stand out with paramount significance:

1. These children, in spite of adverse conditions and handicaps unremoved, were so desperately in need of food that they made a gain of 278 per cent. (normal gain, 100 per cent.) or 302 per cent. gain over the control group.

2. This school, which ranked lowest (fifty-fifth) in the spring, ranked third in September, the difference, beyond reasonable doubt, brought about by nine and one-half weeks of intensive health service.

THERAPEUTIC AGENTS IN CHRONIC NERVOUS DISEASES*

W. A. JONES, M.D.
MINNEAPOLIS

Chronic nervous diseases include the various types of mental and nervous diseases, defects, and associated illnesses that are interrelated with the somatic system. As approximately 50 per cent. of all diseases, of whatever nature, are primarily or fundamentally due to mental influence in its broadest sense, we have a basis for methods of treatment. The more definitely limited disorders of the nervous system not controlled by mental states are comparatively small in their inception. This class may include defects in the structural pathways, and if diseased, they are not uncommonly precipitated by emphasized injuries, shocks or infections.

The gradation between organic nervous diseases and diseases of nonnervous tissue is frequently difficult to analyze and differentiate; hence we are led to assume that a complication of chemical and physiologic states exists, rendering a final diagnosis speculative or tentative. We now know that a thorough history and an elaborate physical investigation are essential before a conclusion is reached, as both the history and the examination usually lead us in the diagnostic path, or, at least, are suggestive and therefore of diagnostic value.

As we study our nervous problems we necessarily become convinced that defects in one or more systems are so closely interwoven that a syndrome of symptoms frequently provides a screen behind which we are unable to go in our efforts to outline a definite scientific diagnosis or prognosis; hence we emerge from our consultation room with a dubious mind. We are almost daily confronted with new methods of investigation and research that require the assistance of the internist, or the specialist, with his modern apparatus and his painstaking efforts to exclude or include his theoretical findings. The surgeon, with his mind bent on surgical prospects, strives to impress us with his surgical diagnostic knowledge, in order to convince both the neurologist and the internist that, fundamentally, their combined explanations are insufficient. And he may attempt to draw from the neurologist's and the internist's intensive studies immaterial and irrelevant conclusions because a pathologic process is demonstrable.

The endocrinologist is temporarily in the foreground, and we gasp and speculate as to whether or not he is on the right track. He has so many theories to offer and so many deductions to declare that he sometimes obscures a possible diagnosis; or he may clear up some of our doubts by his investigation of ductless glands and his applications of remedies that may be of great value.

Then, too, the bacteriologist and the serologist confuse us greatly; they know we are all wrong and are willing to admit that they are right, and we bow our bewildered heads before the laboratory phenomena. From their intensive studies, we are sometimes almost persuaded to admit that nearly every one may have a little syphilis in concealed areas, on the assumption that this disease has been promulgated through the centuries, yet remains in retirement for the reason that no positive evidences are presented to substantiate this view.

Considering all these and other unmentioned possibilities of arriving at a tangible or tentative diagnosis, it seems permissible to conclude that the human race is constructed of poor materials, put together in a disorderly and disorganizable mass. The patient, or the case, may be interesting from many points of view; but the individual who presents a multiplicity and a complexity of problems, together with his variegated life, his conglomerate up-bringing, his environment, his occupation and his social status, is really the one for our first consideration. It is not astounding that he baffles us, and tempts us to treat him for what he is not. In spite of all these mishaps, the psychiatrist and the neurologist have demonstrated their worth and distinction, based on the accomplishments and the elevation of their art in the past three or four years. And they seem destined, ultimately, to occupy a higher plane in medicine than has been their lot heretofore. The field of the psychoneurologist has been for many years the dumping-

1. Lusk, Graham: The Fundamental Requirements of Energy for Proper Nutrition, J. A. M. A. **70**: 821 (March 23) 1918. The Metabolism of Growing Boys, editorial, ibid. **71**: 908 (Sept. 14) 1918. Olmstead, W. H.; Barr, D. P., and Du Bois, E. F.: Metabolism of Boys Twelve and Fourteen Years Old, Arch. Int. Med. **21**: 621 (May) 1918.

* Read before the Section on Nervous and Mental Diseases at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

ground for undiagnosed disorders, but today he is the watcher of the melting-pot of diseases. With all of these recognized distinctions that have been showered on him, does he actually know how to treat his psychoneurotic patients; and why does he so persistently cling to the old methods of treatment, unless it be that he admits that the majority of his patients are studies almost beyond his comprehension?

Among the many modes of treatment that have been suggested to us, rest seems to be of uppermost importance. It is common knowledge that many of our neurologic and psychiatric people are told that they are simply nervous and that what they need is a life filled with interesting and diverting occupations. A number of them are sent on long and arduous trips in the belief that travel and change of scene, and life in the open air, carried on in a strenuous manner, constitutes the most highly beneficial treatment that can be employed. Of these, many come back to occupy the same place they held before this unwarranted method was carried out. It is quite true that in a few instances a strenuous life, provided it is well regulated and well ordered, among the types who are sufferers from nervous irritability, does help them remarkably. An investigation of their former life shows they were sedentary and that their minds were glued to routine channels and their bodies to an office chair. This type of man has a one-track mind devoted only to business, to which he applies himself overassiduously; and he provides no escape for his dissipated energies. He becomes stagnant and stale, physically, nervously and mentally. Put him under proper muscular discipline, regulate his habits, and sweat out the bankrupt skin and flabby muscle accumulations, and clean out his gastro-intestinal tract by normal physiologic methods, and he comes out clean, wholesome and well. These cases, of course, must be carefully selected; but a large number of patients of this type are congenitally or constitutionally inferior, and need a prolonged rest in a suitable environment. The tendency of the day is to have these people rest for a brief period and then get them up and push them about. This can be accomplished only by a skilled attendant, and often the result is lamentable. Give them a longer rest period, add to their diet, and see that they are rested, not only nervously but mentally. Then, through a gradual process of exercise and outdoor life, they come back by degrees to a condition approaching a normal state. It is among this class that we get those who have never been instructed as to the care of themselves; who know, indeed, nothing about ordinary health measures. They become blockaded in their muscular, arterial and glandular systems. It is among these people, too, that many cases of chronic invalidism are found, mainly because their condition was not recognized early and they were not put in bed with a definite object in mind. We see, too, many instances of profound depressive states where a timely suggestion would put them to rights. And these people, too, instead of being worked inordinately, physically and mentally, are the people who need a long, peaceful and well-ordered rest in bed.

The developing dementia praecox patient, or the constitutionally inferior individual who has been crowding his life with all sorts of work and pleasure, with irregular hours and without sufficient rest, is the one who very soon shows his limitations, and his reconstruction requires excessive patience and a carefully directed line of treatment before he shows a prospect of improvement. Unfortunately, among this class are the people of comparatively small means, or those who, perhaps, have dissipated their finances as well as their physical strength, and who are unable to carry out a comprehensive or a well-adjusted scheme of living. We may, in many instances, be obliged to resort to halfway measures in order to meet the circumstances of the individual, and not infrequently they can be restored to a fairly balanced life and permitted to engage in occupations less strenuous.

Exercise, in its various phases, is often carried too far, because the life of the individual has not been accurately analyzed and his exercise suited to his capacity. Sending a mentally defective person to a gymnasium with some carelessly offered suggestions as to exercise is to be deprecated. Frequently the overexercise of people who have just recovered from minor or grave infectious disorders, and who have an inherent constitutional defect, is detrimental rather than beneficial, and the exercise becomes a dangerous punishment rather than a relief.

The question of foods is more important than we are accustomed to believe. One rule holds good, however—that is, before a process of diet is inaugurated, the patient should be cleaned up inside and outside as well, and then it should be the function of the physician to put the gastro-intestinal tract into such order as will permit the individual gradually (and sometimes rapidly) to accustom himself to eating anything that is within reason. Too careful dieting of the average man is a waste of time. Almost any patient can be fed, and even forcibly fed (that is, be urged to eat) anything and everything that is good for him; while another man who goes about with a moderately poor diet list and a book on calories under his arm, and a fear and apprehension of food in his head, not only suffers himself, but brings suffering on his immediate associates.

Baths are much overrated, unless they are applied for some specific purpose, such as a prolonged bath for an acutely excited patient. It may be said, in passing, that the average person does not know how to keep himself clean, and therefore a regulation of his bath toilet is not only beneficial from the point of cleanliness, but serves to improve his skin and muscle activity. The ordinary warm bath and cool spray and the Scottish douche are applicable to many, and they are among our best therapeutic agents. When we send our patients to resorts for baths we are simply transferring the individual from one climate to another, and perhaps by force of example he bathes, as he should, more often than is his custom. We get him out of his old environment, he is taught how to employ his time, and he looks forward to his common, daily, ordinary bath with pleasure because it produces comfort and ease. But most baths given in a routine manner, as is generally practiced at bath places, are more or less valueless. They are on a par with the drinking of so-called mineral water and salt water; the beneficial result consists mainly in the larger intake of water than is practiced at home.

Massage and its adjuncts are fads in the majority of instances, or they are ordered simply to employ and take up the time of the person, who, when he reaches a certain point, has little or nothing to do or who declines to take a normal amount of physical exercise.

The average man who practices massage as a profession is not a very great help to the neurologist. He may be trained in his specialty, but he is not trained in his mind, and he assumes that massage is the one and only factor in the treatment of disease, just as the new schools of therapy (the osteopathic and the chiropractic) claim to accomplish marvelous results irrespective of other methods of treatment. It is undoubtedly true that these so-called practitioners do much good, because they have the knack of inspiring the patient with the wonderful results of their treatment. And yet, who has not seen the disastrous results following the indiscriminate prescribing of massage in any of its forms?

Following this line are the newer cults who practice strange and inexplicable forms of healing. They employ suggestions, but not the suggestion based on the scientific method of the neurologist. Their system of analysis is inadequate, to say nothing of being unscientific. Their methods of treatment are bolstered up by all-impressive notoriety backed by the newspapers and heralded from mouth to mouth by the credulous. Occasionally a medical man sees the application of suggestion and healing by his impressiveness; and he seeks a wild and remote spot and from this point he permits to leak out the fact that he is a wonder. Within a remarkably short period of time the defectives and the chronically, constitutionally inferior people hear, with widely open ears, of his wonderful cures. It is related that one man in an Eastern state, after graduating from a well-known Eastern university with a full-fledged degree of M.D., established a few barrels of concoctions, gave his awestruck patients a rapid ocular examination, and sold them a bottle of medicine for a price that would be acceptable as an ordinary fee for the average medical man. He finally grew tired of attempting in any way to analyze his patients, and simply gave them a rapid glance, followed by the well-known bottle. Eventually the crowds became so great that he issued "privilege" permits (for a substantial fee), in order that the patient should not be too long detained in the acquiring of his bottle of water and herbs. Other healers have profited by the credulity of the public and have practiced their unholy schemes with financial benefit. Now the country is overwhelmed by the so-called "Divine Healer," who admits that Christ practiced the healing art and produced remarkable cures, but that for nearly 2,000 years the art was lost until it appeared in him while yet a child. He goes from city to city, and, with the aid of a devoted churchman, he fills the churches with the lame, the halt and the blind, and, offering a prayer, he lays his hands on these poor derelicts. He heals them without money and without price, accepting what is donated by his grateful recipients; and it is said, without fear of contradiction, that he makes a very good living.

When we come to the final analysis of the whole situation, and the treatment of chronic nervous diseases, the personal influence of the man in charge has much to do with improvement and recovery, provided he is endowed with the qualities of a disciplinarian and the courage of his convictions after he has made a thorough and careful examination and has outlined a course of treatment that is right for the individual. The mere fact that people have faith in their physicians is confirmed all over the world; and when they are presented with a proposition put in a plain, common-sense and direct way, the cures of their physician far exceed all of the cures that are effected by the faker and the charlatan. But the physician's inordinate modesty and his ethical sense prevent him from acquiring a widespread influence which might be of great benefit to others who know nothing of him, his methods, and the application of the scientific mind to the treatment of disease.

SUMMARY

If it were within the power of the neurologist to treat the rich as well as the ordinary classes, they should be given the same strenuous treatment. This perhaps will not appeal to physicians generally, as it would mean a vast reduction in their fees. But, taking the majority of patients who consult the neurologist and psychiatrist, isolation from their former surroundings, confinement in a well-ordered hospital, and the prohibition of visitors should be rigidly adhered to. Nervous and mental patients do better when they have been regulated by correction of their physical disabilities and forced to follow a definite mental disciplinary line of treatment. This includes all that may be said of enforced rest, not for weeks, necessarily, but perhaps for months. These people come to us depleted in their physical and nervous forces, and a period of rest is needed to balance the years of bad living that bring them to the house of the physician. The establishment of order by discipline applies equally well to the physical as to the mental attitude of the patient, and this can be done successfully only by one who is trained for this work. It is better to make a few mistakes through overdoing this method of treatment than to make many mistakes by underdoing it.

Baths of simple type—warm tub, cool spray or Scottish douche—are of more value than many drugs.

Exercise of the graduated type during the convalescent period is of tremendous value, provided it is carried over many days and weeks and with but moderate increase in the time given to such exercise.

Sufficient examination should be made from time to time to assure the physician, as well as the patient, that nothing important is overlooked. The ordinary routine visits must be suspended at intervals to make this impression lasting.

One person should be responsible for the patient, and only minor details should be left to subordinates. The patient should be left alone, and without a special nurse, as soon as possible; otherwise he becomes dependent on the nurse not only for his physical but for his mental habits.

It has been found that massage is not absolutely essential either to the patient's comfort or to his improvement—that his state of mind and his attitude toward himself and others evoke sufficient mental activity to keep him physically fit.

The coddling of patients should be eliminated. Giving way to the wishes of the patient, when we know that doing so is detrimental to his progress, is a backward or retrogressive step. They should all be held firmly in hand by the personal influence of the attending physician, and this rule should not be relaxed until convalescence is well established.

Occupation, unless it is carried on by a trained and skilled worker, is of very little value, and means only the use of time which might be employed in a more profitable manner.

Many patients require a firm, guiding hand. Others require the influence of a strong and dominating will, together with mechanical or drug restraint, and con-

finement in a suitable room. If this method of treatment is begun early in selected cases, the recovery is much more rapid and satisfactory.

ABSTRACT OF DISCUSSION

DR. FRANK R. FRY, St. Louis: The neurologist must support himself by reliable internists. With data thus obtained he can decide the physical and the psychic side of each situation that he is handling. By checking up our cases carefully from the physical side, we can more readily determine how to handle them from the psychic side. Compared with this the technic of a rest cure is of secondary importance.

DR. ROSS MOORE, Los Angeles: The suggestion of not having a special nurse is a very important one: not allowing the patient to be treated, but to have his mind focused on what he himself has to do in order to get well. I do not like massage, except when a patient is so physically run down that he needs it for physical reasons. Patients get the idea that massage or hydrotherapy, or what not, will make them well. Along the same line is the question of relaxation.

DR. C. R. WOODSON, St. Joseph, Mo.: It is hard to lay down a set of rules by which to treat nervous men and women. Rest is excellent in the treatment of some patients and is desirable. In some cases continuous rest is not desirable. In some cases it is impossible for a time to get rest and no one has ever shown us how to get it. A business man who has broken down and is badly depressed must be taken care of and exercised by an entertaining nurse, one who can divert the patient. A maniacal, badly depressed patient, with elevation of temperature, acceleration of heart action and in a constant state of muscular and mental agitation must be looked after constantly. Feeding is necessary. For a patient who will not eat regularly, tube feeding is necessary. If a patient who is badly depressed is left alone, he will kill himself, and this is not to be desired. A maniacal patient should not be left alone, as he will bruise himself on the walls or bed, will expose himself by getting the covers off his bed or getting on the floor and will contract pneumonia. As to filling a patient with drugs, no neurologist or internist will want to do this, as it will not have the desired effect. It is impossible to lay down a set of rules for the treatment of insane patients. Persons who suffer from a mild neurosis may be treated as Dr. Jones suggests. A person who can divert a melancholia patient and who can get his mind off of himself, who will go walking with him, will be good for him. If you lock the melancholia patient up and tell him he must rest, he will not be satisfied. If you shut out his friends he will not be satisfied.

DR. H. CLIMENKO, New York: One form of psychoneurosis has baffled me. This is the anxiety neuroses with marked vasomotor symptoms following a psychic trauma. This neurosis occurs usually in middle aged people, both men and women. The patient is really not insane. He cannot adjust himself to his environment. These people are always brooding over the wrongs done to them. Every time they think of the psychic trauma they become covered with a cold perspiration, develop a rapid pulse, and frequently irregularities of the pulse due to extrasystoles may be present. I have succeeded in curing a small number of these patients by introducing new interests in life. These interests were always of an ideal character. The large majority of these people were not amenable to any known form of treatment.

DR. W. T. WILLIAMSON, Portland, Ore.: The point at issue is simply the question as to the particular quality and character of the patient. One individual requires a certain form of treatment, while another person with exactly the same trouble will require a method of treatment which is exactly the reverse of that employed in the former case. Rest is, perhaps, most generally necessary for those whose nervous system is run down, and very often it is required that this rest be prolonged, the patient carefully watched and treatment carried to the degree set forth by Dr. Jones. Experience has shown, I believe, that rest, properly watched, is the most helpful form of treatment for that class of people called neurasthenics, and that extremes of treatment should be employed only in those cases where we have more definite psychic derangements. Rest carried to the extreme, which was opposed by Dr. Woodson, would, of course, be wrong. Rest can be abused.

If a patient who requires watchfulness to protect him be deprived of a special nurse while having that rest, the results of rest would not only be nullified, but the patient himself would be exposed to additional dangers. We must not have a general system of treatment for any disease. The physician who treats a disease on the basis of its name is bound to blunder. We must simply take the individual as we find him, forget for a moment the name of the disease from which he is suffering, and treat him according to the conditions found, not following any stereotyped methods.

BOTULISM FROM CANNED BEETS

REPORT OF CASES AT FLORENCE, ARIZONA

W. G. RANDELL, M.D.
FLORENCE, ARIZ.

In this outbreak of botulism the food at fault was undoubtedly commercially canned beets in tin containers, as they were the only article of food eaten by all of those who died. The other canned foods—corn, hominy and string beans—were all thoroughly cooked after being taken from the can; but the beets were taken from the can and served with a little vinegar poured over them. No offensive odor was detected on opening the can of beets. At the noon meal, May 12, there were three Indians, two white men and Mrs. Lyles. One Indian did not eat any of the beets. He was unaffected and is well today. Mrs. Lyles only tasted them to see how they were, as she does not like beets. The two Indians and the two white men who ate beets at this meal died. The Indians were not there for the evening meal. What was left of the beets were served that evening, and Charles Reynolds, who was not there at noon, ate most of them. Mrs. Lyles is certain that the four children ate some, but very little. Unfortunately, none of the beets were left. The empty can was thrown out on the ground and recovered later. Investigation of the dried juices in the can is still progressing.

It is to be hoped that out of the research work being done at present, some effective treatment may be perfected. As yet, the antitoxin is of little or no effect and supportive treatment is very discouraging, as evidenced by the history of the last two who died, one lingering five days and the other six, their progress being so slow that I was encouraged to think that nature might be able to eliminate the toxins.

REPORT OF CASES

CASE 1.—G. O. Brown, aged 27, weight 160 pounds, a strong, healthy man, came to the Pinal County Hospital, May 13, about 7 a. m., accompanied by Mr. E. Lyles. He complained of dimness of vision, diplopia (in order to see clearly, he had to close one eye), slight headache, and a feeling of oppression in the epigastrium. The pupils of the eyes were slightly dilated, and there was little or no reaction to light or accommodation. His gait was slightly staggering, he complained of some difficulty in swallowing and, in speaking, he had difficulty to articulate clearly. He was pale, and the expression of his face anxious. Early that morning before daylight, he had left the house to attend to some stock and, in returning, could not walk very well, and part of the way came back on his hands and knees. I suspected the condition and urged him to stay in the hospital

then, but he insisted on returning to the ranch for a short time. On the way, he was nauseated and vomited several times. He was the only one of the five who vomited or had any pain. He was given 2 ounces of magnesium sulphate. I went to the ranch in order to see José Pablo, one of the Indians. Brown was looking about the same. He was lying down. About noon, he came into the hospital and, from then on, his progress was steadily worse. The pulse was strong and full until the last few hours, not above 100. The temperature also was most of the time normal and, at the highest, was 101. He continually became more restless, throwing himself from side to side in the bed. There was no diarrhea. The difficulty in swallowing increased until by Friday night it was almost impossible, and completely so by Saturday morning. We administered saline enemas about every three hours to maintain body fluids. The voluntary muscles of the body seemed partially paralyzed, though up to thirty-six hours before death the patient could get out of bed. The last twenty-four hours, the cervical muscles seemed to be paralyzed and, when he would roll from side to side of the bed, he would grasp his hair and pull his head into a comfortable position. During the last twenty-four hours, attacks of the cyanosis and respiratory failure came on with increasing frequency, until he died at 1 p. m. The last twenty-four hours, there was paralysis of the anal sphincter and he could not retain fluids.

Case 2.—José Pablo, an Indian, aged about 18, was taken sick at the same time as Brown and Lyles. I saw him at noon of the 13th. He refused to go to the hospital and was later taken to an Indian village. I saw him only once. At that time he was completely prostrated, he could not talk, the throat was paralyzed, saliva flowing from the mouth, and he had to raise his head with his hands. The cervical muscles were paralyzed. The pupils did not react to light or accommodation, and they were slightly dilated. When asked if he had double vision or difficulty in seeing, he answered in the affirmative. He suffered no pain and died some time the following night.

Case 3.—John Robinson, an Indian, the third man to die, was about 30 years of age, and weighed about 150 pounds. He began to feel ill Thursday morning, but kept on working until night. I saw him Friday morning at his home. He was lying down, but got up and walked about quite easily, with a slight stagger. He complained of diplopia, dimness of vision, and slight vertigo. He could talk, but articulation was not distinct. There was some difficulty in swallowing. The pupils of the eyes were slightly dilated; there was no reaction to light or accommodation. I saw him again Saturday morning. He was weaker, he could hardly swallow, and his speech was impossible to understand. There was a flow of ropy saliva, which he was continually wiping out of his mouth. The pulse was 90, temperature normal. Sunday morning, I persuaded him to come to the hospital, as I expected to obtain a supply of antitoxin. With assistance, he walked from the automobile into the hospital. Sunday, his temperature was slightly subnormal all day. The highest pulse rate was 118. He was given enemas of physiologic sodium chlorid solution every three hours, and retained them until 2 p. m. Bowel movement became involuntary. He was not given antitoxin. From then on, physiologic sodium chlorid solution was injected under the skin. He was very restless. At 11 p. m., I passed a stomach pump and gave 8 ounces of equal parts milk and water. The fluid may have caused pressure on the diaphragm, or the passage of the tube may have been a shock to the already exhausted sympathetic nervous system. Anyway, he collapsed and died about fifteen minutes later. He was conscious almost to the last.

Case 4.—Mr. E. Lyles, aged 48, weight 158 pounds, came to the hospital at 7 a. m. Thursday, with G. O. Brown. He also complained of dimness of vision and diplopia. The pupils were slightly dilated and did not react to light or accommodation. He complained of some weakness, his gait was staggering, his speech was thick and he had some difficulty in swallowing. He was given 2 ounces of magnesium sulphate, with good results. He went home with Brown and returned with him to the hospital about noon. Paralysis of the pharynx, esophagus and cervical muscles was progressive but slow; the pulse was full and strong, and most of the time under a hundred. Monday, it went to 120. The temperature was normal most of the time; but once, Sunday evening, after an infusion of 500 c.c. of physiologic sodium chlorid solution, it rose to 101.4. I succeeded in getting antitoxin from Miss Jane Ryder of the state health department and gave him 10 c.c. Sunday at 3 p. m. and again Monday at 8 a. m., with no effect in the progress of the disease. The last twenty-four hours, there was considerable cynosis and difficulty in breathing. The patient was conscious and realized that he was dying. The last twenty-four hours, bowel movement was involuntary. Up to within a few hours of his death, he was able to rise in bed, but could not control the cervical muscles and had to lift his head about with his hands. He died at midnight, Sunday.

Case 5.—Charles Reynolds, aged 21, weight about 160 pounds, first complained of symptoms Thursday morning, but worked most of the day. His case progressed much more slowly than any of the others, so much so that I thought his condition might possibly be due to hysteria. The temperature was normal, and the pulse 80, full and strong. He came to the hospital Saturday at 11 a. m. The eye symptoms then were well developed; diplopia, no reaction to light and accommodation, pupils slightly dilated. He was having some difficulty in swallowing, but was drinking all of the milk and eggs he wanted and continued to do so until Sunday night. Monday, he took 3 ounces of milk. He was given physiologic sodium chlorid solution by proctoclysis to maintain the body fluids. At 4 p. m., he was given 10 c.c. of antitoxin, and at 8 p. m. 10 c.c. more. The temperature after the second antitoxin injection went to 100.6 but dropped to normal in a few hours. Tuesday, he could not swallow at all but, aside from the distress in the throat and the necessity for frequently clearing the mouth of the profuse, ropy saliva, he rested very quietly. He had at no time any pain. Tuesday, he gradually became more cyanosed and restless. At 2 p. m., he was given 30 c.c. of the polyvalent antitoxin but with no effect. At 6 p. m., he could no longer retain enemas, and bowel movements were involuntary. Tuesday night, he became more restless, very anxious and distressed, until 5 a. m. Wednesday morning, when he died. He was conscious almost to the last.

Case 6.—Mrs. Lyles complained of difficulty in swallowing, and slight dimness of vision which began Friday. This continued, with severe prostration, for seven or eight days,

FOOD EATEN AND RESULT

	Beets, Raw	Corn, Cooked 30 Min.	Beans, Cooked 1 Hr.	Hominy, Cooked 1 Hr.	Milk, Raw	Jam, Raw	Meals, May 12, 1920	Result
José Pablo	+	+	+	0	+	+	B. and L.	Ill, May 13 a. m.; died, May 14 a. m.
John Robinson	+	+	+	0	+	+	B. and L.	Ill, May 13 a. m.; died, May 16 11:45 p. m.
3d Indian	0	+	0	0	+	+	B. and L.	Well
4th Indian	0	0	0	0	+	+	B.	Well
G. O. Brown	+	+	+	+	+	+	B., L. and S.	Ill, May 13; died May 16 2:30 p. m.
Charles Reynolds	+	0	0	+	+	+	B. and S.	Ill, May 13; died, May 19 5 a. m.
E. Lyles	+	+?	+	+	+	+	B., L. and S.	Ill, May 13; died, May 17 11:50 p. m.
Mrs. Lyles	0	+	+	+	+	+	B., L. and S.	Well
Joe Lyles, 6 yrs.	+	0	0	+	+	+	B. and S.	Well
J. W. Lyles, 11 yrs.	+	+	+	0	+	+	B. and S.	Well
Ida Lyles, 4 yrs.	+	+	0	0	+	+	B. and S.	Well
Margaret Lyles, 9 yrs.	+	0	0	+	+	+	B. and S.	Well

when the symptoms gradually subsided. She was given 10 c.c. of antitoxin on Sunday. Whether her condition was due to poison or to hysteria is difficult to say, but she is not of a neurotic temperament and has been very self-possessed and I am inclined to think that she was slightly poisoned.

Three of the four children also complained of trouble in swallowing, and they were so prostrated that in walking about their feet seemed heavy. The oldest girl, Margaret, was so weak that she had to be lifted out of the bed when she wanted to get up, even ten days after the poisoning. When she left here, she could not step into the car without assistance. She is about 9 years of age.

CHARACTER OF TREATMENT

Treatment, aside from the injection of the antitoxin, was wholly supportive. I found, after observing Brown's condition and the use of codein and morphin to quiet him, that if supplied a sufficient amount of water, either by proctoclysis or hypodermoclysis, the restlessness was so much relieved that opiates were unnecessary. Strychnin, atropin, digitalis and strophanthin were administered whenever indicated but, apparently, with no effect. Because of the effect that pituitary extract has in stimulating involuntary muscle action, I thought it might be of some value in relieving the paralysis of the pharynx and esophageal muscles, and in three cases I administered it every four hours, but with no beneficial effect and possibly some aggravation.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

POLLEN EXTRACT PREPARATIONS (See New and Nonofficial Remedies, 1920, p. 226).

POLLEN ANTIGEN-LEDERLE (FALL TYPE).—A liquid obtained by extracting equal parts by weight of dried pollens of ragweed, goldenrod, wormwood, and maize (Indian corn) by a vehicle of 67 per cent. glycerine and 33 per cent. saturated solution of sodium chloride. It is standardized so that each Cc. contains 14,000 pollen units; a pollen unit has been arbitrarily chosen by Koessler, Noon and Freeman as the equivalent of one-millionth gram (0.000001 Gm. or 0.001 Mg.) of pollen. The Hygienic Laboratory has prescribed no U. S. Standard of Potency. The antigen after preparation is made into fifteen different dilutions by the addition of a proper amount of the glycerine-sodium chloride solution diluent.

Actions and Uses.—See general article, Pollen Extract Preparations, New and Nonofficial Remedies, 1920, p. 226.

Dosage.—The product is supplied in fifteen different doses. Each dose consists of 0.1 Cc. of the respective dilution. Accompanying each dose is a vial containing 9 Cc. of sterile water with which to make the pollen antigen of isotonic strength immediately before administration. For prophylaxis, the complete series (doses 1 to 15) containing progressive amounts of pollen protein should be given, beginning about six weeks before the hay-fever season. For treatment of an actual attack of hay-fever, fewer doses are generally sufficient.

Manufactured by the Lederle Antitoxin Laboratories, New York. No U. S. patent or trademark.

Pollen Antigen-Lederle (Fall Type) Series A.—Marketed in packages of five vials containing for each consecutive dose (numbers 1 to 5 inclusive) 2.5, 5, 10, 20 and 25 pollen units, respectively, and five vials of sterile water with which to make the proper dilution of each dose.

Pollen Antigen-Lederle (Fall Type) Series B.—Marketed in packages of five vials containing for each consecutive dose (numbers 6 to 10 inclusive) 30, 50, 75, 100 and 150 pollen units, respectively, and five vials of sterile water with which to make the proper dilution of each dose.

Pollen Antigen-Lederle (Fall Type) Series C.—Marketed in packages of five vials containing for each consecutive dose (numbers 11 to 15 inclusive) 250, 375, 500, 750 and 1,000 pollen units, respectively, and five vials of sterile water with which to make the proper dilution of each dose.

Pollen Antigen-Lederle (Fall Type) Complete Series.—Marketed in packages containing 15 doses as described in Series A, B and C above.

Pollen Antigen Immunity Test—Diagnostic Test for Fall Type Hay-Fever-Lederle.—Consists of 0.01 Cc. of No. 15 dilution of pollen antigen-Lederle (fall type). It represents 100 pollen units of the combined pollen protein. May be used cutaneously or intradermally.

OVARY (See New and Nonofficial Remedies, 1920, p. 201).

Whole Ovary-H. W. D.—Whole ovarian glands of the cow, including the corpora lutea, selected, freed from extraneous matter and dried *in vacuo*.

Actions and Uses.—See general article, Ovary, New and Nonofficial Remedies, 1920, p. 201.

Dosage.—5 grains or more daily, modified to meet the requirements of the special case. Whole Ovary-H. W. D. is sold in the form of tablets only (see below).

Manufactured by Hynson, Westcott & Dunning Baltimore. No U. S. patent or trademark.

Whole Ovary Tablets-H-W-D 5 grains.—Each tablet contains whole ovary-H. W. D. 5 grains.

Whole Ovary-H. W. D. is a yellowish powder, having a peculiar odor; it is partially soluble in water.

One part represents approximately 5 parts of the fresh animal ovary.

BENZYL BENZOATE (See New and Nonofficial Remedies, 1920, p. 49).

Benzyl Benzoate (Abbott).—A nonproprietary brand of benzyl benzoate complying with the N. N. R. standards.

Abbott Laboratories, Chicago. No U. S. patent or trademark.

Elixir Benzyl Benzoate (Abbott).—A solution composed of 20 per cent. benzyl benzoate (Abbott), 70 per cent. ethyl alcohol absolute, flavoring, and water to make 100 per cent.

Dosage.—20 drops to 2 teaspoonfuls, well diluted with water or milk. May be repeated in one-half to one hour.

Tablets Benzyl Benzoate (Abbott) 2 grains.—Each tablet contains benzyl benzoate (Abbott) 2 grains with charcoal as a vehicle.

Dosage.—2 to 5 tablets at intervals of one-half to one hour continued to effect (up to 20 grains). Follow each dose with a hot drink—water or milk.

Benzyl Benzoate (Fritzsche).—A nonproprietary brand of benzyl benzoate complying with the tests and standards for benzyl benzoate.

Fritzsche Brothers, Inc., New York.

Benzyl Benzoate (Merck).—A nonproprietary brand of benzyl benzoate complying with the tests and standards for benzyl benzoate.

Merck & Co., New York.

Benzyl Benzoate (Organic Salt & Acid Co.).—A nonproprietary brand of benzyl benzoate complying with the tests and standards for benzyl benzoate.

Organic Salt and Acid Co., New York.

FERRIC CACODYLATE.—Ferri cacodylas.—Iron Cacodylate.—A ferric salt of cacodylic acid containing from 39.7 to 44.9 per cent. arsenic (As) (See New and Nonofficial Remedies, 1920, p. 44).

The following dosage forms have been accepted:

Ampules Ven-Iron Cacodylate, 0.03 Gm. (½ gr.).—Each ampule contains iron cacodylate 0.03 Gm. (½ gr.) in 1 Cc.

Ampules Ven-Iron Cacodylate with Sodium Chloride, 0.03 Gm. (½ gr.).—Each ampule contains iron cacodylate 0.03 Gm. (½ gr.) in 1 Cc. of physiological solution of sodium chloride.

Prepared by the Intra Products Co., Denver, Colo. No U. S. patent or trademark.

The ferric cacodylate used in the preparation of ampules ven-iron cacodylate complies with the following tests:

A 5 per cent. solution of ferric cacodylate affords no precipitate with silver nitrate test solution or with barium chloride test solution; nor does it show an immediate blue or green color upon addition of potassium ferricyanide test solution, nor does any turbidity occur when 1 Cc. calcium chloride test solution is added to 5 Cc. of this 5 per cent. solution.

No yellow precipitate is produced in a 5 per cent. solution by ammonium molybdate test solution, or by sodium thiosulphate test solution.

If the iron be removed by precipitation with ammonium hydroxide, filtered, and make acid with hydrochloric acid, it should afford no more than a slight color upon the addition of an equal volume of hydrogen sulphide test solution.

If 0.1 Gm. ferric cacodylate in 8 to 10 Cc. water be placed in a stoppered test-tube with 2 Cc. hypophosphorus acid, or 1 Gm. stannous chloride acidified with hydrochloric acid, it should develop the disgusting odor of cacodyl within an hour.

Assay: Dissolve 0.2 gm. ferric cacodylate in 100 Cc. water; titrate with tenth normal sodium hydroxide, using phenolphthalein as indicator. Each Cc. of tenth normal sodium hydroxide is equivalent to 0.01557 Gm. absolute $Fe[(CH_3)_2AsO_2]_3$. By this method the salt should assay from 82.5 to 87.1 per cent. absolute ferric cacodylate, or 37.9 to 41.9 per cent. Arsenic.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - - Chicago, Ill.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Five dollars per annum in advance

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SATURDAY, JULY 3, 1920

THE ARREST OF HEMORRHAGE

The clotting of blood is a complicated process, the explanation of which is still being debated. The importance of the problem involved can scarcely be denied, however; for it concerns not only the natural arrest of hemorrhage from wounded blood vessels, but also the management of the dangerous conditions that may arise in hemophilia. One indispensable factor in coagulation is the formation of the insoluble protein fibrin from an antecedent fibrinogen existing in solution in the plasma. There is a second generally admitted essential agency, known as fibrin ferment, or thrombin, which is not present, in active form at least, in the circulating blood, but is formed when the blood is shed. Sometimes, under abnormal conditions, it arises within the blood vessels, so that an intravascular clot may appear. When one begins to inquire how and when the fibrinogen, thrombin and other less generally admitted factors interact to produce coagulation of the blood, the uncertainties and conflicts of current hypotheses are at once brought to notice.

It is well known that whereas contact of shed blood with an ordinary foreign surface is sufficient to induce coagulation, the plasma fails to clot rapidly when it is brought into contact with perfectly clean, smooth surfaces, and particularly such as are coated with a greasy layer of paraffin or oil. In explanation of this circumstance, Tait [1] has concluded that the blood contributes in two different ways toward arrest of hemorrhage from a cut vessel: First, certain of the cells agglutinate at the cut end so as to form a plug; second, the plasma undergoes coagulation.

A special though poorly defined rôle has long been assigned to the platelets in the phenomena of coagulation. Tait now asserts that the way in which nongreasy foreign matter induces coagulation is by affording a suitable physical surface to which the labile platelets or spindle cells, latterly called thigmocytes, can adhere. Such adhesive cells are highly phagocytic toward particles of nongreasy matter. When they make an undue effort to ingest foreign matter, the cells often stretch and disintegrate sufficiently to allow thrombin within them to exude, whereupon clotting occurs. On this hypothesis it is possible to understand that clotting fails to manifest itself when blood is confined within smooth surfaces, because the cells remain intact and no thrombin exudes. Likewise when anticoagulants, such as oxalates or citrates, are added to blood the thigmocytes remain unaltered.

From the standpoint of Tait's hypothesis, the primary event in the natural arrest of hemorrhage from a wound is local adhesion of labile cells in the form of an agglutinum, which plugs the cut end of the vessel. By adhesion to the extra-endothelial edge, these cells acquire adhesiveness to other unaltered cells of the same kind (sometimes to blood corpuscles of other kinds as well), and so on in succession; in this way the plug is built up. If this explanation proves to be correct, it is interesting to note, as Tait points out, that the variety of cell which is assumed to furnish thrombin by cytolysis and thus cause clotting of the plasma is likewise responsible for the formation of the plug. In other words, the same cell may contribute in more than one way to the arrest of hemorrhage. The theory of thigmocyte function therefore demands further consideration, especially in relation to hemophilia and intravascular thrombosis.

1. Tait, J.: Natural Arrest of Hemorrhage from a Wound, Proc. Physiol. Soc. June 7, 1919, J. Physiol. **53**: xix (Sept. 5) 1919.

THE TREATMENT OF MYXEDEMA WITH THYROID EXTRACT

Although the condition now recognized as hyperthyroidism of adults was described as early as 1873 by Sir William Gull, the name myxedema was not coined until 1878, when Ord employed this designation for the phenomena of the subcutaneous tissues which he observed at necropsy. The increased thickness of the skin, the "solid edema" of the malady, was attributed to an abnormal abundance of mucin; hence the name. The relation of myxedema to the loss of function of the thyroid gland was not appreciated until the surgeons Reverdin of Geneva and Kocher of Berne described the similar condition that followed goiter enucleation. The investigations subsequent to these observations led in turn to a more careful study of the effects of experimental thyroidectomies in animals, and of the influence of thyroid transplantation or administration of preparations of the glands.

These researches paved the way directly for the present-day therapy of myxedema, which has been described as one of the most remarkable achievements of medicine; it is, in fact, the best example of successful organotherapy. The Journal cannot overlook the opportunity to refer to the life history of the first myxedema patient treated by thyroid extract. The death of this woman has just been recorded by Dr. George R. Murray,[1] who proposed the treatment for

1. Murray, G. R.: The Life-History of the First Case of Myxoedema Treated by Thyroid Extract, Brit. M. J. **1**: 359 (March 13) 1920.

her and initiated the relief. Following the suggestion of Sir Victor Horsley that myxedema, cretinism and cachexia strumipriva might be benefited by grafting a portion of healthy thyroid gland in persons suffering from these diseases, a favorable result seemed to have been secured in this way by Bettencourt and Serrano.[2]

This in turn led Murray to attempt thyroid therapy. The first patient, a married woman, aged 46, was shown at a meeting of the Northumberland and Durham Medical Society in England, Feb. 12, 1891. She presented a typical case of myxedema of several years' standing. Murray stated his intention of treating her with thyroid extract, and the therapy was begun, April 13, 1891. The description of his procedures deserves being recorded in his own words:

> The experimental nature of the treatment was explained, and the patient, realizing the otherwise hopeless outlook, promptly consented to its trial. In order to insure that the extract was properly prepared, the thyroid gland was removed from a freshly killed sheep with sterilized instruments and conveyed at once in a sterilized bottle to the laboratory where the glycerin extract was prepared. This extract was afterward included in the British Pharmacopeia of 1898 as "liquor thyroidei." . . . A hypodermic injection of 25 minims was given twice a week at first, and later on at longer intervals. The patient steadily improved.

At the end of three months the injections were given at fortnightly intervals. Later when Fox and Hector Mackenzie had demonstrated the efficacy of oral administration of thyroid extract, Murray's patient received 10 minims by the mouth six nights a week. On this dose she remained in good health and free from the signs of myxedema. She continued to take liquid thyroid extract regularly until 1918, when difficulties in the supply of this preparation led to the use of thyroid tablets. The woman enjoyed excellent health until 1919, when she died of cardiac failure at the age of 74. Murray concludes the story of the historic case:

> This patient was thus enabled, by the regular and continued use of thyroid extract, to live in good health for over twenty-eight years after she had reached an advanced stage of myxedema. During this period she consumed over 9 pints of liquid thyroid extract or its equivalent, prepared from the thyroid glands of more than 870 sheep.

In the United States, the first patient with myxedema similarly treated by Kinnicut in 1892 was a woman who had been ill twelve years. If anything were needed at present to make the prognosis in myxedema favorable, Murray's simple yet eloquent record would easily bear remarkable testimony. Evidently the duration of life need not be shortened by simple atrophy of the thyroid if suitable treatment is instituted. The science of medicine may well rejoice on this account. The success of thyroid therapy in myxedema was not an accident or the outcome of empiric findings; it is a triumph of scientific research.

2. Bettencourt and Serrano: Semaine méd., Aug. 13, 1890.

THE REPAIR OF PERIPHERAL NERVE INJURIES

Among the varied physiologic damages attributable to war wounds, the injuries to peripheral nerves offer a surgical problem of peculiar and often perplexing difficulty. When there has been a severance of continuity in a nerve, the ideal restorative procedure consists in bringing together the parted ends and attempting to secure union and regeneration by an end-to-end suture. Such a logical operation is by no means always possible, owing to the extent and character of the injury involved. Hence, the possibility of the transplanting of nerve segments to bridge an otherwise unconquerable gap has been proposed. The choice of sources for what has been termed an autotransplant in the patient himself or a homonerve transplant from another individual of the same species will naturally be restricted to such nerves as are less essential in the bodily functions. In human surgery, segments taken from the cutaneous radial, the musculocutaneous and the crural nerves have been suggested as possibilities.

It has been known for some time that transplanted nerve segments undergo structural change after transplantation. It therefore occurred to Lewis and Huber, who have been engaged in extensive studies of the repair of peripheral nerve injuries for the Surgeon-General's Office, that the process of regeneration through a nerve transplant might be facilitated and hastened by using as a transplant a segment of a nerve already in wallerian degeneration. The experience gained by Huber[1] in an experimental investigation of this question showed no preference for either type of transplant. Regeneration was secured, for example, when a segment of degenerated nerve from the sciatic was used to bridge a defect in the resected ulnar nerve of the same animal. There was no indication, however, that regeneration took place more satisfactorily and more rapidly than it would have taken place if an undegenerated autonerve transplant had been used.

The experiments of Huber and his surgical collaborators show that degenerated autonerve and homonerve transplants may be used with assurance of success if an opportunity arises. This is a helpful finding; for in practice it is not always easy to secure fresh transplants, and it is particularly difficult if they are to be secured from the patient himself. Given the possibility of using degenerated segments of human nerves, how are the latter to be stored? French surgeons[2] have already reported the use of human nerves stored in petrolatum at approximately 2 C. (35.6 F.) for periods varying from two to five weeks. Huber has found liquid petrolatum at ice chest temperature (3 C., 37.4 F.) preferable. Nerves have been stored in this way for forty days and still found useful.

1. Huber, C. G.: Repair of Peripheral Nerve Injuries, Surg., Gynec. & Obst. **30**: 464 (May) 1920.
2. Dujarier and François: Bull. et mém. Soc. de chir. de Paris, January, 1918.

Huber finds no reason why longer storage without loss of transplanting value may not be possible.

Nerve fragments removed with proper aseptic precautions may also be stored in 50 per cent. alcohol for the purposes of transplantation. It cannot be supposed that any part of the tissue retains its viability under such conditions; hence, as Huber asserts, the value of the transplant is not dependent on the presence of living sheath cells. There is no question of the nerve fibers of a nerve segment stored in 50 per cent. alcohol undergoing wallerian degeneration as does the peripheral part of a nerve after section. The neurilemma sheaths maintain and through these the central neuraxes reach the distal nerve segment.

Sometimes the disparity of size between the transplant and the resected nerve offers a serious practical difficulty. It is now proposed to meet this by suturing several of the fragments of smaller diameter between the larger resected ends when this situation is encountered. This has been spoken of as a cable-nerve transplant. Huber has summarized the results of all experimental work on nerve transplantation with the conclusion that the most favorable results are to be obtained after the use of an autonerve transplant; and for practical surgery a cable-autonerve transplant, several segments of a cutaneous sensory nerve being utilized to bridge a defect in a large motor-sensory nerve. The question of the type of nerve, he adds, is not material; the question of the funicular arrangement is of secondary importance; whether the central or the distal end of a transplant is placed centrally is not necessary of consideration; accurate end-to-end suture, careful technic and a dry field are essential. Whether the employment of sheaths about nerve suture lines or transplants is of positive value in preventing connective tissue proliferation still remains to be definitely ascertained.

SOME ASPECTS OF DESERT CLIMATES

How the body adjusts itself to unusual changes in its environment has always been a problem of interest to those who have to deal with the living organism. The problems of adaptation to altitude, for example, have become of more than mere academic interest since the development of aerial flight by man. Likewise, the mechanism for adjustment to extremes of temperature has aroused attention in greater degree as man has begun to penetrate the Arctic regions and the tropics in consequence of the improved facilities for transportation to almost every region of the earth.

Among the scientific observations made during a recent expedition to the Egyptian deserts [1] are indications that under the peculiarities of climate there encountered a slight though unmistakable increase in red blood corpuscles may occur. This is analogous to the well known increase that is exhibited by man transported to considerable altitudes, where the reduced partial pressure of oxygen evidently becomes a stimulus for the mobilization of an added number of oxygen-carrying corpuscles in the circulating medium of the body. As deficiency in oxygen cannot be held responsible for an increment in erythrocytes and hemoglobin in the blood at the low altitude of the Egyptian desert, some other explanation must be sought for the phenomenon recorded. Special studies have demonstrated that it cannot be explained by any notable concentration of the blood in the tropical climate. The most tenable hypothesis thus far advanced charges a stimulation of the blood-forming organs to peculiar and intensive light conditions that prevail in the desert. Thus it has also been shown experimentally that exposure to the light of the mercury arc may produce increases in erythrocytes in animals.[2] If this assumption proves to be correct, a new aspect of climatology will have been emphasized in the hematopoietic influence of sunlight.

It might be assumed that the severe heat of the desert would lead to extreme production of sweat and correspondingly a considerable output of chlorid through the skin. This would be in harmony with the belief that in tropical climates increased output of water is synonymous with increased secretion of sweat. Wohlgemuth's [1] studies at Assuan showed, however, that this view is not tenable. The increased water elimination under the climatic conditions of the desert occurs essentially through the medium of so-called insensible perspiration. Accordingly, the chlorid content of the blood is unaltered even when the loss of water from the body is considerable under the trying conditions of life in the desert.

1. Loewy, A.: Verhandl. d. physiol. Gesellsch. zu Berlin, Sitzung vom 12. Mai 1916, conf. Berl. klin. Wchnschr. 1916, Ztschr. f. Balneol., Klimatol. u. Kurort-Hyg. **9**: 43, 1916. Bickel, A.: Berl. klin. Wchnschr., 1916, No. 26. Wohlgemuth, J.: Ueber die Zusammensetzung des Blutes und über das Verhalten des Blutdruckes in Wüstenklima, Biochem. Ztschr. **79**: 290 (Feb.) 1917.

2. Bickel, A., and Tasawa: Charité-Ann. 37, 1913.

Current Comment

GRADUATE MEDICAL EDUCATION IN THE UNITED STATES

The development of graduate medical education in the United States is a matter of the utmost importance. Of the twenty-one cities having the largest population according to the census now nearing completion, all but two have undergraduate medical schools, but in only ten is any graduate medical instruction being offered, and in only four [3] are the facilities well organized and centrally administered. In the other six, either the one school which exists has very meager teaching facilities or there are several independent noncooperating institutions, in no one of which can the student secure satisfactory instruction. In this connection the New York Association for Medical Education, previously referred to in THE JOUR-

3. Boston, New York, Philadelphia and Minneapolis.

NAL,[4] is working in the right direction. All the facilities for graduate teaching in that city are to be administered through a central office from which the student will be promptly directed to the place where he can obtain the particular line of instruction he is seeking. The association, furthermore, is aiding materially in the organization and development of the clinical facilities of that city. For example, its first bulletin, recently issued, sets forth a standard course for specialists in diseases of the ear, nose and throat. It also names the various institutions in New York which are giving courses of instruction in this specialty, and, it is stated, these courses have been reconstructed in order to meet the association's standard. In order that thoroughly qualified teachers may be retained for the graduate schools, a larger fee than heretofore is being charged for tuition. This larger fee, however, is not objectionable when the physician finds he can obtain the character of work desired. Since the reorganization, all courses are said to have had a full enrolment, which shows that physicians appreciate the improvement made. In fact, the New York association is in a position to refer students to courses in other parts of the country if they are brought up to a reasonable standard of excellence. The experience in New York points to the importance of developing graduate medical courses in other large cities of this country. Instead of only four cities in which clinical facilities to any considerable extent have been organized and centrally administered, there should be twenty or more cities in which the abundance of clinical material might be organized and made available for teaching purposes. Since the war, which shut off many of the opportunities for graduate instruction in Europe, America not only has a great opportunity, but also an actual duty to perform in supplying equal if not better facilities for such instruction. This would not only result in a better use of the clinical material; it would also aid in the development of clinical teachers; it would improve clinical methods in hospitals and there would be a constantly increasing number of better trained physicians and ultimately a better care of patients generally. Furthermore, development of graduate instruction would not only be of benefit to the physicians and the public of this country, but in time would attract students from South America and other countries, and the reputation of the United States in medical education would be greatly enhanced.

OBSERVATION ON THE DIGITALIS PLANT

So long as galenic preparations of drugs continue to be used, and so long as thoroughly accurate methods of standardization, either chemical or biologic, for the active ingredients are not available, it will be important to learn as much as possible about the variations to which the crude products, out of which our extracts and tinctures are prepared, are subject under natural conditions. The physiologically potent alkaloids and glucosids that occur in many medicinal plants have been variously regarded by pharmaceutical botanists. By some they have been held to represent waste products of plant metabolism, stored in the vegetable tissues because no mode of elimination is provided. Others have looked on the glucosids as organic reserve materials devoted, like fats and carbohydrates, to the growth and development of the plants in which they occur. In the case of the digitalis plant, *Digitalis purpurea,* active glucosids are found not only in the mature leaves but also in the seeds. A recent investigation by Straub [1] in the pharmacologic institute at Freiburg in Baden has shown that the seed glucosids which include digitalinum verum (digitalin) and digitalein do not decrease in amount as do the fats when germination proceeds; hence they cannot be regarded as reserve products. The glucosids pass into the leaves of the seedling without loss in quantity; on the other hand, the content of digitalis glucosids increases up to a certain stage. This demonstrates conclusively that they are in fact essentially waste residues of the metabolism of the growing plant organism.

ILLEGAL PRACTICE BY MEDICAL CULT PRACTITIONERS

Chiropractors and followers of other medical cults are doubtless practicing in many states in direct violation of the medical practice acts. Chiropractors, especially, are aided and abetted in doing so through an organization known as the Universal Chiropractors' Association of Davenport, Iowa, which has as its officers some who are also closely identified with a chiropractic school in that city.[2] Such illegal practice could doubtless be checked, if not totally done away with, if in more states such energetic action were taken against them as is now being conducted in Illinois by the Department of Registration and Education. As referred to in our news columns this week,[3] temporary injunctions are being issued individually against all chiropractors in Illinois in an attempt to break the vicious circle established by the Universal Chiropractors' Association, which is encouraging a wholesale violation of law. If those who desire to practice the art of healing are not willing to comply with such reasonable educational standards as will render the public safe from ignorance and incompetence, then they should not be granted legal authority to practice; nor should they be permitted to practice on the public illegally through the machinery they themselves have established to evade the penalty for so doing.

4. New York Association for Medical Education, J. A. M. A. **73**: 551 (Aug. 16) 1919.

1. Straub, W.: Ueber die Entwicklung der typischen Blattglykoside in der keimenden und wachsenden Digitalispflanze, Biochem. Ztschr. **82**: 48 (June) 1917.
2. See article on "The Fountain-Head of Chiropractic; What of Its Product?" p. 52, this issue.
3. Illinois News, p. 40, this issue.

The People a League of Health.—There are public health laws galore, but these form only the machinery which sets in motion the regulations under which the public health is controlled. And, yet, machinery, however much it can accomplish, is still a soulless thing; that is the defect of the machinery of the public health laws. It is powerless to influence the personal voluntary assistance of those who benefit from it.—*Medical Press and Circular* **109**:66 (Jan. 28) 1920.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Health Train Starts.—The health train of the state board of health commenced its tour of the Cotton Belt Lines at Piggott, June 7. The train is under the direction of the sanitary engineer of the Cotton Belt system, and Dr. Charles W. Garrison, state health officer.

Health Association Meeting.—At the annual meeting of the Arkansas Public Health Association held in Little Rock, the following officers were elected: Dr. Augustus C. Shipp, president; Dr. Henry Thibault, Scott, and Mrs. H. C. King, Fort Smith, vice presidents; Mrs. C. L. Shafer, secretary, and Mr. T. S. Shannon, treasurer.

GEORGIA

County Adopts Health Law.—By unanimous vote of the grand jury, May 26, the Ellis law was adopted in Walker County, this being the eighteenth county in the state to adopt the law.

College Commencement.—At the eighty-ninth annual commencement exercises of the Medical College of Georgia, Augusta, held May 31, a class of fifteen seniors was graduated.

New State Officers.—At the seventy-first annual session of the Medical Association of Georgia held in Macon, May 5 to 7, the following officers were elected: president, Dr. Edward T. Coleman, Graymont; vice presidents, Drs. Theodore E. Oertel, Augusta, and Fred L. Webb, Macon; secretary-treasurer, Dr. Allen H. Bunce, Atlanta; delegates to the American Medical Association, Drs. Edward G. Jones and William C. Lyle, Atlanta, and alternates, Drs. Jarvis G. Dean, Dawson, and Mallie A. Clark, Macon.

ILLINOIS

Library Open to Physicians.—The medical department of the University of Illinois through its dean, Albert C. Eycleshymer extends a cordial invitation to members of the profession to make free use of its library on the ground floor of the college building at Congress and Honore streets, Chicago. It contains many standard works and subscribes to about 300 periodicals.

Rush Alumni Election.—At the annual meeting of the Rush Medical College Alumni Association, held in Chicago, June 16, Dr. Frank Billings presided as toastmaster, and the following officers were elected: president, Dr. Wilbur E. Post, Chicago; vice presidents, Drs. J. J. Moore, Chicago, A. S. Barnes, Columbus, Ohio, and David Fiske, Chicago; necrologist, J. F. Waugh, Chicago; treasurer, Carl O. Rinder, Chicago, and secretary, Dr. Charles A. Parker, Chicago. Drs. E. L. Kenyon and Dean Lewis, Chicago, were made directors for three years. Dr. Morris Fishbein continues as editor of the alumni bulletin.

Chiropractors Enjoined.—The department of registration and education reports that twenty-six more temporary injunctions have been issued against individual chiropractors who are practicing in Illinois without licenses. The injunctions restrain these individuals from paying assessments to the Universal Chiropractors' Association of Davenport, Iowa, and forbids them from accepting money from that association with which to pay fines, penalties and costs assessed against them by the Illinois courts. It also restrains them from accepting the services of attorneys of the association in defending cases brought against them in the Illinois courts. The result of the injunction is that each chiropractor must finance his own defense. The chiropractors enjoined are: Claude Griffith, Cave-In-Rock; Ollie D. Davidson and Mrs. Elizabeth Suverkrup, Champaign; Ethel B. Stump, G. E. Stump and Lillian B. Stump, Chenoa; S. M. Bernell, Leonard W. Miller, J. Charles Orr, W. C. Schulze and Harrison Atchley, Chicago; Mabel E. Gilpin, Chicago Heights; Anna M. King, East St. Louis; George F. Stewart, Elgin; B. F. Tucker, Galesburg; Rose Aulabaugh, Granite City; Josephine Olson, Greenville; Elnora Clawson, Industry; Louis O. West, Mascoutah; V. C. Wright, Mattoon; Berta Schraner, Rushville; L. E. Gates, Sparta; T. E. Hallbeck, West Salem; W. F. Prisk, Wilmette; E. L. Spencer, Blue Island, and Bessie Atherton, Peoria. Similar injunctions were previously issued against twenty-five chiropractors as reported in THE JOURNAL, May 22, and are still pending against about fifty other chiropractors in the state.

INDIANA

Brockway Found Guilty.—Dr. Charles J. Brockway, Lafayette, accused of involuntary manslaughter in connection with the death of his wife, is said to have been found guilty by a jury on June 12. Dr. Brockway's attorneys filed a motion for a new trial, and his bond of $5,000 was continued pending arguments on the motion.

Personal.—Dr. Fred L. Bunch, city health officer of Muncie, is reported to have been operated on recently for appendicitis and for the removal of a malignant growth.——Dr. Henry W. Greist and his family left Monticello, July 1, on their way to Cape Prince of Wales, Alaska, where Dr. Greist will take charge of the Presbyterian Medical Mission. After a survey covering the Seward Peninsula and islands in Behring Strait, it is proposed, if conditions justify, to build a hospital for this territory next summer.——Dr. Samuel Dodd, recently appointed superintendent of the Northern Indiana Hospital for the Insane, Logansport, has assumed charge of the institution.——Dr. E. C. Wickersham, Anderson, is reported to have been seriously injured in an automobile accident, May 30.——Dr. William I. Fugate, Newcastle, for six and one-half years secretary of the Newcastle board of health, has resigned and has been succeeded by Dr. William C. Heilman, Hope.——Dr. Alois L. Ziliak, Owensville, has been elected president, and Dr. William F. Morris, Fort Branch, vice president, of the Gibson County Hygiene and Health Association.

KANSAS

Supreme Court Upholds Quarantine.—The supreme court of Kansas recently denied a writ of habeas corpus to certain persons quarantined at a state institution because of venereal disease.

District Society Meeting.—At the annual meeting of the Medical Society of the Seventh District, held in Hutchinson, June 10, the following officers were elected: Dr. John T. Scott, St. John, president; Drs. John A. Dillon, Larned, and A. Wallace, Sterling, vice presidents, and Walter N. Mundell, Hutchinson, secretary-treasurer.

LOUISIANA

Authority Voted to Build Hospital.—Authority to build a hospital in New Orleans to cost $1,500,000 was unanimously voted at the meeting of the mission board at the Southern Baptist convention.

Child Welfare Clinic Opened.—The new child welfare clinic at Ninth and Constance streets, New Orleans, known as the Bertha Goetz Station, was formally opened, May 14. Clinics will be conducted by Dr. Francis J. Kinberger on Tuesday, Wednesday and Thursday, and Dr. Harry V. Sims in obstetrics on Thursday.

Colored Physicians and Dentists Meet.—At the annual meeting of the Louisiana State Medical, Dental and Pharmaceutical Association held in New Orleans, May 4 to 6, Dr. Eugene C. Thornhill, New Orleans, was elected president; Dr. Thomas L. Welch, New Iberia, vice president, and Dr. Lee A. Butler, Breaux Bridge, secretary-treasurer.

Personal.—Dr. J. M. Thuringer, assistant professor of anatomy in Tulane University, has resigned.——Dr. John D. Frazar, De Ridder, has qualified as sheriff of Beauregard Parish.——Dr. Jacob W. Newman, New Orleans, has been elected president of the Louisiana Commission for the Blind.——Dr. William Scheppegrell has been elected president of the Louisiana Federation of Catholic Societies.

MARYLAND

Personal.—The following physicians have been appointed as police surgeons in Baltimore city: Dr. Dwight H. Mohr, chief surgeon, and Drs. Walter L. Denny, Henry F. Cassidy, Pinkney L. Davis, William S. Gilroy, Henry C. Houck and E. H. Hutchins, all of Baltimore.——Dr. English Bagby has been appointed as instructor in psychology at the summer school of the Johns Hopkins University. Dr. Bagby has also been appointed instructor in psychology at Yale University and will go to New Haven, Conn., in the fall.

Instructors of Blind Meet.—The twenty-fifth biennial convention of the American Association of Instructors of the Blind was held in Baltimore during the past week. The sessions were held at the Maryland School for the Blind at Overlea. Mr. Eric Harilstad, teacher of the blind in Christiania, Norway, who is sightless, was one of the speakers at the convention. Mr. Harilstad spoke on the "Work for the Blind in Norway." Dr. Max Herz of Vienna, Austria, also attended the convention and demonstrated his new invention, the typophone, by which the blind may read by means of a code similar to the Morse system.

MASSACHUSETTS

Subsidy for a Physician.—A report states that the town of Otis has established a special fund of $500 to be given to a physician who locates in that town.

Changes in Personnel of Health Department.—Dr. Milton J. Rosenau, Boston, has resigned as director of the division of biologic laboratories, effective June 1, but will continue his connection with the department as consulting pathologist and bacteriologist.——G. Benjamin White has been made director of the division of biologic laboratories.——Dr. Stanley H. Osborn, Boston, has resigned as state epidemiologist, effective May 1, to accept a position as director of the division of preventable diseases and deputy commissioner of the Connecticut Department of Health.——Dr. James E. Henry has been temporarily appointed as epidemiologist, commencing June 1.

MICHIGAN

Health Officers Elected.—At the annual meeting of the Michigan Public Health Association held in Kalamazoo, May 21, Dr. Clyde C. Slemons, Grand Rapids, was elected president, and Dr. Henry F. Vaughan, Detroit, secretary-treasurer.

Must Serve Term.—The supreme court, on June 7, affirmed the conviction of Dr. George A. Fritch, Detroit, who during nearly fifteen years' conflict with the law, involving nearly a score of charges of malpractice, was twice convicted, twice imprisoned and once freed of charges of manslaughter in connection with an illegal operation, will now have to serve his indeterminate sentence of from one to fifteen years in the Marquette prison.

New State Officers.—At the fifty-fifth annual meeting of the Michigan State Medical Society held in Kalamazoo, May 25 to 27, under the presidency of Dr. Charles H. Baker, Bay City, the following officers were elected: president, Dr. Angus McLean, Detroit; vice presidents, Drs. Augustus W. Crane, Kalamazoo, Udo J. Wile, Ann Arbor, and Clarence M. Williams, Alpena. Dr. Frederick C. Warnshuis, Grand Rapids, secretary-treasurer, holds office until his successor is elected at the meeting of the executive committee in January. The principal outside addresses were deliverd by Dr. Hubert Work, Pueblo, Colo., president-elect of the American Medical Association, on "The Modernization of the Osler Theory," and by Dr. Frederick R. Green, Chicago, on "The Profession and Compulsory Health Insurance." A memorial tablet was recently unveiled for the four members of the society who gave their lives in France during the war. The tablet was presented by Dr. Herman Ostrander of the State Hospital, Kalamazoo, on behalf of the Kalamazoo Academy of Medicine, and it is to be placed in the medical building of the state university. A public health section of the society was created by vote of the house of delegates.

MINNESOTA

Personal.—Dr. Stanley J. R. Maxeiner has succeeded Dr. Ernest M. Hammes, St. Paul, as assistant editor of the *Minnesota Medicine*.——Dr. Wade R. Humphrey, Stillwater, has been appointed poor commissioner and county physician, succeeding Dr. Ernest E. Wells, deceased.

Help Offered Physicians in Venereal Disease Cases.—The Minnesota State Board of Health, division of venereal diseases, coordinated with the U. S. Public Health Service, has sent a circular to all physicians in the state offering the services of an expertly trained man in diagnosis and treatment of venereal disease whose services are to be lent to individual physicians or communities. Any physician desiring such assistance should address L. W. Feezer, scientific assistant, U. S. Public Health Service, University Campus, Minneapolis.

Tuberculosis Research Fellowship: University of Minnesota.—To encourage study of the means for the prevention and cure of tuberculosis, the Hennepin County Tuberculosis Association of Minneapolis announces that it has set aside a fund for the support of a tuberculosis research fellowship in the Graduate School of the University of Minnesota. The candidate for the fellowship must be a graduate of a Class "A" medical college, and will be expected to devote himself to research in some problem concerned with the causes, prevention or cure of tuberculosis. No teaching or other service will be required. The fellowship yields $750 the first year, and progressively increasing amounts will be appropriated for the second and third years as conditions warrant. Inquiries and requests for application blanks should be addressed to the dean of the Graduate College, University of Minnesota, Minneapolis.

NEW YORK

Given War Decoration.—Dr. Richard Derby, Oyster Bay, who served as lieutenant-colonel, M. C., U. S. Army, with the Second Division in France, has been awarded the Distinguished Service Medal.

Commission to Improve Laws Regarding Children.—The governor has approved the Smith-Walton bill creating a commission of sixteen members to collate and study all laws relating to child welfare, investigate and study the operation and effect of such laws on children, ascertain any overlapping and duplication of laws and of the activities of any public office, department or commission thereunder, and make recommmendations to the legislature or remedial legislation which it may deem proper as the result of its investigation.

New Officers.—At the first annual meeting of the Glen Cove Medical Society, held June 10, Dr. Joseph B. Conolly, Glen Cove, was elected president; Dr. Richard Derby, Oyster Bay, vice president; Dr. Ernest P. Schilling, Glen Cove, secretary, and Dr. Herman G. Wahlig, Sea Cliff, treasurer.——Bay Ridge Medical Society at its annual meeting, held June 8, elected Dr. Joseph W. Malone, president; Dr. Charles M. Fisher, vice president; Dr. James W. Fox, secretary, and Dr. Bruce G. Blackmar, treasurer, all of Brooklyn.

State Health Department Educational Campaign.—In the past, the state health department has been hampered in its work in rural sections of the state owing to the difficulties incident to transportation and handling the details of educational campaigns. In order to remedy these difficulties and to meet the needs of the open country, the department has had designed a large automobile truck, by means of which it is hoped to give rural communities the benefit of much work which hitherto has been confined to more central places. The car carries its own picture screen which may be erected on the roof of the car or at any selected point outdoors. It is planned to keep the car constantly on the road during the summer months.

Course to Train Hospital Assistants.—Owing to difficulty in obtaining trained hospital attendants, Bird S. Coler, commissioner of public welfare, has established four training schools for attendants. These schools are at the City Neurological Hospital, Blackwell's Island; the New York Children's Hospital, Randall's Island; Sea View Hospital, Staten Island, and Greenpoint Hospital, Brooklyn. The students are being instructed in the principles of hospital treatment, and in the care of simple and ordinary sick and chronic cases. When the students have completed this course, they will not only be useful in hospital nursing, but they will also be good practical workers in homes in which the salary of a trained nurse makes such service prohibitive.

New York City

Jacobi Estate Appraised.—Dr. Abraham Jacobi left a gross estate of $515,933 and a net estate of $490,640, according to the appraiser's report filed by the state comptroller. His daughter, Mrs. Margaret McAneny, received $459,184 and the New York Academy of Medicine the rest.

Hospital Seeks Funds.—The Israel Hospital and the Zion Hospital of Brooklyn have amalgamated to form the United Israel Zion Hospital, and have started a drive for $1,000,000 with which to build and equip a new hospital building. It is planned to provide accommodations for 200 patients.

Well Known Psychologist Dies.—James Hervey Hyslop, well known psychologist and editor of the *Journal of the American Society for Psychical Research*, aged 65; died, June 17, from cerebral thrombosis, and his brain was given to Dr. Edward A. Spitzka, New York City. When received by Dr. Spitzka after five days' immersion in 5 per cent. formaldehyd solution the brain weighed 1,290 grams, or 45.5 ounces avoirdupois.

New Regulations Governing Isolation of Influenza and Pneumonia.—The New York City Department of Health, April 29, adopted regulations governing the isolation of persons suffering from influenza and pneumonia, which provide that no person affected with these diseases shall be permitted to remain at home unless the following conditions are complied with:

(*a*) The minimum quarantine period for cases of influenza shall be seven days after the onset of the disease, after which, such quarantine period shall continue until discharges from the nose, mouth, throat, and ears have ceased.

(*b*) The minimum quarantine period for pneumonia shall be twelve days and thereafter until the temperature of the patient has become normal.

(*c*) There shall be a duly licensed practicing physician in attendance.

(*d*) The room or rooms where the patient is to be isolated shall be well lighted and ventilated, and such room or rooms shall be separate and apart from the rooms occupied by other members of the family.

(*e*) All handkerchiefs or other substances contaminated by the discharges from the nose, mouth and throat of persons suffering from these diseases, must be properly cared for so that they shall not in any way constitute a menace to the health and life of others, and they shall be properly and promptly disinfected.

(*f*) The attending physician, nurse, or attendant shall be required to insure the use of handkerchiefs or other suitable material to receive the spray or droplets resulting from coughing, sneezing, or expectorations of the patient.

(*g*) All unnecessary curtains, rugs, or draperies should be removed from the room to be occupied by the patient. All linens used by or which come in contact with the patient should be kept separate and apart from those used by other members of the family until the same have been boiled.

(*h*) Dry sweeping in the room or rooms occupied by the patient is forbidden. A vacuum cleaner or moist rags should be used.

(*a*) All eating and drinking utensils used by the patient shall be separate and apart from those used by other members of the family, and shall be boiled after each such use.

PENNSYLVANIA

Physicians' Licenses Revoked.—An official report from the Bureau of Medical Education and Licensure of Pennsylvania states that at its meeting in Harrisburg, June 2, the license of Dr. H. S. Kulp of Ardmore was revoked on the court record of his having committed criminal abortion.——The bureau also suspended the license of Dr. A. C. Speer of Pittsburgh on the ground of his being a drug addict.——The certificate of Julia Sedula, a midwife of McKees Rocks, was revoked on the ground that her certificate had not been registered in the office of the prothonotary and that she practiced midwifery while suffering from a contagious disease.

Philadelphia

Personal.—Dr. Hugh M. Miller has been appointed chief of the genito-urinary clinic, Phipps Institute, by Dr. Edward Martin, state commissioner of health.——Dr. Aller G. Ellis, associate professor of pathology at Jefferson Medical College, who went to Bangkok, Siam, in May of last year on a year's leave of absence, has now resigned from Jefferson Medical College, and expects to stay at least three more years in Bangkok. He has been appointed pathologist to the Chulalongkorn Memorial Hospital, Bangkok, Siam.

TEXAS

State Officers Elected.—The following is a list of officers elected at the Houston meeting of the State Medical Association of Texas: president, Dr. Ira C. Chase, Fort Worth; president-elect, Dr. Thomas J. Bennett, Austin; vice presidents, Drs. William S. Miller, Estelline, Willis J. Pollard, Kauffman, and Walter Shropshire, Yoakum. Dr. Holman Taylor, Fort Worth, is the secretary.

VIRGINIA

Personal.—Dr. Dean B. Cole, Richmond, executive secretary of the state tuberculosis association has resigned, taking effect July 1. Dr. Cole will go to Bellevue Hospital, New York City, to take up special work on the staff of that institution.

City Must Finance Clinic.—Notice has been served on the city of Norfolk that the venereal disease clinic in that city will not be financed by the U. S. Public Health Service after June 30. In order to continue, it will be necessary for the city to finance the work. Since the clinic was opened in August, last, more than 1,000 patients have been treated.—— The Richmond Health Bureau has received notice from the director of the state bureau of venereal diseases that a good part of the assistance which had been given in the city venereal disease clinic will be withdrawn after July 1, and that the office of the physician who had charge of the clinic will be discontinued.

WEST VIRGINIA

New State Officers.—The fifty-third annual meeting of the West Virginia State Medical Association was held in Parkersburg, May 18 to 20, under the presidency of Dr. Henry R. Johnson, Fairmont, and the following officers were elected: president, Dr. J. Howard Anderson, Marytown; vice presidents, Drs. Hubert E. Gaynor, Parkersburg, Solomon G. Moore, Elkins, and Charles O'Grady, Charleston; and editor of the journal, Dr. James R. Bloss, Huntington. Pence Springs was decided on for the place of the next meeting, and the time fixed was the fourth week in May, 1921.

WISCONSIN

Fined for False Entry.—Dr. William E. Fox, Milwaukee, charged with filing a false birth certificate is said to have been fined $100 and costs, May 5.

Cabot in Milwaukee.—Dr. Hugh Cabot, professor of surgery in the University of Michigan, Ann Arbor, addressed the Dane County Medical Society, University Medical Society and the Rock Jefferson and Sauk County medical societies, May 18.

Personal.—Dr. Frank M. McGauley, Fond du Lac, has resumed practice after an illness of five months. Dr. Arthur C. Dana, Fond du Lac, has been appointed physician of Lincoln, Neb.——Dr. Errol V. Brumbaugh has been appointed deputy health commissioner of Milwaukee, succeeding Dr. John P. Koehler, resigned.

Hospital Notes.—The St. Regina property, Madison, has been purchased by the Methodist Hospital Association, which has been seeking a site for a hospital in that city.——Wells County Council has granted an appropriation of $30,000 for the erection of a third story to the Wells County Hospital. ——The Franciscan Sisters of St. Louis, who now conduct a fifty bed hospital here, have raised money for the building of a new 200 bed hospital. They have a record of having raised $500,000 in two days.——"Pureair," the new tuberculosis sanatorium for the counties of Ashland, Bayfield and Iron, has just been completed near Salmo, Bayfield County. It has been turned over for operation to the board of trustees by the committee from the three county boards, which had charge of its construction. Dr. M. S. Hosmer has been elected superintendent of the institution.——A bill for the establishment of a state hospital in Madison for the treatment of the crippled and deformed has become a law. It is proposed that this hospital when constructed shall be manned by the staff of the medical school of the University of Wisconsin. The bill provides for a 300 bed hospital.

WYOMING

State Society Meeting.—At the annual meeting of the Wyoming State Medical Society, the following officers were elected: president, Dr. George P. Johnston, Cheyenne; vice presidents, Drs. Charles E. Lane, Lander, Elmer A. Keil, Rawlins, and Fred Horton, Newcastle; secretary, Dr. E. Earl Whedon, Sheridan (reelected), and treasurer, Dr. Chester E. Harrison, Basin.

CANADA

Neuropsychiatrists Organize.—The Ontario Neuro-Psychiatric Association has just been organized, and the following officers have been elected: president, Dr. Edward Ryan, Kingston; vice president, Dr. Harvey Clare, Toronto, and secretary-treasurer, Dr. Clarence M. Crawford, London.

University News.—A total of 745 students were registered in the medical faculty of McGill University, Montreal, during the past session, a record that far exceeds any previous year. Of this number, 145 had been soldiers.——The Middlesex County Council has donated $100,000 toward the main building of the Western University, London, which is erecting a new million-dollar structure.

Hospital News.—Mrs. F. F. Dalley, Hamilton, Ont., has given $10,000 to the City Hospital for research work.——One hundred less beds at the General Hospital and sixty less at the Royal Victoria Hospital, Montreal, are the result of the 1 per cent. tax levied by the Canadian government on the purchase of all supplies by the hospitals. It will cost the General Hospital $25,000 a year to pay the tax, and the Royal Victoria $35,000.

Canadian Public Health Association.—The officers elected at the annual meeting of the Canadian Public Health Association held in Vancouver last week are: president, Dr. John A. Amyot, Ottawa; vice presidents, Dr. William F. Roberts, St. John, N. B., Gordon Bell, Winnipeg, and Miss Helen R. Y. Reid, Montreal; secretary, Dr. Robert D. Defries, Toronto; treasurer, Dr. Fred Adams, Winnipeg. Life membership was accorded Dr. Frederick Montizambert, C. M. G., Ottawa, for fifty-four years chief medical officer of Canadian government quarantine.——The national committee for combating venereal diseases reelected Mr. Justice William Renwick Riddell, Toronto, chairman.

Personal.—Dr. Richard J. Harding, Montreal, has been appointed professor of chemical pathology in the University of Toronto.——Dr. Frederick Montizambert, C. M. G., superintendent of public health for Canada, is retiring on a pension. He will be succeeded by Dr. J. D. Page, immigration officer of Quebec. Dr. Emile Nadeau will succeed Dr. Page. ——The government of Quebec has designated the following medical officers for duty in connection with venereal diseases in that province: Dr. Art A. Simard, Quebec City; Drs. Siraphin Boucher and James A. Hutchison, Montreal. Dr. Antoine H. Desloges, Montreal, has been named director of antivenereal service and Dr. Ranger, assistant director. Dr. A. St. Pierre, Montreal, will be director of provincial hospitals.——Dr. Douglas V. Currey has been appointed medical officer of health, St. Catherines, Ont.——Dr. Victor V. Harding (Owens College, Manchester, England) has been appointed professor of pathologic chemistry to succeed Prof. Andrew Hunter in the University of Toronto. Dr. Harding was associate professor in the chemical department of McGill University, Montreal.——Dr. J. A. St. Denis, Montreal, has returned after three months spent in Europe.

Activities of the Massachusetts-Halifax Health Commission.—Dr. D. A. Craig, for five years medical superintendent of the Queen Alexandria Hospital, London, Ont., and during the war consultant in diseases of the chest for Military District No. 1 of the Canadian Army, has been appointed tuberculosis examiner by the Massachusetts-Halifax Health Commission, and on June 15 took up his residence in Halifax. Dr. Craig will give his entire time to tuberculosis work and to other educational phases of public health contemplated by the Massachusetts-Halifax Health Commission. He will supervise the three tuberculosis clinics being organized in the health centers and serve as a free tuberculosis consultant to physicians in Halifax and Dartmouth.——The executive officer has also announced the appointment of Dr. Gordon Wiswell as the physician to be immediately in charge of the prenatal, baby, preschool age and malnutrition services in Health Center No. 1, now conducted in Old Admiralty House; and of Dr. Hugh W. Schwartz as a physician immediately in charge of the nose and throat services. Dr. M. J. Carney, who organized the first tuberculosis clinic in Halifax, will continue in charge of at least one of the health center tuberculosis clinics.——The commission recently announced the names of the following consulting staff, who will cooperate with Dr. Royer, the executive officer, in determining the policies in health center work: Col. John Stewart, dean of Dalhousie Medical School; Dr. Frank Woodbury, dean of Dalhousie Dental School; Drs. Arthur Birt, George M. Campbell, Samuel J. McLennan and R. Evatt Mathers.

GENERAL

New Officers for Dermatologists.—At the annual meeting of the American Dermatological Association, Dr. Jay F. Schamberg, Philadelphia, was elected president; Dr. Oliver S. Ormsby, Chicago, vice president, and Dr. Udo J. Wile, Ann Arbor, Mich., secretary-treasurer.

National Exposition of Chemical Industries.—The Sixth National Exposition of Chemical Industries will be held in Grand Central Palace in New York City from September 20 to 25, inclusive. The exposition this year will be the largest ever held, a very elaborate program being prepared.

Southern Railway Surgeons' Meeting.—At the annual meeting of the Southern Railway Surgeons' Association, held in Washington, June 2, Mobile was selected as the next place of meeting, and the following officers were elected: president, Dr. William A. Applegate, Washington, D. C., and vice presidents, Drs. Horace H. Kinney, Okolona, Miss., W. S. Knox, Knoxville, Tenn., and R. L. Vaught, Showns, Tenn.

General Gorgas' Illness.—According to cabled reports the condition of Major-General Gorgas is still considered critical. Some time ago General Gorgas had an attack of cerebral hemorrhage which affected his left side, and although there have been no new complications he had a slight setback last week. He will remain in London, where his projected sanitary expedition to West Africa was interrupted, until his physical condition permits a return to the United States.

Public Health Service Prepares for Fourth of July.—The United States Public Health Service has sent broadcast its annual notices to newspapers of the United States regarding the danger in the use of fire works, Roman candles and other Fourth of July paraphernalia. Special emphasis is placed on the possibility of lockjaw following wounds from fire crackers, toy pistols and exploding rockets. The usual first-aid remedies are mentioned, including the necessity for the immediate removal from wounds of all dirt and other foreign particles. Injection of tetanus antitoxin is suggested.

American Legion Post Opposes Bonus Legislation.—At a meeting of Caduceus Post 818, American Legion, June 10, it was unanimously resolved that the first obligation of the government is to furnish proper care to the disabled service men and to dependents of those who made the supreme sacrifice; that until these obligations are fulfilled it is unwise to enact beneficial legislation for able-bodied exservice men and it is unpatriotic of such persons to seek or accept monetary benefit and that members of the Caduceus Post are unalterably opposed to the payment of a cash bonus or so-called adjusted compensation. Caduceus Post is composed largely of physicians from the city of New York who served in the World War.

Bequests and Donations.—The following bequests and donations have recently been announced:

Pennsylvania Hospital, Philadelphia, a bequest of $229,000 to establish a memorial to her deceased husband, Annesley R. Dwett, by the will of Elizabeth J. Dwett.

Frankford, Philadelphia, Hospital, $250,000, by the will of Mrs. Isaac Schlicter.

Iowa State University, College of Homeopathy, a gift of $400,000, by Charles F. Ketering, Dayton, Ohio, for medical research in connection with the college.

Albany, N. Y., Medical College, grants of $5 000 a year for two years, from the General Electric Company, and $10,000 from the general education board, and a scolarship of $200 a year to be known as the Dr. Julia G. McNutt Scholarship to be awrded to a woman medical student of the college, preferably of New England ancestry.

Red Cross Campaign.—The fourth Red Cross Roll Call will be held from Armistice Day, November 11, to Thanksgiving Day, November 25, and hereafter every anniversary of the end of hostilities of the World War will be made an occasion for America to renew its Red Cross allegiance through memberships. The funds thus received will be utilized for the furtherance of the peace-time activities of the American Red Cross, which are to continue to work for American veterans of the World War, particularly the disabled; to serve our peace-time Army and Navy; to develop stouter national resistance to disease through health centers; to increase the country's nursing resources; to cooperate with official health agencies; to continue preparedness for disaster relief; to unite home service and community work, and to complete relief work among the war exhausted and disease ridden people of Europe.

LATIN AMERICA

Centennial of the Buenos Aires Academy of Medicine.—Great preparations are being planned to celebrate the completion of the century, April 17, 1922, by the Academia de Medicina of Buenos Aires.

Bubonic Plague.—On June 22, the port surgeon at Tampico, Mexico, after careful investigation of suspected cases of bubonic plague reported that the plague had not made its appearance at that port.——A case suspected of being bubonic plague has been discovered in Mexico City.——Two new cases of bubonic plague were reported in Vera Cruz, June 19.——Since the outbreak of bubonic plague in Vera Cruz on April 14, thirty-two cases have been reported with twenty-two deaths.

New Health Publication in Venezuela.—The Dirección de Sanidad Nacional of Venezuela has begun the publication of a quarterly devoted to public health legislation, vital statistics and reports of the various divisions of the department. In addition, it publishes original articles, usually in Spanish and English on research work carried out in Venezuela. The quarterly is well printed and each number contains an average of about 100 pages. Dr. L. G. Chacín Itriago is at present the director of public health of Venezuela.

FOREIGN

Castellani Honored.—The president of the French Republic has conferred the honor of Officer of the Legion of Honor on Dr. Aldo Castellani of the London School of Tropical Medicine for his method of combined typhoid-paratyphoid and typhoid-cholera vaccination.

Italian Pediatricians to Meet.—The ninth Congresso di Pediatria is to meet at Trieste the last week in September to discuss vaccine treatment in children's diseases and infant welfare. The first topic will be presented by Drs. Di Cristina of Palermo and Caronia of Naples. The secretary of the congress is Prof. E. Modigliani, via Palermo 28, Rome.

Antityphus Hospitals in Poland.—From the funds provided for relief in Poland by the British Red Cross and British government, a sum of 4,000,000 marks, or about $28,000, has been placed at the disposal of the Polish Red Cross by Mr. W. C. Boyden, the commissioner general of the League for Poland. This sum is to be devoted to organizing and equipping two hospitals for the antityphus campaign.

Maternity Hospital at Chalons.—Ground has been broken for the erection of a model maternity hospital at Chalons, France, to cost a million francs. The undertaking is financed by the Friends' Unit of the American Red Cross partly from the proceeds of sales of supplies to inhabitants of this region, and partly from direct gifts. Sixty beds in this hospital will be set aside for the free use of the people of Chalons and neighboring villages.

Australian Red Cross Policy.—The Australian Red Cross has issued a declaration of policy to its various branches for their future guidance, which provides for the extension of the voluntary aid detachment movement throughout Australia; the maintenance and extension of all Red Cross schemes for the benefit of disabled soldiers, sailors and military nurses; assistance in providing nurses for soldiers' settlements, and the general promotion of such objects as may tend to promote national health and mitigate suffering.

Congress of French-Speaking Alienists and Neurologists.—The circular has been received announcing the XXIV Congrès des médecins aliénistes et neurologistes de France et des pays de langue française, to be held at Strasbourg, Aug. 2-6, 1920. The subjects appointed for discussion are hallucinations from dreams; professional mental disease; and the lesions of the thyroid with exophthalmic goiter. Prof. E. Dupré of Paris will preside, and the secretary is Dr. R. Lalanne, medical director of the asylum at Mareville près Nancy.

Medical Conference at Geneva.—At the first formal meeting of the medical advisory board of the League of Red Cross Societies which convenes at Geneva, Switzerland, July 5, the following countries will be represented: United States, by Dr. Simon Flexner; Belgium, by Professor Brodet; Denmark, by Professor Madsen; France, by Professors Roux and Albert Calmette and Dr. Leon Bernard; Great Britain, by General Lyle Cummins, Walter Fletcher and George Newman; Italy, by Professor Bastianelli and Dr. Castellani; Japan, by Dr. Kinnostke Miura, and South America, by Dr. Chagas.

Proposed Tribute to Italian Hygienist.—Prof. Luigi Pagliani of the chair of hygiene in the University of Turin reaches the age limit this year, and it is also the fiftieth anniversary of his professional career. He was the pioneer in organizing the public health service in Italy, in directing legislation and in controlling and preventing epidemics. A committee consisting of the incumbents of all the chairs of hygiene in the country has been formed to collect funds to found an annual prize, the Pagliani prize. The treasurer of the fund is Prof. Paolo Desderi, via Bidone 37, Turin.

Monument to Belgian Biologist.—Our Belgian exchanges describe the recent festivities in connection with unveiling the monument in honor of the late Professor van Beneden, at the entrance of the institute at Liége, the scene of his labors. Van Beneden had to his credit a long list of works on zoology, histology and general biology, and he was one of the two founders of the *Archives de biologie* in 1880. In the course of the speeches it was recalled that van Beneden never ventured to make positive statements in scientific matters, but always qualified his announcements by the words "It is eminently probable that . . ."

Bulletin of the Belgian Department of Labor and Food Supply.—The first number of a journal has been received, to be issued quarterly by the minister of industry, labor and food supply of Belgium. The inspector-general of the medical service of the department, Dr. D. Glibert, contributes an article on the influence of industrial noises; Dr. G. Galand on traumatism of the ear from explosions during labor, and others write on the painting of ships, syphilis in glass blowers, the sanitary supervision of young industrial workers, and on first aid. The bulletin is published at the Imprimérie médicale, 34 rue Botanique, Brussels, the price of each number is 1 franc.

Child Welfare Work.—Coordination of all phases of child welfare work is being successfully carried out by the new Children's Bureau of Lower Austria. The work for schoolchildren includes physical examinations and school medical inspection, physical training and vocational guidance. During 1919, the bureau established thirteen homes, accommodating more than 3,000 children who were delicate or were recovering from an illness. In addition to its work of promoting all measures pertaining to the welfare of children, the Children's Bureau of Lower Austria is charged with the enforcement of the law on the supervision of placed-out children, and the child labor law, both passed in 1919.

New Journals on Heart and Blood.—Italy has founded the *Haematologica, Archivio italiano di ematologia e sierologia,* to be a bulky volume of 500 pages with handsome colored plates. The parts are issued irregularly. The founders are Prof. A. Ferrata, whose address is Cesare Battisti 53, Naples, and Prof. C. Moreschi of Parma. The subscription to the volume is 55 francs. A similar special journal has also been founded in Spain by a group of university professors, with Profs. G. Pittaluga and L. Calandre of Madrid in charge, and F. Jiménez Asúa and J. Planelles as secretarios de la redacción. It is issued bimonthly at an annual subscription of 24 pesetas. The address of this *Archivos de cardiología y hematología* is Doña Blanca de Navarra 4, Madrid. Two numbers have already been issued of each of these new journals.

Celebration of Cortezo's Fiftieth Professional Anniversary.—The director of the *Siglo Médico* of Madrid, Dr. Carlos Maria Cortezo, is a life senator of Spain and has served in the cabinet at different times. The fiftieth anniversary of his entering on his professional career was celebrated May 30 with much ceremony, in the hall of the Academia de Medicina. The minister of state conferred on him in the name of the king the collar of Carlos III, and the municipality notified him that the street on which he had been born had been renamed for him. The first stone was also placed for the foundation of a monument to him in the Parque de Madrid for which his friends are collecting subscriptions. An extra souvenir number of the *Siglo Médico* was issued on the occasion with more than sixty articles contributed. This number is sold separately for 2 pesetas, the profits to be applied on the monument.

Gift to London Hospital.—The Rockefeller Foundation reports that approximately $6,000,000 has been appropriated for the University College Hospital Medical School of London. This particular institution was selected because of the physical unity of the hospital and medical school buildings and the close relationship existing between the University College and its medical school. The medical school has also recently organized what are referred to as full-time clinical units which combine research with the care of patients and with the teaching of students. The foundation expresses its interest in the control and prevention of disease throughout the world and is aiding this medical school in London since it is cooperating with governments in many parts of the British Empire. The building program, for which about $3,000,000 has been appropriated, calls for the enlargement of the hospital to a capacity of 500 beds and for the erection of a building for an institute of anatomy. There will also be a new home for nurses, new quarters for resident physicians and a biochemical laboratory. The rest of the appropriation will be used to meet the annual expenditures of the medical school.

Deaths in the Profession in Other Countries

Dr. **T. A. Tage-Hansen,** the leading surgeon of central Denmark, where he maintained the Aarhus hospital in the front rank of such institutions, aged 71.——Dr. **J. García** of Tucumán, Argentina, subdirector of the Departamento Nacional de Higiene in which he had served for twenty-two years, member of the state legislature, died at Buenos Aires, May 18.——Dr. **Carlos Spada, Jr.,** of Buenos Aires, author of a number of works reporting the results of biologic research, editor of the *Revista Sud-Americana de endocrinologia* of Buenos Aires, of which he was one of the founders, aged 28. ——Dr. **T. Alves** of Campinas, Brazil, aged 63.

Government Services

Hospital Discontinued

The Surgeon-General of the Army has arranged to discontinue U. S. General Hospital No. 3, at Carlisle, Pa., as a general hospital on June 30. He has been authorized to utilize the Carlisle barracks military reservation and the acreage adjoining the school as a "Field Service School, Medical Department, U. S. Army."

Medical Officers Honored

Rear Admiral Robert M. Kennedy, M. C., U. S. Navy, was the commencement orator at the graduating exercises of the Detroit Medical College, June 18, and chose as his subject "The Necessity for Post-Graduate Study."——Col. Joseph M. Heller, M. C., U. S. Army, was elected surgeon general of the Military Order of Foreign Wars of the United States at its nineteenth triennial convention held in New York, May 20.

Distinguished Service Cross Awarded

The distinguished service cross has been awarded to Major Paul F. Brown, Minneapolis, Medical Detachment, 361st Infantry, "For extraordinary heroism in action near Eclisfontaine, France, on the nights of Sept. 26 and 27, 1918. Major Brown, then captain, voluntarily advanced in front of our lines for the purpose of rescuing the wounded left in advance of the new lines by the retirement of a unit of the regiment. Due to his efforts fourteen wounded Americans were brought safely back to our lines."

Health Conditions of the Army

Admission and noneffective rates for the week ending June 18 show a slight increase over the preceding week, but are still unusually low. There were twelve new cases of malaria reported from the Southern Department during the week; eight new cases reported from Camp Dodge, four from Camp Pike and four from the Western Department. Two admissions for pneumonia were reported from Camp Taylor; two from the Eastern Department and one each from Camp Gordon, Camp Upton, Fort McDowell, and the Southern Department. Two cases of diphtheria were reported from Camp Taylor. The death rate for disease is 2.2 per thousand as compared with 3.1 last week. There were seven deaths from disease, one of which was due to tuberculosis and two to pneumonia. Health conditions among the American forces in Germany continue excellent. The following cases of communicable diseases were reported: influenza, five; pneumonia, four; scarlet fever, two; mumps, two; impetigo, three; chickenpox, one, and scabies, fifteen.

Public Health Service Investigates Plague

Surgeon-General Hugh Cumming of the Public Health Service is in Pensacola, Fla., investigating the bubonic plague cases which have recently been found in that city. The prevalence of the plague at Vera Cruz, Tampico, and New Orleans, while not a subject for alarm, is receiving practical attention at the hands of the Public Health Service. At New Orleans sixteen cases have appeared since 1909—the last one June 15. At Pensacola one suspicious and three positive cases have appeared; at Galveston there are two positive cases. The Public Health Service has started a campaign in the southern seacoast cities against the rat menace with a view of eliminating any further spread of the plague by rodents. Senior Surgeon G. M. Guyteras at Key West, Fla., has begun a rat survey in that vicinity, and at Pensacola the Public Health Service has a force of trappers and over 1,000 traps at work.

At the same time the Public Health Service is reviewing its activities to eliminate rodents and has sent letters to Public Health officers of all states urging that local officials, boards of trade and municipal organizations engage in continuous efforts to exterminate rats for sanitary reasons.

Applicants for Positions in Medical Corps

Considerable disappointment exists in the War Department because of the fact that only 1,300 applications have been received for the examination for the appointment of officers in the Medical Department of the Army. This examination is being conducted by the War Department under the Army Reorganization Act of Congress, passed at the recent session, and is intended to fill approximately 1,000 vacancies in the commissioned medical personnel of the Army. This act of congress permits medical officers who served in the war to be appointed in the Regular Army and a special examination scheduled to be held July 7, 1920, is open only to physicians who were in the war.

On account of the fact that only a comparatively small number of applications have been received, it is the opinion of War Department officials that an additional call for applicants will be necessary to fill the vacancies that will be caused by the Army Reorganization Act. No official information is available at the present time as to what method will be employed to secure additional medical officers. It is quite certain, however, that not more than 50 per cent. of the 1,300 applicants will qualify physically and professionally for army service.

Foreign Letters

PARIS

(From Our Regular Correspondent)

June 10, 1920.

Professor Calmette's Work on Tuberculosis

Anent the inauguration of the Pasteur Institute of Greece at Athens, THE JOURNAL (May 15, 1920, p. 1411) mentioned the important work of Professor Calmette and his appointment as assistant director of the Pasteur Institute of Paris. At a recent session of the Academy of Medicine, Dr. Calmette presented a copy of his book "L'infection bacillaire et la tuberculose chez l'homme et chez les animaux," recently published. He found time to write this work during his isolation in Lille under German occupation, when he was possessed of a desire to contribute with all his might toward offsetting, by a better organized campaign against tuberculosis, the frightful loss of young lives which the World War exacted from France and the allied nations.

Calmette characterized his book in the following words: "I have set forth as clearly as I could my own researches on the pathogenesis of tuberculosis infection, on tuberculin reactions, antibodies and immunity against tuberculosis. But I have endeavored, above all, to set off as conspicuously as is merited the achievements of French, British and American investigators, very often ignored by German science. Those who will read my work carefully will find, I hope, that as concerns the latter, I have shown the most rigorous impartiality." To the applause of members of the academy, the president congratulated Dr. Calmette on his successful completion of so important a work despite the severe physical and mental strain endured during the occupation of Lille.

Civil Responsibility and Surgery

Two recent decisions of the court of appeals are particularly interesting, because they show different aspects under which civil responsibility can be attributed to physicians or dentists. The law of Nov. 30, 1892, governing the practice of medicine, is silent on the subject of the responsibility of physicians, surgeons and dentists. Is their civil responsibility, therefore, based on the general principles of law, each being held responsible for the damage inflicted, not only through his

acts, but also through negligence and imprudence? In other words, whenever a mistake has occurred, responsibility is held to exist. Now, as regards medicine, the courts have been very careful, for fear of trammeling initiative and paralyzing the progress of medical science. For this reason it is admitted that if the interest of a patient requires it, the physician may, without incurring responsibility, apply a dangerous form of treatment. He may employ an untried method, if he sees that there is no chance of success with the reputed and usual treatment, but he must not employ a method or perform an operation the dangers of which are not justified by the gravity of the illness. This was the basis of a decision by the court in a case of a young girl who was treated by roentgen rays for a slight growth of hair on the chin. The court ruled that the physician committed a fault by the employment of a treatment the dangers of which were out of proportion with the end to be attained, since he was not treating a disease, but only attempting to remove or hide a simple physical imperfection. The physician should have refused to cooperate; by not doing so he incurred responsibility and as a result he was held liable for damages. In another case there was a surgical mistake. A dentist in attempting to remove a tooth root injured the maxilla. The dentist alleged, it is true, that the subsequent necrosis was due to the diseased condition of the patient. The medical expert did not agree with this but held that there was evidence of a serious mistake on the part of the dentist.

Industrial Strikes and the Public Health

Staff physicians and surgeons of the hospitals of Bordeaux have announced in the daily papers that because of a strike, electric light and current have been wanting for most of their important services and it was therefore impossible to examine, operate on and nurse a large number of patients. On the other hand, the pressure of gas has been too low for sterilizing water, instruments and dressings. Under these conditions, many physicians and surgeons, despite their good intentions, are unable to continue their hospital service.

LONDON

(From Our Regular Correspondent)

June 5, 1920.

Statistics of the Medical Profession

In his address to the General Council of Medical Education, the president, Sir Donald MacAlister, said that on the home list in the new Medical Register only 872 physicians were registered in 1919; but no fewer than 450 were registered in the colonial and foreign lists. The result was that the total number (1,322) of new names was higher than in any years since 1915. The proportion of women physicians was increasing and was likely to increase rapidly during the next year or two. Their services were in less demand than during the war, and newly qualified women were finding difficulty in obtaining suitable opportunities for professional work. The profession of medicine was, in regard to women, affected like other occupations by the return to civil life of large numbers of ex-service men as students and physicians. To those men the country owed special consideration, and they ought to receive it. But inevitably they tended to displace a proportion of the women who so capably carried on the work of the profession during their absence abroad. The Medical Students' Register indicated that the depletion of their professional ranks by the wastage of the war would in a few years be much more than made good by the addition of newly qualified men. No fewer than 3,420 medical students (men and women) were registered in 1919, as compared with 1,600 in 1914. The number of registrations, indeed, exceeded by more than 1,000 the highest previously recorded—namely, in 1891—when for special reasons the number rose to 2,405. This sudden increase could not at once be met by a corresponding expansion of their educational resources, and the strain thrown on the medical schools of the country was therefore for the time excessive. In the departments of anatomy and operative surgery, of midwifery, and of clinical medicine, the existing provision was no longer fully adequate to the new demands. The Dentists' Registry was stationary, but there was an assured prospect of an advance by the end of 1922, for the number of dental students entered in 1919 had risen to 612, as compared with 204 in 1914.

A Tax on Physicians

South Africa stands alone in the British dominions in taxing the practice of medicine. Physicians have to pay a tax of $50 a year, and dentists $75 for a license to practice in the Cape Province, but in the Orange Free state physicians pay $75. Other professions—lawyers, accountants, auditors, architects—are also taxed. In the Cape provincial council a struggle was made in favor of young impecunious lawyers being exempt; but nothing was said for physicians. One rural member rejoiced at physicians and lawyers being taxed, regarding both as parasites from which the state would be well rid.

Censorship of Advertisements in the Medical Press

At a meeting of the Worcester County Council, a curious situation was disclosed. In connection with a medical tuberculosis and school inspection scheme for the county, advertisements for ten physicians at salaries of $2,250 had been published. Two were obtained, and it was proposed to repeat the advertisements; but when they were sent to the *Lancet* and the *British Medical Journal,* replies were received stating that advertisements could not be received which offered less than $2,500 for such posts. A letter was also received from the ministry of health stating that tuberculosis officers should have special qualifications and experience, and doubting whether the salaries offered were sufficient. The chairman of the council said that he objected to this sort of pressure being brought to bear on local authorities. They had already got two gentlemen for $2,250 very suitable for the posts. He felt averse to allowing the medical press to dictate what salaries they should give. By a majority of votes it was decided to advertise for the officer in the daily press.

Protection for the Medical Officers of Venereal Clinics

A deputation from the London and Counties Medical Protection Association waited on Dr. Addison, minister of health, to urge the necessity for legislation to protect the medical officers of venereal clinics from being compelled in the witness box to violate the established principles of professional secrecy and to give information of the nature of their patients' ailments and of anything else that came to their knowledge in their professional capacity. These medical officers are compelled under penalty of imprisonment to reveal what their patients communicate to them believing it to be absolutely confidential. It was urged that the effect would be disastrous to the working of the clinics and militate against the efforts being made to cure and eliminate venereal disease. Dr. Addison expressed agreement with the views of the deputation, and promised to do what he could to promote the legislation desired. He felt sure that public opinion would support the maintenance of professional secrecy in connection with venereal clinics. As has been pointed out before in The Journal, the law does not respect professional secrets in this country, and objections as strong as were urged by the deputation can be made against the legal position in general.

A Bill for the Blind

In the House of Commons, Dr. Addison moved the second reading of a bill to increase preventive services against blindness, against ophthalmia neonatorum in particular, to provide facilities for blind persons learning some trade, and to enable local authorities to provide and maintain or to contribute toward the provision and maintenance of workshops, hostels, homes and other places for the reception of the blind. The bill also provides that persons so blind as to be unable to perform any work, and who are 50 years of age, shall be entitled to receive the pension to which in ordinary circumstances they would be entitled only on attaining the age of 70.

Report of the National Birth Rate Commission

The National Birth Rate Commission was instituted in 1913 by the National Council of Public Morals. It issued its first report in 1916 (which was noticed in THE JOURNAL), discussing the causes and effects of the declining birth rate. It has now issued a second report. In a preliminary chapter the commission discusses the fall in the birth rate during the war years, the reduction amounting by 1918 to 26 per cent. In the period 1915-1918 the loss of births attributable to the war was 543,000. Passing to what they term one of the most important causes of the decline in the birth rate, namely, voluntary restriction, the commission states that at present the decline of the birth rate is greater where the quality of the children might be expected to be better The child bearing is at present relatively the greatest among families and in homes in which the economic and social conditions do not allow of the healthy and proper upbringing of so many children. The reduction is taking place in the average size of the families, in always greater degree in those classes in which the condition for the welfare and education of the children is the best. This disproportion in relative birth rates is an ominous sign for the future of the nation and the empire. While there is wisdom in the purpose not to incur responsibilities which cannot be met, it may easily pass into a timidity which shrinks from what might prove a sacrifice good for the character and bringing joy of heart. Comfort and ease, not to mention luxury, are not necessarily the best conditions for the personal development of either parents or children. The refusal to accept the burden of parenthood on unworthy grounds is not only often an evidence of selfishness, but if it becomes general, will have as its consequence a slacking of the moral fibers of the nation. The responsibility of the country to parents in the discharge of their obligations must equally be asserted. If the community desires an adequate number of children of good quality, it must be prepared to see that the burdens which weigh too heavily on many parents are relieved. Among the reforms that have been proposed are proper housing, a living wage, training for and care of motherhood and infancy, facilities for education, and relief from taxation proportionate to the responsibilities involved. The need for a properly regulated redistribution of the population with special regard to the due proportion of the sexes in the empire is considered one of the most important methods of relieving the burden of parenthood in large families. Various schemes for the endowment of motherhood were considered, but having regard to the economic and other difficulties of the question, the commission does not recommend any of them. It would, however, regard with sympathy any plan by which a reasonable provision, similar to that made for the widows of sailors and soldiers, would be made for widows of men in civil employment who are left with young children, and even for the wives in like circumstances whose husbands are incapacitated. With regard to the problem of illegitimacy, the commission finds that, although the decline in legitimate births has alarmed the country, and the illegitimate child has come to be regarded as helping to make up for the deficiency of births in wedlock, there is no evidence that public opinion has, as a whole, undergone any fundamental change of attitude toward the unmarried mother, nor are there any signs of such a change. Statistics for 1918 show that illegitimate births have increased by 11.6 per cent., while legitimate births have decreased by 1.6 per cent. As a result of these changes (which are due to the war) the proportion of illegitimate to total births, which fell to a minimum or 3.95 per cent. in 1901-1905, has now risen to 6.26 per cent., the highest ratio reached during the last fifty years. There is urgent need for (*a*) more accommodation for the unmarried mother and her child, and (*b*) more efficient guardianship of the illegitimate child. It is recommended that carefully supervised hostels should be set up, in which mothers can care for their children and at the same time learn a trade, or become efficient in domestic work. The emotions of growing boys and girls should be trained and guided by parents and competent teachers, in order to avoid and counteract the general ignorance, and that half knowledge which is even more dangerous. Great issues for the nation and the empire are involved in the steady decline of the birth rate. In the event of a war similar to that which we have just experienced, what would happen to us with a greatly reduced birth rate? As it is, the position is most disquieting, for the indications are that in the homeland the population may not continue to increase, while in the dominions oversea, without the aid of immigration, it will not, at the present rate, increase greatly, at least from additions of the British stock. All these enormous lands, with their countless native races, we hold with under 60,000,000 of white people, of whom 45,000,000 dwell in these little islands. But, unless we add to our numbers, for how long shall we be able to fulfil our obligations in the face of recent developments of race ambitions? Extensive settlements on the land would mitigate the evil, but modern men and women will not settle in numbers on the land. As our own experience and that of Australia show, they prefer the city and the cinema. The commission holds that intra-imperial migration would tend to remove many of the dangers and injuries to the race which depend on extreme urbanization, and the reliance on imported food and in the interests of racial morals they urge the imperial government, in conjunction with the dominions, to direct itself to the problem. Intra-imperial migration, in its view, should be regarded as a matter of imperial health and safety, and should be controlled accordingly.

Marriages

CHARLES TEACKLE CARTER BUCKNER, Capt., M. C., U. S. Army, Fort Sill, Okla., to Miss Mildred Alston Lee, at Montgomery, Ala., June 17.

HERMAN GAILEY, Baltimore, to Miss Mary Elizabeth McConkey, at McClellan Heights, York, Pa., June 17.

JOHN W. HANNER, Col., M. C., U. S. Army, to Miss Gertrude Kersey Jones, at San Francisco, April 22.

ARTHUR TREW BLACHLY, Portland, Ore., to Miss Mary Elizabeth Cole of Forest Grave, Ore., May 29.

HERBERT WARREN CANFIELD, Baxter, Iowa, to Mrs. Matie L. Hager, at Des Moines, Iowa, June 16.

JACOB FRANK HENKEN, Racine, Wis., to Miss Ethel Christine Roose of Sycamore, Ill., June 12.

GEORGE ANASTASIOU PETRULIAS to Miss Edith J. Blum, both of Bethlehem, Pa., June 4.

TRIMBLE CLARENCE JOHNSON to Miss Alice Anderson, both of Atlanta, Ga., June 22.

HOWARD SCULL BRANIN to Miss Mabel Sue Hart, both of Millville, N. J., June 16.

Deaths

Albert Henry Gieschner, Tacoma, Wash.; University of Maryland, Baltimore, 1901; aged 44; first assistant surgeon to the Northern Pacific Railway Hospital, Tacoma; who served before the United States entered the World War in German field hospitals and also in Bulgaria and Constantinople; died, June 9, in the Northern Pacific Railway Hospital, Tacoma, from complications following an operation for appendicitis several weeks before.

Karl August Gunnar Sundstrom, Chattanooga, Tenn.; Chattanooga Medical College, 1908; aged 35; lieutenant-colonel (emergency), M. C., U. S. Army; a member of the Tennessee State Medical Association; who was undergoing reconstruction at the United States General Hospital, Oteen, N. C.; died in that institution, June 1.

Harold James Morgan ⊕ Toledo, Ohio; College of Physicians in the City of New York, 1895; aged 47; professor of pediatrics in Toledo Medical College; for seven years director of the children's department of the Maternity Hospital; captain, M. C., U. S. Army, and discharged Dec. 24, 1919; died in Cleveland, June 7.

William Thomas Stephenson, Kirksville, Mo.; St. Louis College of Physicians and Surgeons, 1892; aged 62; postmaster at Browning, Mo., under the Cleveland administration, and later a druggist of Kirksville; for two years owner and publisher of the Kirksville *Democrat;* died, May 27, from cerebral hemorrhage.

William C. Crutcher, Mt. Vernon, Texas; University of Louisville, Ky., 1883; aged 59; a member of the State Medical Association of Texas; once president of the Northeast Texas Medical Association; local surgeon of the Cotton Belt system; founder of the Crutcher Sanitarium; died, June 2, from pneumonia.

Joseph A. Jennings ⊕ Pittston, Pa.; Jefferson Medical College, 1896; aged 46; also a graduate in pharmacy; a member of the staff of the Pittston Hospital; for three years physician for the Pittston Poor Board, and for five years a member and secretary of the city school board; died at White Haven, Pa., June 5.

Admiral L. R. Avant, Savannah, Ga.; Atlanta (Ga.) Medical College, 1893; aged 63; a member of the Medical Association of Georgia; a member of the staff of Parkview Sanitarium; city physician of Savannah; also an ordained minister; and a pharmacist; died, June 7, from uremia.

Charles Jordan, Wakefield, Mass.; Dartmouth Medical School, Hanover, N. H. 1859; aged 91; a member of the Massachusetts Medical Society, and for sixty-one years a member and once president of the Middlesex East District Medical Society; died, June 6, from senile debility.

Thomas Wilson Lambert, London, England; University of Cambridge, England, 1889; L.R.C.P. (Lond.), and M.R.C.S. (Eng.), 1890; for many years a practitioner of Kamloops, B. C., and medical officer in charge of the western section of the Canadian Pacific system; died, April 10.

Robert L. Ashbrook ⊕ Washington, Pa.; College of Physicians and Surgeons, Baltimore, 1886; aged 56; died, June 6, from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent while despondent on account of ill health.

George Gile Kerns, Leola, S. D.; Sioux City (Iowa) College of Medicine, 1906; aged 38; a member of the South Dakota State Medical Association; died in Aberdeen, April 19, from the effects of the accidental swallowing of a pin, six months before.

John Hamilton Ellis, New Orleans; Tulane University of Louisiana, New Orleans, 1888; aged 54; a member of the Louisiana State Medical Association, and state registrar of vital statistics in the state board of health; died, June 2, from uremia.

Daniel Edwin Stone, Jr. ⊕ Emmitsburg, Md.; University of Maryland, Baltimore, 1900; aged 44; lieutenant, M. C., U. S. Army, and on duty at Camp Green, N. C.; died in the Frederick City (Md.) Hospital, June 13, after an operation for appendicitis.

James P. Lynch, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1883; aged 63; a member of the Illinois State Medical Society; died, June 26, from septicemia following an infected wound of the finger.

⊕ Indicates "Fellow" of the American Medical Association.

Frederick Adryan Hoyer, Paducah, Ky.; Hospital College of Medicine, Louisville, Ky., 1902; aged 47; a member of the Kentucky State Medical Association; captain, M. C., U. S. Army, and discharged November, 1918; died, June 3, from meningitis.

Thomas E. Lucas, Chesterfield, S. C.; Medical College of the State of South Carolina, Charleston, 1859; aged 84; major of the Eighth South Carolina Infantry, C. S. Army, during the Civil War; died, June 12, from heart disease.

William J. Conner, Labette, Kan.; Cincinnati College of Physicians and Surgeons, 1862; aged 84; once state senator; for fifty-three years a practitioner of Kansas; died at the home of his daughter in Parsons, Kan., June 1.

Joseph G. Crawford, Hahnemann Medical College of the Pacific, San Francisco, 1892; aged 80; a director of the Sawtelle Chamber of Commerce; surgeon of U. S. Volunteers during the Civil War; died, June 4.

Harry LaRue, Dexter, Mo.; University of Louisville, Ky., 1897; aged 52; a member of the Missouri State Medical Association; local surgeon of the Iron Mountain system; died, May 27, from cerebral hemorrhage.

Henry Weil, New York; Medico-Chirurgical College of Philadelphia, 1897; aged 45; a member of the Medical Society of the State of New York; died at his summer home at Harmon-on-the-Hudson, May 30.

Maria Louise De Pew Crothers, Bloomington, Ill.; Woman's Medical College of Pennsylvania, Philadelphia, 1883; aged 86; for four years in charge of the Girls' Industrial Home of Bloomington; died, May 31.

Edward Parmer Partlow, Constantine, Mich.; Detroit College of Medicine and Surgery, 1894; aged 59; a member of the Michigan State Medical Society; health officer of Constantine; died, about June 4.

Charles Carpenter Valle, San Diego, Calif.; Washington University, St. Louis, 1879; aged 70; at one time an officer of the United States Public Health Service at Tia Juana, Mexico; died, June 5.

Aloysius Peter Renneker, Cincinnati; Medical College of Ohio, Cincinnati, 1879; aged 65; a member of the Ohio State Medical Association; died at the home of his son in Cincinnati, June 4.

John Harris Werner ⊕ Chicago; Chicago College of Medicine and Surgery, 1911; aged 46; died, June 21, from septicemia following a wound received while performing an operation.

Charles Pitt Holmes, Fort Gaines, Ga.; Atlanta (Ga.) Medical College, 1891; aged 59; a member of the Medical Association of Georgia; died in his office, May 31, from acute gastritis.

David D. Smith, Philadelphia; Jefferson Medical College, 1878; aged 80; formerly dean of the faculty of the Philadelphia Dental College; a veteran of the Civil War; died, June 4.

Rafael Garcia de Quevedo, San Juan, Porto Rico; University of Maryland, Baltimore, 1920; aged 24; was accidentally drowned in the Severn River, near Severn Side, Md., June 7.

Morris Franklin Coglan, Hamilton, Ont.; Queens University, Kingston, Ont., 1916; aged 40; died in the City Hospital, Hamilton, February 20, from pneumonia following influenza.

James Conquest Cross Barker, New Milford, Conn.; Yale Medical School, New Haven, Conn., 1879; aged 68; died, June 16, from a ruptured aneurysm of the abdominal aorta.

John G. Thomas, Monticello, Iowa; University of Wurtzburg, Germany, 1878; aged 69; a member of the Iowa State Medical Society; died, June 11, from cerebral hemorrhage.

William M. Mason, Hazel, Ky.; University of Louisville, Ky., 1875; aged 78; at one time president of the West Tennessee Medical Society; died, June 7, from heart disease.

Joseph Patrick Guinan ⊕ Lima, N. Y.; Georgetown University, Washington, D. C., 1908; aged 38; health physician and registrar of vital statistics of Lima; died, May 31.

George Boardman Cornell, Brooklyn; University of the City of New York, 1864; New York Homeopathic Medical College, New York City, 1871; aged 87; died, June 17.

Christian Schneider, Cross Village, Mich. (license, Michigan, 1902); aged 74; a member of the Michigan State Medical Society; a practitioner since 1865; died, March 29.

Robert Jenkins Henry, Glyndon, Md.; University of Maryland, Baltimore, 1866; aged 74; died, June 7, from paralysis.

Abraham J. Keightley, Louisville; University of Lousiville, Ky., 1867; aged 73; died in Louisville City Hospital, June 7.

George Campbell, Detroit; Detroit College of Medicine and Surgery, 1887; aged 60; a member of the Michigan State Medical Society; died in Pasadena, Calif., April 16.

Charles MacLachlan, Elwell, Mich.; Eclectic Medical College of Maine, Lewiston, 1882; aged 74; a member of the Michigan State Medical Society; died, March 17.

William Franklin Harper ⊕ Mt. Vernon, N. Y.; Cincinnati College of Medicine and Surgery, 1879; aged 65; was killed, June 16, in a railway accident, near Rene, Colo.

William Edwin Baker, Duncanville, Texas; University of Tennessee, Nashville, 1882; aged 62; a member of the State Medical Association of Texas; died, May 29.

Rufus Edwin Donnell, Gardiner, Me.; Dartmouth Medical School, Hanover, N. H., 1889; aged 61; a member of the Maine Medical Association; died, May 23.

Louis Francis Smiley, Philadelphia; Hahnemann Medical College, Philadelphia, 1875; aged 69; died at the home of his brother in Chambersburg, Pa., June 12.

Herbert Tetlow, Westerly, R. I.; Western Reserve University, Cleveland, 1899; aged 49; was found dead in his apartments from a gunshot wound, June 11.

Frederick R. Greene, Albany, N. Y.; Albany (N. Y.) Medical College, 1884; a member of the Medical Society of the State of New York; died, June 6.

Christopher Eugene Lett, Emporia, Kan.; Washburn College Medical Department, Topeka, Kan., 1909; aged 54; died, April 7, from cerebral hemorrhage.

William Henry Falls ⊕ Cleveland; Miami Medical College, Cincinnati, 1873; aged 70; for thirty-five years a practitioner of Cincinnati; died, June 7.

George Washington Fisher, Laporte City, Iowa; Chicago Homeopathic Medical College, 1877; aged 65; died, June 1, from cerebral hemorrhage.

John W. Potts, Lacon, Ill.; Eclectic Medical Institute, Cincinnati, 1871; aged 75; a veteran of the Civil War; died, June 13, from myocarditis.

Frank M. Owens, Remmel, Ark. (license, nongraduate, Arkansas, 1903); aged 45; died in Amagon, Ark., March 25, from cerebral hemorrhage.

John Moffet, Philadelphia; Jefferson Medical College, 1892; aged 54; also a graduate in pharmacy; died suddenly at Audubon, N. J., May 30.

Guy Lawton Bush, Atlanta, Ga.; Atlanta (Ga.) College of Physicians and Surgeons, 1908; aged 36; died in a sanatorium in Atlanta, June 7.

Edward Lanning Sheldon, Tacoma, Wash.; Medical College of Eclectic Medicine and Surgery, Chicago, 1873; aged 74; died, May 31.

Leslie J. Foley, Montreal, Que.; University of Bishop College, Montreal, 1880; M.R.C.S., L.R.C.P. (Eng.), 1881; aged 60; died, April 9.

Treby William Lyon ⊕ New Haven, Conn.; Yale University, New Haven, 1903; aged 39; a specialist in proctology; died, June 14.

Horace Griswold Pease, Tacoma, Wash.; a practitioner since 1855; aged 95; died, April 27, from chronic interstitial nephritis.

William Watson Wetherla ⊕ Chicago; Chicago Medical Society, 1885; aged 71; died, June 2, from cerebral hemorrhage.

Charles E. Barmm, Indianapolis; Eclectic College of Physicians and Surgeons, Indianapolis, 1893; aged 59; died, June 11.

William J. McNair, Quitman, Miss.; University of Alabama, Mobile, 1885; aged 73; died in a hospital in Quitman, June 7.

Oscar H. Fischer, St. Louis; Washington University, St. Louis, 1899; aged 44; died, June 14, from cerebral hemorrhage.

Charles Stuart Wall, Wakeeney, Kan. (license, Kansas, 1901); aged 68; died, April 13, from valvular heart disease.

Julia Virginia Downes, Washington, D. C.; Southern Homeopathic Medical College, 1895; died, about June 9.

William Willard Armstrong, New York City; Bellevue Hospital Medical College, 1897; aged 53; died, June 9.

W. R. O. Veal, Martel, Fla.; a practitioner for fifty years; aged 80; died, March 10, from acute cystitis.

Xavier Bichat Haynie, Gallatin, Tenn.; University of Nashville, Tenn., 1873; aged 72; died, June 11.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE LOWENTHAL POSTGRADUATE COURSE

Which Tells How to Make Diagnoses Accurately, Scientifically Check the Christian Scientists and Increase Your Earning Power

During the past year THE JOURNAL has received letters from physicians in various cities asking for information regarding the "Post Graduate Course of Lectures and Clinics on Nervous and Mental Diseases" which was going to be given in their respective cities by Dr. Albert A. Lowenthal of Chicago. The following inquiries are typical:

"To the Editor.—Please note the enclosed letter from the American Organotherapy Company which appears to be conducted by Lowenthal. The proposition of conducting these clinics impresses me as a piece of colossal gall which is amazing even in these days. Do you know anything about this matter?"

"To the Editor.—Who the dickens is Albert A. Lowenthal, M.D.? Note the circular enclosed. I have blue circled the remarks he evidently thinks will attract."

In May, 1919, Chicago physicians received a form-letter signed, and on the stationery of Albert A. Lowenthal notifying them that Dr. Lowenthal was about to "give a Post Graduate Course of Lectures and Clinics on nervous and mental diseases" in the "Banquet Hall, Morrison Hotel." Enclosed was a "Programme and Reservation Card" and a self addressed envelope for physicians to notify Dr. Lowenthal that they would be present. In addition to showing physicians "how to make diagnoses accurately," Dr. Lowenthal offered to "explain fully how to scientifically check the Christian Scientists and increase your earning power!" And all for nothing!

At later dates similar letters were received by physicians in other cities, on the stationery of the "American Organotherapy Company, Room 902, 31 North State St., Chicago." Dr. Lowenthal, whose Chicago office is Room 901, 31 North State St., is, apparently, president, treasurer and practical owner of this company. Enclosed with each of these letters—which offered the same inducements, free—was an envelope addressed to Albert A. Lowenthal in care of the hotel at which Dr. Lowenthal would stay while in that city. There was also a "Programme and Reservation Card" as in the case of the letters sent to Chicago physicians.

According to our records, Dr. Albert A. Lowenthal was born in Chicago in 1874 and was graduated by the College of Physicians and Surgeons, Chicago, in 1895, receiving his license the same year.

In a leaflet issued some time ago by Albert A. Lowenthal, M.D., "for the sole purpose of enlightening Prospective Patients in regard to the therapeutic value of the Organo Therapy Treatment for Nervous Diseases," we learn that Dr. Lowenthal is, or was:

"Professor Nervous and Mental Diseases, Chicago Hospital College of Medicine."

"Formerly Professor Nervous and Mental Diseases, Dearborn Medical College, Jenner Medical College."

"Adjunct Professor on Neurology and Psychiatry, University of Illinois College of Medicine."

"Formerly Physician Illinois Eastern Hospital for the Insane."

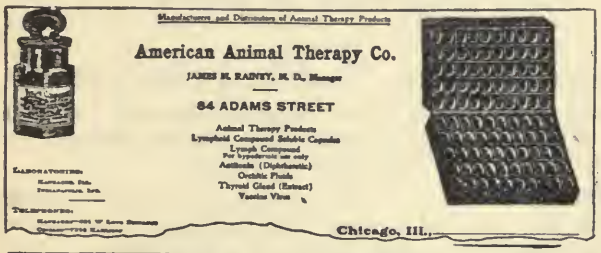
"Formerly Supt., Riverview Hospital for Nervous Diseases, Kankakee, Ill."

"Formerly on Advisory and Associated Attending Staff Cook County Hospital."

In Polk's Medical Directory for 1904 Dr. Albert A. Lowenthal's name appeared, under Chicago, at 910-912 Chicago Opera House Building. He was described as "Superintendent of Lowenthal's Sanitarium." In the same issue of the directory there was a display advertisement of the Lowenthal Sanitarium, which while located at Kankakee, Ill., had its "main offices" at 912 Chicago Opera House Bldg., Chicago.

The advertisement was headed "GOAT LYMPH TREATMENT," and read in part:

"Goat Lymph has revolutionized medicine, and has been adopted by the scientific medical world as the only therapeutical agent that will absolutely bring about positive results in chronic conditions, such as Neurasthenia, Nervous Collapse, Paralysis, Locomotor Ataxia, Brain Fag, Oncoming Insanity, Chronic Stomach Disorders, in fact such diseases needing cell stimulation."


Manufacturers and Distributors of Animal Therapy Products

American Animal Therapy Co.

JAMES M. RAINEY, M. D., Manager

84 ADAMS STREET

Animal Therapy Products
Lymphoid Compound Soluble Capsules
Lymph Compound
For hypodermic use only
Antitoxin (Diphtheretic)
Orchitic Fluids
Thyroid Gland (Extract)
Vaccine Virus

LABORATORIES:

TELEPHONES:

Chicago, Ill.,


The Lymph Hospital

LABORATORIES:

HOSPITAL—Kankakee, Illinois

TELEPHONES:

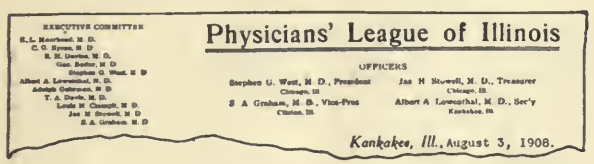
Manufacturers and Distributors of Animal Therapy Products

The Lymph Compound treatment is especially indicated in the following diseases: LOCOMOTOR ATAXIA, PARALYSIS, NERVOUS COLLAPSE, EPILEPSY, BRAIN FAG, ON-COMING INSANITY and such diseases needing cell stimulation.

The Medical Department will be under the personal direction of DR. ALBERT A. LOWENTHAL who introduced the Lymph Compound and Lymphoid Compound to the Scientific Medical World as a curative agent in Chronic Nervous conditions.

Chicago Consulting and Treating Rooms, 84 Adams Street
Chicago.

3-A.


EXECUTIVE COMMITTEE

OFFICERS

Physicians' League of Illinois

Kankakee, Ill., August 3, 1908.

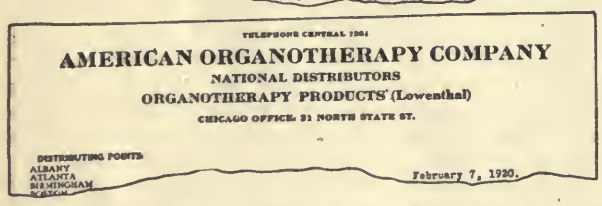

TELEPHONES

National Sanitarium Information Bureau

Representing the Leading Sanitariums and Health Resorts in the U. S.

SUITE 1121-1123 SCHILLER BUILDING
64 W. RANDOLPH ST.

Chicago, Ill. March 15, 1915.


TELEPHONE CENTRAL 1261

AMERICAN ORGANOTHERAPY COMPANY

NATIONAL DISTRIBUTORS

ORGANOTHERAPY PRODUCTS (Lowenthal)

CHICAGO OFFICE: 31 NORTH STATE ST.

DISTRIBUTING POINTS
ALBANY
ATLANTA
BIRMINGHAM
BOSTON

February 7, 1920.

Some letterheads (greatly reduced) of concerns in which Dr. Albert A. Lowenthal has been interested.

It mentioned further that Dr. Albert Lowenthal "introduced Goat Lymph to the medical world as a curative agent."

A few years ago a Chicago concern, known as the "American Animal Therapy Co.," put out such products as "Lymphoid Compound (Lowenthal)," "Ova Mammoid (Lowenthal)," "Prostoid (Lowenthal)," etc. The American Animal Therapy Co. had for its manager James M. Rainey. Rainey also operated the "Rainey Medicine Co.," a mail-order "patent medicine" concern that sold "Vitaline," a "general debility cure." The Rainey "Vitaline" quackery was exposed in THE JOURNAL Oct. 1, 1910, and the matter appears in "Nostrums and Quackery."

When the American Animal Therapy Company was operating from 84 Adams St., Chicago, it claimed to have a hospital and laboratory at Kankakee. At the same time letters were being sent out on the stationery of "The Lymph Hospital" signed Albert A. Lowenthal, M.D. Although this "hospital" was at Kankakee, Ill., the address on the stationery was 84 Adams St., Chicago, and its telephone number was that of the American Animal Therapy Company. According to the stationery, the "Medical Department" of the Lymph Hospital was "under the personal direction of Dr. Albert A. Lowenthal, who introduced the Lymph Compound and Lymphoid Compound to the Scientific Medical World as a curative agent in Chronic Nervous conditions." A layman received a letter from the "Lymph Hospital" urging him to take "Lymphoid Compound." Later he received a "follow-up" letter, from which the following extracts are made. Capitals used as in the original:

"Do you know that the doctors of this country are using the LYMPHOID COMPOUND EXCLUSIVELY in all cases, where the nervous system is greatly involved, with the most MARVELOUS RESULTS. ISN'T THAT SUFFICIENT PROOF as to the merit of the remedy?"

". . . Nobody can tell you there is something just as good, because THERE IS NOTHING JUST AS GOOD AS THE LYPMH — in fact IT IS THE ONLY THING THAT CAN BE DEPENDED UPON."

". . . Our Dr. Lowenthal gives his personal attention to all cases at the Hospital and devotes a portion of his time advising by mail those persons under treatment who are unable to come to the Hospital. He is a man of WORLD WIDE REPUTATION IN TREATING NERVOUS DISEASES — HIS ADVICE ON CASES LIKE YOURS IS WORTH EVERYTHING TO YOU.

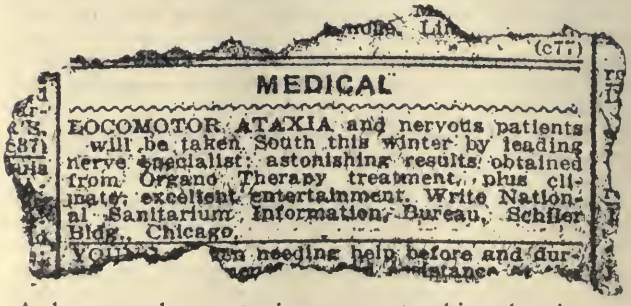
"Think this over and if you do, you will write an order today for the Lymphoid Compound. The home treatment costs $9.50 for thirty three days—think of that. You have our physician's advice and care free of charge — could anybody offer more to you?"

In 1908 Dr. Lowenthal appeared as a witness for Edward R. Hibbard, who was being prosecuted by the federal authorities. Hibbard operated a "men's specialist" office in Chicago; it had two entrances and a different name for each entrance—the "Boston Medical Institute" and the "Bellevue Medical Institute." Hibbard was found guilty of fraud in the operation of this concern and was fined $1,500. The transcript of the testimony in the Hibbard case records that Dr. Albert A. Lowenthal, when on the stand, claimed to "have treated as many nerve patients as any nerve specialist in Chicago." He further declared, according to the transcript, that physicians who make a specialty of nervous diseases "mature in about ten years" and that after that time most of them become nervous wrecks or insane. This was in 1908. In this connection it is worth noting that in letters sent out by Lowenthal in May, 1919, he claimed:

"In the past twenty-five years I have limited my work to neurological and psychological cases. . . ."

In 1908 also, Dr. Lowenthal was sending out letters to Illinois physicians in his capacity as Secretary of the "Physicians' League of Illinois." The "league" issued a "report on candidates for governor and members of legislature" giving the names of the various political candidates for office whom "the members of the league can safely support." There were no "membership" fees and a physician who wrote asking "who foots the bills" received no reply.

In 1915 Albert A. Lowenthal, whose "valuable discoveries in the domains of Organo Therapy, Neurology and Pediatrics, have given him an international reputation as a Neurologist, Alienist and Climatological Expert of high standing," was "Medical Superintendent" of the "National Sanitarium Information Bureau." This purported to represent the "Leading Sanitariums and Health Resorts in the U. S." The "Bureau" expected to make its "profit from the 10 per cent. honorarium received on every referred patient." The "Business Manager" of this concern was one Hubert Miller, M.D. The following advertisement appeared in the classified department of the *St. Louis Post Dispatch* in 1915:


MEDICAL

LOCOMOTOR ATAXIA and nervous patients will be taken South this winter by leading nerve specialist; astonishing results obtained from Organo Therapy treatment, plus climate, excellent entertainment. Write National Sanitarium Information Bureau, Schiller Bldg., Chicago.

A layman who wrote in answer to this advertisement received a letter from Dr. Lowenthal in which he said that it was his intention to take about thirty patients south with him for four months—cost of trip $500, which includes medical treatment, board, etc. Dr. Lowenthal stated further:

"I have treated probably more cases of Locomotor Ataxia and Paralysis than any Physician in United States and can honestly state that with Organo Therapy Treatment your walk can be improved and pains controlled."

In March, 1919, Dr. Lowenthal paid a visit to Spokane, Wash., and Portland, Ore. A Portland paper heralded his coming and printed a picture of "Dr. A. A. Lowenthal, World famous alienist." The paper described Dr. Lowenthal as "the alienist consulted in the Harry Thaw case" and the one "who treated John Alexander Dowie of Zion City fame and Pope Leo XIII." The fulsome puffery that Dr. Lowenthal got while in Spokane drew criticism from one or two members of the local medical profession, who wrote to the newspapers protesting. One of the physicians who thus wrote declared that Lowenthal's "coming was announced in a circular sent through the Owl Drug Company which is agent for the sale of products of an organo-therapy company."

Apparently, it was after Dr. Lowenthal's return from the Pacific Coast that he commenced to announce his "Post-Graduate Course of Lectures and Clinics" to the physicians of Chicago, Denver, St. Louis, Columbus, etc.—and, incidentally, to bring to the attention of the medical world the alleged virtues of the products of the American Organo-therapy Company.

Correspondence

THE INCIDENCE OF EXOPHTHALMIC GOITER IN NEGROES

To the Editor:—Having recently had in Barnes Hospital a case of exophthalmic goiter in a negro woman, I thought it would be of interest to determine, if possible, the relative incidence of this disease in the colored race, as shown by the patients who visit the dispensary. The outpatient clinic of the hospital was opened in December, 1914, and since that time there have been 92,000 admissions, including white people and negroes, above the age of 15 years. As it was impossible to determine the exact proportion between the races without looking over each card, the following scheme was adopted: Through the cooperation of the admitting officer of the dispensary, each new patient was tabulated for a period of a month, and it was found that 31.5 per cent. of the total number were negroes. As there have been 92,000 admissions since 1914, the proportion would be 63,000 whites and 29,000 negroes.

In the 63,000 whites there have been eighty-eight cases of exophthalmic goiter, a percentage of 0.13. In the 29,000 negroes there were nine cases, or 0.03 per cent. These nine cases were all females. It must be remembered, however, that white persons are better informed as to the symptoms of exophthalmic goiter, and of various symptoms of hyperthyroidism; some are sent in on account of suspected exophthalmic goiter. Negroes are in general less likely to describe the symptoms of such diseases, and are often less minutely examined than white patients.

Although the figures I give show the incidence of exophthalmic goiter in a well organized outpatient service, it is probable that a more careful scrutiny would reveal other and less marked cases.

T. C. REDFERN, M.D., St. Louis.

d-l-ARABINOSURIA

To the Editor:—This condition, of which only forty cases have apparently been reported, occurs in a patient of mine who now, for three or four years has exhibited the same want of resistance to staphylococcal infections as do cases of the more commonly seen glycosuria. No treatment yet tried has given immunity. He has had chronic intestinal stasis for many years, and has much enteroptosis; but under the regimen of the last year his general health has on the whole been greatly improved, and the urine does not now exhibit indican, indol, tyramin, etc., in any constant amount. He is quite refractory to autogenous vaccines of staphylococci even up to repeated doses of $20{,}000 \times 10^6$ of detoxicated *Staphylococcus albus* and *aureus*.

This condition is said to be congenital and to occur among Jews especially. My patient is a Jew.

I shall esteem it a favor if any readers of THE JOURNAL with special experience in these cases will inform me whether they too have encountered this chronicity of boils and carbuncles and abscesses in the proved absence of glucose and lactose in such arabinose-excreting patients, and whether they have found any means of conferring immunity.

A. WHITE ROBERTSON, L.R.C.P.E.,
52 Welbeck Street, W. 1, London, England.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

HEYL PRODUCTS NOT ACCEPTED

To the Editor:—In a recent number of the *American Journal of Surgery*, there is an advertisement by the Heyl Laboratories, Inc., for Acriflavine and Proflavine. The advertisement states that these products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in "New and Nonofficial Remedies." In the 1920 edition of N. N. R., I do not find the Heyl products listed, although there is a description for Acriflavine and Proflavine. Will you please tell me whether or not the Heyl brands of Acriflavine and Proflavine have been accepted by the Council on Pharmacy and Chemistry?

G. S. A., M.D.

ANSWER.—We are informed by the secretary of the Council on Pharmacy and Chemistry that the Heyl brands of Acriflavine and Proflavine have been examined by the Council. However, they were not accepted for inclusion with New and Nonofficial Remedies because (1) the quality did not conform to the Council's standards, and (2) in the advertising for the drugs the manufacturer failed to refer to the unfavorable as well as the favorable clinical reports. Although informed of the facts some months ago, the manufacturer has made no efforts to date to have his products accepted. The advertisement cited principally describes "Acriflavine G H" and "Proflavine G H," the "G H" probably representing the initials of George Heyl, one of the proprietors of the Heyl Laboratories, Inc. The statement in the advertisement that "Acriflavine and Proflavine have been accepted by the Council on Pharmacy and Chemistry of the A. M. A. for inclusion in New and Nonofficial Remedies" is misleading in that the reader is likely to infer that the Heyl products have been accepted, which is not the case.

ANTIDOTES FOR SNAKE POISONING

To the Editor:—What information can you give me in regard to Anti-Venom antidote for snake bite poison, manufactured by the Monarch Drug Company, Inc., San Diego, Calif.?

W. G. H.

ANSWER.—We have no information concerning the Anti-Venom antidote, manufactured by the Monarch Drug Company of San Diego, Calif. Neither this nor any other antivenom for snake poisoning has been accepted by the Council on Pharmacy and Chemistry. So far as we know, the United States Treasury Department has issued no license to sell antivenoms for snake poisoning in interstate commerce except to the Pasteur Institute.

Experiments, made principally in France, looking toward the production of antivenoms for snake poisoning by biologic methods seem to have met with some success, but the use of such products in therapy is still in the experimental stage. In general, these studies have shown that the various neurotoxins and hemotoxins of the different poisonous snakes are dissimilar in many respects and that an antivenin which has been prepared against the venom of one species (and is in a sense a specific for that poison) is not always effective when used against the venom of another species. Obviously, it is impossible to place therapeutic antivenins for every species of poisonous reptile within the reach of the practitioner. In some laboratories of India, France and Brazil, antivenins are prepared from the most abundant species of snake in the respective countries.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 13. Chairman, Dr. S. W. Welch, Montgomery.

ARIZONA: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

COLORADO: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: Hartford, July 13-14. Sec., Regular Board, Dr. Robert L. Rowley, 49 Pearl St., Hartford.

CONNECTICUT: New Haven, July 13. Sec. Eclectic Board, Dr. James Edwin Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: Washington, July 13-15. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

INDIANA: Indianapolis, July 13-15. Sec., Dr. Wm. T. Gott, Crawfordsville.

MAINE: Portland, July 6-7. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

MASSACHUSETTS: Boston, July 13-15. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.

NEW MEXICO: Santa Fe, July 12-13. Sec., Dr. R. E. McBride, Las Cruces.

NORTH DAKOTA: Grand Forks, July 6-9. Sec., Dr. Geo. M. Williamson, 860 Belmont Ave., Grand Forks.

OKLAHOMA: Oklahoma City, July 13-14. Sec., Dr. James M. Byrum, Mammoth Bldg., Shawnee.

OREGON: Portland, July 6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 6-10. Sec., Dr. Thos. E. Finnegan, State Capitol, Harrisburg.

SOUTH DAKOTA: Deadwood, July 13. Sec., Dr. Park B. Jenkins, Waubay.

UTAH: Salt Lake City, July 5-6. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.

WASHINGTON: Seattle, July 6-8. Sec., Dr. Wm. M. O'Shea, 505 Old National Bank Bldg., Spokane.

WEST VIRGINIA: Charleston, July 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

Porto Rico April Examination

Dr. Quevedo Baez, secretary, Porto Rico Board of Examiners, reports the written and practical examination held at San Juan, April 12, 1920. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Seven candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University		(1918)	75
American Med. Missionary College		(1906)	84.5
Johns Hopkins University		(1918)	86.2
University of Maryland	(1917) 84.6,	(1919)	88.3
Tulane University		(1919)	79.1
University of Havana		(1919)	92.3

THE FOUNTAIN-HEAD OF CHIROPRACTIC; WHAT OF ITS PRODUCT?

The Palmer School of Chiropractic advertises itself as "the fountain-head" of chiropractic. The following will give some intimation in regard to the character of the "stream" that comes from it:

The 1920 annual announcement of this school states that students are taught not only "how to act with patients in and out of the office" but also "how to successfully advertise." From the beginning, therefore, methods are taught which, from the time of Hippocrates, have been looked on as quackery. It is also stated that the students complete their "freshman," "sophomore," "junior" and "senior" courses in four months each, or altogether in sixteen months. In another place the reader is informed that, in case the student finds it impossible to remain for more than twelve months, the school will, nevertheless, confer on him the degree of D.C. (Doctor of Chiropractic). By remaining at the school six months longer he would be granted an additional degree, that of Ph.C. (Philosopher of Chiropractic), if he got "an A grade on each and every paper submitted."

The statement that a "common school" education is required for admission may mean nothing more than the bare ability to read and write. Granting, however, that it is the equivalent of the eighth grade in the public schools, the professional training, according to the usual methods of calculating standards in general education, would be considered of no higher grade than that of one or one and a half years of high school work. This low entrance qualification is in marked contrast to the requirements for admission to medical schools in which students must have completed a four year high school course and in addition two years of work in a reputable college of arts and sciences, including courses in physics, chemistry and biology.

Another significant statement in this announcement is that a student "may matriculate on any week day." This indicates at once that no intensive course of study is given in this institution such as is required in medical schools. No student entering a medical school a week or more after the opening of any laboratory course (for example, histology, pathology or bacteriology) could possibly be able intelligently to carry on the work in such courses because of the large amount of work missed during the previous week's absence. Evidently, there are no such disagreeable handicaps in the study of chiropractic.

The announcement of this school states that in its "scientific course" the student is required "to attend" (note the exact figures) a total of 4,103½ class hours. This would be fifty-three hours a week for eighteen months, or eighty hours a week—twelve hours a day—for a calendar year. Education does not depend on the number of hours of instruction, however, so much as on the subject-matter taught and the ability of the instructor to impart knowledge. As a matter of fact, the requirement of *actual class-room* work in our highest grade medical schools in four college years of from eight to nine months each is only about 4,000 hours. Each class hour, however, presupposes from one to three hours of outside preparation so that, if measured by the claims of this chiropractic college, the total hours required by medical schools would be somewhere between 8,000 to 12,000 hours!

The textbooks used also are interesting. In anatomy, the text used is said to be that prepared by Mabel H. Palmer, D.C., Ph.C. (1905), the wife of B. J. Palmer, who is the president of the institution. Court reports in 1910 show that the latter had only a common school education and had never matriculated in any school, college or university, other than a chiropractic college. For those who never had a training in the scientific methods of treating the sick, an attempt to teach others how to do so is equal to "the blind leading the blind." Textbooks of their own writing are also used by the teachers in symptomatology, gynecology and chemistry, who likewise have no degrees in medicine. Incidentally, the sale of these textbooks adds considerably to the revenue obtained from students.

Speaking of revenue besides the income from textbooks, this institution charges for its twelve or eighteen months' course a "spot cash" sum of $300—more than a year's tuition last year in any of the highest grade medical schools of the country! If the fee is paid in "deferred payments," it is $350. If a husband and wife, however, take the course the combined fee "spot cash" is $375 or, if in "deferred payments," $450. Reports of inspection of this school show that there are few, if any, all-time teachers. Such few laboratories as the school possesses are reported also to have the barest minimum of equipment. Most of the fees obtained, therefore, must be clear profit. This is in marked contrast with the teaching of scientific medicine in medical schools where the actual average expense of teaching a student each year is more than three times what the student pays in tuition fees!

The low ideals of the leaders of this cult are shown in the report of Mr. Justice Hodgins of Ontario issued a few years ago. B. J. Palmer himself is quoted as having stated that bacteriology was the "greatest of all gigantic farces ever invented for ignorance and incompetency" and that "the analysis of blood and urine is of no value." In this same report other leaders of chiropractic deride also the study of materia medica and chemistry and state they have "no earthly use for diagnosis." They place themselves, therefore, in direct opposition to Pasteur, Koch, Laveran, Flexner and others whose discoveries during the last half century have revolutionized the practice of medicine and saved countless thousands of lives! No wonder Justice Hodgins concludes that he could

not bring himself "to the point of accepting, as part of the legalized medical provision for the sick, a system which denies the need of diagnosis, refers 95 per cent. of disease to one and the same cause, and turns its back resolutely on all modern medical scientific methods as being founded on nothing and unworthy even to be discussed."

But the teaching in this particular school has further interesting tangents. There is also "The Universal Chiropractors Association" with headquarters, evidently at this Palmer School of Chiropractic. At least, B. J. Palmer and Frank W. Elliott, the president and registrar of the Palmer School, are, respectively, the secretary, and the treasurer and business manager of the association. The members of this association—made up largely of graduates of the Palmer School—are promised protection from, and assistance in cases of, prosecution for violating the law in practicing chiropractic. According to the constitution, "The Association, except as herein otherwise provided, shall pay the fine and all costs in all prosecutions, civil or criminal, wherein any member of this class shall be charged in substance with having practiced medicine, surgery, osteopathy, or other method of healing or dealing with the sick or afflicted without a license, or other legal permission, provided such member is in good standing and shall have conformed to the Constitution, Bylaws and all Rules and Regulations of the Association."

The word "class" in this paragraph refers to "active members" who are described as "all chiropractors of good moral character graduated from or holding certificates of attendance from such chiropractic institutions of learning as are recognized by this association and are practicing specific, pure and unadulterated chiropractics without the use of adjuncts, etc."

The constitution and by-laws of the association are printed in a pamphlet of twenty-four pages, including two pages of instructions as to "What to Do If Trouble Starts." Among the fifteen items in these instructions the following are interesting:

> 11. Be conservative in your claims and be very careful that the enemy does not send any patient to you that they think will die on your hands or otherwise complicate matters. Do not, unless in a state or province where you are licensed, undertake to handle any so-called contagious diseases.
>
> 13. Have as many friends as possible present at your trial. Do not make any newspaper announcements without consulting your local attorney.
>
> 15. If trouble has not really started, but there are signs of it, let us hear about it by letter.

The graduates of this "school" are said to be practicing in Iowa—the institution's home state—in direct violation of the medical practice act and, according to the above, they are being encouraged to violate the law in other states.

From the foregoing statements it will be seen that the teaching conducted in schools of chiropractic is a menace to education and to public morals as well as to the science of medicine and to rational rules of public health. The conclusions justified by the evidence submitted are as follows:

(*a*) Leading chiropractors deride or disbelieve in such well known and proved sciences as chemistry, bacteriology and pathology. Their teachings are not based on fact and are refuted by the accomplishments of the great minds in education, research, science and medicine.

(*b*) Their attitude toward these sciences shows their lack of sympathy for the first essentials in the prevention of epidemics and the regulation of public health.

(*c*) They declare that education and the ability to make a diagnosis are not essential for the intelligent treatment of human diseases and injuries.

(*d*) Their schools at most require only a common school education, a training insufficient to permit the student to undertake intelligently any but the most elementary course of study.

(*e*) Their course of professional (?) instruction is too short to enable the student to obtain a training in the sciences necessary for the intelligent or safe practice of the healing art by any method.

(*f*) The school teaches and encourages its students to advertise—which they are doing and using the same flagrant methods which have been employed by quacks since the beginning of medicine.

(*g*) Finally, the leaders of this cult openly urge their graduates to practice chiropractic in violation of the law, and have arranged through the Universal Chiropractors Association to aid and abet them in such outlawry.

Book Notices

MIND AND ITS DISORDERS. A Text-Book for Students and Practitioners of Medicine. By W. H. B. Stoddart, M.D., F.R.C.P. Lecturer on Mental Diseases to St. Thomas' Hospital Medical School. Third edition. Cloth. Price, $6 net. Pp. 580, with illustrations. Philadelphia: P. Blakiston's Son & Co., 1919.

Complete conversion to the Freudian theory is the outstanding feature of this volume, comprising a third edition of the author's work. "Mental disease can only be understood by studying the psychology of the unconscious mind of patients; physical manifestation of a functional disorder must be regarded as secondary, not as primary," as the author taught in the earlier editions. Dr. Stoddart has joined men who, taking a powerful and dominating instinct, built a system around it, reducing all abnormal psychic reactions to it, just as Boris Sidis sought in fear the cause of all pathologic mental processes. The fault with the theories of Freud and Sidis is that only the instincts of reproduction and fear are considered. There are naturally others aside from these two that play an important part in the development of psychoses and neuroses. Psychanalysis then becomes the paramount remedy. The author is satisfied that psychanalysis reduces the pulse rate of exophthalmic goiter to normal in from four to six weeks, and that the other symptoms are gradually ameliorated in a few months. It is natural, then, that a psychoneurosis, also "psychogenetic epilepsy," can be cured only by discovering "the unconscious strivings which have given rise to the disease, and in so doing to reveal them to the patient." The classification in this edition, while remodeled, still follows that of Kraepelin. In the dementia praecox group, "provisionally regarded as a psychosis," a chapter is added on paraphrenia, a name applied by Kraepelin to a group of delusional cases formerly classed under the dementia paranoides or sometimes paranoia. The average age of onset of paraphrenia is later than that of dementia paranoides, usually during the fourth decade. Hallucinations developed much later in the course of this disease than in dementia paranoides, and there is not the deterioration of personality to justify the appellation dementia. In the pathology of manic-depressive insanity, the author's theory of intraneuronic intoxication is ingenious, if not convincing. The sections on normal psychology (Part 1) and the psychology of the insane (Part 2) are well written and up to date. Dr. Stoddart has contributed for years to the clinical research into the nature of nervous phenomena associated with mental disorders. The outstanding feature of Part 3 (mental diseases) is the detailed description of the different forms of mental reactions; especially is this true of the organic group, dementia paralytica, and others. Dr. Stoddart's work justifies a careful reading, especially by beginners in the field of psychiatry.

LABORATORY MANUAL OF ORGANIC CHEMISTRY. By Harry L. Fisher, Ph.D., Instructor in Organic Chemistry, Columbia University. Cloth. Price, $2.25. Pp. 331. New York: John Wiley & Sons, 1920.

Until recently, American students in elementary organic chemistry were dependent mainly on foreign manuals for laboratory guidance. At this time, however, it is gratifying to note that, notwithstanding the extra burdens of the last three years, two excellent laboratory manuals have been written by American chemists. The most recent book, that of Dr. Fisher (the other manual was written by Dr. Lauder W. Jones), follows much the same general outline of subjects as that of its foreign predecessors; it excels, though, in the thorough manner in which the experiments are detailed. One feature that commends the book is the author's insistence on neatness, the vital importance of which should be forcibly brought home to more laboratory workers, chemical and medical. The author realizes that the place to instil such

habits is the college laboratory. In the preface, it is stated (in large type): "It is important that you know what you are doing when you are doing it." Of course, this statement has a double meaning, that is, the instructor must be so well informed with his subject that the student may not be misguided; the present day system of student assistants is often conducive to slipshod explanations. The questions at the end of each experiment are well thought out and should serve admirably in keeping both the instructor and the student familiar with organic chemical literature in general. The book is a worth while American contribution for those who are interested in the teaching of organic chemistry.

Shell-Shock and Other Neuropsychiatric Problems. Presented in Five Hundred and Eighty-Nine Case Histories, from the War Literature, 1914-1918. By E. E. Southard, M.D., Sc.D. Bibliography by Norman Fenton, S.B., A.M., Sergeant Medical Corps, U. S. Army; and an introduction by Charles K. Mills, M.D., LL.D., Emeritus Professor of Neurology, University of Pennsylvania. Cloth. Price, $10. Pp. 982, with illustrations. Boston: W. M. Leonard, 1919.

This is a rather unusual and, at first sight, somewhat bewildering book. Possibly these qualities may be in part due to its genesis, as explained by the author. It started out to be a supplemental aid in a course of instruction, and turned out to be a comprehensive "case-history book on the neuropsychiatry of the war." After evolution to this dignity, an epicrisis of seventy-two pages was superadded so that, as fully developed, it constitutes a short clinical history and digest of the neuropsychiatry of the greatest war of history. In his introduction, which is a worthy review of the book, Dr. Mills says: "The object of this book is to present both the data and the principles involved in certain neuropsychiatric problems of the war." These are presented in a wealth of detail through an extraordinary series of case records (589 in all) drawn from current medical literature, during the first three years of the conflict. There are, indeed, very few phases of war neuroses and psychoses not illustrated in this volume.

A Laboratory Manual of Physiological Chemistry. By Elbert W. Rockwood, M.D., Ph.D., Professor of Chemistry and Toxicology, University of Iowa. Fourth edition. Cloth. Price, $2 net. Pp. 316, with 21 illustrations. Philadelphia: F. A. Davis Company, 1919.

The field of physiologic chemistry is enlarging so steadily, through extensive researches, that frequent editions of textbooks are necessary in order to keep pace with the rapid advancement. In this edition of Dr. Rockwood's manual may be found practically all the modern methods used today in clinical analysis, including even the very recent contributions on blood analysis. The book will commend itself to physicians who desire to know the modus operandi of laboratory findings; the chemical and medical phases are interwoven carefully. As a guide for the student, Dr. Rockwood has combined in a most happy way the necessary academic fundamentals of biochemical work with the practical applications. The clinician or laboratory technician who desires a compact, not burdensome work will find this book a worthy addition to his library.

Manual of Diseases of Children. By James Burnet, M.A., M.D., M.R.C.P., Physician for Diseases of Infancy and Childhood to, and Physician in Charge of the Child Welfare Clinic at, the Marshall Street Dispensary, Edinburgh. Second edition. Cloth. Price, $3. Pp. 416. New York: William Wood & Co., 1919

This small volume covers the whole field of pediatrics, for practically every subject is discussed. Of course, in a book of this size one cannot expect to get a complete idea of any subject. The most important symptoms are touched on, frequently in a cursory manner. The chapters on infant feeding are written from a standpoint distinctly British, and cannot be said to be sufficiently detailed so that one having little knowledge of the subject could derive much benefit from them. The preface states that the work is meant for the busy general practitioner, but it is hard to see how such a short treatment of the various subjects can be of benefit to the man who has to meet individual cases and account for the various symptoms which present themselves. The book has the merit of presenting the author's own view, and as such is to be commended.

Medicolegal

Discoveries as to Roentgenogram Not Ground for New Trial

(Caldwell v. Hoskins et al. (Ore.), 186 Pac. R. 50)

The Supreme Court of Oregon, in affirming a judgment in favor of the plaintiff for damages for personal injuries, says that the defendants filed a motion for a new trial based on affidavits to the effect that a few minutes before the jury returned the verdict the attorneys for the defendants learned of a rumor that the plaintiff had caused a roentgenogram to be taken; that there was no opportunity to verify the rumor until after the verdict was received; that afterward the defendants ascertained that the plaintiff had gone to a roentgenologist, who took a roentgenogram of her spinal column and ribs which showed that there had never been any injury to the spine and ribs, and that the roentgenologist informed her that she had not sustained any injury to her spine or ribs. The defendants contended that a new trial should have been granted because (1) the plaintiff was guilty of misconduct in suppressing and concealing the roentgenogram; and because (2) the roentgenoscopy constituted newly discovered evidence which the defendants could not with reasonable diligence have discovered and produced at the trial. But the evidence about the rib and spine affected the amount of the verdict rather than the right to a verdict. The roentgenoscopy was not made until six months after the date of the injury. The roentgenogram was not made a part of the record or exhibited to the trial judge. There was no affidavit by the roentgenologist, notwithstanding the fact that the plaintiff testified as a witness in her own behalf, and by doing so consented that the physician might testify as a witness. While the court does not intend to decide whether the trial judge could have compelled the plaintiff to submit to an examination on the application of the defendants, yet the court may with propriety note the fact that the plaintiff was not requested to permit physicians chosen by the defendants to examine her condition, and, so far as the question of her injury was concerned, the defendants were apparently willing to rest their whole case on the testimony of one physician and of one of the nurses at the hospital. The plaintiff was a witness in her own behalf, and she was cross-examined. The defendants had ample opportunity to inquire as to whether or not any other physician had examined her and whether a roentgenogram had been taken; and yet no such inquiries were made. In view of the fact that the defendants did not take full advantage of the opportunities offered by cross-examination, and in view of the other facts shown by the record, the court does not think it would be justified in reversing the trial court and holding that he should have allowed a new trial on the ground of newly discovered evidence. Nor does the court think that it could fairly be said that the plaintiff was guilty of suppressing evidence. She knew whether she suffered any pain, and she also knew where the seat of the pain was. So overwhelming was the evidence that it might be said to have conclusively established that she suffered pain in the side. The physician who examined her on the evening of the accident stated that he did not discover any broken rib or twisted spine. The physician who called on her five days afterward and from that time on acted as her attending physician testified that her rib was broken and that her spine was twisted. The roentgenogram was not taken until six months after the accident, and, for aught that appeared in the record, the broken rib, if there was one, might have completely united, leaving no evidence of a former break. The court was not advised as to whether medical men would say that a break either sometimes or always leaves evidence of the break which a roentgenogram will invariably picture; nor does it know how serious the break must be in order to leave permanent evidence of the fracture. If the plaintiff's rib was broken, it might be that it was a slight break, and no evidence of the fracture remained when the roentgenogram was taken. The plaintiff was not bound to believe the opinion

of the physician who took the roentgenogram six months after the accident; but, knowing that she actually suffered pain, and having been told by her attending physician that her rib was in truth broken, she had a right to believe, as she undoubtedly did, that her rib was broken, and she was under no obligation to call the roentgenologist as a witness merely because his opinion, based on an examination made six months after the injury, differed from the opinion of her attending physician.

Death from Influenza Not Increased Risk of Military Service

(Myli v. American Life Insurance Co. (N. D.), 175 N. W. R. 631. Benham v. American Central Life Insurance Co. (Ark.), 217 S. W. R. 462)

The Supreme Court of North Dakota, in affirming a judgment in favor of the plaintiff in the Myli case, which was brought to recover the face of a life insurance policy, says that it appeared that the insured had enlisted in the United States navy during the recent war, and had been assigned to Dunwoody Institute in Minneapolis for instruction and training. While so assigned, he was taken ill with the influenza, and died in the city hospital. The insurance company denied liability for more than the amount of the premiums previously paid, on the ground that the insured had not obtained a permit under the clause of the policy which provided that if the death of the insured should occur while engaged in military or naval service in time of war without previously having obtained from the company a permit therefor, the company's liability should be limited to the cash premiums paid. But the court holds that, in view of the other provisions of the policy with respect to double indemnity for accidental death and disability benefits, the foregoing provision did not exempt from liability for the face of the policy when the death of the insured was not occasioned by extra hazard incident to military or naval service. On the question of the proof that the insured came to his death while subject to the hazard of naval service, it was clear that such was not the case. He was in an inland city, and not subject to any risks not common to civilians with whom he was constantly associated.

In the Benham case, the Supreme Court of Arkansas takes a somewhat similar view, and reverses a judgment that was rendered on a verdict that was directed in favor of the plaintiff for only the reserve accumulated under the policy. The court says that the insured in this case enlisted in the aviation branch of the military service of the United States. After being on duty for a while at an aviation camp in Texas, he was sent to Cornell University for special training, and later was ordered to report at Camp Dick, Texas; but en route to Camp Dick he contracted influenza, and on his arrival at Dallas was transferred to a hospital, where he died. The record in the case showed that the influenza was prevalent throughout the United States, and that soldiers and civilians alike contracted it and died from it; and the court does not think that the death of the insured was in any sense caused by performing any military service, or in consequence of being engaged in military service. The words in the restricted clause of the insurance policy under consideration in this case meant something more than death to the insured during the period of time he was in military service. The word "engaged" denotes action. It means to take part in. So here the words "death while engaged in military service in time of war" meant death while doing, performing or taking part in some military service in time of war; in other words, it must be death caused by performing some duty in the military service. That is to say, in order to exempt the company from liability, the death must have been caused while the insured was doing something connected with the military service, in contradistinction to death while in the service due to causes entirely or wholly unconnected with such service. By the use of the word "engaged" it must have been intended that some activity in the service should have caused the death, in contradistinction to merely a period of time while the insured was in the service.

Society Proceedings

COMING MEETINGS

Montana State Medical Association, Helena, July 14-15.

AMERICAN ASSOCIATION OF ANESTHETISTS

(Concluded on page 1540)

Anesthesia Problem in Goiter Surgery

DR. ANDRE CROTTI, Columbus, Ohio: Both local and general anesthesia are methods of choice in goiter surgery. When expertly used and the dangers of general anesthesia are obviated and the psychic shock of local anesthesia is controlled, the choice between the two methods of anesthesia seems to be a matter of personal cohesion. In using general anesthetics for goiter surgery it is vital to prevent their alarming reflex reactions during induction, as well as any tendency to respiratory embarrassment or cardiac collapse, vomiting and acidosis. The use of preliminary narcotics and concomitant oxygenation is advisable. Atropin to prevent cardiac collapse would be invaluable if it were not too toxic in effective dosage. Too often failures and misfortunes are charged to the anesthetic, when the fault lies in the judgment of the surgeon and an injudiciously performed operation. For the time being, the most popular anesthetic for thyroid surgery is ether. I have operated in more than 1,000 cases of goiter under ether. I no longer resort to anociation. While nitrous oxid-oxygen anesthesia may be safe and efficient in some clinics, I have found it too fraught with abrupt complications that are difficult for any but the most expert anesthetists to handle or avoid. Ether has a greater leeway for controlling any alarming states that may arise during its administration.

Anesthesia Problem in Goiter Surgery from the Surgeon's Point of View

DR. VILRAY P. BLAIR, St. Louis: The temperament and technic of the operator have, in a general way, a much stronger bearing on the proper choice of the anesthetic than the chemical properties or physiologic reactions that are peculiar to any particular agent. The similarity of results obtained by different men, who, with large experience, have concentrated on a certain method of anesthesia, does not mean that there can be no elements in the particular case pertaining to the choice of the anesthetic, but rather that the proper correlation of the anesthetic to the technic is of vastly more importance than the particular anesthetic agent employed. Studies in metabolism show that the patients who do badly react in this manner because of the degree of thyrotoxicosis rather than because of any errors in anesthesia management. Toxicity is in proportion to the mass of the gland. Those who employ a general anesthetic with the best results are the men who produce the least psychic shock, operate quickly with the least traumatism, and remove large amounts of the toxic gland. Under ether the increased respiration of the excitement stage, followed by acapnia, will be more likely to cause paralysis of the respiratory center in those cases in which the disease has progressed to secondary damage to the nervous system. Ether has been shown to favor a postoperative acetonemia and a rapid exhaustion of the glycogen reserve of the body through stimulation of the metabolic rate. My own experience causes me to use local anesthesia for goiter patients who are really sick, either from intoxication or degeneration in essential organs; but for simple cases and milder intoxications, I use ether, and in tracheal collapse, rarely present, I use intratracheal ether insufflation.

Value of Anociation in Goiter Operations

DR. W. E. LOWER, Cleveland: The vital test of any surgical method is found not in its effect on the moderate risk, or even in its effect on mortality rate alone, but rather in the mortality rate plus the postoperative morbidity. Anociation implies an all-inclusive operative technic adapted to the individual case, whereby the nocuous influences—psychic and

traumatic—which inevitably attend any surgical procedure are minimized or eliminated. So sensitive is the thyrotoxic patient that the anesthetist, during the operation, will often be able to note when the knife has passed beyond the blocked zone by the altered pulse and respiration, which in the unconscious state in this disease respond to contact with a like exaggeration to that noted in the conscious patient. In this operation, as in almost no other, therefore, the anesthetist and the operating surgeon must work in accord. It follows that the ideal anesthetist in this operation is one whose specific training as an anesthetist is combined with sufficient knowledge of operative technic to assure the recognition of the approach to shock-producing areas in the course of the operation. In no other class of cases is the value of nitrous oxid-oxygen, as compared with ether, more clearly demonstrated. The absence of nausea, the easy and quickly attained unconsciousness, prevent or minimize the dread of the anesthetic which, in the multiple stage operations in particular, might become a dangerous factor. Moreover, with nitrous oxid-oxygen, the degree of unconsciousness may be graded to suit the condition of the patient at every stage in the operation.

Clinical Observations on Nitrous Oxid-Oxygen Anesthesias in Hyperthyroidism

Dr. Lincoln F. Sise, Boston: In the clinic of Dr. Frank H. Lahey, patients get rest in bed for a number of days, depending on their toxicity. Two hours before operation they receive a hypodermic injection of ¼ grain of morphin and 1/200 grain of scopolamin, and this is repeated one hour before operation. After the gas-oxygen is started, the head is well extended. Procain is used in the skin and other sensitive structures, and accurate, gentle surgery, with careful control of bleeding, is employed throughout. Almost without exception these patients go under anesthesia in a minute without disturbance of any kind. Pushing the anesthetic during induction may cause a fall in the rate of the pulse and respiration. Toxic cases seem to require a higher percentage of oxygen to maintain their color than do nontoxic cases, as the extra oxygen is needed to maintain their abnormally rapid metabolic activities. Ordinary surgical shock is not present in goiter surgery except in cases in which the trachea is involved and respiration obstructed. Respiration during the operative procedure runs about normal. Under local anesthesia alone the pulse rate may be increased by 50 beats; but following the administration of nitrous oxid-oxygen, there is a decisive drop. The highest point reached by the pulse soon after the operation may be taken as an indication of the severity of the reaction to the anesthetic and surgical procedure. This point is practically always reached within half an hour after the patient leaves the operating room. It is also the best standard available by which to measure the intensity of the thyrotoxic storm.

Ether-Oil Colonic Anesthesia in Goiter Surgery

Dr. Walter Lathrop, Hazelton, Pa.: Ether-oil colonic anesthesia is most decidedly in favor of the colonic method of anesthesia originated by Gwathmey. The method is especially efficacious in thyrotoxic patients. Ether-oil colonic anesthesia is contraindicated in patients having colitis, hemorrhoids or other rectal irritations. We have had but two cases of postoperative irritation or looseness of the bowels in all our work. The after-effects are equal to or better than those in the inhalation cases, and postoperative vomiting is reduced to a minimum, while the effect of the anesthesia is such that most patients rest very quietly for some hours after operation and complain of little or no pain aside from the throat irritation that would follow any method after removal of the thyroid. Occasionally colonic anesthesia needs to be supplemented by a few whiffs of chloroform. Also, the anesthetist must see to it that respiration remains free and that some of the anesthetic mixture is withdrawn should the patient exhibit signs of going too deeply under the anesthesia. The safety limit of this method of anesthesia is extended by the gradual absorption of ether by the colon and its rapid elimination by the lungs. The principal factor of safety is the wide margin between the dosage required for surgical narcosis and that which produces toxemia. Colonic anesthesia may be administered to the patient in bed and the operation performed without the patient's knowledge, especially in those instances in which the surgeon and anesthetist are dealing with high-strung nervous patients, with increased blood pressure and possible myocardial degeneration.

Thyroidectomy Under Local Anesthesia

Dr. Carroll W. Allen, New Orleans: I prefer to use local anesthesia in all cases without exception. If the patient can be operated on at all, the procedure can be done more safely under local than under general anesthesia. This also holds good for polar ligations in bad risks, as a preliminary step to the more radical operation. Regional anesthesia is very limited in its application to goiter surgery and has no special advantages. A through knowledge of the neuro-anatomy of the parts involved is essential for success in using local anesthesia.

AMERICAN GYNECOLOGICAL SOCIETY

Forty-Fifth Annual Meeting, held at Chicago, May 24-26, 1920

The President, Dr. Robert L. Dickinson, New York, in the Chair

Analgesia and Anesthesia in Labor

Dr. Edward P. Davis, Philadelphia: The best quality of ether, skilfully administered, is successful in the majority of cases of spontaneous labor during the second stage. If given at the height of the pain, and quickly removed as soon as the pain subsides, it stimulates and does not retard labor. The moment when expulsion occurs, a few deep inhalations without air will render the patient insensible to pain, although capable of comprehending sensations of feeling, of hearing or often of sight. The mother rouses easily after delivery, and requires no anesthesia while the placenta is separating For the insertion of stitches immediately after labor, ether properly administered with oxygen is comparatively safe and efficient. We have seen no evidence that such use during the stage of expulsion injures the fetus.

Induction of Labor: Use of Pituitary Extract

Dr. Benjamin P. Watson, Toronto, Ont.: Pituitary extract is a most valuable agent for accelerating the second stage of labor when delay is due to feeble uterine contraction. I have used it extensively for the induction of labor and during all stages of labor, and have never had any bad results. The method used is to begin with a dose of 0.5 to 1 c.c., administered intramuscularly, with a long needle. In most cases uterine contractions commence in about ten minutes, and increase in severity during the next twenty minutes. At the end of this time the second injection of 0.5 c.c. is given. If after a time the contractions tend to weaken or to come at longer intervals, the dose is repeated. As many as six or eight doses may thus be given at intervals of about half an hour. The important point is to administer a further dose before the effects of the previous one have entirely passed off. The effects from a single dose appear to last only for about half an hour, and there is no cumulative effect. When the cervix has begun to open and the membranes to bulge into it, the uterine contractions will continue without the further adminstration of the drug. The failures I had in the beginning were the result of not pushing the dosage far enough. It is perfectly safe to give eight or ten 0.5 c.c. doses at half-hour intervals.

Induction of Labor at Term

Dr. Charles B. Reed, Chicago: Labor can be inaugurated by quinin and pituitary extract, by castor oil and quinin, by the modified de Ribes bag, or by both. The castor oil acts in about two cases out of five, and most reliably when the patient is a little bit past the calculated date. The Voorhees bag is the most dependable.

Prophylactic Forceps Operation

Dr. Joseph B. de Lee, Chicago: The prophylactic forceps operation is the routine delivery of the child in head presenta-

tion when the head has come to rest on the pelvic floor, and the early removel of the placenta. Primiparous labors, and those in which the conditions of the soft parts approximate a first labor, are treated by this method, which really comprises more than the actual delivery of the child. It is a rounded technic for the conduct of the whole labor, with the defined purpose of relieving pain, supplementing and anticipating the efforts of nature, reducing the hemorrhage, and preventing and repairing the damage.

Value of Wassermann Reaction in Obstetrics

DR. J. WHITRIDGE WILLIAMS, Baltimore: Among 4,000 parturient women a positive Wasserman reaction was noted in 421. Of 302 children born dead or who died during the two weeks following delivery, death was proved to be due to syphilis in 102, while a positive maternal Wassermann reaction does not necessarily mean the birth of a syphilitic child, a negative reaction does not necessarily imply the absence of syphilis.

Extraperitoneal Cesarean Section

DR. JOHN A. MCGLINN, Philadelphia: The Beck operation, with thorough protection of the peritoneal cavity and perfect peritonealization of the uterine incision, is superior to the transperitoneal operation as a routine procedure. While theoretically it is not as efficient as the extraperitoneal method, practically, on account of the many disadvantages of the latter, it is the better operation.

Artificial Impregnation

DR. ROBERT. L. DICKINSON, Brooklyn: Tubal patency must be established by simple instillation of sterile fluid in the knee-chest posture. Semen does not run true to form, a single test being of little value. Immediately before each injection, the microscope must be used. Injection is made, first, until uterine, then tubal discomfort, or mild colic, shows the lateral reservoirs filled. Pregnancy followed five times in three patients. Repeated injections for several months should be specified. There were no troublesome painful reactions, except in one instance, in thirty-two injections.

Neglected Form of Cervical Endometritis

DR. HENRY T. BYFORD, Chicago: As a result of acute cervical endometritis, a permanent exudate is sometimes left about the internal os uteri, where there is a greater thickness of the mucosa. This constriction ring not only produces the characteristics of stenosis in many cases but also gives rise to the ordinary symptoms that are usually attributed to endometritis. The symptoms vary greatly in different patients, depending partly on the interference with the patency of the lumen, the chronicity and the associated pelvic conditions, and partly on the patient's general resisting powers and nervous habits. The diagnosis is made by means of the sound, which detects a tender area at the internal os and which causes more or less bleeding. In the more chronic cases, firm pressure exerted by a dilating sound produces a slight discharge of inspissated mucus, which adheres to the sound. The treatment calls for gradual progressive dilatation with round dilators under the strictest aseptic and antiseptic precautions, and later stimulating applications of iodized phenol. The occasional failure of an Emmet trachelorrhaphy to cure the symptoms is laid to a persistence of such an exudate at the internal os.

Treatment of Suppurating Wounds Following Abdominal Section

DR. THOMAS J. WATKINS, Chicago: No sutures are removed on account of suppuration, except when they cut deeply into the tissues, and no drains are inserted. No probing is permitted. Moist boric acid dressings are placed over the wound as soon as signs of suppuration appear, and are continuously applied until the amount of drainage becomes scant and until excessive redness disappears. The moist dressings are used to keep the wound secretions from desiccating and to promote drainage. A large amount of drainage will take place through very small openings when thus treated, the drainage will be efficient, and the suppurating surfaces, by virtue of atmospheric and intra-abdominal pressure, will keep in relative apposition. The wounds heal quickly; the treatment is painless; the patient is not unnecessarily disturbed mentally, and the ultimate strength of the abdominal wall is seldom injured by the suppuration. When the discharge ceases, no open wound remains to heal by granulation. Antiseptic solutions are not employed, as they injure the tissues more than they harm the bacteria.

Hemorrhages Into Pelvic Cavity Other Than Those of Ectopic Pregnancy

DR. RICHARD R. SMITH, Grand Rapids, Mich.: The most frequent source of such hemorrhage is the ovary: a ruptured graafian follicle or corpus luteum; hematoma ovarii and ovarian tumors (cystic or solid), although the tube may on rare occasions give rise to hemorrhage. A tube involved in the twisted pedicle of an appendage is a good illustration of such hemorrhages. Intraperitoneal hemorrhages may occur from fibroid tumors.

The Importance of a Follow-Up System

DR. GEORGE W. KOSMAK, New York: In view of the liability to injuries resulting in invalidism remaining unrecognized in the usual postpartum examination, a discharge of the patient should not be made for at least three months after the birth of the child. During this interval at least two or three examinations of the patient should be made. Of forty-eight American maternity hospitals, thirty-six maintain some sort of follow-up system, but in the majority of the latter the patients return only if abnormalities develop. A regularly organized postpartum clinic should be part of the equipment of every maternity hospital, and in connection with it an organization of social service workers or follow-up nurses to visit the patients in their homes is essential. The necessity of more prolonged postpartum observation should be included in every scheme of hospital standardization, and the shortcomings of institutional work in this field applies with equal force to private patients. The advisability of some form of maternity insurance may do a great deal to obviate some of the difficulties connected with the scheme of more prolonged postpartum care of obstetric patients.

Operation or Radium for Operable Cancer of Cervix

DR. WILLIAM P. GRAVES, Boston: Personal experience with radium in cancer of the cervix has not justified its use in operable cases as a substitute for radical operation. Success depends largely on equipment and method of application not possessed by the users of moderate quantities of radium. Operation is the treatment by choice by those to whom the highly developed radium therapy is not available.

Radium Treatment of Cervical Cancer

DR. FREDERICK J. TAUSSIG, St. Louis: Radium treatment of uterine cancer should be kept in the hands of the gynecologist rather than the roentgenologist, but such a gynecologist should seek preliminary training in the use of radium and must have continued opportunity for observation and treatment of cancer cases in order to reduce mistakes to a minimum.

Operation is to be preferred in the case of all operable patients under 35 years of age, and in the early operable cases beyond this age. Radium is to be recommended wherever obesity or lung, heart or kidney lesions make operation difficult or dangerous, and in advanced operable, borderline and inoperable cases, but not in the advanced inoperable group with cachexia. It is better to treat the advanced inoperable cases with acetone, since radium increases the tendency to fistulas and pain in most instances.

A New Method of Covering Raw Surfaces on the Uterus

DR. GEORGE GELLHORN, St. Louis: The fundus is pulled backward and upward in the direction of the promontory. The reflection of the bladder peritoneum on the cervix is incised transversely as in a hysterectomy, and pushed off from the uterus. The uterus is then tilted forward, and the bladder peritoneum is pulled over the uterus and stitched to the posterior aspect of the fundus, where an intact peritoneal surface presents itself. In small uteri, the bladder

peritoneum may be fastened as far back as the insertion of the sacro-uterine ligaments, if necessary. The entire fundus with its denuded area is thus covered by peritoneum. If an inverting stitch is used, even the catgut knots become invisible. The newly formed covering consists only of the bladder peritoneum which, in many cases, is so thin and transparent that the raw uterine surface and even the volsella holes may be distinguished. The method not only supplies the raw fundus with a new serous coat, but it also safeguards a normal position and mobility of the uterus, and the late results have remained most satisfactory. It is, however, not to be relied on exclusively in a case of fixed retroflexion. I have never observed an instance of vesical disturbance other than those that may follow any laparotomy.

Lutein Cysts Accompanying Hydatidiform Mole

Dr. W. A. Coventry, Duluth, Minn.: In one case the ovarian tumors appeared with the mole (in fact, somewhat clouding the history of mole), and in the other case the tumor seemed to arise and started to grow rapidly after the mole had been removed. These multiple lutein cysts are different from those normally appearing during pregnancy. They accompany only the formation of chorio-epithelioma and mole, and are probably not to be found in any associated condition.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Review of Tuberculosis, Baltimore

May, 1920, **4**, No. 3

*Tuberculosis in Guinea-Pig after Subcutaneous Infection. Tracheobronchial Lymph Nodes. A. K. Krause, Baltimore.—p. 135.
*Factors that Influence Development of Tubercle in Lymph Nodes of Guinea-Pig. A. K. Krause, Baltimore.—p. 193.
*Vincent's Spirochete and Hemorrhage in Pulmonary Tuberculosis. A. N. Sinclair, Honolulu.—p. 201.

Tuberculosis After Subcutaneous Infection.—After subcutaneous (right groin) infection of guinea-pigs with massive doses of tubercle bacilli, the bacilli are carried centralward by the lymphatic stream and thence into the blood and throughout the body with great facility and rapidity. Krause is of the opinion that for a time after pulmonary infection (infection, not lesion) is first established, most bacilli are expelled from the lung (of the guinea-pig) by the lymphatics. Many experiments made by Krause have shown this. In the tuberculous guinea-pig gross lesion of the lung is not indispensable to the appearance of gross lesion in the tracheobronchial nodes. Lesion in the latter very commonly exists without lesion in the lung. The amount of involvement of the tracheobronchial nodes is directly related to the amount of tubercle that may be present anywhere in the body. But, since under ordinary conditions the spleen is the most extensive depot of tubercle in the guinea-pig, the condition of the tracheobronchial nodes usually reflects that of the spleen.

Tuberculosis of Lymph Node.—In the guinea-pig, Krause says, the existence of tubercle in a lymph node is contingent on the occurrence of a lesion at a point peripheral to the node. The progression or retrogression of tubercle in this animal's lymph nodes is largely dependent on the progression or retrogression of the peripheral foci.

Spirochetes and Lung Hemorrhage.—A rounded, definitely limited roentgen-ray shadow, about the size of a small orange, was noted by Sinclair just to the right of and slightly below the level of the hilum in twenty-three cases complicated with hemorrhage, and Vincent's spirochete and *B. fusiformis* were present in the sputum in large numbers. Of 410 sputum examination, 256 showed the presence of the spirochete, while 182 were complicated with hemorrhage. Of the 154 negative cases, 56 were complicated with hemorrhage. The corollary of this shows that of 238 cases with hemorrhage, the spirochete was present in 182, and of the 172 cases without hemorrhage the spirochete was present in 74. If the series of cases under consideration is divided into those cases in which cavitation can be ruled out (incipent cases), and those cases in which there is a probable or evident active cavitation (advanced cases), there will be 205 incipient and 205 advanced cases. Of the 205 incipient cases, 118 had hemorrhage, and in all but 13 the spirochete was demonstrable. Also of the 56 cases in which the spirochete could be found, there was active cavitation in 43.

Arkansas Medical Society Journal, Little Rock

May, 1920, **16**, No. 12

Focal Infections; Their Relation to Some Pathologic Conditions of Organs of Special Sense. L. H. Lanier, Texarkana.—p. 223.
Focal Infections. W. T. McCurry, Little Rock.—p. 227.

Boston Medical and Surgical Journal

June, 1920, **182**, No. 25

*Significance of Hematuria. A. L. Chute, Boston.—p. 623.
Chronic Fatigue: Diet, Exercise, and Other Factors in Treatment. J. Bryant, Boston.—p. 629.
*Infection of Knee Joint Treated by Early and Continuous Active Motion. F. B. Lund, Boston.—p. 631.

Hematuria.—A study of 100 cases of hematuria, which probably represents pretty much the ordinary run of such cases, Chute says, proves very definitely that hematuria is not a condition to be looked on lightly, that in more than one half of the cases it is indicative of an extremely serious condition which is only remediable if recognized and treated early; that in only a small proportion of cases, more especially in the cases of bleeding nephritis, can it be said that it makes no real difference whether they are attacked early or not, that in these very cases, however, it is essential that they be investigated, for the simple reason that in most instances without this investigation it is utterly impossible to distinguish them from cases of hypernephroma where an early diagnosis and early removal of the growth are essential if one is to accomplish anything in this class of tumors of the kidney. Study of a considerable number of cases of hematuria compels Chute to conclude that the physician who told his patient that he might safely ignore his bleeding showed poor judgment medically; that although he was partially right, this was due to good luck rather than to sound medical judgment.

Active Motion in Infected Knee Joint.—A bullet located in the capsular ligament was the cause of the infection in Lund's case. The joint was opened and a large amount of seropurulent fluid escaped. The bullet was found and removed. A rubber tissue drain was placed in the popliteal space and a dry sterile dressing applied. Active motion was started the next day. This was regularly continued daily, the temperature gradually going up until a collection of pus in the upper part of the popliteal incision was drained and a rubber tube put in. Then a pus pocket above the upper end of the wound in the popliteal space was opened. At this time the active motion was not as free as it had been on account of the swelling and tenderness in the popliteal space. The patient was then put on the Carrel treatment under which the amount of pus gradually diminished. The active motion was continued though not quite to the same extent as the first. Lund is convinced that in this case active motion from the first gave an excellent result, although recovery was delayed by the complication of the abscess in the popliteal space.

Bulletin Johns Hopkins Hospital, Baltimore

May, 1920, **31**, No. 3511

*Significance of Syphilis in Prenatal Care and in Causation of Fetal Death. J. W. Williams, Baltimore.—p. 141.
*Transient and Paroxysmal Auricular Fibrillation. V. R. Mason, Boston.—p. 145.
*Determination of Acidity of Gastric Contents. A. T. Shohl, Baltimore.—p. 152.
*The Colorimetric Determination of Free Hydrochloric Acid in Gastric Contents. A. T. Shohl and J. H. King, Boston.—p. 158.
Combined Acidity and Buffer Value of Gastric Contents. A. T. Shohl and J. H. King, Boston.—p. 162.
Psychopharmacology. D. I. Macht, Boston.—p. 167.
*Biologic Study of Hemolytic Streptococci from Throats of Patients Suffering from Scarlet Fever. W. P. Bliss, Boston.—p. 173.

Syphilis as Cause of Death of Fetus.—Williams' paper is based on the study of 302 fetal deaths occurring in 4,000 consecutive deliveries. Of the 302 dead babies, 212 came to necropsy. In the former are included not only those dying at the time of labor or during the two weeks immediately following it, but also those dying during pregnancy from the time of viability onward; 157 occurred at the time of labor or during the first two weeks of the puerperium, and 145 were in premature children. Syphilis was noted in 104 cases, in eighty-nine of which the diagnosis was confirmed by necropsy with the demonstration of spirochetes in the fetal tissues; while in the remainder it was made from the presence of syphilitic lesions in the placenta, associated with a positive Wassermann on the part of the mother.

Auricular Fibrillation.—Eighteen cases are reported by Mason. In about 7 per cent. the arrhythmia was transient or paroxysmal. Cardiac disease was a nearly constant finding. In a few instances, in which the only evidence of cardiac disease was an attack of auricular fibrillation, it was necessary to assume that cardiac changes due to arteriosclerosis or hypertensive vascular disease were present.

Acidity of Gastric Contents.—Shohl claims that the expression of gastric acidity in terms of p_H (hydrogen-ion concentration) brings out clearly the relation between acidity and peptic digestion.

Colorimetric Determination of Free Hydrochloric Acid.—A new colorimetric method is presented by Shohl and King which determines the amount of free hydrochloric acid in the gastric contents. A simple color comparison shows both the amount and concentration of the acid. The procedure is: Take 2 c.c. of filtered or unfiltered gastric contents. Add 2 drops of 0.2 per cent. thymolsulphonephthalein. Compare the color of the sample with standard solutions containing the same amount of the same indicator. The result can be read directly in hydrochloric acid in 100 c.c. of gastric contents. The method is accurate and applicable to clinical tests.

Biology of Hemolytic Streptococci.—In a study by Bliss of twenty-five strains of *S. hemolyticus* isolated from the throats of patients with scarlet fever, twenty, or 80 per cent., were agglutinated by four different antistreptococcic serums made with streptococci isolated from scarlet fever cases. None of these strains were agglutinated by five antistreptococcic serums of nonscarlatinal origin (except in the few instances noted). But three of seventeen strains of nonscarlatinal origin were agglutinated by these three serums of scarlatinal origin, and these three may have been either atypical scarlatinas or scarlatinal contacts. Certain differences in cultural characteristics, particularly in the fermentation of carbohydrates, were noted.

Canadian Medical Association Journal, Toronto

May, 1920

Ontario Medical Association Reorganization. J. H. Mullin.—p. 401.
Union of Septic Compound Fractures. W. E. Gallie.—p. 407.
Wounds and Infections of Knee Joint. A. T. Bazin.—p. 416.
Cancer of Uterus; Diagnosis. G. S. Cameron.—p. 424.
Causes of Death in Men who Died from Gunshot Wounds of Abdomen. H. E. Clutterbuck.—p. 428.
Certain Bacteriologic and Seriologic Aspects of Epidemic Influenza. A. H. W. Caulfeild and D. T. Fraser.—p. 436.
*Early Diagnosis of Variola. Conditions of the Blood and Spleen. N. B. Gwyn.—p. 447.

Diagnosis of Smallpox.—Gwyn suggests that a normal or even low leukocyte count and an unusually firm large spleen may be found in the preeruptive stage of mild variola and that this fact may be of use in early diagnosis.

Colorado Medicine, Denver

May, 1920, **17**, No. 5

Gastrostomy for Laryngeal Tuberculosis C. J. Lowen, Denver.—p. 111.
Case of Congenital Word Blindness. C. S. Bluemel, Denver.—p. 113.
Case of Double Optic Neuritis Associated with Dental and Nasal Focal Infection. G. F. Libby, Denver.—p. 117.
Ileus. J. L. Mortimer, Denver.—p. 119.
Etiologic Factors and Treatment of Certain Types of Surgical Infections. C. E. Tennant, Denver.—p. 124.
*Three Cases Presenting a Masto-Ovarian Syndrome, Relieved by Corpus Luteum. J. B. Hartwell, Colorado Springs, Colo.—p. 128.
Antituberculosis Activities in France. C. T. Burnett, Denver.—p. 132.

Corpus Luteum in Pain in Breasts.—In the three cases cited by Hartwell, pain in the breasts was more or less constant, severe and aggravated by menstruation. The use of corpus luteum for about one week gave complete and permanent relief from pain in each case.

Florida Medical Association Journal, St. Augustine and Jacksonville

May, 1920, **6**, No. 11

Reproduction. L. DeBlocker, Pensacola.—p. 202.
Pruritis Ani. J. Holton, Sarasota.—p. 203.

Illinois Medical Journal, Oak Park, Ill.

May, 1920, **37**, No. 5

Diagnosis of Ectopic Pregnancy. H. F. Lewis, Chicago.—p. 301.
Postpartum Management. E. Cary, Chicago.—p. 305.
Mercurosal in Treatment of Syphilis. L. D. Smith, Chicago.—p. 308.
Soldier and Tuberculosis. C. L. Wheaton, Chicago.—p. 310.
Osteomyelitis of Traumatic Origin. A. B. McQuillan, East St. Louis.—p. 313.
Cystic Dilatation of the Vesical End of Ureter; Report of Case. F. Kreissl and Wm. H. Gehl, Chicago.—p. 315.
Diseases of Thyroid and How to Attack Them. E. W. Marquardt, Elmhurst.—p. 320.
Prostatectomy; Its After Treatment. D. J. Hayes, Milwaukee, Wis.—p. 325.
Treatment of Fractures of Radius and Ulna at Middle Third. C. H. Lemon, Milwaukee, Wis.—p. 328.
Sphenoid Sinus. J. A. Cavanaugh, Chicago.—p. 331.
Pernicious Vomiting. Plea for Mother. P. Gardner, New Hampton, Iowa.—p. 333.

Journal of Biological Chemistry, Baltimore

April, 1920, **41**, No. 4

*Digestibility of Chicken Skin. E. F. Kohman and H. A. Shonle, Indianapolis.—p. 469.
*Effect of Sleep on Alkali Reserve of Plasma. J. B. Collip, Edmonton, Canada.—p. 473.
Utilization of α-Methylglucoside by Aspergillus Niger. A. W. Dox and G. W. Roark, Ames, Ga.—p. 475.
Properties of Nucleotides from Yeast Nucleic Acid. P. A. Levene, New York.—p. 483.
Rutin, Flavone Pigment of Escholtzia California Cham. C. E. Sando and H. H. Bartlett, Ann Arbor, Mich.—p. 495.
*Formation of Acetone Bodies Following Ether Anesthesia and Their Relation to Plasma Bicarbonate. J. J. Short, New York.—p. 503.
*Milk as a Source of Water-Soluble Vitamin. T. B. Osborne and L. B. Mendel, New Haven, Conn.—p. 515
*Effect of Intravenous Injections of Active Deposit of Radium on Metabolism in Dog. R. C. Theis and H. J. Bagg, New York.—p. 525.
Determination of Refractivity of Hemoglobin in Solution. F. H. Howard, Williamstown.—p. 537.
*Nutritive Factors in Plant Tissues. IV. Fat-Soluble Vitamin. T. B. Osborne and L. B. Mendel, New Haven, Conn.—p. 549.
Studies of Acidosis. XVI. Titration of Organic Acids in Urine. D. D. Van Slyke and W. W. Palmer, Baltimore.—p. 567.
*Determination of Fibrin, Globulin and Albumin Nitrogen of Blood Plasma. G. E. Cullen and D. D. Van Slyke, New York.—p. 587.
*Studies of Variations in Chemical Composition of Human Blood. F. S. Hammett, Philadelphia. —p. 599.
Heat Coagulation of Milk. H. H. Sommer and E. B. Hart, Madison, Wis.—p. 617.
A New 0.1 N Calomel Electrode Design. A. E. Koehler, Madison, Wis.—p. 619.

Digestibility of Chicken Skin.—In experiments made by Kohman and Shonle, in which over 65.1 to 67.5 per cent. of the nitrogen of the diet was supplied by chicken skin, especially prepared for eating, there was as good utilization of nitrogen as when the same proportion of the nitrogen was supplied by meat, eggs and milk. The skin used for these experiments had 26.3 per cent. fat and 3.03 per cent. nitrogen. To prepare it for eating it was rolled in balls and fried.

Effect of Sleep on Alkali Reserve.—Collip found that the alkali reserve of the blood plasma is either unaltered or depressed during sleep. An actual increase in the C_H of the blood during sleep is indicated.

Formation of Acetone Bodies During Anesthesia.—Acetone bodies were not formed promptly enough during ether anesthesia in cases reported by Short to account for the decreased plasma bicarbonate present in the blood plasma.

Vitamin in Milk.—Attempting to duplicate the results of Hopkins, Osborne and Mendel fed diets consisting of casein or edestin, starch, a salt mixture, lard and other butter fat along with fresh milk offered in varying quantities. In con-

tradiction to some of Hopkins' results they found, under the conditions of their investigation, that 2 c.c. of milk per day rarely sufficed to enable rats, on the diets mentioned, to make more than very slight gains in weight. Many of the animals were barely maintained when such small quantities furnished the sole source of water-soluble vitamin. Not until at least 16 c.c. of fresh milk per day were supplied along with the food mixture was anything approaching a normal rate of growth secured. Even this amount sometimes failed.

Effect of Radium on Metabolism.—Solutions of sodium chlorid which contained active deposit from radium emanation were used by Theis and Bagg. The injection was followed by an increased output of nitrogen, reaching the maximum figure on the second day after treatment. The absolute as well as the relative amount of total nitrogen excreted as ammonia nitrogen was decidedly increased. The effect seems to be cumulative.

Nutritive Factors in Plant Tissue.—According to Osborne and Mendel, the newer studies indicating the richness of many types of plant tissues in those nutritive properties termed vitamins, place the dietary importance of the green vegetables in an entirely new light. It emphasizes their use to supplement the refined foods of the modern food industry which furnish products rich in proteins, fats and carbohydrates but in many cases comparatively deficient in the vitamins. The fats cited in the present investigation, along with others recently published, serve as an added reminder that the fat-soluble vitamin need not be sought solely in foods known to be rich in fats.

Studies of Acidosis.—Methods are described by Cullen and Van Slyke for separation of the fibrin, globulin, and albumin of blood plasma in such a manner that they may be determined by the Kjeldahl method.

Nitrogenous Constituents of Human Blood.—Hammett's studies of the chemical composition of human blood indicate that while the total nitrogen, nonprotein nitrogenous constituents, and the sugar in the blood vary in the same person from week to week, there is a tendency for the level of these variations to be characteristically individual. The sum of the average deviations of the constituents for any given individual may be an index of the metabolic stability of that individual.

Journal of Immunology, Baltimore

March, 1920, **5**, No. 2

*Natural Antihuman Hemolysins and Hemagglutinins in Horse Serum in Relation to Serum Therapy. J. A. Kolmer and M. Matsumoto, Philadelphia.—p. 75.
*Attempt to Produce Specific Immune Agglutinins and Hemolysins for Four Groups of Human Erythrocytes. J. A. Kolmer and M. E. Trist, Philadelphia.—p. 89.
*Comparative Study of Methods for Preparation of Typhoid Agglutinogens. J. E. Sands, Philadelphia.—p. 97.
*Study of Different Methods for Preparation of B. Typhosus Antigen. M. Matsumoto, Philadelphia.—p. 111.
*Experimental Study of Effect of Autogenous B, Coli Vaccines on Intestinal Colon Bacilli of Dogs. J. C. Torrey and A. H. Rahe, New York.—p. 133.
Experimental Study of Sensitized Cholera Antigen. Y. Miura, Tokyo.—p. 145.
Dropping Bottle as an Aid in Macroscopic Slide Agglutination. C. Krumwiede, New York.—p. 155.
*Complement Fixation Test for Tuberculosis. H. O. von Wedel.—p. 159.

Antihuman Hemolysins and Hemagglutinins.—While practically all horse serums contain agglutinins for human erythrocytes, Kolmer and Matsumoto believe that it is highly probable that the intravenous injection of preserved horse serum does not introduce sufficient agglutinin and hemolysin for human erythrocytes to produce ill effects referable to intravascular agglutination and hemolysis; this is particularly true if the serum is diluted and injected slowly.

Immune Agglutinins and Hemolysins for Erythrocytes.—The immunization of rabbits with human corpuscles belonging to Groups I, II, III and IV does not result in the production of specific agglutinins and hemolysins for the corpuscles of the group employed in immunization, but Kolmer and Trist found that these serums frequently show slightly more agglutinin and hemolysin for the corpuscles of the group used in immunization than for the corpuscles of the remaining groups. For the grouping of human erythrocytes it does not appear possible to prepare specific immune serums; human serums containing iso-agglutinins and hemolysins must be used and these are best preserved in a fluid state at or near the freezing point.

Typhoid Agglutinogens.—A comparative study of agglutinogens prepared from a single strain of typhoid bacilli which had been used for agglutination tests for several years, was made by Sands. An agglutinogen is best prepared by cultivating on solid medium for forty-eight hours, removing the growths with from 0.85 to 1 per cent. chemically pure sodium chlorid in distilled water, shaking with beads until a perfectly homogenous emulsion is secured, diluting with saline solution to proper density (about 2,000,000,000 per cubic centimeter), and adding neutral liquor formaldehydi to 1 per cent.

Preparation of Typhoid Antigen.—The general result of Matsumoto's study and a review of investigations by others indicate that the similar bacterial antigens in which is employed the whole micro-organism either living or dead in physiologic sodium chlorid solution or in culture broth, are superior to filtrates and constitute the antigens of choice for the conduct of complement fixation tests in bacterial infections.

Effect of B. Coli Vaccines on Intestinal Colon Bacillus.—In the case of a number of dogs Torrey and Rahe found it possible to effect the temporary suppression of a certain variety of *B. coli* normal to the intestinal tract through inoculations with a specific vaccine. Autogenous vaccines are apparently necessary for marked results and the dosage must be large. Cultural results indicating a decrease in numbers of the type of *B. coli* in question were associated with a coincident rise of specific antibody in the blood. A uniform diet must be maintained, otherwise the effect of the vaccine will be obscured.

Tuberculosis Complement Fixation Test.—The results of 6,128 complement fixation tests made by von Wedel on 1,207 serums from 1,000 patients point to the fact that this is not a 100 per cent. test for the diagnosis of tuberculosis. A considerable percentage of serums from incipient and far advanced cases apparently contain insufficient antibodies to fix complement, no matter what system or what antigen is used for the test. This fact, therefore, precludes the probability of a 100 per cent. test based on complement binding antibodies in the patient's serum. About 70 per cent. positive results appears to be the average finding, with all types of unselected active tuberculous cases, for many thousands of complement fixation tests made by many serologists, using tubercle bacillus suspensions or tuberculins as antigens. The reactions are weakest when the patient exhibits few, if any, symptoms of tuberculosis, while they are most definite and strongest in the incipient and moderately advanced cases exhibiting marked symptoms. The results are therefore more confirmatory than actually diagnotic in the largest percentage of cases. However, when used intelligently, along with the clinical history, the results justify its more extended use.

Laryngoscope, St. Louis

April, 1920, **30**, No. 4

1919—Index-Medicus and Digest of Oto-Laryngology.

Medical Record, New York

June 5, 1920, **97**, No. 23

Cure of Cancer. L. D. Bulkley, New York.—p. 941.
Diet and Health: Amount and Kind of Food Required. J. Aulde, Philadelphia.—p. 947.
Psychoanalysis. H. Laveson, New York.—p. 952.
Mycotic Otitis. C. J. Koenig, Paris.—p. 956.
Physics of Percussion. A. Abrams, San Francisco.—p. 958.
Removal of Vertebra of Chicken from Esophagus. J. E. Sheehan, New York.—p. 959.

June 12, 1920, **97**, No. 24

*Retrograde Stretching in Treatment of Impermeable Cardiospasm. M. Einhorn, New York.—p. 983.
*Anesthesia Problem in Lung Surgery. J. T. Gwathmey, New York.—p. 987.
Case of Mixed Neurosis with Some Paraphrenic Features. M. K. Isham, New York.—p. 990.

Epidemic Encephalitis (Miscalled Lethargic). T. A. Williams, Washington, D. C.—p. 994.
Osteomalacia: Is It a Rare or Rather Common Disease. W. H. Dieffenbach, New York.—p. 995.
Chronic Pulmonary Conditions Simulating Advanced Tuberculosis. W. Narins, New York.—p. 997.
In What Way Do Focal Infections Cause Systematic Disease. T. J. Ryan, New York.—p. 999.
Subperitoneal Enucleation of Uterus; Report of Five Cases. H. Crutcher, Joliet, Ill.—p. 1001.

June 19, 1920, **97**, No. 25

Some Principles Seldom Recognized in Treatment of Syphilis and Syphilitics. W. W. Graves, St. Louis.—p. 1025.
Significance of Diastolic Blood Pressure. L. F. MacKenzie, Newark, N. J.—p. 1029.
*New Method for Clinical Diagnosis of Toxic Thyroid Sattes. W. N. Berkeley and J. Koopman, New York.—p. 1035.
Neoplasms in Light of Experimental Studies. M. W. Lyon, South Bend, Ind.—p. 1037.
Dengue. M. D. Levy, Galveston, Texas.—p. 1040.
Case of Influenza Complicated with Streptococcic Bronchopneumonia, Endocarditis, Arthritis and Pyemia; Recovery. J. Sellin, Chicago. —p. 1042.

Retrograde Stretching of Impermeable Cardiospasm.—Retrograde stretching with the pyloric dilator is preferred by Einhorn to passing bougies over a previously swallowed string. It sometimes happens that even a flexible instrument cannot follow the string, if there is present too great a bend in the sacculation or an unyielding spasm at the cardia. In cases in which an ulcer in the stomach is suspected or really discovered, it is advisable first to accord the esophagus and stomach a period of rest before instituting the stretching treatment. The later is best done first by the pyloric dilator, every other day or twice a week, the dilator being introduced before retiring supplemented by a dose of atropin, and stretching done the following morning. After a few stretchings the dilator enters the stomach in a much shorter time.

Anesthesia Problem in Chest Surgery.—This paper is based on between eighty and 100 animal experiments, and a large clinical experience with surgical teams working in the advanced zone of the Americal Army and confining themselves almost exclusively to chest surgery.

New Method for Clinical Diagnosis of Toxic Thyroid States.—Having observed that with normal dog thyroid random samples of exophthalmic goiter serum would bind powerfully, and that they would not bind with any other dog organ, Berkeley and Koopman made fixation experiments on more than 175 human serums, of which forty were under suspicion of positive thyroid dyscrasia. Of the forty, eighteen were clinically undoubted exophthalmic goiter, two were probably so, ten were doubtful, and ten were probably not exophthalmic goiter. The eighteen positive cases were all from one to four plus. The probable cases were positive; six of the ten doubtful cases were positive; the ten "probably not" were all negative. As to the controls, numbering more than 135 patients, all were negative except one, with a tertiary specific skin lesion on one knee. The new test has been repeated hundreds of times and has been checked up with all needful controls. This reaction is apparently due to a specific thyroid substance which combines with an antibody in the blood of the patient. The test is described in detail.

Modern Medicine, Chicago

April, 1920, **2**, No. 4

Contributions of Laymen to Medical Science. J. A. Tobey, Washington, D. C.—p. 272.
*Autonomic Nervous System and Disorders of Stomach. H. Wheelon and J. E. Thomas, St. Louis.—p. 283.
Experience of Medical Department at Nitro, W. Va. J. A. Watkins, Cincinnati.—p. 293.
Traumatic Surgery in its Relation to Workman's Compensation Laws. R. Lewy, New York.—p. 298.
*Cincinnati Survey of After Effects of Influenza. P. Mason, Cincinnati.—p. 305.
Public Health Notes from Vosges. T. C. Merrill.—p. 308.
Plan to Stimulate Family Physician in Diagnosis of Tuberculosis. J. J. Moorman, Oklahoma City.—p. 313.
Tomorrow's Health—Doctor's Dilemma. T. J. Werle, Milwaukee.—p. 322.
A Samaritan Quarter for Housing and Employing Semi-Invalid. S. Wachsmann, New York.—p. 326.
Public Health Nursing in Italy. E. L. Foley, Chicago.—p. 331.
Chicago Infant Welfare Society. S. B. Place, Chicago.—p. 335.

Autonomic Disorders of Stomach.—Wheelon and Thomas review the literature showing that the stomach may be regarded as an autonomic organ influenced to cooperative activity because of the intergrative action of the central nervous system acting through the vagus and splanchnic nerves. The normal stomach is one in which, added to its myogenic properties, a proper reciprocal innervation is maintained associated with a balanced chemism. Alterations in any one of these elements will of necessity break the balance, and resulting pathologic functioning or symptoms will be in proportion to the degree of severity of the alteration.

After Effects of Influenza.—Outstanding features of the report by Mason are the high proportion of cardiac cases, covering a wide range of seriousness; the abnormal development of tuberculosis and pretubercular conditions, and the large number of throat affections. Hardly less striking is the absence of affections of the urinary organs from the statistical record. The total number of persons examined was 7,058. Of this number 5,624 required medical attention and 1,434 were examined but not recommended for treatment, and 2,015 were reexamined. Defective vision, hypertrophy of tonsils and adenoids, diseases of respiratory tract, asthenias, cardiac diseases and defective teeth were the conditions encountered in greatest numbers. The number of tuberculosis cases was striking in the respect that they were, in nearly every instance, new cases, never before reported to the health department. Mason links up with this epidemic the unusually large number of sudden deaths, and presumably from heart disease, in persons who had had influenza.

May, 1920, **2**, No. 5

Reconstruction of Sick Child. A. Levinson, Chicago.—p. 344.
Epidemic Encephalitis. J. M. Stanton, St. Louis.—p. 353.
Standardized Surgical Methods in Industry. C. D. Selby, Toledo, O. —p. 360.
Necessity for Institute of Industrial Hygiene. C. Baskerville, New York.—p. 363.
Service Departments of R. K. Lebland Machine Tool Company. I. De Hart, Cincinnati.—p. 365.
Experience of Medical Department at Nitro W. Va., J. A. Watkins, Cincinnati.—p. 370.
Public Health Surveys. H. B. Wood, New York.—p. 380.
Red Cross Public Health Nursing. S. Fuller, Chicago.—p. 386.
Nutrition Classes in Chicago Schools. I. C. Wood and E. McCormick, Chicago.—p. 388.
Students' Health Service at University of California. R. T. Legge, Berkeley, Calif.—p. 400.

Nebraska State Medical Journal, Norfolk

May, 1920, **5**, No. 5

What Everybody Ought to Know About the Roentgen Ray. J. C. Bloodgood, Baltimore.—p. 121.
*Peritoneoscope in Diagnosis of Diseases of Abdomen. B. H. Orndoff, Chicago.—p. 124.
Five Years' Experience in Treatment of Cancer with Roentgen Ray. A. P. Overgaard, Omaha.—p. 126.
Some Clinical Aspects of the Kidney Problem. A. D. Dunn, Omaha. —p. 130.
Treatment of German Measles, Pertussis, Scarlet Fever and Diphtheria. H. B. Hamilton, Omaha.—p. 135.
Mechanical Treatment of Compound Fractures of Upper Extremity. J. E. M. Thompson, Lincoln.—p. 140.
Aortic Aneurysm. Report of Two Cases. G. P. Pratt, Omaha.—p. 143.

Peritoneoscopy.—Orndoff describes the peritoneoscope and the method of using it. The instrument is inserted through the abdominal wall and is said to be of value in the diagnosis of tubercular peritonitis, general or diffuse peritonitis, hydroperitoneum, postoperative shock where there is question of abdominal hemorrhage, extra-uterine pregnancy and ovarian cyst. It permits of a direct view of the pathologic condition.

New Jersey Medical Society Journal, Orange

May, 1920, **17**, No. 5

Treatment of Disease in Aged. W. G. Thompson, New York.—p. 145.
Chronic Purulent Inflammation of Middle Ear and Its Accessory Cavities As Seen by General Practitioner. C. F. Keeler, Philadelphia.—p. 152.
Diagnostic Significance of History in Disease of Gallbladder, Stomach and Appendix. C. G. Heyd, New York.—p. 155.
Uses of Radium in Medicine. H. A Kelly, Baltimore.—p. 160.
Removal of Lower Extremity by Disarticulation of Hip Joint and Removal of Upper Extremity Including Scapula and Outer Third of Clavicle. E. Staehlin, Newark.—p. 164.

Can Arsphenamin Be Kept in a Permanent Solution? O. Lowry, Newark.—p. 167.
Importance of Radiographic Examination of Thorax. H. A. Knauss, Newark.—p. 168.

Pennsylvania Medical Journal, Athens, Pa.

March, 1920, 23, No. 6

Value of Early Diagnosis of Pleural Effusions. S. A. Savitz, Philadelphia.—p. 307.
*Acquired Pulmonary Syphilis. E. H. Funk, Philadelphia.—p. 310.
Present Status of Therapeutic Pneumothorax in Pulmonary Tuberculosis. A. Armstrong, White Haven.—p. 315.
Nose and Throat Lesions Associated with Pulmonary Tuberculosis. H. H. Farnsler, Harrisburg—p. 318.
*Two Cases of Lung Abscess Following Tonsillectomy, Under Local Anesthesia, in Tubercular Subjects. J. R. Simpson and H. G. Noah, Pittsburgh.—p. 322.
*Acute General Peritonitis in Infants. F. E. Ross, Erie.—p. 323.
Acute Otitis Media Complicating Epidemic Influenza. Observed in the U. S. Base Hospital, Camp McClellan, Anniston, Ala. J. C. Keeler, Philadelphia.—p. 325.
Surgical Operaions of War, Industrial Activities at Methodist Episcopal Hospital, Philadelphia. L. J. Hammond, Philadelphia.—p. 329.
Our New Responsibilities. D. Riesman, Philadelphia.—p. 330.
*Errors in Diagnosis of Pulmonary Tuberculosis. Joseph Walsh, Philadelphia.—p. 333.
Medical Review of Last Fifty Years. T. B. Hill, Waynesburg.—p. 336.
Pennsylvania State Prenatal and Postnatal Clinic at Henry Phipps Institute in Philadelphia. C. C. Norris and N. S. Rothschild, Philadelphia.—p. 338.
Wassermann Test in Primary Syphilis. W. H. Guy, Pittsburgh.—p. 341.

Acquired Pulmonary Syphilis.—Although questioning the great frequency of lung syphilis which some writers maintain, Funk believes that among chronic lung patients will be found some who suffer because of a syphilitic lesion in the lung. Among the nontuberculous group, those comprising the mycotic infections, chronic abscess, tumor, pneumokoniosis, etc., syphilis is no mean contender. Health can sometimes be restored in a few weeks or in a few months to persons who appear to be in the last stage of pulmonary tuberculosis. Funk agrees with Hoffman, who states that patients have perished from pulmonary syphilis improperly treated under a mistaken diagnosis of pulmonary tuberculosis, etc., where restoration to health might have been possible had appropriate treatment been promptly instituted.

Lung Abscess Following Tonsillectomy.—The possibility of aspiration of infected material as a cause of pulmonary absces is not denied by Simpson and Noah, yet they believe that more cases occur as a result of hematogenous infection than is generally supposed.

Acute General Peritonitis in Infants.—Four cases are reported by Ross. The ages of the patients were 4, 8 and 3 weeks and 4 months, respectively. Only one case was characterized by persistent vomiting. Neither diarrhea nor constipation were prominent features. All patients had some elevation of temperature, high at the onset. Cyanosis was present in one case and great depression in all cases. The symptom common to all was marked distension of the abdomen with general abdominal tenderness. In all cases the peritonitis seemed to be a part of a general septicemia complicating infectious processes in other parts of the body.

Errors in Diagnosis of Pulmonary Tuberculosis.—In the 471 necropsies at the Phipps Institute there were six cases which were not tuberculous; of these six two were properly diagnosed (both cardiovascular disease) and four were diagnosed tuberculosis, though one was carcinoma, one actinomycosis and two cardiovascular disease. This represents an error in less than 1 per cent. These statistics constitute Walsh's personal experience with advanced cases diagnosed by about twenty different physicians, and, coming as they do from necropsies on consecutive deaths, represent what a study of the physical signs can accomplish.

April, 1920, 23, No. 7

*Bacteriology of Pneumonia. B. Lucke, Philadelphia.—p. 369.
Pneumonia and Empyema. T. G. Simonton, Pittsburgh.—p. 372.
Management of Pneumonia, Its Complications and Sequels. L. Litchfield, Pittsburgh.—p. 373.
Surgical Complications of Pneumonia and Empyema. E. W. Meredith, Pittsburgh.—p. 376.
Acute Alveolar and Interstitial Emphysema in Influenzal Bronchopneumonia. F. F. D. Reckord, Harrisburgh.—p. 379.
Medical Reserve Corps. M. W. Ireland, Washington, D. C.—p. 387.
*Removal of Spinal Cord Tumor, Resulting in Entire Disappearance of Paraplegia and Neurologic Signs. T. Diller and O. C. Gaub, Pittsburgh.—p. 392.
Operations in Orthopedic Department of University of Pennsylvania. W. G. Elmer, Philadelphia.—p. 394.
Impressions Resulting from Experience in Pennsylvania Legislature Session of 1919. F. L. Van Sickle, Olyphant.—p. 401.
Bladder Cystoscopic Diagnosis and Treatment of Certain Lesions of Genito-Urinary Tract. M. Lick, Erie.—p. 404.

Bacteriology of Pneumonia.—The widespread and early bronchial changes, the marked proliferation and partly its catarrhal inflammation of alveolar epithelium in the lungs Lucke believes to be the result of the bacillus of influenza. The damaged tissue thus produced is readily invaded by other organisms. These, then, produce divers tissue changes, each typical of the species of invading micro-organisms.

Spinal Cord Paraplegia Due to Tumor.—Diller and Gaub cite the case of a healthy woman, aged 28, who had been for two years growing progressively weaker in the legs until they finally became almost completely paralyzed. During this time she suffered considerable pain in and around the anal region, spreading over the buttocks. Finally, impairment of sensation of all kinds from the level of the navel downward, exaggerated knee jerks on both sides, more marked on the left than the right, ankle clonus and Babinski were noted. At operation, there was found a small elongated tumor about the shape of the last phalanx of the little finger but smaller, growing from the dura and pressing across the cord below the level of the ninth thoracic vertebra. It was easily removed and proved to be an endothelioma. The cord was indented distinctly by pressure of growth but apparently uninjured. The patient made a good recovery from the operation, showing some movement of the toes the next day. She steadily gained more and more movement until at the end of two months she was able to stand and walk. Sensory changes disappeared within two weeks and by the time the patient left the hospital knee jerks were normal and ankle clonus and Babinski toe reflexes were absent.

Social Hygiene, Menasha, Wis.

April, 1920, 6, No. 2

Social Consequences of Illegitimacy. P. G. Kammerer.—p. 161.
Professional Education of Women and Family Problem. E. R. Wembridge.—p. 181.
Some General Aspects of Family Desertion. W. H. Liebman.—p. 197.
Antivice Movement in California. I. Suppression. F. Hichborn.—p. 213.
"Eugenic" Marriage Laws of Wisconsin, Michigan and Indiana. B. C. Roloff.—p. 227.
Struggle Against Venereal Diseases and Prostitution in Switzerland. N. Wintsch-Maleef.—p. 255.
Sex Instruction Through English Literature. L. S. Curtis.—p. 263.

Southern Medical Journal, Birmingham, Ala.

March, 1920, 13, No. 3

Military Medicine as a Profession W. C. Braisted, Washington, D. C.—p. 153.
*Chronic Appendicitis in Children. McG., Newton, Richmond, Va.—p. 166.
Conditions that Simulate Pulmonary Tuberculosis. W. H. Witt, Nashville.—p. 169
Serum Treatment in Lobar Pneumonia. Report of Cases. G. E. Henson, Jacksonville.—p. 178.
*Calcification of Thyroid Gland. J. J. Clark, Atlanta.—p. 183.
Early Diagnosis of General Paralysis of Insane. E. W. Fell, Cincinnati.—p. 184.
Venereal Disease Control. J. P. Bowdoin, Atlanta.—p. 186.
*Treatment of Empyema. D. Eve, Nashville.—p. 190.
Surgical Treatment of Empyema. W. W. Grant, Denver.—p. 195.
Empyema: Recent Experiences. F. K. Boland, Atlanta.—p. 198.
Therapy in Obstetrics. J. R. Garber, Birmingham.—p. 201.
Congenital Absence of Uterus, Both Tubes and Right Ovary. B. O. Robertson, Birmingham.—p. 205.
Displacement of Eye in Association with Chronic Frontal Sinusitis. Report of Cases. R. C. Lynch, New Orleans.—p. 207.
Atypical Mastoiditis. S. MacC. Smith, Philadelphia.—p. 211.

Chronic Appendicitis in Children.—Newton is of the opinion that the roentgen ray is of great service in assisting to make a correct diagnosis of appendicitis in children who suffer from repeated digestive disturbances. He reports four cases in which this point was brought out.

Calcification of Thyroid.—Clark's patient suffered from hyperthyroidism ten years before he saw her. At the time of his examination she was suffering from hypothyroidism.

Physical examination confirmed the presence of a hard, freely movable tumor in the region of the thyroid, situated just above the suprasternal notch. Roentgen-ray examination disclosed a calcified adenoma of the thyroid.

Treatment of Empyema.—Abstracted in THE JOURNAL, Dec. 20, 1919, p. 1900.

Tennessee State Medical Ass'n Journal, Nashville

May, 1920, **13**, No. 1

Malaria Control in Tennessee. W. G. Stromquist.—p. 13.
Roentgen-Ray Treatment of Open Wound for Cure of Cancer. J. M. King, Nashville.—p. 17.
Pelvic Infection. W. M. McCabe, Nashville.—p. 18.

Virginia Medical Monthly, Richmond

May, 1920, **47**, No. 2

Fractured Vertebrae; Report of Cases. W. L. Powell, Roanoke.—p. 49.
Hydrochloric Acid in Symptomatology and Therapy of Stomach Diseases. A. G. Brown, Richmond.—p. 52.
Laboratory Diagnosis of Typhoid. E. C. L. Miller and A H. Straus, Richmond.—p. 58.
*Diverticulum of Bladder, Report of Three Cases. R. L. Payne, Norfolk.—p. 60.
Neoplastic Growths Treated Successfully by Roentgen Ray and Electrothermic Measures. C. A. Pfender, Washington, D. C.—p. 62.
Blood Pressure as a Measure of Old Age. C. R. Grandy, Norfolk.—p. 68.
Laennec's Stethoscope. S. W. Dickinson, Marion.—p. 70.
*Foreign Body in Right Inferior Bronchus; Removal by Use of Bronchoscope. E. G. Gill, Roanoke.—p. 72.
*Scleroderma and Combined Sclerosis of Spinal Cord. D. R. Murchison, Richmond.—p. 74.

Diverticulum of Bladder.—Payne has operated successfully in three cases. Radical extirpation was done in two cases, and a plastic operation, after the method of Squier, was done in the other case.

Foreign Body in Bronchus.—During an epileptic fit, Gill's patient swallowed a piece of an artificial plate denture seven years ago. Shortly following the accident the patient began having an itching and tickling sensation in her throat which gradually developed into a cough and became steadily worse, more so at night. Eighteen months after this injury the patient, while bending over, had a hemorrhage. She has had hemorrhages at various intervals since, but only when stooping over. The roentgen ray located the foreign body in the right bronchus, opposite the ninth rib, using posterior markings, and opposite the fourth interspace, using anterior markings. The fragment was removed with the aid of the bronchoscope.

Scleroderma and Spinal Sclerosis.—These two conditions were combined in Murchison's patient. About two weeks after recovering from the grip, the symptoms of sclerosis appeared. About one year after the attack of grip, the first symptoms of scleroderma were noted.

West Virginia Medical Journal, Huntington

May, 1920, **14**, No. 11

Hospital Legislation at Last Meeting of Legislature. W. W. Golden, Elkins.—p. 401.
Significance of Pelvic Disorders in General Diagnostic Study of Women. E. H. Richardson, Baltimore.—p. 404.
Case of Lethargic Encephalitis. W. H. St. Clair, Bluefield.—p. 409.
Acute Intestinal Obstruction. G. A. Hendon, Louisville.—p. 411.
Tuberculosis Siuattion in West Virginia. H. B. Jones, Glendale, W. Va.—p. 416.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

April, 1920, No. 237

Leukocytic Blood-Content of Those Handling Radium for Therapeutic Purposes. J. C. Mottram and J. R. Clarke.—p. 345.
Method of Fluoroscopic Examination with Army Bedside Unit. F. F. Borzell.—p. 350.
Watch in Esophagus; Tracheotomy Tube in Trachea. F. A. Stoney.—p. 352.
Case of Tuberculosis of Stomach and Its Surroundings. H. C. Geuken.—p. 354.
New Standard Chart for Recording Tracing of Opaque Meals. C. P. G. Wakeley.—p. 356.
Cases of Electrotherapy. S. Sloan.—p. 257.
Clinical Method of Dosage of Ultraviolet Rays. H. Bordier.—p. 366.

British Medical Journal, London

May 22, 1920, **1**, No. 3099

Chronic Paroxysmal Trigeminal Neuralgia and its Treatment. W. Harris.—p. 693.
Significance of Acidosis in Certain Nervous Disorders. B. H. Shaw.—p. 695.
Care of Crippled Children. G. R. Girdlestone.—p. 697.
*Roentgen-Ray Treatment of Acne Vulgaris. H. C. Semon.—p. 700.
Treatment of Sleeping Sickness by Arsphenamized Serum. C. H. Marshall.—p. 702.

Roentgen-Ray Treatment of Acne Vulgaris.—Semon is convinced that a cure of acne can only be attained by the judicious application of the roentgen ray. The nodular and keloidal varieties of the disease are not amenable to relief or cure by any other method. Relapse after apparent cure by roentgen rays is rare. Should it arise it can be dealt with by further irradiation. There are no permanent contraindications to the treatment by roentgen rays.

Dublin Journal of Medical Science

May, 1920, **4**, No. 3

Oil Ether Colonic Anesthesia. A. E. Boyd.—p. 121.
Lupus Tumidus. B. Solomons.—p. 133.
Early Symptoms of Cancer of Colon. S. Pringle.—p. 136.
*Ovarian Insufficiency as a Probable Cause of Epilepsy. J. S. Ashe.—p. 142.

Ovarian Insufficiency as Cause of Epilepsy.—The suggestion made by Ashe is that the toxin which acts as the predisposing factor in some cases of epilepsy is produced by (*a*) absence, diminution or change in the ovarian ferments leading to (*b*) some multiple functional deficiency of the endocrine organs which upsets the hormone balance, producing further toxins which act on the cerebral cortex, causing epilepsy in some cases.

Edinburgh Medical Journal

May, 1920, **24**, No. 5

*Transfusion of Blood in Pernicious Anemia. J. M. Graham.—p. 282.
Provisional Point Scale for Blind. W. B. Drummond.—p. 307.
*Osteitis Fibrosa: Two Cases. D. M. Greig.—p. 324.
Vaccine Therapy in Gynecology and Obstetrics. R. Robertson.—p. 328.
Types of Tachycardia and Irritable Heart. A. Goodall.—p. 334.

Blood Transfusion in Pernicious Anemia.—Of the twenty-three patients treated by transfusion by Graham, transfusion was called for in thirteen within one year or less of the first symptoms of anemia. In six cases the symptoms had existed for from one to two years. The remaining cases were of a more chronic type. In thirteen cases the patients had suffered from one or more relapses. In ten cases, the symptoms were progressive. Three patients were transfused a second time. One patient was transfused on three occasions. Direct transfusion from artery to vein was performed in nineteen cases, and indirect transfusion from vein to vein in seven cases. Citrated blood was used on two occasions. It is definitely stated by Graham that although transfusion may cause a remission of symptoms, it cannot bring about a cure in a case of pernicious anemia or alter in any material way the nature of the disease. The ideal method of transfusion, in Graham's opinion, is either direct from artery to vein or, preferably, indirect transfusion from vein to vein. A large amount of blood is unnecessary, owing to the risks of overtransfusion and to the fact that the benefit conferred by transfusion is not necessarily in proportion to the volume of blood received. A repetition of transfusion should be considered when the symptoms relapse, or if the first transfusion fails to produce the desired effect. Transfusion is not to be regarded as an alternative to other forms of treatment, but as a therapeutic agent available when the usual measures have failed.

Fracture and Osteitis Fibrosa.—In one case cited by Greig a fracture of the femur in childhood healed well and was followed by no untoward circumstance, whereas a fracture of the leg seven years later was followed by an osteitis fibrosa of the tibia, and a fracture of the same femur shortly afterward was followed by a similar affection of that bone. Greig suggests that such an extraordinary occurrence points surely to some constitutional peculiarity of the bones or of the osteoblasts, so that the fresh deposition of healthy bone is interfered with. The second case, too, is interesting in that the affection of the tibia was not preceded by a fracture but was apparently the result of overexertion.

Japan Medical World, Tokyo

April 17, 1920, **10**, No. 16

Treatment of Gonorrhea. S. Hidaka.—p. 334.
Mucor Found on Normal and Pathologic Skin Surface. S. Hanawa. —p. 334.
Epidemic Influenza among Children. Case of Influenzal Meningitis. K. Iwagawa.—p. 334. (To be cont'd.)

April 24, 1920, **10**, No. 17

Epidemic Influenza among Children: Case of Influenzal Meningitis. K. Iwagawa.—p. 353. (Concluded.)
Pathology of Malignant Tumors in Nasal Cavity. F. Tanaka.—p. 353.
Antirabic Treatment of Dog. S. Umeno and R. Doi.—p. 353.

Lancet, London

May 22, 1920, **1**, No. 5047

*Neonatal Mortality. A. Newsholme.—p. 1097.
*Scurvy: Prophylaxis in British Navy. P. W. Bassett-Smith.—p. 1102.
Smallpox in Occupied Germany. G. G. Johnstone.—p. 1105.
Morbid Anatomy of Chronic Arthritis. G. L. K. Pringle.—p. 1106.
Abrams's Method of Percussion to Delineate Solid Organs in Chest and Abdomen. J. Barr.—p. 1109.
*Erythrocytes in Malaria. R. Craik.—p. 1110.
Choice of Individuals for Colliery Rescue Work. G. A. Stephens. —p. 1110.
Perfect Dentition in Old Age. J. O. Butcher.—p. 1111.
Hysterical Paralysis in a Boy. J. A. Gorsky.—p. 1111.

Neonatal Mortality.—Newsholme discusses this subject from the standpoint of its relation to public health. He suggests the establishment of antenatal and postnatal clinics; skilled care during parturition; maternity homes and hospitals; a raised standard of midwifery practice.

Lemon Juice in Prevention of Scurvy.—Lozenges of dried lemon juice are used by Bassett-Smith. The juice of fresh lemons is roughly filtered through muslin and then through filter paper under reduced pressure by means of a water pump. The filtered juice is evaporated, in vacuo over sulphuric acid at ordinary temperature (from 13.5 to 15.5 C.). The residue of noncrystallizable syrup is worked up into as stiff a paste as possible with a mixture of anhydrous lactose, 97 per cent.; gum tragacanth, 3 per cent. The paste is cut up into sections, each containing the juice of half a lemon. These are rolled, faced with the mixture, and pressed to assume the lozenge form. These tablets have been stored at 15, 30 and 37 C. for months, and have been employed in experiments. The average yield of juice from one lemon is about 48 c.c., and each tablet contains the equivalent of 24 c.c. of unfiltered juice. The whole process takes about five days; no heat whatever is used.

Effect of Lead on Erythrocytes.—When lead is given, in health or in minor ailments, the blood film in most persons shows, in from three to seven days, a few polychrome, polychrome punctated and punctated reds. Craik's impression is that punctated disks are always polychrome when they first appear. Polychromasia means premature birth of the erythrocyte, and punctate basophilia denotes something more pathologic. Even in mild anemia the former is seldom absent, whereas the latter is rarely present, unless the anemia is really serious. Only when punctate basophilia is seen in normal blood associated with but little polychromasia is it pathognomonic of lead poisoning. Thus lead enables one to turn into the circulation marked disks by which parasites may be traced. Accordingly, in two mild tertians, with infected corpuscles less than one in 500, and with practically normal blood, this mixture was given: lead acetate, 20 grains; dilute acetic acid, 1 dram; chloroform water, 8 ounces. Signa: 4 drams, t. d. s. On the fourth day, young rings were found in polychrome and in punctated disks. Young parasites occurred in normocytes also, and some marked disks were uninfected. Next day ameboid and large pigmented forms were seen in punctated disks as well as rings. Craik thinks that this proves the life of a punctated disk to extend to two days at least. In polychrome or in polychrome punctated disk there were never seen any but young rings. This proves that within twenty-four hours the polychrome disk develops into a normocyte. In the same time a polychrome punctated disk becomes a punctated red. Craik thinks that a similar test with the quartan parasite would show that punctation disappears within seventy-two hours in approximately normal blood. Multiple infection suggests that certain corpuscles are less resistant than others and are the youngest corpuscles.

May 29, 1920, **1**, No. 5048

*Lethargic Encephalitis. E. Bramwell.—p. 1152.
*Advantages of Extension in Treatment of Diseased Joints. W. Arbuthnot Lane.—p. 1159.
Clinical Diagnosis of Diphtheria and Other Exudations in Throat. H. Drinkwater.—p. 1160.
*Three Cases of Modified Smallpox. W. Allingham.—p. 1162.
*Full Time Tubal Pregnancy: Cesarean Salpingectomy: Recovery. R. E. Smith and C. B. Leeds.—p. 1163.
Medical Progress in China Since the Republic. Wu Lien Teh.—p. 1203.

Pathology of Lethargic Encephalitis.—The material forming the basis of the pathologic inquiry made by Bramwell consisted of five fatal cases. He found (1) hemorrhage rare; (2) edema of the nerve tissue; (3) proliferation of neuroglia, and (4) infiltration of nerve tissue and perivascular lymph sheath with cells, usually lymphocytelike in type. These changes were seen most strikingly in the ventral portion of the pons, especially in the region of the substantia nigra, implicating the fibers of the third nerve as they pass out, and thus accounting for one of the common symptoms of the disease. In no case were any organisms, or bodies suggesting organisms, seen.

Extension for Diseased Joints.—If a diseased joint is moved forcibly without being extended, the articular surfaces are bruised or otherwise damaged, and acute inflammation follows only too frequently; whereas, under the influence of extension, the surfaces of the fixed or displaced joint can be moved freely on one another, so that such movement is followed by a minimum degree of rapidly subsiding inflammation. The apparatus used by Lane, although not original with him, by means of which extension is kept up on the affected joint, is applied to the limb and the patient at once proceeds to lead an active life. The mode of treatment varies to some extent with the joint affected. By means of extension and movement, Lane has been able to restore the function of many joints which would otherwise have been fixed, probably in a bad position, and materially interfering with the usefulness of the individual.

Modified Smallpox.—The cases cited by Allingham followed the same course, with varying severity, in conformity with their vaccinal states, each exhibiting similar characteristics as regards rashes and distribution. In each case headache was followed in three days by a papular rash (on forehead and chest), rapidly becoming vesicular and gradually involving the whole trunk and extremities equally. Flexor surfaces were affected as much as extensor, with several spots in both axillae; palms of hands, soles of feet, and soft palate were quite free. The vesicles were discrete, soft and flat; some were ovoid, not umbilicated, and collapsed on puncture. As no history of contact with smallpox could be obtained in the first case, the diagnosis of chickenpox was made, but on the eighth day of the first rash a second rash made its appearance, unaccompanied by any constitutional disturbance, except a slight headache in the mildest of the three cases. This secondary rash, which was petechial, deep and somewhat shotty, affected those parts more especially involved in true smallpox, that is, the brow, wrists, extensor surfaces of the forearms and legs, palms of hands and soles of feet; in two cases vesicles were seen on the soft palate. By this time most of the first rash was becoming dry, but many vesicles still remained full of lymph and quite soft. The two rashes were quite distinct and could easily be differentiated. Allingham suggests that it might be wise to insist on isolation of chickenpox for the first ten days.

Full Time Tubal Pregnancy.—That incomplete rupture of one or more of the coats of the tube may not have occurred in the earlier months of the pregnancy is not denied by Smith and Leads, but if it did, there was later sufficient reinforcement by adhesions and localized protective peritonitis (as shown by repeated alarms) to thwart complete rupture, and allow a viable child to go to full term until delivered by surgical interference.

Medical Journal of Australia, Sydney

April 17, 1920, **1**, No. 16

Applied Psychology and Suggestive Therapeutics. J. V. McAree.—p. 356.
Tonsillectomy as Means of Treatment in Diphtheria Carriers. G. Brown and E. K. Hughes.—p. 361.

April 24, 1920, **1**, No. 17

Physiology of Ductless Glands. H. Priestley.—p. 381.
"Catarrh," So-Called Nasal and Postnasal, Its Causes and Treatment. A. J. Brady.—p. 383.
Nonligature of Proximal End of Umbilical. A. J. Bothamley.—p. 385.
Gibbon's Hydrocele. C. MacLaurin.—p. 385.
Hernia of Vitreous in Anterior Chamber. J. L. Gibson.—p. 387.

December, 1919, **2**, No. 3

Sarcoma of Duodenum. A. G. Ellis and N. K. Plankul.—p.
Case of Strangulation by Meckel's Diverticulum. P. Sakdabolraksh.

Practitioner, London

May, 1920, **104**, No. 5

*Trauma and Tuberculosis. T. Oliver.—p. 321.
Diseases of the Liver. T. Horder.—p. 330.
Medicolegal Notes. J. Collie.—p. 333.
*Vaccines in Treatment of Cutaneous Diseases. J. M. H. Macleod.—p. 338.
Opaque Meal and Opaque Enema. F. Hernaman-Johnson.—p. 344.
*Acute Appendicitis: Study of 370 Cases. E. R. Flint.—p. 352.
Manganese in Suppuration. E. Watson-Williams.—p. 375.
Nauheim Bath Treatment of Hypertension. L. T. Thorne.—p. 379.
Malignant Malaria in a Baby—Recovery. W. G. Marsden.—p. 393.

Trauma and Tuberculosis.—It is Oliver's opinion that when tuberculosis follows injury, it is more in consonance with pathologic experience to believe that a tuberculous lesion had been present in the body previous to the accident, and had been lying dormant. All that injury, therefore, could do, would be to rouse into activity a lesion which has been inert, probably for years. The subject of trauma and tuberculosis has received additional interest and opportunities of investigation during the war, owing to the large number of gunshot wounds of the chest wall, superficial and penetrating. Oliver's experience is that only in a extremely small number of wounded soldiers has the relationship been observed.

Vaccines in Skin Diseases.—Of all the cutaneous conditions which MacLeod and others treated with vaccines, the only ones in which immediate and definite benefit resulted were suppurating staphylococcic lesions, especially acute recent and recurrent boils; by vaccines, both stock and autogenous, they had been able to cause the rapid involution of boils without the assistance of any form of local treatment and in almost every case to keep the patient free from recurrences, though there was often a tendency to relapse after the treatment was discontinued. In the case of chronic boils, such as those about the back of the neck, in which the circulation through the boil is impeded by the formation of scar tissue, the results were uncertain and, as a rule, unsatisfactory. In acne vulgaris, the results were not encouraging; where suppurative lesions predominated, the vaccine treatment caused a diminution in the pustulation but did not influence the comedones, and when it was discontinued an exacerbation of suppuration generally took place. In those cases of acne, chiefly in adult women, in which the comedones were few or absent and which were associated with small, more or less indolent subcutaneous abscesses, little or no benefit was derived from the treatment. In sycosis barbae of coccogenic origin, the results were uncertain, and not to be compared with those from other methods. In tuberculosis cutis, improvement was obtained from Koch's original tuberculin in lupus with superficially ulcerated patches, and healing had taken place in such lesions on the subsidence of the local reaction; but this procedure, even when small doses were given, was regarded as too dangerous for fear of lighting into activity unknown foci of the disease in other organs. The results with bacillary emulsion were irregular and, though some improvement was obtained at times in superficially ulcerated patches of lupus and in scrofulodermia, in no case did they find that the benefit from it was in any way equal to that which could be obtained by appropriate local treatment.

Postoperative Treatment of Appendix Dyspepsia.—Flint suggests that patients who present a history of prolonged appendix dyspepsia, previous to the acute attack or attacks, should have merely water by mouth for several weeks after appendectomy, provided that the physical state is sufficiently good to permit of this rather stringent treatment. The ordinary medical treatment of gastric ulcer should be followed after operation.

Bulletin de l'Académie de Médecine, Paris

April 27, 1920, **83**, No. 17

Contagiousness of Lethargic Encephalitis. A. Netter.—p. 373.
Ocular Manifestations of Lethargic Encephalitis. F. de Lapersonne.—p. 384; Idem. C. Achard.—p. 387.
Acquired Immunity to Influenza. Chauffard.—p. 394.
One Thousand Operations for Goiter. L. Bérard.—p. 397.

May 4, 1920, **83**, No. 18

*Resection of Esophageal Diverticulum. H. Hartmann.—p. 410.
Acquired Immunity to Influenza. Dopter.—p. 415.
Tumor of Uterine Cervix in Monkey. Marullaz.—p. 417.

Esophageal Diverticulum.—Hartmann's patient was a woman of 61 who for nine years had had symptoms indicating a diverticulum in the upper esophagus. For the last ten months there had been excessive flow of saliva and frequent regurgitation of food, and swallowing had become more and more difficult. When the neck was stretched a tumor appeared at the side of the neck, most pronounced on the left. Hartmann made an opening into the stomach and through this fed the patient for a month until she had regained strength. Then he removed the diverticulum through an incision along the inner margin of the sternomastoid muscle. It opened into the esophagus at the junction with the pharynx, where there is always a weak point in the wall. The ease of the operation and the complete relief from all disturbances justifies similar intervention in such cases. In a second case in a man of 65 there is so little disturbance that surgical measures are not required as yet.

Bulletin Médical, Paris

April 28, 1920, **34**, No. 23

*Auscultation of Venous Pulse. O. Josué.—p. 391.
*Paroxysmal Tachycardia. P. Chevallier.—p. 395.
Extrasystolic Arrhythmia. A. Mougeot.—p. 402.

May 5, 1920, **34**, No. 24

Diagnosis of Bradycardia. D. Routier.—p. 417.

Auscultation of Venous Pulse.—Josué declares that auscultation of the venous pulse will supply information in the majority of cases such as can be obtained otherwise only by cardiographic methods of exploration. It is no more difficult than auscultation of the heart. He describes the points which differentiate bradycardia of sinus origin, the sounds heard on auscultation representing the peaks of the cardiogram, etc. The subject must be reclining flat on his back, the head low, without a pillow. The stethoscope is applied between the sternal and clavicular attachments of the sternocleidomastoid, immediately back of and as close as possible to the clavicle. The stethoscope should not be applied perpendicularly to the axis of the neck but should almost parallel it, slanting downward, backward and inward, pointing to the mediastinum. The pressure should be minimal and the subject should hold his breath during the auscultation. The radial pulse helps to explain the sounds.

Paroxysmal Tachycardia.—Chevallier enumerates a number of things that can be done to arrest by reflex action a paroxysm of tachycardia: swallowing a chunk of bread; an emetic to induce vomiting; lying on the back and breathing slowly, keeping the chest full of air; drinking something with big gulps; tickling the pharynx with a feather; pressing on the right pneumogastric in the neck, or giving every ten minutes a cachet of 0.15 gm. pituitary extract. If the paroxysm keeps up, some preparation of digitalis may be needed, and if there is accompanying fever, a purge and then 6 or 8 gm. of sodium salicylate daily, with sodium bicarbonate, for a few days and then half the dose. During the intervals, moderation in all things should be the rule. Paroxysmal tachycardia is not incompatible with an active life. Specific treatment is required for the syphilitic even if there is nothing to suggest the syphilitic origin of the tachycardia. Sedatives may prove useful for the nervous, and ovarian treatment in climacteric conditions. Perseverance is the main factor in successful treatment.

Bulletins de la Société Médicale des Hôpitaux, Paris

March 19, 1920, **44**, No. 11

Lethargic Encephalitis. G. Brouardel and others.—pp. 387; 390; 391; 394; 407; 414 and 422.

*Lower Margin of Liver. R. Glénard and J. Aimard.—p. 411.
Radiology of the Kidneys after Insufflation of Air into Peritoneal Cavity. L. Ribadeau-Dumas, Mallet and de Laulerie.—p. 418.

The Lower Margin of the Liver.—Glénard and Aimard do not think it necessary to insufflate oxygen for investigation of the lower margin of the liver except in very dubious cases. Radioscopy alone is generally sufficient; the question then is whether the shadow below the liver is from the enlarged gallbladder or an appendicular lobe. This can be decided by palpation with the thumb. Seated on the bed, facing the patient, at the close of inspiration, the thumb tries to lift up the crest of the margin of the liver, working from below upward and from behind forward, first raising the right lumbar region to bring the crest into prominence and pressing down on the left iliac fossa to drive the mass of intestines back under the liver. With this thumb procedure, the liver lobe is easily distinguished by its shape from the rounded lower pole of the gallbladder. It also helps to distinguish between pain in the gallbladder and pain in the liver, and often renders roentgen examination superfluous.

Encéphale, Paris

Jan. 10, 1920, **15**, No. 1

Traumatic Softening of Spinal Cord. Claude and Lhermitte.—p. 1.
Lateral Sensory Spinal Roots. P. Quercy.—p. 13.
*Treatment of Lax Paralysis of Arm. L. Mencière.—p. 21.
Psychanalysis in Treatment of Morbid Worry. L. Trepsat.—p. 35.

April 10, 1920, **15**, No. 4

The Sweating Function after Injury of Brain or Spinal Cord. André-Thomas.—p. 233.
Multiple Deformities in a Mental Degenerate. Laignel-Lavastine and G. Heuyer.—p. 255.
Polyneuritic Pachydermia after Freezing of Feet. L. Marchand.—p. 259.

Correction of Lax Paralysis of the Arm.—Mencière's plates show his technic and his success with orthopedic and surgical measures in correction of flaccid paralysis consecutive to anterior poliomyelitis.

Paris Médical

April 24, 1920, **10**, No. 17

Hydrologic Congress: Address of President. Gilbert.—p. 333.
Functional Insufficiency of Pulmonary Orifice Complicating Mitral Stenosis. Vaquez and Magniel.—p. 340.
Postprandial Diarrhea Caused by Coffee. J. J. Matignon.—p. 342.
Injections of Mesothorium Combined with Radiotherapy. Guilbert.—p. 345.

May 1, 1920, **10**, No. 18

Rôle of Different Food Elements in Nutrition. G. Linossier.—p. 349.
*Epilepsy in Relation to Diabetes. M. Labbé.—p. 354.
Arthritism and the Endocrine Glands. Mouriquand.—p. 358.
Electrotherapy in Pathologic Nutrition. J. Bergonié.—p. 364.
*Glucose Excretion Threshold in Diabetics. F. Rathery and E. Gruat.—p. 372.
Cereals in Treatment of Diabetics. E. Lambling.—p. 378.

Epilepsy in Relation to Diabetes.—From four cases of his own and from a study of the cases reported in the literature, Labbé concludes that diabetic epilepsy is a manifestation of acidosis. In cases of acidosis in which there is no cause for assuming uremia or any other intoxication, occasionally epileptiform seizures develop which it seems justifiable to associate with acid intoxication. They are localized or general, and are followed by loss of consciousness, either transitory or prolonged. They may precede diabetic coma, or appear after the diabetic coma has begun, or occur long before coma sets in.

The Excretion Threshold for Sugar in the Blood in Diabetics.—By the excretion threshold Rathery and Gruat designate the level of the glucose content of the blood above which the surplus is thrown off by the kidneys. Sodium chlorid and glucose are typical threshold substances, in contrast to other substances, such as urea, uric acid, methylene blue, etc., which the blood tends to eliminate so long as there is any present. As the result of analysis of their own cases and study of the literature, Rathery and Gruat have reached several definite conclusions in regard to the excretion threshold for sugar in diabetes. A high glucose threshold does not necessarily signify a case refractory to dietetic treatment, nor does a moderately high threshold imply a mild diabetes.

Variability of the threshold is more significant than its mere increase. A high threshold, with great variability, points to easily controllable diabetes, but if the threshold does not fluctuate much, then a high level is of grave import. A moderately high but nonfluctuating threshold is of doubtful prognosis. The relations between the rise of the threshold and the degree of glycosuria have likewise a prognostic and therapeutic value, as they explain in detail. When the glucose threshold and the degree of glycosuria vary in the same direction, the main thing to note is the degree of stability of the threshold. If the glucose threshold and the glycosuria vary inversely, either the threshold is high and the glycosuria is nil or very slight, or the threshold is low and the glycosuria is high. In the former case the prognosis is usually unfavorable. In the latter case the prognosis is somewhat more favorable, provided the threshold is slightly variable. The glucose threshold varies greatly in different diabetics. The excess of glucose in the blood above the glucose threshold will explain a certain number of glycosurias, but not quite all. The variations in the glycosuria are at times quite incommensurate with the modifications of the hyperglycemia. In any event, in different subjects there is a wide range of difference in the percentage of glucose excreted in the urine in the presence of a given hyperglycemia, for the reason that the kidney itself plays an important part in the modifications of the percentage of glucose excreted.

May 8, 1920, **10**, No. 19

*Uremia in Jaundice from Hemolysis. A. Gilbert. E. Chabrol and H. Bénard.—p. 385.
Absence of Anaphylaxis-Producing Sensitizer in the Mishaps from Neo-Arsphenamin. G. Milian.—p. 391.
Technic for Radium Treatment of Cancer of Esophagus and Larynx. J. Guisez.—p. 392.

Uremia in Hemolytic Conditions.—The last few years have demonstrated the frequency of uremia with infectious jaundice with or without kidney disease. Gilbert and his co-workers here report instances of uremia accompanying jaundice in blackwater fever, in pernicious anemia, and in chronic jaundice with enlargement of the spleen and hemolysis. In six of seven cases of pernicious anemia, the urea content of the blood was over 0.7 gm. The maximum was 2.7 gm. in one case in the terminal phase; in the terminal phase of tuberculosis and cancer they never found over 0.31 to 0.54. Both retention of urea and exaggerated production seem to be involved in this. Perfusion of hemoglobin directly into the liver of a dog not only increased production of bile, but also increased production of urea, the liver evidently predominantly responsible for both. The urea content of both blood and urine was found extremely high in cases of hemothorax. These and other facts cited seem to sustain the assumption that, in the domain of the general circulation, urea is produced by a mechanism very comparable to that of the production of bile. The liver is responsible for both, depending on the same factor, destruction of blood. The question now is to determine to what extent hemolysis is involved in other causes producing urea.

Presse Médicale, Paris

May 8, 1920, **28**, No. 29

*Treatment of Neurosyphilis. J. A. Sicard.—p. 281.
*Diagnosis of Ulcer in Digestive Tract. L. Meunier.—p. 283.
Pathogenesis of Osteoma in Muscle. Nathan.—p. 284.
Present Status of Treatment of Chancroidal Bubo. L. Cheinisse.—p. 285.

Treatment of Neurosyphilis.—Sicard gives neo-arsphenamin in doses of 0.15 gm. dissolved in 1 c.c. of distilled water, injected every day or second day, without any mercury. He asserts that this method of daily small doses subcutaneously or by the vein has given remarkable results in neurosyphilis during his two years' experience with it. He thus gives during the year up to a total of 8 or 10 gm. for paraplegia; 20 or 25 gm. in tabes, and 28 or 30 gm. in general paresis. Some patients in the course of the two years have taken up to 40 or 50 gm. This technic, he says, avoids serious reactions, prevents anaphylaxis, and the outcome in his 200 cases

is at least equal to that with other methods and usually surpasses it. Among the four types of minor by-effects was erythema, observed early in the treatment in about 7 per cent. and tardily in 2 or 3 per cent.; tardy jaundice in 2 per cent.; transient slight uremia was common. He suggests that possibly the puffiness of the face and ankles with large doses of arsenic may be from retention of chlorids. In about 6 per cent. of his 200 cases in the course of treatment it proved impossible to elicit further the Achilles tendon reflex. This *aréflexie achilléenne,* he continues, has persisted unmodified in his cases to date, while the knee jerk never showed any change. He adds that it might be possible to utilize in treatment of spastic disturbance and contracture this affinity of arsenic for the neuromuscular-tendon system of the back of the leg.

Diagnosis and Location of Ulceration in Digestive Tract.—Meunier explains that blood is not found in the digestive tract as such but only in the form of hematin and this is usually coated with mucus in case of an inflammatory process. Neither are soluble in water, gastric juice or duodenal juice, but both are readily dissolved by ammonia. To differentiate an ulcer and locate it, he gives through the stomach tube 200 c.c. of water containing 10 drops of official ammonia, after two days of a milk-vegetable diet. The stomach content can then be examined at once for blood. The stools are not examined until the next day, to allow for demarcation with charcoal. With this ammonia technic, blood is detected in the stomach content so frequently that he is convinced that every true pain in the stomach is traceable to some solution of continuity in the mucosa, whatever the nature of the gastric secretion. When there is no blood in the stomach content but the stool shows blood, then the ulcer symptoms can probably be referred to the duodenum. Blood from hemorrhoids is in the hemoglobin form, soluble in water, but blood from the intestines above is in the form of the insoluble hematin, and can be dissolved by addition of a little ammonia to the stools. To differentiate ulcer from cancer, he keeps the patient in bed a week, examining regularly the stomach content by the ammonia technic; the persistence of positive findings testifies to cancer. This *repos hémostatique* has often rendered the greatest service in excluding malignant disease.

May 12, 1920, **28**, No. 30

*Chyluria in Filariasis. E. Jeanselme and others.—p. 293.
*Hyperpyrexia. E. Lesné and L. Binet.—p. 295.
Sign of Anteroposterior Fracture of the Astragalus. G. Kuss.—p. 296.

Chyluria with Filariasis.—Jeanselme and his co-workers discuss the characteristic rhythm of the output of urine and the chemical composition of the urine in two cases of filariasis.

Fever with Extremely High Temperature.—Lesné and Binet report the case of a woman of 38, inclined to be ultranervous, who in the course of a meningeal reaction during mild pulmonary tuberculosis had the temperature run up to 43.7 C. (110 F.) and again six days later to 44 C. (111.2 F.), measured in the rectum with three thermometers. It kept at 43.2 C. (109.5 F.) for more than twenty-four hours. The nervous system is undoubtedly responsible for this hyperpyrexia, and treatment should aim to reduce the nervous excitability and induce sleep.

May 15, 1920, **28**, No. 31

*Pericarotid Sympathectomy. R. Leriche.—p. 301.
Minor Signs of Lethargic Encephalitis. H. Roger.—p. 302.
*Relative Size and Shape of Heart and Body. A. Martinet.—p. 302.
Cysts in the Wrist and Tuberculosis. J. Murard.—p. 304.
Carbon Monoxid Poisoning. L. Binet.—p. 304.

Pericarotid Sympathectomy.—Leriche announces that removing the sheath of sympathetic nerve fibers around the internal carotid artery, for a stretch in the neck, causes pronounced constriction of the carotid artery for a few hours and other effects such as we are accustomed to observe only after removal of the superior cervical ganglion, including durable enophthalmos, ptosis, miosis, and transient vasodilatation in the fundus of the eye. The results in his four cases suggest that excision of the cervical ganglion is a mutilation out of all proportion to the purpose, as the desired effects can be obtained by merely excising some of the isolated fibers, instead of the whole of the ganglion. For example, in exophthalmic goiter, this denudation of the carotid artery might cure the exophthalmos; severing the superior cardiac nerves might arrest the tachycardia, supplemented by resecting the sheath of nerve fibers surrounding the superior thyroid artery. In trigeminal neuralgia, pericarotid sympathectomy of both carotid arteries might answer the purpose. The intense constriction of the carotid artery under irritation of its sympathetic innervation shuts off the blood from the brain, and this might explain sudden death under certain jiu-jitsu maneuvers or accidental hangings. This temporary reduction of the caliber of the carotid might possibly be utilized to ward off hemorrhage in operations on the brain. It might explain also some of the pathologic phenomena observed with fracture of the skull.

Relative Size of Heart.—Martinet uses a sliding gage, like that used in shoe stores, to record the diameter of the chest from axilla to axilla; he records also the longest longitudinal and transverse diameters of the heart, and the minimum (slanting) diameter of the aorta. These, with the height, furnish an index of the relative values of heart and aorta with different builds. Even merely dividing the height by the chest diameter gives a more instructive "index of robusticity" than any hitherto suggested. He was impressed with the close connection between the diameter of the chest and the diameter of the aorta, and also beween the measurements of the heart and aorta and the blood pressure, particularly in those with sluggish circulation and weak pulse. The index thus throws light on diagnosis, prognosis and treatment. Several charts showing the various measurements are reproduced.

Revue Neurologique, Paris

February, 1920, **27**, No. 2

Histology of Nerve Centers in Friedreich's Disease; Three Cases. G. Marinesco and C. Tretiakoff.—p. 113.
Isolated Aphasia from Contrecoup with Contusion of the Skull. F. Bremer.—p. 132.
Extreme Albuminosis in Totally Coagulating Spinal Fluid. A. Souques and P. Lantouéjoul.—p. 137.
Posterior Longitudinal Fracture of Petrous Bone with Paralysis of Spinal Nerve. G. L. Regard.—p. 141.
Congenital Hemihypertrophy of Limbs and Ear. C. Roubier.—p. 147.
*Principles for Syphilometry. A. Vernes.—p. 156.

The Principles of Syphilometry.—Vernes applies this term to measurement of the intensity of the syphilitic infection at a given moment, and he shows how it is possible to supervise the course of the case by repeated simple colorimetric syphilimetry. The main thing is to have a suspension of ultramicroscopic particles of a determined size and known stability for the standard reagent, always alike. He is director of the Institut Prophylactique, and his innumerable tests of various substances for the purpose showed that both organic and mineral substances can be utilized, but he has found most satisfactory a mixture of thirty-nine parts of 9 per thousand sodium chlorid solution with one part of what he calls perethynol, which is obtained by repeated extraction of pulverized horse heart in a vacuum with ethylene perchlorid and alcohol. The perethynol is a solution of 15 gm. of this dry extract in 1,000 gm. of alcohol at 60 C. This extract provides particles of a constant average size when mixed properly with the salt solution under control of the absorption of light by the particles. Flaking occurs when normal human serum is added to the suspension, but the flaking is much more intense with syphilitic serum, and the degree of flaking is an index of the severity of the syphilis at the moment. Pig serum prevents flaking, or, if the flaking has occurred, dissolves the flakes. On the other hand, pig serum lakes sheep erythocytes. But if it has exhausted its energy against the flakes, it is incapable of laking the erythrocytes, or if it is only partially exhausted it will lake only part of the erythrocytes. These properties of pig serum are utilized for the systematic syphilimetry, and it is thus transformed, he says, from empiric guesswork to a reliable and exact scientific method. For this, the human serum and then the pig serum are added

to the test suspension and then, after a certain interval, the sheep corpuscles—all in exactly calculated amounts. This reveals the flocculation induced by the syphilitic serum but which has been held in check by the pig serum, the tint from the amount of laking produced forming the colorimetric scale. A previous communication by Vernes on the nature of the seroreaction in syphilis, was summarized in The Journal, Aug. 2, 1919, p. 372. He gives here the list of his various publications on the subject, referring for the minuter details of his technic to the *Bulletin des sciences pharmacologiques* **25**:321, 1918, and **26**:449, 1919.

Schweizerische medizinische Wochenschrift, Basel

April 29, 1920, **50**, No. 18

*Acute Appendicitis in Children. J. Dubs.—p. 341.
Backward Protrusion of Aneurysm of Aorta. M. Pierroz.—p. 346.
Climate of Certain Swiss Health Resorts. W. Knoll.—p. 349. Conc'n.

Differential Diagnosis of Acute Appendicitis in Children.—Dubs recalls that children and some adults localize pain in the stomach region when the appendix is the seat of the disease process. Also that when the symptoms seem to suggest acute appendicitis, the contrast between the serious general condition and the slight local findings in the appendix region, along with the sudden high fever, up to 39.5 or above should suggest the false appendicitis of pneumonia. With pneumococcus peritonitis, the pneumococci have been found in the urine even from the earliest phase of the peritonitis, and girls from 4 to 10 are the ones usually affected. Dubs obtained a positive response in six of nine cases. Ileus from ascarides and tuberculous mesenteric glands are generally mistaken for appendicitis, and both seem to be becoming more frequent of late. Rost has recently demonstrated substances in the ascaris body which have a tonus increasing action and others a tonus depressing influence, while fluid from the interior of the ascaris body is extremely irritating. In only six of eleven cases of primary tuberculous mesenteric glands was the diagnosis made before the operation. The patients were from 6 to 18 years of age and all have been apparently cured by the operation whether the symptoms were from a recent acute exacerbation of the mesenteric tuberculosis or the rupture of one or more old cheesy glands. In both events the ileocecal region is the one generally involved, and the rupture cases induce a clinical picture very much like that of perforated appendicitis. Even when the abdomen has been opened, the tuberculous mesenteric glands and the glands sharing in the disease with acute appendicitis closely resemble each other, so that differentiation may be difficult; palpation is the main reliance. The children with mesenteric tuberculosis are generally frail, the temperature high, but the general condition is comparatively good, in contrast to the high fever, and the extremely mild local findings. He has never excised tuberculous mesenteric glands, restricting his intervention to injection of one or two syringefuls of iodoform oil in the abdominal cavity and suturing at once without draining. His cases all made a clinical recovery under general treatment for tuberculosis, and he is positive that mesenteric gland tuberculosis is more common than generally supposed, and often heals spontaneously.

Policlinico, Rome

April 12, 1920, **27**, No. 15

Coagulation of Milk by Colon Bacillus. C. Gorini.—p. 427.
Migration of Projectiles. P. Bertoli.—p. 429.
*False Ascites in Children. S. Segagni.—p. 431.

False Ascites in Children.—Segagni cites seven cases from the literature which resemble four he reports from his own practice in which the large size of the abdomen and the extensive area of dulness, changing its position with change of attitude, suggested ascites, but the liver, spleen, heart and kidneys seemed to be sound. All had been having protracted diarrhea and the tissues were flabby. The intestines gorged with fluid had sunk down into the lower part of the abdomen. Injection of fluid into the intestines exaggerated all the findings, and as the fluid was voided the findings became less and less pronounced. In some of the cases on record laparotomy was done, but the anticipated ascites was not found.

April 19, 1920, **27**, No. 16

*Vaccination Against Whooping Cough. T. Luzzatti.—p. 451.
Acetonuria in Influenza. G. Izar.—p. 453.
*Treatment of Empyema. E. Gallo.—p. 454.
Lethargic Encephalitis with Crossed Paralysis. E. Bandiera.—p. 456.

Vaccination Against Whooping Cough.—Luzzatti thinks there can be no question of the prophylactic efficiency of the antipertussis vaccine he used in three families with numerous children when one of the children in each family developed whooping cough. None of the two or three other children showed any signs of the disease. They were given the preventive injection when the older child began to cough. Not until ten days later was the diagnosis of pertussis made absolutely certain by the typical paroxysms. There was no attempt at isolation of the younger children, but none showed any signs of the disease except one child that developed a catarrhal cough which soon subsided without any spasmodic tendency. The vaccine was made by Nicolle of Tunis from agar blood and Martin broth cultures of the Bordet-Gengou bacillus, centrifuging repeatedly with fresh amounts of a solution of sodium fluorid until the emulsion was rinsed free from toxic products, with 500 millions per cubic centimeter heated to 104 F. for forty-eight hours. He applied the vaccine in treatment in a number of advanced cases of whooping cough but was unable to detect any benefit from it. The outcome might be better when given earlier.

Empyema.—Gallo uses a cannula, with guide and oval disk, for siphon drainage through the eighth interspace on the posterior axillary line. In a case described, at the eighth day the long tube was discarded, and through a Potain aspirator he injected into the pleural cavity 200 or 300 c.c. of dilute hydrogen dioxid, aspirating it out again at once. This daily rinsing out of the cavity was kept up for twelve days and then the cannula which had been left in place throughout was finally removed. With this simple technic, ideal healing was complete in less than a month.

Riforma Medica, Naples

April 10, 1920, **36**, No. 15

Lethargic Encephalitis. G. B. Queirolo.—p. 361; Idem. C. Cantieri and R. Vegni.—p. 367.
Artificial Palate. B. de Vecchis.—p. 369.
The Dispensary in Campaign Against Tuberculosis. Ilvento.—p. 370.

April 17, 1920, **36**, No. 16

*Alopecia from Emotional Stress. C. Todde.—p. 382.
Amebic Hepatitis. O. Castigliola.—p. 384.
Endiapedesis in Inflammatory Processes. G. Galeotti.—p. 387.

Alopecia from Emotional Stress.—The officer of 34 had never had any disease of the scalp but he was of the lymphatic constitution and had had phlyctenular conjunctivitis. The stress of life at the front was capped finally by a week of incessant bombardment which was followed by the rapid dropping out of all the hairs not only on the scalp but on the body, the eyebrows and moustache. A nervous taint was apparent in the family and the young man presented certain symptoms suggesting exophthalmic goiter. Boschi has reported a case of mild hyperthyroidism in which after severe emotional stress the woman's hair all dropped out in two or three weeks. Under treatment for hyperthyroidism the hair grew again in a few months. Todde has begun tentative organotherapy in the case of the young officer.

Anales de la Facultad de Medicina, Montevideo

January-February, 1920, **5**, No. 1-2

Hospital Hygiene. E. Fabre (Paris).—p. 1.
The Thermal Springs of Chile. O. Maira.—p. 20.
*Echinococcus Cysts in Children. V. Zerbino.—p. 46.
*Supernumerary Ureters. L. Piñeyro Carve.—p. 100.

Echinococcus Disease in Children.—Zerbino states that in a total of 1,511 cases of echinococcus cyst since 1896 at Montevideo, children formed from 20 to 32 per cent. The cyst makes itself manifest in a child usually in from one to six years, while in adults the interval is from two to eight years. His experience does not confirm Devé's assumption that hydatid cysts in adults can generally be traced back to childhood.

Double Ureters.—Piñeyro cites Motzfeld's statement that he found anomalies in the kidneys in 1.75 per cent. of 4,500 cadavers. This included 0.51 per cent. double ureters. Weigert found 10 per cent., and Piñeyro has encountered four cases himself, which he describes, reproducing the roentgen findings. One man of 37 had bilateral double ureters, and in one young man the left kidney was removed on account of partial pyonephrosis and two ureters were found. In another man the diagnosis of the double ureter was made from the cystoscopic findings of the two ureter mouths. In his fourth case there seemed to be merely an accessory ureter. These anomalies are liable to entail serious trouble on account of the small size of the lumen. In examining the bladder, we must not be content with locating the normal ureter mouths but should seek for an extra mouth or mouths.

Revista de Medicina y Cirugía, Havana

March 10, 1920, **25**, No. 5

Jacksonian Epilepsy for Twenty-One Years Cured by Operation. J. Arias Avellán.—p. 107.
The Probable Capacity of the Skull in Delinquent Minors. I. Castellanos.—p. 113.
Cysticercosis of the Brain in Argentina. N. Lugo-Viña.—p. 120.

March 25, 1920, **25**, No. 6

Multiple Fibromas Complicating Pregnancy. E. Stincer.—p. 131.
Prophylaxis of Influenza. V. M. Pérez Lerena.—p. 135.

Semana Médica, Buenos Aires

Jan. 15, 1920, **27**, No. 3

*Osmosis and Edema. L. J. Facio.—p. 73.
*How to Teach Infant Hygiene. P. Rueda and others.—p. 75.
Histopathologic Processes in Healing of Tuberculosis. S. de Madrid.—p. 100.

Osmosis in Edema.—Facio regards the ratio between the serum globulin and the serum albumin—the proteic coefficient, which is 0.67 in normal blood—as the index of osmotic balance. When this balance wavers or is upset, the osmosis may be so deranged that edema of various degrees of intensity results. This may occur even without retention of sodium chlorid, the liver feeling the effect of the autointoxication resulting from chronic nephritis, and thus its production of serum albumin being modified. The reduction of the proteic coefficient represents the ultimate biologic phase of the pathologic process of chronic Bright's disease.

Infant Welfare Work.—Rueda's article and a number of minor articles, all dealing with puericulture, are reproduced as delivered at the Child Welfare Congress at Montevideo last year.

Kitasato Archives of Experimental Medicine, Tokyo

December, 1919, **3**, No. 3

*Spirochete of Rat-Bite Fever in Japanese Field Mouse. R. Kobayashi and M. Kodama.—p. 199.
*Spirochete-Like Bodies in Cultures of Certain Bacteria. G. Koga and I. Otsubo.—p. 207.
Origin of d-Lactic Acid in Animal Organism. K. Taguchi.—p. 223.
*Vaccine Treatment and Prophylaxis of Tuberculosis. K. Shiga.—p. 239.

Spirochete of Rat-Bite Fever in Field Mouse.—Kobayashi and Kodama found *Spirochaeta morsus-muris* in 12 and 54 per cent. of field voles from two districts. Monkeys inoculated with cultures from the mice developed antibodies with spirocheticidal action, but the strains from the two districts behaved differently. The article is in English. It concludes with the suggestion that this species of field vole, *Microtus montebelli*, may prove useful in research on spirochetes.

Bodies Resembling Spirochetes in Cultures of Certain Bacteria.—The plates show the spirochete-like bodies as observed in anaerobic cultures of motile bacteria with flagella. They seem to be a production of the bacteria themselves or represent the flagella in a certain condition. They are readily differentiated from true spirochetes by their staining properties and motility, but the research reported testifies that cultivation of any species of spirochete is not complete until a pure subculture can be obtained. (Compare with editorial, June 26, 1920, p. 1783.)

Vaccination Against Tuberculosis.—Shiga emphasizes that the only positive prophylaxis against tuberculosis is to attack it before it has induced manifest symptoms. In the last four years he has treated 300 tuberculous patients with his T B serovaccine, including twenty of prophylactic vaccination. For this he uses dilutions of 1 : 5,000 for five weekly injections; 1 : 1,000 for four injections; 1 : 500 for three; 1 : 100 for three and then living avirulent tubercle bacilli 1 : 20 for two injections. The temperature is taken for a week before commencing the course, and if there is fever, the vaccination is begun still more cautiously.

Deutsche medizinische Wochenschrift, Berlin

April 8, 1920, **46**, No. 14-15

Diagnosis of Tuberculosis in Children. P. Grosser.—p. 369.
*Syncopal Attacks; Especially in Children. E. Stier.—p. 372.
Duodenal Ulcer. F. Mendel.—p. 375. To be cont'd.
Differential Diagnostic Value of Mesenteric and Peritoneal Symptoms in Abdominal Disease. D. Kulenkampff.—p. 377.
Atypical Findings in Lobar Pneumonia. W. Robitschek.—p. 381.
Apparent Death and Its Diagnosis. G. Puppe.—p. 383.
Microscopic Examination of Lungs of Newborn. Strassmann.—p. 385.
Sterilization of Women from Eugenic Standpoint. Strohmayer.—p. 387.
Toxicology of Eucalyptol and Other Oils. J. R. Spinner.—p. 389.
Acute Isolated Myositis in Volhynian Fever. J. Bungart.—p. 391.
Abscesses from Traumatic Aneurysms. O. Orth.—p. 392.
Friedmann's Tuberculosis Treatment. Jungmann.—p. 393.
Percentage of Infants in Need of Outside Aid. F. Rott.—p. 394.
Value of Consultation Service for Venereal Disease. Hodann.—p. 397.
Causes of Death in Germany, 1914-1916. Prinzing.—p. 398.
Syringe for Injection of Opaque Fluids. R. Braun.—p. 399.
Capillary Pipet for Obtaining and Forwarding Spirochete Serum. J. Schereschewsky.—p. 400.
A Shoe Inlay for Flat-Foot. S. Romich.—p. 400.
Present Meaning of Term "Constitution." J. Bauer.—p. 402.
Treatment of Coryza. G. Finder.—p. 404.

Syncopal Attacks.—Stier states that syncopal attacks are to be regarded as the result of abnormally intense oscillations in the blood circulation which rest exclusively on an inherited constitutional inferiority of the neurovascular apparatus. Many of these attacks are of purely reflex origin. As to the mechanism of the process, we may assume that the quick contraction of the cerebral vessels due to emotional disturbances, and the resultant sudden shifting of masses of blood to the internal organs, and more especially to the abdominal organs, which normally is followed by a dilatation of the cerebral vessels, in a syncopal attack become too intense, and the dilatation of the cerebral vessels does not occur in time. The clinical picture, however, requires the recognition of certain psychic factors. Syncopal attacks seldom occur in children under circumstances that endanger their lives—never on the street, when at play, or in swimming or the like—but almost always at home when help is near. From this fact it is evident that aside from the reflex process in the neurovascular apparatus, psychic factors play a decisive part, among which is weakening of the will power or when the surroundings are such that the child feels that he can yield to the strain.

Medizinische Klinik, Berlin

March 28, 1920, **16**, No. 13

Blood Examination in Relation to Mental Disease. Kafka.—p. 329.
Arthritis Following Intestinal Disease. Von Goltzheim.—p. 331.
Influenzal Meningitis (Encephalitis). H. Rotky.—p. 335.
*Neo-Arsphenamin in Gangrene of Lung and Chronic Bronchitis. E. Becher.—p. 336.
Auscultatory Phenomena with Patent Ductus Arteriosus. W. Wendt.—p. 338.
Quinin Derivatives in Treatment of Pyodermias. W. Friedländer.—p. 339.
Turpentine Poisoning. Lodemann.—p. 340.
Effect of Hot Decoctions of Linden Blossoms. L. Schwartz.—p. 340.

Neo-Arsphenamin in Gangrene of Lung and Chronic Bronchitis.—In chronic bronchitis following pneumonia and influenza, Becher has found injections of neo-arsphenamin (neosalvarsan) successful in two cases. One patient had been expectorating profusely for three months. He was given two 0.6 gm. doses of neo-arsphenamin intravenously. The third day following the first injection the daily amount of sputum had increased slightly from 200 to 225 c.c., but then it fell rapidly to 10 c.c. in two days, and in a day or two more had ceased altogether and did not return. The patient gained rapidly in weight, and felt and looked much

better. The Wassermann reaction was negative. In Case 2 the bronchitis, following influenza, had lasted for two months, and the sputum had amounted to 200 c.c. daily. It began to decrease the third day following the first injection of neoarsphenamin, and by the seventh day had dropped to 70 c.c., but did not disappear until the twentieth day. There were no spirochetes in the sputum and the Wassermann reaction was also negative. Becher thinks that it seems indicated to try arsphenamin injections further in similar cases.

Münchener medizinische Wochenschrift, Munich

March 26, 1920, **67**, No. 13

*Calcification of Arteries. J. G. Mönckeberg.—p. 365.
*Tissue Defense. A. Theilhaber and H. Rieger.—p. 368.
Influence of Temperature on the Sachs-Georgi Reaction. L. Hauck. —p. 369.
*Mechanical Irritation in Adams-Stokes' Disease. E. Schott.—p. 370.
Stable Sterile Physiologic Sodium Chlorid Solution. Taege.—p. 371.
Floating Disappearing Goiter. A. Krecke.—p. 371.
Infant Feeding with Spontaneously Soured Milk. Klotz.—p. 372.
Ateriovenous Aneurysm. Bernard.—p. 372.
Nipple Clip to Prevent Loss of Breast Milk. H. Hinselmann.—p. 373.
Intravenous Injection of Opaque Fluids. W. Hoffmann.—p. 373.

Calcification of Arteries.—Mönckeberg emphasizes that from a pathologic and anatomic standpoint the calcification of the media in arteries of a muscular type is quite distinct from the disease process in atherosclerosis. Both processes may, however, occur together, in which case atherosclerosis is grafted on to an existing calcification of the media, but even the advanced stages of calcification commonly show no associated atherosclerosis. Since atherosclerosis of the terminal arteries is seldom so severe that the changes in the walls can be palpated through the skin, it follows that the clinical finding of an artery with calcium deposits justifies the assumption of calcification of the media, and that atherosclerosis may be associated. It does not justify the conclusion that atherosclerosis alone is present. The more pronounced the findings, the more likely it is that only calcification of the media obtains.

Tissue Defense.—On the basis of investigations and clinical observations, Theilhaber and Rieger believe that atheromatous degeneration of blood vessels is conditioned not only by the kind and quantity of chemical substances in the blood but also by the state of tissue defense. If the chemical poisons in the blood do not exist in too large quantities and the tissue defense is still reasonably efficient, when a reduction of heart function in advanced years occurs, only sclerosis will develop. But, on the other hand, if the poisons in the blood are very numerous and the tissue defense is defective, atheromatosis will result. Sclerosis and atheromatosis in turn open the gates to invasion of the connective tissue by adjacent tissues (epithelium). They also prepare the way for many other diseases such as chronic arthritis. They also break down the tissue defense. A further important factor which impairs the tissue defense is the reduced activity of the blood-forming organs. The spleen, bone marrow, thymus, Peyer's glands, lymph glands, etc., atrophy in old age in consequence of the reduced supply of blood circulating through them owing to the weakening of the heart action. As a result there is a decrease in the round cell production, in the formation of connective tissue cells; a reduction in the tissue defense and a decrease in the antibodies acting against foreign invaders. The meshes of the "filter" that protects the vessel walls against the invasion of toxins in the blood are unduly widened. The functioning of the blood-forming organs is impaired also by the sclerosis and atheromatosis of their vessels, and thus the vicious circle is established. Impaired heart functioning due to old age is thus frequently the primary factor in the syndrome.

Mechanical Irritation in Treatment of Adams-Stokes' Disease.—Schott states that in attacks of Adams-Stokes' disease, heart action may sometimes be restored by a rather vigorous slap on the chest over the heart. This may be done from five to ten minutes after the onset of the syncope. He thinks that possibly patients may thus be tided over the time of gravest danger. One blow with the fist may rouse the patient from his stupor or it may require several. Two cases are cited

April 16, 1920, **67**, No. 16

Hints on Economical Dieting. Kruse and Hintze.—p. 445.
Experiences with the Deycke-Much "Partial Antigen" Treatment of Tuberculosis. L. Jacob and M. Blechschmidt.—p. 447.
*Investigations of the Question of Colds. II. H. Schade.—p. 449.
*Tetragenus Sepsis. H. Lüdke.—p. 454.
Clinical Aspects of Erythema Infectiosum. C. Coerper.—p. 456.
Elastic Steel-Wire Artificial Foot. J. Fuchs.—p. 457.
Adjustable Table for Examination and Treatment of Back. F. Penzoldt.—p. 457.
Syringe for Intravenous Injection of Opaque Fluids. F. Heitz. —p. 458.

Investigations of the Question of Colds.—Schade recalls that the skin is the main defense and protective organ of the body against the cold, but strangely enough we scarcely ever speak of taking cold in the skin, although the skin is just the place where disturbances of the tissues due to cold are best recognized. The effect of the cold is first seen on the nerves. In the vasomotors this is evidenced by the interruption of regular processes; in the sensory nerves a reduction in the specific skin sensations is noticeable. "Aside from these changes, a general physical alteration of the skin tissue takes place, a fact that in the past has been grossly neglected." He means the stiff and doughy condition of the tissues which is noticeable in the hands and face after staying a short time in the cold air. Through the effect of the cold the tissues become harder and less elastic. The change that occurs in the skin may be likened to the hardening process of certain jellies when exposed to the cold, for in both cases it is the colloids that undergo a change. As we learn from recent physiologic and clinical investigations, the changes in the colloids are of the greatest importance from the standpoint of cell functioning. Every change in the colloid state causes disturbance of function. After the colloidal change becomes permanent, it is impossible for the cell to continue to exist in the normal manner. There are several manifestations in the clinical course of catarrhal conditions that point to the cold as one of the etiologic factors responsible for these conditions. The catarrhal conditions appear frequently within a few hours after exposure to cold. When a mucosa is affected, at the beginning of the condition the whole surface is often affected at once, instead of first a small focus appearing, as is the case in ordinary infections.

Tetragenus Infection.—Lüdke finds in the literature very few cases reported in which a pure infection from *Micrococcus tetragenus* occurred. He therefore gives an account of three cases of his own, which he thinks justify the conclusion that this species is an independent disease-producing agent. Its pathogenicity cannot be very great, as all the cases took a favorable course. In his three tetragenus cases he used intravenous injections of killed tetragenus cultures or an albuminoid product, which promptly reduced the fever and led to a speedy recovery of the patient. In one case he had tried intravenous injections of collargol, but without success.

Therapeutische Halbmonatshefte, Berlin

Jan. 1, 1920, **34**, No. 1

*Rectal and Parenteral Feeding. C. von Noorden.—p. 1. Conc'd in No. 2, p. 40.
*Treatment of Rachitic Curvature of Bones. G. Magnus.—p. 4.
Pharmacology of Colchicum Treatment of Gout. S. Loewe.—p. 5.
Practical Suggestions for Out-Door Treatment of Tuberculosis. Backer and Capelle.—p. 11.

Rectal and Parenteral Feeding.—Von Noorden asserts that the best means for artificial feeding is with the duodenal tube. When this is not practicable, all that we can hope to get absorbed from a nutrient enema is water, a few salts, alcohol of at least 3 per cent. concentration; of the carbohydrates only dextrose, or better yet dextrin; of nitrogenous food, only albumose-peptone or products of far advanced splitting of albumin. He advises not more than two enemas of 300 c.c. each in the twenty-four hours, the patient lying quiet thereafter. The rectal tube is introduced for 8 cm. and a preceding injection of a little opium twenty or thirty minutes beforehand is advisable. By giving the enemas by the drop method up to 2 liters can be given in the twenty-four hours. It is better to give the nitrogenous and the carbohydrate ingredients in separate enemas. When the rectum

cannot be utilized, sugar can be given subcutaneously or by the vein and does not induce anaphylaxis, like albumin. Fat by these routes is not assimilated. Cane sugar and milk sugar are eliminated in the urine almost unutilized; dextrose and levulose are the forms to be used. By the vein, a 5 or 10 per cent. solution can be infused; subcutaneously, only the 5 per cent. solution. This should supplant the old saline infusion as it supplies the needed fluid and nourishment besides. It is indicated particularly, instead of saline, in uremia and cholera, and can be combined with nutrient enemas. When mineral salts are indicated, Ringer's solution is preferable to saline, but he omits the sodium bicarbonate as this causes turbidity. Although the calcium content is minute, yet it may have decisive importance for the heart action. He commends especially a combination of Ringer's solution and 10 per cent. sugar solution.

Treatment of Rachitic Deformity.—Magnus utilizes the tendency of an immobilized bone to atrophy and soften. This is accomplished by putting the deformed leg in a plaster cast without any attempt at correction. The child is then kept in bed for five or six weeks. When the cast is then removed, the bone is soft and pliable and can be straightened under general anesthesia as readily as a wax candle. Another plaster cast is then applied for a second six weeks but weight bearing is now indispensable to overcome the tendency to atrophy. It should be begun by the third week. His results in thirty cases were highly satisfactory; usually both legs were treated at the same time. In one child the femur fractured and had not quite healed so that a cast was necessary for an additional three weeks. There has been no recurrence of the deformity in any case. The cast reached to the ischium when merely the legs were in question, but with the thigh, the pelvis was included.

Zentralblatt für Chirurgie, Leipzig

April 17, 1920, **47**, No. 16

Access to Pretracheal Space by Epiperiosteal Sternum Flap. L. Drüner.—p. 370.
Incarceration of Stomach in Femoral Hernia. R. Spiegel.—p. 378.
*Incarceration of Fallopian Tube in Inguinal Hernia. B. Vas.—p. 374.

Retrograde Incarceration of Fallopian Tube in Hernia.—Vas states that he finds only one other case similar to his case in the literature (Maydl). The girl of 16 had long had a right reducible inguinal hernia. It suddenly became larger and painful, and the operation revealed in the sac a livid, loop-shaped object about 11 cm. long and 2 cm. thick, which proved to be the right fallopian tube. It had looped down into the incarceration ring, while its free end still lay in the abdominal cavity, and was bluish black. Prompt recovery followed excision of tube and ovary.

April 24, 1920, **47**, No. 17

*Separation of Lower Epiphysis of Femur. A. Fromme.—p. 394.
Preparatory Measures for Tendon Grafting. K. Henschen.—p. 396.

Traumatic Separation of Lower Epiphysis of Femur.—In Fromme's three cases of traumatic separation of the lower epiphysis of the femur in two boys of 9 and 12, and in a girl of 12, in spite of extensive exposure of the lesion, it was impossible in any case to secure an ideal reduction or, if perfect reduction was secured, it proved impossible to retain the limb in the corrected position, although it was put up in flexion in a plaster-of-Paris cast. In every instance forward displacement of the epiphysis occurred. After the healing process in this faulty position had taken place, no normal movements of the knee joint were possible for several months. Not only flexion was prevented by bony growth, but also extension was impossible, but four or five years later, he was somewhat surprised to find that by the process of growth an excellent functional adaptation had been finally brought about, so that the practical results were almost perfect. In one case extension was only 5 degrees and in two cases flexion was only 10 degrees less than normal. Almost normal motility had been effected by the gradual reconstruction of the lower end of the femur. Only in one case had slight shortening (1 cm.) occurred.

Zentralblatt für Gynäkologie, Leipzig

April 17, 1920, **44**, No. 16

Technic for Closure of Ureter. W. Poten.—p. 393.
When Is It Safe to Leave Extravasated Blood from Tubal Abortion? A. Mueller.—p. 395.
*Reinfusion of Extravasated Blood. D. Kulenkampff.—p. 396; Idem. M. Friedemann.—p. 398.
Etiology of Postoperative Parotitis. H. Friedrich.—p. 400.

April 24, 1920, **44**, No. 17

Leukorrhea, Its Origin and Treatment. A. Loeser.—p. 417.
Indications with Retention of the Placenta. Lindig.—p. 430.
Maceration of a Living Child. Meyer-Rüegg.—p. 433.
Lamellar Desquamation in the Newborn. H. Brauns.—p. 435.

Reinfusion of the Blood with Tubal Abortion or Rupture of the Spleen.—Kulenkampff proceeds to reinfusion of the extravasated blood at once and has had no mishaps in the two cases of ruptured spleen and nine of tubal abortion in which he restored to the system the blood lost in this way, and he knows of thirty-five other cases on record. In a twelfth case he found that the blood had coagulated. The harmlessness of puncture has been demonstrated by the pneumoperitoneum technic, and he punctures the abdominal wall in the lower third of the rectus muscle and aspirates, to confirm the presence of fluid blood. The infusion tube is introduced into the vein by the assistant as the abdomen is being opened. The parietal peritoneum is then drawn up into a cone and the blood around the bladder runs out. From ½ to 1 liter of fluid blood is thus secured in a few minutes, strained, citrated and poured into the infusion funnel.

Reinfusion of Blood with Tubal Abortion.—Friedemann, in critical cases, immediately exposes the vein and infuses physiologic sodium chlorid solution by the drop method. When the abdomen has been opened and the bleeding artery clamped, the extravasated blood is scooped up and citrated with a 3 per cent. solution of sodium citrate in the proportion of 9:1. Then the citrated blood is added to the saline and the mixture is infused as needed, but always very slowly. When the blood has all been used, he occasionally continues with pure saline. He has been using this technic for several years and has never noted any signs of intoxication with it.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Nov. 29, 1919, **2**, No. 22

Model Procedure for Medical Examinations. G. van Rijnberk.—p. 1697.
*Traumatic Neuroses. T. van Schelven.—p. 1703.
Dysentery and Bilharziasis in Surinam, and the Action of Emetin. C. Bonne.—p. 1718.

Traumatic Neuroses.—Van Schelven's article is the outcome of study of 4,000 cases of traumatic neurosis in Austro-Hungarian soldiers. He protests against the term as misleading, as the neurosis is not the result of the physical trauma but of the mental reaction to it. The subject is well posted in regard to his sufferings, and they always subside sooner or later when the matter of compensation is finally adjusted. The best form of compensation for a traumatic neurosis, he says, is a pension, not too large, progressively declining and automatically stopping at the end of the second year, without appeal.

Feb. 7, 1920, **1**, No. 6

Clinical Study of Typhus. P. H. Kramer.—p. 455.
*Determination of Urea Content of Blood. R. Bahlmann.—p. 473.

Urease Test for Urea in the Blood.—Bahlmann gives an illustration of the set of connected test tubes and wash bottles with which he applies the urease test for determination of the urea content of minute quantities of blood. It is a simplified soy bean ferment micromethod. His parallel tabulated findings apparently demonstrate that the method is reliable.

March 27, 1920, **1**, No. 13

*Signs of Calcium Deficit. H. A. Stheeman and A. K. W. Arntzenius.—p. 1030.
Ideals of School Inspection. M. van der Hoeve and others.—p. 1039.
*Psychogalvanic Reflex Phenomena. A. A. Grünbaum.—p. 1044.

The Stigma of Calcium Deficit.—Stheeman is chief of the children's hospital at 's Gravenhage and his long and extensive experience has convinced him that a large number of pathologic conditions have the one feature in common of an inadequate reserve of calcium. This *calcipriva stigma* is the

underlying cause responsible for spasmophilia, for the habitus asthenicus, universal asthenia and allied conditions. That this fact has not been fully appreciated before is due to the lack of a simple and reliable quantitative test for the calcium content of the blood. Wright's method reveals only the calcium that is dissolved, and there is no standard for comparison between the findings by different workers. The De Waard method of microtitration with one-hundredth normal solution of potassium permanganate gives reliable findings with as little as 0.5 or 1 c.c. of blood or serum. (It was described in detail in the *Nederlandsch Tijdschrift voor Geneeskunde* **2**:992, 1918.) The findings in the blood serum of thirty-five sick children and in a number of healthy children and a few sick and healthy adults are tabulated. In the fifty-eight healthy children the calcium content was constantly between 12 and 13 mg. per 100 c.c. of serum. In the others it ranged from 8.25 to 17 mg. The age does not seem to influence the calcium content, but an extremely low figure was found in the prerachitic condition, with intestinal infantilism, neuroses of the vegetative nervous system, universal asthenia, and tuberculosis. The severity of the pathologic condition was reflected in the lowness of the calcium content, and the figure rose as the general condition improved. A further proof of his theory is the prompt benefit in all these pathologic conditions when treatment aiming to promote retention of calcium, namely, with cod liver oil and phosphorus, was systematically given. To estimate the improvement, he does not trust to personal impressions but measures it with precision by testing the sensitiveness of the peripheral nerves to the galvanic current. This has confirmed that the Erb sign is nearly always positive with a low calcium content and is never positive with a high content (aside from rachitis). Also that the Erb sign is most pronounced, the greater the deficit in calcium, and that as the Erb sign becomes less pronounced, the calcium content is also found to be increasing. It seems thus beyond question, he concludes, that the cause is a local calciprivic condition of the nerve tissue, at least in the peripheral neuron, as a part of a general deficit of calcium in the tissues. It conforms to Quest's and McCallum's findings in dogs, and to the Chvostek sign in children. The latter he regards as a more sensitive sign than the Erb reaction.

Psychogalvanic Reflex Phenomena.—Grünbaum's thirty-page article is a critical review of recent literature on the galvanometric measurement of mental processes and emotive physiological changes. He is privat-docent of physiology at the University of Amsterdam, and his conclusions are against the acceptance of psychogalvanic reflex phenomena as a reliable element in the diagnosis.

Hospitalstidende, Copenhagen

April 28, 1920, **63**, No. 17

*The Duodenal Tube with Gallstones. A. Tvilstegaard.—p. 257. Conc'n.

Duodenal Findings with Gallstones.—Tvilstegaard found leukocytes in the duodenal content in 10 cases of cholecystitis. On the other hand, he never found leukocytes in the duodenal content from healthy persons. The duodenal content resembled macroscopically, microscopically and bacteriologically the contents obtained from the gallbladder at the operation. In four of the five cases in which the colon bacillus was found in the duodenum, it was present also in the gallbladder. Injection of a solution of peptone into the duodenum is said to induce contraction of the gallbladder, and the outflow of bile is modified. In some cases he noted that the bile thereafter became thick and dark colored, but this cannot be ascribed to contraction of the gallbladder alone, as in one of the cases the gallbladder was completely destroyed and unable to contract. In some other cases, although the gallbladder seemed to be functionally capable, yet no effect from the peptone was apparent. Investigation of the duodenal content is instructive for differentiation of disease of the biliary apparatus from kidney disease and appendicitis in puzzling cases. Considerable literature is appended. He has applied the method in 18 cases and gives the details of 11 cases in which the findings were confirmed by an operation.

Hygiea, Stockholm

April 15, 1920, **82**, No. 7

Injury of Ureters During Operations on Pelvis. W. Forssell.—p. 209; Idem. F. Westermark.—p. 217.
*Hypernephroma. E. Michaëlsson.—p. 220.

Results of Operative Treatment of Hypernephroma.—Michaëlsson relates that of the 30 patients with hypernephroma given operative treatment at the Serafimer Hospital between 1896 and 1915, 7 are still in good health after intervals of over 15, 12, 9, 7 and 4 years; 6 died from recurrence or metastasis within three years and 3 others in from four to ten years. All the others died from intercurrent disease but there probably was metastasis in some of them. It is difficult to base the prognosis on the microscopic findings in the tumor; even those that do not indicate malignancy under the microscope may develop metastases.

Ugeskrift for Læger, Copenhagen

April 8, 1920, **82**, No. 15

Immunity after Influenza. J. Buchholtz.—p. 486.
Vaccination against Influenzal Pneumonia. J. Buchholtz.—p. 488.

April 15, 1920, **82**, No. 16

*Etiology of Chronic Gastric Achylia. K. Faber.—p. 505.
*Polycythemia. T. E. Hess Thaysen.—p. 514. Begun in No. 15, p. 473.
*Cyst in the Brain. A. V. Neel.—p. 524.

Etiology of Chronic Gastric Achylia.—Faber presents evidence to disprove the assumption of a congenital achylia, and to demonstrate that in the majority of cases the nonfunctioning of the gastric glands is the result of toxic injury from endogenous toxins in the course of acute or chronic diseases, or from gastro-intestinal infectious processes, or from irritation from insufficiently masticated food. The direct hematogenous toxic action in typhoid and dysentery, entailing achylia, was abundantly proved during the war. In bacillary dysentery there is frequently a toxic bradycardia. In children, achylia of toxic origin is common, but it is usually transient; in adults irreparable injury may result. At all ages, the achylia may develop without causing symptoms. While the toxic action responsible for it is transient, the glands may be damaged for life. As the condition is proving to be so much more common than formerly supposed, its occurrence in several members of a family cannot be accepted as indicating a congenital, familial condition, at least from the evidence hitherto presented.

The Capillaries in Polycythemia with Enlarged Spleen.—Thaysen says that if the erythrocytes were counted systematically over long periods in cases of polycythemia, remarkable fluctuations in the count might be found, as in the case here reported in detail. His patient was a woman of 54, and the erythrocytes ran up from 7.7 millions to 11.8 millions in the course of six weeks, but this was followed by a still more sudden drop to 7.2 millions in three and a half weeks. In the course of twelve hours the figure ran up from 5.3 to 10.6 millions on one occasion. His investigations and tests showed that the fluctuations were caused by varying contraction and dilatation of the capillaries, and precapillaries of the skin. The vasomotor system is evidently in a very unstable state which might be called actual vasomotor or capillary ataxia. This suggests the possibility of suprarenal insufficiency as an element in the clinical picture. There is one case on record of associated Addison's disease and polycythemia. In polycythemia there is usually a tendency to muscular weakness and pigmentation. Guggenheimer has reported two cases of eunuchoidism plus polycythemia. Thaysen adds that the experiences with roentgen treatment have been conflicting. Vaquez noted general improvement but no action on the erythrocyte count, while McCray thinks it is the only dependable treatment, and Engelhardt and Brown denounce it as ineffectual. Rydgaard has published a favorable report and Thaysen's own patient seemed to improve after the first two exposures, but later no effect was apparent.

Cyst in the Brain.—The apparently healthy woman of 76 developed severe chorea following a fright. The chorea was ascribed to hysteria, but it persisted with progressive dementia. Necropsy the third year revealed an old subdural cyst behind a depression in the frontal bone from a fall.

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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, NO. 2 CHICAGO, ILLINOIS JULY 10, 1920

PRINCIPLES OF PERIPHERAL NERVE SURGERY *

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Notwithstanding the amount of experimental work that has been done on peripheral nerves, there is still some difference of opinion among investigators as to their method of repair after injury or division. The complex histology of the nerve fiber and the many different processes occurring or progressing simultaneously in both segments of a divided nerve offer many opportunities for widely different interpretation of findings. If the essential features of nerve repair are understood, the factors that interfere with it can be easily determined by experimental studies or the examination of tissues removed at operation. Therefore, before discussing the principles of peripheral nerve surgery, I will consider the regeneration of peripheral nerves after division.

REGENERATION AFTER DIVISION

When a nerve is divided, definite evidences of regeneration are noted within a few hours in the proximal segment adjacent to the point of injury. Some of these early changes are undoubtedly abortive, but others indicate attempts at definitive repair. Some degenerative changes occur in the neuraxes in the distal end of the proximal segment. These do not, however, extend far back in the nerve, probably only to the next node of Ranvier.

Definitive regeneration of neuraxes occurs only in the proximal segment, and all the neuraxes that eventually neurotize the distal segment passing into the motor end plates and sensory endings develop from those of the proximal segment. By the eighth day after division of a nerve, the medullated fibers of the proximal segment have given off numerous lateral rami some 5 mm. above the point of section. These grow distad beneath the old neurilemmal sheath. The nonmedullated fibers also dissociate into bundles of neurofibrillae which grow down in the old sheaths by the fourteenth day. In studying the repair of nerves through a gap, it can be positively demonstrated that no neurofibrillae can be found in the distal segment until those developing from the proximal segment have bridged the gap. Some still ardently defend the theory of peripheral regeneration of nerves, but all recent evidence shows that the theory of peripheral regeneration is based on studies made when specific stains were not in use or on experiments which were imperfectly or insufficiently controlled.

The changes that occur in the distal segment after division are equally important to those occurring in the proximal. Nerve impulses cannot be transmitted without neuraxes, but the neuraxes cannot reach their terminal distribution unless bands or conduits are formed along which these can pass or creep. Both degenerative and regenerative changes occur in the distal segment after division. The neuraxes soon become broken up. Often they seem to have snapped. Later they break up into fine granules. The myelin breaks up into balls and globules. While these degenerative changes are occurring in the neuraxes and myelin sheaths, definite evidences of growth or repair are noted in the sheath cells. The adult neurilemmal sheath (Schwann) is a fine, thin, structureless membrane provided with a few fusiform nuclei—one to each node of Ranvier, the latter varying from 80 to 900 microns in length.

After division, the sheath cells of both the proximal and distal segments bordering on the traumatized area react early. The first indication of a growth change is indicated by a slight increase in the granular cytoplasm surrounding the nuclei of the sheath cells. This change is observed within from twenty-four to thirty-six hours after division in the cells immediately adjacent to the zone of injury. The cytoplasm increases rapidly in amount, the nuclei undergo mitosis, and by the fourth to the sixth day definite protoplasmic bands have formed. These are narrow strands or bands of protoplasm which contain hyperchromatic nuclei. This growth change, leading to the formation of protoplasmic bands, occurs throughout the distal segment. Certain factors, probably traumatic, greatly accelerate the process in those sheaths bordering on the line of division. The fully formed protoplasmic bands appear later in the peripheral parts of the distal segment than in those adjacent to the line of division.

These bands evidently play an important rôle in nerve regeneration; for the fibers which have no neurilemmal sheaths, such as those of the optic nerve and spinal cord, do not regenerate after division. Kirk and Lewis, in studying regeneration of peripheral nerves after fascial tubulization, could demonstrate these bands passing through and bridging the gap. They seemed to precede the developing neuraxes, forming pathways, as it were, for these as they developed. The neuraxes—the conducting portion of the nerve fiber—develop only from the proximal segment after division of a nerve. The changes in the neurilemmal sheath which occur throughout the distal segment and in the distal part of the proximal segment adjacent to the line of division—the so-called wallerian degeneration—are, however, essential to the definitive regenera-

* Chairman's address, read before the Section on Surgery, General and Abdominal, at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

tion of the nerve; for without protoplasmic bands, which develop as a result of regenerative changes in the sheath cells, the developing neuraxes do not reach their terminal connections.

HARMFUL EFFECTS OF SCAR TISSUE

In the repair of a divided nerve, the first consideration is to provide easy access for the developing neuraxes to the distal segment. After division of a nerve, a neuroma will develop within nineteen days. Even when there has been no hemorrhage or infection, a neuroma develops. The cut fibers retract within the epineural sheath, and a connective tissue cap forms over the end of the nerve. There is, however, a very marked attempt at repair, for the developing neuraxes as they reach the connective tissue, formed by the cells of the endoneurium and perineurium and surrounding tissues, turn back on themselves to form the spirals described by Perroncito. The neuromas which invariably form after division of a nerve, as demonstrated by Huber and Lewis, are indicative of an attempt at repair which has been thwarted by scar tissue. Some of the developing neuraxes may undoubtedly zigzag through scar tissue and reach the distal segment, but it is doubtful whether they will reach the terminal connections to which they were originally destined.

Scar tissue forming after division of a nerve interferes most seriously with nerve repair. There has been a tendency of late to advise suture by neuroma. There will be but few successes when such a procedure is attempted. In all cases the neuroma should be resected until healthy funiculi appear and to the point where scar tissue is not visible to the naked eye. In many instances even after the neuroma has been resected far back, the funiculi will have a peculiar matted, gelatinous appearance. This appearance is due to small amounts of young connective tissue, developing neuraxes and some edema. The results which have been obtained after suture would seem to indicate that successful nerve repair may be obtained when end-to-end suture is made between funiculi having this appearance.

In examining some neuromas which were resected when suture has been performed, connective tissue septums which equal in diameter the funiculi have been found. In such instances, it would have been easy to approximate funiculi of the distal segment with connective tissue septums of the proximal segment, thus preventing or seriously interfering with nerve repair. I believe it advisable in many cases to employ frozen sections to determine the level to which the resection of neuroma should be carried. Mobilization of the nerve segments and preparation of the nerve ends followed by accurate adjustment require some time, and the frozen sections could be easily made and studied while these procedures were being carried out.

NECESSITY OF PRESERVING THE NERVE PATTERN

Success in peripheral nerve repair depends on accurate anatomic approximation of the two ends. The importance of the internal topography of peripheral nerves should be emphasized. Stoffel has insisted that the funiculi in a mixed nerve have a fairly definite position and that the sensory and motor funiculi, which serve different muscles, maintain their position and relation throughout the entire course of the nerve. He is probably incorrect in the belief that the funiculi maintain a fairly definite relationship throughout the entire length of the nerve, for Langley has demonstrated in peripheral nerves an internal plexus. The internal plexuses apparently serve to collect together the afferent and efferent fibers of the different nerve roots for the areas supplied by the peripheral nerves, just as the brachial and lumbosacral plexuses do for the large areas supplied by the nerve trunks. In the region between the origin of two successive nerves, not arising close together, the bundles are arranged in groups which have little or no connection with one another, although the bundles forming the group are more or less interconnected. Such a region is called an intermediate region, but it gradually blends with the region in which is found the plexus which is formed by the interlacing of fibers or bundles given off from the nerves or bundles of the intermediate zone. Langley's work agrees with that of Dustin, who described an interlacing of nerves or bundles between the funiculi of peripheral nerves at points where branches are given off.

As far as the surgery of peripheral nerves is concerned, Stoffel's and Langley's work, although differing in detail, emphasizes the importance of nonaxial rotation of nerve trunks during suture, thus avoiding distortion of the nerve pattern. Distortion of the nerve pattern may interfere seriously with the nerve supply of muscles. If the nerve pattern is distorted, reeducation of muscles or readjustment becomes necessary. If the nerve pattern is distorted, the developing neuraxes may not reach the muscles for which they were originally intended, or neuraxes which originally served motor function may be diverted to the skin. In some instances after suture, even when care is exercised, the neuraxes may make proper functional nerve endings; but the central connections may be different from those existing before the suture was performed. In such instances a readjustment of impulses or a degeneration of these fibers must occur before coordinated movements can be made.

I have attempted without any great success to perform funicular suture. This is the object to be desired, but I believe it impossible. As perfect anatomic repair as is possible should, however, be secured in order to preserve the nerve pattern. The surgeon who makes the most perfect anatomic repair will, other things being equal, have the greatest number of successes.

It is often difficult to determine whether or not rotation has occurred or the amount of rotation, if such has occurred. This is especially true when the nerve has been divided by a missile, for the nerve after division may be rotated or displaced by the force continuing to act. When the nerve is exposed, fine silk sutures may be inserted on both sides of the nerve before it is lifted from its bed. These serve as guides to determine the exact position of the nerve segment when suture is attempted. Mosquito forceps may be used for the same purpose, but they are not so easily handled and may cause more injury to the nerve.

If, after suture, fibers originally destined for a certain group of muscles become partly distributed to their own group and partly to those of another group, marked incoordination of movements may occur. The movements are then no longer precise. They are awkward and without force. This is often seen after suture of the radial nerve, when the supinator longus contracts more forcibly when attempts are made to use the extensors of the wrist, than when the forearm is flexed on the arm. In this instance some of the fibers which

should have been distributed to the radial extensors have reached the supinator longus.

Accurate approximation will prevent to a great extent this imperfect redistribution of developing neuraxes. An imperfect redistribution occurs to some slight extent after every suture, but the results are overcome by reeducation or some degeneration of the fibers which have made wrong terminal connections.

IMPORTANCE OF EARLY SUTURE

The length of time intervening between the division of the nerve and repair is the third important factor in determining the success of nerve suture. Those cases in which nerve suture is performed early, in which the period between the injury and the operation does not exceed three or three and one-half months, have a much higher percentage of recoveries than those in which the suture is performed later. Some time ago I reviewed the statistics of nerve suture, and it seemed to me that suture performed as late as nine months after the injury presented a much lower percentage of recoveries than suture performed earlier.

I have had the opportunity of observing eleven cases in which primary suture was performed. Nine months after suture, nine of these presented definite evidence of return of motor function. These cases could be spoken of as cured. The importance of the time element cannot be emphasized too strongly, for there is a tendency in civil practice to delay operation in hopes that improvement may occur if massage, electricity, etc., are continued long and faithfully. Supplementary movements which are not dependent on regeneration of the injured nerve are often regarded as evidences of recovery. These movements should be carefully studied, for operative interference should not be delayed because of the mistake of interpreting these movements as evidence of return of function in the paralyzed group of muscles. Early exploration is advisable in many of these cases, for the secondary changes occurring in the nerve often render suture difficult after a delay of many months, and the changes which occur in the muscles, tendons and joints may cause more or less permanent disability.

END-TO-END SUTURE

I have wished to emphasize the harmful influence of scar tissue on nerve regeneration, the necessity of preserving the nerve pattern, and the importance of early suture. These are important things in peripheral nerve surgery. The method of applying the suture in end-to-end anastomosis is simple.

End-to-end suture is the only procedure that can be relied on to reestablish the continuity and function of a nerve after division. It makes no difference concerning the suture material, for fine silk or catgut gives equally favorable results. Transfixion sutures do not seem to disturb the nerve pattern, but I believe that epineural sutures are the most satisfactory. In cases in which some traction must be exerted, it may be necessary to employ one or more transfixion sutures.

The sutures should be applied so that the epineurium is closed, thus preventing straying of neurofibrillae in surrounding tissues. The ends should be approximated without pressure. It has been advised by some that a small gap be left. I believe that this is poor advice, although one can see the reason for it after examining neuromas which have been removed when the suture was performed. In some cases the scar tissue surrounding a funiculus equals in diameter the funiculus itself. In such cases it might be difficult to avoid approximation of the funiculi in one segment with the scar tissue in the other. If a small gap were left it might be easier for the neuraxes to find their way into the protoplasmic bands of the distal segment. Resection of the neuroma far enough back to expose healthy neuraxes is necessary if peripheral nerve suture is to be successful.

Mobilization of the segments will often permit of end-to-end suture even when the defect is long, especially when combined with displacement of the nerves and change in the position of the part. Dissection of a nerve from its bed apparently does not interfere with regeneration, for recovery within the time expected after suture occurs when, for example, the sciatic is dissected out of its bed for considerable distance. As one's experience in peripheral nerve surgery increases, the attempts at end-to-end suture even in long defects become more and more successful. In the cases in which the defect is so long that end-to-end suture is impossible, many procedures have been suggested. No one of these can be depended on to give results.

CABLE TRANSPLANTS

Experimentally, auto and homo-cable transplants will conduct neuraxes from the proximal to the distal segments. Fascial tubes can also be used with success experimentally.

The results obtained by Platt in clinical surgery when these procedures are employed are not encouraging. They suggest either that the results obtained experimentally cannot be applied directly to clinical surgery or that our technic is at fault in this work.

Platt's conclusions are as follows:

1. In eighteen operations in which fascial tubulization combined with autogenous nerve grafts, fascial tubulization alone and autogenous vein tubulization (one case) were used, there was a complete absence of any clinical sign of recovery. The shortest period over which observations were made was four months, the longest period twenty-six months.

2. Secondary exploration in four cases showed complete silence of the nerve trunk to direct faradic stimulation. End-to-end suture was accomplished in all after exsection of the bridged segment.

3. At the reexploration operations, partial or complete obliteration of the lumen of the fascial tube was noted.

4. In two specimens examined histologically, one, a tubulization alone, showed obliteration of the lumen of the tube by fibrous tissue in which no nerve fibers could be found. In the second, a graft and tubulization combined, nerve fibers were present in the center of the obliterated tube eighteen months after the operation. There was no sign of continuity between the proximal and distal ends through this strand of nerve fibers.

5. The early reexploration of all graft and fascial bridge operations is advisable.

In 120 operations I used auto cable transplants twelve times and performed tubulization with fascia six times. In none of these has there been recovery, although in two transplantations there has been some slight return of motor power in isolated muscles. The striking thing, however, is that the transplant may increase markedly in size. I believe that these cases

should be explored after a reasonable time as a block to the developing neuraxes may occur at the junction of the transplant and the distal segment. Resection and suture at this point might favor the downgrowth of neuraxes and neurotization of the distal segment.

PROCEDURE WITH PHYSIOLOGIC INTERRUPTION

The group of nerve injuries in which there is no anatomic division but a physiologic interruption of nerve impulse offers some interesting problems. The pathology varies considerably. Constricting bands, thickened epineurium, bony callus and cicatricial nodules within the nerve resulting from intraneural hemorrhage and proliferation of intraneural connective tissues are the conditions most frequently found.

Not all are agreed as to the procedure to be followed. In some cases, however, the indications are well defined. Tinel has stated that neurolysis is permissible only when it restores a free, supple nerve, in the interior of which is found no obstacle to regeneration, and that as a whole liberation is ineffective in cases of severe lesion of nerve trunks associated with rupture of the sheath, and the development of scar tissue with the formation of a neuroma. In these cases the cicatricial tissue is either permeable to regenerating axis cylinders, in which case intervention is useless, or the obstacle does not permit of the passage of axis cylinders, and an operation such as neurolysis will not make it permeable. Neurolysis is of distinct value, but it is sometimes difficult to determine whether or not the results are the direct results of surgical intervention, for many of the patients recover spontaneously. The value of the operation cannot be denied, however, in those cases in which paralysis has existed for months and in which a distinct return of motor power occurs within ten days following the operation. Nerves which present the least macroscopic change may have the greatest alteration in or suspension of function. This is observed especially in those cases in which a number of nerves, some of which have recovered spontaneously, have been affected. When the operation is performed it may be found that the nerves presenting the most marked pathologic changes are the ones that have recovered spontaneously.

Whether neurolysis or resection is to be performed depends on the appearance and feel of the nerve and the electrical reaction. The time element is important in determining the results after neurolysis, that is, the time existing between the injury and the operation. Statistics dealing with a large number of nerve injuries compiled by a number of different surgeons indicate the importance of the time element. The greatest number of improvements, from 80 to 100 per cent., are noted in cases in which this operation is performed within five months after the injury. When the operations were performed eight or nine months after the injury, improvement was noted in but from 30 to 70 per cent. In thirty-nine cases in which neurolysis was performed within six months after the injury, improvement was noted in 58.9 per cent., while in 100 cases in which a year had elapsed before the operation, improvement was noted in but 28 per cent. Patients operated on ten months or more after injury had the lowest percentage of improvement. There is, however, no relation between the amount of improvement and the time at which it begins after this operation, for many of the patients who improve the most are those who begin to improve some time after operation.

Endoneurolysis, in which the separate funiculi are exposed and freed of scar tissue, is technically somewhat difficult. While there may be no increased disability as the result of such an operation—even some improvement—the end-results are usually not much of an improvement over the condition existing before the operation, for scar tissue tends to reform within the nerve.

Neurolysis is frequently combined with capsulectomy —removal of the thickened epineurium—or parallel incision of it. Injection of the nerve with a solution of procain, as suggested by Hofmeister, is employed by many now in preference to endoneurolysis.

A number of methods have been suggested to prevent the reformation of scar tissue after neurolysis. Whenever possible, and it is possible in the majority of cases, the liberated nerves should be placed between uninjured muscles. Even in large wounds with a great deal of scar tissue it is possible to displace muscles so that a new bed can be formed for the liberated nerve. Liberated nerves should not be placed in contact with cut muscle fibers, for the adhesions which then form may seriously interfere with the conduction of the nerve impulse.

Cargile membrane is the next choice. Fascia cannot be used for this purpose to advantage, for when placed in contact with scar tissue it becomes invaded by and converted into scar tissue. I have reoperated in three cases in which a free fat transplant has been used for neurolysis. The fat had disappeared from all, and in the place of the transplant were adhesions. These were delicate, but delicate adhesions frequently seriously interfere with nerve conduction.

RECOVERY OF FUNCTION

Following suture, nerves recover function in a fairly definite order as regards time. The musculocutaneous nerve in the arm recovers rapidly and completely. The musculospiral nerve recovers early. Distinct return of motor power in the supinator longus and radial extensors of the wrist is frequently observed within five and a half months after suture. Seventy per cent. of the cases of musculospiral suture present very definite evidences of recovery when followed for some time. Favorable results are obtained after suture at almost any level. The results are not dependent on whether the nerve is sutured above the clavicle, just above its entrance into the radial groove on the inner side of the arm, or on the outer side of the arm between the supinator longus and brachialis anticus. The internal popliteal (tibial portion of the sciatic) comes next in order of frequency and rapidity of recovery. A longer time is required for recovery than after suture of the musculospiral. Thirty-three per cent. or slightly more recover fair function after six months. At the end of nine months, 66 per cent. may present definite evidences of return of function. The median nerve repairs fairly rapidly and comes next in order. Contractures of the thumb and index fingers with accompanying joint changes may seriously interfere with complete restoration of function and prolong disability. In my experience the external popliteal recovers most slowly after suture. Even those patients on whom the suture is performed low down recover slowly. A large percentage do, however, recover after some time. I have observed one case of external popliteal suture in which return of function (motor) was fairly complete at the end of six months.

Peripheral nerves have great regenerative power. The procedures that are necessary to the establishment of repair are plainly indicated by clinical and experimental studies and the histologic examination of specimens. Changes occurring in muscles and joints which develop during repair unless prevented or corrected will defeat the purpose of the operation. Careful and assiduous after-treatment is necessary. There should be the closest cooperation between the physiotherapist and the surgeon. Nerve injuries occurring in civil practice should be operated on earlier than they are. Time is lost waiting for evidences of return of function. Secondary changes occurring in the nerve during this time may render the operation difficult, often unsatisfactory, and the changes which occur in the muscles and joints may increase and prolong the disability.

Early exploration after nerve injuries with loss of function of the muscles supplied by the nerve affected is advisable, for the condition of the nerve (anatomic division or physiologic interruption) can be determined and steps taken to promote an early return of function. Results in nerve surgery grow progressively worse with delay.

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CLINICAL EXPERIENCE WITH A STANDARDIZED DRIED AQUEOUS EXTRACT OF DIGITALIS *

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That digitalis to be effective must be given in sufficient dosage to produce demonstrable effects has been well known since the original directions for the use of the drug were given by Withering. How far short of these instructions the general profession had fallen is a sad commentary. Chiefly through the work of Eggleston,[1] it has been demonstrated that within reasonable limits the amount of digitalis necessary to produce physiologic effects can be calculated on a basis of the patient's weight, and that the administration can be carried on rapidly up to this point. Robinson [2] has gone a step farther and has shown that under proper control this calculated amount of digitalis can be given in a single dose and effects obtained in from twenty-four to thirty-six hours that under the ordinary methods of administration would require from five to six days or even longer. Those who have witnessed the remarkable effect of a large single dose of digitalis when given to a patient with acute symptoms of heart failure must have been impressed with the great value of rapid digitalization as a time saver to the patient and to the clinic.

In order to give digitalis properly and especially rapidly, it is essential that the potency of the preparation in use be known. It is to be hoped that soon physicians generally will prescribe digitalis in terms of physiologic units, instead of the usual drops, cubic centimeters or grams. One immediately encounters the difficulty of obtaining preparations of constant or even known strength. Few clinicians have available the material or skill for assaying the drug they must use in so many important cases. The Pharmacopeia has set a standard for the minimum activity of acceptable leaf, yet this does not solve the problem entirely, since wide variations in potency are found above this minimum required.[3] In spite of this requirement, much of the digitalis on the market today is below standard, while occasional samples are found considerably above the pharmacopeial strength. It is further difficult to judge without making actual assays how much the original leaf or the preparation may have deteriorated in strength before the drug comes into the hands of the physician.

In an effort to meet this problem, one of us has developed in the laboratories of the Harvard Medical School a preparation which has been used in the treatment of cardiac patients in the medical wards of the Peter Bent Brigham Hospital and in private consultation work for the last year. It is a dried, aqueous extract, prepared essentially as follows: A 1 per cent. infusion is made and filtered and immediately evaporated to dryness over a water bath at a temperature not exceeding 80 C. The residue is a fine brown powder that is easily handled. It is quite deliquescent, but with care can be kept perfectly dry. Each lot is tested for potency by physiologic assay. For the most part the frog method has been used, the standard recognized by the Pharmacopeia. The powder is mixed with anhydrous sodium sulphate in amounts depending on the strength of the original leaf, never using more than equal parts. This in no way detracts from the usefulness of the preparation, and materially aids in preserving dryness. It is then made up to weight if necessary with lactose so that 1 gm. of the final product represents 1 gm. of a leaf of pharmacopeial strength, that is, 0.6 mg. per gram of frog weight is just sufficient to cause systolic standstill of the heart in sixty minutes. The powder is most conveniently dispensed in capsules of 0.1 gm. each. The capsules protect the patient from the bitter digitalis taste, and also aid in protecting the powder from moisture, thus contributing to its stability. The oldest sample has maintained its activity for a year. This gives, then, a stable preparation of constant potency of pharmacopeial standard. It should be emphasized that the preparation must be kept dry. It has been found that if the extract is allowed to take up moisture, it may show marked deterioration in three months' time.

The extract has been given to fifty-five patients under all the varying circumstances seen in the medical wards of a general hospital. The results, judged on the basis of digitalis medication in general, have been uniformly satisfactory. Whenever practicable for purposes of this study, the patients entering because of symptoms of heart failure were put at absolute rest and given the advantage of all therapeutic procedures excepting digitalis. This was withheld until the

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* From the Medical Clinic of the Peter Bent Brigham Hospital and the Department of Medicine of the Medical School of Harvard University.
* Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.
* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the latter will be sent by the author on receipt of a stamped addressed envelop.

1. Eggleston, Cary: Digitalis Dosage, Arch. Int. Med. **16**: 1 (July) 1915.
2. Robinson, G. C.: Am. J. M. Sc. **159**: 121 (Jan.) 1920.
3. Pratt, J. H., and Morrison, Hyman: The Activity of American Digitalis, J. A. M. A. **73**: 1606 (Nov. 22) 1919.

patient seemed to have reached more or less of a level of improvement, or persisting or increasing symptoms made it seem unwise or unfair to withhold the drug longer. If it could be definitely ascertained that he had not been receiving digitalis within three weeks or more before coming to the hospital, massive doses, in the majority of instances single doses, of the extract were given. It was soon found, by giving divided doses rather rapidly, that 30 mg. per kilogram of body weight very closely approximated the dose from which physiologic effects might be expected. With those patients to whom it seemed unwise to give large doses because of previous digitalis medication or doubtful histories in this regard, the usual method of giving repeated small doses was employed. The usual effect, consisting of gradual slowing of the heart in fibrillating cases, gradual loss of edema, etc., was seen. In many instances the total amount of the drug required was larger than the calculated dose. In general, the amount in excess seemed to depend on the rapidity of administration. Pardee [4] has estimated that with one particular tincture, 1.5 c.c. of which equaled 1 cat unit, there was a daily elimination or destruction equivalent to 1.5 c.c. We have not made as yet definite studies with this point in mind. That more digitalis is required when given slowly was well illustrated in one patient with auricular fibrillation who had no toxic symptoms and but moderate effect on the heart rate when the calculated dose was given slowly. Some weeks later the same amount of digitalis given as a single dose produced not only a marked slowing of the heart, but in addition considerable nausea with vomiting.

Case 1 shows very well the typical response to repeated small doses in a patient with auricular fibrillation. Here may be seen the gradual slowing of the heart with reduction of the pulse deficit and gradual loss of weight. The digitalis was given over a period of six days. The calculated physiologic dose would be approximately 2.7 gm. He actually received 4.2 gm., which was followed by rather marked nausea and vomiting, indicating that the amount given was somewhat in excess of the optimum dose. The effect, as judged by the heart rate, persisted for fully twenty days after the drug was discontinued.

Case 2 shows a similar effect, though the administration was not carried to the point of vomiting. This patient, also with fibrillation of the auricles, was given 1 gm. of the extract during the first twenty-four hours after admission, without a preliminary rest. It was then continued in smaller doses over a period of ten days until a total of 4.2 gm. had been given. During the first five days he received 3.4 gm., 1.1 gm. in excess of the calculated dose that would have been expected to be effective if given at once. This case illustrates very well an effective method of giving digitalis in practice when the patient is not under constant observation.

The records of twelve patients showing fibrillation of the auricles who received effective large doses on a single day were selected as having been sufficiently well controlled to make comparison of value, and because in these patients the changes in heart rate give such good objective evidence of digitalis effect. The average total dose varied from 1.4 to 2.2 gm. The dose per kilogram of body weight, calculated on the lowest weight of each patient as obtained after the disappearance of edema, varied from 27 to 38.9 mg., with an average of 30.4 mg. These results are tabulated herewith. Taking 30 mg. per kilogram as an average therapeutic dose, it is seen that in this series the variation was slight, within 10 per cent. in all cases but one, in which the large dose, 38.9 mg., was approximately 30 per cent. above the average.

DOSAGE AND RESULTS IN PATIENTS WITH AURICULAR FIBRILLATION

Patient	Age	Weight Greatest, Kg.	Weight Lowest, Kg.	Day of Treatment	Dose Total, Gm.	Dose Per Kilogram,* Gm.	Time of Full Effect, Hours	Evidences of Effect
J. M. C.	54	73.6	70.4	5th	1.8	0.030	16	Slowing of heart with loss of pulse deficit
W. H. C.	62	74.4	74.0	3d	2.2	0.030	24	Slowing of heart with loss of deficit; decreased dyspnea and cyanosis
A. W.	65	58.0	55.2	3d	1.5	0.027	24	Slowing of heart; diuresis
A. L. M.	55	75.6	62.0	2d	1.8	0.029	24	Slowing of heart with almost entire loss of deficit; symptomatic improvement
D. F. K.	52	69.8	67.8	1st	2.0	0.0295	16	Slowing of heart in spite of fever
A. M. M.	44	60.6	57.4	5th	1.8	0.030	20	Slowing of heart; later died of mesenteric thrombosis
G. J. F.	18	52.2	47.0	36th	1.4	0.030	28	Slowing of heart; loss of deficit; nausea
T. F. B.	55	68.2	65.2	3d	2.1	0.032	16	Slowing of heart; decreased deficit; lessened dyspnea; nausea; increased vital capacity
M. A. D.	57	55.4	46.2	3d	1.8	0.0389	24	Slowing of heart; loss of deficit; no nausea; symptomatic improvement
M.	56	58.4	57.0	4th	1.8	0.0315	24	Slowing of heart; decreased deficit; symptomatic improvement
F.	29	57.0	52.3	5th	1.5	0.029	10	Slowing of heart; diminished deficit; marked increase in vital capacity
T. F. B.†	55	70.0	65.0	3d	2.0	0.030	6	Slowing of heart; symptomatic improvement

* Calculated on basis of lowest weight.

† Second admission; effect less permanent at this time.

It is of considerable interest to note that while the standardization was originally done by the frog method, the preparation was also tested on cats through the kindness of Dr. S. A. Levine, who found that the minimum lethal dose was 0.095 gm. per kilogram of cat weight. Converting the foregoing therapeutic dose, 30 mg. per kilogram of body weight of patient, to cat units per pound, the Eggleston standard, the value is 0.145 unit. Eggleston [1] found in his series an average of 0.146 cat unit per pound and recommends the standard dose of 0.15 unit, the dosage used by Robinson [2] in the series recently reported by him. The agreement is especially striking since the standardization of our preparation by the cat method was done late in the course of the observations, and the first use of the value was made in computing these end-results.

Case 3 is a good example of a single physiologic dose in auricular fibrillation. Here is seen a large pulse deficit completely and persistently eliminated in twenty-four hours. The patient came in complaining of nausea, a symptom that did not recur after the digitalis became effective. No further digitalis was required while the patient was in the hospital.

4. Pardee, H. E. B.: Notes on Digitalis Medication, J. A. M. A. 73: 1822 (Dec. 13) 1919.

Case 4 shows a similar effect, but illustrates the rapidity of action. Here an initial slowing is seen in four hours, and complete elimination of deficit in twelve hours.

While in no condition is the effect on the pulse rate so strikingly seen as in patients with auricular fibrillation when after a single physiologic dose initial slowing may be seen in from three to six hours and maximum slowing within twenty-four hours, still there is little doubt in the minds of most clinicians that much good can be expected from proper dosage in patients showing regular rhythm when their symptoms are evidence of heart failure.[5] We have had the opportunity of giving large doses of digitalis to a number of patients with regular hearts, using the same basis for calculation as in the cases mentioned above. In many the effects were quite as gratifying as in those showing auricular fibrillation. The average dose was the same.

This raises the question of evidence by which one may judge the beneficial effect of digitalis therapy. In patients with fibrillation of the auricles a marked slowing of the heart rate, especially the rate as counted by the stethoscope, and the reduction of the pulse deficit is one of the most striking phenomena in clinical medicine. When the rhythm is regular, however, marked slowing is not to be expected, and frequently the rate remains but little changed. In these patients an increase in the pulse pressure, due chiefly to a lowering of the diastolic pressure, is characteristic during the height of the digitalis effect, but is frequently temporary.

That patients may show a spontaneous diuresis on being put at rest is frequently noted. It is, therefore, occasionally difficult to be sure just what part digitalis plays in this increase in fluid elimination. Many times, however, the diuresis follows the administration of digitalis in so evident a manner that little doubt can be felt as to the stimulus given by the drug. At times a profuse diuresis may start within six hours after giving the full single dose of digitalis, as was well illustrated in Case 5. Here the digitalis was given at 10: 30 a. m. The diuresis began late in the afternoon, and continued throughout the night, so that the patient was voiding practically every half hour. With or without a diuresis the patients may show other evidence of rapid improvement, such as lessened dyspnea, improved color, ability to sleep, and generally increased comfort. The electrocardiograph will practically always show the effects of sufficient dosage of digitalis within twenty-four hours or less. The chief evidences of this are the well known increase in P-R time and changes in the form of the T waves.

There is one evidence of cardiac efficiency on which we wish to lay especial stress, and that is changes in the vital capacity of the lungs. Peabody [6] and McClure and Peabody [7] have shown that in patients with symptoms of heart failure the vital capacity may be greatly reduced; that from a mechanical standpoint, dyspnea seems to be due to the inability of the patient to take in sufficient volumes of air to meet his physiologic requirements without considerable effort. As it has been expressed, his "pulmonary reserve" is reduced. Making allowance for age, sex, height and anatomic defects, changes in the vital capacity, especially changes seen in the same individual from time to time, give perhaps the most sensitive objective measure of the circulatory condition, and especially in regard to the tendency to dyspnea. Lowering of the vital capacity has frequently been observed to precede obvious symptoms of cardiac failure. On the other hand, as the patient improves, a corresponding increase in the vital capacity may be expected. This test has proved of considerable value in judging the effects of digitalis, especially in those patients with regular rhythm when the heart rate changes are slight. Increases of as much as from 400 to 500 c.c., or from 15 to 20 per cent., have been seen in a number of instances in the first twenty-four hours after the physiologic dose, while the records during the preliminary rest period may show but little variation. Illustrations of prompt increase in the vital capacity are seen in Cases 5, 6 and 7. Conversely, it is felt that if the vital capacity is low and does not increase during treatment, the prognosis for recovery is poor. This is illustrated in Case 8, in which, in spite of a satisfactory and prompt effect on the heart rate, the vital capacity remained low and the patient was but little improved. It was necessary to transfer her to a hospital for chronic cases for continued care.

That any active digitalis will produce nausea and vomiting by its effects on the central nervous system, if pushed but slightly beyond the maximal therapeutic point, is well known. Consequently, no claim is made as to the freedom from toxicity of this preparation. When large doses of digitalis are being used, occasional symptoms of this character are to be expected; for without doubt there is some individual variation in susceptibility to digitalis. While the effects of toxic doses are distressing to the patient and to be avoided if possible, really dangerous symptoms are not seen if one knows the strength of his preparation and uses ordinary judgment.

That not all patients with heart failure will be obviously benefited by digitalis is admitted. These fall roughly into two groups: (1) those in whom the cardiac condition has progressed beyond the point at which they can be truly benefited by any therapeutic procedure, and (2) those with cardiac lesions, but in whom because of rest and other therapeutic measures all symptoms of failure have disappeared. A third group, perhaps, should be added including certain patients in whom the effectiveness of digitalis cannot be demonstrated but who respond to rest prolonged for weeks or months. It is true, however, that in patients with auricular fibrillation, digitalis is of service in maintaining a slow heart rate and thus aiding greatly in protecting the patient from a recurrence of symptoms.

Case 9 is a record of a patient with a regular heart who, as a result of rest in bed, Karrel diet, etc., had lost practically all her symptoms, one of the most conspicuous of which was a distressing cough. Her vital capacity had increased in thirteen days from 1,725 to 2,400 c.c. On her thirteenth day in the hospital she was given the calculated dose for her weight, 1.7 gm. of the extract. In this instance nausea and vomiting were produced, the nausea persisting for two days. During this period there was actually a fall in the vital capacity, which gradually returned to the previous highest point. It is of interest to note that at the height of the digitalis effect the heart rate at one time was 48 per minute, though there was no evidence of

5. Christian, H. A.: Digitalis Therapy: Satisfactory Effects in Cardiac Cases with Regular Pulse Rate, Am. J. M. Sc. **157**: 593 (May) 1919.
6. Peabody, F. W.: Cardiac Dyspnea, Am. J. M. Sc. **155**: 100 (Jan.) 1918.
7. McClure, C. W., and Peabody, F. W.: Relation of Vital Capacity of Lungs to Clinical Condition of Patients with Heart Disease, J. A. M. A. **69**: 1954 (Dec. 8) 1917.

dissociation. No direct benefit from the digitalis could be observed.

Case 10 is a similar record of a patient with auricular fibrillation and hypertension. While entering with considerable edema and some dyspnea, these symptoms disappeared with rest and other treatment. It is to be noted that the pulse was originally slow without deficit. He had a marked diuresis beginning on the sixth day.

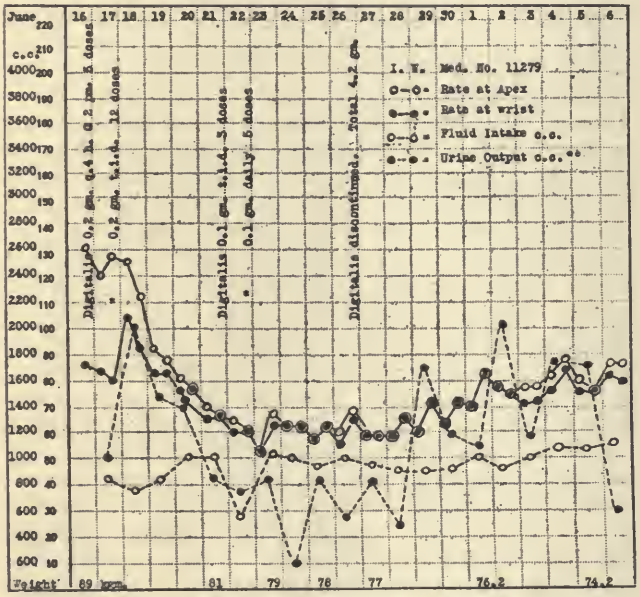


Chart 2.—Effect of digitalis in Case 2.

On the thirteenth day he was given 2 gm. of digitalis, and the calculated dose was completed on the fourteenth day, making a total of 2.4 gm. There was an initial fall in the systolic blood pressure and a more persistent lowering of the diastolic pressure. Objectively there was no marked improvement in the patient's general condition, though the vital capacity was increased by 200 c.c. during the next four days.

These cases are reported, not to detract from the value placed on digitalis as a great therapeutic agent, but to emphasize the point that it should be expected to show its usual beneficent effect only when the patient has symptoms due to heart failure in the broad meaning of the term.

In practice, in order to avoid the nausea that occasionally follows large doses of digitalis, it is well to give at the first administration—if the patient has not had digitalis within two weeks—0.4 gm. less than the calculated dose. If in twenty-four hours satisfactory results have not been obtained, the remainder can be given. Another method of value is to give at the first administration from 0.4 to 0.6 gm. less than the calculated dose, and then after twenty-four hours to give 0.2 gm. every six hours until indications for discontinuing the drug are seen. Occasionally somewhat more than the calculated amount will be necessary. Eggleston [8] has recently discussed the use of digitalis in large doses in detail.

CASE ABSTRACTS

CASE 2 (Med. No. 11279, Chart 2).—A Russian Jew, aged 53, admitted, June 16, 1919, with the diagnosis of chronic myocarditis, auricular fibrillation, tabes dorsalis and syphilis, complained of shortness of breath. He spoke little English, and details of the history are incomplete. He had apparently had no previous cardiac symptoms. The present illness began five weeks before with dyspnea, and he had to stop work three weeks before coming to the hospital. Since then he had been orthopneic, and one week before admission his feet began to swell. The pupils were irregular, of unequal size, and fixed to light. The deep reflexes were all absent. The heart was markedly enlarged and absolutely irregular. There was definite but not extreme Cheyne-Stokes respiration. There was evidence of fluid at the bases of the lungs and considerable edema of the feet and legs. The liver was somewhat tender. The blood pressure was: systolic, 128; diastolic, 84. An electrocardiogram revealed auricular fibrillation and left ventricular preponderance. The Wassermann reaction was positive in the blood and spinal fluid, in which there was also pleocytosis of 46 cells and a positive globulin test. The weight on admission was 89 kg. The lowest weight was 74.2 kg.

On the day of admission, 0.2 gm. of the extract of digitalis was given every four hours for five doses. This was followed by 0.2 gm. three times daily for twelve doses, 0.1 gm. three times daily for three doses, and 0.1 gm. daily for five doses, making a total of 4.2 gm. in eleven days. The calculated dose on the basis of lowest weight was 2.2 gm.

The patient showed a gradual but steady improvement, with disappearance of dyspnea and loss of weight. The pulse deficit had disappeared on the fifth day.

CASE 3 (Med. No. 12711, Chart 3).—An American clerk, aged 54, admitted, Jan. 13, 1920, with the diagnosis of chronic myocarditis and auricular fibrillation, had first entered the hospital in February, 1919, complaining of shortness of breath. He had had occasional attacks of rheumatism when a boy, and frequent tonsillitis. He was refused life insurance thirty years before because of a "leaky heart." A year previous to his first entrance he began to suffer from dyspnea, which increased particularly after he had influenza. He also developed edema. He had short attacks of precordial pain—not altogether typical of angina pectoris. The heart was enlarged and absolutely irregular. There was moderate edema of the extremities and Cheyne-Stokes respiration. He left the hospital feeling very well, and had been taking digitalis in small doses until one month before the second admission. He had worked in a postoffice up to this time (one month before), when he stopped work because of loss of strength and nocturnal dyspnea. He was also troubled with nausea and vomiting, which he attributed to digitalis, and he had not taken any for the preceding four weeks, though the nausea had continued.

On admission he was able to lie flat in bed, but there was definite periodicity in his breathing. The heart was enlarged with a loud systolic murmur heard over the precordium. The action was absolutely irregular. There was a large pulse deficit of from 50 to 60 beats per minute. An electrocardiogram revealed auricular fibrillation and some preponderance of the left ventricle. The patient's weight on admission was 73.6 kg.; lowest weight, 70.4 kg. The calculated dose on the lowest weight was 2.1 gm.

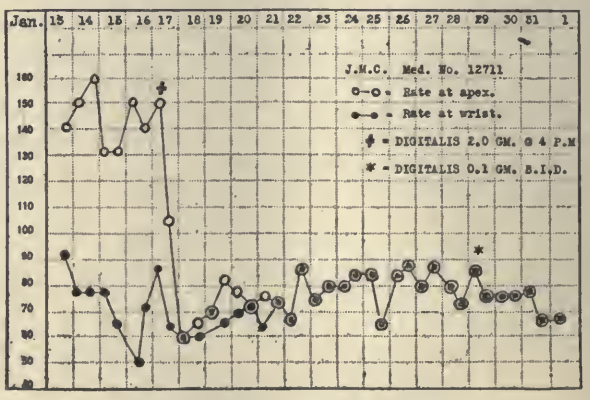


Chart 3—Effect of digitalis in Case 3.

8. Eggleston, Cary: Administration of Digitalis by "Eggleston Method," J. A. M. A. 74:733 (March 13) 1920.

The patient's condition remained unchanged until the fifth day, when he was given 2 gm. of the digitalis extract at 4 p. m. An initial slowing of the heart was noted in four hours. In twelve hours the rate was 60 a minute, without deficit. Two hours later he was given some magnesium sulphate, after which he vomited. There was no other evidence of toxic effect. Improvement was continuous from this time, with no recurrence of nausea and vomiting, which was com-

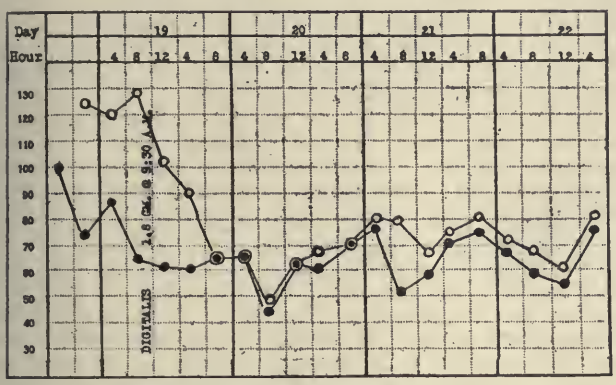


Chart 4.—Effect of digitalis in Case 4.

plained of on admission. He had had some nauesa during the five days of rest before digitalis was given.

CASE 4 (Med. No. 12296, Chart 4).—An American "matron," aged 55, admitted, Nov. 18, 1919, with the diagnosis of chronic myocarditis, auricular fibrillation, mitral stenosis and syphilis, entered the hospital for the sixth time for cardiac symptoms. She had had rheumatic fever at 17. There were several miscarriages following the first child. The Wassermann reaction was positive. Cardiac symptoms began in 1914. The auricles had been fibrillating since 1915. She had been discharged from her fifth admission, fifteen months before. Since then she had been able to work part of the time. The present illness began six weeks before admission, with weakness and dyspnea. She had been in bed nine days with dyspnea, "fainting attacks," and edema of the legs. She appeared acutely ill with marked cyanosis, jaundice and dyspnea. The heart was enlarged, absolutely irregular, and rapid, with a deficit of about 40 beats a minute. There was a loud systolic murmur heard over the precordium, most marked at the apex. Râles were heard over the bases of both lungs. There was marked edema of the extremities. She was mentally confused. The patient's weight on admission was 75.6 kg.; lowest weight, 60 kg.

Because of the severity of her symptoms she was given 1.8 gm. of digitalis extract at 9:30 a. m. on the second day. At that time there was a pulse deficit of 35 beats a minute. Though she was reported to have vomited about half an hour after receiving the digitalis, at 8 p. m. the heart rate was 60 without deficit. The initial slowing was noted in four hours. All symptoms were improved, and she lost 6.6 kg. in weight in five days. On the eleventh day, because of increase in the heart rate and slight gain in weight, she was given 0.2 gm. of digitalis three times daily for six doses. Following this the heart rate averaged 70 a minute with very slight deficit during her stay in the hospital, and improvement was continuous.

CASE 5 (Med. No. 12093).—A Russian Jew, aged 44, admitted, Oct. 22, 1919, with the diagnosis of chronic myocarditis, hypertension and arteriosclerosis, complained of dyspnea, nocturia and insomnia. The first attack of dyspnea occurred three years before while he was walking. It was said that he had a blood pressure of 190 at that time. During the last two years he had been troubled with pain in the arms on exposure to cold. Nine months before he was told by his physician that he had kidney trouble, and rest in bed was advised. There was nocturia during this time, and for a month before admission it increased markedly. The patient was pale and adipose, with slightly cyanosed lips, enlarged heart with loud systolic murmur, a systolic blood pressure of 206, diastolic 140, evidence of edema at the bases of the lungs, and slight edema of the lower legs. The breathing was shallow and regular. The heart also showed distinct gallop rhythm, and pulsus alternans was present. The rhythm was regular. The rate was between 90 and 110. The patient's weight on admission was 81 kg.; lowest weight in hospital, 79 kg. October 23, the vital capacity was 1,950 c.c.; on the 24th, 2 200 c.c. On the 26th the blood pressure was: systolic, 188; diastolic, 130. Pulsus alternans and gallop rhythm were present. On this day the patient was given 2.5 gm. of the digitalis extract without toxic symptoms. On the 27th the vital capacity was 3,100 c.c.; blood pressure: systolic, 194; diastolic, 116. Alternation and gallop rhythm were not present. From this time on there was a steady improvement with an increase of the vital capacity to 3,600 c.c.. Blood pressure on discharge was: systolic, 176; diastolic, 106.

The patient was admitted a second time March 3, 1920 (Med. No. 13089, Chart 5). After leaving the hospital he was able to be up and about for most of the time until the second week before admission. Since then he developed cough, increasing dyspnea, marked edema and sleeplessness. During this time he remained in bed. Examination disclosed a more severe condition than on the previous admission. Pallor had increased, dyspnea was more evident, and there was excessive edema. The heart gave the same findings, except that alternation was not noted. The liver edge was palpable 10 cm. below the costal margin in the nipple line. There were few crackling râles at the bases of the lungs. Blood pressure was: systolic, 190; diastolic, 130. The weight on admission was 90 kg.; lowest in hospital, 66 kg. The vital capacity, March 4, was 2,125 c.c. March 5, the blood

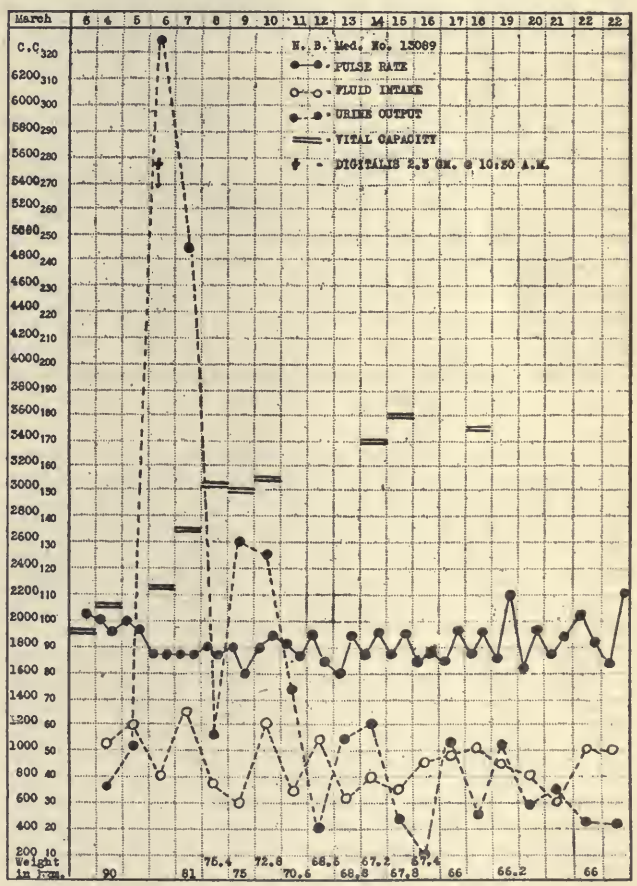


Chart 5.—Effect of digitalis in Case 5.

pressure was: systolic, 176; diastolic, 130. March 6, the vital capacity was 2,250 c.c. Two small hemorrhages were discovered in the right retina. As there was no definite improvement and the condition of the patient seemed serious, he was given 2.3 gm. of digitalis extract. March 7, the note reads: "Yesterday at 10:30 a. m. patient was given 2.3 gm. digitalis. His output chart shows that no urine was voided from 7 a. m.

to 12:55 p. m. when he put out 425 c.c. He voided 450 c.c. at 3:30 p. m. and 500 c.c. at 6:20 p. m. Beginning at 8 p. m. he voided practically every half hour during the night, making a total of 6,475 c.c. for the twenty-four hours. The output for the day previous had been 1,000 c.c. Vital capacity yesterday was 2,250 c.c., which was an increase of about 150 c.c. over the previous day. This morning it is 2,700 c.c., an increase of 450 c.c. There have been no evident toxic symptoms: in fact, the patient complains of being hungry. He still has moderate Cheyne-Stokes respiration. The night nurse reports that he seemed to sleep more comfortably except for the frequent voidings. On the whole, he seems definitely better than yesterday." From this point on, condition improved and the vital capacity increased to 3,500 c.c. Later, April 10, after being allowed to walk about the ward and the fluid and food intake had been increased, the vital capacity dropped to 2,800 c.c. Following this he developed symptoms of dyspnea and weakness and it was necessary to enforce continuous rest in bed, at the time of compiling this report.

CASE 8 (Med. No. 11646, Chart 8).—An American housewife, aged 57, admitted, Aug. 15, 1919, with the diagnosis of chronic myocarditis, auricular fibrillation, hypertension, arteriosclerosis and chronic nephritis, complained of dyspnea. She had been in the hospital twice before during the last three

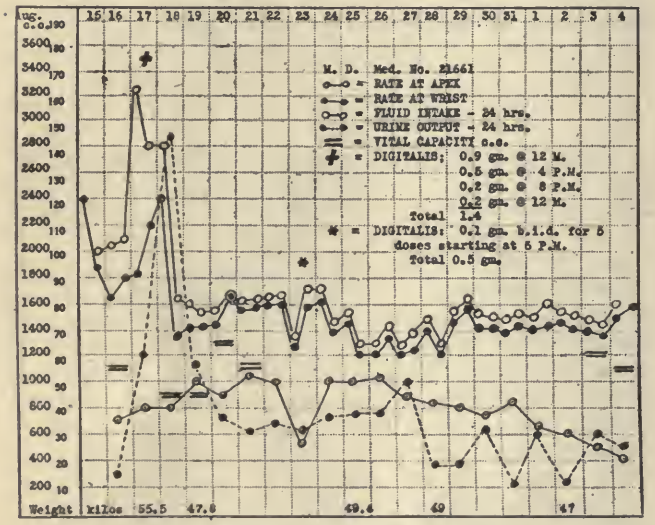


Chart 8.—Effect of digitalis in Case 8.

years for symptoms of heart failure. During the month previous to admission, dyspnea and orthopnea had become increasingly severe. The vision had been failing. Retinal hemorrhages were noted a year before. Examination revealed some cyanosis and distressing dyspnea. The heart was enlarged, absolutely irregular and rapid, with a pulse deficit amounting on the third day to approximately 70 beats a minute. The blood pressure was: systolic, 210; diastolic, 110. There was evidence of edema at the bases of the lungs. The heart was enlarged. There was no edema of the extremities. The sclerotics were slightly jaundiced. The patient's greatest weight in the hospital was 55.5 kg.; lowest, 46.2 kg. On the third day the heart was very rapid with large deficit. The patient was given 1.8 gm. of digitalis extract in four doses at four hour intervals. Sixteen hours from the last dose the heart rate was 80, with only a slight deficit. The rate remained slow from this time. There was a prompt and fairly marked diuresis. The vital capacity was 1,100 c.c. on admission, and was never greater than 1,300 c.c. during her stay of thirty-six days in the hospital. The blood pressure remained high. Though the patient was more comfortable after receiving digitalis and the pulse remained slow, she never showed any marked improvement. She was discharged in an ambulance to continue rest at home or in a hospital for chronic cases.

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ABSTRACT OF DISCUSSION

DR. G. CANBY ROBINSON, St. Louis: The recent advances in the use of digitalis may be spoken of under three heads. In the first place, we have learned to regulate the dosage of the drug more effectively. It must be used in doses sufficient to get the therapeutic, or, perhaps, the very early toxic effects. Secondly, we have learned to recognize the early toxic symptoms through the use of the electrocardiogram and the occurrence of symptoms, such as nausea. Thirdly, we have learned the importance of a standardized preparation. With these three conceptions in mind, we are in better position in the treatment of heart diseases than we were previously. Another factor which has improved the use of digitalis is our ability to differentiate cases in which the drug is especially indicated from those in which it is not so useful. We now know that digitalis is very valuable in cases of complete irregularity of the heart action, the auricles being in a state of fibrillation, while in those cases where the heart is beating regularly, digitalis does not produce such striking effects. I am very glad that we have had some information from Dr. West and Dr. Pratt regarding the effect of digitalis on hearts that are beating normally. The effect is shown by exact measurements of the vital capacity. Peabody showed that the vital capacity bears a direct relation to the state of circulation, and diminishes as the circulation becomes inefficient. That method is valuable for the study of the circulation. The aqueous extract of digitalis should be of value in that it is stable and can be standardized definitely. This paper marks a definite step forward in the use of digitalis in heart disease, where we often need the drug to act rapidly, and where we need to know accurately the strength of the drug we are administering.

DR. C. F. WAHRER, Fort Madison, Iowa: Given a well-diagnosed case for the use of digitalis, the next most important step is to have a reliable and dependable drug to give to the patient. It would certainly be a relief to have some dependable standard. Sir James McKenzie said that he had no trouble in getting a good digitalis. So will you all if you insist on getting it and learn where to get it. As Pratt, Eggleston and others showed, there is a vast difference in the preparations on the market. We should know where to go for reliable goods and not depend on the offerings of the agents of the many pharmaceutical houses.

ETHER-OIL COLONIC ANESTHESIA*

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Experience with the method here described is presented from the standpoint of the operating surgeon, and has been derived from 1,002 cases of various kinds, chiefly goiter, thus distributed:

Hyperthyroidism and exophthalmia	166
Cystic goiter	104
Colloid and cystic goiter	388
Parenchymatous goiter	226
Abdominal and miscellaneous	118
Total	1,002

In 1902, Cunningham, at the Boston City Hospital, devised an apparatus for introducing ether-laden air, which was used in that institution, without causing the complications of earlier methods. This ether and air, however, caused colicky pains and discomfort. The same conditions were found by Buxton, who observed, in addition, tenesmus, diarrhea and more or less collapse. Many other reports were made by various observers, but they were largely negative, until the first marked advance was made by Sutton,[1]

* Read before the Section on Surgery, General and Abdominal, at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Sutton, in Gwathmey and Baskerville: Anesthesia, New York, D. Appleton & Co., Chapter XI.

using oxygen instead of air with ether. He reported 140 cases in the Roosevelt Hospital, New York City, chiefly in the service of George E. Brewer, but the apparatus used was rather complicated, and this method was again allowed to lapse.

Hewitt [2] says, "If the risk of diarrhea, melena, and after stupor could in any way be greatly reduced, rectal etherization would be strongly indicated in certain cases." This has been accomplished by the present method of combining ether and oil.

Dr James T. Gwathmey made the first report on experimental work, before the International Medical Congress, London, in 1913. In 1915 he published a very complete paper [3] on colonic anesthesia, giving its early history, experiments of various kinds, and the different technic used by those who had tried this method of inducing anesthesia. That paper still stands as a complete record and reference, worthy of being read by all who may be interested in this subject.

In cooperation with Gwathmey, experiments were made by Dr. Charles Baskerville, professor of chemistry in the College of the City of New York, and Dr. George Barclay Wallace, professor of pharmacology, University and Bellevue Hospital Medical College, to determine the rate of evaporation of ether from oils, and tests were made with vegetable, animal and mineral oils, such as olive, cotton seed, peanut and soy bean, cod liver, lanolin and liquid petrolatum. The ether used was free from acids, aldehyds and water. The experiments were made in glass, and, while not showing the changes that would take place when the ether and oil come in contact with the walls of the colon, on account of diffusion and osmosis, yet some facts were well demonstrated.

1. While ether boils at 34.6 C., it does not escape violently from an oil-ether mixture, as from an aqueous mixture when heated higher, nearly to 37 C., or body temperature.

2. The rate of separation of ether from oil quickly acquires a definite and fairly fixed speed.[4] This rate of separation is important, as a proper content of ether may be maintained in the blood to produce a desired effect, as, for example, the surgical stage of anesthesia. Four factors, acting in harmony, help to maintain an even anesthesia:

1. The constant rate of evaporation of the ether from the oil.

2. The distention of the colon, causing less ether to be absorbed than when partially distended.

3. Cooling of the mixture and the intestine as the ether leaves the oil, which retards elimination and absorption.

4. The difference between the absorptive power of the colon and the eliminative capacity of the lungs (Gwathmey).

Within five minutes after the injection of the mixture into the rectum, it is heated to body temperature; some ether leaves the oil in the form of gas, which is absorbed by the blood in the capillaries about the colon. The ether is carried through the liver by the greater circulation to the heart, and from there it is pumped into the lungs, where some of it is excreted by the air passages, while the remainder is reabsorbed, and carried on to the brain and central nervous system. The odor of ether and paraldehyd can be detected on the breath in from three to five minutes after the administration of the preliminary dose. The accumulation of mucus or saliva, seen often in inhalation anesthesia, is absent; there appears to be no irritation of the lungs, as only the ether required for narcosis passes through the respiratory tract, and the bronchial secretions, which are increased by local irritation under inhalation methods, are absent.

The respiration is normal, as a rule, and very seldom noisy or stertorous, if the anesthetist is watching the patient. The eye reflex is usually retained, even though good muscular relaxation is present. I have noticed analgesia in a number of cases, as also have others, and have conversed with the patient at different times during the operation; this is not to be expected very often. The pulse is maintained at an even plane; if rapid, as in hyperthyroidism, it usually remains so, though we frequently get a slowing, which is no doubt psychic. In ordinary cases the pulse remains full and strong. The blood pressure varies. In cases of great nervous tension, such as exophthalmia, observation has shown that the pressure falls after the patient is asleep, and usually rises immediately on his regaining consciousness. The diastolic pressure is usually low. Pressure in ordinary cases does not vary much, though the amount of surgical interference naturally has a decided effect. This applies to hemorrhage, and undue manipulation of viscera.

The safety of this method is shown by several factors, such as the rate of evaporation of ether from oil, in accordance with well known physical laws. The ether may be separated from the oil at any time by warming; but unless deliberately raised to a high point, it passes off slowly, especially at body temperature. After administering the mixture it is impossible to withdraw oil and leave ether, or vice versa. Each molecule of one is bound to a molecule of the other, and the union is broken only by evaporation. It is impossible to have deep anesthesia at one minute, and light anesthesia at another, unless purposely accomplished by rebreathing, or made light by an air-way tube or a face free from covering.

Sutton has shown that when the colon is fully distended, less ether is absorbed. When we recall that the absorbing surface of the colon is much less than that of the lungs, we see that some distention of the colon is necessary to increase its absorbing surface, and we know that overpressure does not take place, for there is very seldom distress after anesthesia, such as diarrhea, bloody stools or tenesmus, that was usual with the Cunningham-Sutton method. Again, when the ether leaves the oil as gas, the intestine is cooled during the process. This retards elimination and absorption, thus regulating the dose. The temperature of the patient remains constant, and the cold, clammy skin so often seen under inhalation anesthesia is absent in nearly all cases. The gradual absorption of the ether by the colon no doubt acts as an element of safety. Wallace made a study for one hour, by sphygmographic tracing, of a number of animals under ether-oil anesthesia, during which the pulse and respiratory tracings never varied. This fact has been well demonstrated in many hundreds of patients surgically anesthetized by this method, in whom, without any supplementary anesthetic, the pulse, respiration,

2. Hewitt, F. W.: Anesthetics and Their Administration, New York, the Macmillan Company, 1912.
3. Gwathmey, J. T.: American Year Book of Anesthesia and Analgesia, 1915.
4. Baskerville: Am. J. Surg., January, 1916.

reflexes and blood pressure all remained constant, except, as already mentioned, in hyperthyroidism.

The value of olive oil has been shown by Graham, who proved beyond question that this oil is capable of restoring to the blood certain properties which are inhibited by the action of the ether, that is, those concerned with phagocytosis. The injection of certain amounts of the oil into the rectum is followed, after three to six hours, by a restoration of phagocytic power, although ordinary depression lasts for some time. The oil absorbs any ether vapor that may still remain in the intestine, and not only prevents protracted undesired effects, but also insures speedier restoration of the opsonic index, and satisfactory recovery.

It is interesting to note that the experiments of Dr. W. H. Park of New York showed that an ether in oil mixture killed the colon bacillus in one minute, thus giving another factor of safety in the possible prevention of infection. Our experience has shown that the postoperative effects are better than with the routine inhalation methods of ether and chloroform, though there is no doubt about the great value of nitrous oxid and oxygen anesthesia.

After ether-oil anesthesia there is less vomiting or nausea, and the patient is usually comfortable and can retain nourishment; and of greater importance is the fact that there is considerable analgesia for some time, often for two or three hours, which adds to the ease of the patient.

Anociation as practiced by Crile can be carried out easily, and no doubt is very valuable in many conditions, especially exophthalmia and hyperthyroidism. Ether-oil anesthesia is especially useful in head and neck operations, because the operator is not troubled by either cone or anesthetist. It is also useful in hernias, especially as seen in patients with asthma, and in our work among coal workers, who have the common condition known as miners' asthma. These patients sleep calmly throughout, with none of the choking and cyanosis seen under ether by inhalation. The value of local anesthesia must not be forgotten in these conditions also.

Patients with short thick necks are especially good subjects for colonic anesthesia. The most valuable of all its uses is in those conditions of high nervous tension, such as hyperthyroidism, or in cases just on the border line of toxic goiter, and also when fear is a prominent factor, as seen in nervous women, and in men as well. To be able to etherize a patient in bed, remove her to the operating room, perform the operation and return her to bed with little or no knowledge of what has been done, is surely worthy of consideration, and trial in proper cases.

TECHNIC OF ADMINISTRATION

It is most important that the use of the mixture be in the hands of one who can begin its administration and have it under his care throughout and in all cases. It should never be delegated to a different physician or nurse each time it is used. The same care should be taken as in any other type of anesthesia. Experience is the great factor, and in our earlier work we used much more anesthetic than at present. After trying out various combinations and proportions, we settled down to the routine method to be described. The patient should be under observation for twenty-four hours or more. This does not apply to exophthalmic or hyperthyroid conditions, in which preliminary observation and treatment are imperative. The evening before operation an enema of soapsuds (2 pints) is given. A second enema of 1 or 2 pints of clear, tepid water is given early the next morning. To illustrate: Supposing the operation is set for 11 a. m.; then at 9: 30, 2 drams of olive oil (warm), 3 drams of paraldehyd and 4 drams of ether, are given. The patient should be kept as quiet as possible. At 9: 50, ¼ grain of morphin and $\frac{1}{150}$ grain of atropin are given hypodermically. At 10: 20, 3 or 4 ounces of ether and 2 ounces of olive oil (warm) are given. The oil and the ether are put in a bottle and shaken thoroughly. The patient should be on the left side with both knees flexed, the right acutely. A rectal or colon tube with a funnel should be inserted not more than 6 inches, care being taken to have the mixture in the tube and all air expelled, before inserting. The mouth and nose should be covered with several thicknesses of gauze. The injection should be given slowly, *about one ounce a minute,* the funnel being held about 3 inches above the level of the patient. The tube should be clamped and allowed to remain in the rectum so that the mixture may be withdrawn during operation if there should be any indication for doing so. If there is any excitement, 15 or 20 drops of chloroform usually quiets the patient. If the patient cannot retain the oil-ether mixture, one should not try to repeat, but abandon it. The patient should be ready for operation in from twenty to thirty minutes from the time the last injection is given. The reversed Trendelenburg position seems to aid in the maintaining of an even plane of anesthesia. The jaw should be supported so that respiration will be unobstructed.

In alcoholic subjects, $\frac{1}{100}$ grain of scopolamin (hyoscin) is added to the preliminary hypodermic injection of morphin. When the operation is completed, the bowel should be well irrigated with tepid water until it returns clear. The colon may be gently massaged from right to left to aid this. One pint of water is then put in the bowel and left, or olive oil may be given in quantity of 4 ounces, to prevent any possible irritation that may be feared, though in more than a thousand cases we have had only two instances of irritation, both being an annoying looseness, which speedily yielded to treatment.

Hyperthyroidism or exophthalmia offers a most striking condition in which the value of this method is shown. These patients, as is well known, are usually high strung, nervous and apprehensive, while the danger itself is by no means small. We have repeatedly operated, with little or no knowledge on the part of the patient; stealing the gland has indeed been easy. The procedure with these patients is as follows: Supposing operation is decided on for Saturday, then a week previous, we give each day an injection of 2 ounces of tap water, with a dram of ether in it. This, the patient is told, is for its tonic effect. The morning of operation she is given the regular dose of ether-oil and paraldehyd followed by hypodermic, and the full mixture, all given while she is in bed. She usually goes to sleep very quietly, though at times requiring a few drops of chloroform; is taken to the operation room, the gland removed, or ligation performed, and when she awakens, she is in her bed, with little knowledge of what has taken place, aside from knowing something has been done to her throat; but the fear is greatly lessened or gone.

COMMENT

Surely this is well worth trying in such conditions, and when supplemented by Crile's nerve blocking, is an ideal means to get results in a very bad class of cases.

Mr. Wade [5] of London, anesthetist to the Queen's Hospital, says: "There is no doubt that this is a very valuable method of anesthesia for many operations in plastic surgery."

Ether-oil colonic anesthesia is *contraindicated* in *conditions of rectal disease,* or when *pain is caused* by its introduction. It is not recommended for routine use, as the time required for successful administration would not permit of this method, especially when a number of operations were scheduled. For regular clinic work we depend on ether by inhalation, reserving colonic anesthesia for the class of patients already mentioned. When successfully used, it will not be given up by the surgeon who tries it. Dr. Arrowsmith of Brooklyn has shown the value of this method in bronchoscopy and in gastroscopy, in which the absence of excess mucus in the air passages is a most valuable factor, as is also the fact that there is a clear passage for the escape of ether vapor. The value is undoubted in cases in which absorption must be minimized on account of some lung, heart or kidney lesion.

Our experience with this method for children has been very small, and has not been satisfactory, owing chiefly to the lack of cooperation on the part of the child, and the expelling of the mixture.

To sum up, we would advocate ether-oil colonic anesthesia in the type of cases mentioned, and emphasize the safety, comfort, control, efficieny and simplicity of the method. Under efficiency, we can do no better than quote Gwathmey, whose conclusions are practically in accord with our own:

> The method insures prevention of shock, narcosis is smooth and of uniform depth, pulse and respiration remain near normal. A complete relaxation of the muscular system is secured. The stage of excitement is eliminated. The patient inhales a warm, moist vapor, and the direct irritation of a concentrated vapor is overcome. There is no eructation of gas, before or after, in 95 per cent. of cases. Hypersecretion of mucus and saliva is absent. The patient's stomach, lungs and kidneys are spared. The absence of the ether cone in surgery of the head and neck lessens the technical difficulties of the operation by giving continuous access to the field of operation.

Postoperative nausea and gas pains are reduced to a minimum.

State Hospital.

ABSTRACT OF DISCUSSION

Dr. James T. Gwathmey, New York: Certain fundamental principles should be emphasized: When physiologically understood, ether-oil colonic anesthesia is one of the easiest methods to administer, requiring only a rectal tube with funnel attached and quiet for the patient. It is one of the safest methods. The margin between full surgical anesthesia and a toxic dose is greater than with any inhalation method. It is one of the most pleasant methods for the patient, as attested by the fact that those who have tried other methods prefer the colonic. A greater relaxation of the musculature exists than is usual with any inhalation anesthetic. A smaller amount of ether per hour is required than by any other method. The estimated amount is two ounces per hour, which seldom varies. It is regulated as easily as any inhalation method, by (*a*) covering the face with a towel to deepen the anesthesia, (*b*) by placing an airway tube to lighten, or (*c*) by unclamping the rectal tube and draining the residue, and flushing thoroughly. It can be terminated at any time, as far as the anesthetic is concerned, the patient continuing to sleep from the other drugs used. While the rate of absorption is slightly different with each patient, dependent on the age, temperature and general condition, it is constant when established—an anesthesia deep at one time and light at another is physiologically impossible. The brain is more completely protected against reflex stimuli than by any method of inhalation anesthesia; and this is proved by the patient crossing his legs, changing his position, or conversing with the surgeon as in spinal analgesia. So-called analgesia with nitrous oxid-oxygen, where the patient is continually squirming and refusing to be comforted by the anesthetist, but on awakening, remembers nothing of the pain, is not analgesia but amnesia. The brain is not protected in so-called analgesia with nitrous oxid and oxygen. The complete analgesia of the colonic method is dependent on the synergistic action of all the drugs concurrently given with the ether—an extra amount of ether will not have the same effect. The quiet sleep and analgesic stage for a few hours after the anesthetic is terminated is an advantage to the patient, and should not be counted against the method.

Dr. Alexander Primrose, Toronto: In the hospital at Sidcup, England, Major Gillies found that rectal anesthesia by ether oil was entirely satisfactory. In these cases requiring a prolonged technic for the repair of face and jaw wounds, it was important to get the anesthetist out of the way of the operator.

Dr. J. Shelton Horsley, Richmond, Va.: When a cautery must be used in the mouth colonic anesthesia is ideal. It would seem indicated in cases of exophthalmic goiter, but here, in my hands, the results have been unsatisfactory, probably because this disease causes some affection of the liver, as Dr. Crile has shown. If you pour all the ether through the portal circulation and concentrate it on the crippled liver there may be unfortunate results. It is like giving ether by inhalation to a patient with seriously damaged lungs.

Dr. George W. Crile, Cleveland: Do you use local anesthesia in conjunction with local analgesia?

Dr. Walter Lathrop, Hazleton, Pa.: Yes. Our best success has been with the exophthalmic type of goiter. We have had very few mortalities, not more than we would have had with any other method because we know what hyperthyroidism means. We get these patients in the best condition possible. If we are going to operate a week from today on a woman highly strung, nervous, scared to death, she is given a dram of ether and two ounces of tap water as a "tonic." This is repeated daily until the seventh day, when she is given the regular dose of paraldehyd, ether and oil followed by a hypodermic. She wakes up in bed after the operation with little knowledge of what has been done.

5. Wade: Anesthetic Supplement, Am. J. Surg., July, 1919.

Early Diagnosis of Breast Cancer.—It is wrong to teach students that axillary lymphatic enlargement is a sign of breast cancer; and it is criminal to ask men to wait for its appearance before making a diagnosis. Which of us would await the onset of gangrene before diagnosing strangulation in a hernia? Yet the enlarged lymph nodes of the cancerous breast are almost as fatal a complication in the long run as gangrene is in hernial strangulation. Bloodgood's aphorism expresses this graphically, when he tells us that a woman with a cancerous lump in her breast, but no cancerous glands in her axilla, has four chances out of a possible five of a permanent cure by operation; whereas a woman with a cancerous lump in her breast and cancerous glands in her axilla, has not one chance in five! You will see then that to wait for the appearance of an enlargement of the axillary glands to make a diagnosis of cancer of the breast is to throw away 600 per cent. of your patient's chances of an operative cure. An earlier diagnosis is our only hope of obtaining better results.—W. Doolin, *Med. Press,* April 28, 1920.

RELATION OF QUANTITATIVE METHODS TO THE ADVANCE OF MEDICAL SCIENCE*

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SAN FRANCISCO

The progress of science has been marked by the transition from purely qualitative observations to quantitative determinations. In astronomy the possibility of measurements was perceived very early and carried out with comparatively a high degree of accuracy. In physics and chemistry the phase of measurements came mainly with the modern development of precision instruments; and it has been largely through their use that these sciences have come up from the notions of alchemy and of fire and water as elements. Measurements in the biologic sciences are still more recent, but are now being pursued with increasing attention. They occupy a prominent place in a large part of recent biologic literature, and their importance has been so far emphasized as to give the name *Biometrica* to a leading research journal in this field.

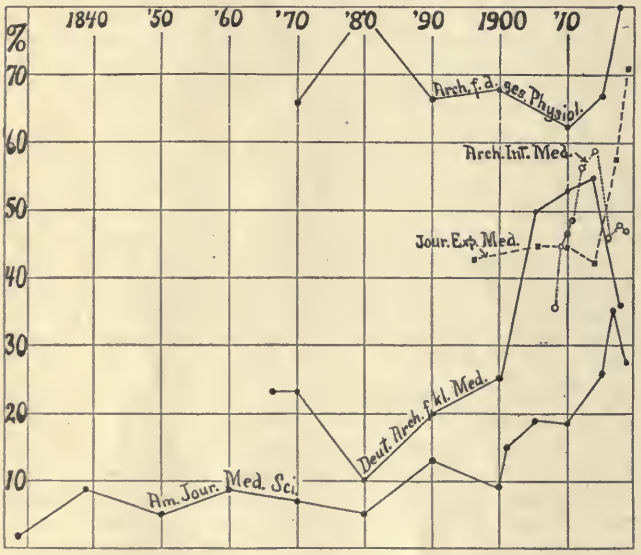


Chart 1.—Percentages of quantitative reports in various medical journals.

That the medical sciences are following the same trend has frequently been noted. I have examined the extent to which this is true by sorting, in several representative journals, the original contributions in two classes, which may be called quantitative and nonquantitative contributions. Among the former were included only reports of investigations in which the idea of quantity was a main if not the sole objective of the investigators—mere statements of such quantities as weight, temperature or blood pressure were not used to classify an article as quantitative if they were but incidental to the main purpose of the description. Statistical analyses of clinical or other material were counted as quantitative. In going over the literature from this point of view, one is struck by the comparative vastness of opportunity for important research in the domain of measurements. As the discovery of Columbus was delimited in succeeding years by thousands of surveyors, so the discoveries of Harvey, of Pasteur and of Bright have prompted myriads of researches on circulation dynamics, on virulence and immunity, and on kidney function.

The results of the survey are shown graphically in Chart 1. It will be seen that of the contributions to the *Archiv für die gesamte Physiologie* about three quarters have always been quantitative reports. In the field of more strictly medical research occupied by the *Journal of Experimental Medicine,* the quantitative reports have been about 50 per cent. of the whole number, and apparently are on the increase. The same approximately is true for the *Archives of Internal Medicine.* These represent the comparatively recent type of medical journal for original reports. The *Deutsches Archiv für klinische Medicin* and the *American Journal of the Medical Sciences* represent the older type of clinical journal; and they illustrate well the shift in emphasis toward quantitative endeavor which characterizes the more recent work. The effect of the war is not yet clear, but there is a suggestion in both these curves of an interruption in their ascent or a positive decline.

Among the quantitative reports encountered in these journals, a considerable number were so classified because they made use of statistical methods in analyzing qualitative data. In many other cases the original data consisted of measurements of one sort or another to which statistical methods were applied in assembling and making deductions. It is therefore apparent that statistical methods of research, while primarily designed for problems in economics, in recent years have found increasing application in medicine. In other biologic sciences in which they have been employed more seriously they have become recognized as particularly applicable to the study of "characters" which vary on account of a large number of causes that are difficult or impossible to separate. Medical problems are very largely of this class and, accordingly, it is no surprise to find medical literature, and especially clinical literature, abounding with statistical reports. It is a remarkable fact, however, that almost without exception, even in the hands of workers in our foremost research and teaching institutions, medical statistical studies have confined themselves to the consideration of simple averages or associations, with little or no attention to the degree of probability supporting the "conclusions" drawn—without, in fact, making any serious application of the theory of probabilities with which they are so intimately concerned. Under these circumstances, it is of course natural that statistical methods themselves should be blamed for many abuses.

It being possible in this paper to call attention to only a few of these methods, I shall do so by illustrations, and without presenting mathematical proofs.[1]

1. *Inconsistency of Statistical Data.*—If it were reported that among 100 cases of hypertension there were: (A) fifty-two over 50 years of age, (B) thirty-one with albuminuria, and (C) forty-seven with decreased phenolsulphonephthalein elimination; and that of those over 50, fourteen had albuminuria (A B), and four decreased phenolsulphonephthalein excretion (A C), that albuminuria and decreased phenolsul-

* From the Department of Medicine, University of California Medical School.
* Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. For an elementary exposition of the theory of probabilities, the reader is referred to Yule, G. U.: An Introduction to the Theory of Statistics. Griffin & Co., 1912; for a guide to the use of formulas, Davenport, C. B.: Statistical Methods, New York, John Wiley & Sons, 1914.

phonephthalein (B C) were associated nine times, and in the group over 50 years (A B C) twice, there would be nothing obviously wrong with the figures. And yet, by simple arithmetic,[2] it can be shown that they are impossible.

2. *Association of Attributes.* — Attributes may be associated positively (e. g., cases with positive Wassermann reactions and aneurysm), negatively (e. g., presence of adenoids and excellence of intelligence of schoolchildren), or they may be independent (e. g., blue eyes and gastric ulcer).

The Criterion of Independence: If two attributes, such as astigmatism (attribute A) and adenoids (attribute B) are independent, then the proportion of A's multiplied by the proportion of B's will tend to equal the proportion of A B's (individuals having both conditions). Thus, if among 1,024 schoolchildren, 384 had astigmatism and 144 adenoids, we should expect, if these are independent, that about $\frac{384 \times 144}{1,024} = 54$ would show both abnormalities.

A "coefficient of association" may readily be calculated to express numerically the degree of positivity or negativity in an association, from +1 (complete positive association) to 0 (independence) or −1 (complete negative association). But the value of deductions as to associations of attributes expressed by such a coefficient or otherwise will naturally depend on the numbers of observations made, and accordingly the amount of variation to be expected from chance alone. This expectancy may also be shown quantitatively, as will be shown in the discussion of variables.

3. *Manifold Classification.*—This may be illustrated by the accompanying table showing the number of times certain gastric acidity findings are supposed to have occurred in association with the diagnosis given.

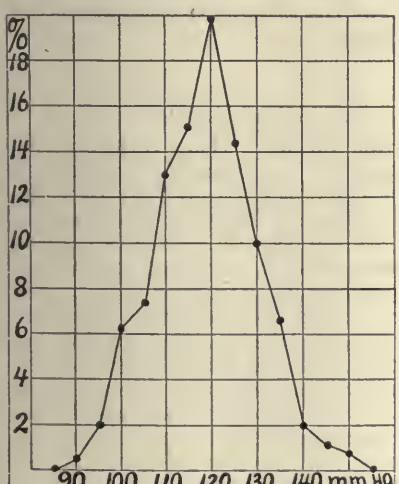


Chart 2.—Example of a frequency polygon, showing the distribution of systolic blood pressure measurements in a group of 314 young men.

Not only may the relative frequencies of diagnoses in relation to acidity findings and vice versa be seen from such a table, but, by calculating a contingency coefficient, it may be shown whether or not on the whole these conditions are related to the acidity findings, and if so whether the relation is very close or the reverse; that is, the general value of acid measurements could be stated mathematically and this might be compared with the general value of other diagnostic procedures.

4. *Frequency Distribution.*—As distinguished from the simple attributes of the foregoing examples, the following case of a frequency distribution illustrates some of the special methods applicable to variables: If the blood pressure of a group of young men is measured, the results may be expressed in a table showing the number of measurements in the "class intervals" 100 to 104 mm. of mercury, 105 to 109, etc.; and the same may be shown graphically in a "frequency polygon" such as Chart 2. If the observations are numerous enough and the class intervals small enough, such a polygon may closely approximate the ideal "frequency curve" for the series. In medical literature there usually accompanies such studies a statement of the arithmetical mean or common average, and often of the "range" or the highest and lowest in the series; but very rarely indeed is serious attention paid to other characteristics of the frequency distribution, such as the "median" (or mid-value), the "mode" (or most frequent value, i. e., the "peak" of the curve), the question of "complexity" of the curve, or the amount of "dispersion" present. The last item is particularly important and is not covered adequately by a statement of the range, which depends on the chance variation of extreme values of the variable. A good measure of dispersion must take into account the scattering of values among all the members of the series. Of several that do this, the "standard deviation" is most commonly used by statisticians.[3]

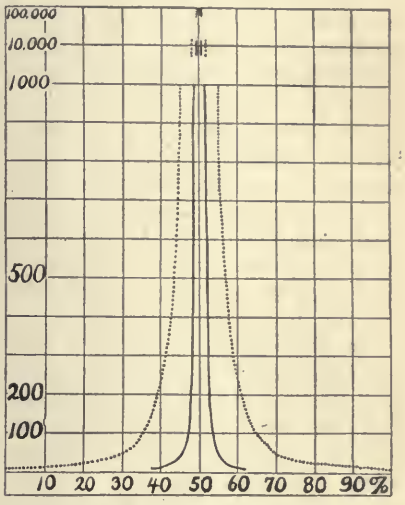


Chart 3.—Precision of percentage lymphocyte count.

5. *Simple Sampling of Attributes.*—This finds an example in the ordinary differential count of leukocytes. Our interest here, from the statistical point of view, is in the "precision" or accuracy of the observed proportions of the different types of cells. It can be shown that this varies as the square root of the number of observations on which the proportion is based; that is, the percentages based on a count of 400 cells are not four times but only twice as dependable as those obtained by counting 100 cells.

GASTRIC ACIDITY AND DIAGNOSES

	Hyperacidity	Acid Normal	Hypo-Acidity	Totals
Gastric cancer	20	56	200	276
Peptic ulcer	310	90	4	404
Gallbladder disease, etc.	200	165	65	430
Totals	530	311	269	1,110

Again, if in a given case the percentage of lymphocytes in one count of 100 cells was found to be 47 per cent. and later in a similar count 53 per cent., it may be important to inquire whether or not the difference of 6 per cent. is due to an actual change in the composition of the patient's blood—in other words, whether or not the difference is readily chargeable to "fluctuation of simple sampling" or whether it is probably "significant." Most clinicians would regard the difference as probably indicating a change in the blood.

2. Thus: 100 — 52 — 31 — 47 + 14 + 4 + 9 — 2 = — 5 (Yule).

3. The standard deviation is obtained by subtracting each member of the series from the mean, squaring these differences, finding the average of these squares, and extracting the square root.

To examine this point, let us suppose that in this case the actual percentage of lymphocytes as determined by a count of millions of cells examined on the same day was 50 per cent. It is evident that if this large number were counted by groups of 100 cells each, the percentages obtained from these separate groups would for the most part differ more or less from the general average of 50 per cent. They could then be treated as a series of variables and their range and standard deviations could be determined as indicated above. Or, without using such an experimental method, the standard deviation (in this case 5 per cent.) could be obtained directly from a formula.[4]

Now it can be shown experimentally as well as mathematically that a series of variables such as this will be scattered over a "range" approximately three times the standard deviation both above and below the general average. In our example, some of the lymphocyte counts will be as low as $50-(3\times5)=35$ per cent., and some as high as $50+(3\times5)=65$ per cent.; also, within the limits of the "probable error" (about two-thirds the standard deviation, hence in this case from 47 to 53 per cent.) the chances are even that in our illustration a given count of 100 cells will yield a lymphocyte percentage within or without these limits. It is therefore apparent that the observed difference of 6 per cent. between the counts mentioned is quite without significance.

Chart 3 shows, in relation to the number of cells counted, the precision of the percentage lymphocyte count in the case we have considered. The solid line shows the "probable error," i. e., the limits within which there is an even chance for an individual count to fall. The dotted line shows the range, i. e., the limit which will include about 99 per cent. of the observations. Occasionally results will even fall outside these limits through the operation of chance alone.

The lesson of these examples of the blood pressure study and the lymphocyte count, it will be seen, have a general application to studies involving averages, percentages and other variables. The average metabolic rate, or weight, agglutination titer, or blood nitrogen in one group of individuals as contrasted with another; the mortality, or the percentage of cures following different methods of treatment may and frequently do present differences which writers refer to as "very striking" or "highly suggestive," and which simple calculations show to mean nothing whatsoever. The illustration we have used has been dwelt on because it brings out the one pitfall of statistics commonly overlooked by medical workers—that associated with failure to make sufficient allowance for the operation of chance in sampling. In forming inferences from averages, great care is needed to exclude other causes of differences than the one to be investigated; but this necessity is more obvious than the necessity of considering in connection with each average its probable error or other measure of precision.

Although the mathematical training necessary to use such simple aids and safeguards in statistical work is comparatively little, it is too much to expect any sweeping change in the practices of the present generation of writers. But for the future the defect can be remedied by readjustment of the premedical curriculum. The change would not require more time in the premedical course, and would not necessarily curtail the usual instruction in physics, chemistry, biology and language, although it would undoubtedly be justified at this price. Two or three hours a week for one semester would provide a good elementary knowledge of the theory of probabilities, and most medical students have spent enough time in mathematics to have included in it this subject without detriment to their general mathematical training. For the purposes of general culture and mental discipline it would equal higher algebra, conic sections or trigonometry, which many of them study, and for their practical purposes it would far surpass these subjects. Although calculus is useful, the elementary course in theory of probabilities would not necessarily require as prerequisite anything more than high school algebra. In most universities the cooperation of the mathematics department would be necessary to rearrange the courses open to medical students; in fact, in many departments of mathematics it would be necessary to organize the course in theory of probabilities, as this subject at present is commonly left to the department of economics.

4. $\sigma = \sqrt{npq}$, where n = the number of cells counted in each "sample," p, the chances for an individual cell encountered to be a lymphocyte, and q the chances for it to be other than a lymphocyte.

SUMMARY

A survey of medical literature shows that medicine, following the trend of other sciences, is seeking its advance increasingly through the use of quantitative methods of research. The multiplicity of variables inherent in the laboratory, as well as the purely clinical material, requires the constant use of statistical methods of analysis and interpretation. Medical writers generally have relied purely on intuition in these interpretations—a practice that leads very frequently to gross misstatements of results, and which has thereby brought unmerited discredit to the use of statistical methods in medicine. The elementary theory of probabilities which deals scientifically with these methods is comparatively a simple branch of mathematics, is of great practical significance, and should be required in the premedical curriculum.

ABSTRACT OF DISCUSSION

DR. HENRY A. CHRISTIAN, Boston: There is no question that there is a false security felt in figures. With insufficient knowledge, we attempt to utilize figures as a basis for drawing conclusions, and we make many mistakes in doing that. Dr. Kilgore pointed out some of the sources of these errors. Among others are the quite common error made by medical men in drawing conclusions, in statistical form, from a very small group of cases, or to figure out the percentage of the occurrence of some symptoms, or some preceding disease in the history of the patient, or some finding in the patient, and conclude that it has a causal relation on account of its frequency of occurrence. Perhaps, because we find that 30 per cent of our patients have bad teeth, we conclude that the bad teeth are the cause, or one of the causes of that condition. We do not stop to secure the figures relative to the occurrence of just those same things in persons who are otherwise well, or who have entirely different diseases. If we are going to play with figures, we should know the rules and laws of the statistician. On the other hand, it is well to remember that the statisticians, knowing the laws of the game as far as statistics are concerned, fall into error, because often they draw their conclusions in a very accurate way from the statistics, but the data from which they make the statistics contain many inaccuracies. For example, you will find statistical literature showing the relative frequency of death with pneumonia, and death without pneumonia, in cases of influenza. That is not of very much use, because in most of the cases, the death report is made by a man who did not know whether the patient died with or without pneumonia. He was too busy examining the

lungs, or he did not realize how few signs many patients with influenza had, when the necropsy showed a very extensive pneumonia.

DR. E. S. KILGORE, San Francisco: Dr. Christian's point against the professional statisticians who attack medical problems is well taken. Medical problems obviously require medical training for their intelligent study. But it is also true that statistical problems require a knowledge of statistical methods for their intelligent handling. In some cases both requirements have been met by the collaboration of the medical man with the statistician. But the point I wish to emphasize is that the applications of the theory of probabilities in medicine are very numerous, so numerous that, at least, a rudimentary knowledge of the subject is essential for medical investigators, and even for those who would read intelligently and critically the medical literature.

MISLEADING SYMPTOMS AND ROENTGEN-RAY FINDINGS IN SUSPECTED MASTOID ABSCESS*

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There is no especial literature pertaining to the subject that I am to present, for it is purely a clinical one, and such deductions as may be reached are wholly derived from clinical experience.

When to operate in suspected mastoid abscess is largely an individual question, to be determined by the symptoms shown in each case; but we have all learned that there are certain cardinal principles which govern us in our consideration of the indications in the individual case. However, experience teaches us that these cardinal principles must be duly and carefully weighed in each instance, for in many cases the exception proves the rule in suspected mastoid abscess, and our operative findings not infrequently are in dissonance with the subjective and objective symptoms.

A septic temperature course, painful mastoid to pressure, a leukocytosis and a history of purulent middle-ear discharge of a week or ten days' duration would be regarded as a syndrome clearly indicating a suppurative mastoiditis, demanding operation. Bearing on this are the history and operative findings in Case 1.

CASE 1.—Sylvia B., colored, aged 37, ten days before coming to the hospital developed sore throat, with chilly sensations, and shortly afterward her nose began bleeding and both ears pained a great deal, followed by a serosanguinolent discharge from her ears. A swelling, painful on pressure, developed back of each ear.

Examination of the ears made at the hospital revealed both canals full of pus. There was marked swelling and tenderness over both antrums and mastoid tips. The temperature was 104.4 in the afternoon. The blood count was: 11,200 leukocytes and 78 per cent. polymorphonuclears.

The history and symptoms pointed conclusively to double mastoid abscess, so the following morning, the temperature at the time being 102, the right mastoid was first explored, not a drop of pus or even a soft cell being found, clear to the antrum, which also was free of pus. The left mastoid was then opened, with the same result as the right. The temperature went to 104 in the afternoon of that day, and then progressively declined, the patient being discharged in normal condition nine days after the operation.

What prettier picture of mastoid abscess could be asked? It was so positive clinically that we did not even wait for roentgen-ray pictures of the mastoids, and with these symptoms, negative roentgen-ray findings would not altogether have convinced us that there was not pus in the mastoid cells. Both mastoids were congested, and perhaps would have broken down in a short while, so the operation may have been conservative in this sense. But the fact remains that with freely draining middle-ears, this case was running a high, septic temperature course, and presented what usually are regarded as positive mastoid symptoms.

The question that would here arise is, Would I have been justified, in the presence of these typical symptoms, in delaying operative interference? There can be no fixed rule as to when to operate in such cases, for we all know from actual experience how rapidly some develop, and how quickly a meningitis or sinusitis can set up when the pus absorption is so great. In the case just related, both subjective and objective symptoms not only justified, but to me, demanded operation.

We are all familiar with the type of abscess found in young children, when pus has broken through the antral wall externally producing a fluctuating mass back of the ear. So Case 2 may have been regarded, if we had not carried our operative investigation deeper than customary:

CASE 2.—Sterling M., white, aged 12, was brought to the hospital with a history of earache in the right ear, beginning three weeks before. Something like a "boil," according to the father, developed behind the right ear, with a great deal of pain and increasing swelling. The child's father stated that the boy had experienced similar attacks previously, and some time before the same ear had swelled and burst externally, back of the ear.

Examination revealed a fluctuating mass, about the size of a small hen's egg, over the right mastoid process. The membrana tympani was congested, but there was no pus in the canal. The temperature was 100, in the afternoon; the blood count: leukocytes, 11,200; polymorphonuclears, 80 per cent. Roentgenoscopy revealed the mastoid normal.

Under ether the mass was opened with the usual mastoid incision. After removal of a large quantity of pus, the entire mastoid process was bared of periosteum, and carefully investigated for a sinus. None being found, the antrum was uncovered, but no pus encountered. The boy left the hospital in a few days, entirely recovered.

There was in this case evidently a burrowing of pus from the middle ear beneath the periosteum of the external auditory canal, without involvement of the bone; but it is remarkable that the corresponding membrana tympani was not ruptured. Perhaps this was one of the type of cases that we sometimes see reported as "mastoiditis without middle-ear inflammation."

Along somewhat similar lines is Case 3:

CASE 3.—Charlie J., white, aged 34, came to the hospital with a history of pain beginning in the right ear five weeks previously. There had been a slight discharge from the ear, but none recently. Four weeks before he began having pain back of this ear, with swelling, and for this reason, the pain continuing, he came to the hospital.

Considerable swelling was found over the right mastoid, and it was intensely painful on pressure. There was no discharge from this ear. The temperature was not running high, but would make quick drops to below normal. The blood showed 11,200 leukocytes, and 84 per cent. polymorphonuclears. Roentgen-ray examination revealed a normal mastoid.

The usual mastoid incision was made, and a large amount of thick pus removed. The bone apparently was healthy, but

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

the antrum was entered, without pus being found. Convalescence was uninterrupted, with the exception of several marked exacerbations of temperature, with sudden drops to subnormal, coming on the third, sixth, seventh and eighth days after operation, due probably to some retention, as there were no symptoms of intracranial complication, and from the tenth day following operation there was no further fever.

Here was another case of middle-ear abscess which had burrowed beneath the periosteum, without bone involvement, and could, to the operator's exaltation, be called a "blind" mastoid abscess; but the surgeon would have to be indeed "blind," in more respects than one, so to denominate this condition.

In this connection I should like to say that I am very skeptical of numerous reported cases of mastoiditis without previous middle-ear suppuration. I doubt whether this ever occurs, though in this conclusion I may be quite wrong. Still, it is somewhat difficult to conceive of a suppuration in the mastoid cells without a previously existing suppurative condition at the gateway to these cells—the middle ear.

In reviewing my entire experience in mastoid surgery, I cannot recall an instance of suppurative mastoiditis in which either from the history or clinical evidence, a previously existing middle-ear inflammation was not traceable. To me it is a good deal like reported cases of primary laryngeal tuberculosis—I have heard of such cases, but have never seen one, this condition in my experience always being secondary.

A case of more than ordinary interest is this:

Case 4.—C. S. O., man, white, aged 22, consulted me, July 28, last year, with this history: He had been subject to "risings" in the left ear all his life. He had four attacks of this kind while in the army in France. Six days before an intensely painful abscess developed in this ear. Since then the ear had been discharging thick, yellowish pus. He had been having high fever, and the entire left side of his head had been quite painful. In fact, his suffering was so intense that he was being kept constantly under the influence of morphin. He had lost 16 pounds since the beginning of this attack.

On examination, the external auditory canal was found full of thick, yellowish pus, with drooping of the posterosuperior canal lining. There was intense pain on pressure over the mastoid antrum and tip. The patient's temperature was 100.4 at 3 p. m. A roentgenogram revealed a cloudy mastoid, apparently beginning to break down. Operation was refused, but the symptoms continuing on the afternoon of the 31st, mastoidectomy was performed. Much to our surprise, while the mastoid was hemorrhagic, not a drop of pus was encountered, none being found even in the antrum. However, recovery was prompt following the operation.

Here everything was positive, including the roentgen-ray findings, yet operation showed how erroneous was this all. But doubtless this was another borderline case, and would have gone to suppuration later. The operation was conservative, in that it brought relief.

There is no question in my mind of the value of roentgenograms in suspected mastoid abscess. In most instances, well-taken roentgenograms give positive evidence that is invaluable in aiding the surgeon in determining whether or not operation is necessary, although these pictures sometimes may prove misleading, as in the case just cited. But no otologist should neglect to have such pictures made whenever possible, not only for their diagnostic worth, but also as operative guides. However, the absence of positive roentgen-ray findings should not lull us into a sense of security which may be false, and cause us to fail to give the patient the benefit of opportune surgery. Clinical symptoms must in the final analysis be our most dependable guide, even though at times we err to the extent of performing what may appear to have been an unnecessary operation.

Here let me briefly relate the details of a case which is almost amusing from a diagnostic standpoint, but had its very serious aspect to the patient:

Case 5.—Mrs. B., aged 30, consulted me, Oct. 10, 1919, with reference to the condition of one of her ears, which six days before developed an abscess, which burst and discharged for three days. She had been suffering a great deal with this ear, even after it began discharging. She was much alarmed, because some six weeks before, having then an abscess in each ear, she had consulted a specialist in a nearby town, and after making roentgenograms of both mastoids, he told her that she had an abscess in each mastoid, was in imminent danger of her life, and must urgently have both mastoids opened and drained.

There was no pus in either ear when I saw this patient, and no mastoid symptoms. I had pictures made of the mastoids, and they showed absolutely normal mastoids.

To return to the symptomatology, the first of these cases which I have outlined presented a typical and classical syndrome of suppurative mastoiditis. It is true that in this case the roentgen-ray findings were negative as to mastoid abscess; but in the presence of such positive clinical symptoms, it would be an extremely conservative attitude that would consent to refraining from operation.

In the next two cases, while there did not exist at the time seen an aural discharge, both gave positive evidence of mastoid suppuration, with probable necrosis through the outer table, and the operative revelation of entire absence of mastoid involvement was most astonishing.

The fourth case lacked nothing by way of positive evidence, but utterly failed on operation to bear out these findings, or to account for the exaggerated symptoms of an acute suppurative mastoiditis.

While none of these cases proved to be what was operated for, that is, a suppurative mastoiditis, still, recovery apparently was hastened by operation; and even with this experience before me, I expect in future to have similar cases which will be handled in the same manner, owing to the fact that even a careful study of such cases, before advising operation, is not always going to eliminate for me the possibility of just such operative findings as I have outlined in the cases described.

When we consider the classic textbook indications for operation in mastoid abscess, we can find enough of these in any of the cases reported by me to justify operation; and yet in the light of the experience of any of us, I doubt whether there are not instances in which the classic indications are not borne out by operative findings. I am aware of the fact that some claim that, in conjunction with other symptoms, the drooping of the posterosuperior lining of the external auditory canal is always an indication for opening the mastoid, but I am not inclined to stress this symptom too much. Case 4 presented this markedly, and I have failed to find this drooping in some cases in which there was extensive suppuration in the mastoid cells, as was operatively demonstrated. So it is with other symptoms which are regarded as very positive indications, and which may prove just as misleading. These, however, are the exceptions to the rule; and in the final analysis, I think that, after duly weighing all considerations in a given case, it is far safer and better for the patient that the surgeon should abide by the

cardinal principles laid down as indications for operation in these cases, and that it is far better occasionally to open an innocent mastoid than to delay in the presence of the danger, always present, of intracranial complications, which so rapidly may supervene, and result in a fatality that could have been avoided by a mastoid exenteration.

Bank of Commerce Building.

ABSTRACT OF DISCUSSION

DR. FRANCIS P. EMERSON, Boston: The roentgen ray is as an adjunct in diagnosis, confirmatory of the clinical picture. We have often checked up our operative findings with the roentgen-ray diagnosis of what was present in the mastoid, and our experience has been that if you rely on the roentgen-ray findings alone you will open a great many mastoids unnecessarily. Another point to be emphasized in connection with mastoiditis is that in probably every acute middle ear inflammation congestion of the mastoid is present. There are very few acute mastoids that should be opened before the lapse of a week or ten days from the onset of the middle ear disease. In few acute mastoid cases will you lose the patient from not operating soon enough. On the other hand, in many cases, especially of the pneumatic type, in which cells extend up over the zygoma and far back over the sinus, if you open the mastoid too early, a long and tedious convalescence follows. In the presence of infected bone, if you open the mastoid before there is a leukocytic walling off, you are never certain of being outside of the infected area. That happens in many cases of mastoiditis where, in our anxiety, we open the mastoid too early. If we wait until the process has limited itself, the patient will have a very quick convalescence. In a fulminating case, in which the inflammation jumps from one area to another, with no tendency to limit itself, an operation will seldom save the patient. Time and again, I have seen a mastoid opened on the basis of the roentgen-ray findings, opened in the congestive stage, with the result that a second operation had to be performed by some one else.

DR. CULLEN F. WELTY, San Francisco: An antrum of Highmore that was once infected will throw a shadow that cannot be differentiated from an active infection. Doubtless, this is also true of the mastoid if it has been infected. I agree with Dr. McKinney as to the indications for operative intervention because by waiting the patient may die. I believe in early operation. Take away all the cells and there is no reaction; the temperature drops to normal and remains normal. If temperature or pain persist, you have not taken away all of the cells. Always bear in mind the cerebral complications that have existed with the other symptoms prior to operation. Cerebral manifestations do not come on so quickly.

DR. G. H. MUNDT, Chicago: The average acute mastoid case is safe until there is a breakdown of the intracellular septums. It is not a matter of having a mastoid full of pus. We should have two roentgenograms for comparison. The roentgenogram is the most valuable single aid in determining whether or not to open the mastoid.

DR. WILLIAM B. CHAMBERLIN, Cleveland: The differential diagnosis between acute mastoiditis and external otitis is not easy. I have seen patients in the Politzer Clinic waiting for five days for a differential diagnosis to be made. Dr. McKinney did not, in several of these cases, speak of the appearance of the tympanic membrane. It is not always easy in external otitis to obtain a sufficient view of the tympanic membrane, and I wonder if some of these cases might not have been an extension from an external otitis rather than an extension along the external canal wall. The roentgenogram may be exceedingly misleading anatomically. Safety lies in not gaging operative intervention by the roentgen ray, but in operating in every mastoid case as if the lateral sinus was as close to the exterior as possible.

DR. E. LEE MYERS, St. Louis: I agree with Dr. McKinney. It has been my experience since the first epidemic of influenza that too much attention cannot be paid to symptoms. In children there may not be any redness of the drum membrane, and yet at operation all the cells are found necrotic. I have had two cases of wryneck, one in a child 6 years of age, in which the wryneck was the only symptom. There was no redness of the drum membrane; no running ear. It proved to be a case of cerebellar extradural abscess. Another patient had a perfectly normal ear, as far as acuteness is concerned. The roentgen ray showed nothing in the mastoid or antrum. It proved to be a fistula of the mastoid squama an inch and a half away from the antrum. The fistula was as large as the end of my thumb. The dura was protruding.

DR. RICHMOND MCKINNEY, Memphis, Tenn.: I realize that there is a possibility of mistaking a large boil for a mastoid abscess, but that was very carefully borne in mind. All my patients gave a history of previous middle ear trouble. In none of the cases reported was there occlusion of the external auditory canal, and the congested membrana tympani could clearly be seen.

THE TREATMENT OF CHRONIC INDIGESTION IN CHILDHOOD*

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BOSTON

Normally the digestive powers are equal to the work demanded of them, that is, the digestion of the food. The equilibrium of the digestion may be disturbed either by a decrease in the powers of digestion or by an increase in the work to be done in digestion. The decrease in the powers of digestion may be due to the action of diseases other than those of the digestive tract, to overfatigue, either physical or mental, or to diseases of the digestive tract. The increase in the work to be done in digestion may be due either to too much digestible food or to indigestible food.

The treatment in the first place evidently consists, therefore, in the exclusion or treatment of diseases other than those of the digestive tract and the removal or remedying of all causes of overfatigue, whether it be physical or mental. It is surprising how often the source of a chronic disturbance of digestion will be found outside the digestive tract. Chronic disease of the tonsils or the accessory sinuses is a very frequent cause of indigestion. An unsuspected pyelitis is also not an infrequent cause. Success in the treatment of chronic disturbances of digestion due to other diseases evidently cannot be hoped for, no matter how careful the regulation of the diet, until these diseases have been remedied. Overfatigue is an even more common cause of chronic disturbances of digestion in childhood than are diseases outside the digestive tract. The whole difficulty in many instances is due to overplay, overstudy, overexcitement or too late hours. The removal of these causes will almost at once result in the disappearance of the indigestion. Until these causes are removed, however, no improvement, or very little, can be expected, even with the most rigid attention to the details of feeding.

Incidentally, it is important in all disturbances of digestion, no matter what the cause, to regulate exactly the intervals between feedings, to enforce regularity in feeding, and to forbid the taking of any food between meals. It is extremely important to make sure that the child chews its food properly and never washes it down

* Read before the Section on Diseases of Children at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

with liquid before it is properly masticated. Regulation of these simple matters is, of itself, often enough to cure the milder disturbances of digestion in childhood.

Primary disease of the digestive tract is very uncommon in childhood. If there is disease of the digestive tract, it is almost invariably secondary to disturbances originating in the contents of the tract as the result of the ingestion of improper food or as the result of bacterial fermentation. Treatment in the next place consists, therefore, in regulation of the diet by regulation of the amount of food and by the elimination of indigestible food. The application of these general rules as to the regulation of the diet is all that is necessary in many instances, and certainly in the majority of the milder cases of chronic indigestion in childhood.

In other cases, however, and certainly in most of the more serious disturbances of digestion, the conditions are more complicated. There is an intolerance, more or less marked, for one or perhaps two of the individual food elements. This intolerance is usually the result of overfeeding with this element in the past. In the severer cases, intolerance for one or more of the food elements is almost always associated with fermentation in the intestinal contents as the result of abnormal bacterial activity. This fermentation may take place in any of the food elements, fat, carbohydrates or protein. Chronic indigestion in childhood may, therefore, be divided into indigestion with intolerance for fat, indigestion with intolerance for sugar, indigestion with intolerance for starch, indigestion with intolerance for protein, and indigestion with fermentation. The borderline between simple indigestion with intolerance for one or more of the individual food elements and indigestion with fermentation is necessarily somewhat indistinct, because there is always fermentation going on normally in the intestinal contents. The line between normal fermentation, fermentation with simple indigestion, and indigestion with excessive fermentation must evidently be very indefinite.

SYMPTOMS

All types of chronic indigestion in childhood have certain general symptoms in common, such as loss of weight and other manifestations of disturbed nutrition. Among these are dryness of the skin and hair, cold extremities, pallor, irritability, peevishness and disturbed sleep. Other symptoms, which vary according to the type of indigestion, are diarrhea, constipation and the alternation of diarrhea and constipation. The abdomen may be distended, normal in size or sunken; there may or may not be vomiting; fever of varying degrees may or may not be present. None of these symptoms, are however, definite enough of themselves to justify a positive diagnosis as to the type of indigestion.

DIAGNOSIS

While something may be told from the condition of the bowels, the odor of the breath, the condition of the tongue, the presence or absence of gas, nausea and vomiting, and the history in general, the diagnosis must be made mainly, however, on the results of the examination of the stools, as the different types of indigestion have characteristic stools. The macroscopic examination of the stools is often sufficient to justify a positive diagnosis as to the type of indigestion present. It should never be depended on alone, however, but should be verified by a microscopic examination, because the microscopic examination will sometimes show that the conclusions drawn from the macroscopic examination were not justified. The microscopic examination of the stools should, therefore, always be made. This is not a difficult matter and requires but a few minutes.

A small portion of the stool is spread on a slide and stained with either Lugol's or Gram's solution. Starch granules stain blue or violet. Another portion is spread on a slide and stained with a saturated alcoholic solution of sudan III. The neutral fat drops and fatty acid crystals stain red. Soap crystals do not stain with sudan III. A drop of glacial acetic acid is then allowed to run under the cover glass. The specimen is then heated until it simmers. This changes the soap into fatty acids, which then stain. If it is desired to determine whether the fat is in the form of neutral fat or fatty acids, another specimen is stained with carbolfuchsin. This does not stain neutral fat, but stains fatty acids a brilliant red and soaps a dull red.[1]

The bacteriologic examination of the stools is not usually necessary, but in certain cases is absolutely essential, as a positive diagnosis is impossible without it.

THE STOOLS IN INDIGESTION

The stools vary decidedly in the different types of indigestion.

Fat Indigestion.—The stools are usually large, semisolid, gray, acid in reaction, and often contain a considerable amount of mucus. They are sometimes dry, hard and gray or white. More often they are loose, frothy, gray and extremely acid. The odor is that of butyric acid, and they contain considerable amounts of mucus. Sometimes the fat is in the form of small, soft curds, or the stools appear oily, as in babies. Microscopically, the fat is present in various forms, rarely as neutral fat, more often as fatty acids or soap.

Sugar Indigestion.—The stools are loose, yellow, sometimes green, frothy and acid in reaction. The odor is that of acetic or lactic acid. The stools are very irritating to the skin, and often contain mucus. Microscopically, little abnormal is seen, except that sometimes, as the result of the diarrhea, they show unabsorbed fat and undigested particles of food which have been hurried through the intestine.

Starch Indigestion.—The stools are loose, yellow-brown, sometimes green, often frothy, and acid in reaction. The odor is acid, usually being that of acetic or lactic acid, but sometimes, if there has been a change in the starch to fat, that of butyric acid. If very acid, the stools are irritating to the buttocks, but usually are not. They occasionally contain mucus and almost invariably considerable amounts of starch, either unchanged or partially converted into dextrin.

Protein Indigestion.—The stools are loose, brownish, and alkaline in reaction. The odor is foul or musty. They usually do not contain mucus.

Indigestion with Fermentation.—The characteristics of the stools are the same as in the other types of indigestion, with the addition of those due to the fermentation. They are likely to be frothy and to contain more mucus. The acidity or alkalinity of the reaction is increased, according to the type of fermentation present, and the odor is more acid or putrefactive.

BACTERIOLOGY

In general, the bacteriologic examination of the stools is not of great importance in diagnosis.

1. Further details are given by Morse, J. L., and Talbot, F. B.: Diseases of Nutrition and Infant Feeding, New York, the Macmillan Company, 1920, p. 94.

Usually, no additional information is obtained from it. The intestinal flora is, of course, either fermentative or putrefactive, that is, one which forms acids or alkalis from the intestinal contents. The type of the intestinal flora can always be determined from the reaction of the stool. In the acid stool of carbohydrate indigestion, however, the presence or absence of organisms of the gas bacillus group is of considerable importance in indicating the form of treatment. The determination of the presence or absence of the gas bacillus by the fermentation test is not difficult, and can be carried out by any one in his office without special training.[2] In protein indigestion there is an excess of putrefactive organisms. Porter and his co-workers [3] have recently developed a method for the recognition of this type. It is very possible that organisms of the butyric acid group or *Bacillus acidophilus* may be of importance. There are, however, no easy methods for recognizing these organisms and no specific treatment, if they are present.

TREATMENT

There is no place for the so-called digestants in the treatment of chronic indigestion in childhood. There is probably never an insufficiency of either hydrochloric acid or pepsin and, as pancreatin is destroyed in the stomach, it cannot possibly be of any use. The general methods of treatment have already been mentioned. Further treatment, therefore, consists primarily in regulation of the diet to fit the digestive capacity of the individual child. The element or elements of which it cannot take care must be cut down to the point where it can take care of them. This point can be determined only by the examination of the stools. The deficiency in calories, brought about by the cutting down of the amount of one or more of the food elements, must be made up by increasing the amount of the others. The amount of the element that is causing the trouble must be increased as fast as the increasing tolerance will allow. It is not enough in severe cases of chronic indigestion, due to intolerance of one or more of the food elements, to give general directions as to the diet. The diet must be laid out explicitly, and the number of grams of the offending food element allowable daily must be definitely stated. The number of calories which the child needs must also be indicated. A list showing the caloric value and the content in grams of the various food elements in the foods allowed must be given to the parents and its use explained. In my experience, almost all parents are intelligent enough to use these tables. I have had no difficulty in getting their interest and cooperation.

In the cases in which there are marked clinical evidences of fermentation, bacteria undoubtedly play an important part in the production of the symptoms. They unquestionably also play a part in the cases in which the evidences of fermentation are less marked, because bacterial fermentation is always going on in the contents of the gastro-intestinal tract under both normal and diseased conditions. What proportion of the symptoms in a given case is due to bacterial fermentation and what proportion to disturbance of the chemical processes of digestion is, however, almost impossible to determine. It is impossible, moreover, to know whether the trouble was originally due to bacteria or to disturbance of the chemical processes of digestion. In general, however, it is probable that the difficulty was not originally due to bacteria, as it is impossible to implant permanently any organisms in the intestine by giving them in the food. Fortunately, it is not important to know which is primary, because the two factors are finally active in every case.

Whether primary or not, however, abnormal bacterial activity must be stopped. It is impossible permanently to change the intestinal bacterial flora by giving bacteria by the mouth, although the flora may be temporarily somewhat modified, if the bacteria are given continuously. The intestinal flora can be changed by changing the composition of the food, that is, the flora may be changed from the acidophilic to the putrefactive by changing the composition of the food, and vice versa. Cutting down the proportion of the carbohydrates and increasing that of the protein in the food changes the flora from fermentative to putrefactive, and cutting down the proportion of protein and raising that of the carbohydrates changes it from putrefactive to fermentative. This can be proved by bacteriologic examination of the stools, but is shown equally well by the change in the reaction of the stools, the stools being acid when the bacterial flora is mainly fermentative, and alkaline when it is mainly putrefactive. Organisms growing on fat have relatively little to do with fermentation in the intestinal tract, but the products of their activity increase the acidity of the stools. Treatment by regulation of the diet on the indications furnished by the examination of the stools thus not only aids the weakened digestive powers but also changes the bacterial flora.

When the organisms of the gas bacillus group are the cause of the fermentation in the intestinal contents, something may also be done to limit their activity by the administration of organisms that produce lactic acid. The best type for this purpose is probably *Bacillus bulgaricus*. It is more effective when given in the form of buttermilk than in tablets or cultures, because it is numbers that count, and there are infinitely more organisms in buttermilk than in any tablets or little tubes of cultures. Furthermore, the buttermilk contains considerable amounts of lactic acid, which is of itself inimical to the growth of the gas bacillus and putrefactive organisms. The lactic acid forming organisms are also sometimes of benefit in the treatment of putrefactive conditions. It must be remembered, however, that the lactic acid organisms cannot change the bacterial flora permanently. This can be done only by so changing the diet as to change the character of the culture medium in the intestine. It is doubtful whether the growth of other pathogenic organisms can be influenced by the administration of any other organisms in the food.

There is no place for drugs, except for the temporary relief of symptoms, in the treatment of chronic indigestion in childhood. Cure can be brought about only by regulation of the life and diet. In severe cases the most minute attention to every detail is absolutely essential. In these cases recovery is a matter of many months, and often of years, while relapses are frequent. Recovery is, however, almost always possible, provided the treatment is careful enough and is kept up for a sufficiently long time.

2. Morse, J. L., and Talbot, F. B.: Diseases of Nutrition and Infant Feeding, p. 306.

3. Porter, L.; Morris, G. B., and Meyer, K. F.: Certain Nutritional Disorders of Children, Associated with a Putrefactive Intestinal Flora, Am. J. Dis. Child. **18**: 254 (Oct.) 1919.

ABSTRACT OF DISCUSSION

Dr. Lewis Webb Hill, Boston: I have seen many of these patients treated by Dr. Morse. His results are equaled by few, partly because he has had a great deal of experience, but mostly because he is willing to take infinite pains. That is the most important thing to remember in dealing with these chronic feeding cases, to take time with them, to pay the closest attention to details and to see the child often. Even then you will often not get nearly as good results as you would like to get. The relation of the intestinal bacteria to the food in the intestine must be considered. Escherich, in 1886, first brought forward the very important fact that the types of intestinal bacteria were dependent almost entirely on the food supply, and that if you changed the character of the food supply, the kinds of bacteria in the bowel could be changed accordingly. He distinguished between two broad groups of intestinal bacteria, the putrefactive, which live on protein food, and the fermentative, which live on carbohydrate food. If the intestine is infected with fermentative, carbohydrate splitting bacteria, withdraw the carbohydrate food on which they live and substitute protein food, in order to do away with the type of bacterium that is causing the trouble. If the intestine is infected with putrefactive, protein splitting bacteria, withdraw the protein food, and substitute carbohydrate food, in order to change that type around. This conception is most important in infant feeding, not only in cases of chronic indigestion in older children, but in the case of babies as well. There is absolutely no use in dealing with these cases to try to temporize. One should figure out very accurately what the child is going to have, and give the mother an ironclad diet list. All directions should be written. I use a card about five by eight inches, with the meal times written on it, breakfast, luncheon, dinner and supper; and then I put down under each one of those headings exactly what the child is going to have for each meal. That helps a great deal The mother can tack it up in the kitchen or pantry, and follow it from day to day. When the diet is changed, a new card can be given. Never give dietary directions by word of mouth for such cases as these; always write out the directions. Trust nothing to the judgment of the mother.

Dr. C. G. Grulee, Chicago: Dr. Morse has made an ironclad statement, that you cannot introduce bacteria into the bowel by giving them by mouth. That statement should be questioned. I do not know how you are going to account for a certain phenomenon unless you admit that bacteria when introduced by mouth do show evidences of growth in the intestine. Typhoid is caused by the introduction orally of the typhoid bacillus, and certain types of dysentery are caused by the introduction by mouth of certain types of the dysentery bacillus. I suppose Dr. Morse meant to say that by the introduction of the lactic acid bacillus by mouth, we could not obtain any therapeutic results in the intestine. My experience has been rather contrary to that. It is very hard to say in a given case to what results are due, because you will probably use several therapeutic agents, but there is no scientific reason why the lactic acid bacilli introduced by mouth cannot be taken up in the intestine. Dr. Morse may say that the gastric juice is bactericidal in action. It probably is, under normal conditions, and under abnormal conditions it probably is not. The latest bacteriologic results, as obtained by the duodenal tube, and examination of the gastric contents, show that there is a very definite relation between the bacteria found in the stomach and in the duodenum, with the various types of nutritional disturbance.

Dr. L. T. Le Wald, New York: I endorse everything Dr. Morse said. My work in studying children has been along the line of the roentgen-ray diagnosis in cases of indigestion which do not yield to ordinary methods of treatment. Unless one takes into account some of the congenital anomalies of the gastro-intestinal tract, treatment of what is considered a digestive disturbance will fail to relieve. There may exist a definite obstructive lesion, that can only be dealt with by knowing the exact nature of the mechanical obstruction. In a case of persistent vomiting we found a congenital hernia of the diaphragm, with the stomach in the chest cavity, and part of the time some of the stomach would protrude into the abdominal cavity, and produce a partial obstruction, and at other times it would slip entirely up into the chest cavity, and the child would go on without any vomiting for a period of several weeks or months. That condition of recurrent digestive disturbance was immediately explained by the roentgen-ray examination, and was relieved by an anastomosis between the stomach and the small bowel; the only case on record in which the condition has been successfully relieved by a palliative operation of this sort. A case of congenital syphilis of the stomach, with a very marked narrowing of the entire stomach lumen, would never have been recognized in any other way.

Dr. Isaac A. Abt, Chicago: I agree with everything Dr. Morse said. I was particularly impressed by the fact that he recognizes that indigestion may be produced by constitutional disturbance. I doubt whether there is such a condition as indigestion, pure and simple. I believe that indigestion is but one step in the general metabolic disturbance. If you are dealing with a baby who is suffering from an excess of starch, he first possibly has indigestion, but very soon he has some more profound constitutional disturbance. He has an injury produced by starch that may show itself either as an atrophy, or possibly with a general hydremia; so that I doubt very much whether one should stress entirely the indigestion without considering the nutritional side, the general metabolic disturbance. It is not such a complicated matter to cure or to remedy these food disturbances. It is simply a matter of finding out what the difficulty is, and diminishing the amount of food ingested, or altering the character of the food entirely. Examination of the stools in my experience is not the most important element in diagnosis. A little fat may be found in a perfectly normal stool; or a little starch even, without producing any pathologic symptoms.

Dr. John Lovett Morse, Boston: If I had read the whole of that part of my paper dealing with bacteriology, I do not think that Dr. Grulee would have criticized. I do not think that his arguments apply. I was talking about bacteria in the intestinal contents. Typhoid fever is a systemic infection and in infectious diarrhea the bacteria invade the intestinal wall. I am still prepared to defend my statement that it is impossible permanently to implant any bacteria in the intestine. They will stay only as long as they are given, unless the diet is changed. If the diet is changed, it is not necessary to give them. As to the examination of the stools: If the findings in the stools are interpreted correctly, they are often of great assistance. If the examiner thinks that a few fat globules mean fat intolerance or a few starch granules intolerance for starch, he will be misled. The child, the diet, the number of stools and the life must also be considered. That is, brains are necessary here, as elsewhere, in medicine.

Infant Welfare and the General Practitioner.—There is no reason why the average practitioner, who is always an obstetrician and pediatrician as well, should not conduct a well-baby clinic in his private work as an integral part of his practice. There is no reason why he should deny the new-born child that measure of medical supervision which to a greater or less degree he accords the mother during the nine months preceding the birth of the infant. The goal of good obstetrics should be not only the delivery of the living child, but that the child should continue to possess the attribute of living. Prenatal care by the average practitioner, even if many times indifferent and inefficient, is recognized by him as an inherent right of the expectant mother. Equally rightful is the prerogative of the infant during its precarious first year to have its share of medical supervision. The socially-minded individual is largely so through instinct. Like poets, and to be more concrete, like the successful public health nurse, they are born and but rarely made. Yet the dormant and potential social instinct may be awakened into a dynamic force through stimulation and cultivation.—J. S. Wall, *Am. Child. Hyg. A. Tr.,* Nov. 11-13, 1919.

MANAGEMENT OF ACUTE APPENDICITIS DEVELOPING IN LATTER WEEKS OF PREGNANCY

REPORT OF CASE TREATED BY CESAREAN SECTION AND APPENDECTOMY *

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For the purpose of discussing the various questions which arise in the management of acute appendicitis occurring at or about the termination of pregnancy, the following case, developing within the last three weeks of pregnancy, treated by cesarean section and appendectomy with drainage, is reported:

REPORT OF CASE

Mrs. F. W., aged 25, primigravida, married two and one-half years, was first seen in October, 1919, after having passed through six months of pregnancy uneventfully. Her last period began on April 21, 1919, and labor was expected between Jan. 25 and 28, 1920. The past history was unimportant except that the patient had always suffered from slight indigestion, but never from any pain or other symptom referable to the appendix. Physical examination and pelvic measurements showed her to be normal in every way. Oct. 29, 1919, she developed headache, nausea, "heartburn," vertigo and blurring of vision. The urine contained a small quantity of albumin and a moderate number of hyaline and granular casts. The systolic blood pressure was 115. There were slight pains in the lower part of the abdomen. She was kept in bed on milk diet and was subjected to free purgation. All symptoms cleared up rapidly, and on the tenth day the urine was free from albumin and casts. The systolic blood pressure registered 100. The attack was considered to have been one of toxemia of renal origin.

January 4, patient was awakened about 1 a. m. with nausea and vomiting; she was seen at 4 a. m. The pulse and temperature were normal; she complained of slight pains over the lower abdomen; uterine contractions could be seen and felt. There was no vaginal discharge. She was given ⅛ grain of morphin sulphate and 1/200 grain of scopolamin hydrobromid hypodermically, and soda water by mouth.

At 9 a. m., vomiting was persistent and severe; the temperature and pulse were normal; no tenderness was elicited over the abdomen, but the patient complained of intermittent cramping pains. Milk of magnesia, one-half ounce, was given, and this was followed by a soapsuds enema with only fair results. The systolic blood pressure was 105; the urine showed a few hyaline casts, but no albumin; the leukocyte count was 21,000. The vomiting continued throughout the day, and by 9 p. m. the temperature was 99.2 and the pulse, 110. The cramping pains were still present.

January 5, at 9 a. m., all symptoms had improved except the vomiting. The vomitus contained bright red blood, and intense burning was complained of along the course of the esophagus. In the evening some tenderness was noted in the right lower quadrant of the abdomen, and the leukocyte count was 22,000. Vaginal examination revealed the head well down in the pelvis, with the os thick and admitting only one finger.

The continuation of vomiting, with a high leukocyte count and the absence of definite onset of labor, together with a tendency to locate pain in the right iliac fossa, raised the question of appendicitis.

On the morning of January 6, the temperature was 99 and the pulse, 90. There was no abdominal pain or tenderness. The vomiting had continued, however, and the leukocyte count was 21,500. The urine was still free from albumin; it contained only a few casts, and no pus or blood.

At 3 p. m. a consultation was held. After considering the history and after careful examination with findings about the same as noted above, we made this analysis of the situation:

1. Although the patient had suffered from toxemia of renal origin two months before, the present urinary findings did not justify such a diagnosis at this time.
2. The persistent vomiting, with high leukocyte count, and with a tendency to refer pain and tenderness to the right iliac fossa was very suggestive of appendicitis even in the absence of material elevation of temperature or increase in pulse.
3. The patient's general condition, with incessant vomiting, demanded the termination of the pregnancy.
4. We decided on cesarean section, to be followed by examination of the appendix, with its removal if found diseased.

At 6 p. m., January 6, sixty-six hours after onset, under gas-oxygen anesthesia, the uterus was delivered and carefully packed off from the abdominal cavity. The fetus was extracted, the uterine wound closed, and the uterus returned to the abdomen and still further protected by packs. The abdominal incision was retracted and the appendix located well down in the pelvis. It was acutely inflamed, almost gangrenous, covered with lymph but free from adhesions. The appendix was removed, a large cigaret drain was carefully placed through a stab wound in the right iliac fossa, and the laparotomy wound was closed.

The patient made an uneventful recovery.

IMPORTANCE OF PROMPT OPERATION

The frightful mortality of neglected appendicitis is recognized by every one, and the advisability of prompt operation on the development of an acute attack in the nonpregnant patient needs no discussion at this day.

The higher mortality which has been attributed to acute appendicitis during pregnancy is not to be charged to the appendicitis or to the pregnancy so much as to the failure to recognize the disease promptly and to treat it along well established surgical lines.

The failure to recognize the disease in the latter months of pregnancy may be due to difficulty in diagnosis, which is brought about by the enlargement of the uterus, with attendant changes in the relations of the intra-abdominal organs.

The delay in prompt operation is most often due to the obstetrician's hesitancy in undertaking any serious operation which may be followed by abortion or premature delivery, and, to a very great extent, to the attitude of those obstetric teachers, who, until recently, have held that while operation is indicated in all cases occurring in early pregnancy, only in perforative or gangrenous cases should operation be performed during the last four months.

No teaching more dangerous to the pregnant woman with appendicitis could be held, and we heartily approve the position of De Lee,[1] who states in his latest work that "appendicitis during pregnancy should always indicate immediate operation, and that even in cases of doubt, operation is the safer course;" of Kelly [2] that "because of the well recognized clinical severity of any attack of appendicitis associated with suppuration during pregnancy, prompt interference is demanded as soon as a diagnosis is clearly made," and of Hirst,[3] who urges prompt operation and points out that "if an attack occurs late in pregnancy, in con-

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. De Lee, J. B.: The Principles and Practice of Obstetrics, Philadelphia, W. B. Saunders Company, 1915.
2. Kelly, H. A., and Hurdon, Elizabeth: The Vermiform Appendix and Its Diseases, Philadelphia, J. B. Lippincott Company, 1909.
3. Hirst, B. C.: A Text Book of Obstetrics, Ed. 7, Philadelphia, W. B. Saunders Company, 1912.

sequence of intense congestion and increased intra-abdominal pressure, it is likely to be very severe, with early virulent peritonitis." Findley,[4] in a paper before this section in 1912, quoted the statistics of Wagner, who gives the mortality in nonoperative severe cases complicating pregnancy as 77 per cent., as contrasted with 6.7 per cent. in cases of all grades of severity in which operation is performed within the first forty-eight hours, and expressed the belief that reduction in mortality would no doubt occur if these patients were operated on within the first twenty-four hours.

John B. Murphy, in discussing Findley's paper, emphasized two facts: First, when the condition was diagnosed early and remedied early the mortality was almost nil; second, when the condition was diagnosed late the endeavor to remedy was also late, the mortality was colossal. He pertinently asked: "If we can diagnose the condition early, what is the excuse for waiting?"

In the earlier months of pregnancy, appendicitis is not infrequent; its diagnosis offers no special difficulties, and operative technic does not differ from that employed with the nonpregnant. Abortion occurs very infrequently, and there is little likelihood of its happening with the patients operated on early, without drainage, and with the minimum amount of intra-abdominal manipulation.

Reported cases of acute appendicitis developing at or very near the end of pregnancy or with the onset or in the course of labor are rare, and the difficulties of diagnosis may be great.

CASES IN THE LITERATURE

In reviewing the literature as found in the abstracts of THE JOURNAL since 1912, only four such cases are noted, and only two of these are abstracted or reported in full.

In Wallace's case[5] at full term pregnancy, the attack began on Saturday night and was thought to be the onset of labor; on Sunday afternoon appendicitis was diagnosed; on Monday at 1:30 p. m., about forty hours after onset, the perforated appendix was removed and drainage was instituted. On Tuesday at noon, twenty-two hours after the operation, labor set in and was completed at 12:30. Uneventful recovery took place.

In Grattan's case,[6] in which the expected date of confinement was July 18, the onset of the attack occured at 1 a. m., July 15, with epigastric distress; at 7 a. m., July 17, abdominal pain in the right iliac fossa caused suspicion of appendicitis; also at the same time definite dilation of the cervix, with characteristic intermittent girdle pains indicated the onset of labor. Operation was performed, 12:30 a. m., July 18, about seventy-two hours after onset; a gangrenous appendix was removed, with drainage of the abdomen. Labor pains came on half an hour after the regaining of consciousness, and labor was completed at 10 a. m., the 18th. The mother recovered after a very stormy convalescence, but the baby died.

PROBLEMS THAT ARISE

When appendicitis develops at or near the end of pregnancy, several serious problems arise: (1) that of diagnosis; (2) the question of operation; (3) whether or not pregnancy shall be terminated; (4) the question: Is the better plan to empty the uterus before removing the appendix, or to remove the appendix first? (5) What method shall be employed in terminating pregnancy?

Diagnosis.—Some time must inevitably be lost in deciding that any pain present is not due to the onset of labor alone, but may be due to some cause outside the uterus. By careful examination, one must exclude hematogenous infection of the kidney, pyelitis, ureteral obstruction, gallbladder disease, and inflammatory affections of the appendages. Repeated observations must be made of pulse, temperature and leukocytes. Any tendency whatever to refer the pain to the right iliac fossa, or the eliciting of any tenderness or rigidity in this region, must be given special weight in view of the fact that these signs are frequently obscured by the increased size of the uterus.

Operation.—From what has gone before, we have made our position clear that operation is indicated when a diagnosis has been clearly made. In some instances, operation will, of necessity, be exploratory in character and may have to be undertaken on the ground that severe, persistent abdominal pain, not relieved by the usual simpler remedies, demands operative investigation, bearing in mind the opinion of De Lee, already quoted, that in case of doubt operation is the safer course.

Shall Pregnancy Be Terminated?—At this late period, the life of the child is not endangered by terminating pregnancy, and we believe that this should be done.

Neither Cragin[7] nor Williams[8] favors the emptying of the uterus from above or below in dealing with the appendix.

Hirst[3] thus states his position:

> If there is any reason to suspect suppuration, the median incision is required in operating after the fourth month, and the uterus should be lifted out of the abdominal cavity to detect possible areas of suppuration deep in Douglas' pouch or on the left side. If it is necessary to deliver the uterus from the abdomen after the seventh month, it should be emptied by cesarean section before it is returned. If drainage is required, the uterus should usually be amputated.

As to whether the uterus should be emptied first or the appendix removed, it seems to us better to terminate labor first and remove the appendix immediately thereafter. All writers agree that the removal of an appendix in the presence of the full term uterus is usually very difficult. Furthermore, if the placing of the drains is necessary, the subsequent change in intra-abdominal relations brought about by uterine contractions, and by the diminution in the size of the uterus after delivery, may so disturb the operative field as to cause the spread of infection to all parts of the abdomen, while the maintenance of a quiescent condition would allow the formation of protective adhesions with subsidence in intraperitoneal inflammation. With the uterus empty and contracted, the appendix may be located and removed with greater ease, and there will be but little danger from interference with the peritoneal toilet after the operation is completed.

Method by Which Pregnancy Shall Be Terminated.—No slow or uncertain method should be employed. While a slowly induced labor is in progress, suppura-

4. Findley, Palmer: Appendicitis Complicating Pregnancy, J. A. M. A. **59**: 612 (Aug. 24) 1912.
5. Wallace, C. J.: Ruptured Appendix at Full Term Pregnancy, J. A. M. A. **64**: 739 (Feb. 27) 1915.
6. Grattan, J. F.: Gangrenous Appendicitis Coincident with Labor, Surg., Gynec. & Obst. **29**: 457 (Nov.) 1919.
7. Cragin, E. B.: The Practice of Obstetrics, Philadelphia, Lea & Febiger, 1916.
8. Williams, J. W.: Obstetrics, New York, D. Appleton & Co., 1917.

tion and peritonitis may be progressing much more rapidity. If the patient is a multipara and the obstetrician is sure that he can accomplish delivery promptly by accouchement forcé, this may be considered. If the patient is a primipara, or if there is any doubt about immediate delivery in the multipara, cesarean section, with appendectomy, should be performed.

CONCLUSION

We are entirely opposed to the teaching that operation in the latter months of pregnancy should be reserved for perforative or suppurative cases.

The pregnant woman at this period of pregnancy should be given the same chance of recovery that is offered the patient who develops appendicitis in the earlier months, namely, an early diagnosis and prompt removal of the appendix, not after but before perforation, gangrene or peritonitis has developed.

Jefferson County Bank Building.

ABSTRACT OF DISCUSSION

DR. ARTHUR H. CURTIS, Chicago: I agree with Dr. Mason that every actively diseased appendix must be removed irrespective of the stage of pregnancy. Not only the acute appendix, but every appendix should be removed, because one never can tell when serious complications may arise. As to the advisability of performing a cesarean section on these patients: If the appendix is accessible, in the absence of distinct contraindications for cesarean section, I would be inclined to leave the uterus without manipulation. I see no reason why, if we close the abdomen thoroughly and carefully, labor should not go on in a normal way. If we perform cesarean section we are apt to have trouble from unsatisfactory closure of the uterine or abdominal incision. In such cases it would be a pretty good plan for the doctor to consider local anesthesia. If ever there is need for local anesthesia, it is in such cases as these. If we decide not to take out the fetus and if the uterus is left alone, we should be extremely careful in the closure of the abdominal wound. Under such circumstances it is best to use strong tension sutures.

DR. FRANCIS LE S. REDER, St. Louis: It is well to give instructions to the woman who expects to become pregnant to subject herself to the most thorough examination before conception occurs. If there are any evidences of former attacks of appendicitis, it is better to remove the appendix in the interim than to allow her to go on and take this risk. Up to the fourth month of pregnancy, the appendix can be removed with comparative safety, no matter what its condition. From the fourth month to the seventh month there is some danger. From the seventh month on, the situation is a very complicated one and calls for the exercise of good judgment on the part of the attending physician in determining the treatment. It has been my experience that appendicitis at this time in a pregnant woman is not of the same virulence as when it occurs prior to that time. Although I have urged operation in a number of such cases, it was declined and these women went on to full term without any untoward consequences. If it is extremely dangerous to this woman's life to allow the condition to go on, what should be our method of procedure? I am inclined not to be hasty; to watch and wait; as long as the patient remains within the limits of safety, as far as your surgical judgment will dictate, no surgical intervention becomes necessary. If the case goes on to suppuration, and the pus can be palpated in the culdesac of Douglas, puncture through the rectum and evacuation of the pus, will sometimes suffice and not disturb the pregnant uterus. I have had two successful cases treated in that way. Ventral hernia is a secondary matter. The safety of the woman must be considered primarily. The hernia can be repaired later when the woman is in a safe condition for such repair

DR. DAVID ROSS, Indianapolis: Whether to operate for appendicitis during pregnancy is a matter of individual judgment. However, what impressed me most in the paper was the suggestion to do a cesarean section in cases of rupture of the appendix. Some years ago the late Dr. Beckman answered the question: "When is it safe to do a multiple operation?" by saying that he could tell better when it was safe not to do one. He advised never to operate in the presence of an infection or even when infection was suspected. I certainly would not submit any woman to a cesarean section in the presence of a ruptured appendix.

DR. JAMES M. MASON, Birmingham, Ala.: One-half the textbooks on obstetrics advise that when appendicitis occurs early in pregnancy, the appendix should be removed; the other cases should be left alone unless suppuration occurs. My position is—no matter what the stage of the pregnancy, if appendicitis develops the pregnant woman is in as dangerous a condition as the nonpregnant woman would be. No one can tell which appendix is going to rupture and which is not. The accepted surgical decision is that patients with acute appendicitis should be operated on as early as possible. Murphy said we can diagnose the cases early and we should operate early. At the present day cesarean section is exceedingly simple and safe. If you get a case of acute appendicitis in a pregnant woman and want to terminate the pregnancy that way, it is a simple matter to open the abdomen, close the uterine wound, remove the appendix, and, if there is no suppuration, close the appendiceal wound. Late in pregnancy, a few hours before labor is going to come on, it is very much safer to do as Hirst says, open the abdomen, remove the appendix, amputate the uterus with every chance of the patient getting well with free abdominal drainage. If you leave the uterus intact and do an appendectomy with drainage, there is great risk of labor coming on two or three days afterward and to have a localized peritonitis where the contractions of the uterus may break up adhesions. If you do a transperitoneal cesarean section, there is no reason why an extraperitoneal section cannot be done and appendectomy carried out. As for the use of local anesthesia, it has a great place in cesarean section, but gas-oxygen, especially if the woman is suffering from nausea, is the best anesthetic to use. Concerning the virulence of the infection, the cases I have seen early in pregnancy were subjected to operation before they were far advanced. However, Murphy, Kelly, Hirst and many others have said that if acute appendicitis develops late in pregnancy we may look for the rapid spread of virulent appendicitis. I believe that if appendicitis occurs in the last month of pregnancy, termination of labor and removal of the appendix is indicated.

CONTROL METHODS IN THE TREATMENT OF DIABETES MELLITUS*

SOLOMON STROUSE, M.D.
CHICAGO

This discussion presents the treatment of diabetes mellitus from a point of view not usually employed in consideration of the subject. Diabetes mellitus is a much misunderstood disease, but the difficulties of treatment are often greatly exaggerated. Difficulties have arisen mainly for two reasons: First, the course of the untreated or poorly treated disease is confounded with the results of treatment; second, metabolic investigations have been confused with practical therapy. Modern improved methods of treatment have increased the length of life of the diabetic and have cleared the clinical picture of the disease as treated under improved conditions. The improved methods mainly have been applications of the metabolic investigations of laboratory and ward; but successfully to treat an individual case does not necessarily imply knowledge of these investigations if their appli-

* From the Medical Clinic, Michael Reese Hospital.
* Read before the Chicago Medical Society, May 5, 1920.

cation is understood. A patient with diphtheria may recover even though the physician who administers antitoxin never heard of Behring or knew that George Washington died of diphtheria.

One reason why the treatment of diabetes has been difficult is the apparently inherent difficulty in conceiving of dietetics as a practical procedure on a scientific basis. Diabetes is a functional disease of the pancreas primarily involving carbohydrate metabolism and ultimately extending to the metabolism of fat and protein, and treatment depends on the degree of functional impairment. A natural analogy to cardiac conditions is immediately seen. In aortic insufficiency, for instance, there is no cause for treatment until there is an actual functional disturbance of the heart as evidenced by signs of decompensation, either early exertion dyspnea or a final complete break, perhaps involving all the organs of the body. No one would attempt to treat a patient with an aortic diastolic murmur who has no signs of decompensation in the same way as he would treat the same patient two or three years later with a break.

The only essential difference in therapeutic principle between diabetes mellitus and aortic insufficiency is that diabetic therapy is practically confined to food, and diet is traditionally more difficult to understand than is digitalis. Just as there are methods of control in the handling of cardiac cases, so there are similar, if not identical, methods of control in the treatment of diabetic patients: methods of control which are simple and logical, which change the treatment of the disease from a hit and miss affair with uncertain results to a scientific procedure of almost sure results in most instances. I shall discuss these methods of control and show by case reports how improved therapeutic results can be obtained by the practical application of some surprisingly simple procedures.

IMPORTANCE OF THE HISTORY

Even at the risk of repeating facts known to all, or even of laying undue emphasis on what may seem apparent, experience leads me to say that the first and most important method of control lies in a careful history and physical examination. In this respect diabetes differs in no way from other diseases of internal medicine, and yet time and again I have seen treatment of the diabetic undertaken by the physician who had made no effort to ascertain any facts in his history, which from the very nature of things must have influenced his treatment had they been known. For example, analysis of case records shows that diabetes in the young is usually the severest type of the disease, but that when the young diabetic has a family history dotted with diabetic relatives his chances are improved. Further analysis shows that the later in life the disease starts the milder it is likely to be, and a still more important fact can be brought out from knowledge of the length of time a patient has been sick, the nature of his symptoms, and the kind of treatment he has undergone. To emphasize these points, I will cite two cases:

Case 1.—A man, aged 22, was seen in February. Sugar was discovered accidentally by his father, a physician, who noted a markedly increased appetite and increased thirst when the boy came home from college for a vacation. The specimen showed a specific gravity of 1.050, an excretion of about 6 liters containing 8 per cent. sugar and a trace of acetone. The blood sugar was 0.28 per cent. Everything pointed to a severe case, but his history showed, first, a family history of diabetes, and secondly, a short duration of his own symptoms. On the basis of these two facts I volunteered the information that treatment would not be difficult and, indeed, it took only three days to get this boy sugar free and to keep him so.

Case 2.—Contrast with this a woman seen several years ago, who on the way from New York developed erysipelas. When I saw her she was quite sick, with high temperature, fast pulse and marked toxic symptoms. The urine contained more sugar, more albumin, more acetone and more diacetic acid than I had seen in a long time. The woman was too sick to give much history, and the natural interpretation of the case would have been that some of her urinary abnormalities had been caused or increased by her erysipelas. However, to quote her husband, "she'd had all those things for years and had remained in apparent perfect health despite this abnormal urine." Practical judgment based almost entirely on history then indicated the therapeutic procedure, which was definitely to make no radical changes in the woman's method of living. She recovered. However, had we not taken the history into consideration, and had we instituted treatment on the procedure indicated by the urinary findings alone, it seems to me we would have spoiled any chances for recovery this woman may have had.

PHYSICAL STATUS OF THE PATIENT

In recent years when men have spoken and written of this and that kind of "cure" for diabetes, it has been my experience that dangerous practices have resulted from the indiscriminate use of any particular method for all patients with diabetes. It is no more logical to give every diabetic a set of pink and blue pills than it is to give every diabetic the same diet list. When starvation first became fashionable other things were neglected, and in the hands of men less skilled than the advocates of the starvation method many a patient with exophthalmic goiter, pulmonary tuberculosis, nephritis or obesity was made definitely worse. No treatment of diabetes should ever be started unless everything possible is known about the physical status of the patient. The individual with a big reserve of fat offers an entirely different therapeutic problem than the thin, highly nervous woman with tachycardia, or the older person with arteriosclerosis and albuminuria. The records of two patients will illustrate how the physical status indicates the proper procedure:

Case 3.—A man, aged 50, who had diabetes of five years' standing, had within the last few months lost an undue amount of weight and was coughing. Physical examination revealed a rather large area of pulmonary tuberculosis in the right lung. He was put in the hospital and his diet was never allowed to go beyond his maintenance level (Mosenthal). He was kept at complete rest, and very gradual methods were employed to reduce the glycosuria. It took a long time, but within four weeks the pulmonary condition was quiescent, the urine was normal, and his general physical condition excellent. He left the hospital in better shape than he had been in for years. But several months later, in his own Canadian town, he transgressed his diet, and sugar reappeared in his urine. To quote the patient's words, the doctor did not examine him, but starved him to death. The expected happened. He became sugar free, but his cough and pulmonary findings increased. He lost weight, and when I saw him a month later he was a wreck of his former self.

Another case illustrates the value of the physical examination:

Case 4.—A stout, highly nervous woman, aged 40, with diabetes of ten years' standing, with albuminuria and acetonuria, asked about five years ago that I put her under the starvation treatment. The result was a quick and dangerous acidosis, to overcome which glycosuria was again produced, and the patient was in no better condition than before treatment was started. A few months ago the same patient was

subjected to an intense nervous shock and decided to enter the hospital for a period of complete rest. Because of her excess weight the only food change made was a complete elimination of fat, with the result that she became sugar free, acetone free and albumin free, for the first time in ten years. This was unquestionably due as much to the complete mental and physical relaxation of the high tension patient as to the removal of fat from her food.

OTHER ELEMENTS TO BE CONSIDERED

If these two factors in treatment, namely, history and physical examination, are clearly understood and their importance not neglected, the rest of the treatment of the diabetic is a matter of careful correlation of clinical condition, food intake, and the results of some simple laboratory findings. The identification of the reducing substance as glucose is necessarily the first step in the laboratory work. The amount of the reducing substance is even less important than certainty regarding its nature. The presence or absence of signs of acid intoxication then follows, and the tests for this are easy clinical matters. The sodium nitroprussid and ferric chlorid urinary tests, with or without ammonia determination, give information of the greatest value. But supplementary evidence of acidosis can be obtained by use of the Marriott apparatus for testing alveolar air. This test is clinically accurate, and is simpler to perform than a stain for tubercle bacilli or even than an accurate white count.

As a matter of fact, the treatment of diabetes needs no more elaborate laboratory study than is here outlined. As I have already mentioned, we must distinguish between the scientific study of the metabolic disturbance in the disease diabetes and the actual treatment of the individual patient with diabetes mellitus. The former requires well equipped laboratories, well trained technicians, and men interested in and anxious to pursue such a study. But in practice such a study is actually far removed from the absolute needs of the patient. It is true that the advance of knowledge concerning the disease depends on such intensive investigations, but it is not necessarily true that the course of treatment of the average diabetic need be influenced by the lack of opportunity for this intensive work.

Nothing has been said concerning blood chemistry, but the study of blood sugar and of other constituents of the blood in diabetes has formed a chapter of the greatest interest and certainly has furnished information of the greatest value. Hyperglycemia is always present in a true diabetic when he is passing sugar, and a study of the blood sugar will show that in the course of treatment blood sugar changes are likely to precede urinary changes and in this respect furnish information of actual practical therapeutic value. The same thing may be said of a study of the retention products causing acidosis in the diabetic. And the blood sugar study has become so simplified of late that it can be carried on in a comparatively easy way in a well equipped office.

Although it is not my purpose to extend this discussion into the details of management of the individual diabetic, I will abstract two cases in which therapy was improved by ascertaining relative values:

CASE 5.—A lad, aged 15, living out of town, who had been under observation for two years and was exceedingly intelligent, found that a sudden drop in his tolerance had occurred which he was unable to explain. He sent his diet list and twenty-four hour urine. The urine contained sugar, but no acetone bodies. Analysis of the diet compared to his tolerance diet when he left the hospital two years before showed considerable excess of fat. Within forty-eight hours after entering the hospital the patient became sugar free on exactly the same diet which he had had except that fat was considerably reduced. His blood sugar also became normal and he left the hospital in a short time with considerably increased tolerance. This case illustrated the necessity of analyzing food intake.

CASE 6.—A woman, aged 61, with diabetes, was operated on for acute appendicitis. Statistics show that there is nothing more dangerous to the life of the diabetic than an acute appendicitis. The fear of the dangers caused the physicians to give rather large doses of carbohydrates and of alkali in the hope both of avoiding acidosis and of treating it if it occurred. The patient developed a pelvic abscess, and had a considerable glycosuria, but no acidosis, and a very marked gastro-intestinal upset. When I saw her it was perfectly apparent from her history that her diabetes was mild; the urine showed no acetone bodies, and the blood sugar indicated that her body was pretty well saturated with carbohydrate; the alveolar air determination was normal; and she was vomiting all the food given her. The line of treatment was pretty definitely indicated. For a period of twenty-four hours nothing was given by mouth except ice pellets, the bowels were emptied by an enema, and then she asked for food. The urine still showed some sugar, greatly reduced, however, and there was still no acidosis. Then her diet was gradually built up, but never high enough to produce glycosuria. The patient made a complete recovery, and left the hospital to all intents and purposes a normal woman with a fairly liberal diet.

If I have made myself clear so far, it should be a comparatively simple matter to plan a set of principles for guidance in the treatment of the individual diabetic. It will be evident that the first and perhaps most urgent need of proper therapy is individualization of the patient, individualization based on a combination of the data obtained from the methods of control already outlined. The patient with a mild case of diabetes will immediately classify himself as one who on an excessive amount of carbohydrate intake passes sugar without acetone bodies and without marked historical or systemic changes. The severe case will likewise fall into its class from actual evidence, such as age at onset, rapid course, loss of weight, perhaps difficulty of being rendered sugar free, and clinical and laboratory signs of acidosis. The second principle is to get the patient sugar free without producing or increasing an already existent acidosis. In the mild case this is done simply enough by attention to carbohydrates, which, gradually reduced, will almost invariably result in an aglycosuric urine. In the severe, or even in the doubtful cases, in the presence of acidosis or threatened acidosis, the cautious physician will leave the carbohydrates alone and devote his attention to the fats. It is, indeed, surprising how often elimination of fats in the diet results not only in immediate reduction of acidosis, but also in the diminution or even disappearance of glycosuria. It is true that some of the more severe cases, already rendered free from signs of acidosis, require the complete absence of food before sugar disappears. Any patient, no matter how severe his case, can and should be made aglycosuric. And it is only by recognizing the truth of this that it is possible to fulfil the third requirement in treatment, namely, increase in the patient's food tolerance. It is a rule of almost absolute certainty that as a diet is reduced, so is it built up.

Only one more matter need be discussed, the control of which is as necessary for successful therapeutics of the diabetic as is anything I have thus far discussed: the matter of intelligent cooperation by the

patient or by some member of the patient's family. If we wish to make any permanent impress on the diabetic's life, we cannot do it by a two or three weeks' stay in an institution, no matter how scientific our efforts or how brilliant our results. The patient must be told what is being done for him, and he must understand what is being told. There is no use in talking in the language of the laboratory to a patient who understands only the language of the kitchen. We must either teach him the new language or translate our Greek into understandable English.

CONCLUSIONS

This bird's eye study of the diabetic problem justifies these conclusions:

1. The diabetic, like any other patient, must be considered as an individual.
2. The history, physical examination and laboratory data are equally important in establishing a basis for treatment.
3. Treatment consists of rendering a patient free from sugar and acetone bodies and increasing his tolerance.
4. The patient's cooperation is essential to any permanent results.
5. Under such a plan of treatment the lives of some diabetics will be saved, of many will be prolonged, and of most will be freed from distressing complications.

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RELATION OF ACQUIRED FOOD DISLIKES OF CHILDHOOD TO DISEASES OF MIDDLE LIFE*

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What I am to present is not a hypothesis formulated from a study of case histories, nor is it a set of statistical data gathered to substantiate a preconceived theory. It is merely a conclusion that recently unfolded itself in my mind as an illuminating interpretation of general observations of the effect of food on life, first as a general practitioner, who was much baffled by the metabolic disorders of middle life, and later as a pediatrician who observed the tendency of many children to form positive dislikes for certain of the essential foods.

The very probable relationship between the food dislikes acquired in childhood and the pathology of middle life, while not capable of immediate scientific demonstration, should, I believe, be borne constantly in mind by both the pediatrician and the internist. The general evidence which appears to establish such a relationship is what I desire to present.

That which is of great importance in the rational interpretation of the clinical phenomena of nutrition is the background against which such phenomena are viewed. Therefore, I shall first sketch the background, then set up the general evidence of observation, and then bring them into focus from a final conclusion.

Whatever be the nature of life, for practical scientific purposes the whole of it can be expressed in terms of matter and energy. Huxley viewed a living organism as a whirlpool through which there flowed a never-ending stream of matter and energy. Certain it is that the flesh of us, created out of the stuff of which our environment is made, is no more than a stabilized system of colloidal matter within which glows the protoplasmic fire of life. Visualized against the deep, broad background of biologic chemistry, the human organism becomes revealed as a fearful complexity of interrelated cellular systems, of continuous atomic and molecular activities and energy transformations, of actions, reactions and interactions, between known and unknown catalytic agents, hormones, enzymes, etc.

With a speed and orderliness that defy laboratory imitation, the life processes go on so long as the inflow of raw material is unbroken. Broadly speaking, to this inflow of raw material, of air, water and food, we give the name nutrition. And we pediatricians are nutrition experts; we stand at the headwaters of life, as it were, and observe the quality and quantity of raw material that begins its flow into the new-born. We know the effect of food on life. We know it better than the internist can ever know it, for we face the simple problem. From birth to adolescence we watch the immature human organism mold itself to its food. We are not confused by a multiplicity of etiologic factors, as is the internist. The baby reflects his diet. A balanced diet means a balanced baby; an unbalanced diet, an unbalanced baby.

We particularly are familiar with the pathologic condition that comes from the lack of essential food elements. And here is a point I wish to stress: We know that this pathologic condition is not always the *immediate* effect of a deficient diet. Put 100 babies on an exclusive diet of sweetened condensed milk and visualize the result. A few will thrive and reach the age of 11 or 12 months before showing signs of malnutrition; others will reach the age of 9 or 10 months in fair health and then show signs of rickets; others will become rachitic as early as the third month; after a few months, one or two may develop scurvy; others will do famously for several months and die suddenly from an acute sugar intoxication; and all along the line from the third month on, a large percentage will sink into a hopeless state of marasmus from persistent vomiting or fermentative diarrhea.

These children sicken and perish, not from what they eat, but from the constant lack of essential food elements and the absence of those mysterious "chemical messengers" which are so vitally important in the laboratory of life. The effect of these deficiencies is, in most cases, gradual and cumulative, weeks or months elapsing before the infant machine shows serious crippling or a sudden explosion, as in acute sugar intoxication.

We know, too, that it is not uncommon to encounter a feeding case that has been malfed to the point at which permanent damage seems to have been done to its chemical machinery; and though the needed food elements are supplied, the capacity for their digestion and assimilation are but partly restored and the child remains a weakling.

From observation of the dietary habits of adults and children in general, three facts stand out prominently:

1. Almost without exception, the adults and children who possess the red blood and vigor of health are those who eat a variety of foods. They may eat

* Read before the Section on Diseases of Children at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

irregularly and consume much of what is commonly called "trash," but their appetites for the essential foods are unimpaired. Rarely do I encounter such a healthy adult or child who dislikes milk, eggs, fresh meats or green vegetables. The more I have inquired as to the diets of these healthy persons, the more I have noted the almost constant presence of one class of food, the green vegetables. Judged from its almost constant seasonal presence in the diets of healthy Southerners, the green vegetable ranks high among the essential foods, probably above milk after the fifth year. Certainly, a diet that excludes both green vegetables and milk comes dangerously close to being deficient; if fresh meats are also excluded, I believe that such a diet will lead to serious metabolic disorders if persisted in over long periods of time.

2. A great many children, perhaps the majority, appear to be able to while away the between meal hours with ice cream cones and all-day-suckers without impairing their appetites for the essential foods. With such children we pediatricians have little to do except to have them pointed out to us as numerous and glaring exceptions to our rigid dietary rules. However, we have a great deal to do with the large percentage of children who do not fall into this favored class.

In its first year the well fed, rapidly developing baby gets no nourishment except from the breast or bottle. His diet is well balanced and he shows all the enviable characteristics of physical and mental equilibrium. In the second year he comes into possession of language, of his locomotive mechanism and of the strong desire to taste everything in his immediate environment. Then comes the anxious question, What may the baby eat? If parental discipline is strong, all may be well; but if the entire household bows down in idolatrous obedience to every whim of his adventurous palate, the baby comes more and more to satisfy his hunger with those foods that taste best, and so his dietary habits are formed, ranging from mild dislikes for essential foods to alarming perversions.

Many times I have seen scrawny, anemic, irritable little children slap aside the life giving foods and cry for candy, pickles, catsup or coffee. They possess a craving for these things to the exclusion of all others.

Perhaps the commonest type of feeding cases I see is that of children from 4 years up who live almost exclusively on carbohydrates. All present varying degrees of the same clinical picture, lassitude, irritableness, secondary anemia and constipation—in short, chronic intestinal indigestion. I know in some cases, and have been informed by the parents in others, that the majority of such children were in perfect health in the first and second years of life, with normal appetites and normal digestion. But somehow they gradually had turned more and more to the palatable sweets and starches, and developed a mild or positive dislike for milk, eggs, fresh meats or green vegetables.

The treatment of these cases is simple enough. We need not remove the starches and sweets from their diet. Regular feedings and the addition of that which is lacking is all that is necessary to restore health. But we know too well the difficulties encountered in a good percentage of such cases, that nothing short of complete and permanent removal from home environment and influences will effect a cure. And we know that some of these patients do well for a time, or as long as maternal discipline obtains, and then gradually lapse into their old habits of diet.

Most of these carbohydrate children do not suffer any serious impairment of health during childhood. Owing to the flexibility and adaptability of youth, they pass into adolescence in fair shape, slightly anemic, perhaps, inclined to be constipated and vaguely conscious of the presence of abdominal viscera that now and again fail to function in their accustomed, automatic harmony.

3. A surprising number of sufferers from the diseases of middle life confess to food dislikes that date back to childhood. I refer only to those functional and organic disturbances which have no bacterial etiology and which clearly are brought about by some fault in the body metabolism. I have questioned many of these "chronics" who haunt the physicians' offices, likewise many adults of unhealthy appearance. It is a difficult matter to learn exactly what an adult eats, but comparatively easy to determine his dislikes. By getting at their food dislikes I have found that the great majority of those middle aged sufferers I have questioned have lived for years on deficient diets. They have always liked the carbohydrates, but eat sparingly or not at all of milk, eggs, fresh meats and green vegetables. Many who say they like vegetables refer to potatoes; and those who say they like meat refer only to ham and bacon.

CONCLUSION

We are familiar with such pathologic entities as rickets, scurvy, pellagra and beriberi, which result from deficient diets over varying periods of time, but we do not, I believe, recognize often enough that the deficient diet is the underlying foundation of more varied and mysterious ills of man than any single causal agent in the whole range of pathology; that of all etiologic factors it is the most difficult to recognize in its masked and remote manifestations, in its gradual, cumulative action on organs and tissues over long periods of time. I believe that in the acquired food dislikes of the child, in its early start on an unbalanced diet, in the long continued total or partial absence of essential food elements we see the explanation of many of the metabolic disorders of middle life.

I believe it to be highly probable that not a few cases of such middle life affections as hypertension, chronic Bright's disease, visceral ptosis, gastric and duodenal ulcers, etc., are but the remote, graver manifestations of that blighting etiologic factor, the symptoms of which we pediatricians are quick to recognize in their incipiency—the deficient diet. Certainly we see quite a few older children who present mild or pronounced symptoms of malnutrition from no other reason than that they have acquired dislikes for essential foods. Some of these children cannot be made or trained to eat properly, and pass out of our care. If they do not in later life develop serious metabolic disorders, by all the laws of life they ought to.

So convinced am I of the ultimate harm that is foreshadowed in the food dislikes of childhood that I have come to view the future welfare of these patients with something of the grave concern with which I look on a valvular heart lesion or a scarlet fever nephritis, for the tendency of such children is to relapse into old habits of diet. The carbohydrate diet does not contain the potential elements essential to longevity, nor is the human machine capable of

making its normal life cycle on an unbalanced fuel. Just as certain as the child passes into adolescence on a deficient diet and with the first faint blight of malnutrition on him, just that certain will he some day face the internist to learn the rigid conditions under which he may hope to eke out the remnant of a salt-free and joy-free existence.

ABSTRACT OF DISCUSSION

DR. WILLIAM WALTON BUTTERWORTH, New Orleans: Dr. Rice presents a new viewpoint concerning some of the disturbances of nutrition. While it may be difficult for him to prove his assertions, there is much in his paper to command attention. Take rickets, for example. While it may not be brought about necessarily by an insufficient amount of food, improper food certainly has something to do with it. The results are seen not only early in life, but likewise in later life. Then, again, pellagra is believed to be due to certain deficiencies of food, or the active principles which are necessary to proper development. Not only is it of slow onset, but it may be prolonged in its effect. Changes of metabolism may not be very striking at first, but they make such lasting impressions on the organism that permanent results are seen later in life.

DR. FRITZ B. TALBOT, Boston: There is no doubt that many of the diseases of adult life find their origin in childhood. I have noticed that in a certain group of children there are food dislikes on a good, well balanced diet. In my experience, those food dislikes come in certain types of families. They come in the type of family in which there is a history of asthma, eczema and hay-fever, and sometimes urticaria. In those families, of course, we know that we often have idiosyncrasies due to anaphylaxis. And we have always to bear in mind, in considering food dislikes, the fact that it may be due to anaphylaxis. Do not put a person down as a fool who says that he cannot eat eggs, until you have proved that he is not anaphylactic to eggs.

DR. MAY G. WILSON, New York: In 1916 I made a dietetic study in the public schools of New York. The results of my study corroborate some of Dr. Rice's statements. I found that green vegetables, other than potatoes, tomatoes and lettuce were absent from the diet. In the grades just higher than the kindergarden milk was being left out and tea was being substituted. Then still higher condiments were being used. The acquired dislike of essential foods is noted as we pass from the kindergarden to the higher grades.

DR. O. M. GILBERT, Boulder, Colo.: It is the almost universal experience when I attempt to outline the diet for my tuberculosis patients to be told that the patient does not like milk or eggs. I have become impressed with the fact that this dislike of certain foods must have some bearing on the nutritional factors which predispose to tuberculosis. It is true that a few patients have a tendency to an anaphylactic reaction against milk or eggs, but with the average person it its only a matter of taking time and using patience and perserverance, to become accustomed to them. I have come to disregard almost the likelihood of anaphylaxis, and to insist on the patient gradually adjusting himself to the proper diet. Irving Fisher showed the bad effects of excess of protein diet in people past middle life; but to my mind it is well to have the factor of safety, so to speak, on the side of the proteins in the formative period of life. And I cannot help but feel that this lack of a proper protein element in our diet is by no means a negligible factor, in the production of this metabolic condition, which predisposes to the development of conditions not only like pellagra, but of tuberculosis.

DR. C. HILTON RICE, JR., Montgomery, Ala.: The conclusion I presented came to my mind only too recently for me to have kept statistics on it; but I have always had a curiosity as to what people eat, particularly the healthy child and the healthy adult. One of the most common diets of children in Alabama, particularly in the rural districts, is bread and syrup. The people of the West and North do not see that. If it is not bread and syrup, it is too much eating of cakes and candy and ice cream cones between meals; much of the ice cream we get is a mixture of cornstarch and vanilla. The eating of sweets between meals destroys the appetite for all food, except sweets and starches. These children will eat rice and cereal foods, but they do not like green vegetables. They do not like fresh meats. Very often they do not like eggs, and in many cases they will not drink milk. They have no idiosyncrasies for these foods, because they previously had taken them without harm. Mothers and fathers have some fear that the child may have inherited indigestion. They say that they never liked green vegetables; that they have not been drinking milk since they were children. Some will not even eat butter or anything that comes from the cow. I believe that we can look forward and see the effect of food dislikes of childhood, and their relationship to the metabolic diseases of middle life, better than can the internist, who seeks, from fragmentary data, to visualize the past history of his case. If he would look back to us, to explain the etiologic factors, we, as pediatricians, could tell him that a certain percentage of children leave us on deficient diet, for no other reason than they never were trained to eat properly—if they don't have trouble, they ought to have it.

PLASTIC SURGERY OF THE FACE

TS RECENT DEVELOPMENT AND ITS RELATION TO CIVILIAN PRACTICE *

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As is well known plastic surgery about the face, especially rhinoplasty,[1] has been practiced for hundreds of years. It is my intention in this paper, not to discuss any given operation at length, but to bring to your notice the advancement of this branch of surgery within the last few years, and to suggest that it be more often employed in civilian practice than has been the custom heretofore.

The disabilities under consideration may be classified, first, as physical and, second, as mental; the first are actually functional; the disability in the second type of cases is the result of the person's mental attitude toward his disfigurement, and often restricts the activities of an individual sufficiently to reduce his worth to the community to a serious degree. We may consider these cases together; we have therefore for consideration such disabilities as are caused by tumors about the face, the removal of which entails much loss of tissue; deformities caused by syphilis; disfiguring scars which usually, by contraction, interfere with proper function of the eyelids, lips, alae nasi, etc., and the loss of eyebrows or part of the nose or ear or of the mucosa and soft parts of the eye-socket, with consequent inability to wear an artificial eye, or of the buccal mucosa, with adhesions and inability to open the mouth properly, or to wear a plate if needed.

It was my fortune, while in service, to be detailed to the Queen's Hospital for Facial Injuries at Sidcup, England, where this branch of surgery has been very highly developed and is practiced with, I think, unusual success. I have detailed this work with which I am familiar in the British camps; but America is by no means behind in it, as witnessed by the splendid work of Ferris Smith, Blair, Beck, Coughlin, Ingersoll, Arrowsmith, Carter and many others in this country.

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Keegan, D. F.: Rhinoplastic Operations, London, Balliere, Tindall & Cox, 1900.

This success depends on many factors, prominent among which are abundant material of which the surgeon is in actual control until the work is finished, complete staff and equipment, and close collaboration between the surgical and dental and other departments. At Sidcup I learned that it is possible to maneuver skin, fat, muscle, cartilage and bone into new locations at will, with assurance of success in the great majority of instances. It is often necessary to do this work in stages. Surgical training of the most comprehensive kind is required; also are needed imagination and tenacity of purpose, with ability to draw, pattern and mold, and often much courage to carry out a proposed plan of operation. Complete records, such as history, physicial examination, photographs and plaster casts, before the operative procedure and before each succeeding operation, and at all times the strictest attention to details, are essential.

In supplying tissue to remedy a defect it is of primary importance that a defect be not caused in the region from which the tissue is taken, and that proper environment be afforded the graft while it is becoming established in its new position.

In flap grafting, the method of making flaps known as the tubed-pedicle flap [2] overcomes many of the difficulties formerly encountered, such as interference with blood supply and infection, with loss of tissue. It also renders it easier to shift flaps without disfigurement. In this method two incisions, about 3 inches apart, are made; the intervening skin is dissected up and inverted; the edges are stitched together and allowed to heal, thus forming a tube; the denuded area is covered by approximation beneath the tube, after any necessary undercutting has been done. The ends are left undisturbed; the proximal one is located so as to contain the most abundant blood supply available, e. g., the superficial temporal artery, and to allow the distal one to reach to its proposed site. If branches leading off from the blood supply are blocked, this of course increases the volume of blood passing through the flap. After ten to fourteen days the circulation through the tube and flap will have been well established. Then the distal end, holding the flap, cut to a pattern made of tinfoil or other suitable material (in exact size and shape of the area to be covered) is dissected up. Bleeding should be controlled. The flap is now shifted to the desired location.

Close coaptation of the entire surface and edges must be had in order to prevent separation by clot and infection and loss of tissue; the edges are best approximated by horsehair stitches placed at close intervals and left from four to eight days. As stitches are placed, it is occasionally found necessary either to loosen one or place it in another position, as is indicated by blanching of the skin. Surface approximation with this kind of flap usually is good, on account of the fact that the area covered generally is more or less convex.

When circulation is well established between the grafted skin and its new lodging place, the pedicle is either utilized to fill in further defect by lifting the former proximal end and turning it around, or else it is severed and returned to its former position.

When the tubed-pedicle is utilized as a flap or returned, an incision is made along the line of union of the free edge, and the tube is flattened out. In order to prevent contraction of the flap where a covering has been made for a cavity such as the nose, it is necessary that lining be afforded. This is done either by reflecting skin edges or by Thiersch grafts. Careful massage and local application of heat sometimes is indicated for a few hours after operation. Needling also is at times helpful in relieving venous congestion.

It is sometimes more advantageous to use a free graft of whole skin, known as the "Wolff graft." Here the graft is cut by pattern to fit, and is sewed carefully into place, covered by tinfoil, and held in apposition for a few hours by a cast of dental molding-compound made immediately beforehand. This method frequently is used in covering an area on the forehead where a large flap has been turned down, and closure by approximation alone is not feasible. It is also of use in covering small isolated areas in places, such as the tip of the nose.

In supplying epithelium to cavities such, for example, as the mouth, the eye socket, eyelids, or the interior of the nose, the Esser [3] operation, modified and much improved by Gillies, Waldron and Pickerell, is the operation of choice. The area to be covered is freshened by removal of scar, which usually is present, and by undercutting sufficient to allow the parts to assume the desired position; an exact cast of the raw area is made and allowed to cool in position; it is then covered by Thiersch grafts, the outer surfaces next to the cast, and the cast thus covered is reinserted and held in position from five to eight days. Then it can be removed by dividing the stitches which support it, when it will often "pop out," leaving a perfectly lined cavity. In order to prevent further contraction of the cavity, it is advisable that a cast of hard rubber be worn for a few weeks. This is, of course, to be removed frequently for cleansing, in mouth cases.

In some instances it is quite difficult to hold these casts in the desired position about the mouth and nose. A well fitting and carefully designed dental appliance cemented to the upper teeth and having an adjustable arm, which is flexible, over which the cast is made, will often overcome this difficulty. These must be fully tried out before the operation. Free suppuration occurs with these grafts, but they flourish in the presence of pus, and practically always "take."

In replacing eyebrows, care must be taken not to injure the hair follicles. They are best taken from the mastoid, and usually show growth in eight to twelve weeks.

Frequently it is necessary to replace bone as, for example, in the nose, forehead, cheeks or jaw.

Methods of bone-grafting will not be discussed in this paper further than to say that in this type of cases the advance has been great, particularly in jaw injuries. The osteoperiosteal graft is of great importance, and probably is available in more instances than any other, particularly when there is great loss of tissue and difficulty in finding anchorage. The crest of the ilium is particularly serviceable in ununited fractures of the jaw where there is not great loss of tissue, and where there are good edges to unite with.

Cartilage implantation is of great help where loss of bony support has occurred, as in the nose or in the skull, with only soft parts left to cover the dura; or in loss of the malar eminence or margin of the orbit or a part of the auricular cartilage. These can be done almost at will.

2. Devised by Major H. D. Gillies, R. A. M. C. (J. Nat. Dental A., January, 1920).

3. Esser, J. F.: Ann. Surg. **65**: 297 (March) 1917.

Rib cartilage is shaped as desired and inserted either at once or buried in the chest wall, and later on taken out and shaped and put into the desired position.

Fat and muscle grafts also are frequently made use of in filling out depressions.

The end-results in these cases are so uniformly successful and so very gratifying to both patient and surgeon that I wish to urge the more frequent employment of this line of treatment in these cases.

ABSTRACT OF DISCUSSION

DR. WILLIAM T. COUGHLIN, St. Louis: When I operate on syphilitics I fear lest things will go wrong, and the accidents are suppuration and sloughing. I insist on a course of antisyphilitic treatment before any plastic surgery is attempted on these persons. The "mental disability" is worth consideration. It is most marked in civilian patients. Because there are few in the hospital, they do not see others of like condition. I was astonished in war work to see the change in the patients after admission. Brought in much depressed, as though it was all over with them, when admitted to the ward with the other patients their attitude changed and they became cheerful. Control of a case throughout by one surgeon is important and desirable. To attempt to do this without the assistance of our dental colleagues is absurd, but the surgeon must direct.

The "special" surgeon should have a wide surgical training, and I am glad of the effort being made to have otorhinolaryngology include the head and neck. I find it difficult to have patients cooperate. They do not want so many operations. They want to get through quickly, and one cannot get the best results with that kind of work. The "tubed pedicle" is one of the best of flaps. Accumulation of blood under the Wolf graft works against its success. The Esser inlay is one of the best things the plastic surgeon has gotten out of the war.

DR. GEORGE M. DORRANCE, Philadelphia: At the beginning of the war men did not read as they should; if they had, they would have known more about transplanting and grafting and would have avoided many mistakes. There is practically nothing new in implant surgery. In the Crimean War and in the Franco-Prussian War, excellent work was done. I do not like the osteoperiosteal graft. The best graft of all is the one with a pedicle attached to the subcutaneous or muscular tissues. The idea of using cartilage for deformity of the forehead is not correct. Fraser used the outer table of the skull and obtained very good results.

DR. AUSTIN A. HAYDEN, Chicago: One of the most important steps in the preparation of these patients is to procure very carefully made pictures of the condition present before the operation. This can best be done by the man who is going to operate, because photographers invariably try to hide the deformity, which defeats the object of the picture. Asepsis is very important. Iodin should be used freely inside of the nose, and over a considerable area of the face, before an intranasal operation is attempted. I have done an intranasal operation. It is much harder to get the patient to consent to an operation in which an external incision is to be made.

DR. FERRIS SMITH, Grand Rapids, Mich.: I was greatly surprised to hear Dr. Dorrance say that there is nothing new about rhinoplasty. He has not read much or he would not make that statement. The rhinoplasty that was done a thousand years ago was the Indian type of operation, which was performed to cover up the defect, but there was no lining and no support. Then they tried a covering with support but no lining, and finally Nélaton combined the three essentials. The technic of Gilles, which grew out of his service in the war, certainly is the only method which makes a certain rhinoplasty possible.

DR. MILLARD F. ARBUCKLE, East St. Louis, Ill.: In selecting the time for operation in cases with suppuration, it is important to remember that considerable time is required for the scar tissue to become sterile.

THE CATALASE CONTENT OF THE BLOOD IN DIFFERENT TYPES OF ANEMIA*

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In spite of the contradictory state of our knowledge of the catalase content of the blood under various clinical and experimental conditions, and the wide variations that have been found in different individuals of the same species,[1] we were led to make a comparative study of the catalase content of normal and anemic bloods by the statement of Van Thienen[2] that in pernicious anemia the catalase index of the blood was extraordinarily high. Although Stehle's experiments demonstrate that the catalase content of the blood fluctuates under given conditions parallel with the hemoglobin content, nevertheless an index obtained by dividing the catalase content by the hemoglobin or red blood cell count would still be significant if it constantly showed changes in the same direction in this or that disease. We, therefore, have endeavored to control van Thienen's observations, by comparing such an index of the blood of pernicious anemia cases with that of other anemias, and of nonanemic individuals. A further control of the enumeration of the red blood cells in the actual sample from oxalated blood was also made in most cases. As the index thus obtained was in the main proportional to that furnished by the clinical erythrocyte count, and the variation never sufficient to affect the conclusion drawn, these figures have not been included in this report.

The method of estimating the amount of catalase was exactly similar to that described by Stehle. The samples of blood were necessarily collected at a distance from the laboratory, so that a delay up to an hour was unavoidable; but control tests proved that standing did not cause an appreciable change in the catalase content. The slight increase that was sometimes found after standing several hours we considered to be probably due to the greater concentration of the sample. The blood was obtained as far as possible at the same time of day, a given number of drops (twenty) from the ear or vein mixed with two drops of 10 per cent. potassium oxalate, and well shaken before samples were taken. We could detect no noteworthy differences in venous or capillary blood. Two samples were taken of each blood and readings of the amount of oxygen liberated made after five, ten and fifteen minutes. Of these readings, which were closely proportional, only the fifteen minute reading has been given, as coming nearest to the correct estimation. This we have found to represent about 75 per cent. of the total oxygen liberated, and minimizes errors introduced by changes in temperature, acidity, etc. In a few cases in which an obvious fault in technic spoiled one of the samples, a single reading was taken. In the others, as the variation averaged less than 5 per cent., the average of the two readings is given.

* From the John Herr Musser Department of Research Medicine, University of Pennsylvania School of Medicine.

1. Burge, W. E., and collaborators: Am. J. Physiol. **50**: 165 (Oct.) 1919, and numerous papers in the same journal since 1916. Stehle, R. L.: J. Biol. Chem. **39**: 403 (Sept.) 1919. Winternitz, M. C.; Henry, G. R., and McPhedran, F.: The Determination of the Catalytic Activity of the Blood as a Clinical Diagnostic Method, Arch. Int. Med. **7**: 624 (May) 1911.

2. Van Thienen, G. J.: Nederlandsch Tijdschr. v. Geneesk. **1**: 2006 (June 7) 1919.

After most of this work was done there appeared Bodansky's [3] demonstration that the volume of oxygen liberated depends on the hydrogen ion concentration of the peroxid, which may vary up to 35 per cent. in different samples of the same make. We were fortunate in having used only three different samples of peroxid, all of the same make, and made several estimations on each type of case with the same sample. Our conclusions, therefore, are not affected by the lack of control of this factor, although we have several times confirmed his observation that more oxygen is liberated from peroxid of p_H 7 than of lower hydrogen ion concentration. The catalase index was obtained by dividing the number of cubic centimeters of oxygen liberated at the end of fifteen minutes by the red cell count expressed in millions. Records of temperature and barometric pressure were kept; but the correction involved (which was always found to vary by less than 4 per cent.) was so small, compared to the individual variations, that the original readings have been retained.

RELATION OF CATALASE CONTENT OF BLOOD TO RED BLOOD CELL COUNT

Type	Cubic Centimeters of Oxygen Liberated by 0.1 C.c. of Blood in 15 Minutes	Red Blood Cell Count per Cubic Millimeter	Catalase Index
Pernicious Anemia:			
Case 1	37.0	920,000	40
Case 2	80.0	2,320,000	34
Case 3	66.5	1,640,000	40
Case 4	31.5	1,020,000	31
Case 5	15.0	930,000	16
Case 6	45.5	1,910,000	24
Case 7	77.0	2,210,000	29
Case 8	29.0	1,560,000	19
Case 9	28.0	1,730,000	16
Average	45.3	1,483,000	28.6
Other Anemias:			
Secondary	58.5	3,700,000	16
Secondary	150.0	2,830,000	53
Secondary	105 0	2,680,000	39
Secondary	77.0	3,490,000	22
Secondary	142.0	4,010,000	35
Secondary	111.0	3,660,000	30
Secondary	53.0	2,970,000	18
Acute hemolytic anemia	52.0	2,410,000	22
Congenital hemolytic jaundice	38.0	2,590,000	15
Congenital hemolytic jaundice after splenectomy	75.5	4,400,000	17
Banti's disease	155.0	3,800,000	41
Average	92.5	3,322,000	28
Nonanemic:			
Aortitis	163 0	5,130,000	32
Premature menopause	179.0	5,160,000	36
Suspected syphilis	156.0	5,000,000	31
Trauma of lip	179.0	5,470,000	36
Headache	150.0	4,650,000	30
Normal	147.0	4,390 000	33
Normal	143.0	5,540,000	26
Normal	145.0	4,530,000	32
Normal	215.0	5,250,000	43
Average	164.1	5,013,000	32.7

Two items are at once apparent in the accompanying table: first, that the anemic blood liberated much less oxygen than the normal, and second, that the wide variations found by other workers were also present in our series. Both the actual amount of oxygen liberated and the resulting indexes varied less in the nonanemic than in the anemic individuals; but the averages obtained from all three groups were surprisingly close.

It is stated by Wells [4] that removal of various organs—among which is included the spleen—temporarily diminishes the catalase contents of the blood. In a few tests on splenectomized monkeys we have found this to be the case, but are inclined to attribute it to the transient anemia that follows splenectomy. In a case of hemolytic jaundice, on the other hand, when the blood picture improved greatly after splenectomy, the catalase content also increased, so that there was very little resultant change in the catalase index. In dogs, the catalase content of the blood is relatively low; but after they had been made plethoric by repeated transfusions, it was considerably increased.

3. Bodansky, M.: A Note on the Determination of Catalase in Blood, J. Biol. Chem. **40**: 127 (Nov.) 1919.
4. Wells, H. G.: Chemical Pathology, Ed. 2, p. 69.

CONCLUSIONS

Under the conditions observed by us, the catalase content of the blood varies according to the concentration of red blood cells and this ratio is not materially affected by splenectomy or by the various types of anemia studied.

GAUCHER'S DISEASE

REPORT OF A CASE

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According to Mandlebaum, up to 1916 there were nineteen instances of Gaucher's disease in the literature in which the diagnosis had been determined by histologic examination. Since then, cases established on a similar basis have been reported by Evans, Reuben, Mandlebaum (two) and Carr and Moorhead. This makes a total of twenty-four authentic cases,[1] to which the present report adds another.

REPORT OF CASE

History.—J. B., aged 50, a Polish Jew, a shoemaker, lived alone, and had no relations or friends in this country, and very little could be learned of his previous history. From the reports of the neighbors, though somewhat "queer," he was apparently in good health and attended to his business regularly. The day of his death he acted quite eccentrically, and without reason struck at one of his customers and chased her from the shop. So violent were his actions that a policeman, hurriedly called, shot twice at the man, each shot taking effect. The patient was taken by the police patrol to the Hahnemann Hospital, where an examination revealed the two bullet wounds. One of these entered about the seventh rib on the right side, causing a hematoma, but not penetrating farther, the bullet being plainly palpable. The other bullet entered in the left iliac region, but no exit was found. On admission, the patient was conscious and able to tell his name and age, and answer other questions. He rapidly lapsed into unconsciousness, however, and died in an hour and a half.

Necropsy.—This was performed twenty-five hours after death by the coroner's physician, Dr. W. S. Wadsworth, whose

1. These are as follows:
Gaucher: Thèse de Paris, 1882.
Collier: Tr. Path. Soc., London **46**: 148, 1895.
Picou and Raymond: Bull. Soc. anat. de Paris **70**: 531, 1895; Archiv. de méd. expér. et d'anat. path **8**: 168, 1896.
Bovaird: Am. J. M. Sc. **120**: 377, 1900.
Brill, Mandlebaum and Libman: Proc. New York Path. Soc. **4**: 143 1904; Am. J. M. Sc. **129**: 491, 1905.
Schlagenhaufer: Verhandl. d. deutsch. Gesellsch. **10**: 77, 1907; Virchows Arch. f. path. Anat. **187**: 125, 1907.
Von Herczel: Wien. klin. Wchnschr. **20**: 123, 1907.
Marchand: München. med. Wchnschr. **54**: 1102, 1907.
Brill, Mandlebaum and Libman: Am. Jour. M. Sc. **137**: 849, 1909.
De Jong and van Heukelom: Beitr. z. path. Anat. u. z. allg. Path. **48**: 598, 1910.
Mandlebaum: J. Exper. Med. **16**: 797, 1912.
Wilson: Surg., Gynec. & Obst. **16**: 240, 1913.
Downes: Med. Rec. **83**: 697, 1913.
Babes, Aurel and Babes: Compt. rend. Soc. de Biol., 1913, No. 36, p. 575.
Sapegno: Arch. science méd. **37**: 323, 1913.
Stevenson: Brit. M. J. **2**: 847, 1913.
Niemann: Jahrb. f. Kinderh. **79**: 1, 1914.
Erdman and Moorhead: Am. J. M. Sc. **147**: 313, 1914.
Herrman, Roth and Bernstein: Arch. Pediat. **31**: 340, 1914.
Evans: Proc. New York Path. Soc. **16**: 114, 1916.
Reuben, M. S.: New York M. J. **107**: 118 (Jan. 19) 1918.
Mandlebaum, F. S.: Am. J. M. Sc. **157**: 366 (March) 1919 (two cases).
Carr, J. G., and Moorhead, L. D.: Gaucher Type of Splenomegaly, J. A. M. A. **72**: 19 (Jan. 4) 1919.

notes state that the subject was of medium size and the body was in good condition, with fair muscular development and a moderate amount of fat. The necropsy was performed primarily to ascertain the fatal effect of the bullets, and hence the notes on the organs are only casual. The stomach and intestine were penetrated, and the lower edge of the spleen was cut by the bullet. The liver exhibited what looked like a moderate chronic hepatitis. The retroperitoneal glands were moderately enlarged. The condition of the spleen was so peculiar that Dr. Wadsworth kindly offered it to me for further gross and microscopic examination. Death was unquestionably to be attributed to the bullet wound.

The spleen was brought at once to the laboratory and found to weigh 825 gm. and measure 23 by 12.7 by 5 cm. The organ in general was quite soft, in some spots almost mushy; but scattered all through it were firm nodules more apparent to the palpating finger than to the eye. The feel of these nodules might be compared to that of the numerous secondary tumors felt in malignant growth of the lung. On section, the firmer areas were not plainly discernible. The general color of the sectioned spleen was that of a normal organ, but close inspection revealed that the nodules were of a deeper brownish red than the surrounding parts. The size of these firmer masses varied from 0.5 to 1.5 cm. in diameter.

Microscopic examination disclosed the characteristic picture of Gaucher's disease. Rather marked thickening of the arteries and an abundance of pigment were also noted. The nodular portions of the spleen correspond to those areas in which the dilated sinuses were prominent. To eliminate any doubt as to the authenticity of the case, sections were submitted to Dr. F. S. Mandlebaum for an opinion. His observations are as follows:

"The sections of spleen from your case show the typical lesion of Gaucher's disease. The dilated sinuses, the arrangement of the large cells with the peculiar type of cytoplasm and small nuclei, often multiple, the pigment—all these are most characteristic features. It might appear at a glance that those portions of the spleen in which the sinuses are not very prominent were devoid of large cells, but with the high power the cells are readily seem among the pulp cells. The follicles are rather well preserved, but throughout the section the arteries show marked changes. I assume from this that your case is that of an adult, also because the pigment is quite prominent. In young individuals the pigment as a rule is scant or absent in the spleen."

COMMENT

Clinically, the meager knowledge of this case permits but few comments. In the matter of age, this patient of 50 is the oldest case of Gaucher's on record. Carr and Moorhead's [1] patient was 46 and Marchand's,[1] the next in order, was 44 years of age. As the disease is supposed to begin in infancy or early life and last many years, it might be expected that the older the patient, the greater would be the size of the spleen. This was apparently realized in Brill, Mandlebaum and Libman's [1] case, the patient dying at 42, the disease lasting twenty-one years and the spleen weighing 8,100 gm. Carr and Moorhead's [1] case also had a duration of thirty-seven years, and the spleen weighed 4,990 gm. But Marchand's [1] patient, in whom the disease was supposed to have a duration of twenty years, had a spleen weighing only 2,720 gm. And Schlagenhaufer's case had a record of thirty-eight years' duration, the patient dying at 43 with tuberculosis, and the spleen weighing 3,510 gm. In the present case, the spleen, as far as can be ascertained, is the smallest of the Gaucher type occurring in adults, indicating that the disease began late in life or was extremely slow in development.

The familial aspect of this disease has rightly been emphasized, but in none of the original reports available or in any of the summaries from the literature has there been found mention of racial predilection. Yet, correctly or incorrectly, the perusal of case reports has given the collective impression that the disease is more common in Jews. In the case herewith cited, the patient was a Jew. This comment is therefore intended to be interrogative in character.

The histology of Gaucher's disease has been described with great detail and exactness by Marchand,[1] Schlagenhaufer,[1] Risel,[2] Mandlebaum [1] and Mandlebaum and Downey.[3] To the usual microscopic studies have lately been added observations on the microchemical reactions for lipoids. Anitschkow [4] demonstrated large cells containing lipoids in animals experimentally fed on fats and lipoids; and in these cases the lesions resembled those of Gaucher's disease so closely that Aschoff [5] referred to the condition as "pseudo-Gaucher." Schultze,[6] Lutz,[7] and Williams and Dresbach [8] also reported cases of diabetes with lipoidemia featured by large cells containing lipoids. The resemblance to Gaucher's disease in these cases was noted. In the two cases of Knox, Wahl and Schmeisser,[9] reported as examples of Gaucher's disease, the authors demonstrated a lipoid substance in the large cells of the first case. Mandlebaum and Downey,[10] in a criticism of Knox, Wahl and Schmeisser's paper, point out the histologic identity of these cases with those of Anitschkow, Schultze and Lutz, and the further resemblance in lipoid content. They conclude that the foregoing cases are not true examples of Gaucher's disease, and believe that in genuine Gaucher's disease fat or lipoid bodies cannot be demonstrated in the large cells by microchemical means.

In the present case, sections of the formaldehyd-fixed spleen were stained with osmic acid, scarlet R, sudan III, Nile blue and by Ciaccio's method. With osmic acid, Nile blue and Ciaccio's method, results were negative. Scarlet R and sudan III were used in the simple alcoholic solution, in Herxheimer's alkaline solution and also in his solution in alcohol and acetone. The results with simple alcoholic solutions were negative, and those with the alkaline solutions were negative or unsatisfactory. In employing scarlet R and sudan III dissolved in alcohol and acetone, the staining sections were exposed in open dishes, contrary to the usual directions, and the fluid allowed to evaporate more or less. In this way, it was noted that the large cells in the sinuses, as well as those in the pulp, took on a decided pink or red. This color was never the deep red assumed by control fat sections, but in the spleen the color of the large cells contrasted distinctly with the pallor of the follicles and other cellular portions of the section. They were easily the deepest stained parts of the specimen. This was not due to precipitate, for the cells assumed a diffuse pink or red color and not a granular or dotted appearance. The significance of this reaction is not clear, but attention is called to Bullard's [11] remarks:

Bell [12] believed that neutral fat is readily stained with simple alcoholic solutions of scharlach R, but many faintly refractive "liposomes," which consist wholly or in part of lipoids, are stained only by Herxheimer's method. Later

2. Risel: Beitr. z. path. Anat. u. z. allg. Path. **46**: 241, 1909.
3. Mandlebaum and Downey: Folia haematol., 1916, **20**, Archiv. 139.
4. Anitschkow: Deutsch. med. Wchnschr. **39**: 741, 1913.
5. Aschoff, quoted by Mandlebaum and Downey (Footnote 10).
6. Schultze: Verhandl. d. deutsch. path. Gesellsch. **15**: 47, 1912.
7. Lutz: Beitr. z. path. Anat. u. z. allg. Path. **58**: 273, 1914.
8. Williams, J. R., and Dresbach, M.: Am. J. M. Sc. **153**: 65 (Jan.) 1917.
9. Knox, J. H. M., Jr.; Wahl, H. R., and Schmeisser, H. C.: Bull. Johns Hopkins Hosp. **27**: 1 (Jan.) 1916.
10. Mandlebaum, F. S., and Downey, H.: Bull. Johns Hopkins Hosp. **27**: 109 (April) 1916.
11. Bullard: The Microscopical Demonstration of Fats in Tissue Sections, J. Med. Res. **27**: 55, 1912.
12. Bell: Anat. Rec. **4**: 199, 1910.

Bell [13] states that there is no good evidence that Herxheimer's stain will show fats which are qualitatively different from those brought out by the simple alcoholic stains. He, however, thinks that his faintly refractive liposomes contain some substance other than fat, possibly an albuminolipoid, and are usually left unstained by simple alcoholic solutions of scharlach R, while they may be stained with more or less intensity by Herxheimer's method.

The Herxheimer method referred to by Bell is the alkaline alcoholic solution. Mandlebaum [14] notes that while the peculiar substance in the cells of Gaucher's disease has never reacted to any microchemical method for lipoids, it is in all probability of complex protein nature in combination with lipoids.

SUMMARY

The case of Gaucher's disease herewith reported is the twenty-fifth on record in which the diagnosis has been established by histologic examination. The patient was 50 years of age, the oldest recorded. Some positive staining reactions were obtained with concentrated Herxheimer's solutions of scarlet R and sudan III. The significance of these results, however, is not clear.

1327 Spruce Street.

Clinical Notes, Suggestions, and New Instruments

ANESTHETIC FRAME

MYER N. MOSKOVICH, M.D., ST. PAUL

The drop method of administering an anesthetic is superior to any other at present in use. After the surgical point of anesthesia has been reached, only a small amount of the

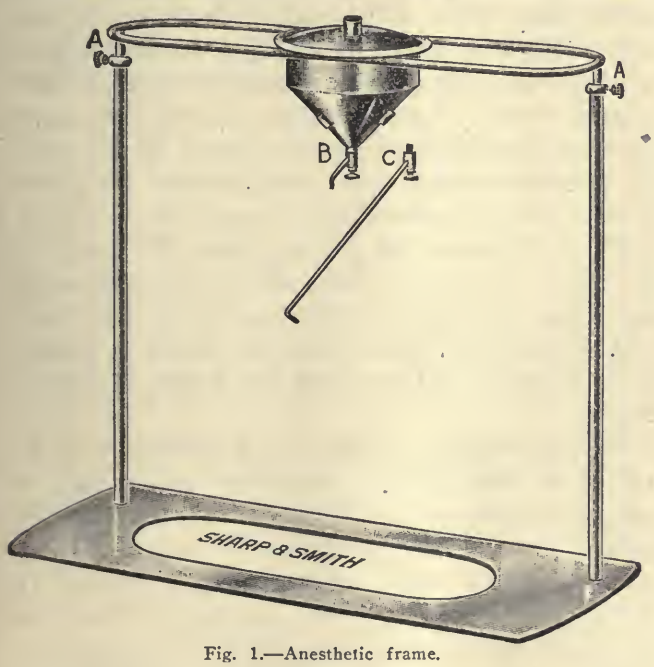


Fig. 1.—Anesthetic frame.

anesthetic is required to keep the patient under, and it is equal to that expired by the patient plus that given off by his tissues. The variation in different individuals is within the range of difference between a slow and a fast continuous drop of the anesthetic. It is difficult, however, to give such an anesthetic without interruption by the essential duties to watch the eyes, properly support the jaws, take and record pulse and respirations, and do any number of other things arising during the course of its administration. It was the desire to have an even and uninterrupted anesthetic given which prompted me to devise the apparatus here described.

Figure 1 represents an anesthetic frame. It is 15 inches in height, when closed, 18 inches in width, and weighs 5½ pounds. The screws at *A* permit the height to be increased.

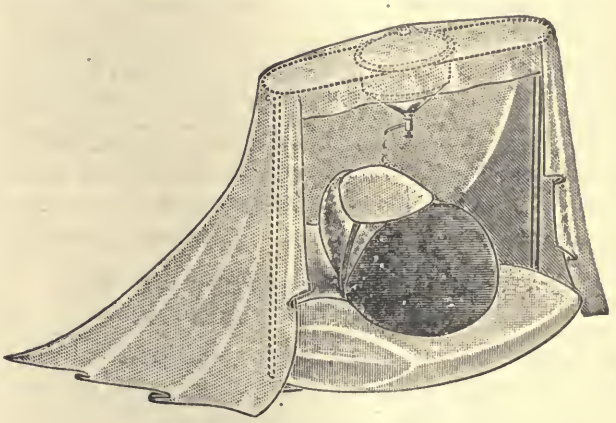


Fig. 2.—Apparatus in use.

The can holds 12 ounces of the anesthetic, and may be rotated about or moved from side to side. The short nozzle, *B*, is used in operations in which a sterile anesthetic is not required, while the longer nozzle, *C*, is substituted in all operations about the head, neck and shoulders, thus administering the anesthetic at a point 8 inches from the patient's head, at which distance the operator works without being handicapped by the presence of the frame. The small thumb screw at the lowermost part of each nozzle is used to adjust the flow from a slow to a fast drop or a continuous stream.

Figure 2 crudely shows the apparatus in use and the manner in which the sheet from the patient's body is drawn over the frame to act as a means of separation between the operator's field and that of the anesthetist. The patient's head rests on a pillow which fits between the rods of the frame and helps to keep the apparatus from sliding when the Trendelenburg position is used.

The patient is first anesthetized in the usual manner. When the third stage of anesthesia has been reached, the frame is placed in position and the thumb screw regulated to permit the desired flow. An Esmarch mask is used to receive the anesthetic, and the gauze or flannel which envelops it is capable of diffusing the anesthetic as fast as it drops, a point which I proved to my own satisfaction and also to the satisfaction of those who have watched the frame in use.

ADVANTAGES

1. The apparatus aids in the administration of a uniform, drop method, anesthetic without interruption.
2. It permits the use of one or both hands when required.
3. It acts as a shield in separating the operator from the anesthetist.
4. It may be used to replace the so-called sterile anesthetic, which in reality does not exist.
5. Ether or chloroform may be used.
6. The frame is of convenient size, simple in construction, uncomplicated in its manipulation, attractive in appearance, and inexpensive.

641 Grand Avenue.

13. Bell: Internat. Monatschr. f. Anat. u. Physiol. **28**: 297, 1911.
14. Mandlebaum, F. S.: Am. J. M. Sc. **157**: 366 (March) 1919.

Sodium Fluorid as Insecticide.—The best insecticide against the roaches is sodium fluorid powder mixed half and half with flour or starch and sprinkled lightly about their haunts. If the powder is used pure it is not very efficacious as the roaches will not always eat it, particularly if it is heavily sprinkled, as its poisonous effect on the insect is produced by its being ingested.—*U. S. Nav. M. Bull.*, January, 1920.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET . . . CHICAGO, ILL.

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SATURDAY, JULY 10, 1920

LIMITATIONS OF KNOWLEDGE IN THE MANAGEMENT OF NEPHRITIS

It is a wholesome experience in medicine from time to time to pause long enough to take stock of our knowledge in various departments of practice, and to ascertain whether we are walking in the light of sound information or merely groping aimlessly in the darkness of ignorance. Now and then some thoughtful clinician, who is unwilling to apply drugs regarding the action of which he has only traditional or conjectural evidence to guide him, is met with the charge of therapeutic nihilism. In this day and generation, however, it is high time to understand that skepticism is not necessarily identical with either ignorance or pessimism. Scientific education has taught medical men, like others, to demand the truth above all else. Guesswork can never be a real panacea. For this reason we welcome the frankly critical review by Christian [1] which was recently published in THE JOURNAL on the subject of treatment in chronic nephritis.

The subject is one of such widespread interest and significance in the daily life of every physician that the gaps in our knowledge deserve to be made clear and prominent. Without essaying to review the details of Christian's contentions, we may point out in his words that, except for the removal of recognized foci of infection and as prompt and efficient treatment as is possible of all acute infections, we at present can do virtually nothing for the prevention of nephritis. Preventive treatment in a practical sense is almost nil for chronic nephritis, and will remain so until we learn more of the etiology and particularly of the factors that influence the progressive development of renal lesions. The use of new words, such as nephropathy or nephrosis, does not advance our knowledge beyond addition to the vocabulary.

It is currently believed that in chronic nephritis the kidney is more or less incompetent and must therefore be spared from "overwork." Since water, salts and nitrogenous catabolites represent the compounds which the kidneys help to eliminate, effort is often made to diminish the occasion for getting rid of these products. The intake of these, or of their precursors in the case of nitrogenous waste products, is restricted. Although it is realized that undue reduction in the water output may damage the renal cells owing to the excessive concentration of the resulting urine, few efforts have been made to ascertain what constitutes an optimal or desirable water intake in nephritis. Practice today proceeds in individual cases on a basis of hypothesis rather than fact; yet, as Christian has remarked, until appropriate studies have been made, much of the value of a prescribed water intake in influencing the course of nephritis must remain guesswork. The "flushing out" of the "system" or the kidneys with water, whatever this may mean, represents the converse unfounded therapeutic project that one still hears spoken of at the bedside.

"Sparing" the kidneys by restricting the protein intake likewise is not without possibilities of detriment if it is continued to an extreme degree or over long periods. The advantages of reducing kidney function by decreasing the excretory work to be done has been heralded by the advocates of the low protein diet. There is, however, no proof that a kidney necessarily suffers by the work to which it is adapted any more than does a muscle. Functional performance tends in many instances to improve rather than deteriorate the structures concerned. By use a muscle grows stronger, more efficient, and less easily fatigued. Inaction is detrimental. What is "physiologic rest" for the kidney? And what will be the effect, on the organism as a whole, of prolonged deprivation of indispensable protein? Janney [2] has sounded a possible warning by asserting that nephritics may even attain an unfavorable condition because of low protein intake for a long period. Those patients are frequently rather weak and obese because the average man will make up promptly in fats and carbohydrates for what he is prevented from taking in the way of protein food. The occurrence of obesity must be avoided in nephritis. The obese nephritic is usually weak and neurasthenic.

To the foregoing features of uncertainty may be added the limitations of knowledge with respect to nephritic edema and its management. It is not always easy to dissociate the renal from the extrarenal factors. The once valued diuretic drugs are known to be actually harmful in some cases in that they only add to the kidney irritation without facilitating elimination. Debilitating sweats and catharsis help little at best. And when we approach the subject of the hypothetic toxins, the vagueness of the literature is a monument to the substitution of fancy for fact. We need more facts.

1. Christian, H. A.: Deficiencies in Our Method for the Treatment of Chronic Nephritis, J. A. M. A. 74: 1615 (June 12) 1920.

2. Janney, N. W., in discussion on article by Christian, J. A. M. A. 74: 1618 (June 12) 1920.

VITAL STAINING

The current scientific literature includes numerous references to phenomena that are designated as "vital staining"—an expession which we believe to have been promoted, if not actually introduced by Ehrlich. In its original implication it was supposed to apply to certain living cells that were distinguishable from others by the capacity of being stained with special dyes introduced into the body. Methylene blue was among the first of such compounds to be studied. Numerous other "vital stains" have since been investigated. It was Ehrlich's belief that the localization of these dyes in definite structures is due to chemical combinations within the tissues. The capacity of a cell to undergo vital staining was thus interpreted as a reaction between special groups in the protoplasm and the selected dye. The hypothesis was formulated to fit Ehrlich's "side chain theory," which has played a prominent part in the development of the science of immunology.

A review of the history of vital staining shows that the phenomenon has played a part in the explanations of the permeability of cells in general. Certain uninjured cells are readily penetrated and "stained" by such dyes as neutral red, methylene blue, toluidin blue, thionin and saffranin. Other dyes like nigrosin and anilin blue tested under comparable conditions do not penetrate the cells. Wells [1] has pointed out that Overton tested the solubility of dyes which are not vital stains and found them insoluble in oils, fats and fatty acids; but the dyes staining living cells were readily soluble in lecithin, cholesterol, "protagon" and cerebrin, the so-called cell lipoids. Furthermore, if crumbs of lecithin, "protagon" or cerebrin were placed in very dilute watery solutions of these dyes, they were found to absorb from the water the vital stains, but not the others, which indicates that stains that penetrate living cells are more soluble in lipoids than they are in water.

The theory of the essential lipoid solubility of all dyes that penetrate cells must be abandoned because of numerous contradictions with experimental facts. As the result of an elaborate study of vital stains and staining, Schulemann [2] has found it necessary to discard the other previously mentioned hypothesis also. According to him, the occurrence or nonoccurrence of vital staining with any dyes depends essentially on the physicochemical properties of the latter. Those dyes that are not readily diffusible penetrate cells with slowness, and when once they find their way into these structures they disappear from them only slowly. Readily diffusible compounds, on the other hand, easily stain cells; and the dye disappears again with readiness. Vital staining thus becomes in the main a question of penetration by diffusion—not a problem of specific chemical affinity with some component of the protoplasm. The behavior of dyes in relation to cells is a result of the physicochemical properties of the substance investigated, rather than of their chemical structure. The deposition of dyes in granular form within tissues seems to depend on physicochemical conditions that induce flocculation.

The distribution and deposition of dyes as they are observed in so-called vital staining is of scientific interest because these phenomena, which can be followed by the colors that are involved, apparently duplicate the movements of many other noncolored substances, including products of metabolism, within the tissues. If it is true, as Schulemann asserts, that the vital stainings are the exhibitions of the expected distribution of chemical substances having appropriate diffusion and solubility characters, it may be assumed that nonvisible compounds like the amino-acids, carbohydrates and other normally occurring metabolic intermediary products of comparable diffusibility, etc., can find their way into the same structures by the same pathways from the blood. This is likewise true of the movements of drugs in the body. Suitable dyes may be expected to teach the paths, places and limits of penetration which may ultimately help to disclose where and how important biologic reactions take place. Vital staining has already been employed to distinguish normal from abnormal cells by their unlike permeability to the products selected to discover them. Perhaps the appropriate pathways of drugs will similarly be discovered.

1. Wells, H. G.: Chemical Pathology, Philadelphia, W. B. Saunders Company, 1918, p. 50.
2. Schulemann, W.: Die vitale Färbung mit sauren Farbstoffen in ihrer Bedeutung für Anatomie, Physiologie, Pathologie und Pharmakologie, Biochem. Ztschr. **80**: 1 (March) 1917.

INTERRELATIONS OF ATROPHY AND HYPERTROPHY IN THE LIVER

Under abnormal conditions, portions of the liver may be the seat of either atrophy or hypertrophy. An increase in the mass of one or more lobes has been observed to follow local disturbances that interfere with the portal supply to other parts of the same organ. This increment in hepatic parenchyma may be regarded as a compensatory hypertrophy, analogous to the overgrowth which other parenchymatous structures undergo when added burdens of functioning are thrown on them. The possibility of an atrophy in one lobe dependent essentially on a simultaneously developing hypertrophy elsewhere seems, on the other hand, not to have been appreciated in the study of the pathology of the liver. The prevailing view has been that severe atrophic liver changes do not occur after interference with branches of the portal circulation in man or the laboratory animals unless the blood pressure is abnormally low in the hepatic artery or high in the vena cava as the result of a disturbed systemic circulation. When atrophy does occur, it has been assumed to be due to some more severe deprivation of the tissue.

Rous and Larimore[1] have recently recorded the occurrence of atrophy in liver tissue conditional on compensatory changes in other parts of the organ. The occlusion of portal branches to a part of the liver of the rabbit leads to a progressive and ultimately complete atrophy of the parenchyma in the region deprived of portal blood, and to hypertrophy of the rest of the hepatic tissue which receives such blood in excess. Three fourths of the liver may thus be reduced to a fibrous tag within two months, while the remaining fourth attains the bulk of the entire original organ. The atrophy is simple, unaccompanied by obvious degenerative changes or by any connective tissue replacement. More important, it is conditional in nature, failing to progress when the bile duct from the proliferating tissue is ligated and its hypertrophy checked in this way.

There are numerous indications, as Rous and Larimore point out, that in man also an atrophy conditional on hypertrophy elsewhere may occur after interference with parts of the portal circulation. They suggest that the advanced local atrophy sometimes occurring in livers containing an echinococcus cyst, a gumma, slow growing tumor, or other limited process may well be the result of pressure on portal radicles. In such instances there is present elsewhere in the organ an abundance of parenchyma capable of compensatory proliferation. Likewise, it is suggested that local portal obstruction may be a prime cause for the extreme atrophy and hypertrophy sometimes seen in syphilitic livers, whereby great hepatic distortion results.

How is a destruction of liver tissue dependent on compensatory hypertrophy to be explained? Various possibilities have suggested themselves. When the portal blood stream is obstructed, the liver tissue is dependent on arterial blood alone. It is conceivable that the latter may be unsuitable for hepatic cells; but such unfitness would apply even when other liver cells were not undergoing hypertrophy on which the atrophy is evidently conditioned. Possibly the lack of the particular digestion products carried by the portal stream alters the functional state of the hampered cells. Perhaps, indeed, a special "food" is needed for the liver tissue which it cannot secure from the general circulation when once the unimpeded hepatic residue has hypertrophied to the point of being able to utilize all that is brought to it by the remaining portal stream. These are, indeed, mere physiologic speculations. If a "functional atrophy" of the liver truly exists, however, we must agree with Rous and Larimore that its completeness indicates that the liver has no essential activity, at least none on which its maintenance depends, which is not intimately associated with substances derived from the organs drained by the portal system. It is a significant experimental observation that the bile secreted from a liver mass far advanced in atrophy and competing with a large bulk of parenchyma receiving the entire portal stream is almost colorless and devoid of characteristic bile salts. Glycogen, on the other hand, may be present in the atrophic cells in approximately the same amount and distribution as in the hypertrophic liver tissue of the same animal. "Conditional atrophy" may not only explain such chemical anomalies; Rous and Larimore venture to believe that it may perhaps also be responsible for alterations in the shape of the normal liver that have been indefinitely attributed heretofore to pressure from the surrounding organs.

1. Rous, Peyton, and Larimore, Louise D.: Relation of the Portal Blood to Liver Maintenance, a Demonstration of Liver Atrophy Conditional on Compensation, J. Exper. Med. **31**: 609 (May) 1920.

THE MEASURE OF PHYSICAL FITNESS

If the attainment of what is sometimes termed "athletic condition" is a factor in physical fitness and human efficiency, it becomes important to learn the criteria. Relative freedom from fatigue, effective muscular training, good health and similar expressions indicative of preparedness for bodily activity offer at best a vague implication regarding the physiologic basis for competent performance by the individual. What is involved in physical fitness? How can it be attained and how is it affected by exercise or training? If these questions can be analyzed in a purely objective way free from the personal or individual bias of the examiner or the subject concerned, a distinct step in advance toward a real physiology of exercise will have been taken.

A recent writer[1] has concluded that the chief elements in athletic condition are a strong heart muscle, a highly efficient coronary circulation, and good peripheral vasomotor control. He hazards the further guess that there may be even deeper factors, such as a vigorous metabolism involving the ability to generate energy rapidly without undue accumulation of harmful end-products. Obviously, the possession of these faculties will enhance the ability to meet new muscular tasks with success and to adjust promptly to severe muscular effort. There have been numerous suggestions in the past for estimating these features of fitness. For example, it has been noted that the heart rate serves as an indication of condition, since it is relatively low in the active, well trained person, and that it is increased less on exertion in the athletic person and returns more promptly to its normal rate than it does in the case of the sedentary, inactive individual. A slow horizontal and a slow vertical postural pulse, with a small difference between the two, are also usually now regarded as signs of "excellent health." Changes in blood pressure have also been referred to as indicative of the same features.[2]

1. Manual of Medical Research Laboratory, War Department, Air Service, Division of Military Aeronautics, Washington, D. C., 1918, p. 85.

2. Crampton: Proc. Soc. Exper. Biol. & Med. **12**: 119, 1915. Sewall: Am. J. M. Sc. **158**: 786, 1919.

The question of physical condition has been especially important in the disposal of men in the service of the army. Reviewing the difficulties that beset the responsible officer, Schneider [3] has lately pointed out in THE JOURNAL that so far as the pulse rate criteria are concerned, in forming a judgment as to the physical condition of a man it is best to consider together the postural rate, the increase on standing and after exercise, and the time required for the rate to return to the normal after exercise. Those who are concerned in physical training as an aid to healthful living will be interested in Schneider's account of the scoring scheme introduced in the medical inspection of the air service to take cognizance of six factors that represent cardiovascular changes or conditions. In a mathematical way it recognizes, with a minimum of "personal bias," to quote Schneider, that fatigue or derangement may be evidenced in the high heart rate during reclining; during standing; in the number of beats the heart rate increases when the standing and reclining postures are compared; in the accleration of the pulse rate after exercise; in the time taken by the pulse to return to normal, and, lastly, in the rise or fall in the systolic blood pressure on standing. A low score not only helps to eliminate the less fit but also acts as a stimulus to the person who needs to exercise in such a way that "his heart will have to work harder, the coronary vessels deliver a full volume of blood, the vasomotors be practiced in their work, the respiration deepened, and metabolism kept going at an increased rate." [1] Apparently we now have a more satisfactory test of cardiovascular fitness.

Current Comment

GENERAL WILLIAM CRAWFORD GORGAS

A man sometimes becomes a tradition or a symbol. Before his death, Gen. William Crawford Gorgas had become a symbol of hygiene: an idol to whom all the nations of the world appealed when threatened by deadly plague or perilous infection. The tradition, in this case, was based on a record of successful accomplishments: yellow fever driven from Havana; Panama —the "White Man's Grave"—made one of the most healthful places in the world; investigations on pneumonia in Africa, and an American army under his protection, with one of the lowest mortality records heretofore achieved. It is not necessary to repeat here how these sanitary triumphs were developed. Much has been written on the subject, and no doubt the future will produce competent histories and appreciations; but it is interesting to consider the record in relation to Gorgas, the man. His personality was not that of the indomitable leader whose word is law and who brooks no interference. He was a man of soft word and kind thought, seeking counsel and gathering around himself associates whom he trusted and who put their trust in him. He made many friends through his ever gracious manner. He greeted all with a smile of welcome, ever ready to hear both sides of any case which might come before him in the many positions of leadership which he held. He commanded the love and respect of all with whom he came in contact. It was this that made it possible for Dr. Gorgas to accomplish the great works that have made his name a household word in every civilized land. "In the conquest of science over disease," said Welch, on one of the many occasions in which the medical profession honored General Gorgas, "in the saving of untold thousands of human lives and human treasure, in the protection of our shores from the once ever-threatening scourge of yellow fever, in the reclamation to civilization of tropical lands—in results such as these are to be found the monuments of our laureate, his victories of peace."

BEHAVIOR OF UNCOOKED STARCH IN THE DIGESTIVE TRACT

When uncooked starch is subjected to the action of human saliva in the biochemical laboratory, it is converted slowly and incompletely at best into soluble products. The student has been taught that the starch grains must be ruptured and their contents "liberated" to insure good amylolytic digestion. The membranes enveloping the starch grains have been regarded as relatively impervious to digestive juices and the enzymes which they contain; hence the importance of cooking starch to render it readily digestible. It has been reported, in harmony with this point of view, that no starch appears in the feces after a meal of well cooked wheat or rye bread, rice or potatoes, or even legumes prepared in the form of purée. Legumes not in this form—for example, string beans eaten as salad—may resist the action of the digestive juices so that the starch contents of the cell are untouched, and the vegetable cells appear in the feces. These facts explain the appearance of bread in the feces if the bread is badly baked, or if such a "heavy" bread as pumpernickel is eaten. The imperfectly heated bread contains starch granules whose coverings are impermeable to the digestive juices, as are also many of those in the unbolted rye of pumpernickel.[1] Despite these traditional teachings, it appears from recent investigations conducted in the Office of Home Economics of the U. S. Department of Agriculture [2] that current statements categorically claiming that starch in the "raw" state is to man an almost indigestible substance must be revised. The proof of the pudding is the eating. Langworthy and Deuel [2] have fed to men fairly large quantities of raw starches in the form of frozen puddings resembling ice cream in taste and texture. The starch granules were neither swollen nor broken, yet ingested quantities exceeding 200 gm. a day disappeared from the gastro-intestinal tract. Raw corn and wheat starches were found to be

3. Schneider, E. C.: A Cardiovascular Rating as a Measure of Physical Fatigue and Efficiency, J. A. M. A. **74**: 1507 (May 29) 1920.

1. Lusk, Graham: The Elements of the Science of Nutrition, Philadelphia, W. B. Saunders Company, 1917, p. 52.

2. Langworthy, C. F., and Deuel, H. J.: Digestibility of Raw Corn, Potato, and Wheat Starches, J. Biol. Chem. **42**: 27 (May) 1920.

completely assimilated, and no trace of them could be found in the feces. Experiments on raw potato starch gave values for its digestibility varying from 62.3 to 95.2 per cent.; the average was 78 per cent. The digestibility of the other constituents of the diet was not affected to any great extent by the large amounts of raw starch ingested. Why the ingestion of potato starch caused disagreeable physiologic disturbances not noted in the other experiments with raw corn and wheat starches remains to be ascertained. Whatever the explanation of this undoubted capacity for the utilization of at least some uncooked starches in the digestive tract of man may be, the newly demonstrated facts place the potency of the alimentary apparatus of man in a new and favorable light.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CONNECTICUT

Million for Medical School.—A gift of $1,000,000 to Yale University from the general education fund has been announced. The fund is to be used for the development of the New Haven General Hospital through the medical school of the university.

Alumni Meeting.—At the forty-first annual meeting of the Yale Medical School Alumni Association, held June 21, in New Haven, under the presidency of Dr. Alfred G. Nadler ('96), New Haven, the principal address was delivered by Dr. Milton C. Winternitz, and the following officers were elected: president, Dr. Jeremiah J. Cohane ('98), New Haven; vice presidents, Drs. Frank L. Phillips ('06), New Haven, Gould S. Higgins ('01), North Haven, Samuel C. Harvey ('11), New Haven, David P. Smith ('12), Meriden, and Ralph A. McDonnell ('20), New Haven, and secretary-treasurer, Dr. Simon B. Kleiner ('15), New Haven.

Personal.—Dr. Milton C. Winternitz, professor of pathology in Yale University Medical School, has been elected dean of the school succeeding Dr. George Blumer, whose resignation takes effect at the close of the college year.——Dr. Alexander L. Prince, assistant professor of physiology in Yale University Medical School, has resigned to accept a position in the industrial research department of the Aetna Life Insurance Company.——Mr. Friend Lee Mickle has resigned as bacteriologist of the bureau of laboratories of the Connecticut State Department of Health to accept an appointment as director of laboratories of the bureau of health, Atlantic City, N. J.

ILLINOIS

Chiropractor Fined.—J. H. Cairns, 6241 Kimbark Avenue, Chicago, was arrested by the department of registration and education for practicing as a chiropractor without a state license. He pleaded guilty to the charge on June 28, and was fined $50 and costs.

Illegal Practitioner Fined.—Walter A. Huffman, Chicago, was arrested by the department of registration and education for practicing medicine without a license, and on June 20 was fined $25 and costs. In addition to the money fine, he was committed to the county jail for fifteen days.

Physician's License Revoked.—At a meeting of the Department of Registration and Education of Illinois, June 10, the license of Dr. John Paul Furno (also known as Dr. J. Paul Furnel) of Chicago was formally revoked on account of unprofessional and dishonorable conduct.

Hospital to Be Closed.—As the result of a visit of Surg.-Gen. Merritte W. Ireland, U. S. Army, to U. S. General Hospital No. 28, Fort Sheridan, it is announced that the institution will probably be closed October 1. At the time of General Ireland's visit there were less than 800 patients in the hospital.

Births Not Registered.—According to the computation of the health commissioner of Chicago, there were 98,412 births in Chicago during the last eighteen months, but of these only 72,076 were reported. He has, therefore, formed a board composed of Dr. Martin O. Heckard, chief of the bureau of vital statistics; Dr. H. O. Jones, assistant chief of the bureau of child hygiene, and Assistant Corporation Counsel Edgar A. Jonas to hear the explanations of parents and physicians summoned before them for failure to report births.

Drives for Hospitals.—The Federated Orthodox Jewish Charities of Chicago won their campaign for $100,000, June 24, when $65,000 in cash and $35,000 in pledges were turned in by workers.——Plans for a city wide campaign for a million dollars for buildings and maintenance of the consolidated Polyclinic and Henrotin hospitals were discussed at a meeting of the board of directors, June 23. The campaign will be inaugurated early in the fall.——More than $6,000 was raised in the tag day for the new Auburn Park Hospital fund.——A drive for $500,000 to rebuild the Edward Sanatorium, Naperville, has been started. This institution is a branch of the Chicago Tuberculosis Institute.

INDIANA

Typhoid at Shultztown.—Cass County has requested the state board of health to send a health officer to Logansport to take charge of the typhoid situation in Shultztown, a suburb of Logansport.

Nurses Elect New Head.—Margaret P. Church of Fort Wayne has been elected president of the state board of registration and examination for nurses. Edna Humphrey of Crawfordsville is the secretary of the board.

Personal.—Dr. Cloud M. Jackson, Elizabethtown, has been appointed coroner of Bartholomew County, succeeding Dr. George F. Cline, East Columbus, deceased.——Drs. Joel D. Sturdevant and Samuel W. Hooke have been appointed members of the board of health of Noblesville.——Dr. Fred L. Bunch, health officer of Muncie, who has been seriously ill following an operation for abdominal tumor, is reported to be improving.——Dr. John W. Cook, Pendleton, was stricken with cerebral hemorrhage, June 21.——Dr. John H. Plew, Martinsville, suffered a cerebral hemorrhage, June 9.

Found Guilty.—Dr. Frederick E. Crum, Indianapolis, and Frank J. Peacock, charged with having violated the Reed amendment by transporting 194 quarts of whisky from Cincinnati into Indiana, May 6, 1919, are said to have pleaded guilty and to have been fined $10 and costs each.——Frank Clark and Lottie Clark, accused of operating a soft drink establishment in Terre Haute which was the center of wholesale trading in narcotics, were sentenced, June 30. Clark was sentenced to four years' imprisonment in the federal prison, Atlanta, and to pay a fine of $1,000, and his wife was sentenced to imprisonment for two years in the Indiana Woman's Prison.

KANSAS

Personal.—Dr. John T. Scott, St. John, was elected president of the Seventh District Medical Association at its meeting in Hutchinson, June 17.——Dr. Milton O. Nyberg has succeeded Dr. William T. Doherty as city physician of Wichita.

State Board Items.—Drs. George R. Dean, McPherson, and Henry A. Dykes, Lebanon, have been reappointed members of the state board of medical examiners.——At the annual meeting of the Kansas State Board of Medical Examiners held in Kansas City, June 15, Dr. Charles W. Jones, Olathe, was elected president, succeeding Dr. George R. Dean, McPherson; and Dr. Henry A. Dykes, Lebanon, who has served as secretary for twelve years, was reelected.

LOUISIANA

Buy Parish Medical Society Building.—The local lodge of Elks has purchased the Orleans Parish Medical Society Building for $50,000. The research library of the society will be moved to the Hutchinson part of Tulane, and later on the society expects to purchase a new site for a building.

Personal.—Dr. Clarence Pierson, for fifteen years superintendent of the East Louisiana Hospital for the Insane, Jackson, has resigned.——Dr. J. George Dempsey, New Orleans, head of the antituberculosis bureau of the city board of health, has resigned to become statistician of the state board of health.

Hospital Items.—The staff of the Hotel Dieu, New Orleans, effected a permanent organization, June 15, and elected Dr. Marion S. Souchon, president; Dr. Homer J. Dupuy, Jr., vice president; Dr. Henry W. E. Walther, secretary, and Dr. Lucien A. Fortier, recorder.——Belvedere Private Sanatorium, New Orleans, has been taken over by the United States government, and will be utilized for the care of nervous and mental cases. Clarence H. Waring, P. A. Surg., U. S. Public Health Service, will have general charge of the institution and Dr. R. M. Connelly will be resident neurologist.

MAINE

Larger Quarters for Health Department.—The steady growth of the Maine Department of Health in the number of its workers and its lines of activity has necessitated an increase in the size of its headquarters in Augusta. The present health building on the State Hospital grounds is to be increased by the extension of the south wing, and the new offices will be ready for occupancy in September.

Health Department Appointments.—William H. Sawyer, Jr., assistant professor of biology in Bates College, Lewiston, has been appointed assistant in the diagnostic laboratories during July, August and early September. E. S. Lawrence, Gardiner, has been made summer assistant in the water laboratory in the division of sanitary engineering, and William Lawrence has been appointed hotel inspector for the summer season.

Public Health Association Organized.—The former state antituberculosis association has been reorganized as the Maine Public Health Association with a board of eighty-five directors and the following officers: president, Dr. Elmer D. Merrill, Foxcroft; vice presidents, E. M. Hamlin, Milo, Dr. Sylvester J. Beach, Augusta, and Henry Richards, Gardiner; secretary, Mrs. Howard R. Ives, Portland, and treasurer, Ralph Whittier, Bangor.

MARYLAND

Pleads Guilty.—Dr. Chauncey T. Scudder, Arlington, arrested some time ago on a charge of violation of the Harrison Narcotic Law, is said to have pleaded guilty in the district court, June 17, of administering drugs in violation of the law. His sentence has been suspended until October.

Personal.—Dr. Dwight H. Mohr, Baltimore, has been appointed chief police surgeon of Baltimore, succeeding Dr. T. H. Athey.——Asst. Surg.-Gen. Henry R. Carter, U. S. Public Health Service, superintendent of the United States Marine Hospital, Baltimore, sailed from New York, June 19, for Pieta, Peru, where he will engage in sanitary work for the Peruvian government with special reference to yellow fever and bubonic plague.——Dr. Carl M. Van Poole, Mount Airy, has been appointed local surgeon of the Baltimore and Ohio system.

MASSACHUSETTS

Personal.—Dr. James A. McKeon, Lynn, who was committed to the State Hospital, Danvers, for observation, is said to have escaped from the institution.

MICHIGAN

Branch Laboratory Established.—Plans have been formulated by the state health department and the officials of Port Huron whereby a branch laboratory of the state health department will be established in that city.

Summer Health Camp.—The Detroit Department of Health has decided to establish a summer health camp with accommodations for 100 children and the city council has appropriated $10,000 for this purpose. The camp will be in charge of health department officials.

Smallpox Subsiding. — The smallpox outbreak, which assumed rather alarming proportions in Detroit last month, has decreased greatly and there are now only about seventy cases in the city. The disease was confined almost entirely to negroes and to certain regions in four wards of the city.

Hospital Association Meeting.—At the annual meeting of the Michigan Hospital Association, held in Detroit, last month, Dr. Christopher G. Parnell, Ann Arbor, superintendent of the University Hospital, was elected president; Dr. Stewart Hamilton, superintendent of the Delray Industrial Hospital, Miss Grace McElderry of Hackley Hospital, Muskegon, and Miss Anna M. Schill, of Hurley Hospital, Flint, were made vice presidents; Dr. Durand W. Springer, University Homeopathic Hospital, Ann Arbor, was elected secretary, and Dr. Herman Ostrander, Kalamazoo, treasurer.

NEW JERSEY

New State Officers.—At the annual meeting of the Medical Society of New Jersey, held at Spring Lake, June 16-19, under the presidency of Dr. Gordon K. Dickinson, Jersey City, the following officers were elected: president, Dr. Philander A. Harris, Paterson; vice presidents, Drs. Henry B. Costill, Trenton; James Hunter, Jr., Westville, and Wells P. Eagleton, Newark; corresponding secretary, Dr. Harry A. Stout, Wenonah (reelected); recording secretary, Dr. William J. Chandler, South Orange (reelected); treasurer, Dr. Archibald Mercer, Newark. The next annual meeting will be held at Atlantic City.

NEW MEXICO

New State Board Member.—Dr. William R. Lovelace, Albuquerque, has been appointed member of the state board of medical examiners to fill the unexpired term of Dr. Charles B. Kohlhousen, deceased.

County Full-Time Health Officer.—San Miguel County has authorized a levy for the purpose of maintaining a full-time county health officer. The Rockefeller Foundation will pay $3,000 toward the salary and maintenance of the office.

Schools and Health Crusade.—Ten public schools in New Mexico were winners in the various divisions of the health crusade. These include the schools at June, La Madera, Sapello, three at Clovis, Ventanas, Carlsbad, Hondo and Socorro.

Public Health Association Still Active.—Some misunderstanding has been caused on account of the recent closing of the offices of the National Tuberculosis Association in Albuquerque. The office of the public health association is still open and will continue under the direction of Mr. Clinton P. Anderson.

NEW YORK

Mullan Bill Signed.—Governor Smith has signed the Mullan bill to amend the public health law in relation to the practice of nursing, by including the terms of "trained, certified and graduate" nurse along with that of "registered nurse."

Detectives Discover Drug Cache.—Police of the Italian squad discovered $75,000 worth of cocain in the home of Louis Mauro, 160 Carroll Street, Brooklyn, and $150,000 worth of cocain and other habit-forming drugs in the home of Giuseppe Gangarossa, 170 Carroll Street. These men confessed that the drugs were smuggled to them from Italy, though the last consignment came from Germany. They state that their chief market was along the water front of Brooklyn.

Public Health Graduates Organize.—Graduates of the 1919 and 1920 graduate course in infectious diseases and public health, which has been conducted under the joint auspices of the Albany Medical College and the state department of health by Dr. Charles C. Duryee, Schenectady, medical director, met at Albany Medical College, June 24, and organized the Eastern New York Post-Graduate Public Health Association, and elected the following officers: honorary president, Dr. Charles C. Duryee, state department of health; president, Dr. Melville D. Dickinson, Troy; vice president, Dr. William C. Treder, Scotia, and secretary-treasurer, Dr. William G. Keens, Albany. It was decided to hold two meetings annually, one of these to be in conjunction with the annual state conference of health officers. After the meeting a dinner was held, and the certificates were presented to the class of 1920.

New York City

Golden Wedding.—Dr. and Mrs. Lewis Stephen Pilcher, Brooklyn, celebrated their golden wedding anniversary, June 21, at their country home, "The Eagle's Nest," Lake Hopatcong, N. J.

Drug Smugglers Arrested.—Revenue inspectors of the port of New York recently arrested a former detective as he landed from an Italian steamer. In a false bottom of his trunk were found 840 packages of cocain. According to the customs officials, this country, during the past year, has been supplied almost exclusively with narcotics for the illicit trade from Italian ports.

NORTH CAROLINA

Personal.—Dr. Charles E. Lowe, Wilmington, has resigned as health officer of New Hanover County and has been succeeded by Dr. R. A. Herring, at present stationed at Milledgeville, Ga.

Antituberculosis Clinics.—From June 14 to July 3, a series of antituberculosis clinics was held in Gaston County under the direction of the state board of health and in immediate charge of Dr. Joseph L. Spruill of the state sanatorium, Columbia.

Betterment Fund for Hospital.—Physicians of Raleigh, headed by a local committee composed of Drs. Hubert A. Royster, John B. Wright, James W. McGee and Hubert B. Heywood, have recently secured more than $100,000 for the betterment fund of the Rex Hospital.

Antityphoid Campaign.—The authorities of Gaston County with the cooperation of the North Carolina State Board of Health offered the people of the county free inoculation against typhoid fever. Work will be under the charge of Dr. Charles S. Mangum, Chapel Hill, of the medical faculty of the University of North Carolina, and Dr. William B. Hunter, Wilmington, superintendent of public welfare, and will continue until July 24.

Education Campaign in Health and Sanitation.—Mr. W. A. McGirt, general manager of the North Carolina Landowners' Association, announces that an intensive educational campaign in hygiene and sanitation will be conducted in eastern North Carolina as a part of the activities of the association. The campaign will be in the form of free illustrated lectures to be given by Dr. Charles E. Low, formerly superintendent of health of Wilmington and New Hanover County. The program includes the full-time service of Dr. Low as sanitary expert, who will deliver illustrated health lectures on malaria, typhoid fever, hookworm and the relation of insects to the transmission of these diseases; soil and water pollution, necessity of privy sanitation, undernourishment, faulty diet and the need of a larger milk supply.

PENNSYLVANIA

Personal.—P. W. Whiting, in charge of biology at Franklin and Marshall College, Lancaster, has resigned to accept a position at St. Stephens' College, Annandale-on-Hudson, N. Y.——Dr. Robert M. Hursh has been appointed assistant in the Harrisburg genito-urinary clinic.——Drs. John Gilbert, Frank V. McConkey, Gibson Smith, Herman H. Farkas and Alfred A. Long have been appointed assistants to the reorganized tuberculosis clinic at York.——Dr. Charles C. Cooner, Kulpmont, has been appointed assistant at the Mt. Carmel Tuberculosis Clinic.

Philadelphia

Personal.—Dr. William W. Keen, emeritus professor of surgery at Jefferson Medical College, was awarded the degree of Doctor of Science by Harvard University at the recent commencement exercises.——Dr. Alonzo E. Taylor, professor of physiologic chemistry at the University of Pennsylvania, was given the honorary degree of Doctor of Laws by the University of Wisconsin, Madison.——Dr. Hugh M. Miller, Philadelphia, has been appointed chief of the genito-urinary clinic of the Phipps Institute.——Dr. Leo J. Rostow, dispensary physician to the Babies' Hospital, Philadelphia, was presented with a silver cup and fifty volumes of books by the board of managers at the annual meeting, June 14.

RHODE ISLAND

Return from the Orient.—Dr. John M. Peters, Providence, retiring president of the Rhode Island Medical Society and superintendent of the Rhode Island Hospital, and Dr. Frederick T. Rogers, Providence, have returned after a six months' sojourn in the Orient.

New State Officers.—The annual meeting of the Rhode Island Medical Society was held, June 3, in Providence. Dr. Simon Flexner, New York, delivered an address on "Lethargic Encephalitis," illustrated by motion pictures. The following officers were elected: president, Dr. Jesse E. Mowry, Providence; vice presidents, Drs. Herbert Terry and George S. Mathews; secretary, Dr. James W. Leech (reelected), and treasurer, Dr. Henry J. Hoye, all of Providence.

Fiske Prize Awarded.—Announcement was made by the president of the Fiske fund that the prize of $200 offered for the best essay on the subject "Surgical Lessons from the Great War" has been awarded to Dr. Allen G. Rice, Springfield, Mass. Under the terms of the Fiske Fund, a prize of $200 annually is awarded for the best essay on a subject selected by the trustees. The subject for next year is "Compulsory Health Insurance." The contest is open to all physicians and details regarding it may be obtained by addressing Dr. Halsey DeWolf, Providence, secretary of the fund.

SOUTH CAROLINA

Medical College Building Sold.—The state sinking fund commission has sold the old South Carolina College building, Charleston, to Montague Triest for $12,000.

Clinic Day.—Clinic day was celebrated in Columbia, June 8, when more than 150 surgeons from all over the state were the guests of the Columbia Medical Society. The day was devoted to clinics, and in the evening a banquet was given with addresses.

Venereal Disease Clinics.—A free clinic for the treatment of venereal disease is to be established in Union. Local support to the extent of $4,000 has been secured, and the state board of health has agreed to furnish $2,000. This will be sufficient to carry on the work for one year.

Personal.—Dr. Elizabeth S. Van Duyne, resident physician and professor of physiology and hygiene at Converse College, Spartanburg, has resigned to accept a similar position at Goucher College, Baltimore.——Mrs. Frances M. Montgomery, formerly superintendent of the Chick Springs Sanatorium and Steedly Clinic at Chick Springs, will be connected with the University Sanatorium, which is just being completed at Anderson.

Commencement.—The annual commencement exercises of the Medical College of South Carolina were held at Charleston, June 3, when degrees were conferred on a class of fourteen. These faculty changes were announced: Dr. J. P. Richardson has been appointed instructor in clinical pathology; Dr. J. J. LaRoche, instructor in medicine; Dr. M. W. Beach, instructor in pediatrics; Dr. H. S. Mustard, instructor in medicine; Dr. H. P. Jenkins, Jr., assistant in obstetrics, and Dr. William Rhett, assistant in pediatrics. The college cup awarded the honor graduate in medicine and the Blease medal were won by Dr. Harry E. Levit.

WISCONSIN

Fire in Sanatorium.—Damage to the extent of more than $2,000 was done by fire to the Mount Washington Tuberculosis Sanatorium, Eau Claire, June 19. The patients were removed without casualty.

New District Officers.—At the annual meeting of the Ninth Councilor District Medical Society, held in Stevens Point, May 14, Dr. Victor A. Mason, Marshfield, was elected president, and Dr. Joseph F. Smith, Wausau, was reelected secretary-treasurer.

Plaster Specialist Sentenced.—The supreme court of the state has sustained the decision of the lower court which sentenced "Dr." Till, the so-called "plaster specialist" of Barron County, to the county jail for six months. The decision was on the ground that the defendant had had a fair trial and was properly convicted.

New Clinic for Ashland.—The new clinic building in Ashland, recently built by Dr. John M. Dodd, is two stories and basement in height and will contain ten complete sets of offices. Dr. John M. Dodd has been elected president of the clinic; Dr. Adellon P. Andrus, vice president; Dr. Clyde J. Smiles, secretary, and Miss E. Peterson, treasurer.

Bedside Clinics for Physicians.—A series of clinics in internal medicine with ward rounds extending over two weeks is offered for physicians at the Milwaukee County Hospital, Wauwatosa, by Dr. Louis M. Warfield. The classes are limited to six physicians. Courses begin July 12, July 26, August 9 and August 23. No fee is charged. Applications should be made to the superintendent, Milwaukee County Hospital, Wauwatosa, Wis.

Staffs Selected.—The directors of the Madison General Hospital, on May 19, selected a temporary staff. The surgical staff will consist of Dr. Thomas W. Tormey, chief of staff, and Drs. Frederick A. Davis, Corydon G. Dwight, Louis R. Head, Reginald H. Jackson, Walter H. Sheldon and Arthur G. Sullivan. The medical staff will consist of Drs. Hugh P. Greeley, Cornelius A. Harper, Harry M. Kay, William T. Lindsay, Julius C. Sommers and Robert Van Valzah.

Will Give Complete Medical Course.—Legislation recently enacted in Wisconsin provides for the offering of a complete four-year medical course by the University of Wisconsin Medical School. It is reported that the teaching of the third year will be offered in the fall of 1923, and that of the fourth year in the fall of 1924. The legislation provides; also, for the establishing of a state hospital at Madison. A university infirmary and the Bradley Memorial Hospital have already been established on the university campus.

CANADA

Professional Fees in Montreal.—The Montreal Medico-Chirurgical Society has ruled that physicians hereafter shall make charges for telephone advice and prescriptions. There will also be an advance in day and night fees in the near future.

Center for Vital Statistics.—Ottawa is now headquarters for vital statistics for Canada. There will be tabulated returns from the dominion. Formerly, this was done by each province. All provinces will take advantage of the new method.

Mental Defectives in Toronto Schools.—Three hundred and twenty-five pupils have been found in eleven schools of Toronto with an intelligence quotient of less than 80 per cent. Out of 122 defectives below 70 per cent., 100 are possessed of characteristic stigmas of degeneration. Dr. Charles K. Clarke, who made the investigations, recommends that the board of education segregate low grade defective children in two or more special classes, centrally located.

GENERAL

Eye and Ear Men to Meet.—The fifteenth semiannual meeting of the Sioux Valley Eye and Ear Academy will be held at the Hotel Fontenelle, Omaha, July 14, under the presidency of Dr. James E. Reeder, Sioux City, Iowa.

Railway Surgeons Elect Officers.—At the annual meeting of the Central of Georgia Railway Surgeons' Association, held in Savannah, June 3 and 4, the following officers were elected: president, Dr. George W. Williamson, Hartford, Ala.; vice presidents, Drs. Benjamin L. Bridges, Ellaville, Ga., and R. Earl Evans, Gordon, Ga., and secretary-treasurer, Dr. Craig Barrow, Savannah, Ga.

Specialists Hold Annual Meeting.—At the annual meeting of the American Laryngological, Rhinological and Otological Society, held in Boston, June 2-4, the following officers were elected: president, Dr. Lee Wallace Dean, Iowa City; vice presidents, Drs. Harmon Smith, New York, Joseph C. Beck, Chicago, Joseph B. Greene, Asheville, N. C., William V. Mullin, Colorado Springs, Colo., and Hill Hastings, Los Angeles; secretary, William H. Haskin, New York, and treasurer, Dr. Ewing W. Day, Pittsburgh.

Bequests and Donations.—The following bequests and donations have recently been announced:

Woman's and Mount Sinai hospitals, New York, and Middlesex, N. J., Hospital, each $5,000 by the will of Henry J. Duveen, New York.

Vermillion County Hospital, Clinton, Ind., a donation of $10,000 to supplement $100,000 voted by the county, by Mr. H. M. Ferguson, Clinton, president of the county board.

Cornell University, $500,000 for the endowment of research professorships and to provide facilities for scientific work, a donation by August Heckscher of New York.

Grant Hospital, Chicago, $5,000 by the will of Harry Rubens.

American Hospital, Neuilly, donations of 250,000 francs by George Edward Kessler, St. Louis, and 100,000 francs by Louis D. Beaumont, of the Aero Club of America.

Gifts to Universities and Colleges.—The following appropriations have been made to medical schools in the United States by the trustees of the General Education Board:

Washington University Medical School, St. Louis, for endowment, $1,250,000; for additional laboratory facilities and equipment, $70,000.

Yale University Medical School, New Haven, Conn., toward a total of $3,000,000 for endowment, $1,000,000.

Harvard Medical School, Boston, for improved facilities in obstetrics, $300,000; for development of teaching in psychiatry, $350,000.

Johns Hopkins Medical School, Baltimore, for development of a new department of pathology (toward a total of $600,000) $40,000.

The trustees of the Rockefeller Foundation have also voted the following appropriations:

Dalhousie University Medical School Halifax, for buildings and equipment, $400,000, and for endowment, $100,000.

Medical Research Foundation of Elizabeth, Queen of the Belgians, Brussels, for general purposes of medical research, 1,000,000 francs.

College Not Recognized.—At its meeting, held June 18, at Atlanta, the National Eclectic Medical Association adopted the following resolution:

"WHEREAS, The Regular State Medical Board of Arkansas, has recently sent a resolution to every examining board in the United States, calling attention to the fact that the Arkansas Eclectic Medical Board of Examiners persists in examining and licensing graduates of a nondescript medical college of Kansas City, Mo.; primarily it may be to embarrass that college, but secondarily it may be an attempt to reflect on Eclectics in general, and this national body in particular.

"*Resolved*, That the secretary of this Arkansas regular board be notified that the aforesaid institution is *not* recognized as an eclectic college by this body."

This college is reported as not recognized in Missouri, its home state, nor is it probable that it would be recognized by the regular medical boards in the adjoining states. It has been reported that the college called itself "eclectic" in order that its graduates might appear before the Arkansas Eclectic Board of Medical Examiners and by that makeshift secure licenses.

LATIN AMERICA

Plague in Mexico.—One more death from bubonic plague and one new case were reported at Vera Cruz on July 4.

Reorganization of the School of Medicine of Bolivia.—The government of Bolivia has recently reorganized the School of Medicine of La Paz and provided funds for the school laboratories.

Sanitary Information Office Organized in Chile.—There has been recently organized in the department of public health of Chile a branch of the International Sanitary Commission of American Republics.

Chilean Medical Delegates.—A recent law adopted in Chile provides for the appointment of a medical commission which will come to the United States to study the methods followed in the antivenereal campaign.

Biologic Products of Bolivia.—The Instituto Nacional de Bacteriologia of Bolivia provides free to citizens of that country the following products: antityphoid vaccine, anti-anthrax serum, antistaphylococcic vaccine, antipneumococcic vaccine, diphtheria antitoxin and tuberculin. During the second part of the year 1919, 75,000 ampules were distributed.

Yellow Fever in Salvador.—An epidemic of yellow fever was reported, June 24, in the northwestern part of Salvador near the Guatemalan frontier. The advices state that forty-nine cases have been discovered, and that seventeen of these patients have died.——Yellow fever was reported, June 21, at Sonsonate, in the southwestern part of Salvador.

Vaccination at El Salvador.—During the year 1919, 143,579 persons were either vaccinated or revaccinated at El Salvador. The virus was furnished by the vaccine institute of that country.——During the years 1916-1919 the uncinariasis department of El Salvador examined 84,136 persons, 41,915 of whom were found infected and 12,118 of whom were cured.

Cuban Delegate in the United States.—Dr. Fernando de Plazaola, chief of the division of quarantine of the department of sanitation of Cuba has been studying in New Orleans the methods employed to control their previous plague outbreak.——The department of sanitation of Cuba has designated Miss Martina Guevara, chief of the public health nurses, to study nursing methods in the United States.

FOREIGN

Plague in Java.—The *Nederlandsch Tijdschrift* states that there were 798 cases of plague reported in Java during the month of April, with 797 deaths. In March there were 936 fatal cases.

Hospital Fund.—The American Hospital at Neuilly, France, has thus far received 2,750,000 francs toward the fund of 7,000,000 francs which is being collected for the purpose of enlarging the institution.

Births Exceed Deaths in Spain.—During 1919, according to vital statistics published by the *Official Gazette*, there were 585,352 births in Spain and 482,030 deaths. The birth rate was 28.25 per thousand and the death rate, 23.26.

Monument to Dr. Reymond.—A monument was recently erected at Montbrison, France, in memory of the men from the region who lost their lives in the war and in particular of Dr. E. Reymond, senator from the Loire district and military aviator.

Bubonic Plague.—June 26, bubonic plague was reported from Catania, Sicily, by the American consul there. Several cases have occurred, with two deaths.——Assistant Surgeon Carl Michel, U. S. P. H. S., is in charge of the work against bubonic plague at Vera Cruz.

Prize to Pende.—Dr. Nicola Pende, professor of pathology at University of Palermo, was recently awarded the Balbi-Valier prize by the Venice Reale Istituto for his works on the organs of internal secretion. This prize is conferred for the best medical works published in the preceding period.

Flechsig's Fiftieth Professional Anniversary.—The first volume of Prof. P. E. Flechsig's "Anatomy of the Human Brain and Spinal Cord on a Myelogenetic Basis" appeared May 23, the date of his fiftieth professional anniversary. He has been professor of psychiatry at Leipzig since 1877 and chief of the clinic for nervous and mental diseases.

Postgraduate Work in London.—Physicians seeking graduate medical work in London may obtain full information in regard to the opportunities in that city by writing to the

Postgraduate Medical Association, 1 Wimpole Street, London, W. 1, England. Better information will be secured if, in writing, the particular kind of work desired is mentioned.

Tokens of the Gratitude of France.—Several American names are in the list recently published of those to whom the French government has awarded the Médaille de la reconnaissance française. Among them are Drs. Wyatt and Baribault, and the women physicians: Drs. Finley, Chills, Klotz, Doherty and Fraser, nearly all connected with the hospital at Luzancy.

Monument to Living Pediatrician.—Our Spanish exchanges give an account of the statue of Dr. Gómez Ferrer recently unveiled at Valencia. The resolution to erect the monument was adopted at the Asamblea Médica Regional held at Valencia in 1918, as a testimony of the gratitude of the mothers of Valencia to the incumbent of the chair of children's diseases at the University of Valencia, and leader in plans for welfare work for children.

Medical Students and Chemical Experiments.—The *Deutsche medizinische Wochenschrift* relates that in an explosion in the chemical laboratory at Münster seven students were killed, including two medical students. The editor comments that this sustains his appeal for separate lectures for the medical students. "Why," he asks, "should medical students have anything to do with experiments with explosives, as was the case in this lamentable occurrence?"

Exhibition for Dental Hygiene.—A traveling museum to educate the public in the care of the teeth has been organized in the Netherlands, and was on exhibition at Rotterdam for ten days. It was organized by the national dental association with the aid of the Green Cross Society. The aim of the display is said to be to educate not only the public in the care of the teeth and the dangers of neglect, but to inform the authorities as well, so that they will appreciate the necessity for concerted efforts to save the teeth of the rising generation. Examination of 20,000 schoolchildren in one Holland city showed carious teeth in 80 per cent. Women volunteers explain the exhibits to visitors.

The Crisis in Contract Practice in Germany.—The *Münchener medizinische Wochenschrift* of May 28 relates that at noon, May 25, all the contracts with the sickness insurance companies having expired, physicians all over the country were released from all contract obligations, and the Leipziger Verband, the solid front of the organized profession, has ordered that from that hour the krankenkassen insured are to be treated by the physicians as private patients, with cash payment at once for each service rendered. The fee to be asked is 8 marks for each office call and 12 marks for each visit, with specified higher rate for extra services. No certificates for the patients are to be made out, but prescriptions are to be written on the physician's own blanks, and marked "No renewal." The *Wochenschrift* adds, "These orders of the Leipziger Verband are to be unconditionally obeyed. On the strict and invariable compliance with them depends the outcome of the conflict into which the profession in Germany has now entered. Let no one think of his private advantage! The welfare of the whole is in the last line also what is best for the individual." As THE JOURNAL has already mentioned, at the recent conference between the representatives of the organized profession and of the krankenkassen, when the former stated the tentative terms on which the contracts would be renewed, the representatives of the krankenkassen got up and left the room. The last mail brings word that a partial agreement has finally been reached between the parties, which is regarded as essential progress toward the desired "free choice of physicians." The krankenkassen have also agreed to found institutions to promote social hygiene. The question of remuneration is still unsettled and had to be left to a third impartial committee.

Deaths in Other Countries

Dr. **Demons,** formerly professor of surgery at the University of Bordeaux.——Dr. **T. Barrois,** professor of parasitology at the University of Lille.——Dr. **R. Kretz,** privat-docent of pathologic anatomy at the University of Vienna and author of seventy-five articles on this and allied subjects.——Dr. **T. Debaisieux,** former professor of surgery at the University of Louvain, at one time president of the Belgian Academy of Medicine and of the Belgian Surgical Association, aged 73. His son succeeded him in the chair of surgery.——Dr. **K. Franz,** chairman for ten years of the quackery committee of the German Aerztevereinsbund.——Dr. **F. Schatz,** former professor of gynecology and obstetrics at the University of Rostock, aged 78.

Government Services

General Hospitals Named in Memory of Distinguished Medical Officers

The War Department has inaugurated the policy of naming its general hospitals in memory of deceased medical officers of the Army who have made distinguished records in the service. For many years it has been the policy to identify Army hospitals by numbers and particular location of the Army camps or forts.

This new policy is one which will appeal to the sentiment and traditions of the Medical Corps of the Army and will identify the medical profession more conspicuously in military affairs than heretofore.

In accordance with this new policy the War Department has issued General Order No. 40 which provides as follows:

General Hospital No. 41, Staten Island, N. Y., is announced and will be known as the "Hoff General Hospital, Staten Island, N. Y.," in honor of Col. John Van Rensselaer Hoff, M. C., U. S. Army (born 1848, died 1920), who throughout his entire military career devoted unremitting effort to the efficient organization and administration of the medical department and was the pioneer in the organization and development of the enlisted branch thereof, formerly known as the Hospital Corps.

General Hospital No. 28, Fort Sheridan, Ill., is announced and will be known as the "Lovell General Hospital, Fort Sheridan, Ill.," in honor of Surg.-Gen. Joseph Lovell, U. S. Army (born 1788, died 1836), who served as Surgeon-General of the Army from 1818 to 1836. (The first formal organization of a Medical Department for the Army was prescribed by Congress in 1818 and by virtue of that Act he was appointed Surgeon-General from Hospital Surgeon, being the first officer to bear that title.)

General Hospital No. 6, Fort McPherson, Ga., is announced and will be known as the "Lawson General Hospital, Atlanta, Ga.," in honor of Surg.-Gen. Thomas Lawson, U. S. Army (born 1795, died 1861), who served as Surgeon-General of the Army from 1836 to 1861. (Awarded brevet rank of brigadier-general in 1848 for meritorious conduct in the Mexican War.)

General Hospital No. 19, at Oteen, N. C., is announced and will be known as the "O'Reilly General Hospital, Oteen, N. C.," in honor of Brig.-Gen. Robert Maitland O'Reilly, U. S. Army (born 1845, died 1912), who served as Surgeon-General of the Army from 1902 to 1909, and under whose administration the Medical Reserve Corps of the Army was established.

General Hospital No. 21, at Denver, is announced and will be known as the "Fitzsimons General Hospital, Denver," in honor of First Lieut. William Thomas Fitzsimons, Medical Officers' Reserve Corps, U. S. Army (born 1889, died 1917), a skilled surgeon and the first officer of the U. S. Army killed in the World War. He met his death at Dannes-Camiers, France, Sept. 4, 1917, in an air raid by the enemy while serving with Base Hospital No. 5, U. S. Army. The name also fittingly commemorates the eminent services rendered by the civil medical profession of America as members of the Medical Corps of the Army during the World War.

The new hospital to be constructed on the military reservation at El Paso, Texas, for which funds have already been appropriated, is announced and will be known as the "William Beaumont General Hospital, El Paso, Texas," in honor of Major William Beaumont, Surgeon, U. S. Army (born 1785, died 1853), who during his service as a medical officer of the Army conducted epoch-making investigations of the physiology of digestion, and as a result of his researches became the leading physiologist of the country and the first to make an important and enduring contribution to that science.

The Department Hospital, Honolulu, Hawaii, is announced and will be known as the "Tripler General Hospital, Honolulu, Hawaii," in honor of Major Charles Stewart Tripler, Surgeon, U. S. Army (born 1806, died 1866), who served as a Medical Director of the Army of the Potomac during the Civil War, and as a distinguished author published in 1858 his celebrated manual on the examination of recruits. (Awarded brevet rank of Brigadier-General in 1865 for faithful and meritorious service during the Civil War.)

The Department Hospital, Manila, P. I., is announced and will be known as the "Sternberg General Hospital, Manila, P. I.," in honor of Brig.-Gen. George Miller Sternberg, U. S.

Army (born 1838, died 1915), eminent bacteriologist and sanitarian, who served as Surgeon-General of the Army from 1893 to 1902, and founded the Army Medical School. (Awarded brevet ranks of captain and major in 1865 for faithful and meritorious service during the Civil War.)

The Walter Reed General Hospital, Washington, D. C., will retain its present name.

The Army and Navy General Hospital, Hot Springs, Ark., will retain its present name.

The Letterman General Hospital, Presidio of San Francisco, Calif., will retain its present name.

Foreign Letters

MEXICO CITY

(From Our Regular Correspondent)

June 27, 1920.

Plague and Smallpox

The department of public health is still much concerned about the eradication of plague from the port of Vera Cruz. Some sporadic cases are still occurring. From April 19, when the first case was observed, to June 18, there were reported thirty-nine cases with twenty-three deaths, which is a high mortality rate. The campaign is being carried on with all energy, employing all the available scientific resources. There is already at hand a large supply of imported antiplague serum, and prophylactic vaccinations have been made on a large scale, utilizing vaccine received from the United States and also that prepared at the Instituto Bacteriológico Nacional. No time has been lost in carrying out deratization measures, as well as the isolation of plague patients and suspected cases. Occasionally, the authorities have had to contend with the ignorance of some families who refuse to allow their members to be sent to the pesthouse, and even with the criminal connivance of a German physician, who concealed a patient and was therefore arrested. Railroad communication has been reestablished from Mexico City to Vera Cruz, although quarantine of passengers is enforced and merchandise disinfected. Mention was made of a case of plague at Tampico, but after investigation it was found that the supposed patient had died of adenophlegmon of the axilla, following an infected wound of the hand.

Many cases of smallpox have been reported in the state of Oaxaca.

A New Department Planned

The Department of Public Instruction and Fine Arts, which was established in the last years of General Diaz's government, was suppressed during Señor Carranza's term of office. Since 1917, the only national center of culture has therefore been the National University. Its new rector, Lic. Vasconcelos, has explained his intention of asking the government to reestablish the department. In his opinion the department of public instruction must be a federal institution. This plan, if carried out, will among other things result in correcting or abolishing several of the state medical schools, which are very far from being ideal.

Child Welfare Congress Postponed

It was the intention to hold in this city the Congreso Mexicano del Niño in September. As in that month there will be held the postponed presidential elections, the board of directors of the congress has decided to postpone it until January, 1921. This is all the wiser, since Ing. Palavicini, the president of the organizing board, has left for Europe as extraordinary ambassador of the Mexican government to Belgium, France, England, Italy and Spain.

BELGIUM

(From Our Regular Correspondent)

May 30, 1920.

Death of Bersaques

By the death of Dr. Charles de Bersaques, one of the most active members of the Société de medecine de Gand, Flanders loses one of its most eminent surgeons. Dr. Bersaques was a very capable operator and had attained an enviable position at the Hôpital de la Biloque. He wrote several important works, especially on congenital club-foot and surgery of the large intestine.

The Effects of War on Children

M. Dubois presented before the Académie royale de Belgique certain data regarding the weight and height of Liége children between the ages of 6 and 17 years, in 1918. These data are based on observations of children who presented themselves at the canteens for debilitated children, and they include curves of the weight and height of boys and girls arranged in groups according to their state of health.

It appears from these findings that the classical figures of Quetelet are too low to apply to the present average population of our towns, that the children who escaped impairment of health up to 1918 were affected during that year, and that, at that period of the war, the debilitated children were much below the average weight and height of normal children, although they did not present any determinable symptoms of disease.

At a subsequent meeting of the Académie, M. Duthoit reported the physical condition and development of children in 1915-1919. He was attached to the schools patronized by Her Majesty the Queen and paid careful attention to the development of 600 children between the ages of 2 and 6 who were in care of these institutions. He showed the importance of a careful medical inspection of schoolchildren, and pointed out that tuberculosis was not highly prevalent among these children, but that rickets was found in 25 per cent. of the young children, while the older children were, in general, quite robust. M. Duthoit called attention to the fact that in the Yser region infants are generally healthy and sound from birth, and that the high mortality in the first year must be attributed to the almost total abandonment of breast feeding and the absolute ignorance of the mothers. It is his hope that the infant clinics which were established during the war will be continued and extended, as they are destined to bring excellent results.

Anglo-Belgian Congress of Hygiene

An Anglo-Belgian congress of hygiene, in which representatives of other allied nations also participated, was held at Brussels, May 20-25. The purpose of the congress was not to discuss abstract problems and to broach complex scientific questions, but to study the best means for protecting children, for improving the housing conditions, for combating tuberculosis and venereal diseases, and for promoting industrial, municipal, military and tropical hygiene. England has made great progress in these fields, and the creation of a ministry of health promises to render this progress more rapid and more certain.

As Belgium faces the same contingencies, an exchange of ideas between British and Belgian hygienists and a comparison of practical solutions would seem to be both interesting and highly advantageous.

The congress, organized by the Royal Institute of Public Health of England, with Dr. Réné Sand as Belgian secretary, had a success beyond all expectations; 500 members were registered from England, and 200 from Belgium. More than 300 papers were presented at the congress, which was

divided into the following sections: social hygiene; military, naval and tropical hygiene; municipal hygiene; industrial hygiene; hygiene of employed women (maternity protection and infant welfare), and bacteriology and chemistry. The main topics were the prevention of venereal diseases, regulations for the reconstruction of towns, and especially the lessons of the war from the point of view of military hygiene. Particular attention was given to the question of lighting as related to the hygiene of the industrial worker.

PARIS

(From Our Regular Correspondent)

June 17, 1920.

School Community Centers and Hygiene

Schoolbuildings are intended primarily for educational purposes, but by virtue of a law which permits of their use by certain qualified persons specified in the text, they have latterly been appropriated to public purposes. There has been a tendency to make the school more and more a place for public gatherings and a refuge for services of every nature foreign to school purposes. As a result, the class-rooms are often occupied from 8 a. m. to 10 p. m., and the continuous occupation of the premises prevents thorough disinfection and cleansing, while the presence of a large number of people constitutes in some measure an agency in the propagation of infectious diseases and a permanent danger to the health of the schoolchildren. The Conseil d'hygiène of the department of the Seine recently resolved to take all possible measures to restore the schools to their legitimatet functions and to restrict their use for purposes other than teaching.

French Literature in the United States

The Comité "France-Amérique" has recently designated a subcommittee of ten prominent men of France, including Dr. Henri Roger, dean of the Paris faculty of medicine, with directions that they prepare a monthly list of ten new French works which are particularly deserving of the attention of the public, more especially of Americans. One book will be chosen from each of the following categories: intellectual life; history and political science; economics, industry, commerce and finance; novels; poetry and art; ancient and modern literature and literary criticism; philosophy and sociology; law; medicine, and foreign travels. These monthly lists will be published in French and English, and will be sent to libraries, universities, editors, publishers and interested individuals in America.

Gift to the Medical Faculty of Strasbourg

At the last session of the University of Strasbourg, announcement was made of a gift to the medical faculty by Messrs. André and Edouard Michelin of French government bonds yielding an annual income of 50,000 francs. This is to be used for creating a prize for that scientist of France or allied nations who shall first discover an effective preventive or remedial agent for tuberculosis by experimentation on guinea-pigs or cattle. The donors do not desire that human experimentation be undertaken. From now and until the prize shall be awarded, the income is placed at the disposal of the Faculté for the establishment and support of a laboratory devoted exclusively to research on tuberculosis under direction of the professor of hygiene and bacteriology of the medical faculty.

In choosing the University of Strasbourg for the award of the new prize, Messrs. Michelin are giving expression to the feeling of pleasure which pervades all France at the return of Alsace and Lorraine to France, and they are testifying to their trust in the future of the great city where Pasteur did his earliest work.

Under the special regulations which will govern the award, the candidates for the prizes must furnish proof of the efficacy of the remedial agent before a committee composed of the dean of the medical faculty of Strasbourg, one professor named by the council of the faculty, the director of the Institute of Hygiene and Bacteriology of Strasbourg, the director of the Pasteur Institute of Paris, and a professor named by the council of the medical faculty of Paris.

Death of Professor Demons

Dr. Demons, former professor of clinical surgery at the Faculté de médecine de Bordeaux, died recently at the age of 78. Born in 1842 at Saint-Ciers-de-Canesse (department of the Gironde), Demons studied medicine at Bordeaux University, was appointed surgeon to the hospitals of Bordeaux in 1869, and at the foundation of the medical faculty became associate professor of surgery. In 1886 he was made professor of clinical surgery, which position he occupied until his retirement in 1911. Dr. Demons was national correspondent for the Académie de médecine from 1882, and was one of the organizers of the French congress of surgeons, over which he presided in 1891.

LONDON

(From Our Regular Correspondent)

June 19, 1920.

Clinical Units in Medical Schools

A new departure, which consists in the formation of "clinical units" in the medical schools, has already been mentioned in these columns. The University Grants Committee has issued an important memorandum on the subject, pointing out that their origin is twofold: the advance of medicine itself and the evolution of the form of medieal education. Medicine itself was revolutionized in western Europe first by the renaissance, and then in our own times by the advance of biology in the middle of the last century, and the discovery of the etiology of infective disease in the last half of the century. These things gave a new content to medicine and formed the basis of profound changes. Then, in the second place, there has been an evolution in the education of the physician. A century ago he became a physician by apprenticeship; this was followed in due course by what may be called the hospital system—in other words, an application of the apprenticeship system on a large scale in the wards of a hospital; lastly, there came the more systematic education of the medical student in the preliminary sciences and the intermediate subjects before he was trained on the clinical side. The clinical unit is not a sudden offshoot or "outcrop," but a further stage in a long process of evolution. The relation to the state to this evolution began with various medical acts, and more recently the subsidizing of medical education by the government. In 1912, Abraham Flexner's Report on "Medical Education in Europe" was published, and *inter alia* it advocated a development of medical teaching by the formation of clinical units.

The British system of clinical teaching has been an applied apprenticeship by means of clerking and dressing, which has at least four great advantages: (1) The student himself became an observer and a physician; (2) a close personal relationship was established between the student and patient; (3) the art of medicine was taught by practice, and (4) the student was holding a responsible office and cultivating his sense of responsibility. These four points have proved invaluable, and have resulted in producing a good standard of physician, perhaps indeed the best in the world. But there are disadvantages. (1) The student's work tends to become empiric and not sufficiently inspired by the science of medicine; (2) the student is in the main brought into associa-

tion with the end-results of disease, and is insufficiently equipped to deal with disease at its beginnings; (3) instruction in clinical work tends to become discontinuous and unsystematic; his studies in biology and chemistry, in anatomy, physiology and pathology are systematized and organized on a scientific basis; his clinical instruction is, on the contrary, in a large degree unorganized.

While these virtues are great, the defects are serious and they become more serious from the advances of medicine. They are greatest in London, which has not a centralized teaching university like Edinburgh and other university centers, where the germ of clinical units and, indeed, almost their essentials have existed. These conclusions are reached: 1. The latest advances in sciences which affect medicine—chemistry and physics, anatomy and physiology, pathology and pharmacology—should be continually brought into the teaching of the clinical subjects and applied to the observation and treatment of disease. 2. In order that education may be of this scientific standard and that students may come into direct contact with knowledge at its growing point, there is needed a system of instruction by teachers actively engaged in scientific research. 3. Such teachers must be provided with proper equipment, adequate staff and sufficient time if their work is to be comparable with the best scientific and practical teaching of, say. a professor of physiology. The system of clinical units is designed to secure these ends. It should consist of three parts or units which should be interrelated and separable, dealing with medicine, surgery and obstetrics (including gynecology), respectively. In each of these subjects a clinical unit should include a professor or director, who would devote the greater part of his time to teaching, treatment and research, competent above everything else to teach, of sound scientific training, and possessing scientific imagination, who shall have: (*a*) an adequate whole-time and part-time staffs; (*b*) the control of wards (from fifty to 100 beds); (*c*) a proper and effective outpatient department; (*d*) ample laboratory accommodation for research and pathologic work; (*e*) adequate scientific equipment for effective clinical teaching, and (*f*) a postmortem service. Such units should work along with and supplement the ordinary ward services, in which practical teaching will still be carried on as before. But while the ordinary services are organized only for the immediate needs of the patient and the practical training of students, the clinical unit will, in addition, be especially equipped for scientific instruction and scientific research.

Dangerous Drugs Bill

The second reading of the dangerous drugs bill in the House of Commons has taken place. In moving it, Major Baird, undersecretary to the Home Office, said that it was to give effect to the international opium convention of 1912, which aimed at controlling throughout the world the traffic in opium and cocain and their preparations. During the war, Great Britain found it necessary to take action on her own account, owing to the spread of the cocain habit and the smuggling in the East, which caused trouble and delay with our merchant shipping in connection with China. A regulation was made to control the manufacture, sale and distribution of cocain, and a proclamation was issued prohibiting the importation of cocain or opium except under license. These measures did not prove altogether successful, owing largely to the difficulty of controlling smuggling of an article which could be brought in in such small quantities and so easily concealed as opium. The only effective control must come from international cooperation. The allied powers attached so much importance to this question that the ratification of the international convention of 1912 was made one of the conditions of peace, and embodied in the peace treaty. The bill seeks power to extend the provisions of the measure to any new derivative of morphin or cocain, or any drug likely to produce the same effect as these substances.

Munificent Rockefeller Gift to Medicine

The Rockefeller Foundation has offered the following gifts for the furtherance of medical education and research in this country: To University College Medical School the sum of $2,000,000 "toward a building and equipment program, substantially as submitted by the authorities of the school, and the further sum of $2,175,000 toward the support of clinical facilities and teaching in substantial conformity at the outset with the proposed plan," making a total of $4,175,000 for the medical school. To "the University of London in behalf of the University College, the sum of $950,000 toward a building and equipment program substantially as submitted by the authorities of the college, and the further sum of $900,000 toward the endowment of laboratory teaching in substantial conformity at the outset with the proposed plan," making a total of $1,850,000 for the college and a grand total of $6,025,000. At a meeting of the staff and students, the provost of University College said that he believed that the gift was the greatest single one ever made for educational purposes in this country. In moving a resolution of appreciation for this munificent and spontaneous gift, Dr. Eliott Smith, professor of anatomy in University College, said that it would insure that the requisite facilities for anatomic teaching and research, in close conjunction with those in physiology and pharmacology, would be provided in accordance with the scientific requirements of the time. The general scheme of anatomic teaching in this country was in a curious position. There was, for instance, no equipment for allowing students to study, in the anatomy department, such parts of the body as could be seen only by the artificial aid of a lens or lenses. There were no facilities for showing sections of embryos, or for allowing students to study this essential part of their work. Nor were there any facilities for the study of the experimental factors which determined the form of the body. It was now hoped to bring back to anatomy the parts of the subject, such as histology and embryology, which had been taken away from it. It had been the settled policy of University College to restore anatomy to the position which it should occupy, not only in the medical curriculum, but also in the field of research.

VIENNA

(From Our Special Correspondent)

June 16, 1920.

Socialistic Methods and Eight-Hour Day in Hospital Work

Since the radical change of government came into being in this country, one institute after the other has been conducted on socialistic lines, with only little attention being paid to the desirability of such measures from the standpoint of effectiveness. In the hospitals, also, all the latest ideas in regard to socialization have been introduced. In addition to inaugurating the eight-hour day, a working board (Betriebrat) had to be elected from among the hospital staff in such a way that each group of employees delegated a number of representatives to this board: the physicians, the nurses, the clerks, the artisans, the machine-hands and the patients have their representatives. The board is the real manager of the hospital, which "runs" the whole thing. No person, be it physician or charwoman, may be dismissed without the counsel of the board, and the dietaries, as well as the regulations of the daily work, are controlled by this council. Naturally, such a condition, which the medical staffs have repeatedly but vainly opposed, only tends to hamper seriously the efficacy of the medical work. By the adoption of the eight-hour day through-

out the whole state in all occupations, the number of nurses had to be trebled, and the men engaged in permanent work (engines, automobiles, stoves) in the hospitals are now working in three shifts, meaning a double or treble expenditure. Things have taken such a turn that a few weeks ago a clinical attendant who had not protected the interest of the charwoman in a sufficient degree roused the anger of the majority of the working board of our general hospital. They demanded his dismissal for that reason. Of course, this demand was not fulfilled by the government. But the union of the hospital directors and heads of the ward addressed, in their turn, a memorandum to the board of health (the government), pointing out that the present conditions are intolerable. They chiefly demand that the unduly large nonmedical hospital staff be reduced. While in peace time and even during the war, two or three nurses were sufficient to minister to all needs of the patients of a ward, and stood always in close contact with their patients, now eight or ten nurses are attending the same number, without even a fraction of former satisfaction to the patients. Formerly, utmost care was extended; now, carelessness is not infrequent. The nurses, the real sisters of former times, have been replaced by a female nursing officer who works eight hours, not a minute longer, like a factory girl.

Naturally, the bad effect is felt by all patients; from 6 a. m. to 2 p. m. one sister nurses him, from 2 to 10 p. m. another, and then the night sister. Severely ill patients do not get the attention they require; furthermore, the number of patients in many hospitals is nearly equal to or exceeds but slightly the number of persons employed in the hospital, an unnatural condition. The consequence is that each patient costs the hospital from 65 to 85 kronen a day in the municipal hospital, even 115 kronen, while the hospitals get from the public treasury only 78 kronen. It is impossible to make both ends meet under such circumstances. These conditions tend to turn the hospitals into "asylums for nurses and hospital employees," as the memorandum styles it, and are a crime against public interests. The directors also make concrete suggestions toward the satisfactory working of their institutes.

They first of all demand that only such nurses be employed as are prompted to their work by the earnest desire to give real help to the sick and all patients—not merely to put in eight hours. All sisters should be housed within the hospital, as is the case in all other civilized countries. They should be unmarried. If they marry, they may be employed in the outpatient department, in the laboratory or in private nursing, but not in the wards of surgical theaters. The medical staff, female or male, should be subject to the same restriction. As long as they work in the wards or clinics, they should be single and live in the hospital. Whole-time appointments should be the rule. The interests of the hospital require all the skill of the physician. The clerks and other members of the hospital may be appointed in such numbers that they complete their work in the normal eight hours; but they must actually work and not merely play politics. Of course, they cannot be denied the right to take advice in matters pertaining to their work, but it is an impossible condition that through the working board each man feels: "Nothing can happen to me, I cannot be dismissed." The consequence is that the efficiency of the work has suffered very severely. The memorandum demands that the directors should be entitled to dismiss without the assent of the board every person who does not fill the post he is in, and allot to him the work he is fit for. The arrangement of working boards is not suitable for public hospitals or humanitarian institutes, working not for profit. Their influence must be limited to advisory and disciplinary measures, but must not interfere with the effective working of the hospital, and the financial situation of all these institutes must be taken into consideration, without paying attention to political desiderata.

Holland Assists the Libraries of Austrian Scientific Institutes

An appeal for books and periodicals for our libraries has found a lively response in Holland these last few weeks. By the activity of Dr. Dykgraf, the ancient University of Leyden and the technical school of Delft have arranged collections of such works and publications as are mostly needed for our schools. The action will extend not only to books, but also to scientific material (glass tubes, chemicals and dyes) and to money contributions to enable the institutes to run for a while, at least on part time. Parts of these gifts have arrived already, and were distributed where they were most wanted. It may be added that the technical laboraotry of our university, for instance, only just escaped being closed for want of material.

Contamination of the Milk Supply

The supply of milk to Vienna has for a long time been a matter of serious concern both to the board of health and to the board of nutrition. The quantity of 900,000 liters (about 220,000 gallons) required daily has not even approximately been reached for about four years. Milk tickets had to be handed out to infants and children up to 6 years, entitling them to from 0.25 to 1 liter daily, according to age, if the milk was obtainable. As a rule, only infants under 1 year get about 0.75 liter (a pint and a half), the other children getting about half this allotted quantity, or none at all, as luck might bring. Lately, even these reduced supplies were cut down still more, and a high percentage of the milk arrives in a sour condition, while a large quantity of the remainder has been pronounced contaminated by the inspecting officer. In fact, no ordinary cow's milk is now delivered to Vienna which is fit to be given to an infant. This is chiefly due to a curtailment of the railway traffic, owing to the lack of coal, and to the ill will of the peasant population, which refuses to send food to Vienna. Condensed milk has to be imported on a large scale from England, America and Switzerland to feed our children. But the exorbitant price, due to exchange rates, is a bar to the extended use of this substitute, as far as the great bulk of our population is concerned, while the fresh cow's milk arriving in antiquated vessels, and obtained by primitive methods, is not a reliable form at all.

Marriages

John Jonikaitis, Boston, to Miss Carolyn A. Eckes of Jersey City, N. J., in New York City, June 24.

Frederick William Fergusson, Starkweather, N. D., to Miss Laura Jane Johnston of Chicago, June 2.

Warren James Duckett, Jersey City, N. J., to Miss Clara Belcher Hopkins of Dover, N. H., April 19.

Frederick Howard Falls, Chicago, to Miss Margaret Haseltine of Berkeley, Calif., recently.

Daniel Schenk Lee, Guymon, Okla., to Miss Lillian Erline Willoughby of Liberal, Kan., May 11.

Ernest Walter Tonkin to Miss Florence Bertha Hicks, both of Edwardsburg, Mich., June 24.

Simon Harry Rosenthal, Lynchburg, Va., to Miss Bettye Greenberg of Danville, Va., June 6.

Edward Hagop Bedrossian to Miss Angele S. Adourian, both of Philadelphia, April 28.

John Pearl Goodrich to Miss Isabelle Esther O'Leary, both of Bangor, Me., June 26.

Julius Arky Haiman to Miss Frances Alexander, both of New York City, June 20.

Benjamin Barker Beeson to Miss Mildred Helen Bronson, both of Chicago, recently.

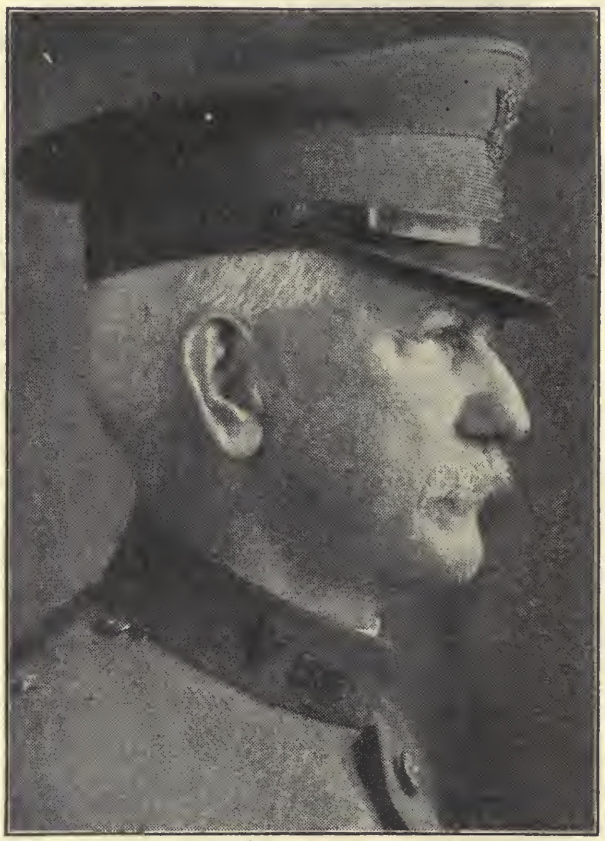
Deaths

Major-General William Crawford Gorgas ⊕ former Surgeon-General of the United States Army and President of the American Medical Association in 1909-1910, died in London, July 4. Early in May, General Gorgas left the United States for the west coast of Africa, to head a sanitary commission of the Rockefeller Foundation, arriving in London, May 19. He proceeded to Brussels, where he was decorated by King Albert, and after a tour of Belgium and of the Rhine district around Coblenz, he returned to London. Here he suffered an attack of cerebral hemorrhage on the morning of May 30, since which day he had been critically ill at Queen Alexandra Hospital, where he was attended by Brig.-Gen. Robert E. Noble, U. S. Army, and by medical officers of the British Army. Full military honors were accorded to him at his funeral, July 9, at St. Paul's Cathedral, London, which was attended by representatives of King George and of the government services, and by members of the medical profession and the scientific world. His body will be returned to the United States in a government transport.

William Crawford Gorgas, the son of Gen. Josiah and Amelia Gayle Gorgas, was born at Mobile, Ala., Oct. 3, 1854. In 1875 he graduated A.B. from the University of the South, after which he studied medicine at Bellevue Hospital Medical School, receiving his M.D. degree in 1879. He served an internship at the Bellevue Hospital and then entered the Army as surgeon with the grade of lieutenant, June 16, 1880. His first service was at Fort Brown, Texas, where he contracted yellow fever, a circumstance which influenced and guided the future career of the young physician. Under military occupation of Cuba from 1898 to 1902, Dr. Gorgas served as health officer of Havana, which had a long history of endemic yellow fever with periodic outbreaks in epidemic form. When, late in 1900, the Army yellow fever board under direction of Major Walter Reed discovered the causative relation of the stegomyia mosquito to the transmission of yellow fever, Major Gorgas immediately directed practical measures of control based on that discovery, with the result that by the end of 1901, Havana and its environs were free from the disease for the first time in centuries. In recognition of this brilliant achievement in preventive medicine, Dr. Gorgas was promoted in 1903 to colonel and assistant surgeon-general by special act of Congress; in 1904, as chief sanitary officer of the Panama Canal, and later as member of the Isthmian Canal Commission, he directed the intensive sanitary campaign which transformed a veritable "pesthole of the Pacific" into habitable domain and made possible this triumph of American engineering without the great sacrifice of life which had doomed all earlier attempts to failure. He was nominated surgeon-general, Jan. 16, 1914, with the rank of brigadier-general, and by special act of Congress in 1915, he was created major-general for life in reward for his scientific attainments in the sanitation of the Canal Zone. He served as surgeon-general virtually throughout the World War, and reached the statutory age limit, Oct. 3, 1918, only a few weeks before the signing of the armistice, but continued on special duty until the end of hostilities.

General Gorgas was in international request as an authority on hygiene and sanitation and repeatedly advised foreign governments regarding special medical problems. At the invitation of the British government he went to South Africa in 1913, and there made important recommendations for the prevention and control of pneumonia among the miners. In 1915, he headed a commission under the auspices of the Rockefeller Foundation to study the foci of yellow fever and other tropical diseases in South America and Central America. He made further investigations in Ecuador after the war.

In recognition of his services to humanity and his contributions to science, he was the recipient of marked honors from the governments, universities and learned societies of many countries. He was awarded the Distinguished Service Medal of the United States and was made commander of the Legion of Honor of France; he was knighted by King George of England and decorated by King Albert of Belgium, as well as by rulers of other foreign countries. Honorary degrees were conferred on him by the University of Pennsylvania, University of the South, by Harvard, Brown, Alabama, Tulane, Johns Hopkins, Oxford, Lima and other universities. He was awarded the Mary Kingsley medal from Liverpool School of Tropical Medicine (1907), a gold medal of the American Museum of Safety (1914) and a special medal from the American Medical Association (1914). Besides being President of the American Medical Association in 1909-1910, he was a member of the American Society of Tropical Medicine, American Public Health Association, and Association of Military Surgeons; honorary fellow of the New York Academy of Medicine, and of the College of Physicians of Philadelphia, and associate member of the Société de pathologie exotique de Paris.



WILLIAM CRAWFORD GORGAS, 1854-1920

Frank Edwin Brown, Brooklyn; Columbia University, College of Physicians and Surgeons, New York, 1903; aged 40; captain, M. R. C., U. S. Army, with service in France with Base Hospital 62 at Mars-sur-Allier and in the St. Mihiel and Argonne offensives, and discharged May 14, 1919; a specialist in surgery; a member of the Medical Society of the State of New York; a member of the attending staff of the Methodist Episcopal Hospital, Brooklyn; died in that institution, June 23, after a surgical operation.

Finley Ellingwood, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1878; aged 68; professor of chemistry from 1884 to 1900, and of materia medica and therapeutics from 1900 to 1907 in his alma mater; editor of the *Chicago Medical Times* from 1884 to 1906; author of several textbooks on eclectic materia medica and therapeutics; died at Pasadena, Calif., June 29.

Charles Daniel McCarthy, Malden, Mass.; University of the City of New York, 1882; aged 59; a member of the Massachusetts Medical Society and once president of the Malden Medical Society; one of the founders of and surgeon to the Malden Hospital, and at one time mayor of the city; died, June 22, from cerebral hemorrhage.

M. H. E. Whitesides, Timpson, Texas; Memphis Tenn., Hospital Medical College, 1888; aged 62; once president of the Shelby County Medical Society; for eight years chief surgeon of the Houston East and West Texas, and Texas and Gulf railways; appointed a member of the State Board of Health in 1909; died, June 10.

George Edwin Davenport, Vancouver, B. C.; University of Vermont, Burlington, 1889; aged 57; formerly surgeon of the Colorado Midland Railroad; a member of the International Association of Railroad Surgeons; for several terms a mem-

⊕ Indicates "Fellow" of the American Medical Association.

ber of the New Hampshire state legislature; died, May 31, from heart disease.

James Robert Sanford, Covington, Tenn.; University of Nashville, Tenn., 1857; Jefferson Medical College, 1857; aged 88; assistant surgeon of the Seventh Tennessee Cavalry, C. S. A., during the Civil War; for several years president of the Tipton County Poard of Health; died, June 21.

Frederick W. Rogers, Hartford, Wis.; College of Physicians and Surgeons, Chicago, 1889; aged 57; for more than fifteen years health officer of Hartford, and local surgeon for the Chicago, Milwaukee and St. Paul System; died, June 15, from cerebral hemorrhage.

Benjamin I. Berman, Norfolk, Va.; Medical College of Virginia, Richmond, 1909; aged 46; a member of the Medical Society of Virginia; while crossing a street, June 16, was struck by a motorcycle, and died from his injuries fifteen minutes later.

Claude Humphrey Addleman, Indianapolis; Indiana University, Bloomington and Indianapolis, 1920; aged 26; an intern in the City Hospital, Indianapolis; died in that institution, June 16, from septicemia a week after a surgical operation.

George F. Cline, Columbus, Ind.; University of Louisville, Ky., 1893; aged 56; a member of the Indiana State Medical Association; coroner of Bartholomew County; died in the Southeastern Indiana Hospital, Craigmont, from arteriosclerosis.

John Lyon, Greenwood, S. C.; Medical College of the State of South Carolina, Charleston, 1900; aged 46; a member of the South Carolina Medical Association; for several years a member of the State Board of Medical Examiners; died, June 21.

Oliver P. Hopping, Mt. Pulaski, Ill.; Illinois Medical College, Chicago, 1896; Missouri Medical College, St. Louis, 1897; aged 50; died at St. Johns Hospital, Springfield, Ill., June 11, from pneumonia following influenza.

William Preston Snyder, Kimberton, Pa.; University of Pennsylvania, Philadelphia, 1873; aged 63; formerly auditor general of Pennsylvania; state senator, and representative; died, June 20, from cerebral hemorrhage.

Rufus Walter Athey ⊕ Marietta, Ohio; University of Wooster, Cleveland, Ohio, 1890; aged 55; died in Tremont Hospital, Marietta, June 5, from hypostatic pneumonia, eleven days after an operation for appendicitis.

John Menzer Ward, Manchester, Tenn.; Medical College of Indiana, Indianapolis, 1882; Rush Medical College, 1893; a member of the Tennessee State Medical Association; died, June 9, from cerebral hemorrhage.

Lawrence D. Neary, Torrington, Conn.; Georgetown University, Washington, D. C., 1913; aged 32; a member of the Connecticut State Medical Society; died at the home of his father in Waterbury, June 1.

Carey Lee Lamborn, Philadelphia; formerly of Penns Grove, N. J.; University of Pennsylvania, Philadelphia, 1896; aged 49; a member of the Medical Society of New Jersey; died, June 24.

Andrew Jackson Davis, Charleston, Iowa (license, Iowa, years of practice, 1886); aged 75; a practitioner for forty-five years; died at the home of his daughter in Keokuk, Iowa, June 15.

John Christopher Mitchell, Brockville, Ont.; Trinity Medical College, Toronto, 1875; for ten years superintendent of the Ontario Hospital for the Insane, Brockville; died, May 2.

John P. Paxton, Paterson, N. J.; Long Island College Hospital, Brooklyn, 1872; aged 69; a member of the Medical Society of New Jersey; died, June 16, from heart disease.

Otis H. Deck, Herkimer, N. Y.; Albany (N. Y.) Medical College, 1894; aged 56; a member of the Medical Society of the State of New York; died, June 13, from heart disease.

R. M. Henderson, Wake, Ark.; license, State Medical Board, Arkansas, 1903; aged 82; for forty-three years a practitioner of Baxter County; died, June 18, from senile debility.

Hiram J. Hampton, Tampa, Fla.; Georgia Eclectic Medical College, Atlanta, 1879; aged 68; formerly secretary of the eclectic board of examiners of Florida; died, June 7.

Thomas F. Wurtsbaugh, Richwood, Ohio; Eclectic Medical Institute, Cincinnati, 1886; aged 75; a veteran of the Civil War; died, June 19, from pulmonary tuberculosis.

Clayton C. Quillian, San Antonio, Texas; Atlanta, Ga., Medical College, 1886; aged 61; a member of the State Medical Association of Texas; died, June 18.

Correspondence

"THE IMMEDIATE STERILIZATION AND CLOSURE OF CHRONIC INFECTED WOUNDS"

To the Editor:—Dr. Hyman's letter (THE JOURNAL, June 12, 1920, p. 1663) concerning the dangers attendant on the method of closing chronic infected wounds published in THE JOURNAL, May 8, illustrates the serious error into which one may fall who does not read carefully. If one after ample opportunity to observe the method in use at Fort McPherson can comment as does Dr. Hyman in his letter, it shows that even the simple concept expressed in the title of the article has not been grasped, and an explanation for those who may not carefully note the directions and warnings given of necessity with brevity in the original article is offered. For efficient sterilization a powerful, penetrating caustic, zinc chlorid, is used, the safety in the use of which depends, first, on the surgeon's ability to prevent its entering the blood stream during its application and, secondly, on the prompt operative excision of all tissues impregnated with the caustic. Our experiments, of which Dr. Hyman quotes only the control, show that zinc chlorid is rapidly converted by the blood into a nontoxic compound. Thus, while a fraction of a drop of a saturated solution of zinc chlorid rapidly injected into the marginal ear vein of a rabbit is instantly fatal, a drop of this caustic held in the ear veins three minutes by compressing the base of the ear produces no systemic effect. Likewise, the temporary use of a tourniquet protects in the dog when several minims of the saturated solution are injected into the saphenous vein. In human practice no systemic symptoms have been observed when a tourniquet has prevented the entrance of blood from the injected area into the body during and for five minutes after the injection. For regions that cannot be guarded by a tourniquet, the zinc should never be applied by forcible injection but by packing all sinuses with cotton pledgets wrung out of the solution. Having introduced the caustic, especially if in the region of important structures, the surgeon is morally obliged to excise promptly all the chlorided tissue. Dr. Hyman's reference to frequent hemorrhages after the use of this method is based on two cases in which operation was performed in my absence that well illustrate what is not the method and what the surgeon should not do. In the first case, a sinus from the femur, there was inadequate exposure of the bone and an incomplete excision. A jagged edge of femur was left against the exposed femoral artery and the wound filled with Dakin tubes. After about ten days of Carrel-Dakin treatment, recurrent hemorrhages requiring ligation occurred and finally resulted fatally. In the second case, a perforating sinus of the femur, the external half of the sinus was properly treated by sterilization, excision and suture, but the important inner half of the sinus close to the femoral artery was drained and the chlorided tissue not excised. As would be expected, the corrosion progressed to violent hemorrhage on the third day, and partial gangrene of the foot followed a ligation of the femoral artery. That we had no case of secondary hemorrhage or paralysis in our series of about 350 cases treated by the method is due to the fact that thorough excision and immediate suture were considered the most important parts of the operation. One need not hesitate to treat sinuses adjacent to a large vessel if he has the skill to excise them properly. The danger of the method lies far less in the zinc chlorid than in the timidity and incompetence of the surgeon; and even one clumsy enough to cut a hole into the femoral artery, as I did in one case, may escape ill results if he does an immediate arterial suture and carefully surrounds

the artery with living muscle. To excise timidly and incompletely, to drain or to "Dakinize" is contrary to the technic and is to invite danger and failure. The skin may be left open to avoid tension, but the deep tissues must be well opposed. The method was by far the most efficient treatment for chronic infected wounds that was tried at Fort McPherson; and at the Army Hospital at Fox Hills while the method was temporarily abandoned until the need of a tourniquet was appreciated, the wounded soldiers themselves requested that it be resumed, and Capt. Donald Cragin reports very satisfactory results in about ninety cases. Only with the exodus of the reserve officers experienced in this method to civilian practice, and entirely against the desire of the commanding officers, was this treatment discontinued at Fort McPherson.

W. WAYNE BABCOCK, M.D., Philadelphia.

PRESENTATION OF CRAMPTON BLOOD PTOSIS TEST IN 1904

To the Editor:—In the article on "A Cardiovascular Rating as a Measure of Physical Fatigue and Efficiency," by Major Schneider (THE JOURNAL, May 29, 1920, p. 1507), reference is made to my "blood ptosis test" as being presented first in 1913 with two other tests. This is in error. My test was first presented at the Olympic Congress in St. Louis, in 1904. It was published in the *American Physical Education Review* in 1905-1906 in an extended article on "Recent Investigations in Sciences Underlying Physical Education." It was then published in the *New York Medical News,* Sept. 16, 1905. The error is no doubt merely an inadvertence. Its correction, however, is important and I would be grateful if you would be good enough to print this statement.

C. WARD CRAMPTON, M. D., Battle Creek, Mich.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MODES OF CONVEYANCE OF SCARLET FEVER

To the Editor:—In Anders' Practice of Medicine, Edition 13, p. 198, speaking of the modes of conveyance of scarlet fever, the statement is made that "the disease may also be transferred by persons who have been in the sickroom, while they themselves escape." Outside of the possibility of harboring the germ in the mouth, nose or throat, in what manner could the disease be transferred? Again, the statement is made that "it is also communicated by fomites, and the poison of scarlatina contained in the clothing retains its infective power for months," and "any objects (furniture, books, utensils, toys, etc.) which the patient has handled may serve to communicate the poison"; and again, "the infection may be air-borne, though not for any great distance." Are the foregoing statements supported by the weight of authority today? Aside from the conveyance by direct contact with the infected patients when they sneeze, cough or expectorate, or from drinking glasses or eating utensils, is there a single reliable instance in which the germ of scarlet fever has been carried by fomites or in the clothing, and in this way spread and communicated? How could there be communication on account of the patient's handling furniture, books or toys? Has any one ever obtained a culture from the desquamation scales? What proof is there that it is an air-borne disease, even for a short distance, unless one is in close proximity to the infected patient and comes in contact with the sputum or droplets from the mouth or nasal secretions? Finally, if all that is necessary is individual quarantine and isolation of the patient, why enforce a rigid household quarantine and follow by the useless formaldehyd fumigation when recovery has taken place?

HENRY FARRELL, M.D., Kearney, Neb.

ANSWER.—The general conception of the mode of conveyance of scarlet fever assumes that the essential cause of the disease is present in the secretions from the throat, nose, ears, etc.

If this assumption is true, then anything which is contaminated by such secretions and mechanically carries them may serve to spread the disease. Such carriers include a large number of animate and inanimate agents, such as hands, eating and drinking utensils, clothing, toys, foods and air. In the absence of strong currents, air will carry moist particles only a short distance before they fall to the ground from their own weight. Foods may not only mechanically carry the scarlet fever virus, but also furnish conditions in which it will multiply. It is generally thought that the essential cause of scarlet fever remains alive and virulent after drying, and that this may be true for a long time if the disinfecting action of light is excluded. In this way have been explained apparently well-authenticated instances of scarlet fever transferred by toys, clothing, etc., even after a long time.

Since the cause of scarlet fever has not been identified, cultures from desquamation scales, etc., would add no information of value. For the same reason it is impossible to speak of the mode of spread of scarlet fever with the same accuracy and assurance as can be done with diphtheria and typhoid fever.

If personal isolation is efficiently accomplished, there is little apparent reason for household quarantine. There has been a disposition among hygienists in recent years to substitute for formaldehyd fumigation, which is often of doubtful value, thorough airing and sunning, and the liberal use of soap and water.

THE NATURE OF MEDICAL PRACTICE ACTS

To the Editor:—Why are osteopathy and chiropractic allowed to be practiced, if they have no scientific basis?

Please omit my name and address. A. R.

ANSWER.—The regulation of occupations, professions and trades by the state comes under what is known as the police power of the state. This is the right of the state to restrict and regulate the acts of its citizens for the public good. Medical practice acts are not for the benefit of the medical profession or for its protection against competition. It is not the business of the state to settle scientific questions regarding the relative value of different methods of treatment of disease. All the state can do for the protection of the public against ignorant and incompetent persons is to establish educational standards or qualifications, and to require all persons who desire to follow certain occupations, professions or trades to comply with those standards or qualifications. This is what the majority of laws do: so far as the medical profession is concerned they establish a standard for those who treat the sick, which standard requires certain educational and professional qualifications. Physicians comply with these requirements; they have to do so. But as the standard for physicians is too high for practitioners of certain cults—osteopaths, chiropractors, Christian Scientists, etc.—certain legislatures have passed laws exempting them. We are not able to answer our correspondent's question because we do not know why legislatures pass such contradictory legislation.

ARTIFICIAL RESPIRATION IN THE NEW-BORN

To the Editor:—Would you please let me know when was first described in the United States the method of artificial respiration for the new-born, apparently asphyxiated, which is known in France under the name of American or Dew's method, and mentioned by Professor Audebert in 1897 in the *Journal de médecine de Bordeaux?*

J. O. TOULOUSE, France.

ANSWER.—J. Harvie Dew described his method before the New York Academy of Medicine in 1893. His paper, "Establishing a New Method of Artificial Respiration in Asphyxia Neonatorum," was published in the *Transactions* of the New York Academy of Medicine, 1893, p. 80, and in the *Medical Record* **43**:289, 1893, and *Buffalo Medical and Surgical Journal* **33**:665, 1893. A Spanish translation was printed in *Anales de obstetricia, ginecopatía y pediatría* **14**:104, 1894.

REMOVAL OF MERCUROCHROME STAINS

To the Editor:—Please suggest some efficient remedy to remove mercurochrome stains from the clothing without injuring the cloth and color.

B. F., Rockford, Ill.

ANSWER.—Mercurochrome stains may be removed from the skin by rubbing first with 2 per cent. potassium permanganate solution and then with 2 per cent. oxalic acid solution (THE JOURNAL, Jan. 3, 1920, p. 31). This method might be tried for stains on cloth. As a preliminary, however, one should determine whether or not this treatment removes the color of the cloth itself. This is best done by applying the treatment to an "out of the way" piece of the cloth.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 13. Chairman, Dr. S. W. Welch, Montgomery.

CONNECTICUT: Hartford, July 13-14. Sec., Regular Board, Dr. Robert L. Rowley, 49 Pearl St., Hartford.

CONNECTICUT: Hartford, July 13-14. Sec., Regular Board, Dr. Robert Edwin Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: Washington, July 13-15. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

INDIANA: Indianapolis, July 13-15. Sec., Dr. Wm. T. Gott, Crawfordsville.

MASSACHUSETTS: Boston, July 13-15. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.

NEW MEXICO: Santa Fe, July 12-13. Sec., Dr. R. E. McBride, Las Cruces.

OKLAHOMA: Oklahoma City, July 13-14. Sec., Dr. James M. Byrum, Mammoth Bldg., Shawnee.

SOUTH DAKOTA: Deadwood, July 13. Sec., Dr. Park B. Jenkins, Waubay.

WEST VIRGINIA: Charleston, July 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

Colorado April Examination

Dr. David A. Strickler, secretary, Colorado State Board of Medical Examiners, reports the written examination, held at Denver, April 6, 1920. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 23 candidates who took the physician's and surgeon's examination, 10, including 7 osteopaths, passed, and 13, including 2 osteopaths and 1 undergraduate, failed. Fifteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Yale College		(1875)	75
Kansas City College of Medicine and Surgery		(1920)	78.1
Kansas City University of Phys. and Surgeons		(1919)	80
	FAILED		
St. Louis College of Physicians and Surgeons		(1919)	71.2
Eclectic Medical Institute, Cincinnati		(1908)	36.2
Undergraduate			67.9

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College		(1902)	Michigan
University of Illinois		(1911)	Illinois
College of Physicians and Surgs., Keokuk		(1880)	Kansas
Indiana University School of Medicine		(1917)	Indiana
Harvard University		(1910)	Mass.
University of Missouri		(1903)	S. Dakota
St. Louis Medical College		(1889)	Missouri
Washington University Medical School		(1919)	Missouri
Hahnemann Medical Coll. and Hosp., Philadelphia		(1903)	Kansas
Jefferson Medical College of Philadelphia		(1915)	Penna.
Women's Medical College of Pennsylvania		(1915)	Penna.
University College of Medicine, Richmond		(1913)	W. Virginia
University of Vermont		(1914)	Connecticut
University of Naples		(1908)	France

District of Columbia April Examination

Dr. Edgar P. Copeland, secretary, District of Columbia, Board of Medical Supervisors, reports the oral and written examination held at Washington, April 13-15, 1920. The examination covered 16 subjects, and included 80 questions. An average of 75 per cent. was required to pass. Of the 12 candidates examined, 10 passed and 2 failed. Eight candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University	(1916) 78.4,	(1917)	86.8
George Washington University		(1917)	78
Howard University	(1919) 81.9,	83.	83.4
Loyola University		(1918)	81.3
Medical College of Louisiana		(1905)	89.6
Johns Hopkins University		(1918)	84
Meharry Medical College		(1916)	76.4
	FAILED		
Coll. of Med. and Surg. (Physio-Medical), Chicago		(1911)	68.1
Columbus Medical College		(1884)	56.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Tulane University		(1916)	Louisiana
University of Maryland		(1915) (1916)	Maryland
University of Pennsylvania		(1912)	Penna.
Vanderbilt University		(1910)	Tennessee
Medical College of Virginia		(1914)	Virginia
University College of Medicine, Richmond		(1912)	Maryland
University of Virginia		(1891)	Maryland

Book Notices

THE PRINCIPLES OF ANATOMY AS SEEN IN THE HAND. By Frederic Wood Jones, D.Sc., M.B., B.S., Professor of Anatomy in the University of Adelaide. Cloth. Price, $5 net. Pp. 325 with 125 illustrations. Philadelphia: P. Blakiston's Son & Co., 1920.

Frederic Wood Jones is a scientific anatomist whose previous work shows that he desires not only knowledge but also understanding. He says: "In the study of the hand we are immediately brought face to face with some of the most important biologic problems and some of the most striking exhibitions of general principles. It is for this reason that the hand has been selected as a limited and self-contained study from which the student may learn more of principles and less of details than is usual in complete textbooks of anatomy." The book may be commended to those who, earnest in the cause of medical education, see the fundamental sciences only from the practical side, and who believe that teachers of anatomy should have the surgical point of view. Jones has seen "well taught but wholly unlearning students" who have been trained by such teachers, and he is sorry for them. By methods of patient drudgery and brute force of memorizing, they have learned many dead facts about the dead hand. But it is not a dead hand which the author invites the student to consider in this book. It is one full of character and life—of life which has been continuous from the beginning of life on the planet, and of character which has been slowly but clearly stamped on the living structures as we have traveled the long road of evolution. "Man's place in nature is largely writ upon his hand." The author considers whether these characters are new or were acquired long ago, far back along the road, and so became firmly impressed on the tissues; whether they are progressive or regressive, whether they are highly specialized in the human animal, or whether they are a part of the original heritage of the stock. No study of structure can be intelligent which is not also a study of function. The author considers the hand as a working part of a working organism. Its efficiency depends not only on its own structure but more on the capacity and control of its cooperation. "It is the lower animals which show the anatomical advance from a primitive condition which we retain; but as a cortically controlled structure the human hand affords striking evidence of man's superiority over all the other members of the mammalia. It is not the hand which is perfect, but the whole nervous mechanism by which movements of the hand are evoked, coordinated and controlled." In considering the mechanism of this control, Jones regards the tissues as living things; and their study is endowed by him with vital interest. Although the book is limited to the hand, the author has made a valuable contribution to the study of anatomy in general; for no student can study one organ as he will be led to study the hand through this book without developing habits of observation and of thinking; and these are permanent. General principles, if only they are seen, even in but one part, illuminate every other part and the mind of the student, so that the study of structure can never again be uninteresting drudgery, but will rather be a source of ever renewed interest, satisfaction and understanding.

THE PRACTITIONER'S MANUAL OF VENEREAL DISEASES, WITH MODERN METHODS OF DIAGNOSIS AND TREATMENT. By A. C. Magian, M.D., Ancien Elève de l'Hôpital St. Louis, Paris. Cloth. Price, $3. St. Louis: C. V. Mosby Company, 1919.

The author states that this book was written only for the general practitioner; but he indulges in lengthy excursions into the history of syphilis and gonorrhea, and furnishes in another chapter an elaborate description of the technic of the Wassermann test. Inaccuracy in using medical terms and in describing pathologic processes is frequent throughout the text. He says: "Sloughing and gangrene may follow." One might suggest that sloughing is the consequence of gangrene. The author overlooks the important differentiation between incontinence and frequency of desire for urination. The views of the author with regard to pathology are illustrated by the statement that continuous straining may cause abscess

and fistula. Inflammation of the testicles is defined in parenthesis as gonorrheal epididymitis, and this is followed by the remark that the affected testicle swells rapidly. That in treatment of acute anterior urethritis the author recommends the forcing of permanganate solution, administered by percolator irrigation, through the urethra into the bladder, will cause many a urologist to raise his eyebrows. To mention packing of the urethra with medicated gauze in the treatment of gonorrheal urethritis is unnecessary, to say the least. In the chapter on treating syphilis, the author enumerates sixty different drugs, every one of them obsolete as to use, after having cautioned the reader to purge his library of all but the most modern textbooks and pamphlets on syphilis. It may be doubted whether subcutaneous and intramuscular injections of neo-arsphenamin may be given without any risk, as the author asserts. Such immature attempts at hurriedly writing a medical book cannot be too severely criticized.

VENEREAL DISEASE: ITS PREVENTION, SYMPTOMS AND TREATMENT. By Hugh Wansley Bayley, M.C. Cloth. Price, $4.25 net. Pp. 152, with 54 illustrations. Philadelphia: P. Blakiston's Son & Co., 1920.

Another attempt to cover the prevention, symptomatology and treatment of the venereal diseases in a book of 146 pages, and—another failure. The only chapters that come up to the standard of such a publication are the one on Legislation and Prophylaxis and one on Instructions on Conducting a Venereal Clinic. Only colored pictures may be expected to be instructive in the diagnosis of syphilis, but the crudeness of the black and white plates presented destroys even the limited claim to usefulness that noncolored illustrations may have. It is surprising to have a supposedly professional pathologist tell us that a urethral discharge may be caused by gout or rheumatism, and to have him use the term "tubercular" intead of "tuberculous" epididymitis, or have him divide the symptoms of intolerance to arsenic compounds into vasomotor and toxic symptoms. In the treatment of syphilis he does not mention the use of intravenous injections of mercury, so useful in nervous and eye complications. Epididymotomy does not find a place in the chapters on gonorrhea and its complications, and the author fails to call attention to the importance of early operation for prostatic abscess. The Guyon capillary catheter also seems to be unknown to the author. A plate meant to illustrate the microscopic appearance of a gonorrheal smear taxes to the utmost the imagination of the reader. The comic relief in the tragedy of gonorrhea is furnished when the author, in discussing latent gonorrhea, reminds us that "criminals who are wanted by the police do not frequent the main thoroughfare, but frequent the sidestreets and alleys; so the gonococcus may lurk unsuspected in ducts and glands that surround the urethra along its whole length." Teaching is an art, and writing a medical textbook calls for more thorough preparation and more concentrated application to the work than is manifested in this publication.

UEBER HÄMOPHILIE BEIM WEIBE. Kritische Studie nebst Erörterung der gynäkologischen Blutungen. Von Prof. Dr. C. Bucura. Paper. Price, 11.20 marks. Pp. 92. Vienna: Alfred Hölder, 1920.

The sum and substance of this monograph on hemophilia in the female is that there is no such thing as hemophilia in the female. An analysis of 197 cases reported as such in the literature leads the author to the conclusion that not one of these cases meets the requirements for establishing the existence of true hemophilia according to the strict definition of the disease. This conclusion is in harmony with the prevailing view that true hemophilia is a hereditary disease, transmitted from father to grandson through the daughter without the daughter, herself, exhibiting the disease. Cases of excessive tendency to hemorrhage in the female are always to be attributed to some other cause than true hereditary hemophilia, a point of importance in diagnosis and treatment. The author's investigations throw no new light on the etiology of hemophilia. He accepts the view that it must depend on an inherited chemical abnormality of the protoplasm of the formed elements of the blood and of the vessel walls. Possibly lack of thrombokinase in the blood platelets is an important factor, although there is no general deficiency in the thrombokinase.

Medicolegal

Illegal Quarantine to Examine for Venereal Disease

(Ex parte Dillon et al. (Calif.), 186 Pac. R. 170)

The District Court of Appeal of California, Second District, Division 1, in ordering that these petitioners for a writ of habeas corpus be discharged from the custody of the chief of police of Los Angeles, says that they were arrested, without a warrant, for the alleged violation of a city ordinance which made it unlawful for any person to resort to any rooming house, lodging house, hotel or other place in the city, for the purpose of having therein sexual intercourse with a person to whom he or she was not married; and they were held in a sort of quarantine. It appeared that whenever persons arrested for violating this ordinance were brought to the city jail they were, by the chief of police, held without bail and under a pretended quarantine by reason of a general instruction given by the health department of the city, and without any knowledge being had on the part of the health department or its inspectors which would give rise to reasonable cause, or suspicion, that the persons so detained were afflicted with contagious or infectious venereal disease. It was stated that for two years or more it had been the practice of the health department to examine all persons brought to the city jail charged with the violation of the ordinance, or charged with any other offense involving sexual immoralities or lewdness, to determine the freedom of such persons from contagious and infectious quarantinable venereal disease; that about 1,000 persons had been examined within such time; and that about 90 per cent. of the women so arrested and charged were found to be afflicted with contagious and infectious venereal disease in some form.

The right of the health authorities to subject the person of an individual afflicted with contagious disease to quarantine restraint is an extreme measure, recognized as being necessary in cases of epidemics and instances in which such detention is necessary to protect properly the public health. Sick persons who are subjected to such quarantine are not deemed to be criminals, and are to be treated with every consideration and afforded conveniences reasonably procurable under the circumstances.

The court assumes, for the purposes of this case, that the arrest was legally made. It may be assumed, too, that under the laws relating to the public health, inspection and quarantine may be made of persons, animals and property by the duly constituted health authorities, when it is known, or appears on reasonable ground, that the person so subjected to inspection or quarantine is afflicted with contagious or infectious diseases, such as are enumerated in Section 2979a of the Political Code. But the question here was whether the health department might reasonably assume, without any previous knowledge, information or report as to the individual concerned, that every person arrested by officers and booked at the city jail as having violated the rooming house ordinance was reasonably likely to be afflicted with a quarantinable venereal disease. Virtually the health officers, through their orders to the chief of police, said to the individual:

> We don't know whether you are guilty of this offense or not; if you were guilty we think it would furnish reason to suspect that you are afflicted with a venereal disease; but, whether guilty or innocent, you have been arrested, and you must remain confined without bail and without being permitted communicaton with the outside world, except with our consent, until you have submitted to a private examination and convinced us that you are free from the taint of disease

The bare statement of this proposition, considered in view of all the safeguards which have been thrown around the liberty of the individual, is shocking to our sense of justice. When sufficient cause exists to believe that a person is afflicted with a quarantinable disease, there is no doubt of the right of the health authorities to examine into the case and, in a proper way, determine the fact. Such preliminary investigation must be made without delay, and, if quarantining is found to be justifiable, only such quarantine measures

may be resorted to as are reasonably necessary to protect the public health, it being remembered that the persons so affected are to be treated as patients, and not as criminals.

Recovery for Services Not Supported by Evidence

(Huntley v. Geyer (N. D.), 175 N. W. R. 619)

The Supreme Court of North Dakota reverses a judgment that was obtained by the plaintiff for services, and remands the case for a new trial, because improper evidence was admitted and necessary evidence was lacking. The court says that it appeared from the evidence that the professional services for which the plaintiff, a physician and surgeon, sought to recover were rendered in the treatment of one Walter Geyer, a son of the defendant. At the time the services were rendered, Walter Geyer was about 24 years of age. He was making his home with his parents, but was operating an adjoining farm for himself. The plaintiff testified that about a certain date one of Walter Geyer's brothers came to the plaintiff's office and informed the plaintiff of Walter's illness, and obtained some medicine for him. The plaintiff further testified that at that time the brother stated that he had been sent by the defendant to consult the plaintiff with regard to Walter's illness. This testimony was admitted over the objection that there was no showing that the son who called on the plaintiff had been authorized by the defendant to do so, and that the alleged statements were hearsay as to the defendant and inadmissible. The objection was overruled and the evidence admitted, but the supreme court is of the opinion that it was error to permit the plaintiff to testify to the statements which he claimed the defendant's son made at the time he called the plaintiff to treat Walter Geyer. The defendant denied that he had sent the son, or had in any manner requested or authorized the calling of the plaintiff. The plaintiff made no showing whatever that the son had actually been sent by the defendant. Clearly the plaintiff's testimony as to what the son said would not be admissible to prove that the defendant had sent him. It was purely hearsay. And in view of the condition of the evidence in the case the court is not prepared to say that the admission of the evidence did not affect the result.

The defendant contended also that there was no evidence tending to show either that the compensation of the plaintiff had been agreed on, or that his services were reasonably worth the amount awarded; and the court believes that this contention was well founded. There was no evidence tending to show that the amount of the plaintiff's compensation was fixed by agreement. Nor did the plaintiff or any one else testify that the services rendered by the plaintiff were reasonably worth the amount for which the plaintiff recovered judgment or any other amount. The plaintiff contented himself by stating what he had done, and identifying certain charges he had made on his books therefor. Nowhere did he testify that the services were reasonably worth what he charged for them. In the absence of an express agreement as to amount, the law implies a promise to pay for a physician's services as much as they are reasonably and ordinarily worth on the professional market. When a physician seeks to recover for such services, he has the burden of proving their value.

May Testify to Making Examination but Not as to Result

(Livingston v. Omaha & C. B. St. Ry. Co. (Neb.), 175 N. W. R. 662)

The Supreme Court of Nebraska says that in this personal injury case, in the direct examination, with respect to her physical condition before the accident, the plaintiff testified that she never had any venereal disease or taint, nor had she taken any treatment for any ailment of that sort. The examining physician for the juvenile court testified that it was her duty to examine those coming under its care; that in her official capacity she examined the plaintiff in 1911, when she was brought by the juvenile authorities to her for that purpose, and that from the examination she reached a conclusion as to the plaintiff's condition at that time; that in 1912 the plaintiff came voluntarily and received treatment. On objection by the plaintiff, the witness was not permitted to testify respecting the plaintiff's condition in 1911, nor as to whether she discovered anything abnormal in her condition in 1912. Another physician, who was called by the defendant, was permitted, over objection, to testify that the plaintiff had called on him for an examination before her marriage and before the accident. But he was not permitted to answer the question as to for what purpose, or to determine for what that examination was made. The supreme court sees no error in this. It holds that when a plaintiff offers testimony in chief tending to prove freedom from venereal disease, it is competent for the defendant to offer testimony tending to show that the plaintiff called on and was examined by a physician, but such physician cannot testify as to the result of his examination.

Cutting Hole in Bladder—Skill and Care Required

(Krinard v. Westerman (Mo.), 216 S. W. R. 938)

The Supreme Court of Missouri, Division No. 1, in affirming a judgment for $15,000 damages in favor of the plaintiff, says that it was alleged that the plaintiff, being troubled with a fibroid tumor of the uterus, went to the defendant for an operation for its removal, he having represented to her that he was specially skilled in the performance of such operations, having performed 500 operations of like character. The alleged negligent acts on which the case was submitted to the jury were that, in performing the operation, the defendant negligently and unskilfully cut a hole in the plaintiff's bladder; and that, either during the operation or during one of the operations thereafter performed by him, he so cut or tied off the plaintiff's left ureter as to cause it entirely to lose its functions and to atrophy, and to cause the plaintiff's left kidney also to lose its functions and to atrophy. The defendant admitted that he cut the hole in the plaintiff's bladder, but averred that it was not negligently done, but that it became necessary for him to make such cut in removing the tumor. He also admitted having performed two subsequent operations for the purpose of closing the hole, but averred that they were unsuccessful for the reason that the parts were diseased.

Negligence may be inferred from the facts. If the legitimate inferences which may be drawn from the facts establish negligence, the case of negligence is made. To a woman friend that was in the operating room at the solicitation of the plaintiff, the defendant said: "That is a perfect operation, perfectly successful." Not a word was said about cutting the bladder. Nor did the defendant tell the plaintiff about it for a month, during which time he was telling her and her friends that she was getting along nicely. Then, when the plaintiff complained about the constant flow of urine, and told him that she believed he had injured her bladder, he said that he had cut the bladder and taken out the diseased portion, and there would have to be a second operation. Moreover, when the necessity arose for a third operation, and the plaintiff wanted an eminent physician called in to assist, the defendant became enraged and used some rather forceful language, with the result that the operation was performed without the presence of the other physician. The very conduct of the defendant tended to show guilt. Besides all this, the plaintiff was examined both before and after these operations by different physicians, and none of these found any evidence of a cancerous or diseased condition, nor did the surgeons who afterward operated three times to get the cut closed. The evidence also showed that the cutting or tying of the ureter would kill the kidney, and it tended to show that the plaintiff had been normal in all these parts, but now there was no life in the left kidney. A fair inference from these facts would indicate that the defendant had destroyed the left ureter in one of his operations. There was no error in submitting the case to the jury by the overruling of the defendant's demurrer to the evidence of the plaintiff.

Nor was there error in an instruction which told the jury that the defendant as a surgeon, having undertaken to operate on the plaintiff and remove a fibroid tumor and the uterus, "in performing this operation it became and was his duty to exercise reasonable skill and care, as an ordinarily skilful and careful surgeon is accustomed to exercise and use in

like surgical operations under like circumstances." It was contended that the instruction covered the whole world's physicians, while the defendant's efficiency should have been gaged by "the degree of skill possessed by reasonably skilful surgeons in the community in which he is practicing." But the court holds that that contention cannot be sustained. There should be no limiting to the local vicinity of the practitioner. The weight of authority is against that doctrine.

But, even if the instruction was technically wrong, this would not avail the defendant in this case. The plaintiff sued him as a specialist in this line of operations. The rule applicable to his case has been stated thus:

> A physician holding himself out as having special knowledge and skill in the treatment of particular diseases is bound to bring to the discharge of his duty to a patient employing him as such specialist, . . . that special degree of skill and knowledge possessed by physicians who are specialists in the treatment of such diseases, in the light of the present state of scientific knowledge.

Insufficient Indictment for Practicing Illegally

(People v. Devinny (N. Y.), 125 N. E. R. 543)

The Court of Appeals of New York, in reversing a judgment of conviction of the defendant of practicing medicine without a license, holds insufficient an indictment which accused the defendant "of the crime of practicing medicine without being registered and legally authorized (as required by Section 161 of the Public Health Law) committed as follows: The said . . . Devinny, on May 27, 1918, and for a considerable time immediately prior thereto, at Albany, in this county, unlawfully practiced medicine, he not being then registered and legally authorized" as in the statute required and provided. The court holds that the indictment was not defective because it did not negative all of the cases set forth in Section 173, enumerating cases not to be affected. The court says that in the case at bar if it should be held that an indictment must negative all of the cases referred to in the statute as not being unlawful, it would be drawn out to intolerable lengths; and even after that had been done, the burden doubtless would rest on the defendant of proving that he came within the excepted cases. But the court thinks that it was necessary for the present indictment to set forth one detail of the alleged offense, which in this particular case would very likely involve and lead to setting forth generally the details of the offense. It is abundantly established that in charging an offense committed on or in respect of an individual, as diagnosing, treating, or offering to diagnose or treat, a disease, it is necessary to name, or excuse naming by proper allegation, such individual. There is an exception to this general rule. When the crime consists of a series of acts continuous in their nature, such as carrying on a prohibited business, or keeping an unlawful resort, a general description, reasonably including and describing the series, will be sufficient. It is not necessary in such cases to set forth each act going to make up the offense. In the court's opinion, however, this indictment does not come within that exception. It does not seem to the court that the statute was intended to define or constitute the prohibited offense as consisting of a continuous series of acts amounting to the conduct of a business within the decisions referred to. It may be that if the court had nothing but Section 161 prohibiting the "practice" of medicine, and were relegated to the dictionary or common usage for a definition of that word, the court would be compelled to interpret it as meaning a continued and habitual performance of acts. But the court is not thus left to these means of reaching a definition. Section 160 defines what "practice" means. Its meaning is satisfied whenever and as often as an individual "holds himself out as being able to . . . and offers or undertakes to diagnose, treat," etc. Whenever within the fair meaning of those terms on a single occasion an offender has held himself out as able to and has offered to treat a patient there has been a completed offense, and it is not necessary to show that this operation has been repeated so many times that it has ripened into a habit or business. If this is the correct interpretation, there is no question that the individual operated on should have been named or proper excuse given for not naming him even within what has been said in cases applying the "business" rule.

Society Proceedings

COMING MEETINGS

Montana State Medical Association, Helena, July 14-15.

AMERICAN PEDIATRIC SOCIETY

Thirty-Second Annual Meeting, Held in Highland Park, Ill., May 31-June 2, 1920

The President, Dr. Thomas S. Southworth, New York, in the Chair.

Segregation of Pneumonia

Dr. Thomas S. Southworth, New York: Segregation of pneumonia patients may have been practiced by thoughtful physicians, but the idea has not found its way into the general medical conscience, nor has it been advised widely in our literature. Evidence of the infectiousness of pneumonia is not wanting. I have for years insisted, when possible, on the prompt isolation of the first case of pneumonia among children having measles, with a resulting limitation of the number of cases, and I have extended segregation to all the pneumonias. The obligation is imperative to anticipate the day, not far distant, when the movement to control the scourge of pneumonia may make the retention of such cases in the general ward as repugnant to our medical sense of propriety as the retention of an open case of pulmonary tuberculosis.

Studies on Blood Sugar: Effect of Blood on Picrate Solutions: Limitations of Lewis-Benedict Method

Drs. David Murray Cowie and John Purl Parsons, Ann Arbor, Mich.: Blood contains substances other than sugar which induce a color change in the picrate solution employed in the modified Lewis-Benedict blood sugar method. Under normal conditions, these substances do not interfere with the established normal range for this method. Under pathologic conditions, several of these substances which showed the most marked influence were epinephrin, acetone and diacetic acid. Creatinin may interfere, but does so in a less marked degree if we consider the comparative nonsensitiveness of the picrate solution to these substances.

DISCUSSION

Dr. Oscar M. Schloss, New York: It seems probable that under normal conditions it is an essentially accurate clinical method, though it has a moderate error such as is present in any colorimetric method. I have used the Lewis-Benedict method, and a control series in which the method of Bertrand was used. The Lewis-Benedict method gives results that are constantly higher, but the difference is consistent and does not influence the results of observations made in normal cases.

Dr. David Murray Cowie, Ann Arbor, Mich.: The effect of heat on picrate acid solutions has been a matter of discussion, and very different opinions are held. The experience of Addis and Benedict, as well as our own, is that the prolongation of the heat produces an increase in the intensity of the color. In regard to the acetone, we have not run tests beyond ten minutes, but up to that time a color change has been produced.

Epidemic Lethargic Encephalitis

Dr. L. E. La Fétra, New York: It is evident both from the difference in the lesions and from the results of animal experimentation that poliomyelitis and epidemic encephalitis are distinct diseases. I have not found that this disease follows influenza with sufficient regularity to warrant one in stating that it is caused by influenza, though influenza may predispose the patient to infection or increase the virulence of the prevalent virus. Of eleven children, four died. There was no relationship between any two of the patients, and they did not live in close proximity to each other. In only two was there any history of influenza. When the disease was well under way the outstanding features were lethargy, general weakness and ptosis or paralysis of the

ocular or facial muscles, with double vision in several instances. In the fatal cases the leukocyte count was higher than in the cases ending in recovery. The spinal pressure varied. In most cases globulin was present, with increase in the number of cells. The fluid was sterile on culture. Recovery took place very gradually. Two patients showed serious sequels, one imbecility and one spasticity and mental impairment. The disease has to be differentiated from tuberculous meningitis, poliomyelitis, cerebrospinal syphilis, brain tumor and meningism. The mortality of the disease is about the same as that of poliomyelitis. In how many damage to the brain may show later it is too soon to state.

DISCUSSION

DR. ROWLAND G. FREEMAN, New York: According to accounts, the disease has invariably occurred after influenza and not after other conditions. Little is known with reference to the ultimate results of the disease; however, the outcome is not altogether favorable.

DR. HENRY HEIMAN, New York: It is sometimes impossible to differentiate between epidemic encephalitis and tuberculous meningitis if the tubercle bacillus cannot be found. Loewe and Strauss have shown that the disease can be diagnosed by animal inoculation. The eyes should be examined to detect the presence of choroid tubercles.

DR. CHARLES GILMORE KERLEY, New York: The symptom that has impressed me in this disease is the great variability of the symptomatology. Only one symptom is constant, and that is the high degree of stupor, which resembles opium narcosis.

DR. JOHN HOWLAND, Baltimore: The disease is more common than is generally believed, and is difficult of recognition in its atypical forms on account of the relatively slight changes in the spinal fluid. Sequels may persist for a long time. We have had patients return on account of abnormal symptoms, particularly at night. Some have been apparently normal in the daytime, but at night exhibited an almost maniacal condition. This sleeplessness may last for weeks.

DR. ALFRED HAND, Philadelphia: One patient slept twenty hours out of twenty-four and showed double ptosis. Another patient had double ptosis of the eyelids, strabismus, and slight rigidity of the neck. Lumbar puncture revealed the spinal fluid under pressure. The fluid contained no tubercle bacilli, which excluded tuberculous meningitis.

DR. OSCAR M. SCHLOSS, New York: Encephalitis occasionally complicates measles and scarlet fever. Last winter I saw two such cases. The symptomatology of so-called "encephalitis lethargica" is practically identical with the sporadic cases seen for some years.

Significance of Xanthochromia of the Cerebrospinal Fluid

DR. ISAAC A. ABT, Chicago: My patient was 37 days old at the time of death, and of eight months' gestation. Specimens of fluid contained red cells, increased globulin and increased cell count, most of the cells being polymorphonuclears. Necropsy revealed a fibrinous, hemorrhagic meningitis and encephalitis. There were subpial hemorrhages, marked internal hydrocephalus, subacute pyelitis and bronchopneumonia.

DISCUSSION

DR. J. MILTON MILLER, Atlantic City, N. J.: This condition was present in a child 3 weeks old. The first and second lumbar punctures were negative. Ventricular puncture revealed a yellowish, gelatinous fluid not coagulated.

Acute Cerebrocerebellar Ataxia

DR. J. P. CROZER GRIFFITH, Philadelphia: This condition is not common, but it occurs more frequently than is ordinarily supposed—an acute hemorrhagic encephalitis involving the cerebellum, and which may be designated acute cerebellar encephalitis. There are always symptoms indicating an involvement of the large brain as well, and for these the title cerebrocerebellar encephalitis or cerebrocerebellar bulbar encephalitis is to be preferred. The degree to which the process involves one or another part of the brain varies. In the majority of cases some infectious disease has preceded the attack. The prognosis, so far as life is concerned, is good. The disease leaves no traces in the majority of instances. Lumbar puncture was performed in all my cases and was always negative.

Nature of Reducing Substance in Urine of Children Suffering from Nutritional Disorders

DR. OSCAR M. SCHLOSS, New York: My experiments do not confirm the work of Langstein and Steinitz showing that this reducing substance is lactose or galactose. The only reducing substance which we have found constantly present in perceptible amounts has been glucose. There is usually a nonfermentable reducing substance similar to that found in normal urine. This may be lactose, but its amount is too small to identify it with certainty.

DISCUSSION

DR. DAVID MURRAY COWIE, Ann Arbor, Mich.: In these cases in which you did not find a reducing substance like glucose or lactose, did you run the acetone test?

DR. HENRY HEIMAN, New York: Was an attempt made to exclude glucose and then to test for pentose and galactose?

DR. OSCAR M. SCHLOSS, New York: Acetone and creatinin would, of course, be present in the nonfermentable fraction. Both substances were excluded, the acetone by boiling and the creatinin by first precipitating with mercuric nitrate solution. If pentose was present, it could be present only in the nonfermentable fraction. The proportion was so small that it was difficult to determine its presence with any degree of certainty.

Relation of Bodily Mechanics to Cyclic Vomiting and Other Obscure Intestinal Conditions

DRS. FRITZ B. TALBOT and LLOYD T. BROWN, Boston: Poor bodily mechanics are surprisingly prevalent among children and can easily be corrected by proper exercises or an abdominal support. Correcting the improper posture often corrects chronic constipation, and hastens the cure of recurrent vomiting and the cure of certain types of attacks of acute abdominal pain in children.

DISCUSSION

DR. CHARLES GILMORE KERLEY, New York: I have found practically the same things true, except that I have always attributed the faulty posture and distension of the abdomen primarily to a defect in the intestinal tract. A roentgen-ray study of these cases almost invariably reveals an elongated sigmoid. It is remarkable what an abdominal support will do for these patients. It seems to me it is the faulty structural condition rather than faulty mechanics that is the primary cause of the trouble.

DR. GODFREY R. PISEK, New York: The use of the lead tape to show the changes in the curve of the back, chest and abdomen when the patient is in proper and improper posture is a great help in the correction of faulty posture.

Epidemic of Hemorrhagic Diarrhea Due to Streptococcus Mucosus

DR. A. D. BLACKADER, Montreal, Canada: Of sixty-five cases the larger proportion were children under the age of 6 years. The attack began abruptly with high fever, nervous symptoms and vomiting, and diarrhea set in early. Mucus and blood appeared in the stools and the amount increased rapidly, until in the severe cases they seemed to form almost all of the stool. The attack lasted from a few days to twenty-one days. The presence of *Streptococcus mucosus* in the stools, associated with other streptococci and large numbers of colon bacilli, and the absence of any *Bacillus dysenteriae* indicated that the streptococcus must be regarded as the chief organism in the production of the epidemic. The milk supply seemed to be excluded as the source of the epidemic.

Phlyctenular Ophthalmia and Its Relation to Tuberculosis

DRS. BORDEN S. VEEDER and T. C. HEMPELMANN, St. Louis: Of 196 children with phlyctenular disease, skin tuberculin tests were positive in more than 92 per cent. The results of the complement fixation tests for tuberculosis were strik-

ingly similar to those obtained in cases of proved tuberculosis. Tuberculous lesions involving other organs than the eye were definitely demonstrable in more than one half, and seemed probable in almost two thirds of the cases. Children observed over periods of one year or more showed an even greater proportion of tuberculous lesions, more than four fifths of this series giving such evidence. Cough, malnutrition and a history of exposure to other cases of tuberculosis were frequent.

DISCUSSION

DR. JOSEPH BRENNEMANN, Chicago: Dr. Gibson and I found a positive tuberculin test in 98 per cent. of the cases. We started our investigation thinking phlyctenular disease was not a tuberculous condition, and we left it convinced that it was either a manifestation or an accompaniment of tuberculosis. Finding this condition, however, is not sufficient ground for saying that a child has tuberculosis.

DR. HENRY J. GERSTENBERGER, Cleveland: Another factor that may have some relation to this condition is the exudative diathesis. If one takes a careful history of children with tuberculosis it will be found that many have eczema or intertrigo.

DR. FRITZ B. TALBOT, Boston: In a series of 100 cases of phlycenular disease, 21 per cent. showed signs of tuberculosis. In chronic cases of phlyctenular disease the von Pirquet tests were all positive, though many of the children showed no other signs of tuberculosis.

DR. T. C. HEMPELMANN: We obtained a very slight history of lesions attributable to exudative diathesis. Such statistics as we were able to obtain showed phlyctenular disease no more frequent in children having the exudative diathesis than in others. We employed old tuberculin in the treatment of these cases, starting with 0.000001 mg., and we have not been convinced that either local recovery or general improvement resulted.

Pneumonia in Infants and Children

DR. HENRY HEIMAN, New York: Of 336 cases of pneumonia in children, 288 were bronchopneumonias and forty-eight were lobar pneumonias. The mortality was 16.6 per cent. With the exception of the 2 to 5 year period, the mortality varied inversely with the age. A variety of organisms were found in the sputum, including the influenza bacillus, pneumococcus, streptococcus and staphylococcus, but none in sufficient predominence to justify conclusions. The most frequent complication was otitis media, which occurred in seventy-five of the 336 cases. Of prime importance in the treatment of pneumonia in children is hygienic care and efficient nursing. I would not recommend the general use of digitalis in children, since, as a rule, the pulse is not lowered or the blood pressure raised by this agent. The promiscuous use of dry cupping is to be condemned.

DISCUSSION

DR. ROWLAND G. FREEMAN, New York: There is no method of treating pneumonia so valuable as fresh air, and the colder the air the better the result. I have never seen cold air harm a patient with pneumonia, and I have seen it do a great deal of good. For many years I did not use digitalis in children, but recently I have been using it in large doses and have found it valuable, especially when given early to older children.

DR. A. D. BLACKADER, Montreal, Canada: Alcohol may be used with advantage in some cases. It should be used as a drug and the dose carefully regulated. Digitalis disturbs the stomach. Fresh air is desirable, but the line should de drawn at flowing air and drafts. Rest is most important, and for this reason hydrotherapy should be used with moderation.

DR. RICHARD M. SMITH, Boston: To conserve the outgo of energy it is a good plan to give codein.

DR. E. W. SAUNDERS, St. Louis: Potassium iodid is useful to loosen up a tenacious sputum that blocks the bronchial tubes, and is responsible for keeping the temperature higher than it otherwise would be.

DR. HENRY HEIMAN, New York: I am in favor of fresh air but not cold air; fresh air contains as much oxygen as cold air. In the application of hydrotherapy I never use a cold sponge; if cold water is not used, fear and shock are avoided. Potassium iodid does no good.

Relative Efficiency of Mercurial Preparations in Treatment of Congenital Syphilis

DRS. WALTER R. RAMSEY and O. A. GROEBNER, St. Paul: Mercurial ointment, 50 per cent., is to be preferred to the less concentrated preparations, and should be repeated not more often than twice weekly instead of daily. Calomel ointment is absorbed less rapidly and to a less extent than mercurial ointment, and should, therefore, be given in greater concentration twice weekly. Mercuric salicylate in oil should be given hypodermically twice weekly instead of once. Mercuric chlorid by hypodermic injection, although the dose is very small, continues to be eliminated for several days, but the fact that its use is frequently followed by the appearance of protein in the urine should exclude it from the treatment of syphilis. Calomel by mouth is absorbed in small amounts and continues to be eliminated for a considerable time, so that it is probable that it would be sufficient to give it at intervals of several days without producing diarrheas. Mercury with chalk is absorbed to a small degree and eliminated rapidly, so that fairly large doses repeated daily would probably be necessary to maintain mercury in the circulation.

Incidence of Hereditary Syphilis

DRS. P. C. JEANS and JEAN V. COOKE, St. Louis: The histologic examination of the placenta as to the presence or absence of syphilitic changes corresponded to the established diagnosis in 95.5 per cent. of the cases. The lack of correspondence consisted entirely in finding no syphilitic changes in the placenta in cases in which the infant had syphilis. In every instance in which the placenta was noted as showing syphilitic changes, the infant was found later to have syphilis. The Wassermann reaction on the placental cord blood corresponded to the diagnosis in the infant in 96.5 per cent. Here also the discrepancies were entirely due to finding a negative Wassermann reaction in the fetal blood when the infant was syphilitic. In every instance in which the fetal blood gave a positive Wassermann reaction the infant was later found to have syphilis. In 1,000 cases examined there was an incidence of 5.5 per cent. among the poor of the white race, 16 per cent. among negroes, and 10 per cent. among the whole group of dispensary cases. The incidence among the combined middle and upper classes was 1.5 per cent. The total incidence in the whole series was 6 per cent.

DISCUSSION

DR. HENRY J. GERSTENBERGER, Cleveland: Among 20,000 patients we found an incidence of syphilis of 14 per cent. There was little difference in the incidence of syphilis as determined clinically alone and that since the Wassermann test has been employed.

DR. L. R. DE BUYS, New Orleans: The Wassermann test should be made on each infant, no matter what the mother's reaction may be. I have seen mothers negative from the Wassermann standpoint and in perfect health, and yet their children were decidedly syphilitic and gave a positive Wassermann reaction. I have also seen the mother give a negative Wassermann reaction, and one twin would be negative and the other positive.

DR. LANGLEY PORTER, San Francisco: In a small series of 118 cases, we found that unless the blood was heated we had a good deal of trouble with the anticomplementary properties of the cord blood. Of this number, 6.5 per cent. were syphilitic.

Lesions of the Midbrain

DR. J. H. MASON KNOX, Baltimore: A child aged 3 years, gradually developed bilateral ptosis, partial paralysis of the ocular muscles and a coarse tremor, followed by ataxia. These symptoms persisted for three months until the child died. At necropsy a tuberculoma the size of a hickory nut was found in the midbrain, involving the corpora quadrigemina and occluding the aqueduct of Sylvius.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

May 1, 1920, **52**, No. 1

*Gastric Response to Foods. Psychic Secretion of Gastric Juice in Normal Men. R. J. Miller, O. Bergeim, M. E. Rehfuss and P. B. Hawk, Philadelphia.—p. 1.
*Id. Influence of Tea, Coffee and Cocoa on Digestion. R. J. Miller, O. Bergeim, M. E. Rehfuss and P. B. Hawk, Philadelphia.—p. 28.
Rapid Blood Plasma Protein Depletion and Curve of Regeneration. H. P. Smith, A. E. Belt and G. H. Whipple, San Francisco.—p. 54.
*Shock as Manifestation of Tissue Injury Following Rapid Plasma Protein Depletion. G. H. Whipple, H. P. Smith and A. E. Belt, San Francisco.—p. 72.
*Factors Concerned in Perfusion of Living Organs and Tissues. A. E. Belt, H. P. Smith and G. H. Whipple, San Francisco.—p. 101.
Seasonal Variation in Growth of Boston, School Children. W. T. Porter, Boston.—p. 121.
*Certain Changes Noted in Ergographic Response as a Result of Tobacco Smoking. T. Raphael, Ann Arbor, Mich.—p. 132.
*Determination of Capillary Blood Pressure in Man with Microcapillary Tonometer. C. S. Danzer and D. R. Hooker, Baltimore.—p. 136.
*Plethysmographic Study of Shock and Stammering in a Trephined Stammerer. S. D. Robbins, Cambridge, Mass.—p. 168.
Chemical Constitution of Adenine Nucleotide and of Yeast Nucleic Acid. W. Jones, Baltimore.—p. 193.
Action of Boiled Pancreas Extract on Yeast Nucleic Acid. W. Jones, Baltimore.—p. 203.

Psychic Secretion of Gastric Juice.—The sight alone of a table well set with nourishing foods was found by Miller and his associates to give rise to a distinct secretion of gastric juice in normal men. Odor alone produced less stimulation than sight alone. The tasting and chewing of food in the absence of smell or sight produced no marked psychic secretion. The combined influence of the tasting, chewing and smelling of food was pronounced and much greater than that of smell alone. The sound and thought alone of a frying steak gave rise to a gastric secretion. The influence of smell with hearing produced little additional effect. Evil odors depressed secretion to the level of the continuous secretion. Foods unpleasantly prepared, or unpalatable in appearance, odor, taste and belief in their unwholesome character led to delayed acid response and evacuation. Newspaper reading during the course of a meal could not be shown to have any distinct influence on gastric digestion.

Gastric Response to Tea, Coffee and Cocoa.—A study was made by Miller and others of the influence of water, tea, coffee and cocoa on the gastric digestion of a uniform mixed meal as measured by the acid responses and evacuation times. Evacuation of the stomach was not appreciably delayed by the drinking of 1 liter of cold water, cold or hot tea, hot coffee, either plain, with cream or with cream and sugar. The addition of sugar alone to coffee delayed evacuation. Cocoa in 1 liter quantities markedly delayed evacuation. To a less extent this was true of half-liter volumes. One liter quantities of water, hot or cold tea, hot coffee, plain or with cream, delayed somewhat the rise of the level of intragastric acidity as compared with the basal meal alone. As high acidities and normal evacuation were, however, attained these beverages must have stimulated gastric secretion, been rapidly evacuated, or more probably both. Coffee with sugar alone delayed the development of gastric acidity. Coffee with sugar and cream had less effect. Cocoa delayed distinctly the development of intragastric acidity. One liter quantities of tea and coffee gave rise to marked acceleration of the heart beat, to vasomotor relaxation, tremors and other nervous symptoms. Cocoa did not produce these effects but brought about a feeling of fulness at the stomach. Urine secretion during the first ninety minutes after tea or coffee ingestion varied from 550 to 866 c.c., after cocoa from 125 to 372 c.c.

Relation of Blood Proteins to Shock.—According to Whipple and his associates, a fatal shock reaction is almost constant following even a moderate plasma depletion preceded by liver injury. This would indicate that the liver cells are particularly concerned in the peculiar shock reaction which may follow plasmapheresis and lowering of the blood plasma protein values. It may be that this type of "shock" is not unlike the common "surgical shock." The evidence of these experiments gives strong support to the theory that in "shock" there is a primary cell injury which precedes the familiar clinical reaction.

Organ Perfusion.—The authors maintain that much of the work done with organ perfusion is of little value because a proper appreciation of the limitations of the method does not obtain among laboratory workers. The use of physiologic sodium chlorid solution, Locke's solution or various modified solutions with or without red blood corpuscles does not permit of physiological perfusion of organs. The contact of these salt solutions with the tissue cells will result in profound injury or actual cell destruction.

Effect of Tobacco on Ergographic Response.—On the basis of the results obtained in Raphael's study, it appears that under the influence of tobacco smoking, a distinct periodicity may be demonstrated in the curve of ergographic response, arising apparently as a result of central nervous system fatigue or depression.

Capillary Blood Pressure in Man.—A method for the study of capillary blood pressure is presented by Danzer and Hooker which differs from all of the previous methods in the criterion at which the readings are taken. It depends on the production of stagnation of the flow of corpuscles in the capillaries. With this method capillary pressure in man can be determined in the fingers and in the toes. The average capillary blood pressure in normal individuals was 22.2 mm. Hg. Cold lowers and heat raises capillary blood pressure. Posture was found to vary capillary pressure although the hand was at heart level at all time. It was lowest in the recumbent, highest in the standing and midway between in the sitting posture. The diurnal variation is very slight. Increased intrathoracic pressure raises capillary pressure. Diminished intrathoracic pressure lowers capillary pressure. Venous compression causes an increased capillary blood pressure. The authors believe that the prevalent conception that the redness of the skin is due to its capillaries and that pallor means capillary emptying, is erroneous. While undoubtedly contributing somewhat to the color of the skin, nevertheless the rôle of the capillaries is rather slight. The venous plexuses principally contribute to the color of the skin. The collapse of these plexuses is the principal cause of skin pallor resulting from compression. The authors propose as the name of their apparatus, the "microcapillary tonometer."

Stammering and Brain Volume.—Pronounced shock, fear of stammering and emotions of every kind always brought about increase in brain volume accompanied by increased size of pulse in Robbins' patient.

Annals of Surgery, New York

May, 1920, **71**, No. 5

*Finger Exploration of Gunshot Wounds of Brain. E. B. Towne and T. R. Goethals, Boston.—p. 531.
Craniocerebral Wounds Due to Projectiles. R. H. Fowler, Brooklyn.—p. 560.
*Foreign Bodies of Dental Origin in a Bronchus; Pulmonary Complication. C. A. Hedblom, Rochester, Minn.—p. 568.
Multiple Hemorrhage Foci In Bone. G. Barrie, New York.—p. 581.
*Compression Fractures of Lower End of Radius. J. H. Stevens, Boston.—p. 594.
Pseudomyxoma Peritonei. Report of Six Cases. M. H. Biggs, Rutherfordton, N. C.—p. 619.
*Sarcoma of Stomach. J. Douglas, New York.—p. 628.
Hyperplastic Tuberculosis of Intestines Report of Six Cases S. Erdman, New York.—p. 637.
*Results Obtained in Treatment of Chronic Arthritis by Removal of Distant Focus of Infection. H. S. Chapman, San Francisco.—p. 643.
Injuries of Semilunar Cartilages of Knee Joint. M. S. Henderson, Rochester, Minn.—p. 658.
Use of Hyclorite and Modified Surgical Solution of Chlorinated Soda As Substitute for Original Dakin's Solution. E. P. Heller, Philadelphia.—p. 663.
Gastro-Enterostomy Clamp Simplified and Improved. H. L. Foss, Danville, Pa.—p. 668.

Finger Exploration of Brain Wounds.—Of the 61 cases of head wounds discussed by Towne and Goethals, 22 were scalp wounds, 11 were fractures, with intact dura, 28 patients had an open dura with brain wound. The 11 scalp wounds and 22 fractures with unopened dura brought out nothing of

interest. The mortality in these cases is practically nil unless other wounds are fatal, as happened twice in this series. This report is concerned with the 28 cases of wound of the brain of which 20 were operated and 8 were inoperable. These patients were treated with the conception that the problem involved was the absolutely complete removal of contaminated damaged brain, blood clot, hair, cloth, bone and metal, so that primary suture might result in clean healing. The method adopted was to suck and irrigate out the brain and clot, and then extract with fine forceps bone and metallic fragments detected by a gentle palpating finger, provided the cavity was sufficiently large to admit the finger. The size of the hole in the dura was not taken as an index, but was enlarged if necessary. In some cases this finger technic, always (with one exception) preferred if possible, was contraindicated by the small size of the track in brain substance, or by the awkward situation of wounds caused by missiles passing in via the deep nasal sinuses; in these instances cleaning was done as well as possible with catheter and forceps. Of the 28 cases 8 were considered inoperable and died without intervention in a few hours; 20 were operated, and of these, 7 died, giving a mortality of 35 per cent. Of 13 evacuated cases, 12 healed by first intention, and the other developed a septic brain fungus, which was not fatal, after a prolonged attempt to clean a cavity by the catheter forceps technic. In only one instance did routine postoperative examination show a slight and temporary increase in the signs of brain injury. Several cases are reported in which it seems highly improbable that the foreign bodies could have been removed without finger palpation. Later results in the 13 evacuated cases for periods of from six to twenty-one months after operation show that there were no late abscesses, that six patients were working, that major epilepsy developed twice, and that two only can be considered as not distinctly subnormal.

Foreign Bodies of Dental Origin in Bronchus.—There have been at the Mayo Clinic during the past four years seven cases of pulmonary suppuration following dental operations or trauma. In two cases the tooth was spontaneously expelled; in one it was discharged through a thoracotomy wound, and in one it was found at postmortem. In the other cases no foreign body was found, but it is quite probable that they were also cases of infection from inhalation. Hedblom has collected forty-five proved cases from the literature. These fifty-two cases form the basis of this report.

Compression Fractures of Lower End of Radius.—Stevens maintains that fractures of the lower end of the radius (so-called Colles) are always compression fractures, the compressive side breaking first, literally collapsing. The first point of fracture is the point of greatest compression on the cortical surface of the bone because the stress increases both in compression and tension the further away from the neutral axis. It breaks in compression because the compression is much greater than the tension. Early reduction followed by early passive and active motion will return all or nearly all compressive fractures of the radius to useful light occupation within twenty days. Any retentive apparatus other than a leather wrist strap after ten to twelve days is contraindicated except in a very rare instance.

Sarcoma of Stomach.—The total number of authenticated cases of sarcoma of the stomach now recorded, Douglas says, is 230 with a probably larger number on record, the reports of whch are not available. Of a total of ninety-two operative cases, sixty-nine were resections either of the exogastric tumor or of part of the stomach and twenty-three were either gastro-enterostomies or exploratory laparotomies. Sarcoma of the stomach occurs in 1 per cent. of all stomach tumors. The average age of incidence is 41.6, in contrast with an average age of 61.2 for carcinoma. Round cell and lymphosarcoma are the most frequent forms found. They are more apt to be infiltrating, but the round cell may project into the stomach or form pedunculated tumors. They result in ulceration oftener than in other sarcomata, but not as frequently as in carcinoma. Spindle cell and myosarcoma are apt to form large exogastric tumors. The diagnosis can rarely be made with certainty; the roentgen-ray examination furnishes the most useful evidence.

Treatment of Chronic Arthritis.—Fifty per cent. of the cases of chronic arthritis treated at the Stanford University clinics by the removal of foci of infection showed definite improvement. The most striking results were obtained in those cases in which the focus was situated in the genito-urinary tract. Very rapid recovery with very few treatments were obtained in those cases in which the teeth were the seat of infection. Removal of the tonsils in several cases was followed in a few days by loss of pain, and later by return of function to the injured joint.

Archives of Ophthalmology, New York

May, 1920, **49**, No 3

Ring Magnet. T. Harrison Butler, Birmingham, England.—p. 247.
*Radium and Roentgen Ray in Tumors of Hypophysis. D. Quick, New York.—p. 256.
*Nonsurgical Treatment of Pituitary Disorders. W. Timme, New York.—p. 268.
Capsule in Cataract Extraction. E. Jackson, Denver.—p. 275.
Iniial Developmetnt of Papillary Bodies in Human Conjunctiva. K. Hiwatari, Kagoshima, Japan.—p. 283.
Atypical Case of Coats's Disease of Retina. L. W. Crigler, New York.—p. 287.
Etiology and Diagnosis of Glaucoma and Control of Disease by Miotics. W. C. Posey, Philadelphia.—p. 293.
Tonometry of Glaucoma. W. McLean, New York.—p. 301.
Visual Fields in Glaucoma. L. C. Peter, Philadelphia.—p. 309.
Operative Treatment of Glaucoma. J. E. Weeks, New York.—p. 316.

Radium in Pituitary Disease.—In Quick's opinion the application of radium in hypophyseal tumors offers the best chance for an accurate approximation of a well selected dosage with a minimum risk to the patient. He reports three cases.

Nonsurgical Treatment of Pituitary Disease.—In cases of underactivity, presumably of the anterior lobe, Timme advises feeding of the whole gland in doses of from ½ grain, as infrequently as once or twice a week, up to 1 or even 2 grains, three times daily, depending on the reaction of the patient to the dose, especially as regards the production of headache, excitability, insomnia, nausea and vomiting, and rapid fatigability. But in addition thereto, either feeding of the anterior lobe, or hypodermic injections of the anterior lobe extract, will often be found of value, especially in the Froelich syndrome with genital lack of development and in low bodily temperatures. Very small doses of thyroid gland, ⅟₁₀₀ to ⅟₁₀ grain, every day or on alternate days, will frequently enhance the effect of the pituitary administration. In cases of overactivity, treatment depends on the cause for overactivity. If this cannot be found and eliminated, then give sedatives such as luminal, ½ grain, once or twice a day, for a few days at a time; pilocarpin, ⅟₁₀ grain, or acetanilid 2 grains, several times daily, as alternates. If disturbances in the genital sphere produce secondary pituitary activity, lutein or ovarian extract will be found of benefit. When the activity is secondary to a thyroidectomy, then small doses of thyroid gland will relieve the symptoms. In too early thymic involution, with pituitary overactivity, thymus gland, 1 to 5 grains, several times daily, is often effective. Occasionally, an inefficient chromaffin system will give rise to overactivity on the part of the pituitary, which may be offset by feeding whole gland suprarenal extract.

California State Journal of Medicine, San Francisco

June, 1920, **18**, No. 6

Roentgen-Ray in Diagnosis of Nontubercular Pulmonary Conditions. L. Bryan, San Francisco.—p. 219.
Malingering: Relation to Doctor J. Catton, San Francisco.—p. 220.
New Form of Weight Chart for Infants. H. K. Faber, San Francisco.—p. 225.

Journal of Biological Chemistry, Baltimore

May, 1920, **42**, No. 1

*Proteins of Green Leaves. 1. Spinach Leaves. T. S. Osborne, A. J. Wakeman, C. S. Leavenworth and O. L. Nolan, New Haven, Conn. —p. 1.
*Digestibility of Raw Corn, Potato, and Wheat Starches. C. F. Langworthy and H. J. Deuel, Jr., Washington, D. C.—p. 27.
*Carbon Dioxid Content as a Basis for Distinguishing Heated from Unheated Milk. L. S. Van Slyke and R. F. Keeler, Geneva, N. Y. —p. 41.
*Distribution of Iodin between Cells and Colloid in Thyroid Gland. 1. Methods and Results of Study of Beef, Sheep and Pig Thyroid Glands. A. L. Tatum, Chicago.—p. 47.

Elimination of Taurine Administered to Man. C. L. A. Schmidt and E. G. Allen, Berkeley, Calif.—p. 55.
*Some Proteins from Georgia Velvet Bean, Stizolobium Deeringianum. C. O. Johns and H. C. Waterman, Washington, D. C.—p. 59.
*Experimental Studies on Growth. Growth of Relatively Long Lived Compared with that of Relatively Short Lived Animals. T. B. Robertson and L. A. Ray, Toronto.—p. 71.
Colorimetric Estimations with Solutions Containing Two Colored Substances. K. G. Falk and H. M. Noyes, New York.—p. 109.
*Fat Soluble Vitamin. VI. In Carrots, Alfalfa and Yellow Corn. H. Steenbock, P. W. Boutwell, M. T. Sell and E. G. Gross, Madison, Wis.—p. 131.
*Separation of Physiologically Active Portion of Posterior Lobe of Pituitary Body. F. Fenger and M. Hull, Chicago.—p. 153.
Utilization of Salep Mannan. M. S. Rose, New York.—p. 159.
*At What Level Do Milk Proteins Become Effective Supplements to Proteins of Cereal Grain? E. B. Hart and H. Steenbock, Madison, Wis.—p. 167.
Fermentation Characteristics of Certain Pentose Destroying Bacteria. E. B. Fred, W. H. Peterson and A. Davenport, Madison, Wis.—p. 175.
Photometric Turbidimeter. W. G. Bowers and J. Moyer, University, N. D.—p. 191.
Chemical Isolation of Antineuritic Vitamins. C. N. Myers and C. Voegtlin, Washington, D C.—p. 199.
Osmotic Pressure of Serum and Erythrocyes in Various Vertebrate Types as Determined by Cryoscopic Method. J. B. Collip, Edmonton, Can.—p. 207.
Effect of Dilution on Osmotic Pressure and Electrical Conductivity of Whole Blood, Blood Serum and Corpuscles. J. B. Collip.—p. 213.
Osmotic Pressure of Tissue Determined by Cryoscopy. J. B. Collip.—p. 221.
Maintenance of Osmotic Pressure in Nucleus. J. B. Collip.—p. 227.

Proteins in Dry Spinach Leaves.—The authors show that spinach leaves dried at a low temperature and extracted with ether, alcohol, water, and alkaline solutions yield results so similar to those obtained with the fresh green leaf that evidently the constituents of the cells are altered to only a slight degree by drying.

Digestibility of Raw Corn, Potato and Wheat Starches.—Raw corn and wheat starches were found by Langworthh and Deuel to be completely assimilated and no trace of them could be found in the feces. Seven experiments on raw potato starch gave values for its digestibility varying from 62.3 to 95.2 per cent.; the average was 78.2 per cent. The ingestion of the potato starch caused disagreeable physiological disturbances not noted in the other experiments with raw corn and wheat starches. The digestibility of the other constituents of the diet was not affected to any great extent by the large amounts of raw starch ingested.

Carbon Dioxid Content of Heated and Unheated Milk.—It appears that, under the conditions to which normal unheated milk is subjected in its handling from the time of milking to the time of delivery to the consumer, the volume percentage of carbon dioxid rarely, if ever, drops below 3 and seldom below 3.5, while the subjection of normal milk to the conditions of heating used in pasteurization reduces the percentage of carbon dioxid by volume to 2.5 or less. Therefore, it appears safe, in general, to assume that milk containing less than 3 per cent. of carbon dioxid by volume has been heated to the temperature of pasteurization.

Iodin in Thyroid.—A new method is described by Tatum for the separation of cells from colloid of the thyroid gland for chemical study. Iodin is found in both cells and colloid of beef, sheep, and pig thyroid glands. The ratio of percentages of iodin in cells to iodin in whole glands appears to be relatively constant for pig, sheep, and beef thyroid glands, even though such glands vary both in morphology and in total iodin content.

Proteins in Georgia Velvet Bean.—The Georgia velvet bean contains 23.6 per cent. of protein (N × 6.25). Two globulins, designated as the a and b-globulins, may be separated, in yields of about 3 and 1.25 per cent., respectively; and an albumin is found in extracts which have been freed from globulin by repeated dialysis. Analyses of the three proteins show marked differences in the nitrogen and sulphur content, and in the distribution of nitrogen as determined by Van Slyke's method. Qualitative examination indicates that the B-globulin contains no tryptophan, an observation of particular interest in view of the fact that this amino-acid has been found to be present in all seed globulins heretofore tested. The a-globulin and the albumin from the Georgia velvet bean both contain tryptophan.

Studies on Growth.—The hypothesis is presented by Robertson and Ray that the potential longevity of any given individual is determined by the relative velocities of anabolism in the cellular and sclerous tissues, respectively. In terms of this hypothesis it is suggested that the prolongation of life which is brought about by continuous administration of tethelin to mice is attributable to an increased velocity of anabolism of distinctively cellular elements to the relative disadvantage, in the competition for nutrients, of the connective tissue elements. If the administration of tethelin is discontinued prior to sexual maturity the normal proportion of cellular to connective tissues is rapidly restored and exceptionally large animals of normal or abbrevated duration of life are the result.

Fat Soluble Vitamin in Carrots.—When carrots are saturated with lard or corn oil and then extracted with ether none or little of the fat-soluble vitamin is removed. The lard preparation gave no evidence of containing the vitamin, but the corn oil preparation contained it in small but persistent amounts. Ether has little solvent properties for the fat-soluble vitamin as found in carrots; chloroform and carbon disulphid remove some of it; while alcohol and benzene remove considerable amounts of it. None is entirely satisfactory for extraction purposes.

Uterus Contracting Principle in Posterior Lobe of Pituitary.—Evidence is furnished by Fenger and Hull which indicates that the uterus contracting active principle of the posterior lobe of the pituitary body does not occur in the fresh gland in free or crystalline form, but is linked to or part of some protein complex. In its original protein association the uterine stimulus is insoluble in ether, petroleum ether, chloroform, and practically insoluble in absolute alcohol. It is sparingly soluble in 95 per cent. alcohol, but yields a highly active split product when treated with hot 95 per cent. alcohol. The split product is amorphous in ature, very hygroscopic, and much more sensitive to desiccation than the original basic material from which it was derived. The crystalline bodies naturally occurring in and isolated from the posterior lobe are inorganic salts possessing no uterus-contracting power. Alkaloidal reagents only incompletely precipitate the active fraction of the water extract of the gland.

Milk Proteins as Supplement to Cereal Proteins.—The results obtained by Hart and Steenbock show that highly efficient protein mixture is not obtained until the proportion of liquid milk to corn meal reaches 1:1; in this proportion the milk nitrogen will constitute approximately 30 per cent. of the total nitrogen of the ration.

Journal of Experimental Medicine, Baltimore

May 1, 1920, **31**, No. 5

*Experimental Pneumonia. III. Spontaneous Pneumonia in Monkeys. F. G. Blake and R. L. Cecil, Washington, D. C.—p. 499.
*Id. IV. Results for Prophylactic Vaccination against Pneumococcus Pneumonia in Monkeys. R. L. Cecil and F. G. Blake, Washington, D. C.—p. 519.
*Experimental Studies in Diabetes. Series I. Production and Control of Diabetes in the Dog. 3. Effects of Protein Diets. F. M. Allen, New York.—p. 555.
Id. 4. Control of Experimental Diabetes by Fasting and Total Dietary Restriction. F. M. Allen, New York.—p. 575.
*Id. 5. Various Failures of Dietetic Treatment, and Their Causes. F. M. Allen, New York.—p. 587.
Relation of Portal Blood to Liver Maintenance. Demonstration of Liver Atrophy Conditional on Compensation. P. Rous and L. D. Larimore, New York.—p. 609.
Epidemiology of Blackhead in Turkeys Under Approximately Natural Conditions. T. Smith and W. H. Graybill, Princeton, N. J.—p. 633.
Production of Fatal Blackhead in Turkeys by Feeding Embryonated Eggs of Heterakis Papillosa. H. W. Graybill and T. Smith, Princeton, N. J.—p. 647.

Spontaneous Pneumonia.—The close analogy between the epidemic of lobar pneumonia that occurred among monkeys at the Army Medical School and similar epidemics of lobar pneumonia that occurred during the war among certain groups of newly drafted troops shortly after their arrival at camp, Blake and Cecil believe indicates that pneumococcus pneumonia may become an epidemic disease among groups of susceptible individuals when they are assembled under conditions that facilitate the ready transfer of infection from

the individual to individual. Bacteriologic examination made by Blake and Cecil showed the spontaneous pneumonia to be due in the great majority of cases to infection with pneumococcus Type IV. Immunologic classification of the strains of pneumococci by cross-agglutination tests showed that the majority fell into two biologic groups. Two cases were apparently caused by *Streptococcus haemolyticus,* two by *Streptococcus viridans.* Study of the pathology of spontaneous pneumococcus pneumonia in monkeys showed that it presented the characteristic picture of lobar pneumonia, both macroscopically and microscopically, and was in all respects comparable with the pathology of lobar pneumonia, experimentally produced in monkeys and with lobar pneumonia in man.

Prophylactic Vaccination Against Pneumonia.—Cecil and Blake found that the subcutaneous inoculation of monkeys with pneumococcus Type I vaccine in doses comparable with those employed in man does not protect them against subsequent attacks of pneumococcus Type I pneumonia, either spontaneous or experimental. Furthermore, the occurrence of pneumococcus Type IV pneumonia among monkeys that have been vaccinated with pneumococcus Type I lipovaccine indicates that the vaccinated animals develop no cross protection against other types of pneumonia. Vaccination doses, however, modify the course of the disease. Invasion of the blood stream by the pneumococcus in vaccinated animals is usually slight, and the proportion of recoveries is considerably higher for vaccinated than for unvaccinated monkeys. Pneumococcus saline vaccine produces a greater amount of protective snbstance in the serum of the vaccinated animal than does pneumococcus lipovaccine and is probably, therefore, a better antigen. Both, however, fail to protect the animal against pneumococcus pneumonia.

Effects of Protein on Diabetes.—No specific differences were observed by Allen between the glycosuric effects of different kinds of protein. Other incidental observations were noted in connection with the records of individual animals. General conclusions are deferred to the close of the series.

Failures of Dietetic Treatment of Diabetes.—Practically every detail of clinical diabetes was reproduced by Allen in partially depancreatized animals. Every detail of the downward progress of human patients on various diets in reproduced in such animals. Varying degrees of success and failure in the dietetic control of diabetes are also illustrated. A claim of saving every patient, no matter how near death, Allen says, would be a preposterous one for any remedy in any disease, and the animal experiments do not support such a claim for diabetes. Also it is unreasonable to expect the actual care of an organic deficiency by diet, and the diet treatment in animals just as in patients generally represents the sparing rather than the restoration of the weakened function. The basis of the belief is the inherently progressive tendency of severe cases of clinical diabetes is shaken by the exact reproduction of such case histories by diet in animals which are free from spontaneous downward tendencies; but there is still lack of a sufficient number of patients treated on the principle of relief of the total metabolic burden to demonstrate the absence of such inherent progressiveness in human diabetes.

Journal of Laboratory and Clinical Medicine, St. Louis

May, 1920, **5**, No. 8

Acion of Ethylenediamine. H. G. Barbour and A. M. Hjort, New Haven, Conn.—p. 477.
Chemical Changes in Blood in Disease. Uric Acid. V. C. Myers, New York.—p. 490.
*Bacteriologic Data on Epidemiology of Respiratory Diseases in Army. H. J. Nichols, Washington, D. C.—p. 502.
Chronic Poisoning from Hydrocyanic Acid. C. I. Reed, Lawrence, Kan.—p. 512.
Indicanuria and Acetonuria of Gastrointestinal Origin. E. R. Wilson, Los Angeles.—p. 515.
Arsphenamin and Neoarsphenamin. W. A. Smith, Springfield, Ill.—p. 518.
Primary Cancer of Liver. I. M. Cohn, Spokane, Wash.—p. 528.
Effect of Tobacco on Vascular Wall. Tsang G. Ni, China—p. 534.
Selection of Kieselguhr for Filtration of Serums. G. E. Ewe, Philadelphia.—p. 538.
Convenient Stopcock-Needle-Cannula. P. J. Hanzlik, Cleveland.—p 540.
New Urinometer. J. Rosenbloom, Pittsburgh.—p. 542.

Epidemiology of Respiratory Diseases.—Nichols supports the inhalation theory of the transmission of respiratory diseases. No evidence was found by him to support the theory that these organisms spread through dish water. Dish water showed no streptococci except when no soap was used. Infection of the mouth did not occur when streptococci were smeared on the lips. Soapy dish water is antiseptic for streptococci if of proper reaction and made with proper soap. Evidence was found, however, that intestinal organisms can spread through dish water.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

May, 1920, **15**, No. 3

*Reaction of Cat's Uterus to Strophanthus and Calcium. F. Ransom, London.—p. 181.
*Point of Attack of Certain Drugs Acting on Periphery. I. Action on Bladder. C. W. Edmunds and G. B. Roth, Ann Arbor, Mich.—p. 189.
*Id. II. Action on Retractor Penis Muscle of Dog. C. W. Edmunds, Ann Arbor, Mich.—p. 201.
Influence of Heavy Metals on Isolated Frog Heart. W. Salant and H. Connet.—p. 217.

Reaction of Uterus to Strophanthus and Calcium.—The investigations made by Ransom show that the movements of the excised cat's uterus, which have been diminished or arrested by placing it in a Ringer's fluid containing no calcium, are restored and usually increased by the addition of strophanthus. The effect of quite a short exposure of uterine muscle to strophanthus is to make it extraordinarily responsive to calcium. It is suggested that some forms of postpartum hemorrhage may be due to subsistence on a diet poor in calcium affecting the efficiency of the uterine muscle, and that in such cases strophanthin might usefully be injected intravenously.

Point of Attack of Epinephrin, Nicotin, etc.—The point of action of a number of drugs can be defined pretty accurately: epinephrin produces its effects by an action on the myoneural junctions of the true sympathetic nerves, and nicotin probably produces its effects on the bladder by an action on the ganglia along the course of the nerves going to the organ, although this is not certain, as the experiments described by Edmunds and Roth show that there is, in addition to the action on the ganglia, also a direct effect on the muscle. Morphin, and probably the pilocarpin-atropin series, including curara act along the course of the parasympathetics at a point about which there is still discussion as to whether it is nerve end, or myoneural junction. Or, it may be that the contractile substance proper is affected and the points of attack may not be the same in all organs and localities.

Action of Pilocarpin, etc., on Retractor Penis.—The action of pilocarpin, physostigmin, atropin and nicotin on the retractor penis muscle of the dog is a direct one on the muscle proper and there is nothing to indicate that the same may not hold good for their action on the bladder, with the possible exception of nicotin, which may also act on the ganglia along the course of the nerves going to that organ. In the case of other organs and structures such as the iris, bronchial muscles, uterus, etc., the same general rule will not hold as the action may be one on nerve endings or on myoneural junctions, or on the muscle substance proper. It is, therefore, dangerous to speak of these alkaloids as being stimulants of the "parasympathetic nerve endings" or of the "myoneural junctions."

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, Bristol

April, 1920, **7**, No. 28

*Traumatic Aneurysm of Right Subclavian Artery Treated by Ligature. J. McClure.—p. 438.
*Surgery of Chest in Relation to Retained Projectiles. B. Moynihan.—p. 444.
*Histologic Resemblances of Oriental Sore to Epithelioma. W. Macadam.—p. 487.
*Intussusception Occurring in Course of Typhoid. A. L. Moreton.—p. 490.

Difficulties in Diagnosis of Nerve Function. M. Forrester-Brown. —p. 495.
Operation for Chronic Dislocation of Peroneal Tendons R. E. Kelly. —p. 502.
Crucial Ligaments of Knee-Joint: Function, Rupture and Operative Treatment. E. W. Hey Groves.—p. 505.
Treatment of Trigeminal Neuralgia by Injection of Alcohol into Gasserian Ganglion. H. H. Rayner.—p. 516.
*Cyst of Common Bile Duct. A. A. McConnell.—p. 520.
*Hemorrhage and Postoperative Obstruction in Suprapubic Prostatectomy. J. W. T. Walker.—p. 525.
*Thigh Rotation or Obturator Test: New Sign in Some Inflammatory Abdominal Conditions. V. Z. Cope.—p. 537.
Case of Extensive Keloid of Ear Lobes. R. Morison.—p. 538.
Abdominothoracic Gunshot Wound: Diaphragmatic Hernia of Stomach. S. Barling.—p. 539.
Retroperitoneal Hematoma after Radical Cure of Inguinal Hernia and Varicocele. C. H. Fagge.—p. 542.
Unusual Wound of Abdomen. J. B. Haycraft.—p. 543.
Two Cases of Strangulated Intestine Partly Contained in Hernial Sacs. H. Chitty.—p. 545.
*Uncommon Injury of Carpus. C. P. G. Wakeley.—p. 546.

Traumatic Aneurysm of Subclavian Artery.—A case of traumatic aneurysm of the subclavian artery, associated with a concurrent brachial monoplegia, was treated by ligature of the first portion of the subclavian trunk and vertebral artery. Relief from great suffering and pain followed the application of the ligature. The patient's general condition improved rapidly, and active motion in the shoulder became normal.

Surgery of Chest.—Forty-nine patients have been treated by Moynihan by operation. Two patients died, one from hemorrhage following the removal of a projectile from the root of the lung, and one from sepsis after the removal of an infected foreign body and a piece of clothing. Twenty-four patients are in perfect health, and are able to do heavy work; fourteen are better than before operation, but still have some shortness of breath, or unusual respiratory trouble when having a cold or in bad weather. Two patients died; three are unable to do any work, or have serious respiratory trouble, shortness of breath, cough, etc. All but five patients were operated on by the ordinary anterior method. The five operated on by direct attack from behind show four with good ultimate results, one with fair result. Eighteen of the foreign bodies were examined bacteriologically, eleven were infected with *Staphylococcus aureus,* or *Streptococcus brevis* in equal numbers, or by these organisms together with coliform bacilli; seven were sterile Empyema after operation developed in five cases, and in each of these, when the foreign body was examined, it was found to be infected Of the seven which did not suppurate, only once was the foreign body examined, and it was sterile.

Oriental Sore Resembles Epithelioma.—The excised skin lesions of the type of Oriental sore, sometimes called Baghdad boil, Delhi sore, etc., examined by Macadam, mostly showed the characters of a chronic ulcer, those of greater chronicity having some epithelial downgrowth at the margin, but in two instances the histologic characters were such as to be practically indistinguishable from a squamous celled carcinoma.

Intussusception During Typhoid.—The temperature of the patient whose case is cited by Moreton had been raised, although not typical but rather of the remittent type, until the forty-seventh day of the disease. On that morning, the temperature fell suddenly to 97.8 F., and the patient had a severe attack of vomiting. Although the signs characteristic of perforation were absent, it seemed the most probable cause of her condition notwithstanding. Other possibilities were that the case was one in which a slow leakage had taken place, and the leak had been shut off by adhesions; or that it was a case of localized peritonitis without macroscopic perforation. The abdomen was opened, a mass was felt in the ileocecal region. This was found to be an enteric intussusception which had become enterocolic. Its apex was at a point of the ileum 5 inches from the ileocecal valve. This had become invaginated into, and had extended 4 inches up the lumen of, the ascending colon. The ileocecal valve was not invaginated so that the intussusception was of the subdivision "iliaca-ileo-colica." The intussusception was reduced without difficulty. No perforation was found. The patient lived. Ten other cases of this condition are mentioned in the literature.

Cyst of Common Bile Duct.—Only thirty-five cases of this condition have been reported. The diagnosis has never been made before operation, and the operative treatment has not yielded good results. In McConnell's case, the cyst extended from the extreme right side of the abdomen to a point some distance to the left of the middle line, and lay between the aorta, vena cava and right kidney behind, and the pancreas and duodenum in front. The cyst was as aspirated. About one year later some leakage of bile took place at the original site of drainage. The original wound was opened and a large quantity of pus, mixed with bile, evacuated. Eighteen months later a third operation was performed. The cyst had shrunk to the size of a walnut, and occupied a position between the second stage of the duodenum and the right kidney. The patient made an uneventful recovery.

Avoiding Hemorrhage and Obstruction After Prostatectomy.—In Walker's opinion, prevention of these two complications lies in performing an open operation in which the bladder and prostatic cavity are fully exposed, the hemorrhage is treated, and all nodules and strips of tissue and valves are removed. The operation is described in detail.

Thigh Rotation or Obturator Test for Appendicitis.—Cope says a diagnosis of appendicitis may be facilitated by bringing the obturator internus muscle into action; thus pain may be caused by the dragging of the contiguous inflamed tissues. The test is elicited as follows: The right thigh is slightly flexed (so as to relax the psoas muscle); the limb is then fully rotated at the hip, first internally and then externally, so as to put the obturator internus through a full range of movement. The sign is positive if the patient complains of hypogastric pain when the limb is moved in this manner.

Injury of Carpus.—Wakeley's patient was thrown from his motorcycle and landed on his outstretched righ hand. He sustained a fracture of the styloid process of the radius, a fracture through the neck of the os magnum, dislocation of the scaphoid inward and dislocation of the semilunar forward, with rotation on its transverse axis.

British Medical Jouranl, London

May 29, 1920, **1**, No. 3,100

Toxemias of Pregnancy. A. W. Bourne.—p. 727.
*Collective Investigation of Ten Thousand Recruits with Doubtful Heart Conditions. C. C. Gibre and others.—p. 730.
Immediate Closure of Empyemas. F. Hathaway.—p. 734.

Causes of Valvular Heart Disease.—Taking aortic regurgitation and mitral stenosis as the two typical valvular lesions which can be diagnosed with comparative certainty during life the results of this statistical inquiry have led to the following conclusions: The most important etiologic factor in the production of organic lesions of the heart valves in men between the ages of 18 and 41 is rheumatic fever. Strain can independently produce aortic regurgitation. While strain may be a cause of mitral stenosis, it is a much less important factor than in the production of aortic regurgitation. There is a third agent giving rise to symptoms simulating influenza, which is an efficient cause of mitral stenosis, and can possibly affect the aortic valves as well, but is not nearly so likely to do so. The authors have been unable to find any statistical evidence that syphilis, scarlet fever, diphtheria, pneumonia, or gonorrhea, are causes of valvular lesions, nor can we find statistical evidence that a history of growing pains points to affections productive of valvular lesions. The same may be said, with slight reservations, of a history of rheumatism where there is no clear account of pain, swelling of the joints, fever, or confinement to bed. The evidence in favor of chorea as an efficient cause of mitral stenosis is strong, and some, though not very striking, evidence in confirmation of the view that chorea and rheumatic fever are both manifestations of the activity of a common cause has been found.

Glasgow Medical Jouranl

May, 1920, **11**, No. 5

Penetrating Gunshot Wounds of Chest. R. F. Young.—p. 193.
Fatality of Peptic Ulcer and Importance of Early Diagnosis. J. Carslaw and J. M. Cowan.—p. 211.

Japan Medical World, Tokyo

May 1, 1920, **10**, No. 18

Antirabic Treatment of the Dog. S. Umeno and R. Dol.
Vital Staining; Stain Granules inCells. K. Kiyono and H. Hoshijima.

May 8, 1920, **10**, No. 19

Vital Staining; Stain Granules in Cells. K. Kiyono and H. Hoshijima.
First Intermediate Host of Paragonimus Westermanii. A. Ando.

May 15, 1920, **10**, No. 20

First Intermediate Host of Paragonimus Westermanii. A. Ando.
Early Diagnosis of Gastric Cancer. H. Tsuzi.

May 22, 1920, **10**, No. 21

Early Diagnosis of Gastric Cancer K. Tsyzi.
Route in Host's Body Taken by Schistosoma Janica. Y. Suyeyasu.
Therapy of Liver Distomiasis. S. Kakehi, K. Maekawa and G. Toide.

Lancet, London

June 5, 1920, **1**, No. 5049

Principles of Medical Science as Applied to Military Aviation. J. L. Birley.—p. 1205.
*Vital Capacity Constants Applied to Study of Pulmonary Tuberculosis. G. Dreyer and L. S. T. Burrell.—p. 1212.
Blood Transfusion: Its Theory and Practice G. Keynes.—p. 1216.
*Effects of Occupation and Race on Health of Recruits. G. R. Hall. —p. 1218.
*Actinomycosis of Cecum. Report of Case. E. G. Slesinger.—p. 1220.
*Case of Paratyphoid "C" Fever in East Africa. R. P. Garrow.—p. 1221.
Psychoanalysis and Psychotherapy J. Crichton-Browne.—p. 1248.

Vital Capacity Constants in Pulmonary Tuberculosis.—A definite decrease in vital capacity as compared with what should be normal for any person, taking into account the class in which this person should be placed according to occupation and mode of life, Dreyer and Burrell claim is characteristic of pulmonary tuberculosis. An improvement in the clinical condition of the patient is found to be accompanied by an increased vital capacity, while an advance of the disease results in a decrease in vital capacity. The vital capacity, therefore, gives a valuable quantitative measure of the benefit, if any, which the patient receives as a result of treatment. The determination of the vital capacity is also useful for the classification of cases of pulmonary tuberculosis, because it is possible by this means numerically to express the injury to health (e. g., degree of toxemia) which otherwise would depend on the individual interpretation of physical signs by different observers. In this connection it should be noted that classification by physical signs alone may place a patient nearing death from an acute lesion in a high category, while another patient, with satisfactory fibrosis and extensive cavitation, likely to live for several years, may be placed in the lowest category. As an aid to diagnosis a single or repeated examination of the vital capacity of doubtful cases will also prove useful.

Effect of Occupation and Race on Heart Disease.—An analysis of 2,500 heart cases was made by Hall. Of these 40 per cent. had what is known as heart disease, that is V. D. H. (valvular disease of heart), or excessive myocardial change. The illness of 50 per cent. was due to want of tone and minor causes, nearly all quite curable if the people concerned had been in a good financial position. In other words many of these will drift into invalidism and national inefficiency for want of a fair chance. Another interesting feature is the proportion of dark to fair people who figure in this list. Of the 2,500 heart cases, the proportion of dark to fair was 3 to 2, and since among the other recruits examined there were two fair to every one dark, heart trouble would appear to be three times as common among the dark elements. As regards hyperthyroid action, the dark are affected in the proportion of ten to one. The surprisingly high categories in which clerks were placed shows that this occupation need not be unhealthy; while the absolute ill health of the Russian Jews, as a whole, and the close approximation of Jewish lads of 18 born abroad, but reared in Britain, to the British standard at the same age, proves there is nothing radically wrong with the physique of the Jewish race.

Actinomycosis of Cecum.—The case reported by Slesinger is unusual on account of the localized nature of the lesion and the onset with generalized peritonitis.

Paratyphoid C.—An organism corresponding in every way with Hirschfeld's organism was isolated by hemoculture in a case of continued fever in the course of routine blood culture for the diagnosis of puzzling pyrexias. This was the only case of paratyphoid C found—a sporadic case, thus differing from cases found elsewhere.

Medical Journal of Australia, Sydney

May 1, 1920, **1**, No. 18

Conservative Treatment of Eclampsia. R. M. Allan.—p. 405.
Rodent Ulcers and Allied Growths. J. B. Cleland and N. Paul.—p. 407.

May 8, 1920, **1**, No. 19

Labyrinthine Complications in Middle Ear Suppurations H. J. Marks. —p. 429.
Blood Transfusion. J. J. Power.—p. 440.

National Medical Journal of China, Shanghai

March, 1920, **6**, No. 1

Management of 1919 Cholera Epidemic in Harbin. Wu Lien-Teh and J. W. H. Chun.—p. 4.
*Incidence of Abdominal Disease in Chinese. J. Heng Liu.—p. 17.
*Pathogenicity of Ascaris Lumbricoides: Report of Cases. E. S. Tyau. —p. 21.
Selection of Men for Aviation Service. H. J. Howard.—p. 29.
Use of Boiled Beef Bone as Transplants in Tuberculosis of Spine and as Internal Splints in Reduction of Fractures. Way Sung New. —p. 36.
Nutritive Value of Soy Bean Products. W. H. Adolph and P. C. Kiang.—p. 40.
Etiology of Last Cholera Epidemic. E. T. H. Tsen.—p. 49.

Abdominal Disease in Chinese.—The average Chinese hospital, supposing it has the same bed capacity as the Massachusetts General Hospital, admits only one sixth as many abdominal cases, and sees less than one fifth as many laparotomies. Appendicitis is a common disease among the Chinese. In fact, excepting hernia, it is the most common abdominal condition which comes to the hospitals for treatment. Liver cirrhosis and splenomegaly of various and often indeterminate etiology compose 17 per cent. of all the abdominal cases seen in the Chinese hospitals.

Ascaris Lumbricoides in Bile Passages.—Tyau reports the case of a man admitted to the hospital complaining of pain in the epigastrium and general debility. The pain began about three months before, and slowly got worse and worse. It was a dull pain, occurring usually in the afternoon and after meals and lasting about three hours. It was felt chiefly in the epigastrium and occasionally over the hepatic region; it did not radiate to the back or shoulder. During the attack of pain nothing could be taken into the stomach. The appetite was poor and the bowels irregular. A nodular swelling about the size of an egg was palpable below the right costal margin which was slightly tender on deep palpation. Laboratory findings: Urine negative; gastric analysis showed hypochlorhydria; blood, secondary anemia; feces showed many ova of ascaris and a few of trichuris. After a course of santonin treatment about eighteen worms were passed with the feces. But the patient did not improve. There was no fever. The patient died five days after the santonin treatment. At the necropsy, the liver was found to be much enlarged on the lateral and posterior aspects. The gallbladder was greatly distended and the cystic duct was blocked by nine ascaris worms. The liver contained numerous abscesses with copious pus, and in the bile ducts were embedded a number of young ascaris worms, some measuring only 1.25 inches long. In the intestine fifteen ascaris worms, all female and one trichuris was found. Numerous eggs were found in the gallbladder and the liver. Sections of the liver showed marked fibrosis with deposits of biliary pigments, and degeneration of the cells.

South African Medical Record, Cape Town

April 24, 1920, **18**, No. 8

Continuous Administration of Nitrous Oxid in Dental Surgery. W. A. Rail.—p. 144.
Tic Douloureux. A. M. Moll.—p. 147.

May 8, 1920, **18**, No. 9

Extragenital Chancres. B. Bernstein.—p. 163.
Epidemic Influenza. P. T. Cairns.—p. 165.
Tympanic Membrane: Correct Form and Reflecting Areas. J. L. Aymard.—p. 167.
*Specific Complement Fixation Test for Bilharziasis. W. A. Murray. —p. 168.
*Ruptured Ectopic Gestation Combined with Pregnancy in Utero. C. C. Elliott.—p. 169.

Complement Fixation Test for Bilharziasis.—The technic employed by Murray is based on a modification of the original Wassermann test, and the results have been satisfactory, although the number of tests actually performed has been small. Antigen obtained from the livers of snails (*Physopsis africana*) infected with the cercariae of *Schistosmo haematobium* was used. The livers are ground up in alcohol (1 gm. liver substance to 10 c.c. alcohol); the mixture is kept at room temperature for five days, with frequent shaking; is then filtered, and the alcoholic extract is used as antigen. For the test the antigen is mixed with 1 per cent. cholesterin (3:2), and is then titrated. The three antigens used so far have each given an anticomplementary titer of 1:3, and an antigenic titer of 1:80. A dilution of 1:8 is used in the actual test. The amboceptor, complement and sheep cells are used exactly as in the Wassermann test. Murray says that the presence or absence of bilharzial disease may be diagnosed with accuracy from the blood serum of any patient.

Simultaneous Ectopic and Uterine Pregnancy.—In the case cited by C. C. Elliott, an attack of sudden severe abdominal pain led to the diagnosis of ruptured ulcer of the stomach. The woman was having her usual menstrual flow, and gave no history of missing a period. Elliott operated and found the right fallopian tube, near its outer third, ruptured in what was an early pregnancy, possibly a month or six weeks. The uterus was somewhat enlarged, but Elliott did not consider this abnormal. The operation was done April 26, 1919. December 9 she gave birth to a full term child. Elliott concludes that there must, of course, have been a twin pregnancy —one fetus extra-uterine and one intra-uterine. The pregnancy probably began early in March.

Bulletin de l'Académie de Médecine, Paris

May 18, 1920, **83**, No. 20

*Precancerous Condition. G. Darier.—p. 464.
Lethargic Encephalitis. L. Bernard and others.—pp. 470, 474.

Precancerous Condition.—Darier refers to the chronic atypical epithelial proliferation described by Bowen, and urges that all the patches should be thoroughly excised as cancer is almost certain to develop in them. This dermatosis resembles in many respects Paget's disease of the nipple which, likewise, is usually followed by cancer. The dystrophy or dyskeratosis closely resembles epithelial masses in the cancers, which should be borne in mind in cancer research.

May 25, 1920, **83**, No. 21

*Resection of Posterior Arc of First Ribs. J. Boeckel.—p. 486.
Spring Girdle for Ptosis. De la Prade.—p. 489.
*Ipecac for Infants' Dyspepsia. Rousseau-Saint-Philippe.—p. 491.
Influence of Liver on Sero-Agglutination. Duhamel and Thieulin.—p. 492.

Resection of Posterior Arc of First Ribs.—Boeckel for twenty years has operated on high empyema from the back by severing the rhomboideus and the serratus magnus through a longitudinal incision in the trapezius, the incision in the skin curving around the posterior margin of the scapula. When these muscles are severed, the scapula can be easily pushed over toward the axilla, giving ample access to the posterior arc of the upper five ribs.

Ipecac for Infants' Digestive Disturbances.—Saint-Philippe gives systematically minute doses of tincture of ipecac to bottle-fed babies with digestive disturbances. He gives it by drops in progressive doses, aiming to act on the digestive juices, and on fermentation and putrefaction. The ipecac, he says, tones up the liver and secretion of bile.

Bulletin Médical, Paris

May 12, 1920, **34**, No. 25

Forms of Insufficiency of Aortic Valve. C. Achard.—p. 435.
*Erosions of the Anus. G. Durand.—p. 436.
*Insufficiency of the Kidneys. J. Génévrier.—p. 438.

May 19, 1920, **34**, No. 26

Bronchitis of Nasal Origin. H. Flurin.—p. 455.

Hemorrhagic Erosions in the Anal Canal.—Durand comments on the difficulty of diagnosing these erosions, which may be the source of severe hemorrhage and yet escape inspection, hidden in crevices, unless the proctoscope is used. This is advisable also to exclude cancer above. The erosions in question are capillary hemorrhoids, without visible dilatation of the vein. They should be touched with 1 per thousand silver nitrate or 1 per cent. chromic acid two or three times, at two or three days intervals, supplementing this by introducing a "gauze suppository" or roll of gauze coated with petrolatum medicated with zinc oxid, ichthyol or similar substance. This local dressing is renewed daily and the stools are kept soft. In the majority of cases this has always cured the erosions and thus the hemorrhages in two weeks. If not, the persistence of the hemorrhages justifies resection of the mucosa involved, but a trial might be made of the high frequency current.

Impaired Permeability of the Kidneys.—Génévrier warns the general practitioner that determination of the elimination of water, of chlorid and of nitrogen by the kidneys has no practical value unless the intake of each for three or four days beforehand is known, and the amount of urine voided for three or four days previously. The permeability for water is easily shown by the induced polyuria test, drinking 500 gm. water fasting and comparing the amount of urine voided during the two following hours with the amount on corresponding days before. The permeability for chlorids can be determined by the loss of weight when the intake of salt is restricted, and the gain in weight when salt is allowed again. The urea content of the urine throws very little light on the permeability of the kidneys for urea. For this, the urea content of the blood is the criterion, and he describes the simple means with which this can be ascertained with the ureameter after treating the serum with sodium hypobromite and phenolphthalein.

Bulletins de la Société Médicale des Hôpitaux, Paris

March 26, 1920, **44**, No. 12

*Meningococcus Septicemia. E. Sergent and others.—p. 428.
Myogenous Total Bradycardia. C. Laubry and A. Mougeot.—p. 436.
Lethargic Encephalitis. A. Netter and others.—p. 441; 446; 448; 450; 451; 459; 478; 479; 482.
Oculomotor Paresis with Parkinson's Disease. Laignel-Lavastine.—p. 458.
*Vaccine Therapy in Typhus. Monziols and Collignon.—p. 462.
*Alcohol in Cerebrospinal Fluid. E. Lenoble and others.—p. 465.
*Chloral in Idem. Idem.—p. 476.
*Erythema Nodosum and Tuberculosis. A. Gendron.—p. 475.

Meningococcus Septicemia.—The protracted meningococcus septicemia had no meningitis, and no benefit was apparent from serotherapy, but the woman of 32 showed a prompt turn for the better after a single intravenous injection of a stock vaccine containing 1 mg. of meningococcus *C* per c.c., and recovery progressed under three more injections. The pseudomalarial fever, arthralgias and papulonodular erythem might have been mistaken for gonorrhea if it had not been for cultivation of the germs from the blood on egg bouillon and ascites bouillon.

Vaccine Therapy of Typhus.—Monziols and Collignon report favorable experiences with a vaccine made from Proteus X_{19}.

Alcohol in the Cerebrospinal Fluid.—Lenoble states in this seventh report of his research on this subject that the presence of alcohol in the cerebrospinal fluid has pathologic significance only when it persists for more than twenty-four hours. It does not persist in this way unless the individual tolerance for alcohol has been surpassed. This threshold differs with different persons, but is never lower than 250 c.c. of absolute alcohol. The alcohol content of the fluid is of less import than its persistence; this was for eighteen days, seventeen days, seven days in experiences related by different writers. Nicloux's quantitative test is accurate enough, he says.

Chloral and Chloroform in Cerebrospinal Fluid.—Ingestion of chloral induced a positive reaction to the Nicloux test for alcohol in the cerebrospinal fluid. Chloroform did not induce the reaction.

Erythema Nodosum in the Tuberculous.—Gendron remarks that the three cases of erythema nodosum and one of a miliary eruption in different members of a tuberculous family, in his practice, confirm the connection between these conditions and tuberculosis.

Paris Médical

May 15, 1920, **10**, No. 20

*Diabetes from Syphilis of Pancreas. Carnot and Harvier.—p. 401.
*Coagulation of Spinal Fluid. M. Villaret and others.—p. 403.
Immediate Treatment of Wounds of Bladder. H. Costantini.—p. 407.
*Chart for Ambard Ureosecretory Index. Mazéres.—p. 409.

Diabetes from Syphilis of the Pancreas.—Carnot and Harvier summarize from the literature four cases in which diabetes developed in syphilitics, but necropsy showed only ordinary sclerosis of the pancreas. In a case from their own experience, however, a woman of 53 had been presenting symptoms of diabetes and of neurosyphilis for about two years. The pancreas was almost entirely transformed into a sclerogummatous mass. They believe this to be the first case to be recorded of diabetes from unquestionable syphilitic lesions of the pancreas.

Coagulating Spinal Fluid.—Massive coagulation with xanthochromia and hyperalbuminosis distinguished the spinal fluid in two cases reported. In one of them, by making the puncture at different heights, it proved possible to locate and treat the lesion responsible for the anomaly.

Chart for Ambard Formula.—Mazéres gives a nomograph with which the calculations for the Ambard coefficient are dispensed with. The values are determined by drawing a connecting line between figures in different columns.

Presse Médicale, Paris

May 19, 1920, **28**, No. 32

*Pneumococcus Infections in Infants. P. Nobécourt and others.—p. 313.

Pneumococcus Infection in Infants.—At the Paris Maternité during the last year all the infants and adults were systematically examined for pneumococci, with 55 per cent. positive results from 322 smears. Type III was found in 133 cases and was responsible for most of the infections. When a carrier of Type II had been admitted to the ward, it appeared almost at once in the other women and infants in the ward, and a train of infectious processes in the upper air passages followed. Isolation is especially important to guard infants against this contagion. The infant should be taken away from its mother if the latter becomes affected and be brought to her only to be nursed, and she should wear a veil while nursing the child. Screens and veils are not enough to protect an infant in the ward with others having the pneumococcus. Contagion by the dust as well as by droplets is to be feared. Antipneumococcus serum in treatment of pneumococcus pneumonia and pleurisy in infants and adults has made a very favorable impression, especially in three infants of 2, 4 and 5 months old. Prophylactic vaccination has been tried too recently for a decisive judgment, but others have reported excellent experiences with it. The data presented emphasize further the severity of pneumococcus infections in infants.

May 22, 1920, **28**, No. 33

*Reduction of Fractures. R. Baudet and F. Masmonteil.—p. 321.
Arsphenamin Responsible for Jaundice. P. Nicaud.—p. 322.
Copper Sulphate for Cancer of Vagina and Cervix. D. Pamboukis and G. Berry.—p. 324.
*Pepsin for External Application. L. Cheinisse.—p. 325.

Reduction of Fractures.—Baudet and Masmonteil expatiate on the perfect results obtained by stretching the limb in a long frame with pressure applied by turning a handle, just as a patent corkscrew pulls the cork out of the bottle by pressure on the neck of the bottle. A dynamometer is interposed between the foot and the turning handle and this allows the pressure to be graduated. The reduction by this means is gentle but complete, and it overcomes all tendency to muscular contraction. If reduction is not soon complete it shows that interposed tissue is preventing, and that operative intervention is imperative without further delay. Another advantage of this frame method is that any practitioner can apply the frame alone, without assistance. The article is illustrated.

External Application of Pepsin-Hydrochloric Acid.—Cheinisse reviews recent literature on the method of treating vicious scars, torpid ulcers, and keloid, and to promote absorption of drugs through the skin, by digesting the tissues with a mixture of 2 parts pepsin and 1 each of hydrochloric acid and phenol in 200 parts distilled water.

Schweizerische medizinische Wochenschrift, Basel

May 6, 1920, **50**, No. 19

*The Rôle of the Ovaries in the Organism. A. Labhardt.—p. 361.
Lethargic Encephalitis. O. Busse.—p. 368.
*Depilatories. L. Merian.—p. 369.
*Perforation from Cancerous Stenosis of Colon. W. Odermatt.—p. 373.

Physiology and Pathology of the Ovaries.—Labhardt's long presentation of his subject aims to show the predominant importance of the ovaries not only for the genital system but for the whole organism. Gynecology is receding more and more from the conception of localized pathologic conditions. Instead of trying to treat the local process, it is the woman as a whole that has to be treated.

Depilatories.—Merian lauds the pumice stone method of curing hypertrichosis. He has recently seen a woman who had been relieved by this means twenty years ago of a very disfiguring growth of hair, and the skin looks normal in both color and texture. In very severe cases he prefers roentgen treatment, and has thus treated twelve patients with no injurious by-effects. For the pumice stone method he has the region rubbed first for from two to ten minutes with a strong soap, leaving the lather on for from five to fifteen minutes. It is then washed off, the region dried and the skin is then rubbed gently with a fine piece of pumice stone, twisting it a little, while the skin is drawn taut with the fingers of the other hand. Then the skin is treated with a cooling salve. This is repeated the next evening with another part of the skin, and so on, each part receiving the application in turn once in eight or ten days. Or the region can be rubbed with the finger dipped in pulverized pumice stone. The use of pumice stone for this purpose is mentioned in the Talmud.

May 13, 1920, **50**, No. 20

*Treatment of Edema. R. Isenschmid.—p. 381.
School Dental Clinics. Jessen.—p. 386.
Embryology of the Prostate. F. Chatillon.—p. 390.
Galvanometer Dosimeter for Roentgen Rays. J. Iten.—p. 393.
Masks in Prophylaxis of Influenza. A. Josefson.—p. 395; Idem. Lauterburg.—p. 395.

May 27, 1920, **50**, No. 22

Diphtheroid Bacilli. W. Loewenthal.—p. 421.
Pitchfork Severs Optic Nerve Through Nose. J. Strebel.—p. 424.
Compensation After Loss of One Eye. E. Ammann.—p. 426.
Colloidal Silver in Female Gonorrhea. H. Koller.—p. 428. Conc'n.

Influence of Diet on the Water Content of the Body.—Isenschmid remarks that it is hard to conceive that, aside from the skeleton, three fourths or four fifths of this body with which we digest and think consists of nothing but water. Drinking of water does not modify the water content of the body. Its direct dependence on the diet has been emphasized anew by the undernutrition edema reported from various points during the war. It could be cured by giving a more nutritious diet or by repose without change of diet, the repose restoring the balance between the intake and the expenditure of energy. In some cases the edema subsided under merely moving the patients from a cold room to a warm room. There is no need for organotherapy, although the success of some with thyroid and testicle extract is interesting.

The lack of milk in certain countries during the war, prevented the Karell treatment of heart disease, and led to the use of substitutes which, he says, surpassed the effect of the original Karell method in many cases. Brilliant results have been obtained by some physicians with it: Only 1 liter of water or fruit juice is allowed for the beverage, and 1 kg. of potato, cooked without salt, is taken during the day in five portions. A banana cure has also proved effectual, taken in the same way. These and the Karell cure are poor in salt, and the small portions and absence of metabolic waste and small intake of fluid make very little demands on the digestive system and kidneys. The potassium in the potato is another favorable factor. Isenschmid's own experience testifies that restriction of albumin and of fluid and of salt is more effectual in the dropsy of heart disease than restriction of salt alone. One patient with extreme edema, rebellious to the Karell cure plus digitalis, lost in eleven days

16 kg. water on a diet of 5/4 liter milk; 200 gm. bread; butter, and two or three eggs. In some cases it is better to reduce the intake of fluids to 800 c.c. The edema following dysentery and other protracted wasting infectious diseases is usually ascribed to weakness of the heart, but it is more probable that it is of the starvation edema type. Other known factors may be concerned, but to date, a diet conforming to the above principles seems to offer the best prospects for the cure of edema.

Policlinico, Rome

April 26, 1920, **27**, No. 17

Sarcomatous Mediastinopericarditis. F. Schupfer.—p. 475.
*Calculi in the Pancreas. G. Apolloni.—p. 482.
*Unusual Form of Thyroiditis. M. Fasano.—p. 484.

Calculi in the Pancreas and Diabetes.—In the case described by Apolloni the young woman had been presenting symptoms of diabetes for a year and the pancreas was found 12 cm. long, with nothing left but a shell crowded with sand and calculi. The extreme hemosiderosis in the liver was a further necropsy surprise. Marchiafava has reported a case in which compression of the bile duct by calculi in the pancreas proved fatal, but there was no glycosuria.

Unusual Form of Thyroiditis.—Fasano released pus and necrotic scraps by incision of the thyroid, the seat of a sudden inflammatory process in the previously healthy young married woman. Besides the chills, fever and pain from the acute thyroiditis, she developed in the two weeks the complete picture of mild exophthalmic goiter with the three cardinal symptoms, but the Stellwag and Graefe signs were negative. After the incision the thyroiditis subsided and with it the exophthalmic goiter symptoms. The destructive process had acted like a thyroidectomy.

May 3, 1920, **27**, No. 18

*Intradermal Reaction in Diagnosis of Echinococcosis. P. Luridiana.—p. 499.
Ateriovenous Aneurysm of the Subclavian. U. Benedetti.—p. 503.
Prophylactic Welfare Work for Children. A. Prati.—p. 505.

May 17, 1920, **27**, No. 20

Aphasia. F. Sorrentino.—p. 547.
Iodin in Abortion of Furuncles and Carbuncles. D. Pacieri.—p. 549.
Physical Training in the Schools. G. Monti.—p. 551.

Intradermal Reaction in Echinococcus Disease.—Luridiana injects into the derma 0.33 or 0.5 c.c. of fluid from a hydatid cyst, and in case of a positive reaction redness and swelling follow for twenty-four hours or several days. Casoni uses hydatid cyst fluid from cattle or guinea pigs, adding a drop of phenol to each 20 c.c. filtering, and keeping on ice, renewing the supply each month. Six cases are described with operative control in three and clinical confirmation in the others. In one case there were numerous small recent cysts and the reaction was only faintly positive after a negative response at the first test. In another case the reaction was negative but a large echinococcus cyst was removed from the spleen. Its walls were unusually tough, extremely resistant to the knife, and this probably prevented any passage of the toxin into the blood so that there was no sensitization. The reaction was always negative in other pathologic conditions.

Riforma Medica, Naples

April 24, 1920, **36**, No. 17

Congenital Cysts of the Neck. L. de Gaetano.—p. 401.
Case of Symmetrical Cervical Ribs of Unusual Size. S. Livierato.—p. 404.
*Rebellious Salivary Fistulas. L. Stropeni.—p. 405.
The Milk Teeth and the Development of the Face. C. d'Alise.—p. 408.
Operative Correction of Uterus Displacement. E. Aievoli.—p. 410.

Cure of Rebellious Salivary Fistula.—Stropeni blocked the third branch of the trigeminal nerve by injecting alcohol, and this proved as successful in curing the incessant flow of saliva from a fistula leading into the parotid gland as resection of the auriculotemporal nerve which Leriche and others have found promptly effectual. He injected 3 c.c. of alcohol at the base of the skull, corresponding to the foramen ovale, and repeated this nine days later. The fistula kept on suppurating, but there was no further secretion of saliva in that gland.

Semana Médica, Buenos Aires

Jan. 29, 1920, **27**, No. 5

McDonagh's Leucocytozoon Syphilidis. Matheu and Rojas.—p. 145.
Vaccine Therapy of Diphtheria. P. Santillán.—p. 160.
Vaginal Cesarean Section with Placenta Praevia. T. J. González.—p. 167.
*Syphilis and Tuberculosis. E. E. Mariño and J. C. Mussio Fournier.—p. 170.

Feb. 5, 1920, **27**, No. 6

An Argentine Hookworm: Necator Argentinus. S. E. Parodi.—p. 177.
Cysts in Coccyx-Sacrum Region. A. Zeno and A. Boden.—p. 181.
Vaccine Treatment and Prophylaxis of Tuberculosis. F. Gómez Alvarez.—p. 183.
Our Present Knowledge of the Gastric Juice. P. J. Pando.—p. 187.
Diseases of Orbit and Eyeball. R. Argañaraz.—p. 196.
The Public Health and Hospital Service in Colombia. E. R. Coni.—p. 207.

Syphilis and Tuberculosis.—Mariño and Mussio state that they have sometimes obtained surprisingly favorable results in treatment of tuberculous patients when tentative treatment for syphilis was given to supplement the usual measures. Even where there is nothing to suggest syphilis, asthenia, status lymphaticus or other endocrinopathy may be manifestations of an inherited or acquired taint, and justify mercurial or other treatment with small doses. This is liable to be of inestimable value when the parents are robust and free from lead poisoning, malaria, etc., which might have affected their offspring, the probability of inherited syphilis as responsible for the endocrinopathy in such conditions being particularly evident.

April 15, 1920, **27**, No. 16

*Origin and Prophylaxis of Cancer. E. Cisneros.—p. 513.
Prophylaxis of Tuberculosis in Rosario District. J. B. Valdés.—p. 527.
Treatment of Influenza. J. A. López.—p. 535.

Origin of Cancer.—Cisneros insists that cancer is merely a local biologic reaction to a foreign body of organic composition, some mass of fibrin or other proteic material that has accumulated by precipitation at some point during a period of lessened vitality, asthenia or depression from any cause. The accumulated mass impedes the circulation, and the system is too depressed to get rid of it in the usual way, but the local tissues react to it with tumor production. He cites as an instructive example of this sequence of events the case of young Dr. Cianci who developed a sarcoma in the mediastinum while under the depression from a rebellious and progressing radiodermatitis. The shock from the operations required, according to Crile's theory, having further exaggerated the depression.

Siglo Médico, Madrid

March 27, 1920, **67**, No. 3459

*Pancreatic Infantilism. C. S. de los Terreros.—p. 221.
Lethargic Encephalitis. E. Fernandez Sanz.—p. 223. Conc'n.
Biology and Feminism. G. Marañón.—p. 226. Conc'd in No. 3461.—p. 265.

April 3, 1920, **67**, No. 3460

Transplantation in Surgery. Goyanes.—p. 241. Conc'd in No. 3463, p. 304.
Renal Calculi. A. Pulido Martín.—p. 244. Conc'd in No. 3461, p. 267.

Pancreatic Infantilism.—De los Terreros refers to backward growth from insufficiency of the pancreas. The literature records few instances of this, but he has encountered it in a number of children. The pancreatic insufficiency does not entail diabetes in children, although certain features of the metabolism resemble those of diabetes in adults, and transient alimentary glycosuria is common in children. His experience has convinced him that the pancreas probably has three hormones, one serving for carbohydrate metabolism, one for the interglandular control of growth and development; the third forms the active element in the pancreatic juice. In children, insufficiency of the two last mentioned hormones will check normal digestion and also check normal growth, while the carbohydrate metabolism may proceed normally or with only minimal glycosuria and acetonuria. A child with pancreatic insufficiency begins to lose weight; acetone and preacetonic bodies are thrown off in the urine and the thyroid, freed from the pancreas hormone, functions to excess. There is usually a tendency to adenoids, pathologic tonsils, mononucleosis and often leukopenia; the resisting powers are low, and the children contract disease easily.

Deutsche medizinische Wochenschrift, Berlin

April 15, 1920, **46**, No. 16

Physiologic and Pathologic Significance of Ion Balance. Höber.—p. 425.
*Simplification of Kjeldahl's Method. A. Hahn.—p. 428.
*Permanganate Tests of Urine and Sputum. M. Weisz.—p. 429.
Inflammation of Meckel's Diverticulum in Hernia. W. Budde.—p. 430.
*Death Late after Skull Wounds. H. Weise.—p. 431.
*Duodenal Ulcers. F. Mendel.—p. 433. Conc'd in No. 17, p. 458.
Ascending or Descending Infection in Tuberculosis of the Male Genital Organs. C. Kraemer.—p. 435.
Rhinologic Hints for General Practitioner. Finder.—p. 436. Cont'n.

A Simplification of Kjeldahl's Method; Especially for Estimation of Residual Nitrogen.—Hahn describes in detail his modification of the Kjeldahl method for the estimation of nitrogen, which is far simpler and takes much less time than the original method.

Potassium Permanganate in Examination of Urine and Sputum.—Weisz states that he has found still further uses for potassium permanganate in examination of urine. He says that the test for urochromogen proved particularly valuable during the war, and he describes another potassium permanganate test, which differentiates uric acid precipitates from phosphates or albumin. He also gives his method of contrast staining of sputum by means of potassium permanganate in examination for tubercle bacilli, which shows them up exceptionally clearly. The urochromogen test can be used as well for detection of bilirubin, the diluted urine becoming decolored when the 1 per cent. solution of the permanganate is added, instead of the yellow tint with urochromogen. These two substances are so rarely associated that the findings do not conflict. Uric acid causing turbidity in urine is rapidly destroyed on addition of the 1 per cent. solution of the permanganate. This differentiates turbidity from uric acid in urine or any fluid, with or without preceding treatment with acetic acid. The uric acid disappears and the fluid becomes clear on addition of the permanganate.

Death Late After Skull Injuries.—Weise summarizes several cases to show that skull injuries are always to be regarded as serious and that the prognosis remains uncertain for several years. Even two or three years later, frequently, and often quite suddenly, while the patients are subjectively well, meningitis, encephalitis or brain abscess, or a combination of these, may develop and end fatally.

Medical Treatment of Duodenal Ulcer.—Mendel states that in all cases of duodenal ulcer, just to the right of the linea alba, slightly below the midline between the costal arch and the umbilicus, there is a tender spot, usually the size of a 50 cent. piece, or possibly a little larger, which is painful on the slightest percussion, whereas just outside of this area even sharp blows cause no pain. This tender spot grows smaller as the ulcer heals and decreases in size, and it disappears when the ulcer is cured. The reason internal therapy so often fails is that it is not begun promptly. Mendel has successfully treated considerably over 100 cases of duodenal ulcer during the past twenty years with no recurrence in the overwhelming majority. He demands absolute rest in bed for from four to six weeks, even in mild cases, and advises the constant and intensive use of hot moist compresses. At night a Priessnitz compress is ordered. The patient is restricted at first to a milk diet. When the spontaneous pains have decreased and the tender spot as shown by percussion has grown smaller, the diet may be extended so as to include zwieback, potato soup (the potatoes to be passed through a sieve), and finally mashed potatoes, with plenty of butter. Rest and diet are the main factors in the treatment, while the moist heat serves to lessen the irritability of the gastric mucosa. As a rule, the chyme is hyperacid and irritates the surface of the ulcer and causes spastic contractions of the stomach. To neutralize this hyperacidity, Mendel has used for twenty years the following prescription: dried sodium sulphate, 30 parts; dried sodium phosphate, 30 parts; sodium bicarbonate, 40 parts; one teaspoonful, dissolved in a wineglass of water, to be taken four times a day before meals. He emphasizes the importance of the sodium phosphate in this treatment, as it has a regulating and sedative influence on the overexcitable vegetative nervous system which is an important factor in the vicious circle with duodenal ulcer.

Medizinische Klinik, Berlin

April 4, 1920, **16**, No. 14

*To Ward Off Acute Effects of Arsphenamin. W. Kolle and others.—p. 355.
Give Antitoxin in All Severe Cases of Diphtheria. C. Schöne.—p. 359.
Electrolysis for Hypertrichosis. E. Eitner.—p. 361.
Rupture of Aorta in Tuberculous Patient. Kornitzer.—p. 361.
Fleeting Edema from Naphthalin Fumes. F. Rosenberger.—p. 363.
Pathology and Heredity in Plants; Conclusions for Comparative Pathology. C. Correns.—p. 364.

Means of Avoiding Acutely Fatal Effects of Arsphenamin Administration.—Kolle, Schlossberger and Leupold found from experiments conducted with mice that the intravenous injection of small doses of silver salvarsan furnished perfect protection against the injection of an absolutely fatal dose of the same preparation twenty-four hours later. This experiment agrees with the results of Danysz' observations on rabbits. These investigations furnish an experimental basis for the clinical custom of giving syphilitics who are especially sensitive to intravenous injections of arsphenamin very small doses at the start.

April 11, 1920, **16**, No. 15

Rachitis in Relation to Backward Growth. S. Engel.—p. 383.
*Deep Subpectoral Lymphadenitis. H. Schum.—p. 386.
Parenteral Injections of Milk in Latent Infections. Stracker.—p. 388.
Silver Salvarsan and Biologic Aspects of Syphilis in Man. E. Delbanco and F. Zimmern.—p. 390.
Combined Roentgen and Potassium Iodid Treatment of Superficial Actinomycosis. R. Dittrich.—p. 394.
Modern Theories of Life. S. Gutherz.—p. 396.

April 18, 1920, **16**, No. 16

Cause and Origin of Abdominal Pains. M. Kappis.—p. 409.
Successful Removal of Large Tumor from Occipital Lobe. R. Cassirer and E. Heymann.—p. 412.
Lethargic Encephalitis. Hilgermann and others.—p. 415.
Outcome with Fractures of Humerus and Femur. Marconi.—p. 418.
Polyuria Following Subcutaneous Injections of Tuberculin. C. Stuhl.—p. 420.
Atrophy of the Hypophysis. H. Feit.—p. 421.

Lymphadenitis Deep in Chest.—Schum finds that acute subpectoral lymphadenitis presents very characteristic symptoms, occurs rather frequently, possesses considerable importance for the surgeon, and that the prognosis is always serious even when recognized early and properly treated. Sometimes diagnosis is difficult so that a general medical disease process is assumed when in reality there is a well localized process requiring immediate surgical intervention. Occasionally contracture in abduction of the arm, and the superficial breathing will give the clew that will localize the suppurating process. Early operative treatment is indicated even though there may be some doubt about the diagnosis. At times a test incision is advisable.

Münchener medizinische Wochenschrift, Munich

April 2, 1920, **67**, No. 14

*Pathogenesis of Peptic Gastric Ulcer. S. J. Haeller.—p. 393.
Residual Nitrogen Content in Human Tissues. E. Becher.—p. 397.
Capillary Attraction in Bacteriology. Friedberger and Putter.—p. 398.
Seasonal Variations in Response to Tuberculin. Hamburger.—p. 398.
The Sachs-Georgi Reaction in Blood and Spinal Fluid. W. Schönfeld.—p. 399.
Comparison of Wassermann Reaction, the Stern Modification and the Sachs-Georgi Reaction. W. Hinzelmann.—p. 402.
Local Destructive Action of Pepsin-Hydrochloric Acid Mixture on Scar Tissue. W. Patzschke.—p. 402.
*Periesophageal Abscess from Foreign Body. H. Herzog.—p. 404.
The Cone of Rays Phantom for Rapid Estimation of Dose in Deep Roentgen Treatment. Lehmann.—p. 405.
Necessity for Control of the Electric Factors in Roentgen Treatment. F. Voltz.—p. 406.
The Anatomic Forms of Pulmonary Tuberculosis. A. Schmincke.—p. 407.

Pathogenesis of Peptic Gastric Ulcer.—On the basis of experimentation with rabbits, Haeller has reached the conclusion that the ulcers produced in rabbits' stomachs by means of large doses of pilocarpin are not the result of muscle spasms. However, he admits that if the essential preconditioning factors are already present, severe spastic contractions of the stomach may favor ulceration.

Periesophageal Abscess from Foreign Body.—Herzog emphasizes the danger of endeavoring to force a foreign body in the esophagus downward, owing to the likelihood of damaging the wall of the esophagus as in the case reported. He advises even against the swallowing of bulky food with

the idea of exerting pressure on the foreign body. Such measures are likely to cause severe peristaltic movements and vomiting, whereby points and jagged edges of the foreign body may be driven into the wall of the esophagus, entailing perforation; or, if the body is pushed downward, it may cause new lesions in lower segments of the esophagus, so that in place of one injury a series of injuries may result. Immobilization of the esophagus is indicated from the moment that the foreign body enters it. Esophagoscopy should be resorted to at the earliest possible moment. Codein and belladonna will render good service until the patient can be given a direct examination. The subjective symptoms are often misleading. There may be no pain in spite of the presence of a foreign body; then, again, severe pain may be present although the foreign body has already passed through the esophagus. Esophagoscopy is, therefore, the only rational procedure; this does away with guess work and prepares the way for the proper therapy.

April 9, 1920, **67**, No 15

*Practical Results of Cineplastic Prostheses. F. Sauerbruch and A. Stadler.—p. 417.
*The Sachs-Georgi Test. G. Wodtke.—p. 419.
*Parallel Wassermann and Sachs-Georgi Tests. T. Baumgärtel.—p. 421.
Results of Linser Treatment of Syphilis. G. Bruck.—p. 423.
*Traumatic Emphysema from Foreign Body in Trachea. H. Herzog.—p. 424.
*Internal Use of Iodin in Coryza and Angina. J. Finck.—p. 426.
Apoplectiform Symptoms of Menières' Disease, Without Disturbance of Hearing, Following Influenza. A. Bittorf.—p. 427.
Mediastinal Dulness in Influenza. A. Kirch.—p. 427.
Lethargic Encephalitis in Eleven Weeks Infant. A. Hirsch.—p. 428.
Edibility of Beans of Phaseolus Lunatus. H. Fincke.—p. 428.
Roentgenologic Laboratories and the Gas Famine. E. Mühlmann.—p. 429.
Predetermination of Sex. P. W. Siegel.—p. 430.

Cineplastic Operations on Amputation Stumps.—Sauerbruch and Stadler report that they now have a record of 1,500 cases in which tendon and muscle loops, tunnels, etc., have been made in the stump to actuate artificial hands, and 1,200 of the men have already been provided with prostheses. Most of the men can lift weights up to 10 or 25 kg., raising them for 3 or 5 cm. A recent improvement is to take the skin flap, to line the loops, etc., from the abdominal wall. It has been found possible also to utilize muscle power from the muscles of the chest. The details of the cineplastics are described, but without illustrations. They say that the success that is being realized at the Munich and Singen centers for this work is converting the skeptical, and demonstrating the advantages of the artificial arm devised by Sauerbruch, and especially what is called the Singen model.

The Sachs-Georgi Test.—Wodtke states that the sensitiveness of the Sachs-Georgi precipitin reaction can be increased by the use of double the usual amount of serum. Some serums, however, react with the usual quantity of serum more sharply than with double the quantity. By using both the usual and the double amount of serum, an increased number of positive results can be obtained without detracting from its diagnostic significance, so far as Wodtke's experience extends, although some have feared such result. By the use of several different extracts a higher degree of sensitiveness may be secured; besides cholesterin-fortified extract of beef heart, cholesterinized extract of human heart may also be used.

Comparison of Results with the Wassermann and the Sachs-Georgi Tests in Syphilis.—Baumgärtel reports that according to the observations of various authors in 25,000 parallel blood examinations and in 7,000 parallel tests of his own, the results by the Wassermann and the Sachs-Georgi reaction agree in about 90 per cent. of the cases. In using the Sachs-Georgi method he recommends that the reaction be taken solely at the incubator temperature. The results should be noted not only after twenty-four hours, but also after two and forty-eight hours' heating of the test tubes at 37 C. In this manner a certain number of cases of syphilis that are atypical from a serologic standpoint will be discovered.

Traumatic Emphysema from Foreign Body in Trachea.—Herzog reports a case in which the first paroxysm of coughing that followed the entrance of the foreign body (a portion of a prune pit) in the trachea seemed to have brought about the traumatic injury of the lung tissue resulting in interstitial emphysema, which appears to be a very unusual occurrence. The patient, a girl, 1 year old, died following tracheotomy.

Internal Use of Iodin in Coryza and Tonsillitis.—Finck gives a preliminary report of his experience with the prophylactic and therapeutic use of iodin in acute infectious conditions in the upper air passages. The iodin does not suffice to kill the bacteria, but seems to prevent their further development. Either the nutrient medium is unfavorably affected for the growth of the bacteria or the iodin exerts a direct damaging effect on the bacteria themselves. He uses iodin in a 10 per cent. solution of potassium iodid (purified iodin, 0.3 gm.; potassium iodid, 3 gm.; distilled water, 30 gm.). For children up to 10 years of age the dose is 5 drops; for older children and adults, 8 drops; for stout or heavy-set persons, 10 drops, in a quarter of a glass of water; a half a glass of water to be drunk afterward. For prophylactic purposes he prescribes one dose daily, to be taken at the first signs of infection. In some of the severe cases the prophylactic dose may not suffice, in which case two therapeutic doses, one two hours after breakfast and one before going to bed, are recommended. The dosage must never be increased, as iodism with coryza would result. Recovery should follow in from two to three days. A single dose should then be continued for ten days.

April 23, 1920, **67**, No. 17

*Physical Training in the Universities. Gruber.—p. 473.
*Report of the Cologne Salvarsan Commission. Meirowsky.—p. 477.
The Pharmacology of Tuberculin. F. Hamburger.—p. 480.
*The Mastic Reaction. W. Schönfeld.—p. 482.
*Barbital As Adjuvant in Morphin Withdrawal. Hornung.—p. 484.
Important Source of Error in Testing Urine for Albumin with Sulphosalicylic Acid. Grete Lasch and J. Reitstoetter.—p. 484.

Physical Training in the Universities.—Gruber discusses the need of more systematic physical training in German universities now that universal military training is a thing of the past. While the youth of the land need to be well trained physically, there is some danger of overdoing the matter, and allowing sport to assume too much of a professional aspect, of which there were signs even before the war.

Committee Report on Mishaps with Salvarsan.—Meirowsky, secretary of the committee appointed by the Allgemeiner aerztlicher Verein of Cologne, publishes a report of its work. In preparing the statistics on the number of deaths resulting from arsphenamin therapy, 225,780 injections of arsphenamin, neo-arsphenamin and arsphenamin sodium were considered. The number of deaths resulting totaled 20, one fatal case for every 11,289 injections; 12 deaths were designated as certainly due to arsphenamin treatment, 5 as questionable, and 3 as indirectly due to arsphenamin. All deaths from encephalitis following arsphenamin treatment were set down by the commission as certainly due to arsphenamin. On the basis of its investigations the commission recommends that the maximal dose for men be placed at 0.6 gm. and for women at 0.45 gm. It recommends further that manufacturers be prohibited from putting up larger single doses than these. One instance of jaundice was recorded for each 5,000 injections: one in 2,000 for old salvarsan and one in 6,000 for neosalvarsan. With the latter it was generally tardy, and it was most frequent in the tertiary stage. Injury of the skin was recorded in 48 cases, including 5 that terminated fatally. Of this number, 37 of the cases and 3 of the deaths must be attributed to the medication, as also the 15 cases of neurorecurrence.

The Mastic Test.—Schönfeld describes his modification of the Emanuel-Cutting mastic test to apply to the cerebrospinal fluid. The findings coincide with those of the Wassermann reaction only when there are pronounced specific changes in the spinal fluid, such as are found in syphilis of the brain and in general paresis. He says that the mastic reaction, therefore, cannot be considered as a substitute for the Wassermann reaction. It is interesting from a theoretical standpoint, but clinically its diagnostic value is no greater than that of the Pándy, Weichbrodt and other reactions.

Barbital as an Adjuvant in Morphin Withdrawal.—Hornung has found barbital useful in combating withdrawal symptoms in the treatment of morphin addicts and describes in detail his method of using it. The advantage is that the patient is kept in a more cheerful frame of mind during treatment.

Wiener klinische Wochenschrift, Vienna

April 15, 1920, **33**, No. 16

The 1920 Epidemic of Lethargic Encephalitis. C. Economo.—p. 329.
*Pathology of Angina. J. Fein.—p. 332.
*Effects of Carbid on Human Skin. O. Sachs.—p. 333.
Influenza Epidemic of 1918. F. Raffelt.—p. 334.
*Intermittent Course of Gastric and Duodenal Ulcer. E. Schütz.—p. 336.
Periodicity of the Symptoms of Gastric and Duodenal Ulcer. F. Mandl.—p. 337; Idem. F. Brunn and others.—p. 338.

Pathology of Sore Throat.—Fein says that the inflammatory process associated with sore throat is very rarely confined to any single part of the faucial ring; unilateral sore throat does not occur. The entire system of lymphoid structures becomes affected all at once. Contrary observations are due to wrong conceptions and to the fact that secondary factors attract the most attention. He suggests the term "anginosis" in place of "angina," as it marks better a general infection, such as sore throat undeniably is. Infectious sore throat and the so-called complications in other parts of the body are simply manifestations of one and the same infection, and are not to be regarded as cause and effect. The phenomena observed can be explained only by assuming an endogenous infection by way of the blood or lymphatics. Other things being equal, the intensity of the local inflammatory process depends on the size of the mass of tonsil substance. The less substance there is, relatively, the less there is to become involved, and the shorter will be the course of the inflammatory process.

Effects of Carbid on Human Skin.—As prophylactic measures for those who are handling carbid, Sachs recommends that gloves be worn and that petrolatum be rubbed into the hands, following which they should be powdered with talcum.

The Intermittent Course of Gastric and Duodenal Ulcer.—Schütz regards the periodicity of the symptoms of duodenal ulcer as a characteristic feature of great value in its differential diagnosis. The attacks in duodenal ulcer are not only periodic, but they occur mainly during the cold season, or at most during the spring and fall, whereas symptoms from gastric ulcer appear at irregular intervals. The cause of this different behavior is not known. The condition of the patient during the remission in the two disease processes varies widely; with duodenal ulcer the patients are often entirely free from subjective symptoms, whereas with gastric ulcer dyspeptic symptoms very frequently persist during the periods of remission. This is one of the main reasons why formerly duodenal ulcer was often mistaken for a gastric neurosis. The supposition is that gastric ulcer is more exposed during digestion to mechanical and chemical insults than is the duodenal ulcer.

Zentralblatt für Chirurgie, Leipzig

May 29, 1920, **47**, No. 22

*Osteochondritis Deformans of the Hip Joint in the Young. H. Sundt.—p. 538; Idem. H. Waldenström (Stockholm).—p. 539; Idem. G. Perthes.—p. 542.
Compression of Commission Bile Duct by Retroduodenal Tumor. Recovery after Removal of Tumor. A. Brentano.—p. 547.

Osteochondritis Deformans of the Hip Joint in the Young.—Sundt ascribes the priority in the description of this "obscure affection of the hip joint" to Legg and Calvé, and proposes to call it malum coxae Calvé-Legg-Perthes. Waldenström reproduces his published description of it a year before Legg's article. Both writers protest against calling it osteochondritis as there is no inflammation. Waldenström urges to call it "coxa plana," in analogy to coxa vara and coxa valga. The special characteristic is the flattening of the head, as weight bearing crushes it flatter when nutritional disturbance has interfered with its proper development. This term, coxa plana, leaves the question of the etiology untouched. It can be supplemented by the descriptive terms, traumatic, tuberculous, hypothyroid, etc.

Perthes, on the other hand, persists in advocating the name osteochondritis deformans juvenilis as this classes it with osteochondritis dissecans of the knee joint, both the result of nutritional disturbance from impeded circulation from some cause. He cites a number of instances of its bilateral development, which suggest that besides trauma, more general disturbances may be involved in the etiology. Several have observed a familial tendency, and he describes a case in which the hip joint affection was evidently an after-disturbance causally connected with an acute infectious disease, acute febrile rheumatism, in the girl of 8. The flattening of the head of the femur did not become evident until eight months later, although the child began to limp a month after the febrile rheumatism. Probably, he remarks in conclusion, a number of causes may be responsible for the obstruction of the superior artery of the neck of the femur. (Legg has called the affection osteochondral trophopathy of the hip joint. Among the articles on the subject published in THE JOURNAL were Freiberg's, Aug. 26, 1916, p. 658, and Blanchard's, Sept. 29, 1917, p. 1060.)

Zentralblatt für innere Medizin, Leipzig

April 17, 1920, **41**, No. 16

*Slow Septic Endocarditis. E. Münzer.—p. 282.

April 24, 1920, **41**, No. 17

Effect of the War on Denmark and Switzerland. G. Rosenfeld.—p. 305.

Slow Septic Endocarditis.—Münzer, after having published an article on this subject twenty years ago, now takes up the subject again and treats it in the light of recent investigations and observations. In the majority of cases *Streptococcus viridans* is responsible, but in a few cases it may be *Streptococcus lanceolatus*. For the differential diagnosis only the bacteriologic blood test is decisive. The mere presence of streptococci in the blood of patients suffering from endocarditis does not justify any prognostic conclusions, except from the number of the bacteria. Chills and enlargement of the spleen are signs of very bad import. In all cases of septic endocarditis, diagnosed early as such by blood examination, a streptococcus antiserum should at first be tried. If that fails, intravenous arsphenamin treatment should be considered. As a last resort, splenectomy may be indicated.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Dec. 27, 1919, **2**, No. 26

*Accessory Pancreas. P. Nieuwenhuijse.—p. 2106.
Urethral Polyps. G. O. E. Lignac.—p. 2114.
*Progressive Perichondritis. J. F. O. Huese.—p. 2120.

Accessory Pancreas.—A supplementary pancreas is usually merely a necropsy surprise, but it may entail clinical disturbances during life. Scagliosi incriminates it as a factor in duodenal ulcer in certain cases. He found aberrant pancreas tissue in the wall of two ulcers, and de Jong found the same in the hypertrophied tissue of stenosis of the pylorus. Hulst found an accessory pancreas in the wall of an intestinal diverticulum. To date, Nieuwenhuijse says, there is no authentic instance of aberrant pancreas tissue being found in a malignant tumor. In a personal case of which he gives illustrations, the aberrant pancreas tissue formed a bunch under the mucosa of the stomach above the pylorus. The macroscopic picture suggested cancer, but the microscope refuted this.

Progressive Perichondritis.—In Huese's case the inflammatory process was in the costal cartilages of the man of 53. It started with an abscess close to the perichondrium of the eleventh rib and soon involved the stomach wall and spread right and left and up and down, skipping the ribs, the man dying of cachexia. Only two analogous cases are on record, he says.

April 3, 1920, **1**, No. 14

Action of Bile and Bile Salts on the Principal Digestive Ferments. J. Temminck Groll.—p. 1157.
*The Calcium Level in the Blood. Stheeman and Arntzenius.—p. 1168.
*Extramembranous Pregnancy. G. C. J. A. Bol.—p. 1177.

Importance of the Calcium Content of the Blood.—Stheeman and Arntzenius state that the calcium content in the

blood may be high in rachitis, and thus mask the actual calcium deficit in the tissues, but the latter is disclosed by the Erb sign. Whenever the motor nerves display excessive irritability in response to electric tests, there is calcium deficit, regardless of the calcium level in the blood at the moment. It is evident, therefore, they say, that there is more than one kind of calcium in the blood, a biologically efficient and a nonefficient kind, one for growth and one for metabolic processes. When phosphorus and cod liver oil are given, the level of the calcium in the blood begins to rise in ordinary conditions, but with rachitis the exact reverse occurs: The calcium content of the blood declines as the calcium in the blood and from food is diverted to the bones. The proportion of inactive calcium grows less, and the level of total calcium in the blood falls. Then gradually, as conditions right themselves, the calcium content of the blood rises anew. This definite rise is constantly observed as the child throws off the rachitis and the Erb and the Chvostek signs are no longer apparent. In the absence of both of these signs, calcium impoverishment is scarcely probable. In conclusion, they reiterate the importance of estimation of the calcium content of the blood. It is even more important than research on the calcium metabolism, as the calcium balance does not indicate whether there is calcium impoverishment or calcium abundance. The calcium content of the blood, however, combined with electric tests of the peripheral nerves permits continued oversight of conditions. (See abstract of their preceding article, July 3, p. 71.)

Extramembranous Pregnancy.—Attempts to induce abortion at the third month were evidently responsible for the extramembranous development of the fetus. It was delivered naturally at term, but had multiple deformities and died soon after birth.

Hospitalstidende, Copenhagen

May 5, 1920, **63**, No. 18

*Differentiation of Exudates and Transudates. R. B. Larsen and K. Secher.—p. 273.
Influenza. S. T. Sørensen.—p. 279. Cono'd in No. 19, p. 289.

To Distinguish Exudates from Transudates.—Larsen and Secher commend, as very reliable, Sochanski's technic for this purpose. It never failed in the thirty-eight cases tabulated. The reagent is made with 1 c.c. each of a 1 per cent. solution of phenolphthalein and of tenth-normal solution of sodium hydroxid to which double distilled water is added to a total of 100 c.c. To 9 c.c. of this fluid is added a drop of the fluid to be tested. The reagent was always decolored when the fluid was an exudate while the tint remained unchanged with the transudates. The reaction can be made more sensitive by using lesser amounts of the reagent. The findings are more reliable than with determination of the albumin with other tests of the kind, as is shown by the parallel findings with a titration and other tests.

May 12, 1920, **63**, No. 19

*Electric Conductivity of Solutions. J. Christiansen.—p. 297.

To Determine the Electric Conductivity of Solutions.—Christian uses a U shaped tube. For 7 cm. at each end, the diameter is 7 mm. Below this the lumen narrows to 1.8 mm.; the length of this capillary portion forming the loop of the U is 32 cm. The tube is introduced into the electric current, a wire running down into each end of the tube a short distance, the tube filled with the fluid to be tested. The street current can be utilized, interposing a voltmeter recording up to 220 volts, corresponding to a resistance of 3,000 ohms. The reading is made by merely turning on the current and watching the voltmeter. The higher the figure it records, the less the resistance offered by the fluid, that is, the greater its conducting power. To keep the temperature even throughout, the U tube stands in a cylindrical glass full of water at 18 C. (64 F.). He gives an illustration of the U tube and also of a modification of it to use when only a very small amount of the fluid is available, and says that when it is a question of determining the total amount of salts in the urine, this is the simplest of all tests for the purpose. It might also be used to determine the amount of free hydrochloric acid in the stomach content. The method can be used also to test the segregated urine from the two kidneys; in health the conductivity is practically the same in both.

Hygiea, Stockholm

April 30, 1920, **82**, No. 8

Influenza at Sahlgren Hospital. C. A. Wällgren.—p. 257.
*Serotherapy of Ulcus Molle. J. Reenstierna.—p. 270.

Serotherapy of Chancroid.—In Reenstierna's case the infection with ulcus molle was of thirteen months' standing, and had proved refractory to vigorous and prolonged treatment of all kinds. He then inoculated the arm with pus from the venereal sore, and two typical pustules developed from which the streptobacillus was cultivated. An antiserum was prepared from the streptobacillus and by the second day after the serotherapy was begun, a marked change for the better was evident. The infection was manifestly conquered, after which the extensive sore in the groin rapidly healed.

Ugeskrift for Læger, Copenhagen

April 29, 1920, **82**, No. 18

Ultimate Outcome of Sanatorium Treatment. J. Ostenfeld.—p. 569. Cont'n.
*Pathologic Fluctuations in the Metabolism During Repose. Marie Krogh.—p. 577. Begun in No. 17, p. 537.

Fluctuations in Metabolism During Repose.—Krogh reports extensive study of the influence of the thyroid gland on the metabolism, its exaggeration in exophthalmic goiter and hyperthyroidism in general, and its reduction in myxedema and cretinism. With exophthalmic goiter this increased metabolism should rank beside the three cardinal symptoms of the disease, and in the absence of the latter will clinch the diagnosis in dubious cases, testifying to the pathologically increased production of thyroidin. She tabulates the findings in thirty-four cases under eleven headings, including the respiratory quotient, gaseous interchanges and absorption of oxygen per kilo and minute and square meter of surface, but emphasizes that the absorption of oxygen is the main criterion. This will differentiate in dubious cases myxedema from adiposity, will reveal incipient exophthalmic goiter, and allow supervision of the progress under treatment. In a communication in No. 19, Nordentoft protests that exaggeration of the metabolism cannot be accepted as the criterion for the differential diagnosis of hyperthyroidism, until we find out what influence hyperthymism has on the metabolism.

May 13, 1920, **82**, No. 20

*Chronic Multiple Arthritis. H. Jansen.—p. 627. Conc'd No. 21, p. 655.
Outcome of Sanatorium Treatment of Tuberculosis. J. Ostenfeld.—p. 636. Conc'n.

Chronic Multiple Arthritis.—Jansen classifies chronic arthritis according as rheumatism, traumatic, static and senile causes are responsible; the secondary uric acid polyarthritis, and the primary chronic progressive form which is known variously as multiple arthritis deformans, primary asthenic gout, arthritis nodosa and rheumatoid arthritis. His experience with 333 cases, exclusive of the traumatic and static forms, has demonstrated that with physical measures, heat, diathermy, massage, light baths, hot sand bags, etc., if the patient takes hold with energy and perseverance, far more can be accomplished in treatment than is generally supposed possible. The aim is to heat the joints, not to induce sweating. The joint is moved in the water or light bath, and in order to allow this exercising of the joints, the bath tub is made extra large and the patient sits on a stool in the water, the heat permitting great mobility in these kinetotherapeutic baths as he calls them. It has been his experience that diathermy and roentgen treatment did not accomplish any more than ordinary physical measures and sometimes less. But radium emanations have proved extremely useful in treatment of chronic polyarthritis, both in his hands and in Falta's experience in Vienna. Jansen warns against keeping polyarthritis patients too long in bed; the active mobilizing exercises should be begun even before they are able to get up. He adds that it is a sin to put them in cotton clothing, as is done often in hospitals. Their peripheral circulation is poor and they need woolen, and the rooms should be dry. To encourage the patient is an important element.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 75, No. 3 Chicago, Illinois July 17, 1920

THE RIGHTS OF THE CHILD*

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The triumphs of internal medicine and surgery in the last half century have been marvelous, and suffering humanity has been greatly benefited. Many obscure cases of disease have been patiently studied out, and the proper remedies applied. By new methods of diagnosis and the use of instruments of precision, a secure foundation has been laid, and medicine is no longer guesswork and empiricism: it has become a definite science. Cause and effect have been studied, and rational procedures discovered to assist nature in restoring pathologic conditions to normal.

Specialism is now the order of the day. Almost every day sees a new variety of specialist born. If the specialist has built his knowledge of a specialty on the secure foundation of an intimate knowledge of the human body in sickness and in health, and has not been led astray by the ignis fatuus of belief that all human ills may be cured by remedying the conditions found to exist in the particular organ or organs that he has chosen for his attention, but regards the human body as a wonderful mechanism with every organ depending on the proper functioning of all organs, then the practice of a specialty is of the greatest benefit to humanity, for it is admitted to be impossible for one brain to know all the minutiae necessary for the treatment of each individual organ that may not be properly functioning.

Preventive medicine should rank as a specialty, and the health officer or preventive disease specialist should be recognized as authority on his chosen branch, and he should confine himself as do other specialists to the things pertaining to the prevention of diseases. To be a preventive disease specialist, however, he should have had all the training in diagnosis and treatment of disease that makes a first class general practitioner. Having acquired this knowledge, and in addition studied and mastered the problems of public health, he may then offer his services to the public as a specialist in matters pertaining to preventive medicine. Having perfected this specialty, he should no longer practice curative medicine.

The opportunities now offered in this branch of the profession for trained men are many and lucrative, and we must impress on the profession as well as on the public that because a man has the degree of M.D. he is not necessarily a health officer. The public is recognizing these facts, and if the physician is to retain his position as a leader in the fight to prevent disease, he must accept the public verdict and recognize the preventive disease specialist, just as he does the ophthalmologist, the aurist, the pediatrician, the urologist, and the specialist in diseases of the stomach or any of the other specialists.

Unfortunately, little time is now given in the medical schools to the teaching of preventive medicine. The student is trained in the diagnosis and treatment of diseases looking toward a cure, and his mind is directed solely toward curing the ills to which flesh is heir, having but little idea about how these diseases could be prevented. The awakening to these facts is shown in many medical centers, and doctors of public health will soon be not as rare as they are at the present time.

PREVENTION OF GREATEST NUMBER OF DEATHS

Our vital statistics reveal that more than 33⅓ per cent. of all our deaths are of children under 5 years of age. It is in this branch of preventive medicine that the greatest progress can be made.

Death will overtake all of us sooner or later, but we should be able to keep from his cold grasp the infant and tender child. The spectacle of Rachel weeping for her children, and refusing to be comforted because they are not, would not be so often seen if we would make a proper study of what I have termed the rights of the child, and attend to securing these rights for all children.

This subject is timely because the world is just emerging from the gloom of the death struggle for human rights, and the nations are taking stock of their assets. War, pestilence and famine have ravaged the nations of the world. Money has lost its value; ancient thrones have crumbled and fallen; statesmen and philosophers of all nations have turned their eyes to the child as the savior of the world. One supreme fact is acknowledged by all—that their greatest asset is the child. Thinkers the world over are giving their attention to the problem of increasing the number of children, and making the world safe for them.

If we read aright the lesson of the war to this country through the findings of the draft boards, it must be impressed on us that we have wasted our birthright, have ignored some of the fundamental rights of the child; and as a consequence, when our government was called on for its man power, it did not have that man power which its population indicated.

The rights of man have gradually emerged from slavery to freedom. Runnymede, the 15th of June, 1215, when King John signed Magna Carta; the eloquence of Rousseau, Voltaire, the fiery baptism of the

* Chairman's address, read before the Section on Preventive Medicine and Public Health at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

French Revolution, and our own Declaration of Independence have given to man the inalienable rights to life, liberty and the pursuit of happiness. Now, no one disputes that rank is but the guinea stamp—"A man's a man for a' that." "Honor and fame from no condition rise. Act well your part, there all the honor lies."

The rights of woman, too, have been slowly achieved, from the time of Mary Wollstonecraft of England, who first wrote the foundation of the rights of woman, down through Susan B. Anthony, Emeline Pankhurst and the militant suffragettes of England who burned the English country homes, heckled the prime minister, to the women who picketed our own President in Washington, and by general waving of the yellow flag at last achieved their aims. The ballot is now in the hands of the women, and with it they have gained all their rights, both real and imaginary.

But, what of the child? Who has championed its rights? Summoned against its will and without its consent into this world of trouble, pain, sickness and finally death, what Rousseau or Voltaire shall sound the tocsin and call on the infant "mewling and puking in the nurse's arms," to demand that its own mother shall give it the lactic fluid that is its primal right. Bid it howl like all the heads of Cerberus against being condemned to partake of milk of cerulean hue contaminated by Bulgarian bacillus prescribed by some adolescent and ardent disciple of Esculapius. What Danton or Robespierre shall band together the sansculotte toddlers so that they may not be torn from the kindly face of mother earth, washed and dressed and sent to kindergarten, where all of their play is so scientifically arranged by followers of Pestalozzi and Froebel that good fairies are unknown to them, and, to paraphrase Wordsworth, a primrose beside a mossy bank is to them but a primrose, nothing more; where they are taught like the clown in Mrs. Browning's poem to pick simples, turning a broad back to the glory of the stars. Who shall demand for them the right to believe in fairies, the right to sunshine and to flowers, to the fresh air, and to green fields, to all that makes up the paradise of childhood. Who will lead another Children's Crusade for these, their ancient rights?

BIRTHRIGHT OF THE CHILD

The rights of the child named in the order of their sequence, and order of importance, may perhaps be thus arranged:

1. The right to be conceived. Strange as it may seem, this right has been more successfully denied to the child than perhaps any other of its rights. Malthus wrote and taught that in order for a country to be prosperous, the number of babies must be in ratio to the amount of food produced. This, of course, implied birth regulation. Napoleon, on the other hand, when asked by Madame de Staël who was the greatest living woman of France, replied, to her chagrin, "Madame, she who has borne the most sons for France." Here we have the opposite poles of thought. In this country we have not lacked apostles for both creeds. Our own Roosevelt's slogan was more babies and better babies, and he fought the then growing tendency of the American family under modern conditions to consist of a human parasite, called a wife, and an idolized poodle dog. To the transcendentalist who believes that all souls are drawn from the Over Soul, and enter the material body but to perfect themselves by the trials and tribulations of this world and, after blind effort to reach the light, finally return to the Over Soul perfected by these struggles for higher things, the denial of the right to be conceived and born is to deny the whole scheme of the universe, is a sin against nature, and therefore unpardonable.

2. The right to be born after conception. Few will be found to advocate openly the converse of this proposition. But our birth registry, and the enormous number of miscarriages and abortions which occur will show that, in practice, many, far too many, deny the child this right. We medical men must be ever on the watch to prevent and expose these violations of the law of God and man.

3. The right that its parents shall be healthy, both mentally and physically, in order that the child shall not enter the race of life handicapped by transmitted disease or mental weakness.

The problem of eugenics, as first advocated by Galton in 1884, has had many followers. In 1904, Galton endowed a chair in the University of London for the purpose of the study of agencies under social control that may improve or impair racial qualities of future generations either physically or mentally. Galton's work has been elaborated, and laws have been passed in many states to endeavor to safeguard the child in this right.

By law in many states certificates of physical fitness for marriage have been required of both contracting parties. While we concede that this is a step in the right direction, much study is yet necessary before we pass arbitrary laws; for a physically perfect man and woman may never produce a Shakespeare, a Raphael or a Beethoven, and some of the greatest additions to human knowledge and happiness have come from those whose earthly shell was misshapen, for the body must always be regarded as the stringed instrument on which the soul plays wondrous chords, and this would be a dreary world, indeed, without poetry, music and art.

One of the best examples of the way in which eugenics has been carried out was recently given by the English nobility, in whom for centuries has been inculcated the idea that an English gentleman is the finest work of God. The answer came at Mons, where the flower of the English nobility laid down their lives gallantly fighting, with their faces to the foe, for the rights of democracy.

4. The right that its mother shall be so cared for by the state that neither through poverty nor ignorance shall she bring it into the world in unhygienic surroundings, nor under superintendence of those who are not properly trained to give the most skilful treatment to the mother in this, her time of supreme helplessness and agony. This means that maternity hospitals must be maintained in the city, and that in the rural districts trained medical men and skilled nurses must be easily available.

5. The right to have its own mother's milk until it is old enough to be weaned. This we regard, perhaps, as the most important right, and the one most frequently denied. In the rich it is denied because some complaisant boudoir physician agrees with the mother who desires to be rid of the burden of nursing—that her milk does not suit the child, that she does not give sufficient quantity, that it will injure her figure, that it is best for the child not to nurse, and that it disfigures the tender mouth of the child and makes it misshapen.

All of these arguments you and I have heard. In the poor it is denied because grinding poverty prevents the mother from giving the time necessary for nursing her little ones. The state should provide that no mother should have to labor so hard that she is unable to nurse her baby. Pensions for mothers are given in England before and after the birth of the child, and there is no expenditure of money a state can make that will pay better dividends than the care of the mother and babe. Old Jacobi, that Nestor of medical men, said after years of experience that a woman who could have a baby could in 90 per cent. of the cases nurse it. But nature takes her revenge. In the rich she makes the mother strive by seeking new pleasures every day and excitement of all varieties, to forget the pressure on her breast of little hands, and the dewy mouth of the babe which she has robbed of its birthright. In the poor, the mother, instead of having an infant every two years, has one every year; for normal conception does not take place before the child is weaned, and the poor do not understand all the arts of preventing conception known to the rich.

6. The right, guaranteed by the state, that every baby born shall have an equal chance with other babies to develop into the normal, healthy child. This is the problem of the health officer: that the child shall not have to suffer from the ill effects of communicable diseases; that measles, whooping cough and diphtheria shall no longer be called children's diseases; that the tender babe shall be cared for by all the power of the state, as it lives its happy life and grows in wisdom and stature. This also includes medical inspection and correction of defects.

7. The right that, when it reaches school age, it shall have the best that the resources of any government can command. It should have properly ventilated schools, carefully lighted and heated, with the most approved methods of sanitation; and if a proper diet cannot be provided in the homes of the poor, such diet should be provided in the schoolroom, so that its budding mind may be trained that it may attain to industrious, sober and healthy citizenship and take its place in the ranks of producers, and be a real asset to the government that has cared for it. This is the remedy for bolshevism. These methods will stamp out the unrest of the world; and if the rights I have tried to indicate are given the child, the future of the race is assured.

Mental Hygiene of the Child.—Those concerned with the welfare of children should ever bear in mind that the impulsiveness and everchanging activity of a number of so-called fidgety children are but symptoms of mental fatigue, says W. L. Treadway (*Am. Child Hyg. A. Tr.*, Nov. 11-13, 1919). Normal children are active, impulsive and inquisitive. This is nature's method of education, and children, therefore, should be allowed to exercise these mental traits. Rigid discipline tends to curb natural activities, which then seek outlets in other more or less roundabout ways. For example, too rigid discipline tends to cause the harboring of resentment against and disregard for those in authority. When once discipline is relaxed, the child, having failed to learn to control his impulses, frequently finds himself in difficult and compromising situations. Disciplinary measures should follow the form of substituting desirable activities for undesirable ones. To do this effectively those responsible for the welfare of the child, besides having an understanding of personality, should be able, by tact, to secure attention and discipline without apparent effort and without the knowledge of the child. This is especially important when the impulsiveness and activity of the child are so marked as to attract attention.

THE TREATMENT OF OBSTINATE OCCIPITOPOSTERIOR POSITIONS

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I make no apology for presenting such an old, timeworn and familiar subject. My reasons for doing so are: (1) In spite of all that has been said and written about this particular anomaly of mechanism of labor, it is one of the most frequently overlooked; (2) it still is responsible for—I may say without fear of contradiction—thousands of infant deaths each year, and for many maternal deaths; (3) the condition itself and the operations performed because of it cause untold and untellable maternal and infant suffering—the children's brains are damaged, the mothers' soft parts lacerated and destroyed; (4) I have a new and simple method of treatment.

The vast majority of cases of occipitoposterior positions, will, if given time enough, rotate spontaneously and terminate as occipito-anteriors. The majority of these will do so speedily, and with no danger to either mother or child. A part, however, rotates so slowly, and labor drags on so long, that both the mother and the child are harmed. The child particularly suffers from cerebral compression and disturbances due to a mild chronic asphyxia. Even though finally born alive, it frequently succumbs to the effects of the delay, cerebral hemorrhage or atelectasis pulmonum. For the mother, both morbidity and mortality are higher, because of exhaustion and infection from the prolongation of labor and the frequently needful operations with the inevitable lacerations. The word obstinate is therefore applied to those occipitoposterior positions that remain such, in spite of prolonged powerful pains, or when the length of the labor because of weak pains, in itself, becomes an element of danger.

The most important matter in cases of abnormal rotation is their recognition. The fact that the occiput is not diagnosed as posterior, but considered to be anterior, or, indeed, not considered at all, is responsible for most of the fetal deaths and maternal injury.

The character of the labor often gives a strong hint as to the cause of the trouble. A long first stage; weak, irregular ineffective pains; slow effacement and dilatation of the cervix; premature rupture of the bag of waters; head persistently high above the inlet—these usually accompany occiput posteriors. On examination, especially in thin women, a glance at the abdomen may suffice—there is a distinct hollow above the pubis. The occiput is too deep in the flank to be felt, but the forehead often projects over the pubis. The shoulder is not in front as usual. It, too, is back, far in the flank. The heart tones are heard further back, unless, as not seldom happens, the head deflexes a little and the chest is thrown out against the anterior uterine wall. The heart tones are then heard on the same side as that of the forehead, opposite that of the back, and therefore we are likely to be misled into a diagnosis of face presentation, or of an occiput position opposite that of the reality; e. g., a left occipital presentation may impress one as a right.

On vaginal or rectal examination one finds, early in labor, that the head is very high and that there is some deflexion. This brings the large fontanel lower,

nearer the middle axis of the pelvis and better within reach of the examining finger. The small fontanel is found to the right or left, behind the transverse diameter. As labor advances, usually the head flexes, and the small fontanel sinks, comes into the transverse diameter, then anterior to it. It is important for the accoucheur to know whether nature intends to effect this mechanism. He awaits a pain and palpates the head carefully during its action. If the small fontanel makes or tends to make the movement just mentioned, he may feel reasonably sure of spontaneous anterior rotation and an easy delivery. This he may also assume if the head rotates properly in the right direction under light pressure by his finger.

If posterior rotation is to be the mechanism intended by nature, the head descends in moderate deflection, often in the transverse diameter of the pelvis, and the occiput after engagement is found in the hollow of the sacrum. The small fontanel may be easily felt, either rectally or vaginally, near one sacroiliac joint; the large fontanel is behind the pubis, the sagittal suture lying in one oblique or sometimes directly anteroposteriorly.

Nature terminates these cases in one of four ways: (1) Under strong pains, even late, anterior rotation of the occiput occurs and the labor ends as usual; (2) rotation takes place partially and the head remains transversely until art steps in and extricates the child from its precarious condition; (3) if conditions are favorable, the head is born in this position, the occiput escaping from under one ramus pubis, the chin appearing under the other; (4) the occiput having rotated into the hollow of the sacrum (occipitosacral), delivery may occur in two ways: (*a*) Flexion takes place, the root of the nose stems behind the pubis, and the occiput rolls over the perineum (more often it breaks through it), and (*b*) extension occurs, the forehead comes down and stems behind the pubis, and then the occiput comes out over the perineum, the mechanism resembling that of brow presentation. In one of my cases complete extension, face presentation, occurred, the child coming out according to the usual face mechanism.

Diagnostically we can determine which type of delivery will occur by searching for the large fontanel. With flexion, this is high up behind the pubis; with extension, it is nearer the center of the pelvis. In many instances the caput succedaneum covers up the sutures and fontanels; here one has an infallible guide, one that is not often enough consulted. Search for the ear; the tragus always tells you where the face is.

An essential part of the diagnosis is the discovery of the cause of the occiput being and persisting posterior, and of the contributing agents of the dystocia. One may find a contracted pelvis, a fibroid, stenosis of the cervix or vagina, old primiparity with contraction rings in the uterus, a mammoth child, or some other condition which may require a cesarean section as a primary indication. In consultation practice, one is often astonished to observe how this fundamental principle of obstetric diagnosis—a careful examination and consideration of all the factors necessary for judgment—is neglected.

TREATMENT

In practice, one finds two classes of cases: first, those in which the head is engaged, and second, when the head is in or above the inlet. We occasionally meet one in which the head is arrested in the second parallel plane of Hodge, but we treat it as if the head were not engaged.

When the head is high, floating, interference is not necessary; but a careful search should be made for any condition that may demand treatment for its own sake. Watchful expectancy is the course to pursue. Rupture of the membranes should be prevented, if possible, because labor is more often retarded than hastened by it. The woman should lie on the side to which the occiput points; this is supposed to favor flexion, engagement and rotation. Morphin and scopolamin are used in the first stage to prevent exhaustion of the mother and child, but it is not wise to let the labor drag on too much. By means of a colpeurynter the dilatation of the cervix may be completed and the case thus prepared for interference if required. After complete dilatation of the cervix, I usually wait an hour or two to see whether or not the head will engage. If it does not, the membranes are punctured—the patient being on her side, to prevent prolapse of the cord. If the head does not engage very soon, two courses of procedure are open: version, followed by extraction if need be, and manual correction of the position. In multiparas there is little choice, and individual preference may be exercised.

Under deep anesthesia the whole hand is passed into the uterus, pushing the head up and out of the pelvis if necessary. That hand is selected which will have its palm directed toward the face of the infant. The posterior shoulder of the child is sought and with the tips of the fingers is swung around to the front, past the promontory of the sacrum. The head, fitting into the palm of the hand, goes with the trunk. When the inside hand is leading the occiput into the pelvis in its new position, the outside hand forces the head down by pressure on the occiput, which is now to be felt over the pubic ramus. It may be advisable to draw the head down deep into the pelvis with forceps, await from four to six labor pains, remove the forceps, and leave the case to nature, or to follow a later indication. The latter plan is especially successful in primiparas, because the molding of the head and the softening of the tissues produced by a few hours' labor and the progress of the head toward the outlet immensely facilitate the subsequent delivery. In rare instances the manipulation fails because the child is held immovably in the anomalous position, or because the cord prolapses; or the placenta may be in the lower uterine segment and compromised, or perhaps one discovers, even at this late time, a contracted pelvis, an overgrown child, an over rigid cervicovaginal canal. Unless the asepsis of the case has been botched, it is not too late to perform a suprasymphyseal cervical cesarean section. These are rare cases; usually it is possible to rotate the child, and bring the head into the pelvis. A warning must be urged against the use of forceps in these high head cases. If descent rotation and extraction are forcibly effected by forceps, the child is always injured, often killed, and the mother likewise maltreated. This is one of the commonest causes of stillbirth and puerperal infection.

After the head is engaged, the case is gratifyingly simplified. If the cervix is fully dilated and the pains good, a little pressure upward on the forehead during a pain may aid flexion and favor rotation (Hodge's maneuver). Two fingers placed alongside the forehead on the anterior lateral inclined plane of Hodge may

direct the forehead backward, or one may try to draw the occiput forward with three fingers, as Tarnier suggested. If these simple procedures and the consequential lying on the side of the occiput do not show results, or if rectal examination shows that the occiput has rotated to the sacrum, the patient should be etherized, and the head rotated to the proper position by combined internal and external manipulation. Contrary to what is usually taught, this is not usually difficult; the trouble has been to hold the head in its new position long enough to apply the forceps. As soon as the fingers are off the head, it rotates back again to where it was. We can prevent this by the simplest of means: After rotation has been accomplished, the scalp is grasped firmly with a double vulsellum or 8 inch artery clamp, and an assistant holds the head in proper position until the forceps can be applied. I have performed this operation so often and always successfully that I can heartily recommend it for general practice. With care, of course, and gentleness, it does no harm. The little wounds are touched with tincture of iodin after delivery. Even when the head is not engaged I have succeeded in rotating and holding it in position with the vulsellum; but it is best to first effect the rotation by hand, and then apply the vulsellum. (In face presentation the occiput may be pulled down with vulsella for a typical application of the forceps).

Since adopting this simple and harmless method I have discarded Scanzoni's maneuver, and I have not found it needful to deliver a case with the occiput posterior.

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NONINTERFERENCE IN THE TREATMENT OF PUERPERAL AND POST-ABORTAL INFECTIONS*

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The discussion of the policy of noninterference in the treatment of puerperal and postabortal infections before the section may appear to be simply a useless repetition of well known facts. But a fairly extensive experience has shown us that, in spite of the conservative lines of treatment long advocated by practically all obstetricians and gynecologists, meddlesome and dangerous (though apparently minor) operations are still too frequently advocated in cases representing the various types of puerperal infection. In checking over our own results in the obstetric service of Dr. C. Jeff Miller at the Charity Hospital, we have been impressed with the fact that in two cases the fatal outcome has apparently followed injudicious interference; hence, with increasing experience, we are becoming more and more conservative.

The treatment employed by us is not revolutionary, and may be thus outlined, with variations to suit the individual case:

A special ward is set aside for the handling of all white patients suffering from puerperal infections; this ward is also employed for the medical treatment of all other complications of pregnancy and the puerperium. It is in reality a "rest ward," since no patient requiring a major operation is admitted to it. On admission, a careful, general, aseptic bimanual examination is made; at the same time a culture is taken from the uterine cavity with a Little's tube if the cervix is sufficiently patulous; if firmly closed, this step is eliminated, as dilatation would of course entail a certain amount of traumatism. If retained placental tissue is presenting through the partially dilated cervix, it is gently removed with the finger or with the ovum forceps; no other local manipulation, in or out of the uterus, is performed. The patient is put to bed, the head of the bed being elevated if the infection is of recent origin and appears rather virulent. The object of this is to facilitate drainage and, if possible, to limit the infection to the pelvis. We are not sure that this posture helps us to attain these results, but are under the impression that the patients are benefited by a few days of the Fowler position at the beginning of the treatment.

Hyperpyrexia is controlled by hydrotherapy; mild fever requires no treatment. Fluids (chiefly water) are supplied plentifully—by mouth, if tolerated; by rectum, when indicated, and at times by hypodermoclysis or intravenous saline infusion. In a few cases we have transfused, but have not as yet been able to see that we have thereby improved our results. The patients are nourished freely on soft or semisolid food, the only contraindications being vomiting and peritonitis. The bowels are kept open by enemas, saline laxatives being used only occasionally; in the infrequent cases of nausea without peritoneal involvement, small doses of calomel are sometimes given. In cases of pelvic cellulitis or pelvic peritonitis, we apply a light ice bag to the hypogastrium; when the acute local symptoms have subsided in these cases, we begin the employment of copious douches of plain hot water twice daily. It may be weeks before the patient is considered ready for this part of the treatment.

Drugs are secondary to the general supportive measures. We have found the various tonics and stimulants, including alcoholics, to be of no assistance; often they are detrimental in that they are prone to disturb the patient's digestion. Sleep is induced, when necessary by bromids or barbital. Opiates are studiously avoided, being used only when other measures fail to relieve pain or to procure the needed sleep. The usual laboratory studies are made, and we are especially careful to examine the blood for malaria, and the stools, in suspicious cases, for ova uncinaria, two fairly common infections in out-of-town patients. A blood culture is taken every day for four days, as we often find it necessary to take three or four before a positive culture is obtained. In cases of streptococcic bacteremia we have tried the serum treatment, but with negative results. As soon as the patient begins to improve and can be moved, she is carried to the sun porch daily for a few hours of fresh air treatment.

In brief, the patient is given a general supportive treatment, and the pelvis is left severely alone after the preliminary examination. We know that in practically all cases there is an endometritis, but we are sure that local treatment of the endometrium does more harm than good. In cases of septic abortion, with retention of placental tissue, we are sometimes forced

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

to sponge the uterus out carefully on account of hemorrhage; even this gentle procedure often causes a rise of temperature. In the cellulitis cases, we make vaginal examinations occasionally if the abnormal temperature persists, in order to discover accessible pus-foci, if any develop. In blood stream infections, without local pelvic exudate, we as as rule make no further local examination until the patient is ready for discharge.

The treatment of septic abortion with retention of placental fragments is by no means settled as yet, the measures advocated by various authorities ranging all the way from curettage to absolute local noninterference. Experience with the various methods has taught us that the best results are obtained in these cases by letting the uterus alone until the temperature is normal and the uterine culture becomes negative. The only exceptions are (1) patients in whom placental tissue appears through the open cervix, or (2) patients suffering from profuse bleeding due to the retained fragments. However, in several cases in which there are general symptoms of moderate severity and very foul discharge we have seen the condition improve rapidly and the fever disappear quickly after removal of the retained tissue with the ovum forceps or the finger; on the other hand, other patients have developed very severe bacteremias after the same procedure. Of course, the difference is due to the variations in the bacterial flora of the uteri of the different patients, so that the safer method is to follow the advice of Polak and await the report on the culture before deciding on the treatment to be followed. Many of these cases will complete themselves; in the others, small doses of pituitary extract may be given and they can be completed when the bacteriologic report indicates that it is safe to do so. We agree with Polak that many of these patients will need a curettage later, on account of the menorrhagia due to endometrial changes consequent on this retention.

We have treated sixty cases of severe infections following abortion or full term labor, and several times this number of mild infections, with fever for only two or three days. They fall into the usual categories. I will first consider those under the heading of blood stream infections, with no local pathologic condition of the pelvis except the usual endometritis. Thirty-three of these have been cared for, sixteen following full term delivery (most of which were either instrumental or midwife cases), and seventeen consequent on abortion, with the usual history of local interference. Of the sixteen in the first group, five patients died; two of these, however, were hopeless on admission, and soon died, so that the mortality would be more correctly stated as three out of fourteen. Of the seventeen in the second group, three died, showing either that the infections were not as severe, or (what is more likely) that women seek hospital care more readily after abortion, probably in search of the curettage that they are told should be performed.

Of the cases presenting a local pathologic condition of the pelvis, we have treated twenty-three classified under the heading of pelvic cellulitis. As these patients practically all present various degrees of pelvic peritonitis, we find it difficult clinically to draw a sharp line of demarcation between these two groups; nor is it important to do so, as the treatment is the same for the two types. Of these twenty-three, six patients were ultimately operated on. In four cases, the operation consisted of drainage of pus pockets, which developed late, and were opened weeks after admission. Two of these were abscesses of the uterine wall, which were drained by laparotomy; two others were broad ligament abscesses which were opened by incision above Poupart's ligament. All these patients recovered. The other two operations were not so sharply indicated, and represent errors of judgment. In one case, the patient had a rather stormy time, with persistent septic temperature. One of the staff thought that a pus pocket had developed, so he performed a posterior colpotomy on the twenty-ninth day. No pus was found. The patient died two days later with the symptoms of general peritonitis. The other patient was operated on eleven weeks after full term normal delivery; her temperature had been normal for three weeks, and all of the exudate had disappeared with the exception of a small right tubo-ovarian mass. Thinking that the pus (if any) was surely sterile by this time, we operated on her, and easily removed a pus tube and an abscessed ovary. She died forty-eight hours later of general peritonitis. I believe that these two would have ultimately recovered, had it not been for our interference.

Our experience with fulminant, rapidly spreading general peritonitis has been unfortunate, which is the usual story. Four cases have been treated; one by laparotomy, drainage, and enterostomy; the other patients were not operated on, but were treated as outlined above. All four died.

We have found that the treatment of cases of abortion, both complete and incomplete, along the same lines, is productive of very gratifying results. One hundred and twenty-one complete abortions have been cared for; twenty-five of these patients had fever of a mild type; the others were afebrile. Many of them were admitted as cases of incomplete abortion and completed themselves spontaneously in the ward under expectant treatment. One hundred and forty-five incomplete abortions have been treated, in which nonoperative methods failed to bring about complete evacuation of the uterus. It was necessary to clean out the uterus in these cases, because of persistent bleeding; this was done in 102 patients by means of the ovum forceps or the finger; in forty-three, by the use of the dull curet. In the first group, there were thirty-six with mild fever at the time of removal of the retained secudines; in seventeen of these the temperature promptly dropped to normal, while in nineteen it remained elevated. Sixty-six patients had no fever prior to this little operation; thirteen of these developed a rise of temperature, and two of them were very ill. In the second group (curet) eight had fever before and after curettage; thirty-five with no fever were curetted, and three of them developed a mild rise of temperature after the operation. All of these 266 patients were discharged as cured. We have learned, however, that the gentlest of intrauterine manipulation will at times light up an infection.

Summing up the immediate results, then, we have: thirty-three severe cases of blood stream infection with eight deaths, two of these patients being moribund on admission; twenty-three cases of pelvic cellulitis, in seventeen of which the exudate disappeared completely, in four more drainage of abscesses

developing late completed the cure, while in two cases injudicious operation resulted fatally; four cases of fulminant peritonitis, with four deaths; and lastly, 266 cases of abortion, complete and incomplete (eighty-six of these patients had slight fever for a few days), all of whom were discharged as cured. We have not been able to follow up all these patients after discharge, but the ones with whom we have afterward come in contact have been found to be in good health and to have no pelvic symptoms. Some of them have since passed through normal pregnancies and labors. None of them have subsequently been admitted to our gynecologic service for operation because of tubal or ovarian infection, and few, if any, have returned to the other gynecologic wards of the hospital. When we consider that about 50 per cent. of the cases of salpingitis in which we operate are traceable to abortion followed by some form of active local treatment (and this is our experience), we feel that the improved results, both immediate and remote, justify us in regarding the policy of noninterference as the method of choice in handing the types of infection under discussion.

NOTE.—Since the reading of this paper I have been asked whether we employ the same treatment in cases of pelvic abscess. Of course we drain these foci as soon as we are sure that a localized collection of pus is present. The point I wish to make is that we obtain the best results by abstaining from the use of the curet, the intra-uterine douche and all other forms of active local treatment in cases of puerperal infection, generalized in the blood stream or localized in the pelvis, the sole exception being the drainage of accessible pus collections as soon as they develop. I wish to stress noninterference in all cases without localized abscess.

ABSTRACT OF DISCUSSION

DR. JOHN O. POLAK, Brooklyn: The general principles that the doctor has laid down are supported by my experience in several thousand cases of sepsis treated on very much the same lines as he suggested. He seemed a little in doubt as to what the Fowler position did in these cases. Our necropsy experience has shown certain things. In the first place, all these infections either come through the endometrium, through the inoculation of the wound in the cervix, or inoculation of the placental site. Consequently, in the majority of instances, we are dealing with an endometritis and that is taken care of usually by Nature's protective leukocyte wall. If the bacteria are very virulent they will penetrate that wall, however, enter the lymphatics and cause a parametritis, or a parametritis with a periadenitis. If the uterus is in its proper position, it drains and rids itself of a certain amount of toxicosis. By turning the patient over on her abdomen from time to time the vagina will drain also. When the patient is placed in the Fowler position, the sigmoid drops down over the uterus and the omentum comes down and protects. In these cases we found one thing constantly at the necrosy—the pelvis had been more or less completely sealed by the sigmoid loop and by the omentum so that a general peritonitis had been converted into a local one by posture. I have also seen this at the operating table. This is also true in the puerperal case where the uterus is outside of the pelvis and blocks the pelvis by a ball valve action. Consequently the extension is more liable to take place to the peritoneum. We have been treating the bacteremias on the general plan the doctor suggested—fresh air, fluids by rectum, underneath the skin and by mouth. These patients get practically no other treatment. We have found of value the injection of 250 c.c. of citrated blood, every four or five days. The first reaction is an increase in the leukocytes. That increase and also the improvement in the red blood cells disappear very promptly, but after the second injection, there is a greater general improvement in the blood pressure, the resistance of the patient and her appearance. The third time she holds all that you may give and makes a fair recovery. I am pleased with the results of repeated blood transfusions in these cases of pure bacteremia.

DR. EDWARD L. KING, New Orleans: I am glad to find that the Fowler position does do good. We thought it did, but never held a necropsy in these cases because we could not get it. The two cases that I mentioned were not the type that would show anything about the value of the Fowler position. We have not tried the repeated transfusions. We have tried giving 500 or 600 c.c. at one time in several cases and found that it did not seem to help much.

CYSTS OF THE PANCREAS*

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True cysts of the pancreas are due to an obstruction of the outflow of the secretion, with a retention of the fluid and dilatation of the ducts or acini (retention cysts), or they occur when spontaneous proliferation of epithelial elements of the gland is followed by accumulation of fluid in cavities that are formed (cystic tumors).[1]

The latter cysts are called proliferation cysts, and include cystic adenoma and cystic carcinoma. Hydatid cysts occur rarely in the pancreas. Triconi states that seven cases have been recorded. Of congenital cystic disease a few cases have been recorded by Pye-Smith,[2] Richardson, Shattuck and others.

Hemorrhagic cysts of the pancreas occurred following trauma in which bleeding took place into the substance of the pancreas.[3] The presence of blood in the cystic contents does not establish a hemorrhagic origin to the cyst, as the blood may be present as the result of erosion of the vessels due to action of the cystic fluid.

Körte has applied the term "pseudocyst" to those cysts in relation with the pancreas but which are not of pancreatic origin. The inclusion of these tumors within the term "pancreatic" is clinical and due in large part to the difficulty of establishing, at operation, the pancreatic origin of these cysts. Perhaps the greater number of cysts in relation with the pancreas that are encountered by the surgeon, and that have been reported in the literature as pancreatic cysts, are those cysts due to contusion of the upper abdomen, with accumulation of fluid in the lesser peritoneal cavity and which belong to the pseudocysts.

Virchow himself stated that he was unable to determine the origin of a large cyst attached to both the pancreas and the stomach. Records of postmortem examinations in cases of cysts of the pancreas are not numerous.

Retention cysts of the pancreas have been described by Virchow[4] as being of two forms. In one the whole duct is dilated with the occurrence of a "rosary-like" dilatation which he called "ranula pancreatica." In the other group the duct is obstructed at its outlet and becomes distended into a cyst which may become the size of one's fist and may contain mucoid, hemor-

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Opie, E. L.: Disease of the Pancreas, Philadelphia, J. B. Lippincott Company, 1910.
2. Pye-Smith, P. H.: Tr. Path. Soc., London, 1885, p. 17.
3. Kuhnast, Schroder, Friedrick and Hagenbach, cited by Opie (Footnote 1).
4. Virchow: Die Krankheiten Geschwulste, 1: 376, 1863.

rhagic or calculous matter. The causes of retention cysts are: (1) the impaction of a calculus or calculi; (2) cicatricial stenosis; (3) pressure on the duct from without, or (4) a dislocation of a part of the gland (Moynihan). Klebs [5] has applied the name "acne pancreatica" to numerous small dilatations of the minute ducts.

The late Nicholas Senn made the statement that a cyst of the pancreas could not occur as the result of an obstruction to the pancreatic duct in the normal pancreas. Ligation of the ducts of Wirsung and Santorini in dogs did not produce a pancreatic cyst; but, as Opie has pointed out, this does not apply to the actual conditions in man for the reason that there are things about cyst formation in the pancreas that we do not understand.

Proliferation cysts arise as true tumors.[6] Fitz [7] collected nine instances of proliferation cysts. Eight of these occurred in women. Cystic tumors of the pancreas have rarely been malignant.[1]

According to Opie, the formation of cysts which do not occur in other glands is doubtless dependent on particular properties of the pancreatic juice, and their contents are in part at least products of the pancreatic secretion. Ligation of the pancreatic ducts in animals causes chronic inflammation of the gland with little dilatation of the ducts behind. The occlusion of the pancreatic ducts by tumor, gallstones, or pancreatic calculi is usually unaccompanied by cyst formation; but occasionally multiple cysts result. Occasionally, cysts of large size have been associated with gallstones lodged near the orifice of the pancreatic duct.[8] Chronic pancreatitis has been regarded by Tilger [9] as an important factor in the production of pancreatic cysts, for he has thought that scarlike bands of connective tissue compress and occluded the ducts. Chronic pancreatitis, on the contrary, may also be secondary to the cyst formation; for example, by compression of neighboring ducts, cysts cause chronic inflammation. Occlusion of ducts, which may be either the cause or the result of cyst formation, is always followed by interlobular pancreatitis; and when this lesion implicates the entire gland and is far advanced, diabetes mellitus ensues.[1]

Pseudocysts, so called, may be formed within the substance of the pancreas as the result of degenerative changes affecting the interstitial tissue of the gland; and their formation and increase in size is doubtless dependent largely on the presence of the irritant and corrosive products of the pancreatic secretion. A large number of the so-called pancreatic cysts occupy the lesser peritoneal cavity.

Of 121 instances collected by Körte, sixty were in males, fifty-six were in females, and no sex given in the remaining five. The youngest was in a child 13 months old (Shattuck). Stieda operated on a man 76 years old. The cystic tumor may be situated at any part of the gland. In twenty-two instances collected by Hagenback, the cyst had its origin in the head four times, once in the body, ten times in the tail, and in seven the site is not given. Nimier, according to Moynihan, reports its occurrence twenty-one times in the tail, six times on the body, four times in the head, once in the head and body, and once the whole organ was implicated.

Cysts may be single or multiple, unilocular or multilocular. Two cysts may be simultaneously observed of almost equal size; or, after the healing of the cyst, a second may develop in a distant portion of the gland and necessitate further operation. One small cyst may be found with a large number of smaller cysts packed in the walls (Moynihan).

The cysts are generally smooth and rounded, elastic and rather tense. In the early stages true pancreatic cysts are usually lined by a single layer of flattened, cylindric epithelium, which frequently disappears in the long standing cysts, owing to the action of the cystic contents. Pseudocysts are never lined by epithelium. Their walls are always composed of fibrous connective tissue. In a case reported by McPhedran,[10] a pseudocyst and a true cyst of the pancreas occurred.

CONTENTS

The character of the fluid within the pancreatic cyst varies greatly. It may be clear, milky, brownish red or nearly black. It is nearly always albuminous, but frequently furnishes little evidence concerning the origin of the lesion. The contents of the pancreatic cysts are occasionally viscid, and the presence of mucin has been demonstrated. Microscopic examination usually reveals the presence of epithelial cells, globules of fat, crystals of fatty acid, red blood cells, leukocytes and necrotic tissue.[1] It is often possible to demonstrate one of the three well known enzymes of the pancreatic juice in the contents of pancreatic cysts; but proteolytic, lipolytic and diastatic enzymes have been found in the fluid removed from abdominal cysts which have not had their origin in the pancreas. Körte has found a weak diastatic enzyme in a mesenteric cyst. The presence of polymorphonuclear leukocytes may give proteolytic activities to any fluid that contains them, whereas the wide distribution of fat-splitting enzymes is well known. Moreover, the contents of true cysts of the pancreas may exhibit no enzymatic activity. Antitryptic action of the blood serum may explain the absence of trypsin in hemorrhagic cysts, and Heidenhain [11] has shown that enzymes disappear in the secretion of chronic inflammation of the gland. An examination of the fluid present is not always conclusive in establishing the pancreatic origin of the cyst. Nevertheless, if an abdominal cyst contains fluid capable of digesting coagulated egg albumin or of splitting starch, its origin in the pancreas is probable.

SYMPTOMATOLOGY

The early symptoms of pancreatic cyst are usually trivial, and are chiefly those due to interference by pressure with the surrounding viscera. The patient complains of a distress or a sense of fulness, especially after eating. Pain varies greatly and in some cases is of little diagnostic value. However, in some cases the attacks of pain occur periodically, are of a cramplike character, and suggest the presence of gallstones; indeed, in one case,[9] a diagnosis of gallstone had been made by several physicians who had examined the same patient. The pain is generally confined to the upper abdomen, and may extend around to the left side or through to the back. Nausea and vomiting occur occasionally. They are not common, and when vomiting does occur it is usually due to adhesions between the stomach and the cyst wall. It may recur periodically and be quite severe. The bowels are fre-

5. Klebs: Handbuch der pathologischen anatomie, Berlin **1**: 552, 1868.
6. Opie: Disease of the Pancreas, p. 268.
7. Fitz: Tr. Assn. Am. Phys. **15**: 254, 1900.
8. Horrocks and Morton (Lancet **1**: 242, 1897) and others.
9. Tilger: Virchows Arch. f. path. Anat. **137**: 348, 1894.
10. McPhedran: Brit. M. J. **1**: 1400, 1897.
11. Heidenhain: Arch. f. d. ges. Physiol. (Pflüger's) **10**: 557, 1875.

quently constipated, but occasionally diarrhea occurs. The patient may complain of weakness, and frequently there is a considerable loss of weight. Patients have lost as much as 20 pounds or more during a period of several months. In other cases the loss of weight was so great as to arouse a suspicion of the presence of malignancy. The appetite is variable. Jaundice is only rarely present. Körte found it recorded in only nine cases out of 121, the jaundice being due to pressure on the common duct by cysts of large size, which are almost always situated in the head or neck of the pancreas. Dilatation of the superficial branches of the portal vein have been recorded in a few instances. Ascites and edema of the lower extremities have occurred in two cases, as did obstruction of the right ureter in two patients.[12] Steatorrhea or disturbance of the protein digestion is rare.[7] Diabetes occurred in nine instances out of 136 collected by Ozer. Lazarus mentions one case of alimentary glycosuria. Occult blood may in some cases be present in the gastric contents or in the feces, or in both.

PHYSICAL EXAMINATION

Cysts of the pancreas are usually spherical, smooth and tense. In a series of cases reported by Körte, that author found forty-eight in the median line of the abdomen between the ensiform cartilage and the umbilicus. Forty of these were to the left of the median line and eight were on the right side. In a great majority of cases, cysts bulge between the stomach and the transverse colon. The cyst may push itself above the stomach or between the stomach and the liver. This is especially likely to occur when the cyst arises from the upper border of the pancreas. Cases have been reported by Riedel and others in which the transverse colon was pushed down as low as the symphysis pubis. If the cyst arises from the lower border of the pancreas, the transverse colon may run directly across the cyst or the cyst may, as it frequently does, project below the transverse colon with a bulging of the transverse mesocolon. Schwartz [13] reported a case in which the cecum was in front of the cyst, and Martin a case in which the descending colon was overlying the cyst. This also occurred in the case I report. Dreyzehner [14] has described a case in which the cyst arising from the head of the pancreas grew to the right and lay behind the peritoneum, displacing the right kidney. Da Costa [15] mentions a case of pancreatic cyst which appeared in the right flank and which resembled a hydronephrosis. McPhedran [10] says that cysts of quadrilateral shape in the region of the pancreas and extending toward the left kidney are likely to be of pancreatic origin.

Cysts of the pancreas usually possess little motility, since that organ is fixed in its position and behind the peritoneum. However, cysts when attached to the tail of the pancreas in some cases may be moved about freely.

In one case reported by Lazarus the cyst could be moved from the left hypochondrium to the right mammillary line. Cysts in contact with the diaphragm usually possess respiratory motility. Cysts in contact with the aorta may transmit pulsation which is not expansile and which can be differentiated from aneurysm of the abdominal aorta by placing the patient in the knee-chest position, when there will be no pulsation. Inflation of the stomach and colon will aid one in determining the relationship of the cyst to the surrounding viscera. Collections of fluid in the lesser peritoneal cavity usually form very rapidly. Mesenteric cysts are usually in the region of the umbilicus.

In the case here reported the duct opening into the cyst was found and closed by a purse-string suture.

REPORT OF CASE

History.—A man, aged 20, born in the United States, a baker, referred to me by Dr. W. H. Kelly of Philadelphia, sent to the Medico-Chirurgical Hospital, where I operated on him, Aug. 20, 1913, had had the usual diseases of childhood, measles and chickenpox. The history otherwise was negative. There was no history of syphilis. The family history was negative. For the last four months he had noticed a swelling in the left side of the abdomen which had gradually been getting larger. He also complained of some soreness and pain across the upper abdomen. Recently he complained of weakness and inability to work, which, along with baking, consisted of handling barrels of flour. His appetite was good and his bowels were regular. He also had lost about 10 pounds in weight during the previous three months. He had never been jaundiced.

Physical Examination.—The patient was of medium height with good color and fair nutrition. Examination of the eyes was negative. The condition of the teeth, mouth, pharynx and nose was good. The chest was normal, the lungs and heart negative. There was a tumor-like swelling to the left of the middle line of the abdomen extending from the epigastric and umbilical regions to the left hypochondria and left lumbar regions. There were in reality two tumor masses. The mass near the median line was about the size of a fist; the other and lateral swelling was separated from the median mass by a slight abdominal recession, and it was about the size of a hen's egg and located in the region of the lower pole and inner side of the left kidney. The outlines of both masses were regular, fairly well circumscribed, smooth, elastic, and only slightly tender to the palpating hand. There was not any respiratory mobility; between the two tumor masses was a narrow tympanitic area that I believed to be the descending colon. This view proved to be correct by colonic inflation. The percussion wave was transmitted from one mass to the other. Examinations of the urine and feces were negative. The transverse colon was above the mass.

Blood Examination: Hemoglobin (Sahli) was 82 per cent.; red blood corpuscles numbered 4,200,000; white blood corpuscles, 8,000.

Gastric Contents: After an Ewald test breakfast total acidity was 40; free hydrochloric acid, 16. Motility was normal. There was no occult blood.

Operation and Result.—Under ether anesthesia, an incision was made through the sheath of the left rectus muscle, and the lower layer of the transverse mesocolon was torn through, exposing the cyst wall. The cyst was drawn up, a trocar was introduced, and the contents of the cyst were withdrawn. I then enlarged the cyst opening with a pair of scissors, and sponged away the remaining fluid. I found a small opening in the wall of the cyst leading to the cyst cavity; this was the opening of one of the radicles of the pancreatic duct. With a small curved needle armed with linen thread I introduced a purse-string suture which, when tied, closed the aperture. I then stitched the wall of the cyst to the parietal peritoneum and lightly packed the cyst cavity with gauze, which was removed on the third day. The patient made an uninterrupted recovery. He stated that prior to the onset of his trouble he thought that in handling barrels of flour he had strained himself on one occasion. The cystic fluid was clear, digested coagulated egg albumin and converted starch into sugar.

Rupture of pancreatic cysts due to a fall or trauma over the abdomen have been reported by Schwartz,[16] Bull [17] and others. The disappearance of the cyst in

12. Dreyzehner and Reve: Ann. Surg. **18**:227, 1893.
13. Schwartz: Sem. Med. **13**: 281, 1893.
14. Dreyzehner: Arch. f. klin. Chir. **1**: 261, 1895.
15. Da Costa, J. C.: Modern Surgery, 1910, p. 1162.
16. Schwartz: Sem. méd. **13**: 281, 1893.
17. Bull: New York M. J. **41**: 376, 1887.

both instances was associated with diarrhea. The inference is that the cyst ruptured into the intestine.

TREATMENT

The treatment consists of: (1) evacuation and drainage, the cyst being stitched to the abdominal wall (Gussenbauer's method); (2) exposure of the cyst and operation in two stages, i. e., by the insertion of gauze until adhesions have formed, and subsequent opening of the cyst at the expiration of three or more days, and (3) extirpation, partial or complete.

Evacuation and drainage is thus performed: The abdomen is opened either to the right or to the left of the median line, depending on the location of the cyst. The incision is made through the sheath of the rectus muscle. The cyst wall is exposed by tearing through the omentum. The cyst most frequently protrudes between the stomach and the transverse colon, being covered by the gastrocolic omentum. Care should be taken to avoid large vessels, which are usually present. A careful examination of the cyst is made to determine its source, the extent of adhesions and the condition of the pancreas, together with the relation of the cyst to the surrounding structures. The most prominent part of the cyst is brought into the wound, and gauze sponges are placed so as to protect the peritoneal cavity and the abdominal wall from being soiled. An aspirator needle or trocar is thrust into the cyst, and its contents are evacuated into a sterile container for future examination. On withdrawal of the aspirator a clamp is placed on the opening of the sac. The sac wall is now united by a continuous suture to the parietal peritoneum by using a curved needle threaded with catgut, silk or Pagenstecher thread. The forceps are then removed from the cyst opening and a piece of large rubber tubing is introduced into the cyst cavity, where it is fixed by an anchor stitch to the cyst opening, and the cyst wall is closed around the rubber tubing by the use of purse-string sutures.

The two stage operation has not been used very frequently during recent years.

Some surgeons drain cysts of the body and tail of the pancreas by making an incision in the left lumbar region at the border of the erector spinae muscle and its junction with the last rib. The lumbar fascia is divided; with the finger one pushes the descending colon forward; the cyst wall is reached, incised, and drainage is inserted. In the event that one has not made a positive diagnosis, the incision through the abdominal wall is preferable. Some surgeons, after operating through the abdominal wall, have evacuated the cyst and, establishing drainage, have made a counter opening through the loin. It seems to me that the single operation of drainage anteriorly is sufficient. It may be necessary to resort to the two stage operation in some instances in which either through the size of the cyst, or its location, the stitching of the cyst wall to the abdominal wall may offer considerable difficulty. Under the circumstances one may insert gauze packing, allowing it to remain for several days until sufficient adhesions shall have formed to protect the peritoneal cavity. The cyst is then incised and drained.

Extirpation, either partial or complete, has been performed by a number of surgeons. In some cases it has been successful. In other cases the procedure had to be abandoned owing to the character of the adhesions, the presence of large blood vessels, and the danger of wounding the splenic vessels. In other cases it has been possible to ligate the pedicle (Clutton and others); divide it with the thermocautery (Kosinski) or clamp it with forceps (Pincet).

Aspiration, except in ascites, has no place in abdominal surgery. Drainage in some cases may continue for a prolonged time.

Under no circumstances is any solution to be injected into the cyst cavity, with the idea of causing cessation of secretion, for cases have been reported in which this procedure was attempted and it was followed by disastrous results.

1934 Chestnut Street.

ABSTRACT OF DISCUSSION

Dr. A. C. Scott, Temple, Texas: I wish to report a case of pancreatic cyst not quite the size of the average cocoanut. It stood up rather prominently in the midline, and appeared to be fairly movable, although it was very evident that it was attached posteriorly. It had a little movement in response to the diaphragm. We could take hold of it and move it from side to side two or three inches. The top of the mass seemed to be freely movable. We undertook the removal of this cyst. Had we persisted in our efforts, the patient might have died. Rather extensive bleeding occurred from almost every point from which we undertook to dissect the cyst from the pancreas proper, and the pancreatic tissues came up on the under side of it like part of a flower. When we got through with it, it was like a bulb, with the pancreas coming half way up on its side. In our efforts at stripping it loose on the under side, we accidentally tore a hole in the vena cava. By pulling on the cyst and holding my thumb down, I could control the bleeding temporarily. We closed the opening in the vein with silk sutures. We succeeded in removing about two-thirds of the growth.

Dr. Moses Behrend, Philadelphia: Acute cases are operated on the first week. Chronic pancreatic cysts may be considered those that have been in existence many months or years. I have seen two cases of chronic pancreatic cysts, one a traumatic condition, the entire lesser peritoneal cavity being filled with the hemorrhagic fluid which seemed to come as the result of injury to the pancreas. The other case was of undetermined origin, but probably resulted from an attack of acute hemorrhagic pancreatitis. It is not necessary to remove these cysts. If you do, you will have the same trouble Doctor Scott had. It is desirable to suture the cyst to the parietal peritoneum and pack with gauze. The cavity will be obliterated by the irritation of the gauze packed into the cyst. I want to caution you against removing the gauze too soon. Leave it in at least eight days.

Dr. Marcell Hartwig, Los Angeles: Cysts must be considered in an anatomic way, that is, whether or not they have an epithelial lining, with glands. If cysts have no epithelial lining, they will shrink with the simplest kind of an operation. I puncture the cyst with a trocar at the point where the cyst and the abdominal wall touch, and then introduce a catheter. In this way you can cure practically every cyst.

Bolted Versus Whole Wheat Flour.—It is evident that in the milling of flours there comes a point where the law of diminishing returns begins to play; that is, there is a percentage at which the milled flour is the most efficient food deliverer. That the flour must not be milled to too high a percentage is evident, for the great cellulose content will not only hamper the digestion of the protein, but will interfere with the digestion of the carbohydrates. In the case of the German flours during the war, especially when the one great problem of the diet was protein, the mistake of grinding out to 94 per cent. is obvious. Not only was the bread actually less efficient as a food, but by milling to a lower percentage the bran would have been used as a fodder, thus putting it to a useful purpose instead of allowing humans to eat it with no good to them; rather it did actual harm, in that it caused, indirectly, a portion of the available protein to be lost.—C. C. Mason, *Bull Johns Hopkins Hosp.*, March, 1920.

TREATMENT OF DIABETES COMPLICATED BY PULMONARY TUBERCULOSIS *

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The question whether undernutrition is properly applicable to the treatment of diabetes complicated by active pulmonary tuberculosis is the theme of the present paper. Interest in this problem has been enhanced by the general adoption of the Allen diabetic regimen during the last five years which emphasizes the opposed principles in the handling of these diseases, diabetes being treated by fasting, undernutrition and exercise, tuberculosis by maintaining normal nutrition and rest. That the results obtained in general are discouraging is well indicated by the very paucity of the literature [1] on this subject, for physicians are loath to report their failures. Through the establishment of a specially organized metabolic unit in southern California, excellent material and working conditions have been afforded for a study of this not uncommon pulmonary complication of diabetes, the results and deductions obtained being presented in this report. In order to study properly the treatment of diabetes in the presence of tuberculosis, questions of etiology and mutual modifications of the clinical pictures of these diseases must first be regarded.

ASSOCIATION OF DIABETES WITH PULMONARY TUBERCULOSIS

There seems to be no question of the rarity of the development of diabetes in patients exhibiting active tuberculous disease. Montgomery, in his excellent study of this subject, obtained data from twenty-five tuberculosis sanatoriums in the United States reporting, among 31,834 cases of tuberculosis, 101 cases showing glycosuria, that is, ⅓ per cent., only ⅙ per cent. exhibiting developed diabetic symptoms, whereas more than 1 per cent. of our population develop diabetes.[2] Indeed, Montgomery failed to find a single unquestionable case of diabetes developing in the presence of tuberculosis. By this is probably meant active tuberculosis, as Joslin cites instances of diabetes developing in cases of latent or inactive tuberculosis. Several of our cases give a history indicating activity before but not at the time of onset of the diabetes. In one instance a clear history of this pulmonary affection was elicited occurring twenty years previously. It is evident, then, that diabetes attacks less frequently the actively tuberculous subject than normal individuals. The ultimate reasons for this are not entirely clear. It may be noted, however, that diabetes is a disease frequently preceded by obesity and commonly also by dietetic excesses. These conditions are rarely encountered in cases of tuberculosis in periods of pronounced activity, which causes loss of weight and decreased appetite. Indeed, it would seem that undernutrition safeguards against the development of diabetes. Again, the hygienic treatment of tuberculosis may tend to lessen emotional and nervous strain, which is an accepted etiologic factor in diabetes. Metabolically considered, it is probable that the fuel and tissue replacement requirement in the tuberculous patient diverts to these channels protein and fat split products which otherwise through synthesis contribute to glucose formation in the body. It is possible that increased fuel requirements may even decrease the carbohydrate available for excretion in the individual disposed to glycosuria.

With regard to the frequency of tuberculosis among diabetics, the older statisticians report an incidence varying from 15 to 25 per cent. Joslin, however, in 1,146 cases, observed from 1894 until December, 1916, noted only 3.1 per cent. as tuberculous, which may probably be accounted for by the fact that his cases were chiefly private and lived under better hygienic conditions; and, moreover, that treatment, especially in the hands of this great student of diabetes, was improving during this period. Apparently in the fatal cases of diabetes reported, phthisis is infrequent, von Noorden finding 5.1 per cent., Montgomery 8.5 per cent., and Joslin in 439 cases (1894 until December, 1915) 3.6 per cent. tuberculous. But Naunyn, S. West, R. T. Williamson and J. Seegan in a total of 216 postmortems reported tuberculosis in from 40 to 50 per cent. of dead diabetics. This discrepancy in frequency between the cases examined at necropsy and those not so examined is probably due to failure of recognition of phthisis in the presence of diabetes. It is difficult, however, to demonstrate statistically that tuberculosis is more frequent among diabetics than even among the population at large, for according to Rosenow, Baldwin and other authorities about one third of the total deaths of the entire population are due to pulmonary tuberculosis. There will also be remembered the well known data of Naegele, who found tuberculous lesions in 90 per cent. of a large number of necropsies. In a total of twenty-one carefully studied recent cases, sixteen reported in the present paper and six from the Rockefeller Hospital,[3] diabetes preceded the active tuberculous outbreak in every case, except one of doubtful history.

CLINICAL ASPECTS OF DIABETES ASSOCIATED WITH PULMONARY TUBERCULOSIS

All grades of diabetes may be found among glycosurics developing tuberculosis. Of our series, nine cases were mild, four moderate, and three severe. There is little question that rapidly progressive tuberculosis, especially when accompanied by febrile reaction, may definitely lead to increase of food and glucose tolerance in the diabetic. In Case 10, sugar appeared in the urine on a diet of 17 calories per kilogram and 20 gm. of carbohydrates. The same patient, after developing acute caseous tuberculosis, was able to take 30 calories per kilogram and 30 gm. of carbohydrates without glycosuria or ketonuria, blood sugar at times ranging as low as previously (Chart 3). It is interesting that our series of diabetics with pulmonary lesions rarely showed dangerous acidosis symptoms, although 25 per cent. were low tolerance cases. The same factors (as already mentioned) which make the incidence of diabetes in active tuberculosis a medical rarity no doubt play a protective rôle with regard to acidosis when both dis-

* From the Memorial Metabolic Clinic.
* Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Shively, H. L., New York M. J. **87**: 933 (May 16) 1908. Montgomery, C. M.: Am. J. M. Sc. **144**: 543 (Oct.) 1912. Landis, H. R.; Funk, E. H., and Montgomery, C. M.: Am. Rev. Tubere. **2**: 690 (Jan.) 1919. Montgomery's articles are particularly exhaustive, with full references to the older literature.

2. Joslin, E. P.: Treatment of Diabetes Mellitus, 1917, p. 24.

3. Allen, F. M.; Stillman, E., and Fitz, R.: Monograph 11, Rockefeller Inst. Med. Research, Oct. 15, 1919.

eases have developed. The blood sugar of phthisical diabetics runs no higher than in uncomplicated diabetes. We have found it, however, much more difficult to reduce to the normal by diabetic treatment. This tendency is likewise observed among glycosurics exhibiting other infections. Of our seven fatal cases, two of the patients died in diabetic coma. In one the phthisis was readily controlled by rest and diabetic treatment, but the diabetes was severe, the fatal outcome being induced by gross dietetic indiseretions. The other case was too complicated to permit of conclusions. It is our clinical impression that, on accumulation of statistics, severe acidosis will be found to develop rarely in the presence of active tuberculosis.

CLINICAL ASPECTS OF TUBERCULOSIS ASSOCIATED WITH DIABETES

A very important question is whether the pulmonary process usually begins to show activity in the untreated or the treated diabetic condition. Table 2 shows that in sixteen cases, only five of the patients developed tuberculosis while sugar-free. Only one of these five was at this time living on a diet of less than 30 calories per kilogram. Of the ten patients developing the pulmonary infection while showing sugar, seven were on unrestricted diet. There is, then, excellent evidence indicating that the tuberculous outbreak occurs more often in the diabetic showing sugar and carelessly treated than among strictly treated patients living

TABLE 1.—ANALYSIS OF SIXTEEN CASES OF DIABETES ASSOCIATED WITH PULMONARY TUBERCULOSIS

Case Number	Age at Entrance	Family History: Diabetes, Tuberculosis with Exposure	Diabetes: Age at Onset	Diabetes: Type: Severe, +++; Moderate, ++; Mild, +	Diabetes: Treatment: Good, ++; Poor, +; Neglected, 0	Age at Onset or Discovery of Tuberculous Activity	Condition on Admission: Urine: Sugar, Gm.	Condition on Admission: Urine: Ketonuria	Condition on Admission: Blood Plasma: Sugar per 10,000	Condition on Admission: Blood Plasma: CO_2 per Cent. by Volume	Complications	Treatment: Bed Rest	Treatment: Fasting Used	Treatment: Diet, Weeks; Cal. per Kg.: Less than 15	15 to 30	Over 30
1	45	T.B., D.	42	+	+	45‡	8	+	25	55	Gout; nephritis; severe influenza	+	Yes	1	0	9
2	33	0	28	+	+	32	66	0	..	..	0	0	Yes	0	3	5
3	67	0	61	+	+	67‡	4	0	19	56	0	+	No	2	2	2
4	51	T.B., D.	44	+++	+	51‡	0	0	15	..	Arteriosclerosis	0	No	0	3	13
5	37	D.	31	+	0	56‡	6	+	15	54	Alcoholism; chronic nephritis	+	No	3	2	..
6	49	D.	48	+	+	48‡	4	0	25	72	Hemochromatosis	0	Yes	0	1	2
7	61	0	58	+++	+	61‡	45	+++	58	28	Arteriosclerosis	In part	Yes	4	4	..
8	27	T.B.	26	+++	0	27	212	+++	43	47	0	+	Yes	4	1	..
							62	+++	..	40	..	+	No	2	1	..
							83	+	48	49	..	+	No	1	5	..
9	29	0	23	+	++	28	286	++	31	55	0	+	No	1	..	..
10	50	0	49	++	+	50‡	0	+	13	..	Pleurisy (tuberculous)	+	No	1	7	4
11	35	0	34	++	+	35	65	0	26	..	0	+	No	0	2	1
12	63	0	44	+	0	60	39	0	24	65	Arteriosclerosis	+	No	0	2	3
13	42	0	23	+	0	40	25	+	30	53	0	+	No	1	1	..
14	32	0	29	++	+	32	6	+	28	55	0	+	No	1	7	..
15	48	D.	40	+	++	48	12	0	37	59	0	+	No	1	4	..
16	37	0	35	++	++	36	40	0	29	58	Pleurisy (tuberculous)	+	No	0	1	1

RESULTS

Diabetes: Days before Sugar Free	Diabetes: Days before Ketone Free*	Diabetes: Blood Sugar Reduced To:	Signs and Symptoms Before and After Hospital Treatment (+, present; 0, absent; I, improved; U, unchanged; W, worse)	Emaciation	Weakness	Cough	Bacilli	Temperature	Pulse	Lung Pathology	Weeks in Hospital	General Results of Hospital Treatment; Final Outcome
4	3	10 to 16	Entrance	+	+	0	0	Normal	Normal	Incipient	10	Continued slight glycosuria; too much exercise; died aged 49 of tuberculosis rapidly extended after pneumonia
			Discharge	U	U	0				W		
3	0	10	Entrance	+++	+	+	0	98	80	0	8	Died of tuberculosis 10 days after discharge
			Discharge	W	W	W	+	102	120	Acute caseous		
4	0	12	Entrance	0	0	0	0	98	95	Chronic fibroid	6	Improved; living in fair health 2 years after discharge
			Discharge	U	U	0	0	98	85	U		
0	0	12	Entrance	++	++	0	0	97	80	Chronic fibroid	15	Improved; well on diet 30 cal./kg. 6 months after discharge
			Discharge	I	I	0	0	97	80	I		
6	14	9	Entrance	0	+	+	0	100	128	Chronic fibroid	5	Improved; sugar free ever since; well 1½ years after discharge
			Discharge	U	I	0	0	98	90	I		
5	0	18	Entrance	+	0	+	0	97	57	Chronic fibroid	3	Improved; sugar free on 30 cal./kg.; well but weak 1 year after discharge
			Discharge	W	0	I	0	94	74	I		
3	Never	20 to 30	Entrance	+	+	0	0	97	84	Chronic fibroid	8	Improved; died 5 months after leaving hospital; circumstances unknown
			Discharge	U	I	0	0	96	72	U		
21	21†	23	Entrance	+	+	+	0	100	100	Chronic fibroid	5	Improved after each time in hospital: 4 months later broke diet and died in coma
5	2		Discharge	U	I	I	0	98	80	I		
12	4											
Never	Never		Entrance	0	+	+	+	101	100	Acute caseous	1	Probably died later
			Discharge	U	U	U	..	99	90	W		
0	28	10 to 26	Entrance	+	+	0	..	98	65	Chronic fibroid	12	Died of tuberculosis in the hospital
			Later	W	W	+	+	102	110	Acute caseous		
3	0	16	Entrance	+	+	+	+	99	80	Acute caseous	3	Improved; broke diet; returned 4 months later in hopeless condition and died of tuberculosis
			Discharge	U	I	I	..	98	80	U		
2	0	11	Entrance	+++	+	+	+	98	90	Chronic fibroid	5	Improved; fairly well 6 months after discharge; sugar free on 45 cal./kg.; has gained 3 kg. in weight
			Discharge	U	I	I	+	98	90	I		
Never	5	21	Entrance	0	0	+	+	102	100	Chronic fibroid	2	Improved; left against our advice and has not reported since
			Discharge	U	U	I	..	99	90	U		
4	4	15	Entrance	+	+	0	0	97	70	Chronic fibroid	8	Improved; abandoned diet one week after discharge and has not reported since
			Discharge	W	W	0	0	98	70	I		
2	0	13	Entrance	0	0	+	0	98	78	Incipient	5	Improved; still in hospital
			Later	U	U	U	..	98	80	I		
2	0	16	Entrance	+	++	+	+	102	95	Acute caseous	2	Improved; still in hospital
			Later	U	U	U	..	99	90	U		

* Cases 1 to 9 were considered ketone free when the ferric chlorid reaction was negative in the urine. In Cases 10 to 16 and in second and third entries of Case 8, the criterion was a negative nitroprussid reaction in the urine.

† Three entries (see graphic chart).

‡ In Case 1, tuberculosis of right apex diagnosed at the age of 24, which cleared after two months on the Riviera. In Case 5, night sweats for ten years. In Case 6, slight morning cough for six years. In Cases 3, 4 and 7, the tuberculous activity was discovered at physical examination. In Case 10, signs of activity were absent at first physical examination.

sugar-free. Deductions from this fundamental fact will be made later.

It is interesting to note that the prevalence of tuberculosis among diabetics has been ascribed to the well known proclivity of the tubercle bacilli to grow in saccharin mediums. This has been properly challenged by Montgomery, who observes that glucose solutions in vitro must have a concentration of at least 5 per cent. in order to encourage growth of these microorganisms. Human diabetic body tissues and fluids, except urine, rarely contain more than 1 per cent. of glucose.

Ignorance, poverty and its attending lack of hygiene play a more important causative rôle than does undernutrition. Thus, we have already noted the decreased incidence of tuberculosis in privately treated diabetics. Undernutrition per se does not seem to dispose to tuberculosis in the absence of the other factors just mentioned. Preyss [4] noted in underfed animals no appreciable effect on the development of tuberculosis. In many chronic diseases producing emaciation, no especial tendency to phthisis has been noted. Such are pernicious anemia,[5] leukemia and exophthalmic goiter.[6] Available statistics of tuberculous diabetics treated by low diets show no increase of mortality.

TABLE 2.—ANALYSIS OF SIXTEEN CASES SHOWING THAT IN THE MAJORITY THE DIABETIC CONDITION WAS POORLY TREATED AT ONSET OF TUBERCULOUS ACTIVITY

Case No.	General Nutrition	Diet	Glycosuria
1	Emaciated	1,900 calories, 50 gm. COH	0
2	Emaciated	1,400 calories, 24 gm. COH	0
3	Thin	"Not strictly followed"	Usually
4	Thin	Not determinable	+
5	Normal	Unlimited	+
6	Thin	Not determinable	+
7	.....	Not determinable	
8	Thin	Unlimited	+
9	Normal	"Allen treatment"	0 (?)
10	Emaciated	600 calories, 15 gm. COH	0
11	Thin	Unlimited	+
12	Thin	Unlimited	+
13	Normal	Unlimited	+
14	Thin	1,400 calories, 76 gm. COH	+
15	Normal	Unlimited	+
16	Thin	1,800 calories, 50 gm. COH	0

Of 946 diabetic cases seen by Joslin [7] before inauguration of the Allen treatment in December, 1915, mortality due to pulmonary tuberculosis was 1.7 per cent. Thereafter, among 748 cases, but one person died of phthisis.

Pathologically considered, the acute caseous type of tuberculous infection characterized by rapid extension with cavity, and little tendency to fibrosis, has in the past been especially accredited to this pulmonary infection among diabetics. Thus, West [8] in 1902, reporting fifty necropsies on diabetics, found of twenty-one showing tuberculous lesions seventeen to be active and the cause of death, only four cases being of the chronic type. There is certainly no question that galloping consumption may seize on the diabetic. Of our series, five such cases, or 31 per cent., have been observed, three rapidly fatal, and one passing out of observation with small chance of recovery. Montgomery has reported other cases. We have, however, found the great majority of cases to be, just as in uncomplicated tuberculosis, fibroid with low grade activity.

The clinical symptoms of phthisis developing in diabetics are especially insidious. All writers agree as to this. The loss of vitality, weight and strength is so well accounted for by the diabetes that the presence or gravity of the pulmonary complication is frequently overlooked. The great frequency, as compared to living cases, of serious pulmonary tuberculous lesions in diabetic necropsies has been mentioned. This may be condoned to some extent by the absence of clinical symptoms of phthisis. The chest signs in even very extensive lesions may be relatively insignificant; hemoptysis, cough and sputum not marked or absent, and the temperature normal. Subnormal temperatures, just as in uncomplicated diabetes, are not uncommon, the evening temperature being, however, from 0.5 to 1 degree higher than the morning. In 50 per cent. of our cases of active tuberculosis associated with diabetes, the temperature was normal or subnormal. There may be no night sweats until near the end. The bright eye and the hectic flush of the phthisic, as well

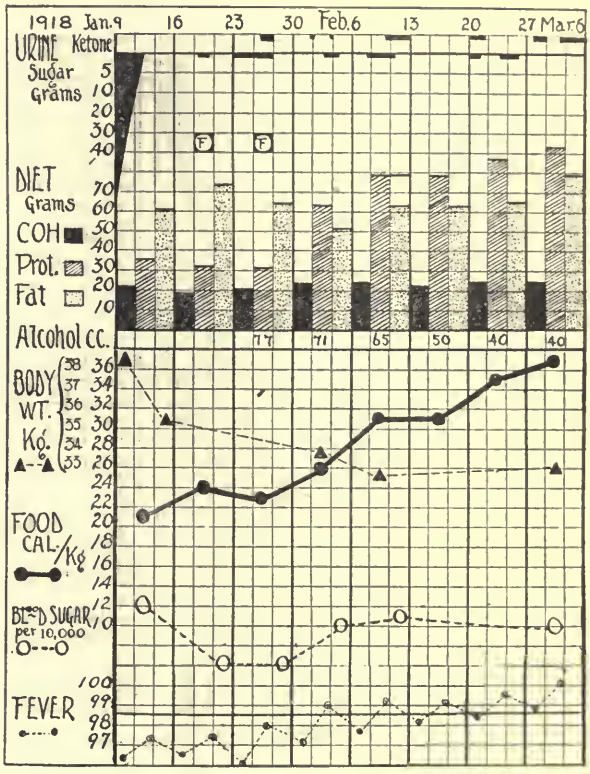


Chart 1 (Case 2).—Effect of fasting and low diet in lighting up a fatal tuberculosis in a diabetic. In this and the subsequent charts the average daily diet has been calculated for each week, carbohydrate, protein and fat being shown schematically, alcohol in numerals below. Average daily caloric intake has been given as food calories per kilogram of body weight. The temperature curve shows the average lowest and average highest temperatures for each week. Fast days are indicated by an F within a circle; half diet days by an F within a half circle.

as the dusky reddened cheeks of the diabetic, are missed in these cases. In spite of contrary reports by others, our series have furthermore all presented the dull ocular expression and pallor of the chronic invalid. The characteristic optimism of the tuberculous is frequent. Of laboratory tests it may be said that sputum is often negative until great pulmonary involvement has already occurred. Only two of eleven cases of the chronic fibroid type have shown bacilli. We have not sought sugar in the sputum of our series, as we have deemed its presence no aid in diagnosis or treatment. The roentgen ray, on account of the frequent latency of diabetic phthisis, becames of more than usual help in diagnosis.

4. Preyss: München. med. Wchnschr. **38**: 418, 1891.
5. Cabot, in Osler: Modern Medicine **4**: 619.
6. Dock, in Osler: Modern Medicine **4**: 820.
7. Joslin, E. P.: Treatment of Diabetes Mellitus, 1917, p. 64.
8. West: Diseases of the Organs of Respiration **2**: 523, 1902.

PROGNOSIS OF DIABETES ASSOCIATED WITH PULMONARY TUBERCULOSIS

The prognosis to a great extent is that of the particular type of either disease exhibited by the patient, but is made somewhat more serious by the presence of the other. But this is not necessarily true. We have observed a severe case (Case 4) of diabetes of eight years' standing, in the course of which neither fasting nor prolonged periods of undernutrition caused a chronic pulmonary tuberculosis to show more than its usual slight activity. The reverse is also observed. A light diabetes may become no worse, or even the tolerance increase, in a case of fatal phthisis. Indeed, rapid increase of tolerance in a diabetic with a pulmonary lesion, accompanied by increase of strength and general well being, is to be regarded as suspicious of insidious extension of the tuberculosis. The lives of sufferers from these two grave maladies can only rarely be ultimately saved; but judicious treatment of the patient may be followed by the clearing up of all diabetic symptoms over long periods and cessation of tuberculous activity, with prolongation of life indefinitely.

Institutional treatment of proper nature gives these patients much more hope, but unfortunately they are *personae non gratae,* both usually in the tuberculosis sanatorium and in the diabetic clinic, in either case on admission failing to get ideal treatment for one or both conditions. Of our series, seven of sixteen have died; three of these fatal cases showed marked improvement on diabetic treatment. The results here reported are more hopeful than is to be expected from home or ordinary hospital practice, for they were obtained in an especially organized and supported metabolic clinic provided with a trained dietetic, chemical and clinical staff. The all-year-round mild climate of Santa Barbara has aided to make conditions as to improvement of the pulmonary conditions nearly ideal, as the treatment even of bed cases could be continuously carried out in the open air.

TREATMENT OF DIABETES COMPLICATED BY PULMONARY TUBERCULOSIS

The course adopted in virtually each instance of the present series of sixteen cases has been to combine modern diabetic treatment with rest. The case histories have been analyzed in Table 1. The results obtained may be thus epitomized: Virtually all cases were rendered free of sugar within a period varying from two to six days. Acidosis, when present, disappeared. Most cases within one week failed to show diacetic acid and acetone in the urine. In the two cases (9 and 13) in which the glycosuria did not disappear, treatment for urgent personal reasons was discontinued within a fortnight, the sugar having greatly diminished in both.

Case 8 (Chart 2) illustrates three periods of improvement of both diabetes and tuberculosis resulting from strict diabetic treatment in the clinic. Relapses of the pulmonary complication were associated with lapses from diet. With bed rest and sufficient dietary restriction to control the diabetes, fever disappeared on the second day, never to return. The cough, weakness and lung signs improved promptly, and the patient would again take up his occupation. After leaving the clinic for the third time, he attained a normal blood sugar and gained 2 kg. in weight, only to break diet again and die in diabetic coma.

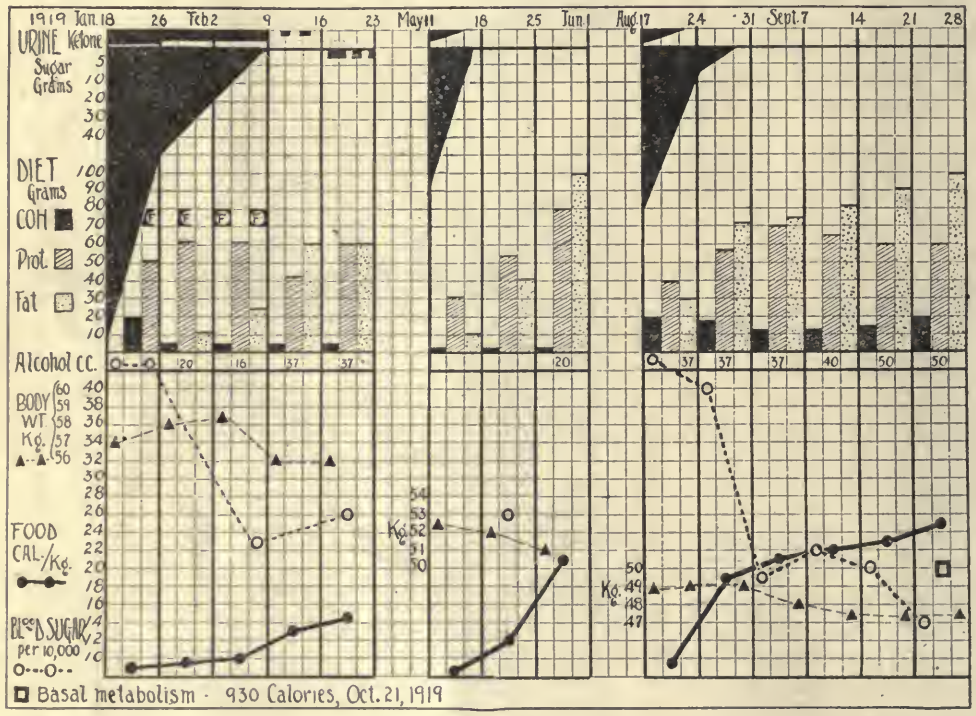


Chart 2 (Case 8).—Three periods of improvement in a severe diabetic case complicated by pulmonary tuberculosis. The breaks in the chart indicate periods of home treatment.

Blood sugar could be reduced to the normal in three cases. This is unquestionably a lower percentage than that now observed in this clinic among uncomplicated diabetics, in the treatment of which a persistent effort is made to reduce the blood sugar to the normal and cause it to remain there. The higher blood pressure level in this series may be ascribed mainly to the effect of the pulmonary infection, but in part probably also to our reluctance to push the undernutrition as far as in the diabetic with sound lungs. Be this as it may, the blood sugar may be fairly regarded even in the phthisical diabetic as the best single laboratory guide to treatment, yet it is remarkable that the blood sugar in the cases in which death was due to tuberculosis fell to normal or subnormal, 7, 8, 10 per 10,000.

In analyzing the results of the treatment of the tuberculosis, it was observed that cough and expectoration were present in ten cases, disappeared or improved in six, became worse in one and appeared de novo in one instance. Six patients entered with elevated temperature. This fell to normal in two cases. In two

fatal cases, fever developed in the hospital. Of ten patients showing both emaciation and weakness, six improved in strength, but one gained in weight. Weight, however, is seldom attained in the treatment of uncomplicated diabetes. The physical signs showed improvement in seven cases, remained unimproved in six, and became worse in three cases.

Dietetic Technic.—As in uncomplicated diabetes, this must be individualized. However, our usual procedure was to order the patient a sufficiently decreased ration of protein and carbohydrate without addition of fat until the patient was sugar-free and the acidosis controlled, and then to increase the protein to between 1 and 2 gm. per kilogram of body weight. The carbohydrate and fat were subsequently increased. The mild degree of acidosis usually encountered in the phthisical diabetic renders it likely that he is more fat tolerant than the ordinary diabetic, especially when febrile. The permissible ratio of carbohydrates to fat has not yet been exactly defined. Every effort is made to give as much protein and as many calories from the start as is consistent with effectual control of the diabetes. Frequently more than 30 calories per kilogram were fed, especially to fever patients, when this value has reached 50. When the patient is taking sufficient calories to maintain his weight and strength, has a normal or low blood sugar, and improved tuberculous condition, he is judged fit for discharge with due precautions.

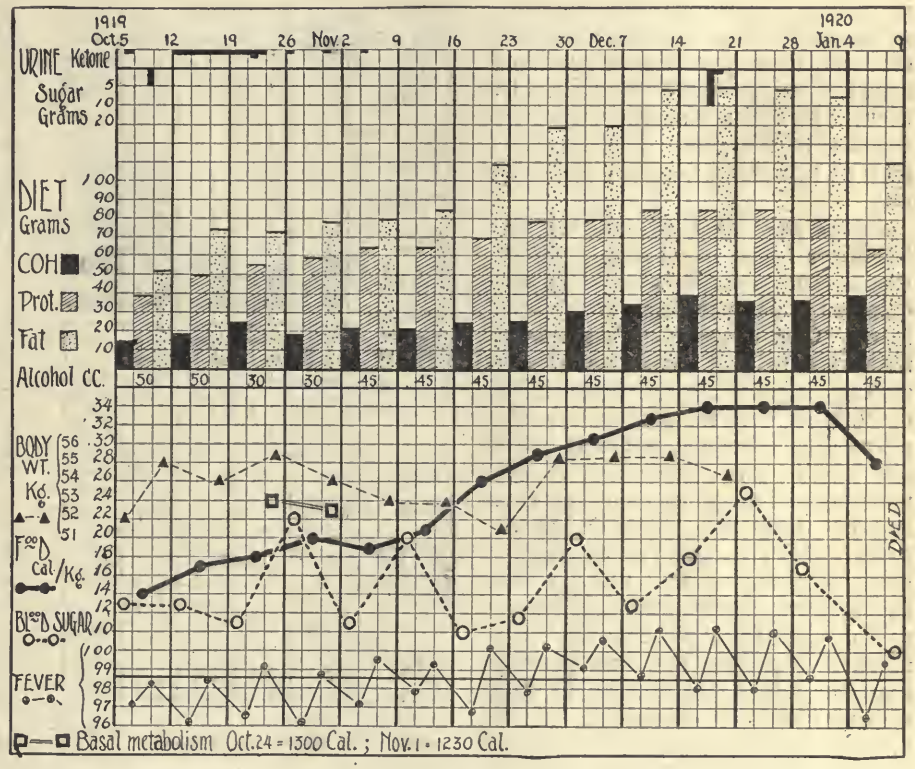


Chart 3 (Case 10).—Great increase in carbohydrate and food tolerance in last stages of tuberculosis. Weight increase is due to edema. Note fluctuations in blood sugar curve, probably due to tuberculous intoxication.

Undernutrition and Fasting: Relative to the advisability of employing a low diet in the treatment of diabetes complicated by tuberculosis, in these cases one should be mindful of the important etiologic factor brought out in this study: namely, that *the majority of our patients developed tuberculosis during the periods of neglected diabetic treatment during which sugar had appeared in the urine* (Table 2). If, then, decreased resistance and defective metabolic processes manifested by the glycosuric diabetic predispose to the development of tuberculosis and not, as has been already demonstrated, undernutrition per se (see above), we have here the chief indication for the treatment that has been followed in our series of cases. Most diabetics with the pulmonary complication bear undernutrition exceedingly well, often with coincident improvement of the chest condition (see charts). It would be a grave error to take for granted that the principle of undernutrition can be applied without the utmost circumspection. Thus the routine application of fasting is certainly best avoided.

As we view it, the question of whether or not fasting or simple reduction of the diet should be advised is not worthy of being raised, as the principle is precisely the same. Fasting was employed with good results in a number of our earlier cases reported in this series whose treatment was supervised by our distinguished colleague, Dr. Nathaniel Bowditch Potter, the deceased founder of this clinic, whose own case is reported in this series. For the past year fasting has not been employed in any case of diabetes complicated with tuberculosis. The results are certainly as satisfactory as when fasting was employed. In treating the great majority of uncomplicated diabetics, fasting can now usually be avoided with considerably lessened hardship to the patient. A diet low in carbohydrates and protein with fat omitted renders the patient in all but severest cases sugar-free in a few days at most, and also gives much more information than does fasting, concerning his true tolerance. Though feared to an exaggerated degree by the profession, there is certainly a distinct element of danger in undernutritional treatment which can best be illustrated by Case 10, in which a prolonged period of fasting and protein starvation was maintained by a general practitioner who failed to recognize the presence of tuberculosis. Our own treatment erred, we feel, in permitting too much exercise, which hurried the development of rapidly fatal acute caseous tuberculosis extending from an old focus.

ADVISABILITY OF PERMITTING GLYCOSURIA IN A PHTHISICAL DIABETIC IN ORDER TO PREVENT DEVELOPMENT OF TUBERCULOSIS

Assent to this presupposes that it is possible to combat the tuberculosis by a diet in excess of the glycolytic power of the diabetic organism, a diet which cannot be fully utilized. The etiologic factor elaborated in this article, namely, that tuberculosis develops usually in the untreated diabetic showing sugar, militates against acceptance of this view. It seems, then, rather illogical to apply as a principle of therapy the same factor

which aided in the development of the disease to be treated. If, indeed, we should at all permit our tuberculous diabetics sufficient food on which they show sugar, we should at least have some definite aim in view. A criterion must be adopted. We might demand a definite improvement of the tuberculous symptoms in a given time, let us say in one or two months of glycosuria. There is only one example in our series in which conditions seemed to indicate such a course. In Case 1, in which at one time there were present diabetes with mild acidosis, symptoms of gout, chronic diffuse nephritis, a bilateral extensive tuberculosis with pleurisy, and ascites, the patient was advised to take sufficient food for comfort, though a moderate amount of sugar was regularly excreted. The patient was indeed more comfortable, but showed as would be supposed no improvement, and continued to the expected fatal termination. Phthisical diabetics with fever and caseous chest lesions can usually eat, without showing glycosuria, as much of a proper diabetic diet as they can digest without showing sugar or ketonuria. In these cases the question whether feeding to the point of glycosuria may be permitted becomes unessential.

Importance of Rest.—The question here to be decided is whether rest is more essential for the tuberculosis than is exercise for the diabetes. Our experience has shown that rest is just as essential for stilling tuberculous activity in a diabetic as it is in treating uncomplicated tuberculosis, whereas exercise can be dispensed with in the treatment of such cases without bad results from the diabetic standpoint. All rules as regard graduated exercise in tuberculosis sanatoriums are equally applicable to the phthisical glycosuritic. Indeed, it is proper that still greater than the usual precautions in this regard should be employed. It is now our habit to keep in bed every patient with tuberculous diabetes exhibiting any suspicion of activity, until experience has demonstrated that his tuberculosis remains unaffected or improved by the diabetic dietary regimen. Another desideratum is effected by bed treatment. Exercise demands more fuel and puts more strain on an organism already weakened by a chronic infection. A diet which during the stringent period of early diabetic treatment is sufficient both to control the glycosuria and to afford enough nutrition to combat the tuberculosis may be insufficient to meet the increased metabolic requirements of active bodily movement. It is obvious that careful observation of the temperature, pulse, sputum characteristics and other minutiae of tuberculosis treatment must be rigorously carried out.

Basal Metabolism.—This was estimated in six cases of the present series with the aid of the Benedict-Carpenter apparatus. In three cases of diabetes, with active tuberculosis sputum and bacilli, the metabolic exchange was found to be normal. Apparently a balance was here struck between the tendency of an acute intoxication to elevate and that of diabetes with undernutrition to depress the basal metabolism, for the remaining three patients whose pulmonary condition was little active showed, as was to be expected, a reduction (from 15 to 37 per cent.) of the respiratory exchange.

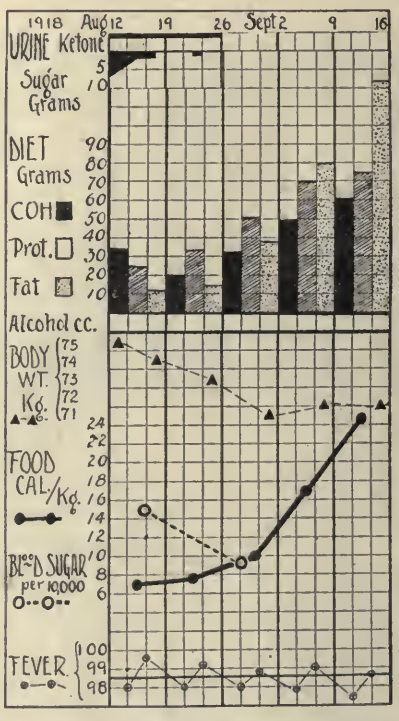


Chart 4 (Case 5).—Arrest of both tuberculosis and diabetes on treatment.

SUMMARY

1. Data presented indicate that the untreated diabetic is more likely to develop pulmonary tuberculosis than when maintained sugar-free by modern dietetic methods.

2. In a series of sixteen diabetic cases complicated by pulmonary tuberculosis showing activity, twelve patients definitely improved during a course of institutional treatment; diabetic symptoms disappeared in all but two cases, observed but a short interval. Tuberculous symptoms improved in the majority of cases.

3. Principles of treatment recommended are the judicious employment of sufficient undernutrition, combined with rest, to maintain the patient sugar-free and control the tuberculosis. Fasting is unnecessary to obtain good results. Ill advised fasting may lead to a fatal outcome. Rest is at least as important as in the treatment of uncomplicated pulmonary tuberculosis.

ABSTRACT OF DISCUSSION

DR. FRANCIS M. POTTENGER, Monrovia, Calif.: Dr. Janney's paper emphasizes two points: first, that the diabetic must not be allowed to develop active tuberculosis; second, if he does develop active tuberculosis he must be cared for in the early stages of the disease. Unless these two principles are regarded, the problem is a very serious one. It is natural that a large percentage of untreated diabetics should develop tuberculosis. It is recognized that latent tuberculous lesions exist in the lungs of a very large percentage of the human race, and that whether or not these foci remain quiescent depends largely on the resistance of the patient. Therefore, it can be understood that if the diabetes increases in severity it will lower the resistance and permit the tuberculous foci to become active. So it is not at all surprising that a much larger percentage of untreated diabetics should develop tuberculosis than those who are treated properly. I think we can safely conclude that if diabetics are treated in such a manner that their disease is held in check, a comparatively small percentage of them will develop tuberculosis. The treatment of tuberculosis in the diabetic is a very serious proposition. It is particularly serious on account of the feeding. Undernutrition, if carried out for a long time, will undoubtedly hasten the tuberculosis. On the other hand, if the steps necessary to the control of diabetes are not taken the tuberculous process will increase in severity. The measures which help one apparently harm the other. The prevention, therefore, of the diabetic's becoming tuberculous is much better than an attempt to cure him after tuberculosis has developed.

Rest should be adhered to very carefully as long as the tuberculous process is active, and, on the other hand, exercise is best for the diabetic patient. In my experience in the treatment of tuberculosis I believe that the one factor that has added more to the chances of cure than any other is the principle of complete rest as long as the tuberculosis is active. This is based on physiologic principles, as follows:

A patient lying in bed, knowing how to relax, lives with the least expenditure of energy. It takes 20 per cent. more energy to sit in a chair quietly than it does to lie in bed. It takes about 50 per cent. more energy to sit in a chair and engage in active conversation than it does to lie in bed quietly, and it takes 100 per cent. more energy to walk around than it does to lie in bed, and if the patient is working it will sometimes require three times the amount of energy that is required by rest. Where it is necessary for the patient to live within his energy output, the factor of rest must always be considered. The necessity of holding the tuberculous process in check is evident from the fact that as the tuberculosis becomes more active and the toxemia becomes greater the diabetes becomes worse; consequently, diabetes complicated by active tuberculosis is very apt to be an acute process.

DR. F. M. ALLEN, New York: Diabetics have died from three main causes: coma, tuberculosis and gangrene. Treatment can nearly always prevent coma if begun in time; gangrene and other complications now still occur almost wholly on account of negligence, because these conditions are almost wholly preventable. What progress has been made concerning the combination with tuberculosis? In the Rockefeller Institute series this combination was encountered in three out of 100 cases, and general comparisons between strict diabetic treatment and an overfeeding policy turned out decidedly in favor of the former. Other experience is in harmony with the points made by Dr. Janney: that the best treatment is undernutrition to the extent needed to control glycosuria and acidosis; that rest should be used in severe cases and only light exertion be permitted in the mild ones; and that more or less arrest of both diseases and particularly improvement in the tuberculosis and secondary infections of the lungs are thus obtainable. Fasting must be used rigorously in some of the worst cases, even for a week or more continuously, and is preferable to continuance of glycosuria and acidosis. In milder cases it is often avoidable, and a low calory diet, consisting of little or nothing but protein, is usually best for improving the diabetes by undernutrition while keeping up strength to resist the infection. More than a year ago a young soldier was received in the diabetic service at Lakewood in the extreme stages of both diabetes and tuberculosis, and by rigid fasting and diet he became able to live six months longer with some actual freedom and enjoyment. In milder cases the gain is correspondingly greater. Nevertheless, these two diseases form one of the worst combinations possible. When either the diabetes or the tuberculosis is at all severe the ultimate prognosis is hopeless. For this reason the strictest treatment is seldom advisable; in particular, strictly normal blood sugar and completely negative nitroprussid reactions in the urine need not be insisted on.

The prolongation of life by from six months to several years, particularly when it is attended by both increase and prolongation of comfort and usefulness, is a goal well worth while. Most of us, however, are not prepared to treat these patients to the best advantage. Most tuberculosis institutions lack the special dietary and laboratory equipment necessary for the proper management of diabetes. As these combined cases are numerous, either tuberculosis sanatoriums should provide themselves with the requisite diabetic equipment in charge of a medical and nursing staff trained in metabolism, or such patients should go to special institutions. Dr. Janney has the aid of the equable climate which attracts so many consumptives to California, and should be able to obtain optimal results. The incidence of tuberculosis among diabetics before the days of diet treatment must have been numerous. It appears that tuberculosis has diminished to a greater extent among diabetics than among the population at large, and that this diminished incidence is due chiefly to better treatment of diabetes. Tuberculosis is generally superimposed as a complication on an existing diabetes, not vice versa; and it is the untreated or inefficiently treated diabetic who is so highly susceptible to tuberculosis. Extremely undernourished and weak diabetic patients show no lack of resistance to most infections, and, perhaps, have an increased immunity to common respiratory infections. Colds and grip at least are surprisingly infrequent among them. They will probably continue to be slightly more subject to tuberculosis than the population at large, but thorough diabetic treatment is going to prevent an enormous number of cases of tuberculosis. The same rule applies to the prevention of gangrene in the old and coma and tuberculosis in the young. Either treat your diabetics thoroughly yourself or send them to somebody who will. When general practitioners no longer allow elderly patients to go along with glycosuria year after year, and when they make early diagnoses in young patients and either send them to a specialist immediately or equip themselves to carry out accurate treatment, the suffering and deaths from all diabetic complications will fall to a fraction of the existing prevalence.

DR. WILLIAM C. VOORSANGER, San Francisco: I am never without one of these cases. It is the worst class of tuberculosis to treat; and although we agree that the diabetes is primary, nevertheless, the tuberculous institution gets the end-result. These people come to be treated for tuberculosis; and the disease which is really killing them is diabetes. The diabetes is naturally a disease of undernutrition, as tuberculosis is; but the treatment of diabetes requires undernutrition and the treatment of tuberculosis requires overnutrition. The treatment of the diabetes combined with rest would unquestionably achieve greater results than any which we can accomplish in any tuberculosis institution; and I would be very much in favor of seeing a metabolic clinic suitably equipped, where these cases can be handled.

DR. LOUIS J. GENELLA, New Orleans: The ease with which anybody can recognize tuberculosis in the diabetic has always impressed me. I think the reason is that there are only two ways of recognizing tuberculosis in the chest. One of them is by some sound transmitted either by or through some alteration in the hydraulics of the chest, whether in the râles or by other fluids in the chest. The other is by the recognition of the bacilli in the sputum. Sputum is easily obtained from the diabetic. If the tuberculous patients were able to furnish us from the base of the lungs a pint of sputum, we could detect tuberculosis in other diseases just as easily and just as soon and just as often as we do in diabetes.

DR. N. W. JANNEY, Santa Barbara, Calif.: An important point which may be emphasized is that the detection of cases of tuberculosis among diabetics is frequently made only by a careful history and physical examination. We are too likely to take a short history, only directed to this condition, and abbreviate unduly the physical examination. I am glad, however, to be able to say that a number of the cases included in the present report were detected in our clinic. I wish to emphasize, also, the matter of the instruction of these patients with regard to their treatment and the nature of their disease as influencing their mode of living. I have been very much impressed, in the treatment of all chronic diseases, with our laxity in this regard. We should try harder to benefit such patients by teaching them diabetic cooking and the necessary restrictions necessitated by their tuberculosis. The matter of sputum I did not touch on. There is less positive sputum found in these cases than is usually the case in tuberculosis. A few years ago it would have seemed foolhardy to attempt to apply the principle of undernutrition to tuberculous patients. Dr. Allen's studies have permitted us to do so with a fair measure of success.

Need for Clinical Research.—The present day conception takes too narrow a view of the field with which medical science has to deal. It assumes that instrumental methods are of necessity the only scientific methods. It has been assumed, because recording and measuring instruments and other methods have greatly advanced such limited fields of medicine as physiology, bacteriology and chemistry, that, therefore, clinical medicine should adopt the same methods. In medicine there are phenomena which the scientific instruments of today, however delicate, can neither register nor measure, and there are methods necessary for the investigation of disease which no laboratory experience can supply. —J. MacKenzie, *Brit. M. J.* **1**:105 (Jan. 24) 1920.

MISTAKES IN ONE HUNDRED THYROIDECTOMIES

WITH DESCRIPTION OF A NEW METHOD OF THYROID CAUTERIZATION IN TREATING EXOPHTHALMIC GOITER *

J. TATE MASON, M.D.
SEATTLE

This series of 100 thyroidectomies for relief of toxic symptoms covers a period of eight years. The series consists of fifty-eight patients operated on for toxic adenomas, with one death, and forty-two patients operated on for exophthalmic goiter, with five deaths. During the eight year period the mortality attending surgical procedure has been markedly reduced. This reduction has been largely brought about by a fuller appreciation of our earlier errors in judgment.

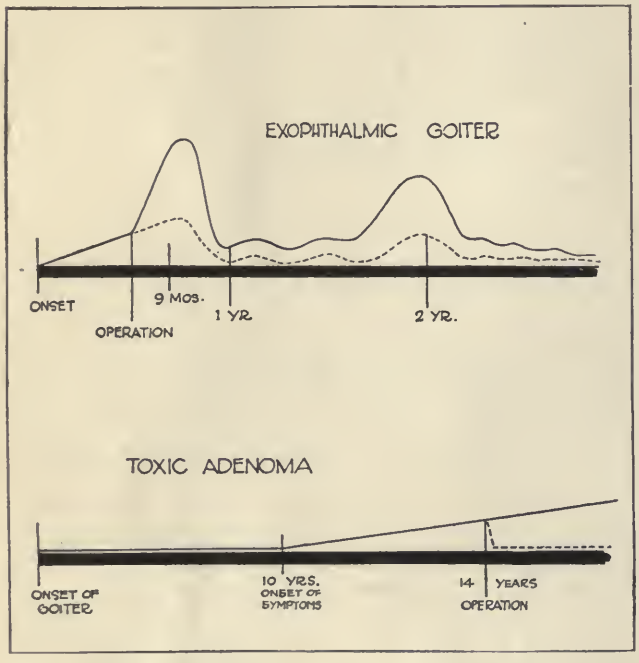


Fig. 1.—Exophthalmic goiter: Base line, normal health; curved line above, intoxication of patient who has not been operated on; dotted line, intoxication of patient following operation. Toxic adenoma: Base line, normal health; line above, gradual increasing intoxication of patient; dotted line, operation.

TOXIC ADENOMAS

Toxic adenomas produce a sequence of symptoms somewhat different from exophthalmic goiter. There is usually no sudden exacerbation such as characterizes exophthalmic goiter, but a gradually increasing chain of symptoms over a period of many years, the symptoms beginning years after the goiter is first noted. Our histories show that the goiters were first observed in the teens or twenties and existed for several years at least before toxicity was observed.

Substernal goiter was found in six patients, all showing thyrotoxic and pressure symptoms. All these cases were adenomatous, which, with other studies, leads us to believe that all substernal goiters are adenomatous and sooner or later become toxic.

Secondary operations were necessary on six patients because of recurring symptoms associated with considerable enlargement of that portion of the thyroid left at the previous operation. Immediate improvement was noted following the first operation for a period averaging two years; then within a few months the symptoms became nearly as marked as before the first operation.

Rest and medical treatment preliminary to operation should be undertaken in bad cases to get the patient into reasonably good physical shape. After such preliminary treatment we remove most of the thyroid gland. These operations can usually be done under morphin and local anesthesia. The patients sit up on the third day and leave the hospital at the end of one week, provided the cardiac condition is reasonably good.

Postoperative results were ascertained by inquiries sent out in January, 1920. More than half the patients answered. All reported themselves cured or improved and as having regained their normal weight. Their general health was vastly better, and they were all greatly pleased with the operative result. In fact, there is no group of surgical cases in which the end-results are more satisfactory than in thyroidectomy for toxic adenomas. Bad judgment was manifestly exercised as we look back at certain cases.

In our fifty-eight cases only one was lost. This death occurred in a Christian scientist who requested operation, but refused the preliminary treatment necessary to get her into good physical shape. The poor judgment in operating under these circumstances was inexcusable.

We operated immediately on a few patients who urgently needed preliminary medical treatment. While only one death resulted, we have had some very stormy postoperative days that could have been avoided.

In the first years we exercised bad judgment in not operating on a few extremely ill patients, usually because of bad hearts. We now regard no toxic adenoma patient as too poor a risk to put at rest under observation, with a view to thyroidectomy. Even the worst cases can usually be tided over a thyroidectomy. If thyroidectomy can be performed there is great subsequent improvement in the patient's general and cardiac condition.

Recurrence of goiter and toxic symptoms seems to indicate that we have occasionally removed too little of the thyroid, so our present tendency is to remove more rather than less. No bad results have followed this plan.

EXOPHTHALMIC GOITER

Exophthalmic goiter, with few exceptions, runs a typical course, as has been recently confirmed by Blackford in studying our cases. Had we known in the early years the usual course of this disease, our mortality would have been lower.

The typical case shows a slight thyroid enlargement with mild toxic symptoms, during several months. The symptoms gradually increase until about the eighth month, when they become markedly worse. During the ninth month there is an explosion of symptoms, commonly known as a crisis. Then there is a period of improvement, with fairly constant symptoms. At about the end of the second year a second crisis occurs, never quite so severe from the standpoint of toxicity as the first. After this there are ups and downs until, after years, the toxicity of the goiter wears out and we have occasionally a cure, but usually a human wreck, suffering from cardiac and general degenerations.

* From the Mason-Blackford-Dowling Clinic.
* Read before the Section on Surgery, General and Abdominal, at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

Early in the disease it may be difficult to make a diagnosis of hyperthyroidism. The basal metabolism rate will be of great assistance at this period, because it assures the diagnosis and enables us to urge surgical interference at the time when most benefit can



Fig. 2.—A piece of cotton is frozen with ethyl chlorid and held on the neck for thirty seconds. A needle can be inserted under this without pain and without the patient's knowledge of what is being done.

be secured. The heart, liver and kidneys have not been damaged; the operative risk is good; the end-results are better than at any other time during the course of the disease.

Unfortunately, if the patient is put completely at rest and given any medicine or none, there is a temporary improvement. This temporary improvement, and the rapid improvement which occurs following the crisis, has caused many drugs to be considered specific; and much valuable time has been lost to patients because this improvement has been credited to the medicine. Thus, good surgical risks have been permitted to become extremely poor ones. Should the patient be allowed to go through the usual course of the disease, there is such marked change in the vital organs that it is impossible by surgical interference to secure more than a relative cure.

The ideal time for operation is within the first six months. The closer we get to the high wave of toxicity, the higher is the mortality and the larger the number of incomplete cures. The patient operated on before the first crisis is eventually much better off than the one who is carried to and then through the crisis by medical treatment and operated on later. However, the patient who is operated on early in the disease will have a slight wave of toxicity at the time of the first crisis; but the severity of this wave will be reduced in proportion to the fraction of the gland removed. If four fifths of the thyroid has been removed, the subsequent crisis will be one-fifth as severe.

In extremely toxic cases it is impossible to tell how much operative interference will be tolerated. As a rule the patient's history and general condition, the pulse and pulse pressure and the metabolic rate give an index to the degree of intoxication. But the shock or acute exacerbation of symptoms following operative procedure is not always as expected. Sistrunk says that of two patients with a plus 50 metabolic rate and other findings about the same, one may stand thyroidectomy well, while the other will prove to be a poor surgical risk. In other words, we have no accurate way of determining the amount of damage already done, although our findings on the present activity of the gland may be fairly accurate.

Postoperative results have been reported by three fourths of our exophthalmic goiter patients. They are all improved, and most of them feel that they are well. Two are still marked cardiopaths. A third is an inmate of a hospital because of degenerative changes dating back to the first high wave of toxicity. These three exemplify the cases which we so often see following exclusive and persistent medical treatment; the hyperthyroidism has disappeared, but the degeneration of vital organs persists.

Secondary operations have proved necessary on five of our exophthalmic goiters. In these five cases there were remarkably severe reactions following thyroidectomy. This observation, with other experience, leads us to believe that there is less reaction if a very large part of the gland is removed.

Lack of judgment as to the best time for interference and the best type of operation on exophthalmic goiter has given us much grief—in fact, we feel that our most serious mistakes have been due to lack of a full appreciation of the dangers of the crisis of the disease and by attempting too much in extremely bad cases. Three of our deaths, even now, appear to me to have been unavoidable, but the other two patients

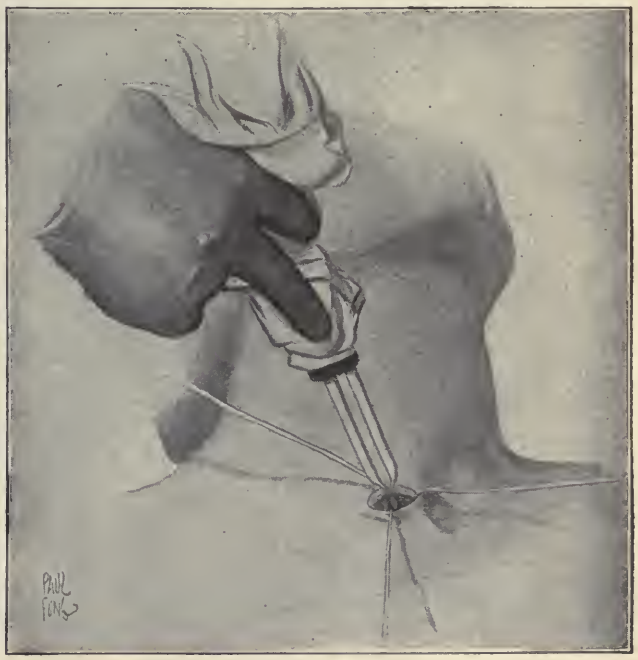


Fig. 3.—The skin, platysma and fascia have been severed. Separation of muscles with blunt scissors.

would now be treated more conservatively. While anxiously watching the first three days of a stormy convalescence, we have often wished that a less complicated operative procedure had been undertaken.

In operative procedures in bad exophthalmic goiter cases we use little general anesthesia. In all such

recent cases, operations have been performed under local anesthesia, a little ether occasionally being used when it becomes necessary to pull on the gland.

There are a few patients who are such poor surgical risks that we wonder whether anything surgical can be attempted. We have kept them at rest and under medical treatment until maximum improvement is attained, and then have depended on the injection of boiling water or ligation of one superior thyroid artery to secure further improvement.

Injection of boiling water may give an idea of the reaction of the patient, but it destroys no portion of the gland. Ligation will often precipitate a severe attack of hyperthyroidism. There is almost always reaction; this is especially true following ligation. The collateral circulation is unquestionably restored within a few days, which leads us to believe that the improvement following is largely due to an increasing immunity to the disease resulting from these high waves of toxicity.

We all agree that the symptoms subside as soon as the gland is safely removed. Then in these bad cases our ideal surgical treatment leading to thyroidectomy should theoretically destroy or remove a small portion of the goiter, with little or no reaction from the patient. Theoretically, this removal or destruction of a portion of the gland should be painless; it should be very simple; it should give no reaction.

Actual cauterization of the exophthalmic gland has been done during the last two years in a few cases, and has apparently approached this theoretically perfect surgical treatment. It is so simple and so painless that it can be performed without the patient's being



Fig. 4.—Cautery being applied to gland.

conscious of what is going on. Reaction has been negligible. The results have been excellent.

TECHNIC AND COMMENT

Local anesthesia is begun by pressure for thirty seconds to the point chosen for the first needle puncture of a cotton applicator frozen with ethyl chlorid. Thus we are able to introduce the first needle without pain. Careful infiltration with procain is then made in the usual manner. An incision 2 cm. long is made just to the inner side of the sternomastoid muscle, in the line where the thyroidectomy incision will later be made. The skin, platysma and fascia are divided in the same direction; these tissues are pulled back with



Fig. 5.—Patient who has had three fractional cauterizations.

small retractors, and the underlying muscles split with blunt scissors. When the goiter is exposed, the retractors are inserted down to the gland. By slight traction the fibrous capsule can be separated from the anterior surface of the gland, exposing the peritoneal-like membrane over a space the size of a dime. The field is made dry. Then an electric cautery, while cold, is passed through the incision down to the anterior surface of the gland. The current is turned on and the cautery rocked slowly from side to side, a piece of gland about the size of a shoe button being destroyed, and causing coagulation of a much larger area. No sutures are inserted, but two or three clips are used for closing the skin. Petrolatum is applied to the outside of the wound to prevent the first dressing from sticking.

There is usually a little muscular soreness at the first dressing, but otherwise we have experienced no local reaction. There has been no hemorrhage, sepsis or sloughing, and there has been no unusual difficulty in performing subsequently a thyroidectomy.

This procedure may be repeated every few days, destroying larger portions of the gland until the patient is considered a safe risk for ligation or thyroidectomy. Further incisions are made 2 cm. apart, care being taken to keep them in the same line as the future collar incision for thyroidectomy. The usual collar incision later will manifestly obliterate all external evidence of the cauterization.

In a few recent cases we have used the fractional cauterization in place of ligation. If this method proves as efficient as it seems to be, it may enable us to do away with the reaction and unsightly scarring of ligation.

Surgical mortality in exophthalmic goiter will always be higher than in other types of goiter, because of the nature of the disease. Yet, by taking these patients through a series of minor operative procedures, it is surprising how many can be relieved without a death.

For years it has seemed desirable that we destroy or remove a small part of the exophthalmic goiter gland in extreme cases, with minimum shock to the patient. In a few cases our method has given results exceeding expectations. We commend it to you to test and to pass upon.

CONCLUSIONS

1. All patients suffering from toxic adenomas or exophthalmic goiter are surgical cases.
2. Preliminary rest and medical treatment are essential to a low mortality risk in bad cases.
3. Poor end-results are usually due to operation undertaken after the onset of permanent degenerations in vital organs.
4. Fractional cauterization of the gland in bad exophthalmic goiter cases has proved efficient, either as preliminary treatment to ligation or in replacing ligation.

DIAGNOSIS AND MANAGEMENT OF INTRATHORACIC GOITERS*

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The following remarks are based on an operative experience with four completely intrathoracic adenomas of the thyroid, one large completely intrathoracic thyroid cyst, and sixty substernal or incompletely intrathoracic thyroid growths, varying in the depth of their locations from almost completely intrathoracic goiters to slightly substernal adenomas or colloid goiters.



Fig. 1.—Course of deviated trachea (indicated by arrows) and intrathoracic shadow.

It is my opinion that too little attention has been directed to intrathoracic goiter, which may be so satisfactorily operated on, and so plainly diagnosed, if its presence is recognized before its growth has reached proportions which threaten life by obstructing respiration, or preclude removal because of the extent of its diameters.

Concealed thyroid growths occur as two types, namely:

1. Those completely intrathoracic, in which no part of the goiter is visible or palpable, or in which just the uppermost part is barely palpable in the sternal notch.

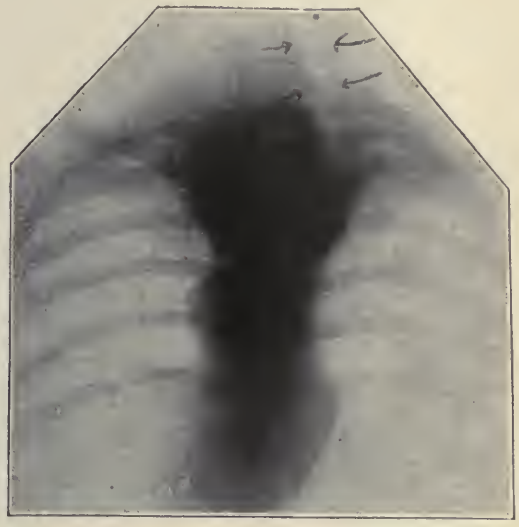


Fig. 2.—Course of deviated trachea (indicated by arrows) and intrathoracic shadow.

This group is made up of adenomas or cysts of the thyroid.

2. Those incompletely intrathoracic, in which the major portion of the goiter is on the neck, and easily visible; its lower pole being substernal, subclavicular or intrathoracic. This type is made up of adenomatous, cystic or colloid goiter; and in connection with the latter (colloid), I wish to remark on the frequency, in my experience, of calcification in this type of enlargement of the portion situated within the chest.

The location and anatomy of the thyroid gland are such that one would expect that all enlargements of the thyroid reaching any size would be directed downward in their growth; whereas, in fact, the growth of such enlargements is commonly directed forward.

The influences that tend to direct the progress of growth in cysts, adenomas and colloid enlargements inferiorly are as follows:

First, the enlargement is constantly subjected to pressure anteriorly by the anterior group of neck muscles—sternothyroid, sternohyoid, omohyoid and sternocleidomastoid. It must be borne in mind that inferiorly no supporting structures offset the results of this anterior pressure, since the inferior boundary of the thyroid is the open upper thoracic aperture; so that when no antagonistic influences are present, such as adhesions of the growth to the trachea, or attenuation on the part of this group of anterior neck muscles, the tendency must be seriously to influence the direction of growth downward.

A further factor favorable to intrathoracic growth is that the thyroid and its contained tumor or cyst ascend and descend with swallowing, a condition which influences the tumors or cysts situated in the lower poles or in the isthmus of the gland constantly to mold for themselves a bed ever enlarging downward

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*Read before the Section on Surgery, General and Abdominal, at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

with the increase in size of the cyst or tumor. In this connection, also, one recalls the fact that the deeper of the two anterior neck muscles, the sternohyoid, is inserted, not into the top of the sternum, but over the top and downward into the posterior surface so that it acts in a guiding capacity in directing growths from above downward within the thoracic cavity.



Fig. 3.—Course of deviated trachea (indicated by arrows) and intrathoracic shadow. Outline of trachea exaggerated by mark.

The foregoing are the principal factors that influence the downward extension in certain instances of thyroid enlargements of the variety already mentioned, and these factors in large part bring about the condition spoken of as Group 2, incompletely intrathoracic goiters, or substernal or subclavicular goiters.

Group 1, the completely intrathoracic goiters, however, require still another influence to bring about their development.

An adenoma or cyst lying free in the thyroid, for example, is directed downward by the influences already spoken of, until it is a true substernal or incompletely intrathoracic goiter. To become then completely intrathoracic, the diameter of the tumor itself must increase; and whether it becomes completely or but partially intrathoracic depends on whether the axis diameter is below the level of the top of the thorax, or above it. If above, it will enlarge upward. If below, owing to the fact that the thoracic cage narrows in approaching its upper aperture, as shown in the illustrations, with increase in axial diameter, there will be, because of the outflaring walls of the chest, a gradual descent of the tumor into the thoracic cavity. This, I believe, is the mechanism of most cases of completely intrathoracic thyroid growths.

If the foregoing assumptions are true, why is it that so few of the adenomas and cysts become completely or incompletely intrathoracic?

Two factors, already mentioned, play a large part in preventing this condition.

The first factor is the great variation in the development of the anterior neck muscles, particularly the sternohyoid and sternothyroid. One who operates frequently for hyperthyroidism—a condition of the thyroid which virtually does not affect this pair of muscles at all—cannot fail to be impressed with the apparent attenuation in these muscles in a great number of cases, and in such cases the important factor of anterior pressure must be largely lost. Clinically, either as cause or effect, one frequently observes attenuation, and often almost entire fibrosis of the longitudinal muscles over the adenomas and cysts of the variety that has enlarged anteriorly.

The other factor is the firm adherence to the trachea of many of the anteriorly enlarging types of thyroid growths, a clinical fact that all thyroid operators cannot fail to have observed—adhesions that are firm and supporting, and doubtless play a considerably antagonistic part toward the influences directing downward growth.

As regards the evidence of intrathoracic goiter, this type usually reveals itself by various degrees of respiratory obstruction, dependent on the progressive growth of the adenoma or cyst. It has been my experience, too, that periodicity of attacks of respiratory obstruction has been quite constant, and it is probably because of these periodic attacks of dyspnea that several of the cases of intrathoracic goiter have been treated for a long time, by various medical and surgical measures, for asthma. The labored breathing that accompanies the attacks simulates asthma in that the respiratory effort is marked; but in no other way does it resemble it.

Roentgen-ray examination demonstrates the substernal shadow continuous above, and as a distinct widening of the upper sternal shadow. A feature that is of even greater diagnostic value is the bowing or deviation of the trachea, as shown by the roentgenogram. This takes place when the adenoma or cyst grows from one side; but when it is bilateral in

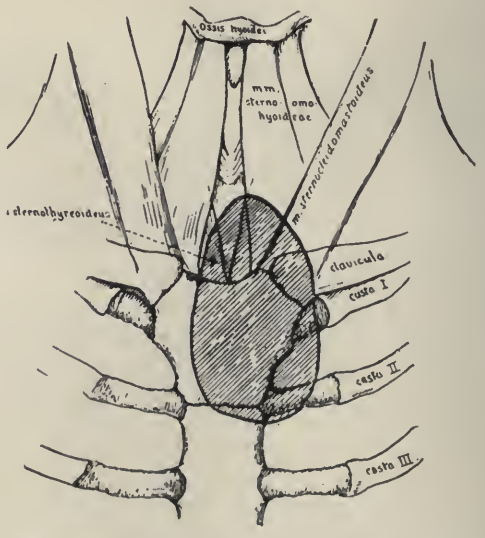


Fig. 4.—Diagrammatic location of intrathoracic mass in relation to the sternum, ribs and anterior neck muscles.

growth—as occurred in one case—the trachea is then not deviated, but collapsed from before backward. When deviation is demonstrated by the roentgen ray, there can be little doubt as to the existence of an intrathoracic growth. On fluoroscopic examination, ascent and descent are of value in differentiating these from other mediasternal growths which do not move. Since these growths are possessed of well-marked capsules,

one may often clearly trace the shadow of the capsule outlines, a blurring of which is said to create a suspicion of malignancy. Clinically, this is to me a proved fact, as tumors of the thyroid whose lines of cleavage have been lost by fusion of their capsules with surrounding structure have in virtually all instances proved malignant in character.

A late involvement of the recurrent laryngeal nerves, as evidenced by the late appearance of a husky

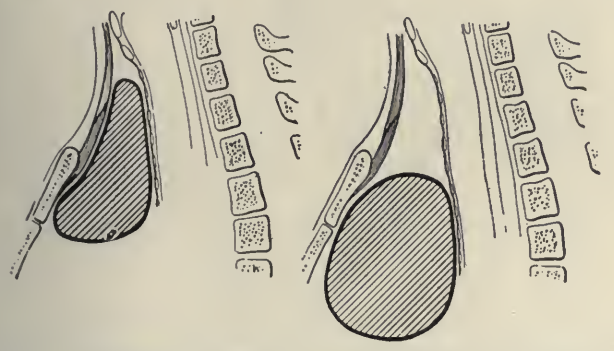


Fig. 5.—Intrathoracic mass shown incompletely and completely, illustrating how, with increased diameter, the upper pole of the mass is drawn into the thorax.

voice, when the tumor has been present for a long time, is also a factor suggesting malignancy.

Intratracheal examination by a trained laryngologist is of great value in the diagnosis of these conditions, as by this means deviation, narrowing or denting of the trachea from pressure may be demonstrated. Not only in the concealed, but also in the incompletely intrathoracic type, this measure has been helpful in demonstrating pressure.

Percussion dulness has been present in all of the completely intrathoracic goiters.

In two of my cases, the upper part of the tumor was just barely palpable below the sternal notch, and this condition is, of course, conclusive evidence of the existence of an intrathoracic mass.

It is assumed that surgery is accepted as the only curative procedure available in this condition, and my remarks in this connection will therefore be limited only to such points as have arisen in my own personal operative experience in dealing with thyroids of this variety.

Perhaps the most essential single feature in the operative procedure is that the intrathoracic mass be delivered as a whole. Piecemeal delivery is to be avoided because of the almost uncontrollable deep bleeding which occurs if the tumor is broken up while still located within the chest. These intrathoracic growths are very vascular within their capsule; but if delivered intact they readily permit of vascular control by ligation of their more or less pedunculated blood supply. Piecemeal removal is also to be avoided because of the possibility of leaving adenomatous masses behind, from which recurrent growths may develop.

Since these deeply seated adenomas and cysts no doubt act as foreign bodies within the chest, they become surrounded by a layer of condensed connective tissue, which is of great value. In the first place, it is most essential to remain within this tissue layer while freeing the tumors, as it forms a barrier against the extension of the infection which accompanies postoperative drainage of the resulting cavity. Furthermore, it establishes distinct lines of cleavage, within which one must remain in order to prevent injury to the recurrent laryngeals and the thoracic duct. Finally, penetration of this layer of connective tissue opens up the possibility of venous oozing within the thorax, resulting hematoma, and possible mediastinitis.

The dissection of these completely intrathoracic masses must be by gently sweeping the fingers around the tumor within the lines of cleavage spoken of above. Attempts should not be made to drag the mass out from above, but rather it should be pried out by pressure from below, when possible.

With increasing experience with these deep-lying thyroids, one becomes impressed with the amount of force which it is possible to apply in prying these masses out of the chest.

If all other measures fail, and delivery is impossible, because the diameter of the tumor is greater than that of the upper thoracic aperture, recourse may then be had to splitting the sternum—a measure which was necessary in one of those cases—by which wedges may be inserted, and the thoracic aperture so widen that delivery is possible. It is a surprising fact that if dissection is gentle and within the lines of cleavage, enormous masses may be delivered with virtually no bleeding, since their blood supply enters from above downward, through the inferior thyroid artery and vein, which become elongated and stretched with the descent of the tumor mass, resulting after delivery in



Fig. 6.—Semidiagrammatic painting of a posterior dissection of the neck, made at the thyroid level, showing the length and course of the inferior thyroid artery which permits it to descend into the thorax with the tumor.

a pedunculated tumor; the tumor representing the portion which before delivery lay in the thorax, and the pedicle representing the elongated thyroid vessels.

The question of anesthesia in these cases is a trying one, since operation is often performed under conditions of complete or partial respiratory obstruction. Of the five completely intrathoracic goiters in my

experience, one was operated on as an emergency, with no anesthetic; one with a local anesthetic, because of almost complete obstruction; one with intratracheal ether, and two with gas-oxygen. In all of the incompletely intrathoracic cases, operation has been performed with gas-oxygen. Of the five patients, four have made completely satisfactory recoveries. The fifth died on the eleventh day of bilateral pneumonia.

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ADVANTAGES OF LOCAL ANESTHESIA IN THYROID OPERATIONS*

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The thyroid is one of the oldest and most generally recognized fields of application of regional anesthesia. The risks of general anesthesia in such operations are serious and numerous. Madelung and Socin, M. L. Harris, James Berry and many others have drawn attention to the advantages of local anesthesia in thyroid surgery. Among the most important dangers of general anesthesia in goiter operations are: (1) postoperative pneumonia; (2) overtaxing of the heart; (3) overtaxing of the kidneys; (4) increased danger through failure to block the sensory nerve paths, resulting in the needless consumption of nervous energy as explained by Crile; (5) injury of the recurrent laryngeal nerve, and (6) asphyxia of any degree.

Advantages in respect of operative technic ascribable to local anesthesia are:

1. More perfect hemostasis may be obtained through the use of suprarenal extract in nontoxic cases.

2. Dissection of the skin flap may be performed more easily and more quickly, owing to thickening of the panniculus adiposus from inhibition of the solution.



Fig. 1.—Safe and convenient inclination of operating table.

3. There is greater facility of delivery of the gland, owing to the elevation of the lobes on the water-bed and thickening of the capsule.

4. By conversation with the patient, the operator has a constant check on such exhaustion producing factors as pressure of instruments on the vital structures of the neck which cause discomfort, if not direct embarrassment of respiration and circulation with asphyxia.

5. The patient can inform the operator at all times whether the head and neck lie comfortably and therefore correctly and safely.



Fig. 2.—Simple method for making first introduction of small hypodermic needle almost painless, blunting sensation by pressure.

6. Local anesthesia enforces gentle manipulation of the tissues, minimizing pressure on the gland with its danger of overactivation of the heat, as proved by Cannon.

7. Postoperative nausea, vomiting and strangling, with the attendant risk of bleeding, are practically eliminated.

8. The patient can take liquids by the mouth immediately after operation, eliminating proctoclysis, which is annoying to excitable toxic patients.

In a relatively small percentage of goiter operations, general anesthesia may present these advantages over regional anesthesia.

1. There is complete relaxation and unconsciousness.

2. Operation under general anesthesia demands the use of less gentleness and patience on the part of the operator than does regional anesthesia.

3. The operation may be performed more quickly under general anesthesia.

These are doubtful advantages. The excitation incident to the induction of inhalation anesthesia is often greater than that which attends operating under local anesthesia. Here the personality of the surgeon is of great importance. One extensively experienced in the use of regional anesthesia will appreciate and utilize the hypnotic influence of the kindly caressing voice, the tranquil manner, and the attitude of frankness and decision which win the confidence of a timid patient. The employment of regional anesthesia develops these qualities in an operator. This, of course, is in the line of the anoci-association plan, with which the name of Crile is so honorably connected.

The patient need know very little of what is going on, if a Kocher screen is used or the simple expedient

* Read before the Section on Surgery, General and Abdominal, at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

employed of placing a wet napkin of gauze over the eyes. Then, too, the preparation of the patient for the induction of local anesthesia is important in this connection. "The terror of the operating room, and the bad impression which the patient receives owing to the observation of everything connected with an operation are removed or at least considerably diminished if a mild narcotic be administered an hour before the operation is begun. Thus the patient's cerebration is sufficiently blunted to external influences as to prevent further excitement."

Concerning the question of the amount of patience and forbearance which regional anesthesia requires of the surgeon, is it important that the tax on the surgeon is less with general anesthesia? If this is true, is it not fair to say that goiter surgery should be left to surgeons of patience and forbearance as well as technical skill? However great the virtuososhiip of a surgeon in brilliant technical performances, he must lay great stress on the qualities of patience and cool judgment in goiter work.

A great and worthy leader of American surgery said recently that he had no time to perform suprapubic prostatectomy under local anesthesia. Should not the poor "prostatiker" with crippled heart and kidneys be turned over to one of reasonable skill who has enough time to provide the safeguard given by regional anesthesia?

Injury of the recurrent laryngeal nerve should rarely occur in local anesthesia. The surgeon, talking with his patient, can know at once when this nerve is compressed or otherwise traumatized. An interesting experiment under local anesthesia consists in producing hoarseness by compressing the recurrent laryn-



Fig. 3.—Infiltrating all superficial structures through one puncture.

geal nerve and relieving it at once on releasing the pressure. Traction on the recurrent laryngeal elicits hoarseness and gives timely warning.

Likewise in goiter surgery, the extra burden imposed on the lung, heart and kidneys by general anesthesia must be viewed with a due sense of its seriousness. Suffice it here to quote Sistrunk, who says that in toxic cases, "with each crisis the damage to vital organs, especially the heart, liver and kidneys, increases until the patient finally suffers more from the symptoms produced by these degenerative changes than from the disease itself." Surgeons who have employed local anesthesia extensively are, I think, as a rule convinced that certain shock producing assaults on the cord or



Fig. 4.—Imbibition of panniculus adiposus facilitates dissection of flap.

brain may be inhibited to a large degree by its use. This is especially true if the patient is protected from frightful and irritating influences before and during the operation, and if the pain centers are benumbed with morphin.

After regional anesthesia, one does not observe the depression that follows general anesthesia. Briefly, it seems fair to say now that accumulated evidence has established the value of regional anesthesia in the prevention of shock, which is of more avail than its treatment. One need hardly reiterate that, in compliance with the theory af anoci-association, the prevention of pain after operation should receive interested attention.

If the operating is done under regional anesthesia, the surgeon will be reminded that lying in one position on a hard table means discomfort and pain. He will, perhaps be reminded by the patient, if it does not occur to him, that a pillow in the hollow of the back and a soft comfortable pillow under the head and neck have the effect of reducing the traumatism incident to the operation. He will be taught respect for the nervous system of the patient, and will eventually make regular application of Crile's admonition that general anesthesia does not cut off the painful afferent impulses, but only inhibits their physical interpretation.

It is quite well known that the addition of suprarenal extract to the procain solution in nontoxic cases not only lengthens the period of anesthesia produced by procain, but also makes possible a much more complete control of hemorrhage. Fewer artery clamps are required, and this is of importance since the pressure of clamps on the neck, by their weight and traction, may be the cause of the only discomfort felt during local anesthesia.

In this connection it may not be amiss to recall the lessons of Kocher relating to provisional ligation in goiter operations. Artery clamps should not be left on the neck during the operation without good reason. No time is lost if the vessels are tied as soon as they



Fig. 5.—Perineural anesthesia of poles.

are grasped by the artery clamps. They must be tied eventually, so why permit the wound to be cluttered with the clamps during the operation? The clamps which provide for bloodless division of the ribbon muscles can be removed after interlocking ligatures to the number of four or five on each side are applied under the clamp jaws. If the ends of these ligatures are left long, they may be employed as retractors dur-

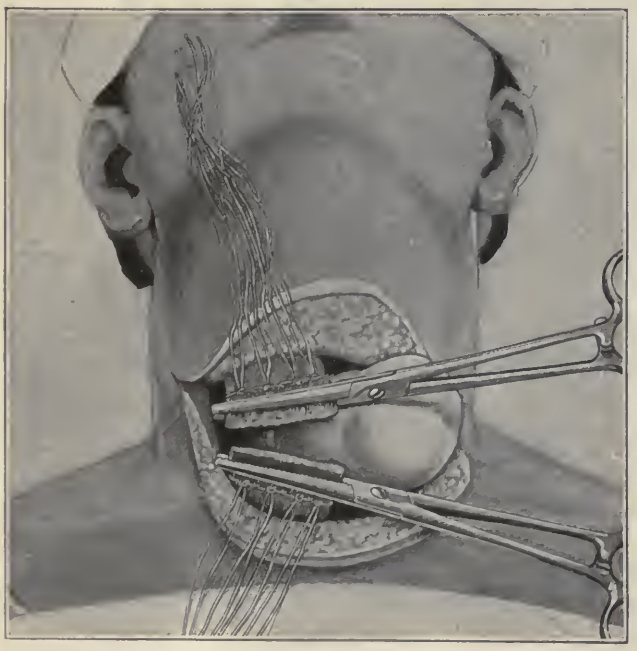


Fig. 6.—Hemostatic sutures in ribbon muscles under forceps jaws make possible the removal of the forceps, freeing the field of all clamps.

ing the operation, and used to unite the cut edges of the muscles on completion of the operation.

Ochsner admonishes that surgeons who are inclined to be violent in their manipulations should perform thyroidectomies under local anesthesia, with its enforced gentleness, since there is no doubt as to the likelihood of increased postoperative perversion of thyroid function if the tissues are severely traumatized.

The loss of blood seems to have the same effect. It is consequently wise always to clamp each vessel between two hemostatic forceps, cut between these and ligate. In this manner the entire operation may be performed with the loss of almost no blood, and therefore with greater facility. The tissues at the close of the operation will not be saturated with blood, the absorption of which, according to Kocher, increases the likelihood of hyperthyroidism.

It should not be embarrassing to the operator if the patient converses with him, informing him perhaps during the course of the thyroidectomy that traction on a lobe is producing dyspnea, or that the pressure of a hand or of the instruments is causing discomfort. It is one of the valuable advantages of local anesthesia that the patient participates in the matter of protecting himself against unnecessary trauma.

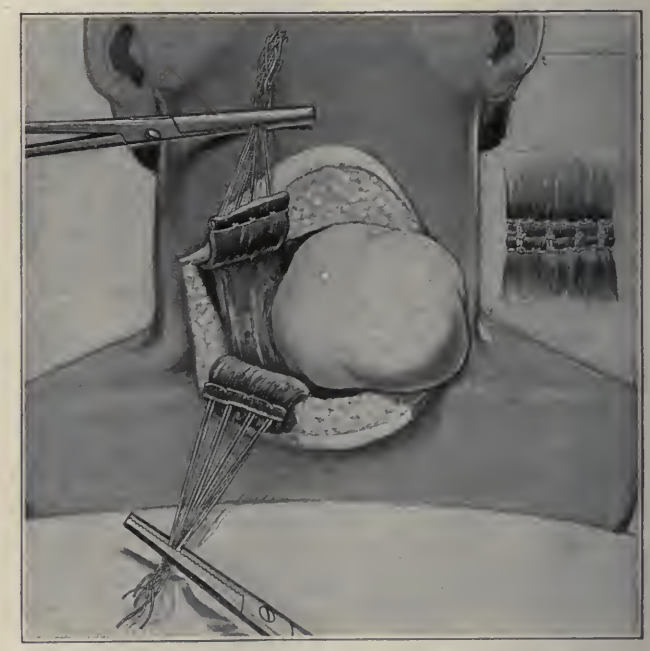


Fig. 7.—Hemostatic sutures in ribbon muscles used as retractors.

Local anesthesia makes its appeal to surgeons who are willing to consider all of these apparently slight factors of precision and gentleness, to proceed with the caution of a serpent and the patience of Job. It is not a proper field of activity for those who still lay stress on the now discredited surgical showmanship.

Very important is the positon of the patient on the operating table. "Let the patient be the judge to tell us whether the head lies correctly. It is not necessary to be guided by the stridor; the patient can say whether the neck is pressed upon or too greatly angulated." [1]

For what good reasons are the head, neck and trunk elevated in thyroid operations? Lowering the head augments the blood supply to the brain and also to the lungs and heart. A position of slight elevation of the trunk, with the neck curving gently backward, is perhaps one of greatest comfort to the patient, and of value for the vital reason that in this position the

1. Schwyzer, Gustav: Diagnosis and Surgical Treatment of Intrathoracic Goiter, J. A. M. A. 74: 597 (Feb. 28) 1920.

heart and lungs are less liable to overtaxation. Thus it is of importance that the patient can indicate to the surgeon that he or she is made panicky by an unfavorable position.

If a 1 per cent. solution of procain-epinephrin is injected copiously into the subcutaneous tissues and muscles, there will of course result a marked imbibition and thickening of the subcutaneous panniculus. After becoming accustomed to this, the surgeon will not be disturbed in any way by this resulting imbibition; on the contrary, it renders the freeing of the skin flap more easy and more expeditious. Likewise, deep injections at the upper and lower pole not only establish perinueral or infiltration anesthesia in the painful areas along the sides of the larynx and trachea, but they greatly thicken the loose weblike fascia external to the capsula propria, which thickening really facilitates freeing and delivery of the lobes.

Postoperative observation of the enormous material of the Mayo Clinic indicates that the degree of improvement that follows thyroidectomy depends to a considerable degree on the extent of damage to the vital organs at the time of operation. If the damage to organs has been extensive, it is impossible to restore the patient to normal health. Here again we are reminded of the great importance of protecting the heart, lungs and kidneys against overtaxation. As a factor assisting in the restoration of the normal metabolic balance following the operation, it is here submitted that the use of local anesthesia offsets to some degree the effects of the increased metabolism by bringing up the rate of food intake in the first few days following the thyroidectomy. The patient can take liquids or even house diets, beginning at once after the operation. In dehydrated patients, water or other fluids taken by the mouth render unnecessary the



Fig. 8.—Herf clips close wounds quickly and precisely.

employment of proctoclysis which, in toxic thyroid cases, is as a rule more or less exciting.

If the patient is not permitted to take too much water by the mouth during the operation, there is little likelihood of vomiting either during or after the thyroid operation, and this is of practical interest as postoperative bleeding is as a rule due to postoperative vomiting and strangling.

Thus it is seen that the elimination of vomiting and the administration of food by the mouth immediately after operation have a bearing on the important ques-

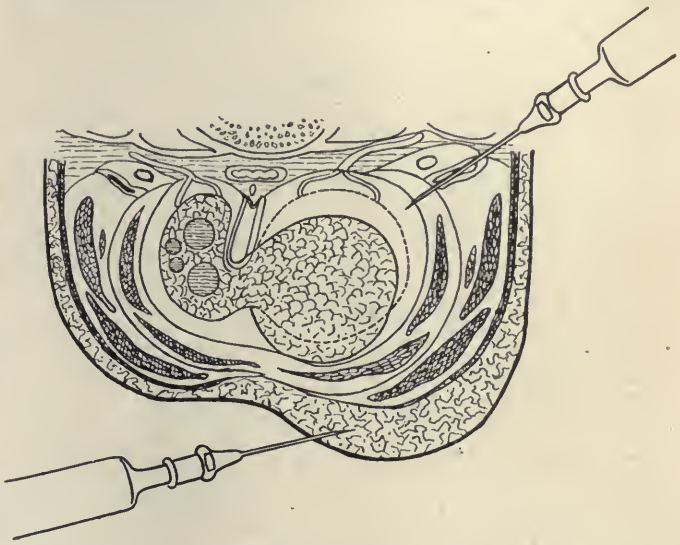


Fig. 9.—Diagram showing thickened panniculus and water bed under lobe caused by imbibition, such imbibition facilitatng the turning back of the skn flap and delivery of the gland.

tion of metabolism. In conclusion, it may be said that, whereas one perhaps should not take the supercilious position that those who do not succeed with regional anesthesia in thyroid surgery fail because of lack of skill or understanding, it may nevertheless be fair to say that considerable experience must precede efficiency in employment of regional anesthesia, that the use of suggestion or hypnosis secured by an appropriate personality on the part of the surgeon and proper environmental influences is desirable, and that much caution and patience on the part of the operator are indispensable.

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AN EMERGENCY TECHNIC FOR THYROIDECTOMY*

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The admirable Halsted technic, based on anatomic grounds, or some modification of it has up to the present been employed whenever a thyroidectomy has seemed indicated. It has fulfilled all requirements when the patient has been carefully chosen, with an assured margin of safety; still, a number of operative experiences during the last year have shown me that the indications for thyroidectomy may be very considerably broadened by the employment of a technic which is based on pathologic principles and is calculated to make the minimum demand on the patient's strength. To this end, one waives every consideration of a cosmetic nature (although it may be stated in passing that the visual end-result is not so bad as to disappoint greatly the patient, especially if he is a man who wears a collar of ordinary height, or a woman whose matrimonial question has been settled), the sole

* Read before the Section on Surgery, General and Abdominal, at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

aim here being to destroy the greatest amount of thyroid tissue possible, which could not be accomplished without risk to life if done in the usual manner.

This may, then, for want of a better expression, be termed an emergency technic: 1. It contemplates the most direct, rapid and bloodless approach to the tumor. 2. It prevents the tissues being contaminated by toxic thyroid juices. 3. It saves the time ordinarily spent in ligating vessels and in closing the wound. 4. It eliminates the accidents which not infrequently cause loss of blood while ligating the numerous vessels divided. It naturally follows that shock is rendered unlikely, because, as will be seen, the operation is short, the efferent nerves are blocked, and very little retraction is necessary. Likewise, postoperative hyperthyroidism is not to be expected because absorption cannot take place, the wound being left wide open (absorption, of course, is only a partial explanation of postoperative hyperthyroidism). This phase of the subject, however, cannot lightly be dismissed by one who has seen postoperative temperature invariably drop when fluid was found secondarily in cases in which no change in the central nervous system had become manifest.



Fig. 1.—Site of intended incision marked before infiltration is commenced.

In the past, the great danger of thyroidectomy for toxic patients has consisted in our doing too much and thus bringing about a fatal postoperative toxic condition. In consequence, we have gradually been driven to primary ligation for most of the serious cases. In these cases, then, it may not be out of order to attempt primarily a form of thyroidectomy, the gravity of which has been reduced to something like that of ligation. Speaking in general, in the past we have divided our patients into three classes: (1) the safe risks, (2) those who were rejected, and (3) the doubtful class which contains most of our unpleasant postoperative surprises. Nothing need be said here about the first group, those that are definitely fit for any form of operation, or for the second, on whom no one would do more than a ligation, if even that. But this emergency technic is intended for the doubtful patients who seem too good for ligation, but in whom no positive guaranty of safety can be given after a classical thyroidectomy has been done. No less an authority than C. H. Mayo says that ligation is of value only in the exophthalmic hyperplasia type with demonstrable vascular disease; hence the toxic adenomas indicate a thyroidectomy only, if operation at all. Many of these patients are so ill that the classical Halsted operation is highly dangerous to them.

The preparation for operation does not vary materially from that generally used. We rest these patients, feed them, try to improve the failing circulatory apparatus, and ward off an impending acidosis by the administration of morphin and fluids. No operation of any kind is justified in a person with persistent vomiting.

As soon as the patient has reached the maximum of improvement and becomes sufficiently well acquainted with the surgeon to exhibit any degree of confidence in him, she is taken to the operating room, in full possession of her faculties, without any preliminary morphin for fear of vomiting on the table, the head of the table is slightly elevated, and the face is turned away from the operator. The site of the intended incision is now marked (Fig. 1) just behind the anterior border of the sternomastoid, care being taken not to run down within 1 cm. of the clavicle (Fig. 2), else an ugly scar will result.

A diamond-shaped area is infiltrated about the growth through two needle punctures (Fig. 3), one at each end of the mark just mentioned. It suffices to infiltrate the subcutaneous fat and the muscle planes with 0.5 per cent. procain. As such a patient must under no circumstances be kept lying long on the table, it is well not to wait for a nerve block, but to infiltrate the skin where marked and proceed with the operation just as quickly as possible after she is placed in position.

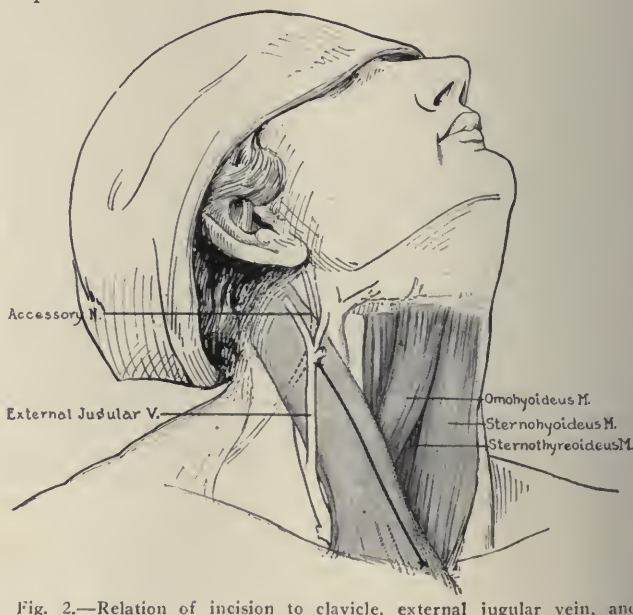


Fig. 2.—Relation of incision to clavicle, external jugular vein, and spinal accessory nerve.

This form of incision has a number of advantages. It allows one to approach the tumor by the most direct route; it encounters vastly fewer vessels than does the "collar incision;" it avoids the extensive separation of tissue planes as contemplated in making the Halsted flaps; it is in a line with the axes of the important deep structures; it obviates retraction to a very considerable extent, and it insures that the resulting ridge-

like scar will lie on a preformed prominent ridge, namely, the sternomastoid muscle.

As soon as the skin incision has been made, sutures (Fig. 4) are introduced to be tied later, and then held out of the way by an automatic spreader (Fig. 5) which engages in the angles of the wound.



Fig. 3.—Infiltration in two planes about tumor; also the skin in line previously marked.

The platysma incision corresponds with that in the skin, this unimportant muscle being the only one whose fibers are divided in any but a line parallel to them. After gentle retraction (Fig. 6) of the lower sternomastoid outward, and of the opposite upper wound lip inward, the ribbon muscles are split longitudinally (Fig. 7) over the most prominent portion of the growth below (Fig. 8). It will usually be found that the upper pole and superior thyroid vessels lie directly under the upper angle formed in the divided ribbon muscles, thus greatly facilitating the further progress of the operation. It will be noticed just here that the gentlest possible retraction gives all the room for approach that is needed, quite contrary to the experience that all of us have had when operating through a midline ribbon muscle incision.

The exposed lobe is now caught with two or three light intestinal clamps and gently lifted. At this point the whole defect is flooded with alcohol (Fig. 9) to seal up all tissue spaces against absorption of toxic material to be liberated in amputating a moment later. As a further guard against this accident, we often pack the furrow around the gland with a roll of dental cotton, provided there is room enough, which is by no means always the case.

The upper pole is now divided (Fig. 10) and the lobe gently drawn toward the angle of the jaw, while capsule and goiter substance are divided after clamping from above downward (Fig. 11). In this way it becomes surprisingly easy to slip out the lobe gently with the minimum of work about the lower pole, and without roughly luxating the gland with the finger, provided there is no outspoken parathyroiditis. By working in this way, the procedure is rendered practically bloodless and the patient disturbed not at all. In some instances the stump has been cut off with the cautery, thus destroying thyroid juice as liberated, and at the same time sealing over denuded surfaces. It must be admitted, however, that this may be an unnecessary refinement.

None of the clamps on thyroid substance are ligated in order to reduce tissue necrosis to the minimum. No attempt is made to whip over the cut thyroid surface, fearing retention of toxic products and consequent symptoms. In other words, *all of the clamps are left on the stump* (Fig. 12), although in most instances we have ligated the few which were required to control bleeding from the other subcutaneous structures. In one instance a total of fourteen clamps was left in place; in another, twenty-six; in another, thirty-four, and in one other still a larger number of which no count was made. The instruments we employ are the lightest that are adequate, namely, the clamp designed by Dr. Halsted, and used commonly in his clinic at the Johns Hopkins Hospital. The instruments are bunched together by a mass of dressing wrapped about them in such a way as to bring pressure to bear on the skin of the neck, and on their handles (Fig. 13), thus tending to lift their weight upward instead of allowing them to rest on the floor of the defect. The whole bundle is now covered with cotton, and a bandage applied around the neck and under the arms.

It goes without saying that a wound held open in this manner cannot possibly retain the fluids forming in it; hence the most complete drainage is secured. The patients who have been operated on in this way have complained of sore throat in just about the measure we see it in other forms of lobe resection. I will say that they almost universally have difficulty in swallowing until the moment when the clamps are released, then they are suddenly freed from this minor discomfort. It will be recollected, in passing, that many a person whose neck has been sewed up in the ordinary way swallows with difficulty for a day or two. Postoperative bleeding and pain have resulted from the removal of gauze, which in some of the earlier

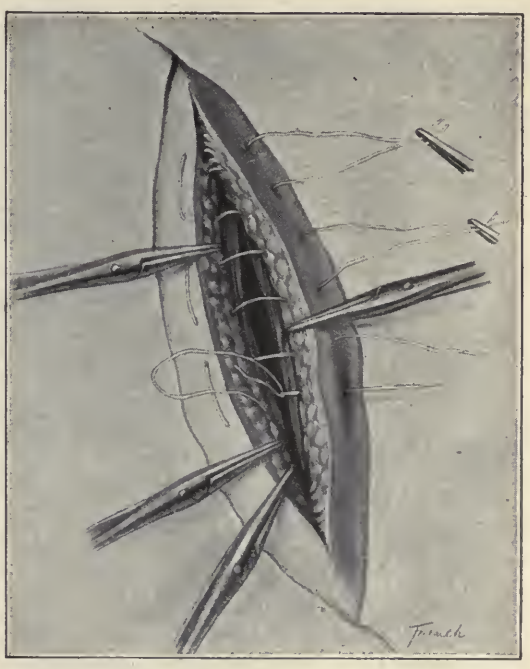


Fig. 4.—Introduction of skin sutures.

instances was packed in the spaces left between the clamps. It is therefore deemed inadvisable to use any packing at all when the clamps are left in place.

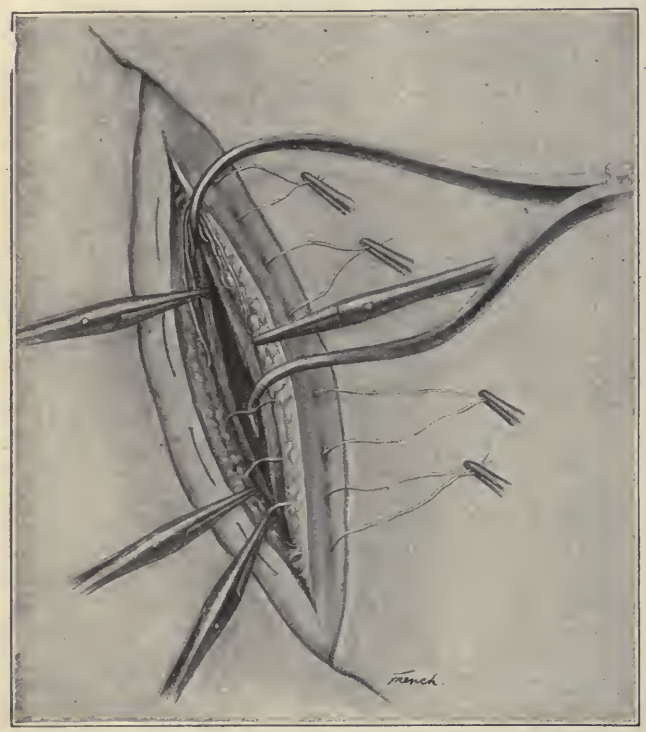


Fig. 5.—Sutures held out of way by automatic spreader.

The after-treatment consists in giving one-half grain of morphin (the tolerance of these patients is always high on account of high metabolic rate) on leaving the table, so that severe after-pain may be avoided. It is customary to repeat this dose as often as the

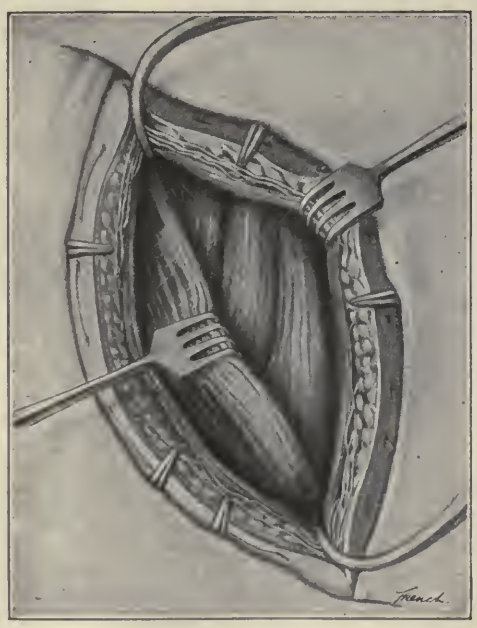


Fig. 6.—Retraction of sternomastoid to expose ribbon muscles.

patient's respiration goes over 20, else restlessness may have the effect of wearing out a damaged heart. We have used Crile's ice pack, applied on a rubber sheet over a thin cotton blanket, laid on the patient's night dress. This invariably reduces a high temperature at about the rate of 2 degrees an hour, and does much to decrease restlessness. We have for many years been in the habit of turning an electric fan directly on all of these perspiring patients, with very much the same result as one gets from the ice pack, having been under the impression that the metabolic rate increases about 10 per cent. with each degree of fever. When there is vomiting or inability to swallow, water is always pushed in the form of hypodermoclysis.

The original dressing should not be touched until the postoperative storm, if there be one, is over. Strange to say, these patients do not complain of the weight of the clamps; at least they have not complained up to a number of Halsted clamps as high as thirty-four; hence there is no reason to touch them during the first twenty-four hours when, if the patient is quiet, it is our custom to unlock all but those on the superior thyroid and let them fall off in the next few hours by virtue of their own weight. This causes no

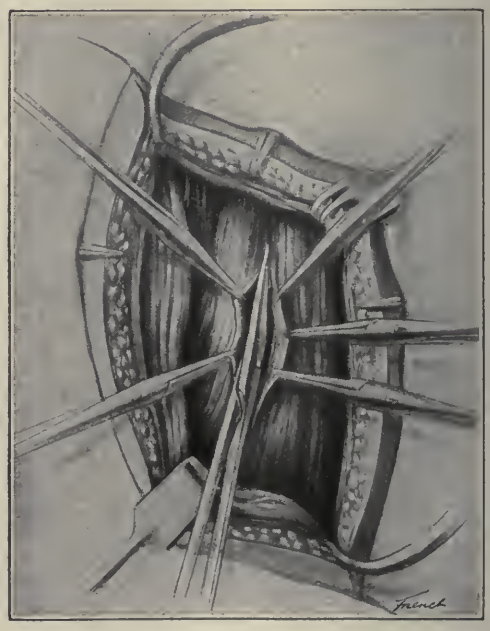


Fig. 7.—Ribbon muscles split longitudionally.

discomfort, provided it can be done with the utmost gentleness. The wound is usually found full of serum, when the clamps are removed. This is expelled by tissue shrinkage, which follows the removal of the instruments, and the defect is practically obliterated when the skin stitches are tied at the expiration of the second twenty-four hours. Some little discomfort always attends this act, but it is distinctly less than that caused by the application of skin wound clips; however, no local or other anesthesia has ever been required at this time. One is surprised at the expiration of forty-eight hours to see how little need there is for any form of skin closure. The application of adhesive plaster would answer all requirements were it not for the tendency that the lips of such a skin wound show to roll inward.

It will be noted that the operation is over as soon as the lobe has been amputated, a fortunate circumstance when it is recalled that the resistance of a toxic patient under local anesthesia is about gone when this stage of the thyroidectomy has been reached. This practical observation tends to discount the fact that it is *the-*

oretically far from ideal to leave a large number of clamps in any surgical wound. One who entertains the idea for the first time might be justified in thinking of shock, postoperative discomfort, possibility of infection and cosmetic deficiency. In practice, the procedure has not worked out thus; on the contrary, the operation has been greatly shortened, perfect drainage has been secured, and there has been none of the hemorrhage that occasionally complicates the tying-off of many clamps. In some instances the undertaking is much better borne than was anticipated in the beginning, and one is justified in going further and ligating in the ordinary manner, then packing the defect with gauze or with soft rubber, which we consider better. However, the gain is very slight, excepting so far as surgical traditions are concerned. The longitudinal slit in the ribbon muscles tends to close spontaneously as soon as their function is exerted. The sternomastoid slips forward to cover the defect in

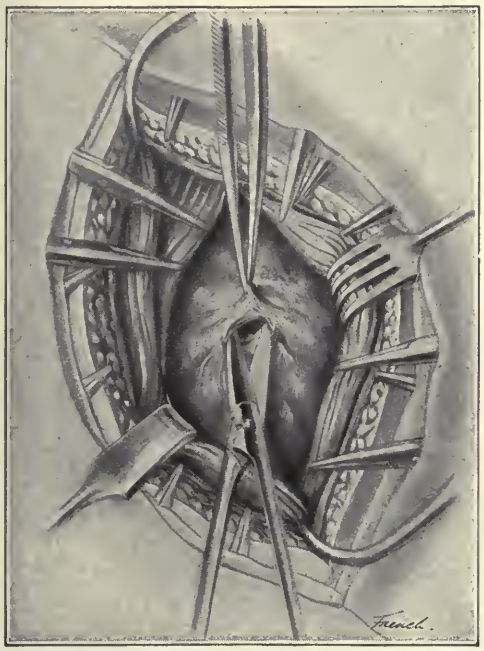


Fig. 8.—Tumor exposed.

them; the thin platysma defect can be disregarded, while the skin is closed well enough for all practical purposes by the tying of the few sutures which were introduced at the operation and left long for that purpose.

Limitations on time and space prevent one's going into details of clinical histories. I can state, however, that the early postoperative period has been rendered so comparatively free from toxic symptoms by this technic as to make one feel justified in resecting one lobe on a considerable percentage of patients who were formerly not thought able to bear the operation as performed in the commonly accepted manner.

410 Metropolitan Building.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. MASON, LAHEY, EASTMAN AND BARTLETT

DR. HENRY S. PLUMMER, Rochester, Minn.: Dr. Lahey's general analysis of the goiter situation was in line with my views. A basal rate of plus 15 or 16 can be accepted as meaning that the case is one of hyperthyroidism with adenoma. That does not apply to exophthalmic goiter. The risks of goiter are evident largely in the case of patients who have been hyperthyroid for more than a year. We must learn not to wait until the patient is a bad surgical case before we

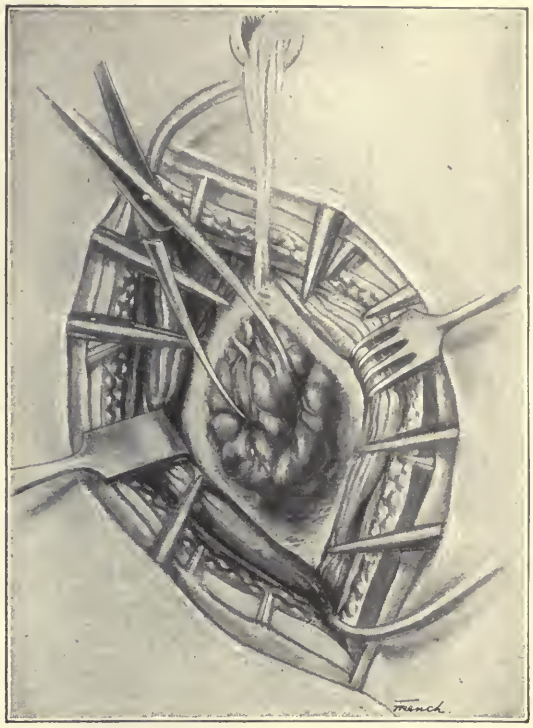


Fig. 9.—Defect flooded with alcohol to seal up tissue spaces.

operate. Sixty-five per cent. of the cases come to us in the first year. A relatively small percentage of the mortality comes from that 65 per cent. Postoperative reaction,

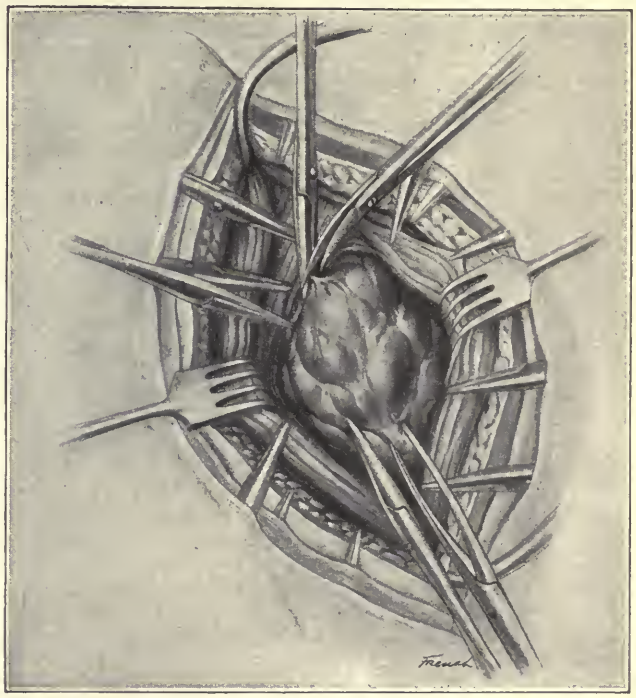


Fig. 10.—Upper pole divided.

the so-called postoperative thyroidism, raises the question whether a patient can stand this sudden discharge of thyrotoxins into his system. We do not even definitely know the crucial point on which this postoperative reaction depends.

Until we do know that, we will not know the line of attack which will bring the highest benefit.

DR. EMIL GOETSCH, Brooklyn: Dr. Mason brought out some interesting points with regard to partial reduction of hyperthyroidism. I should like to know why he prefers the



Fig. 11.—Stump divided from above downward.

repeated use of the cautery instead of ligation. The theory of partial reduction of hyperthyroidism consists largely in the destruction of gland substance or in reduction of its vascularity. After all, secretion of the gland depends on its blood supply. I cannot quite see why it is preferable to redevelop the operations which are more mutilating. I think that repeated cauterizations are less advantageous than single, quick ligations. With regard to the neatness of ligation, I have never been able to convince myself that the cautery is preferable. Dr. Lahey has called attention to the very definite aid which the roentgen ray affords in the diagnosis of adenoma cases. I have made use of the roentgen ray in some cases and have been able to confirm our suspicions that a deep adenoma was present. With regard to the origin and mechanism of these intrathoracic growths which he mentioned, occasionally a growth of this kind seems definitely to have its origin in accessory thyroid tissue. In certain instances there is no connection between these growths and the thyroid. In one instance its structure was the same as a demonstrated accessory thyroid at a higher level in the neck. The new tumor had an independent blood supply. It is well worth remembering this possible origin of these accessory tumors. In one case of acromegaly a large colloid goiter originally was situated in the neck, but with the enlargement of the shoulder girdle, this tumor descended into the mediastinum and was not even palpable above the jugular notch. If the psychic element in thyroid operations is so important, particularly in exophthalmic goiter, as claimed by Crile, I cannot understand why one should resort to local anesthesia in exophthalmic goiter cases in which procedure the psychic element certainly is present to disturb the patient. I have repeatedly noticed a preliminary pulse rate of 140 or 160 fall to 110 or lower under the anesthetic and remain so during the course of the operation. This is evidence of considerable value to show that as far as the stimulating effect on the pulse is concerned the patient is apparently better off under a simple general anesthetic than under a local anesthetic. As far as the pulse may be considered an index of toxicity, there is less of the latter under nitrous oxid-oxygen anesthesia than when a local anesthetic is employed.

DR. EDWARD G. JONES, Atlanta, Ga.: If some medical men are inclined to discredit thyroidectomy and to criticize early operators in this field, they ought to keep in mind that these pioneers had to grope their way carefully to discover the proper margin of safety. These early operators were justified in their caution to remove too little rather than too much thyroid tissue; so that if they had to operate on some patients a second time this circumstance is not a reflection on their judgment. I have never seen a patient who suffered from having had too much thyroid tissue removed at operation; though I am well aware that there is a line of danger, and that such a statement ought to be made with circumspection. Patients have not come back for so-called recurrences. It is true that in some patients I have left one side because it seemed bad judgment to tax them with a double resection. These patients ought to have had a second operation, but usually declined it because of the improvement gained from the one sided operation. Dr. Bartlett's procedure is a commendable effort to provide one more way of handling satisfactorily the class of patients for which he recommends it. It is doubtless true, as he says, that this operation does some violence to cosmetics, and is a little iconoclastic as to the traditions of surgery; but we must remember that the individual under consideration is not much concerned about a scar in the neck, and takes only an academic interest in the traditions of surgery. Anociation should begin the very first time the patient comes under observation, and be continued throughout the whole care of the patient. Goiter is relatively rare in the South. The incidence in the colored race is undoubtedly smaller than in the white race. A nontoxic goiter does not usually compel an individual to consult a physician, and the negro does not do it. One third of our colored patients had exophthalmic goiter.

DR. A. J. OCHSNER, Chicago: You will find a great deal of satisfaction in following the advice that Dr. Bartlett has given in a certain series of cases similar in character to those which he has described. Most of you will share his doubt about the wisdom of leaving on the clamps. The amount of shock avoided by the few moments of taking off clamps will

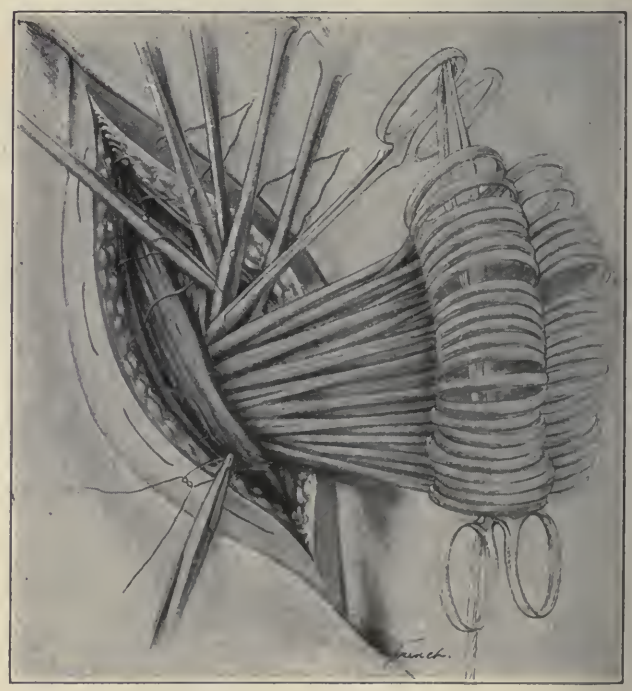


Fig. 12.—Clamps left in place on superior thyroid and stump.

usually be greatly multiplied by the annoyance of leaving them on. We have compared hundreds of cases operated under local and general anesthesia, and, as a rule, the patient operated on under local anesthesia is less badly off on the day after the operation than the one who has been operated on under general anesthesia. However, we have found that

by performing gastric lavage with water at 105 F. immediately after the operation in cases in which general anesthesia was used, these patients are almost in the same condition afterward as those that have had local anesthesia. As a rule, we perform all goiter operations under local anesthesia at the present time, provided there is no reason why we should not do it, that is, if the patient is not excessively afraid of the local anesthesia. With regard to substernal or subclavicular goiters, I wish to refer to a procedure which you may find convenient to employ at some time. In a few of these cases, before I made use of this precaution, the patient gave a sharp cough after the tumor had been delivered and burst the pleura which caused me much worry. Now I immediately place a moist sponge in the space produced when the goiter is lifted out of its substernal or subclavicular location and then go on with the operation. The explanation which Dr. Lahey has given about the goiter being forced down by the strong anterior muscles is an excellent one. In cases in which the goiter was poststernal and post clavicular we have found that usually the anterior muscles are especially heavy, and it has been so in many of these cases in which in the earlier times we considered the goiter too small to give rise to the symptoms which existed. I believe every close observer has confirmed what Dr. Mason said about the late conditions of the heart due to hyperthyroidism. Landstrom brought out this fact fifteen years ago, that degeneration, once it has occurred in the heart, will not disappear, and the advice Dr. Mason has given is absolutely correct. In order to avoid that degeneration we must operate early.

DR. ANDRE CROTTI, Columbus, Ohio: I have operated in more than 1,000 cases of goiter of all forms. In the last 500 cases, the death rate was about 2 per cent. The anesthetic used was ether-oxygen. In dealing with intrathoracic goiters, one must have a complete knowledge of the anatomy of the region; one must be sure to locate the right plane of cleavage; otherwise only disasters will be encountered. No attempt ought to be made at delivery of an intrathoracic goiter before the upper pole has been entirely ligated, cut off, and the whole lobe isolated as far down into the thorax as possible. This procedure is very important because in many instances the connection of the intrathoracic with the cervical lobe is a very thin one. It may be the only hold that one may have to pull on the goiter. When the time of delivery is reached, go very gently around the goiter and separate it from the mediastinal organs, especially the blood vessels, and only then shall we attempt the delivery of the goiter itself. Now, either the goiter is small enough to go through the superior opening of the thorax and then the delivery will be very easy, or it is too large and at that critical time of the operation an unpleasant complication occurs, namely choking. So far as anesthesia is concerned in those cases, one must be guided entirely by the condition of the goiter and of the patient. If the goiter is accompanied with bronchitis, catarrh, dyspnea, or marked compression on the trachea, then local anesthesia ought to be used. It is in these cases that choking spells are apt to occur in the early part of general anesthesia and one must be prepared to meet the situation. In the majority of cases, however, ether or nitrous oxid will do well.

DR. MALCOLM L. HARRIS, Chicago: Operations on the thyroid under nerve blocking is one of the most satisfactory procedures in the field of local anesthesia. The region should be blocked by bilateral blocking of the cervical plexus, which may be done very easily by a single needle puncture on either side of the neck. Under this method of blocking the entire anterolateral region of the neck is completely anesthetized and any operation in this region may be done without pain. Concerning the psychic effect of operations on goiter, even the toxic variety, this is largely in the mind of the operator and not in that of the patient. The patients under complete blocking will have no psychic effect, and if properly handled by the surgeon, the patient will leave the table in infinitely better condition than under any general anesthetic with which I am acquainted. Recovery is easier and shorter and in place of local anesthesia being a step backward it is one of the greatest steps forward introduced in operations on the thyroid, as it is in operations on other regions of the body where it is applicable.

DR. GEORGE W. CRILE, Cleveland: I have found objections to using local anesthesia alone on account of the important psychic factor; there are objections to using general anesthesia alone, because in serious cases of exophthalmic goiter there is so great an interference with the internal respiration that inhalation anesthetics may cause much injury by added suboxidation. Therefore, in serious cases we take the operation to the patient in bed. Using local anesthesia with analgesia under nitrous oxid does not interfere with the internal respiration of the cells. This plan has succeeded remarkably well. Also, in certain cases we allow the wound to remain open in order to prevent the absorption of toxins from the wound and to promote postoperative comfort. A comfortable patient is more likely to make a good recovery. The important note I gathered from these papers was that the operators have found that it is important to conserve to the utmost degree all the resources of the patient and to add other factors of safety, by good judgment, by a graduated operation, by doing the right thing at the right time, by local anesthesia, by general anesthesia. Thus they have been able to achieve great progress in the surgical treatment of exophthalmic goiter.



Fig. 13.—Clamps wrapped with dressings.

DR. J. TATE MASON, Seattle: We do not repeat cauterization if the patient is a safe risk for ligation. The cauterization is not done twice in the same place. We follow a line which eventually is removed by the thyroidectomy incision. The scars will be lost in the one continuous scar that is made when the thyroid is removed. I felt somewhat uneasy in reporting such a large percentage of cases of reoperation. They were our earlier cases of six or seven years ago.

DR. FRANK H. LAHEY, Boston: An important diagnostic point of intrathoracic thyroid is deviation of the trachea to one side. One other point regarding the handling of these intrathoracic masses is the danger of injury to the recurrent laryngeal nerve. There must necessarily be some cases in which injury will occur, since manipulations are naturally digital, and the course of the nerve is often markedly distorted. It is therefore wise to explain this possibility to the friends or family before operation is undertaken.

DR. JOSEPH R. EASTMAN, Indianapolis: Dr. Crotti and Dr. Crile struck a very important note. Local anesthesia is of great value and is especially applicable in the bad cases. These are the cases which concern us most. If a man uses local anesthesia habitually and has become accomplished in its use, then he will be the better prepared to deal with the serious cases in which its use is demanded. I am pleased to have the endorsement of local anesthesia by Dr. Harris.

Clinical Notes, Suggestions, and New Instruments

DEATH FOLLOWING INTRAVENOUS INJECTION OF ONE CUBIC CENTIMETER OF RHEUMATISM PHYLACOGEN

Mervin T. Sudler, M.D., Rosedale, Kan.

A trained nurse, aged 57, acting as hospital superintendent, had suffered from rheumatism, particularly of the knee joints, for the last five years. Her nose had been examined and operated on and her teeth had been extracted over a year before, with a resultant small amount of relief; but she still experienced a great deal of pain and difficulty with her knee joints. In December, desperate from her suffering and lack of improvement, she secretly accepted the advice of a salesman (who is a graduate physician) who visited the hospital from time to time and who recommended phylacogen, in addition to the measures recommended by her regular physician on the hospital staff.

The phylacogen was administered by a graduate nurse, according to the directions of this salesman: About January 20, 1 minim, diluted with physiologic sodium chlorid solution, was given subcutaneously. About January 24, 3 minims, diluted with physiologic sodium chlorid solution were given subcutaneously. About February 2, 8 minims were given subcutaneously. No general reaction followed any of these doses. The first dose given intravenously was on February 7, when 0.125 c.c., diluted with physiologic sodium chlorid solution, was given. It was then given intravenously every day for about two weeks, the directions being to use in slightly increased doses, provided no reaction followed. If there was any reaction, the same amount was repeated the following day, and no reaction would occur. There was an occasional rather severe reaction, but usually only a mild one. At the end of about two weeks, 3 c.c. were given. Then, because of frequent reactions, the dose was ordered decreased until no reaction followed; and given only one every other day. This was done to February 29. The patient had not felt well all day, and at 7 o'clock her temperature was 100.4. At this time, she took 10 grains of acetylsalicylic acid. At 10 o'clock, 1 c.c. of phylacogen was given. Following this dose of phylacogen, the nurse caring for her stated that she had a chill lasting for twenty-five minutes. She then complained of shortness of breath and began breathing hard. Her breathing then became irregular and shallow. The heart was very weak and irregular. She was apparently nauseated just before she died, one and a half hours after receiving the medication.

The nurse, in giving this medicine, carried out the instructions of the physician, who was the representative of the firm manufacturing the phylacogen.

The patient had no valvular heart lesion and had never had any symptoms referable to her heart previously.

A METHOD FOR DEMONSTRATING SPIROCHAETA PALLIDA IN REGIONAL LYMPH GLANDS

Edwin W. Schultz, M.D., Stanford University, Calif.

The importance of establishing an early diagnosis in syphilis is clearly recognized by every one. The most useful means that we have for arriving at the earliest possible diagnosis is undoubtedly by the dark field method. However, occasionally difficulties are experienced in obtaining proper specimens for such examinations. For example, not infrequently one receives patients for dark field examination who before consulting their physician have applied some drug to the lesion in question. In the army it was not uncommon for men to apply calomel ointment on newly appearing genital sores before their nature could be established by medical examination. Naturally, such treatment makes the demonstration of *Spirochaeta pallida*, at least on the surface of the lesion, quite out of the question. Fortunately, the presence of the spirochete in the deeper tissues can frequently be still discovered in these cases by puncturing the base of the lesion in the same manner as I shall describe for demonstrating their presence in lymph glands. Should this fail to reveal the organism, and the regional lymph glands show even a slight enlargement, their presence may then generally be discovered by puncturing the involved glands. This much is not especially new, but I should like to point out a modification of the method ordinarily employed which has proved to be far more efficient in my hands. Merely puncturing a gland with a hypodermic needle and making suction with the syringe, without first injecting into the gland a small quantity of fluid, as is generally done, gives comparatively poor results. The method here described will reveal the presence of *Spirochaeta pallida* in the lymph glands in practically every case of untreated syphilis.

METHOD

A 2 or 5 c.c. hypodermic syringe with a sharp needle is employed. Into the syringe is drawn from 0.5 to 1 c.c. of sterile physiologic sodium chlorid solution. The gland is firmly fixed between the two forefingers and thumb of the left hand, and with the syringe in the right hand the needle is passed through the overlying skin and then gently through the capsule of the gland. The point of the needle is then rotated in order to break down some of the gland tissue. After this has been done, the saline solution is slowly injected into the gland, and the capsule sewell under the fingers is noted, after which the point is rotated a few times more. Suction is then made with the plunger of the syringe and as much gland-pulp mixture is withdrawn as is possible; but a few drops are generally quite sufficient. Several slides are prepared for dark field examination, special care being taken to select thin slides and cover-slips and prepare the specimens in films of practically capillary thickness. The sort of dark field technic is all important. In general, the entire procedure of procuring the specimen should be aseptic and carefully done.

The modification has proved especially valuable in establishing an early diagnosis in certain cases, and has been employed without any noticeable ill effects on the patients.

INDUCTION OF LABOR BY AN UNUSUAL METHOD

George L. Brodhead, M.D., New York

Mrs. A., aged 24, at term in her first pregnancy, was sent to the Harlem Hospital, March 2, 1920, by her family physician, who suspected that she was suffering from toxemia of pregnancy. Her chief complaint on admission was edema of the vulva and extremities. She had no headache, dizziness, nausea or vomiting; her vision was not disturbed and she had no epigastric pain. The urine showed only the faintest trace of albumin. The vulvar edema had been gradually increasing for the three weeks prior to her admission.

The patient was pallid, sat up in bed, and was slightly dyspneic, with a systolic blood pressure of 130, and diastolic, 80. The abdomen showed a full term pregnancy with the vertex well engaged in the left occipito-anterior position. The fetal heart was 142, and of good quality. The vulva showed a very extensive edema; the labia were tremendously swollen, and pitted on pressure, and were so large that the patient could scarcely bring her thighs together. The heart showed hypertrophy and dilatation, due to the decompensated double mitral disease. The pulse was irregular at times both in rate and in rhythm. The lungs showed many râles of all kinds over both chests, anteriorly and posteriorly. The patient's general condition was only fair, and as she appeared to be seriously ill, we believed that pregnancy should be terminated. Remembering a former experience in a similar case, acupuncture of the vulva was performed, March 4, 1920, at 4 p. m., with the escape of a considerable amount of edema fluid. The patient was immediately improved, slept much better, and felt a great deal more comfortable.

At 1 a. m., March 5, she complained of rather severe pains in the back and lower abdomen, and on that day she delivered herself normally of a female child weighing 7 pounds 14 ounces.

After her delivery the patient was more comfortable, and the edema of both the vulva and the extremities, which had markedly decreased immediately after the puncture, rapidly disappeared. The puerperium was uneventful. She left the hospital, March 13, in good physical condition, except for her cardiac disease.

The interesting feature in the case was the onset of labor following the puncture of the edematous vulva, obviating the necessity for any intra-uterine manipulation to bring on labor.

50 West Forty-Eighth Street.

ATROPIN POISONING: REPORT OF A CASE

WARREN E. FORSYTHE, M.D., ANN ARBOR, MICH.

A student, aged 22, during an attack of acute rhinitis, asked at a drug store for atropin tablets. He was given ¼ grain atropin sulphate dispensing tablets without assurance as to their intended use. He stated that he took one at 4 p. m. and that at 4:30 he noticed marked dryness of the nose and throat. This was followed in a short time by muscular weakness and dizziness. He took strong coffee and tea at 5 p. m.

When first visited at 6 p. m., the patient was lying down and complained of general weakness and dry throat. He was rational, but was very anxious concerning his condition. The pulse was 120 and respiration 30. The pupils were dilated. A mustard emetic was given, and the patient left at 7:30 p. m. showing no change except slight carphology.

At 8:30 p. m. the patient insisted on getting out of bed, and made frequent trips to urinate. He was given 10 grains of chloral at intervals, but continued to be restless and talk irrationally at times until 9 a. m.

At 9:30 a. m., he was rational, comfortable, passing urine normally, and able to read medium print at 16 inches. The pupils were dilated and the mouth was dry. At 3:30 p. m. the pupils were dilated, and the mouth was moist. He was able to read fine print at 16 inches, and complained only of weakness.

At the end of forty-eight hours after he had taken the atropin the pupils were dilated and the patient had some general weakness; otherwise he was in good condition and resumed activity without further trouble.

FETAL ABDOMINAL SARCOMA OBSTRUCTING LABOR*

THOMAS D. MAHER, M.D., AND A. S. MUSANTE, PH.G., M.D.
SAN FRANCISCO

Mrs. P., aged 35, Italian, quintipara, had a previously good obstetric history, and as far as could be ascertained the patient passed through the present period of gestation without untoward incident. At 5 p. m., June 25, 1919, approximately at term, labor started, and at 9 p. m. the membranes ruptured. The pains were normal in nature and the labor progressed satisfactorily until 11 p. m., when the head and shoulders were delivered, but further delivery by judicious traction was unavailing. Vaginal and intra-uterine examination under anesthesia revealed the fetal abdomen greatly enlarged and causing the dystocia. After further attempts at manual extraction had failed, the obstetric problem of the reduction in the size of the offending passenger was met by puncturing the fetal abdomen at the ensiform cartilage and extracting an immense tumor, by tearing away pieces with the fingers and hand, until the mass was reduced sufficiently to permit of the passage of the fetus.

The tumor was a heterogeneous mass about twice the size of the fetal head, grayish, with a pinkish framework running through it, and of semisolid consistency.

The reports of two pathologists showed the character of the growth to be that of myxosarcoma, and its origin was thought to have been the kidney.

Thorough examination of the fetal structures was not possible.

*Read at the April, 1920, meeting of the St. Joseph Hospital Staff.

THE USE OF SMALL ENEMAS IN CONSTIPATION

LOUIS HENRY LEVY, M.S., M.D., NEW HAVEN, CONN.

I should like to call attention to a means which I have been using in combating constipation in cases that have resisted the usual forms of medication by mouth, such as the salines, pills and tablets, liquid petrolatum and agar. It is the use of soft soap containing either glycerin, turpentine, cottonseed oil or mixtures of these, one or two teaspoonfuls added to 4 ounces of warm water. This is injected directly into the rectum by means of a rubber bulb syringe of 4 ounces capacity. This makes a nice method for rapid use and rapid results. Occasionally I follow up this enema with another one of a similar amount, of warm water. The formula is:

	Gm. or Cc.	Per Teaspoon, Cc.
℞ Rectified oil of turpentine	5	2
Cottonseed oil	25	1
Glycerin	45	2
Soft soap	45	2
Oil of peppermint	q. s.	

I have been able to get some excellent results, especially in those cases of rectal constipation mentioned by Alvarez. With smaller amounts of the soft soap mixture, this method can be used safely in children. The treatment of constipation by enemas is an ideal short cut method and should be more universally used.

1172 Chapel Street.

ELEVATION OF CONJUNCTIVA NEAR LIMBUS PREVIOUS TO CATARACT EXTRACTION

ARTHUR WHITMIRE, M.D., NEW ORLEANS

According to a method that I have used for some time, to facilitate making a conjunctival bridge less hazardous, I inject about 5 mm. of sterile water from a hypodermic syringe, under the conjunctiva at the upper limbus, to elevate it as far back as is necessary. This I do immediately before making corneal section. Many conjunctiva bridges are divided in the making, on account of the patient's squeezing, or because the conjunctiva lies too close to the sclera. I have employed this additional precaution in not more than twenty-five cases, but find it quite advantageous.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

DIPHTHERIA TOXIN-ANTITOXIN MIXTURE (See New and Nonofficial Remedies, 1920, p. 264).

Gilliland Laboratories, Ambler, Pa.

Diphtheria Toxin-Antitoxin Mixture (Gilliland).—Each Cc. of the mixture represents three lethal (Lt) doses of toxin and approximately 3.2 units of antitoxin. Marketed in packages of three 1 Cc. ampules representing one immunizing treatment; in packages of three 1 Cc. syringes representing one immunizing treatment; also in packages of thirty 1 Cc. ampules representing ten immunizing treatments.

GONOCOCCUS VACCINE (See New and Nonofficial Remedies, 1920, p. 283).

Lederle Antitoxin Laboratories, New York.

Gonococcus Glycerol Vaccine (Lederle).—A suspension of killed gonococci in a vehicle composed of glycerol, 66 per cent., physiological solution of sodium chloride, 33 per cent., and trikresol, 1 per cent. The product is supplied in packages of 15 vials containing progressive amounts of gonococcus glycerol-vaccine, and 15 vials of sterile diluent with which to make the proper dilution of the vaccine. Each dose consists of 0.1 Cc. of gonococcus glycerol-vaccine (the strength varying for each dose) and 0.9 Cc. of sterile physiological solution of sodium chloride. After dilution, the doses (1 to 15 inclusive) contain 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1300, 1400 and 1500 million killed gonococci, respectively.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET : : : CHICAGO, ILL.

Cable Address : : : : "Medic, Chicago"

Subscription price : - - - - - Five dollars per annum in advance

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SATURDAY, JULY 17, 1920

PROHIBITION AND THE MEDICAL PROFESSION

If one were to take seriously the newspaper jokes and gibes regarding the prescribing of whisky by physicians one might assume that the medical profession had lost all honor. Any self-respecting physician must blush for shame at what he regards as slanders on his profession. Unfortunately, however, the charges are apparently true, so far as they apply to some physicians. The office of the Federal prohibition enforcement officer for Illinois contains sufficient evidence to establish the truth of the reports, so far as they concern a not inconsiderable number of physicians.

As is well known, the regulations governing the prescribing of intoxicating liquors require that prescriptions shall be written on regular blanks provided by the government, which are issued in book form. Each of the books contains 100 blanks, with corresponding stubs. On these stubs must be written the date, the name of the patient, the amount of whisky prescribed and the disease for which it is given. These stubs are a record of what the physician has prescribed during a certain period. Before obtaining a new book, the physician must return the stubs of the old one. Examination of these stubs reveals that some physicians have been writing from seventy-five to 100 prescriptions for whisky a month. The stubs of a dozen different books examined at random show that in no single instance was the prescription for less than the maximum quantity allowed by law—one pint, or sixteen ounces. An analysis of ten books—one thousand blanks—shows that the diseases given as the reason for prescribing whisky were: bronchitis, 354; general debility, 167; la grippe, 163. Boils, coryza, diabetes, nephritis, endocarditis, eyestrain and headache, hay-fever, nasal catarrh, rheumatism and urinary irritation were some of the other disease conditions for which whisky was given.

Undoubtedly, the conditions in Chicago are duplicated to a greater or less extent in other cities. Naturally, the proportional number of physicians who are selling their rights and privileges as members of an honorable profession for "a mess of pottage" is very small; but that even a small number of physicians could be so lacking in honor reflects on the profession as a whole. Our profession has always been regarded by the public as an honorable one. Its members are presumed, by the very nature of their calling, to be upright and dependable. Physicians are, in a sense, a privileged class, as is emphasized in the laws of all civilized nations. With the privileges go certain responsibilities and obligations which every physician, tacitly at least, assumes when he enters the profession. It is such a privilege that was conferred on him by the government, under the laws enforcing the principles of the Eighteenth Amendment to the Constitution of the United States. These privileges were granted on the assumption that there might be times when physicians would need to prescribe intoxicating liquor for sick persons. It is beside the question as to how many prescriptions for liquor any physician may need to write in a certain length of time. It is obvious—there is no denying the fact—that some physicians are grossly abusing their trust in this matter. The privileges were granted to physicians with the presumption that they would use them honorably, and would prescribe intoxicating liquor only when absolutely necessary—if such necessity ever exists.[1]

The whole question is a serious one which should be faced frankly by the organized profession. It is one which merits the immediate attention of county medical societies throughout the country. Already physicians in many communities have taken action defining their attitude toward those physicians who have traded an honorable name for the unworthy title of "bootlegger." For the good name of our profession, it should be made known to the public in an emphatic manner that such disreputable practices, on the part of any physician, are not condoned. Noblesse oblige.

TISSUES FUNCTIONALLY EQUIVALENT TO THE SUPRARENALS

Two facts with respect to the physiology of the suprarenal glands have become generally accepted, namely, that these structures are indispensable to life, and that extracts of them, or the epinephrin obtainable from them, can exert very pronounced physiologic effects on the body. Whether the latter potency is a common mode of altering the bodily functions during life, that is, whether the suprarenals exhibit an important internal secretory activity under the normal conditions of existence, has been somewhat debated. The enthusiasm for the earlier belief that vasomotor tone and other essential phenomena are continually

1. In the words of the law, "No physician shall prescribe liquor unless after careful physical examination of the person for whose use such prescription is sought, or if such examination is found impracticable, then upon the best information obtainable, he in good faith believes that the use of such liquor as a medicine by such person is necessary and will afford relief to him from some known ailment."

regulated by an internal secretion of the suprarenals has waned. The once asserted relationship between nephritis or arteriosclerosis and suprarenalemia is no longer emphasized by experimental investigators; and the various assumed interreactions between the suprarenals and other systems of gland structures in the body cannot yet be outlined in a convincing way.

The foremost evidence for the indispensability of the glands consists in the results of extirpation experiments, which are quickly fatal in most species. The fact that the majority of patients who succumb to Addison's disease show a bilateral destruction or atrophy of the suprarenal glands favors the view that this malady is due to some sort of insufficiency of these structures. Epinephrin, which has long been regarded as the "active principle" of the suprarenals, is produced in the medulla of the glands. Since administration of epinephrin as a rule fails to stay the course of Addison's disease, the question has arisen whether the cortical portions of the suprarenals do not also play an important physiologic part. Furthermore, chromaffin structures analogous in character to the suprarenal medulla are scattered in small masses through other parts of the body. If they are functionally equivalent to the suprarenals, it can be understood why persons may survive apparently severe pathologic changes in the glands.

This suggestion that chromaffin tissues located elsewhere than in the suprarenals may act in a way compensatory to the latter is suggested by the report of an unusual case observed by Strauss [1] in Berlin. The history of the patient showed the classic picture of Addison's disease, which had not covered a period of more than six months. The necropsy, however, disclosed an entire lack of suprarenal glands. No vestiges of them could be discovered. As the absence of any detectable residual structures made it seem unlikely that the suprarenals had been present in the months immediately preceding death, Strauss has concluded that the remaining parts of the chromaffin tissue in the body must have functioned in some way for a long time to maintain the physiologic activities for which the suprarenals ordinarily are primarily reponsible. Perhaps the situation can best be summarized, from the results of this unusual case, by noting that the suprarenals per se are only a part, though probably the overwhelmingly most significant portion, of a larger system of essential tissues. Since these nonsuprarenal structures may be functionally equivalent in some measure to the suprarenals, as Strauss' findings seem to suggest, it becomes important to learn more about the distribution and performance of the tissues responsible for prolongation of life when the suprarenals themselves are severely involved.

1. Strauss, H.: Angeborenes Fehlen beider Nebennieren und Morbus Addisoni mit kritischen Betrachtungen zur Biochemie des Adrenalsystems, Biochem. Ztschr. **79**: 51 (Jan.) 1917.

SOCIAL WORK FOR THE HARD OF HEARING

Specialism develops a tendency toward the elimination of the intimate personal relationship between physician and patient which existed when the family practitioner was the only type. However, there has been developing among physicians a social mind, and the specialist of today is beginning to realize that it is his duty to "see the patient through," and lend his aid to restore him, not only physically, but mentally, economically and socially, as nearly as possible, to the best position he is capable of occupying in relation to other human beings. In other words, the physician's duty does not end when he has done all he can to correct the physical disability Manifestations of the newer spirit are evidenced in great surveys now being made as to the number of physically handicapped persons in various communities; in the organization of service leagues for the handicapped, and in the creation of institutes for vocational education and of bureaus for propaganda to interest the public in this altruistic work.

A particularly difficult problem is that of the care of the deaf, including those who suffer from speech defects. As is beginning to be recognized, this class of disabled persons is peculiarly hypersensitive. Through repeated failures to secure relief and through impositions practiced on them by the unprincipled, they have become suspicious of all efforts toward their improvement. In a recent symposium before the Section on Otology of the New York Academy of Medicine, Dr. Wendell C. Phillips called attention to the fact that the physician is frequently unable to supply more than palliative measures in these cases. The deafness is progressive, and with the increasing deafness, there appears an increasing depression of the patient's spirit, inclining him to believe that his life will be useless and, in some instances, leading even to suicide. It is in such cases that the application of otologic skill is the minor phase of treatment. "The otologist," according to Dr. Phillips, "should not be only the otologist, but the wise counselor, treating his patient as a client whose comfort and happiness he should safeguard equally with that of his physical infirmity. He should be prepared to warn him against the pitfalls of despondency, of charlatanism both inside and outside of the medical profession, and to conserve his finances by warning him against responding to advertised quackery in every form. He should encourage him to accept his fate as his peculiar 'thorn in the flesh,' and to have no fear in letting his friends become aware of his infirmity. In other words, deafened people should be warned against their arch-enemies, hypersensitiveness and despondency."

The simple warning in itself, however, is not sufficient. Despondency must perforce increase, unless the patient is pointed to a way out—unless he is shown

how he may remain or become a useful citizen. Much of the sensitivity of the deafened person is dependent on the fact that he must utilize unusual devices for hearing or for communicating his thought. He should be made to understand that through the discovery and encouragement of the art of lip reading, these extraneous and conspicuous methods have been largely done away with. The physician should be able to direct the patient to some of the many leagues or organizations now existing or being formed in most of our principal cities under the leadership of the central Association for the Hard of Hearing, which teach this art to the deafened worker, and where special classes are held to enable the deaf to study lip reading together, thus giving them confidence in their ability.[1] Through practice they lose their hypersensitivity and nervousness, and become almost as proficient in hearing through the eye as is the ordinary person using the normal organ for this purpose. Furthermore, through special employment bureaus, situations are secured for deafened workers, especially adapted to their infirmities. It may be pointed out that the deaf employee does not waste time in conversation, and that, through his infirmity he is attached to his situation, so that he is not continually changing from one occupation to another.

There are few fields of philanthropy which will pay so highly in the reward of successful accomplishment as will aid to those physically handicapped when given in the manner described. The mere bestowal of charity serves to increase sensitiveness and to stimulate pauperization. Instruction and aid which cause the handicapped to become producing members of society develop ambition and happiness, decrease sensitivity, and thus are a real charity.

1. Complete information may be obtained by writing to the New York League for the Hard of Hearing, 126 East Fifty-Ninth Street, New York City.

FURTHER NEW ZOOPARASITES OF MAN

Only a few years ago the search for new varieties of bacteria in their possible relation to disease was one of the foremost activities of the pathologic investigator. Discoveries in the domain of bacteriology had demonstrated the profound importance that they might assume in the problems of medicine. With the growth of knowledge regarding the rôle of bacteria in the genesis of specific diseases, the finding of new microorganisms has become less frequent in occurrence. Indeed, the proof of the etiologic association of some heretofore unrecognized species of bacteria with an old malady has come to be a comparative rarity in medical investigation. On the other hand, other types of parasites, notably those of animal origin, are beginning to awaken more and more interest, so that animal parasitology is claiming a larger share than ever before in the field of pathologic research.

From a popular standpoint, the story of the hookworm has probably been most widely heralded. But uncinariasis is only one of many harmful manifestations of the zooparasites of man. Fecal examinations conducted in all parts of the world of late, particularly by the medical officers active in the World War, have disclosed an unexpected incidence of parasitic invaders, some of which have more than intestinal or purely local effects on their host. One of the latest finds is reported from the Chosen-Government General Hospital at Seoul.[1] It refers to a species of *Rhabditis,* temporarily designated as *Rhabditis hominis* n. sp., a viviparous parasite found numerously in the freshly passed feces of schoolchildren. Heretofore most species of *Rhabditis* and its allies have been found free living in the earth and decayed vegetable matter, although a parasitic specimen in man has been reported. Best authenticated is the rhabditiform larva which was found in 1882 by Nielly in cutaneous papules, chiefly on the limbs, along with small worms in the blood.

In the Korean investigation, seventeen out of 668 schoolchildren examined in one district were found infected with the parasitic worms of the new species. In another place, three cases were discovered among 471 pupils. In a number of these young people the worms had passed out of the body in the course of two or three months without any medical treatment. This suggests that, perhaps, *Rhabditis hominis* may not be a true parasite, but may have happened to find temporary or accidental lodgment in the human body. The Japanese discoverer[1] regards it as highly probable, however, that the worms can thrive in the human alimentary canal, because they were found abundantly and in all stages of their development. The nematode reminds one, in some ways, of possible infections with *Strongyloides stercoralis,* which has rhabditiform embryos and has been found not only in the Far East, but even in the United States. Strongyloidosis has been alleged to occasion a variety of intestinal disturbances. The new worm found in Korea cannot be mistaken for *Strongyloides stercoralis,* because in contrast with what occurs with the latter, eggs of the rhabditoid worm are not found in the feces. It is not unlikely, according to Kobayashi, that the two species have been confused in the past in descriptions of nematode infections of the alimentary tract.

Another recent acquisition to the list of animal parasites of man is a small biflagellated protozoon found in smears and cultures from patients dead of influenza in an army camp. The organisms were spherical or pear-shaped, possessing two free flagella and a kinetonucleus. They are regarded by their discoverers[2] at the base hospital of Camp Zachary Taylor, Ky., as accidental invaders of the body, rather than pathogenic in character.

1. Kobayashi, H.: On a New Species of Rhabditoid Worms Found in the Human Intestines, J. Parasitol. **6**: 148 (March) 1920.

2. Wright, T., and Lucke, B.: A New Biflagellated Protozoon of Man, J. Parasitol. **6**: 140 (March) 1920.

Current Comment

THIS YEAR'S FOURTH OF JULY CELEBRATION

It will be recalled that from 1903 to 1916, inclusive, THE JOURNAL conducted a campaign for a safe and sane celebration of the Fourth of July. Facts and figures were gathered and published each year showing the various casualties that resulted from the method of celebration then prevalent. Ultimately the annual holocaust of deaths and injuries, together with the noise and hubbub due to the use of death-dealing fireworks, gave way to a safe and sane celebration. By 1916, the annual number of deaths from tetanus had been reduced from 406 to none and other fatalities reduced to a minimum. THE JOURNAL felt that its object had been accomplished and the publishing of statistics was discontinued. Newspaper reports of the celebration this year indicate that there has been a serious relapse into the old conditions. Many deaths and large numbers of serious wounds are reported. Of the deaths, several were due to the supposedly harmless sparklers. Of the injuries, the more serious, as usual, were caused by cannon crackers. It is still too early, at this writing, for reports on tetanus, but it can be predicted that with a return to the use of high explosives in the celebration of the Fourth of July there will be a return of mutilation injuries and fatalities with increased possibilities for tetanus. Will it be necessary to learn our lesson over again?

MULTIPLE EXOSTOSIS

Cartilaginous exostoses have been among the rarer phenomena coming to the attention of physicians. The roentgenographic method of observation has greatly increased the possibilities of detecting these abnormalities of growth, so that what is at present a clinical rarity may presently be found more common than is currently suspected. It has happened more than once in the history of medical diagnosis that the introduction of more accurate methods of observation and analysis or forceful publicity by striking descriptions of unusual anomalies has resulted in bringing them to light in unanticipated numbers of cases. Perhaps this will prove to be the outcome of the present interest in exostoses. Honeij [1] has recently correlated the findings in sixty-six reported cases of multiple cartilaginous exostosis with the result that certain theses seem to be presented with clearness if they are not, indeed, definitely established. Apparently the disease involves well defined metabolic disturbances, if one may judge by the alterations in the metabolism of calcium and magnesium found by Underhill and Bogert. The excretion of the alkali earths shows a tendency toward abnormally large values, particularly when the intake is inadequate. Malformation and deformities occur at an age not yet determined, owing to arrest in growth of the skeleton and to bone growth arising at such points as to interfere with the normal growth and direction of the bones. The exact nature of the objectionable growths cannot be properly ascertained until more examinations are made at different ages and developmental periods. According to Honeij there is no evidence that infection plays a part in the etiology; but since a positive relation through heredity was obtained in thirteen of thirty-three cases, the disease having occurred in some member or members of the patients' families, he believes that hereditary factors are concerned. The numerous roentgen-ray observations now made daily on hundreds of persons may be expected to increase knowledge of the exostoses in rapid order.

1. Honeij, J. A.: A Study of Multiple Cartilaginous Exostosis, Arch. Int. Med. **25**: 584 (June) 1920.

NEW MEDICAL SCHOOLS

In times past reports regarding the establishing of new schools of medicine have caused some anxiety among those interested in the development of medical education, since the country was already oversupplied with such institutions. With rare exceptions, also, the new schools reported were opened without adequate financial backing, or without satisfactory clinical material. How different, however, is the news in regard to the medical school to be established by the University of Rochester. As reported recently, through the gifts from Mr. George Eastman and the General Education Board, this institution will have a total endowment of $9,000,000, which guarantees ample buildings, laboratories and hospital facilities. In this connection the news is also welcome that the University of Wisconsin has obtained legal authority to offer a complete four year medical course within the next few years. Of the eleven universities now offering the two year medical course, the University of Wisconsin has established the work on the most elaborate scale and is in an excellent position to develop clinical departments of an equally high grade. The campaign for the improvement of medical education during the last sixteen years has resulted in reducing the number of medical schools from 162 to eighty-five. A vast oversupply has given way to a more nearly normal quantity. We can still dispense with several medical schools of a seriously low type, but there is always room for those which are amply endowed, and prepared to teach modern medicine in a practical manner.

NEW FACTS REGARDING OPIUM ALKALOIDS

In a series of investigations on the pharmacology of opium alkaloids, Macht emphasized that these compounds could be grouped into two distinct categories; in doing this he [1] defined more clearly the work of Pal, Straub, Sahli, and others. One of the categories, the piperidin-phenanthrene group, of which morphin is the principal member, includes substances that stimulate the contractions and increase the tonus of smooth muscle. The second, or benzyl-isoquinolin, group, of which papaverin is the conspicuous member, inhibits the contractions and lowers the tonus of the same active tissue. It was through the discriminating pharmacologic analysis that attention became

1. Macht, D. I.: Action of Opium Alkaloids, J. Pharmacol. & Exper. Therap. **7**: 339, 1915.

prominently directed to the inhibitory effect of benzyl alcohol and its derivatives, so that they have found some recognition in therapy as antispasmodics. On the other hand, Straub's so-called morphin reaction, consisting in a peculiar stiffening or bending backward or curling of the tails of mice which have received doses of morphin, can now be explained as due to the spasms of the sphincters of the anus and bladder provoked by the alkaloid in question. As the morphin molécule includes both piperidin and phenanthrene groups, Macht[2] has undertaken to ascertain the effect of these groups separately on smooth muscle. The upshot of the research has been to demonstrate the comparative inertness of phenanthrene, whereas piperidin is found to be a powerful stimulant of this contractile tissue, suitable doses causing an increase in the rate and strength of its contractions and an increase in its tonicity. Macht asserts that this interesting effect of piperidin on smooth muscle has never before been described. Its possible significance deserves further consideration.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Martin Clinic Organized.—Dr. E. H. Martin announces the formation of the Martin Clinic, with offices in the Dugan-Stuart Building, Hot Springs, and with the following staff: Drs. Edward H. Martin, chief of clinic; Ernest A. Purdum, medicine; William G. Klugh, neurology; George C. Coffey, urology; William F. Porter, gastrology; W. C. Minnich, surgery; Milton T. Edgerton, Jr., ophthalmology; W. J. Fort, roentgenology, and L. M. Runskequitz, clinical pathology.

Personal.—Dr. Octavius L. Williamson, Marianna, has been appointed a member of the state board of health, succeeding Dr. Charles M. Lutterloh, Jonesboro, deceased.——Dr. William E. McLean has been appointed health officer of Little Rock, succeeding Dr. Robert C. Foster, who resigned to accept a position as passed assistant surgeon, U. S. Public Health Service, with station at Houston, Texas.——Dr. H. H. Niehuss, Eldorado, for many years health officer of Union County, has also been appointed health officer of Eldorado.

Physicians Protest Against Tax.—Members of the Garland County Medical Society, at its meeting in Hot Springs, July 1, entered a protest against the tax recently levied by the Division of National Parks of the Department of the Interior compelling all physicians who prescribe the hot radio-active baths to pay the government $60 a year. The Department of the Interior also has ruled that physicians desiring to take the examination to prescribe the hot baths must pay a fee of $10, and if they pass the test must pay an additional fee of $15.

FLORIDA

Bubonic Plague.—After several days of freedom from the disease, the fourth case of bubonic plague was officially reported in Pensacola, July 7, the patient being a driver for an express company. The state health officer has urged the people to assist in the campaign to exterminate rats.

ILLINOIS

Personal.—Dr. Edgar G. Merwin, Highland, sustained a fracture of the leg in a collision between automobiles June 10, and is under treatment at St. Joseph's Hospital, Edwardsville.——Dr. Harry S. Holmes of the Lincoln State School and Colony, was stabbed in the back by a young man whom he had reproved for using foul language.——Dr. Clifford P. McCullough, Lake Forest, sustained a severe cut in the face by being accidentally struck with a golf club.

Clinics to Be Established.—The Moline city council on July 8 passed an ordinance providing for the establishment of a city venereal disease clinic and for making venereal disease reportable. The clinic will be under the supervision of Dr. David E. Kohler.——An all-day clinic was conducted at the Robinson Hospital, June 30, by the medical field director of the Illinois Tuberculosis Association.——On June 29, a tuberculosis clinic was conducted at Kewanee by Drs. Orville W. McMichael, Chicago; Russell E. Adkins, Springfield, and James W. Pettit, Ottawa, under the auspices of the Henry County Tuberculosis Association.

Chicago

Explosion in Hospital.—Fire which started in the basement of the South Chicago Hospital, July 10, occasioned much excitement and necessitated the removal of thirty-five patients from the building. The fire started in the basement and is believed to have been due to the explosion of chemicals. None of the patients were injured, but the janitor was seriously burned and may die.

Home Nursing School.—The sixth session of the training school for home and public nursing opened July 7. The classes are held three times a week and the course lasts eight weeks. At the graduating exercises of the fifth course held at the Municipal Tuberculosis Sanatorium, June 29, a proposal to raise a million dollars to make the training school a permanent institution was presented to the board of directors of the institution. A class of 478 was graduated.

Personal.—At a meeting of the Council of the Society of Medical History of Chicago, Dr. Morris Fishbein was elected secretary-treasurer to succeed the late Dr. Stanton A. Friedberg.——Dr. and Mrs. Kellogg Speed sailed for France July 3. Dr. Speed is one of the delegates from the United States to the International Surgical Congress which meets in Paris, July 19.——Dr. George G. Zoehrlaut has been appointed a special deputy collector of internal revenue, and will have charge of collecting taxes on motor boats in the Chicago district.

INDIANA

New Clinics.—The City Board of Health of Indianapolis has ordered the establishment of three additional tuberculosis day clinics and one night clinic. One of the clinics is for colored people. The clinics will be supported by money derived from the special tuberculosis tax levy.

Personal.—Dr. Ira Miltimore has returned to his duties as chief surgeon of the Gary Steel Company Hospital after a three months' trip to Panama and South America.——Dr. John W. Cook, Pendleton, was stricken with cerebral hemorrhage, June 21. It is believed that he will recover.——Dr. Thomas O. Redden, Indianapolis, fell into a cistern at the rear of his house July 3, and was rescued with great difficulty.——Dr. Gardner C. Johnson, Evansville, president of the state antituberculosis association, will act as temporary superintendent of the Boehne Camp after the departure of Dr. Thomas Willett, Evansville.

IOWA

Public Health Nursing in the University of Iowa.—Beginning with the academic year in September, the University of Iowa will conduct a course in public health nursing, open only to graduate nurses.

Alumni Election.—At the annual meeting of the Alumni of Keokuk Medical College, Dr. Benjamin S. Pennington, Hoisington, Kan., was elected president; Dr. Albert C. Armitage, Shenandoah, vice president; Dr. Henry C. Young, Bloomfield, secretary, and Dr. Alanson M. Pond, Dubuque, treasurer.

Personal.—Dr. Robert E. Jameson, Davenport, was operated on at Mercy Hospital, July 1, for gastric ulcer.——Dr. Grant J. Ross, Sioux City, has been installed as medical director of the Iowa Department of the Grand Army of the Republic.——Dr. Jennie McCowen, for more than thirty-five years physician of the Cook Home, Davenport, has resigned.

Employee May Choose His Own Physician.—A committee has been appointed by the Dubuque County Medical Society to investigate the statement made by a local manufacturing company that it would not be responsible for bills from any except its own company physician for services rendered its

2. Macht, D. I.: A Pharmacodynamic Analysis of Straub's Morphine Reaction, J. Pharmacol. & Exper. Therap. **15**: 243 (May) 1920.

employees. The committee has reported that an employee has the right to choose any physician he pleases under the Iowa workingmen's compensation law.

KANSAS

Detention Home Opened.—The state detention home at Lawrence was opened June 1. In this institution, girls infected with venereal disease will be treated.

State Board Election.—At the annual meeting of the state board of health held in Topeka, June 25, Dr. Oliver D. Walker, Salina, was elected president; Dr. William M. Earnest, Washington, vice president; Dr. Samuel J. Crumbine, Topeka, secretary and executive officer (reelected for the seventeenth year); Albert J. Jewell, chief engineer, and C. F. Maxcy, state bacteriologist, succeeding Dr. Sara E. Greenfield, resigned.

Public Health Association Organized.—At the annual meeting of the state board of health of Topeka, June 25, the Kansas Public Health Association was organized. Rev. Edmund J. Kulp, Topeka, was elected president; Mr. William Allen White, Emporia, and Dr. Samuel J. Crumbine, Topeka, vice presidents; Dr. Charles H. Lerrigo, Topeka, state registrar of vital statistics, secretary, and Dr. Earle G. Brown, health officer of Topeka, treasurer.

MARYLAND

Personal.—Dr. Laurence Hickman, president of the Baltimore City Jail Board, underwent an operation for appendicitis recently at the Hebrew Hospital, and is reported to be improving rapidly.

Campaign Against Bubonic Plague.—Because of the presence of bubonic plague in cities connected with Baltimore through steamship lines, Dr. C. Hampson Jones, health commissioner, has taken steps to prevent the introduction of the plague into Baltimore. He will conduct a vigorous campaign against rats and other rodents that carry the disease. The U. S. Public Health Service has asked all health officials along the Atlantic Coast to prepare to fight the disease.

MICHIGAN

Personal.—Dr. William G. Hutchinson, Detroit, was elected third vice president of the Michigan Mutual Life Insurance Company, June 19.

Sanatorium Enjoined.—An injunction is said to have been granted in the circuit court by Judge Burton of Big Rapids, June 26, against Dr. Benjamin A. Shepard, Kalamazoo, to restrain him from operating an institution known as the Pine Ridge Tuberculosis Sanatorium.

University Notes.—The national research council has reappointed Dr. E. T. Barker to its fellowship in the University of Michigan, Ann Arbor.——Dr. Ira Dean Loree, associate professor of genito-urinary surgery in the medical school, has resigned.——Dr. Clyde B. Stouffer, assistant physician of the university health service, has resigned.——The medical library of the late Dr. Enos Church has been given to the university by Mrs. Church.

Work Against Tuberculosis.—Tuberculosis sanatoriums in Michigan now number twenty-seven with a capacity of less than 1,000, while the number of known cases of tuberculosis in the state is aproximately 25,000.——The clinic division of the Michigan Anti-Tuberculosis Association held four separate series of free clinics in Macomb, St. Joseph and Washtenaw counties, and on Drummond Island. The series commenced, June 14, in Macomb County; June 22, in St. Joseph County; July 6, in Washtenaw County, and July 12, on Drummond Island.

MINNESOTA

Hospital Staff Organized.—The staff of the Fairview Hospital, Minneapolis, organized April 28 and elected Dr. Henry L. Williams, president; Dr. Oscar Owre, vice president, and Dr. Frederick J. Souba, secretary-treasurer.

Research Fellowship Created.—A tuberculosis research fellowship in the University of Minnesota to be supported by the Hennepin County Medical Association has been created. The object of the fellowship is to encourage research in means for the cure and prevention of tuberculosis and will be for the first year $750, and for the second and third years, progressively increasing amounts.

Personal.—Dr. Elias Potter Lyon, dean of the University of Minnesota Medical School, was granted the degree of Doctor of Laws by the St. Louis University at its commencement, June 7.——Dr. Lawrence F. Sutton, St. Paul, field inspector for the Minnesota Sanatorium Commission, has gone to England to make a study of social conditions.——Dr. William Friesleben, St. Cloud, has been appointed coroner of Stearns County.——Dr. Pierre A. Hilbert, Melrose, has been appointed a member of the state board of control.

MISSOURI

Hospital Building Started.—Construction work on the new Callaway County Hospital at Fulton has been begun and the cornerstone has been laid.

Fined for Violation of Narcotic Law.—Drs. Commodore E. Bennett, Joplin, and John W. Jeans, Prosperity, are said to have pleaded guilty to a charge of violation of the Harrison Narcotic Law and to have been sentenced to imprisonment for ninety days and four months, respectively, in the Newton County jail.——The permit of Dr. Jeans to practice medicine in the state is said to have been suspended by the state board of health for a period of ten years.

New Dispensary.—The Albert Benjamin Dispensary, Kansas City, was opened June 18, at Admiral Boulevard and Harrison Street. It is being operated under the direction of the United Jewish Charities, and its objects are the furtherance of science, the study of diseases, and the instruction of nurses and assistants.——A free health clinic has been opened at Carthage under the charge of Drs. Cassius M. Ketcham, Edward J. Burch and Herman A. LaForce.

Personal.—Dr. William L. Gist has been appointed superintendent of the Kansas City General Hospital, succeeding Dr. A. W. Thompson, resigned.——Dr. William A. Clark has been appointed chief of staff, and Dr. Lawrence David Enloe, secretary of the staff of St. Mary's Hospital, Jefferson City.——Dr. Malvern B. Clopton, St. Louis, has been elected president of the Missouri Association for Occupational Therapy, succeeding Dr. G. Canby Robinson, resigned.——Dr. Porter E. Williams has been reappointed superintendent of State Hospital No. 2, St. Joseph.——Dr. Hasbrouck De Lamater, formerly health officer of St. Joseph, has been appointed health officer of Norfolk County, Va., and has been succeeded by Dr. George M. Boteler, St. Joseph.——Dr. W. M. Lamkin, Eugene, is reported to be critically ill as the result of a cerebral hemorrhage.——Dr. James W. Bruton, Ozark, has been appointed state deputy health commissioner.

MONTANA

State Board Building Dedicated.—The new building of the state board of health, which has been erected at a cost of more than $50,000, was dedicated July 11. The dedicatory exercises were conducted by Governor Stewart

Health Regulations Circularized.—Booklets giving all the necessary data as to the duties of county health officers and methods to be employed by them together with a copy of the state health laws and the new regulations were mailed to all county health officers the first week in July.

Public Health Officials Meet.—The annual meeting of the Montana Public Health Association was held at the state house, Helena, July 11 and 12, under the presidency of W. N. Cobley, state chemist, Bozeman. In addition to the general sessions, there were also meetings of the sections on tuberculosis, child welfare, industrial hygiene and sanitary and water works engineering.

NEBRASKA

Hospital Dedicated.—The Lynchburg Hospital was decicated May 4 by Archbishop Hodges.——The Verges Sanatorium, Norfolk, has been opened by Dr. Carl J. Verges.

Personal.—Dr. Jacob O. Hoffman, Orleans, has retired after more than forty years' practice.——Dr. John T. Standard has been made mayor of Ulysses.—Dr. Charles A. Hull, Omaha, has been made chief surgeon of the Omaha and Council Bluffs Railway Company.——Dr. D. S. Brazda has been appointed instructor in anatomy in the University of Nebraska during the absence of Mr. Homer P. Latimer, professor of anatomy at the university, who has been granted a leave of absence for a year that he may study at the Institute of Anatomy of the University of Minnesota.

NEW JERSEY

Personal.—Dr. Isaac Barber, Phillipsburg, has been appointed a member of the state board of taxes and assessments.——Dr. Clarence A. Hofer, Metuchen, who was

operated on recently for appendicitis complicated by gall-bladder disease is convalescent.——Dr. Samuel K. Salasin has been elected health officer of Atlantic City, succeeding Dr. Talbot Reed, deceased.

NEW YORK

Eye Clinic for Watertown.—The Visiting Nurse Association has opened an eye clinic to care for children in the schools who cannot afford the services of an oculist.

Sanitary Exhibit Installed.—The Jewish Agricultural and Industrial Aid Society has installed a permanent exhibit on its property at Ellenville to demonstrate to farmers and proprietors of boarding houses how wells, springs, cesspools, sewage disposal plants and privies should be constructed and maintained in rural districts.

Outline Lecture on Tuberculosis.—The *Monthly Bulletin* of the New York State Department of Health announces that an outline lecture on tuberculosis for use before lay audiences in connection with the department set of lantern slides on this subject is now available and may be obtained by writing to the Supervisor of Exhibits, State Department of Health, Albany.

Civil Service Examinations.—Examinations will be held July 31, to fill the following positions:

Assistant medical examiner, state industrial commission, salary $2,000 (separate circular).

Physician and assistant physicians, state institutions, salary $1,500 to $1,800 and maintenance; candidates will be rated on training, experience and personal qualifications.

Physician (psychiatrist) Syracuse State School for Mental Defectives, salary $2 000 and maintenance; candidates must be trained psychiatrists, and will be rated on training, experience and personal qualifications.

Information regarding these examinations or separate circulars may be obtained by addressing the State Civil Service Commission, Albany. Application forms for these positions will not be sent out after July 19.

Personal.—Dr. Clarence E. Cobb, Bath, has been appointed superintendent of the Steuben County Tuberculosis Hospital to fill the vacancy caused by the resignation of Dr. Elliot I. Dorn, Bath, who assumed the superintendency of the Chautauqua County Tuberculosis Hospital, April 1.——Dr. Clarence W. Buckmaster, Yonkers, has entered on his duties as health commissioner of Yonkers and has appointed Dr. Chauncey V. Umsted, Yonkers, as assistant commissioner of health. ——Morris Scherago, formerly head of the department of bacteriology of the University of Kentucky, has been appointed assistant bacteriologist in the state laboratory.——Dr. Hermann M. Biggs, state commissioner of health, has been given the honorary degree of Doctor of Science by Harvard University in recognition of his work in combatting tuberculosis.——Dr. Edward F. Marsh, Brooklyn, consultant in venereal diseases of the state department of health, has recently been appointed assistant professor of hygiene and preventive medicine in Long Island College Hospital, Brooklyn.——Dr. Edward S. Godfrey, Albany, has been appointed acting director of the division of communicable disease.

New York City

New Clinics Established.—The Visiting Nurse Service of the Henry Street Settlement announces that it has established four new clinics in connection with its nursing and medical facilities. Plans looking to the establishmet of a diagnostic clinic are under way.

Acquitted of Violation of Harrison Act.—Dr. Christian F. J. Laase has been acquitted in the United States district court on all of twenty-seven counts of an indictment returned against him a year ago alleging violation of the Harrison drug law in prescribing for addicts.

Medical Education Association.—At the meeting of the directors of the New York Association for Medical Education held in New York, June 21, the following officers were elected: Dr. Haven Emerson, president; Drs. George David Stewart and Glentworth R. Butler, Brooklyn, vice presidents; Dr. Otto V. Huffman, Brooklyn, secretary, and Dr. Arthur F. Chace, treasurer.

Ask Leniency for Physician Convicted of Manslaughter.—The conviction of Dr. Julius Hammer of the Bronx for manslaughter in the first degree for having performed a curettage on a woman, which resulted in her death, has called forth protests from Bronx physicians. A petition signed by 400 physicians and surgeons has been presented to the Bronx County court asking for clemency for Dr. Hammer. This action is said to be a forerunner of a movement to appeal to the legislature to amend the penal law so as to make it possible for a physician to perform an operation of this kind to protect the life or health of a patient without fear of spending twenty years in prison. Physicians state that in the present case the operation performed by Dr. Hammer was justifiable and object to having "a jury of laymen pass judgment on the acts of reputable doctors."

Antirat Campaign and Other Precautions Against Plague.—Owing to the danger of the spread of bubonic plague through infected rats, regulations to prevent the escape of rats from vessels docking in this port were adopted some time ago, and recently special efforts have been made to apply them. The sanitary bureau of the department is conducting conferences with ship owners, pier lessees, civic organizations, warehouse men and professional rat exterminators relative to ways and means to destroy rats and prevent any from landing from vessels. A circular has been printed for general distribution urging cooperation on the part of every citizen in the effort to destroy rats and giving definite instructions as to how they may be caught and disposed of. All ships coming to port are being carefully inspected, and when there is suspicion that passengers may have been exposed in Europe they are taken to Hoffman Island for observation.

PENNSYLVANIA

Hospital Building Begun.—Work of construction has been started for the Emergency Hospital at Ellwood City.

New Medical Organization.—Physicians of Beechview, West Liberty, Brookline, Dormont and Mount Lebanon met in Dormont, April 22, and organized the South Hill Medical Association with Dr. Chauncey L. Palmer, Mount Lebanon, president, and Dr. John L. Steffy, Brookline, secretary. This will eventually become a branch of the Allegheny County Medical Society.

Personal.—Dr. Clair B. Kirk, Mill Hall, has been made chief of the tuberculosis dispensary at Lock Haven.——Drs. Edwin D. Schnabel, Bethlehem, and Thomas J. Butler, South Bethlehem, are president and secretary, respectively, of the Physicians' Club of Bethlehem, recently organized.——Dr. John F. Norris, for several years superintendent of the Somerset Home and Hospital, has resigned.——Dr. John B. Critchfield, Lock Haven, has been appointed state medical supervisor of the state department of health, succeeding Dr. John Herbert Waite, Flemington, resigned.

Chester to Get Hospital.—Another hospital to be known as the Robert H. Crozer Hospital will be erected on the grounds of the Chester Hospital and will be deeded to that institution for ninety-nine years. The agreement reached ended a long series of conferences between the executors of the Crozer will and the Chester Hospital managers regarding the bequest of $200,000 made by Crozer in his will several years ago for the erection of a hospital in Upland or Chester. Since his death the amount has increased to $240,000 and the executors declared their intention of making available the fund for the immediate erection of a hospital.

Philadelphia

More City Nurses Needed.—A shortage of nurses to care for the city's insane has led the director of public health and charities to ask the city's civil service commission to waive citizenship and residence requirements in order to obtain the services of Canadian nurses.

Blockley Interns Appointed.—The following men have been appointed to the resident staff of the Philadelphia General Hospital: Drs. Furman Angel, John S. Floyd, Charles A. Heiken, Alfred B. Nesler, Robert E. Crogan, Duma C. Arnold, Joseph A. Kervin, Frederick W. Mulsow, Russell O. Lyday and Adam R. Blakey.

Personal.—Dr. Charles H. Frazier has accepted a commission in the Medical Reserve Corps, U. S. Army, to attend the Interallied Surgical Conference to be held in Paris, July 18 to 23. He will make a report on the activities of the Neurosurgical Department of the Surgeon-General's Office during the period of reconstruction.

Health Survey.—The department of public welfare, according to an announcement made by its chief physician, Dr. Blair Spencer, will make a health survey of all girls and boys who go to the health centers of the city. Two physicians will be appointed to hold a clinic at ten recreation centers, the object being to discover any incipient illness among children and to guide them in treatment and exercises most beneficial to them.

Plans for Special School.—Plans have been completed by the University of Pennsylvania for the establishment of a special school of advanced training in medicine and sur-

gery to be opened in the coming autumn which will accommodate not only the graduate student who wishes to pursue his studies further, but also the trained surgeon and physician who wishes to extend his training. Two hundred physicians and surgeons will comprise the staff of the new school, which will open, October 4.

Bill to Regulate Drives and Campaigns.—In the twenty months that have elapsed since the armistice was signed, the people of Philadelphia have contributed $20,000,000 to "drives" of all kinds, according to figures compiled in connection with the introduction in the city council, June 29, of an ordinance to regulate the solicitation of funds for charitable purposes. This bill will require organizations conducting drives for funds to file with the department of public welfare complete information in regard to the proposed use of the money collected, it will require solicitors to apply for a license and pay a fee and it will empower the director of public welfare to investigate individuals and organizations filing applications.

CANADA

Personal.—Dr. Marchant B. Whyte, Toronto, director of medical service in the department of public health, has resigned, to take effect September 1.

Vital Statistics for Quebec.—According to figures just issued, the province of Quebec with a total population of 2,500,000, had 77,915 births in 1919, as against 82,521 in 1918, and 80,361 in 1914. The marriages reached a record number—21,997—there being only 12,031 in 1918. In 1919, the number of deaths amounted to 40,917, which is about equal to 52 per cent. of the births.

Federal Health Department.—Owing to the retirement of Hon. Newton Wesley Rowell from the ministry of health, doubt is expressed as to the future of the department. There is every likelihood with the advent of a new ministry for the dominion that some of the departments will be consolidated and it is feared by high medical officials that the department of health may be merged in some other department.

GENERAL

Gold Medal Awarded to Dr. Souchon.—The Committee on Awards at the New Orleans Session awarded the Gold Medal of the Scientific Exhibit to Dr. Edmond Souchon of New Orleans for his exhibit of anatomic dissections. In acknowledging the receipt, Dr. Souchon writes:

> The beautiful gold medal came this morning. I received it with great joy as the crowning glory of my declining years. In a few months I shall be 80.
>
> This work is my Song of the Swan, as I will not likely be able to do any more of it. My endurance is fast ebbing away.
>
> With kindest regards, EDMOND SOUCHON, M.D.

District Society Meeting.—The annual meeting of the Iowa and Illinois Central District Medical Society was held in Davenport, July 8. Dr. Gordon F. Harkness, Davenport, Iowa, was elected president; Dr. John W. Seids, Moline, Ill., vice president; Dr. William D. Chapman, Silvis, Ill., secretary, and Dr. William D. Snively, Rock Island, Ill., treasurer.

Meetings to Come.—The annual meeting of the Lake Keuka Medical and Surgical Association will be held at Keuka Hotel, Keuka, N. Y., July 29 and 30, under the presidency of Dr. Alfred W. Armstrong, Canandaigua.——The tenth annual meeting of the Lehigh Valley Medical Association will be held at The Kittatinny, Delaware Water Gap, July 22, under the presidency of Dr. Jacob A. Trexler, Lehighton, Pa.

Sioux Valley Surgeons Elect Officers.—At the twenty-fifth annual meeting of the Sioux Valley Medical Association, held in Sioux Falls, S. D., June 23 and 24, the following officers were elected: president, Dr. Ernest A. Jenkinson, Sioux City, Iowa; vice presidents, Drs. Charles L. Sherman, Luverne, Minn., and Goldie E. Zimmerman, Sioux Falls, S. D.; secretary, Dr. John A. Dales, Sioux City, Iowa, and treasurer, Dr. Walter R. Brock, Sheldon.

Industrial Nursing Organization Formed.—At a meeting of the National Organization for Public Nursing, held in Atlanta, Ga., April 10, an industrial nursing section was organized, the object of which is to stimulate interest in the special problems of the industrial nurse and to provide a forum for the discussion of such problems. Any member of the National Organization for Public Health Nursing may become a member of this section, and employers are also eligible for membership. Further information will be furnished by Florence Swift Wright, chairman of the section, 156 Fifth Avenue, New York.

Catholic Hospital Association.—The annual meeting of the Catholic Hospital Association was held at St. Paul, June 22-24. Many of the Catholic hospitals were represented by groups of sisters. There were also a number of physicians in attendance. Special interest was shown in the shortage of nurses, and a committee was appointed to suggest ways and means by which more student nurses could be recruited. The association is now publishing a monthly journal entitled *Hospital Progress,* and reports indicate an increased membership in the association, both by institutions and individuals. The election of officers resulted in the renaming of Rev. C. B. Moulinier, as president, and Charles F. McGrath, as secretary.

Yellow Fever Investigations in Central America to Be Continued.—In a report on the work of the Rockefeller Institute for Medical Research during 1919, Dr. George E. Vincent comments on the work in connection with the origin and treatment of yellow fever. No cases of yellow fever have appeared in Guayaquil since June 1, 1919, while from 1912 to 1918 the city averaged 259 cases annually, and there were 460 cases in 1918. The report announces that vigilance will not be relaxed for a year at least. The commissions created in Central American countries to regulate control measures will be continued through the year. Dr. Hideyo Noguchi, New York, will test the results at Guayaquil by further investigations at other places.

The Child Welfare Special.—The Child Welfare Special is a large government truck that is being used as a movable child welfare station for the purpose of carrying to remote regions the principles of child hygiene. It was built especially for this purpose, and follows in a general way the construction and equipment of the traveling dispensaries used in a number of the large cities of the country. The truck has been in operation since July, 1919, and in the meantime it has inspired welfare organizations in several communities to duplicate and augment the efforts of the government in furthering child hygiene. The Children's Bureau of the U. S. Department of Labor has just issued an illustrated pamphlet outlining the purposes and giving a detailed account of the workings of the Child Welfare Special, and it is ready to lend all possible assistance to related endeavors.

Scientific Research.—Under the auspices of the federal government, thirty-five scientific researches are being conducted simultaneously in the leading laboratories of the United States for the discovery of more effective measures in the treatment and prevention of venereal disease. These include researches at the State University of Iowa College of Medicine, on a selective medium for the isolation and cultivation of the gonococcus; at Northwestern University, Department of Chemistry, a synthesis of new organic mercury compounds for use in the treatment of syphilis of the central nervous system; at Washington University Medical School, a study of hereditary and congenital syphilis with particular reference to the progress of the disease in the individual and the effect of treatment; at the Medical School of Harvard University, a continuation of the investigation of toxicity of arsphenamin and analogous products and improved methods of manufacturing a safer and cheaper product; at Columbia University College of Physicians and Surgeons, Department of Bacteriology, New York City, a study of etiology of chancroids with especial reference to bacteriology, diagnosis and serum reactions; and at the University of California, Department of Pathology, Berkeley, classification of gonococci and fixation reaction in gonorrhea.

Infants' Deaths.—The Children's Bureau, U. S. Department of Labor, has been making series of studies of infant mortality in an endeavor to determine the conditions responsible for this "peak." In Manchester, N. H., during 1919, 63 per thousand babies born alive died from gastro-intestinal diseases, and in August more deaths occurred from these diseases than occurred in any other month from all causes combined. Two thirds of the babies in Manchester were born of foreign-born mothers; two fifths of mothers who could not speak English, and over one sixth of illiterate mothers. Nearly half were in families where the father's earnings totaled less than $650 a year, and more than two fifths were born of mothers who were gainfully employed during the year following the baby's birth. Mothers who worked away from home were in most cases obliged to wean their babies, and did not understand the importance of artificial food and modification of milk. Similar conditions prevailed in Johnstown, Pa., Waterbury, Conn., and New Bedford, Mass., where the infant mortality rates were 32, 41,

and 48 per thousand, respectively. In Saginaw, Mich., and Brockton, Mass., where the proportion of foreign-born, illiterate and gainfully employed mothers was comparatively low, and incomes were more nearly adequate, infant mortality rates from gastro-intestinal diseases were only 8 and 12 per thousand, respectively.

LATIN AMERICA

Plague in Mexico.—It is reported from Mexico that one death from bubonic plague and two new cases were reported at Vera Cruz on July 12. It is also stated that there have occurred several cases of yellow fever.

Personal.—Dr. E. R. Coni, the pioneer in public hygiene in Argentina, has been elected honorary member of the Havana Academy of Medical and Physical Sciences.——Dr. Juan Santos Fernández of Havana has been elected corresponding member of the S. Paulo Medical Society, Brazil.——Dr. F. M. Fernández of Havana has been elected corresponding member of the Sociedad oftalmológica méxicana and member of the Sociedad académica de Historia internacional. The two latter are director and editor of the *Crónica médico-quirurgica de la Habana.*

FOREIGN

Race Biology Institute.—It is announced that the Swedish parliament has appropriated 50,000 crowns for the yearly maintenance of the Racebiologisk Institut at Upsala, of which Prof. H. Lindborg is in charge.

Roentgen-Ray Injuries.—The cable reports that the radiologist, Dr. C. Infroit, of Paris, had to have his remaining arm amputated on account of roentgen-ray injuries. This is the twenty-fourth operation he has had to undergo since 1898.

Brazilian Hospital Transferred to France.—The hospital installed by Brazilians in Vaugirard, France, at a cost of $2,000,000 has been offered by the government of Brazil to France and has been accepted by the Paris Faculty of Medicine.

Marriage and Disease.—The new Danish marriage law is up for its third reading in the Folketing (Lower House) after which it will go to the Landsting (Upper House) for consideration. The committee having the draft in charge is unanimous in approving the following provisions:

1. If the person who wishes to contract a marriage does not suffer and has never suffered from venereal disease, he shall give a written declaration on his honor to that effect.
2. In the opposite case, he must either put in a doctor's certificate, made within the previous fortnight that the danger of infection or its transmission to the children is most improbable; or
3. If such a declaration cannot be made, he must prove that the other party to the marriage has been informed as to the disease, and that both parties have had oral instruction from a doctor as to the dangers consequent thereon.

Deaths in Other Countries

Dr. **de Pezzer,** a well known urologist of Paris.——Dr. **Susano Almado** of Montevideo, a leader in the fight against tuberculosis, aged 50.——Dr. **J. F. Fuste** of Placetas, Cuba. ——Dr. **Cayetano Vilalta** of Manbanillo, Cuba, and Dr. **A. Lobato** of Havana, both members of the national legislature.

CORRECTIONS

Dose of Arsphenamin.—In the article by Dr. Oliver S. Ormsby, Chicago, THE JOURNAL, July 3, page 4, second column, it is stated that frequently repeated small doses, that is from 0.1 to 0.5 gm., are inefficient. The figures should be 0.1 to 0.15 gm.

Society Election.—In the May 29 issue of THE JOURNAL it was announced that Dr. Warren G. Patton, Cape Girardeau, had been elected president of the Southeastern Medical Association. The new president of the association is Dr. William G. Patton of Cape Girardeau.

Treatment of Anthrax.—In an article on "Anthrax," THE JOURNAL, May 22, page 1441, Dr. Albert J. Scholl, Jr., Los Angeles, states that Regan reports a successful case and suggests phenol injections at the site of the wound. The statement is an error. We are informed that Regan used anthrax serum locally.

Interstitial, Not Epithelial.—In THE JOURNAL, June 19, page 1748, the abstracter quotes Ishibasi, *Mitteilungen a. d. med. Fak. d. kais. Univ.,* Tokyo, to the effect that he finds no relation between the total amount of the interstitial cells and the secondary sexual characters, but erroneously uses the words "epithelial cells." In the abstract, the word "interstitial" should be substituted for "epithelial."

Government Services

Colonel McCoy Honored

John C. McCoy, Lieut.-Col., M. C., U. S. Army, Paterson, N. J., was decorated with the Distinguished Service Cross at Governor's Island, April 30. Colonel McCoy was cited for exceptional bravery under fire at a hospital at Joug-sur-Nurin and at Chateau-Thierry, where he commanded Red Cross hospitals.

Funeral Honors to General Gorgas

Unusual honors were paid July 9, at the funeral ceremonies of Major-General Gorgas in St. Paul's Cathedral. King George V was represented by Sir Thomas Herbert John Chapman Goodwin, K. C. B., C. M. G., D. S. O., and a salute of thirteen guns was fired as the procession started from Queen Alexandra Military Hospital. The procession was led by the Coldstream Guard band, followed by detachments from the Coldstream Guards, the Life Guards and other military organizations. Representatives from all the allied powers and from scientific organizations of England and the continent were honorary pallbearers.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list L. signifies lieutenant; C., captain; M., major; L. C., lieutenant colonel, and Col., colonel.

ARKANSAS
Wesson—Slaughter, J. W. (L.)

COLORADO
Boulder—Salberg. J. B. (L.)
Denver—McGugan, W. A. (C.)
Preston, M. E. (M.)
Walker, A. G. (C.)
Frederick—Leyda, J. H. (C.)

DISTRICT OF COLUMBIA
Washington—Cox, S. G. (M.)
Dickerson, D. G. (L.)
High, D. L. (M.)

GEORGIA
Milledgeville—Saye, E. B. (C.)

ILLINOIS
Anna—Rendleman, G. F. (L.)
Chicago—Moir, C. L. (M.)
Monmouth—McKinley, R. W. (L.)
Towanda—May, O. F. (L.)

INDIANA
Attica—Casey, E. B. M. (L.)
Evansville—Cox, J. B. (C.)

KANSAS
Osawatomie—Frazer, B. F. (L.)
Seneca—Rudbeck, J. (L.)

MARYLAND
Baltimore—Darby, W. A. (L.)
Herring, A. P. (M.)
Fallston—Yellott, R. E. (C.)

MASSACHUSETTS
Boston—Stack, J. J. (C.)
Newton—Maskell, L. J. (C.)

MICHIGAN
Detroit—Bulson, G. A. (C.)
Hart—Day, C. (C.)
Sault Ste. Marie—Lemon, A. E. (M.)

MISSISSIPPI
Schlater—Holland, M. L. (L.)

MISSOURI
Kansas City—McCarty, G. D. (L.)

MONTANA
Scobey—Tucker, C. C. (L.)

NEBRASKA
Broken Bow—Talbot, W. E. (M.)

NEW HAMPSHIRE
Haverhill—Squires, W. H. (C.)

NEW JERSEY
Atlantic City — Clement, E. B. (C.)

NEW MEXICO
Lordsburg—James, S. H. (L.)
Pinos Altos—Robinson, L. B. (C.)

NEW YORK
Beacon—Du Bois, L. C. (C.)
Dunkirk—Meister, H. J. (C.)
Glen Cove—McBirney, R. S. (L.)
New York—Herrick, W. P. (C.)
Hunter, J. R. (C.)
Price, J. (L.)
Rockville Centre—Martin, A. C. (M.)

NORTH CAROLINA
Laurel Hill—Willcox, J. W. (L.)
Oak City—House, W. H. (L.)

OHIO
Jamestown—Troute, F. R. (L.)

OKLAHOMA
Berwyn—Webb. J. W (L.)
Tulsa—Gwin, H. B. (C.)

OREGON
North Bend—Bartle, I. B. (M.)
Portland—Matson, R. C. (M.)

PENNSYLVANIA
Glen Rock—Lutz, J. F. (M.)
Philadelphia — Baier, G. F., Jr. (L.)
Schartz, F. W. (M.)
Pittsburgh—Heilman, H. C. (C.)

SOUTH CAROLINA
Charleston—Wynne, W. R. (L.)

TEXAS
Belton—Denman, J. A. (C.)
Dallas—Loving, R. S. (C.)
Delvalle—Morris, E. T. (L.)

UTAH
Murray—Knott, A. D. (C.)
Ogden—Forbes, H. B. (C.)

VERMONT
Montpelier—Tindall, W. J. (M.)

VIRGINIA
Snowville—Summers, F. T. (L.)

WEST VIRGINIA
South Charleston—Henson, A. N. (L.)

WISCONSIN
South Kaukauna—Hoyt, B. F. (C.)

MEDICAL OFFICERS, U.S. NAVY, RELIEVED FROM ACTIVE DUTY

DISTRICT OF COLUMBIA
Washington—Calcote, R. J.

NEW YORK
New York—Eisler, S.
Walsh, W. J.

OREGON
Seaside—Briscoe, L. E.

PENNSYLVANIA
Philadelphia—Carey, H. M.

VIRGINIA
Richmond—O'Brien, W. A.

Foreign Letters

PARIS.

(From Our Regular Correspondent)

JUNE 24, 1920.

Rapid Test for Butter Fat

Dr. Icard of Marseilles, speaking before the Société de pathologie comparée, recently called attention to a practical method for examining milk, especially applicable to the milk of wetnurses. A drop of milk is placed on a piece of paper, which is placed across the two branches of a hair-pin resting on an iron spoon. This is then held in an alcohol or gas flame, or over the globe of an oil-lamp, for from three to five minutes, or until the drop of milk has dried and has assumed a dark caramel tint, almost black. At this moment it will be seen that a dark caramel spot is surrounded by a bullous halo, which can be clearly distinguished. The diameter of this halo is proportional to the butter fat content of the milk. A good cow's milk will give a halo nearly three times that obtained with a drop of ordinary milk.

The procedure will be especially valuable in examining wetnurses. It will give very reliable information about the nutritive value of the milk and it will make it possible to determine the variations in fat content during the nursing period, and especially under certain physiologic and pathologic conditions (menstruation, pregnancy and various diseases.) The halo obtained with a drop of good human milk is always smaller than that with a drop of good cow's milk. The same procedure may also be applied to the examination of cheese, but the halo is much larger, owing to the greater fat content.

The Physicians of Alsace

Alsace is still under a transition government, which has occasioned considerable difficulties, especially emphasized in regard to the status of Alsatian physicians. Most of these are graduates of the German faculty of Strasbourg, and have not up to the present time been authorized to practice elsewhere than in Alsace-Lorraine. During the World War, many of them gave their services to France in Red Cross hospitals and by attending the civil population.

At the armistice, however, it was determined that they could not practice medicine in France, and they therefore returned to Alsace. At that time a demand was made that the question of recognizing the Strasbourg diploma as equivalent to the French diploma be settled as soon as possible. Up to date nothing has been done about it.

The Association de la presse médicale française at its last meeting displayed considerable agitation over this state of affairs, and adopted a motion requesting early settlement of the question by Parliament. The resolution was sent to the medical members of Parliament, and these will take prompt steps to improve the status of their Alsatian confrères.

The Public Health Budget

Dr. Roux, director of the Pasteur Institute of Paris, at a recent meeting of the Académie de médecine, remarked on the fact that the budget of the Ministère de l'hygiène, assistance et prévoyance sociale carries 105,000,000 francs for relief and only 2,730,000 for hygiene. This disproportionate appropriation for public health work shows that the care of the sick has until now outweighed the prevention of disease, a policy which should not be continued. To care for the sick is good, but to prevent disease is still better. If it is hoped to reduce, some day, the expenditures for charity, it is necessary to start now by increasing the appropriation for public health work. The Academy adopted a resolution requesting an increased budget for hygiene and a reorganization of the service along lines which will best serve the public good.

Epilepsy Prize Competition

On several occasions, attention has been called to an important international competition for a prize of 100,000 francs, offered by an anonymous donor to that investigator who should effectively disclose by clinical study, and, if necessary, by experiment, the pathogenesis and treatment of nervous diseases, especially epilepsy. The competition lasted during 1913-1919, but the capital prize was not awarded. However, three papers were retained and were deemed worthy of reward: one by Dr. Dujardin, Brussels, another by Drs. Bouche and Hustin, Brussels, and a third by Drs. Dide and Guiraud, Toulouse.

Committee on Day Nurseries

At the time when the first hot spell threatened the recrudescence of infant mortality, M. Raux, prefect of police, called a meeting of a number of presidents of Paris day nurseries in order to coordinate the efforts of the various agencies interested in the protection of infant life. In Paris, there are more than 160 nurseries established through private charity, not counting those attached to factories or the milk stations ("gouttes de lait") which render splendid services to infants in the populous centers. In each of these nurseries more than twenty infants are cared for and fed.

The prefect of police conceived the idea that it would serve a useful purpose to organize the presidents of these agencies into a Comité consultatif des crêches. This new committee will occupy itself with the development of breast feeding; it will study the difficulties and advantages of artificial feeding and will make recommendations regarding feeding bottles, cradles, and other articles employed in the care of children. Those nurseries which play a passive rôle will have a new field of activity in the teaching of hygiene directly to mothers. Finally, when children are found in a bad state of health because of insanitary housing conditions, the nurseries can refer these to the attention of the prefect of police who will be able to suggest correction of the evil by the property owner.

LONDON

(From Our Regular Correspondent)

June 26, 1920.

The Revolution in Medical Service

The revolution in the medical service of the country, described in a previous letter, was the subject of an address by Lord Dawson of Penn to a branch of the British Medical Association. It may be remembered that he is chairman of the Consultative Medical Council, appointed to advise the ministry of health, which brought forward the scheme. He pointed out that the health of the citizen was now seen to be of supreme importance, and it was agreed that organized measures must be taken for securing it. A series of whole-time services had been set up one by one. The school service, for example, had become almost a detached service, with a certain number of physicians earning their living entirely as school medical officers. More recently there was set up a tuberculosis service, then a venereal service, and lastly, a maternity service. The second evident fact was that physicians today were not in a position to do or give the best for their patients along purely individual lines. In his hospital days a man had every facility for following up his cases in the various departments; he could look at the roentgen-ray image, he could see the testing of the secretions, and he could go into the operating theater and the postmortem room. But on going into practice he dropped suddenly down to the limited opportunities of an office in a private house, and when he went to the homes of the people the social surroundings were often such that he could not do his best. The practice of medicine right through the community must have proper

organization and provision. The insurance act was one endeavor to bring medical treatment within the reach of the people more completely than before; but if the best means for the treatment of the community were to be made available, the range of benefit must not be restricted to insured persons. The state could not be asked to make those means available only for one section of the community. The reference to the Consultative Council was therefore to suggest ways whereby the medical services of the country could be so systematized as to provide what should be made reasonably available for all members of the community. The recommendations were designed to secure: (1) the provision of buildings and equipment; (2) services correlated and made available for all; (3) opportunity for physicians to do their best work and further their knowledge; (4) coordination of preventive and curative medicine, and (5) freedom of action for physician and patient. It was difficult to combine all these ideals. If the point of view of the administrator alone were considered, recourse would be to a whole-time service. But that was felt not to be the best thing in the interest of the health of the community. The correlation of preventive and curative medicine was most important, and at present the physician was not identified closely enough with prevention and with the maintenance of communal health. He had yet to be brought into contact with the preventive services. The higher posts in such services must necessarily be in the hands of specialists, but the physician, nevertheless, must somehow be identified with preventive work. With the advance of knowledge, the line of demarcation between prevention and cure became increasingly blurred. A further principle on which the council had acted was that the work of a district should as far as possible be performed by the physicians of that district, who should be paid on a part-time basis. This in itself would bring preventive medicine more under the ken of the general physician. Then, it was realized also that the physicians must have opportunities of following up cases and investigating disease from different standpoints. The work of medicine was becoming less the work of an individual, and more the work of a team. An increase of institutional provision was therefore indicated. What was suggested was new; there was no experience from any other country to guide them; indeed, other countries were watching the experiment with a view to imitating it. The term "health center" was employed because something bigger and more embracing was desired than the term "hospital." The center might be defined as an organization to bring together the curative and preventive services of a given district. In a typical instance it might contain fifty beds, with certain clinical accommodation where consultations might take place and patients be seen other than those in the beds; also a roentgenographic room, a laboratory and other departments, and a common room, where physicians could hold meetings. The essential thing about the primary health center was that it should be staffed by the physicians of the district, and that when a patient left his home and went into the clinic he would be followed there by his own physician. The primary health centers in a given area would be connected with a secondary center, which instead of being staffed by physicians would be staffed by consultants, or by physicians acting in a consultative capacity. Then, to complete this ideal arrangement the secondary centers would be linked with a teaching hospital, which would be scheduled as a national institution with a "zone of influence" attaching to it.

The Medical Curriculum

The General Council of Medical Education is discussing the reform of the medical curriculum. Sir George Newman, principal medical officer of the ministry of health, whose official memorandum on medical education in England has attracted much attention, put in a plea for the importance of the preliminary science subjects in relation to clinical medicine and surgeory. He thought it desirable to strengthen these science subjects rather than weaken them. Chemistry, physics and biology were continually becoming more closely allied to clinical work. He laid down six points for consideration in connection with that broad and generous revision—he would not say revolution—of the curriculum which the time was more than ripe for the council to discuss. His six points were: 1. The curriculum ought to be lightened at both ends. We were not giving our students time to think or digest. True culture or learning was never forthcoming on the principle of the general scrimmage. 2. An endeavor should be made to coordinate the preliminary scientific and intermediate subjects with each other and with the clinical, and to make the preliminary scientific subjects much more applied. 3. The reorganization of clinical teaching must be considered. In America and Germany he had seen no clinical teaching to compare with the best in this country, but our clinical teaching wanted reorganization so that the clinical teacher was in a position to give his best, and not a mere residuum. 4. He would like to see the provision of ampler education in four or five particular subjects, namely, venereal diseases, tuberculosis, maternity and infant welfare, orthopedics and mental diseases. 5. There must be some kind of postgraduate equipment, first for dealing with specialism, and secondly, for insuring the continued education of the student. 6. He would put in a plea for a reform of the examination system. The examination system must follow the training, not lead to it. It must include the preparation of the student, not exclude it. It must represent not a hazard but a certainty. It must be an instrument by which the center of gravity was thrown upon the curriculum rather than upon the examination room itself. This would alter the whole outlook for the student. He would see that his education was not a scrimmage for an uncertain goal, but a course of study for a final destiny.

BELGIUM

(From Our Regular Correspondent)

June 16, 1920.

Rationing of Belgium During the War

M. Demoor, this time in collaboration with M. Slosse, has published another study on the food conditions in Belgium during the war, and the disastrous consequences to the population. The conclusions of this contribution are very interesting from a physiologic and sociologic point of view. They are based on the results of an impartial scientific investigation by one with a strict professional conscience. He brings out the fact that the average daily ration for a man was equivalent to from 1,400 to 1,500 calories with 35 gm. of protein (largely vegetable). This diet, decidedly below requirements, caused serious impairment of the health, as observed in 1916 by Professor Lucas, a representative of the American Commission to Belgium, in a report to Mr. Herbert Hoover. The work is of special social and political import and deserves attentive perusal, all the more so as certain data are apparently in direct contradiction to the findings of Professor Starling during his investigation in Germany. A fairly complete version of the official résumé published by the Royal Academy may therefore be of some interest.

The Comité National, which managed the food rationing, understood from the beginning of hostilities, that after giving all of Belgium the largest ration which could possibly be distributed (it is now seen that it was insufficient), it must seek especially to protect and sustain the children.

It undertook the feeding of all infants from 0 to 1 year, and granted a supplementary ration to pregnant women and

to nursing mothers. Later it provided extra meals for debilitated children. In February, 1918, it distributed 11,343,000 varied meals of from 600 to 825 calories, to children between 3 and 16 years. From 1916 to the end of the war, school lunches consisting of 70 gm. of bread, 5 gm. of lard, and milk (when available) were provided for 1,174,000 children. This then constituted the dietary of the Belgians during the war; an insufficient regimen, in fact, which could only lead to much misery. Some selected facts among those recounted by the various authors will justify this assertion.

INFANTS UNDER ONE YEAR

Thanks to the special measures of infant care, enteritis practically disappeared and infant mortality fell off in 1915 and 1916. In the following two years, the figures again increased without, however, attaining the proportions of the period before the war. But the decreased mortality does not prove that the children were more robust than normally or that the general diet was good. As a matter of fact the weight of new-born infants averaged only 2,500 gm. at birth (Antwerp and Brussels) as compared with the prewar average of 3,000 gm., and there was an increase of mortality from congenital debility. Their physical development (height and weight) was inadequate. On the whole while the lives of living children may have been protected, the unborn children came into life with marked unfavorable heredity.

CHILDREN FROM ONE TO SIX YEARS

The incidence of rickets increased markedly and attained proportions hitherto unknown in Belgium.

CHILDREN FROM SIX TO FOURTEEN YEARS

In this age group, development was greatly retarded and the average weight and height for the various ages at the end of the war was below normal by a figure corresponding to the growth of one full year. In the course of the four years of war, then, the average child lost one year in physical development. Dr. Dubois' figures show that the same was true in Liége.

CHILDREN IN ORPHAN ASYLUMS

The orphans were given a special examination in May, 1918. In two orphanages at Herenthals, for example, the dietary yielded a total of 1,341 calories (30 gm. of protein and 17 gm. of fat) in one, and 1,871 calories (58 gm. of protein) in the other. Now, in the first orphanage two thirds of the children were below the normal height and weight, and in the second one half of the inmates were subnormal. So then, in spite of all the special care which they received, these two groups comprised three fourths or one half of children with serious physical impairment. Before the war, in a communal school of the poorest quarter of Brussels, only one fourth of the children showed as much impairment.

ADULTS

The mortality rate of adults increased during the war, slightly in 1916, but more in 1917 and 1918. Influenza and tuberculosis undoubtedly made great inroads, but deaths from renal and cardiac diseases were also much more numerous. Immunity processes were lowered and the body's resistance against disease was enfeebled. Undoubtedly, adults were greatly reduced in robusticity, the average loss in weight for men in Brussels and Liége being 10 kilograms. In 1916, among 600 inmates of an agricultural colony for the insane in Gheel, an average loss in weight of 4.2 kg. was noted. These facts are brought out by Drs. Demoor and Slosse, who discussed at the same time a British parliamentary report by Prof. E. H. Starling on his investigations in Germany after the armistice. Professor Starling claimed that the average food allowance per man in Germany was 1,500 calories, plus 200 calories (from cultivated legumes) plus 300 calories extra for workingmen (45 gm. of protein, and from 15 to 20 gm. of fat). He contended that this ration was deficient and he showed that the general health was impaired and that both children and adults were suffering. The London physiologist compared the present German ration and its consequences with that which he believes to have been the Belgian ration during the war. According to him the program of the American Commission during the war provided a ration averaging 2,842 calories per man (2,274 calories per inhabitant) and that the Belgians were not much impaired and cases of undernutrition were rare.

The Belgian professors are asking their English colleague why he did not get direct information on the real facts about the rationing of Belgium. Of what significance is a program? In times of war, ship arrivals are irregular and agricultural and other products are constantly commandeered by the enemy; therefore the food actually distributed and not that which it was planned to provide should be considered. As a matter of fact, the Belgian subsisted on from 1,400 to 1,500 calories during the war.

If Professor Starling had made the same inquiries in Belgium that he made in Germany he would have found that tuberculosis and debility have increased considerably and that all the misery described by Professor Lucas, in 1916, became accentuated in 1917 and 1918. He would have encountered the populace, overwhelmed by ruthless invaders, preserving their moral strength in opposing the enemy, though physically they were much enfeebled and tottering. Such an inquiry would have prevented inclusion of the erroneous conclusions regarding Belgium.

MEXICO CITY

(From Our Regular Correspondent)

July 4, 1920.

Decrease of Plague Epidemic

According to the official data from June 18 to June 25 there were at Vera Cruz only seven new cases and three deaths of bubonic plague, making a total of forty-six cases and twenty-nine deaths from the beginning of the epidemic. From June 25 to July 2 there have been no new cases, and in view of the energetic measures being carried out, it is to be hoped that no more cases will occur. However, the epizootic has not subsided, since the plague bacillus has been found in two of the trapped rats. As a result, the deratization measures are being pushed, and the department of public health, in order to prevent new invasions, is going to establish at Vera Cruz a permanent deratization service. Aside from the original focus at Vera Cruz, no others have been discovered, and a general campaign against rodents in this capital and other places has been carried out only as a precautionary measure.

Mexican Medical Association

Our association has established its headquarters at No. 18, Avenida Juárez. In order to celebrate the opening, as well as the first anniversary of its foundation, the association will give a concert for physicians and their families. There has already been published the first number of the *Bulletin* of the association, which, so far, is only an organ for propaganda and information. As it is intended that the journal of the association will keep abreast of similar foreign publications, it has been decided to postpone its appearance until the necessary elements are available.

In Honor of Dr. Licéaga

The National University, the Mexican Medical Association, the Academy of Medicine and other scientific societies held recently joint funeral services in honor of the late Dr. Licéaga, who died in the early part of this year and whose

memory as a scientific and public official we try to keep alive as a model for future generations. On its part the Department of Public Health has rendered homage to Dr. Licéaga, placing his portrait in its assembly hall. On this occasion the chief of this department, Dr. Malda, a pupil and admirer of Dr. Licéaga, spoke on the virtues that distinguished the latter.

Personal

Dr. Enrique González Martínez, a well known writer and former undersecretary of public instruction, has been appointed minister of Mexico to Chile, and will leave very soon for Santiago.——Nothing is known about the whereabouts of Dr. Alfonso Cabrera, former governor of the state of Puebla, who had to abandon his capital during the last revolution. Dr. Cabrera always took an active interest in everything pertaining to the profession. He contributed greatly to the success of the Fifth National Medical Congress, founded and supported for two years the *Revista Médica,* had a law adopted regulating the practice of liberal professions, and during his term of office some "healers" were sent to jail for practicing medicine illegally, which is an unusual occurrence in this country.——Dr. Alfredo Caturegli has been appointed Mexican financial agent in New York.——Dr. A. Lara N. has been designated as head of the School of Medicine of the State of Yucatán.——It is expected that in the near future there will return to this country Dr. F. Vásquez Gómez, now of San Antonio, Texas, who was a former candidate for the vice presidency of Mexico, and Dr. Fernando Zárraga, former dean of the School of Medicine, now of Los Angeles. Both had to leave several years ago on account of politics.

Marriages

FRANK IGNATIUS STUART, Independence, Mo., to Miss Minnie Ruth McLaughlin of Monticello, Iowa, June 29.

ABRAHAM LEBENDIG, Rochester, N. Y., to Miss Mamie E. Spoont of Shenandoah, Pa., at Rochester, June 29.

OLIVER H. KELSALL to Miss Dorothy May Dietzmann, both of Louisville, Ky., at New Albany, Ind., June 22.

WILEY WARREN JOHNSTON, Winston-Salem, N. C., to Miss Bess Swearnghan of Charlotte, N. C., June 10.

WILLIAM OTTERBEIN ROOP, Atlantic City, N. J., to Miss Emma L. Taylor of Jackson, N. C., June 26.

SYLVESTER C. E. ALLEN, Waterloo, Wis., to Miss Mercy Rockwood of Oshkosh, Wis., June 19.

FREDERIC GEORGE MAURER, Lima, Ohio, to Miss Odilia Ann Neumeyer of Toledo, Ohio, June 19.

STEPHEN PASCHAL KENYON, Dawson, Ga., to Miss Lucille Hooper of Atlanta, Ga., June 16.

RAY HOSKIN RULISON to Miss Mildred Fowler Gignoux, both of Monroe, N. Y., June 28.

HENRY KAPLOVICH, Haverhill, Mass., to Miss Lillian Cohen of Somerville, Mass, June 1.

GEORGE B. RANDALL, Buhl, Idaho, to Miss Mathilda Bohr of Pocatello, Idaho, June 10.

BENJAMIN AUGUSTUS to Miss Anna Beatrice Davidson, both of Chicago, recently.

ROY ROBERT HALEY to Miss Mary Katherine Erwin, both of Brookfield, Mo., June 28.

EU YOUNG KAU, New York City, to Miss Mabel F. J. Tyau of Philadelphia, June 16.

JAMES LOUIS LOCASCIO to Miss Olga Marie Elliott, both of New Orleans, June 23.

SOLOMON BILOON to Miss Fannie R. Levin, both of New York City, June 20.

BENJAMIN KADISH to Miss M. Saplitzsky, both of Chicago, June 27.

JACOB RUCHMAN to Miss Edith I. Max, both of Brooklyn, June 27.

Deaths

Joseph Oakland Hirschfelder ⊕ San Francisco; University of Leipzig, Germany, 1876; aged 65; died, July 4. After studying for two years at the University of California and a year at the Medical College of the Pacific, he completed his medical studies at Wurzburg, Berlin and Leipzig. On his return to America in 1877, he was made professor of materia medica and clinical medicine in the Medical College of the Pacific, San Francisco, and continued as professor of clinical medicine throughout the life of Cooper Medical College from 1882 until its absorption by Leland Stanford, Jr., University, when he become emeritus professor. Working with General Sternberg, he was one of the first in this country to confirm Koch's findings of the tubercle bacillus. In his latter years he devoted himself chiefly to experimental medicine. His work was all done in his own laboratory at his own expense, with tireless devotion and thoroughness. His methods were largely original and his experimental resourcefulness excellent. He was a keen diagnostician and warm-hearted physician, and held for many years a leading position as a practitioner and consultant.

Adolph Alt ⊕ St. Louis; University of Heidelberg, Germany, 1875; aged 69; a member of the American Academy of Ophthalmology and Oto-Laryngology and American Ophthalmological Society; professor of ophthalmology in Beaumont Hospital Medical College, St. Louis University Medical School, and Washington University, and professor emeritus in the latter institution since 1917; a veteran of the Franco-Prussian War; oculist and aurist to the St. Louis Mullanphy Hospital, and consulting oculist to several hospitals of the city; died, June 28, from heart disease.

John Henry Curtis, New Britain, Conn.; University of the City of New York, 1886; aged 56; for twelve years professor of therapeutics in the College of Physicians and Surgeons, Chicago; for several years an official of the Chicago Health Department; who went to New Britain in February as superintendent of the local department of health; died, June 26, from embolism.

William Hamilton Lambert, Moosejaw, Sask.; University of Toronto, Ont., 1893; aged 51; major, R. A. M. C., during the World War, with service in Asia Minor and Egypt, and since the war president of the examining board at Moosejaw, and consultant in diseases of the eye and ear in the Military Hospital; died, June 11, from nephritis.

Charles Arthur Pauson ⊕ San Francisco; University of California, San Francisco, 1907; aged 38; captain, M. C., U. S. Army, and discharged March 26, 1919; died in Mount Zion Hospital, San Francisco, June 29, from acute congestion of the brain and lung due, it is said, to a local anesthetic, injected preparatory to a tonsillectomy.

Marion Tracy Davis ⊕ Atlanta, Ga.; University of Maryland, Baltimore, 1892; aged 51; formerly a member of the staff of the Grady Hospital, Atlanta; died, June 26, from the effects of a gunshot wound of the head, believed to have been self-inflicted, with suicidal intent, while despondent on account of ill health.

John D. Sourwine ⊕ Brazil, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1896; aged 67; local surgeon for the Big Four system; said to have been the builder of the first traction line in the United States; formerly a druggist; postmaster of Brazil in 1884; died, June 26, from heart disease.

James Stratton Carpenter, Pittsville, Pa.; University of Pennsylvania, Philadelphia, 1882; aged 61; local surgeon for the Pennsylvania system since 1889; surgeon of the Eighth Infantry, N. G., Pa., from 1885 to 1895; president of the Schuylkill County Medical Society in 1889-1890; died, July 3.

Oscar Baker Steely ⊕ Pocatello, Idaho; Jefferson Medical College, 1891; aged 58; formerly president of the Idaho State Board of Health; a member of the Association of Military Surgeons of the United States; division surgeon of the Oregon Short Line; died, June 27, from angina pectoris.

Delbert Joseph Miller ⊕ Alliance, Ohio; University of Michigan, Ann Arbor, 1888; aged 57; died at the home of his brother, near North Benton, Ohio, June 29, from the effects of a gunshot wound, self-inflicted, it is believed, with suicidal intent, while suffering from melancholia.

George W. Thomas, Chester, Pa.; Howard University, Washington, D. C., 1908; aged 45; a colored practitioner;

⊕ Indicates "Fellow" of the American Medical Association.

and a member of the staff of Douglas Hospital, Chester; died in Chester Hospital, June 18, from surgical shock a few hours after an operation for appendicitis.

Ellsworth S. Blythe, Allen, Texas; Vanderbilt University, Nashville, Tenn., 1884; aged 61; a member of the State Medical Association of Texas; died in a sanatorium in Dallas, June 14, from malignant disease, for which an operation had been performed four days before.

John Calvin Fulton, Bluffton, Ind. (license, Indiana, years of practice, 1897); aged 75; a practitioner for more than fifty years; a member of the Indiana State Medical Association; a veteran of the Civil War; died, June 22, from carcinoma of the intestines.

Robert Shelby Cowan, Girard, Ill.; St. Louis Medical College, 1867; aged 87; a charter member of the Macoupin County Medical Society; a surgeon of Third Missouri Volunteer Cavalry during the Civil War; for three terms mayor of Girard; died, June 18.

Thomas Linton Price, San Francisco; Medico-Chirurgical College of Pennsylvania, Philadelphia, 1897; aged 54; was found dead in a skiff at Wingo, Calif., June 19. Death is believed to have been due to heart disease, resulting from heat exhaustion.

Joseph Burton Connell, Kansas City, Mo.; Kansas City (Mo.) Medical College, 1887; aged 64; formerly professor of skin diseases in the Medical Department of the State University of Kansas; died in a sanatorium in Jacksonville, Ill., June 18.

James C. Stewart, Kansas City, Mo.; Kansas City (Mo.) Homeopathic Medical College, 1895; aged 69; professor of visceral anatomy in his alma mater; formerly a builder and contractor; died, June 21, from the effects of roentgen-ray burns.

Davison Hughes Ray, Bingham Canyon, Utah; University of Louisville, Ky., 1907; aged 39; after his graduation acting assistant surgeon in the United States Public Health Service; died at his country home near Bowling Green, Ky., June 27.

John Edgar Hathorn, Bartley, Neb.; Rush Medical College, 1874; aged 75; a member of the Nebraska State Medical Association; at one time a member of the state legislature; died, May 6, as the result of an automobile accident.

William Austin Tomes, Brooklyn; College of Physicians and Surgeons in the City of New York, 1891; aged 55; a member of the Medical Society of the State of New York; died, June 28, from carcinoma of the liver.

Robert H. Milnor, Warrensville, Pa.; Jefferson Medical College, 1896; aged 52; a member of the Medical Society of the State of Pennsylvania; died in Hahnemann Hospital, Rochester, N. Y., June 24, from nephritis.

Sidney P. Hollingsworth, Washington, D. C.; National University, Washington, D. C., 1886; who had been in the patent business in Washington for many years; died, June 18, in the Emergency Hospital, Washington.

Edmund Oldham, Chatsworth, Ont.; Queens University, Kingston, Ont., 1881; medical officer of the Thirty-First Regiment with rank of lieutenant-colonel for twenty-five years; died, June 8.

George Thomas Northcutt, Seligman, Mo.; University of Tennessee, Nashville, 1896; aged 54; a member of the Missouri State Medical Association; died, May 18, from cerebral hemorrhage.

Thomas W. Duvall, Lynchberg, Ohio; Medical College of Ohio, Cincinnati, 1886; aged 55; a member of the Ohio State Medical Association; died, May 21, from cerebral hemorrhage.

Joseph M. Wells ⊕ Trenton, N. J.; Jefferson Medical College, 1878; aged 63; for many years local surgeon for the Pennsylvania system; died, June 11, from cerebral hemorrhage.

James Anderson, Hamilton, Ont.; University of Toronto, Ont., 1880; aged 61; died recently at the Mayo Clinic, Rochester, Minn., after an operation for carcinoma of the throat.

Sebastian Cabot Hatton, Riverton, Iowa; College of Physicians and Surgeons, St. Joseph, Mo., 1882; aged 71; died in the Jennie Edmundson Hospital, Council Bluffs, Iowa, July 5.

Elijah H. Hesterly, Cerro Gordo, Ark. (license, Eclectic State Medical Board of Arkansas, 1903); aged 47; was accidentally drowned, while fording Little River, June 19.

George David Arnold, Cleveland; University of Pennsylvania, Philadelphia, 1871; aged 71; a member of the Ohio State Medical Association; died in Mexico, June 14.

Donald A. Kellogg, Sacramento, Calif.; Bellevue Hospital Medical College, 1889; aged 54; a member of the Medical Society of the State of California; died, June 23.

George Louis Ahlers, Pittsburgh; University of Buffalo, 1883; aged 55; formerly police surgeon of Allegheny, Pa.; died, June 21, from carcinoma of the stomach.

John Wesley Blades, Hornell, N. Y.; University of the City of New York, 1881; aged 74; local surgeon for the Erie Railroad; died, June 28, from heart disease.

William P. Patterson, Beauregard, Miss.; license, Mississippi State Board of Health, 1882; aged 82; died in Hattiesburg, Miss., May 1, from senile debility.

Ernest A. Bleuler, South Bend, Ind.; Washington University, St. Louis, 1898; aged 60; died in Epworth Hospital, South Bend, June 12, from heart disease.

Thelesphere Chagnon, Brooklyn; Long Island College Hospital, Brooklyn, 1894; aged 61; also a pharmacist; died, June 22, from cerebral hemorrhage.

Thomas Cope, Nazareth, Pa.; Jefferson Medical College, 1869; aged 72; a member of the Medical Society of the State of Pennsylvania; died, June 26.

Robert Joseph Thompson, Versailles, Ky.; Kentucky School of Medicine, Louisville, 1870; aged 73; died at the home of his sister in Versailles, June 22.

John Horner, White Water, Kan.; Eclectic Medical Institute, Cincinnati, 1880; aged 87; for fifty years a resident of Butler County; died, June 19.

George W. Higbee, Sullivan, Ind.; Homeopathic Medical College of Missouri, St. Louis, 1870; aged 78; a veteran of the Civil War; died, June 12.

Ernest C. Brown, Madrid, Iowa; University of Michigan, Homeopathic Medical School, Ann Arbor, 1893; aged 53; died, May 30; from tuberculosis.

Sandford Reamy, Hot Springs, Ark.; University of Louisville, Ky., 1851; aged 92; died at the home of his daughter in Hot Springs, June 19.

Quintus Emanuel Snyder, Frenchtown, N. J.; Bellevue Hospital Medical College, 1868; aged 78; died, May 10, from progressive paralysis.

John H. Neese, Tremont City, Ohio; Starling Medical College, Columbus, Ohio, 1892; aged 64; died, June 15, from cerebral hemorrhage.

Thomas McKenzie, Parkdale, Toronto; University of Toronto, 1883; aged 55; lecturer in biology in his alma mater; died, June 2.

Harry Lewis Connett, Athens, Ohio; Johns Hopkins University, Baltimore, 1909; aged 38; died, March 31; from pulmonary tuberculosis.

George E. Meredith, Lanesville, Va.; University of Maryland, Baltimore, 1886; aged 56; died, June 10, from cerebral hemorrhage.

John Moore, Sussex, N. J.; College of Physicians and Surgeons in the City of New York, 1866; aged 76; died, April 30.

John C. Cooper, Carrollton, Mo.; University of Pennsylvania, Philadelphia, 1856; aged 87; died, May 2, from renal calculus.

Ivey Goodman Riddick, Raleigh, N. C.; Bellevue Hospital Medical College, 1886; died recently from carcinoma of the throat.

Victor Sisung ⊕ Monroe, Mich.; Detroit College of Medicine and Surgery, 1895; aged 52; died, June 27, from heart disease.

George J. Pickenpaugh, Unionville, Mo.; Northwestern Medical College, St. Joseph, Mo., 1885; aged 64; died, June 9.

Irving S. Bretz ⊕ Cleveland College of Physicians and Surgeons, 1897; aged 49; died, June 25, from heart disease.

Julius B. Thomas, Smith's Grove, Ky.; University of Louisville, Ky., 1870; aged 79: died, May 13, from uremia.

William H. Price, Carterville, Mo.; license, Missouri, 1883; aged 79; for half a century a practitioner; died, June 14.

Grant Newton, Dexter, Mo.; Chicago Homeopathic Medical College, 1894; aged 52; died, June 14, from dropsy.

William Iseminger, Denison, Iowa (license, years of practice, Iowa, 1887); aged 83; died, June 21.

Nelson Cheney, Corning, N. Y.; Eclectic Medical Institute, Cincinnati, 1868; aged 84; died, June 16.

James M. Moore, Marietta, Ga.; Medical College of Georgia, Augusta, 1871; aged 72; died, June 23.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

BORACETINE

"Boracetine," is manufactured by F. E. Barr & Co., Chicago. In a large advertising campaign in the fall of 1919, it was heralded as "The Guardian of Health." Some of the claims made for the product were:

"Recommended by Doctors and Dentists Everywhere."

"Boracetine keeps the mouth, throat and nasal passages clean and sweet, and prevents the growth of germ life by antisepticizing the tissues and membranes of these parts."

"It is an *all-around* antiseptic, especially good for pyhorrea [*sic!*], sore gums, sore throat, etc., excellent for cuts, bruises, insect bites, skin eruptions and, in fact, any condition where an efficient healing agent and germ destroyer is needed."

In addition, the use of Boracetine was recommended to "get rid of that 'dark brown taste.'" By inference rather than by direct statement the advertisements also claimed that Boracetine would prevent "influenza, consumption, scarlet fever, diphtheria, pneumonia, hay fever, bronchitis, measles and many other diseases." An original package of Boracetine was examined in the Association's chemical laboratory and the report of the chemists follows:

CHEMISTS' REPORT

"A specimen of Boracetine (F. E. Barr & Co., Chicago) was examined and found to be a slightly yellow liquid having the odor of thymol or eucalyptol. Both the odor and taste were much like that of the Antiseptic Solution of the National Formulary (*Liquor Antisepticus, N. F.*). The label declared the presence of 20 per cent. alcohol.

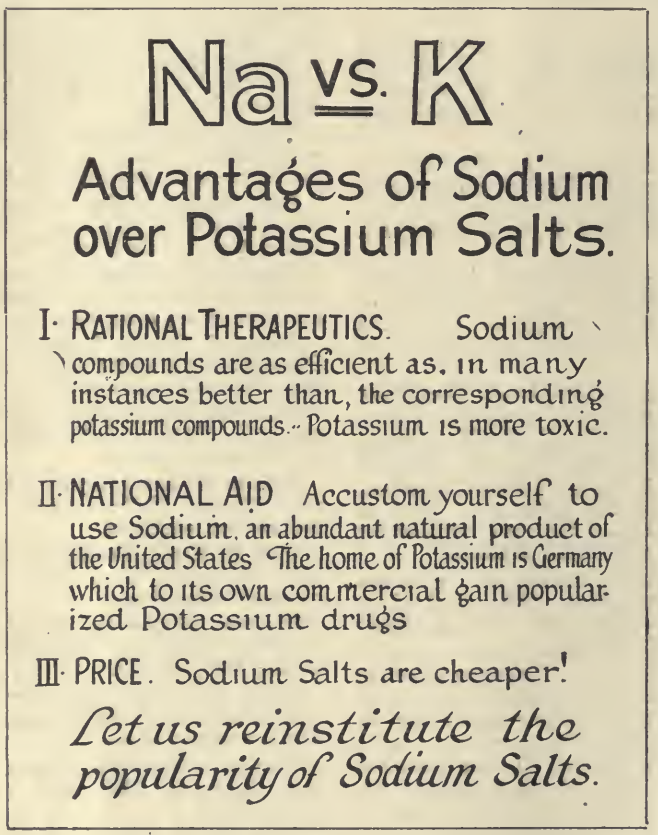
"Boracetine was found to have a specific gravity, at 25 C., of 0.9859 and was neutral or faintly acid to litmus. Qualitative tests showed the presence of boric acid (some borate may also have been present), benzoic acid or a benzoate, formaldehyde, magnesium, sodium, traces of salicylic acid or a salicylate, some carbonate, and traces of some alkaloid. When allowed to dry in a desiccator over sulphuric acid and phosphorus pentoxid Boracetine gave a residue amounting to 2.3 gm. in 100 c.c. The total borate expressed as boric acid was 1.95 gm. in 100 c.c. The total chloroform extract from strongly acidified Boracetine was 0.4078 gm. in 100 c.c.

"When extracted with chloroform, an oily residue was obtained, having, when dried spontaneously, a spicy odor suggesting both cinnamon and cloves. Boracetine was acidulated with sulphuric acid, heated to expel alcohol and extracted with chloroform to remove oils, etc. The acid solution was then made alkaline with ammonia water and again extracted with chloroform. On evaporating the chloroform, a residue was obtained which, when dissolved in acidulated water, gave precipitates with potassium mercuric iodid, iodin solution, and phospho-molybdic acid. These precipitates were about as dense as those obtained from a grain of ordinary alkaloids in a pint of water. The amount of this residue was so small that its identification was not attempted.

"Compared colorometrically by action of Jorissen's Reagent with a solution of formaldehyde of known strength, Boracetine was found to contain about one-tenth of 1 per cent. formaldehyde. From the above analysis it was concluded the Boracetine was a solution containing about 2 gm. boric acid, about 0.5 gm. sodium benzoate, about 0.1 gm. formaldehyde in each 100 c.c., together with aromatic substances, traces of some alkaloid and also sodium salicylate.

"Boracetine is like the National Formulary antiseptic solution (*Liquor Antisepticus, N. F.*) in odor and taste. Aside from the presence of formaldehyde, it is like it in composition also, since the N. F. preparation contains 2.5 gm. boric acid, 0.6 gm. sodium benzoate and 0.120 gm. sodium salicylate in 100 c.c., quantities which approximate those found in Boracetine."

From the chemists' report, then, it appears, that this preventive of consumption, scarlet fever, diphtheria, etc., this "efficient germ destroyer," is no more wonderful than some *Liquor Antisepticus, N. F.*, with a dash of formaldehyd. The more "patent medicines" that are analyzed, the more obvious becomes the commercial wisdom of the nostrum interests in fighting formula disclosure. Secrecy and mystery are indeed the backbone of the "patent medicine" industry. Consider the woful state of the advertisement copy-writer who had to romance about *Liquor Antisepticus* with a dash of formaldehyd; but "Boracetine"—well, that's different! *Omne ignotum pro magnifico!*



This is a greatly reduced reproduction of one of numerous educational posters shown at the New Orleans session in the exhibit of the Chemical Laboratory of the American Medical Association. Potassium, as compared with sodium is, relatively speaking, a foreign substance in the body. Potassium and sodium salts are prescribed mainly for the effect of the radicle they carry. It is illogical, therefore, to administer *potassium* acetate or *potassium* bromid when *sodium* acetate or *sodium* bromid can more readily be given. In spite of the smaller demand, sodium salts are on the whole cheaper than potassium salts and, should the medical profession prescribe the sodium salts more generally, undoubtedly all of those that might be used in medicine would be less expensive than the corresponding potassium salts.

Work for the Tuberculous.—D. A. Stewart (*Am. Rev. Tuberc.* 4:292 [June] 1920) remarks that a fairly general agreement as to the guiding principles of sanatorium treatment for pulmonary tuberculosis has been reached by men of experience. These principles are as definitely standardized as those of surgery, but they are not as familiar to the medical profession or to the general public as the principles of surgery and they run counter to many old prejudices, as indeed the principles of modern surgery did a generation or more ago. The essentials of the treatment of tuberculosis are frequently—and wrongly—stated to be "food and fresh air." The real essential, as sanatorium men all know, is regulation of rest and exercise—of energy conservation and expenditure. One tuberculous patient must not raise his hand to his head unnecessarily; another may do a day's work with benefit. Between these two are ranged all who have active or even fairly arrested tuberculosis, and the placing of a man where he belongs is a matter of experience, study and skill. He who can direct wisely regarding rest and exercise can treat tuberculosis. He who cannot do this can only maltreat tuberculosis. Only he who can bring to the treatment of tuberculosis thought, experience and skill, has a right to try to direct the treatment or after employment of the tuberculous.

Correspondence

THE MEDICAL PROFESSION A SUBSTITUTE FOR THE SALOON

To the Editor:—The following resolution was passed and signed by the entire membership of the Beloit Physicians' and Surgeons' Club. It appears to me that this should be the stand taken by the physicians in general throughout the country, and as we are getting a "black eye" by the careless prescribing of intoxicating liquors, I wish you would publish this resolution:

WHEREAS, By constitutional amendment the United States has adopted a prohibition law; and

WHEREAS, The legal right to prescribe and dispense intoxicating liquor is in the hands of the physicians of our country; be it

Resolved, That we, the members of the Beloit Physicians' and Surgeons' Club, as patriotic citizens of the United States, do hereby place ourselves on record as absolutely upholding the letter of the law and do hereby agree not to dispense or prescribe any intoxicating liquors except in cases of extreme need; that this club will aid the federal government in every way possible in the enforcement of this law.

This resolution appeared in the Beloit *Daily News*, June 18, 1920. The Beloit Physicians' and Surgeons' Club has received numerous letters congratulating it on the stand taken in this matter, and I know it is the stand of the medical profession at large. Certainly, the medical profession never will take the attitude of being a substitute for the saloon.

C. F. N. SCHRAM, M.D., Beloit, Wis.

PRELIMINARY NOTE ON A NEW AND PHYSIOLOGIC METHOD OF "ARTIFICIAL" FERTILIZATION

To the Editor:—I desire to record a method of so-called artificial fertilization which I believe to be not only practicable but obviously advantageous in certain cases.

In some instances of azoospermia it has been recommended to obtain the semen from some individual other than the husband, insemination being accomplished by injecting the fluid into the cervix. Only an intense desire for progeny on the part of the female and complaisance on the part of the husband justifies this procedure. The knowledge of the fact that the material is obtained from a heterogenous source is likely to be disquieting to a sensitive female, to say nothing of the unphysiologic nature of the process. It is my belief that both of these objections can be overcome by the following simple method:

A small incision can be made on either side, exposing the vas, as in vasostomy. The seminal fluid from a healthy individual, which obviously is easily obtained, is to be injected into the seminal vesicle in precisely the same way as the colloid preparations of silver are used for the cure of vesicular infection. Coitus may be performed immediately, or even within a reasonable period, thereafter, the act not being interfered with by the slight disturbance of the tissues incidental to the exposure and injection of the vas. By this method the opportunity for impregnation is afforded in a perfectly natural and physiologic manner free from esthetic objections on the part of the female.

In following the foregoing plan, the source of the spermatozoa may be revealed or not, at the discretion of the husband. While I have performed no experiments as yet, I am of opinion that, granting a comparative freedom of the vesicles from infection, with a patent vas on the proximal side of the point of injection, the spermatozoa from an alien source probably will thrive quite as well in the vesicle of the recipient as in that of the donor The injected spermatozoa are not so "alien" to their new habitat as spermatozoa always are to the generative tract of the female. It is evident that this method would be available only in selected cases. In instances in which the seminal vesicles of the husband are seriously diseased and both vasa deferentia occluded above the point available for vasostomy, the method could not be used successfully. When the sterility of the male is associated with sufficiently abnormal vaginal secretions which destroy the spermatozoa, the method would not be available. In cases in which not only is the husband sterile but also mechanical obstructions exist in the wife's cervical canal, the method could be supplemented by taking the semen from the vagina after coitus and injecting it into the uterus.

My object in making this preliminary note is merely to put it on record, pending such opportunities as may present themselves to put it into actual practice. Experiments to determine the feasibility of the method so far as concerns the conveyance of the spermatozoa during coitus are very easily accomplished.

G. FRANK LYDSTON, M.D., Chicago.

USE OF PITUITARY EXTRACT IN SECOND STAGE OF LABOR

To the Editor:—I have just read, in the report of the meeting of the American Gynecological Society (THE JOURNAL, July 3, 1920, p. 56), the abstract of Dr. Benjamin P. Watson's discussion of induction of labor by the use of pituitary extract. His attitude conveys the idea to my mind that the use of large doses of the drug, begun and repeated several times, before the cervix has become effaced, is perfectly safe. This is so decidedly contradictory to my ideas that I cannot refrain from criticizing. Dr. Watson has been lucky if he has used this drug in the early part of the second stage for a long period of time with no evil results. The use of a Voorhees bag is considered a better method by most obstetricians, unless I am much mistaken, and is preferable to the method suggested by Dr. Watson. I believe that this criticism is justified by the fact that were his suggestion accepted and followed by large numbers of practitioners, disastrous results might occur in many cases.

RAYMOND L. BRADLEY, M.D., Houston, Texas.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ECHINACEA

To the Editor:—I have just received this circular. What is this echinacea that will do such wonders? What is the evidence to warrant the claims? It ought to be easy to get the scientific evidence if there is any. If you answer in THE JOURNAL, please omit my name.

G. S., M.D.

ANSWER.—The circular referred to by the correspondent is entitled "Skin Lesions of Unknown and Uncertain Origin." It is devoted to the exploitation of "Echitone," a preparation put out by Strong, Cobb & Co., which is stated to contain echinacea, blue flag and pansy. Several years ago the Council on Pharmacy and Chemistry examined "Echitone" and rejected the product because unwarranted therapeutic claims were made for it, and for other reasons (THE JOURNAL, Jan. 2, 1915, p. 70). The drug echinacea, or purple cone-flower, has been claimed to be a "specific" for rattlesnake bite, syphilis, typhoid, malaria, diphtheria and hydrophobia. Later enthusiasts have credited it with equally certain curative effects in tuberculosis, tetanus and exophthalmic goiter, as well as with the power of retarding the development of cancer. In view of the extraordinary therapeutic claims made for echinacea, in 1909 the Council made an exhaustive study of the subject and concluded that more reliable evi-

dence was needed to warrant the use of this drug by the profession (THE JOURNAL, Nov. 27, 1909, p. 1836). In 1913 the Council reported that no satisfactory evidence of the therapeutic value of echinacea had been made available since the date of its previous investigation (THE JOURNAL, Jan. 4, 1913, p. 69). So far as can be learned to date, no reliable evidence for the claims made for this drug have been presented since the publication of the Council's reports. Echinacea is one of the many vegetable drugs introduced by the eclectics without a rational basis for their use.

LITERATURE ON LETHARGIC ENCEPHALITIS

To the Editor:—Kindly give me references to articles on lethargic encephalitis. HERMAN TROSSBACH, M.D., Hasbrouck Heights, N. J.

ANSWER.—The following articles have appeared in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION during the last year:

Loewe, Leo, and Strauss, Israel: Diagnosis of Epidemic Encephalitis, May 15, 1920, p. 1373.
Garnett, A. Y. P.: Lethargic Encephalitis as a Complication of Pregnancy and Labor, May 8, 1920, p. 1315.
Encephalitis in Horses, editorial, April 24, 1920, p. 1172.
Bassoe, Peter: The Delirious and the Meningoradicular Types of Epidemic Encephalitis, April 10, 1920, p. 1009.
House, S. J.: Observations on a Green-Producing Coccus from the Brain in a Case of Encephalitis, March 27, 1920, p. 884.
Flexner, Simon: Lethargic Encephalitis: History, Pathologic and Clinical Features, and Epidemiology in Brief, March 27, 1920, p. 865.
Reilly, T. F.: Hitherto Undescribed Sign in Diagnosis of Lethargic Encephalitis, March 13, 1920, p. 735.
Schulze, Margaret: Encephalitis Lethargica in Pregnancy, March 13, 1920, p. 732.
House, William: Epidemic (Lethargic) Encephalitis, Feb. 7, 1920, p. 372.
Loewe, Leo, and Strauss, Israel: Etiology of Epidemic (Lethargic) Encephalitis, Oct. 4, 1919, p. 1056.
Wegeforth, Paul, and Ayer, J. B.: Encephalitis Lethargica, July 5, 1919, p. 5.
Tucker, B. R.: Epidemic Encephalitis Lethargica or Epdiemic Somnolence, or Epidemic Cerebritis, with Report of Cases and Two Necropsies, May 17, 1919, p. 1448.
Ely, F. A.: Lethargic Encephalitis: Preliminary Report, April 5, 1919, p. 985.
Bassoe, Peter: Epidemic Encephalitis (Nona), April 5, 1919, p. 971.
Epidemic or Lethargic Encephalitis: Acute Infectious Ophthalmoplegia, Acute Encephalitis, Nona? editorial, March 15, 1919, p. 796.
Epidemic or Lethargic Encephalitis (Nona), special article, March 15, 1919, p. 794.
Pothier, O. L.: Lethargic Encephalitis, March 8, 1919, p. 715.

BLOOD AND RESPIRATORY CHEMICAL DETERMINATIONS

To the Editor:—1. Please give the name of some small laboratory guide treating on the latest methods of blood and respiratory chemical determinations.

2. In the Epstein modification of Lewis and Benedict's sugar blood test, is it necessary to heat the picric blood sugar mixture over a free flame, in the process of concentration just before and after the sodium carbonate is added? We have made the concentration over a steam bath, and have not been able to detect any difference in the readings.

3. Is it necessary to use a rubber bag in determining the alveolar carbon dioxid tension of alveolar air according to the method of Dr. Marriott, or can accurate results be obtained by having the patient exhale several times through a tube into the bicarbonate solution direct?

4. Is it possible to purchase the celloidin sacks used in the alkali reserve of blood plasma, and the H-ion concentration tests? Where may these be purchased?

Please omit name and address. X. Y. Z.

ANSWER.—1.

Medical War Manual No. 6. Laboratory Methods of the U. S. Army, Edition 2, Philadelphia, Lea & Febiger, $1.50.
Rockwood, E W.: A Laboratory Manual of Physiologic Chemistry, Edition 4, Philadelphia, F. A. Davis & Co., $2.00.

2. It is not necessary.

3. A rubber bag should be used.

4. Try the Central Scientific Company, 460 East Ohio Street, Chicago; Hynson, Westcott and Dunning, Baltimore, or any other good medical supply house.

EXCEPTIONS FOR PHYSICIANS IN PARKING ORDINANCE

To the Editor:—Our city has recently passed an ordinance prohibiting the parking of cars down town. We are trying to get them to make an exception for physicians. Will you let me know what cities do this? W. H. OWENS, M.D., Atlanta, Ga.

ANSWER.—So far as we know, Billings, Mont., Easton, Pa., Greensboro, N. C., and Fresno, Calif., have special exceptions for physicians in their parking ordinances.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 7. Sec., Dr. Harry C. De Vighne; Juneau.
HAWAII: Honolulu, Sept. 6-10. Sec. Dr. R. W. Benz, 1141 Alakea St., Honolulu.
NEW HAMPSHIRE: Concord, Sept. 9-10. Sec., Dr. Charles Duncan, Concord.

A GRADUATE COURSE IN ORTHOPEDIC SURGERY

A report states that the Harvard Medical School is planning to establish a graduate course in orthopedic surgery. The course will be open, mainly, to graduates in medicine who have completed service as house officers in surgery in approved hospitals. The course is planned to cover eighteen months, of which six months will be spent in the laboratories of the Harvard Medical School; six months in the Children's Hospital, and six months in the Massachusetts General Hospital. The sequence will depend on the vacancies in the hospitals, but as a rule the laboratory training will be in advance of the clinical work. The laboratory portion of the course will be left sufficiently flexible to supply the varying needs of the applicants—a need greatly emphasized by experiences of a large number of medical officers in this special field during the war. In order to pursue the clinical work to the best advantage it was decided that something should be done to correct any deficiencies of training in the fundamental branches. At the same time, the instruction will be of an advanced character rather than elementary. The candidates will be started at the hospital portion of their course at various times during the year, since hospital facilities necessitate the appointment of men periodically during the twelve months. Since only a small number of students can be handled, they will be selected with great care. The charge for the course will be kept at a nominal figure, and this will be only for the laboratory portion of the course. It may be that fellowships can be provided for some, if not all, of the students who may be enrolled. It is believed that the course as outlined will provide an opportunity for a number of special students to secure an excellent training in their chosen specialty.

Educational Policy in China

What is reported as the largest medical conference ever assembled in the capital of China was held February 21-28, of the present year. Over 300 delegates were present, including 210 medical missionaries. A message from the minister of education of China was read which stated the following as the educational policy for the immediate future in that country:

1. To establish new medical schools as soon as conditions will allow, on the basis of one medical school for each province.
2. To improve and extend such schools as were already established.
3. To encourage the study of medicine and to maintain for the scientifically trained doctors a high social status aiming at a sufficient number for this important profession.
4. To cause to be organized at proper localities such institutions or facilities of investigation as will aid specialists in their research work, and
5. To regulate the practice of doctors trained in the traditional way with a view to the unification of standards required of medical practitioners.

Delaware June Examination

Dr. P. S. Downs, secretary, Delaware Regular State Board of Medical Examiners, reports the written and practical examination held at Wilmington, June 16-18, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. One graduate of Temple University, 1918, was examined and failed.

Book Notices

THE PROBLEM OF THE NERVOUS CHILD. By Elida Evans. Introduction by C. G. Jung, M.D., LL.D., Cloth. Price, $2.50. Pp. 299. New York: Dodd, Mead & Co., 1920.

Physicians realize that some of the disturbances of children, as many of the functional disturbances of adults, have their origin in early experiences. Perhaps, through the influence of Freud, this point of view has been exaggerated; on the other hand, there is no doubt that an intimate analysis of the child's habits and its relations to its friends, relatives and its general environment, frequently reveals the underlying factors that manifest themselves in systemic upheavals. Among the most recent of several new books on the general subject is this work, which has the distinction of an introduction by Jung. The introduction is one of those graceful prefaces which merely state that the author seems to be well acquainted with the subject, and can therefore be granted reliance. The book yields no evidence as to the experience or official position of the author, except that she herself was for some time a pupil of Jung. Of all the books thus far available on the nervous child, this one places most attention on the infantile sexuality and libido. It is hardly a book of value for the general public, because of the overemphasis of the sexual side; for the physician or educator who can use it with proper appraisal of the arguments and facts presented, it will make interesting if not altogether valuable reading.

THE YOUNG PHYSICIAN. By Francis Brett Young. Cloth. Price, $2.50 net. Pp. 520. New York: E. P. Dutton & Company, 1920.

The author dedicates his book to Thomas Brett Young, M.D., his father, from whom, undoubtedly, he must have secured much of the medical material which it contains; for, like few other novels, everything medical in this book is accurate and real. The book tells the life story of a young man from his first day in preparatory school to the first few years of his practice as a physician. The first half of the book, which is especially interesting, is a fascinating psychologic study of the development of boy character. The middle portions of the book seem somewhat dull and halting, but the final portions, taking up entrance into the medical school with intimate scenes of dissecting room, laboratory and clinic, are thrilling with real life well described. The book will be of interest to physicians as a literary exposition of what each of them has lived through. An enthusiastic advertisement compares the style of Mr. Young to that of Conrad, which is not complimenting Conrad.

DISEASES OF THE CHEST AND THE PRINCIPLES OF PHYSICAL DIAGNOSIS. By George William Norris, A.B., M.D., Assistant Professor of Medicine in the University of Pennsylvania, and Henry R. M. Landis, A.B., M.D., Assistant Professor of Medicine in the University of Pennsylvania. With a Chapter on the Electrocardiograph in Heart Disease by Edward B. Krumbhaar, Ph.D., M.D., Assistant Professor of Research Medicine in the University of Pennsylvania. Second edition. Cloth. Price, $8 net. Pp. 844, with 433 illustrations. Philadelphia: W. B. Saunders Company, 1920.

In this edition has been added a discussion of spirochetal bronchitis, influenza, streptococcus empyema, chronic inflammatory conditions of the lungs of uncertain etiology, calcification of the lungs, pneumopericardium, etc. In other words, it is brought completely up to date. This excellent work was given full and favorable review in THE JOURNAL, Dec. 29, 1917, and what was then said in endorsement of the book would be repeated here, if necessary.

A DIABETIC MANUAL FOR THE MUTUAL USE OF DOCTOR AND PATIENT. By Elliott P. Joslin, M.D., Assistant Professor of Medicine, Harvard Medical School. Second edition. Cloth. Price, $1.75. Pp. 191 with illustrations. Philadelphia: Lea & Febiger, 1919.

The second edition of this book has been thoroughly revised, condensed and simplified. It is a safe book to place in the hands of diabetic patients. Physicians will believe with Dr. Joslin that, for one diabetic patient who learns too much about the disease, there are unquestionably ninety-nine who know too little, and that those patients who are most intelligent and who understand their disease best live longest.

LA TENSION ARTÉRIELLE EN CLINIQUE, SA MESURE, SA VALEUR SÉMÉIOLOGIQUE. Par le Dr. L. Gallavardin, Médecin des Hôpitaux de Lyon. Second edition. Paper. Price, 30 francs net. Pp. 717. Paris: Masson & Cie. 1920.

This edition, published ten years after the first, is in reality a new book. The author has brought the subject up to date and has included the results of his own clinical experience. The work contains a full discussion of the principles underlying arterial tension and the various methods of estimating it. The last two thirds of the book treats of the clinical features of the condition with an adequate consideration of therapy. The book is a reliable and complete exposition of this important subject.

A MANUAL ON FOOT CARE AND SHOE FITTING FOR OFFICERS OF THE U. S. NAVY AND U. S. MARINE CORPS. By W. L. Mann, Ph.B., A.M., M.D., Lieutenant-Commander (M. C.) U. S. Navy, and S. A. Folsom, M.D., Lieutenant (M. C.) U. S. Navy. Cloth. Price, $1.75 net. Pp. 124, with 58 illustrations. Philadelphia: P. Blakiston's Son & Co., 1920.

This is one of the handy manuals for the definite purpose mentioned in the title. Its directness and brevity appeal both to the busy practitioner and to the specialist.

Medicolegal

Competent Medical Witness and Evidence of Insanity

(Beasley v. Faust (Texas), 217 S. W. R. 179)

The Court of Civil Appeals of Texas says that, in this action on a note and mortgage executed by the defendant for whom the defense of insanity was made, a physician testified that he thought the defendant had been insane all the time from the fall of the Wilson campaign to the time of the trial. This testimony was objected to on the ground that the witness did not qualify as an expert, and because he was testifying to his opinion concerning the mental condition of the defendant at a time when he had not observed him. The physician had practiced medicine for fifty-five years, and had ample opportunity to observe the defendant during the years concerning which he testified, but was unable to state that he had observed him at the time of the execution of the note and mortgage. He had not specialized in the treatment of mental diseases, but had treated a good many persons who were insane. He had read textbooks on insanity, and his opinion whether insanity was curable was based on observation and textbooks. He modestly admitted that he did not know what kind of insanity the defendant had, and this admission was considered by the plaintiff to be sufficient to deprive him of standing as a skilled witness. As the court understands the authorities, the physician fully qualified as a skilled witness who was entitled to give his opinion of the mental condition of the defendant, not only at such times as he observed him, but also at the time he executed the instrument in question; his opportunities for observing and conversing with the defendant before and after such times being such as to justify him in forming the opinion expressed. The specialist in diseases of the mind may be able to classify with reasonable accuracy all cases of insanity which come under his observation, but it is not necessary that the physician should be a specialist in order to testify as a skilled witness.

Nor was there error in permitting the physician to testify that the defendant from about 1912 to the date of the trial would not be conscious of the effect his acts would have on him or surrounding circumstances. The objection was urged that this testimony was a legal conclusion of the witness; but the testimony was not subject to that objection. No knowledge of any rule of law was necessary in order to answer the question. The answer involved only an opinion concerning the extent or degree of the mental unsoundness of the defendant. The expression of an opinion that a person did not have sufficient capacity to make a will or deed or to transact business has been held improper by the courts of Texas; and these holdings are in accordance with the weight

of authority. To make a valid will or contract, a certain amount of mental capacity is required by the rule of law to be applied testing the validity of the transaction, and for a witness to say that a person has the requisite capacity implies that such witness knows the rule of law and is applying it in arriving at his conclusion. But it seems obvious that to state that a person would not be conscious of the effect his act would have on him does not imply that the witness has attempted to apply a legal definition to test the validity of any act of the person.

It might have been contended that the opinion expressed by the physician was in effect an opinion that on the date of the execution of the note and mortgage the defendant was not conscious of the effect his acts would have on him, and that therefore necessarily he expressed the opinion that the defendant was not conscious of the effect the execution of the note and mortgage would have on him. Looking at the matter from that standpoint, the objection might have been urged that the opinion was one on the ultimate fact to be determined by the jury. However, that objection is not tenable if the opinion relates to a matter within the scope of expert testimony. In this case, moreover, the only objection relating to the competency of the evidence was that the opinion involved a legal conclusion. Such objection was properly overruled.

Construction of Statute Making Hospital Records Admissible in Evidence

(Leonard v. Boston Elevated Ry. Co. (Mass.), 125 N. E. R. 593)

The Supreme Judicial Court of Massachusetts, in overruling an exception to permitting to be read to the jury that portion of the records of a hospital to which the plaintiff was taken after he was injured, which contained the statement, "odor of alcohol on breath," says that this required the construction of the Massachusetts statute which requires certain hospitals to keep records of the treatment of the cases under their care and their medical history, and provides that such records shall be admissible as evidence in the courts of the commonwealth so far as such records relate to the treatment and medical history of such cases; but nothing therein contained shall be admissible as evidence which has reference to the question of liability. In construing this statute the court cannot accept the view of the plaintiff that the hospital record is inadmissible if it may have "reference to the question of liability," even though it directly relates only to the "treatment and medical history of the case." A reasonable interpretation must be given to both these clauses in the statute. Apparently the legislation making this hearsay evidence admissible was enacted primarily to relieve physicians and nurses of public hospitals from the hardship and inconvenience of attending court as witnesses to facts which ordinarily would be found recorded in the hospital books. Under this statute only such portions of the record are admissible in evidence as relate to the treatment and medical history of the patient. The difficulty in applying the act arises from the nature of the entries made in hospital records. It frequently must happen that facts stated therein, which deal in the main with the patients' medical history, may also be relevant to the issue of liability, in the event of litigation. For instance, a statement of the location and nature of the patient's injuries, primarily an essential element in the history and treatment of his case, may incidentally tend to confirm or disprove his claim as to how the accident happened. So, the condition of intoxication, in the case of a patient suffering from delirium tremens, would be an important element of his medical history and treatment; at the same time it well might bear on the issue of liability in an action to recover under the civil damage law. In the court's opinion, a reasonable and practical construction of the statute requires that a record which relates directly and mainly to the treatment and medical history of the patient should be admitted, even though incidentally the facts recorded may have some bearing on the question of liability. The improper application of the facts recorded can be prevented by means of suitable instructions to the jury. The court is unable to say as a matter of law that in the present case the "odor of alcohol on the breath" could not relate to the plaintiff's medical history. So far as appeared, the usual physical examination may have been a material fact to consider in making a diagnosis of his condition.

Right of Physician to Sue Employer Not Taken Away

(Noer v. G. W. Jones Lumber Co. (Wis.), 175 N. W. R. 784)

The Supreme Court of Wisconsin affirms a judgment in favor of the plaintiff, a physician, for services rendered in treating, and furnishing hospital accommodations to, an employee of the company injured under circumstances making the defendant liable for compensation under the workmen's compensation act; and notwithstanding that it was contended that the court had no jurisdiction of the case. The supreme court says that, when the plaintiff presented his bill, payment was refused on the ground that it was excessive, and a request was made that the matter be referred to the industrial commission for adjustment, which was refused by the plaintiff. It was argued for the defendant that, the services having been rendered to an injured employee at the request of the employer, no liability existing on the part of the employer to furnish such services except by virtue of the workingmen's compensation act, all of which was known to the plaintiff, exclusive jurisdiction was vested in the industrial commission to pass on the reasonableness of the charges made for such services, and that the plaintiff could not maintain an action at law to recover therefor. This contention was unsound.

The workmen's compensation act deals exclusively with matters growing out of the relation of employer and employee. The provisions of the act are binding on employers and employees electing to be bound by them, and on none others. All except employers and employees are strangers to the act, and their usual lawful rights and remedies are unaffected by it. True, it is made the duty of the employer to provide certain medical attention to its employees; but the act does not provide that he who renders such medical services at the request of the employer must submit the reasonableness of his charges in that behalf to the industrial commission for its approval and allowance. The physican rendering such services is no more deprived of his right to resort to the courts for the establishment and collection of his claim than though the services had been rendered to the employer personally. The fact that neither employer nor employee, those for whom the act was primarily designed, is affected by its provisions against their consent, coupled with the further consideration that no method is provided by which a physician may consent to be bound by the terms of the act, would strongly negative the inference that the act was intended to have the effect for which the defendant contended.

The provision in the act that the industrial commission shall have jurisdiction to pass on the reasonableness of medical and hospital bills in all cases of dispute in which compensation is paid, in the same manner and to the same effect as it passes on compensation, confers on the industrial commission authority to pass on and determine the amount which the employer shall pay the employee when the employer has failed in his duty to provide proper medical attention, which was provided by the employee himself. Under such circumstances the reasonable value of the services, as determined by the industrial commission, measures the amount which the employer must pay to the employee for this item of compensation, but the physician rendering the services is in no manner bound by such determination when he proceeds to collect from the employee. His remedy in the courts is left unimpaired, and he may maintain his action therein for the value of his services as he conceives them to be.

Having discovered no legislative justification in the workmen's compensation act to deprive physicians, rendering services under the circumstances here presented, of their legal rights and remedies, the court finds it unnecessary to consider the question of the power of the legislature to confer on the industrial commission the exclusive jurisdication for which the defendant contended.

Society Proceedings

COMING MEETINGS

Colorado State Medical Society, Glenwood Springs, Sept. 7-9.
Missouri Valley, Medical Society of the, Omaha, Neb., Sept. 6-7.
Utah State Medical Association, Ogden, Sept. 7-8.
Wisconsin, State Medical Society of, La Crosse, Sept. 8-10.
Wyoming State Medical Society, Cheyenne, Aug. 9-10.

OHIO STATE MEDICAL ASSOCIATION

Seventy-Fourth Annual Meeting, held at Toledo, Ohio, June 1-3, 1920

The President, DR. J. F. BALDWIN, Columbus, in the Chair

Therapeutic Possibilities of Blood Transfusion: Methods, Indications and Results

DR. E. R. ARN, Dayton: Hard and fast rules cannot be drawn about the possibilities of blood transfusion. The physician must be guided by the single purpose of doing the most good at the minimum risk. Many lives are lost either by not transfusing at all or by doing it too late. The illness of many patients could be shortened materially by blood transfusion; operations could be made less hazardous, and recovery could be hastened and made less burdensome. When bleeding has been abrupt and excessive, a blood transfusion is indicated because it alone can raise and sustain the blood pressure. It is a good working rule to transfuse if the blood pressure falls as low as 70 mm. of mercury, since life is hardly possible with a pressure below that limit. The citrate technic is the method of choice. In cases of hemorrhage of the new-born, transfusion is a specific. In cases of pernicious anemia, it yields results superior to any other mode of therapy and frequently acts as a life-saving measure by initiating the onset of a remission. Most of the dangers of transfusions can be prevented by avoiding the use of incompatible blood, excessively large injections, and emboli of air or blood clot.

Medical Aspects of Blood Transfusion

DR. LOUIS A. LEVISON, Toledo: The conditions in which aid of a lasting nature may reasonably be expected from blood transfusion are disappointingly small. In fact, it may be said that blood transfusion does not cure any disease. The only exception to this would probably be certain hemorrhagic states in early infancy. However, blood transfusion is life saving in many conditions in which hemorrhage is present as a symptom. Occasional deaths ensue even after all the requirement of grouping have been met. Only the most extreme emergency warrants a blood transfusion without determining the compatibility of the donor and the recipient. In view of the reactions of successive transfusions involving the same participants, a separate determination of type should be made prior to each injection. The benefit derived is probably due to the rise in hemoglobin percentage and not to the mass bulk of the blood itself. Sooner or later blood transfusions cease to bring about remissions in anemias, but before this time there are usually pronounced cord signs to indicate the hopeless nature of the disease. A field yet to be explored is the use of transfusion employing immunized blood in serious, chronic infections, especially those associated with endocarditis.

Craniocerebral Injuries

DR. THERON S. JACKSON, Cleveland: Cranial injuries are almost always emergencies, and those who handle them must be ready to make a rapid, systematic examination, accurate enough to enable them to use the correct treatment for the individual case. Cushing's classification of craniocerebral injuries is as applicable to civil practice as to the surgery of war. One of the chief difficulties encountered is the evaluation of cases of concussion. Skull fractures and cerebral hemorrhage are so frequently masked by concussion that they must always be suspected. In the differential diagnosis I have learned to rely on a rising pulse pressure associated with a falling pulse rate as a definite indication for operation. Delay until symptoms of medullary compression arise spells disaster. Valuable diagnostic information may also be obtained from the incidence of papilledema and the results of lumbar puncture, reflex reactions and stereoscopic roentgenograms. Apparently mild injuries may eventuate in profound cerebral complications, while seemingly much more severe external injuries may recover without surgical interference. We should always be prepared to perform a craniotomy at the earliest moment that a diagnosis of cortical irritation or compression is justified. According to the best available statisics, the end-results following operation, whenever there has been a reasonable suspicion of intracranial injury, have been much better than those following palliative treatment.

The Laryngologist and Diseases of the Lungs

DR. JOHN A. THOMPSON, Cincinnati: The direct, local treatment of inflammatory diseases of the lungs gives results that cannot be obtained in any other way. The training and skill of laryngologists fits them especially to give this treatment. The diseases of the lungs in which local treatment is useful are acute and chronic inflammation of the trachea and bronchi, bronchiectasis, bronchial asthma, pulmonary tuberculosis, pulmonary syphilis and emphysema. The recovery from pneumonia, either bronchial or lobar, can be aided greatly by local treatment. For an ordinary injection I prefer the following mixture: atropin, 1 grain; epinephrin, 2 grains; menthol, 48 grains; camphor, 80 grains; oil of sweet almonds, 4 ounces, and liquid petrolatum, 12 ounces. Using 1 or 2 drams for an injection will give a dosage of atropin, 1/64 grain; epinephrin, 1/32 grain; menthol, 1 grain, and camphor about 1¼ grains. Curing bronchitis by direct medication also cures bronchial asthma if treatment has been begun before the lungs become emphysematous or the heart has been weakened beyond repair. In pulmonary tuberculosis, no direct curative effect on the disease can be expected from local medication; but the complicating laryngitis and bronchitis can be helped and the paroxysms of coughing decreased by half. A healthy mucosa will not be infected by the tuberculous sputum, and the fatal laryngeal tuberculosis can be prevented by regular injections. Also the control of the cough makes it unnecessary to give narcotics, and the nutrition of the patient is not impaired by medication.

Surgical Phases of Cancer Problem

DR. FRANK WARNER, Columbus: Cancer is the most fatal disease of adult life. Of those who reach the age of 40 years, one person in eleven dies of cancer. Cancer is neither hereditary, contagious nor transmissible. At the outset it is a purely local condition easily cured by radical operation. A large number of the cases reach the surgeon only when terminal symptoms of the disease are present. The public should be thoroughly informed regarding the necessity for early diagnosis and prompt operation. The knife should always be used in early cases of cancer. Care should be exercised not to spread cancer cells onto raw surfaces during operation, as they grow readily. Heat, the roentgen ray and radium should be reserved for handling inoperable cases.

Treatment of Hyperthyroidism with Corpus Luteum

DR. H. H. HOPPE, Cincinnati: I have been using corpus luteum in the treatment of hyperthyroidism for six years. One of the patients has died of influenza; all the others are doing well and some of them seem to have reestablished a normal balance of the endocrine glands and no longer take corpus luteum, while others are comfortable only when they take the remedy. The most notable and rapid improvement following the use of corpus luteum is seen on the part of the cardiovascular symptoms and general nervous manifestations. While I regard corpus luteum as a specific in exophthalmic goiter, I have not discontinued symptomatic treatment or the attention to hygiene and diet. I usually give corpus luteum, 2 grains; quinin hydrobromate, 3 grains, and extract of belladonna, 1/10 grain, after each meal. On improvement the dosage is reduced to two capsules a day and then to one dose at bedtime. The theory on which this treatment is based is that hyperthyroidism is caused by a defective secretion of the interstitial sex glands; that the hormones of these glands

have an inhibitory and regulatory action on the secretion of the thyroid, and that when their function is deficient there is a lack of physiologic inhibition of the thyroid with an excessive secretion, and, therefore, hyperthyroidism. In other words, hyperthyroidism and hypo-ovarianism are synonomous conditions.

(To be continued)

AMERICAN PEDIATRIC SOCIETY

Thirty-Second Annual Meeting, Held in Highland Park, Ill. May 31-June 2, 1920

(Concluded from page 129)

Dyspituitarism So-Called: Absorption of Membranous Bones, Exophthalmos and Polyuria

DR. ALFRED HAND, Philadelphia: A boy, aged 4 years, had a tumorlike swelling of the left parietal region removed at the age of 2. There was absence of bone under the tumor down to the dura. Section revealed a slight degree of inflammation, but mainly a myxomatous change. Since then other swellings had appeared, and exophthalmos, which was greater on the right; but as yet there had been no polyuria.

Use of Fresh Vaccines in Whooping Cough

DR. ROWLAND G. FREEMAN, New York: In sixteen children, pertussis vaccines were used at various periods of the disease. In five, no results were obtained; three received the vaccines early in the disease, and two very late. Of the remaining eleven cases, nine showed a very material improvement and in four a practical cure was obtained. Quite remarkable results obtained in certain beginning cases have convinced me that these vaccines should have an extended use, particularly in institutions where controls might be used to demonstrate whether we might not have in these vaccines a valuable method of reducing the large mortality from whooping cough. Dr. Huenekens' antibodies were not present after the injection of whooping cough vaccines unless the vaccines were freshly prepared.

Rickets

DRS. JOHN HOWLAND and EDWARDS A. PARK, Baltimore: A definite correlation exists between the roentgen-ray signs and the actual pathologic conditions. Calcium deposits in the cartilage cast well-defined shadows. The effectiveness of cod liver oil as a therapeutic agent in rickets is demonstrated. In animal experiments a beginning calcium deposit can be demonstrated two days after beginning the administration of cod liver oil. In human beings the calcium deposit in the cartilage is definitely demonstrable at the end of three weeks after beginning the administration of cod liver oil.

DISCUSSION

DR. W. MCKIM MARRIOTT, St. Louis: In order to gain some knowledge of the nature of the process which causes a deposition of lime salts, we have made a solution containing all the inorganic constituents of blood plasma, an "artificial blood," containing phosphates, lime, magnesium salts, sodium bicarbonate and carbon dioxid, the latter being at a tension of 40 mm. Such a solution is perfectly clear, but a precipitate occurred when a portion of the carbon dioxid was removed, or if more bicarbonate, calcium salts or inorganic phosphate were added. The precipitates obtained in these various ways had each different compositions. The only precipitate that had a composition the same as that of bone was obtained by increasing the amount of phosphate in solution. A very small increase in the amount of phosphate in solution caused a considerable precipitate of the substance having the approximate composition of bone. It would seem likely, therefore, that the method by which bone is laid down in the body is by an increase in the amount of phosphate present at some point, and that a mere increase in alkalinity is insufficient. Such being the case, it would be interesting to know whether or not the phosphate content of the blood is increased following the administration of cod liver oil.

DR. H. J. GERSTENBERGER, Cleveland: We have fed 1,200 or more babies on a synthetic milk, containing 10 per cent. fat in the form of cod liver oil, and we have as yet to see the first case of spasmophilia or rickets among the children so fed.

DR. CLIFFORD G. GRULEE, Chicago: Dr. Phemister showed that feeding of phosphorus to normal children has produced a thickening of the ends of the bones very much the same as that produced by cod liver oil. A longer feeding of phosphorus caused a greater thickening at the epiphyseal line. In these children the phosphorus was used alone and not in combination with cod liver oil.

DR. JOHN HOWLAND, Baltimore: After feeding cod liver oil we found the phosphorus content of the blood greatly increased.

Sarcoma of Kidney

DR. ROWLAND G. FREEMAN, New York: A child aged 2½ years, weighing 26½ pounds, had been in failing health for two months. A tumor of the kidney on the left side was diagnosed. Six weeks after operation the child was very dyspneic, with râles over the entire chest. Roentgen-ray examination revealed numerous metastases in the lungs.

Case of Portal Thrombosis

DR. RICHARD M. SMITH, Boston: A child, aged 3 years, gave a history of acute rise of temperature and cough lasting seven days before admission. Several ecchymotic spots were present on the body, together with an enlarged heart, with a systolic murmur heard all over the precordia, an enlarged spleen, low red blood cell count and low hemoglobin. The abdomen gradually distended with fluid, the superficial veins in the upper portion became enlarged, and the spleen increased greatly and assumed a transverse position in the abdomen. The pulse remained rapid, respiration from 30 to 35. Six weeks after admission the child vomited a large amount of bright red blood. The child was transfused several times, but died virtually two months from the onset of the illness. No diagnosis was made during life. At necropsy, thrombosis of the portal vein and its great radicles was found, with passive congestion of the spleen, ascites, hypertrophy and dilatation of the heart, edema of the lungs and anemia. Undoubtedly the thrombosis was of infectious origin arising in connection with the initial infection of the respiratory tract.

Case of Paralysis of the Respiratory Muscles

DR. W. MCKIM MARRIOTT, St. Louis: A girl, aged 10 years, six weeks after an attack of diphtheria developed paralysis of the palate, ocular muscles, legs, back and neck muscles and partial paralysis of the arms; and ultimately the diaphragm became involved, so that it failed to move at all during inspiration. Artificial respiration was given by means of the Erlanger-Gessel air current interrupter connected with a nitrous oxid mask. After ten minutes of artificial respiration the child fell asleep and the mask was removed. Cyanosis slowly developed and was again relieved by artificial respiration. This was kept up more or less continuously for five days, at the end of which time the function of the respiratory muscles began to return and the child was able to breathe without the apparatus. She made a complete recovery.

Congenital Atresia of Esophagus

DR. HENRY L. K. SHAW, Albany: In this case necropsy revealed that the upper third of the esophagus ended in a culdesac and had no relation to the lower part, which opened into the trachea.

A Case of Lymphosarcoma

DR. CHARLES A. FIFE, Philadelphia: A boy, aged 9 years, gave a negative history until his seventh year, when a slowly enlarging right cervical node was detected. On the supposition that the node was tuberculous, the roentgen ray was used. Within five months of the cessation of roentgenism, extensive metastases in the tracheobronchial lymph nodes produced massive exudation into the left pleura, but causing no other signs of mediastinal compression. There was a tremendous enlargement of the spleen and liver. The lymph nodes in the abdomen which were not affected by radiation were full of typical, active tumor cells, while those in the region treated by the roentgen-ray and radium showed retro-

grade changes in the tumor cells, many of which were replaced by dense connective tissue.

Primary Sarcoma of Thymus

DR. L. EMMETT HOLT, New York: A child, aged 6 months, gave symptoms dating back only four weeks, consisting merely in increased pallor and slight fever. There were a few minute hemorrhages over the neck and extremities. The case was regarded as one of severe secondary anemia. At necropsy a sarcomatous thymus weighing 36 gm. was found. Besides the sarcomatous change in the thymus, similar lesions were found in a lymph node in the spleen and in the lungs. The child presented none of the symptoms associated with enlarged thymus.

Case of Anaphylaxis Following an Intradermal Protein Sensitization

DR. HENRY J. GERSTENBERGER, Cleveland: A boy, aged 17 months, who had never received egg in any form, developed an extreme anaphylactic shock after an intracutaneous administration of egg yolk allergen and egg albumin in doses of 1 and 2 mg. This child, who had received cow's milk from the third week of life and had suffered from eczema and asthma, showed a negative intracutaneous test to cow's milk casein and cow's milk albumin. The intracutaneous injection of cow's milk allergen responded within twenty-four hours with an indurated and red area of infiltration not unlike that of an ordinary positive von Pirquet test, but entirely different from an urticarial wheal.

Blood Findings in a Child Five Years After Splenectomy

DR. HOWARD CHILDS CARPENTER, Philadelphia: The average results of thirteen blood counts in a white boy, aged 10 years, who had had his spleen removed five years before for familial hemolytic icterus of the Chauffard-Minowski type, show that the red blood cells, which before the operation were down to 2,020,000, have increased to 4,288,000; the hemoglobin, which was as low as 23 per cent. before the operation, now is 82 per cent. There is still present evidence of bone marrow regeneration as shown by the high color index, the continued leukocytosis, moderate chromophilia and poikilocytosis, high transitional and eosinophil counts, and reticulation of the erythrocytes. There is an unusually quick coagulation time and a rather low platelet count, indicating in this case either a rapid availability of the platelets for the purposes of coagulation or an increased amount of prothrombin in the platelets, or a large percentage of macroplatelets. No Howell-Jolly bodies were found. There is also evidence of lymphatic activity shown by absolute lymphocytosis, and by the enlargement of the external lymph glands and the very large tonsils.

Duct Sign in Mumps

DR. DAVID MURRAY COWIE, Ann Arbor, Mich.: In 97 per cent. of fifty-seven cases of parotid mumps, a red spot was observed at the orifice of Steno's duct, which developed and disappeared under the influence of the disease. The duct itself becomes teatulated. The sign develops early in the disease, sometimes ahead of the swelling of the parotid, and disappears when the duct returns to normal. It is influenced by the degree of fever.

Misuse of Milk in the Diets of Infants and Young Children

DR. B. RAYMOND HOOBLER, Detroit: There is much propaganda by popular writers urging the increased use of milk as a food for the young. I believe that this is being overdone and that many mothers are forcing milk in such large quantities on their children that it becomes a positive menace to health, particularly in the group of children between the ages of 1 and 6 years. In taking a diet so largely composed of milk, the child is robbed of minerals that should come to it in fresh fruits, vegetables and cereals, not to mention the vitamin and antiscorbutic properties which these foods possess.

DISCUSSION

DR. CHARLES GILMORE KERLEY, New York: After a child is 15 months old I give milk only to the amount of 1 pint daily. The child fed entirely on milk is likely to be flabby, and in the second, third and fourth year it is likely to have secondary anemia.

DR. THOMAS S. SOUTHWORTH, New York: In the agitation for the larger use of milk, the fact that the kind of milk is important has been forgotten; it should be milk free from pathogenic bacteria.

DR. E. W. SAUNDERS, St. Louis: I agree with Dr. Hoobler in every respect. I never give Jersey cow's milk unless it is well skimmed. I can see no valid reason why milk should be raised above a temperature of 140 F., which is sufficient to kill all pathogenic micro-organisms.

DR. MAYNARD LADD, Boston: In feeding milk to children 2, 3 or 4 years of age, we should take into consideration the amount of butter the child is getting. The harmful effect of milk is often due to the excessive amounts of butter fed on the theory that the more butter the child eats the better. If one feeds a child a quart of milk a day he should be very careful to see that he is not receiving too much butter.

Has Malt Soup Extract an Antiscorbutic Value?

DR. HENRY J. GERSTENBERGER, Cleveland: While studying the respiratory quotient of scorbutic infants, it was decided for definite reasons to feed these children on Keller's malt soup extract, a mixture which has made for itself a reputation of producing and never of curing scurvy. During this study three infants recovered unexpectedly in a rapid and complete manner. This may be accounted for on the theory that this special lot of malt soup extract possessed an antiscorbutic content due to some unwonted occurrence during its manufacture.

DISCUSSION

DR. JOSEPH BRENNEMANN, Chicago: It is difficult to explain why some foods cure scurvy and others do not, and why some children are cured by almost any change in diet. It would seem that individual susceptibility is a large factor in connection with both the causation and the cure of scurvy.

DR. J. P. CROZER GRIFFITH, Philadelphia: It is beyond question that there must be, besides diet, a peculiar disposition to develop scurvy seen in a comparatively small number of infants; otherwise we would find all the infants fed on a certain mixture of proprietary food developing scurvy. Malt soup has been a favorite food with me for many years, and I have not seen more than two or three children develop scurvy in spite of the fact that no orange juice was administered. It is again evident in these cases that there is some element other than diet concerned, and that malt soup is not to be blamed more than other foods.

DR. CHARLES G. KERLEY, New York: I have seen more cases of scurvy develop on malt soup than with any other method of feeding.

DR. THOMAS S. SOUTHWORTH, New York: This subject should be very thoroughly discussed before the impression is conveyed that malt soup extract is an antiscorbutic. In one institution in which this preparation was used for some years because we obtained better results with it than with lactic acid milk, we had repeated outbreaks of scurvy when the management of the institution failed to provide sufficient orange juice or tomato. It is absolutely essential that infants receiving malt soup should have orange juice or tomato in considerable quantities.

Fate of Subcutaneously Injected Red Blood Cells

DR. ROOD TAYLOR, Minneapolis: Using Ashby's method of differential red blood cell counting, I determined that following subcutaneous injection of homologous citrated blood there is no marked absorption of injected corpuscles into the recipient's circulating blood.

Calcium-Magnesium-Phosphorus Balance in Children Subject to Convulsive Disorders

DR. B. RAYMOND HOOBLER, Detroit: In general, it was found that the retention of these minerals was considerably diminished in children subject to convulsive disorders when compared with normal controls. The findings indicate that in such children an attempt should be made to discover the mineral deficiency; and if such a deficiency is found, an effort should be made to bring it up to normal.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

June, 1920, **19**, No. 6

*Effect of Intravenous Injections of Calcium in Tetany and Influence of Cod Liver Oil and Phosphorus in Retention of Calcium in Blood. A. Brown, I. F. MacLachlan and R. Simpson, Toronto.
Nitrogenous and Sugar Content of Blood of New-Born. J. P. Sedgwick and M. R. Ziegler, Minneapolis.—p. 429.
*Allergy in Infants and Children. O. M. Schloss, New York.—p. 433.
*Fordyce's Disease as Pseudo-Koplik Spots; Cause of Mistakes in Diagnosis of Measles. J. C. Regan, Brooklyn.—p. 455.
*Bacillus of Pfeiffer in Inflammations of Respiratory Tract in Children. M. Wollstein and R. C. Spence, New York.—p. 459.
Bullous Eruption Complicating Measles. F. C. Neff, Kansas City, Mo. —p. 469.
Hemorrhage into Spinal Cord at Birth. C. W. Burr, Philadelphia. —p. 473.
Von Pirquet's Feeding System. H. K. Faber. San Francisco.—p. 478.

Calcium Lactate in Tetany.—Constitutional reactions were produced following intravenous injection of calcium lactate in 1.25 gm. doses in nine patients observed by Byfield and his associates. The degree of reaction varied from a slight drowsiness to almost complete collapse accompanied by dyspnea. The signs of reaction disappeared usually between one and seven hours; the more severe the reaction the longer it took the patient to recover. A temporary absence of both electrical and mechanical signs of tetany, usually lasting from seven to ten hours was noted. Apparently no beneficial therapeutic effect was exerted, unless this was supplemented by the administration of cod liver oil and phosphorus, and in this instance the reduction of the tetanoid symptoms is a little more rapid than with the employment of cod liver oil and phosphorus alone. Cod liver oil and phosphorus produced an increase in the blood calcium with a corresponding reduction in the mechanical and electrical signs, within a period of from ten to seventeen days.

Allergy.—Twelve patients who were desensitized for from three to seven years, were followed by Schloss. All of these patients are now quite immune and can eat, without discomfort, the foods to which they were sensitive. The results of this study are described in detail.

Fordyce's Disease.—This is one of the conditions of the mouth which may simulate Koplik's spots when they exist in patients who develop German measles. The similarity between the clinical symptoms of the two diseases is further increased by the presence of these pseudo-Koplik spots. Fordyce's disease is quite frequently mistaken for early Koplik spots in patients ill with various contagious diseases and exposed to measles, whose buccal mucosa is being examined daily for the appearance of the true spots. The possibility of these pseudo-Koplik spots leading to errors in diagnosis when they are present in patients with suspicious looking maculopapular eruptions from serum or antitoxin, should be borne in mind.

Incidence of Bacillus of Pfeiffer.—Among 1,000 patients examined by Wollstein and Spence for the presence of the bacillus of Pfeiffer in the sputum, the organism was found in 474. The bacillus of Pfeiffer was present in the sputum of 74 per cent. of all the pneumonia cases studied. Eighty-five per cent. of all the cases with rhinitis and bronchitis severe enough to produce systemic reactions were positive for that organism. Fifty-three per cent. of the ordinary colds showed the bacillus; but only 11 per cent. controls carried it. It would seem, then, that this bacillus is not a normal inhabitant of the normal respiratory tract, but that at the time when an epidemic of influenza prevails, it is present in over 50 per cent. of all cases of inflammations of any portion of the respiratory tract.

American Journal of Public Health, Boston

May, 1920, **10**, No. 5

Relative Functions of State and Local Health Departments. C. E. McCombs, New York.—p. 393.
Reduction of Deaths from Infantile Diarrhea by Care of Bowel Discharges of Infants. E. C. Levy, Richmond, Va.—p. 400.
By-Products from Sewage Sludge. R. S. Weston, Boston.—p. 405.
Need for Standards for Recording and Classifying Defects and Impairments. J. S. Billings, New York.—p. 410.
Meat Inspection Law for Municipalities. W. P. Jones, Washington, D. C.—p. 415.
Federal Meat Inspection as a Safeguard to Public Health. J. R. Mohler, Washington, D. C.—p. 421.
Diphtheria Virulence Test in Public Health Work. E. M. Wade and C. E. Vaughan, Minneapolis.—p. 426.
Epidemiologic Points Regarding Acute Respiratory Diseases. Patchogue, New York.—p. 431.

Archives of Dermatology and Syphilology, Chicago

June, 1920, **1**, No. 6

*Precancerous Lesions of Skin of Vulva. Leukoplakic Vulvitis, Kraurosis, Pruritis. F. J. Taussig, St. Louis.—p. 621.
*Hydrargyrism from Application of Weak Ammoniated Mercury Ointment in Treatment of Psoriasis. P. E. Bechet, New York.—p. 636.
*"Spirochetes" Derived from Red Blood Corpuscles. F. Eberson, St. Louis.—p. 638.
*Etiology of Eczema. H. H. Hazen, Washington, D. C.—p. 642.
Skin Reactions to Apothesin and Quinin in Susceptible Persons. W. H. Mook, St. Louis.—p. 651
*Two Unusual Phases of Hepatic Syphilis. U. J. Wile, Ann Arbor. —p. 656.
Physics of Roentgen Ray J. S. Shearer, Ithaca, N. Y.—p. 664.

Precancerous Lesions of Vulva.—An accurate study of the vulva in 100 women beyond the menopause was made by Taussig. The average age of these women was 67 years. All variations of vulvar atrophy were encountered. They were independent either of age, or the amount of atrophy in other parts of the skin or of the amount of vaginal discharge. The extreme forms of atrophy were more common in those women who had had children. Cases of extreme atrophy presented at times a markedly dry and brittle skin that cracked open on merely separating the labia for inspection. In spite of frequent lack of cleanliness, pruritis was only rarely present. The special pathologic conditions encountered were: pruritis vulvae, kraurosis vulvae, leukoplakic vulvitis and carcinoma vulvae. It was apparent that the cessation of ovarian secretion, either by castration or at the menopause, leads to profound atrophic changes in the vulvar skin which, under special conditions, predispose to carcinoma. In all instances there is a general atrophy which varies greatly in the typical cancer following leukoplakic vulvitis. There is a combination of three factors: cessation of ovarian function, disappearance of elastic tissue from the underlying dermis, and chronic inflammation. These are with reasonable certainty of special significance in the etiology of the malignant degeneration.

Hydrargyrism.—In Bechet's case only 1 dram of ointment of ammoniated mercury was contained in 1 ounce of salve, or approximately 1.25 per cent. ammoniated mercury, and yet mercurial ptyalism resulted.

Spirochetes in Red Blood Corpuscles.—The spirochete-like bodies derived from red blood corpuscles by Eberson bear no relationship whatever to the organism of syphilis and may be produced at will.

Etiology of Eczema.—As clinical entities now well established the following are suggested by Hazen: dermatitis due to external irritation; vagotonic dermatitis; urticarial dermatitis and dermatitis due to disturbed food assimilation (the eczema of young children). None of these conditions should, he says, be classified as eczema, as this only results in confusion and a failure to discover the cause.

Syphilis of Liver.—The two phases of liver syphilis described by Wile are: "icterus gravis syphiliticus," also known as "icterus syphiliticus praecox" and syphilitic cirrhosis.

Archives of Internal Medicine, Chicago

June, 1920, **25**, No. 6

*Sodium Carbonate in Chloroform Poisoning. E. A. Graham, St. Louis.—p. 575.
*Study of Multiple Cartilaginous Exostosis. J. A. Honeij, New Haven, Conn.—p. 584.
*Toxic Jaundice in Patients Under Antisyphilitic Treatment. C. V. Bailey and A. MacKay, Woodstock, Ont., Canada.—p. 628.
*Case of Hereditary Diabetes. F. M. Allen and J. W. Mitchell, Lakewood, N. J.—p. 650.
*Prevention of Simple Goiter in Man. D. Marine and O. P. Kimball, Cleveland.—p. 661.
T Wave of Electrocardiogram of Dog Following Ligation of Coronary Arteries. F. M. Smith, Chicago—p 573

Sequence and Arrangement of Pallor and Redness in Irritated Skin of Normal and Dermographic Individuals. L. B. Bibb, Little Rock, Ark.—p. 680.
Determination of Ventricular Predominance from Electrocardiogram. H. E. B. Pardee, New York.—p. 683.
*Effect of Acute Yellow Atrophy on Metabolism and Composition of Liver. W. C. Stadie and D. D. Van Slyke, New York.—p. 693.

Sodium Carbonate in Chloroform Poisoning.—Graham's study shows that dogs may be protected to a variable extent from the effects of late chloroform poisoning by the administration of sodium carbonate.

Multiple Cartilaginous Exostosis.—A detailed analysis and classification of sixty-six reported cases made by Honeij, showed that a positive history of heredity was obtained in thirteen of thirty-three cases, the disease having occurred in some members of the patients' families. In one case, eight members were affected, and in several other cases many members were similarly affected. Honeij reports four cases in detail with the study of the calcium and magnesium of two of the patients.

Syphilis.—The results of a study of the chemical analyses of the blood and urine, and the effect of exercise and diet in the treatment of syphilis are given by Bailey and MacKay.

Hereditary Diabetes.—One of the patients in the diabetic service, with which Allen and Mitchell were connected, came of a family in which seven out of fourteen children of one father (one by one woman, thirteen by another woman) were diabetic. In addition to the treatment, clinical and pathologic studies were carried out in the attempt to throw light on the hereditary feature of the condition. Clinical examinations of the patient and his family for general or focal infections, including clinical and serological examinations for syphilis, were negative. Glucose tolerance tests afforded an early diagnosis in one of the seven cases of diabetes, but were negative in the mother and the remaining children. The gross and microscopic pathologic findings of the tissues of the patient who died served further to exclude syphilis, and were characteristic of tuberculosis. The pancreas showed changes of two types, namely, occasional hydropic degeneration of islands (functional overstrain) and slight fibrosis and hyalin formation in islands (infectious or toxic damage). In general, the diabetic heredity, which apparently came through the father, was manifest in the children who most resembled him in coloring of complexion, eyes and hair, but the rule was not absolute. As far as glucose tolerance tests could decide, the diabetic tendency was inherited as a unit character.

Prevention of Goiter.—Observations on the prevention of simple goiter in man on a large scale, made by Marine and Kimball, have extended over a period of thirty months. The results show that it may be prevented very simply and cheaply in normal individuals. While thyroid enlargements of adolescence are more common, they are not more important than those occurring in mother and fetus. Prevention of adolescent goiter is properly a public health problem, while the prevention of fetal and maternal thyroid enlargements is largely a responsibility of individual physicians.

Blood and Urine Analyses in Acute Yellow Atrophy.—Stadie and Van Slyke report chemical analyses of the blood and urine made in a case of acute yellow atrophy for three days before death, together with analysis of the liver removed at necropsy three hours after death. The study was directed especially toward the nitrogen metabolism and the acid-base balance of the patient. An increased excretion of ammonia and titratable acids was observed in the last days of illness, and a fall of plasma bicarbonate to slightly below normal on the day before death. Even at this time, however, the deviations from the normal were too small to indicate that acid intoxication was a significant factor in the condition. The results afford confirmation of a quantitative character for the belief that amino-acids are formed by autolysis in the atrophying liver, and circulate and are excreted as such in unusual amounts. The excretion of amino-acids did not appear to be due to increase in their rate of formation, for the total protein katabolism was not abnormally or even unusually rapid. The excretion appeared due rather to loss of power to deaminize amino-acids at even an ordinary rate. These observations support the view that in the deamination of amino-acids and the synthesis of urea the liver bears a part which cannot be entirely assumed by the rest of the body.

Archives of Ophthalmology, New York

March, 1920, **49**, No. 2

Ocular Manifestations following Exposure to Various Types of Poisonous Gases. G. S. Derby, Boston.—p. 119.
New Operation Involving New Principle in Etiology and Treatment of Chronic Primary Glaucoma. E. J. Curran.—p. 131.
Therapeutic Use of Radium in Diseases of Eye. H. H. Janeway, New York.—p. 156.
Case of Trigeminal Neuralgia. C. W. Stevens, New York.—p. 175.
New Apparatus for Testing Accommodation. H. J. Howard, Long Island, N. Y.—p. 182.
Pupillary Symptoms in Case of Embolus of Central Artery of Retina; Especial Reference to Primary Reflex. J. Dunn, Richmond, Va.—p. 191.
Maddox Multiple Red: Some of Its Optical Defects. P. Dolman, Long Island, N. Y.—p. 194.
Removal of Magnetic Foreign Bodies from Vitreous. L. M. Francis, Buffalo.—p. 198.
Diagnosis and Treatment of Syphilitic Involvement of Optic Pathways. M. J. Schoenberg, New York.—p. 204.
Tonometric Chart. T. H. Butler, Birmingham, England.—p. 227.

Boston Medical and Surgical Journal

June 24, 1920, **182**, No. 26

Principles of Posture. M. E. Todd, Boston.—p. 645.
Bodily Mechanics and Medicine. L. T. Brown, Boston.—p. 649.
Malnourished Child in Public School. W. R. P. Emerson, Boston.—p. 655.
Comparative Statistics on Physical Examinations of Pupils of Boston Public Schools. W. H. Devine, Boston.—p. 658.
*Rupture of Rectus Abdominis Muscle. R. J. Behan, Pittsburgh.—p. 660.

Rupture of Rectus Abdominis Muscle.—While raising a heavy window, Behan's patient suddenly felt a sharp pain in the right side. The pain would cease while lying quietly, but would return when she raised up, coughed or sneezed. No other symptoms were manifested, except tenderness on pressure over the lower half of the rectus, which was in tonic contraction. In the center of this rigid area there seemed to be a slight groove where the fingers could be pressed down deeply through the rectus muscle. On coughing there was a slight bulging of this area. Operation confirmed the diagnosis of ruptured rectus abdominis. The separation had apparently occurred down near the insertion of the rectus muscle into the tendinous portion adjacent to Poupart's ligament.

July 1, 1920, **183**, No. 1

*Epidemiology and Etiology of Influenza. A. J. McLaughlin, Washington, D. C.—p. 1.
*Pneumonia in Woman with Habitual High Blood Pressure. M. J. Konikow, Boston.—p. 23.

Influenza.—McLaughlin presents an historical review of influenza, and analyzes recorded data as to its epidemiology and etiology, problems which remain unsolved. He is convinced that more intensive, comprehensive and sustained laboratory research must be made, using the body fluids and secretions of influenza cases for material, to solve the problem and secure the biologic aids now lacking for the prophylaxis and treatment of influenza.

Pneumonia Lowers High Blood Pressure.—A woman, aged 54, had an habitual high systolic blood pressure, never less than 225, and at times as high as 275. She contracted pneumonia. On the third day of the pneumonia, the blood pressure fell to 160 and continued to fall until it reached as low as 130, when lysis began and the dullness reached its height. From this date, with the gradual fall of the temperature, of the pulse, and of the respiration, the blood pressure began to climb again, the diastolic slowly, the systolic quite rapidly, until after three weeks it reached 230, almost her habitual pressure. Konikow interprets this case to mean that high blood pressures should be left alone, if the cause of it cannot be ascertained and removed. High blood pressure in itself is merely nature's means of self-defense.

Journal of General Physiology, Baltimore

May 20, 1920, **2**, No 5

Effect of Temperature on Facet Number in Bar-Eyed Mutant of Drosophila. II. J. Krafka, Urbana, Ill—p. 433.
Effect of Temperature on Facet Number in Bar-Eyed Mutant of Dropsophila. III. J. Krafka, Urbana, Ill.—p. 445.

Influence of Hydrogen Ion Concentration on Inactivation of Pepsin Solutions. J. H. Northrop, New York.—p. 465.
Effect of Concentration of Enzyme on Rate of Digestion of Proteins by Pepsin. J. H. Northrop, New York.—p. 471.
Dark Adaptation of Human Eye. S. Hecht, Omaha.—p. 499.
Significance of Cambium in Study of Certain Physiologic Problems. I. W. Bailey, Forest Hills, Mass.—p. 519.
Quantitative Study of Effect of Anions on Permeability of Plant Cells. O. L. Raber, Cambridge, Mass.—p. 535.
Antagonistic Action of Anions. O. L. Raber, Cambridge, Mass.—p. 541.
Nature of Growth Rate. H. S. Reed, Riverside. Calif.—p. 545.
Cause of Influence of Ions on Rate of Diffusion of Water Through Collodion Membranes. II. J. Loeb., New York.—p. 563.
Reversal of Sign of Charge of Membranes by Hydrogen Ions. J. Loeb, New York.—p. 577.

Journal of Industrial Hygiene, Boston

May, 1920, **2**, No. 1

Mortality from Respiratory Diseases in Glass Industry. F. L. Hoffman, Newark, N. J.—p. 1.
Surgery and Increased Production. A. C. Burnham, New York.—p. 6.
Modern Specialist in Unrest: Place for Psychiatrist in Industry. E. E. Southard.—p. 11.
Social Work and Industrial Hygiene. A. W. Stearns.—p. 20.
Successful Industrial Medical Department. M. B. Franklin, Philadelphia.—p. 22.
Industrial Diseases Under Workmen's Compensation Act. T. M. Legge, London, England.—p. 25.
Poisons in Rubber Industry. Hexamethylene-Tetramine. N. A. Shepard and S. Krall, Akron, Ohio.—p. 33.

Journal of Infectious Diseases, Chicago

June, 1920, **26**, No. 6

Studies in Influenza and Pneumonia. E. C. Rosenow, Rochester, Minn.
*V. Bacteriology and Certain Clinical Features of Influenza and Influenzal Pneumonia.—p. 469.
*VI. Leukocytic Reaction in Influenzal Pneumonia.—p. 492.
*VII. Effects Following Injection of Bacteria Found in Influenza in Normal Throats, in Simple Nasopharyngitis, and in Lobar Pneumonia.—p. 504.
*VIII. Etiology of "Gastro-Intestinal" Influenza—p. 557.
*IX. Changes in Green-Producing Streptococcus Induced by Successive Animal Passage and Their Significance in Epidemic Influenza.—p. 567.
*X. Immunologic Properties of Green-Producing Streptococci from Influenza.—p. 597.
*XI. Therapeutic Effects of Monovalent Antistreptococcus Serum in Influenza and Influenzal Pneumonia.

Influenza and Pneumonia Studies: Bacteriology.—From a bacteriologic study made by Rosenow of a large series of cases of influenza and influenzal pneumonia throughout four epidemic waves, green-producing streptococci (including pneumococci) were found to occur more constantly and in larger numbers than any other organisms commonly associated with this disease. This flora predominated alike in the cases of influenza without lung involvement, in those of lung involvement in the initial febrile attack as well as in those in which influenzal pneumonia developed after a quiescent interval following influenza. During the latter part of the outbreaks hemolytic streptococci became relatively more numerous, especially late in the disease, and death was often the result of invasion by these organisms. The influenza bacillus was found in the sputum in the early part of the first wave only in a few cases and always in association with streptococci, while throughout the remaining three waves it was isolated only occasionally.

Leukopenia in Influenzal Pneumonia.—Leukopenia, or absence of leukocytosis, has come to be regarded as an important aid in the diagnosis of influenza, and a persistent leukopenia as of bad prognostic import. The cause of the leukopenia has been the subject of much speculation. Rosenow's findings indicate that the reduction in leukocytes following injection of the material from patients with influenza may not be due to an unknown virus, but to peculiar properties of the streptococci or other bacteria at hand in this disease. These streptococci have the power by growth in vitro and in vivo to produce a soluble filterable substance. The filtrates from broth cultures and from influenzal lungs and sputum when applied intratracheally in guinea-pigs have the power, among other properties, to cause sharp reduction in leukocytes. The reduction in leukocytes has occurred with regularity only in the animals injected with influenza strains and not following injection of streptococci in like dosage from similar conditions showing leukocytosis, or type pneumococci.

Infecting Powers of Streptococci.—Through a study of the infecting powers of the streptococci in influenza and influenzal pneumonia throughout several epidemic waves, Rosenow has been able to reproduce in animals, by various methods of injection, but particularly by intratracheal injection, the picture of influenza as seen in man. Likewise, the gross and microscopic changes which have come to be regarded as quite characteristic of influenzal infection have been reproduced.

Gastro-Intestinal Influenza.—On the basis of the experiments reported Rosenow claims that there is a true gastro-intestinal type of influenza and that green-producing streptococci similar to those isolated from the respiratory type of the disease but which tend to localize in the gastro-intestinal tract, are the chief cause. All symptoms, however, in influenza referable to the gastro-intestinal tract are not due to localization of bacteria in its mucous membrane. The symptoms and findings in influenza are due in part to an anaphylactoid reaction; the severe vomiting and diarrhea noted at the outset of some cases may be an expression of this mechanism.

Change in Virulence of Streptococci.—The results reported elsewhere following the intratracheal injection into animals of the green-producing streptococcus from influenza have been verified and extended in this study by Rosenow. Virulence and mortality increased after one or two injections, then diminished.

Value of Monovalent Antistreptococcus Serum in Influenza.—Of the twelve patients treated by Rosenow, all but one were critically ill at the time of serum treatment. Five recovered and seven died. Three of the patients who died were practically moribund at the time of the serum treatment and good effects could scarcely be expected. Two others that died showed green-producing streptococci immunologically different from the strain with which the serum was prepared, and in two, hemolytic streptococci caused death. In these cases also improvement could not be expected. In all cases in which specific agglutination was obtained, marked improvement followed the injection of the serum, and in no case were good effects noted at a time when agglutination tests were negative.

Kentucky Medical Journal, Bowling Green

June, 1920, **18**, No. 6

Tendency Toward State Medicine. W. W. Anderson, Newport.—p. 185.
Roentgenography in Diagnosis of Tuberculosis. I. H. Brown, Winchester.—p. 191.
*Selective Treatment of Fibromyoma Uteri. J. W. Price, Jr., Louisville—p. 195.
Exhibition of Fetus with Anomalous Placement of Ears. H. E. Tuley, Louisville.—p. 205.
Alopecia Areata in a Boy of Twelve. W. A. Jenkins, Louisville.—p. 206.
Progressive Muscular Dystrophy: Exhibition of Two Brothers. R. T. Pirtle, Louisville,—p. 207.
Extremes of Age as Surgical Risks. E. J. Brown, Stanford.—p. 210.
Ocular Hygiene. R. Lockhart, Owensboro.—p. 214.
*Treatment of Hypertrichosis. W. J. Young, Louisville.—p. 217.
Early Diagnosis in Rectal Diseases. B. Asman, Louisville.—p. 219.
Fecal Fistula. W. L. Gambill, Jenkins.—p. 223.

Treatment of Fibromyoma Uteri.—Price does not agree with Clark that a small myomatous uterus causing hemorrhage is not a case for the surgeon. He believes that if the patient is in a good physical condition operation is a most conservative treatment.

Treatment of Hypertrichosis.—Young does not favor the use of the roentgen ray, radium or carbon dioxid in the removal of superfluous hair because of the dangers attending their application. He prefers electrolysis which produces excellent cosmetic results without discernible scars.

Maine Medical Association Journal, Portland

May, 1920, **10**, No. 10

Comparative Study of Serum Sickness and Certain Acute Exanthemata L. D. Bristol, Augusta.—p. 291.
Current Misconceptions Regarding State Hospitals. C. J. Hedin, Bangor. —p. 299.
Early Tuberculosis. O. S. Pettingill, Hebron—p. 308.

Medical Record, New York

June 26, 1920, **97**, No. 26

Oliver Wendell Holmes and the Medical Student. K. M. Vogel, New York.—p. 1067.
Antituberculosis Movement Prior to and Since Formation of National Tuberculosis Association, S. A. Knopf, New York.—p. 1071.
Rheumatic and Some Other Infections. S. E. Earp, Indianapolis.—p. 1074.
Localization of Pulmonary Lobes by Roentgen Ray. K. Dunham, Cincinnati.—p. 1077.
*Autoserum Therapy (Intraspinal) In Lethargic Encephalitis. I. C. Brill, Portland, Ore.—p. 1079.
Prevention of Peritonitis in Case of Intrapartum Infection Subjected to Extraperitoneal Cesarean Section. R. A. Bartholomew, Atlanta, Ga.—p. 1080.

Autoserum Therapy in Lethargic Encephalitis.—Five cases have been treated by Brill by this method. In four of these the improvement was definite, rapid and marked. In the fifth case, the patient was in a moribund condition with signs of rapidly developing pneumonia when a single injection of autogeous serum was given intraspinally. The following day the patient's condition appeared to improve, but on the third day he died of pneumonia. The technic consists in obtaining from the patient from 60 to 100 c.c. of blood. A lumbar puncture is performed in the usual manner and from 25 to 35 c.c. of spinal fluid is withdrawn and an equal amount of patient's blood serum is injected into the subdural space. The foot of the bed is raised from 6 to 8 inches for from three to four hours. Brill does not consider it necessary to inactivate the serum, since it no doubt destroys some antibodies.

Military Surgeon, Washington, D. C.

May, 1920, **46**, No. 5

Function of Medical and Surgical Consulting Staffs Determined by Experience of Late War. J. L. Bevans.—p. 465.
Experience with a Gastrointestinal Service in Army Hospital. J. L. Kantor.—p. 507.
Blood Transfusion. R. G. Hussey.—p. 514.
Influenza in U. S. Army. D. C. Howard and A. G. Love.—p. 522.
Founding of this Association and its Founder, Nicholas Senn. H. M. Brown.—p. 549.
Epidemiology of Influenza. M. W. Hall.—p. 564.
Other Side of Question of Indirect Contact Infection in Acute Respiratory Diseases. T. W. Jackson.—p. 570.

Minnesota Medicine, St. Paul

June, 1920, **3**, No. 6

*Diagnosis of Cardiac Disease. J. S. Gilfilan, S. Paul.—p. 269.
*Radium-Roentgen-Ray Therapy of Carcinoma Uteri and Uterine Bleeding. F. S. Bissell, Minneapolis.—p. 273.
*Tuberculosis of Thyroid. A. C. Broders, Rochester.—p. 279.
Uterus at Menopause. E. X. Wanous, Minneapolis.—p. 283.
Prolapse of Uterus. W. A. Coventry, Duluth.—p. 286.
Vertigo, its Causes and their Determination. J. A. Watson, Minneapolis.—p. 290.
Injection of Gas into Peritoneal Cavity for Diagnostic and Therapeutic Purposes. A. F. Tyler, Omaha.—p. 295.
Blood Transfusion and Results that may be Expected. C. R. Mullong, Norfolk, Neb.—p. 298.

Diagnosis of Cardiac Disease.—Gilfillan would not place too much dependence on a systolic murmur in the diagnosis of a valvular lesion. He advises that other evidence should be demanded when a lesion is suspected, and that the murmur should be searched for at different times and under various conditions.

Treatment of Cancer of Cervix.—Combined radium and roentgen-ray therapy is considered by Bissell as a treatment of choice in all cases of cancer of the cervix. In early cases, conservative surgery followed by radiation is justified but probably the latter alone will prove equally efficient. Cases of cancer of the fundus should all be submitted to operation, but the patient should be given the added benefit of postoperative radiation. Bissell would accept radiation as a specific in hemorrhages due to myoma or fibrosis or those of unknown etiology.

Tuberculosis of Thyroid.—Seven cases of this type have been under observation in the Mayo Clinic. They are divided into three groups: (1) cases with high degree of hyperthyroidism, (2) with a moderate degree with hyperthyroidism, (3) hyperthyroidism mild or absent. In each case the diganosis was made after the enlarged gland had been removed by operation. The greater the tuberculous involvement the less severe the toxic symptoms. Broders believes that all cases of tuberculosis of the thyroid are secondary to some focus elsewhere in the body, although none were discovered in the seven patients.

Missouri State Medical Ass'n Journal, St. Louis

June, 1920, **17**, No. 6

Influence of Medical Profession. N. P. Wood, Independence.—p. 221.
Influenza and Influenzal Pneumonia. V. C. Vaughan, Ann Arbor, Mich.—p. 223.
Lacy-Heist Method of Testing Immunity by Means of Whole, Coagulable Blood in Vitro. S. Solis-Cohen, Philadelphia.—p. 225.
Treatment of Mild Case of Diabetes Mellitus. R. T. Woodyatt, Chicago.—p. 227.
Certain Conditions in Europe after War. A. J. Carlson, Chicago.—p. 229.
Typhoid Fever in A. E. F. H. Emerson, New York.—p. 230.
Botulism. C. L. Alsberg, Washington, D. C.—p. 232.
Differences Between Diagnoses of Chloral and Morphin Poisoning. H. McGuigan, Chicago.—p. 234.
American Relief Administration European Children's Fund. F. C. Gephart, New York.—p. 235.
*Wandering Spleen. Report of Case, C. Smith, St. Louis.—p. 236.
Venereal Disease Reporting in Missouri. R. L. Russell, Jefferson City.—p. 238.
Preventing Blindness in Missouri. F. E. Woodruff, St. Louis.—p. 240.
Hygiene in Dispensary Service. G. Homan, St. Louis.—p. 242.
Roentgen Rays in Diagnosis of Chest Complications. E. H. Kessler, St. Louis.—p. 243.

Wandering Spleen.—In a case of uterine polyp causing bleeding, Smith found, on examination, a mass to the right and above the uterus, firm and smooth, and extending as high as the umbilicus. The uterus could be distinctly outlined apart from the mass, but there seemed to be a close connection between the two structures. During examination the tumor would suddenly jump to the left iliac region, causing pain. Blood examination was negative. A diagnosis of subserous fibroid was made. At operation the mass proved to be the spleen attached to the right ovarian region by a fibrous adhesion. The pedicle measured 1½ inches in diameter, with veins about three-eighths inch in diameter extending from the spleen diagonally across the abdominal cavity to the normal splenic region. The spleen was removed. Statements made by the patient seemed to justify the diagnosis of malarial spleen. One month after the operation, the blood count was virtually normal.

Modern Hospital, Chicago

May, 1920, **14**, No. 5

Carson C. Peck Memorial Hospital. C. F. Neergaard, Brooklyn.—p. 341.
Purpose and Methods of Air Control in Hospitals. E. Huntington.—p. 348.
Use of Books in Hospital. M. H. Barker, Worcester, Mass.—p. 353.
Illinois New State Institutions and Hospitals. A. L. Bowen, Springfield, Ill.—p. 357.
Prevention of Cross-Infections in Children's Ward of a General Hospital. J. C. Doane, Philadelphia.—p. 361.
Dental Care for Ward Hospital Patients. L. A. Sexton, Hartford, Conn.—p. 364.
Development of Hospital Planning in Military Hospitals of Canada. W. L. Symons, Canada.—p. 368.
Training Opportunities in Medical Department, U. S. Army. H. F. Pipes, M. C., U. S. Army.—p. 383.
Full Time Pathologic Interns. H. J. Goeckel, Plainfield, N. J.—p. 386.
Discipline in Schools of Nursing. H. M. Gillette, Erie, Pa.—p. 389.
Student Self-Government. S. E. Parsons, Boston.—p. 392.
Courses of Insrruction for Dietitians. K. Fisher, New York.—p. 393.
Teaching of Medical Dietetics. L. Bauman, New York.—p. 395.
The Relation of the Physician to the Dietitian. E. Campbell, Cincinnati.—p. 396.
Work of New York City Division of Industrial Hygiene. S. D. Hubbard, New York.—p. 405.
Prisoner and Free Man. E. H. Cleveland, Inwood-on-the-Hudson. N. Y.—p. 407.
Milestones in the Fields of Rehabilitation. D. C. McMurtrie, New York.—p. 408.

New York Medical Journal

June 19, 1920, **111**, No. 25

Retention Crypts in Infratonsillar Nodules as Harbors of Pathogenic Bacteria. T. R. French, Brooklyn.—p. 1057.
Method of Anesthesia for Adenoid and Tonsil Work. J. T. Gwathmey, New York.—p. 1065.
Relation of Hypertension and Hypotension of Membrana Tympani to Deafness and Tinnitus. H. M. Hays, New York.—p. 1067.
Treatment of Chronic Purulent Otitis Media. J. G. Callison, New York.—p. 1072.
Mastoidectomy Followed by Insanity. O. Glogau, New York.—p. 1075.
Technic of Simple Mastoid Operation. C. M. Sautter, New York.—p. 1079.

Four Patients with Cysts of Larynx Operated on Under Suspension Laryngoscopy. W. Freudenthal, New York.—p. 1080.
*Case of Injury to Larynx. F. O. Lewis, Philadelphia.—p. 1081.
*Cancer of Larynx Removed by Indirect Method M. J. Ballin, New York.—p. 1082.
Voice and Lingual Tonsil. P. V. Winslow, New York.—p. 1083.
Some Endoscopic Mishaps. H. Arrowsmith, Brooklyn.—p. 1083.
Removal of Foreign Body from Bronchus. W. B. Chamberlain, Cleveland.—p. 1084.
*Wire in Esophagus. C. J. Imperatori, New York.—p. 1084.
Conservative Nasal Sinus Surgery. M. S. Ittelson, Brooklyn.—p. 1085.

Injury to Larynx.—A steel worker was struck in the neck by a small fragment of hot steel. Shortly after the injury he experienced great difficulty in breathing, and had a spasmodic cough and severe pain in the region of the wound. On admission to the hospital the patient presented the cardial signs of laryngeal stenosis; an anxious expression, husky voice, a well marked cyanosis, recession of the accessory muscles of respiration, and difficulty in swallowing. On examination, there was found a small cut to the left of the median line of the neck, extending through the left wing of the thyroid cartilage, through which a small quantity of air was escaping. There was some emphysema in the tissues of the neck. Indirect examination of his larynx showed the arythenoids were swollen, the left immovable, the vocal cords could not be seen, and the lumen of the larynx was greatly narrowed. By means of the roentgen ray the foreign body was located. The findings being the same as before, the wound was again cocainized and by means of the fluoroscope, and a probe between the larynx and esophagus, it was removed.

Cancer of Larynx.—The entire clinical picture in Ballin's case gave the impression that it was an ordinary case of subacute laryngitis. Under local treatment there was a gradual improvement in the inflammatory condition, with the exception of a small polypoid elevation about the size of a pea which remained in the anterior portion of the left vocal cord near the anterior commissure. Ballin removed the growth by the indirect method. The pathologic diagnosis was carcinoma. The patient refused to submit to a major operation, and as his throat assumed a more healthy appearance, and his voice almost returned to normal, Ballin advised him to have nothing done for the present. Two and a half years have elapsed, and there has been absolutely no signs of recurrence.

Wire in Esophagus.—A patient had been in the habit of swabbing his throat with a heavy copper wire, one end of which was wrapped in cotton. During one of these manipulations the wire was pushed down so far that attempts to get it out were without avail. Esophagoscopy showed the upper end of the wire embedded in the lateral wall of the esophagus at a point about 9 cm. below the cricopharyngeal constriction, that is, about 25 cm. from the upper teeth. Because of fixation of the lower end of the wire, it had to be removed by means of gastrostomy. The patient died thirty-six hours after the operation from pulmonary embolism.

June 26, 1920, **111**, No. 26

Industrial Toxicology. W. A. Wadsworth, Philadelphia.—p. 1101.
Health of Worker in Industry. C. B. Connelley, Harrisburg, Pa.—p. 1103.
Filtered Roentgen Ray Dosage. W. D. Witherbee and J. Remer, New York.—p. 1105.
Reflex Disturbances Due to Eye-Strain. H. E. Smith, New York.—p. 1108.
Malnutrition in Infancy and Childhood. J. D. Leebron, Philadelphia.—p. 1109.
Tuberculous Veterans. J. L. Mandracchia, Brooklyn.—p. 1112.
Problem of Malingerer. J. C. Fisher, New York.—p. 1113.
Group Study in Surgery of Head. S. Oppenheimer, New York.—p. 1117.
Coin Test as Aid in Diagnosis of Bronchiectatic Cavity. S. A. Loewenberg, Philadelphia.—p. 1122.

New York State Journal of Medicine

May, 1920, **20**, No. 5

Lethargic Encephalitis. E. L. Hunt, New York.—p. 137.
Symptomatology of Epidemic Encephalitis. M. Osnato, New York.—p. 140.
Present Status of Poliomyelitis. H. B. Sheffield, New York.—p. 146.
Tenotomy of Inferior Oblique Muscle. J. W. White, New York.—p. 156.
Nationalization of Agencies for Health-Welfare of People. A. T. Lytle, Buffalo.—p. 159.

Northwest Medicine, Seattle

May, 1920, **19**, No. 5

Mathematical Terminology for Neoplasia and Its Signicance. W. C. McCarty, Rochester, Minn.—p. 113.
Technic of Whole Blood Transfusions: Value in Association with Surgical Procedures in Treatment of Pernicious and Other Severe Anemias. N. M. Percy, Chicago.—p. 119.
Treatment of Cancer of Breast. L. P. McCalla, Boise, Idaho.—p. 124.
Surgical Treatment of Intracranial Pressure. G. A. Cathey, Portland.—p. 126.
Hospital Standardization from Standpoint of Case Records. E. F. Ziegelman, Portland.—p. 128.

Ohio State Medical Journal, Columbus

June 1, 1920, **16**, No. 6

Surgery of Peripheral Nerves. J. A. Caldwell, Cincinnati.—p. 404.
Clinicians and Collections. N. W. Ingalls, Cleveland.—p. 409.
Etiology and Treatment of Prolapse of Uterus and Bladder. G. Mambach, Cincinnati.—p. 416.
Mineral Nutrients and Vitamins in Diet. E. B. Forbes, Wooster.—p. 419.
Treatment of Average Case of Weak Feet. G. N. Morrill, Cleveland.—p. 425.
Schenck-Beck Improved Tonsil Snare. W. E. Schenck, Cincinnati.—p. 427.
Intussusception in Infants; Report of Five Cases. J. W. Epstein, Cleveland.—p. 429.
*Case of Sodium Nitrite Poisoning. S. F. Oliver, Cincinnati.—p. 430.

Sodium Nitrite Poisoning.—Oliver's patient mistook sodium nitrite for table salt and ate six or eight radishes dipped in this salt. The patient was given an intravenous injection of Fischer's solution (500 c.c.) and recovered.

Public Health Journal, Toronto

May, 1920, **11**, No. 5

Recent Advances in Science of Ventilation from Industrial Standpoint G. G. Nasmith.—p. 197.
Sanitation. W. H. Hattie.—p. 207.
Public Health Information Bearing on Prenatal Subjects. R. E. Wodehouse.—p. 211.
Industrial Hygiene: Need of Research in Canada. Report of Committee.—p. 216.
Plan for More Effective Federal and State Health Administration. F. L. Hoffman.—p. 221.
Social Background. Standards of Child Placing. Mrs. A. D. Fisher.—p. 226.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

May, 1920, No. 238

Dental Roentgenography. S. G. Scott.—p. 392.
Case of Fractured Sesamoid in Foot, Without History of Trauma. F. Hernaman-Johnson.—p. 395.
Two Cases of Schlatter's Disease. F. S. Scales.—p. 396.
Case of Spondylitis Deformans. R. M. Beath, London.—p. 397.

British Medical Journal, London

June 5, 1920, **1**, No. 3101

Jejunocolic Fistula Following Gastrojejunostomy. C. Bolton and W. Trotter.—p. 757.
Military Orthopedics. R. W. Sutherland and J. M. Christie, Edinburgh.—p. 762.
Physiopathic Paralysis of Hand and Its Causation. R. G. Abercrombie.—p. 764.
*Inherited Syphilis. F. H. Haynes, London.—p. 765.
Transfusion of Blood in Nephritis. J. Ramsay, Blackburn.—p. 766.

Inherited Syphilis Cause of Epilepsy.—Haynes believes that the large majority of cases of epilepsy occurring in the young are due to syphilis either in the parent or in the grandparent. In fact, he suspects strongly, there is a want of stability about children of syphilitics. Of the wives of men who had syphilis, some seem to be unaffected and live to a good age, but a certain number die young. Haynes refers to four or five instances of such women who have died from so-called puerperal fever and several who have suffered from albuminuria, convulsions or iliac thrombosis during or after pregnancy. One woman who had exophthamic goiter was cured by mercury. Other instances of diseases occurring in those known to be affected with syphilis are: Dupuytren's contracture, so-called tuberculous glands of the neck, and ulcerative keratitis. Haynes believes that Bright's disease is

usually syphilitic. A medical man had a digital chancre, and died at the age of 44 from Bright's disease.

June 12, 1920, **1**, No. 3102

Correlation of Function: Special Reference to Organs of Internal Secretion and Reproductive System. W. B. Bell.—p. 787.
*Commoner Complications of Bacillary Dysentery in Military Practice. P. Manson-Bahr.—p. 791.
Instinct and Hysteria. V. T. Carruthers.—p. 792.
*Use of Roentgen Rays as Immunity Raising Agent before and after Operation for Cancer. F. Hernaman-Johnson.—p. 793.

Idiopathic Dysenteric Arthritis.—Manson-Bahr holds it reasonable to suppose that there exists an idiopathic dysenteric arthritis due to the absorption of specific dysenteric toxins from the bowel wall and their excretion (as is known to be the case during the absorption of toxins of septic and gonorrheal origin) into the joint cavities. In the same manner the arthritic symptoms occurring during the course of serum sickness may justly be regarded as representing an effort on the part of the organism to rid itself of toxins peculiar to horse serum; and it is possible that a particularly high percentage of these toxins, even when introduced in moderate doses into a subject already suffering from dysentery in which per se arthritis is not an infrequent complication, may not only determine the onset of the condition, but also the amount of disintegration of the joint thus produced.

Roentgen Rays as Immunity Raising Agent.—Hernaman-Johnson refers to the fact that roentgen rays in cancer act as much by their stimulating or regulating action on the body, locally or generally, as by direct depression of cancer cells. Radiation undoubtedly has a deleterious effect on embryonic cells, and in so far as cancer cells approach this type they are injured by it before normal cells are. To this extent the action is "specific." But, apart from the treatment of rodent ulcer, which does not tend to metastasize, the general stimulating and regulating action of roentgen rays is of more value than its "specific" local effect on pseudo-embryonic cells. That the general resistance can be so raised has been conclusively proved so far as mouse cancer is concerned.

Indian Medical Gazette, Calcutta

May, 1920, **55**, No. 5

*Blackwater Fever (Hemoglobinuria) in Coorg Province, Madras, 1917-1918. E. H. Wright.—p. 161.
Epidemic Influenza in and Around Calcutta. K. C. Bose, Calcutta.—p. 169.
Open Air Treatment of Pulmonary Tuberculosis in Madras Presidency. C. F. Fearnside.—p. 174.
Treatment of Kala-Azar with Intramuscular Injections of Hyperacid Antimonyl Tartrate (plus Urethane). U. N. Bramachari, Calcutta.—p. 176.
Abscess of Brain Due to Chronic Ear Disease. K. Prasad.—p. 177.
Rupture of Gallbladder. W. C. Kane.—p. 178.
Fifteen Cases of Ovarian Tumor Treated by Operation. K. M. Gupta.—p. 179.

Cause of Blackwater Fever.—A little girl, aged 11, contracted a severe attack of blackwater fever. Death occurred suddenly from syncope and coma. This girl slept in a room with fowls or near them, and was bitten severely by fowl fleas (*Echidnophaga gallinarum*). In this case and several others reported, Wright found in the blood a protozoan parasite of the genus piroplasma in conjunction with the malarial plasmodium. He suggests that this may be a new and undescribed species of *Laverania malariae*. The organism is described in detail.

Journal of Laryngology, Rhinology and Otology, London

May, 1920, **35**, No. 5

Chronic Middle Ear Suppuration, Cholesteatoma and Mastoiditis, Complicated by Labyrinthitis, Sinus Thrombosis and Meningitis. J. K. M. Dickie.—p. 129.
Aqueduct of Fallopius and Facial Paralysis. D. McKenzie.—p. 135.

Journal of State Medicine, London

May, 1920, **28**, No. 5

Climate in Tuberculosis. E. Morland.—p. 129.
Schemes and Methods in Tuberculosis Work. B. T. J. Glover.—p. 140.
Suggested Reforms in Campaign against Tuberculosis. S. V. Pearson.—p. 144.

Journal of Tropical Medicine and Hygiene, London

May 15, 1920, **23**, No. 10

Milroy Lectures on Higher Fungi in Relation to Human Pathology. A. Castellani.—p. 117.
Histologic Observations on Possible Pathogenicity of Trichomonas Intestinalis and Chilomastix Mesnili: Note on Endolimax Nana. C. M. Wenyon.—p. 125.

June 1, 1920, **23**, No. 11

Higher Fungi in Relation to Human Pathology. A. Castellani.—p. 133.
*Case of Onyalai in East African Protectorate. T. B. Welch, London.—p. 138.

Onyalai.—Welch's patient had bullae and ulcers in the mouth, nose and skin, and the spleen was slightly tender, readily palpable, firm and slightly enlarged. About half a pint of blood was emitted from the mouth daily for about fifteen days. The patient recovered.

Lancet, London

June 12, 1920, **1**, No. 24

Principles of Medical Science as Applied to Military Aviation. J. L. Birley.—p. 1251.
*Treatment of Benign Tertian Fever. H. W. Acton.—p. 1257.
*Exfoliative Dermatitis Occurring During Arsenical Treatment. E. G. Ffrench.—p. 1262.
Agglutination Experiments with Trench Fever Rickettsia. J. C. G. Ledingham.—p. 1264.
*Value of Posture in After-Treatment of "Stiff-Shoulder." C. Mackay.—p. 1266.
Residential Antenatal and Postnatal Treatment. G. W. Rundle.—p. 1268.
Case of Tumor of Mesentery. J. K. Haworth.—p. 1269.
Bacteriology of Colitis. H. L. Lyon-Smith.—p. 1269.
*Case of Fatal Internal Lacerations without External Wounds. W. E. Masters.—p. 1269.

Specificity of Quinin in Malaria.—The universal belief that quinin is equally a specific for all types of malarial fever Acton claims will have to be abandoned before any material advance can be made in the treatment of these fevers. Malarial fever should be regarded not as one disease, but as a group of three different fevers, due to three distinct parasites, and two, at least, of these require different alkaloids of cinchona bark for their treatment. Acton's observations were made on a series of almost 1,000 cases of malaria, only fourteen being of the malignant type. Eight weeks was the minimum period of observation in each case before a cure was claimed. Quinin apparently has a specific action on the malignant tertian parasite. The cure rate of quinin in benign tertian infections was low. Out of 663 cases of this infection treated with quinin there were 32.4 per cent. of cures; nearly 70 per cent. of the cases relapsed in spite of treatment. The maintenance of the cure rate about a constant of 25 per cent. from the first to the fourth course of treatment is a very important fact, as it indicates that neither does the parasite become more and more quinin resistant, nor does the host's resistance alter; otherwise the cure percentage should diminish with each subsequent course. The cure rate for a month's course of treatment in this infection varies for the different alkaloids as follows: Quinin, 20 per cent.; cinchonin, about 40 per cent.; cinchona febrifuge, 50 per cent.; cinchonidin and quinidin, about 60 per cent.; so that the last two alkaloids must cause a greater percentage destruction of each generation. As the rate of multiplication of the benign tertian parasite is about twice that of the malignant tertian it follows that in order to destroy every parasite in the body of the treatment should extend over six weeks instead of a month, as for malignant tertian infections.

Arsenical Dermatitis.—Ten years' experience with arsenical preparations in many thousands of cases of syphilis confirm French in his belief that severe cases of exfoliative dermatitis and toxic jaundice occur only in a very small fraction. During several years in India and London he saw only four cases of severe exfoliative dermatitis, but during service in France he had about twenty cases under supervision. He describes the clinical picture in detail.

Value of Posture in Stiff Shoulder.—The value of early splinting of the arm in an abducted position with a recognition of the value of the horizontal posture as an aid to any form of treatment of stiff shoulder, is emphasized by Mackay.

Severe Fatal Internal Injuries Without External Signs.—Masters reports the case of a man who fell down a mine shaft for a distance of 150 feet. He lived for one and a half hours after the injury. There were no abrasions or bruises of any kind on the trunk, externally or internally. On opening the abdomen three pints of red blood escaped. The spleen, four times its normal size, was badly lacerated near the hilum, the splenic vessels were completely torn off, but the spleen was not separated from its normal bed. The cardiac end of the stomach was lacerated for 4 inches, and the stomach contents were free in the abdomen. There was hemorrhage into the pancreas and great omentum.

Medical Journal of Australia, Sydney

May 15, 1920, **1**, No. 20

Some Surgical Notes. T. P. Dunhill.—p. 455.
*Ferric Chlorid Test for Diacetic Acid in Urine. L. A. I. Maxwell.—p. 458.
Cross Fire Radium and Roentgen Ray Therapy for Inoperable Malignant Disease. H. Lawrence.—p. 458.
Case of Postoperative Tetanus. E. L. Parry.—p. 460.

Ferric Chlorid Test for Diacetic Acid.—When testing the urine of a patient who had been taking sodium bicarbonate for gastric hyperacidity, Maxwell noticed a red color with ferric chlorid similar to that obtained with diacetic acid. As there was no reason in this particular case to suspect acidosis and as the reaction of the urine was intensely alkaline, it occurred to Maxwell that the sodium bicarbonate might be the cause of the red color with ferric chlorid. Repeated tests showed that if sodium bicarbonate were added to normal urine and then ferric chlorid, the urine became a similar red color to that obtained in the presence of diacetic acid. In further experiments the urine of the author, after ingestion of approximately 6 gm. of sodium bicarbonate during a period of twenty-four hours, also gave a red color on the addition of ferric chlorid. Presumably the ferric chlorid reacts with the bicarbonate to form ferric hydroxid, which dissolves in the excess of ferric chlorid to give the red color, carbon dioxid being evolved during the reaction. The more bicarbonate present, the deeper the red color produced. In all cases of acidosis which are being treated with alkalies, it is essential to exclude the possibility of sodium bicarbonate being responsible for the development of the red color when ferric chlorid is added to the urine. If this precaution be overlooked, the dosage of alkali may be increased, in the hope of overcoming an acidosis which in reality does not exist.

South African Medical Record, Cape Town

May 22, 1920, **18**, No. 10

Treatment of Syphilis. H. Gluckman.—p. 182.
Schistosome Infection from South African Snails. F. G. Cawston.—p. 192.

Archives des Maladies du Coeur, etc., Paris

March, 1920, **13**, No. 3

*Femoral Venous Pulse. C. Pezzi, E. Donzelot and J. Yacoel.—p. 97.
*Septal Rhythm. A. Clerc and C. Pezzi.—p. 103.
Case of Ventricular Paroxysmal Tachycardia. L. Gallavardin.—p. 121.
Case of Atrioventricular Paroxysmal Tachycardia. L. Gallavardin.—p. 126.

Femoral Venous Pulse in Heart Block.—This case is reported as the first to be published in which, with complete heart block, the femoral vein showed a pulse of auricular origin. Roentgenoscopy confirmed the extra activity of the auricle while congestion in the liver revealed the slight insufficiency of the myocardium permitting this femoral venous pulse.

Septal Rhythm.—Clerc and Pezzi apply this term to what others call sinusal or atrioventricular rhythm, and they describe research which has demonstrated that all its varieties can be experimentally induced by electric or toxic stimulation of the cardiac nervous apparatus.

Archives Médicales Belges, Liége

January, 1920, **73**, No. 1

Experimental Meningitis from Germs in the Blood Stream. L. H. Weed (Baltimore).—p. 1.
*Myotonic Sign of Pulmonary Tuberculosis. L. Dautrebande.—p. 13.
Psychoses Consecutive to Toxi-Infections. H. Hoven.—p. 25.

Myotonic Reaction as Early Sign of Pulmonary Tuberculosis.—Dautrebande has been studying the local transverse contraction in the muscle which follows pinching or tapping the margin of the trapezius, pectoralis or biceps, revealing the extreme excitability of the muscle in the segment irritated, under the influence of the toxins of tuberculosis. He obtained a positive reaction with one or more of these muscles in all but six of the hundred tested. The muscular system must be completely relaxed, and the test must never elicit pain in a region free from pain, and it is well to grease the fingers. Sometimes the reaction can be felt with the fingers, when it is not pronounced enough to be visible. Halbron calls the reaction *la corde musculaire*, and Dautrebande speaks of it as a muscular wave, saying that it is of constant occurrence in active tuberculosis, and throws light on the localization, the extent, and the more or less progressive course of the lesions.

Bulletins de la Société Médicale des Hôpitaux, Paris

April 16, 1920, **44**, No. 13

*Serotherapy for Hemorrhage. Raymond and A. Rouquier.—p. 485.
*Pituitary Treatment in Diabetes Insipidus. C. Flandin and others.—p. 487.
Lethargic Encephalitis. F. Bosc and others.—p. 490 and 493.
Another Case of Familial and Hereditary Congenital Ophthalmoplegia. O. Crouzon and P. Béhague.—p. 495.

Serotherapy of Hemophilic Intestinal Hemorrhage.—The young man had been admitted to the hospital for roentgen treatment of mild exophthalmic goiter, when he began to pass blood by the anus. In three days he had seven stools of almost pure blood, from 200 to 300 c.c. a day, and there was a history of frequent and excessive protracted epistaxis. He was given two injections of 10 c.c. of rabbit sérum-sérique, that is, serum from rabbits in a state of anaphylaxis to horse serum. There were no further hemorrhages, and sixteen days later the blood coagulated in four minutes and thirty seconds, instead of the ten minute interval before the serotherapy.

Pituitary Treatment of Diabetes Insipidus.—The woman in the case reported was quite obese but no influence on the obesity was noted from the pituitary treatment although it proved promptly effectual so far as the polydipsia and the polyuria were concerned. Nothig could be found otherwise to indicate pathologic conditions in the pituitary body.

April 23, 1920, **44**, No. 14

*Cancer Metastasis in Brain. O. Crouzon and others.—p. 500.
*Tetanus Originating in Uterus. De Massary and Lechelle.—p. 504.
*Typhoid Septicemia. N. Fiessinger.—p. 506.
Influenza of 1920 at Necker Hospital. Rénon and Mignot.—p. 509.
Lethargic Encephalitis. H. Claude and others.—p. 514.
*Children Born in Recent Syphilis. M. Pinard and Lévy-Solal.—p. 516.
*Thyroid Treatment of Hemorrhagic Tendency. L. P. Bottaro and J. C. Mussio Fournier.—p. 519.

Cancer Metastasis in the Brain.—One breast had been removed for cancer twenty years before and the other for the same reason eighteen years afterward. Then multiple metastases developed in the brain.

Tetanus from the Uterus.—Nine days after an abortion, tetanus developed but the woman recovered under serotherapy for fifteen days, a total of 2,240 c.c. of the antiserum.

Acute Cholecystitis of Typhoid Origin.—Fiessinger reports a case in a man of 44 in which, in the course of recurring gallstone colics, inflammatory processes in liver and kidneys were explained by discovery of the typhoid bacilli in the blood, but there were never any symptoms of typhoid fever. The gallstones subsided into a latent phase, and the man was soon cured otherwise.

Healthy Infants Born During Recent Syphilis of Parents.—Pinard and Lévy-Solal report two instances of the marriage of a man who had contracted syphilis four or three months before, but had been given vigorous arsphenamin treatment in the interim. The bride conceived almost at once, and her blood soon responded positively to tests for syphilis although there were no clinical manifestations. Both man and wife were given thorough treatment, and the child was born apparently entirely healthy and has shown no signs

of syphilis to date, up to seven months from birth. No portal of entry for the virus could be discovered on the women. They bore the arsphenamin treatment perfectly; it has no feticidal action, the writers say, and can be given in proper doses to the pregnant.

Thyroid Treatment of Hemorrhagic Tendency. — Bottaro and Mussio report from Montevideo a case in which metrorrhagia, epistaxis, hemoptysis and purpura were superposed on symptoms of mild thyroid deficiency: slight puffiness of the face, dropping out of the eyebrows, and vasodilator symptoms. The patient was a girl of 19 who had borne a child at 14 and had had three induced abortions since. Under thyroid treatment the hemorrhagic tendency seemed to subside.

April 30, 1920, **44**, No. 15

Mild Typhus at Paris. Legry and others.—p. 524 and 565.
*Cumulative Action of Emetin. C. Mattei.—p. 531.
*Typhoid Septicemia. G. Guillain and others.—p. 534.
Myasthenic Syndromes in the Gassed. P. Harvier. —p. 536.
Epidemic Encephalitis. P. Kahn and others.—p. 542; 546; 552; 556; 557 and 562.
Case of Erythrodermia with Lymphadenia. Labbé and Langlois.—p. 569.
Case of Rose Spots in Pneumonia. Bergé and Hufnagel.—p. 573.
Suprarenal Treatment in Progressive Myasthenia. P. Marie and H. Bouttier.—p. 575.

Cumulative Action of Emetin.—Mattei found in men taking emetin that it was eliminated in an irregularly intermittent manner, and was retained so long that it accumulated in such amounts as to be actually toxic. This retention over prolonged periods was observed when the emetin had been injected by the vein as well as subcutaneously. He warns that 1 gm. is the maximal safe dose for man, even when this amount has been reached in the course of a month of treatment interrupted by weeks of suspension.

Extra-Intestinal Typhoid.—The young woman developed what seemed to be acute articular rheumatism and it yielded in the usual way to the salicylates in less than a week, but typhoid bacilli were cultivated from the blood. The disease was thus a typhoid septicemia affecting the joints apparently exclusively.

Encéphale, Paris

May 10, 1920, **15**, No. 5

Catatonia in General Paresis. A. Antheaume and L. Trepsat.—p. 297.
Nerve Lesions in Tay-Sachs' Disease. M. Dide and others.—p. 303.
Auditory Verbal Hallucinations. P. Quercy.—p. 311.
Case of Paranoia with Hallucinations. E. Gelma.—p. 318. Conc'n.

Journal de Radiologie, Paris

March, 1920, **4**, No. 3

Radiologic Study of the Aorta. Delherm and Thoyer-Rozat.—p. 97.
Radiologic Study of Subphrenic Abscess. Chassard and Morénas. —p. 107.
Diaphragmatic Hernia; Three Cases. Carrière and Desplats.—p. 112.
Gynecologic Radiotherapy in Germany, 1914-1918. I. Solomon.—p. 123.
Lesions in the Bones in Tuberculous Suspects. Billet.—p. 132.
Radioscopic Index of Development of the Ventricle in the Depths. R. Grangérard.—p. 133.

Journal d'Urologie, Paris

February, 1920, **9**, No. 2

*Hypercholesterinemia in Chronic Nephritis. Cordier, Boulud and Colrat.—p. 81.
*Epithelioma of the Bladder. E. Jeanbrau and others.—p. 89.
*Nephrotomy in Anuria from Eclampsia. M. Gérard.—p. 97.
Calculi in the Ureter; Child and Two Adults; Recovery After Operation. Giuliani and Arcelin.—p. 113.

Hypercholesterinemia in Chronic Nephritis.—In the case described by Cordier and his co-workers, the farmer of 33 had incipient chronic nephritis with a large heart, and high blood pressure, with polyuria, albuminuria, edema of the legs and impaired vision, but only 0.6 per thousand urea in the blood, and the fundus of the eye was normal. The complexion was of a jaundice type, but more orange than yellow, and there was no excess of bile pigments to be detected, but the cholesterin content of the blood was high. The man was kept in complete repose and allowed only milk and large amounts of green vegetables, with revulsion, etc. In a month the cholesterin content had dropped from 6.4 to 3.2 per thousand, and the blood pressure at the same time had declined to 180/100. The subjective improvement kept pace with these findings, and clinical health was regained for an active life. The patient was *un vasculaire* and not yet *un rénal.* Excessive functioning of the suprarenals was evidently responsible for the exaggerated production of cholesterin.

Epithelioma of the Bladder.—The epithelioma in the woman of 62 had developed on an old papilloma which had been noted for twenty-eight years, before the four years of the malignant tumor. The structure resembled both syncytium and sarcoma.

Nephrotomy in Anuria with Eclampsia.—Gérard has been able to find only four cases on record in which nephrotomy was done to relieve anuria in eclampsia, with recovery of two of the patients. He adds another successful case to the list. Spontaneous delivery occurred thirty hours after the first convulsion, but this did not arrest the eclampsia. The most prominent symptom was the anuria, with its train of incessant diarrhea, dropsy and mental confusion. The kidney began to function anew the evening of the operation, but only the kidney that had been incised. The other kidney did not begin to work properly until forty-eight hours later. The profuse diarrhea had substituted to some extent the lacking renal function. It is possible that there may have been preceding retention of salt and water, which may have contributed to the development of the eclampsia; the progressive anasarca seems to sustain this assumption. He compares with this case the literature on decapsulation in eclampsia. Albrecht has compiled 62 cases with 40 per cent. mortality; Lance, 78 cases, mortality 28.2 per cent.; Poten, 98 cases, mortality 38.8 per cent. In the 7 cases of eclampsia with anuria, decapsulation had a mortality of 57 per cent. For these and other reasons he advocates nephrotomy with a long incision and drainage of the pelvis under nitrous oxid, without waiting until the patient is moribund.

Médecine, Paris

May, 1920, **1**, No. 8. Tuberculosis Number

*Present Conception of Tuberculosis. L. Rénon.—p. 453.
*Value of Tuberculin Reactions. A. Calmette.—p. 461.
Work of the American Commission for the Prevention of Tuberculosis in France. Gunn.—p. 463.
Pulmonary Tuberculosis in the Gassed. E. Sergent and J. Haas. —p. 466.
*Tuberculosis and Marriage. C. Sabourin.—p. 472.
*Pleural Pneumoserosa. P. E. Weil.—p. 477.
Conditions for Artificial Pneumothorax. F. Dumarest.—p. 482.
Discordance Between Roentgenologic and Stethoscope Findings in Incipient Tuberculosis. A. Zimmern.—p. 487.
*Antituberculosis Serotherapy. A. Cavasse.—p. 490.
*The Fixation Reaction in Tuberculosis. L. Rénon.—p. 496.
Compulsory Notification of Tuberculosis. L. Rénon.—p. 498.
*How To Tell When Tuberculosis is Cured. L. Rénon.—p. 502.
*Spiroscopy in Respiratory Disease. J. Pescher.—p. 504.
*Albumin in Sputum. M. Salomon.—p. 508.

The Present Conception of Tuberculosis.—Rénon cites recent research by Madelaine which demonstrated that the tubercle bacilli are not digested by the phagocytes like other bacteria; the phagocytes incorporating them die, but the micro-organism is left intact. The tubercle bacilli may be promptly phagocyted and have lost their acid-staining property, but eight hours later, inoculated in guinea-pigs, they cause fatal infection. A latent infection entails considerable resisting power against a new infection. But if the new infection is intense, and the bacilli very virulent, then the superposed infection induces a rapid necrotic process, with expulsion of large amounts of bacilli, causing new foci from the swallowed and inhaled bacilli, and scattering the infection to others. He explains how this combination of immunity and hypersensitiveness is the guide to prophylaxis, and describes what is being done in France.

Value of the Tuberculin Reactions.—Calmette states that at least 95 per cent. of adults in the large towns of France give a positive response to the skin and intradermal tuberculin tests. But in young children, and especially in infants, they warn of recent tuberculous infection.

Marriage of the Tuberculous.—Sabourin says that he and many other physicians know of women with chronic tuberculosis who yet have passed safely through several pregnancies. They are usually of a dry, muscular, nervous type, and they have come unscathed through several acute phases as they have a good organic balance, and are able to stand strains without their being reflected in the lung. After the

stress of childbirth, he says, it is important to ward off menstruation for a time, and hence he advises lactation, letting the woman nurse her babe to the end, possibly with a little supplementary feeding for the infant. By thus warding off the return of the menses, the organic balance has time to get reestablished, and this practice has always proved successful in his experience. The tuberculous women who have their lung disease transformed into acute phthisis by parturition are those with comparatively recently acquired infection, and the lesions have kept subactive; who are ultrasensitive to all overexertion and internal intoxications, menstrual and others, with an unstable organic balance, to say nothing of those with impaired heart, kidneys or liver. Women of this type should not be allowed to become pregnant.

Injection of Air in Pleurisy.—Weil emphasizes the importance of this, after evacuation of the effusion, not only for the diagnosis but in treatment of all forms of pleurisy. It often aids in the care of the purulent form, facilitating surgical measures.

Serotherapy in Tuberculosis.—Cavasse declares that this is not a promise but a reality now. Applied in time, serotherapy is the supreme resource in certain forms of pulmonary tuberculosis, especially with hemoptysis, as the antiserum is more effectual than normal serum in these cases. Serotherapy is also particularly indicated with tuberculous peritonitis and pleurisy, especially in children. He advises against serotherapy for the aged, the asthmatic, the nephritic, and with tuberculous laryngitis. It is almost certain to fail when the tuberculous organism is unable to respond to tuberculin, or when the fever keeps at an even height with scarcely any ups and downs. The antiserum, made by A. Jousset's technic, is injected subcutaneously, about 2 c.c. per kilogram of weight. With extensive lesions, the dose is smaller, from fear of inducing too severe a focal reaction. A single injection may suffice, but three or four is the usual rule; never over twelve. The intervals are eight days at least. The temperature is such a reliable criterion that if it does not show marked modification after two injections, Jousset abandons the treatment.

Deviation of Complement Test for Tuberculosis.—Rénon insists that the reaction of fixation should be included as a routine procedure among the biologic tests for tuberculosis. The findings are negative when the tuberculous lesion has healed.

How to Tell When Tuberculosis Is Cured.—Rénon decides this by the reaction to the progressive resumption of active life. This test of *adaptation progressive à l'activité* is best made in the late summer and fall, thus training the patient to stand the winter.

Spiroscopy.—The Journal has described Pescher's device for measuring the capacity of the lungs by blowing into a jar, watching the displacement of the water in the jar. He relates here that experience is confirming more and more the advantages of this method of training the lungs to greater expansion.

Albumin in the Sputum.—Salomon regards the test for albumin in the sputum as very important for detection of incipient tuberculosis. Negative findings, he says, positively exclude tuberculosis, and the amount of albumin is a gage of severity of the tuberculous process. The albumin can be precipitated out by heat after getting rid of the mucin with a little acetic acid and filtering; or with potassium ferrocyanid and heat, or with nitric acid alone.

Presse Médicale, Paris

May 26, 1920, **28**, No. 34

*Thymus Death. A. Pulawski.—p. 333.
Action of Quinin on the Heart. C. Pezzi and A. Clerc.—p. 334.

Thymus Death.—Pulawski relates that a young epileptic man was found dead in the bath tub, face downward, but the assumption of drowning during an epileptic seizure was not confirmed by the necropsy findings. The thymus, however, was exceptionally large for his age, and other findings completed the clinical picture of the thymic-lymphatic constitution. Pulawski reviews considerable literature on sudden death for which the thymus is responsible, and cites Bartels' figures that status thymicolymphaticus was pronounced in 36 per cent. of 126 suicide cadavers, and the lymphatic type in 26 per cent. Gluzinski has reported cases of thymus death in pseudoparalytic myasthenia, and others have commented on the frequency of the thymic-lymphatic status in persons with exophthalmic goiter.

May 29, 1920, **28**, No. 35

*Organotherapy for Children. E. Apert.—p. 341.

Organotherapy for Children.—Apert remarks that except for thyroid treatment in myxedema, very little use is made of organ extracts in pediatrics, and yet this is a particularly fertile field for them. The children's clinics, fetal findings and the results of experimental research all confirm that the suprarenal cortex, like the thyroid, stimulates the nutritional processes. But, with thyroid excessive stimulation, there is emotionalism and a tendency to lose weight, while with suprarenal cortex excessive stimulation, the tendency is to obesity and virilism. He advises to begin organ extract treatment with small doses for three days each week, watching the pulse, the weight and the excitability. With uniform backward growth, he has obtained the best results with a combination of thyroid and suprarenal powder, especially in the thin, anemic and frail. If the sexual development is precocious, he associates pituitary with the other extracts, with or without suspension of the suprarenal extract. In mongolism, or depressed vitality from any cause, this associated organotherapy often whips up the sluggish development and renders the children easier to teach. He insists that administration by the mouth is as effectual as by subcutaneous injection. The powder can be given with a mouthful of food. Calcium seems to promote the action of thyroid extract, and magnesium that of the suprarenal extract. The indications for pituitary treatment will be found among the short and stout, hairy subjects, with precocious puberty; for suprarenal treatment, among the overtall, weak and apathetic, and, among boys, in those with a tendency to feminine characteristics; for thyroid treatment, among those with uniform backward growth, gait, speech and intelligence and delayed development of the sexual organs.

Progrès Médical, Paris

April 24, 1920, **35**, No. 17

*Sarcoma of Clavicle. A. Aimes and A. Delord.—p. 181.
*Vessel Grafting. P. Mauclaire.—p. 185.
Sodium Citrate. G. Faroy.—p. 187.
Exophthalmic Goiter of Emotional Origin in Syphilitic. C. Pfeiffer.—p. 187.

May 1, 1920, **35**, No. 18

Congenital Hemi-Atrophy of the Diaphragm. V. Cordier.—p. 193.
Hallucinations. Laignel-Lavastine.—p. 194.
Indications with Deranged Metabolism for Mineral Waters. H. Paillard.—p. 196.
Sodium Bicarbonate. G. Faroy.—p. 197.
Plague in History. The Avignon Epidemic. P. Raymond.—p. 198.

Sarcoma of the Clavicle.—Aimes and Delord found records of ninety-eight sarcomas among the 126 cases of tumors in the clavicle which they have compiled. Pain is sometimes the first symptom, exaggerated by movements and cold, and relieved by repose, so that it is usually ascribed to rheumatism. But an insidious onset without pain is more common. With operative treatment, long survival is possible, but it is necessary to seek for metastases with extreme care. In case of doubt, it is better to remove a secondary tumor than to let a primary sarcoma go untreated. With sarcoma, the entire clavicle has to be removed. Syphilitic lesions in the clavicle are painful, with nocturnal exacerbations. Exostoses generally develop at the end of the bone and accompanied by exostoses elsewhere. Sarcomatous degeneration of callus in the clavicle is known. In a personal case described, the boy of 11 can use his arm normally and there has been no sign of recurrence during the three years since the clavicle was removed.

Vessel Grafting.—Mauclaire gives a summary review of the success that has been realized with implants of arteries and veins to reconstruct vessels and to restore musculomembranous passages or as a sheath to protect a nerve.

Revue Médicale de la Suisse Romande, Geneva

May, 1920, **40**, No. 5

Lethargic Encephalitis. A. Cramer and others.—pp. 277; 283; 286; 293; 297; 299; 301.
*Epidemic Hiccup. P. Gautier.—p. 290.
Seashore Sanatorium in Treatment of Tuberculosis. A. d'Espine.—p. 303.
*Arsphenamin in Sciatica. Veyrassat.—p. 308.
High Frequency Current with Endoscopy for Bladder Tumors; Six Cases. C. Perrier.—p. 313.
Stenosis of Esophagus from Anomaly of Subclavian Artery. G. G. Moppert and J. Baumgartner.—p. 318.

Epidemic Hiccup.—Gautier relates that at Geneva recently he encountered five cases of intense spasmodic hiccup coming on suddenly, persisting for from two to four days, and then disappearing with equal suddenness, without the treatment having much effect. The patients were four men of 30 to 45 and one woman of 46. The lumbar puncture fluid was found practically normal in the one case examined. Similar epidemics of hiccup have been reported from Paris and from Berlin recently, and some regard them as an attenuated form of lethargic encephalitis.

Arsphenamin in Sciatica.—Veyrassat gave arsphenamin by the vein as a last resort in a case of severe sciatica, and the prompt benefit encouraged him to try this treatment in four other cases in which compression of the nerve could be excluded. In one of the cases the cure was explained by the suspicion of syphilis; in two others tuberculosis was evidently responsible. He asserts positively that arsphenamin has an unmistakable action on tuberculous adenitis, but this cannot be the explanation of the benefit in these cases, as the sciatica subsided in two days, before any swollen glands had had time to be influenced. Whatever the explanation, the fact remains that rebellious sciatica subsided after a single injection of 15 cg. of neo-arsphenamin in the case of one man of 40 with a family history of tuberculosis. In the other cases one or two injections answered the purpose.

Policlinico, Rome

May 10, 1920, **27**, No. 19

*Hydrocephalus from Anomalies in Arteries. F. Pedrazzini.—p. 523.
Induced Pneumothorax After Hematoma. P. Bertoli.—p. 531.

Anomalies of Arteries as Factor in Hydrocephalus.—Pedrazzini gives fifteen photographs of the anomalous course of the arteries in the skull of four infants with primary hydrocephalus. The small arteries showed a remarkably tortuous course, with abrupt turns and spirals and irregular caliber. These abnormal conditions presented an obstacle to the blood stream, and the balance was thus upset between the production of the cerebrospinal fluid and its absorption. The ependyma was rough and thick in parts.

March, 1920, **27**, Surgical Section, No. 3

Annular Pancreas. U. Benedetti.—p. 81.
Gunshot Wounds of the Bladder. L. Frassi.—p. 84. Conc'n.
Submucosa Lipoma Obstructing the Cecum. L. Longo.—p. 105.

March-April, 1920, **27**, Medical Section, No. 3-4

*Lethargic Encephalitis. G. Economo.—p. 93.

Lethargic Encephalitis.—The whole of this double number, with its 55 pages, is devoted to this article by Economo, with twenty plates of photomicrograph findings in thirteen cases of epidemic encephalitis.

Rivista Critica di Clinica Medica, Florence

March 15, 1920, **21**, No. 8

Echinococcus Disease of Liver and Peritoneum with Pseudochylous Ascites. F. Schupfer.—p. 85. Conc'n.

March 25, 1920, **21**, No. 9

Case of Erb-Goldflam's Disease. C. Capezzuoli.—p. 97. Conc'd in No. 10.—p. 109.
Unreliability of Diazo Reaction in Sputum. E. Bufalini.—p. 101.

Crónica Médica, Lima

April, 1920, **37**, No. 682

Gunshot Wounds of Pleura and Lung. F. Quesada.—p. 117.
*Test for Blood in Urine. M. A. Velasquez.—p. 121.
Headache in Schoolchildren. F. Valles Vargas.—p. 122.
Symptoms from Retention of Chlorids. M. Arias Schreiber.—p. 132.
Scientific Care of the Insane. H. F. Delgado.—p. 135.

Test for Blood in Urine.—Velasquez relates that he has simplified the dimethylamido-antipyrin test for blood in urine. He takes up on a scrap of cotton a few drops of the urine from the bottom of the receptacle. On this are dropped exactly two drops of a 50 per cent. solution of acetic acid, and two or three drops of a 5 per cent. solution of the dimethylamido-antipyrin (pyramidon), and, finally, one or two drops of ordinary hydrogen dioxid. With a positive response, the cotton turns a bluish violet color for about fifteen minutes and then the tint disappears.

Archiv für Verdauungs-Krankheiten, Berlin

March-June, 1920, **26**, No. 3-4

*Paratyphoid Gastro-Enterocolitis. B. Stein.—p. 155.
*Rumination in Infancy. Eva Somersalo.—p. 167.
*Secondary Acute Pancreatitis. H. Wildberger.—p. 192.
*Catarrhal Jaundice. W. Buchbinder.—p. 231.
*General Dilatation of the Esophagus. A. Huber.—p. 250.

Paratyphoid Gastro-Enterocolitis.—Stein describes the clinical picture, rectoscopic findings and the complicating peritonitis in the acute and chronic form of paratyphoid B disease. The characteristic picture in the rectum is extreme hyperemia and swelling of the follicles with serous infiltration of the tissues, catarrhal rather than resembling typhoid. In his two chronic cases there was an ulcerative colitis. He does not know of any literature on chronic paratyphoid infection of the digestive tract except Schottmüller's case. A seropurulent enterocolitis seems to be the bridge between the acute and the chronic form.

Rumination in Infants.—Somersalo has found records of 32 cases of rumination in infancy, and describes in detail 2 cases personally observed. It usually lasts in infants about five months but may persist up to eight months; one was cured by a change from fluid food to a thick gruel form. Diversion of the child's attention proved an important factor in the cure, as a psychic factor is unmistakable. Alkaline kefir conquered the rumination in one case, and complete change of scene in another. Several infants were cured when transferred from an institution to a private home, confirming Lande's remark that "rumination is a cage disease." The literature on the subject and on conditional reflexes in general is reviewed, including Strauch's article in THE JOURNAL, Aug. 21, 1915, p. 678.

Secondary Acute Pancreatitis.—Wildberger compares a case personally observed with a number on record in which acute suppurative pancreatitis developed from a perforating gastric ulcer. Also a case of acute phlegmonous pancreatitis from involvement in an infectious process starting in the common bile duct. In two cases of pernicious anemia the pancreas was found apparently normal at necropsy, but in a third case the pancreas showed signs of two waves of acute pancreatitis. No cause for the pernicious anemia could be discovered in this case, and he compares it with the literature on the causation of pernicious anemia. He has found four cases on record in which changes were found in the pancreas during mercuric chlorid poisoning, and reports two cases of this mercurial pancreatitis, but the islands of Langerhans were intact.

Catarrhal Jaundice.—Buchbinder's experience with 300 cases confirmed that the course is from three to four weeks; the cause, some inflammation in the liver of toxic origin, entailing some modification in the composition of the bile. The liver is always large and tender in the first week, and the most effectual treatment of catarrhal jaundice is the application of moist heat to the liver region. The spleen is also large and soft but not painful, and soon subsides to normal. The kidneys also show signs of inflammation, and there may be considerable sediment in the urine, but we should not be too hasty with the diagnosis of nephritis. In every case of catarrhal jaundice there is latent insufficiency of the stomach glands. Unless the diet is carefully regulated, the secreting function may be permanently injured; in only eight of thirty-seven cases kept long under observation was the stomach secretion left normal. When diarrhea follows catarrhal jaundice, it can generally be traced to achylia. In treatment

the aim should be to ward off gastro-intestinal complications rather than to check the jaundice.

Dilatation of the Esophagus.—Huber concludes from analysis of the roentgen findings in his fourteen cases of general dilatation of the esophagus that the main factor is a functional or degenerative impairment of the vagus innervation. This causes partial paralysis of the esophagus, and also tends to induce constriction of the cardia. Atony of the esophagus is the first phase, and this can be remedied by using a sound to push the food down into the stomach. This cures the incipient cases of dilatation and relieves some of the advanced cases, but in others operative measures are indispensable. One man with extreme dilatation for twenty-seven years keeps free from disturbances and in good health by eating as usual bread, eggs or chopped meat at each of his three meals. Then he pushes down into the stomach all that is left in the esophagus of this food, and concludes his meal by pouring through the sound milk, cocoa and cream. He has improved so much that he now can go three or four days without the aid of the sound.

Deutsches Archiv für klinische Medizin, Leipzig

July 5, 1919, **129**, No. 5-6

*Composition of Blood in Absence of Daylight. Grober and O. Sempell.—p. 305.
Esophagocardiography. W. Weitz and L. Schall.—p. 309.
*The Heart Beat-Volume of Blood. G. Wiedemann.—p. 325.
*Velocity of Blood Stream with Cardiac Insufficiency. F. Vorpahl.—p. 333.
*The Venous Pulse with Continuous Arrhythmia. A. Weber.—p. 349.
The Conception of Disease: Clinical Syziology. V. von Weizsäcker.—p. 359.

Composition of the Blood in Absence of Sunlight.—Grober and Sempell found no evidences of anemia in twenty-two horses that had been kept in mines for from five to ten years, at a depth of 225 to 637 meters below the surface. Most of them had not seen the daylight for over a year, some not for ten years. The erythrocyte count was somewhat higher than normal, and the hemoglobin a trifle below normal compared with horses elsewhere.

Determination of the Volume of Blood Expelled from the Heart at Each Beat.—Wiedemann gives an illustrated description of a simple device with which he measures the fluctuations in the pressure in the air passages in the lungs synchronous with the heart beat, and from this pneumocardiogram determines the amount of blood expelled from the heart at each beat.

Velocity of the Circulation with Cardiac Insufficiency.—Vorpahl induced insufficiency in the rabbit heart by injury of the tricuspid valve, and then, by comparing the oxygen content in the right and left heart, he found that retarding the velocity of the blood stream by one fourth or one third, entailed pronounced signs of stasis in various organs.

The Venous Pulse with Continuous Arrhythmia.—Weber concludes from his study of forty-one cases of arrhythmia perpetua that the importance of the auricles for the circulation has never been appreciated enough. He discusses the different types of continuous arrhythmia in connection with the venous pulse and the electrocardiogram.

Deutsche medizinische Wochenschrift, Berlin

April 22, 1920, **46**, No. 17

*Own Blood Infusion. A. Döderlein.—p. 449.
Acute Atrophy of the Liver. F. Umber.—p. 451.
*Treatment of Tuberculosis of the Testis. H. Els.—p. 451.
Friedmann Treatment for Pulmonary Tuberculosis. Zadek.—p. 453.
Diagnostic and Prognostic Significance of Cutaneous Reaction to Bovine Tuberculin. I. Synwoldt.—p. 455.
Roentgen-Ray Treatment of Cancer of Breast. Telemann.—p. 457.
*Acute Abscess of the Prostate. G. Praetorius.—p. 460.
Suggestion for Reconstruction of Anal Sphincter. Kurtzahn.—p. 461.
Advantage of Compulsory Notification of Tuberculosis. E. Neumann.—p. 463.
Venereal Diseases in Relation to Prostitution. Struve.—p. 463.
Medical Certificate for Candidates for Matrimony. Bruck.—p. 465; Idem. Schubert.—p. 466.
Rhinologic Hints for the Practitioner. G. Finder.—p. 466.

Reinfusion of Extravasated Blood.—When persons were bleeding to death from internal hemorrhage, especially from ruptured tubal pregnancy, reinfusion of the extravasated blood has been successfully applied, Döderlein relates, in fifty-one cases on record to date, and he has applied it in five cases himself with equal success. He obtains the blood by lowering the pelvis so that the blood runs out of a groove in the abdominal wall retractor, pouring directly into a gauze-lined funnel which filters it into an Erlenmeyer jar. He introduces a glass tube into the ovarian vein, exposed by the operation, the pelvis low, and lets it fill with the blood (citrated) from the funnel. Then, on raising the pelvis, the blood flows into the vein directly from the funnel. The effect is wonderful. One who has once seen it will never doubt the wisdom of this "own blood infusion." If there is doubt about the blood being contaminated, it can be injected by the rectum or subcutaneously. Of course the procedure is indicated only when there has been a comparatively sudden and extensive loss of blood and the blood is fresh. Placenta praevia, rupture of the spleen, of the liver, gunshot wounds of the spleen and of the lungs have been given this treatment with success. It not only resuscitates the moribund but aids in the more rapid convalescence, he says, and restores the immune bodies which the system has been accumulating through life.

Tuberculosis of the Testis.—Els summarizes seven of his own cases and recommends early operation in all cases of tuberculosis of the testis (whether unilateral or bilateral) in which the diagnosis is certain. If a typical resection of the epididymis is no longer possible without danger of a recurrence, a portion of the testis about the size of a filbert should be reimplanted, in order that the patient, though deprived of potestas generandi may preserve libido and potestas coeundi and the accompanying energy and ambition, as otherwise the manifestatations from loss of testicle functioning are far reaching, resulting in indolence, loss of energy and general indifference toward one's surroundings. He advises the reimplantation in the scrotal sac of the certainly sound parts of the testicle even when the disease process is restricted to one side. This saves what is savable, and may be of great advantage if the other side becomes pathologic later. The implanted testicle in one case described in detail can still be palpated as of the same size and normal movability.

Acute Abscess of the Prostate.—Praetorius recommends the opening of an acute abscess of the prostate through a median buttonhole incision as the easiest and best form of surgical intervention, and in many respects superior to other operative methods. He describes also what he regards as the indications for operation in general.

Jahrbuch für Kinderheilkunde, Berlin

February, 1920, **91**, No. 2

*Elements in Food That Promote Growth. E. Freise.—p. 79.
*Blood Pressure Under Epinephrin. E. Schiff and B. Epstein.—p 128.
Partial Giant Growth. F. Uebelin.—p. 134.

Diet Elements that Promote Growth.—Freise here reports several years of dietetic experiments with white rats (since 1913). The experimental and theoretical deductions harmonize with what has been learned from practical experience in infant feeding, emphasizing in particular the importance of variety in the diet, even in the first months of life, especially for the artificially fed. The research seems to show that cow's milk lacks some necessary growth-promoting element or the mode of its preparation destroys some element, and this deficiency must be made up for the child to grow properly. But, on the other hand, milk displayed a surprising efficiency in bringing an otherwise insufficient diet up to the proper standard. Addition of 10 per cent. desiccated milk to an exclusive milk diet brought it up to full efficiency. This happened also when barley-malt was added to the food. Honey, syrup, other cereals, beans, casein, smaller proportions of desiccated milk, and alcoholic extracts of barley-malt, of carrots, and of egg yolk failed to display any such action when added to the same diet.

Blood Pressure in Children After Injection of Epinephrin.—Normal children respond with a considerable increase in the blood pressure, unmodified by change of position. With a weak pulse and low tension there may be little if any rise in the pressure, but it rises on reclining, if the vasomotor system is stable. With unstable innervation, there is usually

a prompt but slight rise in the pressure but no modification with change of position. The vessels themselves seem to be partly responsible for the differences.

March, 1920, **91**, No. 3

*Composition of Different Parts of the Body. E. Klose.—p. 157.
*Tests of Intelligence of Young Children. J. Peiser.—p. 182.
Influence of Whey on Intestinal Epithelium. E. Freudenberg.—pp. 201; 207.
*Constitutional Inferiority of the Circulatory System in Children. E. Schiff.—p. 217.

Metabolism in the Skin.—Klose has been investigating the chemical composition of different parts of the body in the new-born, and here reports the results of his research on the skin of the back from nineteen infants. The skin seems to be the first part of the body called on to store water in pathologic conditions, and it is also active in the mineral metabolism, storing and eliminating mineral substances independently of the water metabolism.

Tests of the Intelligence of Young Children. — The test which earliest shows reasoning power in a young infant is when it draws a coveted object into its reach by pulling up the counterpane or paper on which the object is lying. Infants of 9 months do this. Peiser describes a number of other tests for older infants, graded for their age and intelligence. One of the most instructive tests is to place between the infant and the coveted object a stick with a crooked handle. It takes exceptional intelligence for an infant to use the crook to pull up the object.

Constitutional Inferiority of the Circulatory System in Children.—Schiff classifies children with a constant pallor and irritable weakness of the nervous system, but no anemia, according as the vasomotor system is unstable or not. There is in all a history of headaches, dizziness, slight syncopal attacks, palpitation and chilliness, and the children tire easily and are dull. The pulse is small, almost thready; the heart sounds are dull at the base and functional murmurs are common. The outline of the heart differs from normal and the excursions of the diaphragm are inadequate. The blood is not normally distributed throughout the body and the result is an arterial anemia maintaining a vicious circle. The reaction to epinephrin differs in the children with stable or unstable vasomotor system, but the effect shows that the instability is an advantage rather than the reverse. This constitutional inferiority of the circulatory system enhances the danger from acute infectious diseases.

April, 1920, **91**, No. 4

*Digestion of Meat by Infants. P. Karger and A. Peiper.—p. 235.
*Experiences with Intubation. M. Hohlfeld.—p. 240.
*Postscarlatinal Nephritis. E. Stransky.—p. 259.
*Ileus from Helminths. Sára von Uji (Budapest).—p. 274.
Scurvy in Infants. H. Vogt.—p. 278.

Digestion of Meat by Infants.—Karger and Peiper tabulate the metabolic findings in four healthy infants from 2½ to 5 months old before and during periods in which they were given 10 gm. daily of boiled beef so finely divided that the particles could be added to the infant's bottle and it could suck the suspension easily. No digestive disturbance was noted and the stools were not modified, while the nitrogen balance showed a decided gain thereafter. Everything indicated that the meat was well digested and that the children thrived on it. Lundell has reported excellent results in a large series of infants given meat, egg, fish and vegetables after they were 6 months old, and Lövgren and Monrad report similar experiences.

Experiences with Intubation in Diphtheria.—Hohlfeld found pressure ulcers at necropsy in 25 of 99 cases in which intubation had been done. At the Leipzig children's clinic intubation was required in 428 of 433 cases of stenosis. In some of the clinical cases there was suppuration in the skin of the front of the throat; in some it was the only sign of the pressure ulcer within, but it did not become apparent until several days after extubation. The black spots on the tube which are assumed to correspond to pressure ulcers did not always thus correspond in his experience. When repeated reintubation is necessary, by using a tube of a different shape the pressure is shifted and he advises to try this early, not waiting for ulceration. In nineteen of twenty-two cases of retained tubes, merely using a tube of another model answered the purpose. In the three other cases even changing the models several times, coating each with alum-gelatin, was unable to cure the process. He makes a point now of introducing a tube of another model whenever the tube is coughed out. By leaving the long tube in place, the tissues are protected against stenosis. This is especially necessary with infants less than a year old; the pressure ulcers were numerous and severer in this group than in others.

Postscarlatinal Nephritis. — Stransky describes seventeen cases in which he studied the scarlatinal nephritis and applied treatment according to the latest knowledge in regard to the nature and treatment of kidney diseases. He always views hemorrhagic nephritis in a child as suspicious of scarlet fever, even when there is nothing in the history to suggest it otherwise. The first thing is to rest the kidney, and he allows nothing by the mouth the first day except at most a little water by the spoonful occasionally. The second, third and fourth day he gives 2 or 3 pints of "malt coffee" with abundance of sugar. The child thus gets over 100 gm. sugar per day. Then 500 c.c. of water is given fasting; if it is all eliminated in from two to four hours, he allows more water. If not, he continues to keep the intake of water low. The food is then increased, keeping it salt poor and albumin poor: potatoes with fat or butter, gruels and crackers. In his thirty cases there was no death from the nephritis; the only death in the group was from tuberculosis, although one child was unconscious with convulsions when admitted, and others presented symptoms of actual uremia. He warns that the albuminuria may persist for weeks after subsidence of the acute symptoms.

Ileus from Helminths.—Uji reports a case of ileus in a boy of 7, the symptoms suggesting invagination. Nothing to explain the obstruction was found at the laparotomy until a clump of ascarides was palpated through the wall of the small intestine.

Monatsschrift f. Geburtshülfe u. Gynäkologie, Berlin

January, 1920, **51**, No. 1

*Premature Rupture of Fetal Membranes. H. R. Schmidt.—p. 1.
*Active Treatment of Febrile Abortion. W. Kolde.—p. 17.
*Loss of Weight and Fever in the Newborn. F. Heimann.—p. 27.
*Vicarious Menstruation. A. Roth.—p. 41.
Artificial Vagina. A. Hörrmann.—p. 58.

Cause of Premature Rupture of the Membranes.—Schmidt presents evidence that in certain cases some inflammatory process in the uterine mucosa involves the fetal membranes and is responsible for the premature rupture. In a case described there was no external cause for the rupture, and six days later a 7 months living child was born. The inflammatory process in the cervical mucosa had evidently been responsible for the frequent hemorrhages during the pregnancy and for the weakening and rupture of the lower pole of the membranes under the weight of the fetus and fluid.

Active Treatment of Febrile Abortion.—Kolde says that at the Magdeburg women's clinic, the 1318 cases of abortion or miscarriage formed 19.85 per cent. of all the cases at the clinic, and they yielded 18.8 per cent. of all the deaths at the clinic during the five year period. Omitting the cancer cases and the cases of severe puerperal fever, they formed 32.6 per cent. of all the fatalities. The mortality was 3.8 per cent. in the cases treated by prompt evacuation of the uterus, using the Winter abortion forceps and the fingers or possibly the blunt curet, and rinsing out the uterus afterward with hot saline, under very low pressure, with a two-way tube. No tamponing, unless there was much hemorrhage; a little ergot or pituitary ensured the contraction of the uterus.

Physiologic Loss of Weight and Transient Fever in the New-Born.—Heimann concludes from study of 8,441 newborn infants during the last ten years that the loss of weight and the transient fever sometimes observed were due to a combination of several factors; inadequate nourishment, resorption of pyretogenic substances, and the conflict between the meconium flora and the milk flora. The fever and the loss of weight are harmless and soon made up, but the fact that

they occur on about the same day shows the connection between them. The number of cases has been much reduced since the infants are placed at the breast the twelfth hour instead of waiting for twenty-four hours as was the rule until the last few years.

Vicarious Menstruation.—Roth has found 225 cases of vicarious menstruation recorded since 1870, the bleeding occurring from the nose (30 per cent.), fistulas, skin (10 per cent.), lungs (8 per cent.), breast, stomach, mouth and throat (4 or 5 per cent. each), bladder, ear, eye, intestine, larynx, trachea, kidneys and vagina (from 3.5 to 0.45 per cent.). The bleeding was purely vicarious in 20 per cent. and supplementary in 75 per cent. In three cases the vicarious hemorrhages from the lungs or bronchi proved fatal. Of course only the severer cases are published. In one of two cases personally observed, the woman began to bleed from the bowel at regular intervals nine months after the onset of the menopause. The other patient was a young woman who vomited blood from the stomach, without retching, at each return of the menstrual period. The stomach content was free from blood during the intervals.

February, 1920, **51**, No. 2

*Placenta Praevia. F. Lönne.—p. 74.
*Hemorrhagic Purpura. Charlotte Ehrenberg.—p. 99.
Comparison of Methods of Treating the Umbilicus. W. Lang—p. 118.
The Internal Secretions and Practical Gynecology. B. Aschner.—p. 130.

Placenta Praevia.—Lönne relates that there were only ten primiparas in his 200 cases of placenta praevia. With the central type the fetal mortality was 50 per cent. while it was only 30.2 per cent. with lateral implantation; the maternal mortality was 13.3 per cent. with the central and 1.9 with the lateral. In four cases there was internal hemorrhage although there was no loss of blood externally after the version or metreurynter and the uterus was contracting normally. An estimate of conditions in the circulation can be easily made with control of the pulse, of the systolic murmur, and of the blood pressure with the Riva-Rocci cuff, especially if the hemoglobin percentage is determined at the same time. By systematic examination in this way we can estimate how much blood the woman has lost and how much more loss she can stand. Measuring the girth of the abdomen is also instructive; any increase from the beginning of the birth is abnormal. In three apparently moribund women, the abdomen measuring 3 cm. more than at the beginning of labor, an emergency Porro operation brought the mothers and two of the children safely through. He advocates systematic abdominal cesarean section for all cases of placenta praevia centralis, and for lateral praevia when there has been much hemorrhage. With this, the mortality of the mothers in recent compilations of 262 and 125 cases dropped to 4 and 2.4 per cent. and the child mortality to 1.6 per cent. in the latter group. Extraction of the child through the abdomen wards off the excessive stretching of the cervix which is the main cause of atony of the uterus directly afterward. It also saves further loss of blood, and averts danger of internal hemorrhage. He regards section as indicated when there has been extensive hemorrhages even if the fetus is already dead.

Hemorrhagic Purpura.—Ehrenberg accepts an essential thrombopeny as the main element in the clinical picture of Werlhof's disease, and describes a case in a girl of 19 in which the purple patches and hemorrhages appeared about eight or ten days before each menses and persisted to the end. The menstrual hemorrhages were often so severe as to threaten life. An intravenous injection of a blood platelet preparation arrested the excessive menstrual hemorrhage on one occasion, justifying the use of this in threatening hemorrhages. No other hemostyptics displayed any efficiency except injection by the vein of a 10 per cent. solution of sodium chlorid, which seemed to check partially the hemorrhagic tendency for two hours. After splenectomy the blood platelets rapidly increased in numbers; they gradually dropped back again, but never to the former low figure, and the tendency to hemorrhage seemed to be completely cured; the menses were normal and the purple patches did not reappear. Certain points in this and other cases of hemorrhagic purpura suggest perverted functioning of the ovaries or some of their elements as explaining the phenomena observed.

March, 1920, **51**, No. 3

*Premature Separation of Placenta. L. Heidenhain.—p. 145.
*Delivery with Narrow Pelvis. V. Hiess.—p. 149.
*Operative Treatment for Sterility. T. Seitz.—p. 177.
*Tuberculous Ulceration in the Vulva. W. Schade.—p. 190.
The Mental Condition of Parturients. F. Poensgen.—p. 198. Cont'd.

Premature Detachment of the Placenta.—The previously healthy quintipara of 33, nearly at term with her sixth pregnancy, had pregnancy nephritis, and suddenly signs of profuse internal hemorrhage developed, with intense pain in the uterus. There were no signs of life from the fetus, and Heidenhain amputated the uterus without opening it. The nephritis may have been responsible for the premature separation of the placenta, but this could not be proved by the anatomic findings. The rapid recovery from the nephritis confirmed its transient character. The umbilical cord was wound around the neck of the child and measured only 39 cm.

Delivery with Narrow Pelvis.—Hiess reviews the experiences in a recent nine years with contracted pelvis at the Vienna women's clinic of which Schauta was chief at the time of his death. The number of births was 2,264 in 1911 and 1,406 in 1918. Spontaneous delivery occurred in 11.1 per cent. of the forty-five cases with true conjugate of 6.5 to 7.5 cm.; in 35 per cent. of the 208 with 7.6 to 8.5 cm.; in 54 per cent. with 8.6 to 9.5 cm., and in 47.1 per cent. with 9.6 to 10 cm. In a total of 419 cases of narrow pelvis, spontaneous delivery occurred in 40 per cent., but the proportion was 64 per cent. among those women who had been admitted to the clinic before or at the commencement of labor. This shows the wisdom of the expectant principle followed in the management of the cases but institutional supervision is almost indispensable for this.

Operative Treatment of Sterility.—Seitz has operated in twenty-two cases in which inflammatory processes in the ovaries or tubes had closed the lumen of the tubes. In the majority the adnexa on one side had to be removed, so the restoration of the passage was done only on one side in all but two. The later history is known of fifteen of the women; conception occurred in two, but both aborted. None of the other women have conceived, but their menstrual disturbances have subsided. The preferable technic is described and the participation of the uterine mucosa in the old inflammatory adnexitis is incriminated in the early arrest of the pregnancy. The salpingostomatoplastic operation therefore is not advisable when the inflammatory conditions have been very severe or protracted, but otherwise it is justified when the happiness of a household is threatened by the sterility.

Tuberculous Ulceration in the Vulva.—The extremely chronic course, the fistulous passages, edema and proliferation suggesting elephantiasis, form a characteristic picture of this manifestation of tuberculosis. Schade compares a personal case described with those on record.

Therapeutische Halbmonatshefte, Berlin

Jan. 15, 1920. **34**, No. 2

*Surgical Treatment of Tabetics. H. Holfelder.—p. 33.
Roentgen Treatment of the Tuberculous. E. Mühlmann.—p. 35.
*Treatment of Addison's Disease. H. Quincke.—p. 42.

Operative Treatment of Tabetic Joint Lesions.—Holfelder comments on Oehlecker and Schmieden's excellent results from resection of joints in tabes. They succeeded in nearly every case in inducing consolidation of the articulating surfaces and arresting the destructive process. No anesthetic was required in some of the cases, and the surgeon refrained from the use of the Esmarch band. Of course the operation can be considered only when the process is aseptic.

Addison's Disease.—Quincke reports two cases in which all the symptoms of Addison's disease retrogressed completely, even to the pigmentation of the mucous membranes, under tonics and systematic administration of suprarenal tablets. The patients were men of 65 and 70 who had been subjected to great deprivations for some time. The suprarenal deficiency had evidently been merely functional, not organic.

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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 75, No. 4 Chicago, Illinois July 24, 1920

RELATION OF ORTHOPEDIC SURGERY TO INDUSTRIAL SURGERY*

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The development of orthopedic surgery manifests a continuous, healthy growth from its humble beginnings in a past age. Born from the urgent needs of countless crippled and deformed who covered the civilized earth, it has attained a healthy manhood in the most pregnant era of the world's history. The present generation of physicians has seen this specialty develop from a guild of bracemakers to a fraternity of bone and joint surgeons whose operations cover a fairly large area of the human body.

This endeavor has been accomplished by hard and aggressive work. It was first necessary to convince the general surgeon that the treatment of deformities could be better carried out by the orthopedist, as he was then called. This was the first step in the emasculation of modern orthopedic surgery. With the general surgeon devoting himself to the fascinating problems of abdominal surgery, which was then developing into a splendid science, it was but natural for the orthopedist to concentrate on bone and joint surgery. He did this so well, in the majority of cases, that he became known as an orthopedic surgeon, and was received into the ranks of those who may safely be entrusted with the scalpel.

Then came the World War, providing varied and remarkable opportunities for work and development. For the first time in his career—speaking for the great mass of the specialty—the orthopedic surgeon was assigned to the treatment of fresh fractures and of deformities in the incipient stage. To be sure he entered by the back door, for he was supposed merely to supervise the application of the necessary splints after the surgical operation had been performed. He was not yet fully to be trusted with the surgical care of this class of patients. He was, however, fortunately situated. New methods of treatment were being brought forth daily. He witnessed the evolution of the Dakin-Carrel method of wound sterilization; the new work on osteomyelitis and nerve surgery; the lessons of bone-grafting; the successes and failures of complicated joint fractures.

When the orthopedic surgeon returned to civil practice, it gradually dawned on him, as the same light came to others who had witnessed the transformation of those short, active years, that this had all been a preparation for a greater opportunity for usefulness.

In certain communities in this country it had been recognized for several years that the properly trained orthopedic surgeon was the logical man to treat fresh fractures. Whether the fracture is simple or compound, the treatment is principally mechanical, and as such it naturally fell into the hands of the surgeon who had proved himself competent to treat such accidents. Since the war, the orthopedic surgeon has been more often consulted in cases of severe fracture. In some hospitals he has been asked to assume the care of fresh fractures of the extremities. Cases of osteomyelitis have lately been placed in his hands. He has more frequently been asked to advise in cases of nerve injury, bone-grafting and deformities following accident. Where he was formerly asked to apply the external splint, he has lately been requested to insert the internal splint.

THE FIELD OF INDUSTRIAL SURGERY

If our premises are well founded, all this experience means that the orthopedic surgeon has arrived at the threshold of the greatest opportunity in his career—the invasion of the field of industrial surgery. The thought is not a new one. Other authors have ably pointed the way. I wish to emphasize somewhat specifically the means by which the orthopedic surgeon may have a part in a great movement.

It is a far cry from the day when the injured employee of an industrial plant was sent to the nearest physician for treatment, or was placed under the care of a medical man who served all the employees under the contract plan. Many of the largest industrial plants in the country now employ full-time physicians who have had special training in industrial hygiene and in the treatment of diseases and accidents. Schools of industrial hygiene are being established in medical schools in this country. A flourishing periodical, the *Journal of Industrial Hygiene,* has recently been added to our current literature. The handwriting is on the wall. The medical profession must interest itself in this remarkable movement for improving the working conditions of employees, and in the treatment of them when ill or injured.

In this movement, orthopedic surgery has a definite place. Many large industrial plants have appointed a staff of physicians, including all specialties, to furnish medical attention to their employees. More industrial organizations will adopt this plan in the near future. This can be done in much the same way in which consultants served on examining boards during the selective draft examinations in the late war. By such a procedure many a disabling condition will be recognized early, and proper treatment can be instituted. Many otherwise efficient laborers will be restored to the ranks of those fit to work, or will be eliminated, if unfitted for this particular industry.

* Chairman's address, read before the Section on Orthopedic Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

In the actual treatment of injuries, the orthopedic surgeon will be consulted in cases of severe and complicated fractures, especially those involving joints; in nerve injuries resulting in potential deformities; in severe tendon injuries; in cases of bone and joint disease occurring during employment. If the case is one which the orthopedic surgeon is preeminently fitted to treat, it should be assigned to him as early as possible after the injury, in order that every reasonable means for preventing deformity and securing early function may be employed. It is unfair to both patient and orthopedic surgeon, and disheartening to the latter, if a patient is turned over to him when it is too late to secure the best functional result, or when the treatment consists in the correction of a preventable deformity. If he is to be entrusted with the care of the case at all, he should be permitted to see the patient early.

The after-treatment in these cases is most important. Bakings, massage and active and passive movements are effective only if the best possible result has been obtained by previous surgical and mechanical measures. A potential ankylosis will not be greatly benefited by the use of physical therapeutics.

PROBLEM OF THE CONVALESCENT EMPLOYEE

The convalescence is the most critical period of the disability for the employee, for the employer and for the surgeon. Cooperation between these three factors is absolutely essential in the future, or else industrial conditions will be seriously disturbed. The time lost to production in this country by inability to put the injured employee back in his proper place at the earliest moment is appalling when reduced to figures. More serious, perhaps, is the effect on the morale of the worker himself. A slight influence is sometimes enough to turn an industrious workman into a park bench loafer. A man who occupies a hospital bed for eight weeks while a fractured femur is knitting often needs a bit of uplift to turn his steps into the road of sober industry again.

Employers and insurance carriers should seek the advice and cooperation of the surgeon, and work through the medium of the nurse and social worker. Employment should be provided for the idle man. This should begin while he is still in bed or incapacitated, and as soon as he is able to get to his work he should be given some kind of useful employment. It is just here that the surgeon and the nurse or social worker can be of the greatest assistance to the employer. Too often the superintendent or the foreman of a department is told to give a convalescent light work, without being informed as to the ability of the patient to work. Being more interested in securing efficient production in his department than he is in helping to restore this workman to health, the foreman quickly loses interest when he finds that the employee is, for the moment, a negligable factor in production. The result is that the injured man is allowed to drift, and his name is simply kept on the pay-roll until he is able to work, or is discharged as incompetent.

The surgeon can suggest types of work which the employee can undertake at this stage in his convalescence, and the nurse and social worker, by visiting the working parts of the plant, can see to it that the worker so employs his time that his injured part shall be restored most quickly to usefulness. By this means he will be prevented from losing the will to work, which is all essential to his future.

Workmen's compensation laws have done much thus far to improve the treatment of the injured employee by providing prompt and skilful medical attention, and by relieving mental anxiety through the payment of compensation during the period of disability. The weak link in the chain is the period of convalescence, during which the employee needs friendly coaching to prepare him, physically and mentally, for his occupation. This is more important, of course, in what may be termed orthopedic injuries, than in any other class of accidents, on account of the long period of disability. In schemes of cooperation, hitherto, the medical man has generally been overlooked. He should assert his position and point out the dangers of the convalescent period, for he is the one essential factor in the successful solution of the problem. Let him but urge the need of cooperation in this matter, and it will speedily be brought about.

RENAL GLYCOSURIA*

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By the term "renal glycosuria," often incorrectly called "renal diabetes," is meant an abnormal permeability of the kidney to glucose while the sugar content of the blood remains within normal limits and the tissues of the body retain their power to utilize carbohydrates in a normal way. There accompanies this condition a constant, slightly variable glycosuria which, in the majority of the reported cases, is only slightly, if at all, affected by diet: the usual symptoms of diabetes, namely, polyuria, polydipsia, polyphagia, loss of weight, etc., are conspicuous by their absence.

Certainly this condition is not common, according to our present belief; on the other hand, there are probably many more patients under treatment for mild diabetes who really have renal glycosuria than our present knowledge would indicate. The simplified and more general use of methods for the study of blood sugar will be of great benefit in differentiating this group of cases. The recent article by Allen [1] reporting three cases of renal glycosuria among forty cases of supposed diabetes, sent to U. S. Army General Hospital No. 9, is of the greatest interest and has given new impetus to the study of this condition.

The disease, as in the case herewith reported, is usually discovered during the course of a routine physical examination for some other condition, or the patient may be rejected for life insurance because of the discovery of sugar in the urine. The present case is particularly interesting since when the patient was first seen, four years ago, it was thought that he had so-called renal diabetes, although at that time this opinion was held without having sufficient proof that such was the case; since then, however, laboratory investigations have confirmed the clinical diagnosis.

REPORT OF CASE

History.—Mr. D., No. 3104, aged 23, white, single, clerk in a hardware store, came under observation, Aug. 30, 1916. His family, consisting of a father, aged 52, a mother, aged 46, a brother, aged 18, and a sister, aged 16, were all living and

* Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Allen, F. M.: Three Cases of "Renal Glycosuria," Arch. Int. Med. **24**: 523 (Nov.) 1919.

well; no brothers or sisters were dead. There was no history of tuberculosis, cancer, nervous or mental diseases, or diabetes mellitus in the family. The urine from all members of the family had been examined many times and found to be sugar free. The patient had had typhoid fever at 16 years of age, and was sick about one month. There were no complications, and recovery was complete. He had had measles at 18, a very mild attack, with no complications; he was in bed only one day. His general health had always been very good, he had had no sicknesses except those mentioned. Occasionally he had a slight headache, not particularly severe,

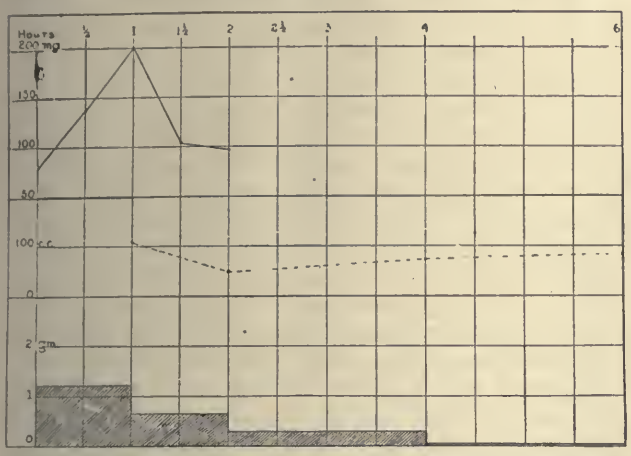


Chart 1.—Patient's response to a meal of 98 gm. of glucose: solid line, blood sugar response in milligrams per hundred cubic centimeters; broken line, urine volume response; shaded area, sugar output.

which was precipitated by constipation. The appetite was good; he ate anything and everything that he desired, and he never suffered with indigestion or abdominal pains of any character. He urinated three or four times during the day, never at night; he had never noticed any excessive urination, nor had he had any pain on voiding or any blood in the urine. The bowels were regular; there was no diarrhea or dysentery. He slept well, always averaging about eight hours; took a great deal of outdoor exercise, walking, golf, basket ball and various other sports; smoked about twenty cigarets daily; had never used alcohol except for an occasional drink, and had lost no weight, his average weight being 125 pounds. For the last five or six months he had been troubled considerably with acne pustules on the face, which he said had been worse during the last three or four weeks and he desired something done for this condition.

Physical Examination.—The patient was well built and muscular and was 5 feet 6 inches tall. The skin presented a healthy color except for the presence of a few acne pimples on the face and neck. The pupils were equal and reacted to light and accommodation. The eye movements were normal, the field of vision, tested roughly, was apparently normal, the sclera was clear, and there was no edema of the lids. There was no discharge from the ears; the ear drums were apparently normal; hearing was 20/20. The anterior and posterior cervical glands were not felt; the axillaries were slightly palpable, and the epitrochlears and inguinals were not enlarged. The thyroid was apparently normal in size. The teeth were in fairly good condition, although a subsequent roentgen-ray report showed that four had some infection about the roots; there was a very slight pyorrhea. The tonsils were easily seen, but presented no marked evidence of infection.

The chest was well formed; expansion was good and was equal on the two sides; tactile fremitus was normal; the percussion note was clear, and auscultation elicited distinct breath sounds that were apparently normal and free from râles.

On examination of the heart, the point of maximum intensity was seen and felt in the fifth interspace, 8.5 cm. to the left of the midsternal line; dulness, 9.5 cm.; no increase, to the right; there was no increase in the retrosternal area of dulness; the heart sounds at the apex and base were clear and of normal relative intensity. The pulse rate was 80 per minute, regular in force and rhythm and small in volume; the radial, axillary and temporal arteries were not felt. The systolic blood pressure was 120 mm. of mercury, and the diastolic, 80 mm.

The abdomen was scaphoid; the edge of the liver was not felt; there was no tenderness or mass to be made out in the region of the epigastrium. The right and left kidneys were both palpable, the right descended markedly; the upper pole was palpable but was not tender, and apparently not enlarged. The spleen was not felt, and the area of dulness was not increased.

The genitalia were normal, the prostate was not enlarged or tender and there was no history of venereal infection.

The knee jerks were present, but not exaggerated. Other reflexes were normal. There was no thickening about any of the joints. The spine was straight; there was no lordosis or kyphosis. The muscular strength was very good; there was no disturbance of sensation, and no tremors were made out. Rectal examination revealed only a few small hemorrhoids.

Laboratory Examinations.—Blood examinations revealed: red blood corpuscles, 4,600,000; white blood corpuscles, 6,800; hemoglobin, 90 per cent. Differential count revealed nothing abnormal. The Wassermann reaction was negative. The specific gravity of a casual specimen of urine was 1.023. It contained a marked trace of albumin, very heavy sugar, no acetone or diacetic acid, an occasional leukocyte and an occasional hyaline cast. A twenty-four hour specimen consisted of 1,650 c.c.; it was of acid reaction; the specific gravity was 1.026; there was a moderate trace of albumin; sugar was 2.1 per cent. There was no acetone or diacetic acid; an occasional hyaline cast was observed. Night and morning specimens of urine were collected separately. It was soon observed that the albumin in the morning specimen was decidedly less than in the night specimen, and after a period of rest for twenty-four hours it would disappear. (This condition was regarded as postural albuminuria.) It was also found that no relationship could be shown to exist between the amount of sugar excreted and the amount of albumin present in the

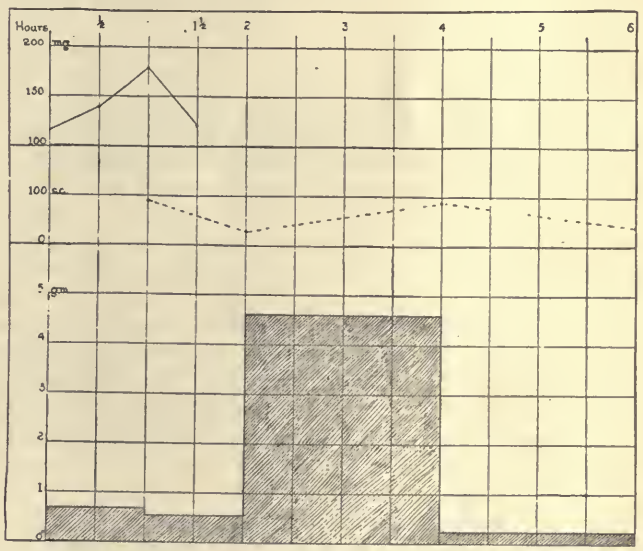


Chart 2.—Patient's response to the ingestion of 147 gm. of glucose; solid line, blood sugar response in milligrams per hundred cubic centimeters; broken line, urine volume; shaded area, sugar output.

urine. Repeated and numerous examinations of single and twenty-four hour specimens of urine were made, all showing the presence of sugar of from 0.5 per cent. to 2.1 per cent. The phenolsulphonephthalein output in two hours was 65 per cent. Examination of the feces was negative. No blood sugar studies were made at this time.

Treatment and Progress.—This at first was regarded as a case of very mild diabetes mellitus because, on an unrestricted diet, the patient's total sugar output for the twenty-four hours

was small. An attempt was made by restricting the amount of carbohydrate and protein intake to free him completely from sugar; we were never successful in having him sugar free for any length of time, even on the most restricted diet. As a result of these dietetic experiences, it was noted that the twenty-four hour output of sugar was almost as much on a diet low in carbohydrate and protein as it was when the diet was unrestricted. Consequently, after a convincing trial and complaint on the part of the patient of weakness and loss of weight, he resumed his usual amount of food with the result that he regained the lost weight and continued his work in comfort, although glucose was constantly present in the urine. After this experience, several times repeated, it was apparent that the disease was not a true diabetes mellitus, but one of "renal diabetes." For over three years he was practically on an unrestricted carbohydrate diet, and now the glycosuria is no greater than when he first came under observation. He enjoys excellent health and shows no clinical evidence of diabetes.

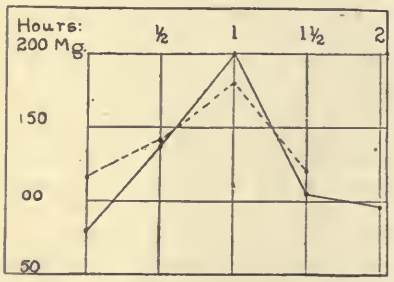


Chart 3.—Blood sugar response as influenced by the ingestion of varying amounts of glucose; solid line, patient received 1.75 gm. per kilogram of body weight (98.9 gm.); broken line, patient received one half as much in addition (147 gm.).

RESULTS OF STUDIES TO DETERMINE NATURE OF THE DISEASE

The patient made many attempts to enter various officers' training camps during the recent war, but he was always rejected because of the presence of sugar in the urine, although he finally did get into some form of government service. After his return from this service, the studies recorded in the accompanying charts were undertaken to establish more clearly the nature of the disease.

Chart 1 represents the patient's blood sugar, urinary sugar and urine volume response to a meal of 98 gm. of glucose given according to the method of Janney and Isaacson.[2] The rise of blood sugar was within normal limits, and the urinary sugar distinctly increased with the height of the blood sugar curve; but the output was small in comparison with the intake. In other words, with increased glycemia, there is an increased glycosuria, but no increase in the total amount of urine voided.

Chart 2 represents the patient's blood sugar, urinary sugar and urine volume response after the ingestion of 147 gm. of glucose, which was half as much again as was given for Chart 1. The response on the part of the blood to the ingestion of the increased amount of glucose was a higher rise in the blood sugar curve; on the part of the urine, there was a marked increase in the total output of glucose from the second to the fourth hour, again returning to the usual amount of sugar after six hours. One and one-half hours after the ingestion of such a large amount of glucose, the patient showed a slight reaction evidenced by itching of the skin, puffiness about the face, weakness, giddiness and nausea, from which he recovered in two hours. Chart 3 is a combination of Charts 1 and 2, for comparison.

Chart 4 represents the response on the part of the patient to the ingestion of 98 gm. of glucose dissolved in 245 c.c. of water, with the added juice of one lemon. In addition 200 c.c. of water were given every half hour in order to determine the effect of diuresis on the amount of sugar excreted. The blood sugar curve ran unusually high (we have observed in normal persons that such a response occurs when water is given in this way), but returned to its level in two and one-half hours. The urine output was markedly increased, amounting during the period of the test to 1,158 c.c., and the output of sugar amounting to 7.18 gm. The concentration of the urinary sugar was never higher than 1.5 per cent.; the lowest is 0.3 per cent. It would seem from this that with an increased excretion of urine, there is an increase in the sugar output.

Chart 5 shows the results of a recent study to determine the effect of diets, with varying amounts of carbohydrate, protein and fat, on the blood sugar, urinary sugar and urine volume in this patient. Fasting for three days caused the blood sugar to remain practically the same; the sugar output in grams slightly diminished with a slight diminution of the percentage of sugar in the urine. There was no change in urine volume. On a diet rich in carbohydrates, the daily blood sugar percentage remained practically the same; there was a slight increase in the twenty-four hour urinary sugar output, and very little change was noted in the percentage of urinary sugar. The urine volume was not increased. It is interesting to note that with a diet rich in proteins, the blood sugar percentage showed a rather marked increase; and coincident with the increase in the blood sugar there was a slight increase in the amount of the daily urinary sugar output, but no increase of moment in the volume of urine excreted. Allen [1] previously noted the effect of a high protein diet on the blood sugar in patients with renal glycosuria. The remainder of the chart shows the results of examinations made while the patient was on an unrestricted diet; no changes of moment were noted either in the blood sugar, urinary sugar or urine volume.

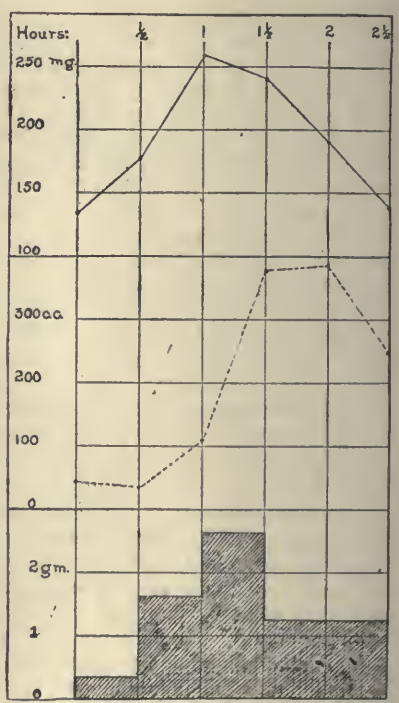


Chart 4.—Patient's response to ingestion of 98 gm. of glucose dissolved in 245 c.c. of water, with the juice of one lemon added: solid line, blood sugar response in milligrams per hundred cubic centimeters; broken line, urine volume; shaded area, sugar output.

METHODS OF DETERMINING THE PRESENCE OF GLUCOSE

The methods used in determining the presence of glucose in this patient were the copper reduction tests, fermentation test, the formation of osazone crystals with phenylhydrazin, and the determination of the melting point of the crystals. The percentage of

2. Janney, N. W., and Isaacson, V. I.: A Blood Sugar Tolerance Test, J. A. M. A. **70**: 113 (April 20) 1918.

urinary sugar was determined with the polariscope and Benedict's quantitative method.[3] Blood sugar determinations were made by the Lewis-Benedict method[4] and Epstein's method.

I believe that from these studies and the length of time the patient has been under observation, I am justified in terming this a case of renal glycosuria. It does not seem necessary or expedient to review the reported cases of this disease, as this has been recently done by Lewis and Mosenthal;[5] Bailey;[6] Beard and Grave,[7] and Williams and Humphreys.[8]

The essentials as agreed on by the majority of writers for the diagnosis of this condition are:

1. A normal blood sugar content of between 70 and 110 mg. per hundred c.c. of blood.

2. The constant presence in the urine of sugar which is definitely known to be glucose.

3. Little, if any, change in the glycosuria on increase or decrease in the carbohydrate content of the diet.

4. An absence of the usual symptoms of diabetes mellitus.

SUMMARY

It seems to be fairly well established that there is a condition in which the kidney is abnormally permeable to glucose. The exact nature, cause and the factors determining this permeability are little understood. Many of the cases show many points of resemblance to phlorizin glycosuria. Among the reported cases there are varying degrees of renal permeability to glucose; whether these are early or late stages in the progress of the disease or the result of a greater or less pathologic condition of the kidney is yet to be determined. Few of the patients have been observed for a sufficient length of time to determine definitely whether they develop a true diabetes mellitus or not, although it would seem that such does not occur and the existence of the condition is not incompatible with a normal existence. In the case here reported, during the four years of observation, there has been no demonstrable progress of the disease. The condition, if it is a clinical entity and if it is due solely to an increased renal permeability, offers certain definite problems for future study.

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ABSTRACT OF DISCUSSION

DR. NELSON W. JANNEY, Santa Barbara, Calif.: The blood glucose tolerance test proposed by Hammond and Hirschman and as modified by me has proved of greatest value in determining the existence of renal glycosuria. It seems as if in typical cases of renal glycosuria we should expect a perfectly normal blood glucose curve, yet in Dr. Paullin's case the curve is higher than normal. The blood sugar reaction appears to remain unchanged by an increased diet, although there is a slight increase in the urinary sugar. One can, however, be deceived in judging these cases merely by the height of the blood sugar. I have seen cases, particularly in children, in which the blood sugar had not risen over twelve, or at the most thirteen parts per ten thousand of blood, but which presented all the typical symptoms of the disease. Perhaps it would be a safe rule to consider all cases of glycosuria as being diabetes mellitus until proved otherwise. Renal glycosuria may also be found in cases of arteriosclerosis and chronic diffuse nephritis, but true diabetes mellitus may never develop. These patients show a remarkably high and prolonged blood glucose curve, probably a retention phenomenon in distinction to the normal curve exhibited by the patients having renal glycosuria of unknown or idiopathic origin.

DR. ALBERT A. HORNOR, Boston: Dr. Paullin told me that he has undertaken some work to attempt to check the influence of water on blood sugar after ingestion of glucose by normals. The influence of proteins in these cases emphasizes the point which Dr. Allen has made so often, that the carbohydrates, proteins and fats must all be considered in the management of cases of diabetes. All three elements of diet are important.

DR. ALLAN EUSTIS, New Orleans: The question of renal glycosuria is a very complicated one and it is only after a careful study of a case that such a diagnosis is justifiable. Croftan showed several years ago that cases of severe intestinal toxemia are often associated with the presence of combined glycuronates in the urine which will reduce alkaline copper solutions. The urine will not turn the plane of polarized light nor will it ferment with yeast, while the blood sugar will be normal. If one judges such a case from the blood sugar and reduction with the urine only as a case of renal glycosuria he will be mistaken. Many of these cases are treated as cases of true diabetes, often with unnecessary inconvenience and hardship to the patient. I see so many of these cases associated with intestinal toxemia which have gone unrecognized for years, that I am forced to the conclusion that the profession does not appreciate the importance of determining the identity of the reducing substance in the urine. In New Orleans, where strong coffee is drunk, it is not infrequent to find urines from patients with deficient liver function which will reduce Fehling's solution.

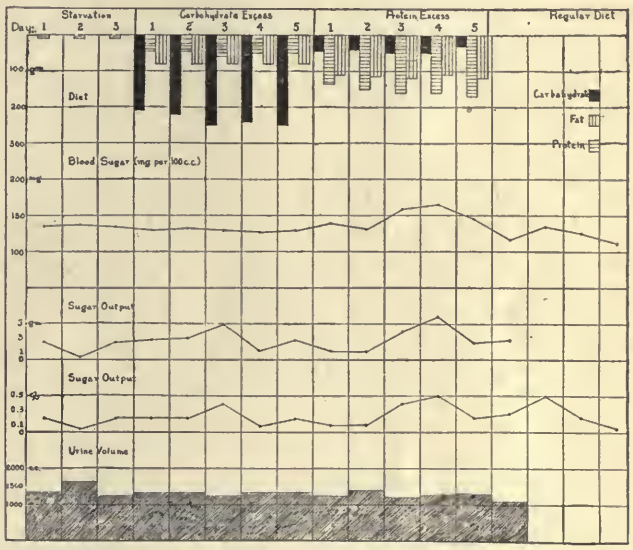


Chart 5.—Blood sugar, urinary sugar and urine volume response to diets with varying amounts of carbohydrate, protein and fat.

Inasmuch as caffein is capable of this reducing action, it is probably due to the presence in the urine of this substance.

DR. JAMES E. PAULLIN, Atlanta, Ga.: The reducing substance in this case was shown to be glucose by the copper reduction, fermentation tests and the formation of osazone crystals with phenylhydrazin and the determination of the melting point of these crystals.

3. Benedict, S. R.: J. Biol. Chem. **9**: 57, 1911.
4. Lewis, R. C., and Benedict, S. R.: J. Biol. Chem. **20**: 61, 1915.
5. Lewis, D. S., and Mosenthal, H. O.: Bull. Johns Hopkins Hosp. **27**: 133 (May) 1916.
6. Bailey, C. V.: Studies on Alimentary Hyperglycemia and Glycosuria, Arch. Int. Med. **23**: 455 (April) 1919; Am. J. M. Sc. **157**: 221 (Feb.) 1919.
7. Beard, A. H., and Grave, A. Floyd: Renal Glycosuria, Arch. Int. Med. **21**: 705 (June) 1918.
8. Williams, J. R., and Humphreys: Observations on Tolerance and Rate of Utilization of Glucose in a Series of Individuals Exhibiting Various Degrees of Diabetes Mellitus, Arch. Int. Med. **23**: 559 (May) 1919.

A Medical Dramatist.—A play that has reached its hundredth presentation in Paris, the "C. Q. G. d'Amour," is said by the *Progrès médical* to have been written by Dr. P. Rehm during a little leisure in the operating room of the H. O. E. at Coulommiers, July 18, 1918.

INTRAPLEURAL HYPERTENSION FOR EVACUATING PUS THROUGH BRONCHI

IN SPONTANEOUS PYOPNEUMOTHORAX

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AND
BARNETT P. STIVELMAN, M.D.
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Medical literature shows much conflict of opinion as to the best procedure in cases of pyopneumothorax in tuberculosis. This conflict applies with special force to cases in which the pulmonary opening still exists, with discharge of the pleural pus by way of the bronchial tree. In the latter case we usually have to deal with an infected cavity and septic symptoms, and the temptation is strong to have a thoracotomy performed, with or without rib resections. But this does not appear rational with constant reinfection going on, although recommended by Finlay,[1] Powell [2] and Lord.[3] Others dissent from this view and prefer the alternatives of periodic aspiration or continuous air-tight drainage (Fowler and Godlee).

There appears to be general agreement, however, that if we had a method of closing the pulmonary fistula and converting the open pyopneumothorax into a closed one it would be a distinct gain. Unfortunately, we are face to face with a double dilemma—there is no method, surgical or otherwise, of dealing with tuberculous pulmonary fistulas, and even if there were, the difficulty of locating them [4] is so great that the proverb of catching a sailor before you hang him to the mast would be an appropriate analogy.

The case reported herewith may hold the germ of an alternative method based on the idea of forcing out the pus from the pleural cavity and through the pulmonary fistula by increasing the pneumothorax, and subsequently introducing various solutions like methylene blue or watery iodin, and forcing them through the same route by means of the increased pressure obtained by the added pneumothorax. We are, of course, not yet ready to report results, as this procedure was begun only a few weeks ago; but as cases of open pyopneumothorax falling under the observation of any single observer are, on the whole, very few, we wished to draw attention to the method in order to insure its wider trial.

REPORT OF CASE

S. G., a man, aged 26, born in the United States, a porter, admitted to the Bedford Sanatorium of the Montefiore Home, Aug. 6, 1919, with irrelevant family and previous personal history, stated that he had been in perfect health until he was discharged from the army in October, 1918, when he caught cold and was confined to bed for six weeks, with moderate chills, fever and night sweats and distressing cough. Subsequent improvement in all symptoms was marked until April 19, 1919, when he had a severe hemoptysis, losing about 16 ounces of blood. Bloody expectoration continued for five days, and he was removed to Bellevue Hospital, April 24, where examination disclosed slight infiltration of the right apex and extensive infiltration with cavity formation in the left lung. A left pneumothorax was induced, May 5, but the patient left the hospital of his own accord, June 3, after having received eight inflations. The roentgen-ray examination before he left disclosed *almost complete collapse of the left lung and absence of adhesions.*

On his admission to the sanatorium in August, physical examination of the chest gave evidence of tuberculous involvement of the right upper lobe, infiltration of the left upper lobe and thickened pleura (?) of the left base. Succussion proved the presence of a hydropneumothorax, as did both fluoroscopy and roentgenograms, with the fluid level shown at the fourth rib. The sputum was positive, and the urine, Wassermann test and tuberculin fixation test negative.

In the next five months the patient rapidly improved. His temperatures remained nearly normal, he lost his cough and expectoration, and he gained twenty-three pounds. The fluoroscope revealed complete absorption of the pneumothorax.

About the middle of January of this year the patient began to complain of distressing pain in the left lower midaxillary region. This was accompanied by a distressing cough and purulent expectoration. A subfebrile temperature was noted in the afternoon, together with tachycardia and absolute anorexia. Physical examination was not conclusive. No splash could be elicited. The left lower chest was markedly dull, with a feeble respiratory murmur; but in view of the clinical symptoms and profuse purulent expectoration, the presence of a spontaneous pyopneumothorax with persistent bronchial communication was considered probable, and that was proved by the subsequent evidence.

Feb. 8, 1920, the white blood count was 15,400, with 70 per cent. polymorphonuclears and 14 per cent. small and 16 per cent. large lymphocytes.

February 9, a roentgenogram showed a definite pocket containing air and fluid, *the pneumothorax being more extensive than when the patient was admitted.* This was proof of a spontaneous pneumothorax, as no air had been introduced during his stay at the sanatorium.

February 12, exploratory puncture yielded 10 c.c. of pus, which was identical with the pus expectorated, and in both the predominating organism was a gram-negative nonhemolytic streptococcus. The pressure after the removal of the 10 c.c. of pus was +1 to +3 cm.[5] of water; but after the introduction of 100 c.c. of air, it rose to +8 to +9. Immediately after the introduction of the air the patient raised nearly the equivalent amount of pus (about 93 c.c.).

The clinical picture did not change for the better in the meantime. The fever ranged between 101 and 102.5, and the cough was very distressing. March 1, 1920, 250 c.c. of air were introduced, the initial pressure being from 0 to +2 cm. of water. The final pressure was 20 mm. of mercury (about 27 cm. of water), the mercurial manometer being used because of the inadequacy of the water manometer for such high pressures. The patient again expectorated about 60 c.c. of pus identical with that aspirated, and the pressure fell to about 1 mm. of mercury (about 1.3 cm. of water). March 15, this procedure was repeated for the third time, and roentgenograms were made before and after inflation. In all, 100 c.c. of air were introduced, the initial pressure being from 0 to +2 cm. of water and the final pressure being +20 mm. of mercury (25 cm. of water), the patient expectorating 93 c.c. of pus.

A roentgenogram taken after the procedure revealed definitely a fluid level reduction of at least 1½ inches compared with one taken immediately before. With the object of getting further proof of the existence of the pulmonary fistula, similar intrapleural hypertension was employed, March 27, for the fourth time, with the modification of injecting also 1 c.c. of a saturated alcoholic solution of methylene blue. Immediately thereafter, 150 c.c. of air were injected, and during the procedure about 150 c.c. of blue sputum were coughed up. The fever chart showed an average reduction of 2 degrees for three days following this purely diagnostic methylene blue injection.

1. Finlay: Allbutt's System, p. 386.
2. Powell: Diseases of the Lungs, Ed. 5, p. 144.
3. Lord: Diseases of the Bronchi, p. 589.
4. We have not tried the method of locating the fistula by introducing liquid petrolatum into the pleura and fluoroscoping for escaping bubbles of air.
5. All manometric readings are those above or below the zero mark; the actual hydrostatic pressure would be double these figures.

At our fifth attempt, April 6, we had an interesting experience. The initial pressure was from 0 to +1. After 100 c.c. of air were introduced, the pressure rose to + 20 mm. of mercury (27 cm. of water). After 300 c.c., the pressure had fallen to from — 0.5 to + 1.5 cm. of water, and after 600 c.c. remained at from — 0.5 to + 1 cm. of water. The low and uniform intrapleural pressure was evidently due to the fact that the air introduced escaped through the fistulous opening. Fifty c.c. of 1 : 10,000 watery iodin solution were injected into the pleural cavity. The patient brought up about 150 c.c. of pus during the operation. The iodin solution did not cause any unusual irritation.

Six days later, at the sixth attempt, no hypertension was obtainable even for a short period, for there was evidently insufficient pus in the pleural cavity to cover the pulmonary opening.

COMMENT

It is our intention to continue this method of expelling the pus, but to follow it at each sitting with injections of iodin of increasing strength, or alternately with methylene blue, in an attempt to close the pulmonary fistula and thus convert the case into a simple pyopneumothorax and ultimately permit a thoracotomy and rib resections, if necessary—this, of course, only if the patient's general condition warrants it. The tolerance of the bronchial tree and trachea for solutions of iodin, 1:1,300, has been demonstrated many times in the last three years in the treatment by irrigation through the bronchoscope of nontuberculous bronchiectatic cavities and pulmonary abscesses. In such a case seen recently by one of us, the patient stood a strength of 1 :650. We have begun with a solution nearly fifteen times weaker merely as a matter of caution.

A considerable search of the literature does not disclose any report of what might be called "pneumatic expulsion" of pus from the pleura, nor of the treatment of a tuberculous pulmonary fistula in the way described.

The age of the adhesions in this case (probably from 4 to 5 months) seemed to us to justify using very much higher intrapleural pressures than we had ever employed before in ordinary artificial pneumothorax work, because we had less fear of their giving way with the formation of new pulmonary fistulas. In addition to this, the very presence of the one proved fistula was to a certain extent a safety valve, as was shown by some manometric readings quoted above and some taken right after the discharge of pus through the mouth, the figures falling promptly to the initial low ones.

The location and size of the opening, and hence the posture of the patient, may prove to be a very important element in obtaining pleural hypertension and expulsion of the pleural contents. Our experience with the fifth injection proved this; hence, each patient's posture for the procedure may prove to be different.

If no hypertension is attainable because the pulmonary opening is above the level of the pus, the chest could be filled with sterile water or with sterile salt solution, and hypertension then applied. In fact, this procedure could be employed several times in succession at the same sitting—a species of scrubbing of the pleural cavity—before the final injection of the remedial agent.

The method could also be combined with aspiration, leaving the hypertension as the final step for bathing the pleura and fistula with the remedial agent. Malachite green or other agents might be substituted for the methylene blue and iodin. Malachite green, in particular, has been recommended by laryngologists for its antibacterial and antiinflammatory effect. Only a long period and a wide trial will hold out any hope of a probable answer on the relative value of this method and of the different agents used. For the present, we can report that the maximum temperatures that had ranged for weeks between 102 and 103.8 have now fallen to between 99.6 and 100.4 daily, and the total sputum of 15 or 16 ounces daily has in the past three weeks averaged only 3 ounces. Coincidentally, of course, there has been a considerable improvement in appetite and well-being.

ULCER OF JEJUNUM FOLLOWING GASTROJEJUNOSTOMY *

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SAN FRANCISCO

During the winter of 1901, while in attendance at the clinic of the late Prof. Theodor Kocher of Bern, it was my good fortune to see him operate on a patient who had a perforating ulcer of the jejunum, following a gastrojejunostomy of the Roux or Y type. Up to that time only six similar cases had been reported, so it excited considerable interest. With the idea in mind that the gastric juice was responsible for these ulcers, I carried out experiments with various types of gastro-enterostomy, but in no case did ulcers of the jejunum develop. Later, in 1903, Watts reported the occurrence of two ulcers of the jejunum, one perforating, in a dog three months after a gastrojejunostomy. Exalto, Wilkie, Soresi and others found secondary ulcers of the jejunum following gastrojejunostomy in animals. Gronnerud of Chicago, in 1917, found ulcers quite frequently when the internal suture was nonabsorbable. In those cases in which absorbable sutures were used, ulcers of the jejunum were only occasionally encountered and were usually minute. The work of Gronnerud, based on some 5,000 experiments, is of great value in throwing light on this rather obscure condition. He concluded that ulcers of the jejunum, following gastro-enterostomy, were caused almost exclusively by nonabsorbable sutures. But this is not the only factor, as some of Gronnerud's, and Hartwell and Hoguet's experiments demonstrate, and as shown also by some clinical experience.

It is my belief that the principal factor in the production of these ulcers is the introduction into the jejunum of non-neutralized acid gastric juice, and that trauma, be it from tight application of clamps, injuries of blood vessels or retained sutures, further lowers the resistance of the jejunum or of the anastomotic opening to the digestive action of the gastric juice. The fact that, in a series of 155 cases which I have collected from the literature, in addition to three cases of my own, only one case of ulcer of the jejunum followed gastrojejunostomy for cancer of the stomach, lends considerable weight to the idea that the gastric secretion is the prime factor. The duodenum has its own succus entericus with bile and pancreatic secretion to act as neutralizing agents, while the jejunum is much less able to protect itself against acid chyme.

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* Read before the Section on Surgery, General and Abdominal, at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

When we come to investigate the type of operation which was followed by jejunal or gastrojejunal ulcer, we find that out of 136 cases collected by Wright,[1] posterior gastrojejunostomy was done in fifty-four (40 per cent.) while the anterior operation with or without entero-enterostomy was done in seventy-four (54 per cent.) In the remaing eight cases (6 per cent.) posterior gastro-enterostomy with entero-anastomosis was performed. The significance of these figures is apparent, for posterior gastrojejunostomy has undoubtedly been performed much more frequently than the anterior operation, yet fewer cases of jejunal ulcer have occurred following it. The further down the jejunum that the anastomosis with the stomach is made, the greater is the probability of development of jejunal ulcer; hence the greater number after the anterior operation because of the longer loop employed. A posterior gastro-enterostomy with entero-anastomosis, or a Y operation, means deprivation of neutralizing agents to that portion of the jejunum attached to the stomach.

Just what element in the gastric juice is necessary, we are as yet unable to say. None of the reported cases give sufficient data as regards gastric analyses before, during and after the occurrence of jejunal ulcers. In a few cases, hydrochloric acid was almost entirely absent. Whether or not infection is a necessary concomitant is also a debated question. The fact that a considerable portion of the reported cases were marginal, that is, involving both the stomach and jejunum at the point of anastomosis, and the further fact that retained sutures have been found at the anastomosis, lend weight to the idea that the nonabsorbable suture is much to blame.

REPORT OF CASES

The following three cases have not been previously reported:

CASE 1 (7464).—Mr. J., aged 32, entered the University of California Hospital, June 4, 1914, with the history of a posterior gastrojejunostomy performed elsewhere three and a half years previously for pyloric obstruction. For twelve years he had had much gastric distress, often relieved by taking food or sodium bicarbonate. Eight years before admission, he had very severe acute abdominal pain which was in all probability due to a perforated ulcer of the duodenum, in view of the later operative findings. Vomiting had been a prominent symptom previous to the gastro-enterostomy. For two years after the operation he had been quite well, but a recurrence of his old symptoms had led to the performance of a second gastrojejunostomy, and he was told that the previous opening had almost entirely closed. The complaint which brought him to the hospital was pain, felt a few centimeters to the left of the umbilicus, and loss of weight and strength. Palpation revealed tenderness over the pain area. The roentgen ray disclosed a six-hour stasis in the jejunum just beyond the anastomosis opening and a closed pylorus. Dr. W. C. Alvarez, who had previously seen the patient, made a diagnosis of probable ulcer of the jejunum. At operation, June 12, after the freeing of many adhesions of the upper abdominal viscera, it was found that we were dealing with an ulcer in the efferent loop of the jejunum about 2 cm. from the anastomosis. The jejunum was firmly attached to the transverse colon at this point, and the ulcer had almost eroded through into the colon. The ulcer was excised, the raw surface on the colon was covered with a tag of omentum, and the open area of jejunum was made a part of the gastro-enterostomy by slightly enlarging the opening into the stomach. The internal suture was continuous silk, and the external was linen.

The patient remained fairly well for two months, when he had an attack of pain in the left side of the abdomen, followed in twelve days by hematemesis and the passage of bloody stools. Five months later he reentered the hospital with much the same complaint as before: epigastric distress, sour eructations and nausea, with occasional attacks of vomiting. Pain was often relieved by soda or food. Analysis of the stomach contents after a test meal revealed free hydrochloric acid 55, total acid 75. After the usual examinations, including the roentgen ray, a diagnosis of ulcer of the jejunum was made. At operation, Feb. 3, 1915, another ulcer of the jejunum was found in the afferent loop close to the stomach. This portion of the jejunum was excised and the proximal end implanted into the efferent loop, thus making a Y anastomosis. It was further found that the ulcer had perforated the wall of the jejunum posteriorly, the base being formed by the pancreas. The patient improved somewhat following the operation, but fourteen months later it was reported that he had died from intestinal hemorrhage. No necropsy was performed.

CASE 2 (8216).—Mr. O., aged 43, entered the University of California Hospital, Nov. 15, 1914, complaining of pain in the right lower abdomen and vomiting blood. A gastrojejunostomy had been performed a year previously at another hospital, there being found an old healed ulcer of the stomach near the pylorus with a recent ulcer in the second portion of the duodenum. The internal suture was chromic catgut and the external was linen, both being continuous. The pylorus was plicated. The patient remained well for only two months after the gastro-enterostomy. With the return of pain there was vomiting, and at one time a considerable amount of blood was vomited and also passed by rectum. The patient lost 30 pounds in weight. Examination revealed a tender mass 4 cm. to the left of the umbilicus; a test meal showed free hydrochloric acid 45, total acid 60; the Wassermann reaction was negative, and there was occult blood in the stools. A diagnosis of probable jejunal ulcer was made. At operation, November 16, a marginal ulcer was found nearly encircling the anastomosis; the lumen was thereby much narrowed and would just admit a finger tip. The pylorus was patent. It was felt that excision of those portions of the stomach and jejunum involved in the ulcer was unwise in view of the patient's poor physical condition, so a gastroduodenostomy was performed after mobilizing the third portion of the duodenum. The internal suture was made with chromic catgut and the external with linen. Recovery was without incident and at the last report the patient was all right.

CASE 3.—Miss A., aged 52, was referred to me in 1918 by Dr. Eliot Alden of Los Angeles, with a history of probable ulcer of the stomach extending back to the age of 25. In 1911, a posterior gastrojejunostomy was performed. Nine months later, pain began in the left colonic region, and in 1912, she had two hemorrhages, vomited blood and had tarry stools. In 1913, a pylorectomy was performed, but during the next four years there were attacks of pain to the left of the umbilicus and four more hemorrhages. A gastric analysis in 1915 revealed only slight acidity. Roentgen-ray examination, however, disclosed an unusual delay in the passage of barium in the jejunum just beyond the gastro-enterostomy opening. In view of the history of persistent pain to the left of the umbilicus, the frequent hemorrhages and the roentgen-ray findings, a diagnosis of jejunal ulcer was made and operation advised. This was carried out, Jan. 25, 1918. A gastrojejunal ulcer was found on the anterior wall with considerable distortion and contraction of the jejunum at that point. Excision of the entire ulcer and reestablishment of the anastomosis with tanned catgut sutures were carried out. Three months later the patient was operated on for acute gangrenous appendicitis. Two years later she had pain and tenderness in the epigastrium, which were diagnosed as recurrent ulcer, but the symptoms subsided promptly on an

1. Wright (Brit. J. Surg. **6**: 390, 1919) gives a list of nearly all reported cases. Other cases are recorded in Percy: Surg., Gynec. & Obst. **10**: 316, 1910. Carman, R. D., and Balfour, D. C.: Gastrojejunal Ulcers, Their Roentgenologic and Surgical Aspects, J. A. M. A. **65**: 227 (July 17) 1915.. Urrutia: Siglo medico **64**: 470 (June 30) 1917; abstr. J. A. M. A. **69**: 678 (Aug. 25) 1917. Coffey: Ann. Surg. **71**: 303, 1920.

ulcer diet. Whether she will again have jejunal ulcer is for the future to tell.

In none of the foregoing cases were any retained sutures found, although search was made for them. To me, the striking feature in the symptoms presented by these three cases and by many others from the literature was the pain and tenderness to the left of the umbilicus. The beginning of the jejunum is just to the left of the spine and at the level of the second lumbar vertebra, while the umbilicus is opposite the third or fourth lumbar vertebra; so I am inclined to believe that the tender area is similar in type to the Head zones. Thus the Mayo-Robson point is not directly over the gallbladder, nor is the McBurney point directly over the appendix, but the tenderness is referred to those points. May it not be that the pain from an ulcer in the upper part of the jejunum is referred to a point from 2 to 4 cm. to the left of the umbilicus?

The value of careful roentgen-ray studies in the diagnosis of these ulcers has been emphasized by a number of observers. Perforation of the jejunal ulcers either into the peritoneal cavity or into the transverse colon has been reported in some fifty-five cases, most of them previous to 1910, so that it is fair to presume that earlier diagnoses have been made in the later cases. In many of the reported cases of acute perforation, there was a history of chronic antecedent pain or discomfort.

CONCLUSIONS

As a result of my study of jejunal and gastrojejunal ulcers following gastro-enterostomy, the following conclusions are offered:

1. The exact etiology still remains in doubt; in all probability the principal factor is the diversion of acid chyme into a part of the intestine, which has less neutralizing power than the duodenum. The other factors of prime importance are trauma, especially from retained sutures or anastomosis buttons, and infection.

2. In view of the very few reported cases of ulcer of the duodenum following pyloroplasty or gastroduodenostomy,[2] it would seem wise to employ those operations in suitable cases.

3. Gastro-enterostomy should be performed with much care; clamps, if used, should be adjusted without traumatism of the viscera; only absorbable sutures should be used for the anastomosis.

4. Patients subjected to gastro-enterostomy should be instructed as to a suitable dietary, which should be continued for at least a year. In addition, antacids should be given if the gastric analyses seem to warrant their employment.

5. Patients should be urged to seek competent advice when pain returns.

240 Stockton Street.

ABSTRACT OF DISCUSSION

DR. J. SHELTON HORSLEY, Richmond, Va.: Jejunal ulcer following gastro-enterostomy is found in a small, but definite, percentage of cases. It is, of course, caused by the gastro-enterostomy. Without this operation it is almost never found. Undoubtedly, unusual trauma and the use of unabsorbable sutures favor its occurrence, but when catgut is used and no clamps are employed jejunal ulcer sometimes occurs. In large clinics it is estimated that it follows gastro-enterostomy in about 4 per cent. of cases. It seems reasonable to assume, therefore, that something in the altered physiology of the stomach is responsible for the jejunal ulcer. When a hollow viscus has always had alkaline contents and the reaction is changed to strongly acid, symptoms are produced. For every jejunal ulcer there are probably many cases of jejunal hyperemia which also produce symptoms. In one of my cases in which a gastro-enterostomy was performed, without clamps, a perforating jejunal ulcer developed on the mesenteric border opposite the stoma. The best results follow gastro-enterostomy when done for complete pyloric stenosis, and the alkalinity of the duodenal contents cannot be lowered by the passage of acid contents through the pylorus. So the unreduced alkalinity of the duodenal contents can better protect the jejunal mucosa at the gastro-enterostomy opening than if this alkalinity had been reduced by the passage of the gastric juice through the pylorus. It is common experience to get the best result in those cases in which there is cicatricial pyloric or duodenal closure; in this type gastro-enterostomy should be done. In other types pyloroplasty will cure the ulcer and in a few months the stomach will appear to be practically normal even on roentgen-ray examination.

DR. WILLIAM J. MAYO, Rochester, Minn.: In our experience gastrojejunal ulcer rarely occurs if fine catgut instead of silk or nonabsorbable sutures are used in performing a gastro-enterostomy. This has also been Moynihan's experience. Twelve years ago I reported seven cases of these so-called marginal ulcers. I have seen very few true jejunal ulcers, but I have no doubt that they occur. They do occur experimentally in animals. The ulcers I have seen have almost always been in the suture line. In two cases, nonabsorbable sutures worked through the abdominal wall and were removed from superficial abscesses. A very narrow layer of tissue should be turned in, and one should be very careful about the blood supply. It has been my misfortune to reoperate in some cases of gastrojejunal ulcer in which the ulcer had been excised. We now cut off the gastrojejunostomy, close the stomach and jejunum, and make a pyloroplasty after the method of Finney. We have seen gastrojejunal ulcer only three times among many hundred gastro-enterostomies in which catgut was used. Carman has shown that a roentgen-ray diagnosis of gastrojejunal ulcer can be made in more than 90 per cent. of the cases. Many of the patients coming back after gastro-enterostomy, with supposed relapses of the original ulcer, prove on exploration to have gastrojejunal ulcer with the original ulcer healed.

DR. A. J. OCHSNER, Chicago: The reason Dr. Mayo does not get jejunal ulcers following his gastro-enterostomies is not that he uses a certain kind of suture, but that he makes his gastrojejunal opening at the lowest point of the stomach so that there is no accumulation of acid gastric juice. In all the cases in which I have reoperated for jejunal ulcer there was a sacculation of the stomach. I have used silk in all my cases and my proportion of jejunal ulcer corresponds to Dr. Mayo's because I followed the principles he laid down twenty-five years ago.

DR. A. A. STRAUSS, Chicago: When a gastrojejunal ulcer occurs, the surgeon has really produced an experimental ulcer. The etiologic factors which produced the original ulcer are still present. Producing the trauma to the bowel and stomach, using silk sutures and cutting off the blood supply by inverting the edges of the bowel and stomach too much, furnish the ideal conditions for producing an ulcer experimentally, especially when the etiologic factor, the infection, is still present in the body. Experimentally, we have found that if an ulcer is produced, and a gastro-enterostomy is performed later, during the very active stage of the ulcer, quite frequently a gastrojejunal ulcer is found, when silk is used. On the other hand, when the gastro-enterostomy is performed later, when the ulcer is practically healed, we hardly ever find a gastrojejunal ulcer. No matter whether we believe that a certain particular type of streptococcus produces the infection, the important clinical fact is that every excised ulcer contains a large number of organisms. The trauma of gastro-enterostomy plus the original infection produces the gastrojejunal ulcer. I doubt whether the acid

2. Van Roojen: Arch. f. klin. Chir. **91**: 381, 1910.

conditions in the stomach play any rôle whatever in producing such an ulcer.

DR. W. I. TERRY, San Francisco: The acid chyme is the prime causative factor. Dr. Mayo brought that out in a different way. His therapy is to do a pyloroplasty. This means that he restores the acid chyme to the duodenum instead of allowing it to go back into the jejunum. That seems to me to be the logical treatment for these cases. The matter of roentgen-ray diagnosis is certainly very important.

AN IMPROVED TECHNIC FOR THE REMOVAL OF THE GALL-BLADDER

BASED ON AN ANATOMIC STUDY *

MOSES BEHREND, M.D.
PHILADELPHIA

The poor results reported by surgeons following cholecystectomy, especially in those cases in which the common duct has been the seat of injury and even destruction, can be readily explained by a study of the anatomic peculiarities in the formation of the ducts and blood vessels around the foramen of Winslow. Many of these peculiarities were illustrated in a paper published last year.[1] Further study along similar lines has revealed additional variations which are most important to remember in the performance of the operation of cholecystectomy (Figs. 11 to 25).

The operation is almost invariably performed by many surgeons within the gastrohepatic omentum by the so-called "closed" method. It is therefore not

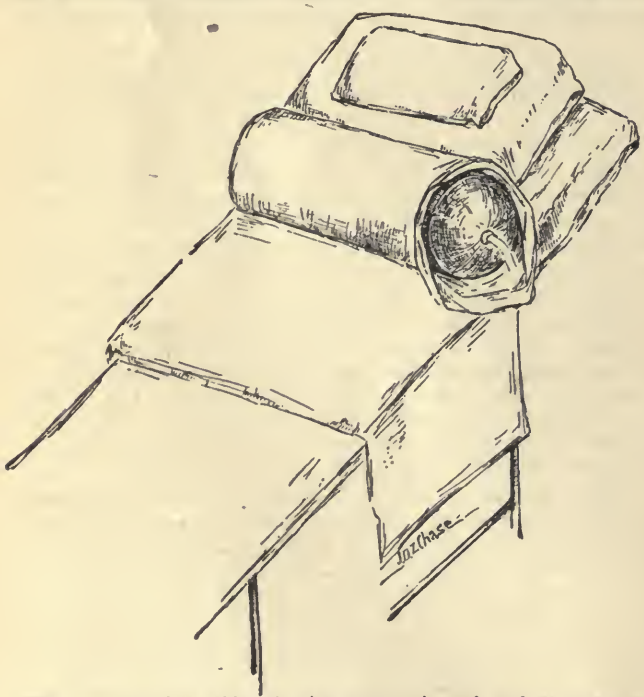


Fig. 1.—Operating table, showing pneumatic pad and arrangement of pillows.

suprising to see many cases of common duct trouble reported after a cholecystectomy. It seems to me that no one in the light of present information ought to perform this operation without a thorough knowledge of the anatomy of the parts in the region of the foramen of Winslow. Such experience can best be obtained in the anatomic laboratory where it is impressed on one that the proper way to perform the

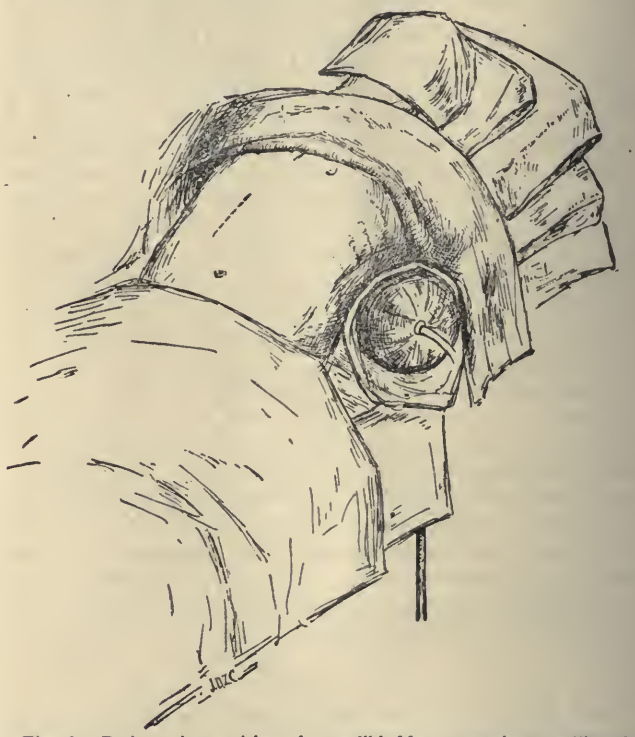


Fig 2.—Patient in position for gallbladder operation: gallbladder pad at border of ribs; straight or slightly oblique incision used at border of rectus muscle.

operation of cholecystectomy is by the "open" method, to be described in the text and by illustration. It is not claimed for this operation that it is new or original; but the fact remains that little cognizance of the proper method of the removal of the gallbladder has been taken.

THE OPEN METHOD

It is important that the patient be in the proper position for this operation. An air cushion which, when inflated, has the contour of a sand bag is placed at the border of the ribs. We use the air cushion in preference to the nonresisting bag because patients complain less of backache following the operation (Figs. 1 and 2). It has been observed that some operators perform this operation without the pad. We find that this prolongs the operation unnecessarily. An oblique incision is made in the epigastric region to the right of the median line. The handle of the knife is used to separate the fibers of the rectus muscle; the posterior sheath and the peritoneum are incised. A pair of Deaver's retractors raise the abdominal wall opposite the operator, and two or three large pads are placed over the stomach and intestine (Fig. 3). The position of the retractors is then changed so that they rest on the sponges, thereby pulling the stomach and intestine out of the way and making taut the gastrohepatic and gastrocolic omenta. Simultaneously the left hand grasps the liver and gallbladder, making traction on the gastrohepatic and gastrocolic omenta in the opposite direction (Fig. 5). The right free border of the gastrohepatic omentum is then opened (Fig. 6), and the ducts and blood vessels are exposed to view.

* Research work done at Daniel Baugh Institute of Anatomy, Jefferson Medical College; clinical work, at Jewish and Mount Sinai hospitals.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Behrend, Moses: The Failure of Surgery on the Extrahepatic Biliary Passages, J. A. M. A. 73: 892 (Sept. 20) 1919.

The cystic duct is always separated from its bed before its ligation; the insertion of the cystic duct into the common duct is noted, and it is ligated close to the common duct, after it is caught with the cystic duct forceps. The proper curve of these forceps is of the greatest importance in expediting the completion of the operation. The cystic artery is always ligated close to the gallbladder (Figs. 7 and 8). Any variations from the normal can be at once detected by this open method of operating. As soon as the cystic duct is severed, the gallbladder is stripped from its bed. The bed is then sutured, and a small caliber drainage tube is always placed at the site of operation (Figs. 9 and 10). The tube is left two or three days for the purpose of taking care of any leakage that may occur from the slipping of a ligature.

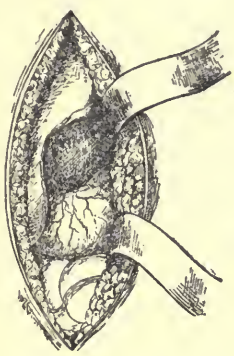


Fig. 3.—Retractors raise abdominal wall, revealing liver, gallbladder, stomach and colon.

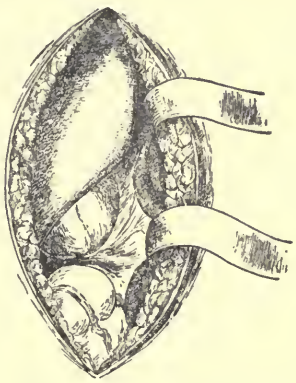


Fig. 4.—Pads in position; position of retractors changed to include the pads; stomach and portion of intestine pulled away from field of operation.

The gallbladder is generally removed from below upward. It really makes very little difference whether this is done from below upward or from above downward as long as we expose the cystic duct and the cystic artery and note their course. Up to 1902, the Mayos and Moynihan used the latter method; but after this date they advised that the operation be performed from below upward. Seelig[2] still advocates this method. The most logical method, however, would be from below upward, on account of attacking the blood supply first. It also simplifies the operation to remove the gallbladder from below upward because with the left hand tension is made on the gallbladder, bringing into view the right free border of the gastrohepatic omentum; and when this is opened, the cystic duct is readily visualized. The importance of using the left hand properly must be impressed on all, as this contributes greatly to the speedy removal of the gallbladder.

The method of double ligation of the cystic duct, as recommended by Andrews,[3] is unnecessary if we observe the precaution of opening the gastrohepatic omentum.

Although the credit of the first operation performed on the gallbladder belongs to Bobbs (1867), the first cholecystectomy was performed by Langenbuch[4] (1882). Petit, in 1743, operated on the gallbladder; he was followed by Herlin, L'Anglos and Duchainois. They attempted cholecystectomy but never completed the operation. They experimented on animals, tying the cystic duct and removing the gallbladder. Thiem,[5] in 1889, and Kummel,[6] in 1897, warned the profession about isolating the cystic duct before its ligation; but these men and many others that followed have not been specific enough as to the details of their operation. Praeger[7] palpated the cystic duct and removed it, a procedure not sufficient in itself, because one must see what one is doing to prevent complications.

A knowledge of the anatomic relations of the cystic duct is important in cases with a duodenal insertion, particularly those in which the common duct is hardly divisible as a distinct entity on account of the closeness of the insertion of the cystic duct into the duodenum (Fig. 11). These are cases that give symptoms of a pseudo gallbladder if the cystic duct is not ligated close to the common duct. Weeks,[8] contrary to our rule, tied the cystic duct as high as possible. It is especially important to visualize the cystic duct where it inserts on the ventral and inner aspect of the common duct because in these cases the cystic duct is in close relation to the hepatic artery (Fig. 15). It is also important to visualize the cystic duct where it is short and swollen on account of the edema from the surrounding inflammation. It is easy in these cases, if one does not perform the open method of operation, to include the common duct in the ligation. This we have demonstrated at the operating table while performing a cholecystectomy. Only recently several patients were operated on who illustrated various types of pathology, emphasizing the



Fig. 5.—Left hand grasps gallbladder and liver, and with retractors the gastrohepatic and gastrocolic omenta are made tense. Gloved hand not shown above.

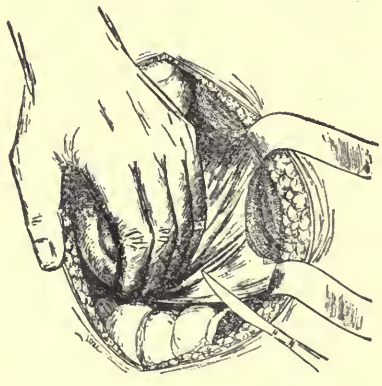


Fig. 6.—Right free border of gastrohepatic omentum opened. Note especially position of left hand, retractors and incision.

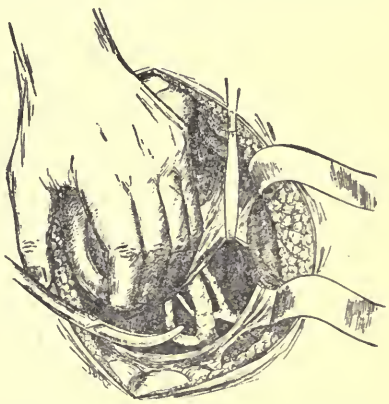


Fig. 7.—"Open" method of operation: Ducts and blood vessels revealed, cystic duct forceps in position. Note exact curve of forceps.

2. Seelig, M. G.: Surg. Gynec. & Obst. **25**: 45-54 (July) 1917.
3. Andrews, E. W.: Surg. Clin., Chicago **3**: 237 (April) 1919.
4. Langenbuch, C.: Berl. klin. Wchnschr. No. 48, pp. 725-727 (Nov. 27) 1882.
5. Thiem, C.: Verhandl. d. Deutsch. Gesellsch. f. Chir. **18**: 92, 1889.
6. Kummel: Deutsch. med. Wchnschr. **23**: 353, 578, 592, 1897.
7. Praeger, E. A.: Montreal M. J. **18**: 881-885, 1889-1890.
8. Weeks: Tr. Am. Surg. Assn. Philadelpiha **13**: 347-350, 1895.

importance of the open method. The common duct could have been easily ligated on account of the edema mentioned above making the cystic duct so short as to resemble the common duct; in another case the ampulla of the gallbladder was adherent to the common duct; and until separated from the latter

The hepatic artery must be avoided because our experiments on animals have shown that ligation of this important vessel will result in death.

The changes occurring in the liver resemble those of acute yellow atrophy. Mention is simply made here of this fact because many obscure deaths follow



Fig. 8.—Gallbladder removed; cystic duct ligated close to common duct; cystic artery ligated close to gallbladder.

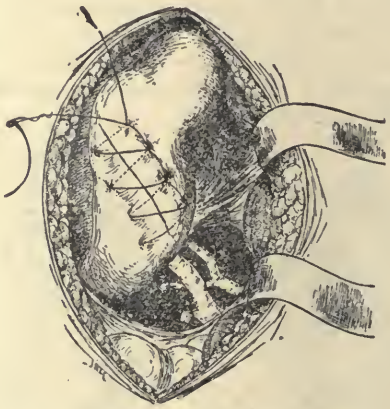


Fig. 9.—Gallbladder bed brought together with continuous mattress suture.

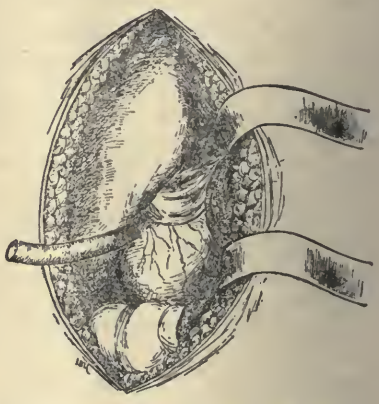


Fig. 10.—Rubber tube placed near site of operation.

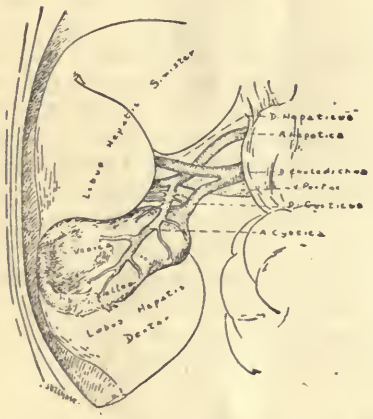


Fig. 11.—A remarkable cystic artery; its size and its numerous branches should be noted.

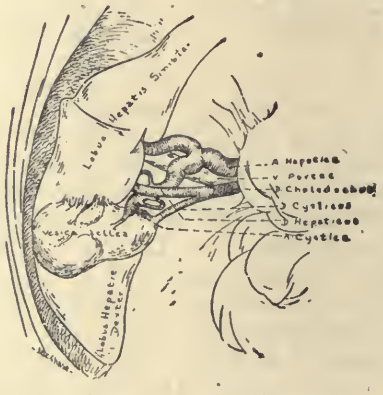


Fig. 12.—Great caliber of cystic artery.

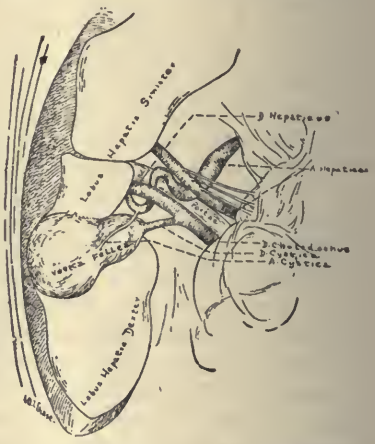


Fig. 13.—Double hepatic artery, one in close relation to the cystic duct.

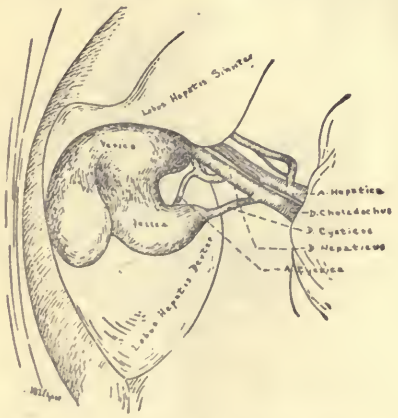


Fig. 14.—Accessory hepatic arteries.

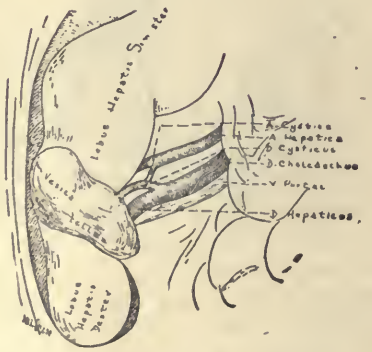


Fig. 15.—Ventral insertion of cystic duct.

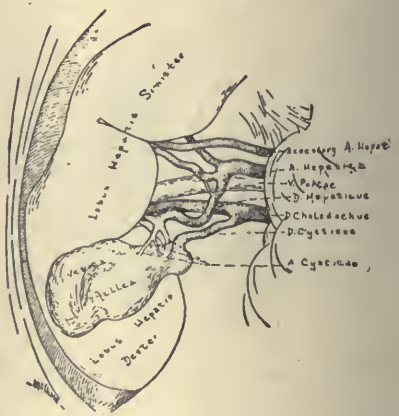


Fig. 16.—Duodenal insertion of the cystic duct; accessory hepatic and cystic arteries.

and until the right free border of the gastrohepatic omentum was opened, it was impossible to distinguish the cystic duct from the common duct. In still another case the gallbladder was so large and the ampulla extended over such a wide area that the structures around the foramen of Winslow were hidden from view. I could cite many more cases to illustrate this point.

a supposedly fine technical operation. One often hears a report of a case of cholecystectomy in which the patient should not have died, but for some unexplainable reason does so. After ligation of the hepatic artery the patient may do well for a week, when gradually there will be signs of inanition, followed by gradual loss of strength, and finally death. Another communication will be made on this subject

after the completion of the experiments. Suffice it to say here that this is another plea for the open operation.

Recently we encountered at operation a hepatic artery which was in close relation to the cystic duct. It curved over the hepatic duct, and dipped down

CONCLUSION

It may be stated that the operation of cholecystectomy has lost all of its barriers to a successful result if we perform this operation strictly along anatomic lines. The convalescence of these patients is far superior to those of the old operation of chole-

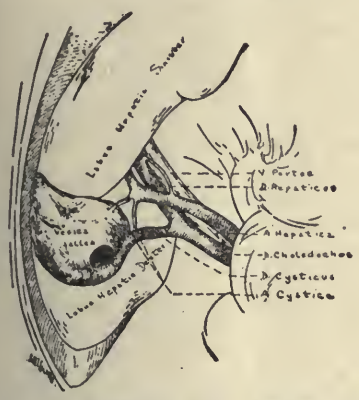


Fig. 17.—Accessory cystic arteries. Note artery to the hepatic duct. Lymph gland shown near insertion of cystic duct, enlargement of which may cause obstruction.

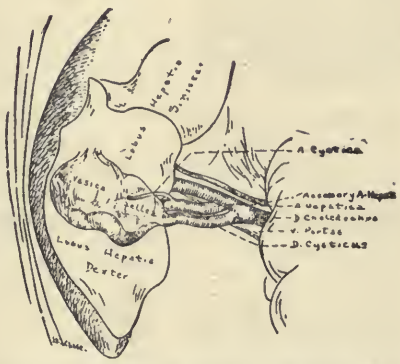


Fig. 18.—Accessory hepatic arteries, the larger of which runs parallel to the cystic duct.

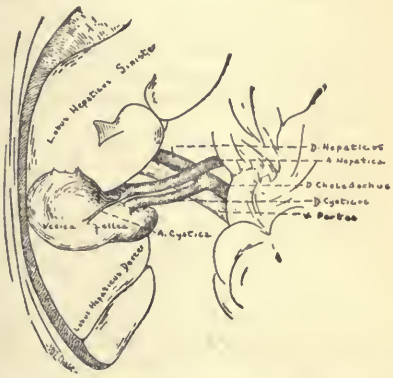


Fig. 19.—Hepatic artery running parallel to the cystic duct: a dangerous type at operation.

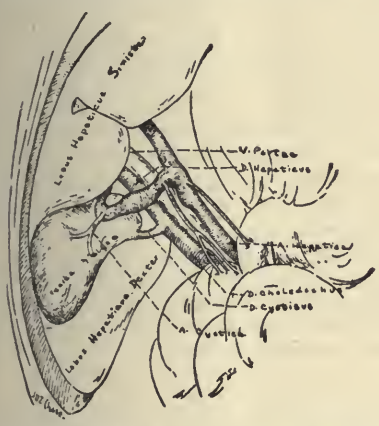


Fig. 20.—Hepatic artery in close relation to the cystic duct; accessory brauches to the stomach and duodenum.

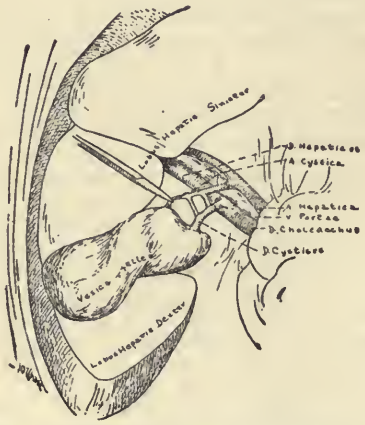


Fig. 21.—Accessory cystic arteries.

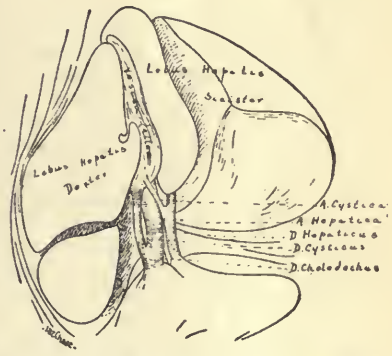


Fig. 22.—Peculiar conformation of gallbladder and ducts in their vertical position.

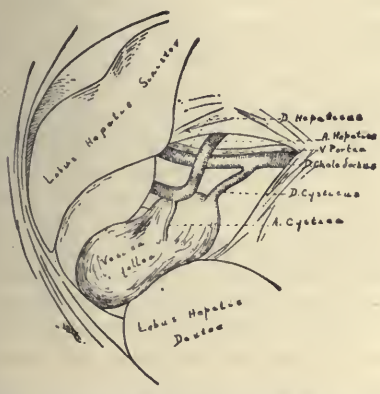


Fig. 23.—The hepatic artery courses over the hepatic duct, and it is in close relation to the cystic duct and the gallbladder.

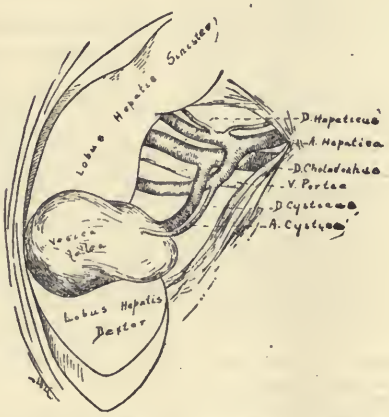


Fig. 24.—A caudal cystic artery: Note the size of the hepatic artery and its relation to the common duct.

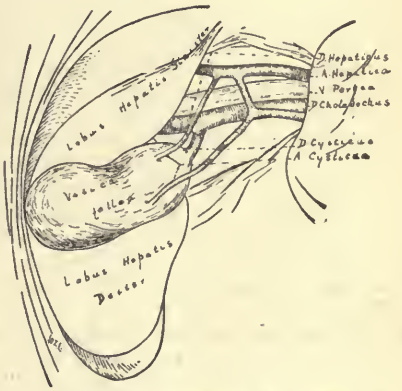


Fig. 25.—Case illustrating a caudal and cephalic cystic artery.

under the hepatic duct to enter the liver. The cystic artery was insignificant (Figs. 13 and 16). When operation is performed within the omentum in cases of this character, there is often severe hemorrhage because the hemostat does not completely compress the entire circumference of the vessel. Then, on account of one's haste in attempting to secure hemostasis, important structures are destroyed.

cystostomy; however, I would admonish those who are not familiar with the points as outlined above to perform cholecystostomies. The complications will be less and the mortality will be greatly reduced.[9]

9. In addition to the references already given, the following will be found of interest:
Judd, E. S.: Surgery of the Gallbladder and the Biliary Ducts, J. A. M. A. **71**:79 (July 13) 1918.
Kleiber, A.: Greifswald, 1892.

ABSTRACT OF DISCUSSION

DR. ALFRED C. WOOD, Philadelphia: Every operation should be based on anatomic and physiologic considerations. The importance of accuracy in surgical work needs no argument, and in this particular Dr. Behrend's operation is a definite step in advance. Ligating structures *en masse* should be avoided, except when it is absolutely unavoidable. I wish to commend particularly Dr. Behrend's careful description of the exact manner in which the patient should be placed on the operating table. The final result in these cases is usually most satisfactory. A clean cholecystectomy is followed by a very rapid convalescence and a very high percentage of permanent cures.

DR. J. B. HAEBERLIN, Chicago: The crucial point in this operation is good exposure. In very fat individuals the best incision is the Bevan incision. The cystic duct may be ligated and cut at any point that is normal. If it is normal it can be tied one-half inch or 1 inch from its junction with the hepatic duct. It is important not to tie the hepatic duct. At times the gallbladder has been dilated frequently and collapsed; It is large and sacklike, and close to where the cystic duct comes off is an ear formation. In dissecting from above downward bring traction on this pouch or ear formation so that the cystic duct can be reached easily. In regard to the treatment of the pain after the gallbladder is taken out: Richter of Chicago devised a method in which the peritoneum is laid down, not sutured tightly, to allow space underneath and the peritoneum grows to the denuded surface. Closing the wound by primary union whenever possible is the ideal method.

DR. M. J. SEIFERT, Chicago: The essayist advised severing the gallbladder as near to its origin as possible. If a cystic stump is left long, it will often develop and take the place of the gallbladder and subsequently gallstones may be found in it.

DR. JOHN J. GILBRIDE, Philadelphia: Most of the accidents encountered in surgery, whether of the biliary passages or anywhere else, are frequently caused by poor exposure of the parts involved. In an ordinary, simple, case of cholecystectomy one would not have any difficulty, but in some long standing cases, where the right upper abdomen is a pathologic laboratory one cannot be too careful. We are concerned not only with primary recovery, but permanent cure.

DR. E. P. QUAIN, Bismarck, N. D.: For a number of years I have made the transverse incision for practically all biliary surgery. It causes less permanent anatomic damage than any other incision. It is anatomically correct. It leaves an almost invisible scar. The longitudinal incision destroys the intercostal nerves. This aids in the formation of hernia and the peritoneum is more likely to invite permanent adhesions than is a normally innervated peritoneum. The transverse incision does sever the rectus muscle transversely, but this is of no consequence; the cut ends of the muscle are easily reapproximated, and even when they are not sutured, they generally come together from a slight overlap of the aponeurosis and from a physiologic relaxation following trauma. The exposure gained by this incision is excellent, the incision being parallel with the common duct and lying over the pylorus. The appendix has been removed by me through the same incision in 30 per cent. of the transverse incisions made for biliary disease. Postoperative hernia has been conspicuous by its absence in more than 600 cases. Another point of importance: the patients suffer less postoperative pain and distress after a transverse than after a longitudinal incision. This is no doubt due to the fact that fewer intercostal nerves have been traumatized in the former than in the latter.

DR. H. M. RICHTER, Chicago: The multiplicity of anomalies met with by Dr. Behrend in 167 sections suggests that they are of little importance or our accidents would be far more numerous. That the displacement of the hepatic artery is not frequently followed by its ligation or section is obvious from the absence of necropsy findings. The ligation of the cystic duct need not be close to the common duct, the literature to the contrary dealing mainly with the cases in which stones or pieces of gallbladder have been left behind. Enlargement of the cystic duct as part of the general enlargement of the duct system is of no importance. Its mucous membrane is analogous to that of the ducts and not to that of the gallbladder. Neither the cystic duct stump nor the raw surface of the liver should be covered by peritoneum, first, because if infected, the peritoneum will better care for it than the retroperitoneal tissues; second, because it is unnecessary to cover the raw surface, and when the attempt is made the peritoneum is lifted from the raw surface leaving a triangular space behind it. The quilting procedure described was attractive, but the gallbladder occupies a depression, and when sutured the little flaps of peritoneum do not lie back against the liver. The adhesions following cholecystectomy are due more to the drainage material commonly used than to the raw surface left exposed.

DR. MOSES BEHREND, Philadelphia: Dr. Wood brought up an important point, that the cystic duct and artery must not be ligated *en masse*. Many good operators do this. It is a mistake. No matter how many kinds of incisions you have, if you follow out this technic and open up the gastrohepatic omentum you will never get into trouble. This operation can be done so expeditiously that it takes practically no time, from the first incision to completion of the operation. It would be much better for those who are not versed in the anatomy of this region to do a cholecystostomy instead of a cholecystectomy, as it would lessen the frequency of common duct obstruction. Drainage is necessary. Why subject a patient to a second operation if you can prevent this by putting in a small drainage tube for two or three days? The operation is done from below upward. If you do the operation from above downward you get the main bleeding from the liver and it is annoying. It will prolong the operation unnecessarily by attempting to eliminate that bleeding. It is not necessary to cover the stumps of the cystic artery and duct. The only reason the liver is sutured is to get the peritoneum in apposition to prevent adhesions. I take issue with Dr. Richter that these anomalies are by no means important. They are of tremendous importance. You have met with cases in which the hepatic or common duct has been destroyed. If these variations are borne in mind, injury to the common and hepatic duct can be prevented. Accidents are due to the fact that more of these anomalies are not borne in mind when the operation is done.

STUDY OF NUTRITION AND MENTAL DEVELOPMENT IN CHILDHOOD

PRELIMINARY REPORT OF WORK DONE BY THE BOARD OF EDUCATION IN THE PUBLIC SCHOOLS OF CHICAGO

KATHARINE B. RICH, M.D.

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EVANSTON, ILL.

The increasing cost of living, sending more and more children aged 14 into the ranks of the workers, caused the Employment Certificate Bureau of the Chicago Public Schools, to which the children must apply for working certificates, to make the startling discovery that:

1. Fifty-three per cent. of the children of 14 applying for employment certificates were from 7 to 21 per cent. below the average child of that age.

2. These children, when they were employed, could not carry their normal amount of work.

3. Because of this they lost their jobs, became discouraged and gravitated into becoming rolling stones, thus easily falling a prey to vicious and criminal companions.

All of these children were undernourished. Was this the cause and, if so, was it the only cause of their failures?

To determine this, the board of education, through the special interest of Dr. Sadie Bay Adair, one of its members, resolved to carry out a number of experiments through the employment certificate bureau to ascertain the effect that direct nutritional work would have on preindustrial children in giving them the requisite bodily fitness for the labor they must perform.

The program, as devised, included rest, proper food and direct instruction on health and nutrition so that the children might intelligently cooperate. The question immediately arose as to the best methods. Previously, nutritional methods used with undernourished children were based chiefly on the correct weight for the height, assuming that cases of underheight came strictly under the range of medical practice or were a matter of nationality. The requirements of the employment certificate bureau, however, were such that the work of the board of education had to be based not only on the weight for age but also on the weight and height for age. To meet the standard, the child of 14, in order to obtain a working certificate (with a few exceptions), must measure 57⅕ inches in height and weigh 80 pounds.

The work was begun about eight months ago in the public schools in the face of many obstacles. The attitude of the parents and the apathy of the children was no small factor in the way. Questions of cost arose, and objections as to real benefits that would be obtained sprung up in the minds of those who had to bear the financial burden of the undertaking; for supplies had to be procured; cots and blankets for rest periods had to be purchased; milk had to be obtained; help had to be obtained, and the school proposition was doubly difficult because the help and the teaching had to be given first to the children. Until parents understood the full significance of the work, they would not cooperate. To become heartily in favor they must see some actual results and realize the *wage* value of the child's gain; for in the beginning the child is offered something he does not want, and the parents must be made to see the economic worth of the work to their own pocketbooks.

For this reason, five public schools in both foreign and native localities were selected for the experimental work. Some interesting and startling facts have been learned with regard to the comparative value of native and foreign diets. This will be gone into more fully in our later statistical report of the year's work.

Two classes were first established. These slowly increased to twelve as interest grew and the possibilities began to develop. Twenty children formed a class. The number grew from forty to 220. Five rooms in one "open-window" school have been treated as nutrition units. These children, because of their tendency, have had milk, rest periods on cots, noonday lunches and graduated physical exercises under a director. In another school the children have been given milk but no rest periods; in another, neither milk nor rest periods: simply instruction to be carried out at home. Two classes in closed (regular) rooms have been given milk and no school rest periods. All these methods have been used in an endeavor to find out the method that will give the best average results.

One child sent to the clinic by the public employment bureau was 2 inches underheight and 10 pounds underweight. In four months he has gained 2⅕ inches in height and weighs 84 pounds. There are a number who have made equal gains. One "open-window" room treated as a unit gained not only the normal weight for a definite period, but 64 per cent. over. Some children have gained 3½ pounds a week.

One of the interesting points this work has brought out is that underweight previously was thought to result largely from bodily defects—diseased tonsils and teeth, adenoids, flatfoot, etc.—and hence was strictly a medical question. In this work, however, we have found that as the children gain in weight they appreciably gain in height without any medical care whatever. Is this because metabolism is bettered, or can the preponderating factor be determined?

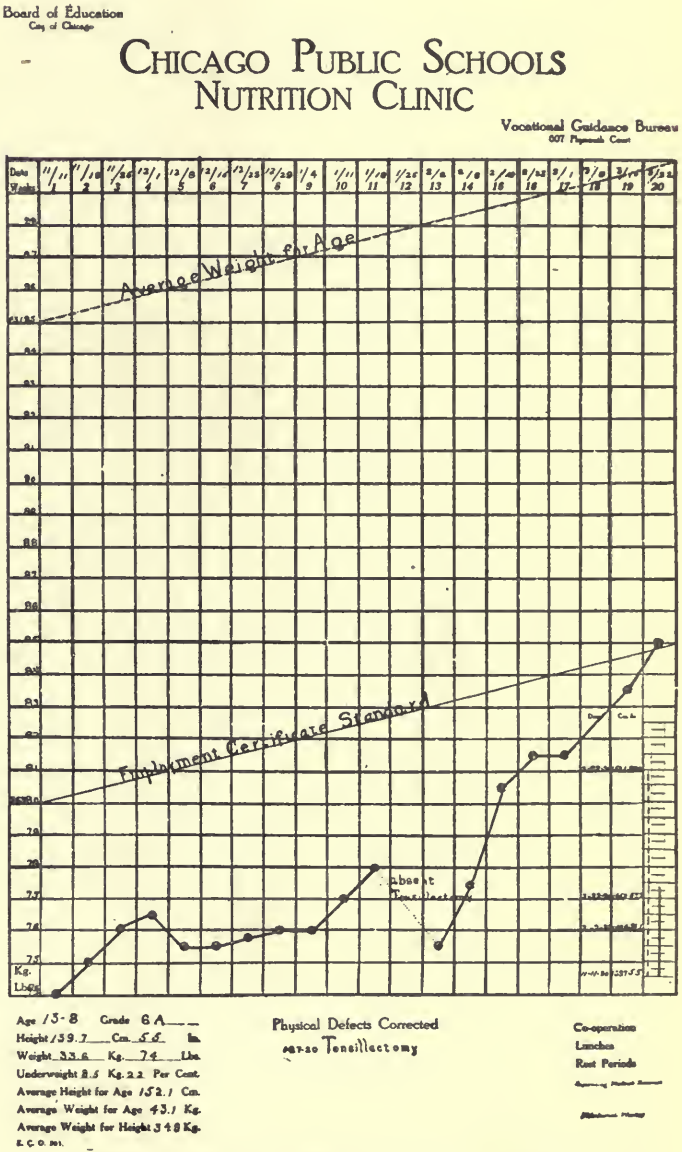


Chart used in nutritional class work in Chicago public schools, giving complete record of each child. Line of average weight for age corresponds with dash line on the "thermometer" at lower right of chart. Solid line at bottom indicates weekly gains and corresponds with heavy line on "thermometer," indicating gain in height.

Another point is that in the prevocational period the problem is better handled in the public schools because of the background of authority. Instructions by the physician and nutritional workers are more likely to be followed, and the parents soon learn to recognize both the physical and the economic value of the work. The younger children are more successfully handled in dispensaries or children's clinics where the mothers bring them because they recognize that they need help. In

this way the parents' cooperation in any necessary procedure is ready and willing.

It is to the child's best interest not to go to work, but to continue its schooling. Undernourishment hinders its best mental effort. The economic advantage from this point gained cannot be urged too strongly.

The procedure so far tried out has three features:

1. A chart has been prepared to meet the needs of both the public schools and the employment certificate bureau. This is reproduced in another column. It has been formulated in such a way that comparative gains both of height and weight are seen at a glance. We believe that this is a distinct advance over methods previously used.

2. Postals are sent to the parents each week letting them know the loss or gain in weight. The interest this awakens and the friendly rivalry between mothers is shown by the fact that if the cards are not received they are promptly asked for.

3. A certificate of graduation (filling the requirements of the employment certificate bureau) is given each child. This is signed by the physician in charge, the nutrititional worker and the principal of the school. It is presented with the other papers (birth certificate, etc.) to the employment certificate bureau when the child applies for its working certificate. This gives it a dignity at once and causes the document to be highly prized.

Many children who intend going into high school want to work during the vacation period. They cannot do it without a full working certificate. It is required just the same as though they were going to work permanently. It can be seen that results depend largely on the enthusiasm and loyalty of the nutrition workers. We have been particularly fortunate in those we have had help us. A knowledge of psychology is necessary also in handling various cases, as the approach must be made from a different angle as they develop. One boy who had been especially hard to interest came bashfully up to the physician in charge and standing on one foot and twisting his cap in his hands said:

Say, dere's a guy over dere dat needs dis work bad. He's 20 pounds underweight. Can't you let him into de class?

Well, you know, we have room for only twenty in a class. Now if you do your best, take your exercises and do as we tell you, you can gain enough to get out of the way and make room for him. Will you do it?

Thus stimulated, with a direct object to gain for a "pal," it wasn't long before a proud boy brought up his friend to gain the advantages he himself had obtained from the public school nutrition work.

1924 Sherman Avenue.

Health Supervision of the Schoolchild. — Dr. Taliaferro Clark, speaking before the American Child Hygiene Association, Nov. 11-13, 1919, said that the number of cases of malnutrition, the number of physical defects, and the number of cases of feeblemindedness which are encountered in schools are an index of the thoroughness of the supervision exercised during the age periods previous to entrance into school. His conception of school hygiene, however, is not primarily the detection and correction of remedial defects, but the placing of the normal child in an environment and under such supervision best suited to his complete physical and mental development. Any program for school hygiene or health supervision of the schoolchild must take into consideration the physical surroundings of the child, and must place the child in the best possible sanitary environment during the course of its school life. It must, by reason of the incompleteness of the work done previous to school age, provide for the seeking out and correction of the remediable defects which hamper the child and prevent it from taking full advantage of the educational opportunities, but in addition must include measures for preventing the occurrence of defects.

CONGENITAL HYPERTROPHIC PYLORIC STENOSIS

REVIEW OF ONE HUNDRED AND SEVENTY-FIVE CASES IN WHICH THE FREDET-RAMMSTEDT OPERATION WAS PERFORMED *

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Before taking up the subject matter of this paper, I wish to call attention to an error that has crept into the literature involving the question of priority in the use of extramucous pyloroplasty. The value of this procedure in the operative treatment of hypertrophic pyloric stenosis was first called to our notice at the Babies' Hospital in 1914, and very shortly afterward it was adopted as the routine operation in these cases. Without properly verifying references we attributed the method to Rammstedt, as had been done by other surgeons. The mistake was not realized until some years later, when Dr. Alanson Weeks of San Francisco called my attention to it. After a careful search of the literature, I find that Dr. Weeks is correct, and that Fredet,[1] a French surgeon, deserves credit for the essential feature of the operation, that is, longitudinal incision of the serous and muscular coats of the pylorus, thereby liberating, but not opening, the mucous layer. This surgeon then converted the longitudinal incision into a transverse one by suturing. Two years later, in 1910, Weber [2] of Germany recommended the same procedure, calling it partial pyloroplasty, and stating that after he had performed this operation he found it had been previously employed by Fredet. In 1912, Rammstedt [3] called attention to the advantages of Weber's procedure, but advised omission of the transverse suture and suggested leaving the pyloric wound gaping. As this modification has been adopted by most surgeons using the extramucous or partial pyloroplastic operation, Rammstedt should receive credit for the suggestion, and the operation styled the Fredet-Rammstedt operation.

All patients with hypertrophic pyloric stenosis on whom I have operated, according to the method just mentioned, from 1914 to January, 1920, are included in this report. At the Babies' Hospital, 165 operations were performed; at St. Luke's four, and the remainder in other hospitals. There were thirty deaths in the series, giving a mortality of 17.1 per cent. The results, judged purely from a statistical point of view, are disappointing; and yet a study of the records brings out the fact that the mortality in patients coming to operation in four weeks or less from the date of the onset of symptoms was only 8 per cent. The rule of classing all deaths in the hospital following operation as operative deaths is strictly adhered to, even though several babies died from two to four weeks after operation, and had apparently made a satisfactory recovery. If this rule was generally adopted in recording results, statistics would be of more value. Eighteen babies died in collapse in from three to seventy-two hours. It is only fair to state that all were in extremely poor condition, and that many of them could easily

* Read before the Section on Surgery, General and Abdominal, at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Dufour, H., and Fredet, P.: Rev. de chir. **37**: 208, 1908.
2. Weber, W.: Berl. klin. Wchnschr. **47**: 763, 1910.
3. Rammstedt, C.: Med. Klin. **8**: 1702, 1912. Zentralbl. f. Chir. **40**: 3, 1913.

have been classed as hopeless and operation refused; but as we felt that surgical intervention offered the only chance of recovery, they were given the benefit of the doubt.

The average age of this group was nine weeks, with a history of symptoms for more than five weeks. The weight averaged 6 pounds—a loss of more than 2 pounds each—amounting in several instances to more than one third of the body weight. Postmortem examination was negative in every case. Four deaths occurred in from ten to twenty-six days after operation. In two instances necropsy disclosed acute gastroenteritis; but in the other two, findings were negative and for want of a better diagnosis they were called marasmus. The remaining eight deaths were due to complications, and can be charged, with probably one exception, to bad technic or poor judgment. Five of the eight died of general peritonitis in from eight to ten days. Two of these deaths occurred early in the series in cases in which the operation was modified by passing a bougie through the pylorus by means of a small opening in the anterior wall of the stomach. A third occurred in a case in which the duodenum was accidentally opened, although no evidence of leakage was found at necropsy. In the remaining two, no explanation can be offered for the development of peritonitis other than faulty technic.

In passing, it might be well to call attention to the fact that peritonitis was not suspected in at least two instances, as the symptoms were not classical, and for this reason one should be guarded in giving the cause of death after operation in infants as collapse, inanition, etc., unless proved by necropsy. Hemorrhage was responsible for the death of three of the patients. One died in twenty-six hours as a result of bleeding from the pyloric wound, one apparently a true hemophiliac, died on the third day of continuous oozing from the pylorus and abdominal wall, and in the third, with a history of symptoms for twelve weeks, death occurred on the third day following delayed hemorrhage from the abdominal wound. While the amount of blood loss was small, no doubt this accident hastened the fatal termination. In only one case was there evidence at necropsy to indicate that the operation was inadequate, so far as relieving the obstruction was concerned.

The diagnosis of hypertrophic pyloric stenosis is based on the history and physical findings. As vomiting, usually forcible in character, is the first sign that attracts attention to the disease, the onset should be considered as dating from the appearance of this symptom. Loss of weight, more or less rapid according to the severity of the condition, immediately follows. The size and character of the stools vary with the amount of food passed through the pylorus. When the abdomen is inspected, visible peristaltic waves situated in the epigastric region and passing from left to right may be seen in practically every case.

While waves of this character are observed occasionally in conditions other than hypertrophic pyloric stenosis, in only one of our proved cases of this disease was this physical sign lacking, and for that reason we consider it of great diagnostic value. By gentle but deep palpation, the so-called tumor consisting of the hypertrophied circular muscle fibers of the pylorus may be felt to the right and above the umbilicus, or at times high up under the liver or even in the middle line just below the ensiform. This tumor varies in size from the terminal phalanx of the little finger to that of the thumb, and gives an almost cartilaginous sensation to the finger even through the abdominal wall.

Just before the abdomen is palpated, the stomach should be emptied of gas by the passing of a small catheter, and the abdominal muscles relaxed by allowing the baby to suck water from a bottle during the manipulation. If these points are borne in mind, the hard, movable nodule at the pyloric end of the stomach can be felt with little difficulty in nearly every case. Occasionally it may be necessary to give a few whiffs of ether or ethyl chlorid to secure satisfactory relaxation of the muscles.

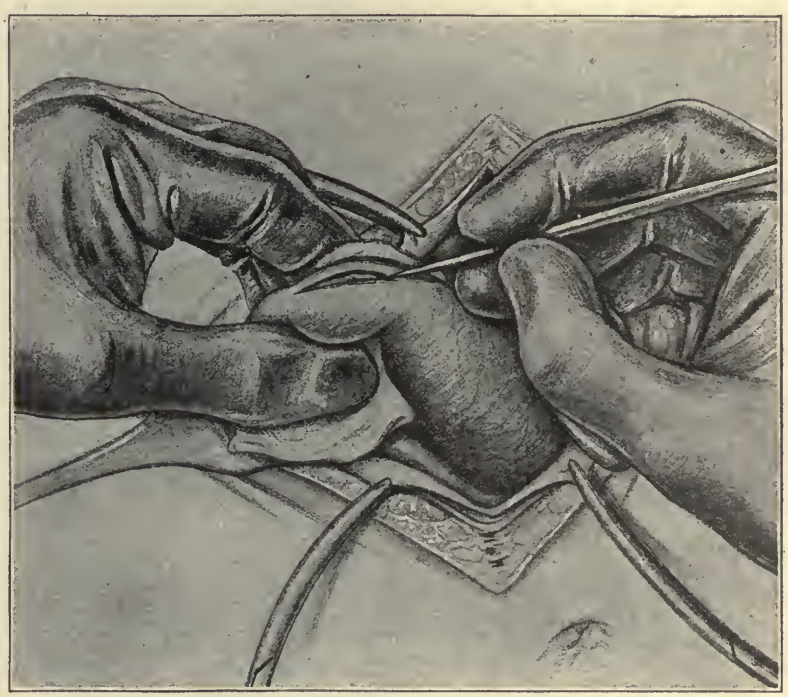


Fig. 1.—Line of incision extending through serous coat and superficial fibers of circular muscle.

The question of feeling the tumor in these cases has given rise to no end of discussion. Undoubtedly, there is a certain knack to the procedure; but if the nodule is once felt distinctly, the chances of recognizing it increase in each succeeding patient examined. In only two out of 217 cases (including thirty-one gastroenterostomies) which I observed and in which I operated up to April 1, has the anteoperative diagnosis of a tumor at the pylorus proved incorrect. In one of these, a small freely movable right kidney was mistaken for a pyloric tumor, but in the other no satisfactory explanation could be given for the mistake. Both occurred some years ago. I myself believe that it is extremely important to develop the ability to feel the tumor in these cases, as its presence is conclusive evidence of the disease. With this finding along with the usual symptoms of projectile vomiting, loss of weight, peristaltic waves, gastric retention, etc., the diagnosis has been proved correct in more than 99 per cent. of our cases, and for this reason we have not

thought it necessary to resort to the roentgen ray as a means of diagnosis in the average case of pyloric stenosis. Many of these babies were admitted to the hospital in such poor condition that immediate operation seemed to offer the only means of saving life. Certainly a delay of from four to eight hours or longer for fluoroscopy or roentgenograms was not warranted when the diagnosis could be established with almost absolute precision if the history was correctly taken and a proper physical examination made. I know of at least one infant that went into a collapse and died while it was being put through a bismuth series. We grant that an occasional vomiting baby is seen in which the history and findings are confusing, when the roentgen ray may be of inestimable value in clearing up the diagnosis.

TREATMENT

As suggested by Holt,[4] congenital pyloric stenosis should be considered as occurring in mild and in severe forms. The determination as to which of these groups a given case belongs depends on the patient's response to medical treatment. If a patient is observed from the onset of symptoms, or if a reliable history can be obtained as to the duration of symptoms, medical treatment is justified for a period of from seven to ten days, provided the baby does not lose more than 20 per cent. of its body weight during this time. If, at the end of this period, the weight has become stationary and there is a general improvement in the other symptoms, this form of treatment may be continued, always bearing in mind, however, that even though the infant seems to be making satisfactory progress there may be a sudden relapse. If so, the case should then be considered as surgical and operation advised. If, on the other hand, there is no improvement under medical care, or if the improvement is unsatisfactory in that the baby is better one day and worse the next so that at the end of from a week to ten days the sum total is that the baby is worse, the case belongs to the severe group, and immediate operation is indicated.

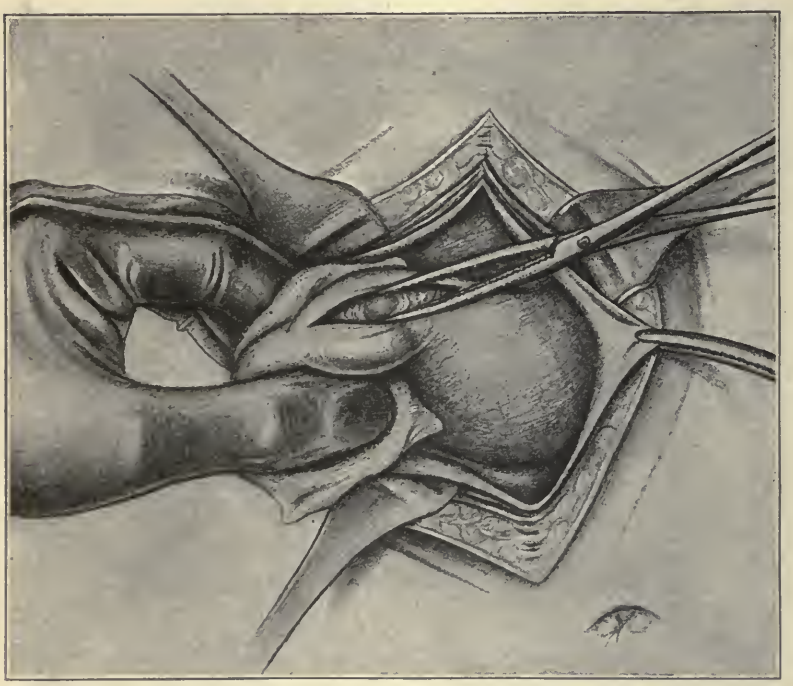


Fig. 2.—Incision spread with artery clamps; mucosa beginning to appear between divided muscle fibers.

Considerable experience in the treatment of this disease is necessary in order to acquire the ability to decide with any degree of accuracy in which group a given case should be placed. As congenital pyloric stenosis is after all not a very common disease, there is little opportunity for the general practitioner to gain this experience. For this reason, any baby with persistent forcible vomiting should be seen by the best available pediatrician at the first possible moment. So frequently is the history misleading or inaccurate and the necessary data, such previous weight, lacking that I believe the question of operation should be taken up in every case as soon as the diagnosis is made.

As has already been stated, those cases in which it is very evident that the symptoms are of short duration, and the condition of the baby good, observation under medical care is allowable for a short time, although the physician should be prepared to turn the case over to the surgeon should there be the slightest change for the worse. Up to the last few years the results following operative treatment of pyloric obstruction in infants were so uncertain that physicians hesitated to recommend this form of treatment; but now that the technic is simplified and the results uniformly good, these objections no longer hold. Surely no man could persist in the medical treatment of this condition beyond the point already mentioned as permissible when the mortality is stated by the best observers to be anywhere from 10 to 50 per cent. or higher under this form of treatment, and it can be shown that the mortality after operation is a fraction under 2 per cent. in selected cases. In a study of the cases at the Babies' Hospital, Goldbloom and Spence[5] call attention to the fact that out of fifty-one breast fed babies coming to operation with a weight loss of less than 20 per cent., only one died. Strauss[6] reports marvelous results following the operative treatment or hypertrophic stenosis in infants. He states that he has operated on 103 unselected patients by a special type of extramucous pyloroplasty with only three deaths—a mortality of less than 3 per cent. The diagnosis was made in each case by the fluoroscope, and in no instance was operation refused because of the poor condition of the baby. From the increasing number of infants with pyloric stenosis admitted to the Babies' Hospital for operation each year, it would seem that the majority of pediatricians now believe that surgery offers more than medicine in the treatment of this disease.

OPERATION

The abdomen is opened through an upper right rectus incision from 1½ to 2 inches in length. When the wound is retracted, the stomach is easily recognized; and if the portion of the anterior wall which

4. Holt, L. E.: Medical Versus Surgical Treatment of Pyloric Stenosis in Infancy, J. A. M. A. **62**: 2014 (June 27) 1914; Hypertrophic Stenosis in Infants, ibid. **68**: 1517 (May 26) 1917.

5. Goldbloom, Alton, and Spence, R. C.: Prognosis in Operated Cases of Hypertrophic Stenosis of Pylorus, Am. J. Dis. Child. **19**: 263 (April) 1920.

6. Strauss, A. A.: Surgical Clinics of Chicago, February, 1920, p. 93.

appears is then picked up with anatomic forceps and gentle traction applied, the pyloric end of the stomach with the tumor is quickly brought into view. The tumor is then grasped between the thumb and index finger, and a longitudinal incision varying from 1 to 1¼ inches in length, according to the size of the tumor, is made at about the junction of the upper and middle thirds (Fig. 1). This incision should start just proximal to the duodenum and should involve only about one-half the estimated thickness of the muscular layer. By gently spreading a pair of small, straight forceps inserted into the center of the incision, the undivided portion of the muscle tears exposing the mucous membrane (Fig. 2), and by continuing this blunt dissection the division is carried down along the line of cleavage to the duodenal ring and well up on the stomach. The separation of the muscular layer from the mucous layer should be sufficiently complete to permit the mucosa to protrude freely into the wound (Fig. 3).

Great care should always be used in spreading the muscle at the duodenal end of the tumor, as the change from the thick-walled pylorus to the normal duodenum with its thin muscular layer is very sudden, and there is great danger of opening the mucous membrane at this point. At the proximal end, the tumor gradually merges into the stomach, and there is not so much danger of injuring the mucous layer. Complete division of the tumor with the knife should never be attempted. As a rule there is little tendency to hemorrhage except in the older babies. A small artery at the duodenal end of the incision may require a ligature; or, if this vessel has retracted under the muscular layer, it may be necessary to suture a bit of muscle fiber, easily obtained from the rectus, over the bleeding point (Fig. 4). In the babies—aged 10 weeks and over—coming to operation, the tendency to bleed is much greater. Besides the artery at the lower angle, there is generally another near the stomach end of the incision. In these cases, continuous suture around the margin of the incision, supplemented by a bit of muscle or omentum, may be necessary to control the bleeding. I do not believe that it is necessary to attempt to cover the exposed mucosa. After the pylorus has been dropped back into the abdomen, the line of incision is again inspected to make sure that all bleeding points have been controlled. The abdominal wall is closed in the usual way.

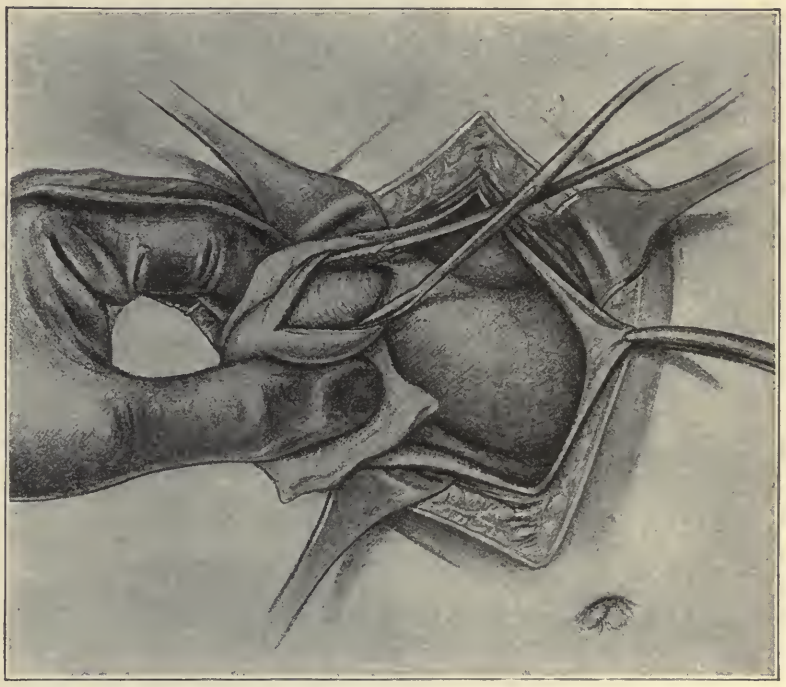


Fig. 3.—Mucosa protruding freely between cut edges of muscle; operation completed.

ACCIDENTS AND COMPLICATIONS

The duodenum was opened three times in this series of cases. The opening was small in each instance, and was easily closed with fine silk suture reinforced by omentum. Two of the patients made a satisfactory recovery, but the third died of peritonitis on the eighth day. Careful hemostasis of the abdominal wound is very important. Four of our patients lost considerable blood from this source, requiring transfusion in two instances. As many of our patients were admitted to the hospital in desperate condition, it was the custom until recently to give a hypodermoclysis of from 150 to 200 c.c. of salt solution preliminary to operation. We now feel that this was a mistake, and that the tendency to bleed was aggravated by this treatment, especially in the older infants. Smaller quantities, from 50 to 100 c.c. of physiologic sodium chlorid or glucose solution given under the skin, beginning from two to four hours after operation and repeated as indicated, is just as efficacious and is a safer procedure. Transfusion both before and after operation was resorted to in a number of cases, but did not prove of value except in those in which there had been hemorrhage, and in one case in which a deep seated abscess developed following a clysis. Practically all the wounds healed by first intention. Sutures are not to be removed before the tenth day. Feeding is begun one hour after operation. At first, from one to two teaspoonfuls of water, alternated with a similar amount of diluted breast milk, is given and gradually increased until the fifth day, when the child should be receiving almost its normal caloric requirements.

The postoperative management of these patients as carried out at the Babies' Hospital was described by Morgan [7] in 1916, and more recently by Goldbloom and Spence. Convalescence in the great majority was without special incident. Loose stools were perhaps the most frequent complication, and were due either to increasing the food too rapidly or to changing from breast milk to a formula, as is often necessary preliminary to discharge from the hospital. Postoperative vomiting is noted as occurring in small amounts or not at all in 107 cases; moderately in twenty-two, and in large amounts in sixteen. Of the patients that died, eleven are recorded as having vomited and nineteen as not.

The average stay in the hospital of the breast fed babies was fourteen days, and of the bottle fed babies twenty-three days. Of the 145 babies discharged as cured, eighty-nine have been seen or heard from in the

7. Morgan, E. A.: The Postoperative Management of Pyloric Stenosis, Am. J. Dis. Child. **11**: 245 (April) 1916.

last two months. All are in excellent health, and with few exceptions are above their normal weight. Eleven are known to have died from one cause or another over periods varying from a few weeks to eighteen months after operation. Forty-five have been lost sight of.

We have been fortunate in obtaining necropsies in two cases in which the patient died of pulmonary conditions a year and a half after operation. The pyloric tumor had entirely disappeared in both instances, and, with the exception of light omental adhesions at the site of the scar, the pylorus appeared normal in every way.

CONCLUSIONS

1. If a satisfactory history can be obtained, and if the findings of a proper physical examination are correctly interpreted, the diagnosis of congenital hypertrophic pyloric stenosis should be made in practically every case.

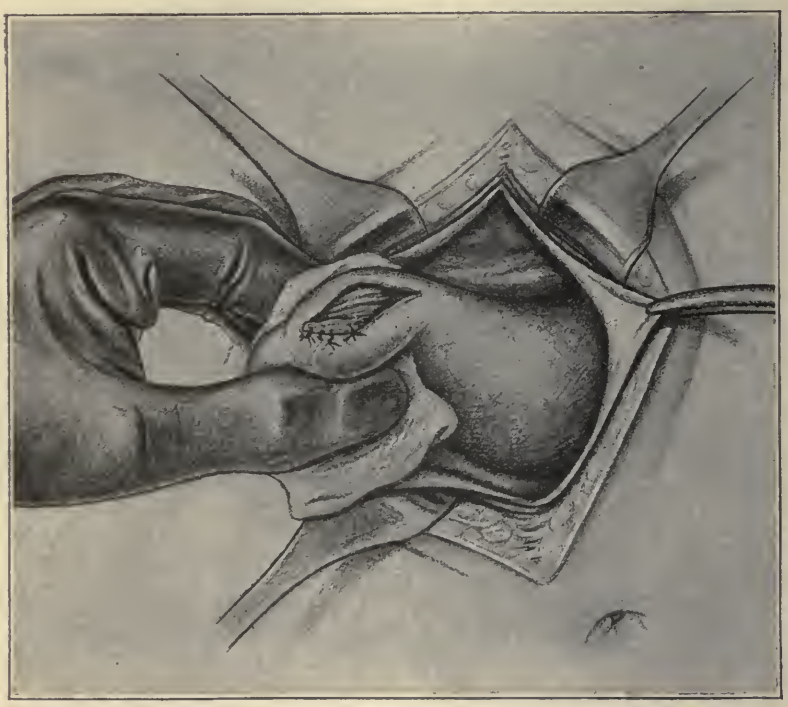


Fig. 4.—Bit of muscle fiber used to control bleeding from pyloric artery.

2. If the patient is observed from the onset of symptoms, medical treatment may be tried for a period of not longer than ten days, provided the weight loss does not exceed 20 per cent. during this time. If, at the end of this period, the child does not show definite improvement, operative interference is indicated. Any patient, continued under medical care, and suffering a relapse should be operated on at once.

3. All cases in which there is a history of a period of ten days or longer in which the data as to previous weight are lacking—and in which the patient is not in very good condition—should immediately be classed as surgical.

4. The mortality among patients coming to operation within four weeks from the onset of symptoms is less than 8 per cent.

5. The results following the Fredet-Rammstedt operation are permanent and the cure complete.

424 Park Avenue.

ABSTRACT OF DISCUSSION

DR. DEAN LEWIS, Chicago: I have performed twelve gastro-enterostomies for the relief of congenital pyloric stenosis. Three of the babies died. In one case the gastro-enterostomy perforated, in another the abdominal wall opened on the fifth day, the baby dying from peritonitis, in the third case the baby did not recover, although no definite cause of death could be established. All the patients who recovered had a stormy convalescence. In the thirteenth case, the condition of the baby was so bad that I did not think it wise to perform a gastro-enterostomy and the operation under discussion was performed. This baby recovered rapidly and without any untoward symptoms. I have performed four of these operations since this first one. The babies have recovered. Two other cases in which I operated presented all the symptoms of congenital pyloric stenosis, with the exception of the tumor. These patients were operated on but as no tumor was found the abdomen was closed. Both babies recovered. This operation is simple and can be performed quickly. It meets the conditions and I cannot see how it can be improved on. The incision should be made through the right rectus muscle and should be carefully closed in layers. Opening of the incision has occurred not infrequently when it has been made in the linea alba.

DR. ROLAND HILL, St. Louis: In 1,000 children born in a foundling hospital with which I am connected we found five cases of pyloric stenosis. From the increasing number coming in for operation I cannot but believe that the condition has been very generally overlooked, and that physicians are just beginning to recognize it. In regard to the method of operating: Formerly I did a gastro-enterostomy. The babies who were brought in early were in fairly good shape and recovered. Then they began to bring in children practically dead and we lost quite a number. I did fourteen of these operations. One child, a premature baby, weighed 3 pounds 15 ounces. I did a gastro-enterostomy. The baby recovered and is well today, although seven years have elapsed. I have done twenty-two Rammstedt operations. Twenty-one patients recovered and one died. This baby had suppression of urine for twenty-four hours before it was admitted to the hospital, with convulsions, and a temperature of 103 F. This child never urinated after the operation and died of uremia. We saved one very sick baby by injecting glucose into the superior longitudinal sinus. We have found this to be of value in some of these very bad cases. I have had to reopen the abdomen twice. In one case it was due to not making the opening larger. I made a single incision alongside of the first one and the child recovered. In the second case the child had convulsions before being brought in, artificial respiration had to be resorted to before the operation, and still the wound looked fine at the end of the fourth day. On the sixth day, while doing artificial respiration, the wound broke open, the child developed obstructive symptoms and we had to reopen the abdomen. We found adhesions, released them and the child got well.

DR. A. A. STRAUSS, Chicago: Too much credit cannot be given Dr. Downes for calling attention to the Rammstedt operation. Dr. Downes brought out that there is a distinct field in the surgery of children and infants. I have treated 163 cases of congenital pyloric stenosis, with three deaths. I operated in 107, with three deaths. The remaining fifty-six patients were treated medically. I insist on a roentgen-ray and a fluoroscopic examination in every case. Such examinations show definitely not only if there is a congenital pyloric stenosis, but also if the patient should be treated medically or surgically. If from 70 to 80 per cent. of the bismuth meal goes through within four hours, there will undoubtedly be recovery in that case by medical treatment, irrespective of any clinical symptoms or tumor. If less than 70 per cent. of

the bismuth goes through, it is an indication for operation. A tumor was found in the 107 cases in which I operated. The fifty-six babies treated medically recovered, and not a single one returned for operation.

If the Rammstedt operation were performed as he described it, the mortality would range from 30 to 50 per cent. The Rammstedt procedure does not release the obstruction sufficiently, and for this reason, the patient, following an operation, vomits from three to five days. If he is in a moribund condition, this postoperative vomiting is sufficient to cause death. The procedure which I devised is a reconstruction of the abnormal condition of the pylorus into a normal one. It frees the infolding mucosa and releases the obstruction completely. For this reason the moribund infant will not vomit, but will retain its food. The mortality rate of my operation is less than 3 per cent. I know of one surgeon who has operated in nineteen cases after my method, without a death, and another, who has operated in twenty-three cases, with one death.

DR. L. T. LE WALD, New York: I wish to emphasize the frequency of this condition in children and the value of the roentgen ray in diagnosis. Of all the gastro-intestinal examinations I have made in the last ten years, I know of no condition in which the diagnosis is so definite.

DR. ARTHUR D. BEVAN, Chicago: I have been impressed by the importance of doing all these operations under local anesthesia. I would go so far as to say that congenital pyloric stenosis should under no circumstances be done under a general anesthetic. The Rammstedt operation is so much easier, so much safer that it has revolutionized the whole subject. Whenever the choice lies between ether anesthesia and a gastro-enterostomy and local anesthesia and the Rammstedt operation, one should not hesitate to choose the latter. I would like to put myself on record as saying to the surgeons of the country that under no circumstances should a case of congenital pyloric stenosis be operated under a general anesthetic. It can be done better and with absolute safety under local anesthesia.

DR. J. L. RANSOHOFF, Cincinnati: The Rammstedt operation has the appeal of complete simplicity and absolute efficiency. It is to my mind one of the most perfect operations devised in surgery and all modifications are unnecessary. I did the gastro-enterostomy before the Rammstedt operation and several Rammstedt operations since. I had one death. This was due to the opening of the duodenum, a very unpleasant complication. I should like Dr. Downes to tell us his exact maneuver in closing these wounds of the duodenum. I had the opportunity of making a postmortem examination of a child six months after a successful Rammstedt operation. This child died suddenly of enlarged thymus. The necropsy revealed a perfect pylorus without a trace of tumor. There was a linear scar at the site of the old incision, no adhesions and the scar was completely covered with peritoneum. Subsequently, in another case where I had done a Rammstedt operation, the mother heard of the result in the case of the child that died of enlarged thymus and became very much alarmed. She brought the child to me and a roentgenogram showed an enlarged thymus. Dr. Palmer, of Cincinnati, among twenty cases has found five cases of enlarged thymus.

DR. W. A. DOWNES, New York: I do not subscribe to the views expressed by Dr. Bevan regarding the use of local anesthesia in these cases. I have tried it in various cases without very satisfactory results. It is important not to allow the stomach to extrude and not to let the intestine to come out into the wound, and with a child struggling and cryng, as it would with local anesthesia, I do not see how this could be prevented. I always use ether, never chloroform. I cannot make a statement regarding the frequency of enlarged thymus in these cases.

Confidence in the Physician.—One of the chief efforts of the physician is to establish a feeling of confidence in the patient and in the family, and to relieve anxiety. The success of this effort depends largely on personality, but consciousness of real knowledge is a most important factor contributing to such an inspiring personal relationship.—Rufus Cole, *Science*, April 2, 1920.

HYPERTROPHIC PULMONARY OSTEO-ARTHROPATHY FOLLOWING LUNG ABSCESS

FURTHER NOTES ON A PREVIOUSLY REPORTED CASE *

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The more important points in the history of this patient prior to his transfer from the base hospital at Fort Sam Houston, Texas, to the Walter Reed General Hospital, as given a year ago by Erdman,[1] were:

B. M. W., aged 24, a first lieutenant, Flying Detachment Air Service, presented a negative family history except for glycosuria in the father. The past history was negative. There was no venereal history. At the time of his commission in the army, the patient was a student at the University of Pennsylvania, and had shown average ability as a student. There had been no respiratory tract infection prior to the present illness. The patient had tonsillitis in December, 1917. Tonsillectomy under general anesthesia was performed in January, 1918. Within a few days he developed a "cough," and later "pleurisy," and was on sick report for about two months. In May, 1918, he reported at Kelly Field, for instruction in aviation. May 29, 1918, he crashed from 700 feet, and was badly bruised and shaken up, but no fractures resulted, and he was in the hospital only three or four days. However, his cough returned, and he was given sick leave. During this leave he first noticed a change in the contour of the extremities—a painless swelling, first of the knee joints, and later of all the joints of the extremities, and particularly of the hands and feet. In August, 1918, the patient was admitted to the hospital for observation. The following month a lung abscess was diagnosed and drained by a two-stage operation. The abscess was in the lower left lobe. A culture showed the presence of *Staphylococcus albus* and a typhosus-like bacillus. On account of the situation of the abscess, surgical solution of chlorinated soda could not be used. Vaccines were prepared, but their use was followed by no demonstrable benefit. Following drainage there was slight improvement in the condition of the extremities, but if for any reason free drainage was interrupted there was an increase in the swelling and more pronounced discomfort.



Fig. 1.—General appearance of patient five months after operation (to be compared with corresponding picture in Erdman's original report).

Insomnia and irritability had been present for some time, but not until November, 1918, following the armistice, did pronounced mental symptoms appear. The patient himself has attributed them to disappointment in failing to go overseas, and to the realization that the war had come to an end, and

* From the Surgical Service of the Walter Reed General Hospital, Washington, D. C.

1. Erdman, Seward: Hypertrophic Pulmonary Osteo-Arthropathy (Bamberger-Marie Disease), J. A. M. A. **73**: 259 (July 26) 1919.

that all he had to show for his service was a "wound in the side from which corruption poured." At all events, he became much depressed, introspective and apparently on the verge of a psychosis.



Fig. 2.—Hands at time of admission.

Erdman thus summarized the course, up to the time of transfer:

Summary—There was an involvement of the left lung, probably the effect of an aspiration infection following tonsillectomy under ether. There was a chronic productive cough. There was a rapid enlargement of the feet and hands during a period of six months. A lung abscess was drained, September, 1918, with a resulting persistent bronchial fistula. Mental depression and insomnia were present. There was a slight loss of weight. There was no evidence of syphilis or tuberculosis. The pathologic condition in the enlarged hands and feet and other regions is best revealed by the roentgenograms, which show, besides the enlargement of the overlying soft parts, a definite striated production of new bone in the periosteum of the shafts of the metacarpals and the first two rows of the phalanges, also along the lower ends of the radius and ulna. The corresponding bones of the lower end of the femur; also the clavicles and some of the ribs are to a degree affected. The joint surfaces appear unaffected. There is fluid in the knee joints.

Negative Findings—The fingers are not "clubbed." No pituitary or thyroid changes are present. There are no headaches, disturbance of vision nor drowsiness; on the contrary, very marked insomnia. There are no changes in face, lips or skull. There is no evidence of abnormal thirst or hunger, and there are no alterations in the special senses.

FURTHER COURSE

At the time of his admission to the Walter Reed General Hospital, March 28, 1919, the patient presented the following picture:

There was a bronchial fistula in the left posterior chest wall, opening through a sinus of 4 or 5 mm. diameter, at the level of the eighth rib. This sinus tract was 9 cm. long, and at the bottom it was possible to see, by endoscope, a defect in a bronchial wall. This was an opening of 2 or 3 mm. diameter, apparently the only such opening. A hemolytic strain of staphylococcus was obtained by culture, but the intensity of the infection was so slight that but one organism could be found in ten microscopic fields by direct smear.

The patient also presented a symmetrical enlargement of the extremities, as has been adequately described in the original report by Erdman. It should again be emphasized that this enlargement was not limited to the distal phalanges, as in the typical "clubbed fingers" so often found in these cases, but involved the whole hand and foot, as well as distal halves of the forearm and legs. Furthermore, the enlargement was not similar to the changes noted in acromegaly, in that the length of the members was not increased, but only the circumferential measurement. At no time during his stay at Walter Reed did the patient show any fluid in any joint cavity. That had apparently disappeared completely, following the original drainage of the lung abscess. There was diminution in the strength of muscles of the extremities. There was restriction of motion in all the joints. There was difficulty in performing fine movements, not on account of any loss of nerve function, for none such was demonstrable, but on account of the unwieldy members themselves. The gait was waddling; he required assistance in dressing.

Roentgen-ray examination showed the bony changes to consist of marked irregular periosteal proliferation, apparently limited to the diaphyses, and an osteoporosis, which may have been either a disuse atrophy or a pathologic process primarily. The joint surfaces were not involved. There was no evidence of pathologic change in the epiphyseal lines. Limitation of joint motion was due to changes in the shafts of the bones, rather than to changes in the joints themselves. There was a brawny infiltration of the soft tissues.

Mentally, the patient seemed to be on the verge of a psychosis. He appeared unable to obtain sufficient rest. He was depressed, irritable and introspective. There were no definite delusions, and no hallucinations. He required close watching to prevent him from performing such pranks as one might reasonably expect from a mischievous boy of 6 or 7. There was no attempt at injury to himself or others.

The mental condition required the first consideration. Rest, reassurance, and the diversions of occupational therapy gradually produced a marked improvement in that element of his syndrome. Throughout this period he also received treatment in the department of physiotherapy for the osteo-arthropathic condition. Such treatment included, at various times, massage, baking, diathermy, whirlpool baths and hot cabinet baths. On account of the irritability and restlessness of the patient, frequent changes had to be made in this course of treatment. There was slight improvement in his general well being, but no demonstrable change in the bony parts, so long as the fistula remained open.



Fig. 3.—Final appearance of right hand.

In May, 1919, it was possible to attempt a closure of the bronchial fistula. Fulguration of the entire tract by high frequency sparks was done in the hope that complete destruction of any epithelial lining, and subsequent cicatrization would obliterate the

fistula. Three such attempts were made without inconvenience to the patient. The net result was to decrease the caliber of the tract, but the fistula remained.



Fig. 4.—Chest during attack of influenza in January, 1920, showing involvement on the right side.

August 19, Lieut.-Col. Carl Eggers and I closed the fistula by operation. Approach to the chest wall was by a posterior linear incision at the level of and parallel to the ninth rib. The fibers of the latissimus dorsi were cut transversely, and the chest wall proper exposed. The sinus tract was naturally excluded in this incision. Subperiosteally from 5 to 10 cm. of the eighth, ninth and tenth ribs were resected, and then the remaining structures of the chest wall, intercostal muscles, nerves and vessels, as well as the periosteal sheathes, were removed *en masse*, the fistulous tract, so much of it as lay in the chest wall, coming away with this mass. The old adhesions still held the lung to the chest wall. These were gently loosened at the edge of the defect, care being taken, however, not to reach the general pleural cavity, but merely to give the lung slightly more mobility than it formerly had had. The dense scar tissue surrounding the fistulous tract at its point of entry into the lung was dissected free, allowing collapse of the mouth of the fistula, and then this mouth was touched with the actual cautery lightly. The wound was closed by suturing the divided latissimus over the chest wall defect, and tightly closing the skin except for one rubber tissue drain leading down to the lung surface at a point remote from the fistulous opening. The entire operation was performed under local anesthesia (1 per cent. procain) and was well borne by the patient.

Recovery was rapid and uneventful. In two days, all drainage was removed. There was a slight serous discharge for a few days; otherwise primary healing of the wound was uninterrupted. All dressings were discarded at the end of three weeks.

From that time the wound has remained healed, there has been no cough and no sputum, and repeated physical and roentgen-ray examinations have failed to reveal any intrapulmonary trouble. It is of special interest to note that in January, 1920, while the patient was still under observation, he developed influenza and an extremely light bronchopneumonia, which involved only the right lower lobe, leaving the left side of the chest, the side of the previous trouble, entirely free.

Examination made in February, 1920, prior to the discharge of the patient, revealed slight asymmetry of the chest, the left side being smaller than the right; slight diminution in the expansion of the left side; the presence of a linear scar, firmly healed, on the posterior chest wall, at the level of the ninth rib; vocal fremitus well transmitted over the right, but diminished over the entire left; percussion note resonant over the entire right and the left front, but slightly impaired over the left back and axilla; marked dulness commencing 2 cm. below the inner end of the scar and 1 cm. below the outer end of the scar; breath sounds normal over the right, but expiration slightly prolonged over the left front and axilla, distant over the left back, except for the area of the defect in the chest wall, where they were near and intensified, and in quality suggesting amphoric breathing, without being frankly so; voice sounds loudly transmitted over the area of the defect, and higher pitched on the left than on the right; whispered sounds very loudly and plainly transmitted over the area of the defect, elsewhere there being no change between the left and right sides.



Fig. 5.—Final appearance of left elbow.



Fig. 6.—Final appearance of left foot.

Roentgen-ray examination of the chest detected nothing of significance on the right. On the left there was slight pleural thickening at the level of the fourth to the seventh rib, axillary region; the diaphragm line was smooth; the costophrenic angle was more shallow than on the opposite side.

Immediately after the closure of the bronchial fistula there was noticeable improvement in the osteo-arthopathic condition. Resorption of the periosteal proliferation commenced: first, and most marked, in the phalanges; later, and less marked, in the long bones of the extremities. At the same time there was an increased deposit of lime salts throughout the shafts of the bones, and the old picture of osteoporosis was no longer as marked, in the roentgenograms. Soft tissue infiltration disappeared concurrently with the improvement in the bony condition. The range of motion at the joints increased. Throughout this period the patient continued to receive the benefits of active treatment in the department of physiotherapy, but also he undertook many more outdoor activities and indulged in normal exercise. The improvement in the bone cortex and in the soft parts was probably influenced greatly by the latter factor.

Mentally there was also marked improvement. With the freedom from dressing attention, he became more cheerful. With the improvement in the condition of the extremities he developed more self-confidence. However, there remained periods of depression, and he continued to be introspective and apprehensive lest other misfortunes might befall him.

COMMENT

It is fair to consider that the general outlook for this patient is good. No further trouble should be anticipated from the old lung abscess. The influenza in January, 1920, was a severe test. There will probably be always a residual chronic periostitis. Eventually complete recovery from all neurotic symptoms should take place.

The case is of particular interest in reference to the improvement in the osteo-arthropathic condition that followed the elimination of the focus of infection in the lung. It may serve as a plea for early definitive surgical action in similar cases.

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ACCESSORY SINUS DISEASE AND CHOKED DISK*

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A number of papers have recently appeared in our journals on the relation of visual disturbances to inflammation of the ethmoidal and sphenoidal cells. The matter has finally come to the attention of the general profession as well as to those whose chief interests lie in the province of rhinology. So many unhappy consequences of indiscriminate and ill-advised operations on the accessory sinuses have come to our attention in this clinic that I feel more or less obligated to express an opinion on the matter. If harm, as I believe, is actually being done to patients by lack of understanding of these conditions, unless we set ourselves straight concerning them harm will certainly come to surgical rhinology, and this we all wish to avoid.

There can be no doubt but that suppurative inflammations of the ethmoid or of the sphenoidal cells may in certain cases lead to inflammatory changes of adjacent nerves. We are sufficiently familiar with this in the case of the neuralgias which accompany suppurative infections of the frontal or maxillary sinuses. Much has been written, too, in regard to similar extensions of infective processes to Meckel's ganglion, producing the so-called nasal neuralgia, regarding the prevalence of which, however, I have ventured to express doubts. However, it is perfectly conceivable that suppurative processes in the ethmoid cells adjacent to the optic foramina may set up similar disturbances in the optic nerves. But what is inconceivable is that these processes should produce choked disk.

It is important to bear in mind that what by common usage is referred to as choked disk (Stauungspapilla; papilledema) is a condition brought about by mechanical causes, and that optic neuritis, papillitis and other similar terms are misnomers for this condition. Inflammatory processes may affect the optic nerve in such a way as to produce reddening, injection and possibly such a degree of hyperemia and vascularity of the nerve head as to resemble the early hyperemic stage of a choked disk, but it is unbelievable that an infection of the accessory nasal sinuses in the absence of increased intracranial tension should produce an actual choked disk. On the part of the rhinologists, the statements which accompany their papers are extraordinarily unconvincing. I may give a few quotations from a recent number of The Journal of the American Medical Association.

> Its pathology [hyperplasia] has always seemed to me rather obscure. Many specimens have been sent to the laboratory but nothing of interest has been discovered. . . . I had high hopes of getting some valuable information: but the report as usual was negative.
>
> It would probably be difficult to find an adult individual in a temperate climate who does not present an example of this bone change within his nasal chambers which I have a right to call pathologic. It is only exceptionally that the symptoms to which it gives rise are sufficient to cause him to seek relief. . . . it is readily seen that many of these cases have a condition so elusive as to be difficult of detection, either microscopically or macroscopically. In looking into these noses one is disappointed in not finding much, if anything, pathologic.
>
> It is always a disappointment to the ophthalmologist when pus cannot be found and the roentgenograms are negative. It is difficult to convince some that there is such a thing as hyperplasia; but case after case has demonstrated that *pressure sufficient to cause atrophy of the nerve* [italics mine] can take place in a nose that on both inspection and roentgen-ray examinations showed practically nothing abnormal.
>
> While it is a source of satisfaction to operate on patients with a marked nasal pathologic condition, nevertheless one should realize that unless some definite explanation for the loss of vision can be found elsewhere, its most probable origin is in the sinuses. The diagnosis of accessory sinus disease in cases of practically negative nasal findings is largely made by exclusion.
>
> It is well known that cases of blindness from accessory sinus disease recover spontaneously. Four of my patients have told of previous attacks in which the eyes were blurry for two or three days and the vision defective, but from which they recovered without treatment.
>
> Thus the demand for early operative interference in the cases of total loss of vision is much more imperative than when the loss is but partial. It would seem the wiser course here to err on the side of advising operation too soon and possibly unnecessarily than to risk a patient becoming permanently blind through delay.

It may be unfair to take random paragraphs from a well-intentioned paper, but I cannot conceive of a feebler argument on which to base the widespread advocacy of so serious an operative procedure as

* From the Peter Bent Brigham Hospital.

one in the upper nasal region. That these operations must be frequently performed I am led to believe by the articles I have seen. That they frequently meet with disaster in the hands of the inexpert I am convinced by the fact that I am often urged to see patients in consultation who are in extremis from meningitis following what was supposed to be a trifling intranasal operation.

Now I may say further, in connection with these papers, that there is great confusion: (1) in citations from the literature, many of which antedate our knowledge of the mechanical factors producing optic atrophy and choked disk; (2) in the variety of lesions considered which vary from the obscure hyperplasia mentioned above to actual suppurative process or even sphenoidal tumors; (3) in that these intranasal procedures of exenteration of the ethmoid cells, removal of the middle turbinate, or opening of the sphenoidal cells are supposed to relieve or forestall a great variety of processes variously described as retrobulbar neuritis, neuroretinitis, optic neuritis, papillitis and optic atrophy.

I confess to a lack of understanding of the causation of certain types of amaurosis which are often attributed to retrobulbar neuritis; but there are so many well recognized neurologic lesions that many produce conditions indistinguishable from them that I have some misgivings when the former diagnosis has to be made. These things, however, are out of my province. But when a retrobulbar neuritis is said to be accompanied by 2 or 3 diopters of swelling we are certainly dealing with something which a hyperplasia of the mucous membrane lining the accessory sinuses is not capable of producing. During the course of the last twelve months many patients with brain tumor have appeared in the Brigham Hospital clinic who had recently undergone radical intranasal operations for assumed infections of sinuses. Were the operations done merely on the chance that the patient complained of obscure headaches or visual disturbance in the absence of choked disk, it would be understandable; but when these operations are performed on people with full-blown changes in the optic nerves and with an idea that cleaning out the ethmoid and sphenoidal regions might check the process, we have certainly gone too far.

Early Diagnosis of Tuberculosis.—Visualization by the roentgen ray probably gives us a clearer idea of the character and extent of lesions in the lung than any other single method of examination except postmortem examination. It is not particularly desirable, however, nor is it conducive to good work in diagnosis to limit ourselves to one method of examination. The isolation of the roentgenologist in his laboratory is no more to be justified than would be limiting one examiner to auscultation and another to percussion. It is only by the most careful correlation of the results of the physical, roentgen and laboratory findings, with the history and temperature record, that we can hope to attain the maximum efficiency in early correct diagnosis.—A. W. Erskine, *J. Iowa State M. S.*, April, 1920.

PREVENTION AND TREATMENT OF WEAKFOOT IN CHILDREN

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NEW YORK

About five years ago I called attention to a fundamental principle concerning the production and correction of weakfoot which had not been previously recognized. It was demonstrated at that time that rotation of the os calcis on its anteroposterior axis controls the degree of strain which the longitudinal arch is called on to bear, and that by directing the course of such rotation outward, foot strain may be prevented and weakfoot overcome. During the interval that has elapsed, the theory has been put to extensive clinical tests which have proved its soundness and made clear its value in preventive work when applied to children's feet.



Fig. 1.—Rear view of the skeleton of a foot resting on a mirror to show the arc of the under surface of the os calcis and its small bearing area.

The old adage, "as the twig is bent the tree is inclined," aptly applies to the child's foot. If through mechanical support and muscle training its balance is maintained through the period of growth, there will result a normal foot, architecturally correct and muscularly strong enough to meet all the demands that may be made on it in the years to come. As foot troubles in adult life have their origin many times in improper development of the pedal tissues in early childhood, it is evident that the subject under discussion is one deserving of more consideration than it usually receives.

At the end of the first year of life, when the baby begins to stand, the bones of the feet are hardly more than an orderly arrangement of cartilaginous masses. Centers of ossification are present in the astragalus, os calcis and cuboid at this time, but they do not appear in the other bones of the tarsus until from one to three years later. It will be apparent, therefore, that these structures are in a condition to be profoundly influenced by the stress and pressure that may be brought to bear on them. They will grow into perfect or imperfect bones as circumstances may ordain; hence the wisdom of experienced supervision of the child's foot throughout this important period of development.

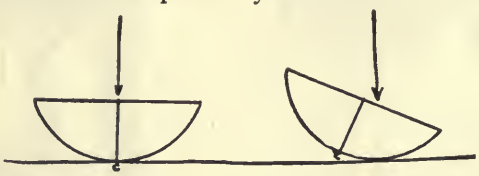


Fig. 2.—Diagram illustrating the cause of rotation of the os calcis in weakfoot: When the thrust of the body weight comes over the center of balance, the bone remains upright. Slight deviation of the point of thrust produces tilting.

There are three factors commonly at work to disturb the fulfilment of Nature's plan for the formation of the foot, namely, improperly designed shoes, unequally developed leg muscles, and a deviation in the normal mechanical relations between the tarsus and the leg. The importance of the last of these will be apparent on examination of the simple basic principles underlying the attitude of pronation. As will be seen by referring to Figure 1, the bottom of the os calcis is approximately an arc, and the weight of the body is resting on a single point, representing the center of balance of this bone. So long as the thrust of the body weight is carried directly over the center of balance, the bone will not tilt; but if it is shifted, let us say to the medial side, the bone will rotate inward (Fig. 2).

The ligaments on the bottom of the foot bind the os calcis and the bones anterior to it so firmly together that they must move as one mass. Therefore inward tilting of the heel bone will lower the inner border of the foot, as shown in Figures 3 and 4, and pronation becomes an established fact with the consequent evil of strain on the ligaments of the longitudinal arch. The result of long-continued strain of this nature will ordinarily be stretching of these ligaments and the production of weakfoot. The prevention of this fault in attitude is easily possible if the young foot is properly trained. Perhaps the most important single factor in the development of a normal arch is the maintenance of the upright position of the os calcis during the period of growth. In some cases it is necessary only to raise the inner border of the heel of the shoe to insure this result. In others, some firm mechanical appliance capable of grasping the heel, such as the plate to be described later, will be indicated. It is the custom of the day, when a child has weakfoot, to put in the shoe a plate which presses up the arch. In the light of my experience this would seem to be both physiologically and mechanically wrong—physiologically wrong because constant pressure on the plantar tissues interferes with their development, and mechanically improper because the force is inefficiently applied. The desired correction can be much more readily obtained by an apparatus whose effective force is applied directly to the heel, and the permanence of the results will be more certain.



Fig. 3.—Above, normal position of tarsal bones; below, depression of the arch by rotation of the os calcis on its long axis.



Fig. 4.—Left, moderate weakfoot; right, correction of inward bulging of the internal border of the right foot by rotation of the os calcis.

Much can be done toward maintaining the proper alinement of the bones of the foot by muscle training; but the use of this measure must of course be deferred until such time as the child is old enough to cooperate intelligently; therefore the question of shoes takes second place in any reasonable scheme of prophylactic supervision of foot growth. While it may be profitless to discuss the relationship between present day foot troubles and the civilized custom of shoe wearing, it must be admitted that if the foot of the savage is normal, then our own are anatomically distorted, and the natural inference is that shoes are responsible. This is very likely true, for we have seen that the bones of the infant foot are soft structures readily influenced by continuous compression; and we know that long before the baby has any inclination to stand, his feet are encased in leather coverings which, in the nature of things, must affect their development. From that time onward the foot, when in use, is always subject to the restriction of movement imposed on it by a shoe. To avoid undue distortion it is necessary, therefore, to select children's footwear with an intelligent understanding of the needs of the growing foot.



Fig. 5.—The three types of normal feet described by the American Posture League: upper row, straight feet; middle row, inflared feet; lower row, outflared feet.



Fig. 6.—Roberts' plates: The small plate, which was used with success in about fifty cases and proved the theory of arch control by rotation of the os calcis, extends forward only to the anterior border of the os calcis.

During the first ten or twelve years of life, the foot should have ample room to expand laterally as well as to grow in length. To meet this condition, a proper shoe may be described as one which is sufficiently wide

at the ball of the foot to avoid crowding the heads of the metatarsals together when the wearer is standing, and in which the inner and outer borders of the sole maintain a straight line well beyond the great and little



Fig. 7.—Left, severe flatfoot; right, correction obtained by standing on the plates. This correction is naturally much greater when the foot and the plate are held together by a shoe. Note the effect on the Achilles tendon.



Fig. 8.—A case of paralytic valgus: left, standing without plate; right, standing on short heel plate.

toes. The popular idea that the anterior part of a shoe should swing inward, a design so often seen in so-called "orthopedic" lasts, is based on an entirely erroneous conception of the normal foot. This fact seems proved by an investigation carried on by one of the technical committees of the American Posture League which collected about two thousand tracings of normal feet from various parts of this country, Japan and India, among which were many outlines of feet that had never worn shoes. Careful examination of these by means of a geometric scale revealed the fact that there exist three distinct types of feet (Fig. 5) and not merely one, as we formerly supposed. The first has been designated as a "straight foot," because a line bisecting the heel and extended forward divides the anterior part of the foot about evenly. The term "inflared" has been applied to another type in which the anterior half of the foot appears to swing inward, conforming to the shape of the conventional orthopedic shoe. In the third type, called "outflared," that part of the ball of the foot on the outer side of the bisecting line is much wider than that on the inner side. Unfortunately, there is no record of a similar study of children's feet; and until scientific data are available, we must be content to treat the child's foot on more general principles when it comes to the selection of shoes, bearing in mind that compression of either the outer or the inner borders of the feet is to be avoided.

Although definite muscle training cannot be carried out effectively at an early age, something can be accomplished by teaching the child to walk on its toes and by devising simple games that will bring this attitude into play, thus helping to develop the strength of the anterior and posterior tibial muscles. Later the much used exercise of rising on the toes and coming slowly down on the outer borders of the feet will be found helpful in attaining the same end, if it is persisted in over a considerable period of time.

Maintenance of the upright position of the os calcis, or its rotation outward if there is an inclination to pronation, may be comfortably achieved by the plates illustrated in Figure 6. Their efficiency has been proved in many hundreds of cases in the last five years, and they have been found to possess a definitely curative value in the treatment of weakfoot in children. Their function is to rotate the heel, and this is accomplished by tilting the floor of the plate under the calcaneum and by pressure of a thumblike flange which engages the tissues over the inner side of the bone toward its posterior extremity (Fig. 7). In the first fifty cases treated, a short plate reaching forward only as far as the anterior



Fig. 9.—Rear view of casts in a severe case of flatfoot. That on the right shows extreme bulging of the inner border of the right foot; that on the left, the result of a year of treatment with Roberts' plates.



Fig. 10.—Two shoes worn by a child with paralytic valgus: 1, effect of two weeks' wear without a plate; 2, effect of four weeks' wear with a plate.

border of the os calcis was used exclusively, and the results that were obtained proved the theory that foot strain can be relieved by outward rotation of the calcaneum. Later the design was changed to

include an extension to the ball of the foot, which cares for any weakness of the anterior arch and also gives the apparatus greater stability. The corrected position in which the os calcis is held finally becomes the attitude of habit in the majority of cases and it is usually possible to omit the support in about two years and occasionally earlier. Their effect is clearly shown in Figures 7, 8 and 9.

One of the most striking demonstrations of the action of these plates is seen in cases of paralysis of the anterior tibial muscle which allows the foot to roll into the valgus position (Figs. 8 and 10). Mild types of this deformity can be perfectly controlled by this device until the patient is old enough to undergo operation for a permanent correction. Cases of this kind illustrate, too, the soundness of the theory that pronation of the foot can be overcome by outward rotation of the os calcis. In a word, control of the calcaneum is the key to the correction of weakfoot, especially in children.

576 Fifth Avenue.

Clinical Notes, Suggestions, and New Instruments

SOME NEW SPLINTS AND APPLIANCES*

CHARLES F. CLAYTON, M.D., FORT WORTH, TEXAS

The appliances shown in the accompanying illustrations were developed during the reconstruction work at U. S. General Hospital No. 29, Fort Snelling, Minn. They are believed to possess advantages over appliances previously described in the literature, designed to meet the respective needs which furnished the incentive for their development. A brief description of each one of them will suffice, with the illustrations, to make clear the underlying idea, and enable any one, with a few tools and a little material, to reproduce them for his own use.



Fig. 1.—Extension splint for elbow.



Fig. 3.—Reversible splint for elbow.

EXTENSION SPLINT FOR ELBOW

This splint (Figs. 1 and 2) is an adaptation of the diamond splint idea. Its special features are: first, the narrow cuffs, attached to the bars of the diamond on swivels, thus insuring equal pressure throughout, and reducing thrust to a minimum; second, the elbow strap, passing through the slot in the metal, which holds the center of the splint fast to the anterior surface of the joint, making it possible to force the joint to complete extension, and, third, the threaded rod and winged nut, by means of which extension is accomplished. The advantages of the splint are that it is light, comfortable, simple in construction, that it exerts pressure exactly where pressure is required, and that the pressure can be regulated perfectly to suit the requirements of the individual case. An important feature of this splint, not shown in the illustrations, is a felt pad which should be used under each turn of the elbow strap, to prevent damage to the tissues by pressure.



Fig. 4.—Reversible splint for elbow.

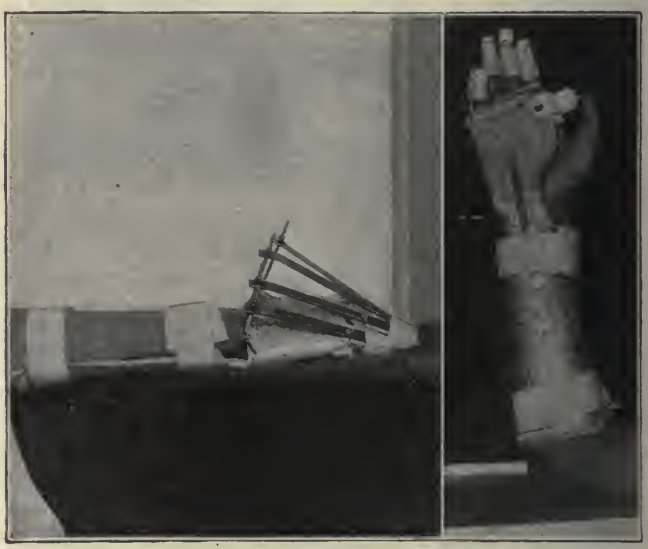


Fig. 6.—Extension splint for fingers.

REVERSIBLE ELBOW SPLINT

This splint (Figs. 3, 4 and 5) is modified from a plan submitted by Capt. E. A. Klein, Medical Corps, of Cincinnati. The method of applying force by means of which flexion or extension is accomplished is exactly the same as in the extension splint, except that two threaded rods and nuts are used in each position with this splint. It possesses the advantage over the foregoing of accomplishing both flexion and extension.

As these splints are used, the ends of the threaded rods beyond the winged nuts should be bitten off with nippers from time to time, as flexion or extension progresses, thus rendering the appliance less cumbersome.

EXTENSION SPLINT FOR FINGERS

Every surgeon has experienced the difficulty, with the means ordinarily at hand, of restoring function to fingers in contracture, the result of peripheral nerve injuries, or the involvement of tendons in cicatricial tissue. The trophic disturbances which so often accompany this condition render splinting most difficult, because of the pressure necrosis which is so likely to follow attempts at mechanical reduction of the deformity. The appliance, illustrated in Figures 6 and 7, was designed with the purpose in view of distributing pressure in such manner as to obviate this accident. The results which have attended its use in a limited number

* Owing to lack of space the scale diagrams have been omitted. They appear in the author's reprints.

of cases have been most gratifying. This appliance should be made to order for the individual case, as in no other way can the exact fit which is essential be obtained.

It will be observed that the rod and winged nut method of applying force is employed here again. The tremendous force which it is easily possible to exert by this means makes necessary here a word of caution. Care should be exercised, lest too great pressure be exerted on the palmar surfaces of the fingers, this being the only point, when the appliance is properly fitted, at which direct pressure is applied. It should not be attempted to force results too rapidly.

ATTACHMENT FOR THOMAS LEG SPLINT

This attachment (Figs. 8 and 9) was designed for use with positive bone traction, by means of calipers or tongs, but lends itself equally well, as shown in Figure 8, to use with surface traction, by means of adhesive tape applied to the skin. The advantages of this attachment are that by its use fractures of the femur can be treated with the knee flexed, and that the degree of flexion may be regulated at will. Active or passive motion at the knee may even be employed, the slots in the disks at either side permitting a range of motion of about 75 degrees. It will be observed that the method of fastening the attachment to the Thomas splint permits of adjustment to fit the length of any thigh. Moreover, this feature causes the attachment, by sliding on the lateral rods of the splint, to adjust itself automatically, as extension progresses, to increasing lengths of the femur. Provision is also made for adjustment in length of the leg piece, as shown in Figure 9. It will be seen that the attachment may be used with either a full length or shortened Thomas splint, and on each side. Extension may be obtained by means of the Spanish windlass, rod and nut or pulley and weight.

BANDAGE FOR ACROMIOCLAVICULAR DISLOCATION

This dressing (Fig. 10) is thus applied: A piece of felt one-half inch thick, 4 inches long and 3 inches wide is placed



Fig. 8.—Attachment for Thomas leg splint.

directly over the acromioclavicular articulation and the bandage applied, beginning at the injured joint, passing across the back to the axilla of the sound side, across the front of the body, over the injured shoulder, down the back of the arm to the elbow, which is flexed to a right angle, and then up the front of the arm to the starting point. Four or five complete turns are thus made, and the bandage is finished by making three or four turns around the arm, as shown in Figure 10, to prevent the bandage from slipping on the forearm. This dressing has the advantages of exerting pressure evenly over the dislocated joint, and of remaining in place indefinitely.

It is essential to success in the use of these, as of all other mechanical appliances, that they be applied with skill, and and that unrelenting vigilance attend their use. This applies with especial emphasis to appliances by means of which



Fig. 10.—Bandage for acromioclavicular dislocation.

force is applied to produce motion in joints. Moreover, the appliances should not be used to the exclusion of other necessary measures.

261 Burton Building.

A NEW COMBINED BLOOD TRANSFUSION AND ASPIRATING MACHINE*

MARTIN LEWIS JANES, M.D., NEW YORK
Instructor of Orthopedic and Bone Graft Surgery, New York Post-Graduate Medical School and Hospital; Pathologist, Bellevue and Allied Hospitals, Gouverneur Division

This apparatus has been used successfully at the Gouverneur Hospital for both blood transfusion and aspirating purposes. The machine has for one of its objects the provision of a multiple cylinder pumping apparatus, two Luer syringes being converted into pumps, so constructed as to provide a continuous flow of blood from donor to recipient, and rendering impossible accidental back-flow. After repeated experimentation with the ball valve, in which balls of various metals and specific gravities were used, it was found to be unreliable because it was not leak-proof. The balls do not always fall into position in their respective sockets to shut the valve completely, thus frequently causing leakage and back flow so that one is not certain whether the blood has come from donor or recipient or vice versa.

Another object of the apparatus is to provide means for supporting and operating opposed pumping devices adjustable to cooperate with pumps (syringes) of different lengths and to vary the length of the stroke of the pump pistons. The machine is so constructed that each pump cylinder, which is a 10 or 20 c.c. Luer syringe, may be quickly and easily disconnected independently of the other cylinder and piston.

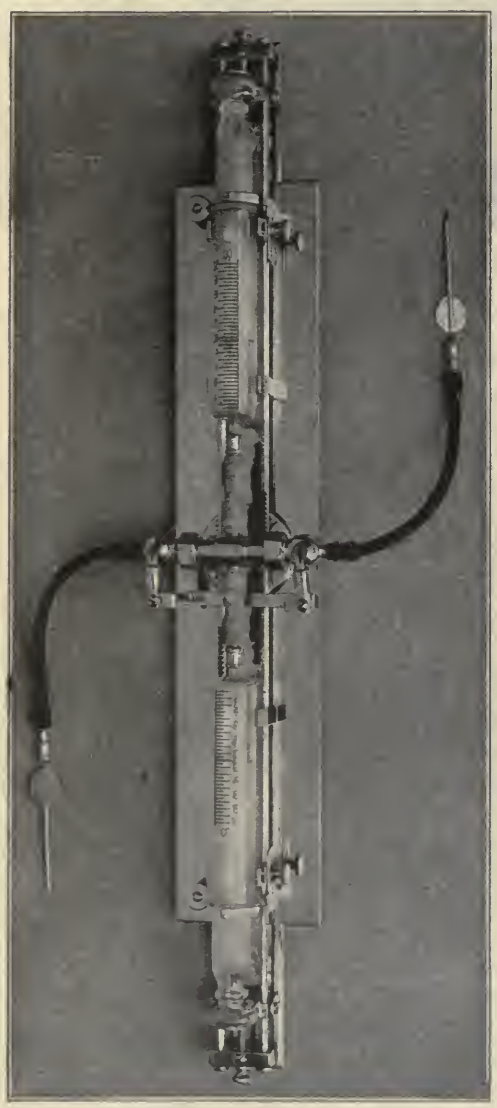
The machine consists of two oppositely faced Luer syringes which are supported on two pairs of saddles, rigidly held to the base plate of the machine and in longitudinal alinement with it. The syringes are removably held down in the saddles by adjustable and detachable clamps having hook portions engaging against the flanged outer ends of the syringe barrels, the clamps being attached to each end-most saddle by means of clamp screws. The syringes with their pistons can be quickly and easily detached from the apparatus by loosening these clamps, which are held tight by means of thumb screws.

The opposed plungers are connected by a reciprocable frame, comprising side rods and end bars to cause the

* Presented before the Section of Surgery, New York Academy of Medicine, April 2, 1920.

plungers to move in unison in the same direction relatively to the base plate and thereby impart a suction stroke to one plunger during the discharge stroke of the other plunger. To reduce friction to a minimum, each end of the frame has a carriage with a pair of rollers adapted to roll on the upper surface of the adjacent collapsible extension plate during the movement of the pistons. The plungers or pistons of the syringes are removably connected at their outer ends with the carriage to move in unison with the frame and carriages, and to permit adjustment of the plungers relatively to each other and to the syringe barrels by adjusting the carriage along the frame.

Each carriage is provided with a fixed, upwardly extending plate adapted to bear against the outer end of the plunger



Combined blood transfusion and aspirating machine.

head, and with an upwardly extending forked plate or yoke adapted to embrace the neck of the piston and bear against the inner end of the plunger head. The plunger is thus held to the carriage to move back and forth with it, but may be quickly disconnected from the carriage when the clamp held against the flanged portion of the barrel is loosened and the syringe is lifted upward.

In the center of the base plate and extending transversely of the plate midway between the syringe nozzles is a tubular member which contains the conduits and valve chambers. The intake and outlet valves are supported at opposite ends of the member, the valves being common to the two syringes. The tubular member is provided with two oppositely extending nipples midway between its ends and in alinement with the nipples on the nozzles of the syringe barrels. The nippples of the syringes and those of the conduit chamber are connected by a short length of rubber tubing.

In order to prevent reversal of the direction of movement of the plunger-connecting frame without first reversing the adjustment of the intake and discharge valves, thus causing a back flow, means is provided for automatically locking the frame against reversal until the valves are properly adjusted. A continuous flow of blood from donor to recipient may be obtained, and accidental back flow is made impossible. The machine may be used for aspirating or pumping out abnormal collections of fluid from any of the body cavities, or for pumping in fluid, as in the administration of arsphenamin, especially in outpatient departments where it may be administered uninterruptedly, and for infusions, etc. The apparatus has been found to be a time and labor saving device, requiring only one man to operate it. It will be noted from the illustration that it is very simple to operate.

The length of the apparatus may be reduced by sliding the end plates centrally, underneath the base plate. The sliding plates are held in position by a thumb screw. The reduction of its length is advantageous in permitting sterilization in a tank of minimum size.

The syringes and apparatus are, of course, sterilized separately. The apparatus can easily be cleaned by removing the screws on the under surface of the plug valves, lifting out the valves from their casings and passing a wire through the conduits. If, after its use, water followed by alcohol and then by ether is run through it, removal of the plug valves from their casings will not be found necessary.

ADVANTAGES OF THE MACHINE

1. It is a one man apparatus.
2. It provides a continuous flow of blood from donor to recipient, rendering clotting impossible.
3. It is a time and labor saving device. Large quantities of blood can be quickly transfused and at the same time measured.
4. It is absolutely leak-proof.
5. It is simple and easy of operation.
6. It can be used both for transfusion and for aspirating purposes, and when intravenous administration of fluid is indicated.

Ritz Chambers.

USE OF ADHESIVE PLASTER IN CLOSING ABDOMINAL INCISIONS

J. H. Carstens, M.D., Detroit

The process of properly suturing the abdominal incision has gone through a long period of evolution, but seems now to be about perfect with the exception of the skin suture, regarding which different views are still held. Some surgeons use the subcuticular suture, bringing the edges of the skin well together and sealing with collodium. Sewing through the skin with silkworm gut leads to the danger of carrying *Staphylococcus albus,* always found on the skin, down to the wound, thereby setting up stitch infection. In addition, removal of the stitches causes trouble and pain and some patients complain of this. Recently, clamps have been employed to hold the skin edges together until healing has occurred, when they are removed. It has been my practice to close the skin incision with strips of sterilized adhesive plaster, a very simple technic practiced even by the laity in ordinary injuries of the face. The abdominal layers are carefully sewed, but never the fat, even if it is quite thick, but this is made absolutely dry and all bleeding is arrested. The skin is thoroughly cleansed and then washed with alcohol, care being exercised that no alcohol gets into the wound. The alcohol removes the fat from the surface of the skin, so that the plaster will adhere. Then sterilized zinc oxid plaster, half an inch wide, is cut in lengths of 3 inches; the skin edges are held together with one hand, while with the other the plaster strips are applied, a quarter of an inch apart, until the whole skin wound is accurately adjusted. The hands should not touch the adhesive surface of the plaster as

this will contaminate it. Zinc oxid plaster, 2½ inches wide, is then applied around the abdomen, directly on the skin and over the smaller strips of plaster. This must go well around the hips. Three or four such strips, or as many as are necessary, put snugly around the body, will hold the wound edges in apposition in spite of any coughing or vomiting that might take place. Ordinarily, no further attention is necessary for ten or twelve days, when the patient is ready to go home. By this time the plaster comes off easily and the patient does not complain, or only slightly. It can be soaked with alcohol, but the alcohol hurts more than removing the plaster without it. If the operation has been perfectly aseptic, only a small linear scar will be seen. If a little stitch abscess should form, the plaster can be taken off sooner, or part of it may be removed, but as a rule it is better to keep it on as long as possible. For safety's sake, fresh plaster is applied when the patient is sent home; this can be removed in from three to four weeks.

A trial of this method will demonstrate what a simple thing it is. The skin incision can be closed more quickly than by sewing it, no matter what suture material is used. I have used this method in operations for appendicitis, even if drainage is necessary, in cases of drainage of the gallbladder, and of course in all kinds of pelvic operations. In all cases rigid aseptic precautions must be taken.

1447 David Whitney Building.

ROENTGENOGRAPHY OF COLLES' FRACTURE

SINCLAIR TOUSEY, M.D., NEW YORK

We have all been told that the roentgen ray has shown that many cases of supposed sprain about the wrist were really fractures. But it is not so generally known that the normal roentgenographic appearance may be misinterpreted as a fracture of the lower extremity of the radius. In a roentgenogram made with the hand and forearm prone on the plate, there is a natural line extending across the radius from the articular surface obliquely upward and radially to a point on the *radial* border of the radius, about an inch above the articular surface. Normally no displacement, of course, is visible; but in this position it might be scarcely perceptible anyway. And the absence of visible displacement in a lateral roentgenogram causes the diagnosis of a "slight fracture" to be made. This mistake can be avoided by making roentgenograms of the two wrists in the same prone position. A line



Fig. 1.—Both wrists prone on plate.

in the injured wrist which is the exact duplicate of a line in the uninjured wrist will not easily be mistaken for a fracture.

The technic that I employ involves the making of three roentgenograms, each measuring 8 by 10 inches, and each including the two wrists in identical positions.

The first roentgenogram has already been described. It shows both wrists prone on the plate.

The second roentgenogram is a lateral one showing both wrists viewed from such a direction that the dorsal border of the radius and, indeed, usually the entire radius, is seen free from the image of the ulna.



Fig. 2.—Lateral view: dorsal border of radius free from image of ulna.



Fig. 3.—Lateral view: palmar border of radius free from image of ulna.

The third roentgenogram is a lateral one showing both wrists viewed from such a direction that the palmar border of the radius is seen free from the image of the ulna. In this position, however, the image of a considerable part of the lower extremity of the radius overlaps that of the ulna.

In some actual cases of Colles' fracture there is marked deformity which is unmistakable even without the roentgen ray and in such cases all three of these roentgenograms furnish a striking picture of the displacement.

In other cases there is a certain amount of deformity persisting after supposed reduction; and, if not discovered in time to be successfully treated, this forms a permanent disfigurement and a very real disability. The case used to illustrate this article was of this type. In spite of other surgical and roentgenographic opinions that the fracture had been successfully reduced, Dr. John M. Keyes thought that the deformity and disability required fuller roentgenographic study.

The prone roentgenogram would not show any dorsopalmar displacement, but it does show slight displacement in what might be called a horizontal plane.

The second roentgenogram shows very distinct dorsal displacement or bending dorsally of the lower fragment of the radius, with evident impaction or driving of the harder upper fragment into the more cancellous lower fragment. The

bending being toward the dorsum is much more clearly shown in this roentgenogram, which shows the dorsal border of the radius, than in the third roentgenogram.

The third roentgenogram shows distinctly the palmar border of the radius where, in this case, there is only slight deformity, and the dorsal border is obscured by the shadow of the ulna. It is required, however, to obviate the overlooking of any displacement which might in some cases not show so well in the first or second roentgenograms.

850 Seventh Avenue.

SYPHILITIC HYPERPLASIA OF PENIS AND SCROTUM

LEON ROSENWALD, M.D., KANSAS CITY, MO.

True elephantiasis does not occur in this part of the world. Pseudo-elephantiasis or esthiomene is fairly frequent in the colored race. I have seen numerous cases of labial involvement. In all of these subjects syphilis is such an important factor that the older terms have been discarded and now "syphilitic hyperplasia" is used to describe the pathologic condition. Because of the unusual extent of the process, the subjoined case warrants a report:

W. T., a colored man, aged 52, admitted to the Kansas City General Hospital (colored division), Nov. 5, 1919, a laborer in one of the packing houses, did not remember of having had any of the diseases usual in childhood, but had pneumonia in 1915, and again in 1918. In 1888 he had a primary sclerosis, for which he was treated for about one month. He had gonorrhea in 1889. In 1903 he had an acute retention of urine, and the bladder was drained by the perineal route. A stricture was also cut at this time. The perineal opening never healed, and the patient had been passing most of the urine through the fistulous tract. In 1907 he



Anterior and posterior aspects of hyperplastic parts.

was struck in the perineum with a brush used for scrubbing cattle. The penis and scrotum became enormously swollen, but the swelling subsided without any operative measures. Within a short time, however, he noticed that the glans penis had become hard and swollen, with some induration and swelling on the scrotum. Gradually this swelling and induration spread over the entire penis and scrotum till about 1915, when the process seemed to come to a standstill. From that time on he had not noticed much additional growth.

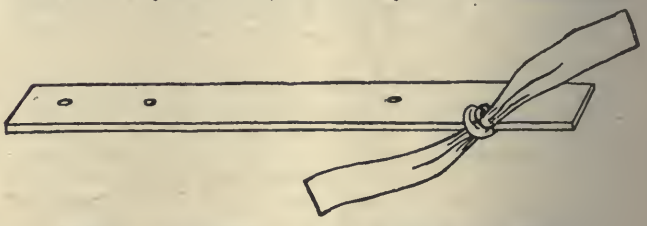
The skin over the penis and scrotum was marked by deep cross furrows, and could easily be taken for elephant's hide. The patient refused any treatment. We were unable to get tissue for microscopic examination. He permitted the pathologist to draw some blood, which proved Wassermann positive.

326 Argyle Building.

A METHOD FOR SOLIDLY INCORPORATING METAL REINFORCEMENTS IN PLASTER CASTS

WILTON H. ROBINSON, M.D., PITTSBURGH

The advantage of reinforcement with metal strips in certain casts is quite obvious; but unless they are solidly incorporated into the cast, they do not always fulfil the objects for which they are used, which may be thus summarized:



A simple reinforcement with one anchoring strip attached.

1. To prevent cracking at a strong joint, as spica of the hip. 2. To connect two sections of a cast, as the divided cast sometimes used in compound fractures of the leg. 3. To help support a heavy part, as abduction cast of the upper arm and shoulder. In addition, the jury mast may be mentioned. While hardly classed as a reinforcement, it is included because the part incorporated in the plaster may be very advantageously treated as here described.

It is not unusual, because of the formation of a plane of cleavage in a cast, for a reinforcement to slip in the folds of the plaster bandage just a little. This is especially common in the divided cast of the leg, in which slight rotation of the upper section of the cast in relation to the lower often occurs.

This slight slipping of a metal addition to a cast may either make the cast of no value or convert it into a very harmful appliance, but the slipping may be prevented by the method described.

The metal to be incorporated, of proper size and strength to meet the indications, is bored, at 1½ to 2 inch intervals, with small holes, through which are threaded 8 inch lengths of muslin bandage which are tied tightly at about their middle. When the cast is applied to about one-half the thickness it is to be, the metal, with the attached strips of bandage, is dampened in the water in which the plaster bandages are soaked, some of the plaster cream from the bottom of the pan being rubbed into the meshes of the bandage; it is now laid on the uncompleted cast in as close contact as possible at all points; that is, it should be shaped to the contour either by the hands, bending irons or a vise. The application of the plaster bandage is now continued to completion, care being taken to turn ends and corners of the strips of the bandage down and over succeeding layers of plaster bandage so as to obtain the maximum amount of "tangling" between the two, which will make for a more solid anchoring of the metal.

Of course, when it is not possible to drill holes in the metal, pieces of bandage may be tightly tied on, and the whole thing incorporated in the same way, though such procedure does not prevent motion in the long axis of a metal strip.

AN IMPROVED CONCENTRATION TECHNIC FOR THE DETECTION OF TUBERCLE BACILLI IN SPUTUM *

THEOPHILE RAPHAEL, A.M., M.D., AND NINA ELDRIDGE, NEW YORK

The possibility of refinement in routine sputum analysis is of importance, particularly as it affects those handling both frank and suspected cases of tuberculosis. We have investigated the practicability of a technic modification which suggested itself in connection with the concentration procedure reported by Greenfield and Anderson[1] in September, 1919, and, recently, ingeniously adapted to institutional routine by Woolley.[2]

According to the technic of Greenfield and Anderson, 5 c.c. of sputum, to which two volumes of 1 per cent. sodium carbonate in 1 per cent. phenol have been added, are shaken in a centrifuge tube and incubated for from twelve to twenty-four hours. The material is then centrifuged for about fifteen minutes, the supernatant fluid decanted, and smears made from the sediment and specifically stained.

While we were working with this technic, with a view to its adoption as a routine measure for Sea View Hospital, it occurred to us that greater refinement and marked time saving might possibly be afforded, if a short period of autoclaving was substituted for the comparatively lengthy incubation of the original method. The value of simple autoclaving is well known,[3] and there was no reason to suppose that even better results might not be obtained through the addition of the sodium carbonate-phenol mixture. No original is claimed for this modification, although search of the literature has not disclosed evidence of its previous use.

PROCEDURE

The method of staining employed throughout was essentially the classic Ziehl-Neelsen method, which, for the purpose of greater precision, may thus be given in detail: The slides were steamed in carbolfuchsin for three minutes, decolorized in 5 per cent. acid (hydrochloric) alcohol and 65 per cent. alcohol, and counterstained in an aqueous solution of methylene blue for one minute. They were then washed in tap water and dried.

The slides were examined independently by two observers. At least forty fields were examined, in each case, before a diagnosis of negative was returned, and, in scoring, it was found most practicable to utilize our routine laboratory scale: From 1 to 5 bacilli per slide = (f)ew; from 6 to 15 bacilli per slide = (m)oderate; 16 + bacilli per slide = (n)umerous.

In the first place, to demonstrate the superiority of simple autoclaving (twenty minutes at 15 pounds pressure) over the direct smear method, there were examined thirty-three sputum specimens from patients referred to this hospital as presumably tuberculous, but whose sputums had not been previously examined in this laboratory. Of these thirty-three cases, there were found six in favor of the simple autoclaving method, or roughly, for the purpose of gross comparison, a percentage of 18.1.

In the same manner, the original Greenfield-Anderson technic was tested against the direct smear procedure, with forty similar cases. This test showed a difference of 60 per cent. in favor of the Greenfield-Anderson technic.

On the basis of a series of forty-six similar cases, the suggested autoclave modification of the Greenfield-Anderson technic showed a superiority of 32.5 per cent. against the antiformin method, which, in turn, scored 25.5 per cent. better than the direct smear method, in forty-seven cases.

The exact technic employed by us in the autoclave modification of the Greenfield-Anderson procedure was as follows: Five c.c. of sputum, to which had been added two volumes of 1 per cent. sodium carbonate in 1 per cent. phenol, were shaken for ten minutes and then autoclaved for twenty minutes at 15 pounds pressure. Following this, the material was centrifuged for ten minutes, the supernatant fluid decanted, and smears made and stained from the sediment.

The antiformin procedure employed by us was as follows: The reagent consisted of equal parts of 15 per cent. sodium hydroxid and Labarraque's solution. Five parts of sputum with one part of reagent were shaken for fifteen minutes, incubated for one hour, and then centrifuged for fifteen minutes. The supernatant fluid was decanted and the sediment washed by centrifuging for fifteen minutes with distilled water. Smears were made and stained from the sediment.

In the comparison between the Greenfield-Anderson technic and the suggested modification of that procedure, in order to make the test more rigid, only such sputums were employed as had been previously found negative to the simple autoclaving technic, which, as has been shown, was found to be 18.1 per cent. more delicate than the direct smear method. The added rigidity of this routine may be inferred from the fact that out of fifty-three such cases, the suggested autoclave modification of the Greenfield-Anderson technic showed a superiority of only 9.4 per cent. over the antiformin procedure, as compared to a superiority of 32.5 per cent. in forty-six cases which had not previously been found negative, as already mentioned. Fifty-one cases of the latter type were very carefully examined in the manner indicated above, both in accordance with the original Greenfield-Anderson procedure and with the suggested autoclave modification. This comparison showed a difference of 2 per cent. in favor of the modification method, not including one case which was discarded because of disagreement between the observers, although the disagreement was in favor of the modification.

As an example of the hydrocarbon principle in sputum concentration, the gasolene method of Krauss and Fleming[4] was investigated. This procedure was not tested very extensively, as, from the outset, the technic seemed hardly of sufficient simplicity or practicability to warrant adoption as a routine laboratory procedure, particularly for laboratories in which a great number of cases are being handled. However, on the basis of ten not previously determined specimens, the direct smear procedure showed a superiority of 30 per cent. over this gasolene technic.

COMMENT

It is evident that the procedure of simple autoclaving is superior to the direct method, although it is not quite so efficient as the antiformin procedure. The suggested autoclave modification of the Greenfield-Anderson technic seems distinctly superior to the antiformin procedure, which may be regarded as generally standard, and which, until recently, appears to have been about the best of the concentration methods. In addition, however, the autoclave modification is much more simple and convenient for laboratory routine, the reagent being much more readily prepared and the manipulation minimal. As regards the original Greenfield-Anderson technic, although there is no doubt as to its great efficiency and reliability, yet it is obvious that the autoclave modification of this technic is at least as good, and indeed, on the basis of the actual figures of our test, even somewhat better. In addition, the autoclave modification need consume but fifty minutes at the most, while the original procedure requires at least fifteen to twenty-four hours, an element of considerable importance when time is a factor, as it so frequently is, particularly with patients coming only for examination and diagnosis. Besides, in the modification, there is no doubt as to the sterility of the material, while in the original procedure, Greenfield and Anderson do not seem to have attained this completely.

SUMMARY

On the basis of our tests, it appears that:

1. The Greenfield-Anderson incubation technic and the suggested autoclave modification of this procedure are definitely superior to the direct smear, gasolene, simple autoclave, and antiformin procedures, for the preparation of suspectedly tuberculous sputums.

2. The autoclave modification of the Greenfield-Anderson technic is slightly more delicate than the original method.

3. Further advantages of the autoclave modification over the original technic are (*a*) great time saving and (*b*) assurance of sterility.

* From the Laboratory, Sea View Hospital.

1. Greenfield, J. G., and Anderson, J.: Lancet **2**: 423 (Sept. 6) 1919.

2. Woolley, Stanley: A Simple Technic for Concentrating Sputum, J. A. M. A. **74**: 525 (Feb. 21) 1920.

3. Gilbert: Manual of Procedure for the Clinical Laboratory, Ann Arbor, 1919, p. 14.

4. Krauss, W., and Fleming, J. S.: J. Lab. & Clin. Med. **1**: 919 (Sept.) 1916.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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Subscription price - - - - - Five dollars per annum in advance

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SATURDAY, JULY 24, 1920

CHEMOTHERAPY OF TUBERCULOSIS, WITH PARTICULAR REFERENCE TO THE "CERIUM SALTS TREATMENT"

Directly after his discovery of the tubercle bacillus, Koch made numerous attempts to find chemical agents that might be used to cure tuberculosis,[1] with the tentative assumption that substances which prevent growth of tubercle bacilli in cultures could perhaps exert the same effect on these organisms in the animal body. He found numerous substances that were capable of inhibiting growth of tubercle bacilli in culture mediums to which they had been added in great dilutions, especially a gold cyanid compound; but, not being given to self-deception, he stated that "all these substances remain completely inactive when tested upon the tuberculous animal." His attention was then diverted to the study of tuberculin as a more hopeful agent, and there followed a period of fifteen years during which little was done toward seeking for chemical agents valuable in the treatment of tuberculosis, except for a little inaccurate and valueless work with compounds related to creosote and guaiacol. These substances came to have a widespread reputation as tuberculocidal agents without any one's taking the trouble to ascertain definitely whether they really had any particular capacity to injure tubercle bacilli in the test tube, the tuberculous animal or the consumptive patient, although the German manufacturing chemists did splendid work in providing innumerable derivatives, each with a new copyrighted name and a patented process of manufacture.

With Ehrlich's brilliant achievements, not only with the widely known trypanocidal and antisyphilitic compounds, but also with his careful but less known studies on "semispecific chemical disinfectants,"[2] a new interest arose in the possibility of extending this method of procedure into the field of tuberculosis therapy. Since then numerous substances have been brought forward as cures of tuberculosis under the impressive caption of "chemotherapeutic agents," and with series of a score or a hundred clinical cases in which "favorable results" have been observed. Copper has had a particularly enthusiastic boom. Gräfin von Linden and her followers in Germany projected a "complex lecithin-copper compound" of unannounced composition but of well-advertised manufacture, with the usual favorable clinical results, especially in lupus and localized nonpulmonary lesions, as is generally the case.[3] From the other side of the world, in Tokyo, came another copper cure, the cyanocuprol of Koga, while copper arsphenamin and other copper compounds sprang into the literature until the war turned attention into other channels. It is now eight years since von Linden's copper-lecithin compound made its appearance, but in the tide of German literature that is now beginning to trickle once more toward our shores, we do not notice any considerable number of references to the use of this compound, although much is said about the alarming spread of tuberculosis in the Teutonic countries. Cyanocuprol is still on the market, but the Japanese continue to advance new compounds, sometimes of copper, sometimes of gold and sometimes of neither, for the cure of tuberculosis, so apparently Koga's discovery has not settled the tuberculosis problem in Japan.

The trouble with the chemotherapy of tuberculosis is that it is too difficult, and especially it is too slow. Chemotherapeutic research is built up in slow stages at the best, but the slowness and the difficulty are augmented many times when the tubercle bacillus is the subject. First comes the determining of the capacity of compounds to inhibit growth of the tubercle bacillus in cultures—and the tubercle bacillus is not the easiest of organisms to handle, especially in incompletely equipped laboratories. Then must be determined what the capacity is to kill bacilli, which requires most meticulous technic, and control by inoculating scores or hundreds of guinea-pigs, which must be watched and studied for months or even for a year in each experiment. Then must follow experimental therapeutics on animals, which means daily work with further hundreds of animals, all under the most careful technic and control. Such work as this is by far the most difficult and expensive sort of chemotherapeutic study yet undertaken, requiring not only abundant equipment and resources, but also a cooperating staff of most highly trained bacteriologists, pathologists and chemists, and especially a highly critical direction. It cannot be done by casual investigators in a few months' time with an ordinary laboratory equipment.

We have made this somewhat lengthy statement in lieu of a more extended discussion of recent reports concerning the treatment of tuberculosis by the so-

1. Lewis, P. A.: On the Possibility of Developing an Experimental Chemotherapy of Tuberculosis, Bull. Johns Hopkins Hosp. **28**: 120 (March) 1917.

2. Bechhold and Ehrlich: Ztschr. f. physiol. Chem. **47**: 173, 1906. Bechhold: Ztschr. f. Hyg. u. Infektionskr. **64**: 113, 1909.

3. Corper, H. J.; DeWitt, Lydia M., and Wells, H. G.: The Effect of Copper on Experimental Tuberculous Lesions, J. A. M. A. **60**: 887 (March 22) 1913.

called cerium earth salts, which, happening to have been taken up by the daily papers, have achieved a notoriety and publicity which is undoubtedly far in excess of the desires of the French physicians who have introduced the procedure. Such reports as have been published are at hand,[4] and the sum and substance of the matter seems to be about this: A few observations of the inhibitory activity of salts of cerium and some other rare earth metals (especially samarium, neodymium and praseodymium) were made on the growth of tubercle bacilli in cultures, possibly because they are rare substances and had not yet been shown to be valueless in tuberculosis. According to the figures given, the inhibitory action of these salts is not at all high, about one to five parts per thousand being required to prevent growth, which may be contrasted with gold chlorid, which inhibits when in dilution of 1: 2,000,000, and yet which in the careful studies of DeWitt,[5] as in the earlier observations of Koch, could not be made to show any favorable influence on tuberculosis in animals. Innumerable substances have a more powerful inhibitory effect on tubercle bacilli than these rare earth salts. Much is made of the reduction of the fat content of the tubercle bacilli grown on mediums containing these salts, the fat being reduced, it is said, from 25 to 40 per cent. to 16 to 22 per cent.; but we know of no evidence that such variations in fat content have any significant relation to the virulence of the tubercle bacillus for man. As far as we can learn, no attempts were made to determine the capacity of the salts of the rare earths to kill tubercle bacilli, and there is no report made of any systematic study of their effects on experimental tuberculosis in animals, in which alone can accurate controls be made. We merely have the statement that on the basis of this slight inhibitory effect in cultures, and, what is perhaps more important, a capacity to cause a mononucleosis, a small number of cases of human tuberculosis have been treated with cerium salts by repeated intravenous injections. These cases, less than a hundred in the reports published, have now been observed at most a few months, and it is believed that cutaneous, glandular and chronic afebrile tuberculous pulmonary lesions have been improved, and that patients with active pulmonary tuberculosis have been made worse. There is no mention of control patients given the same general care without the salts. Possibly cerium earth salts help the tuberculous. The evidence so far presented, however, is nothing to get excited about. Many other agencies, now forgotten, have had as much and more reported in their favor at this stage of their history. We cannot find support for the statement of Rénon: "The results obtained by Grenet and Drouin with the sulphate of the cerium earths are certainly the most scientific yet realized in the chemotherapy of tuberculosis." We find much more support for the closing statement of Paul Lewis' address: "Certainly it will be a most unfortunate thing for the progress of tuberculosis research if every substance showing interesting properties in the laboratory is immediately rushed to the clinic regardless of consequences. In this situation patience is to be taken more than usually as an evidence of virtue."

4. Grenet, H., and Drouin, H.: Traitement des infections tuberculeuses chroniques par les sels de terres cériques, Bull. et mém. Soc. méd. d. Hôp. de Paris **44**: 589 (May 7) 1920. Rénon, M. L.: Ibid., p. 602. Esnault, M., and Brou, M.: Ibid., p. 606; abstr. J. A. M. A., this issue, p. 276.

5. De Witt, L. M.: J. Infect. Dis. **23**: 426 (Nov.) 1918.

FACTORS FACILITATING CIRCULATORY SHOCK

The numerous investigations of circulatory shock have at length made it clear that hemorrhage is not invariably a cause of the condition. Under certain circumstances oligemia may arise, even without loss of blood from the body. There is a diminution of the volume of blood in effective circulation which has been attributed to a loss of the normal tone of the capillary blood vessels, or to a morbid permeability of the capillary walls. A shocklike collapse of the circulation then follows the failure to maintain an effective blood volume or the analogous outcome of a loss of fluid from the vascular system.

The development of circulatory shock without actual bleeding has been demonstrated after extensive injury to tissues, especially to muscle. The recent evidence indicates that in this condition, sometimes denoted "secondary wound shock," an aseptic traumatic toxemia may occur, owing to the absorption of substances produced by the injury or liberated in the subsequent autolysis of the tissues involved. Thus, during the war Bayliss and Cannon demonstrated that when the thigh muscles of an animal were crushed under anesthesia a progressive fall of blood pressure with other symptoms of shock developed. If the blood vessels to the leg were clamped during the injury, the shock effect did not ensue until the clamps were removed. Bayliss [1] has insisted on this account that the circulatory collapse was due to the absorption of some toxic substance produced in the injured cells. He believes that this conclusion was confirmed by the fact that massage of the injured parts brought about an increase in the rate of fall of the blood pressure. The latter result is of interest in view of the clinical experience of the importance of keeping injured limbs as immobile as possible, especially when fractured. Surgeons have found that application of a tourniquet centrally to the injured part is followed by marked improvement. Similar results have been obtained by rapid excision of the damaged tissues.

It was a decided advantage for the investigation of circulatory shock when Dale, Richards and Laid-

1. Bayliss, W. M.: The Action of Gum Acacia on the Circulation, J. Pharmacol. & Exper. Therap. **15**: 29 (March) 1920.

law [2] found that a condition decidedly similar to it could be produced by the administration of histamin in suitable doses. Apparently it produces throughout the whole circulatory system a group of phenomena which are recognized as inflammation when they occur locally. Although it is easily conceivable that histamin might arise from the amino-acid histidin, which is an integral complex of the tissue proteins, there is no proof that histamin is in fact the substance responsible for the capillary damage and altered permeability in traumatic toxemia. For the present it represents merely a convenient agent for the experimental production of shock through chemical influence on the blood vessels. Dale [3] has been further enabled by it to study what influences may have an adjuvant effect in the genesis of shock following traumatic toxemia. Exhaustion, pain, cold, thirst, hemorrhage and anesthetics have all been alleged to play some part in the incidence of the circulatory collapse. Dale has correspondingly found that some of these factors which are suitable for experimental investigation actually lower in a striking degree the normal resistance to the poisonous histamin. This is particularly true of a large but not in itself serious hemorrhage. It is likewise true of anesthetics like ether, in contrast with nitrous oxid and oxygen. Dale regards it as probable that the resistance of the otherwise perfectly healthy subject to products of tissue injury would similarly be high, and it is reasonable to attribute the demonstrated danger of chloroform or ether to the severely wounded man, and the relative safety of nitrous oxid, to the much greater effect of the former anesthetics, as shown in these experiments, in depressing the normal resistance to this type of toxemia. Furthermore, it seems possible to Dale that the greater safety in civilian operations, shown by Crile and others, of the combination of local anesthesia with nitrous oxid and oxygen, as compared with prolonged anesthesia with ether or chloroform, may find its true explanation along the same lines. Hence Dale thinks that in cases in which bacterial or other toxemia is present, chloroform and ether should be avoided whenever possible.

If we regard the shock produced in operations as attributable to a combination of such factors as toxemia from injured tissues, hemorrhage and anesthetics, it is interesting to learn that the solution of gum acacia in saline as advocated by Bayliss [4] in particular gives promise of combating many of the difficulties encountered. It has no chemical or drug-like action and can be used in large quantities; and owing to the osmotic pressure of the colloid gum, which cannot readily escape from the blood vessels, fluid which would otherwise disappear is retained within the blood vessels. In the words of Bayliss [1] the gum-saline solutions can be used with benefit when the blood volume is reduced, owing to removal of a part from effective circulation by stagnation in the capillaries, as happens in wound shock, traumatic toxemia, and probably in other similar conditions. In such cases, its primary object is to maintain a normal circulation until the toxic products are eliminated from the blood, while the blood out of circulation is restored to use. When fluid has escaped from the blood, owing to capillaries becoming permeable to colloids, as in the action of tissue toxins, gum-saline restores the normal state, provided the morbid condition has not lasted too long. In the latter case, even transfusion of blood is of no avail.

2. Dale, H. H., and Richards, A. N.: J. Physiol. **52**: 110 (July) 1918. Dale, H. H., and Laidlaw, P. P.: J. Physiol. **52**: 355 (March) 1919. Dale, H. H.; Laidlaw, P. P., and Richards, A. H.: Traumatic Toxemia as a Factor in Shock, Special Report Series 26, Medical Research Committee, London, 1919.

3. Dale, H. H.: Conditions Which Are Conducive to the Production of Shock by Histamine, Brit. J. Exper. Pathol. **1**: 103 (April) 1920.

4. Bayliss, W. M.: Intravenous Injection in Wound Shock, New York, Longmans, Green & Co., 1919.

SCIENCE IN THE MEDICAL CLINIC

The possibility of making accurate observations at the bedside on the basal metabolism of patients represents a distinct step in the direction of progress in clinical medicine. To one who has followed many of the "crudely unscientific" performances in the consideration of alleged disorders of the endocrine glands, the institution of precise diagnostic measurements and analyses in place of the guesswork of former years is truly significant. The usefulness of scientifically dependable estimations of bodily functions looms up large. Only a short time ago a distinguished physiologist felt justified in remarking ironically that when several unknown factors may be interacting, as happens in the study of the internal secretions, it is pleasant to give the fancy full play, and this is also a perfectly harmless occupation provided such mental activity does not develop into hallucination.[1] Four years ago, Du Bois' review [2] of the few carefully investigated cases of the metabolism in thyroid disease revealed the possibilities in the way of more exact differentiation between true hyperthyroidism, hypothyroidism, and ill defined disorders exhibiting related symptoms. The stimulation or depression of metabolism has become open to more precise clinical interpretation. A knowledge of the basal metabolism rate in each patient has acquired a unique value in thyroid disorder because, to quote a recent writer, it gives a very accurate mathematical index of the degree of functional activity of the gland.

Among the hospitals in which the determination of basal metabolism in suitable cases has now become a routine procedure, the Mayo Clinic has afforded the largest number of records of its possible usefulness

1. Lusk, Graham: The Science of Nutrition, Philadelphia, W. B. Saunders Company, 1917, p. 439.

2. Du Bois, E. F.: Metabolism in Exophthalmic Goiter, Arch. Int. Med. **17**: 915 (June) 1916.

in thyroid disease. In a summary of the observations on several hundreds of patients, published by Sandiford,[3] the success of types of remedial treatment for exophthalmic goiter is evaluated by measurements of basal metabolic rates. In 182 cases before any treatment was instituted, the average rate was 51 per cent. above normal, with an average pulse rate of 115. A week's complete rest reduced the rates in selected cases to + 46 per cent. and 108, respectively. The results of single and multiple ligations could be similarly ascertained and the most advisable steps in treatment pursued on the basis of accurate data. In myxedema the metabolic rate may fall to 40 per cent. below normal. As there are few known disorders in which constant and distinct variations from the normal in the basal metabolic rate have been demonstrated, the significance of the findings in thyroid disorders becomes accentuated. The differential diagnosis of neuroses simulating hyperthyroidism or hypothyroidism becomes more easily possible because no definite instance of an altered rate has been found in that group of cases designated as neurasthenia or chronic nervous exhaustion. The clinical application of the estimation of the rate of basal metabolism is a direct outcome of the work of the scientific laboratory; and yet there still are those who speak contemptuously of the value of laboratory investigations in what they delight to call "practical medicine."

3. Sandiford, Irene: The Basal Metabolic Rate in Exophthalmic Goiter (1,917 Cases), with a Brief Description of the Technic Used at the Mayo Clinic, Endocrinology **4**: 71 (Jan.-March) 1920. Boothby, W. M., and Sandiford, Irene: Technic of Basal Metabolism Rate Determinations, Philadelphia, W. B. Saunders Company, 1920.

Current Comment

HAMSTRINGING THE FOOD AND DRUGS ACT

During the last few years the people of the United States have been given a very material amount of protection against those swindlers who sophisticate the foodstuffs and drug supplies of the country. Especially good work has been done in obtaining convictions against "patent medicine" fakers who have made false and fraudulent claims for their nostrums. This protection has been given through the enforcement of the federal Food and Drugs Act. The administration of this law rests with the Department of Agriculture, which, acting through its Bureau of Chemistry, collects evidence and lays the groundwork for the legal machinery of the government to proceed against the offender. The activity of the Bureau of Chemistry of the Department of Agriculture has, of course, aroused the strongest antagonism on the part of the nostrum interests. These interests may well rejoice in the recent action of Congress in cutting down the appropriations for the Department of Agriculture. Even under the appropriation given for the last fiscal year, which ended June 30, 1920, the department was greatly hampered in its work of enforcing the Food and Drugs Act. Under the plea of economy, Congress has reduced the appropriation for the enforcement of this act by thirty thousand dollars. The *Oil, Paint and Drug Reporter,* a high-grade and conservative publication, well states the fact, in commenting on this disgraceful condition of affairs, when it says:

> Under the reduced amount provided for next year, it will be impossible to supervise the regulation of the Food and Drugs Act as it should be supervised. This portends a rich harvest for those who misbrand and adulterate medicinal, pharmaceutical, disinfectant and other preparations. The vast public, which daily purchases and consumes these products, will be the chief sufferer. At a time when the act requires enforcement of the most rigorous nature the Congress has succeeded in hamstringing it.

At a time, then, when in all lines of industry the spirit of exploitation is rife, Congress, under the specious plea of economy, practically nullifies the protective power of one of the most useful pieces of federal legislation ever enacted.

THE NEWER QUACKERY

The large auditorium is filled with beautifully gowned women. There is a subdued hum of chatter and light laughter. Silently the magnificent maroon velour curtains are parted, as though by some invisible genii. The lights become dim. Then there walks—almost glides—on the stage a man faultlessly attired, his lustrous hair brushed back from a pallid countenance. The audience is hushed. He begins to speak in sympathetic tones pouring forth well rounded but meaningless phrases about the perfection of ideality, happiness through the sacrifice of the excentric ego, the attainment to Nirvana through immolation on the pyre of ideal scientific introspection. He promises youth and health to those who will believe and study. And the audience—women, occupiers of one room kitchenettes, suffering with the ennui of idleness, faces elaborated with artifices in attempt to simulate the long lost buoyancy of youth—sigh happily as they dream of the mirage he brings up before them. Quiet ushers pass along the aisles, and with sibilant whispers distribute cards on which arrangements may be made for personal consultation with the "professor." Thus works the newer quackery—health and happiness through commercialized psychology.

THE HOSPITAL LIBRARY

> *To the Editor:*—Will you kindly send us a list of books, with approximate cost, necessary to furnish an up-to-date library for our interns? SUPT.

This query, from the superintendent of a large hospital, using a considerable number of interns, is not the first request for such information that has been received. It is a practical, timely problem, and THE JOURNAL will be glad to help in its solution. Hence, suggestions are asked for such a library. Different institutions will have different requirements: some will be able to buy only fifty books, others more, some possibly a less number. Let the suggestions cover thirty, fifty, seventy-five and one hundred books. Naturally those who are kind enough to take

the trouble to respond will give the matter careful thought before making the selection. Institutions having satisfactory libraries can help by sending us a list of books that they have found most desirable. It may be that it will be possible to tabulate the replies in such a way that the composite information will be of advantage to many institutions as well as to young physicians who are beginning practice.

THE EASIEST WAY

A gynecologist was speaking. "No," he said, "I haven't taken out a permit. In twenty years of practice I have yet to find a case in which I could be sure whisky was beneficial. Not having a permit makes it easy for me to turn down requests from my intimate friends and patients." Then the opinions of a well-known internist, a pediatrician, a surgeon, and some general practitioners were sought. None of them, with the exception of one of the latter, had taken out a permit. He had given ten prescriptions in three months, and he admitted—not for publication—that in nine instances the prescription was written at the patient's request, and in the tenth something else would have served. Don't subject yourself to temptation; don't hurt the feelings of your patient or of a very particular friend by refusing to write a "prescription" when he pleads for one. Have a good excuse for not doing so. The easiest way is not to have a "permit," much less a book of blank prescriptions.

WHAT CONSTITUTES AN OVERSUPPLY OF PHYSICIANS

Our Berlin letter this week is devoted largely to a discussion of conditions in the medical profession in Germany. Incidentally, it is claimed by our correspondent that the medical profession is seriously overcrowded; statistics are quoted to show there is one physician for every 1,920 persons. In reading this, one is led to wonder how our correspondent would regard conditions in this country, where there is one physician to less than 750 population.

Medical Journals Facing Crisis.—The *Policlinico* of Rome states that in Italy all the medical journals are encountering serious difficulties from the scarcity and high price of paper and of labor, etc. Some of the journals have had to merge and others have raised their subscription price. A conference of editors and publishers of scientific and other journals was held recently at Rome, and a group of physician members of the national legislature have appealed to the minister of public instruction on behalf of the medical journals. In France, the *Presse médicale* and some of the other medical journals have raised their price. The *Presse médicale* is now 40 francs, instead of 25 francs as last year. In Belgium, the two leading medical weeklies are now published by the same firm, to save expense. The *Semana médica* of Buenos Aires has also announced that its subscription price is to be raised, and in Germany the four leading medical weeklies have also raised their prices. Subscription to the *Deutsche medizinische Wochenschrift*, for example, which was in Germany 24 marks in 1915 and 34 in 1919, is now 80 marks. For foreign countries the subscription was 32 marks in 1915 and 42 marks in 1919, but is now stated for the United States to be $5 (plus postage). The price for different countries varies with the rate of exchange at present.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ARKANSAS

Colored Physicians Organize.—Colored physicians and dentists of Mississippi and Crittenden counties met June 25 at Blytheville and organized the Northeastern Arkansas Medical Association. They elected the following officers: president, Dr. E. L. Fern, Osceola; secretary, Dr. G. W. Ezell, Blytheville; treasurer, Dr. Benjamin E. Roberts, Plymouth, and corresponding secretary, Dr. Thornton J. Meacham, Turrell.

ILLINOIS

Chicago

Physician Adjudged Insane.—Dr. Edmond R. Moras, formerly a practitioner of Chicago, but now said to be a manufacturer of proprietary medicines in Highland Park, was adjudged insane July 6.

Liquor Permits Revoked.—Capt. Hubert Howard, federal prohibition director, is said to have revoked the permits to prescribe liquor of Drs. George C. Busch and Max Gecht. The permits of four druggists were revoked at the same time.

Illegal Practitioner Fined.—Ernest W. Johnson, an assistant in the office of Dr. George C. Hunt, chief ambulance surgeon of the police department of Chicago, was arrested by the department of registration and education for practicing medicine without a license. On July 13, he entered a plea of guilty in the municipal court of Chicago and was fined $50 and costs.

Blunt Paroled.—Dr. Arthur L. Blunt, sentenced to imprisonment in the federal penitentiary, Fort Leavenworth, a year ago, on many charges of trafficking in drugs, is said to have been paroled and to be in Chicago. It is stated that the parole was granted on Dr. Blunt's promise to reveal the inside story of the graft alleged to have been paid to William H. Sage, former chief of the narcotic squad.

Reports from Midwives Lacking.—Of the 16,000 missing babies in Chicago, fifty were found July 14, when thirty midwives were called before a board of inquiry consisting of the assistant corporation counsel and Drs. Martin O. Heckard and Harold O. Jones. It was found that the majority of the midwives could not speak English, and that one midwife had failed to report nine births. One midwife who had been in this country seventeen years appeared before the board with an interpreter. The state board of registration has been requested by the board to serve notice on all midwives that unless they learn the English language within a year their permits will be revoked.

KENTUCKY

Railway Sanitation Code Adopted.—The state board of health has adopted the railroad sanitation code, devised by the U. S. Public Health Service and Railroad Administration. These regulations cover sanitation in trains, and waiting rooms, and deal with water supply, cleaning cars and stations and the consideration of a supersedence of routine disinfection of cars by frequent vacuum cleaning.

Assistant Examiner Appointed.—In accordance with the amended act passed by the last legislature, the state board of health has appointed assistant examiners from lists furnished by the various schools of medicine or cults. These examiners will conduct examinations in the special knowledge required by the various schools, the board continuing to examine in physiology, anatomy, pathology and chemistry. No appointments were made of assistant examiners representing the chiropractors as two lists were furnished the board by rival associations.

Hospital Beds in Louisville.—In a report made to the Jefferson County Medical Society by a special committee, Dr. Virgil E. Simpson, chairman, shows the city amply provided with beds for the sick poor, but very inadequately provided with beds for pay patients. The matter was referred to the health committee of the community council of which Dr. Morris Flexner is chairman. At a meeting just held attended by representatives of all the hospitals of the city, county

medical society, and welfare league, a committee was appointed to arrange ways and means for the establishment of an interdenominational hospital to care especially for the communicable diseases in persons of the city able to pay for care, as it was pointed out that the city hospital can care for these cases in the families of the poor.

MAINE

Speakers' Bureau Organized.—A speakers' bureau has been organized by the Maine Public Health Association with the object of promoting a more intelligent interest in problems of public health and welfare. About seventy-five prominent men and women of the state have enrolled in this bureau and will shortly be prepared to speak on these topics before chambers of commerce, rotary clubs, churches, community forums, women's clubs and other bodies of similar nature.

New State Officers.—At the annual meeting of the Maine Medical Association held in Augusta, June 29 and 30, the following officers were elected: president, Dr. Theodore E. Hardy, Waterville; vice presidents, Drs. George R. Campbell, Augusta; James McFadyen, Jr., Milo; Warren E. Kershner, Bath, and Forrest H. Badger, Winthrop; secretary-treasurer, Dr. Bertram L. Bryant, Bangor, and delegate to the American Medical Association, Dr. Addison S. Thayer, Waterville.

State Clinics for Physicians.—Under the auspices of the Maine Public Health Association, cooperating with the state department of health and the Maine Tuberculosis Sanatorium, arrangements have been made for a series of special lectures and laboratory demonstrations to be given at the Central Maine Sanatorium, Fairfield, beginning on August 2 and continuing through August 6. The program includes laboratory demonstrations; roentgen-ray demonstrations; physical diagnosis, particularly as this relates to pulmonary tuberculosis; differential diagnosis of tuberculosis; methods of diagnosis and treatment of venereal diseases; cancer control, and also the diagnosis of nontuberculous diseases of the chest and pathologic conditions of the upper respiratory tract.

MARYLAND

Summer Sanitation Planned.—A general discussion of plans for summer work, which include sanitation problems in Maryland summer resorts, was held at a meeting of deputy state health officers, July 17, at the office of the state board of health, Baltimore. The meeting was called by Dr. John S. Fulton, secretary of the board. The antityphoid fever campaign for the summer was one of the principal topics of discussion.

Personal.—Dr. Henry Arthur Mitchell, Elkton, who commanded the One Hundred and Thirteenth Field Hospital in France, is a patient at the university hospital where he expects to undergo an operation.——Dr. Charles L. Mattfeldt, Catonsville, health officer of the first district, while on a vacation trip, was taken suddenly ill at Niagara Falls and returned to his home from which he was later removed to St. Agnes' Hospital.

New Government Clinic Opened.—A second government night clinic similar to that in operation at Mercy Hospital has been opened at the university hospital. It is open to men Tuesday and Friday nights, and to women Monday and Thursday nights of each week. The new clinic will be directed by the same physicians that are in charge at Mercy Hospital and will follow the methods used there. The daily average of patients treated for social diseases at the latter institution is above twenty-five and some days as many as 150 apply. The staff of the clinic includes Dr. Anton G. Rytina, director; Dr. Wilford A. H. Councill, Dr. Harry M. Robinson and Dr. R. Gerard Willse.

Health Lessons Given to Children.—The children's playground association has broadened its activities this summer with the institution of health demonstrations. The demonstrations will be held at one of the playgrounds each day throughout the summer and will teach the fundamentals of health and care of the body. The Maryland Tuberculosis Association is cooperating, and has announced that a silver cup will be awarded to the playground making the highest number of "health points." Dr. Caroline B. Towles, Baltimore, will direct the educational classes for mothers, which will be held at the various recreational centers in the evenings.

MICHIGAN

State Takes Over Tuberculosis Clinics.—Arrangements have been completed by the Michigan Tuberculosis Association whereby the Michigan State Department of Health will take over the free tuberculosis clinic and the tuberculosis work among exservice men, hitherto conducted by the association.

Memorial Tablet for Nurse.—Friends of Julia E. Lide, formerly superintendent of the Emma L. Bixby Hospital, Adrian, who died in France, have subscribed to a fund for a memorial tablet to be placed in the hospital bearing this inscription:

> In memory of Julia Lide, Red Cross Nurse, Superintendent, Emma L. Bixby Hospital, December 15, 1913, to May 28, 1917. Born April 9, 1871; Died, February 24, 1919. Buried at St. Nazaire, France, with and beside our soldier boys, with full military honors. This tablet placed by her friends.

Change in Distribution of Nursing Service.—The Detroit Department of Health in its *Weekly Health Review* for July 10 gives the following changes in the distribution of nursing service rendered in November and April: infant welfare, November, 29, and April, 44 per cent.; school, November, 26, and April, 19 per cent.; tuberculosis, November, 4.3, and April, 6 per cent.; contagion, November, 26, and April, 17 per cent.; and other service, November, 14, and April, 14 per cent. There was a material increase in infant welfare work and in tuberculosis, but in the work in schools and in contagious diseases there was a relative decrease.

MISSOURI

Public Health Street Car.—The first public health street car in the United States traveled the streets of St. Louis the last week in June standing at a designated location on successive days so that the people of the communities could visit it and learn the lessons taught therein regarding tuberculosis. The exhibit is being made by the Tuberculosis Society of St. Louis and more than 5,000 persons visited the car during the week.

Centennial Endowment Fund.—The alumni and friends of St. Louis University are undertaking a campaign to raise an endowment fund of $3,000,000. The centennial of the university was passed two years ago without formal recognition because of the World War. The university was founded in November, 1818, as the St. Louis Academy, and two years later expanded into the St. Louis College. In 1832, the college was given a charter as a university, and the faculty of medicine was attached in 1836. The principal immediate needs of the institution are $1,500,000 to provide an income of $75,000 a year, of which $60,000 is to be applied to the medical and dental schools; new laboratory and other betterments for the school of medicine at the cost of $250,000, and the future needs for the college of medicine and dentistry for new clinics and new buildings, $550,000. The rest of the $3,000,000 desired is for the institute of law, school of commerce and finance, and the college of arts and sciences.

NEW YORK

New Regulations to Prevent Anthrax.—The New York City Department of Health, June 16, adopted resolutions regulating the manufacture and sale of hair brushes and hair cloth. These resolutions forbid the use in the manufacture of hair brushes and hair cloth of any animal hair which has not been sterilized by a process prescribed or approved by the department of health. No person is permitted to bring into or offer for sale or sell or deliver in the city of New York any cloth or brush containing animal hair unless it shall have been so sterilized. These regulations provide that proper sterilization shall consist in boiling the hair in water maintained at a temperature of 212 F. for three hours or the placing of the hair in an autoclave in which a 10-inch vacuum is produced, and live steam then turned on and kept at 15 pounds pressure for a period of three hours.

New York City

Personal.—Dr. S. Josephine Baker has been made consultant in child hygiene for the U. S. Public Health Service and has received a commission as surgeon in the reserve of the U. S. Public Health Service.——Dr. Jacob Sobel has been designated assistant director of the Bureau of Child Hygiene of the Department of Health.——Miss Julia Stimson has been appointed superintendent of the Army Nurse Corps, with the relative rank of major.

Police Hospital for Brooklyn.—The committee appointed to consider the need for a police hospital has decided that the city should have such an institution. The purpose of such a hospital will be to provide medical, surgical and clinical treatment for the police force, active or retired, and

for their families. A campaign for $5,000,000 will be started shortly. It is estimated that the site will cost $800,000; the building and equipment, $2,500,000, and the rest will form an endowment to meet in part the cost of up-keep.

Wood Alcohol Deaths.—The report of the Metropolian Life Insurance Company for the first four months of 1920 shows that there were forty deaths from wood alcohol poisoning incidental to the use of adulterated beverages. During the same time there were eighteen deaths from acute or chronic ethyl alcoholism. Under present conditions, wood alcohol poisoning is, according to this report, a significant cause of death. On the other hand, deaths from alcoholism in the narrow sense of the term numbered twelve during this period as against sixty-two for the same period of 1919. Alcoholic cirrhosis of the liver shows no deaths thus far this year, although there were seven during the first quarter of 1919.

Taking Fingerprints of All Babies Advocated.—Owing to the difficulties encountered in an investigation into the circumstances under which an undertaker obtained a woman's body from the morgue and buried it without the knowledge of her relatives, the suggestion made by Deputy Police Commissioner Joseph A. Faurot and Acting Capt. John A. Ayres, that physicians filing birth certificates be required also to file fingerprints of the new-born baby is receiving open discussion by city officials. It is pointed out that this would make available an infallible lifelong method of identification, would prevent the burial of a body as that of another person, would limit opportunity for fraud and guard the individual. Dr. Frank J. Monaghan, Brooklyn, acting health commissioner, has expressed himself as favorably impressed with the plan, as it would give an identification record that would stand a legal test and would serve to identify lost children. It is thought that to have the system favorably considered it will be necessary to educate the public because the mention of taking fingerprints suggests a criminal process, though it may be quite as useful in safeguarding the individual or in saving a fortune.

NORTH CAROLINA

Report Profits for Children's Hospital.—Out of the profits of Grove Park Inn, Asheville, the owner will construct and maintain in Asheville a modern hospital for the treatment of crippled children of America on a site near Grove Park Inn on Sunset Mountain. Dr. W. P. Herbert, Asheville, will be chief of the medical staff.

Colored Medical Association Meeting.—The thirty-first annual meeting of the North Carolina Medical, Dental and Pharmaceutical Association was held at Rocky Mount, June 29 and 30, and Charlotte was selected as the place of meeting for next year, and the following officers were elected: president, Dr. William C. Strudwick, Durham; vice presidents, W. H. Williams, Goldsboro, and Peter W. J. Burnett, Rocky Mount, and secretary-treasurer, Dr. Clyde H. Donnell, Durham.

Physician Fined for Failing to Report Births.—The highest fine as yet imposed in a local court for violation of the state vital statistics law was imposed on Dr. B. W. Tugman, Warrensville, July 17. He is said to have been assessed $50 and costs in two cases of failing to report births when he was the attending physician. The case was aggravated by the fact that last summer Dr. Tugman was convicted and given a nominal fine and that in this instance prosecution was instigated only after repeated unsuccessful efforts had been made to get him to comply with the law.

OHIO

Society Acquires Building.—The Toledo Academy of Medicine has purchased the Frank H. Hurd Democratic Club Building, Toledo, for $42,500.

Gift to Homeopathic College.—It is reported that a gift of $400,000 has been made by Mr. Charles F. Kettering of Dayton to promote research in the College of Homeopathic Medicine of the Ohio State University.

Medical Chautauqua.—A medical chautauqua for physicians of Dayton and vicinity will be held at the Fidelity Building, Dayton, September 21 to 24. Among the physicians on the program are Drs. Hugh T. Patrick, Dean Lewis and Alfred C. Croftan, Chicago, Dr. Walter B. Cannon of Harvard University and Dr. Lillie of the Mayo Clinic.

Reciprocal Relations Withdrawn.—At a recent meeting, the Ohio State Medical Board adopted a resolution canceling reciprocal relations with the Arkansas Eclectic Board of Medical Examiners. The reason stated was that the latter board persisted in examining and licensing graduates of a nondescript medical college of Kansas City which is not recognized as an eclectic college by the National Eclectic Medical Association.

Personal.—Dr. Stephen A. Douglass, superintendent and medical director of Ohio Tuberculosis Sanatorium, Mount Vernon, has resigned, to take effect September 1.——Dr. Thomas J. Arundel, Youngstown, who served in Italy during the war as dietitian and physician with the Knights of Columbus, has received from the vatican the gold cross "Pro Ecclesia et Pontifice" in consideration of service rendered humanity and the church.——Dr. Harry L. Rockwood has been appointed health commissioner of Cleveland.

PENNSYLVANIA

Personal.—Dr. William K. T. Sahm, Pittsburgh, medical examiner for the Pennsylvania Railroad, voluntary relief department, retired from active service, June 30, after an administration of thirty-four years. Dr. Sahm was presented with a silk umbrella by the assistants and clerks of the department and a leather traveling bag by the medical examiners of the Pennsylvania system.——Dr. John M. Lawler, Pittsburgh, superintendent of the Allegheny General Hospital since 1918, has resigned.——Dr. Thomas H. A. Stites of the state tuberculosis sanatorium, Hamburg, has resigned.——Dr. Charles J. Hatfield, Philadelphia, and T. Finegan, state superintendent of public instruction, have been appointed Pennsylvania members of the national advisory council of the Modern Health Crusade.——Dr. George S. Deibert, Allentown, heads the eligible list for superintendent in the new bureau of hospitals in the department of health, Philadelphia.

Philadelphia

Regulations for Barber Shops.—Drastic regulations for barber shops in Philadelphia were adopted, July 1, by the board of health, acting on a request made by proprietors of barber shops in the central part of the city for sanitary inspection and certification of their establishments. A copy of regulations will be sent to every barber shop in the city.

Alcohol and Narcotic Law.—The committee on medical defense of the Philadelphia County Medical Society has issued to members a formal statement which declares, "The law on prescribing alcohol and narcotics is sufficiently clear and liberal to cover all ordinary cases and occasions," and which warns members "not to bring discredit on the society and profession."

War on Narcotics.—Mayor Moore will call a conference of drug manufacturers to establish measures to check the illicit traffic of drugs in this city. This action was taken as a result of the discovery of $6,000 worth of drugs by members of the vice squad. It was found that the drugs were being sold by "pedlers" to addicts for $2 a "deck." The confiscated drugs were turned over to the department of health for use in the hospitals.

More School Inspectors Needed.—According to statistics 15 per cent. of the schoolchildren failed to qualify for promotion in June at the end of the term, and the greatest number of these failures were evidenced in the first grade. The board of education has delayed in making necessary increases in the medical staff. The department of health through its health centers is ready to assist in every possible way to take care of the children who need medical attention, but it cannot and should not be the means for finding the needs of the children. More medical inspectors and nurses are needed. Ten public school buildings have been found absolutely insanitary, and an order has been issued to the board of education to place them in better condition.

City Bathhouses Insanitary.—Insanitary condition exist at a majority of the recreation centers and bathhouses under the auspices of the board of recreation, according to a report on a survey of those places submitted to Director Tustin by Dr. Blair Spencer, physician in chief of the department of public welfare. According to Dr. Spencer, 270,550 persons used the public bathhouses and swimming pools at recreation centers during the week ending July 10. Measures to prevent the communication of disease through the water of swimming pools in these public bathhouses were to go into effect the week beginning July 13. Every person entering a pool shall be required to take a shower bath with a generous application of soap. Bathhouse attendants will be required to make a cursory inspection of all persons entering their establishments in order to detect any appearance of disease.

TENNESSEE

New Infirmary in Bristol.—A fourteen-room eye, ear, nose and throat infirmary has been opened in Bristol by Dr. Thomas F. Staley.

Personal.—Dr. James J. Durrett, Charlottesville, Va., has entered on his duties as head of the Municipal Health Department of Memphis.——Dr. E. B. Wise has been made director of the city health department of Chattanooga, succeeding Dr. Stanton H. Barrett, resigned.

Physicians Elect Officers.—At the twenty-ninth annual meeting of the West Tennessee Medical and Surgical Association held in Jackson, the following officers were elected: president, Dr. William T. Black, Memphis; vice presidents, Drs. W. B. Bond, Martin, and Jesse P. Baird, Dyersburg; secretary, Dr. Isaac A. McSwain, Paris, and assistant secretary, Dr. George R. McSwain, Paris. Paris was selected as the next place of meeting.——At the annual meeting of the Middle Tennessee Medical Association held in Centerville, Dr. John H. King, Nashville, was elected president.

TEXAS

Health Crusade.—Since the beginning of the modern health crusade movement last year, more than 420,000 schoolchildren of Texas have been enrolled as crusaders.

Library Association Incorporated.—The Bexar County Medical Library Association has been incorporated at San Antonio with a capital stock of $10,000 by Drs. Frank Paschal, T. Lawson Moody and William A. King.

Personal.—Dr. Charles W. Goddard, Austin, state health officer, has been elected physician in chief for the University of Texas.——Dr. Charles S. Gates, Austin, has been elected physician for men in the University of Texas.——Dr. Dru McMickin has been appointed health officer of Beaumont.

Quarantine Regulation.—In accordance with a modified quarantine proclamation which became law, June 27, every mayor and health officer within the quarantine area has been notified that a complete rat extermination campaign must be inaugurated in the quarantine area which comprises 50 miles inland from the Gulf Coast and Rio Grande and Sabine borders and a radius of 100 miles from Galveston and Beaumont. This quarantine applies to all vessels, railway trains, trucks, persons or things coming from places infected, unless satisfactory proof to the contrary be submitted to the health officer.

Bubonic Plague.—A six-day period of quarantine has been made effective, June 22, at Sabine Pass, on vessels coming from ports in Mexico reporting bubonic plague.——Up to July 8, eight cases of bubonic plague had developed, with three deaths at Beaumont, and at Galveston up to that time, there had been three cases of plague with two deaths.——More than 20 per cent. of the rats examined in Beaumont are said to have been infected with bubonic plague.——The state health officer has issued an order that all health officers and physicians in Texas report by telegraph to the state board of health immediately all suspicious cases of bubonic plague.——The death of a negro boy of Galveston, at Port Arthur, July 6, is reported to have been due to bubonic plague.

WISCONSIN

Clinics Open.—Cudahy and South Milwaukee have opened permanent children's clinics. The clinic in Cudahy is held each Wednesday afternoon, under the care of Dr. Earle X. Thompson, and that at South Milwaukee, every Thursday afternoon from 3 to 4 o'clock, under the care of Dr. Charles A. Dockery.——Six clinics are now being held in Beloit, namely, a children's tuberculosis clinic, an eye, ear, nose and throat clinic, an infant welfare clinic, a dental clinic, a clinic for nervous diseases and a venereal disease and tuberculosis clinic.

Personal.—Dr. Gilbert E. Seaman, Milwaukee, formerly colonel, M. C., U. S. Army, and surgeon of the Thirty-Second Division during the World War, has been nominated by the conservative Republicans as candidate for governor of the state.——Dr. Ernest I. Bunker, Grantsburg, has been appointed coroner of Burnett County.——Dr. Robert W. Blumenthal has been appointed a member of the medical staff of the Milwaukee County Dispensary; Dr. Herbert C. Dallwig has been appointed roentgen-ray operator; Dr. John E. Mulsow to the eye, ear, nose and throat department; Glenford L. Bellis to the tuberculosis department, and Dr. Albert F. Young to the department of nervous and mental diseases.——Dr. Neil Andrews, Oshkosh, sailed for Europe, July 3.——Dr. and Mrs. Bradbury N. Robinson, Baraboo, sailed for Europe, July 1.——Dr. Albert J. Pullen, North Fond du Lac, has been elected president of the Fond du Lac County Branch of the Wisconsin Humane Society.

CANADA

Liquor Issue Restricted.—An order in council has been approved by the Ontario government whereby physicians are now allowed only 3 gallons of liquor at any one time in place of 10 gallons as formerly.

Chair of Public Health.—The University of British Columbia has received an offer from the Provincial Red Cross Society for a Red Cross chair of public health. The Red Cross undertakes to pay the salary of a professor of public health for a period of three years, providing the university will undertake laboratory expenses in connection with the chair.

Representatives Elected.—The British Columbia Medical Act requires an annual election of representatives for various medical electoral districts throughout the province. The College of Physicians and Surgeons of British Columbia announces the results of the election for this year as follows: Victoria District, Drs. Roderick L. Fraser and George W. Hall; New Westminster District, Dr. Richard E. Walker; Vancouver District, Drs. Edwin D. Carder and Vestus E. D. Casselman; Kamloops District, Dr. John S. Burris, and Fernie District, Dr. Saul Bonnell.

Christian Science Church Not Residence.—A Toronto judge has ruled that a Christian science church cannot be erected on property reserved solely for residential purposes. The lawyer for the church argued that as the work of the Christian science church had to do with healing and as a doctor of medicine would be allowed to practice his profession in any such house, therefore the church should be so allowed. Mr. Justice Orde ruled that what is meant by physician in legislative enactments is a duly qualified physician as recognized by the law of Ontario.

Hospital News.—Toronto is still seeking sites for both an isolation and reception hospital. As the present isolation hospital is situated in the eastern part of the city, Dr. Charles J. C. A. Hastings, M. O. H., is of the opinion that residents in the east end will not tolerate the erection of any more hospitals.——The newly organized Western Association of Hospitals, recently formed at Calgary, Alta., is for the purpose of forwarding the movement for greater cooperation among the hospitals of Manitoba, Saskatchewan, Alberta and British Columbia. Dr. Maurice McD. Seymour, Regina, has been elected president. Each province has a vice president. Dr. Warren of Calgary is the secretary.

Personal.—Dr. Herbert A. Bruce, Toronto, has been made a chevalier of the Order of the Crown by the king of Belgium. This is in recognition of services rendered Belgium during the great war. Dr. Bruce was one of twelve consulting surgeons for the British army.——Dr. John G. Cunningham, Toronto, has been appointed head of the new bureau of industrial hygiene just created by the Ontario Board of Health.——Dr. Helen MacMurchy, Toronto, has been appointed to take active charge of the division of child welfare in the federal department of health, Ottawa.——Dr. Delmer A. Craig, London, has accepted an appointment as medical consultant on the staff of the Massachusetts-Halifax Health Commission.

GENERAL

Research Laboratories.—The National Research Council, in a bulletin just issued, lists more than 300 laboratories in the United States in which fundamental research is carried on.

Obstetricians and Gynecologists to Hold Annual Session.—The thirty-third annual meeting of the American Association of Obstetricians and Gynecologists will be held in Atlantic City, September 20 to 22, under the presidency of Dr. George W. Crile, Cleveland.

Climatologists Elect Officers.—At the annual meeting of the American Climatological and Clinical Association held in Philadelphia in June, the following officers were elected: president, Dr. Carroll E. Edson, Denver; vice presidents, Drs. Nelson Estes Nichols, Portland, Me., and Gordon Wilson, Baltimore, and recorder, Dr. Cleveland Floyd, Boston.

Railway Surgeons to Meet.—The thirtieth annual session of the New York and New England Association of Railway Surgeons will be held at the Hotel McAlpin, New York, October 19, under the presidency of Dr. William B. Coley, New York, chief surgeon of the New York Central Lines. Dr. George W. Crile, Cleveland, will deliver the address in surgery.

Warning.—It is reported from Fort Morgan, Colo., that a man, signing his name as J. P. McKeen, is going through the country selling contracts with the Fleming Supply Company, Kansas City, Mo., whereby the purchaser is supposed to get automobile supplies at factory cost for the price of the contract, which is $100 for five years. This company does not exist at the address given. The officials of Morgan County, Colo., are said to be holding a warrant for the arrest of McKeen who has been working chiefly among physicians.

Mississippi Valley Conference on Tuberculosis.—The eighth session of the Mississippi Valley Conference on Tuberculosis will be held in Duluth, September 2 to 4. The Chicago Tuberculosis Institute is endeavoring to arrange a trip to Duluth and return by boat, leaving Chicago, August 30, at 1:30 p. m., arriving at Duluth, September 2, 7:30 a. m., leaving Duluth, September 4, 11 p. m., and arriving in Chicago, September 7, 10:30 a. m. Reservations may be made and other information obtained by applying to James Minnick, superintendent, Chicago Tuberculosis Institute, 8 South Dearborn Street, Chicago.

Public Health Meeting.—The American Public Health Association will meet in San Francisco, September 13 to 17. Special cars will leave from Boston and New York on September 7, connecting with a special train leaving Chicago, September 8. The program will include the following entries: a symposium on the relative functions of official and non-official health organizations; western health problems; narcotic control; food poisoning; organization for child hygiene; mental hygiene and health centers. The foregoing subjects and others will be distributed among the following ten sectional groups: General Sessions, Public Health Administration, Laboratory, Vital Statistics, Sociological, Sanitary Engineering, Industrial Hygiene, Food and Drugs, Personal Hygiene, and Child Hygiene.

Bequests and Donations.—The following bequests and donations have recently been announced:

Boston Floating Hospital, Sharon, Mass., Sanatorium, and Quincy (Mass.) City Hospital, each $2,000, by the will of Daniel F. Chase, Quincy.

Methodist Hospital, Philadelphia, $5,000, by the will of Charles W. Harding.

Nyack (N. Y.) Hospital, $1,000, by the will of Justice Ernest Hall.

Locust Mountain Hospital, Shenandoah, Pa., donations of $2,500, by four physicians of Shenandoah and one of Pottsville, Pa.

The Zionist organization, a donation of $18,500 for the development of medical and health service in Palestine, by Mrs. Nathan Strauss, and $100,000 for a health and research department of the Hebrew University of Jerusalem, a donation by Mr. Nathan Strauss, New York.

For the Children's Hospital project of the Mystic Shrine, a donation of $7,000, by Retiring Past Potentate William Freeland Kendrick, Philadelphia.

Bridgeport (Conn.) Hospital, $10,000, by the will of William F. Armstrong.

Rockefeller Institute Appointments.—The board of scientific directors of the Rockefeller Institute for Medical Research announces that Dr. Winthrop J. V. Osterhout, Cambridge, Mass., has been appointed a member of the board, succeeding Dr. Theodore C. Janeway, deceased.——The following associate members have been made members: Dr. Alfred E. Cohn, medicine; Dr. Francis Peyton Rous, pathology and bacteriology; Dr. Donald D. Van Slyke, chemistry. The following associates have been made associate members: Dr. Francis G. Blake, medicine, and John H. Northrup, experimental biology. ——The following assistants have been made associates: Dr. James H. Austin, medicine; Harry W. Graybill, animal pathology; Dr. William C. Stadie, medicine.——The following have been made assistants: Miss Helen L. Fales, chemistry; Dr. Philip D. McMaster, pathology and bacteriology, and Miss Marion L. Orcutt, animal pathology.——The following new appointments were announced: Harry Clark, associate member in pathology and bacteriology; Pierre L. du Nouy, associate member in experimental surgery; Dr. Paul H. de Kruif and Lloyd D. Felton, associates in pathology and bacteriology; Dr. Rudolph W. Glasser, associate in animal pathology; Drs. Carl A. L. Binger, Ralph H. Boots and Charles P. Miller, Jr., assistants in medicine; Dr. Louis A. Mikeska, assistant in chemistry; Eugene V. Powell, assistant in roentgen ray; Dr. Leslie T. Webster, assistant in pathology and bacteriology; Drs. Goronwy O. Broun and André L. E. Gratia, Miss Katherine M. Dougherty and Mr. Thomas J. LeBlanc, fellows in pathology and bacteriology; Dr. Giovanni Martinaglia, fellow in animal pathology; Mr. Henry S. Simms, fellow in chemistry. ——Dr. Marshall A. Barber, associate in pathology and bacteriology, has accepted a position with the U. S. Public Health Service to do field work in the malaria research laboratory, Memphis, Tenn.——Miss Angelia M. Courtney, assistant in chemistry, has accepted an appointment to do chemical research work in the University of Toronto.——Dr. Carl Ten Broeck, assistant in the department of animal pathology, has been made associate professor of bacteriology in Peking Union Medical College.——Mr. Earl B. Clark, assistant in chemistry, has accepted a position with the bureau of standards.——Dr. Ferdinand H. Haessler, assistant in pathology and bacteriology, has been appointed resident pathologist to the department for nervous and mental diseases of the Pennsylvania Hospital, Philadelphia.——Dr. Arthur B. Lyon, assistant in medicine, has resigned to enter private practice.

Colonel Russell Resigns to Take Up New Duties.—Col. F. F. Russell has resigned from the Medical Corps, U. S. Army, to take charge of the newly organized Division of Public Health Laboratories of the International Health Board of the Rockefeller Foundation. Colonel Russell's resignation from the army is to be regretted so far as the medical corps is concerned. He has been recognized as one of its most efficient officers; he has the rare combination of scientific spirit and executive ability and through this combination has accomplished much. He has developed and stimulated the scientific spirit in others so that the accomplishment of the army in scientific matters has been by no means inconsiderable. In 1908, Colonel Russell introduced prophylactic vaccination against typhoid fever in the army. The well-known Russell double-sugar medium was a product of this period, and was the first instance in which more than one indicator of the bacterial action was used in the same tube. In 1903, he collaborated with Hiss in the study of dysentery bacilli, and described the organism later known as the Hiss-Russell, or "Y," type of the dysentery bacillus. On the death of Major Carroll in 1907, Colonel Russell was placed in charge of the laboratories of the Army Medical School, with which he has been more or less associated ever since. In 1912, Colonel Russell went to Porto Rico to assist in suppressing an outbreak of plague. In 1914, he went to Vera Cruz as a member of the expeditionary force and directed the laboratory service of the medical department. In 1915-1917 he served on the Canal Zone and planned and built the model board of health laboratory. In administrative lines he has been especially active in building up the Army Medical School and department laboratories from the point of view of equipment, personnel and output. For some years he has advocated the placing of the school on the grounds of the Walter Reed Hospital, and the development of a symmetrical scheme for graduate medical education, combining both hospital and laboratory facilities. This project is about to be realized, largely through the active support of Surgeon-General Ireland. While there is universal regret in the medical corps over the loss of Colonel Russell's services to the army, it is realized that his ability and his army experience will be especially valuable in his new position. He will retain a commission in the reserve corps.

FOREIGN

Cholera in Japan.—A press telegram from Tokyo states that 500 new cases of cholera had been reported in Japan in the previous week.

Prize Awarded to Inventor of Cinematic Amputations.—The Ribero prize of 20,000 lire was awarded recently by the Turin Accademia di medicina to Dr. G. Vanghetti of Empoli, Italy, for his method of cineplastics, the utilization of the muscles in the amputation stump to actuate artificial limbs.

Testimonial to Roux of Halle.—Dr. W. Roux, professor of anatomy at the University of Halle, known for his research on the mechanics of evolution and functional adaptation of parts, recently reached his seventieth birthday, and a prize was founded in his honor by the city of Halle and another by the minister of arts and sciences. His pupils also collected 31,000 marks toward a special institution for research on evolution, and two *festschrifts* were presented to him.

Deaths in Other Countries

Dr. **M. Anzoátegui,** a leading physician of Salta province, Argentine, at one time minister of the treasury, aged 50.—— After a long illness Dr. **Terroba y Solares,** ophthalmologist of Mexico City.——Dr. **David Berry Hart,** lecturer and writer on obstetrics and gynecology at the School of Medicine of the Royal Colleges, Edinburgh, honorary member of the American Gynecologic Society, aged 69.——Dr. **P. W. Heiberg,** one of the pioneers in modern surgery in Denmark, aged 80.——Dr. **B. Rojas Carvallo** of Santiago, Chile, aged 66. ——Dr. **G. Klein,** professor of gynecology and obstetrics at the University of Munich, and medical historian.——In Cuba, Dr. **M. Riva** and Dr. **G. J. Benasach,** both of Havana.

Government Services

Honor to Captain Pleadwell

The order of Commander of British Empire (military division) has been conferred on Capt. Frank L. Pleadwell, M. C., U. S. Navy.

Departments of Public Health Service Move

Arrangements have been made whereby several bureaus of the U. S. Public Health Headquarters in Washington will be all located in the building formerly occupied by the U. S. Shipping Board at Sixth and B Streets. The bureaus which will be thus transferred are the hospital, venereal disease, Marine Hospital dispensary, industrial hygiene and statistical. These various bureaus have heretofore been located in various parts of Washington, D. C., but will in the future be located in the Shipping Board Building.

Airplane Ambulance

A new design of airplane ambulance, with a fuselage designed especially for the transportation of the sick and wounded, was recently completed at the Air Service Experimental Station, McCook Field, Dayton, Ohio. The basis for the new ambulance is the DH-4 type of airplane, but many modifications have been made to increase its stability and safety. The depth of the fuselage behind the pilot's seat has been increased, and this space has been divided into upper and lower compartments, each of which provides space for one litter patient. Above the upper compartment is a cockpit provided with a portable seat for the use of the medical officer. On its trial flight, the ambulance negotiated 130 miles in sixty-five minutes and made the return trip in 105 minutes. Several ambulances of the new type are being constructed for use on the Mexican border.

Medical and Surgical History of the World War

Among the important work under way in the office of the Surgeon-General of the Army is the preparation of the medical-surgical history of the World War. Col. Charles Lynch, M. C., is in charge of this work, and is assisted by Colonels Brook, Siler, Moncrief, Wolf, Oliver and Major Kramer of the Surgeon-General's staff.

The history will include an account of the work done during the war in a great many branches of modern scientific medicine and surgery. Subjects to be presented and medical officers who will present such subjects are set out in the following:

Administration, Western Front, Lieut.-Col. Louis C. Duncan.
Administration, United States, Lieut.-Col. Fielding H. Garrison.
Narratives, Col. Bailey K. Ashford.
Sanitation, Col. W. P. Chamberlain.
Sanitation, Western Front, Col. Haven Emerson.
Internal Medicine, Gen. W. S. Thayer.
Surgery, Gen. John M. T. Finney.
Neurology, Col. Thomas W. Salmon.
Oto-Rhinology, Lieut.-Col. Joseph R. McKimon.
Statistics, Maj. Albert G. Love.
Pathology, Col. William H. Welch.
Hospitals, Lieut.-Col. Casey A. Wood.
Communicable Diseases, Col. Hans Zinsser.
Gunshot Wounds, Col. George E. Brewer.
Aviation, Col. Thomas R. Boggs.
Gas Defense, Col. H. L. Gilchrist.
Reconstruction, Col. Frank Billings.
Ophthalmology, Col. George E. deSchweinitz.

It is expected that the history will contain about fifteen volumes, and according to present tentative plans the respective volumes will cover the following titles:

I. Introduction.
II. Administration—United States.
III. Administration—Western Front.
IV. Statistics. Mathematician Interpretation of Data (Anthropometry).
V. Sanitation in the United States, Including Possessions.
VI. Camps and Cantonments.
VII. Hospitals.
VIII. General Medicine.
IX. Neurology.
X. Surgery.
XI. Gunshot Wounds.
XII. Pathology.
XIII. Physical Reconstruction.
XIV. Air Service.
XV. Chemical Warfare.

Foreign Letters

PARIS

(From Our Regular Correspondent)

July 1, 1920.

Death of Simonin

Dr. Simonin, director of the army medical school at Lyons, recently died at the age of 56. In the early part of the World War, Dr. Simonin was severely wounded and taken prisoner, and he wrote an affecting account of his experiences during this captivity.

Congress of Alienists and Neurologists

The twenty-fourth Congrès des médecins aliénistes et neurologistes de France et de pays de langue française will be held at Strasbourg, August 2-6, 1920. Dr. E. Dupré, clinical professor of mental disorders and diseases of the brain on the Paris medical faculty, and Dr. Pfersdorff, professor of psychiatry on the Strasbourg faculty, are president and vice president, respectively, of the congress. The topics listed for formal discussion include postoneiric psychoses, opened by Dr. Delmas; occupational factors in mental disorders, opened by Dr. Coujonlou, and the lesions of the thyroid gland in exophthalmic goiter, opened by Dr. Roussy.

The Work of L'Œuvre Grancher

In a communication to the Académie des sciences morales et politiques, Dr. Armand-Delille recently stressed the value of familial placement of children in child welfare work. Basing his arguments on the results obtained by L'Œuvre Grancher, which has placed more than 2,000 children, Dr. Armand-Delille insisted on the superiority of this method, first and foremost from the moral point of view, because it most nearly approaches the conditions of normal family life; from the hygienic point of view, because it avoids the danger of infectious diseases, the complications of which are particularly fatal to institutional children, especially in nurseries and baby homes; from the economic point of view, because it does not require large sums for buildings and the salaries of a specially trained personnel, always difficult to find; from the social point of view, because the child thus takes a liking to a trade, or, if a girl, to housekeeping.

Finally, familial placement offers the advantage that if the family has been chosen with the desirable discernment, the child finds an educational and moral environment superior to that in the average run of family. The only necessary condition, therefore, to demonstrate the incontestable superiority of familial placement is that the choice of the family be made carefully under competent supervision.

The Truth About American Prohibition

Under the foregoing title, the *Etoile Bleue,* official organ of the Ligue nationale contre l'alcoolisme, published an interesting and expedient article. As a matter of fact, for some time past the daily press has carried foreign dispatches tending to prove that prohibition in the United States has had no social effect, except to encourage the use of more deleterious drugs, morphin, cocain, ether and methyl alcohol; the latter agent is said to have caused poisoning en masse. It is also claimed that prohibition has caused in reality an increase of alcohol consumption and of crime, that it has provoked popular uprisings and brought on a strike of workmen, would-be malcontents because they were no longer able to imbibe freely. It is said that a great number of American workmen, recent immigrants, have returned to their own countries where they can drink again at will. One report states that the roads leading to Cuba, where alcoholic beverages may be freely obtained, are encumbered with travelers going to take

a short course of inebriety; that 2 miles off the coast a floating island has been built where thirsty Americans can become inebriated in all privacy. There is not space enough to relate all the tiresome stories which are printed, without even a wrinkling of the forehead, by the public press under subsidy of an international syndicate of liquor merchants. Attentive reading suffices to convince one that such news is made of whole cloth. One thing is certain, that this European newspaper campaign has enormous financial support; but unified direction, the semblance of sincerity and tact are lacking. These lies are devoid of even the most elementary scientific logic, which alone could bring illusion to the uninformed readers.

The *Etoile Bleue* thinks that it is incumbent on independent journals to publish the truth about prohibition supported by the best possible proof. It quotes from reputable and reliable papers to show certain good effects of prohibition, among others the decrease in arrests for drunkenness, the diminution of poverty and the increase in savings and bank deposits. This article is all the more interesting since the antiprohibition campaign recently found an echo in a medical journal. The *Gazette des hôpitaux,* in fact, published a letter from an American correspondent who claims that prohibition was forced on the country, as it were by surprise, by certain radical elements which very cleverly knew how to profit by the favorable circumstances created by economic exigencies of the war and by the absence of a large number of voters.

Visit of Spanish Physicians

A group of Spanish physicians, including Dr. Núñez Grimaldos, editor of *Los Progresos de la Clínica* and *Plus Ultra,* recently visited the Paris medical faculty and the Pasteur Institute.

LONDON

(From Our Regular Correspondent)

July 3, 1920.

Annual Meeting of the British Medical Association

The eighty-eighth annual meeting of the British Medical Association, held at Cambridge, was the first complete meeting held since the war, during which the scientific part of the annual meeting was suspended. At the meeting last year in London this was resumed; but the meeting was not a complete one, as the number of sections was greatly reduced. Before the war the next annual meeting had been arranged to take place at Cambridge. Hence the present function can be regarded as a postponed one, and its importance was increased by this fact. The ample accommodation provided by the university, the beauty of the surroundings, and the historical interest of this famous seat of English learning made an ideal setting. Among the distinguished foreign visitors present were J. Bordet, president of the Faculty of Medicine and director of the Institut Pasteur, Brussels; Piero Giacosa, professor of materia medica and experimental pharmacology, Turin; Dr. Simon Flexner, director of the laboratories of the Rockefeller Institute, New York; Dr. John J. Abel, professor of pharmacology, Johns Hopkins University, Baltimore; Dr. R. R. Browne, representative of League of Red Cross Societies, Geneva; Dr. Harold Feil, New York; Dr. Robert W. Hegner, director of the department of medical zoology, Johns Hopkins University, and Dr. Alfred Hess, professor of clinical pediatrics, Bellevue Medical School, New York.

THE PRESIDENT'S ADDRESS

The president, Sir T. Clifford Allbutt, in his address, entitled "The Universities in Medical Research and Practice," asserted that the universities, ancient and modern, from Alexandria to Edinburgh, have made the professions. He sometimes thought that the "classics" would have to come back as a "modern side." The university stood for each student for something larger than the field of a particular calling, for a more comprehensive design. We must be trained not only to handle particulars but also to handle ideas. Narrow specialization was found in medicine, as in other arts, among people of narrow culture; never among the Greeks, but abundantly among the Egyptians, the Romans, the third century folk, and today in the tribes of Melanesia. Specializing was prone to be quackish, and had been said to be "only an unequal distribution of ignorance." He pleaded for a study of comparative pathology. Light for the study of the generation of diseases in man must be obtained in part by a study of diseases in animals and plants. Discussing the future of the physician, under the projected socialization of the profession, he considered that an official physician would be as alert and progressive as a country parson, whose service is not much kindled by the chances of promotion; while to shift an official physician from place to place would be to cut the inner threads of those intimacies which we now declare to be clues to the detection of diseases at their sources. Yet, as things are, the independent practitioner is isolated; even in a town he is likely to make a little orbit for himself; he lacks mental incentive, and gradually lets slip occasions of scientific reunion.

At the conclusion of his address the president was presented with his portrait, the work of Sir William Orpen, which had been subscribed for by a great number of physicians. Sir Norman Moore, president of the Royal College of Physicians, who made the presentation, said that Sir Clifford Allbutt deserved to rank with his great predecessors in the chair of medicine at Cambridge, who included Glisson, the celebrated anatomist.

THE MEDICAL CURRICULUM

In the Section on Medical Education the introductory address on "The Place of Preliminary Science in the Medical Curriculum" was delivered by Sir George Newman, principal medical officer of the ministry of health. He considered that four reforms were needed in the medical curriculum: 1. A lightening of the curriculum at both ends. In other words, fuller preparation in science before entering the medical school, and a postponement of certain specialties to the postgraduate period. 2. A fuller study of the sciences preliminary to medicine and a closer application of these sciences to clinical work. Above all there was great need of biology (anatomy and physiology). 3. Development of clinical teaching of university standard, particularly in relation to the beginning of disease, the closer integration of various forms of clinical practice and of clinical with intermediate study, concentration on the protean diseases of tuberculosis, malaria, venereal and malignant diseases, and an understanding of the social side of therapeutics as well as the social side of aspects of disease. 4. Further state aid, though with a minimum of state control. More teachers, better teachers and better-paid teachers were necessary.

In a paper on the teaching of anatomy, Prof. Arthur Keith made a novel and startling plea: Every medical teacher should keep his knowledge in such a state that, if called on, he could resume or assume the rôle of a general practitioner. This was the only guide by which the teacher had as to what his pupils should know. He believed that he had himself gained in every way by keeping up his knowledge of general medicine. If there was compulsory training of the physician, why not of the medical teacher? At every great medical school every teacher of anatomy and physiology should hold occasional clinical appointments up to their thirty-fifth year. Another reform needed was in the scope of textbooks, which strove to serve as works of reference for the research as well as the pass student. The greatest sinners were the anatomists

and physiologists; their books could be reduced by half with an improvement in the education of the man who is to practice general medicine. He requires for diagnosis a knowledge of the exact situation and action of the parts of the body. But less than half of our textbooks were devoted to this. It was not so with the earlier textbooks, which were keys to the living body. Examination papers were a wearisome repetition of "describe" this and "describe" that, as if the student could apply pure description or obtain any assistance from it in practice. Anatomy could be made a living part of medicine if only the teacher would ask himself: Could this fact help me in diagnosis or treatment? If not, let it repose in the comfortable storage of works of reference until it has proved its right to enter the currency of applicable knowledge.

THE REPRESENTATIVE MEETING

At the meeting of the representative body, many subjects of great importance were discussed. It was decided to increase the annual subscription from the present one of $10.50 to $15.75. The reason for the increase was not only the great increase in the cost of producing the *Journal* in all directions, but also the need for adequate funds to carry on the forward political policy of the association. The meeting resolved to ask the council to consider the desirability of excepting from the increase any member who had retired from practice or was of forty years' standing, as many of these received no benefit from the political work of the association, and continued their membership out of loyalty to it.

PROFESSIONAL SECRECY

A long debate took place on the question of professional secrecy which, as pointed out in previous letters to THE JOURNAL, is on an unsatisfactory footing in this country. In 1915 the council of the association went fully into the question and was advised that, apart from state officials, such as ministers of the crown, judges of the high court, and others placed in positions of more or less supreme importance, the only classes of persons recognized by the law courts as competent to claim to hold statements made to them, involving matters of criminal import or otherwise, as absolutely inviolable from obligation to disclose, were lawyers and ministers of religion. But though no such universally recognized protection attached to statements made to a member of the medical profession by a patient, there was admittedly a certain degree of professional secrecy recognized as being associated with such statements, although a conflict of authority existed as to the extent to which this could be carried. As a result of its consideration of the subject, the council expressed the opinion that "a medical man should not under any circumstances disclose, voluntarily, without the patient's consent, information which he has obtained from that patient in the exercise of his professional duties." The chairman of the Central Ethical Committee moved a resolution identical with the preceding excepting that the words "more particularly with regard to venereal disease" were added. The provision by the state of centers for the treatment of this disease has raised in a new form the question of professional secrecy. The chairman recognized that there must be exceptions to the rule. A physician might receive an order from a court to divulge. In such a case an individual physician might feel that he should defy the order and take the consequences. A physician might feel it his duty to divulge a professional secret in order to prevent the committal of a crime, or injury to a third person. In the discussion a member told a story which illustrates the unsatisfactory state of the law on the subject. On the grounds of professional confidence he refused to answer a question in a court. Some time afterward he was attending the judge, who said to him: "You know I could have imprisoned you last week for not answering that question, but if you had I never would have had you in my house as a physician again." The motion was carried.

SECRET REMEDIES

A resolution was carried that a physician should not make use of or recommend any remedy, the principal ingredients of which were not disclosed to the profession. The chairman of the Central Ethical Committee said that it had been brought home to the committee that there was growing laxity in this matter on the part of a large number of members of the profession. They had taken a very strong public line in urging Parliament to bring in legislation to control the sale of registered preparation with the perpetual protection of trade marks and other similar practices which they regarded as inimical to the public interest. But if they found that the advertisers were able to say truthfully that physicians themselves were guilty of gross remissness in regard to that question, they had the ground cut from under their feet for any effective action.

MADRID

(From Our Regular Correspondent)

June 12, 1920.

Tabes and Eye Disorders

Professor Fuchs recently delivered at the Real Academia Nacional de Medicina of Madrid an excellent lecture on "The Relations Between the Eye and Tabes." This disease is preceded by premonitory symptoms, which Fuchs divides into (1) pupillary signs, (2) paralysis of the motor oculi, and (3) atrophy of the optic nerve.

PUPILLARY SIGNS

1. Absence of the light reflex (Argyll Robertson sign). It is well known that the normal pupil reacts by contraction to the light as well as to convergence and accommodation. The first contraction is reflex, while the contraction during convergence and accommodation is a synergic or associate action, for the nuclei of the abducens nerves which direct the convergence (i. e., rule the external recti, and also the accommodation, that is, the ciliary muscle and the sphincter of the iris) act at the same time, while the contraction produced by the light requires the stimulus of a centripetal nerve (optic) and one centrifugal (abducens). The combination of both forms a reflex act. The dilatation of the pupil by a sensory sensorial or psychic stimulus is also reflex. The centripetal branch is formed by sensory nerves and the centrifugal by sympathetic nerves, which receive the stimulus of the former through the ciliospinal center of the lower cervical part of the spinal cord. During the absence of the pupil reflex, the pupil does not react to the light, but it contracts during convergence and accommodation. This lack of reflex is one of the earliest and most common signs of tabes, which is found in 70 or 80 per cent. of the cases, as well as the absence of the patellar reflex. While the location of the lesion that breaks the reflex arc is not known positively, it seems most probable that it is located in the tract of the pupillary fibers of the optic nerve on their course to the nuclei of the abducens, namely, in the vicinity of the aqueduct of Sylvius, along the posterior longitudinal bundle. When there is total lack of reflex the lesion is located in the abducens itself, either in the nucleus, the nerve or its endings. In the cases seen in the dispensary, the total immobility is the terminal stage of the reflex, although in other cases the former is present as such from the very beginning. In tabes, total immobility is three times less common than reflex immobility. Reflex immobility is also found in general paresis (50 per cent.) and in brain syphilis (10 per cent.), while it is exceedingly rare in other nerve affections. Reflex immobility is therefore an almost exclusive sign of syphilitic or parasyphilitic infection of the nervous system.

2. Miosis. This is the second important sign of incipient tabes, and is found in about one half or one third of the cases with reflex immobility. Miosis with normal pupillary reaction is not a sign of tabes, being congenital, senile or due to chronic intoxication. It is due to the inaction of the dilator through lack of stimulus. Under normal conditions the stimulus of the centripetal nerves involves, through the sympathetic, a certain degree of permanent contraction of the dilator. If the stimulus does not reach the nerve centers (narcosis, sleep, etc.), the contraction of the dilator stops and the pupil closes. In spinal miosis the cause seems to be the degeneration of the ciliospinal center, which prevents the transmission of the stimulus from the centripetal nerves to the sympathetic and then to the dilator.

3. Anisocoria (pupillary inequality). This also is common in tabes, and is due to a lesion of the centrifugal abducens or sympathetic nerves. It is not so important as the lack of reflex as it is less common in tabes (one fourth of the cases), and because of its being found in other conditions and even in normal cases.

OCULAR SIGNS

The paralysis of the motor nerve (in 20 per cent. of tabes patients) appears long before the ataxia. The features which characterize the paralysis of the motor oculi in tabes are its temporary character, at least in the beginning; its remissions, and the different degree of paralysis in the muscles supplied by these nerves; the transmission of stimuli to the levator palpebrae superioris; the conquering of the paralysis by an effort of the will, and the insignificant part played by the diplopia. In the tabetic paralysis, the lesion may be in the region of the nuclei of the motor oculi below the aqueduct of Sylvius and the floor of the fourth ventricle. We deal with degeneration processes, a proliferation of the ependyma with sclerosis of the underlying gray matter, followed by atrophy of the efferent nerves. In rare cases, the lesion is found in the nerve trunk itself or the muscle endings.

ATROPHY OF THE OPTIC NERVE

Atrophy of the optic nerve is the most frequent complication and ends unavoidably in blindness. It is to be feared all the more, since, through its occurring at the beginning of tabes, it may blind the patients for many years. It is very exceptional for the atrophy to occur in the paralytic state, so that a patient with ataxia needs not fear to become blind, and in turn those with optic atrophy need not fear ataxia until much later. Optic atrophy attacks from 10 to 15 per cent. of all tabes patients—chiefly men in the prime of life. This complication is very uncommon among women. Infantile tabes, as a sequel of hereditary syphilis, is very rare, but it is accompanied almost always by atrophy of the optic nerve. The atrophy does not occur at the same time in the two eyes, but very seldom is a case found in which the atrophy remains unilateral. The ophthalmologic signs are far from being characteristic, the only peculiarity being that in tabetic atrophy the disk is pale at a time when the patient is not complaining as yet about his eyes. The descending atrophy is accompanied by other symptoms. The pallor of the disk shows that the degeneration occurs in the anterior ending of the optic nerve in the peripheral bundles. The first symptom of the loss of vision is the retarded adaptation to darkness; afterward the acuteness and the visual field diminish for the perception of some colors, as red and green, while the perception of form remains. Whatever may be the relation between the central visual acuteness and the visual field, the disease always ends in complete blindness in a period that varies from a couple of months to twenty or more years. Tabes patients are syphilitic cases whose infection seems mild. Those having frequent syphilitic manifestations are not threatened by tabes, and that is the reason why this condition is never seen in those who have suffered syphilitic iritis or perforated palate. The oculist is frequently the first one to diagnose tabes. When this is detected in its incipient stage, there should be made a general examination of the patient and a blood and cerebrospinal fluid Wassermann test, determining, also, in the cerebrospinal fluid the globulins, lymphocytosis and the albumins by the colloidal gold test If the blood and cerebrospinal fluid tests are positive, there is danger of tabes or general paresis, and there must be instituted a vigorous treatment until the tests become negative. When these diseases have become apparent, the treatment is usually rather inefficacious; and although other symptoms may improve, the action on the optic nerve is practically nil. The failure of the specific treatment in parasyphilis is explained by the special conditions of the blood supply of the nervous system. The meninges are rich in vessels which are in contact with the surrounding connective tissue, and therefore the blood and the medicinal substances contained in it can pass freely from the vessels to the meningeal tissue. In the nervous tissue, on the contrary, the vessels are surrounded by a sheath of neuroglia that seems to offer an insurmountable barrier to some substances. Syphilitic affections locate by choice in the meninges, while with parasyphilis the spirochetes are found in the nervous tissue itself and therefore are not accessible to drugs. This is the reason why the introduction of remedies directly into the cerebrospinal fluid has been suggested. The success with other symptoms of tabes lends hope that this method may prove effective in the atrophy of the optic nerve.

BERLIN

(From Our Regular Correspondent)

June 28, 1920.

Aftermath of the World War

The tremendous political, social and economic disasters which were brought on the German people by the war, by the treaty of peace and the revolution have had special influence on the medical profession, the public health service and medical science.

OVERCROWDING OF THE MEDICAL PROFESSION

Many years before the war the medical profession of Germany was overcrowded; this evil has been markedly increased as a result of the war and the peace treaty. The losses of German physicians on the battlefield and through other effects of the war are inconsiderable as compared to the factors which have increased the absolute or relative overcrowding of the German medical profession. According to the official casualty lists, 1,325 physicians died from causes of action in the line of military duty. Opposed to this decrease, however, is first of all the decrease in population of the present German territory. At the beginning of the war, Germany had a population of approximately 68,000,000. Dr. Hugo Prinzing, a leading statistician, estimates that from the beginning of the war up to Jan. 1, 1919, 4,800,000 infants were born in Germany; 1,800,000 men were killed or died in military service; 5,500,000 civilians died, and about 500,000 emigrated during the same period. To these losses, 3,500,000 should be added for the loss of Alsace-Lorraine, the Polish districts and the provinces of Posen, West Prussia and East Prussia, and the northern part of Schleswig. Even assuming that upper Silesia and the doubtful districts of East Prussia do not revert to Poland, Germany will have a population of about 61,500,000. According to figures in the German medical directory, about 1,600 physicians lived in the lost territory; of these, at least 600 were ejected or voluntarily returned to Germany from the new French and Polish possessions. Whereas, before the war there were 34,000 physicians in Germany with a population of 68,000,000, there are today 32,000 to 61,500,000 inhabitants; evidently a considerable

increase in the ratio of physicians to inhabitants, to the disadvantage of the former. This factor, already of deplorable consequence to the economic status of physicians, will in the future prove almost catastrophic because of the inordinate increase during the last year in the number of medical students, whose ranks will be further augmented in succeeding years. During the war, it was imperative to increase the number of trained medical assistants because of military necessity, and the entrance examinations were made much easier. What an enormous student body was thereby constituted during the fifth year of the war is now startlingly apparent in the lecture rooms of the medical schools. There has been further accession from the ranks of other vocations, as a result of the political upheavals that forced many to give up their former callings and to elect the study of medicine, which for one reason or another struck them as the most suitable. Statistics recently compiled show that the number of medical students has increased from 11,000 in 1913 to 22,000 today. Since it can hardly be assumed that any considerable portion of this multitude will fail to reach the goal, it must be expected that in a few years the number of physicians will increase to 54,000, or eight physicians per ten thousand of the population, as compared with five per ten thousand in 1913. Although this unfavorable disproportion in itself represents a restricted earning capacity, it can readily be understood that the poverty of the German people will have even worse influence on the economic status of physicians.

SICKNESS INSURANCE SOCIETIES

By the extension of sickness insurance, even worse conditions are awaiting the krankenkassen (sickness insurance societies) physicians, who constitute the majority of the German medical profession. Since the greatest enemies of insurance physicians were to be found in the ministry (especially ministers Bauer and Frässdorf), it was anticipated that the representatives of the social democratic party in the new government would very soon increase the existing disparity between krankenkassen fees and medical services. Soon after the revolution of Nov. 9, 1918, the provisional government extended the compulsory insurance act to include all employees with an annual income up to 5,000 marks, instead of 2,500 as heretofore. If one remembers that the number of krankenkassen members rose from 5,400,000 (9 per cent. of the population) in 1885, to 20,000,000 (about 30 per cent.) in 1914, and that the membership was further greatly augmented by this regulation of December, 1918, he can readily understand that the private practice of physicians had shrunk considerably even then. Although objections were naturally raised by the medical profession and by statesmen, the new government did not rest content with this extension of compulsory insurance but a few weeks ago it suddenly decided to include all employees with an income up to 20,000 marks; the latter figure was reduced to 15,000 marks by the national assembly as a result of a storm of protests from the medical profession and insured persons alike. But even under this provision at least 90 per cent. of the population was drawn into the kassen, leaving a bare 10 per cent. for private practice. Physicians who had joined the Leipziger Verband therefore appealed to the government with the request that the prevailing scale of fees for krankenkassen physicians should be revised in conformity with the changed conditions, failing which the physicians would consider their contracts with the krankenkassen as canceled, and would treat the sick only as private patients under the terms of the general regulation of fees. In view of the firmness and unanimity of the medical profession, the government was forced into negotiations, which have not yet been concluded.

So far as results are known, representatives of the medical profession virtually obtained concessions for the introduction of so-called free selection of the physician (which will admit to the kassen practice all physicians who register their intention under certain conditions) and an increase in the fees. Regarding the latter factor, it may be stated that the medical representatives demanded an annual capitation allowance of 46 marks; representatives of the kassen have hitherto been willing to concede only 26 marks. If one considers the services which physicians must generally render for this sum, the demands will certainly not seem excessive. From a general psychologic standpoint it will be understood that for this fee the members of the kassen do not always receive the services to which they believe they are entitled. To realize the necessity of improvement in the status of physicians under the social insurance plan, allowance should be made not only for the aforementioned increase of the insurance beneficiaries but also for the conceivable introduction of family insurance, whereby the members of the employees' families will also come within the sphere of social insurance, and consequently of kassen practice.

Marriages

HERMAN ANDERSON GAILY, Baltimore, to Miss Mary Elizabeth McConkey of McClellan Heights, York, Pa., June 17.

MATHEW TAYLOR MORTON, Estherville, Iowa, to Mrs. Townsend of Monroe, Iowa, at Spirit Lake, Iowa, recently.

ROBERT LOUIS LEVY to Miss Beatrice Strauss, both of New York City, at Mount Kisco, N. Y., June 29.

LEE HERMAN KIEL, Sioux Center, Iowa, to Miss Jennie DeLong of Orange City, Iowa, recently.

WILLIAM VESTAL THORNBURG, Yale, Iowa, to Miss Adele Fonaldi of Des Moines, Iowa, June 30.

GEORGE WASHINGTON BONER, Washington, Ind., to Miss Alice Dickens of Indianapolis, June 28.

WALTER LEWIS ALLESPACH, Buffalo, to Miss Jean Halliday of Victoria, B. C., at Toronto, June 16.

HARRY JAY PITTOCK to Miss Mae Vergoon, both of Ingleside, Neb., at Hastings, Neb., May 12.

ROBERT DOW FORBES, Seattle, to Mrs. Mary R. Bradley of Winnipeg, Manit., at Seattle, May 7.

JAMES WOODROW WILSON, Riverside, Iowa, to Miss Maude Armstrong of Chicago, recently.

WILLIAM LA ROY HORNADAY to Miss Clemantine Wolf, both of Des Moines, Iowa, recently.

FRANK W. PLEHN to Miss Elpha Peters, both of Scottsbluff, Neb., in Omaha, May 3.

CLARA LOUISA HORNER, Camden, N. J., to Rev. J. C. Rodger of Shanghai, China, May 22.

GREENE HAMPTON SMITH to Miss Annie Merle Farrar, both of Blocton, Ala., June 16.

GOTTLIEB WERLEY to DR. BESSIE LUCRETIA SWEET, both of El Paro, Texas, July 3.

EDWARD CARSON ABBOTT, Omaha, to Mrs. Alma Healey in Lincoln, Neb., April 10.

JAMES N. DOWNS to Miss Mary B. Stauffer, both of Bloomington, Ill., recently.

BLASE COLE, Newton, N. J., to Miss Betty B. Kerr of New York City, April 16.

ERNEST KEYES CULLEN to Miss Charlotte M. Macklem, both of Detroit, April 28.

HARRY E. MCKIBBEN, Hector, Minn., to Miss Anna Edstrom of Omaha, April 10.

MYRON ORMELL HENRY to Miss Lucile Fisher, both of Minneapolis, April 14.

LEON WADE MARTIN to Miss Eleanor Marie Pickel, both of Chicago, July 7.

SAMUEL MARMOR to Miss Ethel Perlman, both of Chicago, recently.

BENEDICT ARON to Miss Ida Edith Cohen, both of Chicago, July 1.

Deaths

Frederick Book Abbott, Capt., M. C., U. S. Army ⊕ St. Louis; Washington University, St. Louis, 1914; aged 31; who entered the World War as a physician with the first Harvard Unit, and was on duty with the British Service and went overseas the second time with Barnes Hospital, No. 21; and was gassed at Seicheprey in the Toul sector in 1918, had been ill ever since, and was under treatment at United States Army General Hospital, Oteen, N. C.; died in that institution, June 30, from tuberculosis.

Benjamin Robinson Schenck ⊕ Detroit; Johns Hopkins University, Baltimore, 1898; aged 47; associate professor of gynecology in the Detroit College of Medicine; from 1906 to 1910 secretary of the Michigan State Medical Society and editor of its journal; a member of the staff of Harper and Woman's hospitals, Detroit; died in Broadmore, Colorado Springs, Colo., June 30.

Luther Zwingli Breaks ⊕ Terre Haute, Ind.; Rush Medical College, 1901; aged 41; captain, M. R. C., U. S. Army, and discharged May 4, 1919; a member of the American Academy of Ophthalmology and Otolaryngology; assistant ophthalmic and aural surgeon to St. Anthony's Hospital; died in the operating room of that institution, July 10, from angina pectoris.

Frank Ross Coffman ⊕ Denver; Gross Medical College, Denver, 1890; aged 51; once health commissioner of Denver, and vice president of the Colorado State Board of Health; local surgeon of the Denver and Rio Grande system and health officer of Minturn and Eagle County, Colo.; a specialist in proctology; died in Los Angeles, April 27, from heart disease.

Charles McVea ⊕ Baton Rouge, La.; Tulane University, New Orleans, 1893; aged 51; president of the Louisiana State Medical Society in 1909; a member of the house of representatives for one term and for two terms state senator; Captain, M. R. C., U. S. Army, and discharged Dec. 10, 1918; died, July 5, from chronic interstitial nephritis.

Eugene Alexander Neely, Memphis, Tenn.; Memphis, Tenn., Hospital Medical College, 1886; aged 57; formerly professor of clinical medicine in his alma mater, and president of the Southwestern Association of Railway Surgeons; for the last ten years engaged in the lumber business; was found dead in bed in Lonoke, Ark., June 30.

Gustav A. Mathews ⊕ Napoleon, N. D. (license, North Dakota State Board of Medical Examiners, 1905); aged 46; superintendent of the Logan County Board of Health; who had been operated on repeatedly for disease of the kidney; died in St. Alexius Hospital, Bismarck, N. D., April 14, from uremia.

Robert L. Gillespie, Portland, Ore.; Willamette University, Salem, Ore., 1886; aged 65; professor of theory and practice of medicine in his alma mater; clinical lecturer on mental and nervous diseases in the Oregon State University; city physician of Portland for one year; died, June 30, from heart disease.

Lucy J. Utter, Detroit; Michigan College of Medicine, Detroit, 1882; aged 74; one of the first women to practice medicine in Detroit; once vice president and resident physician of the Woman's Hospital, and Children's Home; died in the Pennsylvania Avenue Sanatorium, Detroit, July 3.

William Lego Nuttall, New Castle, Ky.; Miami Medical College, Cincinnati, 1871; aged 75; once superintendent of the State Institute for Feeble Minded, Frankfort, Ky., was attacked by his insane brother-in-law, June 28, sustaining razor wounds from which he died shortly after.

Elsthon E. Oglesbee, Cedarville, Ohio; Hahnemann Medical College, Chicago, 1885; aged 52; a member of the Ohio State Medical Association; died in Mt. Carmel Hospital, Columbus; June 30, from peritonitis, a week after a nephrectomy for tuberculosis of the kidney.

William L. Walker, Centerville, Tenn.; Eclectic Medical Institute, Cincinnati, 1874; aged 74; a Confederate veteran; representative in the legislature from Hickman County in 1890; died in Nashville, June 23, a few days after an operation for the removal of gallstones.

James R. Menzies, Weihwei, China; Trinity Medical College, Toronto, 1895; aged 56; a medical missionary in China; was shot and instantly killed by Chinese bandits, March 17, while going to the defense of the women in the Mission House, attacked by them.

Frank S. Johnson, Sioux City, Iowa; State University of Iowa, Iowa City, 1882; aged 64; formerly professor of neurology, histology, bacteriology and pathology in the Sioux City College of Medicine; died at his country home in Bronson, Iowa, July 6.

Frank Byron Brown, Boston; Medical School of Maine, Brunswick, 1887; aged 57; a member of the Massachusetts Medical Society; instructor in bacteriology and pathology in Tufts Medical School, Boston; died, July 1, from cerebral hemorrhage.

Harve Ellis Harlow, Zearing, Iowa; State University of Iowa, Iowa City, 1914; aged 39; formerly assistant state bacteriologist to the Iowa State Board of Health; a member of the Iowa State Medical Society; died in Rochester, Minn., July 7.

Frank Sumner Warren, Biddeford, Me.; Medical School of Maine, Brunswick, 1872; aged 69; for several years coroner of York County; a member of the board of aldermen and a member of the legislature; died suddenly, June 28.

Sinclair D. Gervais Niles, McGhee, Tenn.; University of the City of New York, 1861; aged 80; assistant surgeon in the Confederate service during the Civil War; died at the home of his daughter, March 3, from pneumonia.

Peter Henry Lane ⊕ Philadelphia; Medico-Chirurgical College of Philadelphia, 1906; aged 41; founder and for sixteen years in charge of the Kenwood Sanatorium, Chestnut Hill, Philadelphia; died, July 7, from pneumonia.

John Franklin Campbell ⊕ Chicago; Victoria University, Cobourg, Ont., 1886; L.R.C.P., L.R.C.S., Edinburgh, 1890; aged 56; a specialist on diseases of the eye, ear, nose and throat; died, July 14, from angina pectoris.

Eugene Lee Henry ⊕ Lecompte, La.; Tulane University, New Orleans, 1897; aged 46; formerly president of the Louisiana State Medical Society and of the board of health of Rapides Parish; died, July 7.

Fannie Donovan Conklin, Staten Island, N. Y., Woman's Medical College of the New York Infirmary for Women and Children, New York, 1876; aged 74; physician to the Lakeview Home; died, July 4.

George L. Gates ⊕ Winona, Minn.; Philadelphia University of Medicine and Surgery, 1869; aged 83; a veteran of the Civil War; died at the home of his brother in St. Paul, about July 3.

Charles H. Saul, Steelton, Pa.; University of Pennsylvania, Philadelphia, 1878; aged 67; a member of the Medical Society of the State of Pennsylvania; died, June 30, from heart disease.

Kimball Edward Thompson ⊕ Westpoint, Neb.; John A. Creighton Medical College, Omaha, 1908; aged 36; died at the home of his brother in Westpoint, July 6, from heart disease.

Edward Thomas Lawler, Amarillo, Texas; Rush Medical College, 1900; aged 42; a member of the State Medical Association of Texas; died in a sanatorium in California, June 29.

James Walter Anderson, Royal Oak, Mich.; Michigan College of Medicine and Surgery, Detroit, 1891; aged 58; a member of the Michigan State Medical Society; died, June 21.

Frederick Straughn, Jersey City, N. J.; University of Maryland, Baltimore, 1870; aged 75; from 1885 to 1890 city physician of Jersey City; died, June 27, from arteriosclerosis.

Samuel John Hicks, Ivesdale, Ill.; Miami Medical College, Cincinnati, 1890; aged 57; a member of the Illinois State Medical Society; died, July 4, from cerebral hemorrhage.

James Maurice Hally, Denver; Bennett College of Eclectic Medicine and Surgery, Chicago, 1885; University of Colorado, Boulder and Denver, 1894; aged 76; died, May 26.

Warren Perry ⊕ Fairbury, Neb.; Jefferson Medical College, 1891; aged 56; local surgeon for the Burlington and St. Joseph and Grand Island Railroad; died, July 7.

Willard Chancery Earle, Waukon, Iowa; Jefferson Medical College, 1867; aged 88; also a druggist; a veteran of the Civil War; died recently at St. Petersburg, Fla.

Preston Boggs, Franklin, W. Va.; University of Maryland, Baltimore, 1896; aged 52; in 1912 president of the Pendleton County Board of Health; died suddenly, June 19.

Joseph Pierre Morneau, Appleton, Wis.; Laval University, Quebec, 1899; aged 46; died, June 1, from lobar pneumonia.

⊕ Indicates "Fellow" of the American Medical Association.

Edwin H. Lodge, Grosse Point Farms, Detroit; New York Homeopathic Medical College, New York, 1871; aged 72; once president of Grace Hospital; died, July 3.

William B. Conway, College Park, Ga.; College of Physicians and Surgeons, Baltimore, 1869; aged 71; died at the home of his daughter in College Park, July 6.

James A. Hazle, Freeport, Kan. (license, Kansas Board of Medical Examiners, 1901); aged 65; a practitioner for forty years; died, April 24, from arteriosclerosis.

Harry F. McK. Shannon, Tygh Valley, Ore.; University of Oregon, Portland, 1913; aged 32; a member of the Oregon State Medical Association; died, June 28.

Marion Dexter Follin, Johnsville, Ohio; Marion-Sims Medical College, St. Louis, 1892; aged 53; died in Lakeside Hospital, Toledo, May 23, from nephritis.

Earl P. Wagner ⊕ South Bend, Ind.; College of Physicians and Surgeons, Chicago, 1907; aged 45; for two terms coroner of St. Joseph County; died, July 1.

Milton S. Hopper, Gary, Ind.; Medical College of Ohio, Cincinnati, 1881; aged 69; a member of the Indiana State Medical Association; died, May 10.

Edward Henry Jewitt, Cleveland; Homeopathic Hospital College, Cleveland, 1878; aged 68; for twenty years a lecturer in his alma mater; died, July 7.

John Steinbach, Winona, Minn.; Northwestern University Medical School, Chicago, 1886; aged 64; a specialist in diseases of the eye; died, April 28.

Charles Albert Fritchey ⊕ Harrisburg, Pa.; Gross Medical College, Denver, 1901; aged 45; died in the Germantown Hospital, Philadelphia, June 24.

Edward B. Smith, Marion, S. C.; Medical College of Charleston, S. C., 1860; aged 81; died at Centenary, S. C., May 25, from senile asthenia.

Evans Scott, Holdenville, Okla.; Medical Department, University of Iowa, Keokuk, 1864; aged 85; a veteran of the Civil War; died recently.

Abram W. Mardis, Lebanon, Ohio; National Normal University, Lebanon, Ohio, 1890; aged 57; died in a hospital in Hamilton, Ohio, May 2.

Walter Henry Holdridge ⊕ New York; Columbia University, College of Physicians and Surgeons, New York, 1903; aged 39; died, July 3.

Jefferson D. Taylor, Louisville, Ky.; Kentucky School of Medicine, Louisville, 1882; aged 58; died, July 3, from pernicious anemia.

Walter John Habrowski, Pittsburgh; University of Pittsburgh, 1911; aged 33; also a pharmacist; died, June 15, from tuberculosis.

Charles B. Kohlhousen, Raton, N. M.; University of Virginia, Charlottesville, 1867; aged 63; died, April 19, from myocarditis.

Clayborn R. Carver, Eldorado, Texas; University of Arkansas, Little Rock, 1898; aged 63; died, June 8, from angina pectoris.

James O. Wood, Rio, Miss.; University of Alabama, Mobile, 1881; aged 72; died, April 4, from disease of the kidney.

Nelson Porter Freeman, Bridgewater, N. S.; University of Vermont, Burlington, 1891; aged 65; died, April 15.

Paul Octavius Owsley, Asheville, N. C.; Johns Hopkins University, Baltimore, 1899; aged 46; died, July 8.

Peter John Nathaniel Thelberg, New York City; University of the City of New York, 1887; died, June 7.

Eugene H. Wood, Bridgeport, Conn.; Long Island College Hospital, Brooklyn, 1886; aged 63; died, June 16.

James Flack Bell, Lonoke, Ark. (license, Arkansas State Medical Board, 1903); aged 65; died, May 21.

Thomas H. Bowles, Dumas, Ark.; Missouri Medical College, St. Louis, 1898; aged 65; died, May 22.

Hugo Schumann, Oakland, Calif.; American Medical College, Eclectic), St. Louis, 1876; died, June 30.

Walter W. Scofield ⊕ Dalton, Mass.; Albany, N. Y., Medical College, 1882; aged 66; died, July 7.

Benjamin F. Mott, Minneapolis; Eclectic Medical Institute, Cincinnati, 1874; aged 69; died recently.

Joseph P. Fitzpatrick, St. Louis; Missouri Medical College, St. Louis, 1889; aged 52; died, July 4.

Peter McLaren, Ormstown, Que.; McGill University, Montreal, 1872; aged 78; died, May 14.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

MORE MISBRANDED DRUG PRODUCTS AND NOSTRUMS

Some Seelye Nostrums.—The A. B. Seelye Medical Co., Abilene, Kan., shipped in July and September, 1917, "Seelye's Wasa-Tusa," "Dr. Seelye's Compound Extract of Sarsaparilla," "Seelye's Laxa-Tena," "Seelye's Cough and La Grippe Remedy," and "Seelye's Fluorilla Compound," which were misbranded. The Bureau of Chemistry of the Department of Agriculture analyzed samples of these nostrums. "Wasa-Tusa" was found to contain ammonia, chloroform, camphor, capsicum, aromatics, alcohol and water. It was falsely and fraudulently represented as a cure for rheumatism, lame back, tonsillitis, sore throat, cholera morbus, diphtheria, fever, indigestion, deafness and several other conditions "when, in truth and in fact, it was not." The "Compound Extract of Sarsaparilla" was found to contain potassium iodid and a small amount of plant extractives, aromatics, coloring matter, sugar, alcohol and water. This was falsely and fraudulently represented as a cure for scrofula, syphilis, tumors, female weakness and other conditions. "Laxa-Tena" was found to be a dark colored syrup containing essentially emodin-bearing (laxative) plant material, sugar, alcohol and water. It was falsely and fraudulently represented as a cure for jaundice, sour stomach, fever and ague and effective to remove the cause of appendicitis and to prevent fever. The "Cough and La Grippe Remedy" was found to be heavy sugar syrup containing plant material with small amounts of alcohol, chloroform and tar. It was falsely and fraudulently represented as a cure for influenza, whooping cough, asthma, phthisis and all affections of the throat and lungs and as a preventive, when used in connection with "Wasa-Tusa," of lung fever and pneumonia. "Fluorilla Compound" was to be a syrup containing laxative plant material, a small amount of alkaloids, sugar, alcohol and water. It was falsely and fraudulently represented as a cure for anemia, "languid habits in young girls budding into womanhood," amenorrhea, leucorrhoea, falling of the womb and other so-called female weaknesses. In March, 1919, the company pleaded guilty and was fined $50 and costs.—[*Notice of Judgment No. 6953; issued July 1, 1920.*]

Aspirin Tablets.—The Verandah Chemical Co., Brooklyn, shipped in November, 1918, 24 packages of a product purporting to be aspirin tablets. The article was labeled in part "Acetylsalicylic Acid Aspirin." These tablets were declared misbranded in that while they were labeled "Aspirin 5 gr." they contained no aspirin but did contain salicylic acid, corn starch, milk sugar, talc, calcium carbonate and a small amount of sodium citrate. In June, 1919, no claimant having appeared for the property, the court ordered that it should be destroyed by the United States marshal.—[*Notice of Judgment No. 6990; issued July 1, 1920.*]

Dr. Groves' Anodyne for Infants.—A quantity of "Dr. Groves' Anodyne for Infants" was shipped in interstate commerce January, 1917, by Smith, Kline & French Co., Philadelphia. The preparation, when analyzed by the Bureau of Chemistry, was reported to be essentially a sugar syrup, flavored with oil of spearmint and containing ¼ grain of morphin sulphate to each fluidounce. The government officials charged that the product was misbranded because it was falsely and fraudulently represented "to be effective, among other things, to remove nervous irritation in children, to invigorate children before teething and to repair the waste caused by diarrhea and other affections in children during teething when, in truth and in fact, it was not." It was

further declared to be misbranded because it was falsely and misleadingly represented as "a reliable assistant to a mother in that it was a preparation which could be administered with perfect safety to infants, whereas in truth and in fact the article contained morphin sulphate, a drug which rendered the article unsafe to be administered to infants." It was further misbranded in that, while it contained alcohol and morphin, the carton failed to bear a statement of the quantity and proportion of these drugs, as required by law. In May, 1919, the company pleaded guilty and was fined $200.—[*Notice of Judgment No. 6986; issued July 1, 1920.*]

Cacapon Healing Water.—In October, 1918, 6 barrels and 40 kegs of Cacapon Healing Water were shipped in interstate commerce by the Capon Springs Co. of Capon Springs, W. Va. The water was declared by the federal authorities to be adulterated in that it consisted in part of a filthy,


A CHALLENGE TO ARTHUR BRISBANE

Druggists Who Want to Make Dollars Without Risk or Work Write Us Today

Drinking Cacapon is more important than bathing, because poisons in the body are more dangerous than those outside.

CACAPON HEALING WATER

DRINK CACAPON AND LIVE AS LONG AS NATURE INTENDED

Cacapon Co. of Washington, D. C.
1311 and 1313 H St. N. W.

From One of the Best Loved Men in America

Cacapon Co. of Washington, D. C.
1311 and 1313 H Street N. W. Phone Main 989

A full-page advertisement of Cacapon Water that appeared in the Washington (D. C.) *Times* in August, 1918.

decomposed and putrid animal and vegetable substance. Furthermore, it was declared misbranded because of the curative claims made for the stuff, for example:

"To be 100 per cent. efficient, drink Cacapon Healing Water Prescribed by Prominent Physicians for Bright's Disease, Kidney Troubles."

"Cacapon Healing Water . . . for Bright's Disease, Kidney Troubles, Indigestion, Diabetes, Calculi, Rheumatism, Women's Diseases, Stomach Troubles, Dyspepsia, Uric Acid, Gout, Urethral and Uterine Troubles."

"Has cured for centuries . . . rheumatic gout, syphilitic rheumatism and chronic inflammation."

These claims were declared by the federal authorities to be false and fraudulent and "made with a knowledge of their falsity and in reckless and wanton disregard of their truth" so as to mislead and deceive purchasers. In April, 1919, the court ordered that the product should be destroyed by the United States marshal and that the Cacapon Co., Washington, D. C., should pay the cost of the proceedings.—[*Notice of Judgment No. 6957; issued July 1, 1920.*]

Seawright Water.—In September, 1918, Seawright Magnesian Lithia Spring Co., Staunton, Va., shipped nine cases each containing 12 one-half gallon bottles of "Seawright Water" which was declared to be adulterated in violation of the Food and Drugs Act. Adulteration was alleged in the libel for the reason that the water consisted in part of a filthy and decomposed vegetable substance. No claimant appearing for the property, judgment of condemnation and forfeiture was entered in January, 1919, and the court ordered that the product should be destroyed by the United States marshal.—[*Notice of Judgment No. 6961; issued July 1, 1920.*]

Correspondence

"THE REPORTING OF VENEREAL DISEASES BY PHYSICIANS"

To the Editor:—The objection to many of the papers in THE JOURNAL is that they embody solely the swivel chair, or what is equally as objectionable, the laboratory point of view. I am prompted at the moment to make this criticism after reading Dr. William Edler's article on the reporting of venereal diseases (THE JOURNAL, June 26, 1920, p. 1764). His assurance reminds me of the Texas venereal law, which assumes that the man on the street as he runs can diagnose venereal disease. His article contains the same threat of revocation of license as the Texas law, notwithstanding that in Texas and in most states the statutes provide that a license can be revoked only on the commission of a crime of the grade of a felony. As an employee of the United States Public Health Service, Dr. Edler should know that the service will not accept a clinical diagnosis of venereal disease. Now, how many physicians can make a laboratory diagnosis, and how many laboratory experts will agree about the diagnosis or obtain a positive diagnosis when the clinical evidence is suspicious, should we turn our cases over to them? This is no rambling assertion, but the fruit of experience. An important case in the courts in this state recently illustrates the point. An expert and disinterested pathologist testified that the case was one of gonorrhea. Another witness, equally as expert and disinterested, said that it was not. One author says that the gonococcus must be intracellular and another that there must be pus on the slide for a positive diagnosis. When we encounter the Wassermann expert we are even more confused regarding our clinical diagnoses. Even a government clinic treated a man with herpes for syphilis. On a clinical diagnosis, a physician reported a married woman as having gonorrhea. The sequel showed that her discharge came from an appendical sinus, and the doctor was up against trouble.

Dr. Edler attributes his statements about outraged wives and violence to wrong sources or motives. The case cited above is the principal reason that causes physicians to be careful in reporting these cases. No law that I know of offers to back a physician in court in case he makes a wrong diagnosis, or if his diagnosis can be overthrown by a preponderance of witnesses. A physician who draws a salary and whose diagnoses are defended by the United States Public Health Service can afford to express positive views; but a great many of us have our living to make by the practice of medicine among our neighbors and must pay our own lawyers if we are forced to go into court.

J. H. MACKAY, M.D., Houston, Texas.

[A proof of the preceding was sent to Dr. Edler, who replies:]

To the Editor:—I had hoped in my paper on "The Reporting of Venereal Diseases by Physicians" to have covered the objections offered by the profession as I had heard them. That errors in diagnosis and drastic medicolegal consequences were an objection had not, up to this minute, come to my attention.

Exceptionally, I readily agree, venereal disease diagnostic difficulties are encountered. Similarly, the same enigma is encountered in all specialties. I, too, have seen experts disagree on the diagnosis of scarlet fever, smallpox and meningitis, but I always felt that the community, and not the patient, deserved the benefit of the doubt.

In its acute and most communicable stage, "the man on the street as he *runs*" (accent on the last word) can fairly accurately diagnose his malady. I feel sure that out of several

hundred thousand cases of venereal diseases reported, the legal complications have been practicably negligible. My information is that from the lowest to the highest courts the venereal disease laws, even to the point of seizure of person, have invariably been sustained.

I am convinced that if a malpractice suit were instituted against the physician for a mistake in diagnosis, the court would condone his mistake "if he exhibited the skill, care and ability of the average physician in his community." No doubt his state medical society would defend his suit to the limit, and likewise his state board of health, if the suit originated from a report to its office.

The Louisiana medical practice act authorizes the revocation of the physician's license for violation of the venereal disease laws. I hope that some day the American Medical Association will expel from membership physicians who do not report communicable diseases. Shirking obligations of physicians to each other is no more a violation of ethics than criminally contributing to the dissemination of disease—be it venereal or otherwise.

WILLIAM EDLER, M.D., New Orleans.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TUBERCULOSIS JOURNALS — ARREST OF PULMONARY HEMORRHAGES

To the Editor:—1. Please let me know the names and addresses of medical journals devoted to tuberculosis in the United States as well as Europe.

2. Is there any special apparatus used in American sanatoriums for arresting pulmonary hemorrhages, and if there is, please let we know the name of the manufacturer.

JORGE SAÉNZ, M.D., Costa Rica.

ANSWER.—1.

American Review of Tuberculosis, 2419 Greenmount Avenue, Baltimore. Monthly; $3.
Journal of the Outdoor Life, 381 Fourth Avenue, New York. Monthly; $1.50.
Tubercle, London. Monthly; 25 shillings.
British Journal of Tuberculosis, 151 West 25th Street, New York. Quarterly, $1.25.
Archivos Españoles de Tisiología, Diputación, 211, Barcelona, Spain. Thirty pesetas.
Revista de Higiene y de Tuberculosis, Juan de Austria, 12, Valencia, Spain. Twelve ptas.
Revista de Tuberculosis, Calle Colón, 7, Valencia, Spain. Ten ptas.
Revista de Tisiologia, Murcia, Spain. Twelve ptas.
Tuberculose, s'Gravenhage, Holland.
Zeitschrift für Tuberculose, Dorrienstrasse 16, Leipzig, Germany. Thirty marks.
Beiträge zur Klinik der Tuberkulose, Würzburg, Germany.
Internationales Centralblatt für die gesamte Tuberkulose Forschung, Würzburg, Germany.
Tubercolosi, Milan, Italy.
Tuberculosis, Internationales Centralbureau zur Bekämpfung der Tuberkulose, Berlin, Germany. (This is the organ of the International Tuberculosis Society.)

Before the war there were published other tuberculosis journals in France and Italy, but no copies have been received recently.

2. The only apparatus mentioned for such purpose is the device used in producing artificial pneumothorax. These devices may be obtained from any of the medical supply houses advertising in THE JOURNAL.

TREATMENT OF LEPROSY

To the Editor:—Can you give me some information on the results obtained in the leper colony of Hawaii with the new method for increasing the tolerance of patients to large doses of chaulmoogra oil? Please omit my name.

P. P. A., Colombia.

ANSWER.—At the recent conference of state and territorial health authorities with the U. S. Public Health Service, Dr. G. W. McCoy, the director of the Hygienic Laboratory, stated that the results obtained in the treatment of lepers at the leprosy investigation station in Kalihi, Hawaii, with the ethyl esters from chaulmoogra oil had been encouraging. Following a course of treatment extending over about a year, forty-eight lepers treated according to the new method were paroled in October, 1919, and up to now have remained free from the disease. It will require, however, some time—probably years—to determine whether a real cure for leprosy has been discovered.

The treatment employed was described in the *Journal of Cutaneous Diseases* in articles by H. T. Hollmann and A. L. Dean, the authors concluding that in the use of the ethyl ester of the fatty acids of chaulmoogra oil, subcutaneously, we have a method of treatment superior to subcutaneous injection of the chaulmoogra oil mixtures.

In the *Indian Medical Gazette* for April, 1920, recently abstracted in THE JOURNAL, there appeared a series of articles on the treatment of leprosy, one of which was by Rogers on the use of an ethyl ester of the unsaturated fatty acids of cod liver oil in both leprosy and tuberculosis with apparently distinctly favorable results, although it is recognized that much further experience will be necessary before the exact value of the new preparation can be determined.

"CHLORINATION OF WATER SUPPLIES"

To the Editor:—Referring to the editorial on "Chlorination of Water Supplies" which appeared in THE JOURNAL (Spanish Edition, Jan. 1, 1920), I should like to get more details in regard to this method of water disinfection.

ALFONSO QUINONEZ, M.D., San Salvador.

ANSWER.—A list of articles on the purification of drinking water appeared in THE JOURNAL, June 7, 1913, page 1813. Articles published since that date follow:

Whittaker, H. A.: Use of Hypochlorite Capsules for Treatment of Small Quantities of Drinking Water, *Am. J. Pub. Health,* August, 1914.
Liquid Chlorin and Water Sterilization, Current Comment, THE JOURNAL, July 25, 1914, p. 327.
Chlorin Treatment of Water Supplies, editorial, THE JOURNAL, July 10, 1915, p. 174.
Jordan, E. O.: The Purification of Water Supplies, THE JOURNAL, Feb. 12, 1916, p. 467.
Cheap Alum for Water Purification, Current Comment. THE JOURNAL, Jan. 27, 1917, p. 293.
Water Purification, Queries and Minor Notes, THE JOURNAL, Feb. 24, 1917, p. 653.
Making Water Safe for Drinking Purposes, Queries and Minor Notes, THE JOURNAL, Oct. 13, 1917, p. 1291.

LABELS ON GLASS

To the Editor:—Kindly give a method of preparing ink for marking labels on gross tissue specimens which will not be washed off by immersion in the formaldehyd in which the specimens are preserved. Please omit name and address.

S. A. L.

ANSWER.—The glass surface to be labeled should be free of grease. Any ink may be employed. A coat of thin alcoholic solution of shellac or of balsam should be applied over the ink.

OLDEST MEDICAL ORGANIZATION

To the Editor:—What is the oldest medical organization in the United States?

A. S. A.

ANSWER.—The Medical Society of New Jersey was organized in 1766. This is the oldest state medical society of which we have record. Before this date there were minor societies in Boston and elsewhere.

Proposed Health Museum.—W. J. Simpson, professor of hygiene and public health in King's College, London, has suggested the establishment of such a museum to celebrate the means by which we can triumph over preventable disease. In such a museum the causes of preventable disease and the means by which they can be prevented would be illustrated practically. The museum would be open to all. Lectures and demonstrations illustrated by models and the cinematograph should be given, and there should be attached a bureau of information.—*Medical Press and Circular* **109**:105 (Feb. 11) 1920.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 7. Sec., Dr. Harry C. De Vighne, Juneau.

HAWAII: Honolulu, Sept. 6-10. Sec. Dr. R. W. Benz, 1141 Alakea St., Honolulu.

ILLINOIS: Chicago, Sept. 20-23. Director, Francis W. Shepardson, State House, Springfield.

NEW HAMPSHIRE: Concord, Sept. 9-10. Sec., Dr. Charles Duncan, Concord.

New York January Examination

Mr. Herbert J. Hamilton, assistant, professional examinations, New York State Board of Medical Examiners, reports the written examination held at New York, Buffalo, Albany and Syracuse, Jan. 27-30, 1920. The examination covered 8 subjects and included 10 questions. An average of 75 per cent. was required to pass. Of the 169 candidates examined, 90 passed and 79, including 1 osteopath, failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Yale University		(1919)	1
Howard University		(1918)	1
Atlanta Medical College		(1914)	1
Rush Medical College		(1895), (1916)	2
University of Kansas		(1912)	1
College of Physicians and Surgeons, Baltimore		(1912)	1
Johns Hopkins University		(1915), (1916), (1918, 2)	4
University of Maryland		(1917)	1
Boston University		(1904)	1
Harvard University		(1918)	3
Tufts College Medical School		(1914), (1917), (1919)	3
Univ. of Michigan Homeopathic Med. School		(1917), (1919)	2
University of Nebraska		(1919)	1
Albany Medical College		(1917, 2), (1918)	3
Columbia University		(1914), (1915), (1916), (1917, 5), (1918, 2), (1919, 4)	14
Cornell University		(1918), (1919, 3)	4
Fordham University		(1913), (1916), (1917), (1918), (1919)	5
Long Island College Hosp.		(1915), (1917), (1918), (1919, 5)	8
New York Homeopathic Medical College and Flower Hospital		(1913), (1915), (1918, 2) (1919, 2), (1920)	7
University and Bellevue Hospital Medical College		(1910), (1915), (1917), (1918), (1919, 6)	10
Eclectic Medical College, Cincinnati		(1916)	1
University of Cincinnati		(1919)	1
Jefferson Medical College		(1899), (1916), (1917, 2)	4
University of Pennsylvania		(1918)	2
Vanderbilt University		(1919)	1
Medical College of Virginia		(1915)	1
Queen's University		(1919)	2
University of Toronto		(1916)	1
McGill University		(1915), (1918, 2)	3
Syrian Protestant College, Beirut		(1917)	1
Yale University	FAILED	(1916), (1917), (1918)	3
Georgetown University		(1913)	1
Howard University		(1912), (1913), (1918, 3)	5
Chicago College of Medicine and Surgery		(1914)	1
College of Physicians and Surgeons, Chicago		(1902)	1
Northwestern University		(1918), (1916)	2
University of Illinois		(1917)	1
University of Louisville		(1915)	1
Johns Hopkins University		(1916), (1918)	2
University of Maryland		(1911), (1917)	2
Harvard University		(1908)	1
Tufts College Medical School		(1915, 2), (1916), (1917, 2)	5
University of Michigan Homeopathic Medical School		(1918)	1
University of Minnesota Medical School		(1917)	1
Washington University Medical School		(1917)	1
John A. Creighton Medical College		(1916)	1
Dartmouth Medical School		(1902)	1
Albany Medical College		(1916)	2
Columbia University		(1916), (1919, 5)	6
Cornell University		(1918)	1
Fordham University		(1917), (1918, 3)	4
Long Island College Hospital		(1919)	2
New York Homeopathic Medical College and Flower Hospital		(1914), (1915, 2), (1916, 4), (1917, 3), (1918,2), (1920)	13
University and Bellevue Hospital Medical College		(1918), (1919)	2
Eclectic Medical College, Cincinnati		(1915)	1
University of Oklahoma		(1915)	1
Jefferson Medical College		(1915)	1
University of Pennsylvania		(1903), (1917, 2)	3
Women's Medical College of Pennsylvania		(1916)	1
Vanderbilt University		(1913), (1914, 2), (1918)	4
University of Vermont		(1916)	1
Medical College of Virginia		(1914), (1915)	2
Queen's University		(1919)	1
University of Havana		(1917)	1
University of Bologna		(1912)	1
University of Bogota		(1908)	1

Mr. Hamilton also reports that 14 candidates were licensed by endorsement of their credentials. Of these 6 were granted licenses by reciprocity with other states, 7 by endorsement of their licenses on the basis of eminence and authority in the profession, and 1 candidate was granted a reregistration license. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Bennett Medical College		(1912)	Indiana
University of Maryland		(1899)	New Jersey
Columbia University		(1915)	Ohio
Ohio State University College of Medicine		(1916)	Ohio
University of Toronto		(1907)	Indiana
University of Catania		(1912)	Virginia

College	LICENSED BY ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Cooper Medical College		(1904)	California
Georgetown University		(1900)	Dist. Colum.
Northwestern University		(1907)	Illinois
Louisville and Hospital Medical College		(1908)	Louisiana
St. Louis University School of Medicine		(1904)	Missouri
University of Pennsylvania		(1903)	Penna.
University of Valladolid		(1881)	Porto Rico

Illinois March Examination

Mr. F. C. Dodds, superintendent of registration, Illinois Department of Registration and Education, reports the written and practical examination held at Chicago, March 1-4, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 118 candidates examined 102 passed and 16 failed. Seventeen were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Chicago Hospital College of Medicine		(1918,5)	(1920) 6
Hahnemann Medical College and Hospital, Chicago			(1920) 5
Chicago College of Medicine and Surgery			(1917) 1
Loyola University		(1919, 2), *(1920, 13)	15
Northwestern University			(1917) 1
Rush Medical College		(1917, 3), (1919), *(1920, 56)	60
University of Illinois		(1918), (1919), (1920, 2)	4
Hospital College of Medicine, Louisville			(1905) 1
Detroit College of Medicine			(1904) 1
University of Minnesota, Medical School			*(1919) 1
National University of Arts and Sciences			(1914) 1
St. Louis University, School of Medicine			(1919) 1
University of Toronto			(1909), (1916) 2
Victoria University			(1893) 1
University of Vienna			(1910) 1
University of Padua			(1917) 1
Denver Homeopathic College	FAILED		(1904) 1
Chicago College of Medicine and Surgery			(1913) 1
Chicago Hospital College of Med. (1915, 1), (1918, 2)			(1919) 4
Loyola University			(1916) 1
Northwestern University Women's Medical School			(1887) 1
Detroit College of Medicine			(1900) 1
Kansas City Medical College			(1897) 1
Meharry Med. College		(1913), (1914), (1915, 2), (1917), (1919)	6

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago		(1912)	Washington
Hahnemann Medical College and Hospital, Chicago		(1912)	Indiana
Rush Medical College		(1914), (1907)	Wisconsin
Indiana University		(1910)	Indiana
Keokuk Medical College		(1907)	Iowa
State University of Iowa College of Homeo. Med.		(1910)	Iowa
State University of Iowa Coll. of Medicine		(1909), (1914)	Iowa
University of Louisville		(1909) Kentucky, (1911)	Indiana
University of Michigan, Homeopathic Medical Sch.		(1913)	Michigan
University of Minnesota Medical School		(1913)	Minnesota
Eclectic Medical Institute, Cincinnati		(1906)	Arkansas
Ohio State University, College of Medicine		(1918)	Ohio
University of Pennsylvania		(1876) Kansas, (1904)	Penna.

*Degrees for these candidates have been withheld pending completion of their hospital internships.

Hawaii May Examination

Dr. J. R. Judd, secretary, Hawaii Board of Medical Examiners, reports the written examination, held at Honolulu, May 10-13, 1920. The examination covered 8 subjects and included 64 questions. An average of 75 per cent. was required to pass. Of the 9 candidates examined, 3 passed and 6 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Detroit Homeopathic College		(1909)	75.6
Chiba Special Medical School		(1913)	81.2
Osaka Prefecture Higher Medical School		(1907)	78.1
George Washington University	FAILED	(1907)	68.7
Bennett College of Eclectic Medicine and Surg.		(1893)	58.7
Rush Medical College		(1920)	76.1
Dartmouth Medical School		(1904)	67.5
Nagasaki Special Medical School		(1906)	65.6
Osaka Prefecture Higher Medical School		(1914)	48.1

Miscellany

THE FLIGHT SURGEON

A New Specialist in Medicine

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The flight surgeon bears the same relation to aviation as does the specialist in preventive medicine to mankind in general, in that the two are concerned with the prevention of disability and the maintenance of physical efficiency. As a knowledge of diseases is essential in order to make intelligent efforts for their prevention, so a knowledge of the special ailments to which the flier is subject is necessary in order that they may be prevented or reduced to a minimum.

When the United States entered the World War and there began an immediate and great increase in aviation activities, it early became apparent that, after men had undergone a thorough and special physical examination and were found fit to fly, the most important work of the Medical Division of the Air Service was to keep these selected men under constant supervision to see that they remained fit to fly, and to remove from flying those who became unfit. The necessity for such a procedure was made obvious by a report from overseas that the British, French and Italians, by information derived from carefully compiled statistics, had come to the conclusion that 90 per cent. of aviation casualties was due to troubles with the fliers, 8 per cent. to defective aeroplanes, and 2 per cent. to the Huns; further, that by proper medical supervision of fliers, the British in two years reduced this 90 per cent. of casualties to 12 per cent.

These so-called "troubles" of the fliers were made the subject of special study by competent experts. Medical officers were assigned to duty at flying fields for the purpose of obtaining all possible information concerning ills and accidents of fliers, research laboratories for study and experimentation were established at certain of the fields, frequent reexaminations of fliers were conducted, and all of the knowledge acquired thereby was assembled and put into shape for the training of medical officers who were to qualify for the special medical work required by the Air Service. Thus there evolved a new specialist in medicine—the flight surgeon.

The program for the training of many medical officers as flight surgeons for assignment to overseas squadrons was interrupted by the signing of the armistice. The work of the pioneer flight surgeons who were on duty during the war at Air Service stations in the United States was of great value. New to duties not clearly defined, their status not always understood, the importance of their services at first not fully appreciated, they showed keen enthusiasm and marked intelligence in the performance of their tasks and, by practical demonstration of their worth, paved the way for the establishment on a permanent basis of the office of the flight surgeon. Further, these pioneers rendered reports of their observations and experiences which have been of great assistance in formulating the present system of instruction prescribed for medical officers who desire to qualify as flight surgeons.

This instruction is given at the central Medical Research Laboratory, and consists of lectures, demonstrations and practical work in normal physiology of respiration and circulation and in the physiology of respiration and circulation of the flier when exposed to high altitudes. The ability to differentiate the arrhythmias and all types of valvular heart disease is acquired from clinics and lectures. Methods of new and special examinations of the ophthalmologic and otologic apparatus are taught, and each student flight surgeon is required to make a number of complete examinations of the eye and the ear. In psychiatry the general field is covered by lectures and clinical work, and special attention is devoted to the making of personality studies. In psychology the instruction consists of a study of elementary psychologic methods and the psychology of aviation, a subject which has to do with the mental adaptability of the flier to the work required of him. In physics, such matters as oxygen supply apparatus, aviators' goggles, and the rebreathing apparatus for the detection of staleness and the classification of fliers, are given study and practical demonstration. The whole course of instruction requires two months of intensive work.

After its completion, and on being assigned to flying fields for duty, flight surgeons are encouraged to take flying instruction and to qualify as air pilots. They can thus by experience in the air comprehend the psychology of flying. From the study of the sensations produced during flight they gain a wealth of information of inestimable value in dealing with fliers under their charge. They have a true appreciation of the stress which at all times the flier undergoes, the symptoms brought on by flying at high altitudes, and the physical and mental exhaustion incident to prolonged flights. They may acquire a personal knowledge of the manifestations of flying "staleness," that most insidious and dangerous ailment of fliers, which may exist when the subjects themselves are not aware of it, but which the competent observer usually detects without difficulty. Further, they have a bond in common with their fellow fliers, and it has been observed that on this account greater confidence is reposed in them by the fliers.

Of the forty flight surgeons now on duty at Air Service stations, twenty-nine are on flying status, which requires that, either as passengers or pilots, they take a minimum of ten flights a month. Of these twenty-nine there are seven who are qualified pilots and five who are now taking instruction to qualify as pilots.

The duties of the flight surgeon are prescribed officially as follows: "The duty of the flight surgeon is to act as adviser to the commanding officer of flying schools and squadron groups. Although under the post surgeon, he has the freedom of independent initiative in all questions of flying fitness of aviators or cadets. Subject to the approval of the commanding officer, he is expected to institute such measures as periods of rest, recreation and temporary excuse from duty as may seem to him advisable. He takes sick call for aviators and cadets, and recommends a disposition of cases excused from duty. He will visit such cases as may be in the hospital at the post, and consult with the attending medical officer regarding them. From time to time he will make routine reexaminations of aviators and cadets, also such special examinations as he may deem advisable, being assisted therein by data furnished by the Medical Research Laboratory. He will live in as close touch with the aviators and cadets at his station as is consistent with the conditions."

The flight surgeon should be out on the line with the fliers during the hours that flying is actively engaged in. The mechanicians look over the engine, the control gears, the struts and the wings of the aeroplane before it is taken out for flight; how much more important it is that the flier, the "heart and brains of the whole flying apparatus," as one flight surgeon expresses it, should be talked with and critically, if but momentarily, observed, before he is allowed to go up into the air.

On recommendation of the flight surgeon, the commanding officer of an Air Service station may at any time remove a man from flying duty. While the most important part of the flight surgeon's work is in instituting measures for keeping fliers in good physical condition, it is worth while to state that of 1,500 fliers in the United States in 1919 of whom there

is a record, 808 were temporarily disqualified for flying on account of physical disability, and thirty were permanently disqualified.

The flight surgeon is required to prepare and send in to the office of the chief surgeon, Air Service, at frequent intervals, standardized reports on fliers. Several of these reports deserve special mention in that the information they furnish gives an idea of the valuable statistics which the central office is enabled to compile. The "Crash" report, sent in from a station whenever there is an injury to a flier or serious damage to an aeroplane, covers the date of beginning of training of flier; hours of dual and solo instruction; hours flown during past month; duration of last flight; number of previous crashes; result of crash; cause of crash; type of plane, etc. The "Care of Flier" report is submitted weekly from each station. It gives the total number of fliers on duty at the station; the number of hours of flying; number of fliers temporarily removed from flying duty by the commanding officer on recommendation of the flight surgeon; cause of disability in each case reported on; statement as to whether physical examination records are on file for all fliers at the station, etc. The "Physical Examination for Flying" report on each flier is sent in semiannually and covers a thorough and complete physical examination, embracing the new standards required for the examinations of the eye, the ear and the nervous system.

The official status of the flight surgeon is prescribed in the following instructions, which have been issued by the director of Air Service to commanding officers of Air Service stations:

"1. Commanding officers of Air Service stations where flying is being carried on will consult with the flight surgeon in all matters pertaining to the mental and physical fitness of the flying personnel of his command. The term 'flying personnel' will include all who make aerial flights, such as instructors, flying officers, and individuals undergoing flying instruction.

"2. Commanding officers will take full advantage of the assistance that can be rendered by the flight surgeon of his field. Such matters as the amount and kind of physical exercise required by individuals engaged in flying; the state of fatigue of the individual flier; the amount of sleep necessary; food problems; reexaminations, and all field conditions affecting the welfare of the flying personnel will be made the subject of conference between the commanding officer and the flight surgeon. Commanding officers should obtain the recommendation of the flight surgeon on applications for leaves or furloughs from those engaged in flying when physical incapacity is made the basis of application.

"3. The flight surgeon will be listed on any form for clearance in vogue at an Air Service station, and no flying officer or any one undergoing flying instruction will be transferred from a station without first obtaining a clearance from the flight surgeon. On notification of transfer, the flight surgeon will forward to the flight surgeon of the new station the reexamination report and laboratory rating chart of the individual being transferred.

"4. Flight surgeons will be encouraged in every way to take flying instruction. On completion of the prescribed tests, flight surgeons will be rated in the same manner as other flying officers. Applications for flying training should be made through the surgeon to the station commander, and will be accompanied by the necessary report of physical examination.

"5. On recommendation of the surgeon, station commanders will authorize medical officers of the command, who are physically qualified and make application, to take flying instruction. This will enable one of these officers to take the place of the flight surgeon when the latter for any reason is not available for that duty.

"6. Unless an absolute necessity exists therefor, flight surgeons will not be diverted from their regular duties to perform routine post duties when this service can be performed by other medical officers. Flight surgeons should devote all the time possible to the close and constant supervision over flying personnel.

"7. The flight surgeon of an Air Service station will not be detailed as a member of a board of officers convened to examine into the efficiency of a flying officer when it can be avoided. His services will be of more value when called before a board as an expert witness to give testimony relative to physical fitness, etc., of the officer under investigation."

The flight surgeon has come to stay. Instances without number of the practical value of his work could be related. In an analysis of statistics of 1,250 crash reports rendered by flight surgeons, which covers a period from July 1, 1918, to Jan. 1, 1920, and which includes reports on crashes from all stations in the United States at which flight surgeons were on duty, the cause of crash due to physical impairment of fliers, when definitely ascertained to have existed, is given as only 2 per cent. Forty-seven per cent. is reported as due to "poor judgment." It is probable that a relatively small number of these crashes were due to physical impairment, but for lack of more exact information, were not placed in that class.

Undoubtedly the work of the flight surgeon has resulted in the saving of many lives and much valuable property.

Office of Chief Surgeon, Air Service.

OPHTHALMOLOGIC TEACHING

At the annual congress of the Ophthalmological Society of the United Kingdom, the president, Mr. J. B. Story, delivered an important address on this subject. He said that the Council of British Ophthalmologists had already urged the General Medical Council to adopt two reforms—first, to make three months' attendance at an ophthalmic clinic obligatory, and secondly, to have an examination by ophthalmic surgeons as part of the final examination. The General Medical Council accepted the first and rejected the second, a most astonishing thing to those who know well that medical students have no time to waste on subjects that are not necessary and in which examination is not compulsory. There are two reasons why a certain knowledge of ophthalmology is necessary for every person permitted to practice: (1) because the vast majority of physicians cannot escape from having to diagnose and treat diseases of and injuries to the eye when no specialist can be obtained, and (2) because in many serious diseases the evidence afforded by ocular conditions is most important, and often the ocular symptoms are those which induce the sufferer to seek medical advice. For instance, interstitial keratitis may be the first evidence of infantile syphilis, even before the eruption of the teeth described by Jonathan Hutchinson; and acquired syphilis may show itself in the choroid, iris or retina long after the patient has forgotten the primary disease completely. Ocular tuberculosis may be the first visible manifestation of that disease, and the ocular signs are important in tabes, disseminated sclerosis, meningitis and other intracranial lesions, diabetes, nephritis and arteriosclerosis, to mention only a few serious and not uncommon affections. In many of these the ocular signs may be mainly naked-eye appearances or fairly easily observed ophthalmoscopic lesions. The final decision of the General Medical Council is said to be that the hospitals should, or may, refuse certificates to students who do not acquire sufficient knowledge, thus shuffling off the responsibility thrown on it by act of Parliament and placing it, not on the licensing bodies over which it has control, but on the medical staffs of hospitals. It has been objected that if an examination in ophthalmology is instituted at the final, it will overload the curriculum, and that other special branches of surgery will claim a similar privilege.

As regards the first objection, the special clinical examination has been the rule in every one of the Irish licensing bodies for some thirty years, and has not caused overloading. As regards the second, it has already been pointed out how great is the importance of ocular signs and symptoms in serious constitutional diseases, an importance much greater than can be assigned.

Book Notices

NEITHER DEAD NOR SLEEPING. By May Wright Sewall Urthan. Introduction by Booth Tarkington. Cloth. Price, $2.50. Pp. 320. Indianapolis: The Bobbs-Merrill Company, 1920.

The author of this latest addition to the host of books on spiritualism is a woman who—according to the advertisements—for many years headed a well known girls' classical school, was organizer of the National Council of Women of the United States and of the International Council of Women, and was for nine years chairman of the executive committee of the National Women's Suffrage Association. It is interesting to reflect on the fact that during all the time that she was carrying out such work, she was apparently living in a maze of unrealities, in a veritable dream state. Evidence of her credulity in matters spiritualistic is the following incident:

> One evening as we sat in the library in ordinary conversation, with the expectation that later her gift of automatic writing might be used in my service, I told her of the scenes I had witnessed at Oberammergau in August, and showed her some photographs of the chief actors. Holding out to her a photograph of Judas, I asked her to look at it and compare it with another face that we had been analyzing. Reaching out her hand she said, "Where is it?"
>
> I replied, "Why you took it from my hand."
>
> "No, I took nothing; I extended my hand to take it, but although I saw the photograph in your hand there was nothing for me to take."
>
> This seemed incredible to us, for it was for both the first experience of "instantaneous disintegration."
>
> We were alone in the room, of which neither door nor window was open. I had held the photograph studying and discussing it before, and while I passed it to my friend, who, seeing it in my hands, found nothing there when her hand reached mine! We looked everywhere, removing every paper from the desk by which we sat, going over and over again the basket holding my summer's harvest of photographs. It was nowhere to be found. When very late, the automatic writing began, my husband's first sentence was, "It is useless for you to look for the photograph of Judas; ——— took it."
>
> In amazement, I cried: "———! How can that be? What does he want with it?"
>
> My husband replied, "It was a singular thing for ——— to do; but he wished to show it to Judas; he has done so and Judas is not at all pleased with it."
>
> In reply to further expression of incredulity, protests and questions, my husband said, "——— promises to return the photograph when you least expect it."
>
> In May, 1901, while in New York attending a conference of the officers of the National Council of Women, I spent an evening with my friend Miss G., who produced automatically a dictation from my husband for me. On this occasion I had made no reference to the incident narrated above, but my husband wrote: "——— has been prevented from returning the photograph of Judas by the fact that the latter feels deeply offended by its production and is unwilling that a photograph which he regards as a caricature shall be restored and preserved."

Aside from its general interest for the neurologist and psychiatrist, a feature of medical interest is the fact that the author was a sufferer from interstitial nephritis, as she states, and that she was cured by following the directions—communicated mediumistically—of a physician of the middle ages, now residing in one of the spheres of one of the planes to which mortals pass when leaving this terrestial home. These instructions caused her to take materialistic massage treatments from a Swedish masseur, vapor baths and exercises. They also caused her to undergo periods of starvation and to secure mental relaxation by the study of piano playing under spiritualistic instruction of the great Anton Rubinstein, also residing in one of the spheres of one of the planes. It may be said that Mrs. Sewall's chief communicant from the shores beyond was her husband, who died in 1895, and who has been communicating regularly with her ever since. The communications have come through trumpet-speaking, slate-writing, automatic writing, ouija boards, or the other trumpery methods indulged in by professional mediums. In her converse with those who have gone before, Mrs. Sewall spoke with numerous celebrities, including, incidentally, Mesmer. Many of her conversations are interesting as literary curiosities. The book is an amazingly fantastic document. It is a pity that such books are advertised to and are being read by many persons of uncritical judgment.

THE DIAGNOSIS OF NERVOUS DISEASES. By Sir James Purves Stewart, K.C.M.G., C.B., M.D., Senior Physician to the Westminster Hospital. Fifth edition. Cloth. Price, $11. Pp. 584, with illustrations. New York: E. B. Treat & Company, 1920.

This well known and excellent work well deserves to appear in a new edition. As stated in the preface, "from the kindly reception accorded to former editions of this work, it is not unreasonable to infer that it has probably been found of some practical use." As indicated in the title, this is strictly a book on diagnosis. Chapters are devoted to various symptoms, such as coma, convulsions, aphasia, pain, reflexes, postures and gaits. Chapters on war neuroses and organic war lesions of the nervous system have been added. Lethargic encephalitis is lucidy considered in its various relations. As an example of the author's broadness of view we may mention that in discussing the difficult differentiation between chorea, facial tic and facial spasm he brings out the valuable diagnostic points and interpretations contributed by French and American observers. In fact, this author is singularly free from being "insular" in his views and knowledge. Any contribution which has proved fruitful in neurology is given a fair mention, whether emanating from home or abroad, from friend or foe. Freudians may complain that sufficient stress is not laid on the value of psychanalysis in the diagnosis of the neuroses; but the author's conservatism in this regard is shared by the overwhelming majority of neurologists everywhere. The publishers' work as regards print and illustrations also deserves praise.

THE FACULTY OF THE COLLEGE OF PHYSICIANS AND SURGEONS, COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK. Twenty-Four Portraits. By Dorris U. Jaeger, with a Foreword by Samuel W. Lambert, M.D., A.B., A.M. Boards. Price, $10. New York: Paul B. Hoeber, 1919.

This is a well worked up volume containing a frontispiece showing the entrance to the College of Physicians and Surgeons of Columbia University; a foreword by Dr. Samuel Lambert, and, following this, twenty-four large portraits of the chief members of the present faculty. The portraits are nicely printed rotogravures, with artistic backgrounds. Not all are so clear as they might be, and it would seem that clearness of the features has been somewhat sacrificed to artistic presentation. Similar publications were issued by the college in 1846 and in 1875. As evidence of the decided historical value is the fact that the 1846 picture contains the photographs of Willard Parker, John B. Beck, Alex Stevens, Joseph M. Smith, John Torrey, Robert Watts and Chandler R. Gilman, and the group of 1875 contains the pictures of T. Gaillard Thomas, Thomas M. Markoe, Alonzo Clark and John C. Dalton. If every institution of importance could publish a similar work occasionally—say every twenty-five years—the results would form a record of decided personal interest and of historical value. To the medical graduate of any college it means much to have a permanent memento of his teachers in such a satisfactory form. Columbia University is to be congratulated on having set such an excellent pace to the movement as is marked by the high quality of the present volume.

PERSONAL BEAUTY AND RACIAL BETTERMENT. By Knight Dunlap, Professor of Experimental Psychology in the Johns Hopkins University. Cloth. Price, $1. Pp. 95. St. Louis: C. V. Mosby Company, 1920.

This is a reprint of an address delivered before several different organizations during April, 1917, and later published in the *Psychological Review* for May, 1918. The address is divided into two parts covering the significance of beauty and the conservation of beauty. It indicates the author's belief that the predominant ideal in marriage is the procreation of children, and it calls attention to various unsatisfactory conditions of present sex relationship. It does this through defining the factors governing sex attraction and marriage. It is a well written thesis.

Medicolegal

Effect of Receiving Check "In Full of Account"

(Booth v. Dougan (Mo.), 217 S. W. R. 326)

The St. Louis (Mo.) Court of Appeals affirms a judgment in favor of the defendant, who was sued by a physician for a balance of $447 claimed to be due on account after the physician had indorsed and collected through the bank a check for $200 reading "In full of account to date," which the defendant had sent to him. The court recognizes the rule to be that when a certain sum is due from one to another, the payment of a lesser sum is no discharge as to the remainder, notwithstanding an agreement to that effect, because the latter agreement is without consideration. But such rule, the court says, does not apply when the amount due is disputed or unliquidated. When a claim is unliquidated, any sum, no matter how small, given and received in satisfaction of the demand, will legally satisfy it, however large the claim may be. A debt or demand is liquidated when agreed on by the parties or fixed as to the amount by the operation of law. The account in this case was made up of charges for visits made by the plaintiff, as a physician in attendance on the defendant and his family, from Nov. 4, 1911, to May 30, 1915, and totaled $1,347, on which payments were credited, of $200 in 1912, $200 in 1913, $300 in 1914, and $200 in 1915. It was admitted at the trial that it was not necessary for the plaintiff to prove each of his items in detail, but that it would be conceded that he would testify to the correctness of each item. The defendant contended, however, that the last payment was made by him and accepted by the plaintiff as in full of all amounts due the plaintiff. In no sense could this be said to have been a liquidated account. While it was true that the defendant did not dispute that the services had been rendered and that the charges made for them were reasonable, he nowhere admitted that he owed them. On the contrary, when his attention was called to the account rendered just before he sent his check for the last payment, he called the plaintiff's attention to the fact that they had before settled on a compromise basis and proposed to do that here; and on the plaintiff's stating that his account was about $400, the defendant stated that he would pay $200 if the plaintiff would accept that in full. It was true that the plaintiff denied this conversation over the telephone, but that was for the jury, the defendant having distinctly testified to it. It was under these circumstances that the defendant made out his check for $200, writing on it that it was in full, transmitted it by letter, calling attention to that sum, and the plaintiff accepted the check and cashed it. Under these circumstances the plaintiff was bound by his act and could not claim anything over and above the $200. His reception and retention of the $200 in full payment of his account, that not being a liquidated account, or an account stated, was conclusive on him.

Liability of Physicians for Bad Dental Work

(Nisbet v. Vandiver (Ga.), 101 S. E. R. 761, Eichholz v. Poe et al. (Mo.), 217 S. W. R. 282)

The Court of Appeals of Georgia, Division No. 1, in the case of *Nisbet* v. *Vandiver,* affirms a judgment in favor of plaintiff Vandiver, a boy about 8 years of age, for damages in an amount not stated by the court, for alleged permanent injury done to him by defendant Nisbet, a licensed practicing physician and surgeon, in what he did, or failed to do, in extracting a lower tooth for the plaintiff. It was alleged that the defendant failed to administer properly the cocain used, and failed to exercise a reasonable degree of care, skill and diligence in that he used an unclean and infected needle to administer the cocain, injected unsterile cocain, was not careful as to selecting and using clean forceps or instruments, and did not properly diagnose and treat the case afterward, as a result of which gangrene developed, which required a removal of part of the jawbone and a disfiguring opening of the chin. The defendant denied the charges of negligence, and averred that, if any gangrene developed, it occurred after his connection with the case had terminated, and was in no manner caused by him. The court, however, thinks that there was evidence to support the verdict for the plaintiff.

In the case of *Eichholz* v. *Poe et al.,* in which two physicians and a dentist were the defendants, the Supreme Court of Missouri, Division No. 2, reverses an order of involuntary nonsuit and remands the case for a new trial. The court says that the plaintiff was a blacksmith, who worked at his trade until he went to the hospital where the defendant physicians operated on him and removed a kidney. On the day after the operation he had a toothache, of which he notified the physicians, and one of the physicians called his dentist, the other defendant, who examined the tooth, applied some lotion to stop the pain, went away, but returned that evening, extracted the tooth, and broke the jaw in so doing. The plaintiff did not call any supporting witness in his behalf, either lay or expert, although he might have called the nurse who attended him at the hospital, or he might have called the physician who treated him after he discharged the defendants. At the close of his case the defendants demurred to the testimony, and their demurrers being sustained, the plaintiff suffered an involuntary nonsuit. The defendants contended that the demurrers were properly sustained because there was no proof in the record of any negligence on the part of the defendants, and because there was likewise no proof of a causal connection between the act done and the injury suffered. The plaintiff charged in his petition that, while he was in a painful and weakened condition resulting from the operation for the removal of the kidney, the defendants negligently, carelessly and unskilfully extracted one of his teeth, and in so doing fractured his jaw, and thereafter failed properly to care for and treat the case, in consequence of which blood poisoning ensued. Where, as here, negligence is charged and that it resulted in the injury complained of, both must be affirmatively proved, except as to causal connection in cases in which it is supplied by statute. The causal connection in this case not being supplied by statute, it must be proved the same as negligence. But it is not necessary that negligence and causal connection between it and the injury be established by direct and positive testimony. It may be shown by circumstantial evidence, inferences legitimately drawn from physical facts which are disclosed by the record. Thus, either negligence or causal connection may be inferred by the jury. The proximate cause of the injury was established sufficiently by the testimony of the plaintiff, who swore that his jaw was fractured in the act of extracting the tooth, and the extraction of the tooth, being under the management and control of the defendants, the court thinks was sufficiently out of the ordinary course of that which usually happens when ordinary care and skill are employed, to warrant the jury in finding, in the absence of explanation by the defendants, that the tooth was negligently extracted.

Alcoholic Insanity as a Defense for Murder

(Collier v. State (Okla.), 186 Pac. R. 963)

The Criminal Court of Appeals of Oklahoma, in affirming a conviction of murder, says that the principle is everywhere recognized that voluntary intoxication is no justification or excuse for crime, and is no excuse for homicide, though carried to the extent of producing incapacity to control the mind and will. According to the syllabus by the court, in a prosecution for murder, alcoholic insanity, or mental incapacity produced by voluntary intoxication existing only temporarily at the time of the homicide, is no justification or excuse therefor. To constitute insanity caused by intoxication a defense in a trial for murder, it must be insanity caused by chronic alcoholism, and not a mere temporary mental condition. Insanity, though superinduced by excessive and long-continued indulgence in alcoholic liquors and known as "delirium tremens," or "mania a potu," renders a person so afflicted irresponsible for his acts, if it be of such a character as to deprive him of the mental capacity to distinguish between right and wrong, as applied to the particular act, whether he be under the influence of liquor at the time of the commission of the act or not; but, to do so, his afflic-

tion must be settled or fixed insanity, not a mere fit of drunkenness. A person not previously laboring under such a disease or affliction, who voluntarily becomes intoxicated to such an extent and for such a period of time as to cause unconsciousness of his acts, is not irresponsible under the law for the acts done by him while in such mental condition.

Under the penal code of Oklahoma, homicide is murder "when perpetrated without authority of law and with a premeditated design to effect the death of the person killed, or of any other human being," and evidence of intoxication is admissible to show an absence of the premeditated design to kill, for the purpose of determining whether the offense was murder or manslaughter; and a state of intoxication which will reduce homicide from murder to manslaughter in the first degree must be of such character and extent as to render the defendant incapable of entertaining or forming a design to effect death. And this question is for the jury to determine. Intoxication, either voluntary or involuntary, is to be considered by the jury in a prosecution for murder in which a premeditated design to effect death is essential, with reference to its effect on the ability of the defendant at the time to form and entertain such a design, not because, per se, or in and of itself, it either excuses or mitigates the crime, but because, in connection with other facts, an absence of malice or premeditation may appear. And the court says that where intoxication is resorted to for the purpose of blunting moral responsibility, it only increases the culpability of the defendant.

Society Proceedings

COMING MEETINGS

Amer. Assn. of Electro-Therapy & Radiology, Atlantic City, Sept. 14-17.
American Public Health Association, San Francisco, Sept. 13-17.
American Roentgen Ray Society, Minneapolis, Sept. 14-17.
Colorado State Medical Society, Glenwood Springs, Sept. 7-9.
Missouri Valley, Medical Society of the, Omaha, Neb., Sept. 6-7.
Utah State Medical Association, Ogden, Sept. 7-8.
Washington State Medical Association, Tacoma, Sept. 16-17.
Wisconsin, State Medical Society of, La Crosse, Sept. 8-10.
Wyoming State Medical Society, Cheyenne, Aug. 9-10.

OHIO STATE MEDICAL ASSOCIATION

Seventy-Fourth Annual Meeting, held at Toledo, Ohio, June 1-3, 1920

(Continued from page 198)

Problem of Forceps Prehension in Obstetrics

DR. WILLIAM GILLESPIE, Cincinnati: Most writers on and teachers of obstetrics tacitly assume that the tyro can perform a forceps extraction properly with axis traction instruments, provided certain simple rules of procedure are followed. The truth, however, is that most writers have circulated gross misconceptions about the use of forceps in their textbooks, and many common errors about axis traction have crept into the practice of the average obstetrician. The pubic joint may be torn asunder by the force of misguided axis traction, so it is apparent that the proper use of this tremendous force must be more judiciously taught and practiced. While the posterior surface of the pubes furnishes the best guide as to the axis of the pelvis in applying the blades of the forceps, there are special advantages in mastering their cephalic application as well. Such competence will enable the obstetrician to avoid cerebral lesions of the new-born, the result of misapplied blades and pressure. It is quite possible by an intensive study of the mechanism of labor as well as the principles of axis traction to use forceps for the high operation even with the head floating above the brim of the pelvis; also for canting the head past the promontory and delivering through flat pelves, even in face presentations.

Old and New Technic in Operating for Cataract

DR. DERRICK T. VAIL, Cincinnati: The old or combined capsulotomy method of operation is faulty because it is applicable only to ripe or nearly ripe cataracts. I would encourage those who undertake the operation for cataract to adopt Smith's method throughout in every case in which the lens shows a disposition to be delivered without strain, and as a method of last resort in case of imminent disaster. The best time to operate for cataract is before blindness and senility have set in. I operate when the patient can no longer read newspaper print with his best glasses in ordinary light.

Choice of a One-Stage or Two-Stage Operation for Cataract

DR. ROBERT SATTLER, Cincinnati: For a large majority of cases of relatively far advanced, partial or complete senile cataract, favorable and ready for operation, with functional examination, urinalysis and commonly accepted surgical risks in their favor, the complete operation is justly preferred and has become an almost universal practice on account of the advantages of only one hospital experience. For the exceptional cases, a two-stage operation is substituted.

Polycystic Kidney

DR. F. C. HERRICK, Cleveland: Undoubtedly some cases of polycystic kidney give such a prominent family history of an hereditary tendency as almost to justify the term "congenital" as applied to the condition occurring in adults. The surgical treatment of this condition has been chiefly limited to its complications of stone and infection. Nephrectomy is absolutely contraindicated. Experiments have shown that the cystic pressure limits the renal circulation, and that evacuation of the cysts, as a therapeutic measure during acute retention, would seem to be justified.

Causes and Treatment of the Conditions Underlying High Blood Pressure

DR. LEWELLYS F. BARKER, Baltimore: High blood pressure appears to depend chiefly on a narrowing of the lumina of the arterioles in the precapillary areas. It is at first functional and caused by hypertonus of the arterial musculature, though later it assumes a partly organic character the result of arteriosclerosis. The different types of chronic arterial hypertension probably represent different stages in the development of the same fundamental process, which may advance with variable rapidity and with variable associated involvements of cardiovascular, renal, cerebral and other structures in different cases. When recognized early, the process may often be arrested or so delayed in its progress that patients may live comfortably for many years before troublesome symptoms or dangerous complications occur. In the later stages of the process, much can be done to ameliorate symptoms and to ward off dangers, though in the actual end-stages both patients and physicians do better bravely to face reality, accepting the inevitable, rather than through wishful thinking increase suffering by resorting to meddlesome therapy that attempts the impossible. To prevent the development of the pathologic process underlying high blood pressure, one should first "get himself well born without constitutional inferiorities," and then should avoid intoxications and infections, and satisfy his physical, economic, social, educational, esthetic and ethical desires in a well balanced way, so ordering his activities that he will secure the highest self-realization possible in the service of the society in which he lives.

Peripheral Nerve Injuries

DR. LEWIS J. POLLOCK, Chicago: The striking feature of the clinical picture of early nerve lesions is the large percentage of marked and rapid improvement. There were probably 10,000 peripheral nerve lesions sustained in battle by the American Expeditionary Forces. To my knowledge not more than 3,000 cases were classified as peripheral nerve lesions in the hospitals of the United States. In other words, two thirds of the patients had so far recovered on reaching home hospitals that their nerve lesions were considered as of minor importance. From the cases coming under my personal observation, I would conclude that no more than one seventh of all cases should come to operation. One must be able to evaluate the paralysis of a mixed nerve injury and to avoid the mistake of misinterpreting accessory muscle movement and anastomotic nerve supply, factors that account for the miraculously rapid recoveries following resection and suture of peripheral nerves as reported by some surgeons.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal Medical Sciences, Philadelphia

June, 1920, **159**, No. 6

Causes and Definition of Cancer. L. Loeb, St. Louis.—p. 781.
Treatment of Thyroid and Other Endocrine Disturbances. J. A. Lichty, Pittsburgh.—p. 800.
*Human Arteriosclerosis: Its Etiology and Symptomatology. G. W. Norris, Philadelphia.—p. 815.
*Arteriosclerosis in Wild Animals. H. Fox, Philadelphia.—p. 821.
*Two Cases of Fibrinous Bronchitis; Review of Literature. I. C. Walker, Boston.—p. 825.
*Curves of Sugar and Urea After Standard Protein Meals. A. T. B. Jacobson and H. Edwards, New York.—p. 833.
Treatment of Surgical Shock in Zone of Advance. W. R. Ohler, Boston.—p. 843.
*Hyperglycemia in Its Relation to Immunity. G. L. Rohdenburg and H. F. Pohlman, New York.—p. 853.
Tests of Physical Fitness. P. D. White, Boston.—p. 866.
Life Cycles of Bacteria and Their Possible Relation to Pathology. R. R. Mellon, Rochester.—p. 874.
Nephritic Diet Sheet: Regulating Protein Intake. E. F. Walsh and J. P. O'Hare, Boston. p. 883.
*Antipneumococcus Serum (Kyes') in Treatment of Pneumonia. A. W. Gray, Milwaukee.—p. 885.
Chronic Pericardial Adhesions. J. C. Lyter, St. Louis.—p. 891.
Effect of Therapeutic Doses of Mercury on Kidneys and Duration of Its Excretion. L. G. Beinhauer, Ann Arbor, Mich.—p. 897.

Arteriosclerosis in Man.—It seems to Norris that clinical arteriosclerosis may simply be an involutional process, a part and parcel of aging; or it may be mechanical or toxic in origin. Just how this involutional process is brought about is not known, but it seems more than likely that it will ultimately be shown to be the result of chemical changes associated with the bodily metabolism, which exert their effects on the individual visceral, vascular and somatic cells, either directly or through the mediation of the ductless glands.

Arteriosclerosis in Wild Animals.—The study reported by Fox is a part of a general scheme of the Laboratory of Comparative Pathology at the Philadelphia Zoological Garden to place on record a review of the lesions found among the animals at the necropsy table. Mammals subjected to necropsy, 1,806; angeitis, 33, or 1.8 per cent.; birds subjected to necropsy, 3,571; angeitis, 53, or 1.4 per cent.

Two Cases of Fibrinous Bronchitis.—That cases of fibrinous bronchitis would probably not be as rare as the literature would indicate if the sputum of patients were more carefully examined is the belief held by Walker. The diagnosis of fibrinous bronchitis is made only by the finding of long branching bronchial casts in the sputum of persons who do not have tuberculosis, diphtheria, pneumonia or some other primary bronchial disease. Fibrinous bronchitis is an idiopathic disease, the cause of which is unknown. Although it may be due to a neurosis, it seems more closely allied to bronchitis, bronchiectasis and asthmatic bronchitis.

Curves of Sugar and Urea After Standard Protein Meals.—One important finding made by Jacobsen and Edwards is that after a standard meal of 50 gm. protein there is generally a rising curve of urea in the blood, which, as a rule, is higher in patients with severe diabetes or nephritis than in normal persons. The blood-urea level is not a reliable index of nitrogen retention. In some instances, for example in diabetics, it may possibly bear some relation to the rate of protein catabolism. On the whole, it seems to be governed by so many factors of the previous diet, fluid retention and unknown metabolic conditions that by itself it forms an uncertain basis for conclusions. The plasma sugar of normal persons is not appreciably altered by this quantity of protein. The substances in nephritic blood, which react like sugar to the Benedict test, are increased after a protein meal. A typical curve of hyperglycemia follows the ingestion of protein in suitably severe cases of diabetes. This is likely to be missed if active symptoms of glycosuria or hyperglycemia are present, as the effect of 50 gm. protein could scarcely be expected to be noticeable amid such a surplus of sugar. Rarely also the rise may be slight in extreme exhaustion. Under the conditions of strict diet treatment this reaction to a standard protein meal may be used as a measure of the severity of diabetes and a guide both to the protein allowance and the total ration, and it has lately been used for these purposes in this clinic.

Hyperglycemia in Relation to Immunity.—The experiments recorded by Rhodenburg and Pohlman show a phenomenon associated with the process of immunity which has hitherto escaped observation. An analysis of the hyperglycemia following repeated injections of the same substance indicates that the hyperglycemia is one which gradually increases in intensity up to a certain level of sugar concentration in the blood, that it keeps this level of intensity for a short period and then returns to a normal figure even though the immune bodies are still present in the blood. The experiments further suggest that the hyperglycemia which follows the injection of substances generally supposed not to be capable of inducing antibody formation (i. e., fats, polypeptids) may serve as a method for testing the reactions of the body when neither precipitins, agglutinins nor lysins are demonstrable. From a practical standpoint the absence of a hyperglycemia after the injection of a given substance known to induce hyperglycemia might be taken to indicate the point of maximum antibody production in the individual or animal in question.

Antipneumococcus Serum in Pneumonia.—The comparison submitted by Gray is a mortality of 16.7 per cent. in 234 serum treated cases of pneumococcus pneumonia, with a mortality of 53.6 per cent. in 1,684 similar cases treated in other respects by the same methods, except that they received no serum. In other words, the death rate in the serum treated cases was somewhat less than one third that in the cases compared.

American Journal of Roentgenology, New York

May, 1920, **7**, No. 5

Case of Thyroid Metaholism. C. W. Schwartz, Boston.—p. 229.
Four Cases of Malignant Disease Successfully Treated by Roentgen Ray. A. F. Tyler, Omaha.—p. 231.
Pathologic Findings in One Thousand Roentgen-Ray Examinations of Digestive Tract. W. Warner Watkins, Phoenix, Ariz.—p. 234.
Case of Diaphragmatic Hernia without Severe Symptoms. H. J. Howk and J. A. Herring, Mt. McGregor, New York.—p. 247.
Hernia of Diaphragm with Portion of Stomach in Thoracic Cavity. W. W. Belden, New York.—p. 250.
Manufacture of Coolidge Roentgen-Ray Tube. R. C. Robinson and C. N. Moore, Schenectady, N. Y.—p. 254.
Study of Gas Containing Roentgen-Ray Tubes and Description of New Tube. A. Mutscheller, New York.—p. 261.

June, 1920, **7**, No. 6

Diagnosis and Localization of Non-Opaque Foreign Bodies in Bronchi. C. Jackson, W. H. Spencer and W. F. Manges, Philadelphia.—p. 277.
*Secondary Hypertrophic Osteo-Arthropathy with Metastatic Sarcoma of Lung. L. Bryan, San Francisco.—p. 286.
True Congenital Hernia of Stomach in Right Diaphragm. D. Y. Keith, Louisville.—p. 289.
Bucky Diaphragm Principle Applied to Roentgenography. H. E. Potter, Chicago.—p. 292.
*Diagnosis by Roentgen Rays of Cirrhosis of Liver. A. H. Pirie, Montreal.—p. 296.
Malignant Abdominal Tumor Clinically Cured by Roentgen Ray. L. S. Goin, Battle Creek, Mich.—p. 297.
Plan of a Building for a Model Roentgen-Ray Laboratory. J. D. Morgan, Montreal.—p. 298.
Alveolar Infections of Dental Origin as Seen by Roentgenologist. H. W. Dachtler, Toledo.—p. 302.
Cancer Ameliorations and Cancer Immunity. A. F. Holding, Madison, Wis.—p. 306.

Secondary Hypertrophic Osteo-Arthropathy.—To the five cases of this condition now on record, Bryan adds one occurring in a man, aged 29. Fifteen years ago the patient was run over by a wagon and had the middle third of the right arm badly cut and bruised. The wound healed readily, leaving considerable scar tissue. Five years after the accident, a rapidly growing mass appeared in the scar tissue. It was excised, but recurred within a year and was again removed. A year later, excision was again attempted and still later a fourth excision was done. When first seen by Bryan, there was no apparent bony involvement, no evidence of glandular involvement and no clinical roentgen-ray evidence of pulmonary involvement. A thoracoscapular amputation was done from which the patient made an uneventful recovery. Examination of the specimen showed a spindle and small cell sarcoma. Sixteen months following the operation the patient

returned with a large mass at the site of the amputation, with clinical evidence of pulmonary involvement and complaining of pain in the knees. Roentgen-ray examination showed fluid in the chest with multiple rounded shadows of increased density throughout both lung fields, typical of metastatic malignancy. The hand and the feet showed marked clubbing of the phalanges with irregular burrlike expansion of the distal ends of the phalanges. The metatarsals, metacarpals, tibiae, fibulae, femurs, the remaining radius, ulna and humerus, all showed a marked laminated ossifying periostitis which was sharply differentiated from the cortex of the bone; as a rule, this periosteal reaction was confined to the diaphysis and was most marked near the distal ends of the bones. There was no involvement of the skull, vertebrae, scapula or pelvic bones. There was no apparent erosion of the joints or attempts of fusion of the reaction zone with the shaft, as seen in some of the older cases.

Roentgen-Ray Diagnosis of Liver Cirrhosis.—The irregular outline of the hobnail liver was shown by Pirie, with the roentgen rays by injecting into the peritoneal cavity a liter of oxygen and making roentgenogram in the upright position.

Archives of Neurology and Psychiatry, Chicago

June, 1920, **3**, No. 6

*Endocrinologic Aspects of Some Neurologic Conditions. W. Timme, New York.—p. 601.
Monoplegia Spinalis Spastica; Report of Cases. W. G. Spiller, Philadelphia.—p. 609.
*Histopathology of Brain Abscess; with Remarks on Intraspinal Therapy. G. B. Hassin, Chicago.—p. 616.
*Presence of Arsenic in Spinal Fluid. G. W. Hall, R. J. Callender and E. C. Holmblad, Chicago.—p. 631.
*Eleven Cases of Cervical Sympathetic Nerve Injury, Causing Oculopupillary Syndrome. S. Cobb, Boston, and H. W. Scarlett, Philadelphia.—p. 636.
Meditations on Morale. D. Gregg, Wellesley, Mass.—p. 654.

Endocrine Deficiency in Neurologic Conditions.—Suprarenal inefficiency in neurasthenia, pituitary disfunction in migraine and in epilepsy are the conditions to which Timme directs attention.

Value of Intraspinal Therapy.—The practical conclusion drawn by Hassin is that intraspinal therapy of cases in which especially the parenchyma of the brain is deeply involved, as in general paresis, has not physiologic support. In those cases in which the trouble is in the subarachnoid space itself, as in cerebrospinal meningitis, the injection is wholly justified, for given in suitable doses it may produce results. But as used in intraspinal therapy, in very small doses (fractions of a grain of arsphenamin), therapeutic results can hardly be expected. Hassin believes that the favorable reports of the Swift-Ellis method of treatment by some reliable observers can be explained, not by the action of the intraspinal injections, but by that of the intravenous ones.

Arsenic in Spinal Fluid.—According to Hall and others arsphenamin given intravenously in 0.6 gm. doses may be detected in the spinal fluid in from 25 to 35 per cent. of the cases. Irritation of the meninges by the injection of autoserum into the spinal canal does not increase this percentage.

Cervical Sympathetic Nerve Injury Causing Eye Symptoms.—Cobb and Scarlet claim that lesions affecting the seventh and eighth cervical and first thoracic roots, through which sympathetic fibers run, cause the most severe and typical oculopupillary syndromes.

Arkansas Medical Society Journal, Little Rock

June, 1920, **17**, No. 1

Diagnosis of Chronic Heart Disease. H. McCulloch, St. Louis.—p. 1.

Boston Medical and Surgical Journal

July 8, 1920, **183**, No. 2

Prostatectomy. H. G. Bugbee, New York.—p. 41. To be continued.

Colorado Medicine, Denver

June, 1920, **17**, No. 6

*Discrepancies between Clinical Symptoms and Laboratory Findings in Syphilitic Disease of Nervous System. G. A. Moleen, Denver.—p. 147.
Treatment of Nasal Accessory Sinus Disease. F. R. Spencer, Boulder.—p. 156.
Differential Diagnosis of Ureteral Obstruction from Lesions of Other Abdominal Organs. O. S. Fowler, Denver.—p. 159.
*Subcutaneous Use of Lobelia. A. J. Nossaman, Pagosa Springs.—p. 164.

Value of Laboratory Findings.—The five cases cited by Moleen are said to emphasize that all laboratory procedures must be valued only as contributory evidence, as modifying, but not contradictory to, clinical phenomena—that the preponderating evidence belongs to clinical manifestations of disease. In the absence of clinical evidence of a nervous lesion, the presence of a positive Wassermann reaction is not to be ignored, inasmuch as lipoids giving such a reaction may exist in the body fluids, probably derived from sequestered or isolated foci, without, or prior to, the occurrence of disintegrative lesions of the nerve structures.

Lobelia a Valuable Eliminant.—Nossaman recommends the use of lobelia as an eliminant. He administers it hypodermically, from 10 minims to 1 dram, repeated as necessary, every two to four hours, in acute cases, and once or twice a day in chronic cases. He believes that lobelia has not been used as much as it should be.

Indiana State Medical Association Journal, Fort Wayne

June 15, 1920, **13**, No. 6

Sir William Osler. E. M. Hoover, Elkhardt, Ind.—p. 191.
Mechanical Aids in Diagnosis of Lesions of Upper Urinary Tract. J. S. Eisenstaedt, Chicago.—p. 197.
Darning Needle in Lung. J. N. Study, Cambridge City, Ind.—p. 200.
Fracture of Calcaneus. E. B. Mumford, Indianapolis.—p. 200.

Iowa State Medical Society Journal, Des Moines

June, 1920, **10**, No. 6.

Lung Abscess, Exophthalmic Goiter and Cholecystitis Following Tonsillectomy. W. H. Rendleman, Davenport.—p. 168.
Dangers Associated with Blood Transfusions. J. deJ. Pemberton, Rochester, Minn.—p. 170.
Cases of Carcinoma of Rectum. W. W. McCarthy, Des Moines.—p. 173.
Chronic Catarrhal Otitis Media. F. F. Agnew, Independence.—p. 175.
Skin Grafting. J. F. Pember, Janesville, Wis.—p. 181.

Journal of Bacteriology, Baltimore

May, 1920, **5**, No. 3

Families and Genera of Bacteria. Report of Committee of Society of American Bacteriologists on Characterization and Classification of Bacterial Types. C. E.-A. Winslow and others.—p. 191.
Production of Hydrogen Sulphid by Bacteria. J. T. Myers, Chicago.—p. 231.
Correlation Study of Colon-Aerogenes Group of Bacteria, with Special Reference to Organisms Occurring in Soil. C. C. Chen and L. F. Rettger, New Haven, Conn.—p. 253.
Flora of Stomach. G. E. Burget, Chicago.—p. 299.
Relative Effect of Phosphate-Acetate and of Phosphate-Phthalate Buffer Mixtures on Growth of Endothia Parasitica on Malt Extract and Corn Meal Media. M. R. Meacham, J. H. Hopfield and S. F. Acree.—p. 305.
Method of Determining Relative Toxicity of Sodium, Potassium, Lithium and Other Ions Toward Endothia Parasitica: Data on Sodium Chlorid. M. R. Meacham, J. H. Hopfield and S. F. Acree. p. 309.

Journal of Experimental Medicine, Baltimore

June 1, 1920, **31**, No. 6

Studies on Experimental Pneumonia. R. L. Cecil and F. G. Blake, Washington, D. C.—p. 657.
*V. Active Immunity Against Experimental Pneumococcus Pneumonia in Monkeys Following Vaccination with Living Cultures of Pneumococcus.—p. 657.
*VI. Active Immunity Following Experimental Pneumococcus Pneumonia in Monkeys.—p. 685.
Experimental Syphilis in Rabbit. W. H. Brown and L. Pearce, New York.—p. 709.
I. Primary Infection in Scrotum.—p. 709.
II. Scrotal Lesions.—p. 729.
III. Local Dissemination, Local Recurrence and Involvement of Regional Lymphatics.—p. 749.
*Heterotransplantation of Thyroid Gland. L. Loeb, St. Louis.—p. 765.

Active Immunity Against Experimental Pneumonia.—The subcutaneous injection of small doses of living virulent pneumococcus Type I was found by Cecil and Blake to stimulate in monkeys a degree of active immunity sufficient to protect them against experimental pneumococcus pneumonia of homologous type. If administered in a sufficiently large

dose, it likewise renders the monkey immune to a subsequent pneumonia of homologous type. Vaccination of living virulent pneumococci may or may not be followed by a severe constitutional reaction, depending on the natural resistance of the individual. The severe reactions are caused by the development of a pneumococcus septicemia, which is either temporary, or leads to a fatal termination. The mild reactions are not accompanied by septicemia, and there are no symptoms other than a slight elevation of temperature and moderate leukocytosis. Vaccination with living virulent pneumococci does not induce severe reactions and is not accompanied by pneumococcus septicemia.

Active Immunity Established by Experimental Pneumonia.—According to Cecil and Blake experimental pneumococcus Type I pneumonia in monkeys confers on them an immunity which protects them against subsequent infection with the homologous type of pneumococcus. The duration of this immunity has not been determined. A certain amount of cross immunity against the other fixed types of pneumococcus pneumonia may or may not be present following experimental pneumococcus Type I pneumonia. The degree of cross immunity is difficult to measure and probably varies widely with the individual monkey. Experimental pneumococcus Type IV pneumonia in monkeys confers slight if any protection against subsequent infection with the same, or with an homologous strain of pneumococcus Type IV. There is not evidence in monkeys of cross immunity against pneumococcus Type IV pneumonia following pneumococcus Type I pneumonia; and conversely, pneumococcus Type IV pneumonia confers no cross immunity against pneumococcus Type I pneumonia.

Heterotransplantation of Thyroid.—The heterotoxins Loeb says injure the transplanted cells directly and make them thereby susceptible to additional injurious influences, such as lack of good vascularization, fibrous character of the stroma causing compression of acini, and direct invasion and destruction of a limited number of acini by fibroblasts and lymphocytes. These factors lead to a constant dying of transplanted parenchyma which is not compensated for by any appreciable new formation of tissue. The primary factor in the destruction of the heterotransplant is the injurious effect of the heterotoxins. They change the metabolism of the transplanted cells which now exert an effect on the blood vessels, connective tissue cells, and lymphocytes which differs in certain respects from that exerted by normal as well as auto and homoiotransplanted cells. These secondary reactions contribute to the destruction of the heterotransplants.

Journal of Orthopedic Surgery, Lincoln, Neb.

June, 1920, **2**, No. 6

Splint for Treatment of Stiff Fingers. F. F. A. Ulrich, New Zealand. p. 321.
*Astragalo-Scaphoid Dislocations of Foot. A. F. O'Donoghue, Iowa City, Ia.—p. 327.
Treatment of Fractures of Upper End of Humerus by Modified Crane Splint. F. E. Peckham, Providence, R. I.—p. 339.
Suggestions from Brace Shop. R. V. Funsten, Iowa City, Ia.—p. 345.

Astragaloscaphoid Dislocations.—O'Donoghue states that scapho-astragaloid dislocations usually take place when the foot is supinated and plantar-flexed. A palpable caput tali and a prominent scaphoid with a depression proximal to it is the most important physical sign of dislocation in the scapho-astragaloid joint. Open operation is usually indicated in order to hold a satisfactory reduction. Resection of the head of the astragalus is often necessary in cases of more than two weeks standing.

Kansas Medical Society Journal, Topeka

June, 1920, **20**, No. 6

Past, Present and Future of Medicine. E. E. Liggett, Oswego.—p. 151.
Geriatrics. J. A. Rader, Caney.—p. 154.

Laryngoscope, St. Louis

May, 1920, **30**, No. 5

Present Status of Plastic Surgery about Ear, Face and Neck. J. C. Beck, Chicago.—p. 263.
Ethmoid Operations for Pansinusitis. W. P. Reaves, Greensboro.—p. 289.
Radium Applicator for Larynx. O. T. Freer, Chicago.—p. 298.
*Case of Traumatic Salivary Fistula. S. Oppenheimer, New York.—p. 304.
Woody Phlegmon; Report of Cases. H. L. Pollock, Chicago.—p. 306.
Falling Reaction of Acrobatic Aviators. R. J. Hunter, Philadelphia.—p. 312.
Foreign Body in Right Inferior Bronchus; Removal. E. G. Gill, Roanoke, Va.—p. 315.

Traumatic Salivary Fistula.—Oppenheimer records a case of traumatic salivary fistula as a complication of the mastoid operation performed four years previously on a boy, aged 7, following an attack of measles.

Maine Medical Association Journal, Portland

June, 1920, **10**, No. 11

*Operation for Cure of Weak Foot. H. A. Pingree, Portland.—p. 329.

Tenoplasty for Weak Foot.—The operation which Pingree prefers to all other methods in extreme cases consists in lengthening those tendons which are short and which hold the foot everted and the arches flattened, and in shortening those which are too long to give the required support. This method presupposes a flexible foot, so far as disease is concerned, and aims to make the foot eventually self-supporting.

Medical Record, New York

July 3, 1920, **98**, No. 1

Socially Maladjusted. L. P. Clark, New York.—p. 1.
Diet and Health; Amount and Kind of Food Required. J. Aulde, Philadelphia.—p. 9.
Headache from Standpoint of Ophthalmologist and Otolargngologist. E. G. Gill, Roanoke, Va.—p. 12.
*Paralysis Agitans and Syphilis. B. Oettinger, Long Beach, Calif.—p. 15.
Nervous and Mental Mechanisms: Nerve Impulse. W. Steinach, New York.—p. 17.
Ripe Olives. D. W. Montgomery, San Francisco.—p. 19.

Paralysis Agitans and Syphilis.—In nine of twelve consecutive cases of paralysis agitans seen by Oettinger evidence that ranges from reasonably presumptive to certain that a some time syphilitic infection occurred, presents a sufficiently high percentage to be notable, and so, probably, merits further observations. Interesting is the fact, that the blood Wassermann was negative in every case tested, including those instances where the history disclosed certain syphilitic infection and the further fact that one of these had previously given a positive blood and spinal reaction. None of these patients presented symptoms that could be interpreted as characteristically syphilitic in origin. Oettinger does not suggest that Parkinson's disease is a phase of syphilis, but it seems plausible that syphilis may be a determining factor in the disease by effecting loss in organic defense to a virus which finds its most potent expression in characteristic tissue change, namely: degeneration to a greater or less extent of the corpora striata.

Nebraska State Medical Journal, Norfolk

June, 1920, **5**, No. 6

State Care of Defectives. L. Crummer, Omaha.—p. 153.
Surgical Roentgen Ray. H. Everett, Lincoln.—p. 157.
Surgery of Thyroid. C. A. Roeder, Omaha.—p. 162.
Doctor and His Cost System. A. F. Tyler, Omaha.—p. 168.
Report of 5,000 Wassermann Tests. E. T. Manning, Omaha.—p. 170.
Gall Bladder as a Seat of Secondary Infection. E. A. Watson, Grand Island.—p. 173.

New Jersey Medical Society Journal, Orange

June, 1920, **17**, No. 6

Raynaud's Disease. H. P. de Forest, New York.—p. 181.
Radical Cure of Inguinal Hernia. J. F. Hagerty, Newark.—p. 199.

New York Medical Journal

July 3, 1920, **112**, No. 1

Diagnosis and Treatment of Gallbladder Affections. M. Einhorn, New York.—p. 1.
Gastric Superacidity. W. V. V. Hayes, New York.—p. 5.
*Primary Sarcoma of Stomach. S. Basch, New York.—p. 9.
Infections of Gastro-Intestinal Tract and Their Relation to Arteriosclerosis. N. P. Norman, New York.—p. 13.
Diagnosis of Gastric Diseases. M. B. Kunstler, New York.—p. 18.
*Operation for Radical Cure of Inguinal Hernia. G. Woolsey, New York.—p. 21.
Choledochitis, Cholecystitis and Cholelithiasis. B. B. V. Lyon, Philadelphia.—p. 23.
Weight, Diet and Efficiency. R. H. Rose, New York.—p. 27.
Ulcer of Esophagus. S. Weiss, New York.—p. 29.

Sarcoma of Stomach.—A woman, aged 22, whose father died of gastric cancer, was ill for one year with symptoms referred entirely to her stomach. The clinical diagnosis of

intragastric tumor made by Basch was confirmed roentgenographically and by operation. A typical Mayo cautery resection was made, followed by a posterior gastroenterostomy. No other tumor masses were found. Microscopic examination showed that the tumor was a large round cell sarcoma. Fifteen months after operation, the patient was entirely free from symptoms and had gained 50 pounds in weight. Basch believes that these cases are far more common than has hitherto been believed to be the case.

Herniotomy Technic.—The main features of Woolsey's method of operation are obliteration of the inguinal canal and the external abdominal ring, and fortifying this part of the abdominal wall by (1) suture of the entire thickness of the musculo-aponeurotic wall along the upper or inner margin of the incision to the deep surface of Poupart's ligament; (2) by overlapping the lower flap of the external oblique aponeurosis in front of the upper flap, and (3) transplanting the cord so it will lie superficially to the aponeurosis. Woolsey says he has been operating on hernias according to this method since 1895 but never published the technic.

July 10, 1920, **112**, No. 2

*Chronic Intestinal Toxemia. A. Bassler, New York.—p. 45.
Constipation and Effect of Purgatives on Heart and Vessels. O. Lerch, New Orleans.—p. 48.
Dietary Treatment of Constipation. R. Upham, Brooklyn.—p. 53.
Choledochitis, Cholecystitis and Cholelithiasis. B. B. V. Lyon, Philadelphia.—p. 56.
Peptic Ulcer. J. S. Diamond, New York.—p, 60.
Vomiting from a Surgical Viewpoint. A. W. Hammer, Philadelphia. p. 64.
*Fibroma of Mesentery. A. Jacoby, New Orleans.—p. 66.

Chronic Intestinal Toxemia.—The two measures which Bassler says his experience with thousands of cases have proven to be of the most value are diet and bacterial treatments. The diet should be a carbohydrate and hydrocarbon one in the putrefaction (indolic) case, a high protein in the fermentation (saccharobutyric) case, and one of carefully weighed foods so as to keep down to a minimum caloric value in the mixed form. Lactose by mouth is of no value, but the plan of feeding coarse, uncrushed grains, somewhat sustains an acidity if a suitable bacteriology is present in the gut—which unfortunately is seldom met with in the putrefaction case; but when this is present a lactic acid carbon dioxid result can easily be accomplished. What must always be kept in mind, by dietetic treatment alone, is that most of the infecting forms of bacteria in the gut are facultative and while they may be influenced favorably by diet, this is transitory and not dependable in therapy after a few weeks' time. Since no purgation should ever be permitted in these cases, the bowels must be regulated by the well known dietetic and physical measures, and not even by irrigations or enemata of any sort. The bacterial treatments are based on the findings in complete examinations of the stools and urine under known conditions of diet. This diet should be the normal one for the age, work, and weight of the individual. Suitable diet lists are given.

Fibroma of Mesentery.—Indigestion, jaundice and constipation were the first symptoms complained of by Jacoby's patient. Pain led the man to press his hands against his abdomen, and then he felt a mass which physicians later believed to be a "gas" tumor, but at operation it was found to be a tumor located in the mesentery and very close to the ileum. Its removal could be considered only by a resection of that part of the ileum in the mesentery of which it was located. The bowel was excised with the cautery, tied, and the ends inverted with several rows of chromic catgut and one of silk. The ends were placed side by side like the barrels of a shotgun and a lateral anastomosis done. This method of anastomosis does away with the danger of fecal stasis in the blind ends of the gut. Jacoby does not claim originality for the method.

New York State Journal of Medicine

June, 1920, **20**, No. 6

Relation of Hypertension and Hypotension of Membrana Tympani to Deafness and Tinnitus. H. Hays, New York.—p. 173.
Treatment of Muscular Anomalies. E. S. Thomson, New York.—p. 178.
What Should Be Our Routine in Examining Cases of Squint? A. Duane, New York.—p. 181.
Clinical and Bacteriological Study of Fusiform Bacillus Infection. R. R. Mellon, Rochester.—p. 187.
Determination of Cardiovascular Lesions in Draft Soldiers Inducted into Service at Camp Gordon, Ga., and Efficiency of Methods Employed. A. MacFarlane, Albany.—p. 190.
Appendix to Report. A. C. Snell, Rochester.—p. 199.

Pennsylvania Medical Journal, Athens

June, 1920, **23**, No. 9

Modern Treatment of Corneal Ulcers. O. C. Reiche, Hazelton.—p. 493.
Traumatic Cataract. J. W. Park, Harrisburg.—p. 494.
Why Annual Asessment Must Be Increased. J. B. F. Wyant, Kittanning.—p. 497.
Qualification for Membership in a Medical Society. J. N. Hunsberger, Norristown.—p. 498.
Our Responsibility for Membership's Ethics. W. H. Mayer, Pittsburgh.—p. 500.
Proposed Public Welfare Legislation. J. B. McAlister, Harrisburg.—p. 502.
Legislative Possibilities. F. L. Van Sickle, Olyphant.—p. 503.

Rhode Island Medical Journal, Providence

June, 1920, **3**, No. 6

Vascular Hypertension. J. P. O'Hare, Boston.—p. 103.
Case of Lethargic Encephalitis. D. L. Richardson, Providence.—p. 108.

Southern Medical Journal, Birmingham, Ala.

June, 1920, **13**, No. 6

Rôle of Digitalis in Cardiac Disease. F. A. Jones, Memphis.—p. 395.
*Value of Large Single Doses of Digitalis in Treatment of Heart Disease. G. C. Robinson, St. Louis.—p. 396.
Case of Balantidium Coli Infection. W. O. Nisbet, Charlotte, N. C.—p. 403.
*Ileocolitis. N. C. Womack, Jackson, Miss.—p. 406.
Treatment of Enterocolitis in Infancy. W. W. Harper, Selma, Ala.—p. 408.
Aftermath of Malaria Control in Extra-Cantonment Areas. J. A. LePrince, Memphis.—p. 413.
Control of Malaria for Railroad System. H. W. Van Hovenberg, Texarkana, Ark.—p. 418.
Relation of Drainage Projects to Malaria Control. J. I. Herritage, Jacksonville, N. C.—p. 424.
Technic of Operations on Peripheral Nerves. C. C. Coleman, Richmond, Va.—p. 427.
Problems in Neurologic Surgery. E. Sachs, S. Louis.—p. 434.
Choice of Operation in Senile Prostatic Hypertrophy. O. L. Suggett, St. Louis.—p. 440.
*Technic of Removing Ureteral Calculus without Operation. A. J. Crowell and R. Thompson, Charlotte, N. C.—p. 446.
Bronchoscopy. T. W. Moore, Huntington, W. Va.—p. 450.
Foreign Bodies in Lungs, Eosophagus and Intestines. E. W. Carpenter, Greenville, S. C.—p. 451.

Digitalis in Large Doses.—The administration of the tincture of digitalis in large single doses of from 15 to 25 c.c. is advocated by Robinson as a useful method of treatment in certain cases of heart disease, provided the tincture is standardized, the dosage regulated and the patient is kept under close observation. This method of administration not only brings the heart rapidly under the influence of the drug, but also affords a more accurate means of studying its effect than the older methods of small repeated doses. The use of large single doses is apparently not dangerous under the conditions specified. Problems of dosage, especially to body weight, still need solution. The beneficial effect of digitalis in cases with cardiac irregularity caused by auricular fibrillation is especially emphasized by Robinson's experience with large single doses in this condition.

Calomel in Ileocolitis.—In the medical treatment of ileocolitis Womack gives calomel, from $\frac{1}{24}$ to $\frac{1}{48}$ grain, and morphin, from $\frac{1}{50}$ to $\frac{1}{125}$ grain by mouth, every three hours, until the bowel quiets down from its continual spasm. He believes that ileocolitis is mainly due to a gas producing bacterium that is an attenuated or malignant form of the colon bacillus. There is always an attending pyelitis in which the colon bacillus in great numbers is found and this pyelitis may antedate, and certainly is the immediate complication of, ileocolitis, and assumes the major rôle from the standpoint of the cause of death. Therefore, in the treatment of ileocolitis, first attention should be paid to the kidney. Forced feeding of a selected carbohydrate diet with plenty of water should be given. All forms of rectal irrigations or alimentation should strictly be interdicted on the ground that they not only do no good, but are distinctly harmful.

Removing Ureter Calculus Without Operation.—A bismuth catheter is inserted into the ureter until it meets the stone.

Two c.c. of a 2 per cent. solution of cocain or procain is slowly injected into the ureter at the site of impaction. The ureteral spasm is so relaxed in a few moments that the catheter will usually pass beyond the stone where another injection of the anesthetic is made to further deaden the sensation. The kidney pelvis is distended with a physiologic sodium chlorid solution and sterile olive oil is injected as the catheter is being removed. In this way the pressure above the stone is increased and assists in expelling it, while the muscular fibers of the ureter are relaxed and the sensation is deadened. This technic is repeated every second or third day, increasing the size of the ureteral catheter at each treatment.

Southwest Journal of Med. and Surg., El Reno, Okla.

April, 1920, **28**, No. 4

Gunshot Wounds of Abdomen. C. A. McGuire, Kansas City, Mo. —p. 69.
Condition of Eyes Following Gas Attacks. W. A. Cook, Tulsa, Okla. —p. 71.
Hyperthyroidism (Toxic Goiter). A. L. Blesh and W. W. Ricks, Oklahoma City.—p. 73.

May, 1920, **28**, No. 5

Medical Treatment of Obstructive Peptic Ulcer. P. T. Bohan, Kansas City, Mo.—p. 85.
Early Recognition of Cancer. D. Gann, Jr.—p. 88.
Visceral Ptosis. O. B. Hall, Warrensburg, Mo.—p. 95.

Southwestern Medicine, El Paso, Texas

May, 1920, **4**, No. 5

Sequels of Tonsillectomy. S. A. Schuster, El Paso.—p. 1.
Focal Infections in Certain Grave Anemias. J. Vance, El Paso.—p. 4.
Importance of Blood Pressure Observation in Surgical Prognosis. F. H. McMechan, Avon Lake, Ohio.—p. 8.

Texas State Journal of Medicine, Fort Worth

May, 1920, **16**, No. 1

Orbital Tumors. E. H. Cary, Dallas.—p. 7.
Effect of Certain Intranasal Conditoins on Extrinsic Muscles of Eye. E. M. Sykes, San Antonio.—p. 10.
Treatment of Stricture of Esophagus. J. H. Foster, Houston.—p. 12.
Drains and Drainage. T. J. Bennett, Austin.—p. 13.
Symptoms and Diagnosis of Carcinoma of Stomach. G. V. Brindley Temple.—p. 15.
Parturient Eclampsia. H. Allison, Kingsville.—p. 18.
Country Doctor Moves to Town. J. Dildy, Brownwood.—p. 19.

June, 1920, **16**, No. 2

Public Health Education. R. W. Knox, Houston.—p. 43.
Memorial Address. S. R. Hay, Houston.—p. 49.
New Age and New Red Cross. C. C. S. Biggs, Washington, D. C.—p. 51.

Wisconsin Medical Journal, Milwaukee

May, 1920, **18**, No. 12

Influenza at Base Hospital 22. R. C. Brown, Milwaukee.—p. 501.
War Psychoneurosis. W. F. Lorenz, Mendota.—p. 506.
Trephine Operation for Pyothorax. A. C. Strachauer, Minneapolis. —p. 511.
Nausea and Vomiting of Pregnancy. C. H. Davis, Milwaukee—p. 513.
Doctor and Public Health. C. St. C. Drake, Springfield, Ill.—p. 518.

June, 1920, **19**, No. 1

Cholelithiasis. W. Cunningham, Platteville.—p. 1.
Prevention of Trachoma in Military Camps. N. M. Black, Milkaukee. p. 5.
Roentgen Ray as Aid to Diagnosis. E. A. Smith, Milwaukee.—p. 15.
Present Status of Blood Pressure. L. M. Warfield, Milwaukee.—p. 19.
Medical Service from Viewpoint of a Volunteer. M. R. Wilkinson, Oconomowoc.—p. 25.
Mastoiditis Following Infectious Diseases in Army Cantonment. E. F. Baur, Milwaukee.—p. 27.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

June 19, 1920, **1**, No. 3103

Passive Mechanical Factor in Heart Disease: Its Influence and Management. A. B. Morison.—p. 817.
*Deficiency Disease: Special Reference to Gastro-Intestinal Disorders. R. McCarrison.—p. 822.
Poisoning by Arseniuretted Hydrogen. T. H. Wignall.—p. 826.
Ruptured Malarial Spleen: Splenectomy: Recovery. C. A. Raison. —p. 827.
*Syphilis Insontium. J. C. McWalter.—p. 827.
*A Case of Malignant Pustule in which Incubation Period was Known. H. H. McCurrich.—p. 828.
*Subcutaneous Injections of Camphor. A. D. Gorman.—p. 828.
Severe Angioneurotic Edema. R. Alderson.—p. 828.
Herpes and Varicella. C. Wilson.—p. 828.

Vitamin Deficiency Cause of Gastro-Intestinal Disorder.—The importance of a study of the "dietetic history" in every case of gastro-intestinal disorder is discussed by McCarrison. He claims that experience in Germany during the war has shown that children who are properly fed will be less liable to suffer from intussusception. Other gastro-intestinal disorders probably connected in their origin or in their continuance with dietetic deficiency and lack of balance of the food are: mucous disease of children, celiac disease, intestinal toxemia, and gastro-intestinal stasis. They are readily produced by a diet deficient in vitamins and suitable protein while excessively rich in carbohydrates.

Syphilis Insontium.—A case is reported by McWalter which he claims proves that syphilis infection can take place in the eight month of pregnancy.

Malignant Pustule.—The main points of interest in McCurrich's case are that the patient having contracted anthrax from a shaving brush, knew: (*a*) when he cut himself; (*b*) when the painful papule appeared at the site of the cut; (*c*) when the papule became a vesicle. It is also noteworthy that on admission to hospital, seven days after the onset of the disease, the patient had received no specific treatment and yet appeared to be well on the road to recovery.

Injections of Camphor in Oil.—Gorman has given intramuscular injections into the gluteal region of camphor in oil, 5 grains in 15 minims, every four hours without untoward results in a single instance.

Japan Medical World, Tokyo

May 29, 1920, **10**, No. 22

Cases of Pneumectomy. S. Sato.—p. 469.
Probiosis and Contrabiosis of Bacteria. S. Toguchi.—p. 469.
Prophylactic Injection of Influenza. R. Tsuneoka, G. Takahashi and S. Ozaky.—p. 469.

June 5, 1920, **10**, No. 23

Pathology of Puerperal Eclampsia. K. Obata.—p. 493.

Journal of Tropical Medicine and Hygiene, London

June 15, 1920, **23**, No. 12

Diagnosis and Treatment of Tropical Hepatic Abscess. D. Duckworth p. 149.
Cosmopolitan Sudan Skin Affections. A. J. Chalmers and N. Mac donald.—p. 150.

Lancet, London

June 19, 1920, **1**, No. 5051

Influence of Nerve Impulses on Visceral Disorders. H. T. Gray.—p. 1299. To be continued.
*Investigation and Treatment of Nephritis. H. MacLean and A. E. Russell.—p. 1305.
*Factor of Fever in Diagnosis of Cancer. W. Gordon.—p. 1309.
*Cerebral Reactions following Injections of Novarsenobenzol: Two Fatal Cases. F. G. Hitch.—p. 1311.
*Traumatic Rupture of Heart. R. K. Howat.—p. 1313.
*Congenital Stenosis of Aorta. R. O. Moon.—p. 1314.
Obstruction Due to Formation of Spur After Finney's Operation. R. P. Rowlands.—p. 1315.

Protein in Nephritis.—There does not seem to be any theoretical objection to giving protein or urea in large amounts to parenchymatous cases in which there is no retention of nitrogenous products in the blood. In interstitial cases where such retention tends to be more or less well marked, it is generally considered that protein, especially in the form of meat, is, on the whole, contraindicated. There is, however, no proof whatever, in the opinion of MacLean and Russell that protein acts detrimentally even in advanced interstitial nephritis, but, on general principles, it is probably best to limit the intake of protein in patients showing marked retention of nitrogenous products in the blood. On the other hand, it seems quite certain that milder cases of interstitial nephritis are not benefited by very strict dietetic limitations. As the result of very many observations, the authors are convinced that, in general, patients suffering from interstitial nephritis of moderate severity should be allowed a fairly liberal diet in which protein need not necessarily be cut down to any great extent. In very severe cases it is probably best to depend chiefly on carbohydrate food.

Significance of Fever in Cancer.—The fever of cancer uncomplicated by inflammatory lesion is termed "growth fever" by Gordon on the assumption that the fever is produced by some process of the growth itself apart from inflammation; and the fever caused by any inflammatory complication of a cancer, he terms "complicated fever." Gordon classifies cancer according to the type of fever occasionally found in conjunction therewith: A. Either growth fever or complication fever: liver, stomach, suprarenals, lung with mediastinum, long bones, breast (rarely). B. Complication fever only: gallbladder, bile ducts, large intestine, small intestine, appendix, uterus, fallopian tubes, ear, glands in neck, tongue, lip, esophagus, pancreas, peritoneum, rectum, eye, larynx, thyroid. C. Neither form of fever: kidney, ovary, vulva, testis, penis, urethra, parotid, jaw, brain, spine, skin, muscles, heart and pericardium.

Cerebral Reactions Following Use of Neo-Arsphenamin.—The conclusion arrived at by Hitch is that the widespread capillary hemorrhages, demonstrated by microscopic sections, afford a clear anatomic basis for the hypothesis put forward by Dudley that the symptoms are due to anoxemia, that this anoxemic condition is mainly produced by interalveolar hemorrhage into the lungs, and to a less extent by interstitial capillary bleeding into other organs, and that the continuous administration of oxygen offers the best hope of recovery in these unfortunate cases. These appearances would also seem to explain in part the rapid development of the symptoms and the comparatively slow recovery, as instanced by Parnell's case resulting from the continuous administration of oxygen.

Traumatic Rupture of Heart, Liver and Kidney.—A well built man, aged 23 years, sustained a clean, unbroken fall of 45 feet, alighting on a wooden plank and some steel plates lying on the ground. He was not killed outright, but was dead on his arrival at the hospital twenty minutes later. On postmortem examination of the body, preliminary inspection revealed no damage beyond a few scratches and bruising at the right elbow. A deliberate examination by inspection and palpation showed no further evidence of bruising, laceration, fracture, or dislocation. The peritoneal cavity contained about 2½ pints of fluid blood, of which the source appeared to be five transverse lacerations of the right lobe of the liver—four on its upper, one on its under surface immediately to the right of the transverse fissure. There was a considerable quantity of blood effused into the retroperitoneal tissue. There were two transverse tears about half an inch apart on the front of the right kidney near its middle, one through little more than the capsule, and one about ¼ inch in depth through practically the entire width of the kidney. No other source of retroperitoneal hemorrhage was found. No other abdominal injury was discovered. The pericardium was intact and contained about a pint and a half of human blood. A slitlike opening into the cavity of the left auricle was found, about 0.25 cm. in length, and situated exactly in the length of the free edge of the left auricular appendage.

Congenital Stenosis of Aorta.—The special points of interest in Moon's case are the very few symptoms calling attention to the heart, combined with the pronounced physical signs and the comparatively slight impairment of the patient's general activity. The patient was 11 years old. He had a congenital stenosis at the level of the aortic valves. He was always active and energetic and could always walk a fair distance and even play football without becoming breathless or tired, though he got breathless sooner than other boys. In general appearance he was distinctly undersized, very pale, but bright and intelligent looking. The apex beat was in the fifth space in the nipple line, with a somewhat forcible cardiac impulse and the dulness was increased a trifle to the left. Over the aortic area there was a very coarse systolic thrill, which was also palpable over the carotid arteries. All over the precordial area there was a harsh systolic murmur, having a maximum intensity at the second right interspace, where it could be heard several inches from the chest wall. Pulse was small in volume, rate 70. In the electrocardiogram the T-wave was inverted in Leads II and III while in Lead III the P-wave was inverted. There was no evidence of left-sided preponderance.

June 26, 1920, **1**, No. 5052

*Influence of Nerve Impulses on Visceral Disorders. H. T. Gray.—p. 1345.
Treatment of Convalescent Soldier. T. E. Sandall.—p. 1352.
*Postsalvarsan Jaundice. R. Hallam.—p. 1356.
Surgery of Congenital Hypertrophic Stenosis of Pylorus. R. Warren.—p. 1359.
*Fistula of Parotid: Improved Method of Cure. H. Curtis.—p. 1360.
Assessment of Hand Injuries. J. J. Scanlan.—p. 1361.
Enterococcus as Factor in Certain Types of Dysentery. S. M. Ross and C. F. Peckham.—p. 1362.
*Two Cases of Intestinal Obstruction. W. E. Tanner.—p. 1363.
*Hair Ball in Ileum Causing Obstruction. H. R. Gibson.—p. 1363.
Lateral Intestinal Anastomosis Through Vagina. J. G. Watkins.—p. 1364.
Right Mastoid Suppuration Causing Left Sided Facial Paralysis. E. W. Williams.—p. 1364.

Nerve Impulses as Cause of Visceral Disorders.—The aim of Gray's study of more than 300 intestinal cases has been to show that there is a large group of visceral disorders primarily initiated by a derangement of normal nerve impulses. It is a law of the intestine that increased work is always responded to by increased effort leading to hypertrophy. This truth is exemplified clinically in the results of mechanical obstruction in every part of the gastro-intestinal tract, while, physiologically, it has been demonstrated by the work of Bayliss and Starling. No such hypertrophy is ever seen in the visceral disorders under discussion, and this fact alone constitutes an a priori refutation of any mechanical origin as applied to the bowel itself. The establishment of attenuation and muscular relaxation of the colon, so characteristic of this group of disorders, is only possible if this physiologic response to an increase of work is prevented, either by primary intramural disease, or by prolonged active inhibition of its musculature, due to abnormal direct or reflex nerve impulses. The rôle of the mesentery is to carry vessels and nerves to and from the intestine and never to act as a supporting structure; when it so acts (e. g., in congenital mobility of the colon) mechanical stimulation of the contained nerves results. The truth of this is evidenced experimentally and at operations. Gray asserts that it is equally true pathologically.

Jaundice After Arsphenamin Injection.—Attention is directed by Hallam to the prevalence of jaundice occurring during the treatment of syphilis with arsenobenzol preparations, and he shows that it is relatively more frequent with some preparations than with others. Clinically, the attacks are usually very similar to the ordinary catarrhal jaundice. The patient usually recovers in from two to six weeks. Cases, however, have been recorded which have commenced as apparently a mild attack, but have become progressively worse, and terminated as acute yellow atrophy. For this reason alone, although this occurrence is rare, jaundice developing either before or after treatment of syphilis is of extreme importance. Hallam analyzed a series of cases in order to determine what might have caused this complication. It occurred relatively more frequently after the use of arsenobenzol preparations (neosalvarsan, neokharsivan, novarsenobillon, etc.), but the causation is as yet undetermined.

Operation for Fistula of Parotid.—Curtis describes a seton operation which effected a cure in two cases of fistula.

Intestinal Obstruction by Hair Ball.—Two cases are reported by Tanner: (1) obstruction of the small intestine by a large hair ball, and (2) strangulation of the small intestine by the appendix acting as a band. He claims that no case like the first is on record.

Hair Ball in Ileum Causing Obstruction.—Gibson cites the case of a boy, aged 6 years, from whose ileum he removed a hair ball which had caused obstruction.

Medical Journal of Australia, Sydney

May 22, 1920, **1**, No. 21

Four Cases of Syphilis of Central Nervous System. I. Morgan.—p. 477.
Cerebral Syphilis. H. G. Allen.—p. 481.
Surgery as It was Practiced Thirty Years Ago. N. J. Dunlop.—p. 482.
Selecting Suitable Donors for Blood Transfusion. R. Dick.—p. 486.
Bronchitis Due to Empyema of Maxillary Antrum. A. E. Mills.—p. 487.

May 29, 1920, **1**, No. 22

Special Military Surgery. R. Davies.—p. 501.
Infantile Hernia, Enormous Hernia and Gibbon's Hydrocele. R. H. Russell.—p. 505.

Bulletin Médical, Paris

May 22, 1920, **34**, No. 27

*Respiratory Insufficiency of the Apex. E. Sergent.—p. 469.

Respiratory Insufficiency of the Apex.—Sergent refers to a functional hypocapacity of the apex, usually bilateral, and usually associated with malformation of the bony frame of the chest, low index of robusticity, anemia, asthenia and often adenoids. Not enough air gets into the apex. The region does not share in ample excursions, and the respiratory muscles and diaphragm are weak, the habits of breathing defective, but with careful examination the danger of mistaking this functional hypocapacity for tuberculosis can be avoided. Breathing exercises, the spirometer, and restoring the permeability of the nasopharynx will generally restore clinically normal conditions.

Bulletins de la Société Médicale des Hôpitaux, Paris

May 7, 1920, **44**, No. 16

*Is Acute Febrile Chorea Epidemic Encephalitis? P. Harvier and C. Levaditi.—p. 583.
*Treatment of Chronic Tuberculous Infections with the Salts of Cerium Metals. H. Grenet and H. Drouin.—p. 589.
*Chemotherapy of Tuberculosis with Sulphates of Cerium Earths. L. Rénon.—p. 602; Idem. Esnault and Brou.—p. 606.
Continuous Pylorospasm with Chronic Dilatation of the Stomach. F. Ramond and R. Clément.—p. 616.
Reduction of Vesicular Murmur of Right Lung with Catarrhal Jaundice and Gallstones. F. Ramond, Vincent and R. Clément.—p. 619.
Atypical Meningeal Reaction and Cardiac Lesions in Miliary Tuberculosis. G. Brouardel and E. Fatou.—p. 621.
Meningococcus Purpura. A. Netter and others.—p. 630.
Tuberculous Meningitis after Antirabies Treatment. P. Carnot and C. Gardin.—p. 633.
Lethargic Encephalitis. Rieux and others.—p. 636; 646; 648; 650.
Emetin in Treatment of Hemoptysis. C. Colbert and R. Bazin.—p. 641.
Treatment of Epilepsy with Phenylethylbarbituric Acid. C. Vincent. —p. 644.

Febrile Chorea and Epidemic Encephalitis.—Harvier and Levaditi think that certain cases of acute febrile chorea are a manifestation of acute epidemic encephalitis, basing this assumption on the histologic findings in a case described in detail and the effects of inoculation of animals with the nerve centers. Souques has reported two similar cases; in one the acute chorea merged finally into typical lethargic encephalitis.

Treatment of Tuberculosis with Salts of Cerium.—This communication from Grenet and Drouin, relating their success in treating different forms of chronic tuberculous infection, is a logical sequence of the research on cerium and other uncommon metals which Rénon, Frouin and others in France have been conducting [for eight years] in tentative chemotherapy of tuberculosis. Two facts seem to be established, namely, that the salts of the cerium earths reduce the fats of the tubercle bacillus in cultures to which these salts have been added, and that these salts induce a mononuclear leukocytosis in man and animals. Grenet and Drouin selected the sulphates of samarium, neodymium and praseodymium, and here report a year's work with the clinical application of these cerium metals. They inject by the vein from 2 to 5 c.c. of a 2 per cent. solution for twenty days; then suspension for fifteen or twenty days, and then a second and a third series of injections. They summarize the details of 8 cases of tuberculous glands; 10 of lupus; 5 of verrucous tuberculous lesions; 8 of erythematous lupus, and 23 of pulmonary tuberculosis. The external tuberculous lesions healed and chronic apyretic pulmonary tuberculosis showed considerable improvement if not an actual cure. The general health improved, the expectoration became less purulent and less profuse, the physical signs became modified and disappeared and the bacilli sometimes disappeared from the sputum or if they were still found in the sputum they showed extremely pronounced modifications and took stains badly. Three guinea-pigs inoculated with these modified bacilli, after losing weight for two weeks, had regained their health by the end of two months. A fourth, recently inoculated, shows no signs of disease, confirming the great reduction in the virulence of the bacilli. Grenet and Drouin add "Will the latent and well tolerated lesions flare up again? Time alone will tell, but the improvement in all seems to be continuing, and the apparent cure has persisted now for several months. . . . The results, such as they are, are very interesting: a direct action on the bacillus, an action on the human organism by favoring the production of sclerosis, perhaps on account of the enormous mononuclear leukocytosis induced." In conclusion they reiterate that these cerium salts should be used with pulmonary tuberculosis only in the afebrile cases, stopping at once if fever develops. "If these precautions are not observed, discredit may be brought on a method which is still only in the period of being studied, but which already seems to offer real hope."

Salts of Cerium Metals in Chemotherapy of Tuberculosis.—Rénon reviews his eight years of research on a large number of salts of not commonly used metals, hoping to find some that would reduce the virulence of the tubercle bacilli in the organism while rendering the soil of the organism less favorable for its development. The sulphates of some of the cerium metals reduce the fats of the tubercle bacillus from 25 or 40 per cent. to 22 or 16 per cent. He mentions other salts which induce mononucleosis in man and animals but are too toxic for clinical use, and adds, "The results obtained by Grenet and Drouin with the sulphates of the cerium earths are certainly the most scientific yet realized in the chemotherapy of tuberculosis. In controlling their results, their technic must be carefully followed, and the warning heeded that in acute forms of tuberculosis no benefit follows and the lesions may even be aggravated." In the five cases he has just begun to treat, the injections are well tolerated and the leukocytosis has run up from 10,000 to 20,000, 26,000 or 40,000 with from 18 to 23 per cent. mononuclears.

Sulphates of Cerium Metals in Pulmonary Tuberculosis.—Esnault and Brou report their experience with the Grenet and Drouin method in twenty cases, and say that the number of cases of unquestionable improvement is impressive if the gravity of the cases is taken into account, and it permits the highest hopes of progressive improvement to a cure. This will be the rule, they say, when treatment is applied in the early stage without waiting for advanced pulmonary lesions. They add that as the treatment seems to act on the tubercle bacilli alone, it might be advisable to add some medication to act on the secondary infections. [Frouin in a communication read before the Paris Académie de médecine, April 6, 1920, reported encouraging results from the application of the salts of earths of the cerium group to torpid suppurating ulcerations. He stated that 2 or 4 per cent. solutions of these salts and especially of the sulphates of the cerium group promoted healing, hastening the formation of derma and epithelium layers and seemed to have an antiseptic action while less irritating than the nitrates and chlorids. L. Rénon also has been studying since 1912 these salts of cerium metals in the chemotherapy of tuberculosis, and in a communication read at the Académie de médecine, March 4, 1920, he referred to his work and the difficulty of such research, as it requires study of the action of the chemical on cultures of the bacillus, study of the toxicity of the chemical for animals, at least for the dog, rabbit and guinea-pig; if the toxicity is slight, study of its action on experimental and spontaneous tuberculosis in animals and then in human tuberculosis. Chemotherapy, he said, might be aided by withholding from the tuberculous those substances, such as potassium, magnesium, phosphorus, sulphur and iron which seem to be indispensable for the proliferation of bacteria in culture mediums. He lists nearly two dozen salts of rare metals which have an inhibiting influence in vitro on the tubercle bacillus; among them he mentions cadmium fluorid and chlorid, neodyme sulphate and praseodyme sulphate, lanthane sulphate, and the salts of bismuth, of silver, of gold, of selenium, etc.]

Lyon Médical

May 25, 1920, **129**, No. 10

*Tuberculous Nature of Gastric Ulcer. Mongorge.—p. 429.
The Rôle of the Lamblia in Intestinal Pathology. F. Deglos.—p. 434.
Compulsory Notification of Tuberculosis. Piéry.—p. 464.

Tuberculous Nature of Simple Ulcer of the Stomach.—Mongorge argues that simple ulcer is of toxi-infectious

origin, and as tuberculosis is the toxi-infectious disease *par excellence,* and as Jaksch and Brinton assert that 25 per cent. of patients with simple gastric ulcer die of pulmonary tuberculosis, the conclusion seems evident that round ulcer is often of tuberculous origin. He summarizes ten personal cases in which the round ulcer developed in a tuberculous patient, or pulmonary tuberculosis developed in persons with gastric ulcer. In another case hemoptysis from pulmonary tuberculosis seesawed with hematemesis from a gastric ulcer. In one case there was a sequence of round gastric ulcer at 30, pulmonary tuberculosis at 36 and lupus at 45. All were cured in turn, and the woman, now 50, is in good health.

June 10, 1920, **129,** No. 11

*Familial Diseases. J. Audry.—p. 469.

Familial Diseases and Malformations.—Audry reviews the literature on this subject, citing among others Sanger Brown's case with cerebellar heredo-ataxia in five generations, with 25 cases among the 55 members. Audry himself has encountered a family with 15 cases of hemorrhagic telangiectasia in four generations. Truc was able to trace hemeralopia through ten generations in the Nougaret family, 137 having had night blindness among the 2,137 members. Certain regions seem to predispose to hemophilia, such as southern Germany and Switzerland. The Gintrac district statistics include 48 German, 9 Swiss and 8 French families with hemophilia. The czarevitch was a hemophiliac, as also the sons of Henry of Prussia and their mother, who is the sister of the former Emperor Wilhelm. Among the instances of familial malformations cited, Audry mentions the nevi found in the Drieux family from the fifteenth century to date. Baroux found records of the nevi in 41 female members of the family and all at the same points, places where the armor exerted pressure in the early days of the family. The village of Yzeaux, in Audry's own region, is noted for the six fingers and toes of the inhabitants. Potton in 1829 and 1836 published an account of this community malformation, the records showing that in the eighteenth century nearly all the inhabitants were *sexdigiti.* Devaix confirmed this in 1862, but Bénard has recently reported that the anomaly is dying out, only three families with polydactylia being discovered there now. It seems to be the rule that with familial malformations and diseases of a continuous heredity type, if the subject is sound, no restrictions need be imposed on marriage, and the same applies to the male descendants in families with familial disease transmitted by the mother. Familial diseases of the fraternal or recessive type, such as deafmutism and pigmented retinitis, are less inclined to reappear than the others mentioned above, but consanguineous marriages, no matter how remote the connection, are sometimes highly dangerous.

Paris Médical

May 22, 1920, **10,** No. 21

*General Paresis in Tuberculosis. S. Roque and V. Cordier.—p. 417.
Pilomotor Reflex with Paresthetic Meralgia. André-Thomas.—p. 422.
*Acute Pulmonary Edema and Blood Pressure. L. A. Amblard.—p. 425.

General Paresis in Tuberculosis.—Roque and Cordier describe a case of apparently typical paretic dementia in a man of 50 with pronounced tuberculosis of long standing and syphilis acquired thirty-four months before death. Necropsy revealed tuberculous meningitis and old tuberculous lesions in the cortex. They do not venture to decide whether the case is one of general paresis masquerading as an ordinary lesion, or whether the tuberculous leptomeningitis realized the syndrome of syphilitic general paresis.

Acute Pulmonary Edema.—Amblard states that, in his experience, the persons who developed acute edema of the lungs always had a history of hemoptysis at some time or blood streaked sputum, possibly ascribed mistakenly to tuberculosis, or after trauma. In two cases in which the pulmonary edema developed under his eyes, he noted that the high blood pressure ran up still higher, both the minimal and maximal pressure showing a rise of several degrees. Then suddenly the pressure dropped, the maximal from 280 to 140 mm. mercury, for example; the minimal from 180 to 100, while the pulse ran up from 70 to 130. Venesection tided through the period of dyspnea, but the heart was still unequal to its task, and the blood pressure never returned to its former figure. Although the latter was abnormally high, yet this was necessary to ensure adequate circulation even although this was still below normal. Each attack reduces it still lower. The onset in each is sudden, but each is always preceded by the giving way of the ventricle; then the blood pressure drops, and this in turn is followed by the acute edema in the lungs, but the heart action keeps up and there is no arrhythmia. The cause of the sudden weakening of the ventricle is still a mystery, he says, but much can be accomplished in treatment with drugs to combat it and dieting to relieve the kidneys of all unnecessary work. The prompt benefit from venesection cannot be from reduction of the blood pressure, as this is not accomplished by clinical venesection; nor from escape of toxins, as this is likewise insignificant and the effect would be more gradual; nor from modification of the composition of the blood, as this could not occur so promptly.

Presse Médicale, Paris

June 2, 1920, **28,** No. 36

*Urobilinuria. M. Labbé and P. A. Carrié.—p. 353.

Urobilinuria.—Labbé and Carrié reaffirm that urobilinuria is evidence of functional insufficiency of the liver. The bile pigments entering the bowel become transformed into urobilin. Part of this is voided in the stools (stercobilin), but the rest is reabsorbed and carried to the liver. The liver utilizes it anew, probably to make bilirubin, but if the liver is not functioning properly, some of the urobilin passes through it unmodified and gets into the blood and passes from the blood into the urine. Urobilinuria thus requires (1) the presence of stercobilin in the intestines, which implies the permeability of the biliary passages, and (2) functional insufficiency of the liver. There can be no urobilinuria at the height of jaundice from retention. In a recent case a man with chronic jaundice from obstruction of the bile ducts by a lesion in the pancreas, had no urobilinuria, not even after the liver functioning had been relieved by fastening the gallbladder to the skin so that bile production and evacuation proceeded practically normally except for the participation of the intestines. A second operation joined the gallbladder to the small intestine; the only change from the previous condition was that the bile entered the bowel instead of being voided through the fistula, and urobilin promptly appeared in the urine anew. Of course bilirubin may become transformed into urobilin elsewhere than in the bowel, but this is exceptional and comparatively insignificant. Fischler's dogs with a bile fistula had no urobilinuria unless they were allowed to lick the bile from the fistula or were given bile by the mouth, or were injected by the vein with distilled water, the latter confirming the possible hematic origin, although under conditions scarcely realizable in the clinic.

Revue Franç. de Gynécologie et d'Obstét., Paris

April, 1920, **15,** No. 4

*Spinal Anesthesia. P. Delmas.—p. 145.
*The Minimal Blood Pressure with Hemorrhage. P. Balard.—p. 154.
Retention of Urine from Genital Tumor. G. Deverre.—p. 163.
*Fatal Embolism in Course of Pregnancy. S. Remy.—p. 172.

Spinal Anesthesia for Gynecologic and Obstetric Operations.—Delmas expatiates on the superior advantages of spinal analgesia for these interventions, and especially when done with cocainized spinal fluid, an ampule of 0.02 gm. cocain being dissolved in the spinal fluid for a fifteen minute operation.

The Minimal Blood Pressure with Hemorrhage.—Balard refers in particular to severe puerperal hemorrhages, saying that the maximal arterial pressure gives no indication of the actual decline of the blood pressure in these cases. In four cases described in detail the minimal pressure of 5 was the extreme limit, these patients dying, while all recovered with

a minimal pressure of 7, although the clinical picture seemed identical in all.

Embolism Early in Pregnancy.—Remy reports a case in which the mild phlebitis of the internal saphenous vein entailed sudden and fatal embolism; it happened to occur during the physician's casual call to inspect the phlebitis. The woman was lying quietly in bed at the time. In Lancereaux' case the embolism occurred with phlegmasia of both legs, the patient recovering. In three other cases, the embolism was fatal, although the phlebitis was insignificant. Possibly citric acid might ward off embolism.

Rivista di Clinica Pediatrica, Florence

April, 1920, **18**, No. 4

*Scurvy in Children. U. Franchetti.—p. 193.
Should Foundlings' Asylums Be Abolished? R. Fuà.—p. 211.
*Progressive Lenticular Degeneration. A. F. Canelli.—p. 232.

Scurvy in Children.—Franchetti reports a case in which the retrospective diagnosis was chronic scurvy without any acute phase. Before the age of 3 there probably was an unsuspected stomatitis which interfered with normal eating, so the child refused to eat anything but boiled milk and coffee. At 3, and again at other periods later there was painful paraplegia, sometimes with stomatitis, maintaining the vicious circle. Neuritis was diagnosed, and although the physician ordered a change of diet, this was not enforced. At 5 the roentgenograms showed extreme dystrophy of the bones in and near the knees and the painful paraplegia, cachexia and anemia were severe, with absolute anorexia, but there never had been any tendency to hemorrhages.

Progressive Lenticular Degeneration.—Canelli analyzes what has been published on this disease since Wilson's description of it in 1912. Higier has reported on a family in which the father at 30 developed paralysis agitans, and one child has this Wilson's disease and another the Westphal-Strümpell pseudosclerosis. In Schütte's case the clinical course suggested the former, the necropsy findings the latter.

Archivos Latino-Amer. de Pediatría, Buenos Aires

March-April, 1920, **14**, No. 2

Subacute Meningitis. J. Bonaba and V. Zerbino.—p. 97.
Scrap of Glass in Lid for Six Years. J. de Salterain.—. 105.
Meningitis in Two Months Infant. A. Rodriguez Castro.—p. 107.
*Serotherapy for Defective Development. C. Ferreira.—p. 109.
*Oculomotor Paralysis in Infant. J. P. Garrahan.—p. 114.
Traumatic Rupture of Spleen in Boy. A. Buzzi.—p. 122.
Classification of Dyspepsia in Infants. Martagão Gesteira.—p. 129.

Horse Serum in Treatment of Dystrophy and Hypotrophy in Infants.—Ferreira confirms R. Freeman's statements in regard to the stimulating action of horse serum when an infant is not developing properly. It seems to whip up the sluggish metabolism and nutrition in general so that the child afterward progresses more or less normally. He injected it in three cases here described. One of the infants weighed only 3,750 gm. at the tenth month when the serotherapy was started, and the benefit was so unmistakable that it was kept up for sixteen months, the child having thus been given 2,386 gm. of the serum, and its weight showing a regular increase. He began with 2.5 c.c. but soon reached the dose of 20 c.c., repeated two or three times a week. A 3 months babe improved so rapidly after the serotherapy was begun that the latter could soon be dropped, the improvement continuing thereafter. None of the three infants was entirely breast fed.

Oculomotor Paralysis in Infant.—The paralysis persisted unmodified for a month, but subsided completely as soon as tentative antisyphilis treatment was begun.

Brazil Medico, Rio de Janeiro

March 6, 1920, **34**, No. 10

*Prognosis with Angina Pectoris. Pinheiro Guimarães.—p. 151.
Action of Currents of Air on the Frog. M. Ozorio de Almeida.—p. 156.
Prophylaxis of Influenza. Nery da Costa.—p. 157.

Prognosis of Angina Pectoris.—Pinheiro warns of the harm from suspending the Damocles sword of angina pectoris over the head of a person suffering merely from the effects of swallowing air or of some neuropathy. A history of intoxications and infections is instructive, especially syphilis, and alcohol and tobacco poisoning. On the whole, he reiterates, nothing justifies a definite prophecy as to the immediate outcome, the symptoms, evolution and pathologic anatomy being so widely diverse in different cases. He gives the details of a number in which the orders to lead a quiet life were disregarded, and a recurring attack proved fatal within a few months. One man of 42 has had several attacks but two years have passed and he is still active. This patient has a low blood pressure and weak heart sounds.

Semana Médica, Buenos Aires

Feb. 12, 1920, **27**, No. 7

Peduncular Hemorrhage. A. Bergman and M. Ruet.—p. 213.
*Auscultation of the Fetus. H. Colmegna and S. Varalla.—p. 219.
History of Insanity in Argentina. J. Ingenieros.—p. 220.
Public Hospitals and Charities System in Uruguay. Coni.—p. 233.

Auscultation of Twin Pregnancy.—Colmegna and Varalla report a case and cite two others which confirm the differential importance of auscultation of a single and intense focus of fetal heart sounds in the clinical picture of hydramnios. The fetal heart beat is heard exceptionally distinctly at a single point. This is actually pathognomonic with twin pregnancy when hydramnios obscures the clinical findings.

Feb. 19, 1920, **27**, No. 8

*Absorption of Solid Particles by Peritoneum. J. Dutrey.—p. 249.
Tuberculin in Surgical Lesions. O. Copello.—p. 253.
*Papillomas in Child Larynx. A. Quadri.—p. 254.
Advantages of Film Treatment of Burns. V. Conti.—p. 263.
The International Congress of Medical Women. Alicia Moreau.—p. 276.

Absorption of Solid Particles in the Peritoneum.—Dutrey's research has confirmed that the lymphatics, omentum and diaphragm, take up and retain for a time at least the solid particles injected into the peritoneal cavity. The blood vessels do not seem to share in this task, none of the particles of India ink injected having ever been refound in the blood vessels. There do not seem to be any direct routes of connection between the peritoneal cavity and the spleen, liver and kidneys. The few leukocytes containing any of the particles which were found in these organs had evidently found their way to them by way of the lymphatics and thoracic duct.

Papillomas in Child Larynx.—Quadri has had one case in which multiple papillomas in the larynx retrogressed so that the child, now 11, has no further inconvenience or danger from the tumors; he first saw the papillomas at the age of 2. Another girl required tracheotomy on account of a second recurrence after operation. The one small tumor left was coughed up later. He thinks that probably many cases of papilloma escape detection and the tumors retrogress later. His practice is to remove the tumors even in emergency cases, thus avoiding tracheotomy unless absolutely compelled, supplementing the surgical measures with arsenic internally. He advocates radium treatment after tracheotomy but warns that without this it is liable to induce suffocation from the congestion it induces, and thus compel an emergency tracheotomy, as occurred in one of his cases.

Siglo Médico, Madrid

April 17, 1920, **67**, No. 3462

Hemorrhagic Septicemia. Muñoyerro and Calvin.—p. 281.
Pathology of Suprarenals in Tetanus. C. Sabucedo.—p. 283.
Treatment of Typhus. J. Francos Rodriguez.—p. 284.

April 24, 1920, **67**, No. 3463

Epidemic of Measles. B. Hernández Briz.—p. 301.
*Epileptiform Seizures Under Neo-Arsphenamin. J. Bejarano.—p. 302.

Epileptiform Seizures Under Arsphenamin.—The young man had been given two injections of neo-arsphenamin at a week interval (0.15 and 0.3 gm.), and two days later he had two severe epileptiform seizures with loss of consciousness for two hours. He had never had anything of the kind before, but it was learned later that a brother was epileptic. Henceforth Bejarano intends to investigate the family as well as the individual antecedents before giving arsphenamin.

Deutsche medizinische Wochenschrift, Berlin

Jan. 22, 1920, **46**, No. 4

Traumatic Psychoneuroses. M. Reichardt.—p. 89.
*Silver Arsphenamin in Treatment of Syphilis. F. Hahn.—p. 92.
*Blocking of the Splanchnic Nerves. G. Buhre.—p. 93.
*Treatment of Tetanus by Multiple Routes. Eberle.—p. 94.
Operations in Penetrating Gunshot Wounds. O. Heinemann.—p. 96.
Operations for Inguinal Hernia in Infants. Kern.—p. 97.
*Laryngeal Perichondritis Simulating Thyroiditis. A. Brüggemann.—p. 97.
Was it Murder or Suicide? Schütz.—p. 99.
*Nitrobenzene Poisoning from Delousing Remedy. L. Wolpe.—p. 100.
The Mortality in Denmark During the War. Prinzing.—p. 100.
Dermatologic Hints for the Practitioner. M. Joseph.—p. 101.

Silver Arsphenamin in Treatment of Syphilis.—Hahn has been using silver arsphenamin for two years and now reports the results, after treating 300 syphilitics and giving nearly 4,000 intravenous injections. He endeavors to justify his standpoint that syphilis early diagnosed should be treated energetically and with large doses of arsphenamin, even though there may be some risk involved. He regards silver arsphenamin as the best form of arsphenamin, saying that in its action it is much superior to arsphenamin sodium and neo-arsphenamin, and is at least equal, if not superior, to arsphenamin (old salvarsan). He adds that silver arsphenamin is to be put on the market soon. He used no mercury or other medication in connection with the silver arsphenamin treatment, though he admits that possibly better results might be secured with a combination of silver arsphenamin and mercury. On account of the dark brown color and the lesser solubility, silver arsphenamin is more difficult to inject than arsphenamin sodium and neo-arsphenamin. Injections improperly given are painful. He gives ordinarily 0.1 gm. as an initial dose for both men and women, and has seen no pronounced bad effects. He uses a 1 to 1.5 per cent. solution. Twelve injections of 0.25 gm. each, given twice a week (3 gm. in all) constitute a vigorous course of treatment.

Blocking of the Splanchnic Nerves for Operations on the Upper Abdomen.—Buhre describes the Braun method of blocking the splanchnic nerves, for operations on the upper abdomen, after the abdomen has been opened by a median incision. He has used the method in 104 cases and found the technic remarkably simple. The anesthetic effect is prompt and lasts from one and a half to two hours, and no danger for the patient is involved. He therefore recommends it as the method of choice in all operations on the upper abdomen, especially gallstone operations.

Serotherapy of Tetanus by Multiple Routes.—Eberle reports three cases of tetanus in which on the fifth to the seventh day after the appearance of the first symptoms he treated the patients with intracranial, subdural and intraspinal antitoxin injections, according to the Betz-Duhamel technic. No improvement followed and the three cases resulted fatally. H. Smidt has also reported eight cases of tetanus which were treated by the same multiple routes, the serotherapy being begun in from six to twenty-four hours after the first symptoms became manifest, but all these patients died likewise. Eberle expresses the wish that all who have had experience with this direct method of serotherapy might report their results. Betz and Duhamel reported three recoveries in four severe cases, and others similar experiences, so that there was a record of eight recoveries in ten severe cases of tetanus, until the Eberle and Smidt series of eleven fatal cases.

Laryngeal Perichondritis Simulating Thyroiditis.—Brüggemann reports a case of acute laryngeal perichondritis, in which edematous swellings appeared on the outside of the throat simulating the picture of acute thyroiditis. Sensitiveness to pressure was, however, confined to the larynx, which ruled out thyroiditis. Pressure symptoms elicited in the thyroid were doubtless due to the fact that in pressing on the thyroid a certain amount of pressure is brought to bear on the larynx.

Nitrobenzene Poisoning Following Use of Delousing Remedy.—Wolpe reports two cases of nitrobenzene poisoning in two children of 10 and 12. Their mothers had used on their heads a delousing remedy containing nitrobenzene. The writer demands that druggists be restrained from dispensing nitrobenzene unless the buyer holds a special permit, and that the use of nitrobenzene in delousing remedies and in cosmetics in general be prohibited by law.

Medizinische Klinik, Berlin

April 25, 1920, **16**, No. 17

The Genesis of Poisons in the Blood. H. Freund.—p. 438.
Cesarean Section on the Dead and Moribund. Linzenmeier.—p. 439.
*Congenital Luxation of Hip Joint. S. Peltesohn.—p. 442.
Urobilinogen, Urochromogen and Diazo Reactions in Urine of the Tuberculous. K. Dietl and B. Szigeti.—p. 444.
Syphilitic Aortitis and the Wassermann Reaction. G. Bock.—p. 447.
The Increase in Chancroid Infections in Berlin. E. Borchard.—p. 449.
Changes in the Working Muscle. O. Meyerhof.—p. 451.

May 2, 1920, **16**, No. 18

Toxic Desquamative Inflammations of the Esophageal and Gastric Mucosa. H. Eichhorst.—p. 463.
Harmlessness of Postpneumonic Râles in Children. P. Karger.—p. 466.
Artificial Respiration in Morphin Poisoning by Puncture of the Trachea. E. Becker.—p. 467.
Paratyphoid Bacteriuria. G. Herrnheiser.—p. 469.
Zygomaticitis with Otitis Media. A. Seligmann.—p. 471. Continued.
Local Oil of Turpentine Injections in Adnexitis. Hartog.—p. 474.

Diagnosis and Treatment of Congenital Luxation of the Hip Joint in Infants.—In view of the great advantage of the early diagnosis and immediate reduction of a congenital luxation of the hip joint, Peltesohn emphasizes that physicians should take pains to examine the hips as reduction of a luxation during infancy is usually child's play, whereas after the child has begun to walk it becomes increasingly difficult. The ordinary circular plaster cast cannot be used on infants as it cannot be kept clean, but he recommends and describes in detail a special splint that he has found very useful in dealing with infants.

Münchener medizinische Wochenschrift, Munich

Jan. 23, 1920, **67**, No. 4

*Nonspecific Increase of Function. W. Weichardt.—p. 91.
Tuberculous Infection and Constitutional Diatheses. A. Wolff-Eisner.—p. 93.
*Water Put Up in Ampules for Intravenous Injections. G. L. Dreyfus.—p. 95.
*Osteomalacia in Munich. Heyer.—p. 98.
*Eosinophilia in Muscular Rheumatism. I. Synwoldt.—p. 98.
*Hemorrhage of Lung from Puncture. M. Flesch-Thebesius.—p. 99.
Prophylaxis of Venereal Diseases. F. Jenssen.—p. 100.

Nonspecific Promotion of the Functional Capacity.—Weichardt approves the term "activation of protoplasm" to express the peculiar promotion of the functional capacity of the entire system by various means, such as by exercise, by getting rid of fatigue products, by vaccination, but most strikingly, perhaps, by protein therapy, parenteral injections. These whip up the organism to increased functional achievement, a nonspecific *Leistungssteigerung*. The effect is not that the function is altered; it is merely intensified. The response varies in the normal and in the diseased, and in normal regions and in pathologic processes. He reviews the recent literature on the subject, citing in particular experiments with preliminary intensive radiation, inunction of mercury or sweating procedures, etc., to enhance the effect of the protein therapy.

Water in Ampules for Intravenous Injections.—Dreyfus finds it a very convenient and safe method for arsphenamin injections to use distilled water that has been put up in sealed ampules. Thus stored, distilled water may be kept for years unimpaired, but the ampules must be made of very hard glass that will give off little or no alkali.

Osteomalacia in Munich.—Heyer reports nine cases of osteomalacia traceable to the restricted war diet, which while they presented in the main the usual symptoms, showed also certain peculiar manifestations.

Eosinophilia in Muscular Rheumatism.—Synwoldt found marked eosinophilia (up to 18 and 22 per cent. of eosinophils), in 79 per cent. of thirty cases of acute muscular rheumatism. She thinks this has diagnostic importance.

Grave Hemorrhage of the Lung Following Diagnostic Puncture.—Flesch-Thebesius reports a case in which surgical puncture of the lung in a youth of 15 caused a hemorrhage

into an empyema cavity, which was not discovered at once and thus threatened the life of the patient.

Therapeutische Halbmonatshefte, Berlin

Feb. 1, 1920, **34**, No. 3

*Febrile Abortion. A. Heyn.—p. 65.
*Multiple Sclerosis. G. Steiner.—p. 68.
*Rumination in Infants. A. Ylppö.—p. 76.

Febrile Abortion.—Heyn reports from the Charité at Berlin a mortality of only 2.4 per cent. of the 410 cases of febrile abortion treated by active intervention, out of the total 578 febrile abortions. Almost 85 per cent. had return of normal temperature the same or the next day; 3.4 per cent. had fever for more than six days. After the middle of the fourth month, instruments are never used to clear out the uterus. Cautious and skilful dilatation of the cervix with laminaria first, for twenty-four hours, is the main thing.

Multiple Sclerosis.—Steiner has succeeded in inducing a paralytic disease in rabbits and guinea-pigs by inoculating them with fluid and blood from recent cases of multiple sclerosis, and a spirochete was found in their tissues. A monkey inoculated at the same time developed paralysis eighteen months later, and the brain showed changes analogous in almost every respect to those found in multiple sclerosis in man. Siemerling has also beheld living spirochetes in the brain two hours after death from multiple sclerosis. These facts justify tentative treatment with spirocheticidal drugs, Steiner asserts, but the results to date have been conflicting.

Rumination in Infants.—Ylppö has found that infants are not so likely to swallow air when they are fed lying prone, the head raised or turned on the side. The change to reclining on the abdomen is sometimes enough to break up a rebellious habit of rumination. If not, he has the child lie on a flat hammock, stretched from headboard to footboard of the crib. The unsteadiness, the movements of the hammock, supplement the change to the prone position, so that the child's attention is diverted, and it forgets its ruminating habit.

Feb. 15, 1920, **34**, No. 4

*General Principles of Organotherapy. L. Borchardt.—p. 97.
Treatment of Mental Disease. Raecke.—p. 101. To be continued.
*Dangers from Removing Bullet in Tissues. H. Curschmann.—p. 108.
*Splenectomy in Pernicious Anemia. W. Charlton.—p. 111.

The Principles of Organotherapy.—Borchardt recalls that some of the active substances isolated from certain organs display an action which has nothing to do with the original function of the organ, and warns that we must not overestimate the reciprocal or antagonistic action between different organ extracts. He cites as important Langley and Elliot's assertion that epinephrin in all its actions on any organ behaves the same as electric stimulation of the afferent sympathetic fibers of that organ. Suprarenal and certain other extracts seem to activate the protoplasm, and thus increase the functional capacity, like parenteral protein therapy. If the organ extracts contain any protein, there is a superposed protein therapy effect. Both suprarenal and pituitary extract increase the immune reactions. In typhoid, the former has increased the agglutinins from 1:20 to 1:5,120 or even 1:10,240, and pituitary up to 1:2,560. There is much to sustain the assumption that the hemostatic action of organ preparations is due to this promoting of the functional capacity. This is probably also the explanation of the benefit from transfusion of blood. The blood is destroyed, and at most its elements are used in the production of new blood. The promptly favorable effect is probably merely from stimulation of the functional capacity of the blood-producing system. Bone marrow and spleen extract may yield as favorable results in the line of regeneration of the blood as transfusion of blood itself. Pituitary treatment of typhoid, tuberculosis, cholera, etc., has been tried on this theoretical function-promoting basis, and with promising results in some circumstances. We have thus at our command a substituting hormone therapy, as in thyroid treatment of myxedema; a symptomatic hormone therapy, as in thyroid treatment of obesity; a ferment therapy, as in supplying the finished pepsin or a hormone which stimulates some special secretion; a hormone therapy seeking to utilize the reciprocal and antagonistic action of the endocrine glands, and, finally, we have the protoplasma activation therapy as in parenteral protein therapy. Hitherto, he adds, the application of these principles has been mostly empiric.

Danger of Extracting Bullet.—Curschmann reports a case of lead nephritis developing fifteen months after a bullet had entered the hip joint. The bullet was then removed but lead encephalitis followed the operation the second day, with fatal convulsions. He ascribes this to the particles of lead which had been absorbed into the tissues around, and had become mobilized by the operation when they had been in a way encapsulated before. The immediate increase in basophil granular erythrocytes in the blood testified to the intense aggravation of the lead poisoning. How to prevent this is a question. Leaving the wound open and promoting in every way the outward flow of lead-containing secretions will help. It is possible that by local infiltration of the tissues with some chemical, the lead might become transformed into an insoluble compound. Straub has suggested infiltration of the field of operation with sodium sulphate or the bicarbonate which might have the effect of sweeping the lead albuminate in the region into the kidneys, and thus get it eliminated before it had a chance to reach the central nervous system. This is analogous to the action of potassium iodid. Experimental research with a deposit of lead in the tissues has confirmed the acceleration of the resorption and elimination of the lead under internal treatment with potassium iodid. No chemical is known yet which will transform and hold the lead at the spot, but search should be made for such.

Splenectomy in Pernicious Anemia.—In Charlton's case the pernicious anemia retrogressed after splenectomy on the woman of 32, but her pulmonary tuberculosis did not seem to be modified by the improvement in the blood picture.

Wiener klinische Wochenschrift, Vienna

Jan. 29, 1920, **33**, No. 5

Nerve and Muscle Symptoms in Arthritis Deformans. M. Jungdahl.—p. 97.
*Treatment of Scabies. M. Oppenheim.—p. 102; Idem. F. Schönbauer.—p. 105.
Finger Ring on Root of Penis for Ten Years. Maresch.—p. 106.
*Treatment of Gonorrhea by Hot Baths. Kapferer.—p. 107.
Suction with Manometer Fluid with Induced Pneumothorax. E. Hoke.—p. 108.
Sarcophila Magnifica in Myiasis. J. Fiebiger.—p. 109.

April 22, 1920, **33**, No. 17

Epidemic of Encephalitis and Polyneuritis. Schlesinger.—p. 358.
Serotherapy in Influenza. E. Földes and K. Hajós.—p. 360.
1920 Epidemic of Lethargic Encephalitis. Economo.—p. 361. Conclusion.
Concrete As a Conductor of Electricity. S. Jellinek.—p. 364.

Treatment of Scabies.—Oppenheim reports that in the treatment of over 20,000 recent cases of scabies in the Wilhelmine Hospital, his modification of the Hardy treatment effected an entirely harmless and absolutely certain cure. The whole treatment is completed within a period of three hours, as compared with a week or more by older methods. He describes the method in detail and recommends that stations for the purpose be organized throughout the country.

Treatment of Gonorrhea by Hot Baths.—Kapferer found the Weisz method of treatment very weakening to the patients, some of whom were obliged to discontinue it. The results are very uncertain, and it requires the constant presence of physician and nurse. The aim is to kill the gonococci by heating the body to 40 C. (104 F.) or more and keep it at this point. The temperature of the deep bath is raised within fifteen minutes from 38 to 43 or even to 45 or 46 C. (114.8 F.).

Zentralblatt für Chirurgie, Leipzig

May 1, 1920, **47**, No. 18

Atony of Stomach with Arteriomesenteric Ileus. H. Nieden.—p. 418.
Infolding Suture in Gastro-Intestinal Surgery. Pribram.—p. 422.
Advantages of Nonhydrophil Gauze. Propping.—p. 424.
*Cello String for Thread-Saw in Stenosis of Esophagus. G. Kelling.—p. 425.

Wire-Covered Gut String as Thread-Saw.—Kelling, having found it difficult in using a thread-saw for cutting an esophageal stricture to get the thread past the stenosis, and to find the end again quickly through the gastrostomy opening, decided to use a wire-covered gut string such as is used on a cello, and has found it very satisfactory, chiefly because it does not kink so readily.

Zentralblatt für Gynäkologie, Leipzig

May 1, 1920, **44**, No. 18

*Kidney Disease in Relation to Pregnancy. T. Heynemann.—p. 449.
Criticism of "Twilight Sleep." R. T. von Jaschke.—p. 459.
Appendicitis with Adnexa Involvement. Hartog.—p. 461.
*Conservative Operation in Chronic Pyosalpinx. F. R. Brewitt.—p. 462.
Injury of Sigmoid Flexure in Induced Abortion. Schlüter.—p. 464.

Kidney Disease in Relation to Pregnancy.—Heynemann explains that, while a typical pregnancy glomerular nephrosis is not likely to develop into chronic nephritis, yet an acute exacerbation, during a pregnancy, of a previously existing glomerular nephritis may become chronic. In ordinary cases of pregnancy glomerular nephrosis, so long as there is no tendency to eclampsia, interruption of the pregnancy will very rarely be indicated, but with acute and chronic glomerular nephritis, interruption of the pregnancy must always be considered. In acute glomerular nephritis, if the blood content of the urine increases in spite of treatment or if it keeps at a high level, interruption of the pregnancy is imperative.

Conservative Operation in Chronic Pyosalpinx.—In the treatment of pyosalpinx, Brewitt has used turpentine injections in twelve cases and reports remarkable success. After a Pfannenstiel incision, the patient is placed in the Trendelenburg position. The intestines are walled off to expose the pelvis, and with a large cannula the tubal sacs are punctured, and the pus or serous fluid is aspirated. The cannula is left in the opening and a 10 per cent. solution of oil of turpentine (slightly less than the amount of fluid aspirated) is injected. The site of puncture is sutured with fine catgut. Then 4 or 5 c.c. of the solution are carefully injected into the passage of the tube from each end, to block the infection from spreading. If any loops of the small intestine or the sigmoid are adherent to the pelvic organs, the adhesions are broken up. Then the omentum is brought down and is spread out like a mantle so that it extends deep down into the Douglas pouch, and is sutured to the posterior pelvic wall, thus completely roofing over the pelvis. There was no postoperative fever, and prompt recovery followed. After-treatment consisted of warm sitz baths. In ten of the twelve cases so treated gonorrheal infection was present.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

April 10, 1920, **1**, No. 15

*Porphyrinuria with Colics. I. Snapper.—p. 1233.
Excentric Fixation for Strabismus. G. ten Doesschate.—p. 1250.
Danish State Sickness Insurance. H. H. van Eyk.—p. 1256.
Case of Lethargic Encephalitis. C. D. Cramer.—p. 1266.
Abscess in Left Brain with Right Otitis Media. Klessens.—p. 1269.

Porphyrinuria with Colics.—Snapper describes three cases of porphyrinuria accompanied with abdominal pains at the times when the execretion of porphyrin was most pronounced. The patients were a girl of 17, a woman of 24 and a man of 33. In each case in time the inevitable paralysis developed, of both the cerebral and spinal type, and proved speedily fatal. Necropsy failed to reveal any characteristic changes. A tuberculous apical process and congenital malformation of one kidney in the young girl seemed to be incidental. Between attacks of colic the patients felt entirely well until the terminal paralysis. The pains and the abnormal functioning of the liver cells responsible for the porphyrin production and also the hemorrhagic erosions in the stomach responsible for the occult hemorrhages, might be explained by a pathologic condition of the retroperitoneal plexus, spreading finally to involve the whole peripheral nervous system. Chronic lead poisoning can produce a similar picture, with porphyrinuria, colics and recurring gastric ulcer, and endogenous intoxication might be considered. Attempts to induce similar symptoms in rabbits with sulphonal poisoning were only partially successful. A normal tint of the urine does not exclude porphyrinuria, as a tuberculous alcoholic, aged 29, presented a strongly positive porphyrin spectrum though the urine was but slightly darker. At necropsy the tuberculous process was found to be close to spleen, stomach and liver, thus possibly affecting the retroperitoneal plexus, which supports Snapper's theory stated above.

Acta Medica Scandinavica, Stockholm

June 9, 1920, **53**, No. 4

*Fat Content of Blood and Liver in Diabetic Coma. H. C. Geelmuyden.—p. 381.
Kinetics of Ketonic Decomposition of Aceto-Acetic Acid. E. M. P. Widmark.—p. 393. In English.
Bacteriology and Epidemiology of Influenza. O. Thomsen and M. Kristensen.—p. 422. In French.
Central Mechanism for Movements of the Eyes. H. Gertz.—p. 445. In French.
Duration of Systole in Electrocardiogram. L. S. Fridericia.—p. 469. In German.

Fat Content of Blood and Liver in Diabetic Coma.—Geelmuyden tabulates the necropsy findings in ten diabetics and in four nondiabetics in regard to the weight of the liver and its content in glycogen and fat, and the fat content of the blood. They confirm the old assumption that the glycogen content of the liver may be high in diabetics. The amounts ranged from traces up to 44.7 per cent. in the cases with the highest acidosis. This is a larger proportion than is found in the liver of dogs with pancreas and phlorizin-starvation diabetes. The fat content does not parallel the glycogen content as a rule, but the livers with high percentage of glycogen had also large proportions of fat. On the other hand, the blood showed a much higher proportion of fat than is found in experimental diabetes. In the latter the liver contains much fat and little glycogen, while the reverse prevails in human diabetes. He ascribes this to the more gradual onset of the human diabetes. (In German.)

Hospitalstidende, Copenhagen

March 31, 1920, **63**, No. 13

The Pigment in Human Skin. A. Kissmeyer.—p. 193. Concluded in No. 14, p. 209.

April 7, 1920, **63**, No. 14

*Coagulation of the Blood in the Insane. E. J. Larsen and H. Lind.—p. 220.

Coagulation of the Blood in the Insane.—Larsen and Lind tested the coagulation time in thirty-nine healthy controls and in fifty insane patients with various forms of mental disease and found them all within normal range.

April 14, 1920, **63**, No. 15

*Extreme Deformity from Rachitis. T. Eiken and J. Fabricius-Møller.—p. 225.

Case of Monstrous Rachitis.—Eiken and Møller here report the necropsy findings at the age of 38 in a case of extreme deformity and dwarfing from rachitis. The head alone seemed to be normal, and the man was known as a Shakespeare scholar. The total height was 87 cm. and the weight 20 kg., of which the heart formed 1.1 per cent. The bone findings had nothing in common with osteomalacia.

Hygiea, Stockholm

May 16, 1920, **82**, No. 9

Occurrence of Parameningococci. L. Cronstedt.—p. 289.
*Complications of Fracture of the Humerus. W. Forssell.—p. 300.

Complications of Fracture of the Humerus.—Although usually harmless, supracondylar fracture of the humerus, especially in children, is liable to entail extremely severe complications if the brachial artery gets pierced or compressed by the fragments of bone or the median nerve is compressed. Kocher has published two cases, and Forssell here adds two more to the few cases of the kind on record. The great danger is that the injury of the artery will be overlooked, as there often is no hemorrhage, the artery being obliterated by the pressure. No collateral circulation can develop, owing to the pressure from extravasated blood and

secretions. In Forssell's two cases, the arm had been put in a plaster cast, the injury of the artery not having been suspected, but the tendency to gangrene was arrested in time, by operative opening up the seat of the fracture to correct conditions. In one of Kocher's cases the child's arm had to be amputated.

May 31, 1920, **82**, No. 10

*Suprarenal Tumor with Hypertrophy of Heart. H. Bergstrand.—p. 321.

Suprarenal Cytoma.—The pheocytoma of the right suprarenal gland was accompanied by hypertrophy of the myocardium of the left half of the heart. Bergstrand accepts this by exclusion as probably the result of chronic excessive suprarenal functioning under the stimulus of the tumor.

Norsk Magazin for Lægevidenskaben, Christiania

June, 1920, **81**, No. 6

Lethargic Encephalitis. F. Harbitz.—p. 529.
*Spontaneous Subarachnoid Hemorrhage. J. Blom.—p. 551.
*Labor Induced with Internal Measures. G. Benestad.—p. 563.
*Primary Sarcoma of Lung. K. Wildhagen.—p. 567.
Aneurysm of Main Trunk of Pulmonary Artery. K. Wildhagen.—p. 572.
*Migration of Fat. H. C. Geelmuyden.—p. 578.

Spontaneous Subarachnoid Hemorrhage.—In one of Blom's two cases, the sudden onset of weakness, the knees giving way, the intense headache, chills and vomiting, Kernig sign, bradycardia and stiff neck were explained by the blood in the lumbar puncture fluid. Great relief followed the punctures, but no micro-organisms could be found in the fluid. One case was mistaken for lethargic encephalitis, the other for epidemic meningitis. Both the meningitic and the comatous form can terminate in recovery or progress to a fatal ending. In a recent compilation of thirty-one cases, all ages are represented, from a hemophiliac boy of 7 to five subjects between 60 and 80. Petrén advises against lumbar puncture, as this might bring on the hemorrhage anew, but Blom comments on its brilliant success as a palliative. Petrén enforces complete physical and mental repose, with ice to the spine.

Medical Internal Measures to Induce Delivery.—Benestad reaffirms that dietetic measures, plus quinin and pituitary treatment or other internal measures may induce expulsion of the contents of the uterus if the pregnancy is at term or beyond, but not in the course of a normal pregnancy. In a case reported, in an elderly primipara, the fetus had died at the twenty-ninth week, and three weeks later, under castor oil, quinin and enemas, labor was induced, although there was no indication of it to start with.

Production of Sugar from Fat.—Geelmuyden presents evidence to show the connection between the lack of glycogen in the liver and the syndrome: migration of fat and ketonuria. The latter seems to be a sign that the glycogen content of the liver is very low. Only diabetes mellitus in man seems to be an exception to this rule, probably because in the course of time the organism adapts itself to the altered metabolism, the ability of the liver to produce sugar from fat increasing as its ability to retain glycogen diminishes. The lack of glycogen in the liver starts the migration of fat in order to supply fat for the liver to transform into sugar. The assumption that the hyperglycemia and the glycosuria in diabetes are due to an overproduction of sugar from albumin and fat offers a plausible explanation for all the phenomena in diabetes. This assumption is much more plausible and instructive than the opposite theory, namely, that diabetes is the result of a lesser combustion of sugar in the organism, as the cause of the glycosuria. The primary cause of the overproduction of sugar may perhaps be sought, not in the metabolism as such, but in the nervous system or the endocrine system. Geelmuyden's long article discusses both sides of the question, especially the light thrown on it by the findings in phosphorus poisoning in which there is migration of fat and ketonuria, but the glycogen disappears rapidly from the liver and the sugar from the blood. With tardy chloroform fatalities there is fatty degeneration of organs, and with chloroform anesthesia there may be glycosuria and ketonuria, and this ketonuria, like that in pregnancy and in phosphorus poisoning, is independent of the intake of carbohydrates.

Ugeskrift for Læger, Copenhagen

May 27, 1920, **82**, No. 22

*Otogenous Multiple Intracranial Disease. H. Mygind.—p. 687. Concluded in No. 23, p. 720.
*Sun Glasses. H. Larsen.—p. 700.

Otogenous Intracranial Diseases.—Mygind analyzes 207 cases at the ear and throat clinic, including 35 per cent. in which there were multiple intracranial complications. This material is studied from various standpoints, and also the indications for operative measures. The aim should be, he says, to enter the skull along the track of the infection or the most likely path. He insists on the necessity in every case of opening up the perpendicular part of the sigmoid sinus, to examine it thoroughly throughout. This sinus is involved far more often than would be supposed from the symptoms, while this form of craniotomy is comparatively harmless. In fact, he reiterates, every craniotomy that leaves the dura intact is harmless. Abnormal conditions in the temporal bone and vessels favor transmission of the infectious process. This explains the sudden and unexpected development of intracranial processes in the absence of retention of pus or other conditions usually responsible for the spread of infectious processes. The intracranial complication is a consequence which our prophylactic measures—operative or otherwise—may not be able to avert, owing to individual anatomic conditions.

Sun Glasses.—Larsen reports the results of extensive research on different kinds of glass to determine which is the most effectual in keeping out the short-waved chemical rays, that induce conjunctivitis, etc., while interfering least with vision. His decision is for yellow glass No. 23 (Nitsche and Günther scale). This absorbs 25 per cent. of the 580 wave rays; 50 per cent. of the 520 rays, and 85 per cent. of the 460 rays. This yellow tint is comfortable for the eyes and impedes vision very little. He adds that the macula is protected with yellow pigment in the retina, another physiologic argument in favor of yellow glass.

June 3, 1920, **82**, No. 23

*Differential Leukocyte Count. E. Meulengracht.—p. 715.
*Blood Platelet Count. H. C. Gram.—p. 718.
*Determination of Coagulation Time. H. C. Gram.—p. 720.

Differential Leukocyte Count.—Meulengracht describes the physical and other reasons on which he bases his advice to use a cover glass instead of a slide in making the count of the leukocytes.

Blood Platelet Count.—Gram has modified the Thomsen method in a way to bring this reliable technic for enumeration of the platelets within the reach of every practitioner. A 3 per cent. solution of sodium citrate is poured in a Sahli glass to the mark 10, and then with a not too narrow, curved needle venous blood is run down into the citrate solution to the 100 mark. After shaking and setting aside for an hour, a small quantity of the citrated plasma is drawn off with an ordinary leukocyte pipet and diluted in the proportion of 1:20 with physiologic sodium chlorid solution and a few drops liquor formaldehydi per 100 c.c. Counting the platelets in five large squares in the Thoma Zeiss counting chamber, after waiting half an hour, gives the number of thousands of platelets per cubic millimeter of the citrated plasma. The number of platelets in the blood can be computed from this figure by multiplying with one of the constants in a short table which he gives. The constants range from 0.59 with 110 hemoglobin percentage, to 0.63 with 100; 0.68 with 90; 0.73 with 80; 0.78 with 70; 0.82 with 60; 0.87 with 50; 0.92 with 40; 0.97 with 30; and 1.01 with 20 to 1.04 with 15 per cent. hemoglobin. He refers to his recent article in the *Archives of Internal Medicine*, March, 1920, which explains the importance of the platelet count in the diagnosis and prognosis of various diseases.

Coagulation Time with Citrated Plasma.—Gram describes his modification of Howell's method, and adds that it will be given with fuller details in an article soon to appear in the Johns Hopkins Hospital *Bulletin*.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 75, No. 5 Chicago, Illinois July 31, 1920

SURGERY OF CANCER OF THE LARGE INTESTINE*

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During the last twenty years a great deal of work has been done in the treatment of carcinoma of the large intestine. Many men have attacked this problem, and a great many different operative plans have been introduced and tried out. I have been much interested in the problem during this period and have run the gamut of the various plans that have been presented. From our experience I think we have been able gradually to crystallize some general principles that are essential in the handling of these cases, and I shall briefly and informally present the conclusions I have arrived at as a result of the work I have done in my own clinic.

DIAGNOSIS

Before considering the surgical therapy, I would like to make a short statement in regard to the diagnosis of carcinoma of the colon, simply emphasizing the great importance of careful roentgen-ray study of these cases. The roentgen ray is not infallible in the diagnosis of cancer of the colon, but it has been developed to a point at which it is certainly the most valuable single piece of evidence that we can obtain in these cases. I would not belittle the great value of a carefully obtained clinical history and physical examination of the patient, because these are essential, and are often the basis of determination; but in the absence of a palpable tumor the roentgen ray is absolutely essential to determine by the presence of a filling defect the location of the neoplasm, and it is of great importance in the subsequent management of the case, in determining the shape and location of the abdominal incision. In the overwhelming majority of the cases careful roentgen-ray examination, fluoroscopic and plate, gives definite and absolute evidence of the existence and location of the carcinoma of the colon. I find, however, that there are some exceptions to the rule. In some cases of carcinoma, at the hepatic and splenic flexures the overlapping of the shadows of the barium in the bowel make it impossible in the plate to see any filling defect, and even in fluoroscopic examination it may be difficult to demonstrate any abnormality. Cases of this kind, however, are certainly the exception and not the rule. In the presence of obstructive symptoms it is frequently not desirable or possible to obtain a roentgen-ray examination before operative interference is undertaken, and here, of course, the diagnosis must be based on the history and clinical picture.

SURGICAL THERAPY

As my experience has grown in these cases, I have been convinced of the great value of preliminary colostomy in the presence of obstruction. In the absence of definite evidence as to the location of the obstruction and in cases that come to us greatly distended, we have adopted the general plan of making an oblique muscle-splitting incision on the right side and either a colostomy using the cecum, or if the cecum itself is involved, an ileostomy, to relieve temporarily the obstruction. The plan that we have adopted is a very simple one and the operation is usually done under local anesthesia (Fig. 1); a muscle-splitting incision, such as that employed in an appendix operation; the pulling into view of the cecum or ascending colon or ileum; passing a single suture through the skin and superficial fascia, muscles of the abdomen, and peritoneum, using a noncutting needle; then transfixing the mesentery of the bowel close to the bowel itself; then bringing the suture out through the opposite side of the incision and fastening the two ends of the suture to a large sized bone or porcelain button, about an inch in diameter; then closing the balance of the skin incision with black silk suture and making no effort whatever at suturing the peritoneum to the bowel, and covering the entire field with a thick, sterile zinc oxid paste. We then introduce into the proximal loop through a small puncture a No. 12 or 14 American scale catheter, which is held in position by two purse-string sutures of Pagenstecher linen. This we regard as a point in the technic of great service, as it secures at once a relief of the gas tension, making the patient much more comfortable. If the small catheter becomes obstructed, it is readily washed out with a little physiologic sodium chlorid solution or sterile olive oil. The colostomy is completed at the end of about three days by taking an electric cautery and enlarging the puncture opening, which has been used to introduce the catheter, to the desired extent, usually about one-half or three-fourths inch.

Too great emphasis cannot be put on the life-saving value of colostomy or ileostomy in the presence of obstructive symptoms in these cases of carcinoma of the colon. After the obstructive symptoms have been relieved by the preliminary colostomy, or in the cases of cancer of the colon in which no obstructive symptoms have as yet developed, it is essential for us by roentgen-ray examination to determine the presence of the cancer, if one exists, and to determine its exact location.

* Read before the Section on Surgery, General and Abdominal, at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

THREE BASIC PRINCIPLES

In the technic of removing carcinoma I have learned from experience the importance of three basic principles:

1. All of these cases can be best handled through four different incisions, namely, a muscle-splitting



Fig. 1.—Preliminary colostomy.

incision like an appendix incision on the right side; a similar one on the left; a large S-shaped incision on the right side, and a similar one on the left (Fig. 2). We now seldom use the midline incision, although in carcinoma of the transverse colon close to the center of that section of the bowel, a midline incision above the umbilicus is, of course, indicated.

2. It is essential in the removal of any portion of the large intestine from the cecum to the rectosigmoid to mobilize very fully that section of the bowel which is involved in the process and in the operative procedure. For instance, it is possible by dividing the outer layer of the mesocolon from the cecum to the rectosigmoid to mobilize the entire large bowel and bring it out of the abdominal incision. In the practical application of this principle to a given case it is necessary, of course, simply to mobilize the bowel for a sufficient length to enable us to resect the cancer and to secure a good anastomosis without any tension (Fig. 3).

3. The third basic principle which we have learned to recognize is the importance of a side-to-side anastomosis in big bowel surgery. We are thoroughly converted to the view that, after mobilizing the colon widely and resecting the carcinoma, doing this, of course, with a large margin of safety as far as the extent of the excision is concerned, the proper technic is to close both ends of the intestine by crushing, ligating and invaginating with Pagenstecher linen, and then making a side-to-side anastomosis as we do in gastro-enterostomy (Fig. 4). The mortality, as I obtain the evidence from my own clinic and from the literature, is about one-half as great in properly performed side-to-side anastomoses as in properly performed end-to-end anastomoses of the large bowel, and because of that fact end-to-end anastomoses should be practically discarded.

TWO GROUPS OF CASES

In the practical handling of these cases we should, of course, divide these cancers of the large intestine into two distinct groups: first, those in which there are no obstructive symptoms, and second, those in which obstructive symptoms already exist. In those cases in which there are no obstructive symptoms, the case can be cleaned up in one operation by following the general principles of technic which I have just described: in carcinoma of the cecum or ascending colon, an oblique incision on the right side, with free mobilization of the colon up to the hepatic flexure, or even including the hepatic flexure if this is necessary, which is quite possible by our muscle-splitting incision carried well backward in the flank. In carcinoma of the hepatic flexure or upper part of the ascending colon or right portion of the transverse colon we employ our S-shaped incision on the right side; in carcinoma of the central portion of the transverse colon, a midline incision above the umbilicus; in carcinoma of the splenic flexure or in mobilization of the splenic flexure,



Fig. 2.—Incisions.

a large S-shaped incision on the left side; in carcinoma of the descending colon or sigmoid a large muscle-splitting incision on the left side.

Immediate closure in these cases should be made, with drainage well down through the peritoneum to the site of the anastomosis, with a small cigaret drain, which is to be left in place from twenty-four to forty-eight hours.

The cases of cancer of the colon that come to us with obstructive symptoms present a more difficult and complicated picture. If we have definite knowledge of the location of the carcinoma we can plan the colostomy, which is essential as a preliminary step, to the best advantage; for instance, if we know that the sig-



Fig. 3.—Mobilization of bowel.

moid is involved, we can employ the sigmoid or descending colon for our colostomy opening, if the colostomy is to be permanent. If, however, it is but temporary, a colostomy in the cecum is preferable, as it leaves us a free, clean field for the resection. When, however, there is any doubt as to the location, as I have just stated, we should make it a rule to make a right sided muscle-splitting incision and employ the cecum, ascending colon or the ileum. When the condition of the patient warrants, at the same time that the colostomy is made the hand should be introduced into the peritoneal cavity and a thorough exploration made to determine the exact location of the primary lesion and the question of metastases or radical lymphatic involvement. In some cases, however, when the condition of the patient is bad and the operation is performed under a local anesthetic, this general exploration of the abdominal cavity may be difficult or inadvisable. If the patient recovers from the obstructive symptoms after the colostomy is made, then a careful fluoroscopic study of the colon is later undertaken; and, if the condition warrants, later a radical resection is to be undertaken.

THREE-STEP OPERATION VERSUS THE MIKULICZ OPERATION

You will notice that I have not mentioned the Mikulicz operation as yet in this discussion. Many surgeons in handling cases of cancer of the colon employ the Mikulicz operation in a large percentage of their operations. I want to submit a plan we have adopted in our clinic which I believe is of much greater service than the Mikulicz operation. This is what we call the three-step operation. I can best describe it by giving the history of some of the typical cases in which we have employed this method.

CASE 1.—A year ago a woman, aged 40, was brought into our clinic with obstructive symptoms of a moderately severe degree. She was quite distended, although her general condition was fairly good. Fortunately, Dr. Ralph Brown had obtained a fluoroscopic examination and some roentgenograms of the case before the obstructive symptoms developed, and these revealed a filling defect about the middle of the sigmoid. Because of the obstructive symptoms I first made a muscle-splitting incision on the right side, brought up the cecum with our button suture, and performed the colostomy which I have described. Within four weeks she was in very good condition, the artificial anus functioning very satisfactorily, and she was in a condition to stand the radical operation of resection. I then made a muscle-splitting incision on the left side, resected the carcinoma, which was located at about the center of the sigmoid, and made a side-to-side anastomosis. She made an excellent recovery from this operation. Four weeks later, under a local anesthetic, I closed the colostomy opening on the right side. The patient is now in excellent condition, has regained her former weight, and has made a perfect recovery. She has on her abdomen two oblique incisions like appendix incisions, one on the right and one on the left side, perfectly clean, fine scars without any tendency to hernia or bulging, and she is, in fact, quite normal in every way.

CASE 2.—A man, aged 65, was brought into my clinic, the extreme picture of obstruction. We had absolutely nothing to guide us as to the location and cause of the obstruction. Under local anesthesia I made a right-sided muscle-splitting incision, found the enormously dilated cecum, and made a colostomy with our button suture method, with immediate relief by introducing a catheter into the caliber of the intestine. The man was in such a serious condition that it took six or seven weeks for him to recover sufficiently to warrant the radical operation. In the meantime careful examination revealed a small circular carcinoma at the splenic flexure.



Fig. 4.—Lateral anastomoses of colon at splenic flexure.

The second step in the procedure was an S-shaped incision on the left side, free mobilization of the splenic flexure and the transverse and descending colon, and resection of the carcinoma, and side-to-side anastomosis. Four weeks after the resection of the cancer the third step of the operation was performed, and under local anesthesia the colostomy was closed. He now has a perfectly clean scar like an appendix scar on the right side, and a perfectly clean S-shaped incision scar on the left side.

This three-step operation in the presence of obstruction to my mind is very much more satisfactory than the Mikulicz operation. It is, I believe, a safer procedure and one that is in no way blind. It secures immediate relief from the obstruction, it enables us to make a much more radical operation of resection of the carcinoma than does the Mikulicz, and it is much more satisfactory to the patient than the Mikulicz plan.

Carcinomas from the cecum to the lower part of the sigmoid, which can be handled after the method I have outlined and which are limited to the primary focus, give an excellent prognosis of permanent cure if early recognized and radically removed. Carcinomas of the rectosigmoid form a peculiar, unfavorable group both from the standpoint of the practical management of the operative technic and from the standpoint of ultimate prognosis. I have here run the gamut of the various methods that have been advocated. I am now in a position to present my views without having any longer much question as to the best plan of procedure. My views are these: that in carcinoma of the rectosigmoid a wide mobilization through the abdomen should be undertaken, the carcinoma removed, a left inguinal colostomy made, when feasible the rectum invaginated and excluded from the peritoneal cavity by purse-string sutures, and when advisable, of course, from the extent of the involvement, removal of the entire rectum. One must use good judgment in determining this matter. There is nothing to be gained by the removal of the lower 4 or 5 inches of the rectum which is in no way involved. If the carcinoma of the rectosigmoid is limited and can be completely removed, the lower portion of the rectum should be allowed to remain.

In carcinomas of the rectum itself we are employing with great satisfaction, if the carcinoma does not extend up into the bowel more than 3 or 4 inches and is not too extensive, a method of splitting the rectum posteriorly after removal of the coccyx, bringing the entire operative field will into view and in just the same control as one might an epithelioma of the lower lip, then cutting out the lesion with the electric cautery, saving as much of the rectum as is absolutely free of disease, closing with catgut suture the raw surface from which the carcinoma has been dissected, packing with iodoform gauze, and obtaining, as we must necessarily in these cases, wound healing by granulation. We have been gratified to find what good control the patients have secured after very extensive local operations for carcinoma of the lower 3 inches of the rectum. These operations are, of course, of the atypical type. We have a number of patients who have been operated on two, three, four and five years ago and who report to us regularly that they are free from recurrence and that they have very satisfactory control.

Finally, there is a limited group of cases in which the rectum is so extensively involved that the best procedure seems to be a Kraske operation, with complete removal of the rectum and the making of a sacral anus. We have learned, as other surgeons have learned, not to force the Kraske operation to cover too extensive a field and to attempt to remove not only the rectum but the rectosigmoid and part of the sigmoid itself by this method, because although most of the patients survive and many give very satisfactory results, there is too great a possibility of necrosis from cutting off of the blood supply when this is undertaken. Such cases are preferably handled through the abdominal route.

One final word from our experience, regarding the tube resections that seem so attractive on paper and have been so widely employed: Our own experiences have been that although we have had some very satisfactory results, on the whole the tube resection should be discarded.

CANCER OF THE RECTUM*

G. W. CRILE, M.D.
CLEVELAND

The ideal for the surgical treatment of cancer of the rectum, as of any other pathologic condition, is maximum operability, maximum percentage of permanent cures, and the reduction of the immediate mortality to zero.

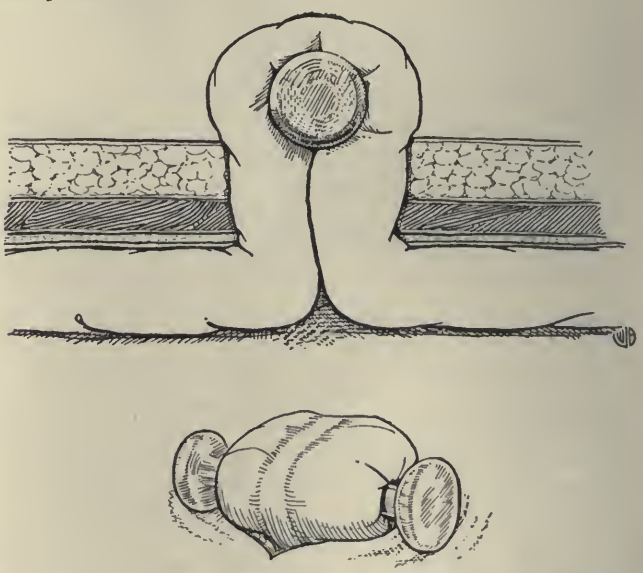


Fig. 1.—Angulation of colon by short flanged glass tube.

The possibility of a permanent cure of cancer of the rectum by operation depends more on the stage at which the case is presented for operation than on even the most thoroughgoing technic; but maximum operability, which means a safe operation with the removal of the maximum amount of tissue surrounding the cancer, is a possible attainment.

To cancers which involve the lumbar muscles, which penetrate the bladder, which involve the liver, etc., operability does not apply. Such cases are inoperable. When we speak of increased operability we mean that the technic has been so improved that all but the anatomically inoperable are given the maximum chance for survival.

We believe that this implies such surgical control that any method—the posterior, the combined, the abdominal—may be used with equal facility to afford the maximum chance of permanent cure.

The evolution of the management of these cases has followed lines analogous to those by which the management of exophthalmic goiter cases was developed; that is, the operation is individualized—

* Read before the Section on Surgery, General and Abdominal, at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

the type of operation and of postoperative care follows the anatomic and pathologic indication. In brief, procedures follow indications—not rules.

Reports of mortality attending operations for cancer of the rectum are given in the accompanying table.

RADICAL OPERATIONS FOR CANCER OF THE RECTUM

Reporter	Date of Report	Number	Mortality, per Cent.
I. STATISTICS COLLECTED BY VARIOUS REPORTERS			
Tuttle (Table I)	To 1885	487	22.4
Tuttle (Table II)	1885-1892	512	20.0
Tuttle (Table III)	1892-1897	259	11.7
Ball	1896	175	16.5
Billroth	1896	608	53.0
Gross	1896	193	20.0
Kelsey	1896	140	15.7
MacCosh	1896	439	19.1
Veljaminoff	1896	335	20.5
Krönlein	1900	881	19.4
Hartwell (group of N. Y. surgeons)	1905	46	20.0
Chalier and Perrin	1913	208	40.86
Hartman	1913	1,665	15.8
J. M. Lynch	1918	335	16.0
II. INDIVIDUAL STATISTICS			
Kraske	1892	80	18.7
Poppert	1906	63	6.3
Rotter	1906	42	4.8
Cripps	1907	85	4.7
C. H. Mayo (Mayo Clinic)	1916	430	15.5
C. H. Mayo (Mayo Clinic)	1916	(1913-1915)	12.5
Bull	1919	44	11.4
G. W. Crile and associates	1920	72	9.7
G. W. Crile (personal, last series)	1920	20	0.0
III. TOTAL SERIES OF OPERATIONS FOR CARCINOMA OF THE RECTUM, INCLUDING COLOSTOMIES FOR OBSTRUCTION			
G. W. Crile and associates	1920	158	12.5
G. W. Crile (personal, last series)	1920	38	0.0

A critical examination of the causes of death as reported in the literature and as found in our own series showed that the principal cause was not hemorrhage or shock, but that death was generally due to infection and to the absorption of the toxins of feces. A laboratory investigation showed clearly that the effects of the injection of the toxins of feces were surprisingly poisonous. This fact, associated with the fact that there exists a large surface for absorption in the field of operation, gave an important clue. It followed that the first surgical step should be the complete diversion of the fecal stream by a preliminary colostomy. This is usually performed under analgesia and local anesthesia, and causes but little depression. We are satisfied that the best colostomy is of the Littlewood type, i. e., an intramuscular incision below the border of the ribs. The Sistrunk technic answers well also. The incision for the colostomy is made large enough to ascertain whether or not there is involvement of the liver or of the lymphatic glands, as well as the extent of the local invasion. Of prime importance is the management of the colostomy so that every particle of the fecal stream is diverted and none passes through the rectum. This is accomplished by a sharp angulation of the colostomy, which is secured by the insertion of a short flanged glass tube under the loop of colon and on the surface of the skin (Fig. 1).

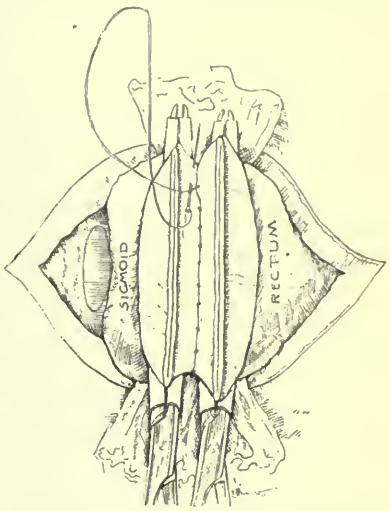


Fig. 3.—Technic of excision of the rectum: continuous right angle stitch.

At the end of a week, or as soon as both the local and the general conditions warrant it, the major operation is performed (Figs. 2-6). Whether the technic is intra-abdominal or posterior or the combined operation, a wide excision of the growth and of the surrounding structures is made. If an end-to-end anastomosis is made, a rectal tube (Mayo) is passed through from the anus. Infection of the field is at first controlled by means of packing with iodoform gauze well wrung out; but as soon as the suture line is secure, the Carrel-Dakin method is employed. The wound must be kept clean at all times. Because of the colostomy, nourishment need not be suspended and the bowels may move.

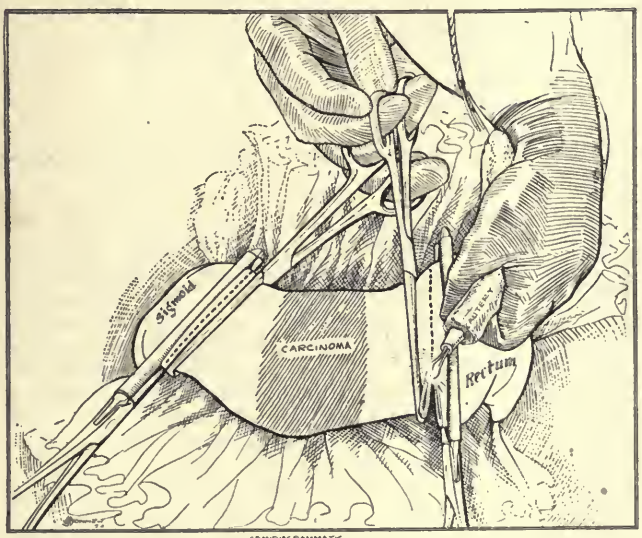


Fig. 2.—Technic of excision of cancer of the rectum: excision of carcinoma.

If the operation is extensive and of a nature to presuppose the development of peritonitis, or should peritonitis unexpectedly appear, the opium-water-posture-heat method is at once inaugurated. This method is all but specific.

Should there be secondary anemia, a blood transfusion is made promptly without waiting to discover whether the patient is going to do well or ill. As in the treatment of shock, it is a grave error to allow a patient to remain in a state of low blood pressure in the hope that he will improve through his own resources, reserving a blood transfusion to be used as a last resort after it has become apparent that the patient is going to die.

Should healing be retarded, a blood transfusion is made.

Whatever his condition, the patient is given the benefit of a dietetic and hygienic regimen identical with that for tuberculosis—forced feeding and fresh air in abundance.

When the intestinal healing is complete, and not until then, the temporary colostomy is closed by a plastic operation and the sigmoid loop dropped back into place.

Our confidence in the value of these procedures is based on a comparative study of seventy-two opera-

tions for cancer of the rectum performed by my associates and myself with a mortality rate of 9.7 per cent.

My series, since the foregoing plan has been followed, consists of thirty-eight operations, twenty of which have been radical with no death.

The end-results of this series will be reported in a later communication.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. BEVAN AND CRILE

DR. DANIEL F. JONES, Boston: Dr. Bevan brought out points which will help to lower the mortality from carcinoma of the colon. There are two principal reasons for the great improvement in our statistics: first, the mobilization of the colon, for which, I believe, Dr. Mayo is responsible, and, second, providing a safety valve which Dr. Bevan does by a colostomy or a cecostomy. There are several other methods of obtaining relief from gas above the line of sutures; one is an enterostomy by the Witzel method, as suggested by Dr. Charles Mayo; another is by putting a tube through the anastomosis from the anus. No improvement has been made in the great majority of surgical conditions, except through the cooperation of the general practitioner. We talk much about the improved technic of operations for acute appendicitis as being responsible for the lower mortality rate, but, as a matter of fact, the real reason is that the family physician sends these patients to us early. Our results in cases of carcinoma of the colon and rectum will be bad until the family physician sends these patients to the surgeon early. The general practitioner cannot be expected to make a diagnosis of carcinoma of the colon, but if he knows the suggestive symptoms, he can send the patients to some one who can make the diagnosis, and then early operation can be made. In many parts of the country the general practitioner takes it on himself to determine whether the case is an operable one or not. He usually determines that it is not operable. The surgeon is the only one to determine this question, not the general practitioner. Dr. Crile leaves no room for argument. Statistics are of little value, however, unless it is known in what percentage of cases seen by the surgeon an operation was performed. For instance, Cripps saw 409 cases and operated in 100. His percentage of cures was very high, and his mortality was low. Dr. Crile is right in suggesting that a colostomy be done first, as in carcinoma of the colon. In the combined two-stage operation, the colostomy is always done as the first stage; this gives an opportunity to remove the rectum at the second operation with very little disturbance to the patient. The convalescence is made safe by keeping the wound in good condition by the use of the Carrel-Dakin method. Dr. Crile's record of twenty cases without a death is very remarkable. I think we can all approach this, however, if we carry out his suggestions.

DR. WILLIAM J. MAYO, Rochester, Minn.: There is no doubt that the principles Dr. Bevan laid down and Dr. Crile's advice with regard to the care that should be given these patients after operation will improve results in these cases materially. The question of operability is interesting. In most large hospitals the patients are sent in for operation not by skilled men of large experience, but by men of less experience, and a very large percentage are sent home from the dispensary as hopeless cases. I think that this is true of practically all the large hospitals of this country in the ordinary dispensary form of examination. In our early work in this field we had a low mortality, about 5 per cent., and a high percentage of cures, between 50 and 60; but 75 per cent. of the patients who came to the clinic, taking them as a whole, were sent home as hopeless cases. Only thirteen of one hundred patients were alive and well after five years, and we had the paradox of a low mortality and a high percentage of cures, yet few cures. We increased operability up to an average of 70 per cent. and we had twenty-seven instead of thirteen patients alive at the end of five years, but the mortality percentage had gone up and the cures had come down. It is difficult to study this question from the standpoint of mere incidence of mortality. The patient and the patient's family and the friends are not very happy over a permanent colostomy, and when the patient is told that by a permanent colostomy the mortality will be reduced about 10 per cent., he will take the increased risk if he has a reasonable chance of having his bowels move in the normal manner. It is a fact that the price the patient must probably pay for the opportunity to recover from the operation and remain well is a permanent colostomy. I shall look into the operation described by Dr. Bevan with great interest because he says function is preserved. I have had many patients who after radical operation have a controllable anus in the normal situation, and are alive and well for many years. For the present, a permanent colostomy will be necessary in the majority of cases, but earlier operation and better technic will secure more desirable results.

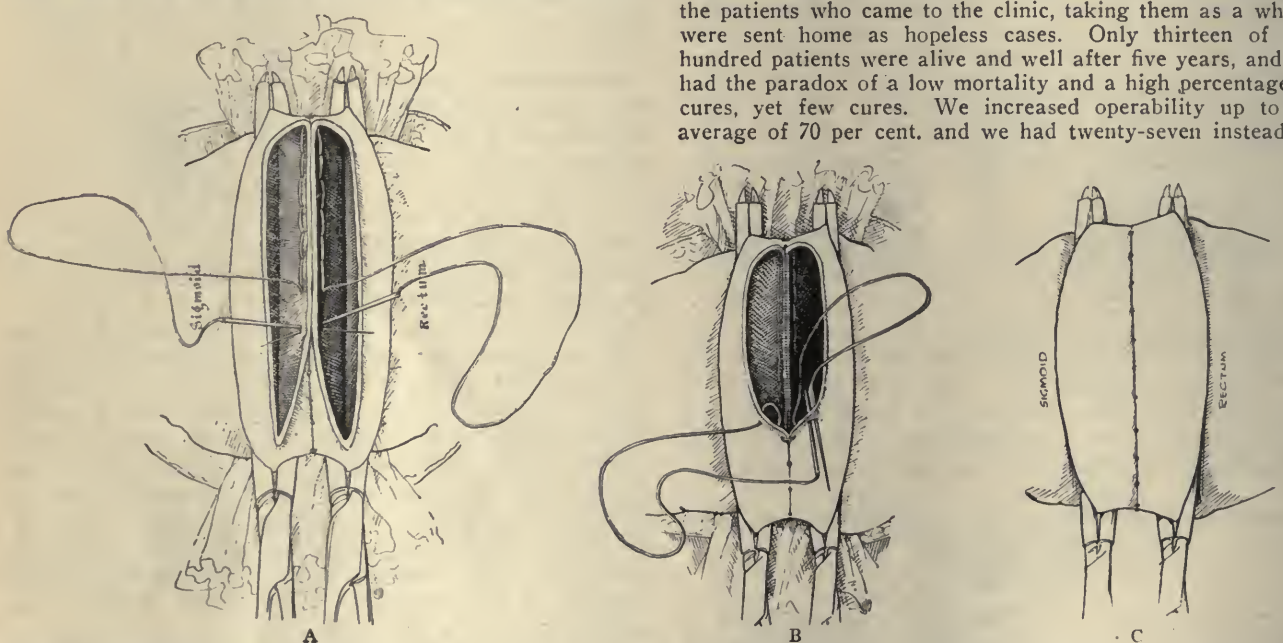


Fig. 4.—Technic of excision of cancer of the rectum: closure of end-to-end anastomosis; *A*, cobbler stitch (Step 1); *B*, cobbler stitch (Step 2); *C*, cobbler stitch complete.

DR. H. J. WARING, London, England: Dr. Bevan's paper bears out to a great extent my experience. In my early days of surgery, I found that in carcinoma of the large intestine, if one attempted resections with end-to-end anastomosis the mortality was very high. I soon learned, however, that one of the main causes of this was the inability of the bowel in which there is obstruction to join on the part in which there

is no obstruction. So I early adopted the principle of making a colostomy on every patient who had a growth in the large intestine. Two of the incisions I made resembled those of Dr. Bevan's, one on the right side and the other on the left side, an oblique muscle splitting incision. In the upper one I did not make an S-sharped curve. I almost invariably make a vertical incision within the lateral margin of the rectus abdominis, splitting the posterior sheath. I have found by experience that in the majority of cases this incision gives a strong abdominal wall. I also adopted the third method: first, colostomy; second, excision of the growth, side-to-side anastomosis and later closure of the colostomy. I cannot give statistics from memory. All I can say is that the mortality has been decreased enormously. As regards the surgery of carcinoma of the rectum, I have had to a considerable extent the experience of Dr. Charles Mayo. In England, whether it is owing to the inferior education of a considerable number of the general practitioners, or because of the desire of the patient not to come under observation at an early stage, a very large proportion of patients come at a late stage of the disease. When an inguinal colostomy is done, an incision is made to introduce the hand into the interior of the abdomen to make out the primary disease and secondary invasion in the adjacent structures. When that has been done, the decision is made as to what the further procedure shall be. In regard to the method of colostomy, I always create a well marked curve. I generally bring the colostomy mattress suture behind the bowel and bring the loop of the bowel over, putting in two sutures. Mr. Harrison Cripps, whom I assisted for some time, selected his cases carefully. His operations were done entirely by the peritoneal route, except in well localized cases of the disease. If the growth was adherent to parts around or extended beyond, and was not freely movable, then an excision was not done, but a colostomy.

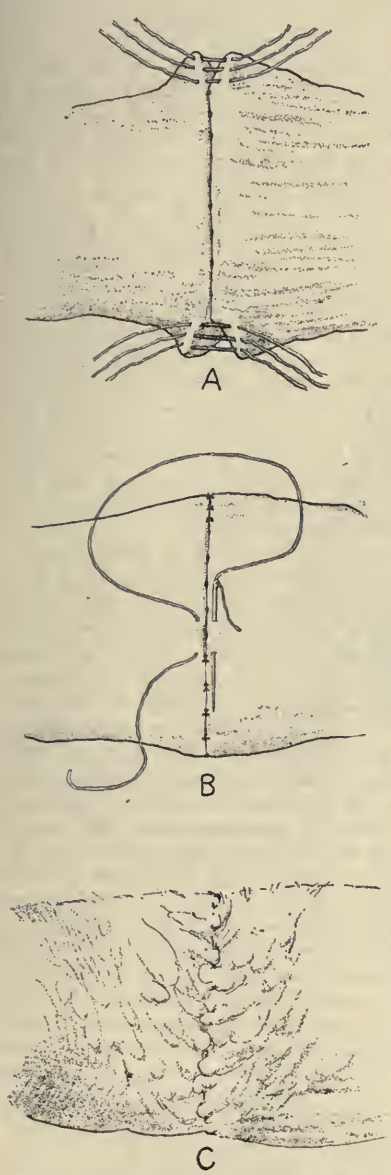


Fig. 5.—Technic of excision of cancer of the rectum: closure of end-to-end anastomosis; *A*, stay sutures; *B*, interrupted right angle stitch over cobbler stitch; *C*, complete anastomosis.

DR. GEORGE W. CRILE, Cleveland: Inasmuch as I did not describe the technic, I may have left the erroneous impression that the colostomy is permanent. This is not so; the colostomy is merely temporary. At the resection an end-to-end anastomosis is made, and cutting off the entire fecal stream at a point above is vitally important, especially when the posterior operation is performed, which leaves a large absorption area. After the anastomosis is healed, then, as Dr. Bevan has described, the temporary colostomy is closed and returned. I do not advise operation in the following groups of cases: first, if there is any involvement of the liver; second, if there is penetration into the bladder or prostate, and, third, if the penetration goes into the lumbar muscles. In the absence of these conditions I always attempt a radical cure. By assembling a plan of procedure by means of which the operation is rendered relatively safe we are able to extend the operability accordingly and to widen the scope of operation. Only in exceptional cases have I failed to secure anastomosis of the intestine and normal defecation.

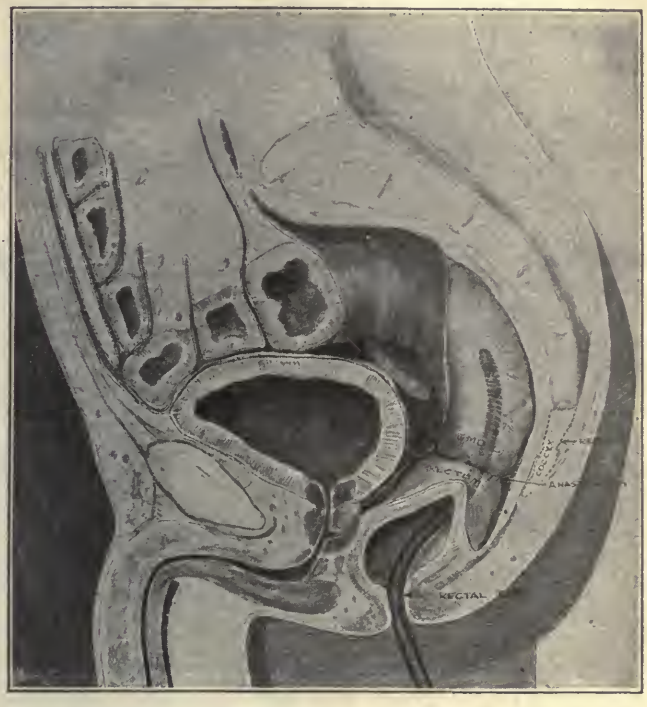


Fig. 6.—Technic of excision of cancer of the rectum: carcinoma of the rectum excised; sigmoid secured to rectum by cobbler stitch; rectal tube inserted.

FEMORAL HERNIA OF THE OVARY*

W. W. GRANT, M.D.
DENVER

The subject of femoral hernia of the ovary has received, it would seem, less consideration than its importance requires. The condition is probably more frequent than the few reports indicate; yet, at best, it is not of common occurrence.

The decadence of diagnostic skill and efficiency, in general, and the subordination of clinical investigation of disease phenomena to laboratory tests and instruments approaching scientific precision doubtless account in a measure for this condition and for many unnecessary errors in the practice of medicine and surgery. Yet it is to be remembered that, especially in ovarian hernia, there is no absolutely conclusive evidence of the contents of the sac, short of demonstration by operation.

Prolapse of the ovary is not hernia. The very rare forms of ischiatic and obturator hernia of the ovary are chiefly of academic interest. For those who may be interested enough to pursue the literature of the

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

subject and to read the most complete reports and outlines of the subject yet made, I may refer to the paper by Robert Barnes[1] of London, and to the most thorough compilation from 1890 to 1910 from the French, English and German, by Heineck[2] of Chicago, while the very interesting paper by Barnard Fuller[3] of London on "Femoral Hernia" should receive special mention. A few other miscellaneous reports are found in current literature.

Of thirty-eight cases tabulated by Englisch, twenty-seven were inguinal and nine femoral. Of 137 cases reported by Heineck, only thirteen were femoral. It is clearly manifest that most cases are of the inguinal variety—eight times as many as of all others—and it is not common; while the crural, from experience and by record, is rare. It is usually unilateral. The predisposing cause is the persistence of the canal of Nuck occupying the analogous position of the processus vaginalis in the male. It occurs generally after the postpartum period of life. A lax mesentery and stretching and mobility of the broad ligaments by pregnancy is probably a contributory cause. The immediate exciting cause is increased intra-abdominal pressure due to a variety of well-known causes. The points of least resistance fail first. When the tube is present in femoral hernia it is considered congenital. The herniated ovary may be normal or pathologic.

I report two cases operated on for ovarian hernia in the crural canal, but I have under observation two other cases of femoral hernia in which the clinical history of each is such as to satisfy me that both are cases of uncomplicated ovariofemoral hernia. One, a woman of 77, has had femoral hernia, right side, for ten years, and until the last two years it would easily protrude and be just as easily reduced by the patient. Two years ago its occurrence resulted in pain and some inflammation, which produced a certain amount of constriction and fixation by adhesions. In this condition it remains and gives practically no trouble. Operation was declined. She has had two children. It is a small, almond-shaped body and could easily be outlined.



Fig. 1.—Follicular ovarian cyst, natural size, removed from patient: *A*, ovary; *B*, omentum; *C*, cyst.

The other is a married woman of 35, having no children; the hernia comes and goes with lifting, but is returned without difficulty. I have examined the patient carefully when the mass protruded through the femoral ring. The objective examination and its shape and size indicate that it is ovarian. In neither of these cases was there ever any evidence or indication of intestinal constriction or of a mass of omentum, which I would hardly expect to exist alone or as an uncomplicated hernia of the femoral canal.

1. Barnes, Robert: Am. J. Obst., January, 1883.
2. Heineck: Surg., Gynec. & Obst. **15**, 1912.
3. Fuller, Barnard: South African Med. Rec., September, 1919.

REPORT OF CASES

Case 1.—Mrs. L. J., a widow, aged 37, mother of two children, had been troubled with a periodic protrusion of a small mass at the upper and inside of the left thigh for two or three years. There was no pain or discomfort, except when it protruded; but finally it became nonreducible, because of mild inflammatory attacks. On examination at different times, I found always a small almond shaped mass in the crural canal. I thought it probably ovarian and advised operation, which was performed at St. Luke's Hospital, Jan. 23, 1917. I removed a small, somewhat atrophied ovary, which was confirmed by histologic examination, though it was macroscopically manifest. The patient is a domestic—cooks and does general housework. I see her not infrequently—the last time two months ago—and she has had no recurrence and feels perfectly well. The surgical technic is described in Case 2.

Case 2.—Mrs. S., a widow, aged 56 years, mother of two grown sons, did ordinary housework in her own home—often washing clothes, etc. According to her statement, in 1892 while carrying a 2 year old child, she slipped on the ice and it was then the hernia occurred; she suffered for several days from it and it was then she got a truss and wore it from then until I operated on her. It never gave her much trouble until (she called Dr. Faith) in August, 1916. It was about five years ago that she noticed the enlargement or tumor just below the hernia. It never gave her any distress except when the truss would slip out of place; then the hernia would come down and give her pain; she would have to put it back and adjust her truss to hold it back. It was April 9, 1919, that it came down permanently and she could not get it back. It never gave her trouble in urinating, or at menstruation time.

April 17, 1919, she was sent to me for operation. Examination revealed a steel spring truss applied to the left groin. The marked depression and discolored, atrophied skin showed that she had worn it faithfully. The mass in the femoral canal could be fairly outlined. The tenderness and discomfort had been aggravated by recent efforts at reduction. From its doughy feel on palpation, with no evidence of intestinal involvement, I thought the tumor at least partly omental. I operated the following day, April 18, at St. Luke's Hospital, by making the usual incision slightly below and parallel to Poupart's ligament, though making a slight downward curve over the tumor, and turned the skin flap up a short distance above Poupart's ligament. The sac and tumor were easily exposed, but I found it necessary, in order to dislodge the tumor, to make a downward incision, 2 inches long, from the inner angle of the primary incision over the pubic spine; with this the mass was easily delivered. It had passed partly out of the saphenous opening. The normal ovary was lying just below the femoral ring, with the omentum greatly constricted by the ring. The omental mass was next in order, and at the lower end was the follicular ovarian cyst. The mass measured 5 inches in length. The fringed edge of the capsule divided in the operation may be likened to the fimbriae of the tube, but the latter was not involved in the hernia. The ovarian pedicle and constricted omentum were ligated separately and the stump of each returned to the abdomen by finger pressure without any difficulty. The sac was transplanted and pouched by making a short incision one-half inch above Poupart's

ligament; and curved pressure forceps guided by the index finger in the ring were forced from above through the ring—the fundus of the sac grasped and pulled out of the wound above the ligament. Under moderate stretching the sac was ligated close to the fascia with No. 1 chromic gut and cut off. The same ligature was now armed with a short full curved needle and the incision closed over the stump, which was forced just beneath the surface. It was fixed at this point. This technic, it is claimed by Kocher, with reason and extensive experience, removes from the ring, whether femoral or internal oblique inguinal hernia, a weak point, which remains when the stump of the sac is left in the ring. I closed the ring with two silk stitches through Poupart's and Gimbernat's and Cooper's ligaments, and then with chromic gut, passed first through Poupart's ligament from without inward and the fascial tissues gathered in purse string suture and the needle carried back through Poupart's ligament, this time from within outward and near the primary insertion. Traction on the two ends now pulls the puckered fascial tissues directly to the ring, which closes the canal as well as the ring and, in my opinion, makes a stronger, more effective and durable barrier against recurrence than is afforded by the usual methods of operation and of even the normal crural septum. It is simple—not so elaborate as when Poupart's ligament is divided and the inguinal canal exposed and, it seems to me, it adds a desirable finishing touch to a delicate and important procedure. The 3 or 3½ inch incision gives, in most cases, ample room in which to expose the sac and the ring, and to apply sutures. The skin wound was closed with a running stitch of chromic gut, though I usually use for this purpose a subcuticular stitch of silkworm gut. The patient is perfectly well, with no discomfort or sign of recurrence.

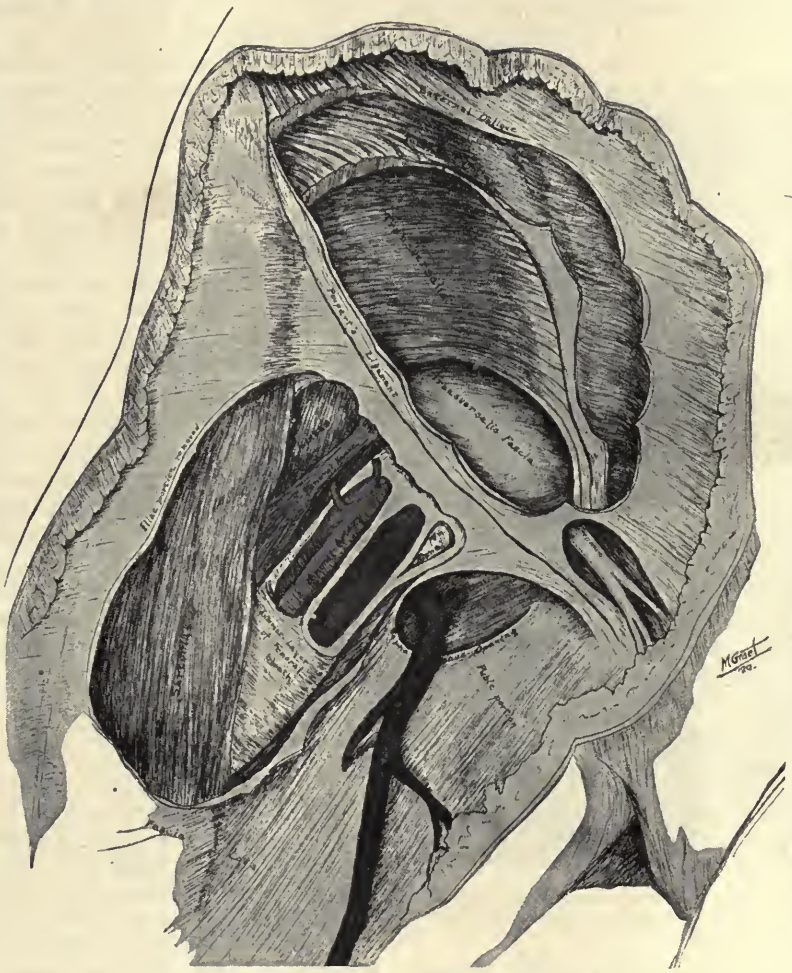


Fig. 2.—Anatomy of the inguinofemoral region.

COMMENT

The unusual and interesting features of this case encourage its report in such detail as seems necessary to a satisfactory presentation of the case as well as of the subject. It will be noted that this woman wore a truss constantly for twenty-five years for a hernia—the most difficult and intractable of all hernias to treatment by a truss, and that only on two occasions (August, 1916, and April, 1917) after the initial stage, did she have any attacks of pain. Whether the hernia was ever completely reduced is a matter of conjecture, but it is certain that it had not been since she noticed and felt the tumor in the thigh five years previous to operation, during which time the cyst doubtless developed.

No reducible, herniated ovary should be removed during the child-bearing period if it can be effectively replaced within the abdomen and its recurrence prevented by operation. At other times and when required by pathologic considerations, its removal is advisable.

In all operations for femoral hernia, the relation of the femoral vein to the ring should ever be in the mind of the operator.

The two chief characters of the Kocher technic in crural and inguinal hernias are the transplanting and pouching of the sac and the use of nonabsorbable stitches in the repair of the posterior wall and in the closure of the crural ring in femoral hernia.

At the Fort Logan Recruiting Depot in the spring of 1918, I operated in 110 cases of hernia, most of them oblique inguinal with well formed sacs, only three femoral and two of these long standing, with distinct sacs. In all such cases I employed the Kocher technic with such varying modifications suitable to the individual cases as not infrequently invites the initiative of the surgeon.

I do not believe it usually necessary to open the inguinal canal, or to divide Poupart's ligament in femoral hernia as introduced and advocated by Kammerer in the Lotheisen operation, nor that of Moschcowitz and others who proceed from above downward, opening the inguinal canal and dividing Poupart's ligament. This might be necessary in exceptional cases of strangulated hernia. The Bassini method is simple, but leaves the stump of the sac in the ring; and Bassini closes the canal by cross stitches, while Macewen makes a pad of the sac as in inguinal hernia.

I do not share the objection to the use of the nonabsorbable stitch on the ground that it may become infected and have to be removed. Infection is usually fatal to the perfect success of any procedure in plastic surgery, but silk and linen should be the last material to introduce it. The surgeon should have more confidence in their sterility, obviously it seems to me, than in any form of catgut. He can, as is my custom, resterilize the former at the moment of operation, and if the field of operation and everything else is aseptic, there should be no fear of infection or of the future of the silk.

Especially in hernia operations, subjected as the parts are to constant intra-abdominal pressure of

varying degree, it is of unusual importance that the reconstructed canals and rings should be strongly supported until the fascial tissues especially are in a perfect state of repair; and this does not occur within ten days. But I do not think the permanent nonabsorbable stitch necessary in ordinary abdominal wounds for the usual intra-abdominal conditions.

325 Mack Building.

ABSTRACT OF DISCUSSION

DR. GEORGE H. LEE, Galveston, Texas: Femoral hernia is usually stated to form about 10 per cent. of all hernias. It is probably never congenital, being the result of the relaxation of late adult life and intra-abdominal pressure, and it has been frequently connected with childbearing. Dr. Grant says that there is no conclusive evidence that enables a diagnosis to be made definitely before operation, and yet two of his patients have not been operated on and the data he gives in connection with those cases would seem to fully substantiate his diagnosis. The diagnostic symptoms are the presence of a movable or immovable, more or less almond shaped and almond size body, tender on pressure and producing nausea if firmly pressed. When the hernial contents include also omentum, intestine or a cyst, as in one of Dr. Grant's cases, the diagnosis is correspondingly difficult and indefinite.

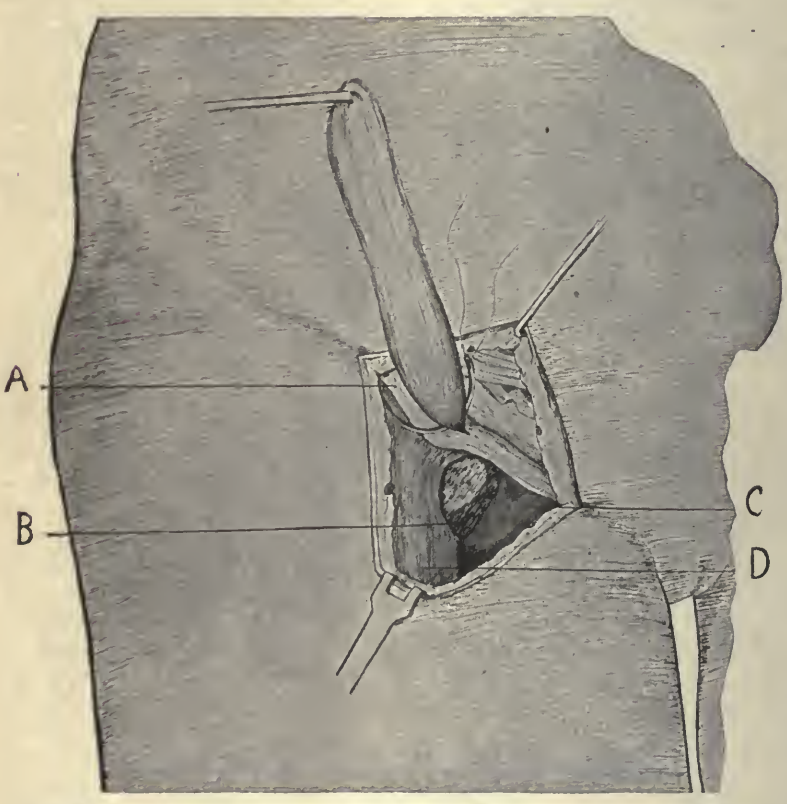


Fig. 3.—Transposition method in the radical treatment of femoral hernia (Kocher): *A*, Poupart's ligament; *B*, crural canal; *C*, pectineus fascia; *D*, femoral vein in sheath.

DR. WILLIAM W. GRANT, Denver: I think the cyst was follicular ovarian, because of its position at the time of operation and the fact that the content was a clear whitish liquid. I was careful not to attempt to free the cyst from the mass, because of the danger of rupturing it, and I was anxious to preserve it intact. In reference to the contents of the hernial sac: It is not difficult when it is a simple uncomplicated ovarian hernia of the femoral canal, but when complicated with other pathologic contents these cannot be differentiated, except by operation. . None of the cases reported presented any symptoms whatever of bowel strangulation or constriction; therefore it was not difficult to exclude the intestine. The case from which the specimen was removed was unusual. I have never seen any such specimen in either femoral or inguinal hernia. The neoplasm is especially an interesting feature.

RELATION OF HYPERPLASIA OF ENDOMETRIUM TO SO-CALLED FUNCTIONAL UTERINE BLEEDING*

EMIL NOVAK, M.D.
BALTIMORE

In most cases of uterine hemorrhage a definite anatomic cause can be found in the internal generative organs—the uterus, the tubes or the ovaries. With amenorrhea, by contrast, the cause is most frequently of a constitutional nature. In a certain proportion of those cases of uterine bleeding which are due to frankly anatomic causes, the mechanism of the abnormal hemorrhage is clear. This is preeminently the case with such destructive lesions as cancer, in which the bleeding is quite easily explained by the actual opening up of blood vessels, as a result of ulcerative processes.

In a second group of cases, bleeding is associated also with gross disease in the pelvis, but the explanation of the mechanism involved is not so clear. This type is well illustrated by the ordinary form of pelvic inflammatory disease. Is the menstrual excess which is so often seen in these cases due merely to an exaggeration of the normal menstrual hyperemia, or is it to be explained, as some assert, by a more fundamental disturbance of the function of the ovary, which is so commonly involved in the inflammatory process? There is no little evidence to support the latter point of view, which has been championed by Hitschmann and Adler.[1] For example, hemorrhage is frequently absent, even in the most severe cases of adnexitis, in which a high grade of pelvic hyperemia is present. On the other hand, it is frequently present in old low grade inflammatory conditions, in which there is little or no active hyperemia. Hemorrhage is certainly not due to hyperemia alone, for it is unusual at any other time than at the menstrual periods. Furthermore, pelvic inflammation does not tend to cause uterine bleeding after permanent cessation of ovarian function, that is, after the menopause. As a matter of fact, it is difficult to conceive how even the most intense hyperemia of the uterine mucosa could in itself cause bleeding on the scale so often observed in cases of menorrhagia. It is suggestive, also, that removal of the ovaries will always check bleeding in this class of cases. Many other facts might be adduced to lend weight to the contention that the abnormalities of menstruation so frequently associated with pelvic lesions are probably to be classed as functional, in the sense in which this much abused term is usually

* From the Gynecological Department of the Johns Hopkins University Medical School.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Hitschmann and Adler: Arch. f. Gynäk. **100**: 233, 1913.

employed. There is nothing surprising in this explanation when we bear in mind that the normal hemorrhage of menstruation is universally conceded to be due to the internal secretion of the ovaries.

CLINICAL CHARACTERISTICS OF FUNCTIONAL UTERINE BLEEDING

The type of functional hemorrhage with which I propose to deal in this paper, however, embraces a much more limited group of cases—those in which no demonstrable pelvic disease exists. Hemorrhage of this functional, idiopathic or essential type, as it has been variously called, is especially common at puberty (hemorrhage of puberty) and at the menopause (climacteric or menopausal hemorrhage). By far the largest number of cases is observed at or about the menopausal age. The great practical bearing of this fact is obvious, in that one is frequently called on to distinguish between functional hemorrhage and that due to early carcinoma. This distinction is usually possible by means of, and only by means of, the microscope. Although most common at the two extremes of menstrual life, functional uterine hemorrhage may occur at any period during the reproductive life of the woman. The bleeding is characteristically of the type of menorrhagia, rather than metrorrhagia, although the latter occasionally occurs. In some of these cases, however, the metrorrhagia is apparent rather than real, the menstrual periods being so much prolonged that bleeding is practically constant. In itself there is no pain associated with this form of uterine hemorrhage. It is interesting to note that in these cases menstruation is often delayed, and it is not infrequent to observe periods of amenorrhea, lasting, in some cases, as long as several months. Many factors have been invoked in the effort to explain bleeding in cases of this general type—arteriosclerosis of the uterine vessels, the "insufficientia uteri" of Theilhaber, and other theories.

HYPERPLASIA OF THE ENDOMETRIUM

The first point which I should like to emphasize is that a very common histologic finding in these so-called functional cases of uterine bleeding is the condition designated as hyperplasia of the endometrium—one of the most distinctive of all lesions of the uterine mucosa. The term should not be confused with the older designations of hyperplastic or hypertrophic glandular endometritis, terms which have become obsolete since the advent of our newer knowledge of menstrual histology. Hyperplasia of the endometrium, in the sense in which the term is here used, is a condition which was first described, with remarkable accuracy, by Cullen,[2] as far back as 1900. Since then this author has called attention to the condition in various publications, which I[3] reviewed in a previous paper on this subject. In hyperplasia there is, as the term indicates, a genuine proliferation of the endometrium —an increase in both its epithelial and stromal elements. As a result of this hyperplasia a characteristic pattern is produced.

The epithelium is thickened and compact, and at times two or more layers may be present. There is no lack of uniformity of the cells, as in the case of carcinoma. The glands vary considerably in size; some are small, others are large and cystic, sometimes enormously so (Fig. 1). That these large glands are not to be looked on as retention cysts is evident from the fact that the epithelium, instead of being flattened out, is usually intact. The dilated glands are not usually scalloped, as they are in the stage of normal premenstrual hypertrophy; their walls are most frequently quite smooth, and of rather stiff, parchment-like appearance. The stroma is very abundant, dense and compact, resembling that normally found in the deeper layers of the endometrium. Its proliferative activity is attested by the not infrequent occurrence of mitoses, an otherwise rare finding in the stroma, except with malignancy. The proportion between glands and stroma varies in different cases and in different portions of the same endometrium. It is probable that these variations are in part due to mechanical factors such as the crowding into the uterine cavity of the overgrown endometrium. Not infrequently, large, hypertrophic glands are seen immediately beneath the surface, where, in the normal endometrium, one finds only the narrow necks of the uterine glands (Fig. 2). Thromboses are often observed, although their significance is not clear.

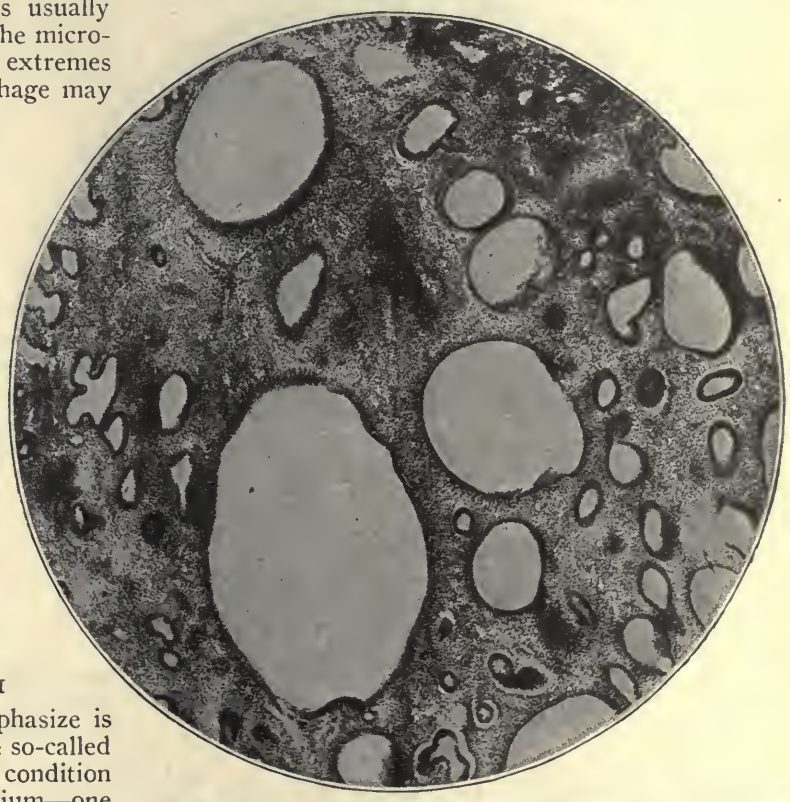


Fig. 1.—Hyperplasia of endometrium. The patient, aged 44, was subjected to curettage for profuse menorrhagia of eight months' duration. The pelvic organs were normal.

Grossly, the endometrium, with few exceptions, is much thicker than normal. At times it is so luxuriant and polypoid that curetting yields many drams of tissue, and the gross picture of malignancy is thereby closely mimicked. However, the microscopic picture presented in cases of hyperplasia is unmistakable in the outspoken case; certainly it cannot be confused with carcinoma. This is of much importance when we

2. Cullen, T. S.: Cancer of the Uterus, New York, D. Appleton & Co., 1900, p. 479; Ann. Gynec. & Pediat. **17**: 413, 1904; Adenomyoma of Uterus, Philadelphia, W. B. Saunders Company, 1908, p. 180; Canad. M. Assn. J. **3**: 658, 1913.
3. Novak, Emil: Am. J. Obst. **75**: 996 (June) 1917.

recall, as has already been emphasized, that both conditions are characterized by bleeding, occurring usually at or near the menopausal age.

THE FINDING OF HYPERPLASIA ONLY IN CASES OF BLEEDING

A large number of cases of hyperplasia of the endometrium have been encountered in the gynecologic department of the Johns Hopkins Hospital. In my own experience the condition has never been found except when uterine bleeding has been a symptom, the menstrual history corresponding to the description of the ordinary cases of functional uterine bleeding given in the foregoing. While seen most characteristically with the functional cases, it may be associated with lesions that are in themselves notorious producers of abnormal bleeding. It is not rare, for example, to find this endometrial condition in cases of myoma, and,

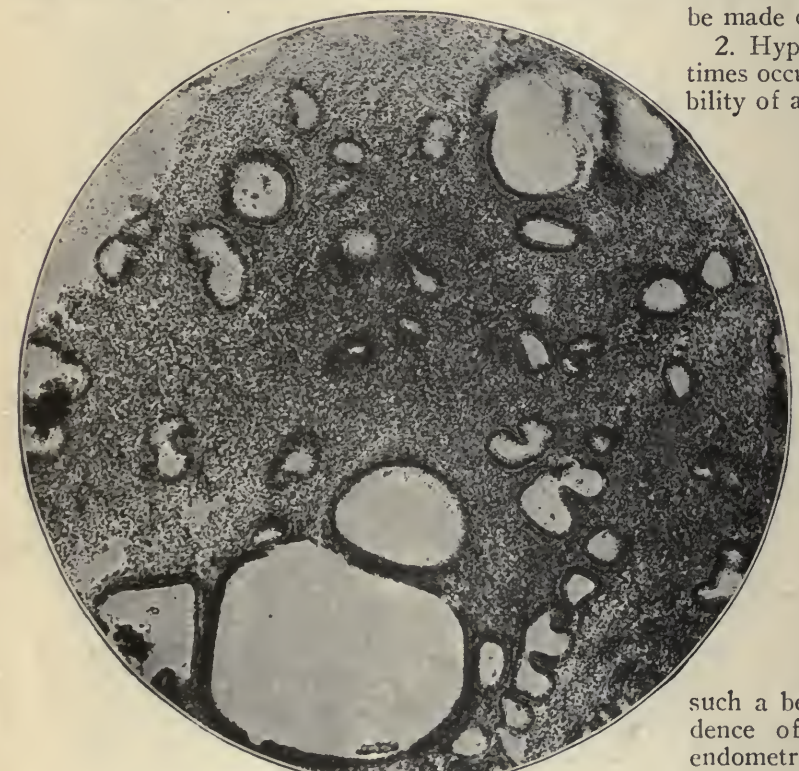


Fig. 2.—Hyperplasia of endometrium in a girl of 18 years. There was excessive menstruation, lasting often from three to five weeks, since inauguration of function at 14, and frequent amenorrheic intervals.

perhaps, even more often, with adenomyoma. There is nothing paradoxical in this fact, especially if we bear in mind the possibility, already referred to, that the uterine bleeding in many cases of pelvic disease may, in the last analysis, be due to a disturbance of the internal secretion of the ovaries.

THE RÔLE OF THE ENDOCRINE GLANDS

Cases of menopausal hemorrhage, as well as of the hemorrhage of puberty—the very cases in which hyperplasia is found on microscopic examination—are undoubtedly associated with endocrine disorders, even though the exact nature of the latter may be indeterminable in the present state of our knowledge. The finding in these cases of such a definite structural alteration as hyperplasia would seem at first sight to speak against the functional nature of the bleeding. We must bear in mind, however, that the endometrium is, as it were, only the creature of the ovary. Certainly the remarkable cyclic changes of the uterine mucosa which are associated with normal menstruation are directly due to the internal secretory activity of the ovary. If the latter is disordered, it is natural to assume that the endometrial response will also be abnormal. In the functional hemorrhage that we are now considering, the ovarian secretion is commonly believed to be disturbed, whether primarily or secondarily. The fact that the endometrium in such cases shows the typical hyperplasia suggests, therefore, that the latter may be merely the result of the disturbed endocrine function. A number of interesting facts bearing on this question may be submitted:

1. Functional uterine hemorrhage, as already stated, may occur at any age during menstrual life; but it is most common at puberty and the menopause, especially at the latter period. Exactly the same statement may be made of hyperplasia of the endometrium.

2. Hyperplasia with excessive menstruation sometimes occurs in very young persons, in whom the possibility of an inflammatory etiology may reasonably well be ruled out. Recently, I observed a typical case in a girl of 12 years, who had profuse uterine bleeding for three months. Figure 3 represents the microscopic picture of the endometrium from a girl of 18, on whom I recently performed curettage for severe menorrhagia of several years' standing. It will be seen that the pattern is identical with that shown in Figure 1, which is taken from a patient of 44. The occurrence of hyperplasia in these very young patients, together with the frequent presence, in such cases, of other endocrinopathic stigmas, points to a probable endocrine origin. The histologic picture described in the foregoing as characteristic of hyperplasia of the endometrium has been described by some as of inflammatory origin. Driessen,[4] for example, speaks of it as "endometritis necrobiotica." There does not seem to me, however, to be the slightest justification for such a belief. Certainly there is no microscopic evidence of inflammation in the typical hyperplastic endometrium.

3. It is only during the reproductive life of the woman—that is, during the period of ovarian activity—that both hyperplasia and functional bleeding are found. They disappear after the menopause, and may always be checked by removal of the ovaries. Occasionally curetting, in cases of uterine bleeding occurring several months after apparent menopause, may yield a hyperplastic endometrium. These cases are analogous to the not infrequent instances of pregnancy occurring after apparent menopause. They are apparently to be explained by the fact that cessation of ovarian function is not actually complete. Or, as Schröder [5] suggests, it is possible that the endocrine disturbance involves endocrine glands other than the ovary.

4. Hyperplasia and the associated menstrual bleeding are not usually cured by curettage. Observations on this point are still rather meager, owing to the fact that this endometrial condition has not as yet gained general recognition as a histologic entity. The results

4. Driessen: Zentralbl. f. Gynäk. **38**: 618, 1914.
5. Schröder: Arch. f. Gynäk **104**: 27, 1915.

of Schickele and Keller [6] are, however, of interest in this connection. Of 111 curettages performed for uterine bleeding, thirty-eight were successful and sixty-one were failures. Among the thirty-eight successful cases, there were only four (10 per cent.) hyperplasias. Of the sixty-one unsuccessful cases, nine (15 per cent.) were hyperplasias. Good results are too often taken for granted when curettage is performed for functional bleeding. Most frequently this assumption is not borne out by the subsequent history of the patient. Busse [7] found only 10 per cent. of actual cures in 505 cases of curettage for uterine hemorrhage due to various causes. He did not differentiate the cases of hyperplasia in his statistics, but there is no doubt that a great many were included, and that they would hardly show better results than the general average here quoted.

5. When a hyperplastic endometrium is curetted away it is not replaced by a normal mucosa, but by a tissue similar to that removed. This is demonstrated by the examination of sections from cases in which curettage has been repeated one or more times. The deduction to be drawn from this fact is that the lesion is not a local one, as it is, for example, in cases of the postabortive type, in which curettage practically always brings about a cessation of the bleeding. By curetting in cases of hyperplasia, on the other hand, we are attacking the disease at the wrong end, for we merely remove the endometrial manifestation of the underlying endocrine cause, which still remains operative.

6. In a certain number of cases, curettage, especially if repeated a number of times, may result in cure. In these cases it seems likely that either spontaneously or as a result of the operation there occurs a readjustment in the function of the ovary.

7. Radium and the roentgen ray, which destroy the graafian follicles in the ovary, exert a most beneficial effect on the type of bleeding under consideration.

8. Even if hyperplasia were a primary disease of the endometrium, it would be difficult to suggest any satisfactory explanation of the uterine bleeding that accompanies it. By comparison, the hyperemia in cases of hyperplasia is certainly much less intense than in such conditions as acute endometritis, and yet, in the latter, menstruation is frequently normal, and may be absent altogether. In other words, disease of the endometrium without involvement of the ovary is not characteristically associated with bleeding, while disease of the ovary, even though the endometrium be normal, is frequently associated with excessive menstruation.

IS HYPERPLASIA A CONSTANT FINDING WITH FUNCTIONAL UTERINE HEMORRHAGE?

The question next arises as to whether all cases of functional hemorrhage are associated with hyperplasia of the endometrium. This is not an easy matter to determine, as the clinical exclusion of anatomic causes is sometimes impossible. For instance, hemorrhage supposedly functional may be due to a concealed uterine polyp, or to a small, unrecognized myoma, or to an early carcinoma, or to a low grade adnexal involvement. Until a much larger number of cases is studied, therefore, we cannot be definite on this point. The impression that I have gained, however, from the study of a rather large number of cases, is that unless hyperplasia is found on curetting, we should not be too quick to assume the functional nature of the bleeding.

SUBSERVIENCY OF THE ENDOMETRIUM TO THE OVARY

The conception that pathologic alterations in the endometrium may be of ovarian origin is not by any means a new one. Brennecke,[8] as far back as 1882, spoke of what he called "endometritis ovarialis." Somewhat similar ideas were suggested by Czempin, Gottschalk and Franz. These observations were published before the epoch-making work of Hitschmann and Adler [9] on the menstrual histology of the endometrium, and there is no doubt that the endometrial changes that were described really represent various stages of the premenstrual hypertrophy normally exhibited by the uterine mucosa. These earlier observations are of interest, however, in that they indicate a recognition of the habitual subserviency of the endometrium to the ovary. Lauth [10] has shown that the injection of ovarian extracts may cause hyperemia and hemorrhage, together with definite changes in the endometrium and myometrium.

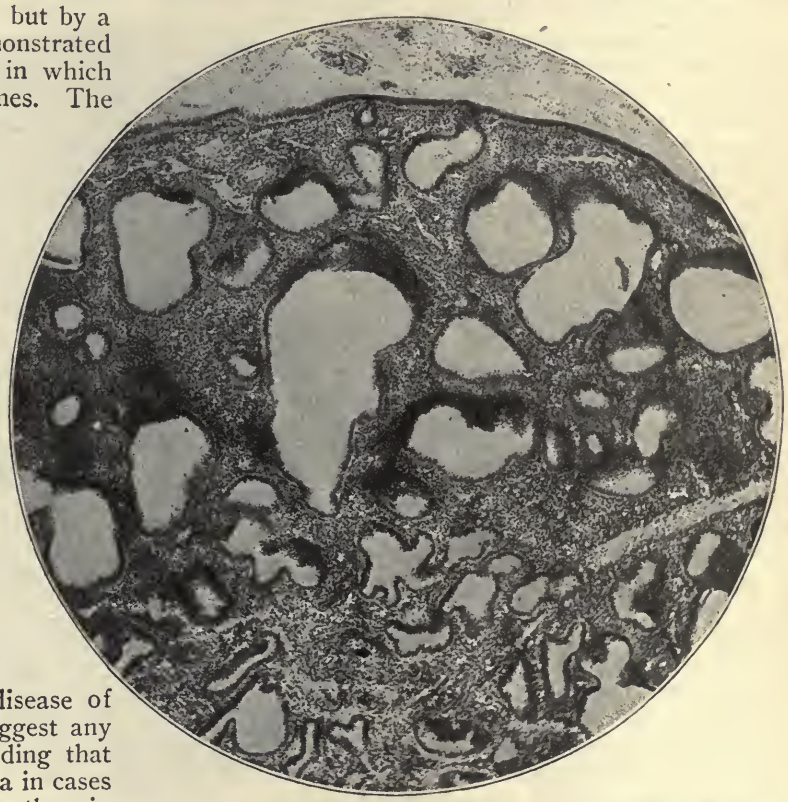


Fig. 3.—Large glands immediately beneath surface. Crowding of glands was perhaps due to large overgrowth of endometrium, many drams of which were removed at curettage. The patient, a single woman of 18, had a history of almost continuous uterine bleeding for one year.

The investigations of Schröder [5] are especially interesting in this connection, in that they have to deal directly with the question of the ovarian etiology of

6. Schickele and Keller, Arch. f. Gynäk. **95**: 586, 609, 1912.
7. Busse: Prakt Ergebn d. Geburtsh u. Gynäk. **2**: 376, 1910.
8. Brennecke: Zur Aetiologie der "Endometritis fungosa," speciell der chronischen hyperplasirenden Endometritis Olshausen's, Arch. f. Gynäk. **20**: 455, 1882.
9. Hitschmann and Adler: Monatschr. f. Geburtsh. u. Gynäk. **27**: 1, 1908.
10. Lauth: Monatschr. f. Geburtsh. u. Gynäk. **42**: 36, 1915.

hyperplasia. This author, from a study of fifty-four cases, concluded that the characteristic ovarian changes consist of a failure of follicular rupture, and a consequent absence of corpora lutea in these cases. As the corpus luteum is believed to be essential to the premenstrual secretory stage normally exhibited by the endometrium, it is not surprising that this secretory stage is absent in cases of hyperplasia. In other words, there is a persistence of the proliferative stage, which Schröder believes is due to the internal secretory activity of the follicles. To put it another way, the development of the endometrium stops short of the secretory stage, the picture of hyperplasia representing merely a persistence and an exaggeration of the proliferative phase. The conclusions of Schröder are of great interest, but they still lack confirmation.

The injection experiments of Schickele [11] also throw an interesting light on the physiologic relation between the endometrium and the ovaries. This investigator found that, generally speaking, the injection of extracts of the ovary exerts a more powerful inhibitory effect on the coagulation of blood than does the injection of uterine extracts. If, however, the uterine extract is derived from a patient who has had excessive bleeding, it is found to be more potent than the ovarian extract in the inhibition of blood coagulation. He suggests that the inhibitory substance is formed in the ovary and passed on to the uterus, and that the excessive menstrual bleeding may thus be due to the presence in the endometrium of excessive amounts of this coagulation-inhibiting substance. A similar theory has been urged by Sturmdorf,[12] Goffe,[13] and others. This explanation is only a variation of the point of view that I am urging, that a functional disturbance of the ovary is the responsible factor in the uterine bleeding of the so-called idiopathic type—the very cases in which, as already noted, we so frequently encounter hyperplasia of the endometrium.

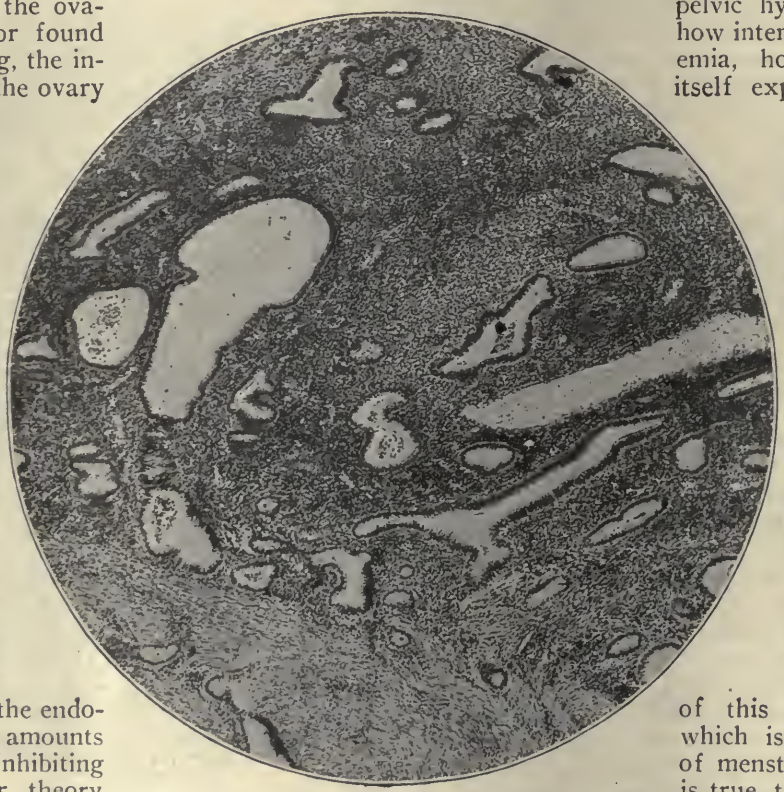


Fig. 4.—Typical hyperplasia of endometrium in a case of adenomyoma of the uterus, the chief symptom of which was menorrhagia.

THE NATURE OF THE ENDOCRINOPATHY

As yet it is not possible to state whether the ovarian disorder is in the nature of excessive or of diminished function. Female hypogonadism is a frequent and well defined clinical entity, being well typified by the phenomena of the menopause, either natural or surgical. Much less is known as to the opposite condition —female hypergonadism, or hyperoophorism. It is surprising to note the looseness with which this term has been employed by various authors. There is no convincing scientific evidence, for example, for ascribing precocious puberty to excessive secretion of the ovary, as has been done by various authors—there is, indeed, good evidence against this view. The administration of ovarian extracts, even in human beings, has at times appeared to cause excessive menstruation, but such observations are few and of rather doubtful significance.

In the absence of any structural changes in the pelvic organs, it would seem logical to explain excessive menstruation as being due to excessive ovarian secretion. In this connection it is worth while emphasizing a point frequently overlooked in the consideration of the physiology of normal menstruation, which, after all, should be taken as the point of departure in the study of menorrhagia. It is generally stated that the ovarian secretion causes menstruation by inducing a pelvic hyperemia. No matter how intense the grade of hyperemia, however, it cannot in itself explain the hemorrhage of normal menstruation. No explanation, indeed, is adequate, unless we assume the presence in the endometrium of some local factor that makes the endometrial vessels much more permeable at the menstrual period than at other times. It is possible that the same factor is responsible for the noncoagulability of menstrual blood. From the work of Schickele and Keller,[6] it seems probable that the ovary is responsible for the presence in the endometrium of this physiologic principle, which is the immediate cause of menstrual bleeding. If this is true, the occurrence of menorrhagia in cases of hyperplasia of the endometrium would point to the probability of an excessive functional activity on the part of the ovary.

In this connection I have been struck with the frequency with which hyperplasia of the endometrium is found in connection with adenomyoma of the uterus (Fig. 4). The latter condition represents what is, to all intents and purposes, a hyperplasia of the uterine musculature, just as hyperplasia of the endometrium represents a proliferation of the endometrial elements. The interesting possibility suggests itself that perhaps both hyperplasia and adenomyoma may be due to the same underlying ovarian dyscrasia.

THE OVARIAN ELEMENT THAT IS CONCERNED

It is not very satisfying, in the present state of our knowledge, to speculate as to the relative importance of the corpus luteum and the other ovarian elements in the production of hyperplasia. Two apparently incongruous clinical factors have struck me as bearing on

11. Schickele: München. med. Wchnschr. **58**: 123, 1911.
12. Sturmdorf: New York State J. Med. **11**: 460, 1911.
13. Goffe: New York M. J. **100**: 109, 1914.

this point: First, the bleeding of hyperplasia is characteristically in the nature of menorrhagia; that is, the periodicity of menstruation is usually preserved. This would suggest an influence on the part of the corpus luteum, which is preeminently the cyclic structure in the ovary. Second, no matter at what period the endometrium is curetted in a case of hyperplasia, the histologic pattern is practically the same, although the degree of change may vary considerably, just as cases vary in the severity of their clinical symptoms. In other words, the endometrium, in cases of hyperplasia, does not exhibit the characteristic cyclic changes seen normally at the various menstrual epochs. This observation, in contrast to the one previously mentioned, would suggest that the corpus luteum influence is in abeyance. When these two observations are explained and harmonized, the problem will be well advanced toward solution. After all, little will be gained from any extended discussion of the etiology of hyperplasia until we know more concerning the nature and functions of the ovarian hormones—I use the plural number advisedly, for it seems certain that the ovary possesses more than one hormone.

THE PRACTICAL LESSON TO BE DRAWN

Too many gynecologists are inclined to explain all cases of uterine hemorrhage on the basis of some definite structural disease in the pelvis, without taking into account the importance of pathologic physiology as a possible factor. Menstruation is in itself a physiologic hemorrhage, and yet no one would maintain that it is due to the hypertrophic endometrium found just before its onset. It is the ovarian secretion which is universally accepted as the ultimate cause of the phenomenon. Why then speak of an important group of cases of uterine hemorrhage as caused by hyperplasia, or even by a "local biologic factor" in the endometrium, when both the hyperplasia and the "local factor" are merely manifestations of the same underlying cause—a disordered ovarian function?

SUMMARY

The cardinal points that have been elaborated in this paper may be thus set down:

1. Functional uterine bleeding, occurring in the absence of any gross pelvic disease is very common at the menopause, when it often leads to the suspicion of malignancy. It is next most frequently observed at or near the time of puberty, but it may occur at any age. The bleeding is commonly of the type of menorrhagia, with not infrequently periods of amenorrhea.

2. A frequent histologic finding in these cases is the condition that has been called hyperplasia of the endometrium. This is characterized by an overgrowth of both the epithelial and stromal elements of the endometrium, with the production of a perfectly distinctive histologic pattern, which makes its recognition easy by means of the microscope.

3. There are good reasons to believe, as I have shown, that hyperplasia is not a primary disease of the endometrium, but that it is secondary to an endocrine disturbance of the ovary. The exact nature of this functional disorder, and the precise histologic changes in the ovary which are associated with it, have not as yet been satisfactorily determined.

4. The secondary nature of hyperplasia of the endometrium explains the failure of curettage to bring about permanent cessation of the menorrhagia observed in these cases. This procedure merely attacks a local manifestation of the underlying cause—an endocrine disturbance involving the ovary.

ABSTRACT OF DISCUSSION

DR. LUCIUS E. BURCH, Nashville, Tenn.: Seventy-five per cent. of cases of uterine bleeding are due to one of the five following conditions: Cancer, abortion, fibroid tumor, extrauterine pregnancy and the so-called endometritis that is associated with pelvic inflammation. Hyperplasia of the endometrium is sometimes found associated with one or more of these conditions. Functional bleeding occurs only during the period of sexual activity, and is not associated with any palpable or visible pathology either of the uterus or the appendages. Dr. Novak claims that it is due to an endocrine disturbance, and he uses the argument that is almost unanswerable that it is found only during the period of ovarian activity and that it is cured by the removal of the ovaries. He does not, of course, advise the removal of the ovaries for the relief of this condition. My own opinion coincides with his. I trust the time is near at hand when the question of the endocrine system in relation to uterine bleeding and menstruation will be cleared up. The curet does no good in this or in any other condition. It is an instrument that should only be used for diagnostic purposes.

DR. HENRY P. NEWMAN, San Diego, Calif.: What is your treatment of this condition?

DR. EMIL NOVAK, Baltimore: Dr. Burch has very properly emphasized the limitations of curettage in cases of this type. This procedure is usually indicated, however, for purposes of diagnosis. In patients at or near the menopausal age, curettage should be performed in order to exclude the possibility of cancer. As to the treatment of functional hemorrhage, we cannot as yet speak with any degree of finality. Since the hemorrhage is of endocrine origin, the rational treatment would seem to be along the lines of organotherapy. Unfortunately, however, the results of this plan are not usually very striking. In some cases, the thyroid extract appears to exert a beneficial effect. In a recent case of functional bleeding of three months' duration, observed in a patient of twelve years, thyroid extract checked the bleeding almost immediately, although a previous curettage had been unsuccessful. In most cases, however, the results of thyroid therapy are disappointing, and at times the bleeding seems to be made worse. The administration of ovarian extracts, and especially of those derived from the corpus luteum, at times also seems to be of value, although here again the results are anything but constant. It would seem that the nature of the endocrinopathy varies in different cases. Many gynecologists perform repeated curettage in these cases. It is hard to explain the cures which occasionally follow this procedure, except, perhaps, on the assumption that there has been some alteration of the ovarian function. In the more stubborn cases, the two measures which suggest themselves are radiotherapy and hysterectomy. By means of the former, it is possible to diminish the menstrual flow, or to check it entirely if the latter object is desirable, as in the case of women at the menopause. In this latter group, finally, hysterectomy is resorted to by some gynecologists for the reason that the ovaries and their secretion are left undisturbed.

Influenza Prevalence in Newark by Age and Sex.—Although the incidence in sexes has been practically evenly divided, Spanish influenza has apparently shown a marked preference for certain age groups. Among 27,161 cases recorded during September, October and November the age groupings have been unusual: 12,940 were between 20 and 40 years, 47 per cent. In the ten-year age periods the highest prevalence was between 20 and 30 years, 7,550 cases. The ten-year period, 1 to 10 years, had 4,741 cases, and from 30 to 40 years, 5,390 cases. In five-year periods under 20 the highest prevalence was between 15 and 20 years, 3,309 cases.—*Health Bulletin*, Newark, N. J.

ROENTGENOGRAPHY AND TRANSILLUMINATION

COMPARATIVE VALUE IN DIAGNOSIS OF DISEASES OF THE FRONTAL AND MAXILLARY SINUSES: AUTHOR'S METHOD OF TRANSILLUMINATION *

H. H. BRIGGS, M.D.
ASHEVILLE, N. C.

Roentgenography and transillumination offer valuable objective evidence of the condition of the superficial nasal accessory sinuses. Which of the two is more valuable is debatable, depending on the anatomic relationship, the modus operandi, and on how much the observer has studied the various methods of each while comparing his diagnosis with his surgical findings. The one method supplements, frequently corroborates, and occasionally refutes the findings of the other. If they did more they would together form the sine qua non of sinus diagnosis, and their findings would be pathognomonic. If taken jointly, and in connection with other symptoms and signs, they often prove to be determining factors in establishing a diagnosis, and frequently suggest the proper therapeutic procedure.

All agree that the roentgenogram better outlines the sinus, and offers definite limits to guide the operator. It alone furnishes positive evidence of absence of a frontal sinus, the shadow of which by transillumination might indicate an infected sinus. On the other hand, the rays making the plate must pass through the head, the greater part of which is foreign to the parts we wish roentgenographed. Consequently there may be in the plate misleading shadows caused by many parts within the cranium posterior to the sinuses. On the other hand, the translucency of a sinus is little interferred with by extraneous parts except by slight variations of thickness in the bony walls and overlying soft tissues. Transillumination requires less skill, and is quickly and inexpensively done by the clinician himself, while the roentgenogram, correctly made, is the product of a rather highly specialized, and, therefore, expensive technician, requiring careful interpretation by either the technician or, preferably, the clinician. It is just as essential for every clinician to be able to interpret the roentgenogram—although he may not have made it—as it is for him to perceive the translucency of the sinus by the electric light. Every sinus plate reveals details to the interpreter which no one can fully describe to him, and to operate from another's findings is like striking where some one points.

ROENTGENOGRAPHY

It is not intended to describe here the technic of making sinus plates other than to discuss the two usual positions of exposure, namely, the nose-chin and nose-forehead positions of the plate, and to describe the special advantage of each in exposing the frontal and maxillary sinuses. In either position the axis of the tube should be parallel with the plate, and the principal rays should pass through the special part to be roentgenographed at right angles to the plate. Authorities agree [1] that a soft tube with intensifying screen and a moderate amount of milliamperage are best adapted for the deep penetration and detail demanded in sinus roentgenography. For the sake of correct detail, the part to be exposed should be placed as close to the plate as possible. At the same time, consideration must be given to the density of the tissues through which the rays must pass before entering the sinus which is to be roentgenographed; and to fulfil these conditions the position approximating the nose-chin position of the plate is most admirably adapted for the maxillary sinus. The base of the skull offers two prominences of bone of considerable resistance: namely, the lesser wings of the sphenoid, and to a much greater degree the petrous portions of the temporals. It is, therefore, desirable to select a position that will allow the projection of these parts to fall on the plate outside the projection of the sinus which is to be roentgenographed.

In the nose-chin position the projection of the lesser wings of the sphenoid bisects the orbits horizontally, and they are seen as narrow, curved lines passing outward and upward through the orbit, and the petrous portions are superimposed on the upper incisors, and, therefore, just below the shadow of the antrum. The exact position of the plate with reference to the nose and chin depends on the type of face. In the average physiognomy the tip of the nose should be about 1 cm. from the plate; a person with a prominent nose and receding chin should rest with the nose on the plate, or perhaps pressed deeply against the latter, while the opposite type of dish-face may require the nose lifted 1 or 2 cm. from the plate. In the nose-chin position, rays passing through the maxillary sinus first pass through the middle fossa of the skull above the petrous processes of the temporal, and below the lesser wings of the sphenoid. Projected within the shadow of the maxillary sinus, and near the nasal wall, may frequently be seen the foramina, affording exit for the optic and the three divisions of the fifth nerves, especially the foramina rotunda, and ovalia lying more latterly, and being the more easily outlined in the normal sinus.

The nose-forehead position is ill suited for the maxillary sinus, as in it the petrous processes are projected across the antrum often with such density of shadow as completely to obscure the details, mislead the interpreter, and simulate a pathologic condition of the sinuses. This position is perhaps the better routine method for the frontal sinus, especially if an exact outline of the upper limits of the sinus is desired, and provided that the principal rays are directed from a position sufficiently forward to bring the lesser wings of the sphenoid below the superciliary ridge. It is not so well adapted for the outline of the orbital extensions of the frontals and the anterior ethmoid cells as is the nose-chin position, because of the shadows of the lesser wings of the sphenoid, and the base of the anterior fossa.

TRANSILLUMINATION

The value of transillumination depends on the interference which the pathologic contents and thickened mucosa of a diseased sinus offers to transmitted light. A perceptible interference to light is shown by uncontaminated mucus, and more by normal mucous membrane; and when the latter becomes swollen and hyperemic, and the sinus filled with mucopus and detritus, especially in chronic infection, a high degree of illumination becomes necessary for translucency.

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Waters and Waldron: Am. J. Roentgenol. 7: 633 (Feb.) 1915.

Since we are concerned with the light interference caused by the diseased processes in the sinus cavity alone, it is highly important that the light, before entering and after passing out of the cavity, should encounter as little interference from extraneous bone and soft tissue as possible, and to this end I wish to describe a method of transilluminating the maxillary sinus which I have used with gratifying results for eleven years, namely, an orbitopalatobuccal route of transillumination. The advantages claimed over the palatofacial, or Heryng method are:

1. The light passes through less extraneous (to the sinus) tissue.
2. It passes through opposite instead of adjacent sides of the sinus, and, therefore, penetrates deeper into the cavity.
3. It takes less time.
4. It is more cleanly.

AUTHOR'S METHOD

The patient is placed on a high stool in a dark room, and is requested to tilt the head backward and open the mouth. The cheek is retracted with a tongue depressor so as to bring into view not only the hard palate, but also that part of the floor of the antrum in the buccal cavity outside and above the molars.

The light is placed against the lower lid above the infra-orbital notch, pushed inward, and pointed downward until the infra-orbital ridge is well passed, when an area of pink will be seen on that part of the roof of the mouth and buccal wall on either side of the alveolar process corresponding to the floor of the antrum.

That the extraneous tissues in this orbitopalatobuccal method are less extensive and offer less resistance to the light than in the Heryng method is evident after comparing the thickness of the antral walls in the valuable data given by Davis:[2] "The orbital wall is a thin plate of bone from 0.5 to 1.5 mm., and the facial from 2 to 5 mm. in thickness," or from three to four times as thick as the orbital wall. Thus the light passes through only one third as much bone and far less soft tissue in entering the antrum through the orbit in the author's method, as it does in its exist from the antrum through the facial wall in the Heryng method. In each case the light passes through the roof of the mouth. In the new method there is the added advantage of being able to observe the translucency outside and above the molars, as well as in the roof of the mouth; in fact the entire floor of the sinus where pathologic conditions are most usually found is outlined and transilluminated.

ROUTE OF TRANSMITTED LIGHT THROUGH ANTRUM

The popular fallacy in the palatofacial method of Heryng is the presumption that the light passes directly through the antrum. As a matter of fact, the greater part passes first through the floor of the nostril into the nasal cavity, and then through the lateral nasal wall into the antrum and through the upper inner and interior corner of the antrum, escaping entirely any localized pathologic condition of the sinus lying over the roots of the teeth and outer antral wall, which is the most frequent site of a pathologic condition, especially when the infection is of dental origin. Apropos of this, Logan Turner[3] says:

2. Davis, W. B.: Anatomy of Nasal Accessory Sinuses, Ann. Otol., Rhinol. & Laryngol. **27**: 940 (Sept.) 1918.
3. Turner, Logan: Accessory Nasal Sinuses, 1901.

With the exception of a very small portion of the outer edge of the palatal plate of the superior maxilla close to the alveolar margin the roof of the mouth forms the floor of the nose, and has no part in the formation of the floor of the antrum, this wall being formed by the alveolar process which bears the teeth. The typical floor is over the molars and the posterior portion of the second premolar, and in all stages of development is in close relation to the teeth, there being always a bony covering over their roots.

A further quotation from Turner will help to remind one how far, laterally, the inferior fossae of the nose extend:

> In an antrum of average dimensions the outer border of the latter [canine] ridge indicates externally the line of union between the facial and nasal walls of the cavity. . . . When the lamp is placed in the mouth some of the luminous rays enter the maxillary sinus directly, while the remainder pass into the nasal cavities, and thus reach the antra through their nasal walls.

It is very evident, therefore, that when (as frequently happens) a septal spur or an enlarged inferior turbinate or some other abnormal condition fills the inferior fossa, transillumination by the old method is very materially interfered with, and its interpretation rendered faulty.

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ABSTRACT OF DISCUSSION

DR. JOSEPH C. BECK, Chicago: Dr. Briggs demonstrated to me and others the method of transillumination he described. One thing in favor of this method is the anatomic reason given for getting the proper transillumination through the antrum direct. For the frontal sinus this light is splendid. It is the only one I have seen that is worth anything at all in the diagnosis of frontal sinus lesions. In reference to the use of the roentgen ray in the diagnosis of sinus disease or disease of the antrum of Highmore, I am not ready to accept his statement. That the plates show a density across the antrum is due to the fact that the horizontal plate of the frontal bone is too high. It is true that the malar bones are shown somewhat encroaching on the antrum, but when making a plate for all the sinuses, you do get the lower portion of the antrum better in the posterior anterior position, and that is the part where we are looking for trouble, because the upper part of the antrum is usually masked by the anterior ethmoid cells.

DR. HENRY C. BRIGGS, Asheville, N. C.: In trying out the many positions for the plate in sinus roentgenography, the one approximating the nose-chin position offered the fewest disadvantages and the most advantages. In almost any position there are certain perplexing shadows of normal parts projected on the plate, and the most pronounced of these I found to be the petrous portions of the temporal bones and the greater wings of the sphenoid, as demonstrated by the slides showing the wires placed over these structures in the skull. The nose-chin position allows the projections of these dense shadows to fall one above and the other below the antrum, and the shadows of the greater wings of the sphenoid falling across the orbits do not interfere with the projection of the frontals. In this position the outlines of the frontals are well projected, and, what is equally desirable, it shows the orbital extensions of the frontals, as will no other position—a matter of great importance to the operator, especially in the radical operation.

Malformation of Hands and Feet.—Muñoyerro and Bravo Frias give an illustrated description in the newly founded *Revista Española de Cirugía* **1**:73, 1919, of the case of a girl, now 6 years old, whose hands and one foot are symmetrically slit to the wrist or tarsus and the other foot nearly to the tarsus. The parents are normally developed. The middle two or three fingers with their metacarpal bones are missing as also the middle toes and their metatarsal bones.

INDIFFERENCE OF THE LARYNGOLOGIST TOWARD TUBERCULOUS LARYNGITIS

AND THE TUBERCULOSIS PROBLEM *

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No one, I am sure, will deny that tuberculosis is a medical problem of great importance. It would only be necessary to look over the history of tuberculosis in the United States Army in order to confirm this statement. While immunity and resistance influence the prognosis of this disease, by far the greatest aid in the solution of this difficult problem is early diagnosis. What are we as laryngologists doing to assist in this solution? Are we aiding in the early diagnosis and giving the proper advice to the persons affected?

Laënnec,[1] in 1819, first described the formation of ulcers in the larynx, due to the breaking down of little tubercles; Louis, in 1825, laid stress on the direct action of sputum from phthisical lungs as a cause of tuberculosis of the larynx, and also stated that the posterior wall was the most often affected; Trousseau and Belloc, in 1837, differentiated cancerous, syphilitic and tuberculous ulcerations, but prior to this date they had all been grouped as laryngeal phthisis; Rheiner,[2] in 1853, stated that the predilection of the disease for certain parts might be due to the delicacy of the epithelium in such situations. And yet the principle of the laryngoscope was not discovered until 1854, thirty-five years after Laënnec first described the condition of laryngeal tuberculous ulcerations. Krause, in 1885, introduced treatment by lactic acid; and Heryng, in 1887, demonstrated a case healed by the use of curets and lactic acid. These facts make us realize how little has been added to the early observations by later laryngologists.

As to the frequency of tuberculous laryngitis in persons having pulmonary tuberculosis, statistics vary all the way from 5 to 85 per cent. This discrepancy is doubtless due to lack of uniformity in arriving at the diagnosis. It is my own belief that the higher figure is the one nearer the truth, and that tuberculous laryngitis is a more frequent complication than is generally supposed. The diagnosis of incipient laryngeal tuberculosis is not an easy matter. As St. Clair Thomson so well puts it, diagnosis depends on the "skilled eye of the diagnostician." This eye might be compared to the trained ear of the chest man, and it can be acquired only by the examination of a great number of larynges in all stages. After such well known pictures as pear-shaped swelling of the arytenoids and typical tuberculous ulcerations, the diagnosis is not difficult. Meyer,[3] in his histologic examination of the larynx of tuberculosis patients, in whom no laryngeal changes were observed during life, was able to demonstrate histologically tuberculosis in the laryngeal tissues in five out of six of such cases. Von Ruck, in a series of 309 cases, found laryngeal tuberculosis present by inspection in 182, or 58 per cent.; and he determined by focal reaction that eighty-four other larynges were affected, bringing the total to 86 per cent., or 28 per cent. additional.

All due credit should be given to such writers as Wright and Smith, Phillips, Lake Lockard, Kloebs, and many others; yet the literature of this disease is scanty in proportion to, and in comparison with, the literature of other diseases. Think, for instance, of the exhaustive works on the blood, on surgery of special parts, and on malignancy, as compared with what has been written on tuberculous laryngitis. A few years ago the rhinologists combined their efforts and carried on an investigation of ozena. At this meeting we are to have the report of the committee on local anesthesia. Can we not in some way have similar joint work on laryngeal tuberculosis? Consider how infrequently the larynx is removed and studied at necropsy, and what a limited amount of histopathologic work has been done on this structure. I myself never get over my astonishment at the difference between the appearance of the larynx when viewed postmortem as compared with the image seen in either the direct or the indirect laryngoscope. And in making this comparison, I am impressed with the fact that the disease is always more extensive than that which can really be seen in the laryngeal mirror. I think no other disease of the larynx is comparable to tuberculosis in this fact, that the image will vary so at different examinations, and that it is difficult to write down just what one sees.

What is lacking among laryngologists that should have provoked the title of this paper? One thing is this, that they do not take a more active interest in this disease. Some laryngologists have told me that they see very little tuberculous laryngitis in their part of the country; but this means only that they are not making the diagnosis. Some are afraid of becoming infected themselves while examining or treating this condition. Other men have told me that they do not care to treat this disease, but prefer to send the patients to a sanatorium.

ATTITUDE OF SANATORIUMS

Let us see what the situation is at our sanatoriums throughout the country. A questionnaire was sent to all the tuberculosis sanatoriums listed in the directory published by the National Association for the Study and Prevention of Tuberculosis. To the question, "Do you accept cases, if known, of laryngeal tuberculosis at your institution?" 21 per cent. answered, "No." To the question, "Do you have a trained laryngologist in attendance?" 61 per cent. answered in the negative. To the third question, "Are all your cases given a systematic routine examination of the ear, nose and larynx on admission, and at certain stated intervals during their residence?" 35 per cent replied that they did not, and some volunteered the information that they had this examination made only when symptoms demanded it. To the last question, "Is this examination made by a laryngologist, or by the regular chest man in attendance?" 26 per cent answered that they were made by a laryngologist, and 74 per cent. that they were made by the chest man. Some of the additional replies to this question were amusing, and I will give one example: "I can see no reason why a trained laryngologist should be in a tuberculous sanatorium. The attending

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. This brief reveiw of the early history of tuberculous laryngitis is taken from Lake, R.: Laryngeal Phthisis, or Consumption of the Throat, London, 1901.

2. Rheiner, H.: Ueber den Ulcerationsprozess im Kehlkopf, Virchows Arch. f. path. Anat. **5**: 534-579, 1853.

3. Meyer, A.: Beiträge zur Pathologie der Larynx-Tuberculose, Virchows Arch. f. path. Anat. **165**: 498-503, 1901.

physician gets an immense amount of experience covering this kind of work and is as well fitted to treat these cases as a laryngologist."

My deductions derived from the answers to these questions are as follows: The sanatoriums constituting the 21 per cent. which do not admit known cases of laryngeal tuberculosis are adding to the number of patients (already too large) who are endeavoring to seek recovery from tuberculosis of the throat by going to the private office of the physician or to the free dispensaries; whereas, if they are to gain any results at all, they should be in bed carrying out the absolute rest cure. We do not leave the diagnosis and treatment of our ear cases, sinus conditions, or other diseases of the larynx, to a general man, so why leave to him laryngeal tuberculosis? In a series of cases of laryngeal tuberculosis studied by Dworetzky,[4] 35 per cent. either had no symptoms referable to the larynx, or else these were very slight and could be easily attributed to other causes. The influence of diseased conditions of the upper respiratory tract on the larynx is too well known for comment, except to add that in tuberculous patients (the majority of them in bed and with high temperature), the greatest care should be taken to rule out and prevent every irritation from above, thereby greatly lessening cough and preventing complications.

As for the 74 per cent. of sanatoriums in which patients are not examined by a competent laryngologist, I fear that in these institutions the chances for making a diagnosis of early infiltrations in the larynx are greatly lessened. If we wish a conception of the magnitude of the problem in the country as a whole, we must add to the patients in these sanatoriums the great unknown number without competent examination scattered throughout the country. Dworetzky classified his cases in a way that I like very much, namely, acute, subacute and chronic, and I think that more effort should be made to do this when making a diagnosis. Casselberry, writing some years ago, spoke of the resistant and nonresistant types.

At Farmingdale, N. J., there is a tuberculosis preventorium. This institution cares for the children of tuberculous parents. By competent and routine examination of all cases of tuberculosis, a certain number might be put in a "preventorium class," where tuberculous patients with frequent attacks of acute and catarrhal laryngitis would be watched more closely and warned and advised regarding future possibilities. Some may question this procedure on the grounds of insufficient time; but on the other hand, think of the amount of time consumed, with so little reward, in treating one advanced case of laryngeal tuberculosis with perhaps painful deglutition; and then think what the result would be if the same amount of time were given to a number of incipient cases.

I believe that the men doing tuberculosis work are looking to the laryngologists for some definite ideas on this disease, and I do not believe that we are giving them the aid they should have. In a reprint entitled, "Standards for Diagnosis, Classification and Treatment of Tuberculosis in Children and Adults," prepared for the Framingham community health and tuberculosis demonstration, all the diagnostic points in regard to the chest are well covered; but the only advice relative to the throat is: "Any hoarseness or persistent huskiness requires investigation." This is good advice, but it is not enough. Fishberg[5] says that in his experience local treatment is not often effective in enhancing cicatrization of laryngeal lesions, and that when carried out vigorously it is liable to do harm. Farther on in the same chapter, he says that there is one form of the disease in which unlimited use of the voice is advisable, and that is where only the cords are affected. He then reproduces an illustration of a very advanced and distorted tuberculous larynx. I wonder whether most laryngologists dealing with tuberculosis will not agree with me that local treatment is effective; and I certainly believe that we should be able to judge and standardize our treatment in such a way that it would not be so vigorous as to cause damage. I am convinced that, without some modification, the statement in a textbook recommending unlimited use of the voice in laryngeal tuberculosis tends to create dangerous notions, and hence harmful practices.

CONCLUSIONS

1. A more active interest in tuberculosis should be taken by laryngologists.

2. There should be more thorough and uniform teaching of the diagnosis of this disease, and it should be carried on in such a way that the student will have opportunity to examine large numbers of incipient cases, and to see these repeatedly, and thus familarize himself with the laryngeal image seen in tuberculosis as compared with that found in other allied conditions.

3. I hope that a committee of laryngologists representing the various laryngologic societies may be formed to meet with a committee from the National Association for the Study and Prevention of Tuberculosis for the purpose of standardizing the literature and teaching of this subject, and with the further object of stimulating clinical investigations and pathologic research concerning this condition.

317 Burns Building.

ABSTRACT OF DISCUSSION

DR. JOHN B. MCMURRAY, Washington, Pa: I had the larynx removed postmortem from a series of cases in fifty of which, or 60 per cent., the diagnosis was made antemortem; 20 per cent. showed gross pathologic lesions at the time of necropsy, and 20 per cent. did not show any lesions at all at necropsy. As Dr. Mullin stated, in all the cases in which the diagnosis was made antemortem, we were surprised at the extent of the lesion found postmortem compared with the description of the case antemortem. Every one of the ten cases which did not show lesions at necropsy were found to be tuberculous on microscopic examination. These lesions were practically all situated in the posterior wall and lateralward from the ventricle. Just what the early signs are has not been settled definitely. There must be some reaction of the tissues to the early invasion of the infection. Meyer, in his work on experimental tuberculosis, showed that there was a certain amount of edema or swelling of the mucosa. We had a series of cases last year in which there was a submucosal edema of the posterior wall of the larynx.

Believing that it might be possible to make a diagnosis of beginning tuberculous laryngitis with the roentgen ray, we began a series of experiments, first with taking known cases of tuberculous laryngitis. We made stereoscopic plates. In every case we were able to show densities on the plate corresponding to the lesions in the larynx. Ulceration of the epiglottis or other structures was shown. In the nonclinical

4. Dworetzky, Julius: The Diagnosis of Tuberculous Laryngitis, J. A. M. A. **59**: 619-625 (Aug. 25) 1917.

5. Fishberg, Maurice: Pulmonary Tuberculosis, Philadelphia, Lea & Febiger, 1916, chapter on laryngeal tuberculosis.

types, cases that do not show lesions visible with the laryngoscope, densities appeared that we believed were tuberculous. We cannot prove that, however, as we could not get the larynges from these cases for microscopic examination. Two difficulties are encountered in this work: One is the difficulty of getting a good position. The position we found most satisfactory was to put the target of the instrument midway between the anterior and posterior walls and take the first picture with the instrument thirty millimeters upward and the second with the instrument sixty millimeters down from this central point. Dr. Mullin emphasized the fact that we should try to get these cases early. Unquestionably, in any case of pulmonary tuberculosis in which there is positive sputum, there is danger of involvement of the larynx. I believe in direct infection of the larynx. The larynx should be examined frequently and carefully. One never knows when these cases will begin to ulcerate. Put the patient under preventive treatment early to avoid the distress and pain that accompany advanced cases of tuberculous laryngitis.

Dr. Joseph A. Stucky, Lexington, Ky.: In the last six months I have been much surprised to find that in every case in which there was any ear trouble, whether a catarrhal or a suppurative condition, or when there was pharyngeal or tonsil disease, or anything that lowered the resistance of the patient, there were marked results from the removal of the cause and rapid improvement in the pulmonary condition. I have been surprised at the number of cases of ear trouble and beginning laryngeal trouble, with no symptoms until attention was directed to them. These conditions were found by making careful, complete examinations in each case on admission. I believe we are liable to do harm by using the average local treatment, a direct spray in the larynx, when there is a tickling cough. Local treatment should be as nonirritating as possible. Of course, when there is broken down tissue and painful deglutition we have another problem, and efforts should be made to relieve this as rapidly as possible by topical applications.

Dr. Thomas E. Carmody, Denver: Those of us who live in the West have seen many of these cases. The sanatoriums are taking care of them. In U. S. Army General Hospital No. 21 we examined probably 3,000 men. Of the known cases of tuberculosis of the lungs, laryngeal involvement was present in 95 per cent. There has been a difference of opinion among laryngologists as to what constitutes tuberculous laryngitis. Many cases of tuberculous laryngitis are not diagnosed clinically. Lake's work has proved this, also Lockard's. As to the fear of infection, if we accept the present ideas regarding tuberculosis, there is none, for we all have had tuberculosis in some form—probably healed before we became laryngologists. Dr. Mullin spoke of submucosal edema. I have seen it for years and am glad to have a name for it. The cases I have seen postmortem prove that the involvement of the larynx was much higher than we expected from the physical examination. We treat late stages mostly, but I agree with Dr. Mullin that we should devote our efforts to the early stages and the prevention of ulceration. We cannot prevent tuberculous laryngitis, but we can prevent the breaking down of the tissues. The roentgen ray is of great value in diagnosis.

Dr. Cullen F. Welty, San Francisco: I agree with Dr. Stucky. I saw a case in which there was extensive ethmoid suppuration on both sides. The patient was supposed to be tuberculous, but she gained twenty pounds after the ethmoid suppuration was cured. Nothing has been said about what to do with this larynx. How are you going to take care of a tuberculous infection in the larynx of a patient who has fever with no chance of recovery, with great difficulty in swallowing and coughing all the time? Nothing has been said about injecting the superior laryngeal nerve with alcohol, or about resecting it. I can recommend these procedures most highly. Then there is another class of patients, those that are quiet; the lung condition is quiet; no temperature elevation at all. We operate to cure such patients. Remove the tissue and curet the bone. These are the patients that get well. Laryngitis patients do not get well without operation. Sprays and such things in the larynx are of no consequence whatsoever, except, possibly, in a palliative way.

Dr. C. H. McCaskey, Indianapolis: There is just one way to treat a patient with tuberculous laryngitis. Put the patient to bed and keep him or her quiet. Relative to the painful cases, it is all right to inject the superior laryngeal nerve, but that causes pain. There is a better way, described by Blumental of Berlin, which is to resect a portion of the superior laryngeal nerve, and the patient is happy.

Dr. William V. Mullin, Colorado Springs, Colo.: There is nothing in my paper on the treatment of tuberculous laryngitis, therefore I will not reply to any of the discussion regarding treatment. Dr. McMurray is an example of a type of laryngologist who is living in a community in which he is not supposed to see much tuberculous laryngitis, yet who is seeing it all the time. The roentgen ray is not of value in cases in which there is manifest tuberculous laryngitis. But try it in the cases with tuberculosis elsewhere in the body and in which you do not find anything in the larynx on laryngoscopic examination. In the service we roentgenographed a great number of detachment men who were supposedly healthy, and in those we found no densities in the larynx. Then we roentgenographed a number of men who had pulmonary tuberculosis, who were raising sputum but without manifest findings in the laryngeal mirror. We found these shadows and felt they must be tuberculous. Repeated attacks of laryngitis in the tuberculous occur commonly. I believe this is a flare-up of tuberculous deposits well down in the tissues which are not seen by the laryngeal examination. Dr. Stucky emphasized an important point of clearing up other infection of the upper respiratory tract. I agree with him that too vigorous applications may do harm. Most of our medication, outside of operative procedure, is carried on by using an intratracheal syringe.

SOAPS IN RELATION TO THEIR USE FOR HAND WASHING*

JOHN F. NORTON, Ph.D.
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The public is asked to buy many things of a fraudulent nature, or concerning which fraudulent claims are made by the manufacturers or their agents. We are all familiar with the history of foods in the last twenty years and the great advance that has occurred since the passage of the Food and Drugs Act in 1906, in protecting the gullible public. This law and various amendments made an attempt to regulate a far greater evil than adulterated foods, i. e., the ubiquitous patent medicines. At the present time a manufacturer must not make "false or misleading" statements concerning the composition of his medicine and must not make curative claims which are "false or fraudulent"; but this applies only to the package in which the medicine is sold and not to circulars or newspaper advertisements apart from the package. He must also declare the presence and amount of eleven specified drugs. Closely allied to the "patent medicines" are the varieties of "healing," "antiseptic" and "germicidal" soaps, accompanied too often with claims of their value which to my mind have been neither proved nor disproved. I will cite two instances from the soaps with which we have been working for the last two years.

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* From the Department of Hygiene and Bacteriology, University of Chicago.

* I have been aided in this work by Mrs. E. O. Jordan, Mr. J. E. Gordon, Mr. T. T. Crooks and Mr. H. M. Weeter, to whom thanks are due.

* This investigation was made with the assistance of a grant from the Committee on Therapeutic Research, Council on Pharmacy and Chemistry, American Medical Association.

1. "May be used as a general antiseptic for wound cleansing, for washing sores, ulcers, *including cancerous infections* [italics in these quotations are mine]. . . . Useful for offensive odors about the body, *for bathing in contagion* and for many diseases of the skin."

2. "*Chemical* tests have shown that bacteria and germ life exist on ordinary soap, but that no germ life and bacteria can exist on . . . Not only will the soap itself remain sterile but when rubbed over the body *in the usual manner of washing the skin is rendered sterile,* thus acting as a safeguard."

TABLE 1.—ORGANISMS FOUND BY CUMMING

Number	Condition	Organisms	Per Cent. Positive
340	Carrier	Streptococcus hemolyticus	37
40	Patients	Pneumococcus	15
95	Patients	B. diphtheriae	6
...	Carriers	Streptococcus viridans	100
78	Patients	B. tuberculosis	2

Other soaps are frankly advertised as antiseptic or germicidal, and many certainly convey to the buyer the impression that they are excellent means of killing the harmful germs which may be present on the skin when the soaps are used, as in the claim just quoted, "in the usual manner of washing."

There are several features connected with buying and using soaps. One is perhaps more economic than hygienic, i. e., should the public be asked to pay 30 or 35 cents for a special kind of soap unless it really possesses properties which make it more valuable than those selling for 12 or 7 cents? But far more important are the specific hygienic claims made for certain soaps. Are they frauds or do they really possess, for example, germicidal properties which really aid in the prevention of the spread of disease? Can the public depend on them or do they foster a false sense of security? It is certainly important to examine the basis on which these claims are made. Let us take, for example, the bactericidal properties. Whatever variety of tests have been made in the manufacturers' laboratories, for the buyer there is only one guide: the statement which is sometimes on the package concerning the "phenol coefficient" value. I think it may be admitted that soap solutions in *sufficient concentration* are antiseptic (not necessarily germicidal). In addition, many soaps contain such substances as cresols, which are known to be bactericides under the proper conditions. Hamilton [1] has stated that "no soap can be considered an effective disinfectant unless associated with some other more active agent." But this statement is thus qualified later in the same article: "Most disinfectants with the exception of potassium mercuric iodid add little to the efficiency of soap," referring to disinfecting properties. Is the "phenol coefficient" a proper means of measuring the value of soaps when used" in the usual manner of washing"? I think not, because of the great difference in conditions which exist in the laboratory tests and in the actual use of the soaps. We have no adequate tests and, indeed, a search of the literature reveals that almost no attempts at such tests have been made.

First, let us consider the necessity for removing bacteria from the surface of the body and particularly from the hands. Various considerations point to such a necessity and to the hands as vehicles in the transmission of infectious diseases. Transference of typhoid and paratyphoid bacilli from patients, convalescents and carriers to food can most easily be conceived as taking place by way of the hands. Material from the nose, as in colds, or from the mouth, as in diphtheria (or with diphtheria carriers), may be taken from the hands and conveyed to the hands of others either directly or by means of such objects as door handles or dishes or books, and thence will reach the mouth of a normal person and may infect him. Cumming [2] believes that the major part of the transmission of respiratory diseases is due to hand infection. His conclusions are drawn from such data as these: Of groups comprising more than 66,000 officers and men in the army, about half washed their mess-kits in tepid water in barrels, the common property of each organization. The other half used table ware. Among the first group the influenza rate was 252 per thousand, in the second group only 51.1 per thousand. These results are explained by Cumming as due to the conveyance of the virus to the tepid water by the hands, the germs then being picked up on the hands of another individual and hence passing to the mouth either directly or indirectly. In another study [3] on the incidence of pneumonia in institutions, it was found that this incidence was three times as high where hand-washed eating utensils were used than in those in which there were machine washers. Whether or not the interpretation of these results is wholly correct, the figures certainly serve to indicate the importance of the hands as a possible means of transmitting disease.

If the hands are so important, it ought to be possible to find on them pathogenic bacteria or associated organisms. Many studies have been made on the flora of the skin, but most of them were concerned with normal forms, as staphylococci, rather than with those foreign organisms which are temporarily present on the outer surface and would be most easily removed. In attempting to establish experimentally the possibility of typhoid infection by way of the hands, Winslow,[4] more than fifteen years ago, made a search for *B. coli* on the hands of 111 individuals and found typical organisms present in ten instances. Cumming,[5] in the course of the experiments already referred to, found the organisms named in Table 1.

TABLE 2.—RESULTS REPORTED BY WEAVER

Number of Persons	Number of Cultures	Status of Persons	Percentage Positive: B. Diphtheriae	Percentage Positive: Streptococcus Hemolyticus
45	268	Pupil nurses	3.0	9.3
4	51	Graduate nurses	0.0	2.0
3	45	Interns	6.7	15.6
4	64	Diet maids	0.0	3.1
1	18	Orderly	0.0	22.0
		Laundry and office help.	0.0	0.0

Weaver [6] has recently reported results obtained on hospital attendants in which two organisms were sought: *B. diphtheriae* and *Streptococcus hemolyticus.*

Barron and Bigelow [7] found *B. diphtheriae* in 16.1 per cent. of cultures from the hands of diphtheria

1. Hamilton, H. C.: Am. J. Pub. Health **7**:282 (March) 1917.

2. Lynch, C., and Cumming, J. G.: Am. J. Pub. Health **9**: 25 (Jan.) 1919. Cumming, J. G.: Ibid. **9**: 414 (June) 1919.
3. Cumming, J. G.: Am. J. Pub. Health **9**: 849 (Nov.) 1919.
4. Winslow: J. M. Res. **10**: 463-471, 1903-1904.
5. Cumming, J. G.: Am. J. Pub. Health **9**: 417 (June) 1919.
6. Weaver, G. H., and Murchie, J. T.: Contamination of the Hands and Other Objects in the Spread of Diphtheria, J. A. M. A. **73**: 1921 (Dec. 27) 1919.
7. Barron, M., and Bigelow: J. Infect. Dis. **25**: 58 (July) 1919.

patients and carriers who were not masked. Some years ago, Cummins[8] reported the isolation of typhoid bacilli from the hands of carriers. Since not all of the organisms mentioned in these experiments can be regarded as part of the normal flora of the hands, and were obtained by swabbing (Weaver) or washing in sterile water (Winslow), it is easy to see that with sufficient care of the hands, conveyance of infection could doubtless be decreased. This care, of course, consists mainly in adequate hand washing.

It is of some importance, therefore, to know the value of various soaps in removing bacteria, in the destruction of bacteria removed and in killing any bacteria remaining on the hands. It seems to us that this could best be done by studies on hands as we found them rather than by artificially added foreign organisms. The literature of soaps is enormous. From a bacterial standpoint, the disinfecting properties of soap are of particular interest; but nearly all reports found deal either with the chemical constituents of soaps or with determinations of germicidal value of soap solutions according to methods comparable to those used in determining the phenol coefficient,[9] which, as has already been pointed out, are not done under conditions similar to those of actual hand washing. The only experiments of the latter kind are those reported in 1899 by Symes.[10] He tried the usual tests on cultures of bacteria in suspension, and concluded that "for practical purposes most of the so-called disinfectant soaps have no value, but in the combination of biniodid of mercury with soap we have a useful means of disinfecting hands, instruments, etc." Symes also tried hand washing experiments, but did not succeed in sterilizing the hands by this method even with mercuric iodid soap. No details of these experiments are given.

TABLE 3.—BACTERIA REMOVED FROM THE HANDS

Soap	Number of Tests	Wash Water	First Rinse Water	Second Rinse Water	Total
A	26	1,600,000	1,060,000	865,000	3,605,000
B	22	1,670,000	2,270,000	1,920,000	5,860,000*
C	18	79,000	73,500	149,000	201,500
D	13	790,000	420,000	520,000	1,730,000
E	1	19,500	24,500	†	
F	2	122,000	133,000	49,000	304,000
G	4	14,000	325,000	105,000	454,000
H	2	19,000	880,000	904,000	1,803,000

* This series contained one very high count.

In our experiments we have tried to determine four things: First, the relative efficiency of various soaps in removing bacteria from the hands. For this a standard procedure was devised and a large number of tests were made, since the comparison of results from single instances not made in any uniform way would be valueless. Second, the relative germicidal power of the soap solutions obtained in washing toward bacteria removed from the hands. Third, the bacterial condition of the hands after washing, i. e., whether sterile or not. Fourth, the effect of the soap, if any, remaining on the hands, comparing the action of different soaps in this respect.

In the experiments we used in all twelve soaps, varying from the cheapest toilet soaps to the expensive so-called antiseptic and germicidal soaps. These were picked at random from those on sale at retail drug stores. The experiments were made during various seasons of the year on students and members of the staff of the laboratory who were called from their regular work without previous warning. No seasonal differences were noted. In all the work the hands were washed in sterile distilled water at 40 C. in sterile pans. The number of bacteria was determined by plating on nutrient agar (reaction + 1 to phenolphthalein), and the plates were counted after twenty-four hours' incubation at 37 C. In order to work out some standard procedure, a long series of preliminary experiments was made in which conditions and numbers of washings and rinsings were varied. For example, it was found that wiping the hands on a sterile towel between washing and rinsing or between two rinsings resulted in an increased removal of bacteria in the final rinse. The use of a towel was therefore abandoned. Tests were also made to determine the maximum number of bacteria which could be removed by successive washings and rinsings. This number varied from 24,000 to 7,000,000 in six tests with six successive washings and rinsings. The average number of bacteria found in the last rinse water was 232,000—in one case 745,000. We can therefore conclude that it is impossible to obtain sterile hands in the ordinary process of washing. These results were confirmed by later work, done, however, for a somewhat different purpose. The procedure finally adopted was as follows: Hands are washed by the subject for one minute with soap in 500 c.c. of sterile distilled water at 40 C. in a sterile pan. According to trials, the time, one minute, is rather longer than is customarily spent in washing. The hands are immediately rinsed in sterile distilled water under the same conditions, and this rinsing is repeated. The wash water and rinse waters are then immediately plated to determine their bacterial content. Table 3 gives the average total bacteria removed from the hands according to the foregoing procedure. The variation in the number of bacteria in the different tests was tremendous. In one series of twelve tests with the same soap, the lowest number obtained in the wash water was 60,000, and the highest, 8,445,000.

TABLE 4.—BACTERIAL COUNTS

Number	Original Wash	1 Hour	3 Hours	5 Hours
1	1,380,000	2,460,000	1,360,000	1,385,000
2	179,000	143,000	136,000	137,000
3	560,000	181,000	153,000	168,000
4	74,000	71,000	82,000	108,000
5	350,000	1,090,000	110,000	163,000
6	35,000	0	0	0
7	0	19,500	7,500	0
8	24,600	36,000	48,000	4,500
9	2,000	4,500	3,500	2,000
10	23,000	17,500	56,500	19,000

Of these eight soaps, A and B are well known toilet soaps, D is a green soap such as is used in hospitals, and the others are special soaps supposed to have particular powers with respect to killing bacteria. The ordinary toilet soaps appear to have removed the greatest number of bacteria in the wash water, although the differences are not so marked in the rinse waters and totals. There are two explanations. One is that the special soaps have killed the bacteria or at least inhibited their growth so that they do not appear on the plates, and the other is that the ordinary toilet soaps actually have a greater cleansing power.

8. Cummins, cited by Richardson: Bull. State Board of Health of Massachusetts **3**: 129, 1914.

9. Work of this kind is reported by Konradi: Arch. f. Hyg. **44**: 101-112, 1902. Rodet: Compt. rend. Soc. de biol. **63**: 264-266, 1905. Rasp: Ztschr. f. Hyg. u. Infektionskrankh. **58**: 45-63, 1907.

10. Symes: Bristol M. & Chir. J. **17**: 193-197, 1899.

It is certain that, with the soaps we used, a good lather is more easily obtained with the latter. It appears also that the larger number of bacteria in the first rinse water from the special soaps, in comparison with the number obtained in the wash water, might be explained by the difference in cleansing power, and leads us to doubt the germicidal action. However, these points needed further investigation.

The possible disinfecting or antiseptic properties of the special soaps were tested in two ways. The first method consisted in allowing the wash water to stand protected and the bacterial content determined after varying periods of time. This ought to give an indication as to the germicidal action of these soap solutions toward the bacteria found on the hands. Table

TABLE 5.—GROWTH AFTER INCREASED INCUBATION

	24 Hour Incubation	48 Hour Incubation
Wash water	0	19,500
Rinse water	0	24,500

4 gives the bacterial counts as obtained from the original wash water and after this has stood for one, three and five hours. Experiments 1 to 5 are with ordinary toilet soaps; Experiments 6 to 10, with special soaps. Experiments 6 and 7 are with the same soap. These results show that for practical purposes the germicidal and antiseptic powers of the special soaps as well as of ordinary toilet soaps, in solutions as obtained in hand washing, are too small to be of any use. With two soaps containing mercuric iodid (probably potassium mercuric iodid, as this is the soluble compound), we were unable to obtain growths on our plates in twenty-four hours in all instances, either from the wash water immediately after use or after long standing. If the agar plates were allowed to incubate for forty-eight hours, growth was invariably obtained. These soaps apparently exhibited, particularly the one containing the larger amount of mercuric iodid, some germicidal and certainly marked antiseptic properties. An instance of growth after increased incubation is given in Table 5. The concentration of soap in the agar plates carried over from the wash water was about 0.05 per cent., in those from the rinse water about 0.001 per cent. This would mean that with 2 per cent. of mercuric iodid in the soap, 0.002 per cent. of mercuric iodid was sufficient to retard bacterial growth.

That the soap solutions may fairly be compared was shown by determinations of the amount of soap actually used in washing, which, although different persons and different soaps were used, gave figures within reasonably narrow limits. The amount of soap in solution was determined by titrating with standard acid and reading from a plot the amount of soap corresponding to the titer. The plots were made by weighing out various quantities of the soap as bought, dissolving in water and titrating. Straight lines (within the limits tested) were obtained in every case, but the slope of the line varied with the kind of soap. The amount of soap used in hand washing under the conditions previously described varied in twelve tests between 2 and 5.1 gm., averaging 2.8 gm. This corresponds to a concentration of 0.5 per cent.

But in washing, the hands not only come in contact with the soap solution but also are rubbed with lather in which the concentration of soap is much greater. Furthermore, a small amount of the soap or its ingredients may be left on the hands. In order to get the effect of these factors, the hands were allowed to dry for five minutes after washing and were then rinsed in running sterilized distilled water, and the number of bacteria washed off was determined. This was done with a series of ten soaps all of which were supposed to possess antiseptic or germicidal qualities. In Table 6 the first column gives the bacterial content of the first rinse water from a series of experiments done as previously described, i. e., the hands were rinsed immediately after washing. The second column gives the figures from a series in which the hands were allowed to dry five minutes before rinsing.

These figures demonstrate that the soap remaining on the hands after washing has no germicidal action. The difference in the average figures is well within the limits of error of the work.

In this connection the amount of soap in the rinse water was determined as an index of the amount of soap left on the hands after washing. This proved to be about 2 per cent. of the amount of soap actually used or, on the average, 0.05 gm.

The same difficulty in obtaining growths of bacteria with soaps containing mercuric iodid was observed in these experiments as in the previous ones, and such growths (except in one instance) were obtained only after forty-eight hours' incubation. These soaps again exhibited distinct inhibitive properties.

CONCLUSIONS

Sterile hands are not obtained in the ordinary process of hand washing. More bacteria were found to be removed by the ordinary toilet soaps than by the special soaps. In other words, the cleansing properties of a soap are more important than its "germicidal" or "antiseptic" constituents.

The soap solutions obtained in hand washing are of no practical germicidal or antiseptic value.

TABLE 6.—BACTERIAL CONTENT WITH RINSE WATER AFTER DRYING *

	Without Drying	After Drying
	580,000	17,500
	675,000	64,000
	1,760,000	238,000
	12,000	87,500
	17,000	52,500
	1,110,000	260,000
	144,000	30,000
	12,500	47,500
	72,500	23,800
	220,000	450,000
	46,000	2,630,000
		25,000
		3,000,000
Average	421,000	496,000

* The figures, standing opposite in the columns have no significance.

The soap left on the hands after washing has no germicidal action.

In the whole process of hand washing done in the usual manner, the special so-called "germicidal" or "antiseptic" soaps exhibit none of these properties. Therefore, these terms are not proper to use in connection with soaps.

Finally, since the hands may serve as a medium for the conveyance of bacteria in infectious diseases, it is important to remove these bacteria; and this may be done by the ordinary toilet soaps as effectively, if not more so, as by the special brands of so-called "antiseptic" or "germicidal" soaps.

END-RESULT STUDY OF HALLUX VALGUS OPERATIONS

A REPORT OF NINETY-SIX CASES AT THE ORTHOPEDIC CLINIC OF MASSACHUSETTS GENERAL HOSPITAL SINCE 1905

HOMER WALDO SPIERS, A.B., M.D.

LOS ANGELES

Operative attempt to relieve the pain and disability accompanying hallux valgus is far from a new procedure. Removal of the exostosis, dissection of the bursa, tenotomy and transplantation of the tendons, removal of the sesamoids, partial and complete removal of the head of the metatarsal, and removal of the proximal end of the proximal phalanx, together with numerous combinations of the foregoing, have all been advocated and practiced. The influence of such men as the Mayos and J. B. Murphy being thrown on the side of complete excision of the head, the simplicity of it and the fairly satisfactory results that followed have made this method the most frequent one of choice.

One of the many noteworthy lessons that the experience of the Medical Corps of the Army has brought forth is that the present operations in vogue for the relief of this disabling condition did not put the man back in the ranks in a reasonable time prepared to do his full share as a soldier. He was still partially disabled after many weeks of convalescence. The result was not satisfactory, therefore, to the person who must depend largely on his feet for his livelihood. It was with these facts in mind that I undertook the investigation of a series of cases in which operation was performed at the Massachusetts General Hospital over a period of fourteen years.

RESULTS

	Cases
Complete excision of the head of the metatarsal	78
Removal of the exostosis only	8
Kellar method	7
Wedge-shaped osteotomy	1
Miscellaneous	2
	Years
Average time since operation	4
Average age of patients at operation	36
Youngest	15
Oldest	62
	Per Cent.
Satisfied (of the whole series)	64
Dissatisfied (of the whole series)	35
Dissatisfied whose after-treatment was unsatisfactory	56
Examiner's report, satisfactory	57
Examiner's report, unsatisfactory	43

Of the ninety-six patients who answered the questionnaire, sixty-four were examined either by me or by members of the staff of the orthopedic outpatient department. The type of the operation was obtained from the case record, the patient's opinion of the results, his postoperative treatment, shoes, plates, etc., and his occupation were secured from the questionnaire. The examiner obtained the cosmetic and functional result from the local examination. A result was considered satisfactory if the patient could pursue his usual occupation with little or no discomfort. It was, of course, unsatisfactory if the accustomed occupation gave foot distress or the condition of the feet necessitated a change of means of livelihood.

There were seventy-eight operations classified as excision of the metatarsal head; of these, 61 per cent. were satisfactory and the remainder unsatisfactory. Of the latter group, 56 per cent. had unsatisfactory after-treatment. Of this group whose results were not satisfactory, it was found that 70 per cent. were compelled to follow occupations that required much standing and walking, working as waiters, policemen, cooks and mechanics and the like. Concerning after-treatment, those patients were considered to have had sufficient after-treatment whose feet were properly shod, plated and observed for a reasonable length of time, two or three months. The complaints were largely painful transverse arch (metatarsalgia), partial or complete ankylosis, deformity, or a combination of the three. The ones who were displeased with the result, with remarkable regularity, expressed themselves, "Since operation my trouble has not been the same. It has been different."

There were eight operations performed by removal of the exostosis only. Seventy-five per cent. were wholly unsatisfactory. Two patients expressed themselves as partially satisfied. In the seven operations by the Kellar method, all the patients reported satisfaction and the examinations were uniformly good.

This end-result study, analyzed as a whole, shows favorable results in about two thirds of the cases. There is most surely room for improvement. One ought to be able to give a favorable prognosis in better than two out of three of his cases. Undoubtedly in private practice a higher percentage of good results is obtained.

Complete excision of the head of the metatarsal bone was by far the largest group studied. What are the factors that militate against an ideal surgical end-result and lead to disability in this class of cases? First, I think, stands the loss of the foundation of the weight-bearing pillars of the transverse arch of the foot. The anterior arch was the trouble maker; metatarsalgia and painful plantar callosities were the most frequent sources of trouble. A percentage of these could probably have been avoided by proper long continued after-treatment. Correct shoes and properly fitting plates would have helped. The latter require a great deal of adjustment, and in the long run are not ideal. The longitudinal or posterior arch was less frequently a cause for complaint. Secondly, partial ankylosis was the rule in nearly all the unhappy results. If the ankylosis was complete, and particularly if the toe was in the cock-up position, the result was most distressing. With the loss of joint function and the attendant loss of muscular control came difficulty in propulsion. This accounted for some of the painful results. Lastly, there was another class of cases in which the roentgen ray had probably revealed the cause of disability. The tendency to spur formation at the end of excised bone is well known. If this occurs on a weight-bearing surface, we have an evident cause for trouble. If it seems reasonable and good surgical judgement to handle with great care the stump in larger bones, where weight bearing is to be anticipated, it surely is important to consider this a source of possible trouble, in the removal of such weight-bearing pillars as the metatarsal heads. From the appearance of the roentgenograms, it would seem that this detail has been somewhat neglected. It should be added to the thorough technic of excision, in my opinion.

The second group of operations, that of removal of the exostosis only, with or without the so-called bursa, need not occupy our attention long. The post-

operative pain, for some reason, seemed to have been somewhat excessive. Relief, if any, was short lived in this small series. It would seem that this procedure was rarely justified.

The last group that I wish to discuss is a small one, but in the light of the Army experience and the end-result obtained, and because it aims to avoid those chief factors that tend toward an unhappy result, it deserves a more thorough recognition and trial. Colonel Kellar, a regular army officer in the Medical Corps, as early as 1904, described a method that he had devised. An article [1] published by him in 1912 is excellently illustrated and describes his method at length. He recognized the possibilities of disaster in removing one of the legs of the weight-bearing tripod of the foot, particularly to those who must depend in large measure on their feet for efficiency. His incision was the inverted U type with prolongations proximally and distally. The convexity avoided the bursa. He exposed the head of the metatarsal subperiosteally, and excised the exostosis widely, removing also the greater part of the dorsal surface of the head. He next excised the proximal end of the proximal phalanx for a sufficient distance to allow correction of alinement easily. This excision was performed after careful dissection of the capsular and ligamentous attachments. The joint was preserved by the cartilage on the distal end of the metatarsal head and by transfixion of the capsule, ligaments and soft parts over the excised end of the phalanx. This method preserved, therefore, the weight-bearing surface intact, gave correction to the deformity by shortening the toe and removing the exostosis, and interfered but little with the muscular attachments. We report here only seven cases, one six years after operation. The cosmetic and functional results in all have been good. Since last September a number of others have been added to this list. The postoperative pain and discomfort seem to have been minimal, and their convalescence short.

CONCLUSIONS

1. By the excision method, about two out of three will be pleased.
2. By the excision method, favorable results depend to no small extent on the after-treatment.
3. By the excision method, those whose occupations are sedentary can be assured of a satisfactory end-result.
4. The anterior arch is the trouble maker in excisions, and loss of the normal range of motion is the rule.
5. Proper arch supports are essential in after-treatment in excisions.
6. Bony overgrowths interfere frequently with a satisfactory end-result.
7. The removal of the exostosis, per se, is rarely justified.
8. The Kellar method seems to offer a distinct advance in the operative treatment of hallux valgus.

1103 Marsh Strong Building.

1. Kellar, W. L.: Further Observations on the Surgical Treatment of Hallux Valgus and Bunions, New York M. J. **95**: 696 (April 6) 1912.

Child Mortality in England.—In England and Wales from 1911 to 1914 at ages 2 to 5, the percentage of mortality from measles was 17.0; pneumonia, 16.6; tuberculosis, 12.6; diphtheria, 8.8; whooping cough, 6.9; diarrheal diseases, 5.0.

HOMOHEMOTHERAPY

JULES VONCKEN, M.D.
Chief, Surgical Service, Military Hospital
LIÉGE, BELGIUM

The distressing complication of hemophilia has led to increased therapeutic efforts aimed at assisting blood coagulation in patients who bleed almost completely anemic after the slightest wound. Etiologic considerations have directed the attention of recent investigators to a quest for the missing element necessary for production of a normal clot. The employment of human serum and the application of fresh blood to the bleeding wound have successively enjoyed a rather well merited reputation for efficacy. Nolf, who considers the action of serum as that of an antigen, on the basis of extensive studies recommended the use of peptone. To obtain coagulation, he says, it is necessary to have the combined action of three colloids: fibrinogen, thrombozyme and thrombogen. These colloids unite to form fibrin and thrombin. Peptone acts by provoking the secretion—if it may be called such—of that one or several of these elements, of which there is normally a deficiency. This therapeutic measure has given favorable results in other hands. Bienwald [1] injected blood from a healthy subject into the depth of a bleeding wound of a hemophiliac; coagulation set in and the hemorrhage was arrested.

In a recent communication, Chalier [2] pointed out the efficacy of injections of maternal blood in cases of hemophilia. It is known that this hereditary affection—perhaps the most hereditary of all diseases—has a special predilection only for the male sex by transmission through the female sex: the mother of a hemophilic family has normal daughters but gives birth to hemophilic sons. Chalier believes that maternal serotherapy should be efficacious. He reports the case of a young man with a lifelong predisposition to severe hemorrhages, in whom recurrent hemarthrosis interfered with walking and forced him to lead a sedentary life, while repeated attacks of hematuria jeopardized his general health. Eleven intravenous injections of serum, in doses of from 25 to 40 c.c., derived from the patient's mother, were followed by prompt improvement and the disappearance of all symptoms of the disease.

This method of treatment is apparently based on sound principles, and I am therefore tempted to publish the report of an interesting case of war wound which will attract attention because of its complexity and obscure pathogenesis. I have purposely compared it with cases of hemophilia, although it was by no means true hemophilia; but the symptoms in this case revealed some defect in the coagulation process which was readily comparable to the phenomena observed in hemophilia. Moreover, the rapidity with which improvement set in commends the more frequent employment of the treatment described by Sicard [3] under the name of "homohemotherapy." It was a case of hemorrhagic fistula after a wound in the liver region by a shell fragment. Repeated light hemorrhages had produced a serious state of anemia, for which reason we readily found occasion to apply Sicard's treatment.

1. Bienwald, cited by Osler and McCrae: Modern Medicine **4**: 728.
2. Chalier: Société méd. d. hôp. de Lyon, 1919.
3. Sicard: Marseille méd. 1918.

REPORT OF CASE

W., a soldier, was evacuated to the Belgian military hospital Villiers-le-Sec (Calvados), a base hospital attached to the field hospital of Beveren-sur-Yser, with a wound of the abdomen in a convalescent stage. The clinical history revealed that a month before he had been admitted to the hospital of Beveren, where he had been operated on by Dr. Derache for a penetrating shell wound of the right lobe of the liver with laceration of the lower part of the liver. The fragment was buried in the parenchyma of the liver; this was extracted, the liver was sutured and packed with a tampon of iodoform gauze, and the wound was closed. The postoperative course was normal; the tampon was removed on the sixth day, and the soldier was evacuated after three weeks in a fair way to recovery. On his entry into the base hospital, his condition was very satisfactory. Local examination disclosed a cicatrice about 12 cm. long, along the external border of the great right lobe, in the center of which there was a discharging fistula; the discharge was blood stained. The dressings were renewed every other day, and each time blood was detected on the gauze. Eight days after admission to the base hospital there was a slight hemorrhage, more abundant than usual, from the fistula, but no importance was attached to the occurrence. Several days later a profuse hemorrhage saturated the dressing, and the soldier called this to the attention of the physician on duty. The latter applied a tampon in the fistula. On the succeeding days there was relative calm: the dressings were always stained with blood. The hemorrhage apparently occurred with greater frequency; and as retention of a shell fragment in the liver was suspected, a roentgenogram was made, with negative result. As the symptoms continued, the tract was explored with a stylet, on the theory that it concealed some foreign body, not opaque to the roentgen ray. Nothing was accomplished except renewal of the hemorrhage, which could be arrested only by a tampon. The bleeding continued and the general condition of the patient grew worse. One month after admission a blood count revealed 3,800,000 red cells, and the patient was almost colorless; the mucous membranes were pale. A second count, ten days later, gave 3,200,000 red cells, and hemoglobin 60 per cent. The patient felt weak. The discharge from the fistula was always bloody, and never contained clots. It did not seem that hemophilia could be at the bottom of the trouble, as the patient had undergone a major operation without postoperative hemorrhage. From the median vein of the arm a sample (2 c.c.) of blood was taken, in order to compare the coagulation time with that for a normal person, Morawitz's method being used; a difference of one minute was noted, not characteristic of hemophilia. The same was noticed in comparing the bleeding time with that for normal subjects. Bleeding after puncture of the ear lobule continued for some moments and stopped as quickly as in the normal subject. As the symptoms became aggravated it was decided to undertake homohemotherapy as recommended by Sicard. This simple procedure is not in the nature of a transfusion. It consists simply in taking blood from a healthy subject, about 100 or 150 c.c. being obtained from a vein of the arm. The blood is aspirated into a syringe and is immediately injected under the skin of the patient at some point where the skin is fairly loose, as over the abdominal region. In the case here reported, the injection was repeated after eight days. A local hematoma formed, but was resorbed in ten days. On the day following each injection, the temperature rose very slightly (38.2 C. and 37.9 C.), but no other general symptom developed. On the contrary, there was local improvement: After ten days the discharge from the fistula had diminished considerably, and by the fifteenth day the fistula had dried up and the operation scar completely healed. One month later the general condition of the patient was normal, and all signs of anemia had disappeared.

COMMENT

It would be rash to call this condition acquired hemophilia, because there was no incoagulability of the blood. Nevertheless, there is in this term an element of truth, for it was really a local hemophilia, strictly limited to the region of the wound. This hemophilia in the liver region kept the fistula open by the incessant hemorrhages which it provoked. On the basis of the few observations made on this wounded soldier, it is not possible to do more than formulate some hypotheses. It is necessary, first of all, to bear in mind one physiologic fact: When the general circulation of a dog is restricted by excluding the intestinal and hepatic areas, the blood becomes incoagulable. Moreover, in Nolf's theory of blood coagulation, one of the three colloids necessary for coagulation, the thrombozyme, comes from the blood vessel walls. The others, fibrinogen and thrombogen, are formed in the liver. In the case under consideration, did not the wound of the liver alter the hepatic tissue in this definite respect, that the parenchymatous portion no longer produced the colloids indispensable to coagulation? Hence the frequent hemorrhages and the persistent bloody discharge from the wound.

There is, moreover, nothing very new in this hypothesis. We need only recall that diseases of the liver often give rise to profuse hemorrhage; clinicians have noted the frequency of hemorrhage in cirrhosis, while it is only necessary to mention hemolytic jaundice and that disease which was so prevalent during the war, spirochetal jaundice. The treatment employed was enough to induce rapid recovery by changing slightly the humoral equilibrium of the patient. Because of its simplicity and absolute harmlessness, the method deserves the attention of physicians. Much more simple than transfusion, the technic can be used under any and all circumstances. The indications are obviously more restricted than those for transfusion, which retains its value for acute cases, and they are not definitely determined: in all anemic conditions and hemorrhagic dyscrasias, homohemotherapy apparently exerts a favorable influence.

The foregoing case is reported mainly from an essentially practical point of view. The facility with which homohemotherapy may be practiced gives it almost universal application. Without preliminary equipment or surgical preparation of any sort, with only a good syringe sterilized by boiling, any physician can make subcutaneous injection of human blood, provided only that he is certain of the health of the donor. From this point alone, homohemotherapy has an undeniably practical advantage over transfusion. There need be no fear either of anaphylaxis or of producing embolism and infarct, as in transfusion of other than citrated blood. There is no more danger than with an injection of serum, and it would seem that injection of whole blood has proved much more efficacious.

Sanitation and Antityphoid Vaccination.—The protective value of antityphoid vaccination is no longer open to question. No more definite test could possibly have been given than that afforded by the recent war emergency, a test by millions. No better comparison was ever offered than the comparison between the awful typhoid mortality in our troops in the Spanish-American War, and the light incidence of typhoid in the far greater war from which we have just emerged, triumphant over noxious germs as well as noxious Germans. War observation has taught us that vaccination is not a substitute for sanitary precautions. It has demonstrated the possibility that men fully and properly vaccinated may yet succumb to typhoid invasion. The probable explanation is that in such cases the victim is overwhelmed by infective material in enormous doses.—*Bull. Kansas Bd. Health,* March, 1920.

Clinical Notes, Suggestions, and New Instruments

A CASE OF VAGINAL SEPTUM AND BICORNATE UTERUS *

H. G. STEELE, M.D., BLUEFIELD, W. VA.

About 11:30 p. m., March 7, 1920, I was called to see Mrs. C. E. N., who had been wasting for thirteen days. She was 18 years of age, and had been married since October, 1919. I found her in bed, suffering with slight pains, and wasting a little, with evidence of having considerable uterine hemorrhage since 3 p. m. that day. Examination revealed a bloody discharge in and about the vaginal orifice. This was mopped away and the area made reasonably sterile with pledgets of cotton saturated with compound solution of cresol. On attempting to insert two fingers into the vagina, I encountered an obstruction a short distance from the entrance and found that only one finger could be introduced as far as the cervix without some unpleasantness to the patient. This caused me to wonder how it was possible for this woman to become pregnant through so small an opening. On withdrawing my finger and reinserting it into the vagina I found more room than before, sufficient for the insertion of two fingers, and did insert two fingers up to the cervix. On closer examination I found what appeared to me to be two vaginas leading up to two cervices, or a double cervix uteri, with an orifice opening into each vagina. This partition in the vagina was attached to the anterior and posterior walls, and it seemed to be joined to a septum of the cervices. The uterus was slightly enlarged.

The patient gave a history of having missed two previous menstrual periods. I packed the vaginas—the right with two pledgets of gauze, the left with one—after stretching both slightly. I gave the patient a hypodermic injection of morphin sulphate, ¼ grain, and atropin sulphate, 1/150 grain, at 12 o'clock, and left her for the night.

At noon the next day she was brought to the Mountain View Hospital and put to bed. At 1:30 that afternoon the gauze was removed. On the gauze from the right side there was a bloody discharge, but none on the one from the left, leading me to believe that there were two distinct openings in the cervix and a complete septum in the middle of the vagina.

She slept most of the afternoon and was resting comfortably when I left the hospital at 10 o'clock that night. At 1:30 the next morning the night nurse called me over the phone and said that she was having a hemorrhage. A hypodermic injection of morphin sulphate, ¼ grain, and atropin sulphate, 1/150 grain, was ordered. She rested well the remainder of the night, and the hemorrhage almost ceased.

At 10:30 a m., March 9, she was put on the operating table and an anesthetic given The septum was put on the stretch and was found to be 6 cm. long and 3 cm. wide, or the latter was the distance from the anterior to the posterior wall of the vagina when well dilated, and this septum was from 3 to 5 mm. thick.

The cervix was pulled down with volsella until it could be seen in the left vaginal fornix. The cervix was dilated and the uterus curetted with the index finger and then with a dull curet, the remains of a placenta of about one and one-half or two months being removed from the right side of the uterus. On further examination an opening about 1.5 cm. from the external os was found leading into the fundus on the left side of the uterus for a distance of about 6 cm., while the depth of the right or pregnant side was about 10 cm., proving that I was dealing with a bicornate uterus. At this period of the operation I discovered that the upper border of the septum was not attached to the uterus, and that there was but one cervix, or possibly I had converted two cervices into one, at the time of dilatation.

The right cornu was mopped out with a strip of gauze saturated with equal parts of tincture of iodin and alcohol.

The septum was clamped at the junction of the posterior and anterior vaginal walls and cut away between the clamps. The stumps of the septum and the vaginal walls were painted with the iodin-alcohol solution, and the vagina packed with a strip of gauze.

The right side of this septum was covered with a smooth, soft, cartilaginous tissue, while the left side was covered with convoluted vaginal mucous membrane.

The clamps were left on the stumps of the septum, gauze was wrapped around the handles, and the patient put to bed. At 7:40 p. m. that day the clamps were removed. No bleeding followed. At 8:20, 500 c.c. of urine was withdrawn by catheterization. The gauze was removed the next day.

The patient did not seem to have any other deformity except a ptosis of the right eyelid. She never had more than very little vision in this eye. She made an uneventful recovery, and left the hospital, March 15. April 23, she was feeling well.

* Read before the West Virginia Medical Association, Parkersburg, May 19, 1920.

PETROLATUM IN ANTERIOR CHAMBER FOLLOWING CATARACT EXTRACTION

ARTHUR WHITMIRE, M.D., NEW ORLEANS

REPORT OF CASES

CASE 1.—Following combined cataract extraction, the lids were covered with sterile petrolatum, dressed and bandaged. For several weeks following, a round mass, apparently lens substance of about 4 mm., always assuming the highest level or angle of the anterior chamber, was noticed, and the eye developed low-grade iridocyclitis, without the least absorption of the mass. I happened to pass the patient on the porch one morning, stopped to make an inspection, the sun happened to be shining into the eye, and, to my great astonishment, the spherical globule of petrolatum was unmistakably shown in its natural color. I assisted the oculist in charge in its removal, by entering a keratome above, when the petrolatum was floated on the blade, and inspected. The patient passed from under my observation, but not until we had noticed a great improvement.

CASE 2.—As in the foregoing case, seen at the same clinic, a patient presented iridocyclitis. Petrolatum was suspected, and demonstrated by inspection in sunlight. The patient left without operation, and was not seen again.

COMMENT

Petrolatum in the anterior chamber will by artificial focal illumination look exactly like lens matter, having no greenish-yellow color. The appearance would never lead one to think of petrolatum. In cases with sluggish absorption of lens matter, following cataract, I advise sunlight inspection.

A SIMPLE AND EFFICIENT MEANS OF APPLYING RADIUM TO BLADDER NEOPLASMS IN THE MALE

GIDEON TIMBERLAKE, M.D., BALTIMORE

Some years ago, Young devised a most efficient and trustworthy instrument for procuring tissue from bladder tumors for section and diagnosis. The value of this instrument became greatly enhanced when it was found that it could be applied effectively to intravesical operations which ordinarily would call for some major operation to accomplish similar results. The removal of tissue has served as a minor function, as compared with the removal of foreign bodies, including small calculi. In fact, after litholapaxy, there are fragments of stone to be removed which cannot be evacuated by natural or artificial means, yet which are too small and isolated to be within easy reach of a blind instrument like the lithotrite. This instrument, the "cystoscopic rongeur," actually accomplishes a vast deal more than would ordinarily be expected of it, because of its versatility and adaptability to rather intricate problems, which are soon made easy of solution.

The application of radium to neoplasms of the female bladder is more or less simple, and, to be sure, is more or less

simple in the male; but because of the anatomic difference in matter of approach, it has been found necessary to devise rather complex apparatus to meet the requirements, and when done, there is always a great element of risk attending, because of discomfort to patients, which causes them to shift positions without the instrument following. In fact, while excellent by comparison with less well appointed means, the work is done in the dark, and therefore it is uncertain.

While I was working with Dr. William Neill at the Kelly Sanatorium, the application of radium in the end of a cystoscopic sheath or metal catheter end impressed me as being rather clumsy and uncertain. In contemplating the more "refined" methods of approach and application, these, too, seemed to have their weak points. As we were requested to take a piece of a special tumor for diagnostic purposes, it occurred to me to try the cystoscopic rongeur as a means of holding a radium capsule and applying it. It was found that a capsule was held snugly between the jaws of this instrument, and we were able to pass in an ampule containing a decigram of radium after this fashion, and to remove the obturator and replace it with the cystoscopic sheath and turn the nose of the rongeur to whatever part of the tumor we desired.

It was necessary, of course, to hold the jaws of the instrument together lest we lose the parcel. The bystanders naturally entertained some fear lest this slip out and be lost within the bladder. It must be remembered, though, that removal of this capsule with the rongeur would be most simple, provided it did not fall into a diverticulum or hiding fold of the bladder. In thinking this over, a simple means of security presented itself, namely, using a pulley "belt hook" to slip over the thumb and finger posts, which would hold the jaws well in place.

After the instrument has been properly adjusted to the tumor mass, the cystoscope is removed and replaced by the obturator for the purpose of holding the fluid in the bladder. If leakage has taken place or it is necessary to make further observation, the irrigating chuck-nozzle which fits into the tunnel of the instrument can be put in place and the bladder cleansed and filled with clear fluid, when further observations may be made with the cystoscope. It is obvious that this method is short of completion; but it most certainly brings the solution of the problem to being more nearly accurate.

Fortunately, regardless of the position of the tumor mass, it can be approached with reasonable accuracy by this method; then, too, it permits of intensive or lighter radiation at each sitting, thus intensifying the treatment; and it minimizes the amount of discomfort of the patient, since the time of application is greatly lessened.

What use may be made of this suggestion, or what impetus may be given to devising more efficient methods, is problematic; but I have recommended it because it is obvious that it has some merit.

816 St. Paul Street.

A NEW METHOD OF PREPARING WAX BULB CATHETERS OR BOUGIES FOR USE THROUGH ANY OPERATING CYSTOSCOPE

T. M. DAVIS, M.D., GREENVILLE, S. C.

In the diagnosis and treatment of ureteral strictures in female patients, I used beeswax with more or less success for the bulbs on the ureteral catheters, introducing them into the ureter by means of the Kelly cystoscope. But several attempts to pass these beeswax bulb catheters into the ureter through a Brown-Berger operating cystoscope were unsuccessful. The wax was always cut or scraped off in the passage through the instrument.

After trying several substances I found that sealing wax was a suitable substance for making these bulbs. Although the forming of a suitable bulb with it is somewhat more difficult, it more than repays for the trouble in its durable qualities, as there is no injury to the bulb in its passage through the operating cystoscope. The bulb is not scratched by a stone, to determine the presence of which it is necessary to tip the catheter with beeswax before introduction.

In applying the sealing wax to a catheter I generally use an olive tip size 6 or 7 French ureteral catheter, one with preferably two eyelets. Usually one has on hand several of these catheters with some damage to the proximal eyelet. These can be used, as the wax repairs the eyelet. A wire stylet is passed into the distal eyelet past the second eyelet to preserve the lumen of the catheter. The wax is placed at the site of the proximal eyelet, or about three-quarters inch from the end of the catheter. The sealing wax is heated in a flame and applied directly to the catheter (which must be dry). This is repeated as often as necessary, until the desired amount of wax is on the catheter, which is shaped into the form of an olive with some heated metal (as the end of a scalpel), and completed with the blade of the knife by gently scraping until the desired shape is obtained. For diagnosis I usually prepare a bulb 4 mm. in diameter, as this will pass easily through the cystoscopes and will give very satisfactory results. A small wire stylet in the catheter is employed to give sufficient resistance against undue bending of the catheter.

Having used this method in both male and female cases I can say that it is much more comfortable for female patients than is the use of the Kelly cystoscope as formerly.

CHRONIC TOTAL INVERSION OF THE UTERUS

VIGGO W. JENSEN, ST. LOUIS
Intern St. Louis City Hospital

This case is reported because the condition is unusual; it was apparently of long duration; the gynecologic symptoms were of late onset, and the patient had been treated for "nervousness."

Mrs. R. M., aged 43, complained of pain in the abdomen which was sharp and lancinating, beginning March 4, 1919, persisting, and becoming progressively worse. It arose in the left lower quadrant, and then crossed to the right lower quadrant, where it may arise, though this is less common.

The patient, who had been married three times, had one child during the first marriage, twenty-three years before, and had not been pregnant since. Menstruation was regular up to and after marriage. The duration was about four days of twenty-eight day type. Since March 4, 1919, the day on which the third husband was killed, it has been coming on every two weeks, with an increase in the number of napkins. Prior to this date, she had no idea of how long she had had a watery discharge, but after the foregoing date the discharge became red and continued so. There was no leukorrhea.

For about two years she had had attacks of dizziness, with black spots before her eyes at times other than at menstruation, and also progressive loss of appetite and constipation. She had for years had difficulty in walking upstairs or working hard, because she "got out of wind," and occasionally when lying down, she had choking spells and then had to sit up in order to sleep.

The patient was well nourished. The skin had a yellowish tint. There was increased cardiac dulness to the left, with systolic murmurs at the base and apex. The abdomen showed tenderness in the iliac fossae, and the lower margin of the liver was just palpable. There was slight edema of both lower extremities.

Vaginal examination revealed the vagina filled with a spherical tumor, the size of a goose egg, fairly hard, of uniform consistency, with a smooth surface, and easily followed up to the vaginal fornix. A cervical ridge could be made out in the right posterior quadrant, where a finger could dip into a shallow cavity, probably not more than one-half inch deep.

Above the symphysis, no distinct mass could be palpated. In the speculum, the vaginal mass appeared covered by a soft, grayish membrane, which only in certain portions higher up bled easily on being rubbed. Nothing was visible to suggest a tubal opening. A diagnosis of total chronic inversion of the uterus was made.

The uterus was removed by the Spenelli method and the clinical diagnosis confirmed. The length of the uterus from

the internal os to the fundus was 5 cm.; the circumference here was 12 cm.; about 9 cm. at a point corresponding to the internal os.

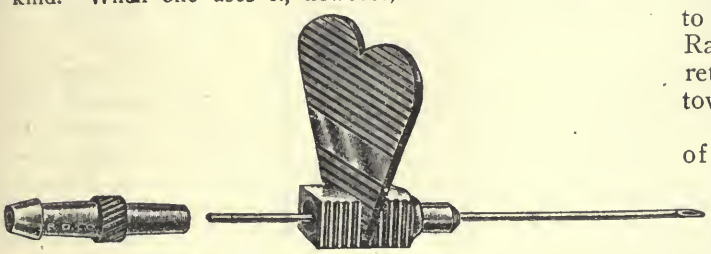
The mucosa was about 2 mm. thick, very red, shading toward the internal os into a pale pink, streaked with capillaries, but the surface was intact except for surgical destruction, and was movable on the underlying tissue. From the peritoneal side the fundus appeared as a mass; there was no cavity here, and portions of the tubes and ligaments had been dragged into this mass, with the cervical arteries, in their relative position, somewhat sclerotic. The cervical ring was obliterated. The tubes were patent from the peritoneal side but not from the mucosal. The surfaces made by cutting rolled out, oozing with a watery fluid; they were smooth and appeared made up of minute strands. The histologic examination revealed normal mucosa and muscle of the uterus.

This inversion was probably of twenty years' standing, as the patient stated that at the birth of her only child she had uterine inertia, which was overcome by drug stimulation; she was delivered with forceps, followed by unconsciousness for one day. She was about the house on the third day, and ten days later walked a half mile. She was told by her physician that she would never bear another child because something else beside the afterbirth came away. Since then she had had intermittent urinary disturbance, pain over her lower abdomen and passing of liver-like clots on excessive intercourse.

MODIFICATION OF FORDYCE NEEDLE USED FOR THE COLLECTION OF BLOOD AND FOR INTRAVENOUS THERAPY

E. W. ABRAMOWITZ, M.D., NEW YORK

The Fordyce needle used for the administration of arsphenamin is of 19 gage, and in my experience is the best of its kind. When one uses it, however, for the withdrawal of



Modification of Fordyce needle used for collection of blood and for intravenous therapy.

blood, unless a syringe is attached the blood spreads out over the parts and causes soiling of the fingers, receptacles, linen, etc.

I have devised a modification of this needle consisting of a stem through the hub beyond the holder, of one piece, at the same time not changing the socket of the holder, thus making it possible for the original Luer adapter to fit around the needle. The administration of arsphenamin can be proceeded with without puncturing the patient again. The needle can be procured from James T. Dougherty, 409-413 West Fifty-Ninth Street, New York.

DIRECTIONS FOR USING THE NEEDLE

After skin sterilization, a tourniquet is applied, and the needle inserted into the vein. A stream of blood passes inside the receptacle, and one can collect 50 c.c. of blood in a few minutes in this way when necessary, as for intraspinal or autoserum work. The tourniquet should be loosened before the gravity apparatus is attached to the needle, thus giving a comparatively clean field for operation.

46 West Eighty-Third Street.

Swat the Fly.—Fly prevention can be accomplished only through efforts of the entire community working as a unit. Competent authorities have estimated that the product of a single fly in forty days would equal 810 pounds, provided one half of the offspring survived.

Special Articles

OBSERVATIONS ON SOUTH AMERICA

I. JAMAICA AND CANAL ZONE

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To the vision, courage and political sagacity of Theodore Roosevelt the world owes the Panama Canal. The severing of the land connection between North and South America united the peoples of the two continents, and now that the war is over, trade and travel between North and South America will grow in an unprecedented manner. The ease with which either coast of South America may be reached from North America is still scarcely appreciated by the people of either continent. The trip from New York to Lima, Peru, can be made in very comfortable steamers in eleven days, and to Valparaiso, Chile, in fifteen days. New and faster steamers are being put on which will readily reduce the time four days. It will soon be possible to make the journey from New York to Rio Janeiro in less than two weeks, and to Montevideo and Buenos Aires in from fourteen to sixteen days. Because of the many stops made by some of the steamers, the time is lengthened; but the interest to the traveler is enhanced by the opportunity given for visiting the West Indies, the Canal Zone and the coast cities. A most delightful route is by way of the Panama Canal and the west coast, with various stops, to Valparaiso, Chile; then across by the Transandean Railway to Buenos Aires and Montevideo, and the return by the east coast via Rio Janeiro and other towns of Brazil.

In January and February of this year I visited some of the countries and cities of South America for the purpose of observing, superficially, it is true, the methods of education and university organization and, more in detail, the medical schools, hospitals and research institutions. I wished particularly to see and profit by attendance on the surgical clinics of the eminent surgeons of these countries. I intend briefly to describe a few of the many interesting phases of our trip with the hope of stimulating others to take similar trips, not alone for the purpose of travel and recreation, but for the profitable study of the medical conditions of our Latin-American neighbors. A brief review of the historical and geographic background may give a better understanding of the relations between the two continents (Fig. 1). In 1492, Columbus landed on San Salvador, one of the Bahama Islands. In 1497, the Cabots reached the mainland of North America. There is evidence to show that Leif Ericson made a temporary settlement in North America about the year 1000 A. D. In 1498, Columbus landed on the mainland of South America near the mouth of the Orinoco River; and on his last trip in 1502, he visited the shores of Panama. It is interesting to note that in the next fifty years the Spanish conquest of Mexico, Central America and South America was about completed. The original people were Indians, and on this Indian stock the Spanish conquerors grafted. Brazil is Portuguese; the country was discovered by Cabral of Lisbon, in 1500.

The native Indians of South America varied in degree of civilization and in characteristics. In Mexico,

Peru and Bolivia they reached a high stage of civilization of a certain type. The Araucanian Indians of the southwestern part of South America were much more warlike, a brave and hardy race, whose characteristics are still manifest in the Chilcans. Generally speaking, the South American natives were a superior type of Indian, and when they mixed with the white race many of the good characteristics of both races were retained. There seems to be an impression in North America that there is a mixture of the negro in the people of South America. It should be remembered that the negroes are to be found in the southern half of the United States and in the West Indies; that they are of an alien race brought over from Africa, and that there has been less mixture of the Africans with the Indians of South America than with the whites of North America. Negro and negro mixtures have been little in evidence in Peru, Chile, Argentina and Uruguay. The peoples of South America who have Indian blood are proud of their ancestry, as are the descendants of Pocahontas and John Rolfe. North Americans have frequently given great offense to the South Americans by failure to recognize this fact.



Fig. 1.—Map of the Western Hemisphere, with trade routes.

South America lies east of North America; the west coast of South America lies east of the east coast of Florida. The Panama Canal is almost straight south of New York. Valparaiso, Chile, lies east of New York. The west coast of South America, therefore, because of the Panama Canal, has been brought in touch with the United States. From the Panama Canal to New York is a distance of 1,974 nautical miles; and from the Canal to San Francisco, 3,245 miles; from the Canal Zone to Liverpool is 4,548 miles, and to Yokohama, Japan, 7,682 miles.

In the narrow valleys and coastal plains of the west coast of South America the soil is extremely rich, and sugar and cotton are raised. Because the mountains extend to the west coast in portions of the country, and because of the lack of moisture, all that is raised, except in the southern part, is produced by irrigation. The mountains are rich in minerals. The world's supply of vanadium is in Peru; the tin, silver, copper and tungsten mines of Bolivia, Peru, and Chile are among the richest known, and the nitrate (saltpeter) fields of Chile are the wonder of the world.

The trade relations with the west coast of South America have not the possibilities of those of the east coast where the great plains exist. On the east coast the distances are not sufficiently in favor of the United States to give any particular advantage. The distance from the east shoulder of South America, at Pernambuco, Brazil, to New York, is 4,062 miles, and to Liverpool, 4,467 miles; and since the Gulf Stream runs direct to the British Isles with from a knot and a half to two knots an hour of current, the advantages are considerable in going from the east coast, Rio Janeiro, Montevideo or Buenos Aires, to Liverpool. It is true that the return voyage from Liverpool is against the Gulf Stream; but going to and from New York, the Gulf Stream must be crossed. The rich portions of eastern South America are tropical and subtropical, and extend down into Argentina. Rubber, cotton, sugar and coffee are raised. The great fertile pampas of Argentina, which remind one of the prairies of Illinois, Iowa and South Dakota, stretch out for a thousand miles to the south. The southern half or more of Argentina lies in a temperate climate favorable to the raising of grains, cattle and sheep.

DIRECT CONTRAST BETWEEN NORTH AND SOUTH AMERICA

North America has an area of 8,500,000 square miles; a certain proportion of it lies too far north to be of great value. South America has an area of 7,420,000 square miles, but possibly 25 per cent. of it comprises the great basins of the Orinoco, Amazon and Parana rivers, areas too low and swampy for continuous human habitation. Millions of years may pass before vegetation and the deposits from the washings of the mountains will sufficiently elevate this country for a salubrious climate. This lowland region, which extends well up to the Andes Mountains, is very interesting.

By entering the River Plata and going up the Parana through the branches of the Amazon, explorers with easy and short portages have finally reached and come down the Orinoco River. Much of the low territory is in Brazil, which has two distinct regions, the tropical lowlands of the north and west, and the temperate uplands of the center and south. The United States is about the size of Brazil, each containing a little more than 3,000,000 square miles. North America has approximately 120,000,000 inhabitants; South America has about 50,000,000, and of these Brazil has nearly half, 24,000,000, who are Portu-

guese speaking people. In the remainder of South America the language is Spanish.

In a study of the characteristics of the people of North America and South America great differences will be found, since the cultured, intelligent class, white or largely white, in South America is small, while the ignorant Indian class is extremely large. Unfortunately, up to the present time there has been almost no middle class in South America, although such a class is in the process of development. In the large cities primary education, while not compulsory, is extensive. In Brazil the primary schooling is three years; in Peru, Chile, Argentina and Uruguay it is from five to six years. The difficulties of general education outside the cities, where the estates are very large and the population scanty, are not easily overcome. The course of education in the secondary schools is six years, but these secondary schools are limited in number. In the various countries in South America Spanish is generally spoken by the cultured class. French and English are the next most extensively spoken. In most of the secondary schools English is taught, at least as an elective study. Persons intending to go south would do well to learn Spanish; a knowledge of this language will also enable them to communicate with people who speak Portuguese. Spanish is easily learned and the vocabulary is relatively small. When the vast possibilities of South America, which are equal to those of North America fifty years ago, are considered, and it is realized that South America at the present time is as yet underdeveloped and underpopulated, no prophet is needed to foretell that Spanish will be a very useful language to the North American; it should be taught generally in our public schools.



Fig. 2.—Ancon Hospital, Canal Zone.

Whatever may be our after-war duty in Europe, about which there is so much difference of opinion, there can be no difference of opinion with regard to the necessity of the establishment of friendly relations with the great and growing republics of South America. In some parts of South America the spirit of friendliness toward North America does not exist. There has been a tendency for North Americans to go to South America for the purpose of exploiting the country, and without extending to the inhabitants even common politeness. Germany, England and France have vouched for the goods their merchants sent to South America, and the South Americans have not been prepared to combat the principle of "buyer beware" which appears to have been the motto of at least some North American business firms who have been developing South America into a dumping ground for inferior goods.

JAMAICA

The Island of Jamaica is inhabited by about 800,000 people, only 20,000 of whom are white; the remainder are negroes. The great supply of laborers for the building of the Panama Canal was obtained from Jamaica, the French island of Martinique, and the Barbados. In Kingston, the capital of Jamaica, are several excellent English physicians. Small nursing homes of the English type are maintained for the care of white patients. A hospital is supported by the English government for the negroes; among the patients a freckled, red-headed negro was seen. This hospital also has a ward for white sailors. Jamaica is a typical West Indian island, and contains a great deal to interest the northern traveler and the physician interested in the tropical diseases of the negroes.

The negroes in Central America, especially in the Canal Zone, are often called "silver," and signs of "Silver" instead of "Negro" are used, as the dollar of these Central American countries is on a silver or fifty-cent basis. "Gold" denotes the white people, who are paid on a gold basis.

CANAL ZONE

Less than two days' sail from Jamaica across the Caribbean Sea brings the traveler to the Canal Zone. In approaching Colon one is close to "the rim of the world" and may look on both sides. On the north is seen the polestar with the Big Dipper, and on the south, close to the horizon, the Southern Cross with its two pointer stars. The clean, wholesome city of Colon, the wonderful docks and locks of the Canal, and the beautifully kept port of that part of Panama City which lies within the Zone inspire pride in the American and the wish that the government could be as well enacted at home. Everything is spotlessly clean, and everywhere the dreaded mosquitoes and flies are absent, an imperishable monument to our revered Gorgas. The supply of water is abundant and pure; the hotels are fine and under government regulations. The sanitation of the City of Panama outside the Canal Zone is also under United States government control, through the agency of the able sanitarian, Dr. Goldthwaite. Within the Zone the sanitation is under the capable and energetic supervision of Colonel Fisher of the Regular Army Medical Corps. Colonel Greenleaf, who during the war had charge of the military hospital at Fort Snelling, Minn., is now commanding military medical officer of the Zone. The splendid hospital at Ancon, located on the slope of Ancon Hill, in the Canal Zone, was built by the United States government (Fig. 2). It is constructed of brick and cement, and all installations are the best and are up to date. Colonel Hess, who is in charge, is a fine surgeon of scientific training and broad sympathies. The ordinary capacity of the hospital is 800 beds, but it may accommodate 1,400 patients. Pay patients are admitted. The surgeons' fees go into the general fund

of the hospital. Seven and one-half dollars a day is charged for a private room, and $2 extra for private bath. Nurses are supplied for $5 a day on an eight-hour day schedule. Thus room and adequate nursing costs $24.50 a day. The people of average means cannot, of course, procure such attention, but they have access to the wards at $3.50 a day. Employees of the government are cared for in the wards free of charge, and in private rooms with a reduction of about 25 per cent. from the regular price. There are about eighty registered nurses and a nurses' home, but no training school.

There are not enough army medical officers to do the hospital work, and the bulk of it is done by contract surgeons who receive a salary of $200 a month. This means, of course, a constantly changing medical personnel. An examination of conditions in the United States Army, relative to the medical force, leads to certain reflections. Appointments to service in the Regular Medical Corps of the Army are not sufficiently attractive to young medical men to keep the ranks full. The medical officers are inadequately paid, without authority in their work, and without facilities for study and observation. If they take time for the purpose of obtaining scientific knowledge, it must be taken at their own expense and in lieu of vacation. They are under the iron-clad and often unsympathetic rule of purely military men, who are as yet little touched by social progress. The West Point man, controlled by unwritten laws, has himself to blame for the suspicion and prejudice of the American people because of his lack of interest in all fields outside the purely military. There are so many splendid exceptions to this statement as almost to negate it, and no doubt the system and not the man is to blame for existing conditions. At least it may be said for the West Point men that they are honest, loyal and brave. The candidate for West Point must be a graduate of a high school. After three years at West Point at the expense of the government, he assumes a life position of authority and the controlling of men, a control based on authority, not necessarily on ability. The army medical officer is a civilian educated at his own expense, with from seven to nine years' training after the high school, as against the two to three years of the West Point man. Is it any wonder that young men planning a career of usefulness do not choose the Army medical service? Some of the greatest men in medicine, who by their scientific work have done much to conquer disease and prolong human life, have belonged to this service. During the war my brother and I, as chief consultants for the surgical services, were brought constantly in contact with the medical officers of the Regular Army, and I take this opportunity to render merited tribute to the ability, integrity and scientific knowledge of these men. The medical officers who controlled the various departments in the Surgeon-General's Office in my opinion averaged higher than men of the same relative position outside the Army. Working under rules and conditions not of their own making, they were just and fair-minded, giving loyal service and achieving results which helped greatly to win the war. It must be remembered that when we entered the war there were less than 500 medical officers in the Army. In investigating criticisms of the medical officers of the Regular Army, I found almost invariably, when I have investigated, that it was the civilian medical officer who had joined the Regular Army Corps after the war broke out who was at fault, and not the officer who had been trained in the Corps. The medical profession of the United States owes it to the fine body of men who represent them in the United States Army to take united action to obtain for them authority, position, pay and, above all, opportunity for professional study. The medical profession can, if it will, make the Army medical service one which will attract capable young men and keep the quota of medical officers full.

THE NURSE QUESTION

The arrangement in the Ancon Hospital of an eight-hour schedule for the trained nurse calls attention to the fact that the registered nurse under present conditions is a luxury that cannot be obtained except by the well to do, and this brings up the question: Is the trained nurse a luxury or a necessity? The answer must be that she is a necessity. The high-standard registered nurse is one of the greatest blessings of modern civilization. She has spent three years of twelve months each in training after graduation from high school, thirty-six months in all, the equivalent of a university course of four years of nine months each, and in a university the same time and work would have won for her the degree of Bachelor of Science. The registered trained nurse is not overpaid, considering the character of her training; rather is she underpaid, for she represents the best type of human machine for the care of the sick. But we need other types of nurses less highly trained but nevertheless important social service vehicles, the Fords, so to speak, of the nursing world. If representatives of the nurses' union are approached on the subject of vocational training to develop a large number of young women for this important work they are indignant and call attention to the fact that standards are being raised for physicians, and they ask why they should lower theirs. In this connection it should be remembered that the physician is expected to care for rich and poor alike, and allow no one to suffer for lack of such care, regardless of his ability to pay for service. This is not and can never be the case with the registered trained nurse. A solution of the problem of the training of a sufficient number of nurses is difficult. My sympathies are with the highly trained nurse, and I would be the last one to desire to curtail or reduce the training in any respect; but there are other considerations. Only one of 450 students who enter our public schools graduates from the university. One in ten who graduate from the high school enters the university, and one in thirty graduates.

There is only the equivalent of the university graduate at the present time in the nursing world, and in the interest of all the people there should be different grades of nurses instead of a dominion of the field by an aristocracy. The time will come, and soon, when there will be the same grades in nursing that there are in other forms of education, for example, common school nurses for the home and family, high school nurses with vocational training, and the university (registered) nurses. The difficulty in carrying out the plan will be in the providing of adequate training for the many young women who may apply for the "common school" course, because the training cannot consist of merely textbook and demonstration courses, but must be the care of the sick in hospitals, the most important part of the preparation. Although the difficulties are many, they are not insuperable. The first

six months of the course would be the same for all applicants; for various reasons many would stop at the end of this period of probation. Those who drop out at the end of the year would receive a certificate of completion of one year's work. Those who remain for the second year would receive a certificate of completion of two years' work, and those who fulfil the requirements of the three-year course would receive a diploma of graduation. The graduates, who had had preliminary cultural training, after passing suitable examinations at the state university would be granted the degree of Bachelor of Science, as the equivalent of that which is now given for training in medicine, dentistry and other professional branches.

THE REPUBLIC OF PANAMA

In the City of Panama the Republic of Panama has a hospital of 500 beds. It has a training school for nurses of various tints; very few are white. Any licensed physician may bring patients to the hospital and operate. This means an unrestricted staff. Under the progressive management of the government of Panama, plans are being made for a splendid new hospital to be built on fourteen acres of land, a peninsula projecting into the ocean.

ANESTHESIA IN NOSE AND THROAT WORK

ABSTRACT OF THE REPORT OF THE COMMITTEE ON THE ADVANTAGES AND DISADVANTAGES OF THE VARIOUS LOCAL ANESTHETICS *

EMIL MAYER, M.D., NEW YORK, CHAIRMAN; ROSS HALL SKILLERN, M.D., PHILADELPHIA, AND ROBERT SONNENSCHEIN, M.D., CHICAGO, COMMITTEE

Following the request of the Council on Pharmacy and Chemistry of the American Medical Association, through the chairman of the Committee on Therapeutic Research, the Section on Laryngology, Otology and Rhinology was asked to appoint a special committee to study and report on the special advantages and disadvantages of local anesthesia in nose and throat work, to sift the available data, and decide what further investigations would be necessary to clarify the subject. The committee was duly appointed, and presents herewith its report.

By a happy though fortuitous circumstance we have the honor of presenting this report in New Orleans, the home of Prof. Rudolph Matas, who has done more to establish the value of local anesthesia than any other surgeon in the United States, and to whom we are glad to pay our respectful homage for his splendid work in this direction, for his scientific attainments, and for the incalculable benefit he has thus given to suffering humanity.

Realizing the vast importance of the study of this subject, we arranged the following plan as our objective:

To compare local anesthesia and its effects with general.

To check laboratory data by clinical data.

To ascertain what clinical literature offers in support of the use of the several local anesthetics in different conditions, and of concentrated solutions rather than dilute in any case.

To determine what cases show idiosyncrasy with a view to determining causes.

To ascertain the relative merits of cocain and the synthetic products.

To determine whether or not hemorrhage during or after operation is greater under local than under general anesthesia.

To study the toxicity faithfully, noting especially injuries to the mucous membrane.

To note the effects of the previous administration of morphin in reducing dangers of toxicity, and in adding to the comfort of the patient.

To compare the effects of local and general anesthesia, and finally to make such recommendation as may be deemed advisable.

The study of the literature was undertaken, clinical experience sought, and animal experimentation arranged for. The study of the literature included the pharmacologic investigations on record. In the study of the clinical manifestations it was ascertained that the Council on Pharmacy and Chemistry, believing that not all fatalities were reported, inserted an announcement in thirty-eight different journals requesting reports on any fatalities following the use of local anesthetics. They received only two replies. Your committee had a similar experience in that its request through THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION was followed by but one reply, which had nothing to do with the subject at issue. A questionnaire was then sent to 150 members of the section, and this was very fruitful of results. Animal experimentation was kindly undertaken by Prof. Robert A. Hatcher with a view to ascertain what effect, if any, morphin had on the toxicity of these drugs. From the literature the committee quotes statements from the introduction to the book by C. W. Allen on Local and Regional Anesthesia, by Matas, as also by the author, from several nose and throat specialists, and from a recent article by Dowman in THE JOURNAL. All show the great advantages of local anesthesia. The latter writer in particular quotes Thomas and Cushing, who removed a brain cyst under cocain anesthesia, in which four previous operations were attempted under general anesthesia and failed, although it was entirely successful when done under local anesthesia.

A résumé of the literature thus presented indicates the advantages of local anesthesia in nose and throat operations.

DISADVANTAGES OF LOCAL ANESTHESIA

The disadvantages of local anesthesia are claimed to be difficulty of control of bleeding at the time of operation, tendency to postoperative hemorrhage, difficulty of sterilization, edema and sloughing, and, greatest of all, toxicity.

After most careful investigation among American operators who favor local anesthesia in nose and throat work—and they are by far in the great majority—no unusual difficulty from bleeding at the time of operation was admitted, nor was there any belief that there was a greater frequency of postoperative hemorrhage after local anesthesia than under general anesthesia by the largest majority of operators.

It was readily admitted that there was always an element of likelihood of bleeding in an adult whose tonsil had already become fibrous, but it was not admitted that the anesthesia had anything to do with the bleeding.

STERILIZATION

There seemed to be no doubt that occasionally epinephrin loses its ischemic effect on boiling, and should therefore be tested as to its activity, and it is stated that procain is difficult to sterilize. MacNaughton-Jones has presented an article on the sterilization of local anesthetics which consists in preparing a solution of sodium chlorid together with the anesthetic and epinephrin chlorid, each constituent being present in such quantity that a dilution with many times the volume of water will give a solution containing the requisite percentage of each. The preparation is placed in a sealed vial or ampule and kept until required. Sterile water is added before injection.

The attention of your committee was called to an apparatus for the triple distillation of water previous to its use as a solvent for procain. It was stated that it had been successfully used at one of our base hospitals in New York City. Inquiry of the originator as to the reasons for triple distillation failed to elicit any response.

* The complete report of the committee will appear in the Transactions of this Section for 1920; also in reprint form.

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

EDEMA AND SLOUGHING

The only local anesthetic that produces edema and sloughing is quinin and urea hydrochlorid. So many statements were found in the literature that this anesthetic had been abandoned in other fields of medicine because of edema and sloughing, that writers who had presented favorable reports in nose and throat operations were communicated with by your committee. One writer who had recorded 390 cases of tonsillectomies extolling this anesthetic, which he had used for four years and is still so recorded, now states that he has not used it in two years, although no publication has been made retracting his former endorsement. Still another writer, who stated that quinin-urea came nearest the ideal local anesthetic, now states that he has ceased using it. Your committee finds that as far as nose and throat operations are concerned, this drug has practically gone into "innocuous desuetude."

IDIOSYNCRASY

Your committee found one case in the literature in which the toxicity was claimed to be due to idiosyncrasy. This was that of a woman, aged 43, who had a tooth extracted and 1 c.c of a 1 per cent. solution of cocain injected. She had been treated for years previously for tachycardia, excessive perspiration and dysentery. Almost complete paralysis followed, the symptoms gradually subsiding after two weeks of illness. In this case there was a preexisting neurosis of the sympathetic, tachycardia, excessive perspiration, and tendency to diarrhea. The small dose of the drug, ordinarily nontoxic, was sufficient to upset the feeble balance of so many years, and this may help to explain the term "idiosyncrasy."

TOXICITY

This chapter is a most important one in the discussion of disadvantages of local anesthesia, and merits most careful study and investigation.

We can conceive of nothing more distressing than a death occurring when least expected, within two or three minutes after the injection of the local anesthetic, for an operation that is performed in the largest number of instances to relieve conditions that may add to the comfort of the patient, thus prolonging life, but not immediately necessary, to which the patient submits at our earnest advice. It is by a study of these fatalities that we may hope to obtain a fuller knowledge of the contributing factors, and to reach conclusions that may tend to prevent their occurrence. Because so little is known of this subject and because of its vital interest, our research has been thorough into both recorded and unrecorded cases.

The toxic effects may range from mild symptoms, grave and threatening ones, to sudden death.

Recent literature contains the record of two deaths from cocain and three deaths from procain; in one of them a necropsy was made in which neither status lymphaticus nor hypoplasia of the chromaffin system, nor any other cause for sudden death was found. The small dose of scopolamin and procain with the usual amount of epinephrin added could be dangerous only if some unexplained susceptibility existed. The writer can find nowhere in the literature a suggestion that danger exists from intravenous injection (he is evidently unacquainted with the work of the American pharmacologists). Death here was due to the heart, evidently an abnormal susceptibility to the drugs on an unusually bad heart. Some half dozen cases of toxic effects, nonfatal, are briefly recorded, taken from the literature, as also one death from apothesin. Mention is made of an article by H. C. Hamilton, who states that epinephrin is an adjunct to and an antidote for apothesin poisoning.

Several cases of poisoning are also mentioned following beta-eucain. Macht finds that benzyl alcohol has lower toxicity than cocain. He says it has as good anesthetic properties, is quickly excreted, easily sterilized and is cheap and satisfactory clinically. Fatalities are recorded following the use of stovain. McMechan declares that procain is from one-fifth to one-seventh as toxic as cocain, and suggests the advisability of adding an alkaloid like sodium bicarbonate, making it much more useful for anesthesia.

NEW LOCAL ANESTHETICS

Allocain S. (soluble) and Allocain A. (insoluble) are made from a Chinese drug with the addition of a synthetic alkaloid. The object of the originator was to obtain a body possessing the local anesthetic properties of cocain, together with the vasoconstricting action of epinephrin. It is claimed for Allocain S. that among other properties it inhibits the growth of streptococci and staphylococci.

CLINICAL INVESTIGATIONS

As nothing was learned of toxic effects through requests in medical journals, we prepared a questionnaire, seeking information directly from fellow-members of this section of the Association, and 85 per cent. of these answered. While this large number of responses is eminently gratifying, your chairman regrets that even so small a number should be found who fail to answer to their own committee on a subject of such vital interest to themselves. The result of this questionnaire has been exceedingly valuable and interesting. We have received reports of the anesthetic used, its dosage, etc., but have also many reports as to toxic effects, nonfatal, and further, a record of twenty deaths, most of them not previously recorded.

REPLIES TO QUESTIONNAIRE

The following was submitted:

1. What method of local anesthesia do you use for operations on the nose?
2. On the throat?
3. Do you use an anodyne first? If so, what doses?
4. What toxic effects have come under your notice?
5. Do you know of any fatalities?

Answers were received from about one hundred, and these are detailed in the report. Your committee received replies relating to twenty deaths, two from nose operations, and eighteen from throat operations, and these are briefly presented herewith:

1. Procain injected. No further details. No amount stated.
2. Large fat girl of about 20 for tonsillectomy. About 3 drops of solution said to have been injected, with immediate death: 0.5 per cent. cocain in epinephrin, 1:10,000.
3. (*a*) A girl, aged 20, with severe endocarditis. Injection of tonsil, immediate death. Necropsy: large vegtations in heart, interference with valve action. Heart stopped in systole. Five-tenths per cent. solution cocain. (Two deaths.)
(*b*) Officer, aged 25, previously operated on (submucous and ethmoid) without toxic effect. One tonsil injected; immediate death. Necropsy: marked enlargement of thymus with general glandular enlargement. Cocain, 1.2 per cent. solution.
4. Injection of 20 minims of equal parts of 1 per cent. cocain and epinephrin 1:1,000 for tonsillectomy. The patient became faint and died in less than three minutes.
5. No further details. Injection of 5 per cent. solution of cocain instead of swabbing.
6. Immediately following injection of less than 1 dram into peritonsillar tissue: great apprehension, air hunger, convulsive movements, succeeded by cessation of respiration and gradual cessation of pulse. Injection of 0.75 per cent. solution of procain, and epinephrin, 1:30,000 into peritonsillar tissue.
7. No further details. Ten per cent. solution of cocain injected, mistaken for 1 per cent. procain solution.
8. Twenty per cent. solution of cocain in larynx. Patient died almost instantly after application.
9. A robust man, aged about 43, after two syringefuls fell to the floor unconscious and died in spasm in a few minutes. (Mistake of druggist.) Ten per cent. cocain solution injected around tonsil, mistaken for 0.10 per cent. solution.
10. A man, aged about 28, had an attack of angina pectoris and died two hours after operation. Necropsy revealed fatty degeneration of the heart muscle. Cocain and epinephrin injected, strength not stated.
11. Patient received, in all, about 2 drams; 0.2 per cent. cocain in epinephrin was injected; death occurred in one hour.
12. No further details. Injection of ¼ grain of cocain into the anterior pillar, with death in four minutes.
13. Woman, aged 30. Local application of cocain, 10 per cent., followed by injection of procain, 0.5 per cent., with 8 drops of epinephrin to 4 drams. One dram injected into

each tonsil. First tonsil removed, when patient gasped and died.

14. Woman, aged 21. Three syringefuls injected under the mucous membrane of each faucial pillar. Injection of 2 per cent. cocain with equal parts of epinephrin, 1:1,000.

15. No further details. Cocain applied to throat and epiglottis.

16. Woman, aged 25. Injection of about 100 minims of 0.5 per cent. procain with 2 drops of epinephrin chlorid. After about three minutes a slight convulsive movement involving the head and neck was noticed, followed in a few seconds by one more severe attack, including the shoulders, chest and upper arms. Tightly closed jaws, dilated pupils, fixed gaze, wide palpebral fissures, stertorous breathing, moderate but soon marked cyanosis, passing of the violent convulsive seizures into a marked and general tremor. Cardiac action, 120; complete respiratory paralysis in ten minutes. Cardiac action continued some time.

17. Injected into tonsil, the patient dying instantly. (Mistake of druggist.) Twenty per cent. solution of cocain injected instead of 0.5 per cent.

18. Injected 0.5 per cent. procain after painting with 10 per cent. cocain solution.

The nose operations that had a fatal ending were for septal operations: (1) a weak solution of procain and epinephrin injected into the septum, with immediate death; (2) a 10 per cent. solution of cocain mistaken for the 1 per cent. solution injected into the nose.

A review of these fatalities shows that fourteen occurred as a result of the administration of cocain, and six from procain. Of the cocain deaths, five were due to avoidable mistakes; the remainder died within a very short time, as a rule after the administration of the drug, usually within three minutes.

Some of these cases have already been recorded, and there is no means at hand of ascertaining the proportion of deaths occurring as compared to the number of cases in which local anesthesia was used.

As deaths have been recorded following rapid injection of epinephrin in 1:1,000 solution, your committee has carefully gone into this question, but has found no evidence at hand that epinephrin in these cases was a causal factor.

THE ADMINISTRATION OF MORPHIN BEFORE OPERATING

As quite a number of our associates usually employ morphin preliminary to operating or immediately after, and as it was claimed that its administration previous to operation added much to the comfort of the patient, lessened the dangers of the local anesthetic and added greatly to its lasting effect, this subject was included in the questionnaire, and animal experimentation was made to help elucidate it. In one of the animal experiments a cat had been given a poisonous dose of chloral hydrate. It was then replaced in its box and slept off its effects. Another animal was given the same dose and fastened to a board, when it promptly died. This would indicate that excitement might be an added danger which morphin would tend to subdue.

PHARMACOLOGIC STUDIES ON LOCAL ANESTHESIA

A brief summary is given of the more recent studies of the various synthetic preparations in use for local anesthesia, as also a report of animal experimentation made for this investigation, particularly in reference to the use of morphin and atropin preliminary to operation under local anesthesia. The protocols of these examinations follow, and your committee finds that the result of these investigations as to the use of morphin is rather negative. If anything, it shows that the cat succumbs more readily to a poisonous dose of both drugs. In the human being there is in many instances a state of apprehension to operations which the administration of morphin is likely to allay, and your committee believes that its use is not contraindicated and should be further tried.

COMPARISON OF LOCAL AND GENERAL ANESTHESIA

Your committee finds that local anesthesia is the method of choice by practically all American rhinologists. There is less hemorrhage, far greater safety especially when operating near the cribriform plate, and the dangers of toxicity will compare favorably in the use of the local anesthetic in preference to any general anesthetic. Even the nitrous oxid and oxygen combination, looked on by many as absolutely safe, has a record of deaths that destroys that assuredness. One observer has reported thirty-seven deaths from this "safest" anesthetic.

In throat operations the unanimity is not so great, a small minority adhering to general anesthesia, for greater rapidity in work and ease and comfort to the operator.

The majority operate under local anesthesia and declare themselves to be entirely content therewith.

The ideal anesthetic having the effects of cocain and absolutely nontoxic has not been found, and we realize that the successful anesthetic of today may be discarded on the morrow; nor are we averse to the reporting of those which seem successful at the moment; but we deem it essential that once having so recorded and endorsed it, especially if unqualified, the same publicity should be made in the event that one has ceased using the drug for grave and important reasons.

It should be understood that this entire report refers to *adults only.*

SUMMARY

As a result of the study of the literature, clinical experiences and animal experimentation, we conclude that:

1. There is a remarkable similarity in the clinical effects and animal experimentation.
2. None of the synthetic products equals cocain in its local effect when applied to the mucous membrane.
3. These synthetic products may be freely injected, if slowly done, in proper doses in unlimited quantities.
4. Fatalities either occur immediately or not at all.
5. The drug is eliminated in the liver.
6. The greatest danger lies in too rapid injection or entering a vein.
7. A peculiar susceptibility which we term idiosyncrasy does exist, as the drug enters into the circulation so rapidly that death is almost immediate.
8. A further study of the toxicity of these local anesthetics will result in definitely establishing the causes of death.
9. Local anesthesia is undoubtedly the choice of methods by all American rhinologists in nose operations.
10. It is also the choice of a very large proportion of American laryngologists in throat operations.
11. There is a small number who believe that tonsil operations particularly are best performed under general anesthesia.
12. The dangers of hemorrhage during tonsil operations under local anesthesia are no greater than under general.
13. There is no greater danger from postoperative hemorrhage under local than under general anesthesia.
14. The previous administration of morphin requires further investigation.

SUGGESTIONS

Your committee suggests that all operations be performed with the patient recumbent, beginning with the first application of the local anesthetic, except in sinus operations, in which the head and shoulders may be elevated to an angle of 45 degrees and the table raised so that proper direction may be maintained.

Each operation should be preceded by a hypodermic injection of morphin and atropin, and the patient kept in the hospital.

In nose operations, epinephrin should be applied first, followed by cocain, and the injection of the synthetic drug *introduced slowly.*

In throat operations, a 5 or 10 per cent. solution of cocain should be applied, followed by the *slow injection* of the synthetic product.

When there may be a suspicion of possible danger, one fourth of the amount of anesthetic to be used at the time of operation should be applied and the patient watched for possible toxic effects.

Among the cases included in the latter are those with evident cardiac disease, exophthalmic goiter, or other disturbances of internal secretion.

CONCLUSIONS

Local anesthesia is the ideal method of operating for affections of the nose and throat.

None of the dangers that have been mentioned are any greater than those following general anesthesia.

The question of toxicity has heretofore not been sufficiently studied, and we are grateful to the Council on Pharmacy and Chemistry of the American Medical Association for proposing this investigation; and while the preparation of this report has entailed much labor, practically constant for nine months, your committee feels that it will not have been in vain if we have thereby added to our knowledge of the causes of fatalities, thus preventing their occurrence in the future, to say nothing of the exceeding value that such formal conclusions will have to some colleague who may hereafter be confronted with one of these most distressing results.

RECOMMENDATIONS

In order that our work may be constructive, your committee recommends that a permanent committee on toxicity following local anesthesia be formed, with the secretary of the section as a member, and that the secretary mail a copy of these resolutions to each registered member of the section, asking that reports of fatalities hereafter occurring should be promptly reported to him for further study by the committee.

This would require the cooperation of every member, and in return the committee would pledge itself to present to each participating member the result of its findings in the form of a sworn affidavit for his support in the event of a fatality, thereby preventing possible legal action, or at any rate providing the assurance of cooperation and support from an independent source.

Your committee further recommends that a change be made from the old method of introducing new local anesthetics.

The method heretofore has been that clinical data were furnished by medical men chosen by the manufacturer, the Council on Pharmacy and Chemistry making its studies, and the product then, if favorably reported on, placed on the market. We would suggest that clinical investigation should be made by clinicians of our own choosing, directly after the pharmacologist has made his investigation.

As such investigation requires much personal attention with careful annotation of the effects of the drug and a reasonably prompt report of the clinical investigation, we would suggest that a fund be placed in the hands of the Therapeutic Research Committee to reimburse properly the physicians who are making these studies, devoting many hours of their time thereto.

In presenting this report, your committee desires to state that its statements as to the advantages and disadvantages of local anesthesia are entirely impersonal; no one's individual preference is expressed, but rather a composite expression of the views now held by all rhinologists and laryngologists.

No one local anesthetic is favored, and a fair and impartial statement is made of the merits or demerits of each.

In presenting suggestions for the methods of operating safely under local anesthesia, we have combined those endorsed by many of the most earnest and active of our colleagues in the profession.

From the great mass of evidence obtained, from the writings of and many personal interviews with the clinician and the pharmacologist, we have carefully sifted the evidence and based our statements thereon.

Our recommendations for such improvement as may tend toward a clearer knowledge of the subject than now obtains, and the institution of newer methods in the introduction of new anesthetics as against the older and more archaic methods, are our own and express our verdict for your consideration and approval.

Finally, we recommend the use of the soluble tablets of cocain for making the solution freshly as required, one to be dissolved in hot sterile water by the operator. Each 240 minims of this solution makes a 0.5 per cent. solution. The unnecessary deaths quoted from "mistake of druggist" or "of nurse" would thus be avoided.

While the work of your committee has been very laborious during these many months, it has been made easier by the stimulus of the hearty cooperation, encouragement and approval of Prof. Torald Sollmann, chairman of the Therapeutic Research Committee, as also of Prof. Robert A. Hatcher, of the Department of Pharmacology of the Cornell University Medical College, whose scientific zeal and great willingness to assist and perform new animal investigations have been a source of great inspiration.

Our sincere thanks are due to Dr. Cary Eggleston for his cooperation in assembling the résumé of the literature on animal experimentation; to Dr. T. F. Galloway for much assistance in abstracting such literature as was suggested; to the members of this section, whose replies to the questionnaire have been of exceeding value and added much to our opportunities for study; and to the Council on Pharmacy and Chemistry of the American Medical Association, which voted a sum of money to defray the incidental and necessary expenses incurred in the preparation of this report.

Your chairman wishes also to extend his personal thanks to his associates on the committee, Dr. Skillern and Dr. Sonnenschein, for their aid in promptly assembling the investigations assigned to them and their most hearty cooperation.

If, as a result of our labor we have added to our knowledge of this important subject, eventually resulting in the saving of human life, thus adding to the value of our services to humanity, your committee will feel itself amply repaid.

ABSTRACT OF DISCUSSION

DR. FRANCIS P. EMERSON, Boston: I move that the recommendations of the Committee on Local Anesthesia be adopted, namely, that this Section endorses the plan for the investigation of new remedies by members of the American Medical Association, when the Council on Pharmacy and Chemistry has concluded its examinations; also that the Chairman appoint a permanent committee of four on the Toxic Effects of Local Anesthetics, one to be the Secretary of the Section. This committee to report at the following annual meeting. (Motion seconded and carried.)

DR. WENDELL C. PHILLIPS, New York: I move that in the investigation regarding local anesthesia during the next year, the committee consider the question as to whether cocain, on account of its habit forming tendencies, could not be eliminated from the pharmacopeia of the nose, throat and ear specialists. I have recently been in conference with representatives of the government, and this question was raised knowing that I specialized in diseases of the nose, throat and ear. I introduced this resolution in order that we may be prepared to act intelligently regarding this matter in case the authorities see our opinion.

DR. RUDOLPH MATAS, New Orleans: I wish to commend everything the chairman of the committee said. However, there is room for further investigation. Let us hope that in the future some elaboration of the facts presented today will be given to us as an additional contribution. General surgeons come in contact with the different anesthetics perhaps more than do the specialists. The first question to be answered is what agent do we prefer. We began with cocain. Then came a series of new agents; some gave good service and some did not. Procain is one of the best local anesthetics. We use apothesin at the Charity Hospital practically to the exclusion of everything else. We think that procain and apothesin are nearly in the same class. From the point of view of toxicity there is no difference, but procain has, perhaps, a little more lasting effect; apothesin has a temporary effect. In the beginning apothesin was not so valuable because it was irritating, but since chloretone is left out, it is just as agreeable as procain. I would say, however, that procain is the approved local anesthetic for use in every field. It is all very well to report successes and to give favorable information regarding any anesthetic, but do not fail also to state afterward, when you no longer use it, that you have changed your mind or that you have been mistaken in your interpretation of results. That is one great trouble about medical reports. We are always ready to report our successes, but we are very reluctant to report our failures or to retract. It is our duty to tell if our opinion has been changed. In my early experience with quinin and urea hydrochlorid I found a greater tendency to necrosis of the tissue. There was an exudate, and local effects on the tissue were marked. I would not use it at all, except in certain regions about the rectum where it undoubtedly has

some advantage, where the pain lasts a long time and the duration of the anesthesia is desirable. The question of preliminary anesthesia has been brought up, and the Committee doubts whether it is an advantage to give morphin and atropin as a preliminary anesthetic. There is no doubt in our minds about it in general anesthesia. There is no doubt that it is a mode of anociation, and the effect of quieting the patient is an immense help. In certain cases of throat work I think the atropin, which is a little more dry, is better. The effect of morphin or scopolamin, given one-half or three-quarters of an hour before the general anesthesia is begun, is very good. I do not think anything has contributed more to the success of local or regional anesthesia than epinephrin. If anything has lessened the toxicity of local anesthesia, it is the use of epinephrin. It was not so much a question of dosage, because we can restrict the area. In this way the whole field of regional anesthesia has increased so that we can now perform operations that were impossible twenty years ago. I do not think that we can pay too great a tribute to Braun and his followers for introducing epinephrin. The question of sterilization is hardly relevant. Cocain was most difficult to sterilize in the early days; it was done by boiling. The fractional sterilization overcame that. We need not worry about sterilization now because it is easily done. The question of toxicity is linked with idiosyncrasy. In 1883 thirty deaths from cocain were reported from Paris. Reclus attempted to solve the problem why these deaths occurred. He favored cocain. He found that all but seven of these patients had had an excessive dosage of the drug; in seven cases the cocain itself was responsible. Since that time the question of the toxicity has been relegated to a secondary place in general practice.

Since we have been using epinephrin we have seen no toxic effects. We use it freely. The solutions have always been weak, 0.5 to 1.0 per cent., and always containing epinephrin. Deaths do occur, however, as the report shows. There is such a thing as an idiosyncrasy to cocain, but it has almost vanished since we know more about handling it. One of the chief mischief makers is the strong, 10 per cent. topical application of cocain. I would like to get rid of this procedure. The report says that every one is agreed that nothing can take the place of cocain as a topical application. I agree to that, but we have found in general practice that the topical application of a strong solution of procain answers practically all purposes. Of course, that is a question entirely in the domain of the specialist. We have no right to introduce our opinions when it comes to topical applications, but it seems to me that all operations in the nasopharynx of the adult can be done with local anesthesia to the greatest advantage. In doing tracheotomies or laryngectomies, where the distress is great, simply inject into the larynx a few drops of procain, which is quite sufficient to produce complete quiet. Local anesthesia will never be popular with the amphitheater teacher, the one who has an audience. He cannot separate himself from his patient, he cannot entrust that to an assistant, and therefore you will not find the men working in the large amphitheaters of this country interested in local anesthesia. Local anesthesia is to be used where there is quiet; when the patient is properly prepared; where there are no distracting noises; where the proper man can do his work in the proper technic. For that reason it will never supersede general anesthesia. The greatest lesson for the student is to see the work done, the preparation for and the giving of the anesthetic, but he has to do it himself, and that can be accomplished only in small groups. Then there are persons who are psychically unfit for local anesthesia, who are sympathetic, who are in a constant state of agitation. Again, some persons die without having had any anesthetic given them. Every one has had such an experience. In one case of enlarged thyroid to be removed we tried the plan of anociassociation, bringing the patient to the operating room to make her familiar with the surroundings. Finally one day we thought we could try the ligation. The patient was apparently quiet and composed. As she was being placed on the table and before she had any anesthetic, one of the attendants allowed one of the lower parts of the table to slip, and it came down with a bang. The report startled her, she gave a convulsive movement and was dead. If we had injected cocain it might have been said to be responsible.

DR. CARROLL W. ALLEN, New Orleans: One point on sterilization might be emphasized, and that is that many agents used by rhinologists and laryngologists stand boiling badly, particularly cocain. It has been suggested that cocain crystals be placed in a dish, absolute alcohol poured over them, allowing the alcohol to evaporate, when it can be added to sterile water. We find a better way is to use benzin or gasoline, because alcohol is not always destructive of all organisms. What effect it may have on some of the synthetic preparations, experience will show, but it does not impair the efficiency of cocain or procain. Regarding quinin-urea hydrochlorid, I endorse what Dr. Matas said. We have abandoned its use except for a very limited field about the anorectal region. The particular subject that attracts my attention is toxicity. I have had very little toxic action, a little loquacity on the part of the patient was about all that could be noticed. I have been called in to assist in the resuscitation of many patients. Take cocain as a type. Cocain is a universal protoplasmic poison. It affects all protoplasm, vegetable or animal, alike. It paralyzes the white blood cells, muscle fibers, nerves of special sense as well as sensory nerves. It forms a chemical combination with the protoplasm, and when broken up and liberated from the protoplasm is not liberated as cocain, but as ecgonin, which has slight toxic action. If the action of cocain in producing anesthesia is the result of a definite combination with protoplasm, that particular part of the anesthetic from which we are getting the anesthesia cannot give a toxic action because it is fixed in the tissues. When toxic action results, it is because of an excess having been used over what was necessary to saturate the tissues and paralyze the nerves. Of course, we enter veins occasionally, and we should always observe the rule when injecting in the neighborhood of vessels to aspirate occasionally and always before making an injection of a concentrated solution. Whereas I admit the existence of an idiosyncrasy to many things, I have not seen one to cocain in an experience of probably twenty years. Fully 50 per cent. of my own work is done under local anesthesia. I would advise always where the nose and throat men use a concentrated solution, that they commence with a weaker solution and thus be able to recognize those cases that present an idiosyncrasy. Regarding morphin: it is a very useful drug as a preparatory agent. Highly neurotic and excitable individuals stand cocain and other local anesthetics poorly. We should try to induce in patients a phlegmatic state, a state of indifference, and just enough morphin for that purpose has a very desirable action on the nervous system, as well as actually preventing toxic reaction. When the nerves are under the influence of morphin, they are less sensitive to the action of cocain, and they respond very much less rapidly to the cocain, so it takes a larger dose to produce the same effect. But morphin as an antidote to cocain is perfectly useless. The best antidote for cocain poisoning is ether. No agent will stimulate as quickly and combat the toxic action of cocain as will ether by inhalation to the point of stimulation only.

DR. EMIL MAYER, New York: I was particularly glad that Dr. Matas stated that there is everything to be said in favor of the preliminary use of morphin as a sedative, and that the request of the committee that it be more generally tried should be complied with. One point occurred to me when Dr. Allen stated that ether is an antidote for poisoning by any of these toxic drugs. If the patient is so quickly paralyzed that respiration ceases, where is the ether coming in? These patients do not even breathe, and it would seem to be almost impossible to have the ether do any good. My own experience has shown that some men believe that hemorrhage is far more frequent after local than after general anesthesia. The war had much to do with converting men to the use of local anesthesia in tonsil operations, because American laryngologists were of the opinion that hemorrhage was no more frequent after local than after general anesthesia. We tried to keep our personal opinions out of the report. We have merely stated the opinions of the great majority of American laryngologists.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Five dollars per annum in advance

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SATURDAY, JULY 31, 1920

NEWER CONSIDERATIONS REGARDING DIABETES

It is obviously of immense importance in the management of diabetes to know whether the impairment of nutrition is inherently and inevitably progressive or whether controllable factors, among which diet is foremost, exercise a decisive influence on the weakness of bodily function. Experimental investigations, notably those by Allen [1] in this country, have at length shown that virtually every detail of clinical diabetes can be reproduced in partially depancreatized dogs. The resemblance is made still more exact by the susceptibility of such animals to acidosis and coma, and also by the similarity of the anatomic changes in the islands of Langerhans. These animals are therefore useful test objects for a therapeutic investigation.

A significant effort to determine whether a diet rich in carbohydrate is the etiologic factor in cases of diabetes in which impairment of the pancreas cannot be related to known disease processes, such as cancer or infection, was made by Thirloix and Jacob.[2] They have reported that partially depancreatized dogs, remaining free from diabetes on a diet of meat, develop a fatal diabetes on prolonged carbohydrate feeding. They concluded that the pancreas remnant, adequate to prevent diabetes on a meat diet, is "overstrained" by the prolonged carbohydrate diet.

This fundamental contention that, when the functional remnant of the pancreas is considerably reduced, inappropriateness of diet may determine the onset of a disease having glycosuria as its prominent symptom, has since been established more firmly by the large number of experiments recorded by Allen from the Hospital of the Rockefeller Institute for Medical Research. He has further shown that the diabetes may be initiated or aggravated in the potential cases by overfeeding with foods other than carbohydrates. Sugar is formed in the organism from protein as well as more directly from starch. According to Allen, the downward progress of individuals having a minimum of functional pancreatic gland may be due to excessive diet of almost any sort. The outcome, on Allen's hypothesis, is the result of food injury resulting in an overstrain of the pancreas as an endocrine organ. Allen [3] finds that in the early stage glucose is more powerful than starch in producing diabetes, and animals which are progressing toward complete recovery on a starch diet can be sent into hopeless diabetes by the admixture of glucose. The difference seems to be merely of the rate of absorption, and indicates that a rapid flood of carbohydrate is more injurious to the pancreatic function than a slow absorption. Whenever permanent diabetes is present, so that complete recovery is impossible, starch brings on glycosuria more slowly than sugar, but just as surely. The difference in time in different cases amounts to days, weeks or months. The clinical lesson from such experiments is that even if a patient becomes free from glycosuria on withdrawal of sugar only, nevertheless other foods should also be limited. No significant differences were observed between the assimilation of different starches, or any extreme lowering of the carbohydrate tolerance by proteins, such as alleged by certain writers in connection with the "oatmeal cure." No specific differences were observed between the glycosuric effects of the different kinds of protein.[4]

The most promising feature of Allen's recent work is the demonstration,[5] if it can be accepted as such, that there is no inherent progressiveness in the diabetic tendency in its early stages. With appropriate restrictions in the diet, animals exhibiting a state of potential diabetes through deprivation of part of their pancreatic tissue could be caused to gain in tolerance and to maintain a condition of health. Further evidence that injurious changes were not in progress was furnished by the intact state of the islands of Langerhans in the residual pancreatic gland. However, when the capacity to metabolize is strained by overfeeding, as is so often done in attempts to preserve or increase the weight of human diabetics, disaster inevitably follows. Allen states that every detail of the downward progress of human patients on various diets is reproduced in such animals. They lose assimilation and die most rapidly on diets rich in carbohydrate, and less rapidly on excess of other foods. The differences between sugar and starch, and between starch and protein, seem to be only those of degree and time rather than anything absolute. The important point is that, granting the absence of spontaneous downward tendencies as stated, all the different kinds of downward progress are purely the results of overstrain of the internal pancreatic function by excess of food.

1. Allen, F. M.: Studies Concerning Glycosuria and Diabetes, Cambridge, 1913. Numerous later papers will be found in the Journal of Experimental Medicine **31**, 1920.

2. Thirloix and Jacob: Bull. et mém. Soc. méd. d. hôp. de Paris, Series 3, **29**: 492, 1910; **30**: 29, 656; Comp. rend Acad. d Sc. **154**: 154, 1912.

3. Allen, F. M.: Experimental Studies on Diabetes, 1, Production and Control of Diabetes in the Dog; 2, Effects of Carbohydrate Diets, J. Exper. Med. **31**: 381 (April) 1920.

4. Allen, F. M.: Experimental Studies on Diabetes, 3, Effects of Protein Diets, J. Exper. Med. **31**: 555 (May) 1920.

5. Allen, F. M.: Experimental Studies on Diabetes, 4, Control of Experimental Diabetes by Fasting and Total Dietary Restriction, J. Exper. Med. **31**: 575 (May) 1920.

Admitting the facts just noted, it should be remarked, however, that the validity of the theory of the production of the pancreatic impairment as a direct result of physiologic "overstrain" has been questioned by Jensen and Carlson.[6] These Chicago investigators point out that many other organs, such as the thyroid and the kidneys, respond by hypertrophy rather than atrophy when they are reduced in volume and called on for more than the usual amount of performance. They admit, in harmony with other observers, that when the functional capacity of the pancreas remnant is too small to prevent diabetes, the residual tissue undergoes virtually no hypertrophy; but they allege that this failure may be due to the unfavorable influence of the diabetic condition on growth in general, rather than to specific "overstrain" of the pancreas remnant. Whatever the correct hypothesis may be, the favorable effects of partial undernourishment in the management of many diabetic patients can no longer be denied.

PELLAGRA IN EGYPT

It is an interesting coincidence, likely to contribute to medical progress, that during the course of the extensive investigations of the United States Public Health Service on the occurrence and possible causes of pellagra in this country, somewhat comparable studies have been undertaken by British authorities in Egypt. In a recent issue of THE JOURNAL,[7] it was pointed out that the facts ascertained during the last few years, notably by Goldberger[8] and his associates, are decidedly antagonistic to the view of a pellagra infection, but are favorable to the long alleged relationship between diet and disease. In the judgment of the American workers who believe that they have actually been able to produce pellagrous symptoms in volunteer subjects by the administration of faulty diets similar to those commonly consumed in families in which the disease occurs, several dietary factors may be involved. The possibilities that are foremost in their suggestions are: an amino-acid deficiency, such as may be occasioned by a diet low in protein of poor quality; faulty mineral supply or constitution, and perhaps an as yet unknown vitamin factor. What combination or combinations of these deficiencies really constitute the specific pellagra-producing defect remains to be accurately determined. In their feeding experiments on man, Goldberger and Wheeler observed that scrotal lesions are much more common early skin manifestations of pellagra than has heretofore been realized. They suggest that the site of at least the initial dermatitis accompanying an attack is bound up with a specific quality of the diet. Indeed, the view is further advanced that there may exist essential differences in the intimate make-up of the diet corresponding to observed differences in some, at least, of the clinical types of the disease.

In 1918 there were many prisoners of war in Egypt, among whom pellagra appeared to an alarming extent. Both Turkish and German prisoners were attacked. The committee of inquiry appointed by the British government to examine the situation filed a report, of which some details have recently appeared,[9] along with reports by some of the medical officers who studied the outbreak.[10] The magnitude of its occurrence can be gaged by the statement that one physician alone saw about 2,000 clinical cases and actually performed necropsies in 300, during three years' residence in an Egyptian hospital for prisoners of war. There was no evidence of a primary specific bacterial or protozoal infection, but intercurrent infections account for virtually all of the deaths. Spot maps showed that there was no infection from place or person. Notable is the fact that the disease occurred in Turkish camps, not—so the report asserts—to any noteworthy extent in the camps of Germans alongside, where there was money to buy extra food. In the diet of the Turkish prisoners who had suffered from long-continued undernourishment, the protein came mostly from wheat, barley or maize, with very little from meat. The implication is that a prime factor in the causation of the disease observed in Egypt was a defective protein supply. We shall not suppress the fact that, as among our American investigators some continue to adhere tenaciously to the possibility of an infectious genesis of pellagra, so there are among the foreign observers a few, like Enright,[10] who are unwilling to accept the food deficiency theory. All in all, however, with so much unanimity in the current American and British scientific opinion regarding pellagra, the discovery of the precise pathogenic factors is almost certain to follow; even now, the path of dietary safety seems to be quite clearly outlined.

DYE WORKERS' CANCER, AN IMPORTANT INDUSTRIAL DISEASE

In any consideration of the general problem of the etiology of cancer, one of the important, outstanding features of comparatively recent development is the fact that chemical irritation is quite as potent as mechanical irritation in producing malignant growths. Indeed, the classical illustration of cancer production by mechanical irritation in the case of the chimney sweep is now generally believed to illustrate rather the

6. Jensen, V. W., and Carlson, A. J.: The Apparent Influence of a Diet of Carbohydrates on the Pancreas Remnant of Partially Depancreatized Dogs, Am. J. Physiol. **51**: 423 (April) 1920.

7. Pellagra, editorial, J. A. M. A. **74**: 1520 (May 29) 1920.

8. The latest review of this work supplementing the references given in the editorial mentioned (Footnote 1) will be found by Goldberger, Joseph, and Wheeler, G. A.: Experimental Pellagra in White Male Convicts, Arch. Int. Med. **25**: 451 (May) 1920.

9. Pellagra in Egypt in 1918, Lancet **1**: 1027 (May 8) 1920. Pellagra in Egypt During the War, London Letter, J. A. M. A. **74**: 1658 (June 12) 1920.

10. Bigland, A. D.: The Pellagra Outbreak in Egypt, I, Pellagra Amongst Ottoman Prisoners of War, Lancet **1**: 947 (May 1) 1920. Enright, J. I.: II, Pellagra Amongst German Prisoners of War; Observation upon the Food Factors in the Disease, ibid. **1**: 998 (May 8) 1920. Pellagra and Diet, editorial, ibid., p. 1019.

effects of chemical irritation by products of the destructive distillation of wood and coal. Paraffin workers' cancer is now an accepted reality, and the only successful production of experimental cancer by artificial agencies is that of Yamagiwa with his rabbit ear epitheliomas produced by applications of coal tar. When, in 1895, Rehn announced to the German Society that cancer of the urinary bladder was observed with especial frequency among workers in anilin dyes, he not only pointed out an important situation in relation to industrial diseases but also called attention to a very significant point in connection with cancer etiology. Although he based his statement on but three observations, nevertheless, his conclusions, which were criticized as premature by many, have since been found to be entirely correct. Several other surgeons in districts where large dye factories exist have since corroborated this striking fact, and in an extensive discussion of the subject from the clinical and the chemical side Nassauer [1] finds reports of eighty-nine cases of bladder cancer occurring in anilin dye workers. To these should be added sixteen of the twenty cases recently reported by Oppenheimer,[2] four of his cases apparently having been included by Nassauer.

One of the striking things about these tumors is the long interval between the first exposure of the workman to the dyestuff and the appearance of the first symptoms of cancer. Ordinarily this is more than ten years, most usually about fifteen years, and in some as late as twenty-eight years; but in one case cancer developed in two years. In many instances the cancer has developed in workmen who have been engaged in other than dye work for a period of ten years or more. While this seems to indicate that the early injury to the bladder persists until cancer develops, it must be considered that part, at least, of this apparently long incubation period may depend on the fact that commonly the first exposure begins before the subject has reached an age at which cancer is likely to develop. Even as it is, the age incidence is low, most of the victims being between 34 and 47 years old. Because of the shifting of workmen and the long period of incubation, it is not possible to state how large a proportion of men exposed to this danger develop cancer, or for how long a time they must be exposed in order to be jeopardized. Nassauer states that the twenty-eight cases he has studied occurred in a plant employing about 105 workmen, and he intimates but does not state specifically that not many of these workmen were transients. Oppenheimer believes that the incidence is even higher than this.

Nassauer is of the opinion that it is unsafe for men to be exposed to the more dangerous substances for more than three months, but believes that with proper hygiene in respect to cleanliness of person, and especially with the installation of necessary devices to prevent unnecessary contact, the danger can be largely if not entirely avoided. In the factory in which he has observed so many cases, such precautions were introduced in 1905, and not a single case has been observed in workmen who began dye work in the fourteen years that have elapsed, although he admits that in view of the long incubation period it is not fully established that the danger has been entirely avoided. He also calls attention to the fact that numerous cases of bladder cancer have been observed in people living in the immediate vicinity of dye works, although they themselves were not occupied in the plants, a circumstance which he believes is significant, although it is not possible to establish the etiologic relation of the dye works to the disease in these cases.

Taken from the other point of view, controlling the conclusion that the dyes are responsible for the bladder cancer is the fact that in the series of cases of bladder cancer in which operation was performed at the university clinic at Basel from 1901 to 1910, of sixteen cases of bladder tumor twelve occurred in persons working with dyes. Furthermore, in the forty preceding years, only six cases of bladder cancer were treated in this clinic, presumably because of the long period of incubation required to produce cancer after the first installation of anilin dye factories in that city. In the surgical clinic at Frankfort, from 1895 to 1918, inclusive, there were observed ninety-two cases of bladder tumors; twenty-two of these occurred in dye workers, and in twenty-four the history does not exclude relation to dye work. Eliminating these twenty-four cases as uncertain, twenty-two cases of bladder cancer occurred in dye workers and forty-six in men known not to have been engaged in this occupation, certainly a striking proportion in a community such as Frankfort, where only a very small proportion of the male population is employed with dyes.

As to the particular chemicals and dyes which are responsible for the production of cancer, it is rather difficult to draw conclusions since most of the patients have been exposed to many substances. Nassauer discusses this problem at length. It has generally been believed that anilin itself and benzidin were most probably the important agents. Nassauer is convinced from his own observation that the anilin alone is responsible. If this is correct it will greatly simplify the avoidance of this menace in dye workers. As yet no experimental evidence has been obtained as to the production of tumors by anilin or other chemicals used in the dye industry, and probably until that is done it will be difficult to reach positive conclusions. Cancers outside the urinary tract are not observed among dye workers with any noticeable frequency.

During the war there was a great increase in work which involved exposure to anilin, and in addition

1. Nassauer, Max: Ueber bösartige Blasengeschwülste bei Arbeitern der organisch-chemischen Grossindustrie, Frankfurt. Ztschr. f. Path. **22**: 353, 1920.
2. Oppenheimer: München. med. Wchnschr. **67**: 12, 1920.

many women were engaged in work leading to contact with anilin. Time alone will tell whether this war work will produce new cases of bladder cancer. Oppenheimer was unable to find that the duration and intensity of the exposure to the injurious substances had any influence on the production of cancer. Presumably the anilin may be absorbed through either the skin or the respiratory tract and possibly also by swallowing dust and vapor which enters the mouth. No particular type of bladder tumor is characteristic for the dye workers, both papillary growth and ulcerating carcinoma being found, and the prognosis with the malignant tumors is very unfavorable. No publications on dye workers' cancer seem to have appeared in the United States, although paraffin workers' cancers have been observed here.[3] With the recent development of the dye industry in the United States, this particularly serious industrial disease must receive consideration.

Current Comment

INTERNAL FIXATION OF FRACTURES

With the advent of aseptic surgery, it became possible to perform open operations on bones with relatively slight danger of infection. This encouraged operators to treat a large proportion of fractures by one form or another of internal splint rather than trust to the classic methods of reduction and fixation. There has been much debate as to the indications for open treatment; at present, opinion on that point appears to be well settled, and discussion now is as to the kind of material that shall be used as the splint. The indications for internal fixation may be grouped as fractures in which there is failure either to obtain or to maintain reduction by the older methods, and ununited fractures. Usually cases belonging to the first group are identified by the method of trial and failure, occasionally by the results of previous experience. Operation is indicated in the former group primarily to correct deformity; in the latter group, nonunion itself is the indication. In the first group, it is the rule that union will occur, if reduction is maintained, independently of the type of material introduced for fixation; in the second, there are grounds for believing that an autogenous bone graft is superior to anything else. Thus, in cases in the first group, the choice of the splint will be determined by the mechanical advantage which the type chosen offers. In spiral fractures, silver wire or Parham-Martin bands may meet all indications; transverse fractures may require Lane plates or, possibly, intramedullary pegs of boiled ox bone. With the second group, however, the invigorating influence of fresh, osteogenic cells in a living, autogenous transplant, appears to play a part that no inanimate material can supplant. It has been proved that, while the deeper portions of such bone transplants, removed from contact with an efficient blood supply, die, many of the superficial cells, being bathed in the nutrient plasma of the contiguous tissues, survive and thus form the centers from which regeneration of the transplant, and the supposed stimulation of the inactive osteoblasts at the site of nonunion, proceed. While the foregoing statement is probably representative of the consensus of current ideas on this subject, there is evidence which suggests that perfect apposition and fixation are the paramount requirements, and that the apparent stimulating effect of a living autogenous transplant is merely an apparent effect and not real. The autogenous transplant has been accorded a second advantage in that it has not been regarded as a foreign body in the same sense as a steel plate or a piece of silver wire. Most autogenous transplants heal in place without destructive reaction; many of the metallic splints require subsequent removal. On the whole, it may be safely concluded that the essentials of the internal fixation of fractures are now established; further development is likely to be in the direction of the refinement of methods.

3. Davis, B. F.: Paraffin Cancer, J. A. M. A. 62: 1716 (May 30) 1914.

FATALITIES FROM LOCAL ANESTHETICS

Nothing in medical practice is more serious than the death of a patient within two or three minutes after the injection of a local anesthetic, especially when the patient is in excellent health except for a condition requiring some minor operation. In view of the frequent employment of local anesthesia, it is apparent that even though the relative number of such accidents is low, in the aggregate the problem merits serious study. Efforts to reduce the dangers arising from the administration of local anesthetics have been hampered by limited knowledge as to the cause and mechanism of these unfortunate occurrences. From time to time appeals have been made to the profession at large to report the clinical manifestations following the injection of a toxic anesthetic, but the response has been poor. The Council on Pharmacy and Chemistry therefore asked the Section on Laryngology, Otology and Rhinology to appoint a special committee to make a comprehensive study on the use of anesthetics in nose and throat work. The summarized report of this committee appears elsewhere in this issue. As is pointed out, the occurrence of twenty deaths in the personal experience of 100 operators shows that the subject deserves more earnest attention. Real progress, however, can be made only if cases are reported promptly and with attention to the factors that are in question. As an illustration of the immediate practical benefit that could follow this inquiry, it is worthy of note that a fourth of the deaths so far reported to this section arose from mistake in solutions. These can probably be avoided by preparing the cocain solution only as needed, from tablets colored with a distinctive dye so that the tint of the solution at once would call attention to the drug and its concentration. Physicians are urged to cooperate by reporting cases of idiosyncrasies, to the end that further study will result in definitely establishing the causes of sudden death, and that a better understanding may be attained as to the proper technic and proper choice of local anesthetics for each particular class of cases.

THE ALLEGED MECHANICAL FACTORS IN THE PRODUCTION OF ALTITUDE SICKNESS

Although Paul Bert, as early as 1878, furnished clear experimental proof that the abnormal symptoms and physiologic dangers experienced by persons at considerable altitudes are due to imperfect aeration of the blood with oxygen, this chemical theory of altitude sickness did not find universal acceptance. The Italian physiologist Mosso, who made many experiments in the high Alps, developed the acapnia hypothesis, which attributed many of the symptoms to a lack of carbon dioxid, while the Bernese physiologist Kronecker invoked mechanical factors as the cause of mountain sickness.[1] The latter investigator believed that a diminished atmospheric pressure brings about disturbances in the pulmonary circulation, quite overshadowing the partial reduction of the oxygen in the effect on the organism. At Kronecker's suggestion, Rosendahl [2] placed animals under reduced barometric pressure until severe symptoms appeared, whereupon he restored the pressure with nitrogen gas and observed a revival of his experimental subjects. This outcome made it appear, indeed, as if the lack of oxygen were of secondary consideration at most under the conditions instituted to imitate the low barometer of high altitudes. A repetition of the investigation by Rippstein [3] in the physiologic institute at Berne has at length brought the results in harmony with the current belief that the essential cause of altitude sickness is lack of oxygen. A mechanical influence of barometric environment on the pulmonary vessels does not manifest itself except when extremely low atmospheric pressures are reached.

THE NURSING PROBLEM

In his series of articles on Central and South America, the first of which appears in this issue of THE JOURNAL, Dr. Mayo calls attention to the nursing problem as he witnessed it in the Canal Zone. He speaks as one who has intimate knowledge of the value of the trained nurse and also as one who has observed the serious effects of the shortage of nurses for the general public. He emphasizes, as THE JOURNAL has done, the fact that a highly trained nurse is not necessary in the vast number of cases of ordinary illness. What is needed in such cases is an intelligent woman who has knowledge of the ordinary elementary facts of hygiene and care of the human body combined with good common sense. As Dr. Norman Bridge recently said in his commencement address before the graduates of Rush Medical College: "Any bright girl can be taught in sixty days to take temperature, pulse and respiration accurately, to prepare and administer invalid diet, to administer drugs in numerous ways, to give baths and fomentations, and attend to the personal wants of the invalid and to keep accurate records of the patient, and of her own doings."

1. Reviews of the earlier studies are given by Mosso, A.: L'homme dans les hautes Alpes. Zuntz, Loewy, Müller and Caspari: Höhenklima und Bergwanderungen in ihrer Wirkung auf den Menschen, Berlin and Stuttgart, Bong & Co., 1906. Kronecker, H.: Die Bergkrankheit, Vienna, 1903. Cohnheim, O.: Physiologie des Alpinismus, Ergebn. d. Physiol. **2** and **12**. Stäubli, E.: Das Höhenklima als therapeutischer Faktor, Ergebn. d. inn. Med. u. Kinderh. **11**, 1913.

2. Rosendahl: Verminderter Luftdruck tötet nicht durch Sauerstoffmangel, Ztschr. f. Biol. **52**: 16, 1909.

3. Rippstein, E.: Experimentelle Untersuchungen über das Wesen der Bergkrankheit, Biochem. Ztschr. **80**: 163 (March) 1917.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ILLINOIS

Clinics.—Under the charge of Dr. Clarence W. East, Springfield, head of the division of child hygiene of the state board of health, twenty-two clinics for crippled children have been established in Illinois with a total attendance of 1,600.

Interest in Chiropractor Injunctions.—As a result of a recent editorial in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, the Department of Registration and Education of the State of Illinois has received inquiries from New York, Ohio, Indiana, Missouri, Oklahoma, Rhode Island and South Carolina, relative to the methods pursued in securing injunctions against unlicensed chiropractors.

Chiropractor Fined.—K. H. Mandel, a chiropractor at Nashville, was arrested by the Department of Registration and Education of the State of Illinois, for practicing without a license and on July 19 was fined $300 and costs which he paid. Mandel was originally located at Mascoutah, St. Clair County. One of the inspectors of the department found him practicing there without state authority and filed seven informations against him in one of the courts of St. Clair County. Mandel heard of this and fled from St. Clair County before the sheriff could get service on him. His whereabouts were unknown for a few weeks, but he was again located in Nashville. When arrested, he seemed very much surprised that the state of Illinois should undertake to stop him in his practice. He appealed to friends, to the officers of the department, and finally wanted to plead guilty, pay a fine of $200 and go ahead and practice. This offer was declined. He then said he would fight the case; but when it was called for trial, he had no desire to fight, and pleaded guilty. State's Attorney House of Washington County was active in the prosecution of this case.

Chicago

Personal.—Dr. Frank Allport has recovered from an illness of several weeks and has returned to Chicago.——Dr. Norman Bridge is convalescent after an illness of more than a month.

Sells Medical Diplomas.—It is reported that a Japanese, named T'Aso, recently pleaded guilty in court of selling certificates of the Chicago Hospital College of Medicine for $250 each. A raid of T'Aso's room is said to have uncovered sixteen blank diplomas, seals, stamps and other paraphernalia.

INDIANA

New Hospital.—The Cass County commissioners have authorized the hospital board to purchase grounds for erecting a county hospital at Logansport at a cost of $100,000.

Physician Exonerated.—In the suits filed against Dr. Elbridge G. Ricker, Monticello, for his alleged failure to report cases of smallpox based on the affidavit of Dr. Henry W. Greist, Dr. Ricker has been completely exonerated.

KENTUCKY

Correction of Speech Defects.—As the result of a two weeks school for correction of speech defects conducted by the Louisville Board of Education, and given to teachers in Louisville public schools, two white teachers and one negro teacher are to be selected to conduct the course for the benefit of children so afflicted.

McCormack Memorial.—At a recent conference of city and county health officers of Kentucky a movement was inaugurated to establish as a token of friendship and esteem a memorial of the labors and activities of Dr. Joseph N

McCormack, Bowling Green, the originator of the latter-day public hygiene and author of virtually all the health laws which have been incorporated into the statutes of the state, and an indefatigable worker on the general betterment and uplift of the whole social fabric. It is proposed to have made a life-sized portrait of Dr. McCormack to be presented at the annual meeting of the Kentucky State Medical Society.

Personal.—Dr. John Walker Moore has recently been elected professor of research medicine in the medical department of the University of Louisville on an all-time basis. ——Dr. Frederick A. Stine, Newport, was sworn in July 12, as a new member of the state board of health, succeeding the late Dr. Isaac A. Shirley, Winchester. ——Dr. Oscar Dilley was sworn in on the same day as a member representing the state board of pharmacy.——Dr. Percy K. Holmes has been placed in charge of the new department of public health and hygiene of the University of Kentucky, Lexington.——Dr. Edward J. Murray, formerly superintendent of the Blue Grass Sanatorium, Lexington, has been appointed superintendent of the Hazelwood State Tuberculosis Sanatorium, Louisville.——Drs. J. C. Sullivan, Mayfield, and Thomas B. House, Hopkinsville, assistant physicians at the Western Kentucky Hospital for the Insane, Hopkinsville, have resigned.——Dr. Louise B. Miller, third assistant physician in the institution, has been succeeded by Dr. Mary C. McClelland, New York.——Dr. Lindsey Morrison, West Point, has been appointed physician at the Frankfort Reformatory, succeeding Dr. Richard H. Moss, Hodgenville.

MAINE

Centenarians in the State.—The weekly news letter of the Maine Department of Public Health of July 5 is devoted to Maine centenarians. Six persons died in Maine during 1919 who had attained the age of 100 years or more, and since 1892, when Maine was admitted to the registration area, there have been 154 deaths of centenarians, an average of five deaths annually; the largest number in a single year was twelve in 1916, while during 1904, 1913 and 1917, the death of only one centenarian was reported.

MARYLAND

Seek Aid in Securing Physician.—The state board of health has been called on by V. M. Moreland of Millersville, Anne Arundel County, to aid the citizens of that section in getting a physician to establish residence and office in that community. There is not a physician within a radius of 9 miles of Millersville, except the medical offiers at Camp Meade.

Health Officers Tour State.—State health officers have adopted a new policy of canvassing the state more thoroughly and more frequently that they may become acquainted with the county officials and come in more direct contact with health problems confined to particular communities. At present, nearly every officer, including Dr. John S. Fulton, secretary of the board, is in some section of the state, either on health work or studying conditions. Dr. Fulton has for some time been helping to work out a system which will give one or two Red Cross nurses to every county in Maryland.

MASSACHUSETTS

Personal.—Dr. Charles E. Perry, Northampton, has been appointed county treasurer to fill an unexpired term.

Social Service Courses.—The American Red Cross in order to meet the need of the U. S. Public Health Service is offering courses in psychiatric social work at Smith College Training School for Social Work, Northampton, and in medical social service work at the School for Social Work, Boston. At the former there is a tuition fee of $50 but the tuition at the Boston school is free.

Child Welfare Station Established.—A public clinic and child welfare station was established at Fitchburg early in June and since that time eighty babies have been registered. Plans are now in progress to open a second station at the police station on Daniel Street. Dr. Herbert Jacques will be on duty at the new station, assisted by Miss Dorris Halloran of the Visiting Nurse Association.

MONTANA

Health Officers Meet.—At the annual meeting of the Montana Public Health Association held in Helena, July 11 and 12, the following officers were elected: president, Harry Call; vice president, Dr. Albert R. Varco, Miles City; secretary, Dr. William F. Cogswell, Helena, and the following officers were elected by the public administrative section of the association: president, Dr. Harmon T. Rhoads, Choteau; vice president, Dr. George A. Lewis, Roundup, and secretary, Dr. John J. Sippy, Helena.

New State Officers.—The forty-second annual meeting of the Montana State Medical Association was held in Helena, July 14 and 15, under the presidency of Dr. Edward M. Larson, Great Falls. Billings was selected as the next place of meeting and the following officers were elected: president, Dr. Creswell T. Pigot, Roundup; vice presidents, Drs. Patrick H. McCarthy, Butte, Louis H. Fligman, Helena, and Harry J. McGregor, Choteau, and secretary-treasurer, Dr. Elmer G. Balsam, Billings (reelected).

NEW HAMPSHIRE

New State Officers.—At the annual meeting of the New Hampshire Medical Society the following officers were elected: president, Dr. Alpha H. Harriman, Laconia; vice president, Dr. Charles S. Walker, Keene; secretary-treasurer and delegate to the American Medical Association, Dr. Dennis E. Sullivan, Concord; alternate, Dr. Herbert K. Faulkner, Keene.

NEW JERSEY

New State Board Officers.—At the meeting of the state board of health at Trenton, for reorganization, Dr. J. Oliver McDonald, Trenton, was elected president, and Dr. Henry Spence, Jersey City, vice president.

Bergen County Hospital.—Building is now in progress on two new hospital pavilions: one for tuberculosis, and one for contagious diseases. These two units, with equipment, from a recent appropriation of $300,000 by the Bergen County Board of Freeholders, will be a substantial addition to the present County Hospital group. They are the result of a well developed plan, formulated by the Board of Freeholders, medical board, and county medical society, in conjunction with an advisory board, consisting of a number of citizens of the county.

NORTH CAROLINA

Licenses Issued.—At the recent annual session of the state board of medical examiners in Raleigh, seventy-four were licensed on examination, and forty-three by reciprocity. Twenty-five second year students took the examination on the primary branches.——Forty-three states have established reciprocal relations with North Carolina.

Examiners Elect Officers.—The board of medical examiners recently elected at the annual session of the state medical society met recently and organized, electing the following officers: president, Dr. Lester A. Crowell, Lincolnton; secretary-treasurer, Dr. Kemp P. B. Bonner, Morehead City; examiner in anatomy and embryology, Dr. Lester A. Crowell, Lincolnton; in chemistry, hygiene and physiology, Dr. William M. Jones, Jr., Greensboro; in histology, bacteriology and pathology, Dr. Clarence A. Shore, Raleigh; in surgery, Dr. Lucius N. Glenn, Gastonia; in materia medica, therapeutics and pharmacology, Dr. John G. Murphy, Wilmington; in practice of medicine, Dr. William P. Holt, Duke, and in obstetrics, gynecology and pediatrics, Dr. Kemp P. B. Bonner, Morehead City.

NEW YORK

New Hospital.—A new community hospital is to be built at Dansville, and $100,000 has been raised for that purpose.

State Buys Radium.—The state of New York has purchased 2¼ grams of radium to be used in the research work in the State Institute for Malignant Diseases, Buffalo. The radium was obtained from carnotite ore found in the Colorado desert.

Typhus Precaution Holds Up Steamer.—The Cunard steamer *Imperator* which arrived from Cherbourg, July 11, was held in quarantine because it is alleged the steamer failed to comply with the quarantine regulation at Cherbourg. Some of the steerage passengers who came from countries where typhus fever is epidemic were sent to Hoffman Island for observation.

New York City

New East Side Clinic.—A free clinic and dispensary for children has been opened at 26 Roosevelt Street by the American Free Milk and Relief for Italy. The clinic will be conducted by Dr. Francesco Furtunato, assisted by a nurse and voluntary workers.

Irrelevant Charges Quashed. — Supreme Court Justice Squiers struck out as irrelevant and scandalous all but twelve of the 111 paragraphs contained in a suit brought by an attorney against Dr. George B. Wix, Manhattan, to recover $7,500 for attorney's fees.

Physician Convicted of Manslaughter.—A sentence of from three to fifteen years has been imposed on Dr. Julius Hammer, who was recently convicted of manslaughter in the first degree following the death of a woman on whom he is alleged to have performed a criminal operation.

Rest Home for Nurses.—A rest home for nurses who have served with the Red Cross, Army, Navy or U. S. Public Health Service has been opened at Bay Shore, L. I., under an appropriation by the national headquarters of the American Red Cross. It has accommodations for twenty-six nurses seeking relaxation after war or epidemic work.

Appropriation to Guard Against Epidemics.—Health Commissioner Royal S. Copeland has obtained from the board of estimate an appropriation of $80,000 to prepare against possible epidemics of smallpox, cholera, plague and typhus such as are raging in parts of Europe. In urging that the appropriation be made immediately Dr. Copeland stated that several cases of smallpox had been discovered among passengers on incoming vessels, and that while there is no imminent danger, conditions are serious enough to warrant immediate action.

Classes for Crippled Children.—A request was made for $258,245 for the maintenance of classes for crippled children in the public schools. This amount was reduced by the board of estimate to $44,000, and the number of classes has had to be reduced from the thirty-six requested to nine. Provision has been made for five additional classes for children with speech defects in the elementary schools and for three additional classes in the high schools. A class for the instruction of prospective teachers for correction of speech defects has been allowed in each of the training schools for teachers.

Physician Sues to Test Dry Law.—Dr. Melville A. Hays, claiming that 100 liquor prescription blanks every three months is not at all times sufficient for legitimate practice, on July 20, obtained an order from Federal Judge John C. Knox, through his counsel, Thomas F. Franklin, requiring the Federal Prohibition Director for the state of New York to show why he should not issue additional blanks to Dr. Hays. Judge Knox declared in the federal district court that he had no jurisdiction in the case of Dr. Hays, and denied his petition for a new supply of blanks, inasmuch as he had used three books of 100 blanks in February, March and April. When he applied for the fourth book in May it was refused. In upholding the action of the federal prohibition director, Judge Knox said the way to obtain relief was to file a suit in equity and if this warranted it the court could then grant the request made on behalf of Dr. Hays.

The Hammer Case.—The secretary of the Bronx County Medical Society writes to the effect that the item in THE JOURNAL two weeks ago, to the effect that four hundred physicians had signed a petition asking for clemency in the case of Dr. Julius Hammer was not correct; he sends the following resolutions, which were adopted by the Commitia Minora of the Bronx County Medical Society and sent to the district attorney for his information:

"A special meeting of the Comitia Minora, of the Bronx County Medical Society was called this day, at the office of the Secretary.

"This action was taken in view of the publicity that was given to the case of the People vs. Dr. J. Hammer, and the appearance of the names of several of the members of the Bronx County Medical Society, in the newspapers in connection with this case.

"The following resolutions were adopted at this meeting, and the Secretary was requested to forward them to the office of the District Attorney, for his information.

"1. That Dr. J. Hammer is not, and never has been a member of the Bronx County Medical Society.

"2. That no member is authorized to use the name of the Society in any way in connection with this case.

"3. That the matter of Dr. J. Hammer's conviction has never come before the Society or the Comitia Minora, for discussion, previous to this date.

"4. That the Bronx County Medical Society, through the Comitia Minora desires to go on record as upholding the laws of this state and country, as interpreted by the courts."

OHIO

Personal.—Dr. Frances M. Hollingshead, Cincinnati, director of the Division of Child Hygiene in the Ohio State Department of Health, has arrived in Buffalo to take up her duties as director of the Buffalo foundation.

New Medical Journal.—The first issue of the *Bulletin of the Academy of Medicine of Cleveland* was issued July 9. It voiced the opposition of the academy to compulsory health insurance for Ohio, chiefly on the grounds that it has proved a failure in England and Germany.

Physicians in Trouble.—Dr. William A. Charter, Marion, recently discharged from the Ohio State Penitentiary after winning a new trial, is said to have been returned to the penitentiary, July 3, following a second conviction of the performance of an illegal operation.——In the case of George F. Lee, Sandusky, charged with violation of the Harrison Narcotic Law, the jury is said to have found the accused guilty, and he was sentenced to pay a fine of $1,000 and costs, and to serve a term of three months in the Richmond County Jail. ——The federal prohibition director announces the revocation of the permit to prescribe liquor for medicinal purposes issued to Dr. Charles F. Hera, New Richmond.——B. W. Pearce, charged with violation of the Harrison Narcotic Law, is said to have pleaded guilty, June 18, and to have been sentenced to imprisonment for one year in the United States Penitentiary, Atlanta, Ga.

OREGON

Personal.—Dr. Philip L. Newmyer, Chemawa, has been employed by the state board of control as assistant physician at the State Tuberculosis Hospital.——Dr. Edwin G. Kirby, Elgin, has purchased an interest in the Grande Ronde Hospital, LaGrande.

New State Officers.—At the annual meeting of the Oregon State Medical Association, held June 2 to 5, the following officers were elected: president and delegate to the American Medical Association, Dr. Joseph A. Pettit, Portland; president-elect, Dr. Clarence J. McCusker, Portland; vice presidents, Drs. Benjamin A. Cathey, Condon, Harvey J. Clements, Salem, and Richard H. Wellington, Portland; secretary, Dr. Raymond E. Watkins, Portland, and treasurer, Dr. Jessie M. McGavin, Portland (reelected).

PENNSYLVANIA

Personal.—Dr. Larry D. Sargant has been appointed chief of the State Tuberculosis Clinic at Washington.——Dr. Frank F. D. Reckord, Harrisburg, for five years associate director of the tuberculosis division of the Pennsylvania State Department of Health, has resigned and will resume practice.

Philadelphia

Personal.—Dr. Morris Smith has been appointed laryngologist, and Dr. John D. Donnelly, pediatrician at the State Tuberculosis Clinic.——Dr. William W. Keen, professor emeritus of surgery at the Jefferson Medical College, president of the Initernational Surgical Society in conference at Paris, presided at the opening sessions.

Portable Health Clinic Established.—The Philadelphia Health Council and Society for the Prevention of Tuberculosis has established a portable health clinic in conjunction with the Department of Public Welfare, ten of whose recreation buildings are being used as centers. Dr. Robert A. Schless is conducting the clinic for boys and Dr. Jeanette H. Sherman the clinics for girls.

Jefferson Medical College to Dedicate Memorial.—The Alumni Association of Jefferson Medical College has planned to dedicate a memorial to the graduates who gave their lives in the service of their country during the great World War. A large bronze tablet, bas-relief, 5 feet high by 4 feet wide, appropriately decorated and engraved with the names of the men who gave their lives in the service, is to be placed in the main entrance to the college building at Tenth and Walnut streets. The dedicatory ceremonies will be held in the college building on Thursday evening, October 7, at 8 p. m. Addresses will be made by the Hon. William Potter, president of the board of trustees, Jefferson Medical College; Dr. S. Solis Cohen, president of the Alumni Association, Jefferson Medical College, and by representatives from the U. S. Army and Navy Medical Departments. Jefferson Medical College was represented during the World War by 1,147 of its graduates in the Army and Navy Medical Service. Sixty-five per cent. of the graduates for the five years preceding 1918 were in the service and 60 per cent. for seven years preceding 1918 served in some department of the Army or Navy. In the class of 1916, 103 were represented, in the class of 1917, ninety-four were represented and in the class of 1918, ninety-one were represented. Four hundred and thirty-one were represented in the student army training corps, 398 were in the Army and thirty-three in the Navy. Graduates from every state in the Union were represented in this

number and representatives of every class for the last forty-four years were included in the service. Twenty-five graduates gave their lives for their country.

SOUTH CAROLINA

District Society Meeting.—The annual meeting of the Eighth District Medical Association was held in Allendale, July 2. Bamberg was selected as the next place of meeting, and Dr. Joseph S. Palmer, Allendale, was elected president, and Dr. G. W. I. Loadholt, Fairfax, vice president.

Personal.—Paul E. Knotts, Gaffney, has assumed his duties as health officer of Cherokee County.——Mr. Clarence E. Smith, who resigned recently as city health officer of Columbia, on leaving for his duties as health officer of Greenville, was presented by the City Board of Health of Columbia with a silver filigree tobacco jar.

TEXAS

Bubonic Plague.—The state department of health and the U. S. Public Health Service working in cooperation have practically completed the bubonic plague survey in Jefferson County and plan to extend their work to other sections of the Texas coast quarantine area. No new cases of bubonic plague have developed in Beaumont.

Health Survey of Schoolchildren.—A survey of the health of schoolchildren in a north Texas town has recently been completed by Miss Pearl N. Heyer, R. N., public health nurse of the Texas Public Health Association. Examinations of 729 children were made by Miss Heyer, assisted by local physicians, and 1,656 defects were found. Of these children, 297 had enlarged tonsils; 31, submerged tonsils; 122, disease of the eyelid; 97, adnoids; 150 needed glasses; 136 had defective hearing; 385 needed dental care; 119 had diseased gums; 20 were more than 10 pounds overweight, and 299 were 5 pounds or more underweight.

WISCONSIN

Personal.—Dr. George V. I. Brown, Milwaukee, has been appointed president of the Tri-State District Medical Society, succeeding Dr. Walter B. Helm, Rockford, deceased. Dr. Joseph S. Evans, Madison, has been elected vice president, succeeding Dr. Brown.

Fine Collected.—The fine of $6,000 imposed three months ago on Dr. John G. Barnsdale, Madison, when he was sentenced to three years' imprisonment in the federal penitentiary, Fort Leavenworth, Kan., for an extensive illicit drug traffic, is said to have been collected, June 21, by United States Marshal Frank O'Connor, after action had been taken to foreclose on the property of the physician.

CANADA

Personal.—Dr. Edward C. Arthur, Vancouver, has been appointed medical officer of health of British Columbia.——Dr. George R. Cruickshank, Windsor, has been appointed director of laboratories in the department of public health, Toronto, succeeding Dr. Albert G. Fleming, who has accepted a position in Ottawa.

Care of Exservice Men.—Statistics recently compiled show that 8,676 exservice men have been treated in sanatoriums maintained by the department of soldiers' civil reestablishment. Of these, 6,636 have been discharged as cured or in quiescent condition. There were at the time of the report 2,040 patients undergoing treatment, of whom 158 had had previous treatment, a percentage of 7.7.

Venereal Clinics in New Brunswick.—The bureau of health of St. John plans ten venereal clinics throughout that province. These clinics will be in charge of physicians who have special training in the diagnosis and treatment of such diseases. The clinics are to be established at St. John, Monckton, Chatham, Bathurst, Campbellton, Edmunston, Grand Falls, Woodstock, Fredericton and St. Stephen.

University News.—The Provincial Red Cross of British Columbia has offered the University of British Columbia a Red Cross Chair of Public Health. The Red Cross will undertake to pay the salary of the professor of public health for three years. The activities of the department will be province-wide in scope and the course will extend over five years.——In the survey prepared by the Faculty of Medicine of the University of Toronto for the Rockefeller Foundation, Ontario leads with one physician to every 905 population. British Columbia comes next with one to 905. Nova Scotia is third with one doctor to every 908, and Manitoba fourth with one to every 1,098.

Red Cross Peace Program in Nova Scotia.—July 12, two great public health caravans planning a tour of Nova Scotia left the parade in front of the city hall, Halifax, under most auspicious circumstances. Each of these caravans, consisting of Red Cross ambulances, motor trucks and touring cars, is equipped with moving picture and lantern slide apparatus and has a personnel of six physicians, one dentist and a corps of nurses. They will spend six weeks in reaching the coast towns and fishing villages most in need of public health assistance and medical relief work. One caravan is going north through Antigonish and on to Sydney, Cape Breton, while the other goes south through the Evangeline country to Yarmouth, returning along the east coast.

GENERAL

Missouri Valley Meeting.—The thirty-third annual meeting of the Medical Society of Missouri Valley will be held in Omaha, September 6 and 7, under the presidency of Dr. Charles Ryan, Des Moines, Iowa. The organization will be the guest of the Omaha-Douglas County Medical Society.

New Officers for Chattahoochee Society.—The twentieth annual session of the Chattahoochee Valley Medical and Surgical Association was held at Warm Springs, Ga., July 13 and 14, and the following officers were elected: president, Dr. William C. Gewin, Birmingham, Ala.; vice president, Dr. Thomas Neal Kitchens, Warm Springs, Ga., and secretary-treasurer, Dr. William J. Love, Opelika, Ala. (reelected).

Civil Service Examinations.—The United States Civil Service Commission has announced examinations for the following positions at the times stated:

Aug. 24, 1920, associate in clinical psychiatry and psychotherapy, to fill vacancies at St. Elizabeth's Hospital, Washington, D. C., and similar vacancies, at $2,500 a year and maintenance. Bachelor degree and medical degree prerequisites.

Aug. 31, 1920, pharmacologist in the Public Health Service, Washington, D. C., and other vacancies at $3,000 a year, qualifications, M.D. degree and three years' postgraduate work in experimental pharmacology and physiology required.

Mine Rescue Contest.—The International First Aid and Mine Rescue Contest will be held, September 9 to 11, at Denver under the auspices of the Bureau of Mines. The contest will be open to all bona fide first aid and mine rescue teams connected with mining and metallurgical companies of the United States, Canada and Mexico. Prizes of gold medals, cups and banners will be awarded to teams most efficient in the art of saving human lives. This meeting will cover the entire mining industry in North America.

Anesthesia Society Activities.—The National Anesthesia Research Society announces that its research workers will present the results of their experiments and observations at their annual meeting to be held at Pittsburgh, October 4 to 8, at which prizes of $200 have been offered for the best papers submitted.——The Toledo Society of Anesthetists has been organized with a 100 per cent. enrolment of the recognized anesthetists of the city.——It is said that fourteen county societies in California have adopted resolutions within the last four months favoring the limitation of the administration of anesthesia to regular licensed physicians and surgeons.

Bequests and Donations.—The following bequests and donations have recently been announced:

Hospital of the Protestant Episcopal Church, Philadelphia, and Pennsylvania Hospital, each $200,000; trustees of the University of Pennsylvania, Philadelphia, Orthopedic Hospital, Woman's Hospital and Children's Hospital, each $100,000, and Philadelphia Polyclinic Hospital, $50,000, by the will of Miss Harriet Blanchard.

Methodist Episcopal Hospital, Brooklyn, General Hospital, each $25,000; Bridgeport (Conn.) Hospital, $10,000, by the will of William W. Armstrong, New York City.

Bowdoin Medical School, Brunswick and Portland, Me., $1,000 by the will of Dr. Frank Byron Brown, Boston of the class of 1887.

New York Post-Graduate Medical School and Hospital, donations of $25,000 from Ida C. Potts, Livingston, N. Y.: $20,000 for the endowment fund from Mrs. E. E. Close, New York City; $10,000 to endow a bed in memory of Eben Briggs Thomas, and $1,000 from Mrs. Clarence M. Hyde.

Harvard University, "for the purpose of fostering the knowledge of healthful nutrition," the residue of an estate valued at $126,573 after the payment of an annuity of $3,600 to his widow, by Dr. Horace Fletcher.

Presbyterian Hospital and Old Men's Home, Philadelphia, the residue of an estate of $114,000 after creating several small trust funds, by the will of Theodore D. Rohrman.

St. Agnes Hospital, Philadelphia, $1,000, by the will of William Hall.

For the new hospital for Marshall Lodge (Masonic) Home and Retreat, Lynchburg, Va., a donation of $20,000, by Mrs. Max Guggenheimer, Lynchburg.

Appeal for Chemicals for Purifying Water Supply.—The failure to obtain necessary purifying chemicals is seriously affecting the water supply of a large number of cities

throughout the United States, and urgent appeals to remedy the situation are being made to the U. S. Public Health authorities at Washington. State health officials in New York, Michigan, Ohio, Pennsylvania, Rhode Island, Minnesota, Virginia and Connecticut have sent emergency appeals to the Public Health Service in an effort to have railroad shipment priorities established for the movement of alum and chlorin, which chemicals are used in ridding water of dangerous disease germs. The chief source of supply of alum from which bauxite is produced is Little Rock, Ark., and the monthly requirements of this chemical for the United States are about 500 cars. Due to congested railroad traffic an acute shortage of these chemicals has existed for several months. The facts have been placed before the Interstate Commerce Commission in order that special orders may be issued to railroads for setting aside cars for transportation of these chemicals. "Officers of the U. S. Public Health Service view the situation with alarm as do health officers throughout the country," said Surg.-Gen. Hugh S. Cumming. "The summer is always a critical time in dealing with water-borne diseases, for the demands made on municipal water systems are then so great that usually every available source of water has to be utilized. In very few places in the United States have large cities a water supply which does not need to be artificially purified before it is safe for drinking purposes, the usual method being mechanical filtration with alum and disinfection with chlorin. With these chemicals practically unobtainable, due to the railroad situation, it may soon become impossible to furnish pure water in some of the largest American cities. During the last ten years the purification of drinking water with alum and chlorin has been the greatest single factor in the control of typhoid fever among the civilian population. Unless the railroads find it possible immediately to transport the necessary materials to the cities, the most serious consequences in the form of epidemics of typhoid fever are to be apprehended."

LATIN AMERICA

Pasteur Institute in Northern Brazil.—The *Amazonas Medico* brings word of the foundation and inauguration of the Instituto Pasteur at Manáos. Dr. Astrolabio Passos has been in charge of the organization of the institution and continues as director, having been given regimental leave for the purpose. He is at the same time director general of the university and member of the state legislature.

Personal.—Dr. J. F. Arteaga was awarded the Suárez Bruno prize by the Academia de Ciencias at Havana for his work with the title "Sanitary Malariology."——Prof. Bosch Arana of Buenos Aires, as exchange professor at Montevideo, recently described his extensive work in adapting amputation stumps to activate prostheses, illustrating his remarks with moving picture records of what he has accomplished.

Argentina Restricts Sale of Acetylsalicylic Acid.—The Argentina health department has decided to restrict the sale of acetylsalicylic acid (aspirin) except when prescribed by a physician. For six months druggists will be permitted to continue the unrestricted sale of acetylsalicylic acid or medicine containing it already on the local market, but no new compound may be introduced, and after the expiration of six months the sale of the old brands will be prohibited except on the requisition of an authorized medical practitioner.

FOREIGN

Czechoslovaks Establish Journal.—A new scientific review entitled *Czech Annals for Dermatology and Venereology,* has been established in Czechoslovakia and is the organ of the Society for Combating Venereal Disease.

Development of Japanese Red Cross.—Dr. A. Minagawa, a member of the board of governors of the League of Red Cross Societies, reports that the membership of the Japanese Red Cross, which in 1898 was estimated at over 500,000, was at the end of June, 1919, 1,879,860. The society issues a monthly journal, the *Haquai.*

Retirement of Gimeno.—Having reached the age limit, Dr. Amalio Gimeno y Cabañas, professor of pathology at the University of Madrid, senator, at one time minister in the cabinet, and author of several popular textbooks, was given an ovation in the university amphitheater at a special gathering for the purpose. He was presented with a medallion and a banquet followed.

St. George's Hospital Pupils' Register.—The dean of St. George's Hospital Medical School, London, announces that the Pupils' Register of the hospital and school is ready for the press. The book consists of a transcription of all the names, 6,500 in number, on the pupils' register from 1872 to 1915, with annotation notes on all of the men about whom it has been able to obtain data. The foreword has been written by Dr. George C. Peachey, London, on "Medical Education in the Metropolis in the Eighteenth Century." The dean will be glad to have the names of intending subscribers. The book will cost not less than $5.25 and may cost $7.50.

Personal.—The University of St. Andrews, Scotland, has conferred the degree of LL.D. on Dr. Leon Frederic, for nearly thirty years professor of pathology in the University of Liége, Belgium; Mr. W. J. Matheson, president of the biologic laboratory of the Brooklyn Institute, and scientific adviser in chemistry to the Board of Health of the City of New York, and Dr. Norman Walker, inspector of anatomy for Scotland and direct representative of the profession in Scotland on the General Medical Council.——Sir Clifford Allbutt, University of Cambridge, M. Roux, former director of the Pasteur Institute, Professor Heger, Brussels, and Professor Marchiafava, Rome, have been elected honorary members of the Association of European Physicians.——Dr. John G. Adami, vice chancellor of the University of Liverpool, and professor of pathology and bacteriology in McGill University, Montreal, has been elected to an honorary fellowship in Christ's College, Cambridge.——Cambridge University has conferred the honorary degree of LL.D. on Dr. Simon Flexner, director of the laboratories of the Rockefeller Institute for Medical Research.

Deaths in Other Countries

Dr. **Arnaldo Vieira de Carvalho,** professor of surgery in the Faculdade de Medicina of São Paulo, Brazil, and one of the leaders in the profession in that country.——Dr. **J. Bucquoy,** dean of the hospital physicians of Paris, at one time president of the Académie de Médecine, author of several works on heart diseases and duodenal ulcer, aged 91. He had attended the meetings of the academy to the day before his death, which was due to a street accident.——Dr. **A. Ritti,** a Paris alienist and writer on insanity, aged 76.——Dr. **A. Levertin,** of Stockholm, an authority on balneology and mechanotherapy, aged 77.

CORRECTION

Bequest for Parkin Prize.—In the announcement of the Parkin prize made in THE JOURNAL of June 19, page 1725, it was stated erroneously that the bequest was made to the Royal College of Surgeons, Edinburgh. This should have read to the Royal College of Physicians, Edinburgh.

Government Services

Public Health Service Campaigns for Infant Welfare

The U. S. Public Health Service is carrying on a special campaign throughout the country in infant welfare work. A series of thirty-three articles on the care, feeding, and general requirements of infants has been prepared by the Public Health Service and is being printed by over 100 leading newspapers throughout the United States. Mothers are urged to read the articles as published and cut them out of the newspapers for future reference.

Hospital Patients Publish Newspaper

Patients of the U. S. Public Health Service Hospital at Fort Bayard, New Mexico, are publishing a weekly newspaper known as the *Mountain Breeze.* The paper was first printed on a multigraph with but 200 readers. The paper met with approval of the patients and hospital officials and a few weeks later a staff was organized. In a short period of time the paper has increased its circulation to 700 copies and in size to twelve pages, containing much information and news of value to the patients in the hospital and the community in general.

The purposes of the paper, aside from its news value, are to unite the patients in their own interests and give them interesting work in the preparation of items for the paper and occasionally cause a smile to those who have dark and gloomy hours. The paper is in charge of James D. Hill as editor. No government funds are used in the printing of the *Mountain Breeze* and all articles are written by the patients and the publication is entirely managed by hospital patients.

Foreign Letters

MEXICO CITY

(From Our Regular Correspondent)

July 4, 1920.

Competitive Tests in the Medical School

The directing body of this institution has ordered that hereafter vacant chairs will be filled by competing examinations which will include the submission by the candidate of an unpublished thesis, a public oral test, practical demonstrations whenever they may be required, and in every case an academic test consisting of a lesson given by the candidate to a group of students before the examining board. The candidates will be classified according to the points they score in each test; the one receiving the highest number will be appointed professor and the next one assistant professor. Even then the professors will not keep their positions permanently but only for some years. Those who have been employed for four years and have given full satisfaction will retain their places without having to pass the tests. The only thing to be done now is to determine the requirements that applicants must fulfil in order to be admitted to the examinations. Once before the same principle was followed, but because of some irregularities the directing board of the school requested that the appointments should be made by the government. More recently, in addition to this method there was adopted (although on a small scale) the optional (unofficial) teaching by means of which any physician so invited by the students could teach any subjects that he wished, after obtaining the permission of the faculty and without receiving any salary. The first examination, which will be held during the present year, will decide whether in our country this procedure will give better results than those obtained by the selection, from among the group of optional professors, of those who have shown unusual fitness for teaching or by the system of free appointments.

A New Children's Hospital

In a few days there will be inaugurated a children's hospital which will be supported partly by the government and partly by private charity. This institution will receive a certain percentage of the profits derived from the national lottery. The previous government suppressed the lottery system, but it is going to be reestablished only as a concession to those who cannot do without gambling, as the new government does not permit other forms of gambling, in spite of the huge profits derived from it. There have already been received several gifts of necessary articles for the new hospital, which will probably be named after the late Dr. Licéaga.

Invitation to a Journalists' Congress

Through Dr. Ocaranza, the editors of Mexican medical journals have received a very cordial message from the *Revista Médica del Uruguay* asking their opinion on the advisability of holding a meeting of the medical editors of Latin America. Though announced a long time ago by THE JOURNAL in its news section, it has not been possible to hold the meeting thus far. One of our journals has answered, suggesting that in order to insure the success of the meeting, an invitation be extended to Canadian and American medical editors to participate, as the latter have a wider experience and the difference in language is not an obstacle to the solution of problems common to all of them, and also because the creation of leagues on purely racial lines occasionally produces ill feeling and misunderstandings, which should be avoided for the sake of mankind. The publication of medical journals in French in Canada and Spanish in the United States, THE JOURNAL, for instance, shows that the medical profession is probably one of the groups that can most easily establish cordial relations throughout the whole continent, and also that medical Pan-Americanism is feasible to the advantage of all concerned.

Personal

Dr. Cutberto Hidalgo, senator, has been appointed undersecretary of the department of state.——Other medical appointees are Gen. Enrique C. Osornio as director of the military hospital and the attached medical school, and Dr. F. Hurtado as professor of clinical medical therapeutics, replacing Dr. Ricardo Manuell, who goes to the university to teach clinical medicine (postgraduate), Dr. Terrés having resigned his position.——Dr. Eliseo Ramírez has been appointed professor *libre* of surgical pathology in the school of medicine.——Don Roberto Medellín, a pharmacist, has been made director of the school of chemical industries.

BELGIUM

(From Our Regular Correspondent)

June 23, 1920.

Infant Mortality in the Belgian Congo

A scientific expedition to the Congo, under direction of Dr. Dossin, for the purpose of making a study of the sanitary conditions as related to infant mortality, has just returned after a period of nine months. A voluminous report will shortly be issued, but in the meantime it may be announced that the expedition will bear excellent fruit. The investigations of Dr. Dossin show that education of the negro will result in a considerable increase of healthy children, by dispelling some of the many superstitions which are entertained by the natives and above all by improving the conditions of hygiene and nutrition.

Death of Debaisieux

T. Debaisieux, the most eminent and renowned surgeon of Belgium, and emeritus professor of surgery of the University of Louvain, died recently. Before his death, Dr. Debaisieux had the gratification of seeing his son appointed to the chair which he himself had held for many years. As one of the representative men in the Belgian medical world, he was the recipient of marked honors during his life, having been elected president of the Société belge de chirurgie and of the Académie royale de médecine. He had many friends in foreign countries, especially in the United States, and was a corresponding member of numerous foreign societies.

Reforms in Medical Education

The Commission for Relief in Belgium assigned the income from one hundred millions of francs to Belgian universities for the development and advancement of higher education. In order that the funds may be utilized for the greatest good of future generations of students, the scientific societies are making a thorough and impartial study of educational projects. The income will permit the universities not only to improve the teaching facilities, but also to encourage scientific research. On motion of Dr. Malvoz, the Académie de médecine recently discussed reforms in medical education with a view to attracting more laboratory workers and thus building up an intellectual group which would maintain the scientific prestige of Belgium.

Now, the professional training of physicians requires practical and technical knowledge in ever increasing proportions. The subjects of examination for obtaining the doctorate of medicine are becoming more numerous, and one is obliged to study gynecology, syphilography, otorhinolaryngology, urology and other specialties of which a fundamental knowledge is indispensable to a good general practitioner. But with only one diploma for all, the young men who are des-

tined for science are obliged to assimilate all this knowledge, even though they desire the title of doctor in order to become assistants, instructors, etc. Is this not an opportune time to establish two diplomas? The M.D. degree would be given after successful termination of a course covering a thorough study of the three branches of medicine. This course would be obligatory for all, and the diploma would suffice for those who wish to devote themselves to science, to anatomy, pathology, embryology, physiology or bacteriology. In case a holder of the scientific diploma should desire to practice medicine, he would then have to pass an additional professional examination, covering all necessary technical subjects and the specialties.

Dr. Swaen broadened the discussion to include more practical methods of teaching the technical branches of medicine. The calling of a professor is a sort of apostolate which demands great devotion. Personal sacrifice of time is demanded for the training of students in small groups as compared with teaching by lectures ex cathedra, but this is, perhaps, the real solution of the problem. To accomplish this it will be necessary to increase the number of professors and to permit organization of teaching faculties on personal initiative.

LONDON

(From Our Regular Correspondent)

July 10, 1920.

Annual Meeting of the British Medical Association

THE FUTURE OF MEDICAL PRACTICE

In the Section of Medical Sociology, Sir George Newman opened a discussion on this subject which was most important in view of the development foreshadowed in a previous letter (THE JOURNAL, June 19, p. 1726). He said that the constantly increasing duties placed upon the physician by the state had diverted the whole course of applied medicine from its century old pathway. The physician was now mistrustful of what he considered unnecessary intervention and feared the imposition of some cast-iron system, some form of so-called "nationalization," a whole time service which might make him dependent and fettered. A larger measure of understanding on his part of central and local government and of the history, and on the part of the state and its officers of the development and genius of professional character, was necessary to bring about an improved relation between the two. Five outstanding problems now faced the medical profession in its relation to the state: 1. We must find a new unit of health government. At present there was confusion and overlapping because the country had been mapped out five times by different hands for different purposes, such as relief of the poor, sanitary administration, education, insurance act, and war pensions. 2. Uniformity of administration was wanted. The provision of medical treatment in the home, at the clinic and at the hospital should be brought into proper relation. 3. We had no connected hospital system; the relation of hospitals to each other, to the contributory clinics and to the insurance system wanted settlement. 4. Most important of all was an adequate method of education of the student and the physician. A different kind of physician was needed in these times—one with improved training in new subjects—preventive medicine and communal responsibility. 5. The physician must be the chief educator of the people in the way of health, and in doing this could not escape his responsibility in problems such as education, recreation, housing, conditions of industry, sobriety and venereal disease.

Discussing the question from the point of view of medical research, Prof. Gowland Hopkins pleaded for a closer cooperation between the laboratory worker and the clinician. It was remarkable how largely, in general practice at any rate, the use of chemical methods in diagnosis had been confined to mere tests for albumin and sugar in the urine. Much earlier information and more discriminating knowledge concerning renal failure could even now be obtained, say by simultaneous analyses of blood and urine, and on the same lines a better realization of the significance of this or that case of glycosuria. So, also, estimations of alveolar carbon dioxid tension made simultaneously with determination of the hydrogen ion concentration, or the alkali reserve of the blood are giving precision to knowledge in other kinds of cases. These were mere illustrations, but it was important to realize that the so-called micromethods of analysis could be made really accurate, and that many constituents of the blood could now be estimated without inconvenience to the patient. Much wider applications of such methods will inevitably arise. There was no pathologic condition in which metabolism remains normal, and the great majority of such departures from normality were reflected in some alteration, qualitative or quantitative, of the blood and urine. There was, indeed, a mass of chemical information already available which had never yet been applied, as it might have been, to the needs of diagnosis; but when the number of laboratory workers (which was absurdly small) was increased, and when the stimulus, hitherto lacking, of real contact with clinical material was provided, knowledge and technic available for these particular needs would develop indefinitely.

SUBACUTE BACTERIAL ENDOCARDITIS

Dr. Libman, New York, said that 90 per cent. of the cases were due to the nonhemolytic streptococcus, the great majority of the remainder being due to the bacillus of influenza. Most often the heart valves showed old and long previous lesions. He drew attention to the renal lesion — a glomerulonephritis with partial involvement of the individual glomeruli. He described the so-called "bacterium-free" stage occurring in something like a quarter of these patients. Renal deficiency, anemia, and embolism were the three commonest causes of death; marked browning of the face was not very rare. The prognosis was bad, but not hopeless.

SURGICAL TREATMENT OF GASTRIC ULCER

Sir Berkeley Moynihan said that gastric ulcer was essentially a secondary disorder. The first efforts of the surgeon were to be directed toward discovering the primary source, which most probably lay within the abdomen or in the buccal cavity; after septic infections of teeth, maxillary antrum and appendix had been dealt with, they were to go on to the essential surgical treatment of the ulcer. Medical treatment had to be much more rigid and spread over a longer time than formerly. He advocated rest in bed, and large quantities of fluid with alkaline drugs rather than starving. When medical treatment thus extensively tried had failed, surgery must step in. Gastro-enterostomy had come to be the favorite operation; it had given him excellent results when the ulcer was small and situated in the lesser curvature, poor results when the ulcer was large and adherent to the pancreas, and bad results when carcinoma had developed in the base of the ulcer. He had abandoned gastro-enterostomy because the results were not good enough for modern surgery. It was now only the second-best method. Excision of the ulcer with gastro-enterostomy was a good method. But he now believed that partial gastrectomy gave the best results, provided the ulcer was suitable for operation at all. He briefly described the technic and gave statistics to show that the ultimate results amply justified this radical procedure.

Dr. Charles H. Mayo gave the experience of the Mayo clinic. In 95 per cent. of the cases, roentgenoscopy could distinguish between gastric and duodenal ulcer. There was

a lowering of the free acids and an increase of the combined acids. Gastric ulcer was potentially malignant. Destruction of the ulcer, along with gastro-enterostomy, was the surgical treatment.

CANCER OF THE RECTUM

Mr. Ernest Miles described the various modes of spread of the disease, and showed how local increase in size was of less importance than the glandular infection, which was generally recognized as developing in three ascending zones; it was this metastasis which constituted the difficulty in operating. It was as important to remove glands discoverable near the common iliac vessels as it was in the analogous case of cancer of the breast to clear the axilla and its contents. By a series of diagrams thrown on the screen he showed how, as the glandular geography came to be known, the scope of the operation came to be widened, and how he was forced to regard the abdominoperineal operation as the only radical one.

Mr. Grey Turner pointed out that the treatment of rectal cancer could never be considered satisfactory as long as the disease was so far advanced as to necessitate operations which left an incontinent anus. Improvement could come only through much earlier diagnosis and surgical operation following it. He regarded the thorough removal of the growth and surrounding tissues, with 2½ inches of uninvolved bowel above and below, as more important than removal of the upward invasion path. The best operation was exploratory laparotomy with colostomy followed by sacral excision.

The discussion revealed some divergence of view as to the extent of the radical removal of the rectum. Some surgeons upheld the operation advocated by Mr. Miles; others thought that some less extensive procedure gave ultimately as good results. Some urged that an inguinal artificial anus was essential; others held that every effort should be made to preserve the anus with sphincteric control in its proper situation.

EARLY SYMPTOMS OF NERVOUS DISEASE

Dr. Henry Head said that early symptoms were often unobtrusive and transitory, and may have impressed themselves so little on the mind of the patient that they were remembered only when a precise and detailed account from the patient was insisted on. Many of the early signs of nervous disorder manifest themselves only in mental spheres. For example, there might be changes in personality and conduct, and memory defects, such as amnesias, disturbances of sleep, and headache. Certain forms of headache could be clearly distinguished, and were of great importance in diagnosis. Diagnosis was a threefold process: (1) determination of the disturbance of function; (2) translation of such disturbance in terms of the locality of the structural lesion, and (3) the nature of the underlying pathologic process. All such names as "tabes dorsalis" and "general paralysis" should be avoided. They did not denote diseases in the strict sense of the word, but were merely "shorthand titles for groups of signs and symptoms evoked by the action of *Spirochaeta pallida* on different structures of the central nervous system."

PUERPERAL SEPSIS

Mr. Victor Bonney said that in nearly all cases of severe puerperal sepsis the streptococcus, either alone or in conjunction with *Bacillus coli-communis*, was the predominant organism. The original source of the organism in the majority of cases was autogenous and not heterogenous, the zone of skin with the anus as a center being the breeding ground of the organisms. He advocated the practical sterilization and shutting off of this part during labor. How did the organisms get into the uterus? The most obvious means was by the hands and instruments of the attendant, but at the same time Bond's experiments proved the possibility of inanimate particles passing in the reverse direction of the main stream up into the uterus, and into the peritoneal cavity. The ovarian plexus of veins draining from the placental site was the commonest and most important route of infection, the phlebitis being accompanied by lymphangitis. As to treatment, at present there was no surety of defeating the causative organisms by surgery or by direct application of antiseptics. He thought, however, that the resistance of the body could be raised by vaccines, and an attempt could be made to prevent organisms and their toxins reaching the general circulation by means of ligating or excising the ovarian plexus of veins and lymphatics, which he had done with success on several occasions.

In the discussion which followed, Dr. Eardley Holland dealt chiefly with the question of prevention. He strongly advocated rectal examination, and stated that during ten years he had never made a vaginal examination in normal labor.

Surgeon-General Gorgas

Surgeon-General William C. Gorgas, who died, July 4, at the Queen Alexandra Military Hospital, London, was taken ill some weeks before while passing through this country on his way to the West Coast of Africa to investigate yellow fever. During a visit to the hospital, June 8, the king called on him and invested him with the insignia of K.C.M.G., in recognition of his services to the British Empire and to the world generally. A military funeral, in which the honors rendered to him were those of a British major-general, was given to him. An imposing military procession brought the body to St. Paul's Cathedral while a salute of thirteen guns was fired at minute intervals. Covered with the Stars and Stripes and a single wreath of white flowers, the coffin was borne on one of the gun carriages of the Royal Horse Artillery. The Band of the Coldstream Guards played solemn music. The general's charger, led by a dismounted Life Guardsman, followed the gun carriage. The pallbearers included the United States military and naval attachés, the presidents of the Royal Colleges of Surgeons and Physicians and of the Royal Society of Medicine; Dr. Charles Mayo of Rochester, Minn.; and the director general of the medical department of the navy. The king was represented by Lieut.-Gen. Sir. H. Goodwin, director-general of the Army Medical Service, and the government by Dr. Addison, minister of health. Serbia and Panama, countries which entered into the scientific record of the general, were represented. The service ended with the Battle Hymn of the Republic. The body is to be taken to America for interment.

PARIS

(From Our Regular Correspondent)

July 9, 1920.

The Book Crisis

The paper shortage and publishing difficulties still arouse a lively interest. M. Ducrot, in an informative article in the *Revue Scientifique* on the subject of scientific publishing in France, showed that if there was a crisis in the publication of literary works, this was particularly acute in the case of works on pure science. In fact, the elements of bookmaking have increased considerably in cost as compared to prices before the war: compositors and pressmen are paid from three to four times as much as in 1914, the price of paper is five times as great, and these factors contribute to make the cost of a book from three to four times as much as before the war. Now, the income of the intellectual classes, the only purchasers of theoretic works, has barely doubled, while the budgets of public institutions, libraries, laboratories, etc., have been greatly reduced. A book, even one that constitutes a

veritable working tool, is not a prime necessity. It should not, therefore, exceed a certain price, above which it will not sell, and at the present moment, the maximum has apparently been reached.

This condition, which constitutes a veritable danger to the advance of science, is not peculiar to France. A statistical study by M. Fernand Roches in the *Correspondant* discloses the progressive decrease of the number of publications in the principal countries since 1914. Exclusive of periodicals and musical works, the figures show that the number of books published in 1918, as compared to 1917, decreased in France from 5,054 to 4,484; in Great Britain from 8,131 to 7,716; in Italy from 8,349 to 5,902; in the United States from 10,060 to 9,237, and in Germany from 14,910 to 14,743. The production in 1919 is not yet known, but it was probably less than in 1918.

It is interesting to note that the decrease in Italy totaled 2,447 books; in the United States 823; in France 570, and in England 415; but Germany, defeated and disorganized, showed a decrease of only 167 works.

So far as French medical books are concerned, statistics recently published in the *Bibliographie de la France* indicate that the number of such works, which had suffered a great decrease before the war (from 1,230 in 1910 to 721 in 1914), had again greatly declined in 1915, namely, to 202 works. A tendency to improvement was noted in 1916, and again in 1917, when 292 books appeared. However, in 1918, a new decline set in which it was believed would be accentuated in 1919, but nothing of the sort occurred and in that year 309 new books appeared.

The Insane Asylum at Charenton

Lively protests have been registered with the ministre de l'hygiène, de l'assistance et de la prévoyance sociales against his announced intention of converting the old asylum at Charenton, devoted for almost three centuries to the care and treatment of the insane, into a maternity hospital in order to relieve the congestion of the Paris maternity wards, which are no longer able to accommodate all applicants. The protests emanate on the one hand from the families of the patients at Charenton, but above all from the medical alienists of Paris. At a joint meeting of scientific societies and professional organizations of psychiatrists, a delegation was appointed to present to the minister of hygiene the objections against the projected change and to seek another solution. At a conference between the minister and the committee it was agreed to adopt the following temporary expedient: the few patients at present under treatment at the asylum will be installed in one wing of the institution, and the vacant beds will be turned over to the new maternity home, which will thus command accommodations for about 1,000 patients.

School Hygiene

The first of the school health centers which the Lannelongue Institute of Social Hygiene is planning to establish in Paris and in other large cities was recently opened under the auspices of M. Honnorat, ministre de l'instruction publique. This center, the prime mover of which is the medical inspector of schools, is first of all a sorting center, where children with diseases of the eyes, ears, etc., are referred to the appropriate hospital clinics or private hospitals in the neighborhood; next a treatment center for certain diseases (dental disorders, spinal deformities); it is also a laboratory for the examination of mentally defective or abnormal children, but last and above all it is a center for teaching and close collaboration between the medical profession and the teachers, for the greater good of the pupils. From these centers, also, the physicians and visiting nurses will set out to give medical attention to children in their homes, to make any necessary inspections regarding the sanitary conditions of their environment, and to give appropriate advice on the improvement of their living conditions.

Memorial Tablet for Medical Officers

The society of students and alumni of the Ecole d'application du service de santé militaire at Val-de-Grâce is seeking subscriptions for memorial tablets to commemorate the names of medical officers of the regular army who died in active service during the World War. The marble tablets will be placed in the arcade at Val-de-Grâce, following those erected to the memory of the heroes of former wars. The subscription list is in charge of Dr. Fasquelle, 8 rue Ballu, Paris.

Paris Faculty Election

The council of the Faculté de médecine de Paris has elected Prof. Henri Roger as dean of the medical faculty for another term of four years.

THE PIRQUET SYSTEM OF NUTRITION

(From a Special Correspondent)

VIENNA, July 1, 1920.

To the Editor:—It is probably not known in the United States that the name von Pirquet, famous for the discovery of the reaction following inoculation with tuberculin toxins—tuberculin test—is now better known in Austria because of Pirquet's system of nutrition. This system is described in a three volume work entitled "Pirquet's System der Ernährung," and also in a smaller booklet by his chief assistant, Prof. B. Schick, entitled "Das Pirquetsche System der Ernährung," published in Berlin in 1919. This system is today widely discussed here. People are being fed according to this system—not only adults, but also rachitic children and nurslings. It is also used in soup kitchens which have been established under the American Relief Association, which prepare food daily for 288 dining rooms in which 165,000 children receive one meal daily.

The unit of nutrition has heretofore been the calory. Von Pirquet believes that the calory is not a definite value, and he has adopted as a standard for all articles of food the physiologic or metabolic value of human milk. This, representing 667 small calories, has been named by Pirquet "nem" (Nährungs-Einheit-Menge or Nutritionis ElementuM). To this the metric system is applied giving the words dekanem as the nutritional value of 10 gm. of milk; hektonem, 100 gm.; kilonem, 1,000 gm. and tonnenem, 1,000 kg. Pirquet reasoned that milk is best adapted for a standard value of nutrition because it contains all the ingredients—protein, fat, carbohydrate, water and salt. It is the only nourishment that the human body receives during the first year of life, and it is well adapted to support the life of the adult.

He has divided all articles of food into eight groups. Thus, sugar, containing in 1 gm. six times the value of 1 gm. of milk, is equal to 6 nems. Suppose that a nursing infant needs 600 c.c. of human milk per day and must be fed artificially. The nem value of human and cow's milk is about the same. However, the child fares better on cow's milk when it is diluted—one-half milk and one-half water—thus reducing the nutritional value by one half. We are therefore obliged to add to the milk enough nourishment to make up the nem value either by adding fat or sugar. We add to the milk 100 gm. of water, which has no nutritional value; but since 1 gm. of sugar is equal to 6 nems, we add to the 100 c.c. of water 17 gm. of sugar; this solution is equal in nem value to 100 c.c. of milk. Hence, a child taking 300 c.c. of milk and 300 c.c. of a 17 per cent. solution of sugar per day receives the same nutritional value as if it were taking 600 c.c. of milk. Suppose we wish to give the child a combination of other articles of food instead of sugar: The nem values of such articles are: 1 gm. of food, 12 nems; 1 gm.

value of cereal, 5 nems. Our aim should be to prepare a dish which has the same value as milk. One hundred and thirty grams of milk have the value of 130 nems; 8 gm. of cereal at 5 nems equal 40 nems, and 5 gm. of sugar at 6 nems equal 30 nems. This mixture is cooked down to 100 gm. The nem value of the porridge is 130 plus 70, or 200 nems, or twice as great as that of milk; that is, 1 gm. of the porridge equals 2 nems. Such a food Pirquet names doppelnahrung, or double nourishment.

I do not care to take up the interesting discussion about the value of fat in the dietary and Pirquet's opinion that it can be safely eliminated by substituting an equal nem value of starch. It would lead me too far. Suffice it to say that from his investigations he concludes that there is not such a thing as minimum requirement of fat for the sustenance of the human body. He looks on fat as a "luxus," a condiment, that is not of vital necessity.

Not so with proteins. The minimum requirement is 10 per cent of the daily ration. He derives this percentage in the following manner: One hundred grams of human milk equal 100 nems or hektonems, which contain 1.7 grams of protein, equal to 10 nems or 1 dekanem; in other words, human milk contains 10 per cent. of nem values of protein. Since milk with its 10 per cent. of protein is able to develop the human body during the first year of life, it can do likewise for the adult. For instance, 40 gm. of lean meat contain 100 nems or hektonems, but its protein value is not that of 100 nems of milk, which equal only 10 nems, but is six times as much, 60 nems or dekanems. Another example: Forty grams of egg equal 100 nems (in round numbers). The protein nem value is three times that of milk, or 30 nems. Eighty grams of potato equal 100 nems. Potatoes contain only one half the nem value of milk, or 5 nems. Pirquet is in accord with Chittenden's conclusions (Physiological Economy of Nutrition with Special Reference to the Minimal Protein Requirement of the Healthy Man, New York, 1904) though the amount of protein may be safely reduced. He postulates that the daily rations should contain a minimum of 10 per cent. up to a maximum of 20 per cent. of proteins per day.

Here we come to the second pillar of the superstructure on which Pirquet's system of nutrition rests. Rubner calculates the amount of nourishment (in calories) according to the surface of the body. Pfaundler has recently (Körpermassstudien, Springer, Berlin, 1916) pointed out the difficulties of the method and devised a method of his own. The method in vogue is the formula of Vierordt-Meeh (Anatomische, physiologische und physikalische Daten und Tabellen für Mediziner, Fischer, Jena, 1906), namely, O equals $m P^{2/3}$, wherein O is the surface of the body, m is the stature and P the weight. Hösslin and Pfaundler came to the conclusion that it is not at all the surface of the body that is the criterion for amount of nourishment, but it is the surface of the blood vessels. I shall not enter into the intricacies of the mathematical calculations. Pirquet has worked on these formulas and verified their findings clinically and arrived at the great discovery that the surface of the intestine can be substituted for that of the surface of the body. He has further found that the surface of the intestine equals the square of the sitting length of the body (measuring from the crown of the head to the coccyx). The sitting length is named Si. Pirquet looks on the intestine as the surface on which the whole of the food is spread out and finds that each square centimeter is fed by one nem. It therefore follows that the amount of nems necessary for the nourishment of any individual can be found by squaring the sitting length of the body. The square of the sitting length Pirquet named Siqua.

For instance, the maximum daily nourishment for a nursing child whose sitting length (Si) is 40 cm. is equal to 40^2 (Siqua) or 1,600 nems. An adult whose sitting length is 90 cm. should receive daily 90^2 (Siqua) or 8,100 nems, or the nutritive value equal to 8.1 liters of milk.

From the foregoing it is evident that the amount of nourishment for all persons is prescribed in accordance with the simple method of taking the sitting length measurement and multiplying it by itself, which gives the number of nems per day. It is noteworthy that when these daily nem values are compared with the caloric values they are found to be about identical. Pirquet has divided the sitting length into seven groups.

In conclusion I wish to say that my interpretation of the system might lead one to think that it is a very complicated affair; yet it is a fact that American nurses and social workers who visited the clinics of Pirquet or who worked in the kitchens of the A. R. A. have all considered the method simple and practical, and many returned to the United States as ardent propagandists of the Pirquet system of nutrition.

C. D. SPIVAK, M.D., Vienna, Austria.
American Joint Distribution Committee.

NOTE.—A more complete discussion of the Pirquet system may be found in a review by Faber, H. K.: Von Pirquet's Feeding System, *Am. J. Dis. Child.* **19**:478 (June) 1920.—ED.

Marriages

ELLIOTT STERLING ANDREW ROBINSON, New Haven, Conn., to DR. HORTENSIA AMANDA FARRALL of Oberlin, Ohio, at Bridgeport, Conn., recently.

MARSHALL ABNER MOORE, Ingram Branch, W. Va., to Miss Margaret Owens of Ceredo, W. Va., at Huntington, W. Va., in June.

LESTER DALE HUFFMAN, Lieut., M. C., U. S. Navy, Indianapolis, to Miss Nell Madden of Aitken, Minn., May 9.

JOHN MOREHEAD EMMETT, Huntington, W. Va., to Miss Annie Cleveland Cone of Richmond, Va., June 16.

LEWIS HAMILTON SETH, Easton, Md., to Miss Katherine Martin of Talbot County, Md., at Easton, July 3.

WILLIAM RALPH BENDER to Miss Sue Elizabeth Stambaugh, both of Hagerstown, Md., Baltimore, July 16.

BOOKER EPHRAM RHUDY, Abingdon, Va., to Miss Margaret E. Hatch of Chesterfield County, Va., May 3.

GEORGE SCHUYLER BANGERT to Miss Elizabeth Hartshorne Parker, both of East Orange, N. J., June 22.

WILLIAM JACKSON MERRILL, Philadelphia, to Miss Helen Wilson of Grand Rapids, Mich., July 3.

DUNCAN WALDO HOLT, Duke, N. C., to Miss Helen Elizabeth Knaur of Denison, Texas, June 2.

JOHN FOX KENDRICK, Philadelphia, to Miss Mary Elizabeth Dixon of Charlotte, N. C., June 30.

EARL LEGRAND WARD, Santa Fe, N. M., to Miss Helen Farrow of Deming, N. M., June 21.

OTTO VANDER VELDE, Detroit, to Miss Margaret Etta Den Herder of Zeeland, Mich., June 24.

FREDERICK W. HORN to Miss Alta Frances Edwards, both of Wortham, Texas, July 27.

IRVING HEWARD CAMERON to Mrs. John Ross Robertson, both of Toronto, July 1.

EVERETT CLYDE KELLY, Peoria, Ill., to Miss May Gilfillan of Chillicothe, Ill., June 5.

MAYNARD GILMORE BENSLEY to Miss Muriel Nicol, both of Summit, N. J., June 19.

KURT JAENICKE, Clinton, Iowa, to Miss Mary Leimbach of Lyons, Iowa, June 28.

PHILIP HAROLD FINKELSTEIN to Miss Sadie Pallenberg, both of Brooklyn, June 27.

ADOLPH MAX KELLERMAN to Miss Natalie Rosenberg, both of Brooklyn, June 8.

FRED HOWARD CARPENTER to Miss May Viola Morcom, both of Denver, June 13.

WALTER KELLOGG REED, Boulder, Colo., to Miss Kate Chase of Denver, June 16.

Deaths

William Winbourn Gray ⊕ Colonel, M. C., U. S. Army (retired), Forest Hills, L. I., N. Y.; Bellevue Hospital Medical College, 1875; aged 69; who entered the army June 6, 1878, as assistant surgeon and was made colonel January 15, 1909; served as chief surgeon of the departments of the Dakotas and of the Missouri, and was retired December 6, 1912, by direction of the president, being over 62 years of age; died, July 3.

Thomas Jefferson Buchanan, Tom's River, N. J.; Jefferson Medical College, 1889; aged 62; a member of the Medical Society of the state of Pennsylvania; a bacteriologist; a pioneer in the study of the effects of the roentgen ray on malignant growths; founder of the Tom's River (N. J.) Hospital; a member of the faculty of his alma mater; died, July 15, from malignant disease, the result of prolonged exposure to roentgen ray.

Eugene C. Powell, McKenney, Va.; University of the City of New York, 1861; aged 80; an honorary member of the Medical Society of Virginia; hospital steward and acting assistant surgeon, C. S. Army, during the Civil War; county superintendent of schools of Dinwiddie County for twenty-seven years, and for fourteen years president of the Bank of Dinwiddie; died, May 18.

Almer O. Huntley, North Bloomfield, Ohio; Starling Medical College, Columbus, Ohio, 1886; aged 77; a veteran of the Civil War, during a portion of which he served as physician on a hospital train, and was a prisoner at Andersonville, Ga.; for twelve years secretary and treasurer of the North Bloomfield Banking Company, and for many years township clerk; died, June 22.

Claude Raymond Woods, Delhi, N. Y.; University of Bishop's College, Montreal, 1891; aged 52; a member of the Medical Society of the State of New York; coroner of Delaware County; formerly a medical missionary in India; while driving in his automobile over a grade crossing at Unadilla, N. Y., July 6, was struck by a train and instantly killed.

W. H. Minton, Jr., Houston, Texas (license, Texas State Board of Medical Examiners, 1907, and in Tarrant County, Texas, 1895); a member of the State Medical Association of Texas; assistant state health officer of Texas since February, 1909, and prior to that time connected with the state pure food department; died, July 6.

James H. Rogers, Beaudry, Ark. (license, State Medical Board of Arkansas, 1903); aged 55; while attempting to search an automobile in which James Carmody was riding, was shot and killed by Carmody, July 9, who surrendered himself to the police stating that Rogers claimed to be a United States marshal.

Ernest A. Robin ⊕ New Orleans, La.; Tulane University, New Orleans, 1891; aged 51; professor of diseases of the eye in the New Orleans Polyclinic; first assistant surgeon in the eye department of the Eye, Ear, Nose and Throat Hospital, New Orleans; died, July 9, from heart disease.

B. Fortunatus Magruder, Fort Worth, Texas; Washington University School of Medicine, Baltimore, 1871; formerly local surgeon of the Gulf, Colorado and Santa Fe Railroad at San Angelo, Texas; once president of the San Angelo District Medical Society; died, June 5.

John W. Stewart, Rock Island, Ill.; University of Pennsylvania, Philadelphia, 1867; aged 75; since 1869 a hardware merchant and real estate dealer of Rock Island; president of the Rock Island Humane Society; died in Estes Park, Colo., July 16, from pneumonia.

William G. Gamble, Guntown, Miss.; Medical College of Louisiana, New Orleans, 1860; aged 86; surgeon in the Confederate Service during the Civil War; died at the home of his son in Greenville, Miss., July 11, from senile debility.

William Cooper Eidenmuller, San Francisco; University of the City of New York, 1884; aged 63; formerly assistant city physician of San Francisco, consulting physician to the French and Mt. Zion hospitals; died, about July 10.

Charles Lewis McCurdy ⊕ Bangor, Maine; College of Physicians and Surgeons, Baltimore, 1888; aged 66; at one time city physician of Bangor and for two terms a member of the board of aldermen; died, July 8.

Philip Asher, New Orleans; Tulane University, New Orleans, 1897; aged 53; founder and dean of the New Orleans College of Pharmacy; died in Touro Infirmary, New Orleans, July 5, from tumor of the bladder.

Dallas L. Scarborough ⊕ Grand Junction, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1871; aged 76; who fell, fracturing his leg, several weeks ago; died in a hospital in Iowa City, July 12.

Hiram Beach Morse ⊕ Bay City, Mich.; University of Michigan, Ann Arbor, 1896; aged 49; a specialist in diseases of the eye, ear, nose and throat; died, July 13, from cerebral hemorrhage.

George Mortimer Snook, Parma, N. Y.; College of Physicians and Surgeons, Baltimore, 1883; aged 79; a member of the Medical Society of the State of New York; died, April 16.

James Francis Goodell ⊕ Rhinebeck, N. Y.; New York Homeopathic Medical College and Hospital, New York, 1879; aged 71; for several years health officer of Rhinebeck; died, May 20.

Charles Wesley Brandenburg, New York; Eclectic Medical College of the City of New York, 1891; aged 69; professor of physiology and hygiene in his alma mater; died, July 17.

Smith J. Posten, Morgantown, W. Va.; College of Physicians and Surgeons, Baltimore, 1881; aged 61; a member of the West Virginia State Medical Association; died, May 11.

Eugene E. McNicholl, Cobourg, Ont.; Queens University, Cobourg, Ont., 1872; for several years medical superintendent of the Cobourg Hospital for the Insane; died recently.

Alfred T. Levick, Mt. Vernon, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1876; Missouri Medical College, St. Louis, 1883; aged 74; died, July 3.

Lester Taylor Allen Mallette, Naylor, Mo.; University of Louisville, Ky., 1910; aged 34; died at Cape Girardeau, Mo., July 9, from arsenic poisoning.

Mathilde Annette Pelham, New York; New York Medical College and Hospital for Women, New York, 1900; aged 56; died, July 16, from diabetes.

Oscar S. Parlow, Alvarado, Texas; Vanderbilt University, Nashville, Tenn., 1883; aged 59; died recently in a sanatorium in Fort Worth, Texas.

Robert Edward Lee Jessee ⊕ Philo, Ill.; Northwestern University Medical School, Chicago, 1896; aged 49; died, July 3, from heart disease.

Thomas F. Thompson, Snohomish, Wash.; State University of Iowa, College of Homeopathic Medicine, Iowa City, 1890; aged 71; died, June 20.

Sam W. Luten, Hickman, Ky.; Kentucky School of Medicine, Louisville, 1864; University of Louisville, Ky., 1868; aged 79; died, June 25.

George Arthur Boone, Troutville, Va.; University of Virginia, Charlottesville, 1873; aged 70; died in a hospital in Roanoke, Va., July 9.

Ernest Kent Parker, Springfield, Mass. (license, years of practice, Massachusetts); died in his office, July 8, from cerebral hemorrhage.

Martin Dutton Cook, West Stockholm, N. J.; University of Vermont, Burlington, 1875; aged 75; died, July 9, from heart disease.

Albert G. Girard, Clyde, Kan.; Western University, London, Ont., 1907; aged 49; died, April 18, from carcinoma of the glottis.

Henry James Brown, Baltimore; Michigan College of Medicine, Detroit, 1885; aged 89; a colored practitioner; died, July 19.

Rudolph Joseph Schmeidel, San Francisco; California Eclectic Medical College, San Francisco, 1899; aged 48; died, July 9.

George Edwin Townsend, Long Beach, Calif.; College of Physicians and Surgeons, Keokuk, Iowa, 1887 aged 62; died, July 6.

William Sumner Long ⊕ Haddonfield, N. J.; University of Pennsylvania, Philadelphia, 1878; aged 65; died, July 14.

James Clemmons McAlister, Hamilton, Ont.; Trinity Medical College, Toronto, 1886; aged 59; died, April 30.

Anton Komoracki, Alpena, Mich. (license, Michigan, 1900); aged 88; died, April 23, from typhoid fever.

⊕ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

A LEGION POST ON NOSTRUM GHOULS

During the war THE JOURNAL exposed the methods of certain nostrum concerns that circularized the soldier body with "scare literature" of their venereal "cures." Quackery, as versatile as it is venal, is now adding to its post-war gains by exploiting the families of the dead soldiery. Taking advantage of the susceptibility of many a "gold star mother" whose mental and physical resistance has been weakened by grief, the "patent medicine" maker has found it easy to "work" her for a testimonial for this or that "tonic." This new phase of exploitation is dealt with in a resolution recently adopted by the Advertising Men's Post No. 38, American Legion, of Chicago. Their attention had been called to the publication of advertisements of "patent medicines" in newspapers and other periodicals purporting to be the testimony of grief-stricken survivors of men who gave their lives in the war. We quote in part:

"BE IT RESOLVED that we go on record as condemning the use of war records of soldiers, sailors and marines killed in this war for the exploitation of 'patent medicines'; that our Post send a copy of this resolution to the gold star mothers and other relations of departed heroes, who through approbativeness, cupidity, ignorance, or otherwise are allowing the publication of their photographs and testimonials together with the exploitation of the heroism of their heroic dead, for the promotion of 'patent medicine' sales; and that our Post send a copy of this resolution to the Department of Illinois of the American Legion, to the *American Legion Weekly*, the Associated Advertising Clubs of the World, the American Newspaper Publishers' Association and divers other newspapers, magazines, periodicals and associations interested."

A SHOTGUN MIXTURE

A physician, whose name and address are omitted for reasons sufficiently obvious, writes THE JOURNAL:

"My partner uses this with marked success on any and all intestinal cases of a medical type and I would be glad if you would give me your idea of *why* it is successful:

"Zinc sulphocarbolate	.5
"Bismuth subnitrate	15.
"Bismuth betanaphtholate	8.
"Camphorated tincture of opium	15.
"Syrup of acacia	30.
"Elixir lactopeptine, sufficient to make	130.

"Mix and give one dram every two hours."

In this prescription the chief active ingredients are bismuth subnitrate and camphorated tincture of opium. The zinc sulphocarbolate is superfluous and its absence would not be missed so far as its effect is concerned. Bismuth betanaphtholate probably differs in no wise in its action from bismuth subnitrate and might, therefore, likewise be omitted. The "Elixir Lactopeptine" is a vehicle, the digestive activity of which is negligible and of no importance in this combination. It, therefore, might as well be omitted and a vehicle like cinnamon water or simple elixir substituted. Syrup of acacia, of course, serves for the purpose of suspension of the heavy powder. It would be better, however, to prescribe the bismuth subnitrate in powder form and alone. One has, then, the sedative action of the bismuth and the narcotic actions of the paregoric and alcohol in the Elixir Lactopeptine. The statement of our correspondent that this mixture is used "with marked success on any and all intestinal cases of a medical type" is doubtless an exaggeration. If it is not, the physician who gives this mixture has been fortunate in having cases in which there was no danger of locking up irritating material in the intestines through the administration of an opiate. The mixture itself is complex and unscientific; to prescribe it indiscriminately in "all intestinal cases of a medical type" would be sheer empiricism.

BENZYL BENZOATE

Its Chemical Properties have been known for years.

Its therapeutic properties as an antispasmodic have been known only a short time. They are based on the investigations of D. I. Macht which showed the benzyl ($C_6H_5CH_2$) group to possess properties peculiar to papaverine.

Before this new addition to Materia Medica can be given thorough clinical trials, it is necessary that the products be of a quality sufficiently pure for medicinal use.

FOR THE PHYSICIAN'S PROTECTION
as well as an aid to the manufacturers

THE A.M.A. CHEMICAL LABORATORY
at the request of the Council on Pharmacy and Chemistry

has elaborated purity standards. It has also examined the market supply and found that on the whole the nonproprietary medicinal brands are of a satisfactory grade for clinical use.

This is a greatly reduced reproduction of one of the numerous educational posters shown at the New Orleans session in the exhibit of the Chemical Laboratory of the American Medical Association.

Correspondence

REMOVAL OF SMALLPOX PITTING

To the Editor:—In Queries and Minor Notes (THE JOURNAL, June 19, 1920, p. 1732) is a letter asking whether there is a remedy for old lesions of the skin caused by smallpox. You state that there is no way of removing the scars (pitting) of smallpox.

With this broad statement I take issue. In some cases the disfigurement can be eradicated. It depends on the amount and depth of pitting, the close approximation or the widespread distribution of the pits, the color and texture of the skin, and the area to be treated —whether the nose, the cheeks, the forehead, etc. Nearly all cases can be improved, and with the exercise of patience and care, some cases can be cured. I have successfully treated smallpox pitting, the scarring of acne indurata and the pitted skin of hypertrophic rosacea, with the following method:

A solution of equal parts of trichloracetic acid and water (approximately a 50 per cent. solution of the acid) is employed. A small pledget of cotton is attached to a fine-pointed piece of orange-wood stick. The hollow "pit" of the crateriform scar is coated with a thin layer of liquid petrolatum or oil. The edge of the crater is lightly touched with the acid solution, forming a ring about its periphery, the application being continued until the skin surrounding the pit, for a distance of about one-sixteenth inch, has turned white. Beyond this whitened zone, a much weaker application of the acid is made, using a solution of, say, 10 per cent. strength, so that the intensity of the action of the acid solution gradually lessens as it recedes from the periphery of the pit. Or the 50 per cent. solution may be employed beyond the whitened zone, the action of the acid being controlled by applications of alcohol or water (neutralization). The appearance of such a lesion, following this treatment, may be aptly compared to the rays of the sun: intense light rays

at the periphery, gradually shading off centrifugally. The application of the acid has to be made so that there is no sharp line of demarcation surrounding the pit—the acid must be made to "shade off" into the surrounding skin. When the smallpox pits are closely set together, the entire area may be treated, piece by piece, with the method outlined. In the treatment of the disfiguring pitting of hypertrophic rosacea and nonlobulated rhynophyma, this procedure has been invariably successful in my hands. From six months to a year's time is required to produce good results in the average case. The application of the acid results in the formation of thin, brown, adherent scabs, which are allowed to drop off spontaneously—which usually occurs in from ten days to a fortnight. A week or two should elapse before the second application is made over the same area, after the scabs have dropped off.

In cases of smallpox pitting, paradoxical as it may seem, the more numerous and closely set the scars are, the better the final result. This is because large areas of the affected skin may be "planed off" with impunity; in isolated, shallow pits, the results are not so easily attained, as the contrast from bad to good is so much less evident, after the completion of the treatment. All cases must be carefully selected, and one or two pitted spots may be experimented on, without making matters worse.

I claim no originality for this treatment.

FRED WISE, M.D., New York.

PROHIBITION AND THE MEDICAL PROFESSION

To the Editor:—I am not at all in sympathy with your "Prohibition" article under date of July 17, 1920. The best surgeons in Milwaukee daily prescribe alcohol either in the form of a nutrient enema, egg-nog or stimulant. Interviews have been printed in our daily papers in which high-standing physicians are quoted, scathingly condemning the government for curbing the privilege of prescribing whisky. No layman and no government has the right to tell the physician what to prescribe and what not to prescribe. You may just as well limit the busy industrial surgeon in the number of bandages or yards of gauze he is allowed to use, as to limit him in the number of ounces of whisky he may prescribe. To shear all physicians over the same comb in their limitation of prescription blanks is equally asinine and autocratic. Some physicians see one case a day; others treat a hundred patients a day; while some physicians use quinin, morphin, etc., others have greater faith in alcohol. It is not for you or me to say what is the best remedy, nor when whisky is indicated, because we do not know. During the late influenza epidemic the mortality in our hospitals was frightfully high, while the mortality in localities where modern scientific medicine was unknown was much lower. Until we, as scientists, explain this to the people, they will believe in whisky as a good home remedy.

As for the sacredness of the eighteenth amendment, permit me to tell you that many of our best physicians believe that this amendment was a fraud on the people. It is an axiom in law that where fraud appears it carries its own nullification with it. The common people were not consulted when this amendment was passed; in fact, the fanatics saw to it that our best people were in France and Russia at the time.

I cannot agree with you that it is within the discretion of the government to dictate to me what to prescribe and when to prescribe it. I am still old-fashioned enough to believe with Dr. Porter in the sanctity of the physician's prescription, and that every self-respecting physician should resent all lay interference, be such interference fanatical, political, federal or police power. In fact, I attribute much of the restlessness and lawlessness of the times to the fanatic obsession of the administration, which imagines that its own tastes and prejudices are advance messages, specially sent out by an all-wise Providence to guide the wheels of the universe.

I do not use much alcohol in my practice, but I have every regard for the courageous physician who substitutes whisky for opium, and then still more whisky for the many idiotic drugs THE JOURNAL favors. Whisky may do some harm here and there, but the moral good it advances in combating the sinister will of the fanatic in his program of oppression and repression will more than offset this possible physical evil. Let every clean, self-respecting, modern and progressive physician give whisky the benefit of every doubt, and thus register his protest against all autocracy, usurpation and fanaticism. Unless we do this, tobacco, coffee, canned fruit and even oxygen will be prohibited by future amendments or statutory laws.

RALPH ELMERGREEN, M.D., Milwaukee.

To the Editor:—Relative to the editorial comments (THE JOURNAL, July 24, 1920, pp. 249, 250) on "The Newer Quackery," and "The Easiest Way," I would beg leave to ask, is the latter any worse or even "less ethical" to further a hobby, fad or whatever you may call it, than the former? Is not the latter a subterfuged ad. of the prohibitionist?

LOUIS T. KLINKER, M.D., New York.

[COMMENT.—The question is not whether alcohol and spirituous liquors are needed in medical practice; not whether prohibition is right or wrong. The question is whether the medical profession shall respect the law or betray its trust by becoming the accomplice of those who are willing to violate the law in order to satisfy their craving for alcoholic beverages. The law gives the physician the right to prescribe alcohol or any of its preparations whenever in his judgment it is necessary in the treatment of the sick. Every physician, in his own conscience, knows how few the occasions are when a prescription for alcohol actually is necessary.—ED.]

"ELEVATION OF CONJUNCTIVA NEAR LIMBUS PREVIOUS TO CATARACT EXTRACTION"

To the Editor:—In THE JOURNAL, July 17, 1920, p. 177, Dr. Whitmire suggests injecting water under the conjunctiva to facilitate a conjunctival flap. May I improve his suggestion by advising the use of cocain instead of sterile water. It answers a twofold purpose: It produces the bleb, and it adds to the anesthetic effect.

JOSEPH E. STERNBERG, M.D., Boston.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

RACIAL DIETS

To the Editor:—Have you any available data on racial diets? I have in preparation a book for public health nurses and believe that it is most essential that they should know something of the food habits of the people with whom they have to come in contact from a professional standpoint. I am under the impression that an article on the diet of the Chinese appeared in THE JOURNAL, March 30, 1918.

F. J. P., Boston.

ANSWER.—We may refer to the following articles on racial diets:

Whyte: Diet Lists Used in the Hospital of the Union Medical College, Tsinan, Shantung, *China Medical Journal*, January, 1916.
Hess, A. F., and Unger, L. J.: Diet of the Negro Mother in New York City, THE JOURNAL, March 30, 1918, p. 900.
Köhler, S.: Dietary in Large Hospitals in Sweden, *Svenska Läk.-Sällsk. Handl.*, March, 1919.
Bjørum, M. V., and Herberg, P.: Dietary of Average Family in Denmark in 1916, *Ugesk. f. Læger*, Feb. 13, 1919.
Ruiz, J. G.: Diet in the Tropics, *Semana méd.*, Dec. 28, 1916.
Little, J. M., Jr.: Eskimo Deficiency Disease, *Boston M. & S. J.*, May 3, 1917.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 7. Sec., Dr. Harry C. De Vighne, Juneau.
HAWAII: Honolulu, Sept. 6-10. Sec. Dr. R. W. Benz, 1141 Alakea St., Honolulu.
ILLINOIS: Chicago, Sept. 20-23. Director, Francis W. Shepardson, State House, Springfield.
IOWA: Des Moines, Sept. 15-17. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.
NEW HAMPSHIRE: Concord, Sept. 9-10. Sec., Dr. Charles Duncan, Concord.

THE TEACHING OF VITAL STATISTICS TO MEDICAL STUDENTS IN BRAZIL

S. T. DARLING, M.D., AND WILSON G. SMILLIE, M.D.,
SÃO PAULO, BRAZIL
Professor and Assistant Professor of Hygiene, Respectively, Faculdade de Medicina e Cirurgia

We have been so much encouraged by the happy result of our attempt in Brazil to interest our students in the subject of vital statistics, particularly in regard to the assignment and certification of causes of death, that we wish to report briefly our methods.

It was the duty of one of us (S. T. D.) for several years, at Ancon Hospital, to make the causes of death turned in by the physicians there fit the classification of the "International List of Causes of Death." It was customary there to pay more than usual, even extraordinary, attention to the difficult subject of assigning correctly the cause of death in the cases that came to necropsy. The combined services of the pathologist, bacteriologist, and at times the chemist, were used to effect this. As early as 1908, before the publication by Dr. Cabot of his comparison of clinical diagnoses and postmortem findings, Col. John L. Phillips, superintendent of Ancon Hospital, had ordered that the laboratory should be required to investigate all cases of fever not definitely pneumonia or tuberculosis and not reducible by quinin within three days; and he later ordered that when the anatomic diagnosis differed markedly from the clinical diagnosis, they should be reported in parallel columns to him for reference to the physician in charge of the case. These wise hospital regulations led to beneficent results, as can well be imagined—results of value to the patients, the physicians, the pathologist, and the sanitary officer. In the task of making the causes of death conform to the international classification, it was realized how thoughtlessly the work of assigning a cause of death is usually done by the generality of busy practitioners, and even by the best of qualified men when their attention is not specially directed to the requirements of the health officer and the statistician. A comparison of the diagnostic results obtained at Ancon Hospital and the procedure and care exercised there to arrive at an accurate cause of death, with those seen in other parts of the tropics, confirmed us in the desire to emphasize to our students the importance of correctly diagnosing and assigning a cause of death in such a way that the sanitary officer and the statistician may be put in possession of the information so requisite to them. Probably no subject is treated so carelessly by physicians as that of assigning a cause of death. We are convinced that one reason for this is that there has been no special class-work devoted to the subject in the medical schools. We determined to remedy this defect, so far as the Faculdade de Medicina e Cirurgia at São Paulo was concerned.

Lectures were given in which the subject was fully explained. The publications of the United States Department of the Census, that is, the "International List of the Causes of Death" in its expanded form, the "Joint Causes of Death," and the little "Physicians' Handbook," were shown the class and their contents explained to them.

Field excursions to the department of demography were made. Through the courtesy of Dr. Arthur Neiva, director of public health for the state of São Paulo, and Dr. Meyer, chief of the department of demography, an afternoon was spent in showing the students every detail in the subject of collecting and compiling the data returned to the demographer. The errors of the physician, both of commission and omission, were shown and fully explained. The students were enabled to see the results which would accrue from their thoughtlessness or carelessness. Their attention was directed to the necessity of referring certain causes, as, for example, embolism under "accidents of childbirth" when the disease had occurred with childbirth; or of referring a death to homicide, when in fact it had resulted in that way. The students were counseled to avoid indefinite or ill-defined terms such as "stroke," "atrophy" or "convulsions." Typical and common faults were shown by the demographer and his clerical assistants, and the students were told how to avoid them. Not only was the exercise well attended, but it was followed with marked attention and unflagging interest.

Finally, practical class exercises were given in the laboratory, in which typical problems were presented to the students for working out—problems in which the students were required to assign a cause of death which would give the health officer and the statistician the information required by them for the proper and intelligent conduct of their work.

The interest that was aroused by these practical laboratory exercises was extraordinary and entirely unexpected. Part of this interest undoubtedly is due to the fact that the Latin temperament likes a problem presented in such a way that there is a chance for ratiocination and polemics, and partly because we stimulated their sense of civic and national pride. Be that as it may, the results make us feel that the experiment can be tried with success not only in other parts of South America, but also by schools in the United States and elsewhere.

PRACTICAL EXERCISES

Besides the lecture on vital statistics and the visit to the state department of demography already described, the students have two practical exercises of two hours each, corresponding to laboratory periods. The work falls naturally into two divisions:

1. The proper method of compiling vital statistics.
2. The proper methods of interpretation of vital statistics.

The proper compiling of vital statistics depends in no small part on the physician, for he is the origin of almost all data, and their accuracy is absolutely dependent on his intelligence, knowledge and painstaking care. In order that there may be a uniform terminology, the International List of Causes of Death has been compiled and is now available in English, French, Spanish, German, Portuguese, Chinese, Japanese, and many other languages. The adoption of the international list was a great forward step in securing uniformity of vital statistics; but since deaths may be reported for one cause only, with one other disease as a secondary or contributory cause, and since individuals die, in the majority of instances, from a complication of diseases, the selection of the proper cause of death from among three or four or a possible half dozen causes must be made with care.

These facts are explained to the students, who are then given the six rules of Bertillon by which the physician may determine the primary and contributory causes of death.

SIX RULES OF BERTILLON FOR PROPER CLASSIFICATION OF CAUSES OF DEATH

1. If one of the two diseases is an *immediate and frequent* complication of the other, the death should be classified under the head of the primary disease.

2. If the preceding rule is not applicable, the following should be used: If one of the diseases is *surely* fatal and the other is of less gravity, the former should be selected as the cause of death.

3. If neither of the foregoing rules is applicable, then the following: If one of the diseases is *epidemic* and the other is not, choose the epidemic disease.

4. If none of the preceding rules is applicable, the following may be used: If one of the diseases is *much more frequently fatal* than the other, then it should be selected as the cause of death.

5. If none of the four preceding rules applies, then the following: If one of the diseases is of *rapid development* and the other is of slow development, the disease of rapid development should be taken.

6. If none of the foregoing five rules applies, then the diagnosis should be selected that best characterizes the case.

It is to be noted that in Rule 3 the term epidemic disease is used. This is a rather indefinite term, and therefore in order to have a criterion we choose diseases as epidemic if they are on the list of reportable diseases of the state in which a physician lives. The list of reportable diseases for his state are then given the student, and he is required to memorize both the rules of Bertillon and the list of reportable diseases.

Having established a basis on which to work, each student is given a blank death certificate and a problem, with the request that he fill out the certificate properly in fullest details. Some examples of these problems may be given:

Problem.—You have been treating a boy aged 15 years for the last three weeks, who has typhoid fever. Three days ago he suddenly developed bronchopneumonia and died. Make out a proper death certificate.

The tendency of the student is to put bronchopneumonia as the cause of death, and typhoid fever as a contributory cause. By careful reading of Bertillon's rules, however, he sees that though Rules 1 and 2 do not apply in this case, Rule 3 has a very direct application, and the disease should be reported primarily as typhoid fever because this disease is reportable and has great hygienic importance.

Problem.—You have been attending a girl aged 4 years for three months. The child had scarlet fever six months ago and developed nephritis, which has progressed steadily, and the child died.

In this instance, the acute symptoms of scarlet fever, such as fever, rash, etc., had long since passed away, and therefore the tendency of the student is to classify the death as nephritis for the primary cause, and scarlet fever for the contributory cause. This, of course, is incorrect, since according to Rule 1, in case a disease is a direct and frequent complication, as nephritis following scarlet fever, the nephritis should be classed not as the primary but as the contributory disease.

Problem.—An old syphilitic alcoholic, aged 56, was picked up in the street by the ambulance and died before he reached the Santa Casa. Necropsy revealed cirrhosis of the liver, anasarca and cardiac insufficiency — syphilitic aortitis and endocarditis. Make out death certificate.

This problem is a difficult one, and not an uncommon picture on the necropsy table. Furthermore, none of the rules of Bertillon apply, except possibly the last one. The general conclusion among the students in the discussion of this case is that the death should be classified as follows: primary cause, syphilitic aortitis; contributory cause, cirrhosis of liver.

In solving the problems the rules published by the Society of Medical Officers of Health of England, and the introductory remarks in the Bureau of the Census Manual of the International List of the Causes of Death, are also used.

These problems are typical examples of the difficulties which each student must solve in filling out the death certificate. When all are finished, each student reads his problem and his solution, while the others criticize his conclusions.

This exercise has proved valuable in that it has opened the eyes of the students to the importance of recording an accurate diagnosis on the death certificate, the necessity of some standard method of reporting causes of death, and the important part played by the physician in the compilation of mortality statistics.

INTERPRETATION OF VITAL STATISTICS

The second practical exercise is devoted to the proper methods of interpreting vital statistics. This exercise is of course very simple, and deals only with the method of calculation of the more important rates, pointing out the common errors in calculation and interpretation of rates, mistakes in the making of charts, etc. Each student in the class is given a problem in vital statistics, and required to make a chart. All necessary data are furnished, he being required only to calculate the rates and make the chart.

Problems are given, for example, to illustrate the methods of determining birth rates—e. g., so many births per thousand calculated population. One student makes a chart of his own city for the last twenty years, another a chart of his own city in comparison with twenty other large cities throughout the world for a given year. A third makes a chart of the death rate of São Paulo and twelve other cities of Brazil with a population of more than 50,000 people; there are only twelve such cities in all Brazil from which statistics are available. Similarly, death rates are calculated for São Paulo for a period of years, and for a given year in comparison with cities of the world, and cities of Brazil. Thus the student learns not only what a normal rate should be, but also how his own city and nation stand in relation to the outside world.

TABLE 1.—INFANT MORTALITY IN SÃO PAULO COMPARED WITH THAT OF OTHER CITIES

Cities	Data Furnished to the Student		Rate Calculated by the Student
	Deaths from 0 to 1 Year	Births	
São Paulo	2,619	17,598	147
Buenos Aires	4,123	43,061	94
Boston	2,055	19,760	103
Montevideo	1,041	9,383	108
New York	12,818	137,664	95
London	8,819	99,341	88
Lisbon	1,795	8,802	203
Stockholm	528	6,583	80
Havana	1,156	5,389	212
Bologna	443	3,320	134
Milan	1,209	9,788	121
Marseilles	1,038	6,623	156
Paris	2,853	28,271	100

The various methods of calculating infantile mortality are explained and the advantage of using the standard method of calculation, e. g., the member of deaths under 1 year, exclusive of stillbirths, per thousand births, is dwelt on. The various common causes of a high infantile mortality are mentioned.

One student then calculates the infantile mortality rate of São Paulo in comparison with previous years, another the rate for São Paulo in comparison with foreign cities, and a third the rate for São Paulo in comparison with twelve other Brazilian cities. This comparison makes a great impression, since São Paulo has a very high infant mortality rate, because it is an industrial city, many mothers working in the factories, and because it has a very bad milk supply.

Other problems include specific disease death rates, calculated by the number of deaths per hundred thousand population. Comparisons are made of the capital city with the rates for previous years, and also with other foreign and national cities in respect to specific death rates for typhoid fever, malaria, diphtheria, scarlet fever, measles, dysentery, smallpox, cancer and other diseases. A typical problem may be cited (Table 1).

When all calculations are completed, each student presents his problem and his conclusions to the class for criticism.

The most interesting feature of this exercise is the effect on the students of the comparison of the vital statistics rates of São Paulo with those of other cities in Brazil and of other nations. The students have great civic pride, and they are proud of their native state, so that one can observe the rapid and pronounced fluctuations of the emotional barometer of the whole class as each problem is read. A tremendous enthusiasm develops when the chart on comparative birth rates is shown, for São Paulo has one of the highest birth rates of any large city in the world of which reliable statistics are available. There is an abrupt fall in enthusiasm when the comparative death rates are calculated, and deep gloom settles down when the high infantile death rate is compared with those of the large cities of other nations. There is quiet satisfaction when the specific death rates for dysentery at São Paulo are compared with these of Bahia and other cities in the north of Brazil, followed by enthusiasm over the low death rates for scarlet fever, whooping cough and diphtheria, as compared with cities of the United States and of Europe.

TABLE 2.—BIRTH RATE OF SÃO PAULO, COMPARED WITH THAT OF OTHER CITIES, 1916-1917

Cities	Data Presented to Student		Rate Calculated by Student
	Population	Births	
São Paulo	470,872	17,598	39.4
Buenos Aires	1,610,594	43,961	29.1
Boston	767,539	19,760	25.0
Montevideo	373,581	9,383	20.8
New York	5,602,841	137,664	24.6
London	4,237,387	80,554	19.8
Lisbon	471,424	8,802	18.07
Stockholm	408,792	6,774	16.05
Havana	363,297	5,389	14.07
Bologna	201,905	3,320	16.04
Milan	705,049	9,788	13.07
Marseilles	583,740	6,623	11.03
Paris	2,847,229	28,298	9.8

These two practical exercises, brief as they are, transform the notion of vital statistics in the mind of the student. Instead of its remaining as long columns of incomprehensible figures, it becomes vitalized parts of his own life, a function of the state for which he will be responsible, an accurate index of the civilization, the progress and the development of the medical science and public health in his own city and nation. He is awakened from a self-satisfied lethargy and sees his nation as others see it. He would resent any criticism of his city as a personal insult, but readily accepts the severe criticism of the statistical chart, for he realizes that figures are impersonal factors which are applied in standard ways throughout all parts of the world.

Washington January Examination

Dr. William M. O'Shea, secretary, Washington Board of Medical Examiners, reports the written examination, held at Spokane, Jan. 6-8, 1920. The examination covered 13 subjects and included 130 questions. An average of 75 per cent. was required to pass. Of the 12 candidates examined, 11 passed and 1 failed. Forty-nine candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University		(1901)	80.7
Johns Hopkins University		(1912)	89.2
St. Louis University School of Medicine		(1919)	87.9
Cornell University		(1917)	88
University of Oregon		(1904) 89.1; (1919)	84.7
Thompsonian Medical College		(1905)	*
University of Toronto		(1914)	90.7
Montreal School of Medicine and Surgery		(1903)	80.4
University of New Zealand		(1916) 84.1; (1917)	89.6
	FAILED		
Northwestern University		(1919)	†81.7

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of California Medical School		(1916)	California
Yale College		(1916)	Michigan
Chicago College of Medicine and Surgery		(1917)	Illinois
College of Phys. and Surgs., Chicago,		(1902) Iowa, (1903) Minnesota, (1905) North Dakota	(1909, 2)	Illinois
Northwestern University		(1903) Montana, (1904) North Dakota, (1905) Minnesota, (1907) Illinois, (1908) Montana, (1910) (1915), (1916)	(1917, 2)	Illinois
Rush Medical College		(1903) North Dakota, (1904, 2)	Illinois
University of Illinois			(1916)	Illinois
State University of Iowa, College of Medicine			(1916)	Illinois
University of Louisville		(1893) Kentucky, (1913)	Kentucky
Johns Hopkins University			(1912)	Ohio
Univ of Mich. Med. School		(1886) Montana, (1916)	Michigan
Detroit College of Medicine			(1895)	Nebraska
University of Minnesota Coll of Med. and Surg.		(1896) Minnesota, (1905), (1906)	‡(1915)	Minnesota
Kansas City Medical College			(1895)	Missouri
St. Louis Coll. of Phys. and Surgs.		(1883) Kansas, (1918)	Missouri
University Medical College of Kansas City			(1912)	Montana
University of Nebraska			(1902)	Minnesota
Ohio State University College of Medicine			(1914)	Ohio
Jefferson Medical College of Philadelphia			(1916)	Penna.
Medico Chirurgical College of Philadelphia			(1893)	Illinois
University of Pennsylvania			(1910), (1913)	Penna.
Western Pennsylvania Medical College			(1899)	Penna.
University of Nashville		(1898) Georgia, (1901)	Idaho
Vanderbilt University			(1917)	Tennessee
National University of Athens			(1913)	Illinois

* No grade given.

† Fell below 60 per cent. in one branch.

‡ Reports state that this candidate has admitted that he presented fraudulent credentials.

Book Notices

OTO-RHINO-LARYNGOLOGY FOR THE STUDENT AND PRACTITIONER. By Dr. Georges Laurens. Authorized English Translation of the Second Revised French Edition by H. Clayton Fox, F.R.C.S. With a Foreword Contributed by J. Dundas Grant, M.A., M.D., F.R.C.S. Cloth. Price, $4.50. Pp. 339, with 592 illustrations. New York: William Wood and Company, 1919.

If the American reader will discount those sections dealing in technic—wherein the methods in vogue in this country are obviously superior to those of the continent—he will be gratified to have found a real textbook for beginners and general practitioners. It must be remembered that the book is written only for the student and the practitioner, and stops at the point of operative interference when the specialist must be called in. A fund of valuable and practical information is contained in its pages, of a character rarely found within the covers of a single publication. Moreover, the author does not skim through the subjects discussed in the usual textbook manner. He has put personality into the work, with the result that one feels one is reading an earnest lecture rather than a stereotyped textbook. Of particular value is the minuteness of detail with which Laurens instructs in the art of examination; and the same love of detail persists in his care of the patient. Under each necessary head come two valuable paragraphs, "What to do" and "What to avoid," which are of especial usefulness to the beginner and the physician in general practice. The book is a marvel of completeness in its field, and should be welcomed by those practitioners who, through choice or necessity, take care of "special cases" in practice.

A GENERAL INTRODUCTION TO PSYCHOANALYSIS. By Prof. Sigmund Freud, LL.D. Authorized translation with a preface by G. Stanley Hall, President, Clark University. Cloth. Price, $4.50. Pp. 406. New York: Boni & Liveright, 1920.

This book presents a translation of twenty-eight lectures delivered to laymen by the author. He tries to make a difficult subject elementary, and succeeds in spots; but unless the laymen to whom the lectures were delivered had considerable fundamental knowledge of psychology and of the nervous system, it is doubtful whether the lectures accomplished all that the author wished them to accomplish. They are divided into three groups: the first four lectures concerning the psychology of errors, the second ten lectures on dreams, and the last fourteen lectures on the general theory of the neuroses. For those who have sufficient fundamental knowledge, and who wish to begin at the bottom in their study of the Freudian movement and psychanalysis, this is an excellent work, since it bears the authority of the originator of this school of

thought. For those who have not the requisite fundamental knowledge, there are several books which are probably simpler and have the additional advantage of being brief.

Die Reiztheorie und die modernen Behandlungsmethoden des Diabetes. Von Priv.-Doz. Dr. R. Kolisch. Paper. Price, 30 marks. Pp. 152. Vienna: Urban & Schwarzenberg, 1918.

Kolisch for so long a time has been an enthusiastic advocate of undernourishment in the therapy of diabetes that this little book, setting forth in concentrated form his theories and method of treatment, is particularly appropriate. He is a great believer in the theory that the cause of diabetes resides in an overproduction of sugar, "in an increased cleavage of sugar out of the tissues from highly complex molecules." This breaking off of sugar from the highly complex molecules is caused by irritation. Despite the tremendous experimental work of the last thirty years, an etiologic therapy of diabetes is still lacking, and modern treatment rests on diet. The kernel of Kolisch's whole discussion is obtained from the following paragraph, which we believe should be quoted in full:

This normal and continuous splitting off of sugar from the protoplasm, from the tissues, apparently is increased in diabetes, probably the result of toxins or nerve irritations, and this increased splitting off of sugar from the tissues explains the hyperglycemia and the glycosuria in the sense of being an overproduction of sugar, inasmuch as this splitting off is much in excess of actual needs (Dieser normale und kontinuierliche Vorgang der Abspaltung von Zucker aus dem Protoplasma, aus den Geweben, erscheint im Diabetes gesteigert, wahrscheinlich durch toxische Einflüsse oder nervöse Reize, und diese vermehrte Abspaltung von Zucker aus den Geweben erklärt die Hyperglykämie und Glykosurie im Sinne einer Ueberproduktion von Zucker, da die Abspaltung den jeweiligen Bedarf bedeutend übertrifft).

American readers are now so well acquainted with undernourishment in the treatment of the disease that not much need be said concerning this section of Kolisch's discussion, which throughout seems to be characterized by an appreciation of the necessity of maintaining the individual patient at an existence level. He differentiates this from starvation, and in his closing paragraph criticizes Allen's earlier publications on absolute starvation.

Some figures quoted from the mortality statistics of Vienna are used by Kolisch as evidence of the value of undernourishment in the prevention of death from diabetes. These statistics are given in the accompanying table. This monograph is, indeed, an interesting and valuable contribution.

DEATHS FROM DIABETES IN VIENNA, AND TOTAL MORTALITY

	Total Mortality		Cause of Death: Diabetes	
Year	Civilian	Military	Civilian	Military
1913	32,130	184	337	2
1914	31,480	1,788	292	2
1915	33,052	3,966	265	6
1916	33,494	4,137	265	15
1917	40 260	5,871	194	15

Standard Methods for the Examination of Water and Sewage. Fourth edition. Cloth. Price, $1.25. Pp. 115. Revised by Committees of the American Public Health Association, American Chemical Society, and Referees of the Association of Official Agricultural Chemists. Boston: American Public Health Association, 1920.

This edition contains few important changes. No changes whatever have been made in the chemical procedures. In the preparation of culture mediums, American peptones have been made standard, and the concentration of carbohydrates in broths has been reduced from 1 to 0.5 per cent. The most important addition to the methods is the introduction of phenol red for adjusting the reaction of mediums. This should rapidly replace titration with phenolphthalein.

Arteriosclerosis and Hypertension with Chapters on Blood Pressure. By Louis Marshall Warfield. Third edition. Price, $4. St. Louis: C. V. Mosby Company, 1920.

In this edition Warfield has added new material and revised the old, thus bringing the book well up to date. The subject is treated in a somewhat elementary fashion, but the main features are given sufficient attention. The views expressed are in general those with which most investigators and clinicians would agree. The printing, type, paper and illustrations are excellent. The book can be commended as a safe guide for the student or practitioner desiring an introduction to this subject.

Medicolegal

Failure to Diagnose Pregnancy—Omniscience Not Required

(Jaeger v. Stratton (Wis.), 176 N. W. R. 61)

The Supreme Court of Wisconsin, in affirming a judgment in favor of the defendant, who was sued by Mr. and Mrs. Jaeger in separate actions for damages for alleged malpractice after which the actions were consolidated and tried as one, says that Mrs. Jaeger at the time she was examined by the defendant had borne nine children. Her menses had ceased two months before that, and she feared that she might be pregnant. She suffered from headache, gas in the stomach, and severe bearing down pains in the lower abdomen. She had not had such pains in her former pregnancies, and so became alarmed and consulted a physician, who did not definitely diagnose her condition, but suggested pregnancy, a tumor or inflammation of the appendix, and advised her to come back in a couple of months. Instead of doing so she went to the defendant, who found a serious inflammatory condition with pain and tenderness in the lower abdomen. The uterus was somewhat enlarged, and there appeared to be an inflammatory mass in the broad ligament. The defendant diagnosed the latter as the chief cause of the trouble, though he thought it might be appendicitis or, possibly pregnancy. He advised an operation. She said she did not want to be operated on if she was pregnant. He told her he thought she was not. She consented to an operation and told him to remove the appendix when he took out the tumor. The operation disclosed that she was about two and a one-half months pregnant, and that she had an inflamed appendix covered with a Jackson's membrane. The appendix was removed, and she made a normal recovery, and in time gave birth to a living and healthy child. The medical testimony showed without dispute that the failure to diagnose accurately her condition was due neither to lack of care, skill nor judgment; that under the conditions as they appeared an early operation was advisable; that the operation was skillfully performed; that the patient made a normal recovery, and was relieved from a menace that might have resulted very seriously during later pregnancy by having to have the inflamed appendix removed. In view of such testimony the trial court properly directed a verdict for the defendant. When a physician exercises that degree of care, diligence, judgment and skill which physicians in good standing of the same school of medicine usually exercise in the same or similar localities under like or similar circumstances, having due regard to the advanced state of medical or surgical science at the time, he has discharged his legal duty to his patient. Where due care, diligence, judgment and skill are exercised, a mere failure to diagnose correctly does not render a physician liable. Not omniscience, but due care, diligence, judgment and skill are required of physicians. When they meet such test, they are not liable for results or errors in judgment.

Violation of Medical Practice Act by Spiritualist —Sufficient Information

(People v. Krause (Ill.), 125 N. E. R. 726)

The Supreme Court of Illinois, in affirming a judgment of conviction of the defendant of a violation of the medical practice act, says that the record showed that two women inspectors employed by the city of Chicago called at the defendant's place of business and found him treating an old man; that the defendant's wife gave Miss Morley a reading, telling her, among other things, that she was suffering from lung trouble; that Miss Morley told her that she did not think she had that trouble but if the reader had told her that she had stomach trouble she might have believed her; that the defendant's wife then said it made no difference what her trouble was, her husband would give her a treatment which would cure her; that the inspectors then went out into the room where the defendant was and found him treating a woman; that the defendant invited Miss Morley to sit down

on a chair and remove her coat and hat; that the defendant placed her feet and put her hands on her knees; that he then manipulated her shoulders and her back; that he put his hand on her forehead and put his head to her back and listened; that he continued this treatment for fifteen minutes and then inquired if she did not feel better; that he charged her 50 cents for the treatment; that she was suffering from no ailment when she was treated by the defendant; that the defendant had in his window a sign calling himself a spiritualist, but that he said nothing to her about spirits. The defendant contended that he healed through the influence of the spirits; that he laid his hands on the patient and asked the Deity to make the sick person well and that he gave such a treatment to Miss Morley, and that therefore he came within the exception to the statute and was not required to have a license. But the contentions of the defendant could not be sustained. Nor would it justify a reversal of the case even if it be conceded that certain instructions to the jury which were refused might properly have been given, because the defendant was clearly guilty of the act charged, and no other verdict could be reached under the evidence in the record.

Section 2 of the medical practice act provides that no person shall practice any system or method of treating human ailments without the use of drugs or medicines and without operative surgery, without a license so to do. Section 20 of the act provides that any person shall be regarded as practicing medicine or treating human ailments who shall treat or profess to treat, operate on or prescribe for any physical ailment or any physical injury to or deformity of another, excepting the treatment of the sick or suffering by mental or spiritual means without the use of any drug or material remedy.

The information in this case charged that the defendant, not being then licensed to treat human ailments without the use of drugs or medicines and without operative surgery, did at the place and on the date named treat human ailments without the use of drugs or medicines and without operative surgery; that at the place and on the date aforesaid he did treat one Miss Morley by rubbing and by laying on of the hands and otherwise manipulating on the person of said Miss Morley, contrary to the form of the statute. The information charged the offense substantially in the language of the statute, and was therefore sufficient. The offense was stated plainly enough to be readily understood by the jury, and it informed the defendant of the offense with which he was charged so that he could properly prepare his defense. This is all the law requires. It was not necessary for the information to negative the exceptions.

Hospitals Liable for Negligence of Employees

(Mulliner v. Evangelischer Diakonniessenverein (Minn). 175 N. W. R. 699)

The Supreme Court of Minnesota, in affirming a judgment for $6,500 damages for the death of a pneumonia patient at the defendant's hospital, says that when the nurse in charge left the room, leaving the window slightly open, and five minutes later the window was found wide open and the patient was found lying dead on the ground below, the jury might well find that he was killed by the fall. In fact, they could not well find otherwise. And when the nurse in charge testified that she felt that the patient needed watching, that he was in a dangerous condition in which he might commit injury to himself, that if she had had more help she would have thought it proper to watch him more closely, and that the only reason she did not watch him more closely was that she had so much work that she could not do so, that evidence was sufficient to sustain a finding that the defendant was negligent in failing to provide a sufficient number of attendants and that the attendants were negligent in failing to exercise proper care for the patient's safety. If this were a hospital maintained for the profit of the owners, liability for such negligence would be undoubted. When a patient enters such a hospital, knowing that the number of nurses is less than the number of patients, he may not expect constant attendance, but the patient is entitled to such reasonable attention as his safety may require. If the patient is temporarily bereft of reason, and is known by the hospital authorities to be in danger of self-destruction, the authorities are in duty bound to use reasonable care to prevent such an act.

A more serious question is whether a hospital corporation constituted as was the defendant is liable to a patient for damages resulting from the negligence proved. The defendant corporation was organized for the maintenance of a private hospital. The ground on which the hospital building stood was donated. The building was erected partly by money donated and partly by money borrowed. The corporation had no capital stock and paid no dividends. Its funds were used for the maintenance of the hospital. It was not a free hospital. It had a regular schedule of rates which patients were expected to pay. The remaining small percentage were free or partly free. The receipts from the pay patients exceeded the cost of maintenance, including repairs, by more than $5,000 a year. This patient was a pay patient. The defendant came within the class commonly known as charitable corporations. The fact that its patients paid for their accommodations did not make it otherwise. The distinguishing facts were that it was partly endowed by donation and that it was not conducted for purposes of gain. There are numerous carefully considered decisions holding that such a corporation is not responsible for the negligence of its employees. But in this court's opinion the rule of liability seems best, and the court adopts it.

One reason given for the rule of nonliability to patients is that when a person enters a charitable hospital he enters into a relation which exempts the association from liability for negligence of its servants in ministering to him, or in other words he assumes the risk of injury from such negligence. As a matter of fact, the patient who enters a hospital has no thought of anything of that kind. His thought is that the hospital affords better facilities for caring for him than he has elsewhere at his command, and this court sees no reason why the assumption of such a risk should be imposed on him. The same principle would exempt the hospital physician, yet such exemption is not generally sustained. Men are not exempt from the consequences of negligence though on a mission of mercy.

Nor does this court think that the hospital corporation should be exempted from liability for the negligence of its employees so that the funds entrusted to it should not be diverted from the purposes for which they were given, or because it derives no gain from the service rendered. The corporation must administer its functions through agents as any other corporation does. It harms and benefits third parties exactly as they are harmed or benefited by others. To the person injured the loss is the same as though the injury had been sustained in a private hospital for gain. The court does not believe that a policy of irresponsibility best subserves the beneficent purposes for which the hospital is maintained. The court does not approve the public policy which would require the widow and children of the deceased patient, rather than the corporation, to suffer the loss incurred through the fault of the corporation's employees, or in other words, which would compel the persons damaged to contribute the amount of their loss to the purposes of even the most worthy corporation.

Society Proceedings

COMING MEETINGS

Amer. Assn. of Electro-Therapy & Radiology, Atlantic City, Sept. 14-17.
Amer. Assn. of Obstetricians and Gynecologists, Atlantic City, Sept. 20-22.
American Public Health Association, San Francisco, Sept. 13-17.
American Roentgen Ray Society, Minneapolis, Sept. 14-17.
Colorado Congress of Ophthal. & Oto-Laryn., Denver, Aug. 4-5.
Colorado State Medical Society, Glenwood Springs, Sept. 7-9.
Indiana State Medical Association, South Bend, Sept. 23-25.
Missouri Valley, Medical Society of the, Omaha, Neb., Sept. 6-7.
Utah State Medical Association, Ogden, Sept. 7-8.
Washington State Medical Association, Tacoma, Sept. 16-17.
Wisconsin, State Medical Society of, La Crosse, Sept. 8-10.
Wyoming State Medical Society, Cheyenne, Aug. 9-10.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

June, 1920, **52**, No. 2

*Study of Forced Respiration: Experimental Production of Tetany. S. B. Grant and A. Goldman, St. Louis.—p. 209.
*Study of Carbohydrate Tolerance in Eck Fistula and Hypophysectomized Animals (Posterior Lobe Removal). C. Jacobson, Baltimore.—p. 233.
*Gastric Response to Pies, Puddings and Cakes. R. J. Miller, H. L. Fowler, O. Bergeim, M. E. Rehfuss and P. B. Hawk, Philadelphia.—p. 248.
Segmental Activity in Heart of Limulus. D. J. Edwards, New York.—p. 276.
Arterial Pressure Curve as Influenced by Occlusion of Certain Vascular Areas and by Histamin. D. J. Edwards, New York.—p. 284.
*Artificial Production of Monsters Demonstrating Localized Defects as Result of Injury from Roentgen Rays. W. M. Baldwin, Albany.—p. 296.
Relation of Epinephrin Output of Suprarenals to Changes in Rate of Denervated Heart. G. N. Stewart and J. M. Rogoff, Cleveland.—p. 304.
Effect of Acids, Alkalies and Salts on Catalase Production. W. E. Burge, Urbana, Ill.—p. 364.
*Permeability of Placenta for Epinephrin in Pregnant Rabbit and Albino Rat. Y. Shimidzu, Philadelphia.—p. 377.
Character of Sympathetic Innervation to Retractor Penis Muscle of Dog. C. W. Edmunds, Ann Arbor, Mich.—p. 395.
*Energy Expenditure in Household Tasks. C. F. Langworthy and H. G. Barott, Washington, D. C.—p. 400.

Forced Respiration and Tetany.—Forced respiration causes symptoms of tetany to occur in the human subject; these include carpopedal spasm, Chvostek's sign, Trousseau's sign, Erb's sign, and in one instance observed by Grant and Goldman a tetanic convulsion. As a result of the fall of alveolar carbon dioxid tension produced by overventilation, there is a reduction in the hydrogen ion concentration of the blood, a reduction of the carbon dioxid capacity of plasma, a change in the reaction of the urine to the alkaline side, a decreased excretion of ammonia, and a slight increase in the calcium content of the serum. The authors believe that the underlying factor in the tetany of forced respiration is the alkalosis.

Carbohydrate Tolerance.—Jacobson found that Eck fistula animals have an extremely low tolerance for laevulose. The conversion of laevulose into glycogen is a function which is permanently lost when the portal blood is diverted into the vena cava by Eck fistula. Glucose tolerance is only slightly modified in Eck fistula animals. The liver is not entirely essential for glucose metabolism. The muscles undoubtedly perform well the functions of glycogenesis and glycogenolysis when the liver is shunted out of the portal circulation. The glycogenic capacity of muscle is increased following posterior lobe removal in an Eck fistula animal as in an intact animal. The augmentation of tolerance is, however, considerably slower. No augmentation of levulose tolerance is noted.

Gastric Response to Pies, etc.—A study was made by Miller and others of the acid responses and evacuation times of nearly fifty pies, cakes and puddings in the normal human stomach. The average evacuation time on puddings for all subjects was two hours and eighteen minutes as against two hours and twenty-seven minutes for pies and three hours and two minutes for cakes. Averaging the highest total acidities, values were obtained for puddings of 92, for pies of 90 and for cakes of 90. Direct comparisons of the three types of foods indicated also that pies were handled more readily than cakes, and pudding somewhat more readily than either.

Artificial Production of Monsters.—Baldwin reports the anomalies produced by a maximum effect of roentgen-ray energy on a relatively small amount of the protoplasmic mass of the frog's egg.

Permeability of Placenta to Epinephrin.—The experiments reported on by Shimidzu show that epinephrin in the fetal blood cannot be increased by a subcutaneous injection of the drug into the mother animal.

Energy Expenditure in Household Tasks.—Fifty-three experiments made by Langworthy and Barott on energy during the performance of various household tasks were made, using a specially designed respiration calorimeter and a young woman subject. The results for such light tasks as sewing, crocheting, knitting, darning and embroidering, gave an average expenditure of 9 calories per hour more than that of the same subject sitting quietly in a chair; other tasks regarded as "harder work" than sewing, such as washing, sweeping and scrubbing floors, caused an increased energy expenditure over the expenditure when at rest with the same subject, of about 50 calories per hour. Several other tasks studied gave results between these two figures: thus, ironing, dressing a child (life-size model) and dishwashing each requiring about 24 calories per hour. During the experiment with dishwashing the height of the table used was varied, and a corresponding variation in energy expenditure was noted, a variation of 15 per cent. in height of table causing an increase in energy expenditure of 20 per cent. to 40 per cent. The observed increase of heat elimination well illustrates the importance of choosing equipment to "fit" the worker.

American Journal of Public Health, Chicago

June, 1920, **10**, No. 6

Community Medicine and Public Health. C. Meyer, New York.—p. 489.
Malaria Control from Engineering Point of View. W. G. Stromquist, Memphis.—p. 497.
An Inferential Index of Swimming Pool Purity. G. M. Fair, Cambridge, Mass.—p. 502.
Public Health Aspects of Cartagena, Colombia. A. de Zubiria, Cambridge, Mass.—p. 509.
Causes of Typoid in Massachusetts. G. T. O'Donnell, Boston.—p. 517.
Self-Imposed Inspection of National Canners Association. H. M. Loomis, Washington, D. C.—p. 521.
Value of Plant Records in Development of Plant Hygiene. A. R. Hackett, Detroit.—p. 525.
Résumé of Methods for Control of Malaria. H. R. Carter, Baltimore.—p. 528.
Number of Bacteria on Lips of Milk Bottles and Their Significance. R. S. Dearstyne, Charlotte, N. C., and C. L. Ewing, Baltimore.—p. 533.
Endemic Goiter as a Public Health Problem. M. Tolman, New York.—p. 434.
Water Treatment at St. Louis, Mo. E. E. Wall, St. Louis.—p. 437.
Improvement in Vacuum Method of Filling Capillary Tubes. T. A. Watson, New York.—p. 445.

American Review of Tuberculosis, Baltimore

June, 1920, **4**, No. 4

Upper Air Passages as Environment for Bacterial Growth. A. L. Bloomfield, Baltimore.—p. 247.
*Twenty-Four Years' Experience with Subcutaneous Tuberculin Test. L. Brown and F. H. Heise, Trudeau, N. Y.—p. 254.
Relationship of Influenza to Clinical Pulmonary Tuberculosis. Deductions from 1918-1919 Epidemic. M. F. Sloan, Towson, Md.—p. 262.
*Effect of Heat on Experimental Tuberculosis. H. J. Corper and H. Gauss, Denver.—p. 269.
*Effect of Bleeding on Tuberculosis in Guinea-Pig. H. J. Corper, Denver.—p. 276.
*Anomalous Position of Colon Revealed during Routine Chest Examination. S. Swezey and L. T. Black, Denver.—p. 280.
Early Vertebral Tuberculosis with Clinical Picture Suggesting Renal Calculus. J. W. Churchman, New York.—p. 288.
Work for the Tuberculous. What is Suitable for the Discharged Tuberculous Man. D. A. Stewart, Ninette, Manitoba.—p. 292.
Influence of Climate as Distinguished from Fresh Air in Treatment of Pulmonary Tuberculosis and Its Complications. J. W. Flinn, Prescott, Ariz.—p. 300.

Results from Use of Subcutaneous Tuberculin Test.—The conclusions drawn by Brown and Heise are based on a study of 324 patients subjected to the subcutaneous tuberculin test made with Koch's old tuberculin (O. T.) during a period of twenty-four years. The use of the test produced no lasting untoward result and, given as advised, has only a very temporary effect on the patient, which, however, is more usually favorable. In only two instances did tubercle bacilli occur in the sputum for the first time immediately after the test. Over 90 per cent. of the seventy-five patients with a hisotry of hemoptysis reacted to the tuberculin test. About 90 per cent. of 144 patients with dry pleurisy, and 90 per cent. of ten patients with wet pleurisy, reacted positively to the tuberculin test. Of forty-one patients studied by the roentgen ray, only three showed a positive increase of shadows. Of 268 patients, only forty-eight showed an increase of râles during the reaction, and twenty-one a decrease. The authors are convinced that the subcutaneous tuberculin test when positive proves tuberculous infection, but when accompanied by

definite clinical changes, or more surely if manifesting an increase of roentgen-ray changes (focal reaction), indicates that the lesion is more accessible to circulatory changes and presumably less firmly cicatrized (healed).

Effect of Heat on Experimental Tuberculosis.—Guinea-pigs were exposed to heat by Corper and Gauss for fifteen minutes at 50 C. to increase the lymphocytes in the circulating blood. Five days later these animals were inoculated with small doses of virulent human tubercle bacilli. All the animals were sectioned forty days after inoculation. Comparing the "heated" and "nonheated" animals, there was no distinctive difference in the anatomic distribution of the tuberculosis, and in the animals that died there was no difference in the duration of life.

Effect of Bleeding on Experimental Tuberculosis.—Corper found that bleeding guinea-pigs in amounts of from 1 to 1.05 c.c. on alternate days, initiated a week before and continued practically throughout the entire period of infection (forty-one days), has no appreciable effect on the tuberculosis produced by small doses of virulent human tubercle bacilli (0.00001 and 0.0000001 mg.) given subcutaneously to guinea-pigs as measured by the anatomic tuberculous involvement.

Anomalous Position of Colon.—In the case cited by Swezey and Black a loop of the colon was lying between the diaphragm and the liver. It was discovered on roentgen-ray examination.

Annals of Medicine, Hagerstown, Md.

April, 1920, **1**, No. 1

Field of Internal Medicine. R. W. Wilcox, New York.—p. 5.
Relation of Bacteriology to Pathology of Tonsils and Relation of Either or Both to Symptomatology. L. A. Turley, Oklahoma City.—p. 41.
Gastro-Intestinal Form of Influenza. J. A. Lichty, Pittsburgh.—p. 49.
The Patient's Reaction. F. M. Pottenger, Monrovia, Calif.—p. 52.
*Wasserman Reaction with Glycerolated Human Serum about Two Years Old. E. H. Ruediger, Bismark, N. D.—p. 54.
*Early Signs of Fibrillation of Ventricle as Shown by Occurrence in Electrocardiogram of Periods of Ventricular Tachycardia. L. F. Bishop, New York.—p. 58.
*Pseudochylous Ascites in Case of Syphilitic Nephritis. E. L. Tuohy, Duluth, Minn.—p. 61.
Endothelial Leukocytosis in Guinea-Pigs by Injection of Nonpathogenic Bacilli of Acid-Fast Group. F. A. McJunkin, Milwaukee.—p. 64.
*Osteomalacia. Effects of Certain Extracts and Oophorectomy on Metabolism of Calcium and Magnesium. H. A. Freund and B. C. Lockwood, Detroit.—p. 67.
*Late Cardiorespiratory Manifestations of "Gassing" as exhibited by Returned Soldiers. F. Smithies, Chicago.—p. 77.

Wassermann Test with Glycerolated Human Serum.—Fifteen glycerolated human serums were kept by Reudiger in hermetically sealed glass ampoules in a dark place at room temperature for about two years, after which time they were as suitable for the Wassermann reaction as they were when fresh. The results obtained with the syphilitic serums 2 years old were not quite identical with the results given by the same serums while fresh. In some instances, the fresh serums gave stronger positive results than did the old serums; in other instances the old serums gave stronger positive results than did these same serums two years previously. The nonsyphilitic serums gave uniformly negative results. In two years' time these serums had become but slightly anticomplementary and reheating them to 56 C. for thirty minutes removed the anticomplementary property without noticably affecting the result given by the Wassermann reaction. All serums remained perfectly clear and sterile.

Fibrillation of Ventricle.—The two cases cited by Bishop, direct attention to this rare and possibly early indication of a condition which might lead to sudden death. Thus far, both of the patients are alive. The ventricular tachycardia which these patients have shown is a serious influence toward causing sudden heart failure. The rapid rate may tire out the heart if it continues for a long time or the tachycardia may lead to fibrillation of the ventricles, with sudden death. The cause is found to be a disease process of the ventricular muscle, perhaps due to rheumatism, or some other degenerative influence.

Pseudochylous Ascites in Syphilitic Nephritis.—Striking features in Tuohy's case were the extraordinary number of tube casts found in the urine and the high content of albumin: The unusually high blood count (5,110,000 red cells; 9,400 leukocytes). The absence of cardiac hypertrophy or increase in blood pressure; the finding of low sugar and creatinin and a fair phenolsulphonephthalein output usually suggestive of a fair prognosis; picture otherwise of a "wet nephritis"; finding of pseudochylous transudate; association of syphilis. The presence of ascitic fluid seemed to be merely a terminal condition.

Calcium and Magnesium Metabolism in Osteomalacia.—In the case cited by Freund during thyroid administration there was a marked increase in the loss of both calcium and magnesium. After pituitary extract there was a still greater loss of calcium, while the magnesium was scarcely affected. During parathyroid administration there was a retention of both calcium and magnesium. After removal of the ovaries there was a much greater loss of calcium and a slightly greater loss of magnesium than at any preceding observation.

Cardiorespiratory Sequels of Gassing.—Reviewing a large amount of material, Smithies found that eighty-five patients were affected with some form of cardiorespiratory disorder, in whom trauma from gassing could be proved, and in whom the symptoms or signs of heart and lung malfunction were seemingly attributable to that gassing. It is with the analysis of these eighty-five patients that this report is especially concerned.

Annals of Surgery, New York

June, 1920, **71**, No. 6

*Relative Values of Radium and Surgery in Treatment of Tumors of Pelvic Organs. J. G. Clark, Philadelphia.—p. 683.
*Amputation of Leg. O. Borchgrevink, Christiania.—p. 697.
*Accidents and Precautions in Ligation of Common Carotid Artery. J. Homans, Boston.—p. 707.
*Complete Division of Spinal Cord by Gunshot Wound. W. B. Cadwalader, Philadelphia.—p. 719.
*Fishscale Gallbladder. J. R. Corkery, Spokane, Wash.—p. 273.
Relation of Variations in Renal Vessels to Pyelotomy and Nephrectomy. D. N. Eisendrath, Chicago.—p. 726.
*Modified Technic for Radical Cure of Inguinal Hernia in Male. DeW. Stetten, New York.—p. 744.
Utilization of External Oblique Aponeurosis in Inguinal Hernia with Muscle Deficiency. W. S. Schley, New York.—p. 753.
Multiple Fibroids in Male Pelvis. L. J. Owen, Ft. Sheridan, Ill.—p. 755.
Intestinal Obstruction due to Ascaris Lumbricoids. F. C. Watson, Bocas del Toro.—p. 757.
Portable Suspension Frame (Erroneously Called Balkan Frame) Employed in Treatment of Wounded during European War. H. M. M. Lyle, New York.—p. 760.
Chlorin Antiseptics. W. E. Lee, Philadelphia.

Use of Radium in Pelvic Tumors.—The results of radiotherapy in 209 cases of cancer of the female genito-urinary organs are given by Clark. He believes it possible that with a further development of technic, cancer of the cervix may be removed from the surgical domain. In cancer of the fundus the results from surgery are too satisfactory to be abandoned in favor of radium, although in the last four cases he has witnessed a very favorable outcome in patients in whom there were grave contraindications to surgical measures. In two instances a cure appears to have been effected. For patients, therefore, suffering with complications prohibiting an operation, radium offers a decided hope.

Technic for Amputation of Leg.—Borchgrevink says the scar has to be so situated as to escape pressure from the prothesis. Avoid ligating the large vessels, which means interference with the nutrition of the flaps. Separate the tendon of the biceps muscle and other soft parts from the fibula as close to the bone as possible without injury to its periosteum and without injury to the insertion of the same tendon into the external tuberosity of the tibia. Every part of the stump ought to be covered by the fascia. The tibia ought to be divided at the lowest possible point but not lower than 22 cm. above the end of the stump.

Anomaly of Circle of Willis.—In the case cited by Homans the double anterior communicating vessel of the circle of Willis proved to consist of a single small artery and a parallel fibrous band. The circle of Willis was, in other respects, within normal limits; that is, the posterior communicating arteries were of about average size. The really important difference between this and the control brains lay in the comparatively small size of the internal carotids, vertebrals, posterior cerebrals and basilar arteries.

Division of Spinal Cord by Gunshot Wound.—Cadwalader proves that complete division of the cord at the tenth thoracic segment by gunshot wound is not in itself necessarily fatal, for if automatic emptying of the bladder can be established, it is possible for the patient to live a comfortable chair life indefinitely. Furthermore, it goes to prove that, even under the most favorable conditions for surgical procedure, return of function does not occur, for in this case the separated ends of the severed spinal cord were approximated by sutures within three hours after the injury, and after careful nursing for nineteen years no clinical sign of a return of function has appeared. It can therefore be assumed that regeneration of the spinal cord does not take place after complete section and end-to-end suture.

Fishscale Gallbladder.—A fishscale-like condition of the gallbladder is described by Corkery as "multiple small cysts of the mucosa." Grossly, the mucosa appears to be studded more or less profusely with cystlike bodies of 1 mm. more or less in diameter. These are nearly the color of normal mucosa. A fresh specimen examined by Corkery strikingly resembled the scales of a fish. On section, it became apparent that in this case no cysts were present. There have been found and diagnosed thirteen cases of multiple cysts of the mucosa, in the last three years among a total of approximately 3,000 gallbladders removed in the Mayo Clinic at that time. These, together with fourteen cases received directly from the surgeon, furnished the material for this study.

New Herniotomy Technic.—The modification described by Stetten is said to differ from all other procedures in that it utilizes, to the fullest extent, all the useful, available structures for the actual repair of the hernial orifice, without mutilation or distortion, and insures a maximum guarantee against recurrence. Essentially, it consists in the overlapping of the external oblique aponeurosis beneath the transplanted cord and over the Bassini suture.

Boston Medical and Surgical Journal

July 15, 1920, **183**, No. 3

Specific Aortitis. W. D. Reid, Boston.—p. 67.
Renal Calculus with Negative Roentgen Ray Findings. A. Hyman, New York.—p. 74.
Agglutinating Titer of Blood Serum in Typhoid Fever. D. O'Hare, Waltham, Mass..—p. 77.
Prostatectomy. H. C. Bugbee, New York.—p. 80.

Agglutinating Titer of Typhoid Blood Serum.—In the cases studied by O'Hara, a fall in the agglutinating titer of the serum before clinical recovery was becoming evident was a sign of poor prognosis.

Bulletin Johns Hopkins Hospital, Baltimore

June, 1920, **31**, No. 352

*Adenoma of Carotid Gland. M. R. Reid, Baltimore.—p. 177.
*Hemodynamic Reactions of Cerebrospinal Fluid and Hypophyseal Extracts. C. Jacobson, Boston.—p. 185.
Experimental Observations on Ureters; Peristalsis and Antiperistalsis. G. B. Wislocki and V. J. O'Conor, Boston.—p. 197.
*Fate of Bacteria Introduced into Upper Air Passages. V. Friedländer Bacilli. A. L. Bloomfield, Baltimore.—p. 203.
Physiologic Study of Eustachian Tube and Its Related Muscles. A. R. Rich, Baltimore.—p. 206.
*Hereditary Spastic Paraplegia. V. R. Mason and W. F. Rienhoff, Jr., Baltimore.—p. 215.

Adenoma of Carotid.—Three cases are reported by Reid. He says that the slow growing pigmented tumor of the carotid gland, heretofore described as "carotid body tumor" is a simple hyperplasia of a part or all of the normal gland; it should be designated as an adenoma or hyperplasia of the carotid body. In rare instances a malignant condition may develop in it. In some cases in which an operation is imperative on account of the size of the growth it may be wiser to do a decompressive operation than to attempt extirpation of the tumor. Then, after the tumor dislocates laterally and becomes more superficial, its removal will be easier and safer, particularly if the artery has been tied at the time of decompression.

Reactions of Cerebrospinal Fluid.—Cerebrospinal fluid from human and bovine sources in concentration gives physiologic reactions identical with those obtained from the injection of various tissue extracts, effects which Jacobson thinks most probably are due to the presence of histamin. There is no definite evidence of the presence of a pressor substance in the cerebrospinal fluid suggestive of any posterior lobe secretion. It seems rather improbable that the pituitary gland gives its secretion into the ventricles or into the cerebrospinal fluid. All pituitary gland extracts show marked variability as far as their responses are concerned on intravenous injection. They all show a depressor effect common to the tissue extract. In general it may be said: (*a*) Anterior lobe exhibits depressor effect mainly. (*b*) Posterior lobe exhibit a moderate depressor effect followed by a specific pressor effect. (*c*) Pars intermedia has a small depressor, followed by a pressor effect. (*d*) Whole gland shows a neutralization of the depressor and pressor effects. (*e*) The posterior lobe secretion, if it is a specific secretion, is most probably produced in the pars intermedia and finds its way into the pars nervosa. The posterior lobe extract on intravenous injections appears to have an antidiuretic rather than a diuretic effect. Glycosuria is produced by intravenous injection of posterior lobe extract in a number of cases. This glycogenic effect is more marked in the rabbit.

Fate of Bacteria in Upper Air Passages.—Friedländer bacilli freshly isolated from various sources were introduced by Bloomfield into the normal upper air passages without producing local or general disease. The organisms disappeared rapidly, usually within twenty-four hours. It was not possible artificially to produce a carrier state. The bacteria are removed by mechanical means. This group of organisms when associated with disease usually act as secondary invaders.

Hereditary Spastic Paralysis.—The four cases of hereditary spastic paraplegia reported by Mason and Rienhoff are of interest chiefly as examples of a rare hereditary alteration of the central nervous system which has affected members of one family for three generations. The cases differ in minor details from others that have been reported, but in general may be considered as fairly typical instances of the disease.

Canadian Medical Association Journal, Toronto

June, 1920, **10**, No. 6

*Sciatica from an Orthopedic Standpoint. J. A. Nutter.—p. 497.
Traumatism of Spleen; Report of Cases. E. L. Connor.—p. 504.
Syphilis and Gonorrhea from Public Health Point of View. R. R. McClenahan.—p. 512.
Plea for Sphincter Ani. F. N. G. Starr.—p. 516.
Some Roentgenograms and Their Significance. G. S. Gordon.—p. 518.
*Infectious Diarrhea. E. A. Morgan.—p. 527.
Need of Psychopathic Hospitals in Canada. G. S. Mundie.—p. 537.
Medical Board Work on Psychiatric Cases. H. Dover.—p. 543.
Occurrence of Acidosis After Anesthesia. E. M. Ross.—p. 548.
Prolongation of Life. A. H. Wright.—p. 554.

Therapy of Sciatica.—The treatment of sciatica, Nutter says, depends on the cause. Tonsils, if diseased, may need removal; abscessed teeth may need extraction; a chronic prostatitis may need treatment. An arthritic spine needs fixation; a relaxed sacro-iliac joint should have efficient support; disease of the hip-joint calls for immobilization. For the affected limb absolute rest is essential, pillow fixation, as a rule, being found useful. The length of the period of rest will depend to a considerable extent on how successful has been the treatment of the cause of the disease. For the pain, acetylsalicylic acid is useful, as also the salicylates and drugs of the coal tar class, such as acetphenetidin. Morphin should be avoided wherever possible. Counter irritation over the course of the nerve is valuable. The Paquelin cautery is very useful, but should be used only very superficially. The application of mustard and the use of blisters may give relief. The injection of sterile water, alcohol, or weak cocain solution into or beside the nerve, is not often practiced, as permanent damage may be done. Nerve stretching is no longer in favor, and properly so. In subacute cases, baking and massage will generally be found useful. Hydrotherapy is sometimes of value, but like electricity more often gives only temporary relief. Anemia should be treated with iron and arsenic. A special diet is indicated only in cases of gout, diabetes and rheumatoid arthritis of intestinal origin. The injection of sterile water into the epidural space of the sacral canal has given relief which has lasted several hours or even longer.

It is a procedure easy of accomplishment and unlikely to result in damage to the nerve.

Infectious Diarrhea.—The indications for treatment of this condition as summarized by Morgan are: (1) neutralization of specific toxins by injection of a specific antitoxin if this is available; (2) correction of dehydration by saline or glucose injections; (3) prevention of formation of toxic products of protein putrefaction by administration of a food rich in carbohydrate; (4) specific therapy.

Illinois Medical Journal, Oak Park, Ill.

June, 1920, **37**, No. 6

Mental Sanitation. G. F. Butler, Wilmette.—p. 378.
Roentgen-Ray Treatment of Exophthalmic Goiter. M. J. Hubeny, Chicago.—p. 383.
Diabetes Mellitus. J. Hall, Westfield.—p. 387.
Diabetes Insipidus. A. A. Goldsmith and D. C. Sutton, Chicago.—p. 389.
Chemotherapy in Tuberculosis. M. W. Harrison, Collinsville.—p. 392.
Urogenital Tuberculosis. M. J. Latimer, Chicago.—p. 394.
Convulsions in Infancy and Childhood. G. H. Withers, Chicago.—p. 397.
Gonorrheal Arthritis. F. A. Bisdom, Chicago.—p. 400.
Difficulties and Failures in Sluder Tonsil Operation. W. D. Black, St. Louis.—p. 402.
Adenocarcinoma of Ovary in Five-Year-Old Girl. O. W. Knewitz, East St. Louis.—p. 407.
Pneumoperitoneum and Roentgen-Ray Examinations. B. H. Orndoff, Chicago.—p. 408.

Journal of Biological Chemistry, Baltimore

June, 1920, **42**, No. 2

*Hemato-Respiratory Functions. II. Henderson-Morriss Method for Determining Carbon Dioxid in Plasma and in Whole Blood. H. W. Haggard, New Haven, Conn.—p. 237.
*Exchange of Chlorid Ions and of Carbon Dioxid Between Blood Corpuscles and Blood Plasma. L. S. Fridericia, Copenhagen.—p. 245.
*Quantitative Method for Determination of Vitamin. R. J. Williams, Chicago.—p. 259.
Modification of Van Slyke Method for Determining Arginne. A. E. Koehler, Madison.—p. 267.
Alleged Relation of Catalase to Animal Oxidations. R. L. Stehle and A. C. McCarty, Philadelphia.—p. 269.
Fermentation of Glucose, Galactose and Mannose by Lactobacillus Pentoaceticus, N. Sp. W. H. Peterson and E. B. Fred, Madison.—p. 273.
*Metabolism of Sulphur. III. Relation between Cystin Content of Proteins and Their Efficiency in Maintenance of Nitrogenous Equilibrium in Dogs. H. B. Lewis, Urbana, Ill.—p. 289.
*Determination of Methemoglobin and Hemoglobin in Blood. W. S. McEllroy, Pittsburgh.—p. 297.
*Vitamin Studies. V. Antiscorbutic Properties of Raw Beef. R. A. Dutcher, E. M. Pierson and A. Biester, St. Paul.—p. 301.
Critical Study of Methods for Detection of Methyl Alcohol. A. O. Gettler, New York.—p. 311.
*Manganese Quantitation in Biologic Material: Manganaese Content of Human Blood and Tissues. C. K. Reiman and A. S. Minot, Boston.—p. 329.
Blood Sugar Concentration and Blood Sugar Methods. H. F. Host and R. Hatlehol, Christiania.—p. 347.

Determination of Carbon Dioxid in Blood.—In the Henderson-Morris method of determining the carbon dioxid of plasma or whole blood Haggard found that the various corrections almost exactly neutralize each other. At ordinary temperatures and barometric pressures the reading on the gas buret for the carbon dioxid absorbed during the gas analysis (corrected only for the carbonate of the ammonia solution) may be taken as indicating directly, within the error of the method, the amount of carbon dioxid contained in the blood or plasma. Each 0.01 c.c. corresponds to 1 volume per cent. of carbon dioxid. This method is particularly valuable for the determination of the carbon dioxid content and combining power of whole blood. With it the analysis of whole blood is as easy as that of plasma.

Chlorid Distribution in Blood.—The influence of various carbon dioxid tensions on the distribution of chlorids between blood plasma and red blood corpuscles was experimentally investigated by Fridericia and the results are represented in curves showing conformity with the curve representing the carbon dioxid combining power of the blood at various carbon dioxid tensions. Fridericia has been able to confirm, with a different method, the results of Van Slyke and Cullen's experiments on the influence of the carbon dioxid tension on the partition of the chlorids between plasma and red blood corpuscles. Experimental evidence is presented to show that the cause of the exchange of chlorid ions and other anions between plasma and corpuscles is in the red corpuscles and not in the plasma.

Determination of Vitamin.—A method is presented by Williams which is based on a gravimetric determination and measures the growth of a very large number of cells rather than a few which have been isolated, and hence the variations in results are not so large. The vitamin content of any material can be rated in terms of milligrams of yeast produced under given conditions.

Cystin Essential for Maintenance and Growth.—The relative efficiencies in nutrition of casein, a protein low in cystin content, and of serum albumin, high in cystin content, have been studied by Lewis in dogs. Serum albumin under conditions of a low protein intake is more effective in maintaining nitrogenous equilibrium than is casein. When casein is supplemented by cystin, however, it is as efficient for the maintenance of nitrogenous equilibrium as is serum albumin. These experiments furnish additional evidence that cystin is essential for maintenance as well as growth.

Hemoglobin and Methemoglobin Determinations.—The method described by McEllroy is based on the fact that while oxygen, as is well known, is liberated from hemoglobin by potassium ferricyanid, it is not liberated from methemoglobin even in vacuo. The total hemoglobin (hemoglobin plus methemoglobin) is determined colorimetrically as methemoglobin, using potassium ferricyanid to convert the hemoglobin into methemoglobin. The oxygen capacity is determined by Van Slyke's method, from which is calculated the hemoglobin only. The hemoglobin as calculated from the oxygen capacity is subtracted from the total hemoglobin determined colorimetrically as methemoglobin. The difference is the amount of methemoglobin.

Antiscorbutic Properties of Raw Beef.—Guinea-pigs were fed diets of oats, water and an amount of milk sufficient to improve the diet but insufficient to prevent scurvy. These animals developed scurvy and died. When water extracts of raw lean beef were fed representing 5, 10, 15 and 20 gm. of raw beef no differences could be noted in the time of onset of scurvy or in the length of life of the experimental animals. Orange juice, added to the basal diet, prevented scurvy, both in the presence and absence of meat extract. The excellent condition of the animals on the orange juice-beef extract diet shows conclusively that the poor condition of the animals on the beef extract diet was due to the absence of the antiscorbutic vitamin rather than to any deleterious property of the beef extract.

Manganese in Blood and Tissues.—A method is developed by Reiman and Minot for the analysis of manganese in blood and tissue which is more rapid and has fewer sources of error than methods heretofore employed. A series of results for the manganese content of human tissue obtained from fourteen necropsies is presented. Manganese was found in all the tissue analyses, the liver carrying the highest amount, averaging 0.170 mg. per hundred gm. of wet tissue.

Journal of Immunology, Baltimore

May, 1920, **5**, No. 3

*Transfer of So-Called Normal Antibodies from Mother to Offspring. I. Agglutinins. G. C. Reymann, Copenhagen.—p. 227.
Relation of Certain Drugs to Anaphylactic Reaction, and Bearing on Mechanism of Anaphylactic Shock. M. I. Smith, Omaha.—p. 239.
Antigenic Properties of Hemocyanin: C. L. A. Schmidt, Berkeley, Calif.—p. 259.
Nature of Bacterial Toxemia. H. Zinsser, New York.—p. 265.
Studies in Anaphylaxis. A. F. Coca, New York.—p. 297.

Transfer of Agglutinins to Offspring.—By examining the trasmission of the agglutinins normally occurring in the blood from mother to offspring in goats, Reymann was able in only one case in fourteen to prove the recurrence; in all others the kids were born without agglutinin and probably derived it from the mother animal through the milk, in which is to be found accumulated parturition. From the milk as well as from the kid's serum it disappears in the course of a few days; then follows a period of a few months in which the blood of the kid is free from agglutinin, and then it appears again, probably in consequence of an immunization from the flora of the digestive tract. The research was con-

cerned with coli and typhoid agglutinins, as well as agglutinin against rabbit and horse blood corpuscles.

Journal of Industrial Hygiene, Boston

June, 1920, **2**, No. 2

Ether Poisoning in Manufacture of Smokeless Powder. A. Hamilton and G. R. Minot, Boston.—p. 41.
Cases of Phosphorus Necrosis. T. M. Legge, London.—p. 50.
Economic Aspects of Industrial Medicine. C. K. Drinker and K. R. Drinker, Boston.—p. 53.
Medical Supervision in Factories. T. M. Legge, London.—p. 66.
Pharmacology of Heavy Metals. W. Salant.—p. 72.

Journal of Laboratory and Clinical Medicine, St. Louis

June 1920, **5**, No. 9

*Botulism from Canned Ripe Olives. H. W. Emerson and G. W. Collins, Ann Arbor, Mich.—p. 559.
Chemical Changes in Blood in Disease. III. Creatinin. V. C. Myers, New York.—p. 566.
Hemostatic Agents. H. C. Hamilton, Detroit.—p. 574.
Action of Chloretone on Animal Tissue. T. B. Aldrich and H. C. Ward, Detroit.—p. 583.
*Classification of Streptococci Isolated from Normal Throats by Sugar Fermentations. L. Arnold, Nashville, Tenn.—p. 587.
*Classification of Streptococci Isolated from Influenza Throats by Sugar Fermentations. L. Arnold, Nashville, Tenn.—p. 591.
*Use of Tethelin in Case of Multiple Bedsores. H. Carr.—p. 593.
Anaphylaxis and Allied Phenomena in Relation to Disease. T. H. Boughton, Akron, Ohio.—p. 597.
Selection of Sugars for Bacteriologic Work. P. Masucci and G. P. Ewe, Philadelphia.—p. 609.
Simple, Apparatus for Obtaining Blood Samples. P. G. Woolley Detroit.—p. 612.
Lange Reaction in Lethargic Encephalitis. I. C. Brill and R. L. Benson, Portland, Ore.—p. 613.

Botulism from Ripe Olives.—Emerson and Collins suggest that menace to life and health from olive poisoning should be removed by adequate government supervision of the plants. This supervision should include the fish packing and canning plants.

Streptococci in Normal Throats.—Of 134 average throats examined bacteriologically by Arnold, 50.74 per cent. were carriers of hemolytic streptococcus, and 91 per cent. were carriers of nonhemolytic streptococcus. One hundred and seventeen strains of hemolytic and eighty-seven strains of nonhemolytic streptococci were classified by Holman's classification.

Streptococci in Throats of Influenza Patients.—Of 116 cases clinically diagnosed as influenza, fifty-six were positive to hemolytic streptococci, making 48.2 per cent. positive. One hundred and sixteen cases were positive to nonhemolytic streptococci, making 100 per cent. positive.

Tethelin for Bed Sores.—An instance of successful treatment by tethelin, a lipoid prepared from the anterior lobe of the pituitary body, of a case of delayed or arrested healing of bed sores which did not improve under any of the customary procedures is recorded by Carr. Tethelin incorporated in a lanolin base was applied.

Journal of Medical Research, Boston

January, 1920, **41**, No. 2

*Amebas of Cecum of Common Fowl and of Turkey: Endamba Gallinarum, sp. n., and Pygolimax Gregariniformis, Gen. E. E. Tyzzer, Boston.—p. 199.
Effects of Administration of Chaparro Amargosa on Intestinal Protozoa of Turkey. E. E. Tyzzer, Boston.—p. 211.
Transmission of "Blackhead" in Turkeys: The Common Fowl as a Source of Infection. E. E. Tyzzer, Boston.—p. 219.
*Incidence of Bovine Infection in Tuberculous Meningitis. N. Novick, New York.—p. 239.
*Comparative Study of Mechanism of Wound Healing. L. Loeb, St. Louis.—p. 247.
*Compensatory Hypertrophy of Thyroid. L. Loeb and C. Hesselberg, St. Louis.—p. 283.
Differences in Results of Various Kinds of Syngenesioplastic Transplantation in Dependence on Relationship between Donor and Host. L. Loeb, St. Louis.—p. 305.

Chaparro Amargosa in Endamebic Infections.—Endameba gallinarum has with rare exceptions disappeared from the excrement of turkeys under treatment with chaparro amargosa or Mexican bitter bush. This finding lends support to the results obtained by others in the treatment with chaparro amargosa of endamebic infections of man. Trichomonads have shown no diminution, and apparently are unaffected by chaparro. A coccidium, *Eimeria avium*, has disappeared in the majority of the treated turkeys.

Bovine Tubercle Bacillus in Tuberculous Meningitis.—Forty-eight strains of tubercle bacilli have been isolated by Novick from the cerebrospinal fluid of forty-eight clinical cases of tuberculous meningitis. Three of the strains proved to be of the bovine type.

Physiology of Wound Healing.—An attempt is made by Loeb to explain theoretically the various phenomena measured during wound healing. The reactions seen in wound healing are considered essentially as reactions of cells toward foreign bodies.

Hypertrophy of Thyroid.—The effect of homoiotoxins on hypertrophy of the thyroid, the changes in weight in the host as a factor in compensatory hypertrophy, and phagocytosis in the hypertrophic thyroid are discussed by Loeb and Hesselberg.

Laryngoscope, St. Louis

June, 1920, **30**, No. 6

Treatment of Cicatricial Web Stenosis of Larynx and Trachea. H. L. Lynah, New York.—p. 343.
Exophthalmos and Third Nerve Palsy Due to Acute Empyema of Posterior Ethmoidal Sinus Cured by Intranasal Operation. D. T. Vail, Cincinnati.—p. 355.
Acute Middle Ear Infections in Children; from Standpoint of Pediatrist. L. E. La Fetra, New York.—p. 357.
Acute Middle Ear Infections in Children from Standpoint of Otologist. T. L. Saunders, New York.—p. 361.
Deep Cervical Abscess and Thrombosis of Internal Jugular Vein. H. P. Mosher, Boston.—p. 365.
Treatment of Brain Abscess. W. Sharp, New York.—p. 376.
New Form of Medication for Nose and Nasopharynx. W. Freudenthal, New York.—p. 381.
Two Cases of Foreign Bodies in Bronchi. C. J. Imperatori, New York.—p. 386.

Medical Record, New York

July 10, 1920, **98**, No. 2

Interpretation and Clinical Significance of Uterine Hemorrhage. E. Novak, Baltimore.—p. 43.
*Parenteral Protein Treatment of Arthritis; Milk Injections; Relation to Anaphylaxis. M. Schulman, New York.—p. 47.
Infected Apices of Teeth and Pyorrhea Alveolaris. A. Westlake, New York.—p. 52.
*Kidney Function in Case of Bichlorid Poisoning. H. Elwyn and E. P. Flood, New York.—p. 56.
Mental Complex. H. Laveson, New York.—p. 58.
Treatment of Influenza. D. Greenberg, New York.—p. 60.
Influenzal Pneumonia Complicated by Empyema in an Infant. A. Lobell, New York.—p. 62.

Milk Injection Treatment of Infectious Arthritis.—The experience which Schulman has had with parenteral protein treatment was almost exclusively with milk as the protein and with infectious arthritis as the disease, and is limited to about sixty cases. He emphasizes that there seems considerable warrant in reports of clinical experience for the therapeutic use of parenteral protein, and that, although the method had its origin before there was satisfactory explanation of its mechanism, yet approach to an understanding has been accomplished. The method has met with considerable success in various forms of arthritis, out practically all the work reported outside of German literature has been with intravenous injection of bacterial vaccine. The results which Schulman has obtained from milk have been gratifying in the great majority of cases with results that make him enthusiastic about its use in gonorrheal arthritis. The method consists in injecting intramuscularly cow's milk that has been sterilized by boiling for about five minutes, and subsequently cooled to a comfortable temperature. The initial dose for an average sized adult is 4 c.c. The injection is generally repeated every other day, and the dose is increased by 1 c.c. at every injection. The total number of injections required varies with the individual case, and may be anywhere from two to ten. The increase in dosage also is not a fixed and constant matter, but will depend on the degree of improvement and more especially on the severity of constitutional reaction that the patient shows. To get any good out of the treatment a constitutional reaction must be produced. The reaction following in intramuscular milk injection rarely comes on in less than one and a half hours. The symptoms rarely last more than eight hours. The treatment

is said to be applicable to all forms of infectious arthritis, including acute, polyarticular rheumatism, but in Schulman's experience gives the most brilliant results in gonorrheal cases.

Kidney Function in Mercuric Chlorid Poisoning.—The pathologic functioning of the kidney is said by Elwyn and Flood to be as follows: With the insult to the kidney, the tubular epithelium is necrosed, desquamated, and fills the lumen. The kidney is swollen, the capsule is tense and constricts the vessels. There is also possibly a reflex vasoconstriction. This causes anuria. Consequently, all excretion products in the blood are retained and the level of the total nonprotein nitrogen and of various nonprotein constituents rises. As the glomeruli or small vessels are not diseased, the mechanism in producing hypertension is not called into play, or only slightly and in the later stages. With the lessening of the swelling of the kidney, and the relaxation of the constricted vessels, filtration at once is resumed and the retained excretion products are rapidly removed. Bowman's capsule has become permeable to the proteins of the blood, which appear in the urine; these also coagulate and form the ground substance on which various cells are deposited with the formation of casts. The blood in the urine originates in all probability from the bleeding capillaries of the necrotic tubules.

Military Surgeon, Washington, D. C.

June, 1920, **46**, No. 6

Preparedness of Medical Department of Navy for War and Medical Department Activities During World War. W. C. Braisted, Washington, D. C.—p. 587.
Typhus Fever in Poland. H. L. Gilchrist.—p. 622.
Ration for Emergencies. P. C. Field.—p. 630.
Comment on Rehabilitation Methods from Neurologic Viewpoint. R. Sheehan.—p. 636.
Insignificance of Recording Chest Measurements at Nipple Line. R. M. Culler.—p. 646.
Relation of Defective Mental and Nervous States to Military Efficiency. K. M. Bowman.—p. 651.
Training of Enlisted Men of Medical Department. G. M. Blech.—p. 670.

New Orleans Medical and Surgical Journal

June, 1920, **72**, No. 12

Cholelithiasis Associated with Angina Pectoris; Case Report. D. N. Silverman, New Orleans.—p. 687.
Prophylactic Incisions of Vaginal Outlet During Labor. W. E. Levy, New Orleans.—p. 692.
Snail: Intermediary Host of Schistosomum Mansoni in Venezuela. J. Iurbe and E. Gonzalez.—p. 696.
Filariasis. M. Alvarez.—p. 701.

New York Medical Journal

July 17, 1920, **111**, No. 3

*Reports of Unusual Cases, Anatomic Diagnosis. N. B. Foster, New York.—p. 77.
Stigmata of Degeneration in Feebleminded. M. W. Barr, Elwyn, Pa.—p. 80.
Types of Carbonated Brine Baths (Nauheim). N. P. Norman, New York.—p. 83.
Results of Operation in Gastric and Duodenal Ulcers. G. Woolsey, New York.—p. 84.
Peptic Ulcer. J. S. Diamond, New York.—p. 88.
Gastrointestinal Disturbances in Affections of Ocular Mechanism. L. W. Kohn, New York.—p. 91.
Diseases of Right Upper Quadrant of Abdomen. M. B. Kunstler, New York.—p. 93.
Treatment of Tuberculosis. B. S. Paschall, New York.—p. 95.

Congenital Diaphragmatic Hernia; Aneurysm of Pulmonary Artery.—The cases reported by Foster are congential diaphragmatic hernia—the stomach and small intestine were in the left thoracic cavity, the displacement causing a volvulus in the mid portion of the ileum and secondary gangrene of 2 feet of intestine; aneurysm of the arch of the pulmonary artery; two cases of hemolytic streptococcus septicemia taking origin in the genito-urinary tract; chloroma; primary sarcoma of the pericardium, with extension to the pleura and metatases in the mediastinal lymph nodes, likewise those of the peritoneum; hemorrhagic suprarenitis.

Public Health Journal, Toronto

June, 1920, **11**, No. 6

Industrial Hygiene. J. W. S. McCullough.—p. 245.
Accident Prevention in Automobile Industry. F. H. Moody.—p. 259.
Shop Lighting. K. A. McIntyre.—p. 266.
Plan for More Effective Federal and State Health Administration. F. L. Hoffman.—p. 276.
Child of Unmarried Mother. P. J. Bench.—p. 282.

South Carolina Medical Ass'n Journal, Greenville

June, 1920, **16**, No. 6

Method of Inducing Rapid Growth of Epithelium Over Areas Denuded of Skin by Use of Zinc Oxid Adhesive Plaster Applied Directly to Raw Area. L. Peters, Columbia.—p. 143.
Autointoxication. E. H. Goodman, Philadelphia.—p. 148.

Surgery, Gynecology and Obstetrics, Chicago

June, 1920, **30**, No. 6

*Jaundice and Its Surgical Significance. C. H. Mayo, Rochester, Minn.—p. 545.
Late Treatment of Gunshot Wounds of Head. H. H. Kerr, Washington, D. C.—p. 550.
Congenital Equinovarus. Report on 114 Cases. C. F. Elkenbary, Spokane, Wash.—p. 555.
*Resection of Double Kidney. F. C. Herrick, Cleveland.—p. 560.
Bloodvessel Surgery in War. B. M. Bernheim, Baltimore.—p. 564.
Case of Tuberculosis of Breast. E. P. Hamilton, Kansas City, Mo.—p. 567.
*Spermatoceles and Hydroceles Containing Spermatozoa. R. Winslow, Baltimore.—p. 568.
Pseudomyxoma Peritonei in Male Subjects. M. G. Seelig, St. Louis.—p. 570.
Pelvic Articulations During Pregnancy, Labor and Puerperium. F. W. Lynch, San Francisco.—p. 575.
Tuberculosis of Joints. Rollier's Heliotherapy. G. Schwyzer, Minneapolis.—p. 581.
Postmature Child. C. B. Reed, Chicago.—p. 589.
*Short Umbilical Cord. C. S. Bacon, Chicago.—p. 597.
Types of Pelvic Infection. T. J. Doerderlein, Chicago.—p. 599.
Intussusception Resulting from Benign Tumor of Intestine. Report of Three Cases. A. M. Willis, Richmond.—p. 603.
Plastic Operations on Rectum. H. B. Stone, Baltimore.—p. 608.
*New Method for Use of Wire in Surgery of Bones. J. M. Neff and J. G. O'Malley, Chicago.—p. 612.
A Modification of the Usual Method of Performing Pubiotomy. H. Jellett, Dublin, Ireland.—p. 616.
A Warning Against Promiscuous Uterine Curettage. J. W. Boveé, Washington, D. C.—p. 618.
Modern Methods in Removal of Projectiles. R. A. Stoney and A. K. Henry, Dublin, Ireland.—p. 621.

Significance of Jaundice.—Jaundice is a late symptom of gallstones in the majority of cases, according to Mayo, the result of neglect to recognize the condition or to advise operation in the preventive period. The mortality following cholecystectomy in the treatment of cholecystitis with or without stones is low, only 1.8 per cent. in 2,460 operations performed during a period of three years. There were 337 cases in which cholecystectomy and choledochotomy were both done, with a mortality of 3.2 per cent. In a group of thirty-six cases of very serious obstruction and malignancy, cholecystotomy and choledochotomy were done with a mortality of 16.6 per cent. Choledochotomy alone was done in a somewhat similar group of forty-seven cases, with a mortality of 15 per cent. If all the choledochotomies are grouped together, however, the mortality in the 420 cases is but 5.7 per cent., too high a mortality for simple cases of stone and obstruction, and too low for the late and complicated cases, including the cancers. Stones were found in the common duct in 274 of the 420 cases.

Resection of Double Kidney.—To four other reported cases of resection of double kidneys Herrick adds one.

Spermatozoa in Hydroceles.—Six cases of hydroceles containing spermatozoa and one of true spermatocele associated with hydrocele are recorded by Winslow. He thinks it probable that in some cases, at least, true spermatoceles rupture into hydroceles and in that manner permit the ingress of spermatozoa into the sac of the tunica vaginalis.

Short Umbilical Cord.—In Bacon's case the entire length of the cord was only 43 cm. It was coiled twice around the neck of the child. The distance from the navel of the child twice around its neck to the clavible was 56 cm.

Wiring Fractures.—In this method a silver or copper wire of proper gage is passed through drill holes made through both fragments and caught by forceps at each end. The wire is drawn taut in opposite directions so as to hold the fragments firmly in accurate apposition. This procedure brings the terminal portions of the wire in lateral and parallel contact with each other. Over the adjacent parallel wires a

small quantity of liquefied zinc chlorid is applied, and, while tension is exerted on the ends of the wire, the adjacent parallel portions are soldered together by merely running the tip of a soldering iron over them. This method is indicated when it is necessary to hold a small fragment in apposition with a larger fragment, and when it cannot be done by the closed method.

Tennessee State Medical Ass'n Journal, Nashville

June, 1920, **13**, No. 2

Use of Radium in Gynecology. J. M. Maury, Memphis.—p. 41.
Drainage of Peritoneum. R. A. Barr, Nashville.—p. 45.
Roentgen Ray an Aid to Surgeon. C. P. Fox, Greenville.—p. 47.
Arterial Hypertension. R. L. Motley, Dyersburg.—p. 52.
Unusual Manifestations of Malaria; Report of Cases. E. O. Jenkins, Clifty.—p. 55.
Nasal Reflex Asthma. R. W. Hooker, Memphis.—p. 58.
Extra-Genital Chancres. H. Spitz, Nashville.—p. 60.
Surgery in Infants. L. L. Sheddan, Knoxville.—p. 63.

Virginia Medical Monthly, Richmond

June, 1920, **47**, No. 3

Operations on Hare-Lip and Cleft Palate. J. S. Horsley, Richmond.—p. 97.
Hemorrhagic Pneumonitis. G. Nelson, Richmond.—p. 103.
Empyema of Chest. W. L. Peple, Richmond.—p. 107.
Kidney Function. W. M. Copridge, West Durham, N. C.—p. 110.
Stricture of Ureter. L. T. Price, Richmond.—p. 113.
Foreign Ideas on Pediatrics. J. S. Foote, Washington, D. C.—p. 116.
Cases of Cerebrospinal Syphilis. C. B. Pritchett, Danville, Va.—p. 122.
Criminality and Mental Unsoundness. J. K. Hall, Richmond.—p. 125.

West Virginia Medical Journal, Huntington

June, 1920, **14**, No. 12

Practical Side of Heart Murmur. H. M. Hall, Wheeling.—p. 441.
Recurrence of Inguinal Hernia after Operation. J. R. Hunter, Huntington.—p. 447.
The Malingerer. A. M. Fredlock, Elkins.—p. 449.
Case of Persistent Hyaloid Artery. T. E. Peery, Bluefield.—p. 450.
Treatment of Asphyxiated Infant, Postpartum Hemorrhage, Placenta Praevia and Eclampsia. L. J. Lynch, Coketon.—p. 452.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

June 26, 1920, **1**, No. 3104

*Early Symptoms and Diagnosis of Diseases of Spinal Cord. F. W. Mott.—p. 857.
Labyrinthine Reactions of Experienced Aviators. D. Ranken, London.—p. 860.
*Effects of Radium Treatment on War Injuries in Neighborhood of Nerves. W. C. Stevenson.—p. 862.
*Poisoning by Arsenobenzol Compounds Used in Treatment of Syphilis. A. G. R. Foulerton.—p. 864.

Diagnosis of Spinal Cord Diseases.—Mott emphasizes the necessity of determining by examination: whether the case is functional or organic, and, if organic, in order to form a correct judgment regarding prognosis and treatment, it is essential to diagnose the pathologic nature of the lesion and its anatomical situation. The recognition of functional sensory disabilities simulating spinal cord disease is easy: the superficial sensibility to pain, heat and cold and touch is lost completely; there is no dissociation, neither the anesthesia nor the pains complained of conform to the anatomic distribution of spinal roots or peripheral nerves. The secret of success in the treatment of these functional cases is faith. It may take minutes; it may take hours. However, among the very numerous cases of functional disability there are many cases of organic disease of the spinal cord with a large halo of functional disturbance, which can be removed by various methods of suggestion, by reeducation and various other forms of encouragement. But the fact must not be overlooked that such a patient, in spite of the satisfactory results of such treament, is suffering with a permanent disability, which may progress in spite of improvement by the treatment.

Radium in Nerve Lesions.—While radium cannot benefit gross nerve lesions, Stevenson found that after a nerve operation, or after milder degrees of nerve trauma, it appears to aid and to hasten the return of function in a limb. It improves the nutrition in the area supplied by injured nerves. It may be useful as an aid to diagnosis, and in certain cases will indicate or contraindicate the necessity of operation. It is a valuable adjunct to other forms of treatment.

Poisoning by Arsenobenzol Compounds.—Sixteen cases are analyzed by Foulerton. In seven cases it was possible to make a microscopic examination of the liver and kidneys after death. In nine cases the appearance of jaundice was followed rapidly by death in patients who were either under treatment with kharvisan or for whom the course had already been completed. Nothing is known as to the actual condition of the organs in these nine cases. The factors of dosage and time appear to have quantitatively but little determining influence on the final result. Whether the symptoms appear rapidly after a few doses—or whether they are delayed for six weeks after the completion of a full course of treatment—the final result is the same in the large majority of fatal cases: jaundice, hematemesis, delirium and coma, with death within three, four, or five days. Experiments were carried out to determine whether the benzene constituent has any influence in aggravating the toxic effect of the arsenic. The experiments included the injection of rabbits subcutaneously with (1) arsenic oxid (As_4O_6), (2) with the benzene constituent (ortho-amido-phenol) with which the drugs are compounded, (3) with arsenobillon, and (4) with kharsivan. In all of the experimental cases there was a nephritis in addition to the hepatitis. The action of the poison, in large amounts, on the parenchyma cells of both liver and kidney, appeared to be severe. The results of poisoning with the two arsenobenzol drugs were comparable histologically with those obtained in the less acute cases of poisoning with arsenic oxid. It appears that the results characteristic of poisoning by arsenobenzol compounds may be produced by the action of arsenic alone. The fat metabolizing functions of the liver are directly affected by the action of arsenic oxid in poisonous doses. But in view of the serious damage to the liver and kidney tissues in experimental poisoning with ortho-amido-phenol it is impossible to ignore the probability that the toxic action of the arsenobenzol drugs may be influenced to some extent by the benzene constituent. Foulerton considers it advisable that the use of mercury in conjunction with arsenic should be discontinued; the more especially so in that it is difficult to understand in what way the additional treatment can have any useful effect under the conditions. It is very evident, that there is a certain definite risk in treatment with arsenobenzol compounds. It is impossible to express the risk in any individual case in the terms of a percentage; but the danger is sufficiently real to suggest that a man who is going through a course of treatment should be kept under careful medical regimen throughout the period of administration of the drug and for some weeks afterward.

Edinburgh Medical Journal

July, 1920, **25**, No. 1

Treatment of Tuberculosis. R. Philip.—p. 1.
Influenza. W. D. D. Small.—p. 15.
*Influenzal Pneumonia. K. Petren.—p. 34.
Michael Scot: A Thirteenth-Century Scientist and Physician. J. D. Comrie.—p. 50.
*Case of Extensive Resection of Small Intestine. W. Q. Wood.—p. 61.
Critical Review. Cerebral Ventricular Hemorrhages at and Soon After Birth.—J. W. Ballantyne.—p. 63.

Influenzal Pneumonia Causing Hyperthyroidism.—Petren noted that after influenzal pneumonia a condition of hyperfunction of the thyroid gland may occur, and that it is associated with many of the ordinary symptoms, though exophthalmos and the rise in the relative number of lymphocytes in the blood are absent. These cases are neither instances of vagotonus nor of sympaticotonus, for they have reacted promptly both to pilocarpin and atropin and also to epinephrin.

Extensive Resection of Intestine.—In a case of strangulation of a large umbilical hernia, 7 feet 2 inches of gangrenous bowel were resected from the lower part of the ileum. Wood says the surgeon need have no hesitation, from fear as to the effect on metabolism, in removing at least a third of the small intestine.

Lancet, London

July 3, 1920, 2, No. 1

Universities in Medical Research and Practice. T. C. Allbutt.—p. 1.
Fibroids, Lipomas, Dermoids and Polypi of Stomach and Intestine.—J. Bland-Sutton.—p. 5.
*Bone Grafting of Fractured Mandible. G. Chubb.—p. 9..
*Paratyphoid "C" Bacillus as a Cause of Paratyphoid Fever. L. S. Dudgeon and A. L. Urquhart.—p. 15.
Syphilitic Aortitis. S. B. B. Campbell.—p. 19.

Bone Grafting Fractured Jaw.—Sixty consecutive cases of bone grafted mandibles are reported by Chubb. Of these all but two were free autogenous grafts from the ilium. Fifty-one possessed edentulous posterior fragments, and in forty of these the loss involved the region of the angle. In sixteen of the latter the loss involved the ascending ramus also. Firm bony union was obtained in fifty-six of the cases, 93 per cent. of the series.

Paratyphoid C Bacillus Vaccines.—From experimental data it is concluded by Dudgeon and Urquhart that as an antigen for the preparation of typhoid and paratyphoid (A, B and C) agglutinating antiserums the heat-killed and formol-killed vaccines are of greater utility than the acid dextrose if the subcutaneous method of inoculation is employed, but the acid dextrose vaccine gives an equally good result if paratyphoid vaccines are injected intravenously.

Medical Journal of Australia, Sydney

June 5, 1920, **1**, No. 23

Enteric Infections. F. B. Lawton.—p. 523.
*Modification of Bezidin Test for Occult Blood. S. Penn.—p. 525.
*Midtarsal Dislocation. J. G. Edwards.—p. 526.
Heart Irregularities. J. Macdonald.—p. 526.
Xanthoma Multiplex. W. McMurray.—p. 528.

New Benzidin Test for Occult Blood.—To a thin smear of feces on a microscopic slide, Pern adds two or three drops of glacial acetic acid, spread evenly with a wooden match, and warmed over a match or spirit lamp. Then a drop or two of benzidin dissolved in alcohol is added. Finally, add a drop or two of hydrogen peroxid. Almost immediately a dark blue color will appear. The claim is that it is done very rapidly and that it is far simpler to perform than the usual test tube test, and free from errors.

Midtarsal Dislocation.—A case of dorsal dislocation of the anterior end of the talus is reported by Edwards.

June 12, 1920, **1**, No. 24

Diseases of Lungs in Australian Imperial Force (Egypt). F. G. Griffiths.—p. 545.
*Skin Sensitivity to Koch's Old Tuberculin under Dispensary Conditions. D. Luker.—p. 548.
Two Cases of Bullet Wounds. I. Morgan.—p. 552.
Case of Lethargic Encephalitis. E. T. Smith.—p. 553.

Skin Sensitivity to Tuberculin Test.—The multiple papillary cutaneous test of Ellis is regarded by Luker as a reliable time saving, tentative method of preliminary sifting of cases into such classes as: (*a*) Clinically active; (*b*) doubtful; (*c*) quiescent; (*d*) nontubercular. Though the test results of these carefully determined minimal effective doses furnish no reliable data as to the amount of lung involvement, yet they give some criteria as to the toxemia present. The test is a valuable guide in estimating the threshold of probable reactions to Koch's hypodermic test or the optimum commencing dose in tuberculin treatment. In the routine examination of individuals presenting no obvious defects, an intradermal injection of 0.0001 c.c. old tuberculin compared with a similar control of physiologic sodium chlorid solution would serve as a quick, reliable way of differentiating candidates into clinically affected and doubtful classes.

Practitioner, London

July, 1920, **105**, No. 1

After Treatment of Surgical Cases. D. Power.—p. 1.
Surgical Complications of Dysentery. R. J. McNeill.—p. 11.
Early Symptoms of Cancer. S. Pringle.—p. 26.
Therapeutic Value of Hope. C. W. Chapman.—p. 33.
Heart in Exophthalmic Goiter. J. S. Goodall.—p. 37.
Eczema or Seborrhoeic Dermatitis in Children. F. Gardiner.—p. 47.
Immediate Treatment of Venereal Disease. E. T. Burke.—p. 55.
Syringing Ears. T. S. Wilson.—p. 70.
Amputation of Middle and Ring Fingers by Transplantation of Web. A. P. Sherwood.—p. 71.

Annales de Médecine, Paris

1920, **7**, No. 2

Ascitic Form of Liver Hydatid Cyst. A. Robin and others.—p. 85.
*Diabetes and Hyperthyroidism. M. Labbé.—p. 95.
Syphilitic Stenosis of Trachea. A. Cade and P. Brette.—p. 104.
Exostoses After Distant Nerve Wounds. Nathan.—p. 109.
*Meningococcus Septicemia. J. Renault and A. Cain.—p. 114.
*Incubation of Tuberculosis. R. Debré and P. Jacquet.—p. 122.
Functional Insufficiency of the Liver. M. Labbé and H. Bith.—p. 138.

Diabetes and Exophthalmic Goiter.—Labbé reports five cases which confirm the possibility of diabetes of thyroid origin. In a series of experiments on rabbits, sometimes thyroid treatment reduced the capacity for sugar combustion, other times it increased it; in others thyroidectomy had a similarly variable effect. The hyperthyroidism exaggerates the nitrogen metabolism, and this explains the special tendency to acidosis. Iodin seemed to have a favorable action on the palpitations, tachycardia and glycosuria. The sugar in the urine dropped from 208 to 71 gm. in a month in one case under iodin, while the general health improved. The data presented confirm the assumption that the thyroid has something to do with carbohydrate metabolism.

Purpura with Meningococcemia.—Renault and Cain present evidence that the purpura is a manifestation of septicemia, and that the diagnosis can be made by cultivating the serous fluid from the purpuric lesion or by histologic examination of a scrap of tissue from it.

The Début of Tuberculosis.—Debré and Jacquet analyze the conditions in three infants known to have been contaminated by the mother at a certain date. The period before the infant became capable of responding to the intradermal tuberculin test was shorter, the older the infant, and the greater the amount of tubercle bacilli involved. During this *période antéallergique*, as they call it, there are absolutely no clinical manifestations to attract attention to the infection. The minimum period seems to be six days, and the maximum, judging from their experience, is four months.

Archives Médicales Belges, Liége

October, 1919, **72**, No. 10

Tardy Sequels of Wounds of Chest. E. Sergent.—p. 341.
Early Diagnosis of Gastric Cancer. H. Koettlitz.—p. 364.
Graphic Records of Nystagmus. M. Stassen.—p. 374.

February, 1920, **73**, No. 2

*Vaccine Therapy of Gonorrhea. F. van den Branden.—p. 99.
Aneurysm of Basilar Artery. A. Leroy.—p. 139.
Modern Conceptions of Hematology. F. Dauwe.—p. 146.

Vaccine Therapy in the Complications of Gonorrhea.—Van den Branden remarks that the best results were always obtained with vaccine of recent production. He used a stock vaccine, and there was no eruption from the 1,500 injections except in two instances and these were mild. The relief from pain that follows the injection is a great advantage. In 57 cases of acute epididymitis, twenty-two days was the average stay in the hospital; in 18, with an average of twenty-four days, the cure was integral; in 17, averaging fifteen days, a slight doughiness was left, and in 22, even fifty days of hospital treatment did not banish entirely a small area of hardness.

Archives de Médecine des Enfants, Paris

June, 1920, **23**, No. 6

Mongolian Blue Spot in European Children. J. Comby.—p. 321.
*Active Immunization Against Diphtheria. E. Gorter and A. ten B. Huinink.—p. 338.
Tardy Suppuration After Appendicitis. P. Nobécourt and H. Stévenin.—p. 353.
Pancreatitis in Children; Two Cases. J. A. Phélip.—p. 357.
Influenzal Meningitis and Meningism. T. Reh.—p. 363.

Active Immunization Against Diphtheria.—This communication from Leyden states that 375 children in a school where there had been twenty cases of diphtheria were injected with a mixture of diphtheria toxin and antitoxin, and the production of antibodies was supervised by the Schick test. Preceding this attempt at active immunization, nineteen adults had been treated and controlled in the same way. Of the 271 children who showed a positive Schick reaction before the

injections, it became completely negative in 138 and dubious in 49, but persisted positive in 40. In the 104 with a previous negative Schick reaction, it persisted negative in all. It is thus possible, without risk for the children, to increase the antitoxin content of their serum by injecting diphtheria toxin not completely neutralized with the diphtheria antiserum. The antibodies appear in the serum about three weeks after the beginning of the immunization, and disappear from the blood in about a year and a half or two years. The antibody content can be supervised with the Schick reaction, but the Römer method is superior for the direct determination of the antitoxin in the blood. When the vaccinated children had lost the antibodies from their blood, by the end of the second year, a new injection of the toxin-antitoxin induced a remarkably sudden production of antitoxin, suggesting that the cells had acquired immunity against diphtheria.

Bulletin de l'Académie de Médecine, Paris

May 11, 1920, **83**, No. 19

*Respiratory Insufficiency of the Apex. E. Sergent.—p. 425.
Organization of Hygiene Institute at Paris. G. Hayem.—p. 436.
*Arthritis After Hexamethylenamin. P. Marie and P. Béhague.—p. 443.
*Syphilitic Intracranial Complications of Otitis. E. J. Moure.—p. 450.
Lethargic Encephalitis. Ducamp and others.—p. 451.

Respiratory Insufficiency of the Apex.—Summarized July 24, 1920, page 276, when published elsewhere.

Hip Joint Disease After Ingestion of Large Amounts of Hexamethylenamin.—Marie and Béhague report two almost identical cases. The young men were prisoners in Germany, and they both took clandestinely large amounts of hexamethylenamin to induce factitious hematuria. They secured the desired exchange as advanced renal tuberculosis was diagnosed. Each took repeatedly a daily dose of 100 gm. The intense and painful hematuria which followed subsided two or three days after suspension of the drug. Both seemed to be entirely well after their return to France, but each developed, ten months or eighteen months later, arthritis of both hip joints, without effusion, which has seriously crippled them both and shows no signs of improvement. In the discussion, Netter mentioned that in five cases he had seen hematuria follow hexamethylenamin in fractioned doses of 1 or 2 gm. daily. Bazy recalled that hexamethylenamin is the discovery of Bardet, a French physician, who named it formin.

Intracranial Complications of Otitis.—Moure urges tentative treatment as for syphilis when otitis media and mastoiditis display certain unusual features or are particularly tenacious. In several cases the functional disturbances persisted after the mastoiditis and otitis were evidently healed, and the Wassermann test gave positive findings, except in one case, but in all, the treatment for syphilis was followed by a prompt cure. A recurrence in one case confirmed his diagnosis, as necropsy revealed the softening of a gumma in the cerebellum as the cause of the fatal acute meningitis.

Bulletin Médical, Paris

May 29, 1920, **34**, No. 28

*Treatment of Edema. C. Achard.—p. 487.
Pathogenesis of Edema. A. Leblanc.—p. 491.
*The Paradoxes of Edema. P. Ameuille.—p. 495.
Semeiology of Edema of the Face. Gastinel and Boutelier.—p. 496.
French Medical School in Western Africa. A. Le Dantec.—p. 502.

Edema.—Achard remarks in the course of this study of the treatment of edema in general, that abstention from salt does not seem to influence the dropsy unless the subject is taking food. Those who are not eating and drinking—although thus abstaining completely from salt—do not lose their edema. It seems to be necessary for resorption of the fluid for the organism to be doing a certain amount of nutritional work, indispensable for the play of the interchanges. He says that of all the drugs advocated in treatment of edema, theobromin and digitalis are the only ones that we should retain. He never obtained any results with Pathault's method of applying to the limbs compresses dipped in a very strong solution of salt, aiming to draw the excess of fluid out through the skin. The reabsorption of large amounts of edema fluid has sometimes induced nervous disturbances, headache, torpor, convulsions and even hemiplegia. He had one case of transient paralysis during a medicinal diuresis in heart disease. They usually subside harmlessly, but have been known to prove fatal. Various theoretical explanations have been proposed.

Paradoxes of Edema.—Ameuille queries among other things why certain edemas seem to escape the action of the laws of gravitation while others obey them so closely; why the condition in chronic edema often varies from day to day when conditions seem identical in other respects, and why edema in some subsides under abstention from salt and in others keeps up or even increases.

Gynécologie et Obstétrique, Paris

February, 1920, **1**, No. 2

*Incision of Cervix to Aid Delivery. V. Cathala.—p. 113.
*Incision of Cervix to Aid Delivery. J. Olow (Lund).—p. 131.
Epitheliosarcoma of Mammary Gland. Bergeret and Botelho.—p. 139.
Large Vulvar Tumor; Two Cases. H. Bouquet (Tunis).—p. 149.
Case of Bilateral Hermaphrodism with Bisexual Glands. E. Briau and others.—p. 155.
Bases and Technic for Radiotherapy of Fibromyomas. G. Détré.—p. 181.

Incision of Cervix to Promote Delivery.—Cathala gives a diagram which shows the location of the incision according to the existing degree of dilatation of the cervix. Properly done, this means of facilitating delivery may render inestimable service without risk for the mother when the prolonged labor and beginning infection, etc., are threatening the life of the child. Before incising the cervix it is important to make sure that the fetal head can pass the zone in question without stretching it. There is no chance for laceration of neighboring organs or hemorrhage or infection if the incisions are made on the median line and intravaginal. One of the fourteen women he has thus treated has passed through another pregnancy since without mishap. He cuts the cervix with straight scissors from the external os to the junction with the vagina, stopping 1 mm. short of the mucosa of the vagina. In his earliest cases he sutured at once, but now sutures at the end of childbed unless he finds the parts perfectly healed. The incisions shrink to insignificance with the involution of the cervix.

Incision of Cervix During Delivery.—Olow reviews the arguments for and against surgical procedures to promote delivery, and describes his own method. He cuts the anterior lip of the cervix to the vaginal fornix and continues the incision on the anterior wall of the vagina for several centimeters. With the finger the bladder is detached and the cervix cut still higher, and so on, until the peritoneum of the vesicovaginal culdesac comes into view. If this is not considered sufficient for the child to pass, the posterior lip of the cervix is cut likewise. The upper end of the incisions is reenforced with a buried stitch, the assistant pulling on the threads. After delivery of child and placenta, the upper end of the incision is drawn down with the thread, and other stitches are taken to reconstruct the parts, leaving a wick to drain and suturing the vaginal incision. There is so little sensation in the region that general anesthesia is not indispensable, merely a little ether for the delivery proper, but as a rule he gives ether from the start to the last suture. It takes very little. This technic avoids danger of laceration from stretching.

Lyon Chirurgical

January-February, 1920, **17**, No. 1

*The Nerves of the Liver and Bile Passages. A. Latarjet, P. Bonnet and A. Bonniot.—p. 13.
*Astragalectomy. E. Villard and E. Perrin.—p. 36.
*Hydatid Cysts of Lung. G. Pelissier.—p. 77.
*Tendon Heterografts. Jalifier.—p. 97.
*Perithyroid Sympathectomy. R. Leriche.—p. 109.

Innervation of the Biliary Apparatus.—Latarjet and his co-workers have been making a special study of the visceral innervation, and describe here their findings, with seven illustrations, so far as the liver and bile ducts are concerned. Surgeons pay little heed to the nerves in operating in this region, but certain postoperative mishaps may be traceable to avoidable section of some nerve.

Astragalectomy.—Villard and Perrin give an illustrated description of twenty cases in which the astragalus was removed to correct a vicious attitude of the foot, especially varus equinus. The results were ideal in many, far surpassing those obtainable by operations on tendons or joints. The secret is to suture at once and be persevering in the after-treatment, as the whole comes under the head of orthopedic procedures.

Hydatid Cysts of the Lungs.—Pelissier has encountered 12 cases of hydatid cyst in the lung in four years at Alger; in 2 of the cases a spontaneous cure followed the bursting of the cyst; the outcome is not known in one case and in another the man died after operation on a concomitant cyst in the liver. In the 8 other cases, recovery followed operative treatment but recurrence is probable in 2. The others are clinically normal. The report in detail is illustrated.

Tendon Grafts.—Jalifier says that there was no failure in the five cases here described in which he implanted tendons taken from the leg of a calf or dog from six to fifty days before. The functioning of the hand is fairly good or very good in all.

Perithyroid Sympathectomy for Goiter.—Leriche resected the sheath of the superior thyroid artery, from its origin to the pole of the thyroid gland, in a young man with parenchymatous goiter from childhood. The artery shrank in size at once and also the external carotid, the sheath of the latter having been resected likewise for a short distance. The connected lobe of the thyroid seemed to be congested at first, but then it began to melt away, as it were. By the end of the month there was nothing left to palpate, while the enlarged lobe of the other side was of the same size as before. Before doing the sympathectomy, he enucleated three small nodules in the median region of the thyroid; they shelled out readily with scarcely any damage to the gland, so that this preliminary median procedure cannot be credited with the retrogression of the lobe on the side of the denuded artery. The results in this case, he reiterates, justify further intervention of the kind to modify goiters.

Médecine, Paris

April, 1920, **1**, No. 7. Obstetrics and Gynecology Number

Obstetrics and Gynecology, 1914-1918. L. Devraigne.—p. 389.
*Pyelonephritis in the Pregnant. Couvelaire.—p. 396.
Pulmonary Tuberculosis and Pregnancy. L. Demelin.—p. 399.
No Safe Method for Painless Delivery. M. Metzger.—p. 400.
Cancer of the Uterus in the Pregnant. A. Levant.—p. 402.
*Obstetric Pituitary Treatment. L. Pouliot.—p. 407.
Treatment of Cancer of Cervix. J. L. Faure.—p. 412.
Levator Ani in Reconstructing Perineum. P. Descomps.—p. 413.
Radiotherapy of Fibromas. Siredey.—p. 417.
Abdominal Hysterectomy for Adnexitis. H. Duclaux.—p. 419.
Radium Therapy of Uterine Cancer. J. Gagey.—p. 423.
Aid for Prospective and Nursing Working Mothers. Lévy-Solal.—p. 426.
Spinal Anesthesia in Gynecology and Obstetrics. P. Delmas.—p. 431.
Allowing Parturients to Get up Early. L. Devraigne.—p. 434.

Pyelonephritis in the Pregnant.—Couvelaire says that the attenuated form is frequently misinterpreted, as slight albuminuria is the only symptom, but it calls for relative repose, dieting and castor oil. The febrile form usually subsides in a week or two and the pain in the kidney disappears under copious drinking, purgatives, and antiseptics eliminated by the kidneys. When the fever persists, indicating retention, if the kidney is not enlarged, he injects into the bladder tepid solution of boric acid and has this retained as long as possible, repeating this three times in the twenty-four hours. This sometimes rouses the ureters to contract and evacuate the purulent urine. If not, do not wait too long before catheterizing the ureter. If this is not practicable, evacuation of the uterus may restore clinically normal conditions. Otherwise, operate on the kidney. This must also be the rule when the kidney is much enlarged, as this implies mechanical obstruction. After delivery the woman must be kept under supervision for a long time.

Pituitary Treatment in Obstetrics.—Pouliot emphasizes that any mechanical cause impeding delivery is a contraindication to pituitary treatment. If the treatment whips up the uterus too vigorously, this may induce tetanic contraction. He advises never to give more than what corresponds to 0.10 gm. of the fresh gland, and to give it by intramuscular or subcutaneous injection, and not to repeat the dose unless the action of the first is exhausted, allowing an interval of two hours at least. Other contraindications include everything causing compression of the cord, as with breech presentation, or premature rupture of the membranes. By heeding these rules, pituitary treatment will not be held responsible for mishaps for which it should not be incriminated.

Paris Médical

May 29, 1920, **10**, No. 22

Inaugural Lecture of Medicolegal Course. Chavigny.—p. 433.
*Pneumococcus Antiserum. H. C. Sloboziano.—p. 439.
*Syphilis and the Endocrine Glands. E. Schulmann.—p. 442.

Antipneumococcus Serotherapy.—Sloboziano's article is mainly devoted to American experiences in this line, but he adds that the French have extended the field for serotherapy to many of the complications of pneumococcus infection, especially in mixed meningitis. Combinations of antipneumococcus and antimeningococcus or antistreptococcus or other serums have proved remarkably effectual in the hands of Dufressine, Nobécourt and Lassance, and Apert uses them to ward off lung complications in measles and whooping cough.

Syphilis of the Endocrine Glands.—Schulmann concludes from his review that some derangement of some endocrine gland is responsible for all forms and cases of malformation and abnormal growth. Whenever there is a possibility that syphilis is responsible for the endocrine derangement—and this is far more common than generally realized—prompt treatment may ward off further damage, attacking the spirochetes with swift and vigorous blows and combating the dystrophy with potassium iodid and organotherapy. The intensity of the treatment must be gaged for the patient and the glands involved; special caution is necessary with suprarenal insufficiency as any arsenic preparation by the vein might bring on acute disturbance from the superposed poison.

Presse Médicale, Paris

June 5, 1920, **28**, No. 37

Inaugural Lecture of Histology Course. A. Policard.—p. 361.
*Radium Treatment of Roentgen-Ray Dermatitis. P. Degrais and A. Bellot.—p. 364.
Ammoniosulphate Copper by the Vein in Treatment of Puerperal Fever. H. Noiré.—p. 365.

Radium Treatment of Roentgen-Ray Dermatitis.—Degrais and Bellot report three cases in which radiologists were cured by curietherapy of professional epitheliomatous radiodermatitis. Their first patient, they relate, was an American physician "M. E.," who had been using the roentgen ray since 1903 and ulceration and an epithelioma had developed first on two fingers. The lesions had been cut out again and again. The third recurrence on the ring finger refused to heal, and the back of the hand showed hyperkeratosis, and there were violent pains. The reaction to exposure to twenty-seven filtered millicuries for twelve hours was soon followed by the complete retrogression of the lesions, and the cure was apparently complete when reexamined six months later. The pains subsided as the skin returned to normal.

June 9, 1920, **28**, No. 38

*Management of Minor Wounds. L. Bérard.—p. 373.
*Unrecognized Fractures of the Patella. L. Moreau.—p. 374.
Subcutaneous Injection of Neo-Arsphenamin. A. Poulard.—p. 376.

Management of Minor Traumatisms.—Bérard urges that the war experiences have taught the necessity of antitetanus serum with even small wounds, and that this lesson should be applied now even to the minor injuries of children's falls. We know that the tetanus bacillus may get a foothold even in an erosion of the epidermis scarcely visible to the naked eye. In case of doubt, especially of injury of the hands, feet or face, soiled with gravel, débris of wood, or manure, it is better to be on the safe side and inject the antiserum. A preliminary injection of 1 or 2 c.c. a few instants before the main injection of 10 c.c. will ward off minor serum by-effects. Whether the antiserum is given or not, the wound should be cleared of every particle of devitalized tissue, under local anesthesia, if necessary, and blisters emptied, concluding by

watering freely with a 1 per cent. alcoholic solution of iodin and then wiping dry the entire wound. This immediate and complete surgical toilet of all injuries, even the apparently most harmless, will not only ward off tetanus, but also the whole train of tendon sheath phlegmons, felons, lymphangitis, erysipelas, etc., which are still far too common.

Fracture of the Patella.—Moreau relates that in a series of ten cases the fracture of the patella had escaped detection; in two cases fracture is claimed but cannot be proved and in three other cases an anomaly in ossification is responsible for the disturbances. He describes the special measures required for differential diagnosis.

Progrès Médical, Paris

May 8, 1920, **35**, No. 19

Lung Extract in Organotherapy. J. Carles and B. Lacroix.—p. 203.
Insufficiency of the Liver. M. Loeper.—p. 205.
Mineral Waters in Treatment of "Pyloric Syndrome." E. Binet.—p. 207.

May 15, 1920, **35**, No. 20

Diagnosis of Cancer of Tendon Sheath. J. P. Tourneux.—p. 215.
Tracheobronchial Adenopathy. P. Nobécourt.—p. 216.
Mineral Waters after Appendicitis. J. Baumann.—p. 219.

Schweizerische medizinische Wochenschrift, Basel

June 10, 1920, **50**, No. 24

Arteries Not Active Factor in Circulation. A. Fleisch.—p. 461.
The Meinicke and Sachs-Georgi Seroreactions in Syphilis. W. Gloor.—p. 466.
Lethargic Encephalitis. T. Tobler.—p. 470. Conclusion.
Volume-Bolometric Records of Action of Plain and Carbonated Baths on the Circulation. S. Hediger.—p. 475.

Pediatria, Naples

June, 1920, **28**, No. 11

*Malarial Radial Paralysis. F. Fonzo.—p. 497.
*Streptothrix Meningitis. S. Fabris.—p. 504.
Tetanus in Children. G. B. Ansalone.—p. 507.
Huge Sarcoma in Omentum of Boy of Four. U. Sala.—p. 526.

Radial Paralysis of Malarial Origin.—Fonzo lists from the literature the cerebral, spinal and peripheral nervous disturbances for which malaria may be incriminated, and reports two cases in children of 7 and 12 in which the right hand showed the effects of typical radial paralysis. It persists rebellious to treatment in both. Fonzo admits the malarial anemia as a predisposing cause, but ascribes the paralysis to the malarial toxin.

Streptothrix Meningitis.—The 9 months' infant with inherited syphilis developed the meningitis after pneumonia, and the streptothrix was found in the spinal fluid. Rutelli has reported a similar case in an infant, and Sindoni six cases, but in five in this group the invasion was evidently secondary in already established meningitis. Kharina has also published a case in an infant of 13 months; in this case, as in Fabris', the meningitis had been preceded by pneumonia.

Rivista Critica di Clinica Medica, Florence

April 25, 1920, **21**, No. 12

Case of Traumatic Subdural Hematoma in Centro-Parietal Region. A. Furno.—p. 133. Begun in No. 11, p. 121.

May 5, 1920, **21**, No. 13

Hemi-Anhidrosis and Hemihyperhidrosis in Case of Brown-Séquard Syndrome. G. A. Pari.—p. 145.

Anales de la Facultad de Medicina, Montevideo

March-April, 1920, **5**, No. 3-4

Human Alveolar Echinococcosis and Bovine Multilocular Echinococcosis. F. Devé.—p. 129.
*Stenosis of Duodenum with Pancreatitis. A. Navarro.—p. 144.
*Persisting Slight Fevers. A. Ricaldoni.—p. 158.
*Thyroid Treatment of Hemorrhagic Syndrome. L. P. Bottaro and J. C. Mussio Fournier.—p. 191.

Stenosis of the Duodenum with Pancreatitis.—Navarro's case, he states, was one of the first of hypertrophy of the pancreas ever published, and the first in which the stenosis of the pylorus was traced to this cause. Gastro-enterostomy was done for the stenosis, and reexamination of the woman twenty-one years later has confirmed the correctness of the diagnosis and the benefit from the treatment. He summarizes ten cases from the literature and three others in which the pancreatitis developed in an annular pancreas. In one of the latter, hematemesis and the pyloric syndrome were traced exclusively to the pancreatitis. The records show that with the pancreatitis causing the pylorus syndrome, the biliary passages were absolutely normal, even in the three cases with great enlargement of the pancreas. An instructive symptom of pancreatitis is the drop in the pulse of eight or ten beats when pressure is applied to the pancreas region. This symptom suggests abnormal conditions in certain ramifications of the solar plexus. One child was in the habit of leaning the abdomen against the edge of the desk, and there was hypertrophic pancreatitis. Besides the modification of the pulse, pressure on the spleen brought on vomiting, even when the pressure was not pronounced enough to elicit pain. Villar's patient was a new-born child, and the laparotomy disclosed annular pancreas and atrophy of the duodenum, but the infant recovered after gastro-enterostomy. Separating the duodenum from the pancreas might be useful to supplement gastro-enterostomy.

Febriculas.—This is Ricaldoni's term for persisting slight fever, and he warns that the temperature may transiently fluctuate a little in the healthy, and the normal level may be a trifle higher than usual in some persons. There is never a wavelike or cyclic course as with true fevers. He warns further to be on the alert to detect factitious fever, and he then passes in review the true febriculas, saying that while tuberculosis is the most frequent cause, yet it is frequently incriminated erroneously.

Hemorrhagic Tendency Cured by Thyroid Treatment.—Summarized July 17, page 207, when published elsewhere.

Archivos Españoles de Pediatría, Madrid

February, 1920, **4**, No. 2

*Intradermal Tuberculin Treatment of Pulmonary Tuberculosis in Children. J. García del Diestro and B. Cordero.—p. 65. Begun in No. 1, p. 5.
Disease of Epiphysis; Three Cases. Riosalido.—p. 85.

Tuberculin Treatment of Children.—García and Cordero found the subcutaneous injection of tuberculin difficult and dangerous, for various reasons, in dispensary treatment of children in their ten years of experience. The intradermal injection, by the Mantoux-Jeanneret technic, is comparatively free from these objections, and they have been applying this method for three years. They give here the minute details of nine cases, and assert that it is the best method for administering tuberculin to children who cannot be kept under strict control; it is much more harmless than the other technics while it is as ineffective as any of them in respect to the tachycardia and the fever, and—aside from exceptional cases—has no or only very slight effect on the focal phenomena when the focus is at all advanced. But the tuberculin administered in this way had very often a favorable influence on the weight, the anemia and the appetite. The injection was made once a week, supervising the local reaction and the temperature, and weighing the child once a month at least. The weight is the most reliable criterion of the benefit or harm from the tuberculin treatment.

Brazil Medico, Rio de Janeiro

March 13, 1920, **34**, No. 11

*Lumbar Puncture in Syphilitics. O. Clark.—p. 167.
Courvoisier's Law. Leonidio Ribeiro, Jr.—p. 171.
Preventive Antitoxin Treatment of Diphtheria. C. de Rezende.—p. 172.

Lumbar Puncture in Syphilitics.—Clark declares that he hopes soon to see the ultramicroscope in universal use, as the early diagnosis of syphilis, which is possible only with this, will permit the immediate and complete cure. In neurosyphilis, the meningeal processes are accessible to treatment, but the early clinical cure is liable to be only apparent unless the spinal fluid is found normal on reexamination once or twice a year. The meningeal lesions require early, vigorous and prolonged treatment. When this is the routine practice, we may hope to see tabes and general paresis diagnosed in time for a cure. He reiterates that the Argyll Robertson and similar signs are of no use for the early diagnosis. Clark knows of sudden deaths from lumbar puncture on the seated

patient. In three cases tabes assumed a fulminating course after lumbar puncture; tabetics are not able to stand any form of traumatism. He has also seen cases of intense gastralgia, persisting for a week, after lumbar puncture; in other cases a condition simulating meningitis. Ten cases of syphilitic meningitis are described; some of the patients have been apparently cured under vigorous treatment applied early.

April 10, 1920, **34**, No. 15

Cocain and Cocain Addiction. S. Viera de Almeida.—p. 235.
Influenza. A. J. Ferreira.—p. 239.

April 17, 1920, **34**, No. 16

*Access to Knee Joint. A. Brandão, Jr.—p. 247.
*Temperature of Spinal Fluid. Ernani Lopes.—p. 249.

April 24, 1920, **34**, No. 17

Present Status of Our Knowledge of Paranoia. H. Roxo.—p. 263.
Chenopodium in Local Treatment of Tropical Ulcer. N. Botafogo Gonçalves.—p. 267.

Access to Semilunar Cartilages and Crucial Ligaments.—Brandão makes an incision at each side of the joint after turning back a U flap of skin. Then he saws the patella, sawing out a pear-shaped piece on a broad pedicle, the outline suggesting a doll's head and shoulders. Turning back the interlocking halves of the patella with its ligament allows ample access to the entire joint, and when the parts are replaced they automatically fit together as in a mortise. The more strain on the joint, the closer the coaptation. Five illustrations show the procedure which has been worked out on the cadaver with no clinical experience to date.

Temperature of the Cerebrospinal Fluid.—Lopes has found that the lumbar puncture fluid is usually a tenth of a degree below the axillary temperature and nearly five tenths below the rectal temperature. He suggests that it might prove useful for diagnosis and for intraspinal injections to know the exact temperature of the cerebrospinal fluid. A thermometer might be devised to be introduced like a guide inside a needle or tube.

Revista Española de Medicina y Cirugía, Barcelona

February, 1920, **3**, No. 20

*Sugar in Therapeutics. E. Pérez Noguera.—p. 57.
*Laryngectomy. Ricardo Botey.—p. 65.
*Prolapse of the Uterus. Soler Juliá.—p. 67.
Lethargic Encephalitis. F. Tous Biaggi.—p. 73.
Bossan and Balvay's Vaccine in Treatment of Tuberculosis. Remigio Dargallo.—p. 77.

Sugar in Therapeutics.—Pérez Noguera reviews the wide field of the use of sugar in therapeutics from the Arab physicians in the days of Avicenna to Lo Monaco's subcutaneous injections in treatment of pulmonary tuberculosis. The reports with the latter, he says, have been contradictory, few reporting actual benefit, but he cites excellent results obtained with sugar in treating athrepsia in infants, in inducing diuresis, in local treatment of wounds, and as a temporary food with gastric ulcer, etc.

Laryngectomy.—Botey gives an illustrated description of his modification of Glück's technic for laryngectomy, and of one of the cases in which he has applied it successfully. Instead of using skin flaps alone, which slough off readily, he cuts muscle tissue with the flap. This protects the pharynx and esophagus, and there is no danger of alimentary fistulas as with the original Glück technic.

Prolapse of the Uterus.—Soler Juliá denounces abdominal fixation of the uterus, saying that the operation for prolapse should aim to correct its causes, hypertrophy of the cervix, breaking down of the perineum or relaxation of the ligaments. A good palliative when all other measures are impracticable, is to induce stenosis of the vagina with silver wire.

Semana Médica, Buenos Aires

Feb. 26, 1920, **27**, No. 9

Encephalitis with Narcolepsy. J. C. Navarro.—p. 283.
Argentine Literature on Psychiatry. J. Ingenieros.—p. 287.
*Varying Agglutinating Power of Blood Serum and Plasma. V. Widakowich and S. de Madrid.—p. 296.
Physicotherapy in Tuberculous Spinal Cord Lesions. Testa.—p. 297.
Syphilis and Military Exemptions. J. A. López.—p. 307.
Public Hospitals and Charities System in Peru. E. R. Coni.—p. 309.
Necessity for Psychology in Medical Course. H. F. Delgado.—p. 312.
Hexamethylenamin by the Vein in Spirochetosis of Liver and Kidney. A. Da Matta.—p. 315.

Varying Agglutinating Action of Plasma and Serum.—Widakowich and de Madrid have confirmed Moss' statements as to the different behavior of plasma and serum in respect to agglutination. They noticed in all their experiences that the blood serum of persons with manifest syphilis agglutinated alien erythrocytes much more intensely than their plasma, while in nonsyphilitics the action of the plasma was always most pronounced in this respect. They have not found any reference in the literature to this characteristic difference, and add that the varying behavior of the serum and the plasma makes it necessary to test each separately before attempting transfusion of blood.

Deutsche medizinische Wochenschrift, Berlin

April 29, 1920, **46**, No. 18

The Learning and Teaching of Surgery. C. Garrè.—p. 481.
Nonspecific Immunity. H. Much.—p. 483.
*Inoculation Against Typhus. B. Möllers and G. Wolff.—p. 484.
*Subacute Atrophy of Liver. H. Strauss.—p. 487.
Acetone in the Cerebrospinal Fluid. J. Koopman.—p. 489.
*Operation for Habitual Luxation of Patella. L. Dreyer.—p. 489.
Extraction of Projectiles. W. T. Schmidt.—p. 491.
Dermatitis Caused by Imitation-Leather Sweat Bands Containing Phenol. R. V. Müller-Hess.—p. 491; Idem. Hölker.—p. 492.

Vaccination Against Typhus.—Möllers and Wolff state that an effective immunity, such as follows recovery from typhus, cannot be brought about in guinea-pigs by means of injections of killed typhus virus, as they have shown by experiments the results of which have recently been confirmed by Dörr and his co-workers. The unsatisfactory experiments with the inoculation of humans are in accord with the animal experiments. There is no persisting active immunity against typhus without the preceding specific infection process. Analogous to the successful inoculations in other diseases (cattle plague, anthrax, swine erysipelas) vaccination by injections of living typhus virus mixed with immune serum seems to offer the best chances of success, though typhus virus attenuated in some other manner—as in vaccination against smallpox—might also be successful.

Subacute Atrophy of Liver, with Ascites, in Relation to Cirrhosis of Liver.—Strauss found complicating ascites in over 20 per cent. of the cases of atrophy of the liver, and that such cases have a special differential diagnostic interest. He also finds from studying a case of his own, which he gives in detail, and other cases from the literature that there are marked points of contact between subacute atrophy of the liver and atrophic cirrhosis of the liver. This may justify the conclusion that the ascites is due to obstruction of the circulation in the region of the portal vein. He thinks that these relationships deserve further study both from the clinical and the pathologic anatomic standpoint.

Operative Treatment for Habitual Luxation of Patella.—Dreyer describes his method of operating for habitual and chronic luxation of the patella, which he has found eminently satisfactory. The muscular traction pulling the patella out of its proper place is arrested by cutting across some of the fibers of the vastus externus, about 7 cm. above the patella, and twisting this bunch of fibers at right angles to its former course, and suturing it to the vastus medialis. The traction on the patella is then in the opposite direction from before.

May 6, 1920, **46**, No. 19

*Prophylactic Postoperative Treatment of Cancer. F. Blumenthal.—p. 505.
Traumatic Neuroses and Their Medicolegal Aspects. T. Rumpf.—p. 507.
Treatment of Hair Diseases with Soluble Horn. Blaschko.—p. 512.
Neuralgia of Dental Origin. H. Kron.—p. 516.
*Intracranial Injections in Trigeminal Neuralgia. F. Härtel.—p. 517.
*The Meinicke Precipitation Test. H. Schmidt and R. Pott.—p. 519.
Influenza Prophylaxis. J. Plesch.—p. 520.
Late Rachitis. K. Stetter.—p. 520.
What is Known of Pathogenesis of Diabetes. G. Herxheimer.—p. 522.
Rhinologic Hints for the General Practitioner. G. Finder.—p. 524.

Prophylactic Postoperative Treatment of Cancer.—Blumenthal finds that raying of the field of operation can only destroy remaining cancer cells, but does not necessarily

prevent recurrence. The local tendency of the tissues to cancer production still remains. Irradiation must be sufficiently intensive, for by inadequate excitation avirulent cells may become virulent. It might be better, after operation for cancer of the breast, to ray also the sternum, the pectoral region and the supraclavicular and infraclavicular fossae. At first the sittings should be four weeks apart; later three months. Irradiation may have to be continued indefinitely. He has found that small recurring nodules in the skin sometimes react better to radium or mesothorium than to the roentgen rays. In all operative cases of breast cancer the healthy mamma must be carefully controlled. We should not trust in postoperative irradiation alone, but should use all other therapeutic means: arsenic (intramuscularly or intravenously), extracts made from the tumor removed at the operation, and autogenous exudates.

Intracranial Injections in the Treatment of Trigeminal Neuralgia.—Härtel has used this method for seven years, and his fifty cases show that a permanent cure of trigeminal neuralgia can be effected by means of intracranial injections of alcohol. Permanent analgesia of all three branches of the trigeminus assures a permanent cure. He has observed cures of over seven years' standing following a single injection. In case only partial analgesia is established, recurrences can be expected. The recurrence can be cured by repeating the injections. In hysterical cases and cases of doubtful diagnosis, intracranial injections should not be given. Partial analgesia, omitting the ophthalmic nerve, is technically possible, and is indicated in mild cases in order to spare the cornea, in spite of the fact that this exposes to recurrence. He sometimes determines in advance, by means of a roentgenogram, the size of the foramen ovale and whether there are any anatomic peculiarities in that region. In 41 cases thus treated over six months ago, a complete success was realized in 21 and partial analgesia in 16; 25 have been free from recurrence to date, the intervals since from seven to two years in 13.

Experiences with the Third Modification of the Meinicke Precipitation Test.—Schmidt and Pott say that in view of the simplicity of this test it should be applied to every serum or spinal fluid, as it seems to be marked by almost as high a degree of specificity as the Wassermann reaction.

Münchener medizinische Wochenschrift, Munich

April 30, 1920, **67**, No. 18

Tissue Defense in "Affinity Diseases." E. Heilner.—p. 501.
Psychogenic Obliteration of Hearing and Sense of Pain in Man and Animals. O. Muck.—p. 503.
*Diagnosis of Pyelitis Gravidarum. R. Zimmermann.—p. 506.
*The Dähne-Haschke Artificial Thigh. W. Meinshausen.—p. 510.
Surgical Diphtheria. Harms.—p. 513.
Fracture of Acromion by Muscle Traction. J. Dubs.—p. 514.
Mercuric Chlorid in Treatment of Influenza. Bennek.—p. 515.

May 7, 1920, **67**, No. 19

Nature and Cause of Arteriosclerosis. W. Hueck.—p. 535. Concluded in No. 21, p. 606.
The Present Encephalitis Epidemic. G. L. Dreyfus.—p. 538.
Neo-Arsphenamin in Pyelitis and Cystitis. K. Kall.—p. 541.
Comparative Frequency of Vincent's Angina. Bierotte.—p. 542.
Pediculus Vestimenti in Nuremberg in 1919. Federschmidt.—p. 542.
Case of Lethargic Encephalitis in East Prussia. K. Kötschau.—p. 542.
Predetermination of Sex. F. Lenz.—p. 543.

Significance of the Findings in the Renal Pelvis Urine for the Diagnosis of Pyelitis Gravidarum.—In investigating the pelvic urine of twenty-four pregnant women, Zimmerman reached the conclusion that the degree of turbidity of the urine and the number of leukocytes and epithelial cells do not furnish a reliable diagnosis for pyelitis gravidarum, for the reason that the casting off of epithelial cells into the urinary passages and the elimination of leukocytes into the urine appear to be normal physiologic processes during pregnancy.

Experience with the Dähne-Haschke Artificial Leg.—Meinshausen thinks that this apparatus marks a step in the right direction in the problem of proper prosthetic appliances after amputation of the thigh, although it is by no means ideal. Orthopedists and technicians should labor to perfect the apparatus still further. One disadvantage of the appliance is that it requires a new socket after a time—in fact, rather soon, as the musculature of the stump changes its shape as the fat is absorbed and exercise strengthens the muscles.

Therapeutische Halbmonatshefte, Berlin

June 1, 1920, **34**, No. 11

*Postoperative Raying of Cancer. O. Strauss.—p. 297.
*Influence of Endocrine Glands on Skin Diseases. E. Pulay.—p. 302.
*By-Effects of Phenolphthalein Purges. L. Silberstein.—p. 306.
*Operative Treatment of Tabetic Gastric Crises. H. Holfelder.—p. 306.

Postoperative Roentgen Treatment of Cancer.—Strauss concludes from his review of the literature on this subject that it is still a question whether postoperative raying is really of advantage or not. It is important to collect extensive statistics, and ascertain the forms of cancer best suited for it. Strauss' own experience has been very favorable.

Organotherapy in Skin Disease.—Pulay's deductions from what has been published on the relations between skin diseases and the sexual glands are that there is no evidence of any direct connection between disturbances in the genital sphere and abnormal conditions in the skin with the exception of certain anomalies in the growth of the hair. He cites also the falling out of the hair sometimes noted with uterine fibromyomas and the rapid growing in of the hair again after these tumors have been removed; also the subsidence of seborrhea during a pregnancy. On the other hand, the mineral metabolism has undoubtedly something to do with skin diseases. Mosse found that ovarian treatment of castrated animals induced pronounced diuresis while the phosphorus content of the urine declined. Matthes found increased elimination of phosphorus and lesser output of calcium and magnesium salts under ovarian treatment; after castration, the output of each was increased. These findings suggest that ovarian treatment might modify certain dermatoses by its influence on the calcium and magnesium metabolism. Ischovezco has also apparently established that all organs rich in lipoids, like the endocrine glands, are stimulated to extra functioning when lipoids from the same organ are incorporated. He injected rabbits with lipoids from the uterus and noted that the uterus became hypertrophied. He also noticed an antagonistic action between lipoids from the corpus luteum and from the suprarenals. In conclusion Pulay refers to pityriasis rosea at the menopause as an instance of a skin disease in which changes in the genital sphere are certainly an indirect factor, to some extent at least.

By-Effects of Phenolphthalein.—Silberstein took a single dose of a phenolphthalein purgative, and plaques developed on his tongue, suggesting cancer and forcing him to give up smoking. A year later he took another dose and developed a painful stomatitis with herpes on the genitals. A woman consulted him recently for general lassitude, loss of appetite and a strip of ecchymosis in the conjunctiva of both eyes. She had taken seven tablets of a phenolphthalein preparation. He warns physicians not to be misled by these consequences of the abuse of this drug.

Operative Treatment of Tabetic Gastric Crises.—Holfelder says that it now seems to be fully established that the cause of the gastric crises in tabes is an isolated pathologic condition of the sensory nerves of the stomach. The motor phenomena are from reflex action. By destroying the sensory nerves we put an end to the crises, and there are a number of ways in which this can be done. The nerves can be temporarily blocked with paravertebral injection of procain, and this is his practice when the patient is too debilitated to stand thorough operative measures. The effect is immediate, but lasts only a few days; it can be repeated, while the patient is regaining strength for the Foerster operation. This he regards as indicated in all cases of pronounced gastric crises in which the participation of the vagus can be excluded. The latter can be suspected from the epigaster reflex and the coincident disturbances on the part of the heart and larynx. In this case treatment requires subphrenic severing of the terminals of the vagus at the cardia, according to Exner. But in the majority of cases, the sympathetic fibers in connection with the splanchnic nerves are the ones involved, and these can be severed at the only point where

they can be isolated, namely, at the posterior roots. It is necessary to resect the nerves from the fifth thoracic to the first or second lumbar spinal nerves. This is done under local anesthesia, the patient lying face down, the head low, with a few whiffs of ethyl chlorid as the roots are severed. The suturing of the dural sac is the most difficult part of the operation, but it can be and must be done liquid-tight. As the motor function of the stomach is paralyzed by the operation, it is indispensable to conclude the intervention with gastro-enterostomy.

Wiener Archiv für innere Medizin, Vienna

June 1, 1920, **1**, No. 2

*Dilatation of the Heart. R. Kaufmann.—p. 211.
*Diabetes Insipidus. J. Bauer and B. Aschner.—p. 297.
*Bence-Jones Proteinuria in Leukemia. A. Decastello.—p. 335.
*The Urochromogen Fraction of the Urine. M. Weiss.—p. 359.
Subchronic Lethargic Encephalitis. C. Economo.—p. 371.
*Extrasystoles. R. Singer and H. Winterberg.—p. 391.
*Cholesterin in the Blood. M. Richter-Quittner.—p. 425.

Dilatation of the Heart.—Kaufmann was in charge of the Vienna military "heart station" where roentgen-ray records were taken of 70,000 men with heart symptoms. Of the 500 beds, 100 were constantly in use in treatment of abnormally large hearts. In the great majority, the heart was structurally sound, not hypertrophied, but merely enlarged. The power of the heart to dilate is one of its compensating mechanisms, but the larger the heart when the dilatation begins, the less the relief, and the less complete the subsidence afterward. The dilatation occurs just as it occurs with excessive athletic strain, but when the overexertion is frequently repeated, the heart does not get a chance to recuperate between. It is not the severity of the exertion which determines the amount of strain but the previous condition of the heart; whether it has been weakened by preceding infectious disease, or has not yet reached its full development, or has been given improper physical training. Some factor of this kind was evident in the eighty-five men with persistent dilatation which has not subsided during the two or three years they have been under observation, but in only fifteen did the condition progress to actual insufficiency of the myocardium. In examining 400 young men just called to the colors, Kaufmann found dilatation of the heart in 25 per cent. after brief military training. He adds that there are comparatively few infectious diseases that entail chronic myocarditis, but when there is a history of one and the heart is much dilated, the assumption of chronic myocarditis is justified. If there is, in addition, a tendency to sclerosis or a history of syphilis, myofibrosis is probable. But in all other cases, he reiterates, we can assume that the histologic structure of the heart is normal although the organ is functionally not quite up to standard. He analyzes his experience from various standpoints, emphasizing that in a group of fifty men who had been under great physical stress and excitement at the front for over two years but had never shown symptoms of disordered heart action although the heart was either much below or much above normal size, 16 per cent. had a history of an acute infectious disease after the age of 14. In another group of fifty men with severe symptoms after five months at the front, 54 per cent. had had similar infectious diseases and some had had two or three. He thus clears dilatation of the heart of much of its former ominous significance, but at the same time he warns that the heart is substandard, and must be spared strain.

Pathogenesis of Diabetes Insipidus.—Bauer and Aschner give fourteen tabulations of the metabolic findings in a typical case of diabetes insipidus in a woman under observation for ten years. There may be various causes for the disease. In some cases some abnormality in the kidneys or in their innervation is responsible. In others—and this is the larger group—it may be traced to changes in the nerve centers of the floor of the fourth ventricle. Some primary disturbance in the center for thirst perception may be involved, in connection with the subcortical diuresis center, possibly from irritation from concentration of crystalloid substances in the tissues, or it may be of psychogenous origin. A fourth possibility, that the disease is the result of abnormal conditions in the pituitary, has not been positively established to date. Even with loss of the diuresis regulating property of the pituitary secretion, normal compensating processes in the kidneys may ward off diabetes insipidus.

Bence-Jones Proteinuria with Leukemia.—Decastello reports here his third and fourth case of this combination. The Bence-Jones body, he says, seems to originate in pathologic conditions in the bone marrow, and hence it is not influenced by peripheral raying. But administration of benzol might reach it in the bone marrow, and he suggests that this should be associated with roentgen-ray treatment. He cites four similar cases from the literature, lymphatic or myeloid leukemia, with the Bence-Jones proteinuria, all in men. The leukemia did not differ otherwise from the usual clinical picture, nor the necropsy findings in two of the cases. In a case of metastatic cancer in the bone marrow, tests for this protein were repeatedly negative. In three of his cases roentgen-ray treatment alone materially improved the blood count and general health, but the proteinuria was left unmodified.

The Urochromogen Fraction of the Urine.—Weiss uses ammonium sulphate for enrichment of the substance in the urine giving the urochromogen reaction, as he describes.

Extrasystoles.—Singer and Winterberg analyze a case in which the interference of two rhythms was plainly evident, a normal sinus rhythm and an automatic ventricle rhythm interfering and causing the extrasystoles.

Cholesterin in the Blood.—Richter-Quittner reports research which has apparently demonstrated that in normal conditions the total cholesterin is divided about equally between the blood corpuscles and the plasma, but the free cholesterin is exclusively in the corpuscles and the cholesterin ester exclusively in the plasma. In pathologic conditions, cholesterin is found in abundance in the plasma along with a little cholesterin ester.

Wiener klinische Wochenschrift, Vienna

April 29, 1920, **33**, No. 18

Pathology and Therapy of Syphilis. E. Finger.—p. 373.
Serodiagnosis of Syphilis. L. Kirschner and J. Segall.—p. 377.
Typhoid Bacilli in Blood of Malaria Patient. R. Strisower.—p. 378.
Mirror Condenser with Direct Illumination. L. Arzt.—p. 379.
Austria's Food Problem. A. Durig.—p. 380. Begun in No. 17, p. 351.

May 6, 1920, **13**, No. 19

Menstrual Toxins. B. Schick.—p. 395.
Failing Compensation of the Heart. L. Hess.—p. 397.
Observations on Partial Antigen Treatment. R. Pilpel.—p. 402.
Austria's Food Problem. A. Durig.—p. 404. Concluded.

Zeitschrift für Kinderheilkunde, Berlin

May, 1920, **25**, No. 1-3

*Progressive Dystrophy after Poliomyelitis. L. Kaumheimer.—p. 1.
Vaccine Therapy of Furunculosis in Infants. C. Frankenstein.—p. 12.
*Convulsions in Whooping Cough. F. Reiche.—p. 28.
*Intake of Fluid and Composition of the Blood. Wimberger.—p. 64.
*Thrush. E. Steinert.—p. 83.
*Age and Constitution in Relation to Infections. Eva Huebner.—p. 104.
Cholesterin Content in Blood in Scarlet Fever. G. Stern.—p. 129.
*Convalescents' Serum in Measles. R. Degkwitz.—p. 134.

Progressive Muscular Dystrophy After Poliomyelitis.—Kaumheimer reports a case of muscular dystrophy in a child developing five years after acute poliomyelitis. He compares his case with the fifty on record in which spinal muscular atrophy developed in persons who had had poliomyelitis. There were only two women in the list. The relative frequency of the spinal amyotrophy after poliomyelitis and the great rarity of progressive muscular dystrophy after it suggest some causal connection with the former, while with the latter there is merely a casual coincidence.

Convulsions with Whooping Cough.—Reiche is in charge of the whooping cough department in the Hamburg public hospital, and here describes 29 cases in which the whooping cough was accompanied with convulsions. He gives the necropsy findings in all but 3. The convulsions began first with or soon after a particularly severe paroxysm of coughing, but later returned without the coughing paroxysm. The whooping cough alone seemed to be responsible in only 17 of the total 29. In 3 cases there was thrombosis in the sinus

or veins in the pia, and in one of these cases there was associated actual pertussis meningitis.

Intake of Fluid and Composition of the Blood.—Wimberger writes from Pirquet's clinic at Vienna to describe extensive series of tests on seven children from 7 months to 15 years old in which the refractometric findings and the daily variations in weight over long periods were compared with the intake of fluids. They demonstrate anew that the concentration of the blood serum keeps at a very constant figure, irrespective of wide variations in the intake of fluids. The solid tissues of the body take charge of the excess of fluids, the composition of the blood seeming to be independent of the water content of the body.

Thrush.—Steinert discusses the clinical picture of thrush and the biology of the fungus responsible for it. His attempts to transmit the aphthae all failed. When there was associated digestive disturbance, rinsing out the infant's stomach with an alkaline mineral water restored apparently normal conditions in both stomach and mouth without local measures. Otherwise, he touched the aphthae with a 1 per cent. solution of silver nitrate or gave the child a boric acid teat to suck. This latter is particularly useful with diffuse thrush when the child sucks vigorously on it, as the mechanical effect helps.

Age and Constitution in Respect to Infections.—Huebner has compiled the history of the infectious processes of 190 infants less than a year old. The younger the child, the less the tendency to contract infections, but the severer the course when once installed.

Convalescents' Serum in Prophylaxis of Measles.—Degkwitz relates that at the Munich children's clinic about 183 children with measles are admitted annually, and the average death rate is 28.8 per cent. for those under 2½ and 4.8 per cent. for those above this. He injected from 7 to 22 c.c. of convalescents' serum in young children when another child in family or ward had developed measles, and none of the injected children showed any signs of measles although continuing to sleep, etc., with the measles child, while many of the uninjected children developed the disease. The blood for the purpose was drawn from a vein in the arm from seven to ten days after defervescence, a total of 40 c.c., which yielded 16 or 18 c.c. of serum. To this a drop of a 5 per cent. solution of phenol was added, and the whole kept in a fused ampule in the cellar. He queries whether the serum of normal adults, most of whom have passed through measles, might not have the same protecting potency, but larger doses would probably be required. He intends to experiment in this line with the parents' serum, both in prophylaxis and in treatment of developed measles, in the hope to ward off pneumonia. He regards the results accomplished as very encouraging both for measles and as a hint for scarlet fever.

Zeitschrift für Tuberkulose, Leipzig

April, 1920, **32**, No. 1

Tuberculosis and Housing Conditions in Rostock. W. Tobias.—p. 1.
Tuberculosis Preventoriums. P. Hesse.—p. 8.
*Tuberculin Inunction Treatment of Tuberculosis. E. Effler.—p. 11.
*Contraindication for Artificial Pneumothorax. E. Rautenberg.—p 13.
*Iodin Treatment of Lupus. K. Moncorps and M. Monheim.—p. 23.

Tuberculin Inunction Treatment of Tuberculosis.—Effler refers to Petruschky's inunction treatment of the tuberculous inhabitants of the peninsula of Hela, near Danzig, with which he claimed to have practically stamped out the disease, as was mentioned in The Journal at the time, March 20, 1915, p. 1038. Effler presents evidence that Petruschky's statements were too optimistic; ten cases are known to have developed since, with four deaths, among the 300 inhabitants.

Contraindication for Artificial Pneumothorax.—Rautenberg induced the pneumothorax to arrest recurring hemoptysis in two men. Both happened to be just 50, and in both the pneumothorax answered its purpose, arresting the tendency to hemoptysis, but both men soon displayed difficulty in breathing, and the heart action grew progressively weaker, with death the twelfth and fourteenth day. The chest of each of the men was of a pronounced barrel shape, with rigid walls, and a tendency to emphysema of the lungs. This combination should warn against inducing pneumothorax.

Iodin Treatment of Lupus.—Moncorps and Monheim refer to Bessunger's method of massaging a solution of iodin into the skin and then exposing the region to the roentgen rays. The raying liberates nascent iodin, and this induces an inflammatory reaction with ulceration. As this heals, the lupus disappears. They report thirty-five lupus patients thus treated during the last year, saying that the results to date in two thirds of the cases rank with those of the best with other methods.

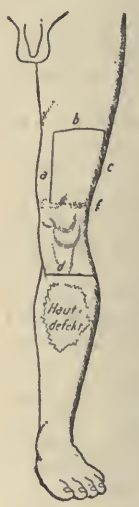
Zentralblatt für Chirurgie, Leipzig

May 8, 1920, **47**, No. 19

Operation for Cryptorchism. G. Lotheissen.—p. 442.
*Cryptorchism and Its Mode of Development. K. Hofmann.—p. 443.
*Bent-Over Flaps in Plastic Operations. M. Kappis.—p. 445.
Primary Focus with Deep Subpectoral Phlegmons. U. Hammer.—p. 448.

Cryptorchism and Its Mode of Development.—Hofmann has operated recently in seventeen cases of cryptorchism. According to his anatomic findings, cryptorchism is attributable to arrested development or a malformation of the canal of Nuck. There is no malformation of the testis or the spermatic cord; their growth has only been prevented by mechanical causes. Normal descent of the testes is possible only when there is normal development of the canal of Nuck. Imperfect development of this canal must necessarily lead to cryptorchism. His method of radical operation follows as a matter of course from this conception of the anatomic relations.

Bent-Over Flaps in Plastic Operations.—Carrying out the suggestions of Neuhäuser, Kappis has been using twice turned-over flaps in plastic surgery. In view of the simplicity and effectiveness of the method he thinks it deserves to be more generally applied. In the first sitting, a skin flap following the lines *a, b* and *c* is dissected and turned over at the line *e f* with the raw surface uppermost. Margin *b* of the flap is then sutured in a linear incision *d*, which is made just above the defect. The proximal margin of the incision *d* is sutured to the margin *b* of the bent-over flap, and the distal margin of the incision is sutured to the raw surface of the flap in such a manner that a wide raw strip of the flap is in contact with and grows to the incisional wound *d*. The defect *a b c* is reduced to as small a size as possible and the balance is covered with Thiersch flaps. The pedicle of the flap, at *e f*, is cut through gradually, at several sittings. The defect to be covered is carefully prepared to receive the flap, which is kept on the stretch so as not to shrink. The angle at *d* should gradually be made to approach 90 degrees (which may be accomplished by padding beneath with cotton), so that when the flap is turned over the second time it will not break away from the pedicle. In the final sitting the flap is entirely severed at the line *e f;* the defect and the margin of the flap are freshened, and the flap is sutured over the defect. Some of the advantages of this plastic operation are that the sound leg is left free and intact, and the whole operation is a matter of leisurely convenience. The pedicle, *e f*, need not be separated from its blood supply until circulation has been definitely established in the new pedicle at *d*. Very narrow bridges will often suffice to keep up the nutrition of the flap. The success of the operation is assured provided the flap *a b c* does not necrose, which with care, working under such favorable conditions, we can usually prevent.



a b c, outline of flap; *d*, incision to receive upper margin of flap; *Hautdefekt*, ulcerated surface to be covered with flap.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

June 5, 1920, **1**, No. 23

Infant Mortality at Rotterdam Before and During the War. J. Sanders.—p. 2017.
Medical Service in French Aviation Department. P. M. van W. Palthe.—p. 2033.
Epidemic Encephalitis. J. J. Hacke.—p. 2045.
Mastoiditis After Healed Otitis. G. von Gangelen.—p. 2055.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, NO. 6 CHICAGO, ILLINOIS AUGUST 7, 1920

THE FUTURE OF THE PHYSICIAN*

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NEW YORK

Must we not provide good physicians for the state; and must not these be such as have been conversant with great numbers both of healthy and sick people?—*Plato's Republic.*

Psychology teaches us that the essential function of the mind is its dealing with the future. Life is one long anticipation, preparation for what is to come, preoccupation with tomorrow. Of course, there could be no outlook without experience. The faculty of anticipation is based on the store of memories: as the searchlight depends on electromotive force or the cantilever bridge reaches out ahead in direct proportion to the materials gathered and joined together behind, so the subject of this particular anticipation of the future of the physician is based on an experience of forty years in the practice of medicine. If the cantilever bridge is a good analogy, I ought to be able to project my anticipations forward, then, at least some forty years.

Most physicians of this generation and of all previous generations have busied themselves with diagnosis and therapy; and, of course, among the oldest generations of physicians therapy was the chief study and occupation, because knowledge of the changes in the body produced by disease and of accurate methods of diagnosis are all very recent in the history of medicine. They did not really know very much even about therapeutics in the old days, but they could and did prescribe. Theirs were not exactly shotgun prescriptions—they were more like shrapnel. A famous and favorite prescription for many centuries was the theriaca of Andromachus. It has attained immortality, together with its prescribers and its victims. Andromachus of Crete invented it. Nero promulgated it by order. I will not take time to name its sixty-one components—but in later centuries it was improved in the Codex of the Faculty of Medicine of Paris by the addition of eleven more ingredients—one of these the flesh of the viper—so that in the end the Favorite Prescription was compounded of seventy-two assorted medicaments.

I'm not so sure that we should laugh at this prescription. We might smile a little, with diffidence, with an eye on the future, for our posterity will probably find much to amuse them in our own therapeutic inventions, methods and agents. I wonder what they will say of some of our surgical procedures, our endocrine adventures, our psychanalysis, eye-muscle cutting, removal of submerged tonsils and turbinated bones, teeth-pulling—these therapeutic epidemics among physicians of our day?

No, we must not be amused at the past. We must rather remember that out of all the facts, errors, follies, mistakes, theories, absurdities, assertions, denials, experiments, failures, of these thousands of years our Tree of Knowledge has risen. These were the gropings of a myriad rootlets in the dark for food and drink and strength of hold. Out of this soil our Ygdrasil has grown.

Therapeutics is the oldest department of medicine. I have no doubt there were practitioners of therapy among the Aurignacians 25,000 years ago. It is, indeed, an ancient and venerable art. It is also the chief interest of the patient today. He does not go to the physician for diagnosis especially, but for relief, for cure, and his demands are in the words of the old Latin therapeutic formula, "Curare cito, tuto et jucunde," to cure quickly, safely and pleasantly. So therapy has had to be thus far the main practical occupation of the physician. To rationalize and improve his therapy he has studied disease, the alterations in the tissue made by disease, the symptoms of the disease, the causes so far as they could be learned, and the infinity of means and methods of diagnosis. And all this material has become so complicated and vast that the medical student of today must needs be an "invincible athlete" to compass it.

Take, for instance, this little fragment of what is required of a medical student today in one of our leading American colleges. It is a syllabus which I find reproduced in Sir James Mackenzie's book on "The Future of Medicine," a book, by the way, which should be read thoughtfully and carefully by every student and physician, and to which I shall refer again later. This is a prospectus of what a student should acquire during his first year of clinical work in the way of technic in special and instrumental methods of examination. It is too long to quote, but I have been strongly tempted to shorten it, to dramatize or put it in the form of vers libre, to make a sort of Whitmanesque poem of it, and it is reproduced herewith. It would have pleased Walt Whitman.

Sir James Mackenzie thus comments on this syllabus:

These are the "subjects recommended in one school for the student's study during three half-day exercises per week for six months. When it is understood that even the specialists who employ these methods have only an imperfect knowledge of the meaning of the signs which their method brings to light, the practical benefit to the student can be inferred. I need not dwell on the state of the student's mind at the end of a six months' course of this kind of instruction, especially when this subject is probably but one of several others pursued in the same spirit."

* Read before the Alpha Omega Alpha Fraternity, Syracuse, N. Y., April 13, 1920.

Sir James is concerned with the effects on the *student* of this wandering in a maze of technic and mechanical systems.

My own query is, what does the *patient* get out of it—the patient who comes to the practitioner for help and relief from suffering? Would the patient who ran the gantlet of all this formidable array of diagnostic mechanisms (and survived the diagnosis) be in the end really any better off, or as well off, as if he trusted himself to some good old-fashioned sensible country doctor?

I met a patient who had had most of these tests tried on him, and he said the experience was most impressive. I asked him what the doctor had done for him as a result of these labors. He said: "He gave me rhubarb and soda, and when I told him that was just what my doctor in Skaneateles had given me long ago, he said it was not rationalized, not scientific. Then I said rationalized rhubard was having a wonderful cathartic effect on my pocket book."

There is no doubt that ultimate good will result from all this effort at scientific precision. It is the road of progress. But this work is still mostly for the seekers after truth, the research men of our institutes and laboratories; and the medical student and practitioner should not be so overwhelmed with mechanics and half truths that they lose the power of close clinical observation, the power of giving every possible relief to the sick people out in the world who are their care.

PROSPECTUS FOR A FIRST YEAR OF CLINICAL MEDICINE

(After Walt Whitman)

O Neophyte in medicine
In thy first year
Acquire roentgenoscopy,
And roentgenography
And be fascinated
By the simplicity of teleroentgenography
As applied to head, thorax, abdomen
And all the bones and members;
In the clinical laboratory.
Learn microscopy and chemistry;
In the bacteriological laboratory.
Learn to collect materials,
Diagnosticate by lens and culture,
By inoculation of animals,
By virulence tests.
Seize the doctrines of immunology
And study agglutinins, bacteriolysins
Hemolysins, precipitins, opsonins and ergins.
Emphasize Widal and Wassermann
Schick and tuberculin.
Next absorb rhinoscopy,
Pharyngoscopy, laryngoscopy,
Paranasal transillumination,
Demonstrate the bronchoscope
And puncture the pleura.
Learn speedily sphygmography,
Cardiography, phonocardiography,
Electrocardiography, tonometry
And sphygmomanometry,
And upon these superimpose
Clinical angiological methodology.
Do not neglect odontology,
Paradental infection,
Pyorrhea alveolaris;
The cognoscibility
Of roentgenograms,
Of dental films,
And if possible oesophagoscopy.
Fail not to practice gastric intubation
With test and contrast meals
And contrast enemas
With proper serial survey
By roentgenography.
It takes but little time
To know the pancreas
By service of the duodenal pump
And secretory analyses,
Whence we proceed to proctoscopy
And rectosigmoidoscopy,
And urogenital methodology,
With urethroscopy, cystoscopy,
Ureteral catheterization
And pyelography.
Grow competent in neurology
By accurate tests, cutaneous,
Deep, gustatory, olfactory,
Acoustic, vestibular, visual,
Motor, reflex, coordinative,
Tests of the speech and writing,
Sphincters, and trophic functions,
Adding to this anthropometry,
Lumbar puncture, electrodiagnosis,
And nervous architectonics.
Pay attention to consciousness
Of the patient as a whole,
Not forgetting attention,
Perception, identification,
Diction, feelings, moods,
Emotions and conative functions
Judged by behavior and conduct.
Then learn how indispensable
For diagnosis and therapy
Are studies of metabolism.
Seize the doctrine of balances;
Make preliminary tests
Of assimilation, digestion, absorption,
Then determine the metabolism
Of proteins, nucleins, purins,
Carbohydrates, fats, water,
Mineral substances and vitamins,
And learn direct and indirect calorimetry.
These are only preliminary to the study
Of several amino-acid diatheses
Of diabetes mellitus and gout.
Thus prepared, O Neophyte, finally approach
The endocrine glands
By pharmacodynamics,
Tests with epinephrin, atropin, pilocarpin,
Till endocrinopathies are laid bare.
These simple points are but an item
For first year students who recite 'em.
Next year add more—ad infinitum!

FOUR STAGES OF DISEASE

Now to turn again to Sir James' book, I want to call attention briefly to the most important thesis there set forth:

In the first place, he points out that disease may be said to progress through four stages:

A predisposing stage in which the individual is still free from disease but inherently weak or vulnerable.

The early or curable stage, when the disease has not produced any perceptible alteration of tissue and the symptoms are mainly subjective.

The advanced stage, when the disease has progressed so far as to cause destruction or modification of tissue and when its presence is revealed by physical signs.

The final stage, when the patient dies and the tissues are subjected to a postmortem examination.

We have a vast accumulation of knowledge concerning the third and fourth stages of disease, i. e., of the pathologic tissue changes found at necropsy and of the coordination of such findings with the clinical manifestations of the third advanced stage with its active structural changes. Now the chief aim in the practice of medicine, to cure the patient, has been almost forgotten in our intense devotion to the pathologic changes in tissues and to methods of diagnosis of disease in its advanced stage when usually irremediable damage to the tissues has already been done.

He points out that we have magnificently equipped institutions for the study of disease after the patient has died, and great hospitals for patients suffering from the advanced stages of disease presided over by staffs of skilled, trained and experienced physicians; but few or no attempts are made to train men to detect disease when there is hope of cure.

His plea is that we should now study and understand the first and second stages: that there are signs and symptoms which we shall some day be able to discover, obscure and indefinite though they may seem to us now; that we should devote ourselves to observation of the predisposing and early or curable stages of disease.

It is evident that patients in these early stages do not come under the observation of laboratory or hospital physicians, but, if vaguely uneasy about themselves, go to the family physician for advice. It is therefore in the hands of the general practitioner to make this new and highly important study of the earliest symptoms. These earliest symptoms are mainly subjective, and it is for general practitioners everywhere to intensify their clinical observations of these cases just passing over the borderline between well-being and disease.

This to me is the main thesis of this book, and the idea is developed with much suggestive detail.

I believe that our immediate opportunity lies in a general, widespread, careful and exhaustive examination of the earliest signs and symptoms. This entails a new significance to the study of subjective manifestations, and the development of new means and methods.

Before passing to another part of my subject I want to make my position clear in regard to all these modern mechanical innovations in the practice of medicine. What I oppose is their too ready acceptance and

adoption by practitioners all over the land before their real value has been thoroughly and finally demonstrated. No one can gainsay the importance of the pursuit of these methods by experts in research laboratories and hospitals; but their exploitation in private practice before their real value or the significance of their findings has been conclusively ascertained is harmful to the profession and, incidentally, sometimes to the patient.

For example, a patient rushed into my office not long ago with an armful of electrocardiograms. They had cost him $300, and he was frightened to death. They were exquisitely done and beautifully mounted, and there were enough of them for a frieze in a refectory. He had a simple neurasthenia with the palpitations so common in that disorder. There was no heart disease, and the pictures were formidable, unnecessary and expensive. It took some little time to cure him of a cardiac hypochondriasis. But it is not alone such elaborate machinery as this that is liable to misinterpretation by both physician and patient; even so simple and widely used an instrument as blood pressure apparatus has, I fear, proved misleading to many physicians and a source of much alarm and hypochondriasis to innumerable patients—not perhaps in the hands of experts, but in the hands of their less experienced imitators all over the country.

HEALTH INSTRUCTION IN PUBLIC SCHOOLS

Now let me invite your attention to a still more important and fruitful field in the future work of the physician. The quotation from Plato at the beginning of this paper suggests that the physicians provided by the republic should be such as have been conversant with great numbers both of healthy and sick people. It is the healthy people whom we are now called on to consider. We physicians have been so busy studying the seats and causes of disease, diagnosis, pathology and therapeutics that we have almost forgotten the healthy people. Yet it seems to me that the physician of the future must make health and healthy citizens his chief concern. There are two factors which have militated against our heretofore taking health into consideration: First, we have been and are too busy with relief repairs and consolation among our clientele to pay much attention to the healthy people about us. Second, the healthy people, engrossed in their own objective affairs, slap themselves on the chest, and feel that the world is their oyster and that they can afford to laugh at fate and the doctors. There are two serious but not insurmountable conditions. I believe that the healthy people and the physicians can be brought together for a common purpose, namely, the reconstruction of the race.

The span of life in this country is about sixty years, and for a century or so we have had in our minds the extension of this average life span beyond the sixty years. But these sixty years are not sixty health years; just sixty years of living, full of more or less ill health and physical decrepitude. The "health span" of life, as Dr. Eugene Fisk calls it, is a much more important matter than the length of life. That "health span" is just about ten years. When the robust, healthy citizens referred to learn the fact that no matter how long they live they are certain of only ten years of exuberant well-being, they are going to stop a moment in the rush of things and take thought. They are going to insist on physicians lengthening that health span, and as soon as the physicians also learn this fact, which few now know, they too will turn their attention to the healthy people and do their part to extend the health span of the race. The ailments that impair health are mostly minor and remediable, forerunners, perhaps, but not the serious disorders from which people die.

I hate to recite statistics, but I must refer to the oft-quoted rejection of more than one third of the flower of our race between the ages of 21 and 31 in the army draft—nearly a million unfit for service—and among those accepted several hundred thousands in the camps found to have "physical defects ranging from syphilis and gonorrhea to flat-foot."

The British, taking in the men of 40 years, rejected 69 per cent. as unfit for military service.

More than 16,000,000 children of our 22,000,000 now in the public schools have physical defects, most of them preventable and remediable, such as heart and lung diseases, disorders of sight and hearing, diseased adenoids and tonsils, flat feet, weak spines imperfect teeth and malnutrition, and among them 1 per cent. of mental defect. I mention these facts first to show how much work there is to be done by physicians among the supposedly healthy members of any community, and secondly to point out the most promising way in which the problem of health may be made evident to the whole people.

We all know how disappointing and almost futile have been our efforts to rouse the people in the matter of public health—the millions expended, our health exhibits, our health lectures, our clean-up campaigns, our pamphleteering—all these expenditures of money and energy have merely scratched the surface. The foremost public health worker in America told me one day that our tuberculosis campaigns in certain states have accomplished practically nothing, and that in one state where nothing whatever had been done there was as much improvement in tuberculosis statistics as in states where campaigners had done their best work.

The point is that we cannot by these methods make clear the matter of public health to the conservative, reactionary, more or less fossilized minds of the grown-ups. We must reach the whole people in the matter of health through the plastic, receptive minds of the children in the schools.

We need but ten minutes daily of health instruction in our schools. It should be a thorough system of instruction in all matters pertaining to health, with special emphasis on health problems rather than on disease, in physical and mental habits, in personal hygiene, in public health and sanitation, in methods to avoid communicable diseases, in the responsibilities of parenthood, and in all that relates to nutrition and growth, including foods and food values and food habits.

These facts reach the growing child, become a part of him, and affect his whole attitude toward life. Moreover, he takes them home and applies them to his younger brothers and sisters, the children of preschool age; and, best of all, he teaches his parents these facts and their importance, and parents will take and absorb ideas from their children to which otherwise presented they would be impervious.

The physician of the future is to be a Master of Public Health. He will push and help instruction in health in the public schools. The healthy people will flock to him. He will fortify the weak against the

onslaught of disease. He will recognize the earliest subjective signs of inroads of disorder and learn to defend his patients from its further encroachment. His mission will be to lengthen the health span of life.

A FIVE OR SIX YEAR COURSE IN MEDICINE

JOHN A. KOLMER, M.D.
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It is generally recognized that the curriculum of the present four year course in medicine is so crowded that expansion of certain courses, to facilitate more thorough instruction and the inclusion of recent advances in the medical sciences, is almost impossible. A saving of time could possibly be gained by more coordinated teaching to avoid repetition of instruction in the same subject or subjects in different departments; but even under these conditions it is exceedingly difficult to introduce new subjects to meet the ever increasing demands of a liberal education in modern medicine.

For example, the medical student of today should receive more practical instruction in biologic chemistry, immunology and advanced bacteriology, medical zoology, medical drawing, preventive medicine and medical sociology, than afforded by the majority of medical schools at present; also, more recitations conducted by the professors for the purpose of review and coordination; more time and opportunity for conducting laboratory work in connection with the clinical branches and for clinicopathologic conferences, and increased opportunities for elective study and original research in the last year of the course.

The majority of medical schools in this country now require that the student of medicine shall have completed a standard four year high school course of study, or its equivalent, plus two years of work in an approved college of arts and science including courses in French or German and in English, physics, chemistry and general biology or zoology, with appropriate laboratory work. Some of these schools contemplate raising these requirements to include four years of collegiate work and a bachelor's degree in arts or science.

Instead of demanding these two extra years of college work, I believe that medical education will be better served by keeping the entrance requirements at the present minimum and extending the course in medicine one year, or two years if the medical school can guarantee a hospital internship for its students so that the degree in medicine is conferred after the successful completion of at least one year's residence in an approved hospital.

If a collegiate degree is demanded for admission to a medical school, the student spends eight years in college after graduation from high school before he or she is prepared for the practice of medicine, and nine years, if one year of hospital residentship is taken; with the foregoing plan the whole time required, including a year's hospital internship, is eight years. Furthermore, the student devotes the extra year or two to study in a medical atmosphere, and I believe that the better opportunities afforded for the teaching of the medical sciences will give the student as good an opportunity for developing mental capacity and cultivation as is afforded by the third and fourth years in a college of arts and science. For example, a reading knowledge of French or German is usually required for admission; with an extension of the medical course, time is permitted for the teaching of what may be called "medical French or German" during the first and second years, requiring the students to develop sufficiently in these languages to read medicine in one or both with fair success, which is far from being true of the average student under present conditions.

By reason of the added facilities for teaching the medical sciences, I believe that all students successfully finishing the first two years' course in medicine should receive the degree Bachelor of Science or Bachelor of Medical Science (B.Med.Sc.); the degree of Doctor of Medicine should be conferred after the successful completion of the entire course of five or six years.

A FIVE YEAR CURRICULUM

As previously stated, the added year will permit the extension of certain courses and the inclusion of others; a curriculum as follows could be worked out by the majority of schools, a year embracing thirty-two weeks of from thirty-eight to forty hours a week, and divided into semesters or trimesters as necessary:

FIRST YEAR

Anatomy, including histology, embryology, osteology, syndesmology, topographic anatomy and neuro-anatomy.
Physiology.
Toxicology.
Medical drawing.
Illustrated lectures in the history of medicine.
Study hours, with special reference to French and German literature with the aid of instructors.

SECOND YEAR

Pharmacology, including materia medica and pharmacy.
Physiologic and biologic chemistry
General pathology.
General bacteriology and medical zoology.
Hygiene and preventive medicine.
Medical drawing.
Study hours, with special reference to collateral reading in German and French with the aid of instructors.

THIRD YEAR

Special bacteriology and immunology.
Special pathology (neurosurgical-gynecologic pathology) and clinicopathologic conferences.
Clinical pathology and microscopy.
Applied anatomy.
Physical diagnosis.
Medicine, including practical and applied therapeutics and dietetics; medical sociology.
Surgery.
Obstetrics.
Roentgenology and electrotherapeutics.

FOURTH YEAR

Medicine, including pediatrics, neurology, medical psychology and mental diseases.
Surgery, including orthopedic and genito-urinary surgery.
Gynecology.
Obstetrics.
Ophthalmology, otology, rhinology and laryngology.
Dermatology and syphilology.
Clinicopathologic conferences
Lectures in medical jurisprudence and medical ethics.

FIFTH YEAR

Medicine obligatory with associated laboratory work in bacteriology, chemistry, immunity and clinical pathology.
Surgery obligatory with associated laboratory work on concrete cases.

Clinicopathologic conferences obligatory.

Electives and research in any of the branches given in the first four years, each student being obliged to select a minimum amount of work.

COMMENT

The first four years would give a liberal and comprehensive course in medicine, including instruction in the specialties. The added fifth year will afford more time for developing dispensary teaching, including sociological medicine and for more laboratory work in connection with the clinical branches, as so clearly emphasized by Dr. Vincent.[1] The fifth year, by providing ample opportunity for elective studies, will also enable the student to concentrate on one or more clinical or laboratory branches and engage in original investigations under certain conditions to better advantage than at present, without sacrificing the principal aim of the medical school to give a broad and comprehensive course of instruction before the student is permitted to begin specialization.

I do not wish to convey the impression of being opposed to a complete collegiate education preliminary to entering on the study of medicine; indeed, this is far from being the case. But the time has come when schools must seriously consider the extension of the course in medicine, and to do this without greatly increasing the expense and time required, I believe it is better to keep the entrance requirements as they are at present in Class A schools, extend the course in medicine for at least one year and reward the extra time devoted to the study of medicine with the degree Bachelor of Medical Science at the completion of the first two years' course, and the degree Doctor of Medicine, after the completion of the last three years. If the medical school is so situated that the graduate can be guaranteed a year's residentship in an approved hospital, preferably with a mixed or rotating service, this extra and valuable year may be demanded for the degree of Doctor of Medicine, although I do not believe that the majority of schools are in position to adopt this requirement at the present time.

1. Vincent, G. E.: Ideals and Their Function in Medical Education, J. A. M. A. **74**: 1065-1068 (April 17) 1920.

TEACHING THE PATHOLOGY OF FUNCTION

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If the position of pathology in the medical curriculum today were to be described diagrammatically, it might be stated that it occupies the neck of an hour-glass. The students receive in the earlier years their conception of fundamental sciences, and as the sand concentrates toward the neck of the hour-glass so are the methods of these fundamental sciences concentrated in the study of pathology, the student later branching out in the clinical divisions to apply to the diagnosis of disease the methods and conceptions acquired in his preceding work. In further elaboration it may be stated that the student learns in his first and second years of study the special methods of anatomy, histology, biochemistry and physiology. He is then prepared to enter on the study of those changes from the normal which constitute the natural history of disease.

Gay[1] has concisely said that "'pathology' is still used to mean morbid anatomy rather than the natural history of disease." Fortunately for medicine, however, this conception is gradually being discarded and the term more broadly applied to the alterations of form and of function which go to produce the manifestations of disease. Henderson[2] has stated that "a man trained by necropsy and microscope is inevitably a morphologist." Medicine does not suffer from having morphologists among her devotees unless those morphologists are devoid of a sense of proportion and possessed of minds incapable of appreciating the phenomena of function.

I wish to express the profound conviction that just as the science of medicine depends on a comprehensive understanding of anatomy in order properly to interpret function, so does the pathology of function find its basis in pathology of form. This is not to be interpreted as an indication that alteration of function and alteration of form are parallel, an idea readily controverted in almost any clinical pathologic conference. To teach pathology without a systematic course of instruction in pathologic morphology would be as absurd as attempting to teach medicine without the study of anatomy. It may very well be that the fields of investigation in pathologic anatomy are not at the present time of such great promise of early and fruitful results as the fields of pathologic function; but this does not by any means excuse the teacher of pathology from omitting morphology as the basis in teaching work.

Recognizing the broad scope of pathology as it was conceived by Virchow, we come to a realization of the fact that in the same sense as anatomy is not the science of medicine, so is pathologic anatomy not the science of pathology. In agreement with Ophuls,[3] I must emphasize that "a thorough understanding of the biologic processes of health and disease cannot be reached by one method alone." In order to convey to students of medicine the proper conception of pathology, we must recognize that pathology in itself is not a science in the same sense that medicine itself is not a science. Pathology constitutes a mélange of scientific methods, and adopts for its own purposes not only the methods of the premedical sciences, but those of the more fundamental pure sciences as well. Pathology, without physics and without mathematics, is on an extremely insecure basis. Few there are who take exception to this point of view as regards investigation in pathology; but many still hold to the view that teaching this subject should be confined to morphologic methods. The latter fail to recognize that the student of today is the investigator of tomorrow, whether he directs his attention to the practice of medicine or to a life devoted to investigation of disease from a more fundamental point of view. The so-called seclusion of the laboratory often leads one to forget that the living patient as he appears for diagnosis represents a problem in investigation.

The pathology of Rokitansky was pathologic anatomy, but, inspired by the stimulus of Virchow and particularly that of Cohnheim, pathology took over the method of physiology and chemistry. With the epochal work of Pasteur, pathology adopted the

1. Gay, F. P.: The Infectious Diseases as a Field of Investigation in Pathology, J. A. M. A. **67**: 1263 (Oct. 28) 1916.
2. Henderson, Yandell: Clinical Physiology—An Opportunity and a Duty, J. A. M. A. **57**: 857 (Sept. 9) 1911.
3. Ophuls, William: Anatomic Structure and Function, J. A. M. A. **63**: 521 (Aug. 15) 1914.

methods of bacteriology, parasitology and immunology. As time has gone on, a certain amount of specialization in these various fields has become apparent; but this fact does not exclude the teacher of pathology from being familiar with at least the fundamentals of these methods of examining disease. The pathologist who ignores any of these methods is remiss in his duties to his students and his school.

If, in the curriculums of most of our medical schools, pathologic anatomy and histology and also bacteriology are given very definite places and allotments of time, there has been, nevertheless, a regrettable neglect of pathologic physiology and chemistry, as well as immunology, in the required work of the student. The widespread application of physiology and chemistry in internal medicine, the important utilization of immunologic methods in the diagnosis and treatment of disease, make it essential that the properly trained student must have had work in these divisions as a required part of his training in medicine. The student who graduates without training in at least the fundamentals of these subjects is not sufficiently equipped to practice his profession. Leaving to chance the possibility that these topics will be touched on in the courses of medicine and surgery is an injustice to students and to the institution. Providing for instruction simply by permitting students to take electives in these subjects is almost equally unjust. The curriculum that places in a group of electives subjects of fundamental importance is neither well balanced nor properly conceived. That this principle will not be conceded by thoughtful teachers seems unbelievable. This being granted, there remain the problems of time and place. There is no lack of agreement that the medical curriculum at present is overcrowded; but this fact cannot be accepted as an excuse for omitting from the course of study those fundamentals that are necessary. I am in agreement with those who believe that in order to accommodate the necessary subjects, the curriculum must make room at both ends of the present four-year course of study. This means that the colleges must accept some of the burden of premedical work which is now included in the four-year course, and also necessitates adoption of a fifth year into which may be placed some of the clinical work included in the third and fourth years of the medical course. The growth of medical science necessitates procedures of this sort. In this way lies success of medical education; in any other way lies failure.

The place in which pathology of function is to be taught cannot be single; it must be multiple. If the preclinical subjects are to be taught as a part of technical education in medicine rather than as abstract science, it is necessary that there shall be brought to the attention of the students certain variations from the normal which constitute part of the process of disease. The clinic concerns itself largely with manifestations of disease, or, in other words, with pathologic physiology in the broadest sense, from which are interpreted not only the outlines of treatment but also the diagnosis of disease. The disease is manifested in a group of functional disturbances which may or may not be dependent on demonstrable morbid anatomic alteration of an organ or group of organs. The question then arises as to how far one is justified in taking into the course in pathology a consideration of the alterations that accompany the changes of form. There is little doubt that the pathology of the dead, so far as it concerns the great bulk of medical students, is a study of death and not of life. The ideal of teachers of pathology is to make the subject an exposition of the causes, processes and results of disease. Therefore any method that brings clearly to the mind of the student the fact that he is studying, in pathologic anatomy, only the end-results of disease is of the utmost pedagogic importance. That these methods include only those of experiments on animals is entirely erroneous, for a proper correlation with clinical branches makes it possible for the clinician and pathologist to cooperate at least in certain exercises, so as to emphasize the fact that the lesion studied is similar to that found in the living patient.

The teacher who can attain this ideal can well afford to sacrifice some details of pathologic anatomy or pathologic histology, for his larger object is to aid in the training of physicians, and not simply the production of students with a facile, though evanescent, knowledge of pathologic morphology. The advantage of including studies of function in the course in pathology is twofold, in that such a procedure makes the subject a living subject and at the same time is of great value in the development of a well-trained graduate. I am by no means insistent that the course in pathology should include the list of experiments published by my distunguished teacher, R. M. Pearce,[4] in spite of the fact that I am firmly convinced that all these experiments have an important bearing on the subject. The student learns more by doing than by seeing others do and, accordingly, it would seem more desirable to have a large number of students do a small number of experiments in which all can partake, than to have a small number of students do a large number of experiments and demonstrate to the remaining members of the class. It must be conceded, however, that there is an irreducible minimum of essential experimental procedures, and the individual teacher must accommodate his facilities and training to the number of students in his classes. If, however, the student is limited to observation on animals he is likely to lose sight of the application to human medicine, in spite of the most earnest direction of his teachers. Therefore a certain amount of clinical correlation[5] should be attempted. As an example, one might say that listening to a heart murmur produced artificially in a dog would have relatively little significance unless the student is able also to listen to a murmur in a living patient. Correspondingly, the study of alteration of secretory effectiveness of the kidney in an artificially produced nephritis is of little value unless the student can be shown the same sort of test as applied to human cases of nephritis.

As concerns general pathology, more particularly the phenomena of inflammation, the mere fact that bacterial infection may produce certain types of inflammation is insufficient unless there is correlated with this the development of immune processes. I shall not discuss in extenso the position of immunology in the medical curriculum, that is whether it should be taught in the division of pathology or in the division of bacteriology. That it should be a part of the medical curriculum as a required subject is

4. Pearce, R. M.: The Teaching of Experimental Pathology and Pathological Physiology to Large Classes, Bull. Johns Hopkins Hosp. **22**: 249, 1911. Karsner, H. T.: The Function of the Experimental Method in the Course in Pathology, Boston M. & S. J. **167**: 511, 1912.

5. Karsner, H. T.: The Experimental Method as Utilized in the Clinico-Pathological Conference, Boston M. & S. J. **170**: 723, 1914.

indicated by action taken on the part of certain of our medical schools in the recent past. Furthermore, the study of inflammation and infectious disease as a part of general pathology is fruitless unless the immunologic phases are considered and at all times supported by experimental study.

The institution of special departments of experimental medicine or of research medicine does not in any way absolve the teacher of pathology from pedagogic methods of the broadest scope or from bringing to the attention of his students, from the experimental point of view and from the clinical aspects, the living nature of his subject.

CONCLUSION

Let me express again the firm conviction that pathologic morphology is the fundamental basis of this subject from the teacher's and investigator's point of view, but that this method alone is not sufficient to meet the demands of modern medical education and investigation. Time for the study of pathology of function in the course in pathology should be found, even if it involves some sacrifice of detail in the study of morphology. The place for teaching pathology of function is in every department of the medical school. It may be emphasized in one department or another as local conditions necessitate, but if it be omitted in any department, that department is not fulfilling its proper duties toward the training of students, the advancement of medical education, and the forwarding of the investigation of disease.

A PLAN FOR A GRADUATE COURSE IN PEDIATRICS FOR GENERAL PRACTITIONERS

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The department of pediatrics which offers instruction to graduates should be prepared to give courses of five different types in order to meet the needs of various classes of students. These five types should be planned as follows:

1. For general practitioners who wish to improve their general knowledge of pediatrics and to become acquainted with the recent advances in the subject.
2. For general practitioners or recent graduates who wish to become specialists in pediatrics, but not teachers or investigators.
3. For those who wish to become teachers and investigators as well as specialists in pediatrics.
4. For general practitioners living in the vicinity who wish to familiarize themselves with pediatrics.
5. For specialists in pediatrics who wish to undertake special investigations.

I shall consider, however, only the first type of course, that intended for general practitioners who wish to improve their knowledge of pediatrics and familiarize themselves with the recent advances in the subject. Such a course should be continuous throughout the year and so arranged that physicians can enter it or leave it at any time. In this way only can it properly meet the needs of general practitioners, who are not always able to leave their work at a definite time and remain away for a fixed period, as is necessary if a course is given only during a part of the year and is of fixed duration. It is of great advantage to them to be able to begin their work the day that they arrive and to continue it up to the time that they have to leave. They should, however, be made to understand that it is far wiser for them to take the course for at least a month, and better, for three months. The course should occupy the whole of every day and should be so arranged that it may be taken for a part of the day only or all day for part

TABLE 1.—ARRANGEMENT FOR A COURSE OF LECTURES

1. Diphtheria.	20. Acid intoxication.
2. Exanthems.	21. Diseases of the blood.
3. Exanthems.	22. Congenital heart disease.
4. Infant feeding—metabolism.	23. Acquired heart disease.
5. Breast feeding.	24. Bronchitis and bronchopneumonia.
6. Artificial feeding — general principles.	25. Pneumonia and empyema.
7. Calculations in home modification.	26. Diseases of thymus and status lymphaticus.
8. Indigestion in infancy.	27. Diseases of the kidney.
9. Indigestion in infancy.	28. Pyelitis and enuresis.
10. Infectious diarrhea.	29. Tuberculosis in infancy.
11. Other diseases of digestive tract.	30. Tuberculosis in childhood.
12. Feeding of older children.	31. Congenital syphilis.
13. Premature infants.	32. Infantile paralysis.
14. Congenital malformations.	33. Cerebral paralysis.
15. Diseases of the new-born.	34. Feeblemindedness.
16 Diseases of the new-born	35. Meningitis.
17. Scurvy.	36. Infant mortality.
18. Rickets.	37. Infant welfare.
19. Spasmophilia.	38. Infant welfare.

of the days, if desired. Such an arrangement allows physicians to divide their time between pediatrics and some other subject or subjects, if they wish. It may be argued that a physician who takes the course for only a week or two, or for half a day for a few weeks, will not learn much about pediatrics. This is unquestionably true; but if he attends but one exercise and learns but one new point at that exercise, he is better off than he would be if he had not taken that one exercise. For my part, I can see no reason why we should not try to teach a man a little, simply because we do not have an opportunity to teach him much.

The work of a course of this sort must necessarily be largely clinical. It should be given partly in the wards of the hospitals and partly in outpatient departments, in order that the physician may see both ambulatory and bed patients, because, if only one type is seen, the range of diseases covered is limited and the instruction is onesided. Special attention should be paid in this clinical work to the newer developments in pediatrics about which the general practitioners are not likely to be well informed. Special opportunities should also be provided for instruction in the details of physical examination for those who are weak in it. This clinical instruction must, of necessity, be rather unsystematic, because it must depend, of course, on the patients who happen to be in the wards or come to the outpatient departments at the given time.

It is important, therefore, to have a systematic course of lectures given as a part of the work. This course of lectures should be so arranged as to cover all the more important subjects in pediatrics. This can be done in three months, if the lectures are given three times a week; in six weeks, if the lectures are given daily. Another course should be begun as soon as one is finished, so that the lectures may go on continuously. A student can, therefore, if he stays six weeks or three months, as the case may be, get the

whole course, no matter when he begins. A reasonable arrangement for such a course is given in Table 1.

These lectures should not be of the same type as those given to undergraduates. It should be taken for granted that the graduates are familiar with the rudiments of the subjects. These should be passed over quickly, therefore, and the chief stress laid on details, the newer developments in our knowledge, and new methods of treatment.

Most general practitioners are out of practice in laboratory work or are unfamiliar with the newer methods, especially as applied to pediatrics. Provision should, therefore, be made for instruction in the ordinary clinical laboratory methods. This should cover at any rate the examination of the blood, urine, stools and cerebrospinal fluid. One afternoon a week is sufficient to do this superficially, but two are better. Instruction in the technic of more complicated procedures, such as the Wassermann test and the examination of the blood for sugar and nitrogen, can hardly be given in a course of this sort. If graduates wish instruction in laboratory methods of this kind, they should get it in some of the other courses.

TABLE 2.—SCHEDULE FOR MARCH

MORNINGS:

Monday:
9 a. m., Massachusetts General Hospital, Dr. Talbot and Assistants.
12 m., lecture, Harvard Medical School, Building A, Room 208.

Tuesday:
9 a. m., Children's Hospital, Dr. Morse and assistants.
12 m., lecture, Harvard Medical School, Building A, Room 208.

Wednesday:
9 a. m., Infants' Hospital, Dr. Dunn and assistants.
12 m., lecture, Harvard Medical School, Building A, Room 208.

Thursday:
9 a. m., Boston Dispensary, Dr. Ladd and assistants.
11 a. m., clinic, Infants' Hospital, Dr. Dunn.

Friday:
9 a. m., Infants' Hospital, Dr. Dunn and assistants.
12:30 p. m., clinic, Children's Hospital, Dr. Morse.

Saturday:
9 a. m., Children's Hospital, Dr. Morse and assistants.

AFTERNOONS:

Monday:
3-5 p. m., Boston Dispensary, Dr. Ladd and assistants.

Tuesday:
3-5 p. m., contagious department, Boston City Hospital, Dr. Place.

Wednesday:
March 3, 3-5 p. m., Children's Heart Hospital, Dr. Eustis.
March 10, Walker-Gordon Farm, Dr Sylvester
March 17, 3-5 p. m., Baby Hygiene Association Clinic, 70 Emerald Street, Dr. Young.
March 24, 3-5 p. m., Children's Heart Hospital, Dr. Eustis.
March 31, 3-5 p. m., Baby Hygiene Association Clinic, 70 Emerald Street, Dr. Young.

Thursday:
3-5 p. m., Massachusetts General Hospital, Dr. Talbot and assistants.

Friday:
3-5 p. m., Laboratory, Harvard Medical School, Building C-II, Room 393, Drs. Grover, Hill, Percy and Wyman.

The physicians taking such a course should also be given an opportunity, as a part of the course, to see something of the workings of a good social service department and of infant welfare clinics or milk stations. They should, in addition, not only be encouraged to read, but also told what to read. It is advisable to have a list of the best and most recent literature on each subject prepared and placed at the disposal of the students. Incidentally, the student should be given a schedule, showing in detail just what the exercises are each day and where they are held; otherwise he is almost certain to go astray. The schedule given in Table 2 is illustrative of a month's work in such a course, as given at the Harvard Medical School.

It is comparatively easy to plan a course of this sort; it is another matter to make it a success. It cannot be a success unless all the instructors are interested and enthusiastic. They must be willing to put as much time and energy into it when there are only two or three students as when there are ten times that number. They must always have in mind how much they can give to the students, not how much they can get out of it. Such a course cannot be a success unless the head of the department and the older instructors do a considerable part of the teaching. It will almost certainly be a failure if the teaching is left entirely to the younger members of the department. They should, however, be given their share of the work, as in this way they get an opportunity to lecture and do more advanced teaching than they ordinarily do with the undergraduates. Finally, if such a course is to be successful, every one in the teaching staff must be prepared to do his best gladly and enthusiastically at every exercise, realizing that the more of himself he puts into his teaching, the more the students will get out of it.

70 Bay State Road.

HOW THE PEDIATRIC TEACHING OF NUTRITION MAY AFFECT THE NATION'S WELFARE *

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In the management of early life, nutrition forms the most important factor, and the building-up process naturally depends on proper food. Any serious mistakes made at this time soon show their effects and are difficult of compensation. Growth is to be stressed in addition to repair and heat production, and, as the two latter elements need only to be considered in adult life, the child stands in a nutritional class by himself.

It is a truism to state that proper nourishment forms the foundation of satisfactory growth and enduring health.

The pediatrician is often consulted by the general practitioner in obscure or difficult cases, and he determines what shall be taught mothers concerning nutrition during the period of most active growth, when the physical foundations of the entire population are being laid. Therefore, pediatric teaching of nutrition plays an important part in national affairs, although this may not be generally recognized.

The importance of this subject has been emphasized by observations during the recent war period. The large number of young men rejected by the draft for physical reasons, averaging one in four, at once attracted attention. Various investigations have also shown an alarming amount of malnutrition among schoolchildren. During 1917 and 1918, the health department of New York estimated that about 20 per cent. of the children in the public schools were suffering from malnutrition. This condition is not always limited to the poor, but is found to a certain extent among all classes. It is thus due to a failure in the proper selection and preparation of food materials, in addition to pov-

* Read before the Section on Diseases of Children at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

erty. The question naturally suggests itself as to how much of physical defectiveness and malnutrition is the result of teaching faulty theories of nutrition. This subject has at last gotten away from theory and is being based on experiment. It is now possible to consider the various theories of infant feeding in the light of knowledge obtained by animal experimentation.

The literature of infant feeding during the last twenty-five years has been based principally on divergent theories of pediatric authorities. For a long time the steady gain in weight by an infant was considered a demonstration that its food was satisfactory, but many animal experiments have shown that poor growth and rapid gain in weight may go together, and that some individuals who are of satisfactory weight may really be stunted. The important thing is to see that gain in weight is the result of real growth and not of simply storing water and fat in the tissues. Failure to distinguish between gain in weight and true growth, therefore, may result in poor physical development and malnutrition among children as well as in domestic animals. From the standpoint of the infant, insistance on breast feeding, as stressed by Sedgwick and others, will give the best nutritional start. If not entirely sufficient, complemental feeding will enable the breast to continue its work. The principal mistake has been in neglecting the breast and in holding wrong theories on artificial feeding.

A few years ago it was taught that food should be selected according to its chemical composition, as all foods were composed of proteins, fats, carbohydrates, mineral matter and water, in varying proportions.[1] The suitability of a food thus depended on the quantity of these elements present, and artificial feeding consisted in accurately changing and controlling the quantities of these component food substances. Much effort and money were expended on chemical analyses of foods and milks. But if these efforts were desirable in such direction, they did not go far enough. Today it is known that there are many kinds of proteins—the term protein as formerly used having been discontinued; likewise, many forms of fats, carbohydrates and mineral matter. Some forms of proteins will produce growth while others will not; some that will cause growth are more efficient in this respect than other forms. Not all fats are alike in properties or nutritive value, nor are all carbohydrates. It is easy to see how much malnutrition might result from selecting foods on the basis of their chemical composition alone.

At another time a great deal of discussion took place over the supposed necessity of adding alkali to cow's milk in feeding infants to make it have the same reaction as human milk. It has been widely taught that from 20 to 40 grains of sodium bicarbonate should be added to from 4 to 12 ounces of cow's milk. This was then diluted and heated to pasteurize or sterilize the milk in order to make it suitable for infants. The heating changes the sodium bicarbonate into sodium carbonate, which is very alkaline. This was poor chemistry, for the amount added was far in excess of the quantity which would be needed to neutralize the acidity of the milk even if it were sour. The real effect was to neutralize the acid of the stomach and throw the milk in a fluid condition into the intestine for digestion. There may be times when this procedure will be useful, but it must be intelligently employed with the knowledge of what is aimed at and accomplished thereby.

Since the discovery of the so-called "fat soluble A" and "water soluble B" of milk and their relation to deficiency diseases, the routine addition of alkalis to milk acquires a new interest. To quote McCollum,[2] "the work of a number of investigators has shown that 'Water soluble B'. . . . is readily destroyed when an excess of such weak alkalis as soda are added to food." The necessity or advisability of adding soda to milk for infants has been diligently taught to mothers all over the country, and it appears that this practice must be eradicated if milk is to have its full nutritive and physiologic value. This is a striking example of a good food being weakened in nutritive value as a result of pediatricians following an incorrect theory.

A later and popular teaching has been that foods were of value in proportion to the amount of heat they yielded on combustion, this amount being expressed in calories. The animal experiments showing the differences in nutritive value of the various kinds of proteins, fats, carbohydrates and mineral matters have made clear the inadequacy of this method of valuing foods, even if it were not known that much nutrition does not depend on combustion. Under this method very improper foods have been advocated and there can be no doubt as to its responsibility for much bad feeding, showing itself in malnutrition, especially in infants and children during the period of growth. I have recently called special attention to the fallacies involved in the caloric system of food valuation.[3] It is thus evident that much of the theoretical pediatric teaching of nutrition has not been such as to promote the most efficient feeding or the best utilization of admittedly good food. There have been those who for many years have persistently advised the use of cereals with milk as the best form of feeding for infants and children, basing their beliefs largely on the practical results obtained. The cereals were used with the milk not only for their nutritive value, but for physically adapting cow's milk to the digestive tract of the infant, which is quite unlike that of the calf for which cow's milk is produced in nature.

The only objection raised to this teaching was that it did not conform to what was claimed to be theoretically correct. As the theories have been found to be incorrect, the proper basis for judgment rests with the nutritional results obtained by the various methods that have been proposed. It has been found that milk makes cereals more efficient in producing growth, and cereals make milk more suitable for infants from the diluent standpoint.

One of the effects of food not being in a physical form that is natural to the digestive tract has been experimentally shown by McCollum and Pitz. Guinea-pigs died of scurvy on a diet of milk and oats that did not fit their digestive tracts, but the addition of inert matter which prevented the food becoming too solid in the digestive tract caused recovery from the disease. "The peculiar anatomic structure of the alimentary tract of the guinea-pig makes it difficult to thrive unless its diet contains a succulent vegetable which gives the feces favorable physical characters

1. Chapin, H. D.: The Limitations of Chemistry in Infant Feeding, New York M. J., April 23, 1904.

2. McCollum, E. V.: Newer Knowledge of Nutrition, New York, the Macmillan Company, 1918.

3. Chapin, H. D.: Do Calories Measure the Value of Food? J. A. M. A. 73: 1911 (Dec. 27) 1919.

and makes them easy of elimination." Many years ago I showed that the proteins of various milks have a developmental function as well as a nutritive value. Hardness or softness of the curds depends on the kind of digestive tract they are designed by nature to serve and develop.[4]

The practical advantages of cereals with milk as food have recently been demonstrated on a large scale. During the late war, Denmark was subjected to a blockade and the people had to be strictly rationed. According to Hindhede,[5] beef was so costly that only the rich could afford to buy it in sufficient amounts; therefore, to quote, "reliance was placed on our potatoes and the large barley crop, which was given to man and not to pigs as heretofore, with the results that the pigs died of starvation, but the people received sufficient nutrition. . . . The principal food was bread made of whole rye, plus wheat bran and 24 per cent of barley meal, barley porridge, potatoes, greens, milk and some butter. People entered no complaint and there were no digestive disturbances." Sugar was not mentioned, as this is not a necessary article of food and has only been widely used for a comparatively short time. Various sugars that are frequently consumed in excess are not always necessary and are sometimes harmful. It is only during the last three centuries that sugars have been used at all as foods. They are not infrequently the cause of faulty metabolism. Cases have been recorded in which hyperglycemia has been found with little or no glycosuria.[6]

During the year of severe regulation in Denmark the death rate dropped 34 per cent, being 10.4 per thousand. Hindhede says: "It would seem, then, that the principal cause of death lies in food and drink. The people must first have bread, potatoes and cabbage in sufficient quantity, and then some milk. If Central Europe had adopted this plan there would have been no starvation or malnutrition. It seems to me that the German scientists, as represented by Rubner, have not learned anything from the war."

It will be found that practically all experiments in nutrition, whether conducted on animals or on human beings, show the most efficient foods to be cereals supplemented by milk and green vegetables. This is contrary to the common belief that meat, from its similarity to human flesh, is more suitable for conversion into bodily tissue than vegetable protein. It should be remembered that meat is not absorbed as such but is broken down into amino-acids, which are then recombined to make the specific body tissues that are peculiar to each species of animal. The real test for proteins rests in their supplying the requisite kinds of amino-acid, not whether they are of animal or vegetable origin.

One of the most active causes of social unrest and discontent is the high cost of living, and this high cost is largely due to false theories of what is really needed for proper nutrition. One way to lessen this high cost is to diminish the use of animal food and depend more on milk, cereals and vegetables. Proteins, carbohydrates, and even to a certain extent fats, can thus be satisfactorily administered. As food transformers and producers, animals are very expensive. To show the efficiency of various food-producing animals as food transformers, that is, to show what proportion of the food they eat becomes available as human food, Jordan[7] has reduced to a basis of dry weight the intake of digestible nutrients and the output of materials suitable for human food, as follows:

> From 100 pounds dry nutrients: Cows produce 18 pounds milk solids, 9.4 pounds cheese solids, 5.44 pounds butter; steers produce from 2.5 to 3.5 pounds meat solids; sheep and lambs produce 2.6 pounds meat solids; pigs produce 15.6 pounds meat solids; calves produce 8.1 pounds meat solids; fowls produce 4.2 pounds meat solids and 5.1 pounds egg solids.

Hopkins states that "1,000 bushels of grain has at least five times as much food value and will support five times as many people as will the meat and milk that can be produced from it." Meat can never be cheap unless animals can be fed rough materials that would otherwise be wasted, and dairy products cannot be cheap with labor and feed both high. When meat is used, the cheaper cuts, if properly selected and prepared, will serve as well as the most expensive portions.

In countries where population is dense, as in Japan and China, meat and milk are not used to any extent because the food needed to produce them can be used to better advantage by the people, and land is so thoroughly cultivated that there is little or no rough, nonutilizable human food material that could be used to advantage by animals. Zavitz of the Ontario Agricultural College, in an intensive study covering three years, found that in the case of a steer, for each pound of meat as sold by the butcher there was required about 3.9 pounds of milk, 5.9 pounds of concentrates, 7.7 pounds of hay and 20.5 pounds of succulent feed. These data exemplify the fact, already noted, that animals are highly expensive as food transformers.

Pediatricians can render the nation no greater service than to start the feeding of infants and children with foods that will be efficient economically as well as physiologically. Habits and tastes formed in early years have much to do with food customs lasting all through life, and children should be taught to live on simple, nutritious and inexpensive foods. This should form part of their education. The palate must be educated as well as the brain.

An amusing incident of how opinions change at different epochs on the food question, because of habit, is cited in the following quotation from J. Russell Smith:[8]

> There is a pitiful tale of woe in the State Archives of Maryland, where it has rested since it was sent up to the Royal Governor about 1680, by the inhabitants of one of the islands on Chesapeake Bay. They petitioned that he should send them from the royal bounty some food, for they were about to starve. They went on to rehearse that their crops had failed and that they had been forced to such extremities by the approach of starvation that they had been compelled to go down to the bay, dig up oysters out of the muddy waters and eat them.

As the food that is craved, or considered best, is that for which a taste has early been created, it is peculiarly within the province of the pediatrician to influence national food habits. Food costs can often be reduced and better nutrition obtained at the same time. As an example, one of the future sources of

4. Chapin, H. D.: Principles of Infant Feeding as Based on the Evolution of Mammals, Arch. Pediat., July, 1903; Biology as the Basis of Infant Feeding, New York M. J., Nov. 27, 1909; The Function of Milk in the Scheme of Evolution, Scient. Month., January, 1916.

5. Hindhede, M.: The Effect of Food Restriction During War on Mortality in Copenhagen, J. A. M. A. **74**: 381 (Feb. 7) 1920.

6. Chapin, H. D., and Myers, V. C.: Chemical Examination of the Blood in Children, Am. J. Dis. Child. **18**: 555 (Dec.) 1919.

7. Jordan, W. H.: The Feeding of Animals.

8. Smith, J. R.: The World's Food Resources.

protein and fat, as a possible substitute for meat and milk, will be soy beans, which contain twice as much protein and fat as meat. Soy bean gruel flour contains 44 per cent. protein, 20 per cent. fat, 10 per cent. sucrose, 4.3 per cent. ash, 2 per cent fiber and 4.6 per cent. water.[9] It has been used successfully in feeding diabetics and also in nourishing infants when cow's milk is not well tolerated. By combining this flour with other cereals we may produce a fairly balanced diet that may be administered in the form of bread, breakfast porridge, soups, biscuits and even cake. All possible food sources of the world should be searched by scientists to find other food supplies that will be at the same time nutritious and economical. This is one of the most fruitful fields wherein a physician can be of service to the state in trying to allay one of the greatest sources of social unrest. Finally, trial, experience and results, rather than mere theory, must prove the final test of the utility of any plan of nutrition.

ABSTRACT OF DISCUSSION

DR. JOHN FOOTE, Washington, D. C.: Dr. Chapin emphasized the necessity for active interest by this Section in the education of the lay public. He says that one out of every four men examined was found to be physically defective. The U. S. Public Health Service says that one out of every three men examined was found to have some physical defect. When we remember the large number examined, and realize that at least a million men were suffering from physical defects which curtailed their working and earning capacity, we can appreciate what this means economically to the United States. Sir Arthur Newsholme, the great English authority on public health, said a short time ago that they found a similar condition of affairs in England, and that it confirmed a belief they had long entertained, that the function of child welfare work in the education of the public was something that should be vested in the local or national health department, in order that it might be enforced. They found that in England were a great number of persons for whom they could do nothing, because they were suffering from diseases which ought to have been corrected when they were children—perhaps, in the case of some of them, before they were born, by proper education of the mother. That is the condition existing here now. If we are to do anything about it, it is properly a function of the physician, and particularly of those interested in diseases of children. What would we think of a corporation that had no cost accounting system and yet boasted about the great amount of business it did? We have really no cost accounting system in the United States, in respect to infant mortality; in many of the states of the Union no attempt is made to register births; and in some states where birth registration prevails, very little help is given local medical men to enforce it.

DR. LEWIS W. HILL, Boston: The general impression prevailing among medical men, as well as among the laity, is that children need a great deal of protein food, in order to thrive and grow. I do not feel sure that this is true, or that our old standard of 2 gm. of protein per kilogram of body weight is correct. It may be a good deal less than that. Accurate figures of the protein requirements of children are not available. Nobody has any adequate idea as to what these requirements are. Last summer I saw three boys who bore out very well what Dr. Chapin said. I never have seen more healthy boys. They were athletes, ranging from 12 to 16 years old. They were perfectly well in every way. They had always been vegetarians. The mother of these boys wanted to know whether this was a suitable diet for them. They weighed from 10 to 15 per cent. more than normal children of their respective ages, and they were also taller and bigger than most children of those ages would have been. We worked out their nitrogen metabolism and found that they were receiving a very adequate supply of nitrogen, apparently. Those boys had never had any animal food of any sort and still they had developed normally in every way.

DR. HENRY DWIGHT CHAPIN, New York: My object in presenting this paper was to show the wide field that the pediatrician may and should occupy, not only in treating individual cases, but in approaching broad social questions; and this certainly is one of the most important ones. At a time when laboring men are striking and crying for porterhouse steaks, and everyone is feeling that the food question is so very important, we can simplify it a great deal, and the time to simplify it is at the beginning of life. We can give a thoroughly balanced, nutritious diet from the beginning, and carry the child through puberty to manhood or womanhood, with a thorough development on food that is nutritious, and at the same time economical. That is the great public question of the day, and the pediatricians are going to solve it.

9. New and Nonofficial Remedies, 1920, Chicago, American Medical Association, p. 177.

THE TEACHING OF MEDICINE

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I have been greatly interested in recent articles, in THE JOURNAL and elsewhere, dealing with medical education. Foster, Wood, Symmers, Hare, Bastedo and Vaughan have presented various phases of this subject. The report of the Congress on Medical Education and Licensure, with its committees regarding teachers and teaching, is evidence of an increasingly active interest in the problem by that influential body. All this is extremely gratifying to those who are teaching medical students, because inquiry and discussion always mean betterment of existing conditions. Many things might be said for or against numerous questions raised by the foregoing writers or by participants in the congress. Instead, I wish to present a view that is broader than any of these, but which at the same time is intimately related to most of them.

One burden of many of the articles to which reference has been made is that the curriculum of medical colleges is overcrowded. With this all teachers will agree. Yet some departments are insistent in their demands for additional hours in the schedule, and still other subjects possibly should be added. What is to be done? Suggested remedies are few, and excepting that of making postgraduate work of waiting subjects, disappointingly indefinite. So far as I have read, no one has referred to improvement of existing methods of teaching as a possible aid to the overloaded curriculum. I believe that much of a practical nature for the relief of present conditions can and ought to be done by teachers themselves. In this way concrete help may be afforded the more or less abstract efforts of authoritative curriculum makers. I wish to suggest three ways in which the time now used for teaching what is on the schedule may be lessened. If this can be done, scheduled subjects now slighted may be given more time and others may possibly be added.

1. DEVOTE LESS TIME TO LABORATORY INSTRUCTION

In these days of emphasis on laboratory training as a foundation for clinical medicine and when laboratory expansion is a dominant note, this statement may sound as the voice of one crying in the wilderness. Nevertheless, I believe that many hours can thus be saved without detriment to the laboratory side of the

student's education. I do not say, "Give less laboratory instructions"; I do say, "Give less time to it." The two are not synonymous. The problem, as I see it, is one of efficiency. The business man installs filing systems, card indexes and adding machines, shortens methods, systematizes his work, and is able to accomplish much more in less time; then he takes on more business. In my opinion this principle can be applied in our laboratories with a saving of time and no sacrifice of knowledge imparted; in fact, improved methods of teaching should result in the student's learning more in the shorter time.

In illustration: For seventeen years (exclusive of one year in Siam) I have been teaching morbid histology, and I have acquired a very positive belief that eighty well chosen sections are sufficient for this course, instead of from 100 to 150 or more, as are usually employed. With these can be given all the knowledge of morbid histology that a second or third year student should be expected to acquire. This statement is based on observation of how students work in laboratories and on the fact that only a very small percentage (one or two) will study sections after leaving the laboratory. The exact working out of this reduction problem in each laboratory will in the final points depend largely on the individual in charge. Regarding my own method of teaching morbid histology and how I would apply it on the suggested basis, I hope later to write with some detail; that would be out of place in this article, which is intended to be broadly suggestive rather than insistent on personal ideas.

Suffice it to say that the eighty sections should be stained by technicians, the student's time being too valuable to be occupied with this work. Those sections in which the lesion is well shown by hematoxylin and eosin could be kept as loan collections. The others should be freshly stained by van Gieson's stain because many lesions cannot be satisfactorily demonstrated in eosin preparations, though this is often attempted. With this fundamental requirement as to sections, with properly systematized demonstrations (didactic and lantern), and a sufficient number of demonstrators, I believe that a practical, instructive and quite satisfactory course in morbid histology can be given in 100 hours. If so, why use from 175 to 200? We are teaching future practitioners of medicine, not technical laboratory experts; morbid histology is part of a greatly overcrowded course; and the prime object of a medical college is to teach the prevention, diagnosis and treatment of disease. Special work may require further histologic knowledge on the part of a few; this is postgraduate or vacation work, as all specialties must be.

Now, if this reduction process can be applied to morbid histology, why not to normal histology, bacteriology, chemistry, physiology? The questionnaire reported to the congress gives to histology (including organology) and embryology 280 hours. I am asking those teachers whose composite figures are 280 hours whether, in case an official edict (as may well happen) requires less laboratory time in order to balance the curriculum, they could not give students essentially the same facts in 200 or an even smaller number of hours? I feel sure that if thus presented the students will have no difficulty in acquiring them in this lesser time.

In the bacteriologic laboratory are we requiring students to learn the characteristic growth of each organism on six to ten different mediums? This is knowledge which only expert bacteriologists have the least reason for possessing. In the physiologic and chemical laboratories are there exercises which theoretically appear desirable but which really are nonessential, or are beyond the capacity of the student to grasp or the curriculum to accommodate? Is biologic chemistry justified in asking for 260 to 280 hours? I ask these questions as a laboratory teacher and a firm believer in the value of laboratory training. Are we doing what we should do in the least possible time or can we do this essentially as well in less and hand over to the student a goodly number of hours to be used in the study of patients? I have stated what I believe I can do in my branch.

Army officers report that one of the noticeable things in the medical service of the training camps during the war was the inability of graduates of recent years to make physical examinations and give a diagnosis. More bedside instruction of students is very properly the suggested remedy. But whence are the hours to come? I believe that a not far distant future will point to the laboratories. Let us, then, to use a phrase beloved of politicians, have "reform within the party" before it is forced on us from without. To maintain the valued place of laboratory training in medical education we should not only avoid undue expansion; we should retrench wherever possible.

2. REDUCE THE TIME DEVOTED TO LECTURES

Some lecturers give value received for the hour spent by students listening to them. Many do not. Why not apply the same principle just suggested for laboratory workers, in some of the following ways, for example? Give only the essentials in an orderly form with outlines and headings that students can follow and incorporate in their notes. As a rule, spend little time on theories unless there are no available facts. Quotations from literature should have a minimum of space, even as illustrative quotations. Textbooks are not to be used as lectures; they are for students to read. The lecturer's time is better spent in explaining the content of the book, with homely language and illustration not considered worthy of printing. This is because most textbooks are written in fear of critical reviewers rather than with a righteous regard for the student learner. Lectures should not be intricate dissertations for the delectation of learned men, but clear, concise presentations of the subject at hand, designedly at the level of the student's understanding. Remember you are to hold him to account later for what he has obtained from these hours.

I think that one trouble with us as teachers is that we become more or less fanatical and develop the obsession that our branch is the only one really worth while. Therefore, we must deliver it to students complete—facts, statistics, theories, speculations, probabilities and even possibilities. A very laudable ambition indeed—if possible to execute. But the student can take only a very small, carefully prepared, digestible or even predigested portion of this great mass of knowledge and theory. He has almost to be desensitized to this foreign protein. How easy to give him mental anaphylaxis with a ponderous dose in the shape of a badly prepared, abstruse lecture!

Another reason for lack of preparation and condensation of lectures is pure inertia. (Were I not including myself as a teacher in these statements, I would have used the word laziness.) It is much easier to say a thing in fifty-five minutes than in forty,

or to devote sixty instead of forty lectures to a subject when it has enough material for 100 or 200. Boiling down, systematizing, outlining, selecting, rejecting—all this is time-consuming and tiresome and even vexatious when one has little enough time to keep himself informed of progress in his own branch, to say nothing of related branches. But emphatically it is the business of a teacher so to do. He has no right to do otherwise. It would have been much easier for me to put these few ideas in a ten-page article instead of the length it is. But I have no right to ask you to read so much to get a little. And yet you can read this or not as you choose; the student must get the substance of his lectures, no matter how it is served.

How, then, can we apply the reduction process to lecture courses? By condensing, by giving fundamentals instead of recent unproved speculations and experiments. Instead of a continuous talk with no divisions, give headings and points; you, as well as the student, can follow it much better. Cut the regular course 10, 20, 30 per cent. in time. If the one hour period be deemed the best length for lectures, reduce the number. Dividing the session into at least two terms will aid in this. With the whole session as a term it is very easy to extend through it a course of lectures that really could be given in considerably less time. The shorter term will help condense the work. I am not one of those who believe that didactic teaching should be entirely eliminated. Lectures permit giving to an entire class systematic instruction that cannot as well be given in laboratory or ward. But much can be done toward lessening the time devoted to them.

3. SAVE TIME BY MORE INTIMATE CORRELATION OF DEPARTMENTS

This means real teamwork. To institute it, the members of the faculty and their first assistants should meet and arrange in exact detail the subjects and parts of subjects each department is to handle. For instance, that portean subject inflammation is discussed in some of its phases by every department, and necessarily so. But only one department should deal with the general pathology of inflammation as a tissue process. That department is pathology, because it has the gross and microscopic material with which to demonstrate the tissue changes. Then the surgeon and gynecologist and obstetrician and others should not take up these points. Let them deal with the symptoms and diagnosis and treatment of inflammation of the organ they are discussing. Let them tell what to do with abscess of the lung or liver or pelvis, but leave out the description of *an abscess*. In the same way the pathologist describes types of inflammation of mucous membranes; the clinician shows cases of these, gives symptoms and treatment, but does not take up half his hour describing catarrhal or diphtheritic or hemorrhagic inflammation as such. Repetition is admittedly the way in which one learns; but the length of the medical course does not permit of several departments giving the same subject.

In the same way a course on surgical anatomy, if it be given, should not spend most of the time with details of descriptive anatomy; problems of the surgeon are to be uppermost. Diseases of the blood are to be handled by the medical or pathologic department, not by both. How much of the subject of syphilis is considered by the genito-urinary department, the pathologic department and the lecturer on etiology? Many similar problems will present themselves in the conferences mentioned. Time can be saved if they are adjusted with the knowledge and consent of those concerned. If left to the dean or the curriculum committee, satisfactory results will not be secured.

But, says some one, I must go over this work that belongs to another department because there it has not properly been taught. This sometimes is too true; but it is very easy to overdo this accusation. Such a spirit engenders sarcastic ideas and references to other departments, and interferes with good teaching. It is so easy for the morbid anatomist or histologist to intimate gently but firmly that he has to spend much time making good the deficient instruction in the anatomic department. And the staff in clinical medicine and surgery and obstetrics bemoan that pathology has not been properly taught. And the pathologist waxes sarcastic over mistaken diagnoses by clinicians.

As a help along this line, I believe that these conferences to divide subjects can well discuss methods of teaching and their results as viewed by other departments. Let the various branches compare notes and the teachers say to each other in a friendly spirit what they have been saying to others in sarcasm or hurtful criticism. Determine what is needed from each to give students a well balanced course, and then each do his part. Each should be willing to give up teaching hobbies if these do not fit in the general scheme or are not conducive to real teamwork. Finally, if there is a department that really is not doing its work properly or will not cooperate with the others, these conferences will show this and the governing board can act accordingly.

In connection with these teachers' meetings, it should be noted that I suggested the inclusion of first assistants (whatever their title), not only because they spend much more time with the students than do the heads of departments (in other words, do most of the teaching) but also because they get more of the student's point of view. The student dare not approach the professor with his difficulties, but he feels fairly free to unburden himself to assistants. And I am speaking not only for the student body but also for the teachers when I say that the ideas and suggestions of the former are not to be disregarded. They are young men, many of them well along in the twenties, and not a few of them have previously taught school. And every one knows whether the teacher, whether professor or instructor, is presenting his subject in a way that can be understood. They are not to be asked to prepare the curriculum or to decide just how subjects are to be taught, but their comments on the effectiveness of teaching methods are most valuable. I have learned much from students.

CONCLUSIONS

The medical curriculum is now overcrowded, and still other subjects in modern medicine are waiting to be added.

The demand for increased hours for subjects now on the schedule, especially laboratory branches, is making worse, instead of relieving, this condition.

In this article are offered suggestions for practical relief by lessening the number of hours given to each subject, except the actual study of patients.

The principle advanced is that of applying efficiency methods to teaching, with the idea of imparting the

same knowledge in less time. In laboratories, condense to essentials; in lectures, give systematized fundamentals without aiming at entirety; between departments, secure real teamwork.

The medical school that effectually utilizes this principle will be blessed by its students and honored wherever its graduates may serve.

THE DIAGNOSIS OF HUMAN PLAGUE

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Much has been written on the diagnosis of bubonic plague in rats and other rodents, but very little has appeared, in this country at least, concerning the disease as it appears in man. Diagnosis is a matter of much more than academic interest, particularly to physicians resident in our seaports, for it is the prediction that it is only a matter of time when this disease will appear in many if not all of the seaports of the United States. When infection does occur, the first observed manifestation will be a human case, and for the diagnosis of this dependence must primarily be placed in the practicing physician.

The early discovery of the occurrence of plague infection in a community is of supreme importance. In the United States, methods of control have been developed which can with certainty be depended on to limit and eradicate plague infection. If the infection is discovered early, control measures can prevent hundreds of human cases and can almost at once eliminate the danger of spread to other cities; hence it certainly behooves us to be acquainted with at least the principal clinical signs and symptoms.

Unfortunately, textbooks give little attention to plague, and their descriptions of the disease are usually generalizations without outstanding points that may stay in the reader's memory. There are good descriptions of plague in the literature, but mostly these are in books on tropical medicine, too seldom studied by the average physician. For a more extended description than is given herein, the reader is referred to Stitt's [1] "Diagnostics and Treatment of Tropical Diseases." Since my intention is to emphasize the "high points" of plague, no lengthy or very detailed description is being attempted.

TYPES OF THE DISEASE

Plague occurs in four forms, only one of which far exceeds the others in importance. They are, in order of frequency and importance to the American physician, bubonic, pestis minor, septicemia and pneumonic. Of these, bubonic is far and away the most important to us, since it is the type that is most likely to occur in this country. Recently there has been a small outbreak of pneumonic plague in one of our western cities, and it is realized that should another such outbreak occur and get beyond control, a fearful epidemic might ensue; but the chances of this are regarded, on good grounds, as remote compared with those of bubonic cases making their appearance.

Bubonic Plague.—There are three principal symptoms of this type of plague, and one clinical sign, surely a small array to remember. The symptoms are sudden onset, rise of temperature and marked prostration. The sign is the bubo. The onset is usually quite sudden, the patient feeling well in the morning, say, and very sick before the end of the day. At onset frequently appears mental haziness and disordered motor coordination resembling similar conditions in some stages of alcoholic intoxication. A chill is quite common. The temperature varies from 100 to 106 F., with 102 as the average. Prostration is as marked as in severe influenza, or more so; on the fourth or fifth day of the disease the patient is apt to be semicomatose and limp as a bag of meal. These signs may vary in degree, cases sometimes being seen which merge into pestis minor. The usual picture is that of a very sick man with temperature of 102 or thereabouts, who complains of a bubo. Minor symptoms are full but rapid and compressible pulse, injected conjunctivae and flushed skin. The important point is the association of these symptoms with a bubo. The plague bubo is characteristic.

The bubo, nine times out of ten, is femoral and virtually always on one side only. Occasionally axillary buboes occur due to infection through flea bites on the hand or forearm, and very rarely the glands of the neck are the ones affected. Since, however, the rat flea usually bites man on the lower portion of the leg, we find that scarpa's triangle on one leg or the other is the site of election. It is not to be inferred from this that the inguinal glands above the bubo are normal—far from it, as a rule; but usually a glance is enough to determine that the main mass is below Poupart's ligament, though a lesser swelling frequently appears above it.

The bubo has four main characteristics: It appears coincidentally (approximately) with the onset of the disease; the swelling is caused by infiltration of the tissues with fluid at least as much as if not more than by enlargement of the glands; the skin immediately over the bubo is hot and red; and the mass is exceedingly tender and painful to the touch. The bubo is an entity: not a string of enlarged glands, but a mass of acutely engorged necrotic glands embedded in gelatinous inflammatory tissue. It appears suddenly and does not suppurate until a week or two after the onset, if at all. Unlike venereal buboes, it shows a broad, flat surface, seldom coming to a point. When seen within the first three or four days, the individual large glands can be made out; thereafter the infiltrated tissue toughens and only a large, hard mass is palpable.

Minor signs are palpable spleen, large liver and occasionally the presence of a blister or "phlyctenule" on the extremity carrying the bubo. The last occurs only in about 5 per cent. of cases, but should always be searched for because, if found, it renders diagnosis exceedingly easy, smears from the contents revealing the typical *B. pestis* in tremendous numbers. These phlyctenules resemble blisters with turbid contents; they vary from one-half inch to an inch and a half in diameter.

Pestis Minor.—Pestis minor is the mild form of bubonic plague. It differs from the description above in lacking a sudden onset and prostration; fever is usually present for two or three days, with general malaise. The bubo is quite characteristic, but is likely to develop more slowly. These cases are usually seen late, when the bubo is hard and only moderately tender. The patients usually recover, the bubo being slowly absorbed, occasionally suppurating. Cases in which

1. Stitt, E. R.: The Diagnostics and Treatment of Tropical Diseases, Ed. 3, Philadelphia, P. Blakiston's Son & Co., 1919.

the patients do not recover pass into the more severe type.

Septicemic Plague.—This is the type in which there is an overwhelming infection of the blood, with death in three or four days, without the appearance of buboes. It need not be considered at any length here, for the reason that its diagnosis without previous knowledge of the existence of plague in the community is hardly to be expected. All that the physician sees is a patient who has suddenly been taken very ill, and who dies without showing any definite evidence of what ails him. At necropsy it can be diagnosed definitely if smears and guinea-pig inoculations are made from liver and spleen.

Pneumonic Plague.—In pneumonic plague, we have a relatively rare form of the disease which, however, being directly contagious, is highly apt to become epidemic when it does appear and with disastrous results. It is unlikely to occur in the Southern cities, but from San Francisco and Norfolk on the two coasts North it must be borne in mind as a possible menace.

Primary pneumonic cases seldom occur in warm climates, since for direct droplet infection of the respiratory passages it has been definitely shown that conditions preventing even moderately rapid drying are necessary. For example, the great epidemic of pneumonic plague in Manchuria was associated with tightly closed native homes and a severely cold winter, while in India where pneumonic involvement from axillary buboes is not uncommon, primary pneumonic infection of attendants on such cases is rare.

Plague pneumonia differs from other forms of pneumonia on three points: After sudden onset, the patient is extremely prostrated with almost no chest signs; by the time definite involvement of the lungs is demonstrable, the patient dies. The sputum is watery, never thick and tenacious, and soon becomes very bloody; the sputum contains typical *B. pestis* in large numbers. Pneumonic involvement occasionally supervenes in bubonic cases.

DIAGNOSIS

Plague is one of the few diseases which can be absolutely diagnosed by the bacteriologic findings. Any case still showing well marked signs or symptoms can be positively shown either to be plague or not plague by proper laboratory methods. *Bacillus pestis* can always be found, if it is present.

Procedures for Recovery of the Organisms.—In bubonic plague and pestis minor, the organism is obtained by inserting the needle (18 or 20 gage) of a syringe into the bubo, going into a gland, if palpable, and aspirating some of the gland juice. One or two drops is usually all that can be aspirated, but this amount is quite sufficient. Most of this is used to make smears, after preparation of which 1 or 2 c.c. of salt solution, or just water, are drawn into the syringe, shaken up a bit and portions of it injected subcutaneously or intraperitoneally into two guinea-pigs. In 90 per cent. of cases of plague the characteristic bipolar bacilli will appear in the smears; in 99 per cent. of cases, one or both of the guinea-pigs will die within ten days, showing the characteristic injection, bubo, large liver and large, granular spleen, with the bacilli present in great number in smears. Intraperitoneal injection causes earlier death of the guinea-pigs, but without the appearance of bubo or markedly granular spleen. It has the advantage of speed and the appearance in the peritoneal exudate of a practically pure culture of *B. pestis*.

In suspected septicemic plague, 3 or 4 c.c. of blood is drawn, thick smears made and guinea-pigs inoculated. In only a few of these cases will the smears be positive, but the guinea-pigs are quite reliable, having been proved susceptible to as few as three or four bacilli.

In pneumonic plague, *B. pestis* is present in ever increasing numbers in the sputum. Guinea-pigs should be inoculated for production of the characteristic lesions in all cases, since the microscopic appearance, except to the eye of an experienced observer, is not a reliable guide.

In preparing smears, they should be made reasonably thin. After drying in air, they should be fixed by passing once or twice through a flame and then stained with carbolthionin, carbolfuchsin or Loeffler methylene blue, preferably the former when obtainable, since it brings out best the bipolar staining. The plague organism is a relatively short, thick, rounded end or oval bacillus. When it is present in smears from tissues at all it usually occurs in considerable numbers; a diagnosis should never be based on two or three bacilli. Smears showing *B. pestis* have three principal characteristics: The bacilli are lightly stained and a considerable proportion of them show distinctly heavier staining at the two ends, shading down to the central portion, which is almost completely clear (the proportion of bipolar stained individuals varies very much in different smears, but is almost never 100 per cent). The individuals vary markedly in size from short coccobacillary and round coccoid forms to rods two or three times as long as wide, with all intervening sizes. There is no particular arrangement, chains are not formed, and individuals do not lie parallel. In smears from human buboes it is not unusual to find plague bacilli inside of phagocytes.

When any case suspected of plague infection has progressed to the point of finding what are believed to be specific organisms or suspicious lesions in guinea-pigs, it should be reported to the proper health authorities as a suspicious case, the absolute determination of the specificity of the organism, which is a somewhat complicated procedure, being placed in the hands of a competent bacteriologist.

POSTMORTEM APPEARANCE

The postmortem appearance of human cases differs somewhat in the various types, except that in the bubo and hemorrhagic pneumonia there are no very marked gross lesions. The bubo cannot be "shelled out," but must be dissected out. On section it shows the large hemorrhagic, necrotic or caseous glands embedded in a mass of blood-stained more or less gelatinous inflammatory tissue. Only the glands themselves are necrotic. The viscera show marked enlargement and congestion of the spleen and liver. Smears from spleen, liver and bubo show *B. pestis* usually in profusion. In plague pneumonia, large areas of hemorrhagic, necrotic consolidation of the lungs appear with plague bacilli in great numbers. Guinea-pigs should always be inoculated for confirmation.

In closing, it is proper to emphasize the statement at the opening of this paper that the probability of plague eventually appearing at our seaport cities makes the diagnosis of human cases a matter of highly practical importance and not academic interest.

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CLINICAL MANIFESTATIONS OF INFECTION OF THE LATERAL SINUS*

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Infection of the lateral sinus we submit as a comprehensive term covering the subdivisions usually spoken of as phlebitis, sinus thrombosis and septicemia. The object of this paper is to differentiate these types, if possible, more clearly, in order that it may be shown that the diagnosis is often exceedingly difficult, even when the facilities of a large hospital are at hand, that the dangerous types may not have thrombosis, and that the cases in which the operative findings disclose complete blocking of the sinus extending back to the torcular have developed more slowly and are the least dangerous. Although this subject is one that has been discussed many times, yet no one will deny that many cases are still being overlooked. This is particularly true in children and in adults when the symptoms are atypical. It is probably true in the past that we have attempted to define too specifically the clinical picture of a complication resulting in infection of the lateral sinus in which the specific organism varies, and where no account is taken of the amount of toxins thrown into the circulation, whether it has been gradual or sudden or of the resistance of the host. This complication is not then a disease entity resulting from a specific infective organism, but must vary in its clinical manifestations with almost every case. Instead of a so-called typical picture with a chill, a sudden rise of temperature of 104 to 106 F., followed by a subnormal remission and sweating, there may be no chill, no temperature over 100, no subnormal remission or sweating; about the only thing common to all being an increased leukocytosis. If the blood stream has been invaded to any appreciable extent there must be an increased leukocytosis. The three cases here reported show three distinct types with temperature charts bearing no resemblance to each other, and yet it was necessary to ligate the jugular in all.

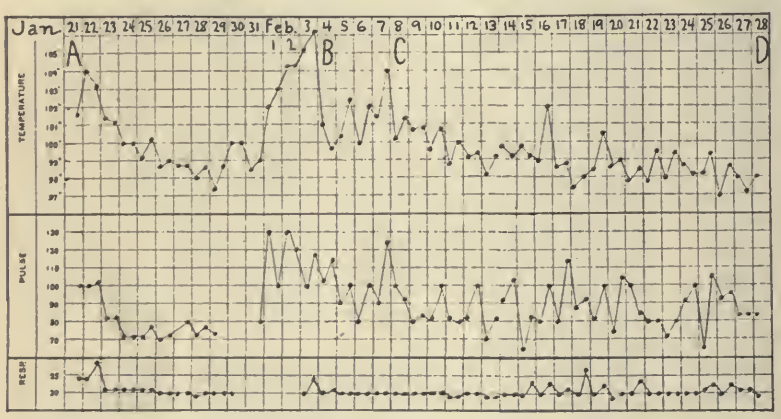


Chart 1.—Temperature, pulse and respiration in the case of P. B.: *A*, mastoid operation at Eliot Hospital; *B*, secondary mastoid operation and ligation of jugular; *C*, white blood cells, 17,400; *D*, discharged.

PATHOLOGY

The operative findings in mastoiditis in which the sinus is exposed give us no certain evidence as to the present or probable development of a thrombus in the lateral sinus or of the blood stream being invaded. We may have a perisinus abscess with the lateral sinus uncovered. The sinus wall may not appear normal in color, and may or may not be covered with granulations. There may be undoubted resistance to the touch from thickening of the wall, and yet no infection of the blood stream has resulted. On the other hand, there may be left a thick and healthy looking plate of bone over the sinus with infection already present. The exposed sinus, thickened wall, or change in color are only suggestive, although the first stage, especially when a thrombus is found, is usually a phlebitis involving the thickness of the vessel wall and resulting in roughening of the intima. While this in most cases is secondary to a suppurative otitis media and mastoiditis, one case was recently reported by Mosher in which the infection was an extension from a peritonsillar abscess. Other cases have been reported as secondary to a labyrinthitis, and in many the blood is the avenue through which the infection reaches the sinus. Again, at the time of the mastoid operation, if this has been performed during the congestive stage before the bone inflammation has been walled off by leukocytes, the operator may fail to remove all infected cells. These cells about the sinus may later break down, and three or four weeks after the original operation there may suddenly develop symptoms of sinus infection.

This is shown in the case of P. B. (Chart 1), seen in consultation Feb. 3, 1920. Eleven days after the primary mastoid operation following influenza, the temperature suddenly rose to 106, with a remission to 94.4. The boy was distinctly toxic, mentally clear, with a leukocytosis of 22,000 and 92 per cent. polymorphonuclears. His reflexes were within normal limits and there was no papillitis. The mastoid cavity was filling in with rather flabby granulations. There was tenderness over the emissary vein, with slight edema. The next day the mastoid was reoperated and the jugular ligated. Much soft bone was found at the tip and around the sinus; when the sinus was opened there was a gush of blood but no thrombus. The toxemia was in evidence clinically over a longer period than usual, on account of the poor resistance of the patient. His recovery was uneventful.

While the sinus infection may not be present at the time of the mastoid operation, if the sinus has been exposed, more bone should be removed and the edges made smooth in case it needs to be opened later. In the preinfective stage, if the invasion of the sinus has been slow and the infecting organism of low virulence, the resulting thrombus is likely to be large and even extend to the torcular.

In the case of A. M. G. (Chart 2), the ligation was performed one month after the primary mastoid operation. In the interval the patient had had an attack of whooping cough. At the end of three weeks the patient commenced to cry bitterly for ten minutes after coughing, grasping her head with her hands. Before this she was very quiet. There was no discharge from the middle ear, and the mastoid was healed, except for a small pustule over the tip. There was an increasing leukocytosis, which reached 26,000. There were no focal symptoms. Physical examination by a pediatrician was negative. The temperature was coming down, but the pain on coughing remained and the leukocytosis was increasing. It was thought best to explore. The mastoid was reopened. The aditus was found shut off, and the mastoid

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

cavity in the region of the antrum was healed. There was soft bone around the sinus, however, and the sinus wall was found thickened and covered with granulations. After ligation of the jugular, when the sinus wall was incised, there was found a thrombus that extended back so far that no attempt was made to remove it. A section of the sinus wall was removed and the usual packing applied. Recovery was uneventful.

These patients often undoubtedly recover without the condition being recognized. On the other hand, if a large amount of infective material of high virulence is suddenly thrown into the circulation, there may not be any thrombus found on opening the sinus. The incision of the sinus wall will be followed by a sudden gush of blood flooding the entire field, unless controlled by pressure. These are the cases in which ligation is urgent, for we now have a septicemia which will be followed by metastases if the general circulation is not shut off.

SYMPTOMS

Local.—The most constant in my experience has been edema and tenderness over the emissary vein. This, however, is only suggestive, for it is present in perisinus abscess and in some cases of mastoditis. When the primary periostitis over the cortex has subsided and is followed by edema and tenderness over the emissary vein as a later development, we expect that there is active trouble around the sinus. Of less importance, because more rare, is tenderness over the upper part of the jugular vein. I have seen it only a few times.

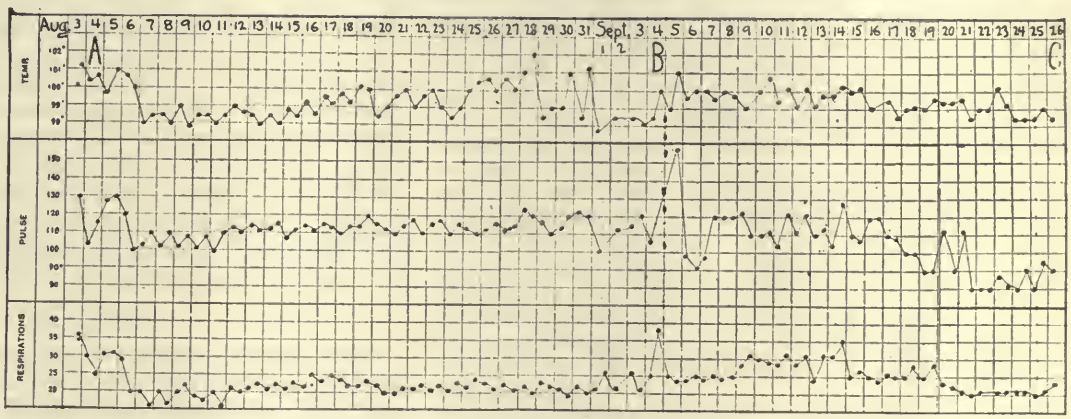


Chart 2.—Temperature, pulse and respiration in the case of A. M G.: *A*, mastoid operation; *B*, ligation of jugular; *C*, discharged.

General.—One of the important symptoms is fever, which may be typical if the patient is markedly septic, but is never typical if the infection is mild, but depends on the amount of toxemia. In the severe cases we have a chill, temperature from 103 to 106, subnormal remission and sweating, i. e., a septic temperature. With this temperature there is marked leukocytosis and high polymorphonuclear percentage, and the diagnosis is very easy. Here Charts 3 and 4, of P. S., are of interest as being typical of a case with pronounced sepsis having the wide excursions between 95.2 and 106. It is also interesting from the age of the patient, as it occurred in a child 13 months old.

The baby had an acute infection, Aug. 1, 1919, with several reinfections and finally a general bronchitis. August 19 the temperature had fallen to 98 a. m., and 100 p. m. August 21 there was a double acute otitis media; temperature, 105; double paracentesis within twelve hours. August 22, free discharge. August 23, 11 a. m., chill; temperature, 105, with remission to 96.4 and marked prostration. August 24, 4 p. m., temperature, 106, and another chill; ears discharging freely. On this date I saw the patient in consultation. August 26, the temperature was from 105.6 to 106; pulse, 150; respiration, 60; white count, 24,000; polymorphonuclears, 70 per cent. There was no postaural swelling or tenderness, and no sagging of the posterior superior wall. The left ear looked like any middle ear with acute infection. The right membrana tympani was boggy, and we assumed that the trouble was on this side. The next day a mastoid operation with ligation of the jugular was done. There was a well developed tip cell and antrum with surrounding cells. When the sinus was opened, the blood flowed sluggishly and then more rapidly, no clearly defined clot having had time to form. Recovery was uneventful.

On the other hand, following the mastoid operation, the temperature; instead of dropping after one initial rise, may be continuos, ranging from 99.5 to 102, and extending over weeks. Between these extremes there may be any type (as in A. M. G.). Infection of the sinus is one of the most common complications of mastoiditis, and should always be suspected. Many cases with meningeal symptoms, due to a bacteremia from an infected sinus, cannot be differentiated from actual meningitis.

The case of E. F. P., soldier, seen at Camp Lee, is reported in full because of the complete data, even to the testing out of the virulence of the specific organism. We believe that the ligation of the jugular and the repeated drawing off of cerebrospinal fluid were the important factors in his recovery. Unfortunately, for scientific purposes, he was given some antistreptococcus serum. He had already commenced to improve, but the order for the serum, which had been given two days before, had not been withdrawn, and so it was used.

E. F. P., private, Co. K, Sixty-Second Infantry, bricklayer, whose family history was negative, had had the usual diseases of childhood, but no other illness except a right acute otitis media when 16 years of age, lasting three days. The patient was admitted to the base hospital at Camp Lee, Va., Dec. 4, 1918, complaining of sore throat which had existed for four days previous to admission. He had pain in the right ear, which started discharging, Dec. 3, 1918. Examination of the throat revealed bilateral acute follicular tonsillitis. *Streptococcus hemolyticus* was obtained on culture. The patient complained of slight pain over the right mastoid region. A profuse mucopurulent discharge continued to December 7, when it became less marked, remaining about the same until December 20, when the membrana tympani was incised, a profuse discharge following.

December 23, the temperature was 102, respiration 24, pulse from 116 to 120. At this time the patient developed an acute exacerbation of a subsiding tonsillitis with some pain in the mastoid region and tenderness on pressure.

During the night of December 27-28, the patient vomited. During December 28-29, he became drowsy and restless, and had a chill. There was marked stiffness of the muscles of the back. Kernig's sign was positive.

December 29, the patient was somewhat drowsy; he had vomited three times in the last forty-eight hours. There was no mastoid tenderness or edema. The inner end of the right auditory canal was considerably narrowed and there was some drooping of the superior canal wall. The temperature was 103 at noon. The first lumbar puncture was performed. The fluid was under pressure and was cloudy. Culture revealed the presence of hemolytic streptococcus. A culture from the middle ear revealed the same organism.

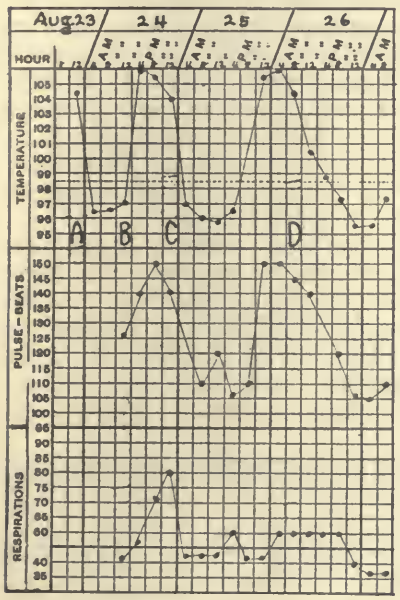


Chart 3.—Four hour chart in the case of P. S.: *A*, chill; *B*, white blood cells, 27,000; *C*, chill; *D*, white blood cells, 34,000; polymorphonuclear leukocytes, 70 per cent.

A simple right mastoidectomy was performed. The cells were broken down and the cavity was filled with pus under pressure. The area of the lateral sinuses was exposed by disease and covered with granulations. A small area of the dura over the antrum was exposed by the disease. All necrotic bone was removed.

December 30, the patient was very restless, with twitching of the face muscles and beginning papillitis of the right eye. An inoculated mouse died in four hours. As the lateral sinus was exposed and covered with granulations, and as hemolytic streptococci were found in the spinal fluid and isolated from the ear, it seemed advisable to ligate the internal jugular vein, which was done. Lumbar puncture revealed 680 mononuclear cells, 80 per cent. polymorphonuclears. There were faint traces of globulation. No meningococci were found.

Dec. 31, 1918, 25 c.c. of cloudy fluid was withdrawn from the spinal canal, revealing 390 cells; 70 per cent. polymorphonuclears, smear negative. Jan. 1, 1919, the fourth lumbar puncture was performed, 35 c.c. of fluid being withdrawn. It was clearer than on the previous day, and showed 320 cells, negative smear, and no growth on culture. Twenty-five c.c. of antistreptococcus serum was given intraspinally. At 8 p. m., 25 per cent. glucose solution was given intravenously. The patient was restless and delirious; the condition was not very good.

January 2, he developed erysipelas on the right side of the face and neck. The fifth lumbar puncture was performed. Fifty c.c. of practically clear fluid was withdrawn, and 25 c.c. of antistreptococcus serum injected; 200 cells; smear, negative. At 3 p. m., 25 per cent. glucose solution, 550 c.c., was given intravenously over a period of one and one-half hours.

January 3, the sixth lumbar puncture was performed. Seventy-five c.c. of clear fluid was obtained, and 25 c.c. of antistreptococcus serum was injected; 300 cells; smear, negative. At 10:30 a. m., 550 c.c. of 25 per cent. glucose solution was given intravenously over a period of one and one-half hours. The general condition was very much improved.

January 4, at the seventh lumbar puncture, 35 c.c. of fluid was withdrawn; 20 c.c. of antistreptococcus serum was injected; cell count, 250; polymorphonuclears, 78 per cent.; smear, negative. The general condition was improved; the patient took nourishment well and did not complain. The erysipelas was improved. The dressing was changed; there was considerable pus from the neck wound, but no discharge from the middle ear.

January 5, examination revealed normal eyegrounds. About this time some swelling of the right temporal region was noticed, with some brawniness of the tissue.

January 10, the condition was very good, the ear dry, the mastoid wound clean, with very much less discharge from the neck wound, and the patient was allowed out of bed for two hours. The swelling over the temporal region was increasing, and the patient complained of headache. This condition increased in severity up to January 25, when it was decided to open wound to see whether or not there was any pus in the temporal region. Operation revealed zygomatic vertical perforation and a large epidural abscess; about 3 drams of pus was obtained. January 2, the white cell count was 15,300; January 3, 17,100; January 6, 17,600. From this time on the patient made an uneventful recovery. The mastoid wound was clean and in good condition. The general condition was very good.

In this case there were present mental dulness, positive Kernig's sign, stiff neck, papillitis, turbid cerebrospinal fluid, bacteremia, virulent organisms that killed a mouse in four hours, and yet the patient recovered after ligation of the jugular, and repeated withdrawal of cerebrospinal fluid.

When symptoms of meningitis follow mastoiditis, however stormy their character, the jugular should be tied at once. Sinus infection is often diagnosed by exclusion. If a mastoid operation turns out badly and an exploratory secondary operation reveals nothing wrong in the technic of the primary operation, in the presence of a marked leukocytosis the jugular should be tied, if there are no definite indications of other complications. With a septic patient it is safer to explore than to wait and see what will happen. Every year patients die of meningitis and no attempt is made to ascertain the condition of the sinus. Many of these lives, I believe, could have been saved by prompt ligation of the jugular.

OPERATION

The jugular, having been exposed by an incision parallel to the anterior border of the sternomastoid and on a level with the thyroid cartilage, is ligated in two places and dropped back into its bed. The superficial fascia is brought together by two or three interrupted sutures. Lastly, the skin is brought together by a continuous suture and a collodion dressing applied to prevent infection from above. With a fresh toilet and a change of gown and gloves, the operator now blocks off and incises the sinus which was widely exposed at the mastoid operation. If a thrombus is present and is circumscribed so as to be removed readily, there is no surgical contraindication. On the other hand, if the thrombus is so extensive that there is danger of pushing infected material farther on, I feel that it is better judgment to remove a section of the sinus wall and let the thrombus remain. It seems faulty technic to remove a clot that is acting as a protection and then block the sinus and have another form that may not be so

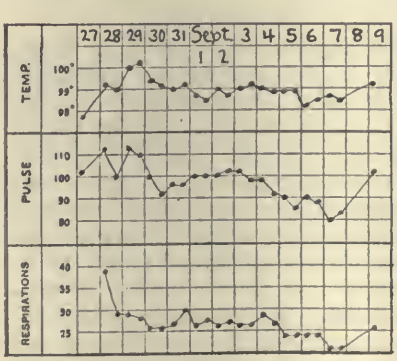


Chart 4.—Temperature, pulse and respiration in the case of P. S.

safe. If a clot is not present, iodoform wick is packed down on each side of the sinus wall and then on top, and kept distinct from the general packing of the mastoid cavity for the reason that the sinus packing should not be disturbed for eight or nine days and should then be removed very gradually. The mastoid dressing will usually be changed on the fourth or fifth day.

CONCLUSIONS

1. Sinus infection should be used as a comprehensive term covering three subdivisions: phlebitis, thrombosis and septicemia.
2. The symptoms vary with the infecting organism, the avenue of invasion, stage of the complication and resistance of the host.
3. The diagnosis can be made only by a study of the history, local conditions and blood findings.
4. There is no typical picture.
5. In septic cases with bacteremia, all the symptoms of meningitis may be present.

ABSTRACT OF DISCUSSION

DR. CULLEN F. WELTY, San Francisco: I saw four cases without any symptoms whatever, in which complete obstruction of the sinus was discovered at operation. I think many cases of sinus thrombosis are not detected. These cases were found accidentally; in two, the sinus was full of pus; in the other two, an infected thrombus was present.

As I understand it, Dr. Emerson ligates the jugular in every case. I think it is a nice point to decide, when to ligate and when not to ligate the jugular. In some instances ligation is not necessary and in others it is quite important. The invasion of the sinus does not begin as a clot infecting the whole sinus. There is a small invasion or a deposit on the inside of the vessel, which is called a mural clot, that only partially obstructs the vessel, and as it increases in size complete obstruction occurs. I maintain that in this mural clot (which the Doctor did not find) he had an infected sinus just the same, but in this particular case, you do not need to ligate the jugular. Furthermore, if the jugular is ligated, it is bad surgery to drop the ligated vessel back into the wound and cover it up, because there is a piece of the thrombus within the ligated and covered up vessel or an infection of the vessel wall. In getting rid of infection, we must do all we can to get rid of every possible bit of that clot. When the jugular is ligated, go down until bleeding from the petrosals occurs, if possible. Sometimes the petrosals are likewise thrombosed. Then go to the distal end and remove the bone until a healthy sinus is in view, then curet the sinus until free bleeding occurs. I do not think it good judgment to put a tampon into a sinus that does not bleed freely. The cases that have not had a speedy convalescence have been those in which I could not get free bleeding from the posterior wound.

DR. JOHN F. BARNHILL, Indianapolis: The internist often sees these patients first and does not always recognize them until too late. It is the experience of many that if these patients are seen early by the otologist and operated on, a vast majority of them will get well; whereas formerly, when classical symptoms were awaited, most of them died. Dr. Ewing W. Day, of Pittsburgh, reported six cases of sinus thrombosis without any fever or little fever; and now Dr. Welty reports four cases without fever. Such reports serve as a warning always to be on guard. I never have seen a case of this type, but possibly I may have overlooked some cases that were thus atypical. Diagnosis is most important, and these reports of cases lead us to believe that there are several types of sinus thrombosis, and that, therefore, we should be on the lookout for some type in almost every case of aural discharge. I have never seen a case of lateral sinus thrombosis with temperature so low as Dr. Emerson has stated; in two cases the temperature did not exceed 101 F. We should bear such possibilities in mind.

I have seen four cases such with no symptoms whatever except a continued temperature of septic type. In three of the four cases there were no aural symptoms, and no history of ear disease, except that there had previously occurred a discharge that had not continued longer than twenty-four hours. Concerning the question of dropping the stump back into the wound, I have always followed that plan, and have never seen any ill results.

DR. LEE W. DEAN, Iowa City: In my judgment, in every case where it is necessary to ligate the internal jugular, the gutta-percha drain should be left at the lower end of the wound.

DR. H. H. MARTIN, Savannah, Ga.: A boy of 20, who had had chronic otitis from the first year of his life, following scarlet fever, had a large granuloma in the ear, filling the external canal. His only complaint was frontal headache. I sent him to the hospital to have the granuloma removed and incidentally had a blood count made, which showed 28,000 leukocytes. The next morning he awoke complaining of a chilly feeling. When I saw him at noon he seemed to be all right. I did a simple mastoid operation with removal of the granuloma. I found no pus in the mastoid, but deep down a necrotic groove leading to the tip. Immediate improvement followed the operation, the leukocyte count dropping to 8,800. About two or three weeks afterward, however, the symptoms had become just about as they were in the beginning, the patient also complained of pain in the back of his neck. The leukocyte count was 20,000. I came to the conclusion that I had probably not uncovered the focus of infection in the mastoid, and reopened the wound and removed the posterior canal wall. He again improved for a few days, but complained intermittently of pain in the back of his neck, and his leukocyte count remained high. Eventually, we opened the sinus and found a nonseptic clot, a thrombus that was white and shriveled. Cultures revealed no pathogenic organism. The temperature never was higher than 101.5 F. Later there developed clear evidence of cerebral abscess which was evacuated, but without any result, other than, perhaps, that the boy lived somewhat longer. All the cases I have ever seen had choked disk, which appeared about the fourth week. Therefore, it seems to me that the outstanding diagnostic points in lateral sinus thrombosis are: frontal headache, vomiting without nausea, the presence of a high leukocytosis, pain in the back of the neck and choked disk.

DR. LEON E. WHITE, Boston: We examine all cases roentgenographically as part of our routine. Both mastoids are taken on the same plate so that comparison is easy. In a recent case, in which the question of involvement of the sinus was under discussion, the roentgen ray was most helpful. The involved sinus was very much larger and higher than the uninvolved sinus. In two cases infection was not suspected until the mastoid was opened. In many cases it is extremely difficult to determine the presence of a clot. I have had cases in which the assistants declared there was thrombosis, but on slitting the sinus there was the usual hemorrhage. As to the question of ligating the jugular, I feel that this should be done if there is infection enough in the sinus to warrant opening it. It is wrong not to eliminate the possibility of its draining into the system. If a patient has a high temperature and a high leukocyte count not otherwise explainable, we do not dare delay operation. Dr. Emerson is very apropos in saying that meningitis and sinus thrombosis are hard to differentiate in the early stages. Meningitis may be prevented by getting rid of the infection in the sinuses.

In the different services at the infirmary there are various methods of handling the neck wound. In my service we use metal clips, and at the lower angle of the wound we insert a small piece of silkworm gut which is removed in from twenty-four to forty-eight hours.

DR. FRANCIS P. EMERSON, Boston: Some of the questions that have arisen in regard to my paper I think are due to the fact that I tried as far as possible to keep strictly to the subject, and so I went over the operative technic very hurriedly.

One case which I reported, in which the temperature was 102 F. and then dropped to normal, I think probably would have terminated in recovery without operation. But in the presence of elevation of temperature and an increasing leukocytosis, the only safe course is to shut off the general circulation from the infection. I do not cut the jugular after ligating it. I ligate in two places and drop the entire vein back into the neck. The rest of my procedure is almost identical with that which Dr. Dean mentioned.

MIGRAINE THERAPY

BERNARD FANTUS, M.S., M.D.
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CHICAGO

Some years ago, I came across the recommendation by T. Lauder Brunton of a mixture of sodium salicylate, 1 gram, and potassium bromid, 2 grams, for the relief of attacks of migraine, which was couched in terms of such enthusiasm [1] that I was led to employ it in suitable cases; and my success with this combination has been such that I have not as yet had the courage to experiment with modifications of the formula.

It is essential that the dose be given at the earliest possible moment when the headache is approaching; best, indeed, that it be given before it sets in by taking advantage of the signs by means of which these patients know that they will have a headache. In some it is a peculiar nervous irritability at bedtime, in which case the dose should be taken before the patient goes to sleep. In other cases, the patient awakens in the morning very drowsy and disinclined to rise, and perhaps with a feeling of weight in the head. If he now goes to sleep again, he wakes up with his headache. If, at the time when he first wakes up, he takes a dose of the medicine, the headache may be prevented. Whatever other "aurae" the patient may have, such as scotomas or fortification phenomena, should be seized on to introduce the dose into the system before emesis takes place, as the presence of vomiting makes the retention of the dose rather difficult. I have the impression that imparting effervescence to the medicine favors its efficiency and retention. If the whole dose is vomited up, the patient might be able to retain a quarter of it taken in a wineglassful of seltzer water every fifteen minutes. If a single dose does not suffice to jugulate the headache, a further dose may be taken hourly, until phenomena of salicylism, such as ringing in the ears, compel discontinuance. I have found it rarely necessary, however, to push the remedy to this point.

Effervescence may, of course, be secured by administration of the dose in seltzer water. It is more practical, however, to prescribe the remedy in this form:

	Gm. or Cc.
℞ Sodium salicylate	6|0
Potassium bromid	12|0
Sodium bicarbonate	12|0
Mix and divide into six blue powder papers.	
Tartaric acid	10|8
Divide into six white powder papers.	

Label: Mix contents of a white and a blue paper in half a glass of water. Repeat dose hourly if required.

For very nervous and presumably sensitive persons and for poorly nourished individuals, it is prudent to advise that half the dose be taken at first to see whether or not it might be sufficient. In this manner, possibly disagreeable effects, due to idiosyncrasies, would be avoided.

PROPHYLACTIC TREATMENT

Of course, the patient is also given a thorough physical examination, including a specialist's investigation of eye, ear, nose and throat, and roentgenoscopy of the teeth; and the attempt is made to eradicate or correct any physical defect found. It is just as important to place the patient under optimal hygienic conditions. This means the best hygiene for that particular individual: an adundance of sleep, a sufficiency of physical exercise (walking) to balance the usual excess of nervous work, a diet that might take cognizance of the idiosyncrasies of the individual and the requirements of daily bowel evacuation, and, above all, the cultivation of equanimity.

In some highly neurotic individuals, the prolonged administration of bromid, as in epilepsy, has been distinctly useful in lessening the frequency of the attacks.

It may be that, in view of the alleged potency of suggestion in this condition, the confidence with which I prescribe this treatment, and the assertion I usually make that I have a special remedy which I am quite sure will help the patient, may endow it with greater power than it intrinsically possesses. I also tell the patient that the prospects as to ultimate recovery are good, since, in the natural course of events, the tendency of these attacks will become less with advancing years. I furthermore advise the patient to report whenever a tendency to frequent recurrence manifests itself. In this case, the attempt to discover physical or hygienic defects is repeated; and another course of bromid is prescribed, or the dose of bromid that is being taken is increased.

1. Brunton, T. L.: On the Use of Bromide of Potassium and Salicylate of Sodium in Headache, in On Disorders of Assimilation, Digestion, etc., New York, the Macmillan Company, 1901, p. 320.

Clinical Notes, Suggestions, and New Instruments

ANTHRAX FROM REMOVING HIDE FROM MULE

Ralph King, M.D., Olney, Ill.

W. L. and C. L., father and son, aged 46 and 21 years, respectively, lost a mule by death, March 21, 1920. The animal had been sick nine or ten days with a bad swelling of the head and one front leg. There were no sores or nasal discharge, and the animal was apparently paralyzed before death. About one hour after death the hide was removed and sold. They stated that they found water under the skin. Forty-eight hours later both were taken ill with chill and a temperature of 103 F. A few hours later painful papules appeared on the left index and right middle finger of the father and the external canthus of the left eye and point of the chin of the son. These lesions rapidly broke down into discharging ulcers with depressed gangrenous bases surrounded by an edematous induration. March 31, they were admitted to the Olney Sanitarium with marked prostration. A diagnosis of anthrax was made from the history and physical findings. The organisms were later demonstrable in the discharges from the ulcers.

The treatment consisted of 40 c.c. of antianthrax serum given to each in 20 c.c. doses intravenously at six hour intervals. This was followed by a slight reaction. Moist dressings of boric acid were applied to the eye, and 50 per cent. alcohol to the chin and finger lesions. They left the hospital in five days. Their convalescence was slow, likened by them as to "one that had typhoid." Scars are left at the site of the lesions with no other ill effects. No other animals

on this farm or those of their neighbors have had a similar illness.

On account of the prostration and the fact that ten days elapsed before their admission to the hospital, we consider their recovery remarkable.

TORSION OF SPERMATIC CORD

PETER MARSHALL MURRAY, M.D., WASHINGTON, D. C.
Assistant Surgeon, Freedmen's Hospital

C. P., a colored man, aged 28, laborer, with negative family history, who had had a mild case of gonorrhea five years before, with no complications, complained of pain in the paraumbilical region, May 29, 1920, had slight nausea, and vomited once. This attack came on without any apparent cause. Next day the pain had subsided, except in the lower right iliac fossa, and the right testicle began to swell. The testicle was not painful, but was tender to the touch and enlarged gradually. The patient continued to be comfortable; the pain subsided except on handling of the testicle. As no improvement followed rest in bed, elevation, ice bag, etc., for forty-eight hours, operation was performed. There was a moderate amount of straw colored fluid in the tunica Vaginalis. The spermatic cord was twisted inward two and one-half turns just proximal to the globus minor. The testicle and epididymis were swollen, dark, hemorrhagic, and almost gangrenous. Orchidectomy was performed. Recovery was prompt and uneventful, the patient being up and able to leave the house within a week. The symptoms in this case were very mild and after the first day the picture was certainly not one of strangulation.

1645 New Jersey Avenue N.W.

Special Article

OBSERVATIONS ON SOUTH AMERICA

II. PERU

WILLIAM J. MAYO, M.D.
ROCHESTER, MINN.

General Gorgas freed the coast country from yellow fever, but the disease is still to be found in the sparsely inhabited back country, both in northern Peru and in Ecuador. General Gorgas was engaged by the Peruvian government to continue the work of eradication, and it is hoped that yellow fever will soon be a thing of the past.

In 1532, just forty years after Columbus discovered America, Pizarro with 310 soldiers landed in Peru and overturned the Empire of the Incas. In 1535 he founded the city of Lima, which now has about 200,000 inhabitants. On viewing the mummified remains of the 6-foot buccaneer lying in state in the cathedral, one visions the great mental and physical force of this man who subjugated Peru in nine years, from the time of his landing to his assassination.

Peru is a vast country, half of it unmapped and scarcely explored. Between the Andes and the Pacific lies a narrow strip of land on which there is no rainfall. It has not rained in Lima for seventeen years, but the dust and general grime are forgotten in irrigated spots containing beautiful trees and flowers. Lima is 2½ miles from the ocean, with its port at Callao, 8 miles away. The Humboldt Antarctic Current, flowing along the west coast, keeps the climate pleasantly cool, but condenses the moisture in the air between the coast and the Andes and thus prevents rainfall. The lack of water is painfully apparent in Peru and has much to do with sanitary failures which even the dryness cannot wholly overcome. The country is tropical; and while the air is cool in the shade, it is very oppressive on exercise or in the sun. The noon siesta, a custom of the country, undoubtedly is based on human needs, for it recuperates the body from the results of the heat on the tissues, especially the nerve tissues. By dividing the day into two parts, the strain of the most trying hours in the climate of Peru and other tropical countries is reduced, and what might be called a protective neurasthenia, greatly resembling the neurasthenic state seen in the United States, is developed. Certainly the siesta, a two hours' rest in bed after the noon meal with the removal of day clothing, is useful in the treatment of neurasthenia. In the high valleys between the mountain ranges are fertile plateaus, the home of the Incas. The Amazon River, rising in the Peruvian Andes, has a port at the city of Iquitos in Peru which harbors vessels of considerable size. A railroad is being built connecting Iquitos with the Peruvian coastal plains.

Peru has much to interest the medical sightseer. All through South America the hospitals are of Spanish design, excellent for the tropics. They are usually of one story, with high ceilings, large high windows, large porch effects for shade, and surrounded by fine gardens. In Lima are two large charity hospitals. The older, the Hospital de Santa Ana for women and children, boys up to 10 years of age, has a capacity of 300 beds. A large new hospital is now being built to replace this old one, in which the government expects to install American nurses and American methods for caring for patients. One of the greatest innovations will be the introduction of wire screens against flies. Hospital Dos de Mayo for men was founded in commemoration of the victory over the Spanish fleet in Callao, May 2, 1866. The independence of Peru had, however, been declared in 1824. This hospital contains 700 beds and is more modern than the Santa Ana Hospital. Miss Soper, a trained nurse from London, has been working courageously for four years to develop a nurses' training school and to improve the nursing and hospital conditions generally. The results of her efforts are beginning to show.

Several cases of verrugas, a disease of the skin peculiar to Peru, were seen in one of the wards of this hospital. The disease is found in the higher Andes and is characterized by fever and eruption. The cause is unknown, although it is believed to be the bite of a night insect. Most patients recover, but there are fatal forms, when hemorrhages occur under the skin, forming pustules.

Both the Hospital de Santa Ana and the Hospital Dos de Mayo are maintained, as indeed are all municipal charities, from the public charity fund, which is accumulated by private contributions and public amusements.

The Italians, of whom there are many in Peru, maintain a good hospital, and the French also have a very good hospital of forty beds. There are a number of private hospitals, notably Dr. Febrie's, which is quite modern in its appointments. Dr. Graña's hospital, with a capacity of 100 beds, now being built on the seashore about 3 miles from Lima, will be the last word in modern construction and equipment. American nurses and a nurses' training school will be installed. There are several excellent hospitals connected with Amer-

ican mines in Peru, with American physicians and nurses.

Lima has 120 physicians, twenty of whom are surgeons. The surgical technic is far in advance of hospital installation, and the highest praise should be accorded these men for their excellent work, which is further illustration of the fact that surgical results depend on the surgeon and not on his surroundings. I attended many interesting clinics and saw Dr. Gasañeta, Dr. Aljovín, Dr. Carvallo, Dr. Denegri, Dr. Morales, Dr. Graña, and others doing clean, careful and skilful surgery. Physicians qualified to do good roentgen-ray and cystoscopic work are needed in Lima.

San Marcos University in Lima, the oldest in the Western Hemisphere, was founded in 1551. Señor Ngarteche Prado, president of the university, is a talented, gracious gentleman, fully equal to the duties devolving on him in the management of this great university, the only one in Peru, with its 4,500,000 inhabitants. The university medical school is also in Lima and is the only one in Peru; it has about 300 students. The spacious buildings are in beautiful grounds. Dissecting material is ample. The laboratories in charge of Dr. Hercelles, professor of bacteriology and pathology, are excellent. There are many unusual and beautifully preserved specimens in the museum of the medical school and in the laboratories. The university impresses one as being in every way a real teaching institution.

Primary school education, a course of six years, is compulsory in Peru; the secondary course of six years has a limited attendance. The medical student must add to the two courses two years of science and seven years of medicine, making in all nineteen years of study to obtain a medical degree. The exceptional student can reduce this period two years. Medical students are much alike the world over, and one of their great virtues is their independent spirit, with little respect for tradition or authority. To the medical student Thomas must be the greatest of apostles. Our reception at the medical school by the faculty and the students was most impressive and formal. In reply to some very beautiful eulogies of the United States, Dr. M. with characteristic felicity said that he wished to congratulate the students on the high character and professional attainments of the Faculty of Medicine. There was no student applause. He then said that he wished to congratulate the faculty on the extraordinary fine body of students they had to teach; and although these remarks were in English, the student applause was uproarious and long continued.

The Peruvian Surgical Association, made up of men distinguished in the profession, have their headquarters in a fine building in Lima. The visitor interested in medicine leaves Peru with profound respect for its medical profession.

In the matter of industrial achievement, Peru is one of the most backward of the countries of South America, largely because of the lack of means of communication between the different parts of a country containing about 700,000 square miles of land broken up by great ranges of the Andes mountains. The population, as represented by the upper classes, is refined, intelligent and progressive. Their ideals are essentially those of North America, and they are developing along similar lines. The lower classes are engaged in small agriculture; they are industrious, but, like children, are easily led by noisy political demonstrations.

The bullfight still flourishes in the old ring at Lima, built nearly 200 years ago, but it is not very popular and will soon be abolished. Several surgeons in Lima told me that they had never seen a bullfight. The bullfight has its points of interest to those interested in comparative anatomy, and it requires skill and courage. It is not, however, as exciting or as dangerous to the human participants as football, but, like our North American sports, it permits the multitude a great deal of vicarious exercise on the principle that it is much easier to allow some one else to undergo exertion than to take setting up exercises themselves. There are no public lotteries or open gambling in Peru, but there is little attempt to control the liquor traffic.

Besides the yellow fever, cases of a mild form of bubonic plague are frequently seen in the northern back country; many are "walking cases," and account for the virulent flare-ups which occasionally call public attention to the matter. Such conditions are characteristic of all the countries.

The United States is popular in Peru. Without the protection of the United States it is probable that Peru would have a struggle to maintain her political integrity; the people of Peru are not warlike, in contradistinction to her more aggressive neighbors.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

STERILE SOLUTION OF LUTEIN-H. W. D.—Each Cc. contains the water soluble extractive of 0.2 Gm. of Lutein-H. W. D., freed from protein in physiological solution of sodium chloride.

Actions and Uses.—See general article on Ovary, New and Nonofficial Remedies, 1920, p. 201.

Dosage.—1 Cc. daily, intramuscularly. It is claimed that the solution may be given intravenously with no reaction other than urticaria.

Manufactured by Hynson, Westcott and Dunning, Baltimore. No U. S. patent or trademark.

Ampules Sterile Solution of Lutein-H. W. D.—Each ampule contains more than 1 Cc. sterile solution of lutein-H. W. D.

Sterile solution of lutein-H. W. D. is made by extracting lutein-H. W. D. with a solvent composed of equal parts of alcohol and water. The extract is freed from proteins by addition of lead acetate and subacetate. After removal of the excess of lead, the liquid is freed from alcohol and the concentration adjusted so that each Cc. shall represent the soluble extractive of 0.2 Gm. lutein-H. W. D. in physiological solution of sodium chloride.

OVARIAN RESIDUE-H. W. D.—The residue from the fresh ovaries of the hog after the ablation of the corpus luteum.

Actions and Uses.—Ovarian Residue is used for the same conditions as the entire ovarian substance but is claimed to have the advantage of being somewhat more stable in composition (see general article on Ovary, New and Nonofficial Remedies, 1920, p. 201).

Dosage.—From 0.3 to 0.6 Gm. (5 to 10 grains). Supplied in the form of tablets only (see below).

Manufactured by Hynson, Westcott & Dunning, Baltimore. No U. S. patent or trademark.

Tablets Ovarian Residue-H. W. D. 5 grains.—Each tablet contains ovarian residue-H. W. D. 5 grains.

Ovarian Residue-H. W. D. is a grayish powder, having a characteristic odor. It is prepared from the entire fresh hog ovary by removal by mechanical means of the corpus luteum. The residue is dried and powdered.

MEDICAL EDUCATION IN THE UNITED STATES

ANNUAL PRESENTATION OF EDUCATIONAL DATA FOR 1920 BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

The tabulated statistics herewith presented are for the year ending June 30, 1920, and are based on reports received from the medical colleges or from other reliable sources. We acknowledge here the splendid courtesy and cooperation of the officers of the colleges who have made the compilation of these complete statistics possible.

STATISTICS OF COLLEGES

Table 1, on pages 380-382, gives the colleges in session during 1919-1920; the population of the city; the rating given to the college by the Council on Medical Education and Hospitals; the number of students, men and women, registered during the year; the number of 1920 graduates, men and women; the number of graduates holding collegiate degrees; the number of teachers for each college; the number of weeks of actual work in the college year; the total fees for each year; the executive officer of the college, and the dates of beginning and ending of the next session. The figures in heavy-faced type show the totals by states. Beginning on page 398 are given essential facts concerning all medical colleges arranged by states.

HOME STATES OF MEDICAL STUDENTS

Table 2, on pages 384-385, shows from what state the students came who were in attendance at each medical college during the session of 1919-1920. The influence of the proximity of the medical school is seen in the fact that states having medical colleges contribute more students in proportion to the population than those which have no colleges. This is shown by the dark zone of figures running diagonally down the page. A comparison of this table with the large tables based on state board examinations,[1] which show the distribution of the alumni of each college, is interesting. The college that has widely distributed alumni usually has a student body from an equally large number of states.

The state furnishing the largest number of students this year was New York with 2,138. Illinois contributed 1,059 and Pennsylvania 1,038. The next states, in the order of the number of students contributed, are: Massachusetts, 765; Ohio, 702; California, 519; Texas, 450, and Michigan, 435. Three states had less than 10 each, these being New Mexico, 9; Nevada, 5, and Wyoming, 5. There were 114 students from Hawaii, Porto Rico and the Philippine Islands, and 269 students from foreign countries.

1. The Journal A. M. A., State Board Number, April 17, 1920,

NUMBERS OF STUDENTS BY CLASSES

In Table 3, on page 386, the students enrolled in each college are shown by classes. This permits one to see whether the attendance at each college is increasing or decreasing. The total attendance for the first year was 4,234, as compared with 3,104 last year and 4,283 in 1918. The second year attendance was 2,837, as compared with 3,587 last year, and 3,521 in 1918. The third year attendance was 3,464, as compared with 3,272 last year, and 2,893 in 1918. The enrolment of the fourth and fifth (intern) years, combined this year, is 3,553, as compared with 3,089 last year, and 2,933 in 1918. The first, third and fourth (including the fifth) year class enrolments, therefore, show increases, respectively, of 1,130, 92 and 464 over the enrolments in those classes last year. This indicates that the college enrolments have largely been readjusted under the higher entrance requirements and the total enrolments in medical schools are again increasing.

TABLE 4.—Medical College Attendance

Year	Non-sectarian	Homeopathic	Eclectic	Physio-Med.	Nondescript	Total
1880.....	9,776	1,220	830	...	...	11,826
1890.....	13,521	1,164	719	...	...	15,404
1900.....	22,710	1,909	522	...	...	25,171
1901.....	23,846	1,683	664	80	144	26,417
1902.....	24,878	1,617	765	91	150	27,501
1903.....	24,930	1,498	848	149	190	27,615
1904.....	23,662	1,309	1,014	123	234	28,142
1905.....	24,119	1,104	578	114	232	26,147
1906.....	23,116	1,085	644	110	249	25,204
1907.....	22,303	1,039	545	97	292	24,276
1908.....	20,936	891	479	90	206	22,602
1909.....	20,554	899	413	52	227	22,145
1910.....	20,136	867	455	49	19	21,526
1911.....	18,414	890	433	49	...	19,786
1912.....	17,277	827	308	...	...	18,412
1913.....	15,919	850	256	...	...	17,015
1914.....	15,438	794	270	...	...	16,502
1915.....	13,914	736	241	...	...	14,891
1916.....	13,121	638	263	...	...	14,012
1917.....	12,925	580	250	...	...	13,764
1918.....	12,727	540	138	...	225	13,630
1919.....	12,259	397	86	...	310	13,052
1920.....	13,220	386	93	...	389	14,088

NUMBER OF MEDICAL STUDENTS

The total number of medical students (Table 4) in the United States for the year ending June 30, 1920, excluding premedical, special and postgraduate students, was 14,088, an increase of 1,036 over last year. This is the largest enrolment of students since 1915. It is noteworthy (Table 12, page 387) that in the high grade (Class A) medical colleges both the number and the percentage of students has increased. Of the total number of students, 13,220 (93.8 per cent.) were in attendance at the nonsectarian (regular) colleges, 386 (2.7 per cent.) at the homeopathic, 93 (0.7 per cent.)

(Continued on page 382)

TABLE 1—STATISTICS OF MEDICAL COLLEGES IN THE UNITED STATES AND CANADA

Marginal Number	NAME AND LOCATION OF COLLEGE	Population of City where College is Located (1920 Census Reports)	Classification by Council on Medical Education	No. of Students Registered 1919-20		Graduates 1920		Grads. with A.B., B.S., or Ph.B.	Number of Teachers	College in Weeks Year	Total Fees (Dollars)				Executive Officer	Session of 1920-21		Marginal Number
				Men	Women	Men	Women				1st year	2d year	3d year	4th year		Begins 1920	Ends 1921	
	ALABAMA			51	...	10	...	2										
1	University of Alabama School of Medicine, Tuscaloosa[1]	11,996	B	51	0	10	0	2	37	34	165	160	160	185	George H. Denny, President	Sept. 6	May 25	1
	ARKANSAS			31	...	6	...	...										
2	University of Arkansas Medical Department, Little Rock[2]	64,997	A	31	...	6	...	...	16	35	60	60	...	...	Morgan Smith, M.D., Dean	Sept. 20	June 8	2
	CALIFORNIA			488	70	77	13	48										
3	College of Medical Evangelists, Los Angeles	575,480	B	89	12	14	...	13	109	35	217	212	197	207	P. T. Magan, M.D., Dean	Sept. 5	May 26	3
4	College of Physicians and Surgeons, Los Angeles[3]	575,480	B	74	11	12	2	4	...	...	...	...	...	...		.....	.....	4
5	College of Physicians and Surgeons of San Francisco[3]	508,410	C	15	1	15	1	...	...	...	...	...	...	...		.....	.....	5
6	Oakland College of Medicine and Surgery, Oakland[3]	216,361	C	4	1	4	1	...	...	...	...	...	...	...		.....	.....	6
7	Leland Stanford Junior University School of Med., San Francisco	508,410	A	124	13	17	3	19	112	34	186	186	186	186	W. Ophüls, M.D., Dean	Oct. 1	June 17	7
8	University of California Medical School, San Francisco	508,410	A	182	32	15	6	16	199	35	200	155	160	150	L. S. Schmitt, M.D., Secretary	Aug. 16	May 11	8
	COLORADO			65	8	17	...	4										
9	University of Colorado School of Medicine, Denver[4]	256,369	A	65	6	17	...	4	61	34	106	106	98	103	Charles L. Meader, M.D., Dean	Sept. 27	June 13	9
	CONNECTICUT			83	5	17	2	19										
10	Yale University School of Medicine, New Haven	162,390	A	83	5	17	2	19	95	35	205	200	200	210	Milton C. Winternitz, M.D., Dean	Sept. 30	June 22	10
	DISTRICT OF COLUMBIA			339	8	66	1	26										
11	Georgetown University School of Medicine, Washington	437,571	A	120	...	19	...	5	90	34	205	200	200	210	George M. Kober, M.D., Dean	Sept. 24	June 11	11
12	George Washington University Medical School, Washington	437,571	A	109	5	21	...	3	95	34	200	200	200	200	W. C. Borden, M.D., Dean	Sept. 29	June 8	12
13	Howard University School of Medicine, Washington	437,571	A	110	3	26	1	18	39	33	165	155	155	162	Edward A. Balloch, M.D., Dean	Oct. 1	June 10	13
	GEORGIA			238	...	43	...	8										
14	Emory University School of Medicine, Atlanta	200,616	A	174	...	28	...	4	98	34	172	160	165	180	W. S. Elkins, M.D., Dean	Sept. 21	June 6	14
15	University of Georgia Medical Department, Augusta[4]	52,548	A	64	...	15	...	2	46	34	65	60	60	60	W. H. Doughty, Jr., M.D., Dean	Sept. 15	May 30	15
	ILLINOIS			1578	112	309	12	224										
16	Chicago Medical School, Chicago[5]	2,701,212	C	88	...	15	...	...	...	...	180	180	180	205	J. L. Kendall, Jr., M.D.	Oct. 4	.....	16
17	Hahnemann Medical College and Hospital of Chicago.—H.	2,701,212	B	45	3	9	1	5	92	34	176	162	177	192	Joseph P. Cobb, M.D., Dean	Sept. 28	June 10	17
18	Loyola University School of Medicine, Chicago	2,701,212	A	188	16	23	...	...	115	34	165	165	165	185	Rev. P. J. Mahan, Regent	Oct. 1	June 15	18
19	Northwestern University Medical School, Chicago	2,701,212	A	408	...	73	...	39	172	33	210	205	196	190	Arthur I. Kendall, M.D., Dean	Oct. 5	June 11	19
20	Rush Medical College (University of Chicago)	2,701,212	A	598	74	108	7	106	304	34	230	225	225	235	John M. Dodson, M.D., Dean	Oct. 1	June 15	20
21	University of Illinois College of Medicine, Chicago	2,701,212	A	251	19	81	4	74	154	34	165	160	150	165	A. C. Eycleshymer, M.D., Dean	Sept. 28	June 10	21
	INDIANA			221	13	46	2	48										
22	Indiana University School of Medicine, Indianapolis	314,194	A	221	13	46	2	48	151	35	125	125	150	150	Charles P. Emerson, M.D., Dean	Sept. 13	June 8	22
	IOWA			224	8	52	1	25										
23	State University of Iowa College of Medicine, Iowa City[4]	11,267	A	224	6	52	1	25	56	35	85	85	85	85	Lee Wallace Dean, M.D., Dean	Sept. 23	June 14	23
	KANSAS			128	7	20	3	14										
24	University of Kansas School of Medicine, Rosedale-Kansas City[4]	404,782	A	126	7	20	3	14	73	35	111	111	103	103	M. T. Sudler, M.D., Assoc. Dean	Sept. 13	June 8	24
	KENTUCKY			126	8	22	3	8										
25	University of Louisville Medical Department, Louisville	234,891	A	126	6	22	3	6	119	33	200	200	200	200	Henry Enos Tuley, M.D. Dean	Sept. 21	June 2	25
	LOUISIANA			311	14	81	...	24										
26	Tulane University of Louisiana School of Medicine, New Orleans	387,408	A	311	14	81	...	24	131	33	200	225	215	245	Isadore Dyer, M.D., Dean	Sept. 27	June 8	26
	MAINE			43	...	10	...	7										
27	Bowdoin Medical School, Brunswick-Portland	69,196	A	43	...	10	...	7	58	34	150	150	150	150	Addison S. Thayer, M.D., Dean	Oct. 7	June 23	27
	MARYLAND			573	61	140	12	93										
28	Johns Hopkins University Medical Department, Baltimore	733,826	A	330	60	81	12	93	185	35	267	267	267	267	J. Whitridge Williams, M.D., Dean	Sept. 28	June 21	28
29	Univ. of Maryland Sch. of Med. and Coll. of P. & S., Baltimore	733,826	A	243	1	59	...	...	164	32	215	215	215	215	J. M. H. Rowland, M.D., Dean	Oct. 1	June 1	29
	MASSACHUSETTS			1005	55	198	19	107										
30	Boston University School of Medicine, Boston	747,923	A	73	15	9	4	12	67	33	175	162	160	190	John P. Sutherland, M.D., Dean	Oct. 1	June 15	30
31	College of Physicians and Surgeons, Boston[6]	747,923	C	28	4	8	1	...	...	...	115	140	120	125		.....	.....	31
32	Medical School of Harvard University, Boston	747,923	A	413	...	96	...	87	222	35	230	225	225	225	David L. Edsall, M.D., Dean	Sept. 27	June 23	32
33	Tufts College Medical School, Boston	747,923	A	302	36	69	14	8	117	36	211	196	186	191	Charles F. Painter, M.D., Dean	Sept. 16	June 20	33
34	Middlesex College of Medicine and Surgery, Cambridge.—N.[7]	109,456	C	189	...	14	...	...	...	...	150	150	150	150		.....	.....	34
	MICHIGAN			535	34	118	5	45										
35	University of Michigan Medical School, Ann Arbor[4]	19,516	A	361	28	70	5	39	87	35	140	140	140	140	C. W. Edmunds, M.D., Asst. Dean	Oct. 5	June 30	35
36	University of Michigan Homeopathic Med. School, Ann Arbor.[4]—H.	19,516	A	33	2	7	...	3	26	35	140	140	140	140	W. B. Hinsdale, M.D., Dean	Oct. 5	June 30	36
37	Detroit College of Medicine and Surgery, Detroit	993,739	A	136	4	41	...	3	209	35	150	150	150	150	W. H. MacCraken, M.D., Dean	Sept. 27	June 18	37
	MINNESOTA			353	15	60	...	55										
38	University of Minnesota Medical School, Minneapolis[4]	380,582	A	353	15	60	...	55	140	35	186	186	186	186	Elias P. Lyon, M.D., Dean	Sept. 29	June 20	38
	MISSISSIPPI			49	2	...	...	...										
39	University of Mississippi School of Medicine, Oxford[8]	1,948	A	49	2	...	...	...	16	34	133	133	...	...	W. S. Leathers, M.D., Dean	Sept. 15	May 31	39

	MISSOURI			**307**	**20**	**221**	**7**	**39**											
40	University of Missouri School of Medicine, Columbia* [4]	10,681	A	63	6	...	...	...	27	32	80	56	...	...	Guy L. Noyes, M.D., Dean	Aug. 30	April 27	40
41	Kansas City College of Medicine and Surgery, Kansas City.—N.[8]	404,782	C	127	1	40	1	...	...	...	200	200	200	200	D. R. Alexander, M.D., Dean	.....	.....	41
42	Kansas City Univ. of Physicians and Surgeons, Kansas City.—N.[9]	404,782	C	63	9	33	6	...	...	...	150	150	150	165	A. L. McKenzie, D.O., President	.....	.....	42
43	St. Louis College of Physicians and Surgeons, St. Louis	772,897	C	144	...	42	...	...	...	...	145	140	140	140	Waldo Briggs, M.D.	.....	.....	43
44	St. Louis University School of Medicine, St. Louis	772,897	A	251	...	63	...	8	132	32	200	200	200	200	Hanau W. Loeb, M.D., Dean	Oct. 1	May 31	44
45	Washington University School of Medicine, St. Louis	772,897	A	159	4	43	...	31	129	33	221	216	216	221	Nathaniel Allison, M.D., Dean	Sept. 23	June 9	45
	NEBRASKA			**272**	**11**	**63**	**2**	**40**											
46	John A. Creighton Medical College, Omaha	191,601	A	98	1	23	...	13	56	34	175	165	165	170	H. Von W. Schulte, M.D., Dean	Sept. 20	June 4	46
47	University of Nebraska College of Medicine, Omaha	191,601	A	174	10	40	2	27	88	34	140	120	110	110	Irving S. Cutler, M.D., Dean	Sept. 17	June 4	47
	NEW HAMPSHIRE			**21**	...	...	...	...											
48	Dartmouth Medical School, Hanover*	2,075	A	21	...	...	...	...	12	36	200	200	...	...	John M. Gile, M.D., Dean	Sept. 23	June 22	48
	NEW YORK			**2024**	**136**	**519**	**23**	**169**											
49	Albany Medical College, Albany	113,344	A	78	1	21	0	3	67	35	225	200	200	200	Thomas Ordway, M.D., Dean	Sept. 20	June 13	49
50	University of Buffalo Medical Department, Buffalo	505,875	A	196	15	54	3	4	112	33	245	240	240	240	C. Sumner Jones, M.D., Dean	Sept. 20	June 3	50
51	Columbia University College of Phys. and Surgs., New York City	5,621,151	A	369	29	101	...	72	279	33	250	250	332	352	William Darrach, M.D., Dean	Sept. 22	June 1	51
52	Cornell University Medical College, New York City	5,621,151	A	206	54	37	14	51	152	33	240	235	235	250	Walter L. Niles, M.D., Dean	Sept. 27	June 9	52
53	Fordham University School of Medicine, New York City[10]	5,621,151	A	118	...	54	...	4	76	35	...	...	...	310	Rev. John A. Ryan, Regent	Sept. 24	June 15	53
54	Long Island College Hospital, Brooklyn	5,621,151	A	327	13	74	2	4	134	32	356	350	350	350	Otto V. Huffman, M.D., Dean	Sept. 27	May 31	54
55	New York Homeopathic Med. Coll. and Flower Hospital.—H.	5,621,151	B	134	8	40	2	1	61	33	250	245	220	230	Milton J. Reisbeck, M.D., Registrar	Sept. 6	May 13	55
56	University and Bellevue Hospital Medical College, New York City	5,621,151	A	455	10	103	1	8	171	35	270	270	270	295	Samuel A. Brown, M.D., Dean	Sept. 15	June 7	56
57	Syracuse University College of Medicine, Syracuse	171,647	A	141	6	35	1	22	101	35	217	217	217	227	John L. Heffron, M.D., Dean	Sept. 14	June 8	57
	NORTH CAROLINA			**104**	**3**	...	...	...											
58	University of North Carolina School of Medicine, Chapel Hill*	1,149	A	59	3	...	...	...	24	34	150	150	...	...	I. H. Manning, M.D., Dean	Sept. 23	June 10	58
59	Wake Forest College School of Medicine, Wake Forest*	1,443	A	45	...	...	...	...	10	34	120	120	...	...	E. B. Earnshaw, Secretary	Sept. 7	May 27	59
	NORTH DAKOTA			**29**	**2**	...	...	...											
60	Univ. of North Dakota School of Med., University (Grand Forks)*	13,950	A	29	2	...	...	...	15	35	85	85	...	...	H. E. French, M.D., Dean	Sept. 20	June 14	60
	OHIO			**838**	**32**	**143**	**5**	**60**											
61	Eclectic Medical College, Cincinnati.—E.	401,247	B	90	3	30	2	3	39	32	160	150	150	150	John K. Scudder, M.D., Secretary	Sept. 16	May 16	61
62	University of Cincinnati College of Medicine	401,247	A	209	12	42	2	31	176	34	260	210	160	180	J. C. Oliver, M.D., Acting Dean	Oct. 5	June 18	62
63	Western Reserve University School of Medicine, Cleveland	796,836	A	175	3	48	...	47	126	34	225	210	204	205	Carl A. Hamann, M.D., Dean	Sept. 30	June 16	63
64	Ohio State University College of Medicine, Columbus[4]	237,031	A	141	9	22	1	9	91	36	152	152	152	152	E. F. McCampbell, M.D., Dean	Sept. 14	June 14	64
65	Ohio State University College of Homeo. Medicine, Columbus.—H.[4]	237,031	B	21	5	1	...	...	21	36	152	152	152	152	Claude A. Burrett, M.D., Dean	Sept. 14	June 14	65
	OKLAHOMA			**80**	**6**	**14**	**1**	**10**											
66	University of Oklahoma School of Med., Norman-Oklahoma City	91,258	A	80	6	14	1	10	66	35	70	40	40	45	Leroy Long, M.D., Dean	Sept. 16	June 7	66
	OREGON			**92**	**11**	**13**	**1**	**5**											
67	University of Oregon Medical School, Portland	258,288	A	92	11	13	1	5	104	32	165	160	160	160	Richard B. Dillehunt, M.D., Dean	Oct. 1	May 31	67
	PENNSYLVANIA			**1333**	**123**	**334**	**15**	**125**											
68	Hahnemann Medical College and Hospital of Philadelphia.—H.	1,823,158	A	130	...	37	...	3	95	32	230	232	232	250	William A. Pearson, M.D., Dean	Sept. 27	May 31	68
69	Jefferson Medical College of Philadelphia	1,823,158	A	522	...	165	...	28	167	34	325	320	320	320	Ross V. Patterson, M.D., Dean	Sept. 22	June 4	69
70	Temple University Department of Medicine, Philadelphia	1,823,158	C	113	1	23	...	...	102	33	175	171	160	170	Frank C. Hammond, M.D., Dean	Sept. 20	June 1	70
71	University of Pennsylvania School of Medicine, Philadelphia	1,823,158	A	428	26	128	3	60	210	34	343	320	320	324	William Pepper, M.D., Dean	Sept. 24	June 15	71
72	Woman's Medical College of Pennsylvania, Philadelphia	1,823,158	A	....	89	...	12	10	60	33	198	202	184	180	Martha Tracy, M.D., Dean	Sept. 29	June 15	72
73	University of Pittsburgh School of Medicine, Pittsburgh	588,193	A	140	7	31	...	24	120	33	310	310	310	310	Raleigh R. Huggins, M.D., Dean	Sept. 27	June 15	73
	SOUTH CAROLINA			**62**	**3**	**14**	...	**5**											
74	Medical College of the State of South Carolina, Charleston	60,734	A	62	3	14	...	5	65	33	150	150	150	150	Robert Wilson, M.D., Dean	Sept. 24	June 2	74
	SOUTH DAKOTA			**22**	**1**	...	...	...											
75	University of South Dakota College of Medicine, Vermilion*	2,590	A	22	1	...	...	...	8	35	60	60	...	...	C. P. Lommen, M.D., Dean	Sept. 27	June 25	75
	TENNESSEE			**362**	**5**	**83**	**1**	**26**											
76	University of Tennessee College of Medicine, Memphis[4]	162,351	A	48	2	14	1	6	107	33	107	102	102	127	McIver Woody, M.D., Dean	Sept. 25	June 7	76
77	University of West Tennessee Medical Department, Memphis	162,351	C	10	...	1	...	...	...	...	80	80	80	90	M. V. Lynk, M.D., Dean	.....	.....	77
78	Meharry Medical College, Nashville	118,342	B	182	3	39	...	18	30	30	87	87	87	97	G. W. Hubbard, M.D., President	Oct. 5	May 19	78
79	Vanderbilt University School of Medicine, Nashville	118,342	A	122	...	29	...	2	79	33	160	160	160	185	G. Canby Robinson, M.D., Dean	Sept. 27	June 8	79
	TEXAS			**338**	**22**	**95**	**5**	**30**											
80	Baylor University College of Medicine, Dallas	158,976	A	137	4	33	...	9	54	32	165	160	160	150	Edward H. Cary, M.D., Dean	Sept. 27	May 26	80
81	University of Texas Department of Medicine, Galveston[4]	41,863	A	201	18	62	5	21	42	32	78	48	31	21	W. S. Carter, M.D., Dean	Oct. 1	May 31	81
	UTAH			**35**	**1**	...	...	...											
82	University of Utah School of Medicine, Salt Lake City*	118,110	A	35	1	...	...	...	24	33	110	110	...	...	Perry G. Snow, M.D., Dean	Sept. 28	June 5	82
	VERMONT			**103**	...	**22**	...	**2**											
83	University of Vermont College of Medicine, Burlington	22,779	A	103	...	22	...	2	45	35	145	145	145	170	H. C. Tinkham, M.D., Dean	Sept. 22	June 20	83

E., Eclectic; H., Homeopathic; N., Nondescript.

* Gives only the first two years of the medical course.

1. This school has just been moved from Mobile to Tuscaloosa and clinical teaching has been suspended.

2. This school has just been suspended.

3. These two colleges ceased medical teaching in 1918, but retain a nominal existence until 1921 in order to grant degrees to the three remaining classes which are being taught elsewhere.

4. The following state universities make an additional charge for students who are nonresidents, as follows: Colorado, $30; Georgia, $90; Iowa, $15; Kansas, $10; Michigan, $25; Minnesota, $30; Missouri, $10; Ohio, $50; Tennessee, $50; Texas, $150; West Virginia, $30.

5. This was formerly the Chicago Hospital College of Medicine.

6. Figures for enrolment, approximate; graduates, exact.

7. Figures are as reported regarding students and graduates. They have not been verified.

8. Figures for enrolment, approximate; graduates, exact.

9. Formerly the Central College of Osteopathy. Reported to be conducting both osteopathic and medical courses.

10. Ordered closed by trustees in 1919. Has continued for two years until two remaining classes are graduated. Will permanently close in 1921.

TABLE 1.—STATISTICS OF MEDICAL COLLEGES IN THE UNITED STATES AND CANADA—(Concluded)

Marginal Number	NAME AND LOCATION OF COLLEGE	Population of City where College is Located (1920 Census Reports)	Classification by Council on Medical Education	No. of Students Registered 1919-20		Graduates 1920		Grads. with A.B., B.S. or Ph.B.	Number of Teachers	Weeks in College Year	Total Fees (Dollars)				Executive Officer	Session of 1920-21	
				Men	Women	Men	Women				1st year	2d year	3d year	4th year		Begins 1920	Ends 1921
	VIRGINIA																
84	Medical College of Virginia, Richmond	156,687	A	234	6	50	1	19	34	34	210	210	210	240	E. C. L. Miller, M.D., Dean	Sept. 15	June 5
85	University of Virginia Department of Medicine, Charlottesville	10,688	A	131	6	22	1	10	112	35	205	208	165	150	Theodore Hough, M.D., Dean	Sept. 16	June 15
	WEST VIRGINIA			103	...	28	...	9	45								
86	West Virginia University School of Medicine, Morgantown[*]	12,117	A	53	2	...	...	...	16	35	30	30	...	...	John N. Simpson, M.D., Dean	Sept. 20	June 15
	WISCONSIN			225	19	2	...	2									
87	University of Wisconsin Medical School, Madison	38,378	A	123	16	...	...	...	46	35	104	97	...	...	Chas. R. Bardeen, M.D., Dean	Sept. 23	June 17
88	Marquette University School of Medicine, Milwaukee	457,147	A	102	1	...	...	2	79	34	250	250	250	250	Louis F. Jermain, M.D., Dean	Oct. 1	June 14
	CANADA [11]			243	138	2827	12	39									
89	University of Alberta Faculty of Medicine, Edmonton, Alta.	5,579	12	123	12	...	...	...	26	30	89	89	...	...	Cecil E. Race, Registrar	Sept. 27	May 12
90	Dalhousie University Faculty of Medicine, Halifax, N. S.	46,619	B	126	13	9	2	1	40	32	140	150	150	150	John Stewart, M.D., Dean	Sept. 29	May 26
91	Queen's University Faculty of Medicine, Kingston, Ont.	18,874	B	229	...	21	...	3	50	32	143	144	144	134	J. C. Connell, M.D., Dean	Sept. 29	May 29
92	University of Toronto Faculty of Medicine, Toronto, Ont.	376,538	A	1002	80	70	4	15	271	32	160	160	160	160	A. Primrose, M.D., Dean	Sept. 28	May 31
93	Western University Faculty of Medicine, London, Ont.	46,300	B	119	...	11	...	2	43	31	120	128	128	153	Paul S. McKibben, M.D., Acting Dean	Oct. 4	May 26
94	McGill University Faculty of Medicine, Montreal, Que.	470,480	A	616	8	52	...	13	135	32	167	167	167	197	John W. Scane, M.D., Registrar	Oct. 1	June 6
95	University of Montreal Medical Faculty, Montreal, Que.	470,480	A	267	...	32	...	...	80	34	125	125	125	145	Louis Daniel Mignault, M.D., Secretary	Oct. 1	June 28
96	Laval University Faculty of Medicine, Quebec, Que.	78,190	B	149	...	25	...	...	35	36	125	125	125	145	Edwin Turcot, M.D., Dean	Sept.	June
97	University of Manitoba Faculty of Medicine, Winnipeg	136,035	B	196	23	23	2	5	90	28	165	170	160	160	S. Willis Prowse, M.D., Dean	Sept. 14	April 15

E., Eclectic; H., Homeopathic; N., Nondescript.
[*] Gives only the first two years of the medical course.
11. The Canadian schools count the one or two years devoted to premedical sciences as a part of the medical course. The fees for the last four years only are shown. Enrolments include students of all years.

(Continued from page 379)

at the eclectic, and 389 (2.8 per cent.) were enrolled in three nondescript colleges. These three colleges consist of two semi-osteopathic and one nominally eclectic affair. Two of them are outlawed in their home state—Missouri—and one is in Massachusetts, which has a feeble medical practice law. None of them, therefore, is subject to rigid laws or regulations. One of them, the Kansas City College of Medicine and Surgery, exists only by the enjoyment of special privileges obtained through a sectarian licensing board in an adjoining state, the Eclectic Board of Arkansas, even though it is disowned as an eclectic college by the National Eclectic Medical Association.

NUMBER OF MEDICAL GRADUATES

The total number of graduates for the year ending June 30, 1920, was 3,047, an increase of 391 over 1919. The number of graduates from the nonsectarian colleges was 2,826, or 403 more than last year. The number from the homeopathic colleges was 97, or 8 more than last year, and from the eclectic colleges there were 30 graduates, or 2 more than last year. The three nondescript colleges had 94 graduates, or 22 less than last year.

TABLE 5.—MEDICAL COLLEGE GRADUATES

Year	Nonsectarian	Homeopathic	Eclectic	Physio-Med.	Nondescript	Total
1880	2,673	380	188	..	..	3,241
1890	3,853	380	221	..	..	4,454
1900	4,715	413	86	..	..	5,214
1901	4,879	387	148	18	12	5,444
1902	4,508	336	138	16	11	5,009
1903	5,088	420	149	24	17	5,698
1904	5,190	371	146	20	20	5,747
1905	5,126	276	153	22	23	5,600
1906	4,841	286	186	22	29	5,364
1907	4,591	225	121	11	32	4,980
1908	4,370	215	116	12	28	4,741
1909	4,163	209	84	15	44	4,515
1910	4,113	183	114	16	14	4,440
1911	4,006	152	110	5	..	4,273
1912	4,206	185	92	..	..	4,483
1913	3,679	209	93	..	..	3,981
1914	3,370	154	70	..	..	3,594
1915	3,286	195	55	..	..	3,536
1916	3,274	166	78	..	..	3,518
1917	2,134	180	65	..	..	3,379
1918	2,454	114	42	..	60	2,670
1919	2,423	89	28	..	116	2,656
1920	2,826	97	30	..	94	3,047

GRADUATES HOLDING DEGREES IN ARTS

Of the 3,047 medical graduates, 1,321 (see Table 11) held also degrees in arts or science. This total includes those taking the combined courses in arts or science and medicine. This year 43.4 per cent. of all graduates held collegiate degrees, as compared with 15.3 per cent. in 1910. This increase is what was expected under the general adoption by medical schools of the entrance requirement of two years of college work. Of the 2,826 nonsectarian school graduates, 1,307, or 46.2 per cent., were reported to have baccalaureate degrees; of the homeopathic graduates, 11, or 11.3 per cent., were so reported, and of the eclectic graduates this year, 3, or 10 per cent., held such degrees. Of the 94 graduates of the nondescript

colleges not one was reported as holding a bachelor's degree in arts or science. As will be noted by referring to Table 11, of the 1,321 graduates holding baccalaureate degrees, 224—the largest number—came as last year from the Illinois colleges. New York had 168 graduates this year holding baccalaureate degress, followed by Pennsylvania with 125 and Massachusetts with 114. The percentage of graduates holding collegiate degrees should continue to increase, since all the better medical schools are now requiring two years of college work for admission, which brings more students in reach of the combined course for the B.S. and M.D. degrees.

TABLE 6.—MEDICAL GRADUATES WITH LIBERAL ARTS DEGREES

Year	Nonsectarian			Homeopathic			Eclectic			Totals*		
	Graduates	A.B., B.S.	Per Cent.	Graduates	A.B., B.S.	Per Cent.	Graduates	A.B., B.S.	Per Cent.	Graduates	A.B., B.S.	Per Cent.
1910.....	4,113	664	16.1	183	13	7.1	114	3	2.6	4,440	680	15.3
1911.....	4,006	683	17.0	152	18	11.8	110	4	3.6	4,273	705	16.5
1912.....	4,206	744	17.7	185	15	8.1	92	4	4.3	4,483	763	17.0
1913.....	3,679	732	19.9	209	20	9.6	93	1	1.1	3,981	753	18.9
1914.....	3,370	794	23.5	154	7	4.5	70	6	8.6	3,594	807	22.5
1915.....	3,286	839	25.5	195	16	8.2	55	3	5.5	3,536	858	24.3
1916.....	3,274	928	28.3	166	20	12.0	78	...	.....	3,518	948	26.9
1917.....	3,134	1078	34.4	180	19	10.5	65	2	3.1	3,379	1099	32.5
1918*.....	2,454	1007	41.0	114	15	13.2	60	...	.....	2,670	1024	38.4
1919*.....	2,423	1162	48.0	89	16	18.0	28	2	7.1	2,656	1180	44.4
1920.....	2,826	1307	46.2	97	11	11.3	30	3	10.0	3,043	1321	43.5

*No graduates of nondescript colleges during the last three years were reported to have collegiate degrees.

TABLE 7.—WOMEN IN MEDICINE

Year	Total Women Students	Percentage of All Students, Both Sexes	Total Women Graduates	Percentage of Graduates, Both Sexes	Women's Colleges			Co-ed. Schools			All Schools		
					Students	Percentage of All Women Students	Graduates	Percentage of All Women Graduates	Students	Percentage of All Women Students	Graduates	Percentage of All Women Graduates
1904	1,129	4.3	244	4.0	3	183	16.2	56	23.0	97	946	83.8	198	77.0
1905	1,073	4.1	219	4.0	3	221	20.6	54	24.5	96	852	79.4	165	75.5
1906	895	3.5	233	4.3	3	189	21.0	33	14.1	90	706	79.0	200	85.9
1907	928	3.8	211	4.2	3	210	22.6	39	18.5	86	718	77.4	172	81.5
1908	835	3.7	185	3.9	3	186	22.3	46	24.9	88	649	77 7	139	75.1
1909	921	4.2	162	3.7	3	169	18.4	33	20.3	91	752	81.6	129	79.7
1910	907	4.2	157	3.5	3	155	17.1	41	26.1	82	752	82.9	116	73.9
1911	680	3.4	159	3.7	2	134	19.7	36	22.6	74	546	80.3	123	77.4
1912	679	3.2	142	3.2	2	143	21.1	32	22.5	64	536	78.9	110	77.5
1913	640	3.8	154	3.8	2	138	21.6	33	21.4	55	502	78.6	121	78.6
1914	631	3.8	121	3.4	2	135	21.4	25	20.7	54	496	78.6	96	79.3
1915	592	4.0	130	3.7	2	116	19.6	38	29.2	53	462	80.4	92	70.8
1916	566	4.0	134	3.8	2	102	18.0	28	20.0	51	464	82.0	106	80.0
1917	610	4.5	153	4.5	2	81	13.3	29	18.9	56	529	86.7	124	81.1
1918	581	4.3	106	4.0	2	70	12.0	12	11.3	60	511	87.9	94	88.7
1919	686	5.2	107	4.0	1	66	10.0	7	6.5	59	620	90.4	100	93.4
1920	818	5.8	134	4.4	1	89	10.9	12	9.0	64	727	90.1	122	91.0

WOMEN IN MEDICINE

During the past year there were 818 women studying medicine, or 132 more than last year, and 237 more than in 1918. The percentage of women to all medical students this year is 5.8, the largest percentage since the presenting of these statistics was begun. There were 134 women graduates this year, 27 more than last year, but 19 less than in 1917. Of all the women matriculants, 89 were in attendance at the one medical college for women, while 727 (90.1 per cent.) were matriculated in the 64 coeducational colleges. From the one women's college there were 12 graduates, while 122 (91.0 per cent.) secured their degrees from coeducational colleges. This increase of women students in coeducational colleges is not surprising, since in recent years some of the largest and oldest medical schools, as Columbia, Tulane, the University of Pennsylvania, Harvard and Western Reserve University, have thrown open their doors to women.

NUMBER OF COLLEGES

Since June 30, 1919, one college, the College of Physicians and Surgeons of the University of Southern California, was closed, and Fordham University School of Medicine was temporarily reopened, leaving 85 still existing. Of these, 76 are nonsectarian (regular), 5 are homeopathic, 1 is eclectic and 3 are nondescript. Two of the nondescript colleges are not recognized by the licensing board of Missouri, the state in which they are located.

TABLE 8.—MEDICAL COLLEGES

Year	Nonsectarian	Homeopathic	Eclectic	Physio-Med.	Nondescript	Total
1850.....	44	3	4	1	..	52
1860.....	53	6	4	2	..	65
1870.....	60	8	5	2	..	75
1880.....	76	14	8	2	..	100
1890.....	106	16	9	2	..	133
1900.....	126	22	9	2	1	160
1901.....	125	22	10	2	1	160
1902.....	126	20	9	3	2	160
1903.....	126	20	9	3	2	160
1904.....	127	19	9	3	2	160
1905.....	125	19	9	3	2	158
1906.....	130	19	8	3	2	162
1907.....	127	18	9	3	2	159
1908.....	120	18	9	2	2	151
1909.....	115	15	8	1	1	140
1910.....	109	12	8	1	1	131
1911.....	103	12	7	..	..	122
1912.....	101	11	6	..	..	118
1913.....	92	10	5	..	..	107
1914.....	87	10	5	..	..	102
1915.....	83	9	4	..	..	96
1916.....	82	10	3	..	..	95
1917.....	83	9	4	..	..	96
1918.....	79	6	2	..	3	90
1919.....	76	5	1	..	3	85
1920.....	76	5	1	..	3	85

TABLE 9.—COLLEGE TERMS

Year	23 to 26 weeks		27 to 28 weeks		29 to 30 weeks		31 to 32 weeks		33 to 34 weeks		35 to 36 weeks		Over 36 weeks	
	No.	%	No	%	No.	%	No.	%	No.	%	No.	%	No.	%
1901	58	36.5	42	26.4	8	5.0	26	16.4	4	2.5	18	11.3	3	1.9
1902	44	28.4	44	28.4	11	7.1	33	21.3	3	1.9	18	11.6	2	1.3
1903	33	21.4	46	29.9	15	9.7	37	24.0	2	1.3	19	12.4	2	1.3
1904	27	16.3	44	26.5	22	13.3	37	22.3	13	7.8	20	12.0	3	1.8
1905	15	9.4	35	21.8	12	7.5	44	27.5	13	8.1	28	23.8	3	1.8
1906	14	8.7	35	21.7	26	16 1	32	19.9	24	14.9	28	17.4	2	1.3
1907	6	3.7	27	16.8	26	16.1	42	26.1	29	18.0	29	18.0	2	1.3
1908	2	1.3	21	13.8	28	18.4	51	33.6	24	15.8	22	14.5	4	2.6
1909	4	2.3	17	11.6	23	16.4	51	34.9	18	12.3	30	20.5	3	2.0
1910	2	1.5	8	6.0	19	14.3	42	31.5	30	22.6	30	22.6	2	1.5
1911	..	....	6	5.0	16	13.3	37	30.8	32	26.7	28	23.4	1	0.8
1912	1	0.9	1	0.9	11	9.5	34	29.3	37	31.8	31	26.7	1	0.9
1913	..	....	3	2.8	5	4.7	29	27.4	41	38.7	27	25.5	1	0.9
1914	..	....	2	2.0	4	4.0	25	24.8	41	40.5	28	27.7	1	1.0
1915	..	....	1	1.0	5	5.3	22	23.2	36	37.9	30	31.6	1	1.0
1916	..	....	..	....	4	4.2	17	17.9	43	45.3	28	29.5	..	...
1917	..	....	..	....	1	1.0	15	15.6	46	47.9	31	32.3	..	...
1918*	..	....	..	....	2	2.2	23	25.6	37	41.1	22	24.4	..	...
1919*	..	....	..	....	1	1.2	11	12.9	44	51.8	23	27.1	1	1.2
1920	..	....	..	....	1	1.2	10	11.8	38	44.7	29	34.1		

*Information not furnished by six Class C colleges during the last three years.

(Continued on page 386)

Marginal Number	NAME OF COLLEGE	1 Alabama.....178	2 Arizona.....11	3 Arkansas.....80	4 California.....519	5 Colorado.....128	6 Connecticut....234	7 Delaware..... 26	8 Dist. of Col.....88	9 Florida.....52	10 Georgia.....273	11 Idaho.....32	12 Illinois.....1,059	13 Indiana.....389	14 Iowa.....354	15 Kansas.....250	16 Kentucky.....128	17 Louisiana.....144	18 Maine.....64	19 Maryland.....176	20 Massachusetts..765	Marginal Number
1	University of Alabama School of Medicine	45	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....	....	....	1
2	University of Arkansas Medical Department	....	....	24	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2
3	College of Medical Evangelists	....	2	....	42	5	....	....	2	1	....	1	2	....	....	4	....	....	....	3	1	3
4	College of Physicians and Surgeons, Los Angeles	....	....	....	77	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	4
5	Oakland College of Medicine and Surgery	....	....	....	5	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5
6	College of Physicians and Surgeons of San Francisco	....	....	....	15	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6
7	Leland Stanford Junior Univ., School of Medicine*	....	1	....	93	5	....	....	1	....	....	2	....	1	1	....	....	1	....	....	....	7
8	University of California Medical School	....	....	....	193	1	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	8
9	University of Colorado School of Medicine	....	....	....	....	59	....	....	....	1	1	....	....	....	1	1	....	....	....	....	....	9
10	Yale University School of Medicine	....	....	....	....	....	68	....	....	....	1	....	....	....	....	....	....	....	....	1	2	10
11	Georgetown University School of Medicine	....	....	....	....	....	3	....	18	....	....	....	....	2	2	....	....	1	2	4	9	11
12	George Washington University Medical School	....	....	....	1	1	4	1	32	....	2	....	2	....	....	1	....	1	....	3	1	12
13	Howard University School of Medicine	4	....	1	....	....	....	....	16	2	....	....	1	....	....	....	4	2	....	6	....	13
14	Emory University School of Medicine	21	....	....	....	....	....	....	....	5	123	....	....	....	2	....	2	....	....	....	....	14
15	University of Georgia Medical Department	....	....	....	....	....	....	....	....	....	59	....	....	....	....	....	....	....	....	....	....	15
16	Chicago Medical School	....	....	....	....	....	....	....	....	....	....	....	88	....	....	....	....	....	....	....	....	16
17	Hahnemann Medical College and Hospital of Chicago	1	....	1	....	....	....	....	....	....	....	....	13	6	3	1	1	....	....	....	....	17
18	Loyola University School of Medicine	....	....	....	....	1	1	....	....	....	1	....	135	4	5	2	1	....	....	....	2	18
19	Northwestern University Medical School	2	1	3	2	8	....	....	....	1	1	5	185	14	22	11	....	....	....	....	1	19
20	Rush Medical College (University of Chicago)	1	....	2	8	10	....	....	1	2	....	5	277	32	41	31	3	1	1	....	....	20
21	University of Illinois College of Medicine	1	1	....	3	3	....	....	....	....	....	....	192	7	14	1	1	....	....	....	....	21
22	Indiana University School of Medicine	....	....	....	....	....	....	....	....	....	....	....	3	223	....	....	1	....	....	....	....	22
23	State University of Iowa College of Medicine	....	....	....	1	....	....	....	....	....	....	1	1	....	219	....	....	....	....	....	....	23
24	University of Kansas School of Medicine	....	....	....	....	....	....	....	....	....	....	....	....	....	1	119	....	....	....	....	....	24
25	University of Louisville Medical Department	4	....	5	1	....	....	....	....	2	1	2	6	18	2	1	43	1	....	....	1	25
26	Tulane University of Louisiana School of Medicine	48	1	13	3	1	....	....	....	11	10	....	....	1	....	1	....	113	....	....	....	26
27	Bowdoin Medical School	....	....	....	....	....	5	....	....	....	....	....	....	....	....	....	....	....	27	....	3	27
28	Johns Hopkins University Medical Department	3	....	2	10	5	13	2	6	2	14	....	6	5	4	1	8	2	4	68	10	28
29	Univ. of Maryland Sch. of Med. & Co. of P. and S.	1	....	....	....	....	13	6	....	2	....	....	....	....	....	....	3	....	....	74	2	29
30	Boston University School of Medicine	1	....	....	1	....	3	1	....	1	2	....	....	....	....	1	....	....	1	....	31	30
31	College of Physicians and Surgeons, Boston †	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	32	31
32	Medical College of Harvard University	4	....	....	8	7	17	....	3	2	11	1	9	4	1	2	....	....	16	1	164	32
33	Tufts College Medical School	....	....	....	....	....	10	....	1	....	....	....	....	....	....	....	....	....	7	....	252	33
34	Middlesex College of Medicine and Surgery.—N.*	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	189	34
35	University of Michigan Medical School	....	1	1	2	3	4	....	1	1	1	....	10	16	1	1	2	....	....	1	3	35
36	University of Michigan Homeo. Med. School.—H	....	....	....	2	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	36
37	Detroit College of Medicine and Surgery	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	37
38	University of Minnesota Medical School	....	1	....	3	1	....	....	....	....	....	1	2	1	5	1	....	....	....	....	....	38
39	University of Mississippi School of Medicine	5	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	39
40	University of Missouri School of Medicine	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	....	....	....	....	....	40
41	Kansas City College of Medicine and Surgery.—N.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	41
42	Kansas City University of Physicians and Surgs.—N.	1	....	....	5	3	....	....	....	....	2	1	2	1	1	7	....	....	....	....	....	42
43	St. Louis College of Physicians and Surgeons*	....	....	4	....	....	....	....	....	....	....	....	23	....	....	10	....	....	....	....	....	43
44	St. Louis University School of Medicine	....	....	....	18	2	....	....	....	....	1	....	37	6	12	11	1	2	....	....	....	44
45	Washington University School of Medicine	....	1	3	2	2	....	....	....	....	....	....	21	3	3	15	....	....	....	....	....	45
46	John A. Creighton Medical College	....	....	....	....	3	....	....	....	....	....	1	....	1	18	7	....	....	....	....	....	46
47	University of Nebraska College of Medicine	....	....	....	1	1	....	....	....	....	....	2	....	....	11	2	....	1	....	....	....	47
48	Dartmouth Medical School	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	2	48
49	Albany Medical College	....	....	....	....	....	1	....	....	....	....	....	....	1	....	....	....	....	....	....	2	49
50	University of Buffalo Medical Department	....	....	....	....	....	1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	50
51	Columbia University College of Phys. and Surgs.	1	1	2	1	1	13	....	1	....	3	1	3	1	....	....	1	....	1	....	3	51
52	Cornell University Medical College	1	....	....	4	2	9	....	....	....	2	....	3	1	....	....	....	....	1	1	9	52
53	Fordham University School of Medicine	....	....	....	....	....	7	....	....	....	....	....	....	....	....	....	....	....	....	....	3	53
54	Long Island College Hospital	....	....	....	....	....	5	....	....	....	....	....	....	....	....	....	....	....	....	....	....	54
55	New York Homeo. Med. College and Flower Hosp.—H.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	55
56	University and Bellevue Hospital Medical College	....	....	....	1	....	17	....	....	1	2	....	1	....	1	....	....	....	....	....	5	56
57	Syracuse University College of Medicine	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	57
58	University of North Carolina School of Medicine	....	....	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	58
59	Wake Forest College School of Medicine	....	....	1	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	59
60	University of North Dakota School of Medicine	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	60
61	Eclectic Medical College, Cincinnati.—E.	....	....	....	....	....	....	....	....	....	2	....	4	4	....	1	7	....	1	1	....	61
62	University of Cincinnati College of Medicine	....	....	....	....	....	....	....	....	....	....	....	4	16	....	2	23	....	....	....	....	62
63	Western Reserve University School of Medicine	2	....	....	....	....	....	....	....	1	....	2	1	3	2	3	1	....	....	....	....	63
64	Ohio State University College of Medicine	....	....	....	....	....	....	....	....	....	....	....	....	4	....	....	....	....	....	....	....	64
65	Ohio State Univ. College of Homeo. Medicine.—H.	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	65
66	University of Oklahoma School of Medicine	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	....	....	....	66
67	University of Oregon Medical School	....	1	....	1	....	....	....	....	....	2	....	....	....	1	....	....	....	....	....	....	67
68	Hahnemann Med. College and Hospital of Phila.—H.	....	....	....	....	....	2	4	....	....	....	....	....	....	....	....	2	....	....	4	2	68
69	Jefferson Medical College of Philadelphia	1	....	1	1	....	15	8	....	1	4	2	3	3	2	4	2	....	2	3	12	69
70	Temple University Department of Medicine	1	....	....	....	....	....	....	1	....	1	....	....	1	....	....	....	....	1	....	1	70
71	University of Pennsylvania School of Medicine	3	....	....	4	4	6	2	1	2	....	1	2	1	2	3	3	....	....	4	1	71
72	Woman's Medical College of Pennsylvania	....	....	....	2	....	4	2	....	1	1	....	2	1	1	1	3	....	....	....	3	72
73	University of Pittsburgh School of Medicine	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	73
74	Medical College of the State of South Carolina	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	74
75	University of South Dakota College of Medicine	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	75
76	University of Tennessee College of Medicine	....	....	1	....	....	....	....	....	2	....	1	....	....	....	1	....	....	....	....	....	76
77	University of West Tennessee Medical Department	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	77
78	Meharry Medical College	11	....	10	....	....	....	....	1	2	17	....	9	....	....	2	5	9	....	1	1	78
79	Vanderbilt University School of Medicine	13	....	5	2	....	....	....	....	2	3	....	2	1	....	....	9	6	....	....	....	79
80	Baylor University College of Medicine	....	....	1	1	....	1	....	....	....	1	....	....	1	....	1	....	1	....	....	1	80
81	University of Texas Department of Medicine	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	81
82	University of Utah School of Medicine	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	82
83	University of Vermont College of Medicine	....	....	....	....	....	9	....	....	1	....	....	....	....	....	....	....	....	....	....	12	83
84	Medical College of Virginia	1	....	....	....	....	1	....	....	....	....	....	1	....	....	....	....	....	....	1	....	84
85	University of Virginia Department of Medicine	1	....	....	1	....	1	....	3	4	4	....	....	1	....	....	1	....	....	....	....	85
86	West Virginia University School of Medicine	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	86
87	University of Wisconsin Medical School	....	....	....	1	....	....	....	....	....	....	1	6	3	2	1	....	....	....	....	....	87
88	Marquette University School of Medicine	1	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	88
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

E.—Eclectic; H.—Homeopathic; N.—Nondescript. * Figures exact; distribution approximate. † Figures and distributionapproximate.

Marginal Number	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51		
	Michigan.....435	Minnesota.....364	Mississippi.....143	Missouri.....594	Montana.....50	Nebraska.....248	Nevada.....5	New Hampshire 48	New Jersey.....365	New Mexico.....9	New York.....2,138	North Carolina 282	North Dakota...88	Ohio.....702	Oklahoma.....112	Oregon.....132	Pennsylvania.1,038	Rhode Island....73	South Carolina 139	South Dakota...89	Tennessee.....179	Texas.....450	Utah.....111	Vermont.....55	Virginia.....275	Washington.....88	West Virginia...142	Wisconsin.....366	Wyoming.....5	Philippines, etc. 114	Foreign.....269	Totals.....14,088	
1	....	....	....	....	....	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	51	1
2	....	....	....	....	....	....	....	....	....	....	1	....	....	....	2	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	31	2
3	4	1	....	....	3	2	....	....	....	1	2	....	2	....	....	3	1	....	....	2	2	....	....	....	1	4	....	2	1	2	5	101	3
4	....	1	....	....	....	....	....	....	....	1	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	85	4
5	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	5
6	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	16	6
7	....	....	....	1	1	....	3	....	....	....	1	....	....	1	....	4	....	....	....	....	....	....	5	1	....	10	....	....	....	....	5	137	7
8	2	....	....	....	1	....	....	....	....	....	1	....	....	....	1	6	....	....	....	....	....	....	1	....	....	1	....	1	....	....	5	214	8
9	....	....	....	....	....	1	....	....	....	1	1	....	....	1	....	....	1	....	....	....	....	1	....	....	1	....	1	....	1	....	....	71	9
10	....	....	....	....	....	....	....	1	1	....	5	....	....	1	....	....	....	1	1	....	....	....	....	....	....	....	....	1	....	1	4	88	10
11	1	4	....	1	....	....	....	....	17	....	22	....	....	2	....	....	15	2	....	....	....	1	....	....	3	....	1	....	....	7	3	120	11
12	3	....	....	....	....	1	....	....	1	....	14	3	1	1	....	....	8	1	2	....	....	1	5	....	9	1	....	1	....	3	10	114	12
13	....	....	3	....	....	....	....	....	5	....	7	13	....	....	1	....	8	1	3	....	....	5	....	....	11	....	....	1	....	1	18	113	13
14	....	....	....	2	....	....	....	....	....	....	1	6	....	....	....	....	....	....	3	....	3	....	....	....	2	....	1	....	....	1	2	174	14
15	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	64	15
16	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	88	16
17	2	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	2	....	....	....	....	....	....	....	....	....	....	1	....	4	11	48	17
18	8	3	....	2	....	1	....	....	....	....	4	....	....	2	....	....	6	1	....	....	2	....	....	....	....	1	....	5	....	11	6	204	18
19	13	11	4	20	2	13	....	1	2	1	....	....	18	7	3	1	1	....	....	4	1	3	4	....	1	14	....	19	1	2	6	408	19
20	17	19	2	11	7	10	2	2	1	1	5	....	15	14	3	13	4	....	....	25	4	9	12	....	1	8	....	56	....	6	10	672	20
21	5	6	....	4	....	2	....	....	....	1	5	....	3	2	....	....	1	....	1	2	....	....	2	....	....	1	....	4	....	5	3	270	21
22	....	....	....	....	....	....	....	....	....	....	....	1	....	2	....	....	....	1	....	....	....	....	1	....	....	....	....	....	....	1	1	234	22
23	....	2	....	....	....	....	....	....	....	....	1	....	....	1	....	....	....	....	....	1	....	1	....	....	....	....	....	1	....	1	1	230	23
24	....	....	....	10	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....	133	24
25	1	1	1	4	1	....	....	....	....	....	2	1	....	10	1	....	2	....	2	....	3	4	....	....	1	1	9	1	....	....	132	25
26	....	....	44	....	....	....	....	....	2	....	13	8	....	....	....	....	1	....	2	....	2	41	....	....	2	....	....	....	....	2	6	325	26
27	....	....	....	....	....	....	....	2	1	....	1	....	....	....	....	....	....	1	....	....	....	....	....	1	....	....	....	....	....	....	2	43	27
28	4	1	1	3	1	4	....	....	11	....	35	14	3	28	....	1	29	8	10	1	10	15	....	....	21	2	8	3	1	....	11	390	28
29	4	....	....	....	....	....	....	....	21	....	30	14	....	3	....	....	17	2	4	....	....	....	....	....	11	....	19	....	....	13	5	244	29
30	....	....	....	....	....	....	....	1	4	....	14	3	....	....	....	....	4	2	3	....	....	....	....	....	2	....	....	....	....	3	10	88	30
31	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	32	31
32	4	5	....	8	....	6	....	4	10	1	22	1	....	14	3	6	15	13	2	....	1	3	6	4	7	1	....	11	1	2	13	413	32
33	....	....	....	....	....	....	....	15	4	....	8	....	....	1	....	....	2	27	....	....	....	....	....	....	....	....	....	....	....	8	3	338	33
34	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	77	34
35	192	1	....	5	2	....	....	....	4	1	31	1	1	46	1	....	24	....	1	2	1	1	....	1	....	3	3	5	....	3	12	389	35
36	25	....	....	....	....	....	....	....	....	....	3	....	1	3	....	....	2	....	1	....	....	....	....	....	....	....	1	....	....	....	....	40	36
37	125	....	....	....	....	....	....	....	....	....	....	....	....	4	....	....	2	....	....	1	....	....	....	....	....	....	....	1	....	....	7	140	37
38	2	277	....	3	10	1	....	1	....	....	2	....	15	1	....	3	....	....	....	12	....	....	....	....	1	7	....	15	....	....	3	368	38
39	....	....	46	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	51	39
40	1	....	....	57	....	....	....	....	....	....	6	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	69	40
41	....	....	....	128	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	128	41
42	....	5	....	30	3	1	....	....	....	....	....	....	....	2	2	1	1	....	....	....	....	....	....	....	....	2	....	....	....	....	2	72	42
43	....	....	....	98	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	7	144	43
44	6	4	1	94	2	1	....	....	1	1	7	....	1	20	2	....	3	....	....	2	....	3	1	....	....	1	....	6	....	3	2	251	44
45	....	....	2	85	2	1	....	....	....	....	....	2	1	1	3	1	....	....	....	3	....	2	3	....	1	1	....	4	....	....	1	163	45
46	....	6	....	1	8	38	....	....	....	....	....	....	....	1	....	....	....	....	....	8	....	....	1	....	....	4	....	1	....	1	....	99	46
47	....	....	....	3	1	151	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....	....	1	....	....	....	....	....	....	4	3	184	47
48	....	....	....	....	....	....	....	5	3	....	9	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	21	48
49	....	....	....	....	....	....	....	....	4	....	69	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	79	49
50	....	....	....	....	....	....	....	....	....	....	203	....	....	....	....	....	6	....	....	....	....	....	....	....	....	....	....	....	....	....	....	211	50
51	....	....	....	1	1	1	....	7	54	....	258	1	....	2	....	1	5	3	....	....	4	6	8	....	1	2	1	3	....	....	6	398	51
52	....	....	....	....	....	....	....	....	32	....	178	....	....	2	....	....	4	1	2	....	1	....	1	....	1	....	....	1	....	....	4	260	52
53	....	....	....	....	....	....	....	....	14	....	92	....	....	....	....	....	....	1	....	....	....	....	....	1	....	....	....	....	....	....	....	118	53
54	....	....	....	....	....	....	....	....	10	....	324	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	340	54
55	....	....	....	....	....	....	....	....	11	....	128	....	....	1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	142	55
56	....	....	1	....	....	....	....	....	50	....	378	....	....	....	....	....	1	1	....	1	1	....	1	....	....	....	....	1	....	....	2	465	56
57	....	....	....	....	....	....	....	....	2	....	132	....	....	1	....	....	3	....	....	....	....	....	....	....	2	....	....	....	....	4	2	147	57
58	....	....	....	....	....	....	....	....	....	....	....	56	....	....	....	....	....	....	1	....	....	....	....	....	2	....	....	....	....	....	1	62	58
59	....	....	....	....	....	....	....	....	....	....	....	41	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	45	59
60	....	2	....	....	....	....	....	....	....	....	....	....	26	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	31	60
61	3	....	....	....	....	1	....	....	....	....	18	....	....	43	....	....	5	....	....	....	....	....	....	....	....	....	3	....	....	....	....	93	61
62	3	1	....	1	....	1	....	....	....	....	2	....	....	143	....	....	3	....	....	....	2	....	....	....	3	1	12	....	....	1	3	221	62
63	1	....	1	....	....	....	....	....	....	....	2	....	....	129	....	....	10	....	1	....	....	....	8	....	....	....	6	2	....	....	3	178	63
64	....	....	....	....	....	....	....	....	....	....	....	....	....	142	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....	....	1	150	64
65	....	....	....	....	....	....	....	....	....	....	1	....	....	20	....	....	2	....	....	....	....	....	....	....	....	....	1	....	....	....	1	26	65
66	....	....	....	....	....	1	....	....	....	....	1	....	....	....	79	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	86	66
67	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	85	....	....	....	....	....	....	....	....	....	10	....	....	....	....	2	103	67
68	....	....	....	1	....	....	....	....	10	....	8	1	....	3	....	....	90	....	....	....	....	....	....	....	2	....	....	....	....	....	1	130	68
69	....	3	1	8	....	3	....	....	29	....	26	47	1	20	....	3	242	3	10	1	5	5	9	1	2	5	16	2	....	7	9	522	69
70	1	....	....	....	1	....	....	....	14	....	12	....	....	1	....	1	67	....	1	....	....	....	....	....	....	....	2	....	....	1	7	114	70
71	1	2	4	6	1	3	....	3	29	....	10	23	....	3	....	1	266	....	3	2	7	5	8	....	8	6	7	3	....	....	14	454	71
72	....	....	....	1	....	....	....	....	6	....	5	5	....	5	....	....	32	....	....	....	2	....	....	1	4	....	....	1	....	....	6	89	72
73	....	....	....	....	....	....	....	....	....	....	....	....	....	8	....	....	138	....	....	....	....	....	....	....	....	....	....	....	....	....	....	147	73
74	....	....	....	....	....	....	....	....	....	....	....	2	....	1	....	....	....	....	61	....	....	....	....	....	....	....	....	....	....	....	....	65	74
75	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	18	....	....	....	....	....	....	....	....	....	....	....	23	75
76	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	42	2	....	....	....	....	....	....	....	....	....	50	76
77	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	10	....	....	....	....	....	....	....	....	....	....	10	77
78	1	....	23	6	....	4	....	....	1	....	2	12	....	3	5	....	1	....	13	....	14	18	....	....	4	....	....	....	....	....	10	185	78
79	....	....	3	....	....	....	....	....	....	....	....	3	....	....	1	....	....	....	3	....	55	12	....	....	1	....	....	....	....	....	1	122	79
80	2	....	....	....	....	....	....	1	1	....	10	2	....	....	2	....	2	....	....	....	....	102	....	....	....	....	....	....	....	9	2	141	80
81	....	....	....	....	....	....	....	....	....	....	2	....	....	....	1	....	2	....	....	....	1	209	....	....	....	....	....	1	....	1	2	219	81
82	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	33	....	....	....	....	....	....	....	2	36	82
83	....	....	....	....	....	....	....	5	9	....	16	....	....	....	....	....	1	3	....	....	....	....	....	43	....	....	....	....	....	1	3	103	83
84	....	....	....	....	....	....	....	....	....	....	1	15	....	1	....	....	2	....	1	....	....	....	1	....	106	....	3	1	....	1	1	137	84
85	....	....	5	....	....	....	....	....	1	....	1	7	....	....	....	....	....	....	2	....	4	1	....	....	64	....	2	....	....	....	....	103	85
86	....	....	....	....	....	....	....	....	....	....	1	....	....	2	....	....	5	....	....	....	....	....	....	....	....	....	46	....	....	....	....	55	86
87	1	1	....	....	3	....	....	....	....	....	....	....	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	120	....	....	....	141	87
88	3	4	....	....	....	1	....	....	....	....	2	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	89	....	....	....	103	88
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51		

Name of College	Enrolled During 1919–20					
	1st year	2d year	3d year	4th year	5th year	Total
University of Alabama School of Med.	13	16	12	10	...	51
University of Arkansas Medical Dept.	6	3	16	6	...	31
College of Medical Evangelists	42	26	16	17	...	101
College of Phys. and Surgs., Los Angeles	32	20	19	14	...	85
Coll. of Phys. and Surgs., San Francisco[1]	...	...	...	16	...	16
Oakland College of Medicine and Surgery[1]	...	...	...	5	...	5
Leland Stanford Junior Univ. Sch. of Med.	46	27	28	17	19	137
University of California Medical School	59	63	44	27	21	214
University of Colorado School of Med.	18	20	15	18	...	71
Yale University School of Medicine	34	18	17	19	...	88
Georgetown University School of Med.	47	35	22	16	...	120
George Washington Univ. School of Med.	25	18	40	31	...	114
Howard University School of Medicine	29	18	33	33	...	113
Emory University School of Medicine	58	40	48	28	...	174
University of Georgia Medical Dept.	17	13	19	15	...	64
Chicago Medical School	16	20	25	27	...	88
Hahnemann Medical College and Hospital of Chicago.—H.	11	15	11	11	...	48
Loyola University School of Medicine	16	16	92	80	...	204
Northwestern University Medical School	107	65	79	86	71	408
Rush Medical College (Univ. of Chicago)	120	121	147	169	115	672
University of Illinois College of Med.	103	50	72	45	...	270
Indiana University School of Med.	80	39	60	51	4	234
State University of Iowa College of Med.	76	50	50	54	...	230
University of Kansas School of Med.	45	32	32	24	...	133
University of Louisville Medical Dept.	44	17	44	27	...	132
Tulane Univ. of Louisiana School of Med.	88	56	97	84	...	325
Bowdoin Medical School	20	6	7	10	...	43
Johns Hopkins University Med. Dept.	98	95	95	102	...	390
University of Maryland School of Medicine and College of Phys. and Surgs.	50	58	74	62	...	244
Boston University School of Medicine	39	19	17	13	...	88
College of Phys. and Surgs., Boston[2]	7	8	8	9	...	32
Medical School of Harvard University	120	88	101	104	...	413
Tufts College Medical School	78	87	93	80	...	338
Middlesex College of Med. and Surg.—N.[3]	68	54	53	14	...	189
University of Michigan Medical School	146	88	78	77	...	389
Univ. of Michigan Homeo. Med. Sch.—H.	20	8	5	7	...	40
Detroit College of Medicine and Surgery	31	15	53	41	...	140
University of Minnesota Medical School	77	83	86	62	60	368
University of Mississippi School of Med.*	29	22	...	...	...	51
University of Missouri School of Med.*	39	30	...	...	...	69
Kansas City College of Med. & Surg.—N[2]	30	22	35	41	...	128
Kansas City Univ. of Phys. & Surgs.—N.	7	7	19	39	...	72
St. Louis College of Phys. and Surgs.[3]	40	32	30	42	...	144
St. Louis University School of Medicine	63	29	85	74	...	251
Washington University School of Med.	43	35	39	46	...	163
John A. Creighton Medical College	32	22	22	23	...	99
University of Nebraska College of Med.	63	28	49	44	...	184
Dartmouth Medical School*	7	14	...	...	...	21
Albany Medical College	25	16	17	21	...	79
University of Buffalo Medical Dept.	67	24	62	58	...	211
Columbia Univ., Coll. of Phys. & Surgs.	98	77	122	101	...	398
Cornell University Medical College	111	50	48	51	...	260
Fordham University School of Med.[4]	...	...	64	54	...	118
Long Island College Hospital	107	53	103	77	...	340
New York Homeopathic Medical College and Flower Hospital.—H.	39	24	45	34	...	142
University and Bellevue Hosp. Med. Coll.	166	80	106	113	...	465
Syracuse University College of Medicine	41	36	34	36	...	147
University of No. Carolina Sch. of Med.*	36	26	...	...	...	62
Wake Forest College School of Medicine*	28	17	...	...	...	45
University of North Dakota Sch. of Med.*	20	11	...	...	...	31
Eclectic Medical College, Cincinnati.—E.	13	23	24	33	...	93
University of Cincinnati College of Med.	72	42	62	45	...	221
Western Reserve University Sch. of Med.	49	34	41	54	...	178
Ohio State University College of Med.	60	34	33	23	...	150
Ohio St. Univ. Coll. of Homeo. Med.—H.	7	8	10	1	...	26
University of Oklahoma School of Med.	33	20	18	15	...	86
University of Oregon Medical School	54	18	17	14	...	103
Hahnemann Medical College and Hospital of Philadelphia.—H.	20	20	53	37	...	130
Jefferson Medical College of Philadelphia	174	66	114	168	...	522
Temple University Department of Med.	24	29	28	33	...	114
University of Pennsylvania Sch. of Med.	114	86	122	132	...	454
Woman's Med. College of Pennsylvania	28	31	17	13	...	89
University of Pittsburgh School of Med.	52	22	36	37	...	147
Med. College of the State of So. Carolina	23	17	10	15	...	65
University of So. Dakota Coll. of Med.*	14	9	...	...	...	23
University of Tennessee College of Med.	10	4	21	15	...	50
University of West Tennessee Med. Dept.[3]	3	3	3	1	...	10
Meharry Medical College	69	32	44	40	...	185
Vanderbilt University School of Medicine	37	15	40	30	...	122
Baylor University College of Medicine	33	28	47	33	...	141
University of Texas Dept. of Medicine	78	47	27	67	...	219
University of Utah School of Medicine	23	13	...	...	...	36
University of Vermont College of Med.	25	17	37	24	...	103
Medical College of Virginia	55	29	28	25	...	137
University of Virginia Dept. of Med.	33	22	20	28	...	103
West Virginia University School of Med.*	24	31	...	...	...	55
University of Wisconsin Medical School*	91	50	...	...	...	141
Marquette University School of Med.	39	25	24	15	...	103
Totals for 1920	4234	2837	3464	3263	290	14088
Totals for 1919	3104	3587	3272	2967	122	13052
Totals for 1918	4283	3521	2893	2933	...	13630

H. Homeopathic; E. Eclectic; N. Nondescript.
* Give only first two years of medical course.
1. Suspended teaching in 1918, but are retaining nominal existence to grant diplomas to the remaining classes.
2. Number and distribution of students are approximate; number of graduates is exact.
3. Distribution by classes is approximate; totals are exact.
4. Had only two classes; will close June, 1921.

(Continued from page 383)

LENGTH OF TERMS

During the last twenty years there has been a decided lengthening of college terms. This has reference to the weeks of actual work exclusive of holidays. Prior to 1904 the majority of colleges had sessions of twenty-eight weeks or less. For five years no colleges have had sessions shorter than twenty-nine weeks, and this year only one college reported a session as short as thirty weeks. Sessions of from thirty-three to thirty-six weeks were reported by 67, or 78.9 per cent., of all colleges.

TUITION AND OTHER FEES

Attention is called to Table 1, on pages 380-382, to the amount charged by the various medical colleges per annum for tuition, matriculation, laboratory and graduation fees for each student. In Table 10, the eighty-five colleges have been grouped according to the amount of fees charged and according to their classification by the Council on Medical Education and Hospitals. Twelve colleges charge fees of $100 or less per year; thirty-four between $100 and $175, thirty-one between $175 and $250, and eight charge above $250. Of the twelve colleges charging $100 or less, ten (83 per cent.) are listed among Class A (acceptable) colleges[2] by the Council on Medical Education, while one each is in Class B and Class C. The ten Class A colleges having these low fees are the schools of medicine of the state universities of Iowa, Missouri, Oklahoma, North Dakota, South Dakota, Texas and West Virginia—for residents of those states. On the other hand, five colleges listed by the Council in Class C charge fees of from $100 to $175 per year for each student, and two exact fees of about $200. Diplomas from Class C colleges are reported as not recognized by from 37 to 42 state licensing boards.[3] No intelligent student would knowingly spend his time and money in a low-grade college, the diplomas of which are not recognized by many states, when in the same time, and for even less money, he could attend one of the best-equipped colleges, the diplomas of which are recognized everywhere. Although 45 colleges listed in Class A charge fees ranging from $150 to $350 per year for each student, the actual expense for teaching that student

2. See classification on p. 395.
3. See THE JOURNAL A. M. A., April 17, 1920, p. 1092, Table D.

for the year in these colleges is much more than the fee charged. This larger expenditure is possible because the colleges receive either state aid or private endowment. This shows that no medical college can properly teach medicine on the income received from fees alone.

COLLEGES, STUDENTS AND GRADUATES BY STATES

Illinois formerly had the largest number of medical colleges (Table 11), but for the last three years the first place has been held by New York, where there are still nine colleges. Illinois, Missouri and Pennsylvania have six colleges each; Massachusetts and Ohio have five each, and Tennessee has four. Of Class C colleges, however, Missouri has three, Massachusetts has two, and there is one each in Illinois and Tennessee. In Missouri the Class C colleges are not recognized by the local state licensing board and exist because that board does not have or does not exert the power to their charters revoked.

For the last four years New York has had the largest number of students enrolled, this year having 2,160, followed by Illinois with 1,690 and Pennsylvania with 1,456. New York leads also in the number of graduates, having reported 542, followed by Pennsylvania with 399, Illinois with 321, Missouri with 228, and Massachusetts with 215.

TABLE 10.—COLLEGE FEES

Total Fees	Number of Colleges			
	Class A	Class B	Class C	Total
$ 50 or less	3	..	..	3
50 to $ 75	4	..	..	4
75 to 100	3	1	1	5
100 to 125	7	..	1	8
125 to 150	8	..	3	11
150 to 175	11	3	1	15
175 to 200	9	1	2	12
200 to 225	11	1	..	12
225 to 250	6	1	..	7
250 to 275	2	..	..	2
275 to 300	2	..	..	2
300 or above	4	..	..	4
Totals	70	7	8	85

QUALIFICATIONS OF STUDENTS AND GRADUATES

Table 12 shows the students and graduates of the last six years grouped according to their classification by the Council on Medical Education and Hospitals. Note that during the eight years the *percentage* of students enrolled in Class A colleges has increased from 65.4 to 90.2, and that for the last four years also the total numbers of students in attendance at these schools has increased from 11,317 to 12,610. Note, on the other hand, both the numbers and the percentages of students enrolled in Class B and Class C colleges have been reduced. The percentage of students in Class B colleges has been reduced from 24.4 to 4.1 and in Class C colleges from 10.2 to 4.2. Of graduates, also, the percentage in Class A colleges shows an increase, while in Class B and Class C colleges there has been a decrease. The reduction in the total number of students and graduates, therefore, has been largely at the expense of the lower grade colleges, while the numbers of students and graduates in the higher grade colleges are increasing.

HINTS TO PROSPECTIVE MEDICAL STUDENTS

The student who is contemplating the study of medicine should read with care the instructions entitled "Choice of a Medical School" beginning on page 391. The selection of the school in which he is to obtain his medical training is a matter of extreme importance and should be considered by the student with special care. He should note the standards of premedical education which are given on page 393; he should note the subjects required by the individual medical schools which, if different from those outlined by the Council on Medical Education and Hospitals, will be found in the descriptive statements of those colleges appearing on pages 398 to 408. A careful review of the material published this week will be of great service to such students.

TABLE 11.—MEDICAL COLLEGES, STUDENTS AND GRADUATES BY STATES

State	Colleges		Students		Graduates		Graduates with B.S. or A.B.
	Total	Class C	Men	Women	Men	Women	
Alabama	1	....	51	....	10	....	2
Arkansas	1	....	31	....	6	....	....
California	3	....	488	70	77	13	48
Colorado	1	....	65	6	17	....	4
Connecticut	1	....	83	5	17	2	19
Dist. of Columbia	3	....	339	8	66	1	26
Georgia	2	....	238	....	43	....	6
Illinois	6	1	1,578	112	309	12	224
Indiana	1	....	221	13	46	2	48
Iowa	1	....	224	6	52	1	25
Kansas	1	....	126	7	20	3	14
Kentucky	1	....	126	6	22	3	6
Louisiana	1	....	311	14	81	....	24
Maine	1	....	43	....	10	....	7
Maryland	2	....	573	61	140	12	93
Massachusetts	5	2	1,005	55	196	19	114
Michigan	3	....	535	34	118	5	45
Minnesota	1	....	353	15	60	....	55
Mississippi	1	....	49	2	....	....	....
Missouri	6	3	808	19	221	7	39
Nebraska	2	....	272	11	63	2	40
New Hampshire	1	....	21	....	....	....	....
New York	9	....	2,024	136	519	23	168
North Carolina	2	....	104	3	....	....	....
North Dakota	1	....	29	2	....	....	....
Ohio	5	....	636	32	143	5	90
Oklahoma	1	....	80	6	14	1	10
Oregon	1	....	92	11	13	1	5
Pennsylvania	6	1	1,333	123	384	15	125
South Carolina	1	....	62	3	14	....	5
South Dakota	1	....	22	1	....	....	....
Tennessee	4	1	362	5	83	1	26
Texas	2	....	338	22	95	5	30
Utah	1	....	35	1	....	....	....
Vermont	1	....	103	....	22	....	2
Virginia	2	....	234	6	50	1	19
West Virginia	1	....	53	2	....	....	....
Wisconsin	2	....	225	19	2	....	2
Totals	85	8	13,271	817	2,913	134	1,321

TABLE 12.—STUDENTS AND GRADUATES ACCORDING TO CLASSIFICATION

Year	Students						Graduates					
	Colleges Rated in Class						Colleges Rated in Class					
	A	%	B	%	C	%	A	%	B	%	C	%
1913	11,122	65.4	4,158	24.4	1,735	10.2	2,539	63.8	1,050	26.4	392	9.8
1914	12,336	74.7	2,838	17.2	1,328	8.1	2,626	73.1	686	19.1	282	7.8
1915	11,314	76.0	2,668	17.9	909	6.1	2,629	74.4	688	19.4	219	6.2
1916	11,162	79.6	2,087	14.9	773	5.5	2,630	74.7	695	19.8	193	5.5
1917	11,317	82.2	1,761	12.8	686	5.0	2,577	76.3	648	19.2	154	4.5
1918	11,522	84.5	1,488	10.9	620	4.5	2,024	75.8	399	14.9	247	9.2
1919	11,466	87.9	1,086	8.3	500	3.8	2,220	83.6	268	10.1	168	6.3
1920	12,610	89.6	680	4.8	798	5.6	2,690	88.4	152	5.0	205	6.6

HOSPITALS FURNISHING ACCEPTABLE INTERNSHIPS

On pages 409 to 415 is published this year a list of hospitals which, after careful investigation, have been considered in position to furnish acceptable internships. Although not previously published in THE JOURNAL, this list has already passed through several revisions. The information from the hospitals has become more and more complete so that the lists are also more reliable.

The present list includes 469 general hospitals, providing a total of 2,960 internships. Included in the list, also, are 25 state and other hospitals for the insane which provide places for graduates who may desire to obtain special training in nervous and mental diseases. There is also a list of 99 special hospitals providing interiships for 388 students. It is usual for those seeking internships in state or special hospitals to have first completed an internship in a general hospital. The 469 general hospitals listed have a total of 103,997 beds. The state hospitals have 41,722, and the special hospitals have 215,443, making a grand total of 361,162.

This list also shows, in the last column, the hospitals which have nurses' training schools. The fact that these institutions are approved for interns indicates that they also are fairly provided with nurses, which would indicate that they are also worthy of approval from the standpoint of nursing instruction.

GRADUATE MEDICAL EDUCATION

The facilities for graduate medical instruction in the United States are set forth on the next few pages. Not only are the separate graduate medical schools given, but also the opportunities available in undergraduate medical schools. In the latter, the courses vary somewhat from year to year, but the outlines given indicate the variety and extent of such work. It is hoped that by the publication each year of these data opportunties in undergraduate schools may be enlarged and a greater use be made of the abundance of clinical material in this country. The majority of undergraduate medical schools are now on a par with those in other leading countries; their future development need not be hindered by providing also for the giving of graduate courses.

GRADUATE COURSES IN PUBLIC HEALTH

Graduate courses in public health have been established in connection with eleven medical schools, the first of which was at the University of Pennsylvania in 1909; the latest is that in connection with the medical department of the Johns Hopkins University, which began its course in 1918. Two institutions, the University of Colorado and Tulane University, suspended their courses in 1918. Five of the schools have courses leading to the degree of Doctor of Public Health (Dr.P.H.) after a two-year course. The University of California offers the degree of Graduate in Public Health (Gr.P.H.) after a two-year course instead of the degree of Dr.P.H. The degree of Certified Sanitarian (C.S.) after a one-year course is offered by the University of Pennsylvania to graduates of colleges of arts and sciences. The degree of Master of Public Health (M.P.H.) is offered after a one-year course by the Detroit College of Medicine and Surgery and the University of Wisconsin Medical School. The Master in Arts in Public Health [M.A. (P.H.)] is offered by the University of California Medical School, and the Master in Science in Public Health [M.S (P.H.)] by the University of Michigan. The courses offered by the eight schools of public health are as follows:

THE UNIVERSITY OF CALIFORNIA: Courses began in 1915; number of instructors, 20; three courses leading to degree of Gr.P.H.: (a) a four year course covering three years in the college of letters and science and one year in the medical school; (b) a two year course covering one year in the college of letters and science and one year in the medical school for graduates of the college of civil engineering who have completed the work in sanitary engineering, and (c) a course of one and a half years, including one year in the college of letters and science, and a half year in the medical school for students who have completed three and a half years of the medical course. Completion of this third course gives the degrees of M.D. and Gr.P.H. The University of California also offers a one year course to graduates in arts or sciences for the degree of Master in Arts in Public Health [M.A. (P.H.)]. Fees are $150 each year. A thesis is required for the degree. The course extends from August to May. Students, 1919-1920, 16; graduates, 10.

JOHNS HOPKINS MEDICAL SCHOOL: The School of Hygiene and Public Health was opened in October, 1918. There are 12 professors and 37 lecturers, associates and instructors, a total of 49. Four courses are offered: (a) A two year course leading to the degree of Dr.P.H., requiring for admission a bachelor's degree and a degree in medicine. The degree of M.D. and the degree of Dr.P.H. may be obtained in a combined course of five years. A thesis is required for graduation. (b) A three year course leading to the degree of Doctor of Science in Hygiene requiring for admission a bachelor's degree and adequate training in physics, chemistry, biology and the medical sciences, anatomy, physiology and pathology. A written and oral examination and a dissertation embodying the results of an independent investigation are required for graduation. (c) A two year course leading to the degree of Bachelor of Science in Hygiene, the course consisting of combined work in the medical school and the School of Hygiene and Public Health. For admission the applicant must have completed at least two years of work in an approved college and have studied courses in physics, biology, inorganic and organic chemistry. (d) A one year course leading to a certificate in public health is also offered to graduates of approved medical schools or graduates in arts or sciences who present evidence of satisfactory training in the physical and medical sciences. The fees charged are $250 per year. Courses for special students are $50 per trimester. Altogether, 84 students were enrolled during 1919-1920, including 35 who were candidates for degrees. The course extends from September 28 to June 21.

MEDICAL SCHOOL OF HARVARD UNIVERSITY: The School of Public Health was opened in 1910; there are 40 instructors. A one year course is offered leading to a certificate in public health. For admission the applicant must have completed two years of work in a recognized medical school, or have received a bachelor's degree from an approved college or technical school, or have had special experience in public health work. In any instance he must show evidence of having completed satisfactory courses in physics, chemistry and biology and modern languages and the fundamental medical sciences. Although not a prerequisite, all candidates are advised to obtain a medical degree before specializing in public health work. Fees are $250 per year; Course extends from October to June.

DETROIT COLLEGE OF MEDICINE AND SURGERY: The course began in 1913 with ten instructors. A one year course leading to the degree of Master of Public Health (M.P.H.) is offered to graduates of approved medical schools. The work is conducted at the college, the Detroit City Board of Health, and the Municipal Contagious Hospital. It includes sanitary engineering, laboratory, clinical and field work. Fees are $100 per year. No thesis required. No students enrolled during the past session. The course extends from September to June.

THE UNIVERSITY OF MICHIGAN MEDICAL SCHOOL: The graduate courses in public health were established in the University of Michigan in 1913. The number of instructors is approximately 10. Two courses are offered—one to graduates in arts and sciences or medicine extending from one to two years, leading to the degree of Master in Science and Public Health; the other a course of from two to three years in length for graduates in arts or sciences and medicine, leading to the degree of Doctor of Public Health. For residents of Michigan the fees consist of $10 matriculation and $80 for men students and $76 for women; for nonresidents of Michigan, matriculation $25 and an annual fee of $105 for men and $101 for women. A thesis is required for the degree of Dr.P.H. There is a summer session but the regular session extends from October 1 to July 1. In 1919-1920 4 students were enrolled.

UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE: The graduate course in public health began in 1916 with approximately 30 teachers. Two courses are offered—a two years course leading to the degree of Doctor of Public Health for graduates of approved medical schools, and a correspondence course of indefinite length, especially adapted for health officers. The tuition for the Dr.P.H. course is $200 for the first year and $25 for the second. The fee for either the correspondence or 26 days' resident course is $30, including the matriculation fee. For the correspondence course the last week must be spent in residence. There were 145 health officers reported as taking the correspondence course during the year. The courses run from October to June.

THE UNIVERSITY OF PENNSYLVANIA: The graduate courses in public hygiene began in 1906; there are 19 instructors; two courses are offered, —a two years' course for graduates in medicine, leading to the degree of Dr.P.H. and a one year course for graduates of arts or science leading to the degree of Certified Sanitarian. A thesis is required for graduation. The fees are $250 per year. There were 8 students during 1919-1920; 4 graduates. The course extends from October to June.

THE UNIVERSITY OF WISCONSIN: Graduate courses in public health began in 1910. There are eight teachers. Two courses are offered—a one year course for graduates in medicine, leading to the degree of Master of Public Health (M.P.H.); the other a two year course for physicians, leading to the degree of Doctor of Public Health. Fees are $50 per year for residents of Wisconsin and $170 for nonresidents. A thesis is required for graduation. Address inquiries to Miss Ruth Hames, Secretary, Medical School.

Uniform Requirements in 1920-21

On February 28, 1919, at a conference of representatives from a number of universities in the country held at New Haven, Conn., the following regulations were adopted to take effect with the Session 1920-21:

1. That the degree of Doctor of Public Hygiene (for which the abbreviation shall be Dr.P.H.) for graduates in medicine shall be awarded after two years of work done under academic direction, of which one year at least shall be in residence, and that the requirements for the degree shall include class work, practical field work, and an essay based on individual study of a particular problem.

2. That the degree Doctor of Philosophy or Doctor of Science in Public Hygiene shall be conferred on students who hold the bachelor's degree from a college or technical school of recognized standing, and have satisfactorily completed not less than three years of graduate study. It is understood that this degree is based on a knowledge of physics, chemistry, biology, anatomy, physiology, physiologic chemistry, pathology and bacteriology.

GRADUATE COURSES IN MEDICAL SCHOOLS

Special correspondence with medical schools shows that there are many opportunities for graduate study which physicians have not been able to take advantage of through the lack of knowledge in regard to them. The following list has been prepared to correct this deficiency. More complete information can be obtained by correspondence with the medical school concerned.

CALIFORNIA

Leland Stanford Junior University School of Medicine, San Francisco.—Graduate courses are open to physicians: (a) Mid-day clinics, 11:30 to 12:30 daily, covering medicine, medical specialties, surgical specialties, obstetrics, gynecology and pathologic conferences free of charge. (b) Clinical examinations at the Polyclinic of the San Francisco Hospital. On Thursdays beginning 9 a. m., the work is in surgery and the surgical specialties; on Fridays, beginning 9 a. m., medicine and the medical specialties. These courses are free of charge. (c) Assistantships in clinics and laboratories. A physician may be assigned to some research problem or receive regular instruction from a member of the staff. For the latter an appropriate fee is charged and a nominal fee also for materials used. During the last five years an average of 28 physicians each year has occupied these assistantships.

University of California Medical School.—Resident positions are open to properly qualified medical graduates as follows: In the University Hospital: A resident position in general medicine and four assistant residentships, one each in general medicine and dermatology; in neuro-psychiatry and infirmary; in out-patient department; in medical research. Besides a residentship in surgery, there are five assistant residentships, one each in general surgery; urology; orthopedic surgery; ophthalmology, ortorhinolaryngology; out-patient department and surgical pathology. There are a residentship and two assistant residentships each in pediatrics and in obstetrics and gynecology. There is one residentship each in pathology and in biochemistry and clinical laboratories. In the San Francisco Hospital as house officers there are two positions in medicine and tuberculosis; two in surgery; one in pediatrics and isolation and one in obstetrics and gynecology. Special courses to physicians and advanced students are open in the departments of anatomy (at Berkeley) neuro-surgery, pathology, and research medicine. An announcement regarding public health work appears in another column.

COLORADO

University of Colorado School of Medicine, Boulder-Denver.—During the present summer, courses for physicians were given in bacteriology, biochemistry, blood chemistry, anatomy, histology, embryology, clinical laboratory technic, advanced pathology and ophthalmology. The session extended from June 14 to August 28 divided in two terms. Physicians may register for either term or for the entire quarter.

ILLINOIS

Rush Medical College, Chicago.—The following courses are offered for physicians: (a) Operative surgery on the cadaver extending over four weeks. (b) A course on tuberculosis. (c) Special course for three or four physicians who are willing to spend a full year in diseases of the ear, nose and throat. (d) Attendance at arena clinics for which a visitor's ticket for a week is issued—registration not limited. (e) Opportunities for a few physicians for investigative work in pathology. Fees: $25 for each major's work, or $75 for a full quarter.

University of Illinois College of Medicine, Chicago. — The summer quarter is devoted to courses for physicians, and during the balance of the year a large number of fellowships are available in courses leading to the degrees of Master of Science and Doctor of Philosophy. A well organized course in ophthalmology has been established. Special opportunities for individual research work in anatomy, pharmacology, and pathology and bacteriology were offered during the present summer quarter.

Michael Reese Hospital, Chicago.—There are five Fellowships, one each respectively in medicine; surgery and gynecology; eye, ear, nose and throat; pediatrics, and genito-urinary diseases. These Fellowships are open to physicians who have completed internships in acceptable hospitals; preference is given to former interns of this hospital. The work includes daily service in dispensary clinics and a limited number of visits to the sick in their homes. The time devoted is about six half days per week. These Fellowshps provide excellent clinical training and offer opportunity also for special research work. The Fellowships include an annual stipend of $900 each.

INDIANA

Indiana University School of Medicine, Indianapolis. — Opportunities for any physicians resident in the state, who make application. During the present summer courses on immunity and on disease production and resistance were offered. Other courses will be arranged as requested so far as facilities will allow.

IOWA

State University of Iowa College of Medicine, Iowa City.—During the present summer a four weeks' review course limited to 14 physicians was offered. There are opportunities for physicians to act as clinical assistants, research workers, hospital chemists, etc., in the various departments of the medical school. Special opportunities are always open for physicians with research ability.

MARYLAND

Johns Hopkins University Medical Department, Baltimore. — During the present summer a six weeks' course in medical diagnosis was offered, limited to twenty physicians. The course consisted in ward rounds, lectures, clinics, group courses, physical diagnosis, laboratory work in clinical microscopy, and group clinics in the special study of syphilis. Provision can be made for similar classes in the other main departments of the medical college. Opportunities for advanced work open to a certain number of qualified men. The work is arranged for by personal communication between the applicants and the heads of the various departments. Special opportunities for long time service in the hospital.

University of Maryland School of Medicine, Baltimore. —. Courses are open for physicians in operative surgery, anatomy, obstetrics, genito-urinary diseases, roentgen ray and clinical laboratory work. Arrangements made by personal communication.

MICHIGAN

University of Michigan Medical School, Ann Arbor. — Special courses open for any qualified physisians in laboratory or clinical work, regional anatomy as a preparation for medical specialties; also special methods and investigative work in bacteriology. Extended courses also offered leading to the degrees of Master of Science, Doctor of Philosophy and Doctor of Science. Summer courses are open for advanced work in research anatomy and bacteriology.

MISSOURI

Washington University Medical School, St. Louis.—A series of courses are open for physicians in the Barnes and City Hospitals and in the outpatient department and clinical laboratory of the medical college. The physician may devote all or a part of his time in the wards, dispensary, or in the laboratory. The courses extend over four weeks during the summer session. Maximum fees are $50 for a half day or $100 for the entire day. During the present summer courses were offered in physical and differential diagnosis, clinical chemistry and microscopy, tuberculosis, dermatology and syphilis, diseases of metabolism, applied immunology, mental dificiency and cardiovascular-renal diseases. In several of these subjects the courses included clinical subjects, lectures, ward rounds, instruction in diagnostic methods, application of laboratory tests and, in mental diseases, interpretation of intelligence tests. Special courses are given in pediatrics. Courses arranged by individual communication.

NEBRASKA

University of Nebraska College of Medicine, Omaha.—Opportunities for a few physicians to do graduate work in the departments of anatomy, physiology, biochemistry, pathology and bacteriology. A few opportunities open also in the clinical departments.

NEW YORK

Columbia University College of Physicians and Surgeons, New York City.—"Courses for physicians are being arranged which will become available in the fall of 1920."

Long Island College Hospital, Brooklyn.—Positions comparable to fellowships open for physicians who have completed internships. These are in several clinical departments of the hospital. Courses open in fundamental branches; courses also open in embryology, neuro-anatomy, histology, bacteriology, biochemistry, physiology, preventive medicine and hygiene. Also opportunities for research work in biochemistry and physiology. Special courses on animal locomotion, heart and circulation, and functional diseases. Opportunities also for physicians to do advanced work. Arrangements made by personal communication.

University and Bellevue Hospital College of Medicine.—Various graduate courses are open for physicians as follows: Research courses in anatomy, embryology, chemistry, physiology, pharmacology and therapeutics as well as special courses in pathology, bacteriology and surgery. Clinical courses occupying about six weeks each are also offered in medicine and physical diagnosis, clinical and operative gynecology, genito-urinary diseases, laryngology, ophthalmology, pediatrics and dermatology.

OHIO

Western Reserve University School of Medicine, Cleveland.—The summer session is devoted especially to courses for physicians. Courses also available during the remainder of the year especially for physicians desiring advanced research work either in clinical or laboratory subjects. Arrangements by personal communication.

VIRGINIA

Medical College of Virginia, Richmond.—Opportunities open for a few physicians to take courses in the combined laboratories of the college, of the State Board of Health, and of the Richmond City Board of Health.

ONTARIO

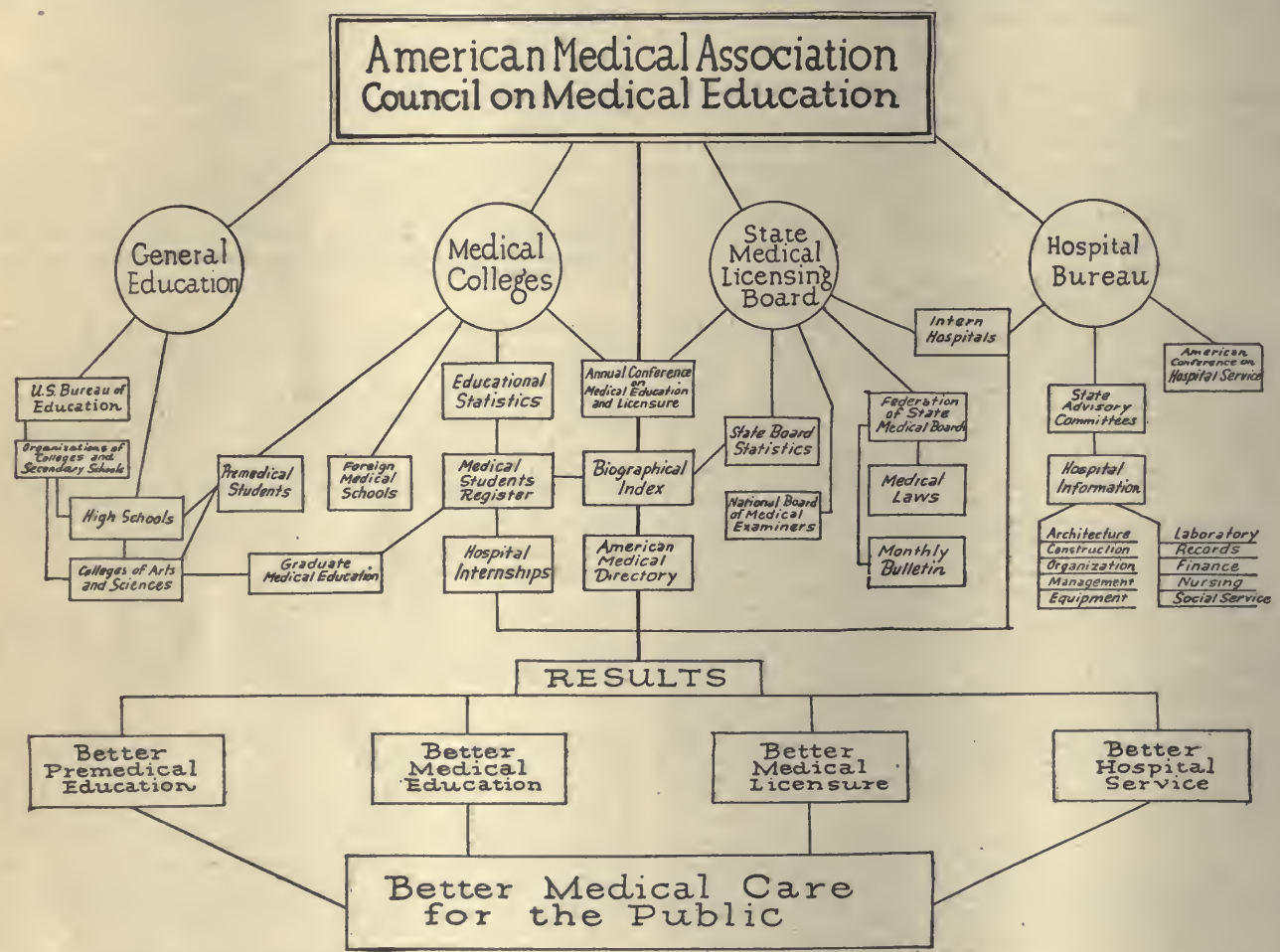
University of Toronto Faculty of Medicine, Toronto.—Graduate courses in clinical and laboratory work are available to physicians on application. During the present summer session a special course in pediatrics was offered. Also a scries of lectures were prepared and given before medical societies or other groups of physicians in the country districts. These dealt with biochemistry, hygiene, medicine, pediatrics, obstetrics and gynecology, otolaryngolgy, pathology, pharmacology, physiology and respiration of the heart, and surgery.

GRADUATE MEDICAL SCHOOLS

There are now eighteen graduate medical schools in the United States. These are commonly referred to as post-graduate medical schools. Of these institutions, seven are connected with universities in which the graduate teaching is, or will be, as thoroughly and scientifically given as are the courses of the undergraduate medical school. The universities having graduate schools are the Universities of Alabama, California, Tulane, Harvard, Minnesota, Columbia and Pennsylvania. The University of Chicago has received a generous endowment preparatory to the establishing of a large graduate school. Active steps toward this end will be taken in the the early future. Following is the complete list of the graduate medical schools:

ALABAMA

GRADUATE SCHOOL OF MEDICINE OF THE UNIVERSITY OF ALABAMA, Ave. F and 20th St., Birmingham. Organized 1915. Formerly the Birmingham Medical College. Suspended in 1918; reopens in fall of 1920. The dean is Dr. Lewis C. Morris, Empire Bldg.



Reproduction of a chart from the exhibit of the Council on Medical Education and Hospitals at the session of the American Medical Association in New Orleans, April 26-30. It shows the many ramifications of the work of the Council on Medical Education by which the latter has come into intimate touch with other departments of education, with medical licensure and with hospitals.

CALIFORNIA

SAN FRANCISCO POLYCLINIC AND POST-GRADUATE SCHOOL, 1535 Jackson St., San Francisco. The dean is Dr. H. D'Arcy Power.

GRADUATE SCHOOL OF MEDICINE OF THE UNIVERSITY OF CALIFORNIA, Buena Vista and Alpine Sts., Los Angeles. Organized 1914. Formerly the University of Southern California College of Medicine. The dean is Dr. George H. Kress.

ILLINOIS

CHICAGO POLICLINIC, 219-221 W. Chicago Ave., Chicago. The secreary is Dr. Malcolm L. Harris, 32 N. State St.

ILLINOIS POST-GRADUATE MEDICAL SCHOOL, 1844 W. Harrison St., Chicago. The secretary is Dr. James A. Clark.

POST-GRADUATE MEDICAL SCHOOL, 2400 Dearborn St., Chicago. The secretary is Dr. Emil Ries, 77 E. Washington St.

CHICAGO EYE, EAR, NOSE AND THROAT COLLEGE, 235 W. Washington St., Chicago. The secretary is Dr. John R. Hoffman, 31 N. State St.

PROVIDENT HOSPITAL POST-GRADUATE SCHOOL, 16 W. 36th St., Chicago. For colored physicians. The dean is Dr. George C. Hall.

LOUISIANA

NEW ORLEANS POLYCLINIC. Post-Graduate School of Medicine of the Tulane University of Louisiana Tulane Ave. and Liberty St., New Orleans. The dean is Dr. Charles L. Chassaignac.

NEW ORLEANS POST-GRADUATE SCHOOL OF MEDICINE, 135 S. Rampart St., New Orleans. The secretary is Dr. Joseph A. Danna.

MASSACHUSETTS

HARVARD MEDICAL SCHOOL, COURSES FOR GRADUATES, 240 Longwood Ave., Boston. Organized as a separate division of the Medical School, 1912; all instruction under the charge of the Faculty of Medicine. Instruction is given throughout the year. The officer in charge is the assistant dean, Alexander S. Begg, M.D.

MINNESOTA

UNIVERSITY OF MINNESOTA GRADUATE SCHOOL OF MEDICNE, Minneapolis. Organized 1914. In 1915, the resources and facilities of the Mayo Foundation were added, with the staff, clinics, laboratories, library and records at Rochester, Minn. A nine months' course of advanced work is offered in the science departments giving the fundamental training essential in ophthalmology and otolaryngology will begin Sept. 29, 1920. It will include anatomy, embryology and histology of the sense organs and of the head region; physiologic optics; physiology of the special senses and of speech; pathology and bacteriology as applied to the eye, ear, nose and throat. The course will include lectures, demonstrations, quizzes and cinical work in the outpatient department. The course is limited to ten students. There are also two teaching fellowships, each available in internal medicine, surgery, obstetrics, ophthalmology and otolaryngology, pediatrics, and mental and nervous diseases. Five others are available in the laboratory sciences, and eighty-six others are available under the Mayo Foundation. Courses in various specialties leading to higher degrees in medicine (M.A., M.S., PH.D.). Instruction throughout the year. The dean is Guy Stanton Ford, PH.D., Minneapolis.

NEW YORK

The New York Association for Medical Education is organized to collect information regarding available graduate medical instruction; to work for the improvement of existing courses and the establishment and development of new opportunities for advanced study; to bring about an affiliation between medical schools and hospitals whose facilities have not before been utilized for teaching purposes; and to serve as a bureau of information and assistance to prospective students. The executive offices are at the Academy of Medicine Bldg., 17 W. 43d St., New York. The graduate schools are as follows:

NEW YORK POST-GRADUATE MEDICAL SCHOOL, 2d Ave. and 20th St., New York City. The secretary is Dr. J. Bentley Squier.

NEW YORK POLYCLINIC MEDICAL SCHOOL, 341-51 W. 50th St., New York City. Is to be taken over and the work developed by Columbia University. The president is Dr. John A. Wyeth, 341 W. 50th St.

MANHATTAN EYE, EAR AND THROAT HOSPITAL AND MEDICAL SCHOOL, 210 E. 64th St., New York City. The secretary is Dr. Samuel J. Kopetzky.

SCHOOL OF OPHTHALMOLOGY AND OTOLOGY, 13th St. and 2d Ave., New York City. The secretary is Dr. George S. Rixon, 40 E. 41st St.

COLLEGE OF THE NEW YORK OPHTHALMIC HOSPITAL, 23d St. and Third Ave., New York City. The secretary is Dr. W. C. McKnight, 13 Central Park West.

PENNSYLVANIA

GRADUATE SCHOOL OF MEDICINE OF THE UNIVERSITY OF PENNSYLVANIA, Philadelphia. Organized 1916 by a merger with the University of the Medico-Chirurgical College of Philadelphia. The Philadelphia Poyclinic was merged in 1918. The faculty includes about 230 teachers. Courses extending over from four to twelve months in medicine, pediatrics, neurology, dermatology, syphilology, roentgenology, surgery, gynecology, obstetrics, orthopedics, urology, proctology, ophthalmology, otolaryngology and the medical sciences. Fees: Four month courses, $200; eight month, $400; twelve month, $600. Special schedules (few only), special fees. The dean is Dr. George H. Meeker.

CHOICE OF A MEDICAL SCHOOL

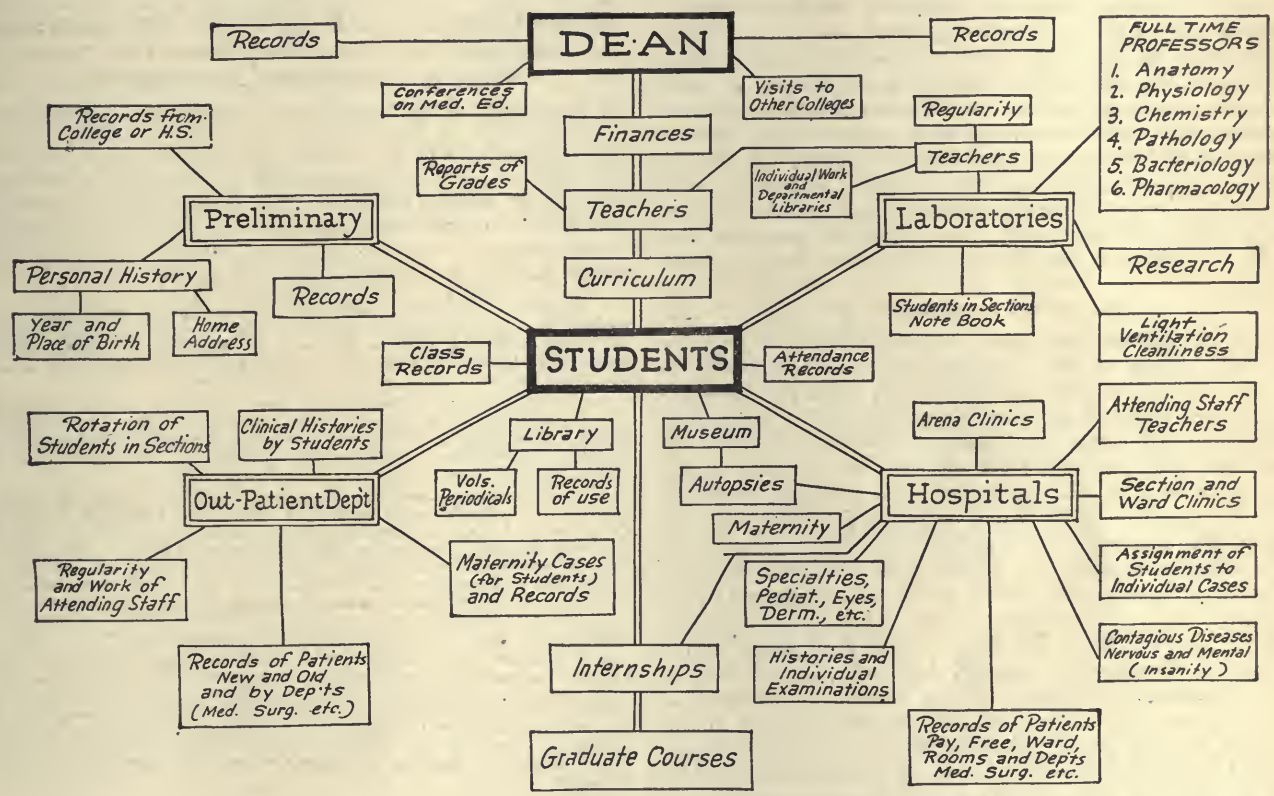
For the student who has decided to study medicine the first and most important step is the selection of a medical school; a false step here may handicap him for life.

thirty-three states, he may later miss a great opportunity by being thus debarred. He should know also that all the better medical colleges now require this higher preliminary education, since—most important of all—the student needs it to study and understand the difficult and complex subjects of the modern medical course. Lower entrance requirements by any medical college, therefore, should be regarded as an indication that the medical training furnished will be correspondingly low.

BETTER MEDICAL TRAINING ESSENTIAL

Medicine is now based on scientific knowledge, without which the physician will be seriously handicapped. Adequate instruction in the recognition, treatment and prevention of diseases can be given only in acceptable (Class A) medical schools, which have expert teachers, well-equipped laboratories, and dispensaries and hospitals where the student can study patients having all varieties of sickness and injuries.

A MODERN MEDICAL SCHOOL



Reproduction of a chart from the exhibit of the Council on Medical Education and Hospitals at the session of the American Medical Association in New Orleans, April 26-30. It gives some idea of the intricate mechanism of a modern medical school; it shows the many inter-relations of the medical school with its laboratories, hospitals and dispensaries, and the many lines of work with which the dean or executive officer of the medical school needs to keep in intimate touch.

Before choosing a medical school the student should obtain information in regard to its requirements of preliminary education; the character of its teaching; its classification; the tuition fees charged and—most important—whether or not its diplomas are recognized by all state medical boards.

ADEQUATE ENTRANCE QUALIFICATIONS

The student should make sure that his preliminary education is sufficient to meet the requirements of the state licensing boards of the country. He should know that at the present time thirty-four [1] (69.4 per cent.) state licensing boards require that before beginning the study of medicine the student must have completed *two years* of work in an approved college of liberal arts, in addition to a four-year high school education.[2] Although he may not at first seek a license in one of these

IS THE MEDICAL COLLEGE RECOGNIZED?

Formerly a course in almost any medical college furnished an adequate qualification for the license to practice medicine in all states. At present, however, state licensing boards are refusing to recognize medical colleges which are deemed not properly equipped to furnish a training in modern medicine. The student should know that the diplomas granted by some medical schools are not recognized in as high as from 37 to 42 states.[3] A diploma from one of these medical colleges, therefore, would not qualify him to practice medicine in any of those states. The student must make sure, not only that he has adequate preliminary education, but also that he has secured his medical training in a college recognized in all states.

CONSIDER CAREFULLY THE COST

The student, of course, is bound to consider the expense of his medical training, and herein lies the bait by which

1. These states may be noted in Table L, THE JOURNAL, April 17, 1920, p. 1099.
2. The courses required and recommended in the high school and two-year premedical college courses are set forth on page 393.
3. See Table D, THE JOURNAL, April 17, 1920, p. 1092.

some inferior colleges which profess deep interest in "the poor boy" endeavor to attract students. If the training is not thorough and up to date, the student should know that the training furnished will be a mighty poor investment at any price. As a matter of fact, and as may be noted in Table 1, on page 380, the total fees charged by some of the best (Class A) medical colleges, particularly the medical departments of some state universities, are lower than those charged by some of the poorly equipped (Class C) institutions which are not recognized by the majority of state licensing boards.

In the same length of time, therefore, and often for even lower fees than he would pay in a poorly equipped institution, the student may acquire his education in one of the best medical colleges of the land. Although some of the better schools do charge higher fees, they spend on each student per year several times the amount of money that the student pays for tuition. This they are able to do because of their larger incomes from endowments or state aid. It would be poor economy, therefore, for a student to enter a low-grade college whose diplomas are not recognized in the majority of states, when for a few additional dollars each year he can enter a thoroughly equipped institution, receive a far better medical training and obtain a diploma recognized everywhere. Even if one should be required to work one's way through, in whole or in part, the opportunities for doing so are usually more abundant in the better than in the lower standard colleges. As a rule, however, the student who works his way through college appreciates not only the value of money, but also the value of the medical course he is getting, and many such students are found in the high-grade medical colleges. There are now over 300 free scholarships, as well as generous loan funds, available for deserving students in the better medical colleges.[4]

GET RELIABLE INFORMATION

How may the student secure reliable information on these matters? Some medical colleges advertise extensively in newspapers and popular magazines and through announcements and circulars containing exaggerated, if not misleading, statements. *Of course, such advertisements do not show the more important fact that their diplomas are reported as not recognized in from 37 to 42 states.* It is essential, therefore, that the student should secure information from impartial and reliable sources, so as to make sure he is not enticed into a low-grade institution. To inform himself thoroughly, therefore, he should not depend alone on the announcements of the medical schools. After extensive and repeated investigations the medical schools of the country have been rated by the Council in three classes, namely, A, B and C, according to their degree of excellence.[5] If the student is otherwise in doubt, he will not make a mistake by choosing one of the colleges in Class A. By so doing he will not only obtain a better training in medicine but also, after graduation, will be eligible to secure a license in any state he may choose.

A STRONG AND SURE FOUNDATION

In his preliminary and medical education the student should bear in mind that he is *laying the foundation for the rest of his life.* If he finds that additional preliminary education is needed to enter one of the better medical colleges, he should consider the time well spent, since he is all the more sure of having laid a solid foundation. Although all professions in this country are crowded, there is always room for the thoroughly competent. On the other hand, the student will be disappointed if, because of lower entrance requirements or other allurements, he is induced to get his training in a poorly equipped college and finds after graduation that his diploma is not recognized in many states, and that otherwise he is handicapped for life.

AVOID CULTS AND FADS

Among the worst pitfalls confronting the present day student is the number of institutions representing various unscientific, or pseudo-scientific cults, such as osteopathy, chiropractic, etc., which profess to train those who desire to treat human ailments. Medical knowledge is now based on scientific facts and there is no longer room for the differences of opinion which in earlier days were justifiable. No one can afford to confine his training to the narrow theories held by any cult but should obtain a thorough, all-round scientific training by which he will be prepared to care intelligently for any form of human ailment or disorder which presents itself and to apply skilfully any form of treatment which each particular patient may require. One must have a thorough training in *all the fundamentals of medicine* before he can intelligently employ any particular method of treatment, even as the member of an orchestra must have a thorough training in all the fundamentals of music before he can play any particular instrument in that orchestra. One must first become a good general practitioner of medicine; then if he wishes to specialize along any particular line he will naturally secure further training for such specialty.

4. A list of colleges which provide scholarships and loan funds will be found on page 398.

5. See classification on page 395.

STANDARDS OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION

SCHEDULE FOR GRADING MEDICAL SCHOOLS

Schools are rated on a civil service basis on a scale of 100 points. Data relating to each school will be grouped under four general heads in such manner that the groups will have as nearly equal importance as possible, each group being allowed a possible 25 points. The revised schedule under the four general heads is as follows:

1. FACULTY.—Number; qualifications (standing in profession, evidences of special training, teaching experience, etc.); research ability; efficiency; proportion of time to teaching; proportion to student enrolment; organization of departments; completeness of department staffs, including dieners, employees, etc.; esprit de corps.

2. PRODUCT.—Qualifications of students admitted; student organizations; esprit de corps; records of graduates before state and national boards; research; articles written; excellence as teachers; membership in medical organizations; reputation in profession; other evidences of character of training; reputation of college.

3. ADMINISTRATION AND SUPERVISION.—Curriculum: grade of course; sequence of subjects; arrangement of subjects in class roster and by departments in annual announcements; completeness of curriculum. Division of students in sections, ward classes, etc. Efficiency of routine. Faculty meetings. Supervision of entrance requirements, of teaching in college and in dispensary and hospital. Records: entrance requirements; class grades; promotion of students; dispensary and hospital records; attendance of teachers and students; conditions, etc.; completeness. Budget: use made of funds; proportion to salaries, etc.

4. BUILDINGS AND EQUIPMENT.—College building, including class rooms, laboratories, library, museum, storage rooms, animal houses and their contents. Dispensary: rooms used for; accessibility; number and regularity of staff; quantity and use of clinical material; character of histories and records. Hospital: accessibility; ownership or control; quantity, variety and use of clinical material. Other equipment. Apparatus. Funds: in addition to students' fees; endowed chairs, fellowships, etc.

Colleges obtaining 70 per cent. or above are rated in Class A, those obtaining from 50 to 70 per cent. in Class B, and those obtaining 50 per cent. or less in Class C.

MEANING OF CLASSES A, B AND C

Class A Colleges are those which are acceptable; Class B, those which, under their present organization, give promise of being made acceptable by general improvements, and Class C those

(*a*) Which require a complete reorganization to make them acceptable.

(*b*) Which do not keep satisfactory records of their students in regard to entrance requirements, attendance, grades in courses, division into classes and reasons for promotion.

(*c*) Which do not enforce their requirements in regard to admission (including those admitted to advanced standing), promotion and graduation.

(*d*) Which give the major portion of their instruction after 4 o'clock in the afternoon.

(*e*) Which are privately owned and conducted for profit.

(*f*) Which for other specific reasons are not eligible for inclusion in Class B.

ESSENTIALS OF AN ACCEPTABLE MEDICAL COLLEGE

Revised to Aug. 1, 1920

1. The minimum requirement for admission to an acceptable medical college is a four-year high school education or its full equivalent and two years of work in a college of arts and sciences approved by the Council on Medical Education and Hospitals, as follows:

1. High School Requirements

(*a*) For admission to the two-year premedical college course, students shall have completed a four-year course of at least fifteen units in a standard accredited high school or other institution of standard secondary school grade, or have the equivalent as demonstrated by examinations conducted by the College Entrance Examination Board, or by the authorized examiner of a standard college or university approved by the Council on Medical Education and Hospitals. A detailed statement of attendance at the secondary school, and a transcript of the student's work, should be kept on file by the college authorities. This evidence of actual attendance at the secondary schools should be obtained, no matter whether the student is admitted to the freshman or to higher classes.

(*b*) Credits for admission to the premedical college course may be granted for the subjects shown in the following list and for any other subject counted by a standard accredited high school as a part of the requirements for its diploma, provided that at least eleven units must be offered in Groups I-V:

SCHEDULE OF SUBJECTS REQUIRED OR ACCEPTED FOR ENTRANCE TO THE PREMEDICAL COLLEGE COURSE

Subjects	Units*	Required
Group I, English—		
Literature and composition	3-4	3
Group II, Foreign Languages—		
Latin	1-4	
Greek	1-3	
French or German	1-4	2†
Other foreign languages	1-4	
Group III, Mathematics—		
Elementary algebra	1	1
Advanced algebra	½-1	..
Plane geometry	1	1
Solid geometry	½	..
Trigonometry	½	..
Group IV, History—		
Ancient history	½-1	
Medieval and modern history	½-1	
English history	½-1	1
American history	½-1	
Civil government	½-1	
Group V, Science—		
Botany	½-1	..
Zoology	½-1	..
Chemistry	1	..
Physics	1	..
Physiography	½-1	..
Physiology	½-1	..
Astronomy	½	..
Geology	½-1	..
Group VI, Miscellaneous—		
Agriculture	1-2	..
Bookkeeping	½-1	..
Business law	½	..
Commercial geography	½-1	..
Domestic science	1-2	..
Drawing, freehand and mechanical	½-2	..
Economics and economic history	½-1	..
Manual training	1-2	..
Music: Appreciation or harmony	1-2	..

* A unit is the credit value of at least thirty-six weeks' work of four or five recitation periods per week, each recitation period to be not less than forty minutes. In other words, a unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. A satisfactory year's work in any subject cannot be accomplished under ordinary circumstances in less than 120 sixty-minute hours, or their equivalent.

† Both of the required units of foreign language must be of the same language, but the two units may be presented in any one of the languages specified.

Of the fifteen units of high school work, eight units are required, as indicated in the foregoing schedule; the balance may be made up from any of the other subjects in the schedule.

2. Premedical College Course

(*c*) The minimum requirement for admission to acceptable medical schools, in addition to the high school work specified above, is sixty semester hours of collegiate work in a college approved[7] by the Council on Medical Education and Hospitals. The subjects included in the two years of college work should be in accordance with the following schedule:

SCHEDULE OF SUBJECTS OF THE TWO-YEAR PREMEDICAL COLLEGE COURSE

Sixty Semester Hours* Required	Semester Hours
Required Subjects:	
Chemistry (a)	12
Physics (b)	8
Biology (c)	8
English composition and literature (d)	6
Other nonscience subjects (e)	12
Subjects Strongly Urged:	
A modern foreign language (f)	6-12
Advanced botany or advanced zoology	3 -6
Psychology	3 -6
Advanced mathematics, including algebra and trigonometry	3 -6
Additional courses in chemistry	3 -6
Other Suggested Electives:	
English (additional), economics, history, sociology, political science, logic, mathematics, Latin, Greek, drawing.	

* A semester hour is the credit value of sixteen weeks' work consisting of one lecture or recitation period per week, each period to be not less than fifty minutes net, at least two hours of laboratory work to be considered as the equivalent of one lecture or recitation period.

Suggestions Regarding Individual Subjects

(*a*) *Chemistry.*—Twelve semester hours required of which at least eight semester hours must be in general inorganic chemistry, including four semester hours of laboratory work. In the interpretation of this rule work in qualitative analysis may be counted as general inorganic chemistry. The remaining four semester hours may consist of additional work in general chemistry or of work in analytic or organic chemistry. After Jan. 1, 1922, organic chemistry will be required.

(*b*) *Physics.*—Eight semester hours required, of which at least two must be laboratory work. It is urged that this course be preceded by a course in trigonometry.

(*c*) *Biology.*—Eight semester hours required, of which four must consist of laboratory work. The requirement may be satisfied by a course of eight semester hours in either general biology or zoology, or by courses of four semester hours each in zoology and botany, but not by botany alone.

(*d*) *English Composition and Literature.*—The usual introductory college course of six semester hours, or its equivalent, is required.

(*e*) *Nonscience Subjects.*—Of the sixty semester hours required as the measurement of two years of college work, at least eighteen, including the six semester hours of English, should be in subjects other than the physical, chemical or biologic sciences.

(*f*) *Foreign Language.*—A reading knowledge of a modern foreign language is strongly urged. French and German have the closest bearing on modern medical literature. If the reading knowledge in one of these languages is obtained on the basis of high school work, the student is urged to take the other language in his college course. It is not considered advisable, however, to spend more than twelve of the required sixty semester hours on foreign languages.

Recognition.—This two-year premedical course in both quantity and quality must be such as to make it acceptable as the equivalent of the first two years of the course in reputable, approved colleges of arts and sciences leading to the degree of Bachelor of Science.

3. Approved Colleges of Arts and Sciences

A tentative list of colleges of arts and sciences approved by the Council on Medical Education and Hospitals has been prepared, and will be occasionally revised. By an approved college (of arts and sciences) is meant one whose standing has been vouched for by some standardizing agency in whose methods the Council has confidence. To be recognized a college must have sufficient scientific equipment and maintain laboratories in the premedical sciences. It must have ample endowment to maintain a sufficient corps of teachers. Membership in some national organization or association of colleges will be favorably regarded and, in the absence of such membership, careful investigation will be made of the causes of exclusion. It must maintain national standards for admis-

7. A tentative list of approved colleges may be obtained on application to the American Medical Association, enclosing 6 cents.

sion to its freshman class. Undue liberality in the acceptance of certificates from secondary schools unendorsed by approved standardizing agencies will be registered by the Council as a failure to comply with its requirement and the college will be dropped from the approved list. No college will be approved by the Council which allows work *in absentia* or by correspondence courses to count toward a baccalaureate degree.

PREMEDICAL COURSES IN MEDICAL COLLEGES—JUNIOR COLLEGES

Premedcal college courses given in or by medical schools, by normal schools, or advance years taken in high schools, will not be considered as acceptable unless they have been investigated and approved by some association of colleges and secondary schools or other approved agency having to do with the standardizing of liberal arts colleges, and unless they are found to be a full equivalent of the first two years of the course leading to the Bachelor of Science degree.

4. The Medical School

ADMINISTRATION OF ENTRANCE REQUIREMENTS

2. The admission of students to the medical school must be in the hands of a responsible committee or examiner whose records shall always be open for inspection. Documentary evidence of the student's preliminary education should be obtained and kept on file. When the medical school is an integral part of the university, this work usually devolves on the university examiner. Unless the university examiner and his records are closely accessible, however, some officer at the medical school should obtain and keep on file documentary evidence of each student's preliminary education, including both high school and collegiate work. The records should show especially that the required amount of work in the premedical sciences, including laboratory experiments, has been completed.

OTHER MEDICAL SCHOOL REQUIREMENTS

3. The college should require that students be in actual attendance in the college *within the first week* of each annual session and thereafter.

4. Actual attendance at classes should be insisted on except for good cause, such as for sickness, and no credit should be given for any course where the attendance has been less than 80 per cent. of the full time.

5. (*a*) Full advanced standing may be granted to students only for work done in other acceptable medical schools, and in granting advanced standing there should be no discrimination against the college's full-course students. Official verification of the student's previous medical work should be obtained by direct correspondence with the college previously attended, and his preliminary qualifications should also be verified and recorded the same as for freshman students. (*b*) In *exceptional cases* students who possess the required premedical qualifications and who have completed three or more years of work in Class B medical schools may be given advanced standing but not higher than *entrance* to the third year (junior) class, and no credit should be given in any subject except on recommendation of the head of the department teaching that subject. (*c*) In *exceptional cases* also students who possess the required premedical qualifications and who have completed three or more years of work in Class C colleges may be given advanced standing but not higher than *entrance* to the second year (sophomore) class, and then only after thorough examinations in all first year subjects have been passed.

SUPERVISION, EQUIPMENT, TEACHERS

6. There should be careful and intelligent supervision of the entire school by the dean or other executive officer who holds, and has sufficient authority to carry out fair ideals of medical education as determined by the present day knowledge of medicine.

7. There should be a good system of records showing conveniently and in detail the credentials, attendance, grades and accounts of the students, by means of which an exact knowledge can be obtained regarding each student's work. Records should also be kept showing readily the attendance of patients at the teaching hospitals and dispensaries; the maternity cases attended by students, and the postmortem cases used in teaching.

8. The college curriculum should be fully graded and should cover four sessions of at least thirty-two weeks each, exclusive of time required for matriculation and holidays, and at least thirty hours per week of actual work. The courses offered in the various subjects should be set forth by departments (anatomy, physiology, etc.) in the annual announcement, showing for each course its number, subject, content, character (lecture, recitation, laboratory or clinic), length of time, when, where, and by whom given, and the amount of credit allowed. The courses for each class should also be clearly set forth in a printed class schedule, for the guidance of the students.

(*a*) The college should give two years of work consisting largely of laboratory work in well equipped laboratories of anatomy, histology, embryology, physiology, physiologic chemistry, bacteriology, pathology, pharmacology, therapeutics and clinical diagnosis. Present-day medical knowledge makes it essential that these subjects be in charge of full-time, well-trained teachers.

(*b*) Two years of clinical work, largely in hospitals and dispensaries, with courses in medicine (including physical diagnosis, pediatrics, nervous and mental diseases), surgery (including surgical anatomy and operative surgery on the cadaver), obstetrics, gynecology, laryngology, rhinology, ophthalmology, otology, dermatology, hygiene and medical jurisprudence. With the higher entrance requirements time is now available in the latter part of the second year for beginning courses in physical diagnosis and the principles of surgery.

(*c*) As soon as conditions warrant, relations should be established with a number of approved hospitals so that a fifth undergraduate year may be required to be spent by the student as an intern under the continued supervision of the medical school.

FACULTY

9. (*a*) The college should provide at least *eight expert thoroughly trained professors in the laboratory branches,* salaried so that they may devote their entire time to instruction and to that research without which they cannot well keep up with the rapid progress being made in their subjects.[8] For colleges having *sixty students or less* in each class, there should be at least one full-time salaried assistant each in the departments of (1) anatomy, (2) physiology, (3) pathology and bacteriology, and (4) physiologic chemistry and pharmacology. There should be also one additional assistant provided in each of these departments for *each additional thirty students enrolled.* This represents a low average of the full-time assistants already employed by the acceptable medical colleges.

(*b*) The faculty should be made up of graduates of institutions recognized as medical colleges and who have had a training in all departments of medicine. Nonmedical men should be selected as teachers in medical schools only under exceptional circumstances and only when medical men of equal special capacity are not available. The faculty should be organized, each department having its head professor, its associate professor, assistant professor, instructor, etc., each having his particular subjects for the teaching of which he is responsible to the head of the department.

CLINICAL FACILITIES AND INSTRUCTION

10. (*a*) The college should own or entirely control a hospital in order that students may come into close and extended contract with patients under the supervision of the attending staff. This hospital should be in close proximity to the college and have a daily average (for senior classes of 100 stu-

8. These professors should have a definite responsibility in the conduct of the college, and their first and chief interest should be the training of medical students. It is suggested that four of these professors be placed at the head of the departments of (*a*) anatomy, (*b*) physiology and physiologic chemistry, (*c*) pathology and bacteriology, and (*d*) pharmacology and therapeutics. The other four might with advantage be assigned, one each, to (*e*) histology and embryology, under the department of anatomy, and to the department of (*f*) pathology and bacteriology, and (*g*) physiology and pharmacology, and to the departments of (*h*) either internal medicine or surgery.

dents or *less*) of not less than 200 patients who can be utilized for clinical teaching, these patients to be of such character as to permit the students to see and study the common variety of surgical and medical cases as well as a fair number in each of the so-called specialties. In the use of this material *bedside and ward clinics* should be developed for sections of from five to ten students, and for the seniors, a certain number of patients in medicine, surgery and the specialties should be assigned to each student under a well supervised clinical clerk system. The treatment and care of these patients should be particularly observed and recorded by the student under the strict supervision of the intern, or the attending staff of the hospital.

(*b*) The college should also have ample hospital facilities for children's diseases, contagious diseases and nervous and mental diseases.

(*c*) The college should own or control a dispensary, or outpatient department, the attendance to be a daily average of 100 patients (visits) (for senior classes of 100 students *or less*), the patients to be carefully classified, good histories and records of the patients to be kept and the material to be well used. The attending staff should be made up of good teachers, should be well organized and be prompt and regular in attendance.

(*d*) At least six maternity cases should be provided for each senior student, who should have actual charge of these cases under the supervision of the attending physician. Careful records of each case should be handed in by the student.

(*e*) Facilities should be provided for at least thirty necropsies (for senior classes of 100 students *or less*) during each college session which are attended and participated in by senior students. These, as a rule, should be in the teaching hospital controlled by the medical school and performed by the professor of pathology. The so-called clinical-pathologic conferences should be more widely developed in connection with the postmortems.

OTHER TEACHING FACILITIES AND FINANCES

11. The college should have a working medical library, to include the more modern text and reference books with the *Index Medicus,* the Surgeon-General's Index and other serviceable indexes. The library should receive regularly thirty or more leading medical periodicals, the current numbers of which should be in racks or on tables easily accessible to the students. At the end of each year these periodicals should be bound and added to the files of bound periodicals. The library room should be properly lighted and heated, and open during all or the greater part of the day; it should be equipped with suitable card indexes as well as with tables and chairs, and have a competent librarian in charge.

12. There should be a working medical museum having its various anatomic, embryologic, pathologic and other specimens carefully prepared, labeled and indexed so that any specimen may be easily found and employed for teaching purposes. It is suggested that so far as possible with each pathologic specimen coming from postmortems there also be kept the record of the postmortem, the clinical history of the patient on whom the necropsy was held and microscopic slides showing the minute structures of the disease shown in the gross specimen. The museum furnishes an excellent means of correlating the work of the department of pathology with that of the clinical departments.

13. There should be sufficient dissecting material to enable each student individually to dissect at least the lateral half of the human cadaver, to provide cross-sections and other demonstration material and to allow of a thorough course for each senior in operative surgery on the cadaver.

14. For modern experimental laboratory work in physiology, pharmacology and bacteriology as well as for medical research, a supply of animals—frogs, turtles, rabbits and guinea-pigs, if not also cats and dogs—is essential. Proper provision, also, is necessary for the housing and care of such animals. In any use made of animals every precaution should be taken to prevent needless suffering, and work by students should be carefully supervised.

15. Each college should have a supply of such useful auxiliary apparatus as a stereopticon, a reflectoscope, carefully prepared charts, embryologic or other models, manikins; dummies for use in bandaging, a roentgen-ray and other apparatus now so generally used in medical teaching.

16. The college should show evidences of thorough organization and of reasonably modern methods in all departments, and evidences that the equipment and facilities are *being intelligently used* in the training of medical students.

17. A clear statement of the college's requirements for admission, tuition, time of attendance on the classes, sessions, courses offered and graduation should be clearly set forth, together with complete classified lists of its matriculants and latest graduating class in regular annual catalogues or announcements.

18. Statistics show[9] that modern medicine cannot be acceptably taught by a medical school depending solely on the income from students' fees. No medical school should expect to secure admission to, or be retained in Class A, therefore, which does not have an annual income of at least $25,000 in addition to the amount obtained from students' fees.

CLASSIFICATION OF MEDICAL COLLEGES

Revised to Aug. 1, 1920

CLASS A—ACCEPTABLE MEDICAL COLLEGES

ARKANSAS

University of Arkansas Medical Department*....Little Rock

CALIFORNIA

Leland Stanford Junior Univ. School of Med..San Francisco
University of California Medical School.....San Francisco

COLORADO

University of Colorado School of Med.....Boulder-Denver

CONNECTICUT

Yale University School of Medicine.....New Haven

DISTRICT OF COLUMBIA

Georgetown University School of Medicine.....Washington
George Washington University Medical School..Washington
Howard University School of Medicine[1].....Washington

GEORGIA

Emory University School of Medicine[2].....Atlanta
University of Georgia Medical Department[3].....Augusta

ILLINOIS

Loyola University School of Medicine[4].....Chicago
Northwestern University Medical School.....Chicago
Rush Medical College (University of Chicago).....Chicago
University of Illinois College of Medicine.....Chicago

INDIANA

Indiana Univ. School of Med.....Bloomington-Indianapolis

IOWA

State University of Iowa College of Medicine....Iowa City

KANSAS

University of Kansas School of Med.....Lawrence-Rosedale

KENTUCKY

University of Louisville Medical Department[5].....Louisville

LOUISIANA

Tulane Univ. of Louisiana School of Med.....New Orleans

MAINE

Bowdoin Medical School.....Brunswick-Portland

MARYLAND

Johns Hopkins University Medical Department....Baltimore
University of Maryland School of Medicine and
the College of Physicians and Surgeons.....Baltimore

9. See "Medical College Finances," J. A. M. A., April 8, 1916, p. 1115.

* Since 1919, gives only the first two years of the medical course. Raised to Class A, June 9, 1919.

1. Rating raised to Class A June 6, 1910.
2. Rating raised to Class A Feb. 24, 1914; formerly the Atlanta Medical College.
3. Class A rating restored Feb. 24, 1913.
4. Rating raised to Class A March 1, 1920.
5. Rating raised to Class A June 6, 1910.

MASSACHUSETTS
Boston University School of Medicine.....Boston
Medical School of Harvard University.....Boston
Tufts College Medical School.....Boston

MICHIGAN
Detroit College of Medicine and Surgery[6].....Detroit
University of Michigan Medical School.....Ann Arbor
University of Mich. Homeopathic Med. School....Ann Arbor

MINNESOTA
University of Minnesota Medical School.....Minneapolis

MISSISSIPPI
University of Mississippi School of Medicine*.....Oxford

MISSOURI
St. Louis University School of Medicine.....St. Louis
University of Missouri School of Medicine*.....Columbia
Washington University Medical School.....St. Louis

NEBRASKA
John A. Creighton Medical College[7].....Omaha
University of Nebraska College of Medicine.....Omaha

NEW HAMPSHIRE
Dartmouth Medical School*.....Hanover

NEW YORK
Albany Medical College.....Albany
Columbia Univ. Coll. of Phys. and Surgs....New York City
Cornell University Medical College.....New York City
Fordham University School of Medicine[8]....New York City
Long Island College Hospital[9].....Brooklyn
Syracuse University College of Medicine.....Syracuse
University and Bellevue Hospital Med. Coll..New York City
University of Buffalo Department of Medicine.....Buffalo

NORTH CAROLINA
University of North Carolina School of Med.*...Chapel Hill
Wake Forest College School of Medicine*....Wake Forest

NORTH DAKOTA
University of North Dakota School of Medicine*..University

OHIO
Ohio State University College of Medicine.....Columbus
University of Cincinnati College of Medicine....Cincinnati
Western Reserve University School of Medicine....Cleveland

OKLAHOMA
Univ. of Oklahoma School of Med.[10]..Norman-Oklahoma City

OREGON
University of Oregon Medical School.....Portland

PENNSYLVANIA
Hahnemann Medical College and Hospital.....Philadelphia
Jefferson Medical College of Philadelphia.....Philadelphia
University of Pennsylvania School of Med.....Philadelphia
University of Pittsburgh School of Medicine[11]....Pittsburgh
Woman's Medical College of Pennsylvania.....Philadelphia

SOUTH CAROLINA
Medical College of the State of South Carolina[12]..Charleston

SOUTH DAKOTA
University of South Dakota College of Medicine*..Vermilion

TENNESSEE
University of Tennessee College of Medicine[13].....Memphis
Vanderbilt University Medical Department.....Nashville

TEXAS
Baylor University College of Medicine[14].....Dallas
University of Texas Department of Medicine.....Galveston

UTAH
University of Utah School of Medicine*.....Salt Lake City

VERMONT
University of Vermont College of Medicine.....Burlington

VIRGINIA
Medical College of Virginia.....Richmond
University of Virginia Department of Med...Charlottesville

WEST VIRGINIA
West Virginia Univ. School of Medicine*[15].....Morgantown

WISCONSIN
Marquette University School of Medicine[16].....Milwaukee
University of Wisconsin Medical School*.....Madison
Total, 70.

CLASS B—COLLEGES NEEDING GENERAL IMPROVEMENTS TO BE MADE ACCEPTABLE

ALABAMA
University of Alabama School of Medicine[17].....Mobile

CALIFORNIA
College of Medical Evangelists[18]...Loma Linda-Los Angeles
University of Southern California Medical Department (College of Physicians and Surgeons)[19].....Los Angeles

ILLINOIS
Hahnemann Medical College and Hospital[20].....Chicago

NEW YORK
New York Homeopathic Medical College and Flower Hospital[21].....New York City

OHIO
Eclectic Medical College.....Cincinnati
Ohio State Univ. Coll. of Homeopathic Med[22].....Columbus

TENNESSEE
Meharry Medical College[23].....Nashville
Total, 7.

CLASS C—COLLEGES REQUIRING A COMPLETE REORGANIZATION TO MAKE THEM ACCEPTABLE

CALIFORNIA
College of Physicians and Surgeons[24].....San Francisco
Oakland College of Medicine and Surgery[25].....Oakland

ILLINOIS
Chicago Medical School[26].....Chicago

MASSACHUSETTS
College of Physicians and Surgeons[27].....Boston
Middlesex College of Medicine and Surgery[28]....Cambridge

MISSOURI
Kansas City University of Phys. and Surgs.[29]....Kansas City
Kansas City College of Medicine and Surgery[30]...Kansas City
St. Louis College of Physicians and Surgeons[31]....St. Louis

6. Class A rating restored June 21, 1914.
7. Class A rating restored Feb. 4, 1917.
8. Class A rating restored Feb. 24, 1914.
9. Class A rating restored June 21, 1914.
10. Rating raised to Class A March 1, 1920.
11. Rating raised to Class A June 6, 1910.
12. Class A rating restored Feb. 6 1916.
13. Rating raised to Class A June 21, 1914.
14. Rating raised to Class A June 12, 1916.
15. Class A rating restored Feb. 4, 1917.
16. Rating raised to Class A Feb. 15, 1915.
17. Rating dropped to Class B June 1, 1920. It is being reorganized at Tuscaloosa as a two-year medical school.
18. Rating raised to Class B Feb. 3, 1918.
19. Suspended in 1920.
20. Rating dropped to Class B June 3, 1912.
21. Rating dropped to Class B Feb. 15, 1915.
22. Rating raised to Class B Feb. 4, 1917.
23. Rating dropped to Class B Feb. 24, 1914.
24. Suspended medical teaching in 1918; retains a nominal existence till 1921 to grant degrees to students of three remaining classes who are completing their medical education elsewhere.
25. Rated in Class B June 6, 1910; rating dropped to Class C Feb. 3, 1918. Suspended medical teaching in 1918; retains a nominal existence till 1921 to grant degrees to students of three remaining classes who are completing their medical education elsewhere.
26. Formerly the Chicago Hospital College of Medicine. Last inspected April 23, 1918.
27. Rated in Class C since 1907. Last inspected Jan. 7, 1918.
28. This is the medical department of the so-called "University of Massachusetts." When last inspected—Jan. 8, 1918—this school was in close association with an osteopathic college and was granting liberal advanced standing for osteopathic courses. It was rated in Class C Feb. 4, 1918.
29. Formerly the Central College of Osteopathy; in 1917 under an amended charter took the name of Central College Medical Department; assumed present title in 1918. Rated in Class C March 15, 1918. Still teaches both osteopathy and medicine in the same building and by the same faculty.
30. This institution is reported not recognized by the Missouri State Board of Health. It is an offshoot of a Class C institution likewise reported not recognized by the Missouri State Board of Health. No higher rating than Class C could be granted it pending an inspection which it has refused.
31. Rating dropped to Class C July 1, 1909. In 1915 it merged with the Medical Department of the National University of Arts and Sciences, but in 1917 it was reestablished. In 1918 reported not recognized by the Missouri State Board of Health.

PENNSYLVANIA

Temple University Department of Medicine[32].....Philadelphia

TENNESSEE

University of West Tenn. Coll. of Med. and Surg..Memphis

Total, 10.

CLASSIFICATION OF CANADIAN MEDICAL COLLEGES

CLASS A

University of Toronto Faculty of Medicine....Toronto, Ont.
McGill University Faculty of Medicine.....Montreal, Que.

CLASS B

Univ. of Manitoba, Manitoba Med. College..Winnipeg, Man.
Dalhousie University Faculty of Medicine....Halifax, N. S.
Queen's University Faculty of Medicine[33]....Kingston, Ont.
Western University Faculty of Medicine[34].....London, Ont.
Montreal School of Medicine and Surgery....Montreal, Que.
Laval University Faculty of Medicine.....Quebec, Que.

The University of Alberta at Edmonton, besides the pre-medical year, gives only the first two years of the medical course as measured by that of the medical schools of the United States. It has not been classified.

ENTRANCE REQUIREMENTS OF MEDICAL COLLEGES

Seventy-seven medical schools are now requiring, as a minimum for entrance, *two years* or more of work in a college of liberal arts in addition to a four-year high-school education, and voluntarily submit reports to the Council by which the enforcement of their published requirements may be verified. The years when each college puts into effect, respectively, the one-year and the two-year requirements, and the rating of each college, are as follows:

College	One Year	Two Years	College Rating
ALABAMA			
University of Alabama School of Medicine	1914	1915	B
ARKANSAS			
University of Arkansas Medical Department	1915	1918	A
CALIFORNIA			
College of Medical Evangelists	1914	1915	B
University of Southern California Med. Dept.	1914	1916	B
Leland Stanford Junior University School of Med.	....	1909	A
University of California Medical School	....	1905	A
COLORADO			
University of Colorado School of Medicine	....	1910	A
CONNECTICUT			
Yale University School of Medicine	....	1909	A
DISTRICT OF COLUMBIA			
Georgetown University School of Medicine	....	1912	A
George Washington University Medical School	1914	1918	A
Howard University School of Medicine	1910	1914	A
GEORGIA			
Emory University School of Medicine, Atlanta	1914	1918	A
University of Georgia Medical Department	1914	1918	A
ILLINOIS			
Loyola University School of Medicine	1915	1918	A
Hahnemann Medical College and Hospital	1914	1916	B
Northwestern University Medical School	1908	1911	A
Rush Medical College (University of Chicago)	....	1904	A
University of Illinois College of Medicine	1913	1914	A
INDIANA			
Indiana University School of Medicine	1909	1910	A
IOWA			
State University of Iowa College of Medicine	1909	1910	A
KANSAS			
University of Kansas School of Medicine	....	1909	A
KENTUCKY			
University of Louisville Medical Department	1914	1918	A
LOUISIANA			
Tulane University of Louisiana School of Medicine	1910	1918	A
MAINE			
Bowdoin Medical School	1912	1916	A
MARYLAND			
Johns Hopkins University Medical Department	....	1893	A
University of Maryland School of Medicine and College of Physicians and Surgeons	1914	1918	A
MASSACHUSETTS			
Boston University School of Medicine	1914	1916	A
Medical School of Harvard University	....	1900	A
Tufts College Medical School	1914	1918	A
MICHIGAN			
Detroit College of Medicine and Surgery	1914	1918	A
University of Michigan Medical School	....	1909	A
University of Michigan Homeopathic Medical School	1912	1916	A
MINNESOTA			
University of Minnesota Medical School	....	1907	A
MISSISSIPPI			
University of Mississippi School of Medicine	1914	1918	A
MISSOURI			
St. Louis University School of Medicine	1910	1918	A
University of Missouri School of Medicine	1906	1910	A
Washington University Medical School	1910	1912	A
NEBRASKA			
John A. Creighton Medical College	1914	1918	A
University of Nebraska College of Medicine	1908	1909	A
NEW HAMPSHIRE			
Dartmouth Medical School	....	1910	A
NEW YORK			
Albany Medical College	1914	1918	A
Columbia University College of Phys. and Surg.	....	1910	A
Cornell University Medical College	....	1908	A
Long Island College Hospital	1914	1918	A
New York Homeo. Med. Coll. and Flower Hospital	1915	1919	B
Syracuse University College of Medicine	1909	1910	A
University and Bellevue Hospital Medical College	1912	1918	A
University of Buffalo Department of Medicine	1914	1918	A
NORTH CAROLINA			
Wake Forest College School of Medicine	....	1908	A
University of North Carolina School of Medicine	1910	1917	A
NORTH DAKOTA			
University of North Dakota School of Medicine	....	1907	A
OHIO			
Eclectic Medical College	1915	1918	B
Ohio State University College of Medicine	1914	1915	A
Ohio State Univ. Coll. of Homeopathic Medicine	1915	1916	B
University of Cincinnati College of Medicine	1910	1913	A
Western Reserve University School of Medicine	....	1901	A
OKLAHOMA			
University of Oklahoma School of Medicine	1914	1917	A
OREGON			
University of Oregon Department of Medicine	1910	1915	A
PENNSYLVANIA			
Hahnemann Medical College and Hospital	1914	1917	A
Jefferson Medical College	1914	1917	A
University of Pennsylvania School of Medicine	1909	1910	A
University of Pittsburgh School of Medicine	1911	1913	A
Woman's Medical College of Pennsylvania	1914	1915	A
SOUTH CAROLINA			
Medical College of the State of South Carolina	1914	1916	A
SOUTH DAKOTA			
University of South Dakota College of Medicine	1908	1909	A
TENNESSEE			
Meharry Medical College	1914	1918	B
Vanderbilt University Medical Department	1914	1918	A
University of Tennessee College of Medicine	1914	1918	A
TEXAS			
Baylor University College of Medicine	1913	1918	A
University of Texas Department of Medicine	1910	1917	A
UTAH			
University of Utah School of Medicine	1909	1910	A
VERMONT			
University of Vermont College of Medicine	1912	1918	A
VIRGINIA			
Medical College of Virginia	1914	1915	A
University of Virginia Department of Medicine	1910	1917	A
WEST VIRGINIA			
West Virginia University School of Medicine	1911	1917	A
WISCONSIN			
Marquette University School of Medicine	1913	1915	A
University of Wisconsin Medical School	....	1907	A

Total, 77.

32. Rating raised to Class B June 6, 1910; dropped again to Class C June 1, 1920.
33. Rating dropped to Class C Feb. 6, 1916; restored to Class B Feb. 3, 1918.
34. Rating raised to Class B Feb. 4, 1917.

The eight following medical colleges either have not announced the higher entrance requirements or such evidence as has been received does not show they have been enforced for all students enrolled:

	Rating
Chicago Medical School	C
College of Physicians and Surgeons, Boston	C
Middlesex College of Medicine and Surgery, Cambridge, Mass.	C
Kansas City College of Medicine and Surgery	*

* This college is an offshoot of the Eclectic Medical University; has refused to have an inspection made. It is reported not recognized by the Missouri State Board of Health and by the licensing boards of 32 other states.

Kansas City University of Physicians and Surgeons	C†
St. Louis College of Physicians and Surgeons	C
Temple University Department of Medicine	C
University of West Tenn. Coll. of Med. and Surg., Memphis	C

† This college was formerly the Central College of Osteopathy; in 1916 it assumed the title Central College Medical Department, and took its present name in 1918. The same faculty teaches courses in both medicine and osteopathy.

Scholarships in Medical Schools

As evidence that provision is being made for worthy students, regardless of their financial status, 348 scholarships are reported this year in the following thirty-eight medical schools:

University of Alabama School of Medicine, Mobile	67
Leland Standford Junior University Medical School*	3
University of California Medical School,* San Francisco	3
University of Colorado School of Medicine,* Boulder	1
Yale University School of Medicine,* New Haven, Conn	2
Hahnemann Medical College and Hospital of Chicago*	6
Loyola University School of Medicine, Chicago	3
Rush Medical College, Chicago	7
University of Illinois College of Medicine,* Chicago	7
Indiana University School of Medicine, Indianapolis	12
State University of Iowa College of Medicine	1
University of Kansas School of Medicine*	17
Johns Hopkins University Medical Department, Baltimore	6
University of Maryland School of Medicine,* Baltimore	6
Harvard Medical School,* Boston	30
Boston University School of Medicine*	50
Detroit College of Medicine and Surgery	8
Washington University Medical School, St. Louis	4
Dartmouth Medical School,* Hanover, N. H.	2
University of Buffalo Department of Medicine*	1
University of Cincinnati College of Medicine*	12
Western Reserve University School of Medicine, Cleveland	1
University of Oregon Department of Medicine,* Portland	3
Hahnemann Medical College and Hospital of Philadelphia*	12
Jefferson Medical College of Philadelphia	2
Temple University Department of Medicine, Philadelphia	3
University of Pennsylvania School of Medicine,* Philadelphia	4
Woman's Medical College of Pennsylvania,* Philadelphia	24
Medical College of the State of South Carolina, Charleston	8
University of Tennessee College of Medicine, Memphis	14
Vanderbilt University Medical Department, Nashville, Tenn	4
Baylor University College of Medicine, Dallas Texas	5
University of Texas Department of Medicine,* Galveston	1
University of Wisconsin Medical School*	6
University of Vermont College of Medicine*	1
Medical College of Virginia, Richmond	10
University of Virginia Department of Medicine,* Charlottesville	2
Total in 38 medical schools	348

* Have loan funds also.

Loan Funds

Besides the twenty-one colleges marked by an asterisk (*) in the above list which have loan funds for deserving but needy students, such funds are available also at the six following medical schools:

College of Medical Evangelists, Loma Linda, Calif.
Tulane University of Louisiana School of Medicine, New Orleans, La.
University of Missouri School of Medicine, Columbia, Mo.
University of Nebraska College of Medicine, Omaha, Neb.
Wake Forest College School of Medicine, Wake Forest, N. C.
University of North Dakota, School of Medicine, University, N. D.

DESCRIPTION OF MEDICAL COLLEGES

Below are given brief descriptions of the medical colleges in the United States and Canada that are legally chartered to teach medicine, several of which do not grant degrees. The name, address, year of organization, history and date when first class graduated are given in each instance. Unless otherwise stated, a class graduated each subsequent year. Where official reports have been received from the college, information regarding faculty, entrance requirements, length of term, fees, students (excluding specials and postgraduates), graduates, name of dean and next session is given without discrimination, regardless as to whether the college is sectarian or not. In a few instances in which such reports were not received, the information published is from other reliable sources. Figures for graduates include all who graduated since July 1, 1919. Extract of rules and the membership of the Association of American Medical Colleges are shown following the list of colleges. Figures showing population of cities and states are taken from the United States Census Bureau's estimate for 1918, except that in cities marked with an asterisk (*) the census returns for 1920 have been given. Statements have been added showing the preliminary requirements held by state licensing boards where those requirements include one or two years of collegiate work. Ten states, Alaska (Ter.), Illinois, Iowa, Michigan, New Jersey, North Dakota, Pennsylvania, Rhode Island, Texas and Washington, require also a year's hospital internship as an essential qualification for a license.

* Figures from 1920 Census returns.

ALABAMA

Alabama, population 2,395,270, has one medical college, the School of Medicine of the University of Alabama, located in Tuscaloosa, a city with a population of 11,996.*

In order to secure licenses to practice medicine in Alabama, students matriculating in the session of 1915-16 and thereafter must have completed two years of work in an approved college of liberal arts, including courses in physics, chemistry, biology and a modern language, prior to entering on the study of medicine. This applies to all graduates of 1919 and thereafter.

Tuscaloosa

UNIVERSITY OF ALABAMA SCHOOL OF MEDICINE, University Campus, Tuscaloosa.—Organized in 1859 at Mobile as the Medical College of Alabama. Classes graduated in 1861 and subsequent years excepting 1862 to 1868, inclusive. Reorganized in 1897 as the medical department of the University of Alabama. Present title assumed in 1907, when all property was transferred to the University of Alabama. In 1920 clinical teaching was suspended and the medical school was removed to the university campus at Tuscaloosa. During the next year only the work of the freshman year will be given. In 1921-1922 and thereafter the first two years of the medical course will be given. Total registration for 1919-1920 was 51; graduates, 10. The fifty-fifth session begins Sept. 6, 1920, and ends May 25, 1921.

ARKANSAS

Arkansas, population 1,792,965, has one medical college, the Medical Department of the University of Arkansas, located in Little Rock, a city of 64,997.* Hereafter it offers only the courses of the first two years of the medical course.

To secure licenses to practice medicine in Arkansas, students matriculating in the session of 1918-19 and thereafter must have completed two years of collegiate work, including college courses in physics, chemistry, biology and a modern language before beginning the study of medicine. This applies to all graduates of 1922 and thereafter.

Little Rock

UNIVERSITY OF ARKANSAS MEDICAL DEPARTMENT, Markham and Center Streets.—Organized in 1879 as the Medical Department of Arkansas Industrial University. It assumed the present title in 1899. In 1911 the College of Physicians and Surgeons united with it and the new school was made an integral part of the University of Arkansas. The first class was graduated in 1880. Clinical teaching suspended in 1919. The faculty consists of 8 professors and 8 lecturers and assistants, total 16. Entrance requirements are two years of collegiate work beyond a four-year high school course. The course of study covers two years of thirty-two weeks each. The fees are $60 each year. The Dean is Dr. Morgan Smith. Total registration 1919-1920 was 31; graduates, 6. The forty-second session begins Sept. 20, 1920, and ends June 8, 1921.

CALIFORNIA

California, population 3,119,412, has three medical colleges. Two are located in San Francisco, a city of 508,410 * inhabitants. They are Leland Stanford Junior University School of Medicine and the College of Medicine of the University of California. The College of Medical Evangelists is located at Loma Linda and Los Angeles, the latter city having a population of 575,480.*

To secure licenses to practice medicine in California under the "physician's and surgeon's" certificate, students matriculating in medical colleges in and after the session of 1915-16, prior to such matriculation, must have completed at least one year of recognized collegiate work including college courses in physics, chemistry, biology and a modern language. This applies to all graduates of 1919 and thereafter.

Berkeley-San Francisco

UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL, University Campus, Berkeley; Second and Parnassus Avenues, San Francisco.—Organized

in 1863 as the Toland Medical College. The first class graduated in 1864. In 1872 it became the Medical Department of the University of California. In 1909 the College of Medicine of the University of Southern California, at Los Angeles, by legislative enactment, became a clinical department. This Los Angeles portion was changed to a graduate school in 1914. In 1915 the Hahnemann Medical College of the Pacific was merged, and elective chairs in homeopathic materia medica and therapeutics were provided. Two years (in and after August, 1922, three years) of collegiate work are required for admission. The work of the first year and a half is given at Berkeley and the work of the last two and a half years at San Francisco. The faculty is composed of 47 professors and 152 associates and assistants, a total of 199. The course covers five years of nine months each, the fifth year to consist of an internship or of special work in a department of the medical school. Fees for the four years, respectively, are $200, $155, $160 and $150. The Acting Dean is Dr. Wallace I. Terry, San Francisco. Total registration for 1919-1920 was 214; graduates, 21. The forty-eighth session begins Aug. 16, 1920, and ends May 11, 1921.

Loma Linda-Los Angeles

COLLEGE OF MEDICAL EVANGELISTS.—Organized in 1909. The faculty numbers 109. The first class graduated in 1914. The laboratory departments are at Loma Linda; the clinical departments at Los Angeles. The course extends over four years of nine months each. Two years of college work are required for admission. The total fees for the four years, respectively, are $221, $216, $201 and $211. The Dean is Dr. P. T. Magan. The total registration for 1919-1920 was 101; graduates 14. The twelfth session begins Sept. 5, 1920, and ends May 26, 1921.

San Francisco-Palo Alto

LELAND STANFORD JUNIOR UNIVERSITY SCHOOL OF MEDICINE, University Campus, Palo Alto, and Sacramento and Webster Streets, San Francisco.—Organized in 1908 when, by an agreement, the interests of Cooper Medical College were taken over. The first class was graduated in 1913. The faculty consists of 56 professors and 56 lecturers, assistants, etc., a total of 112. Three years of collegiate work are required for admission. The school has the quarter system and the completion of any three quarters constitutes a college year. The course covers five years of nine months each, including a year of practical or intern work. The total fees for each of the first four years is $186. The Dean is Dr. W. Ophüls, San Francisco. The total registration for 1919-1920 was 137; graduates, 20. The eleventh session begins Oct. 1, 1920, and ends June 17, 1921.

COLORADO

Colorado, with a population of 1,014,581, has one medical college, the University of Colorado School of Medicine. The first two years of the course are given at Boulder, the seat of the university, while the last two, or clinical years, are given in Denver, which has a population of 256,369.*

The Colorado State Board of Medical Examiners will register without further examination graduates of medical colleges in good standing who present licenses issued after examination by any other licensing board. The law permits any one, graduate or nongraduate, to try the board's written examination. No graduate of 1914 or thereafter is eligible to obtain a license in Colorado, or indorsement of his credentials, unless he graduated from a medical college which, at the time he matriculated, required at least two years' study, without conditions, in an accredited college of liberal arts, and this work must have included courses in physics, chemistry, biology and one modern language.

Boulder-Denver

UNIVERSITY OF COLORADO SCHOOL OF MEDICINE.—Organized in 1883. Classes were graduated in 1885 and in all subsequent years except 1898 and 1899. Denver and Gross College of Medicine was merged Jan. 1, 1911. The faculty embraces 12 professors, 20 associate and assistant professors, and 29 lecturers, instructors and assistants, a total of 61. The work embraces a graded course of four years of nine months each. The entrance requirements are two years of college work counting toward a degree in arts in an accredited college or university. The fees for residents of Colorado, for each of the four years are, respectively, $106, $106, $98 and $103, and $30 more each year for nonresidents. The Dean is Dr. Charles N. Meader. The total registration for 1919-1920 was 71; graduates, 17. The thirty-ninth session begins Sept. 27, 1920, and ends June 13, 1921.

CONNECTICUT

Connecticut, with a population of 1,286,268, has one medical college, Yale University, School of Medicine, located in New Haven, population 162,390.*

Candidates for license to practice medicine in Connecticut who graduate in 1914 or thereafter are not eligible unless, prior to entering on the study of medicine, they had completed, in addition to an accredited four-year high school education, at least nine months of collegiate work including college courses in physics, chemistry and general biology.

New Haven

YALE UNIVERSITY SCHOOL OF MEDICINE, 150 York Street and Congress Avenue and Cedar Street.—Chartered in 1810 as the Medical Institution of Yale College. Organized in 1812; instruction began in 1813; first class graduated in 1814. A new charter in 1879 changed the name to the Medical Department of Yale College. In 1884, the Connecticut Medical Society surrendered such authority as had been granted by the first charter. In 1887, Yale College became Yale University. The faculty consists of 24 professors and 71 lectures and assistants, a total of 95. The requirements for admission are two years of collegiate work plus evidence of satisfactory completion of courses in general physics, general inorganic chemistry, general biology, organic chemistry and physical chemistry or laboratory physics, all reasonably equivalent to the courses in these subjects in Yale University. The student also must have a reading knowledge of German. The course covers four years of nine months each. The fees for the four years, respectively, are approximately $205, $200, $200 and $210. The Dean is Dr. Milton C. Winternitz. The total registration for 1919-1920 was 88; graduates, 19. The one hundred and eighth session begins Sept. 30, 1920, and ends June 22, 1921.

DISTRICT OF COLUMBIA

The District of Columbia, population 437,571,* has three medical colleges; George Washington University Medical School, Georgetown University, School of Medicine and Howard University, School of Medicine.

Washington

GEORGE WASHINGTON UNIVERSITY MEDICAL SCHOOL, 1335 H Street, N.-W.—Organized in 1825 as the Medical Department of Columbian College. Also authorized to use the name National Medical College. Classes were graduated in 1826 and in all subsequent years, except 1834 to 1838, and 1861 to 1863, inclusive. The original title was changed to Medical Department of Columbian University in 1873. In 1903 it absorbed the National University Medical Department. In 1904, by an act of Congress, the title of George Washington University was granted to the institution. The faculty is composed of 48 professors and 47 instructors, demonstrators and assistants, a total of 95. Two years of collegiate work are required for admission. The course covers four years of thirty-two weeks each. The total fees are $200 each year. The Dean is Dr. William C. Borden. The total registration for 1919-1920 was 114; graduates, 21. The ninety-ninth session begins Sept. 29, 1920, and ends June 8, 1921.

GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE, 920 H Street, N.-W.—Organized in 1851. The first class graduated in 1852. The faculty contains 21 professors, 69 instructors and assistants; total, 90. Two years of collegiate work are required for entrance. The course of study covers four terms of eight and one half months each. The fees for each of the four sessions, respectively, are $205, $200, $200 and $210. The Dean is Dr. George M. Kober. The registration for 1919-1920 was 120; graduates, 19. The seventieth session begins Sept. 24, 1920, and ends June 11, 1921.

HOWARD UNIVERSITY SCHOOL OF MEDICINE, Fifth and W Streets, N.-W.—Chartered in 1867. Organized in 1869. The first class graduated in 1871. Colored students compose a majority of those in attendance. The faculty comprises 15 professors and 24 lecturers and assistants, 39 in all. The admission requirements are two years of collegiate work, including physics, chemistry, botany and zoology, English and two years of French or German. The course covers four years of thirty-two weeks each. The fees of each of the four sessions, respectively, are $165, $155, $155 and $162. The Dean is Dr. Edward A. Balloch. Registration for 1919-1920 was 113; graduates, 27. The fifty-third session begins Oct. 1, 1920, and ends June 10, 1921.

GEORGIA

Georgia, population 2,935,617, has two medical colleges, University of Georgia, Medical Department, located in Augusta, population 52,548,* and the Emory University School of Medicine in Atlanta, a city of 200,616.*

In order to secure a license to practice medicine in Georgia, students matriculating in the session of 1918-19 and thereafter must have completed two years of work in an approved college of liberal arts and sciences, including courses in physics, chemistry and biology, prior to entering on the study of medicine. This applies to all graduates of 1922 and thereafter.

Atlanta

EMORY UNIVERSITY SCHOOL OF MEDICINE, 94 N. Butler Street.—Organized in 1854. Classes graduated 1855 to 1861, when it suspended. Reorganized in 1865. A class graduated in 1865 and each subsequent year except 1874. In 1898 it merged with the Southern Medical College (organized in 1878), taking the name of Atlanta College of Physicians and Surgeons. In 1913 it merged with the Atlanta School of Medicine (organized in 1905), reassuming the name of Atlanta Medical College. Became the Medical Department of Emory University in 1915; assumed present title in 1917. Two years of collegiate work are required for entrance. The faculty numbers 98. The course of study is four years of thirty-two weeks each. The fees for each of the four years, respectively, are $172, $160, $165 and $180. The Dean is Dr. W. S. Elkin.

Total registration for 1919-1920 was 174; graduates, 28. The next session begins Sept. 21, 1920, and ends June 6, 1921.

Augusta

UNIVERSITY OF GEORGIA, MEDICAL DEPARTMENT, University Place.—Organized in 1828 as the Medical Academy of Georgia, the name being changed to the Medical College of Georgia in 1829. Since 1873 it has been known as the Medical Department of the University of Georgia. Entire property transferred to the university in 1911. Classes were graduated in 1833 and in all subsequent years except 1862 and 1863. The faculty includes 16 professors and 30 assistants, 46 in all. Two years of collegiate work are required for entrance. The course is four years of thirty-four weeks each. Fees are $5 for matriculation and $60 each year for residents of Georgia and $150 each year for nonresidents. The Dean is Dr. W. H. Doughty, Jr. The total registration for 1919-1920 was 64; graduates, 15. The eighty-ninth session begins Sept. 15, 1920, and ends May 30, 1921.

ILLINOIS

Illinois, population 6,317,734, has six medical colleges, two of which give instruction at night, all located in Chicago, a city of 2,701,212* inhabitants, and are as follows: Rush Medical College, Northwestern University Medical School, University of Illinois College of Medicine, Loyola University School of Medicine, Hahnemann Medical College and Hospital and the Chicago Medical School.

To be eligible for license to practice medicine in Illinois, students matriculating in the sessions of 1915-16 and of 1918-19, in addition to an accredited four-year high school education, must have completed, respectively, one year and two years of collegiate work including courses in physics, chemistry, biology and a modern language, to be taken either in a preliminary year given by a recognized medical college, or in an approved college of liberal arts. Graduates of 1923 and thereafter must have completed also a year's internship in a hospital.

Chicago

RUSH MEDICAL COLLEGE.—Founded in 1837; organized in 1843; was the medical department of Lake Forest University from 1887 until 1898, when it became affiliated with the University of Chicago. The first class graduated in 1844. The faculty is composed of 118 professors, 186 associates, instructors, etc., a total of 304. The requirements for admission are two years of college work, including courses in college chemistry, physics and biology, and a reading knowledge of German or French. Classes are limited to 100 students in each of the freshman and sophomore classes, and to 120 students in each of the clinical years. No application for admission is accepted after September 1. The school operates under the "quarter system" in which the year is divided into four quarters of twelve weeks each; the completion of the work of three of these quarters gives credit for a college year. The course covers four years of eight and a half months each, and a fifth year, consisting of a hospital internship or of a fellowship in one of the departments. All freshman and sophomore studies are given at the University of Chicago. The clinical years are given in the building at the corner of Wood and Harrison streets. The tuition fees for each of the four years, respectively, are $225, $225, $235 and $235. A matriculation fee of $5 is paid but once, and there are incidentals amounting to from $5 to $7 annually. The Deans are Dr. Frank Billings and Dr. John M. Dodson. Total registration for 1919-1920 was 672; graduates, 115. One hundred and twenty-six other students completed the work of the fourth year, and will receive their degrees when a hospital internship has been completed. The seventy-seventh session begins Oct. 1, 1920, and ends June 15, 1921.

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL, 2421 South Dearborn Street.—Organized in 1859 as the Medical Department of Lind University. First class graduated in 1860. In 1864 it became independent as the Chicago Medical College. It united with Northwestern University in 1869, but retained the name of Chicago Medical College until 1891, when the present name was taken. Became an integral part of Northwestern University in 1905. The faculty comprises 60 professors and 112 lecturers and assistants, a total of 172. The requirements for admission are such as will admit to the College of Liberal Arts of Northwestern University, plus two years of college work, including courses in physics, chemistry, biology and a modern language. The course covers four years of eight months each. The fees for the four years, respectively, are $210, $205, $196 and $190. The Dean is Dr. Arthur I. Kendall. The total registration for 1919-1920 was 408; graduates, 73. The sixty-first session begins Oct. 5, 1920, and ends June 11, 1921.

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE, 508 S. Honore Street.—Organized in 1882 as the College of Physicians and Surgeons. The first class graduated in 1883. It became the Medical Department of the University of Illinois by affiliation in 1897 and an integral part in 1910. The relationship with the university was canceled in June, 1912, but restored in March, 1913, when the present title was assumed. Two years of collegiate work are required for admission. The curriculum covers four years of nine months each, and a year's internship in an approved hospital. The faculty is composed of 55 professors, 99 assistants and instructors, a total of 154. The total fees for the four years, respectively, are $165, $160, $150 and $170. The Dean is Dr. Albert C. Eycleshymer. The total registration for 1919-1920 was 270; graduates, 85. The thirty-ninth session begins Sept. 28, 1920, and ends June 10, 1921.

LOYOLA UNIVERSITY SCHOOL OF MEDICINE, 706 S. Lincoln St., Chicago.—Organized in 1868 as the Bennett College of Eclectic Medicine and Surgery. Eclecticism dropped and title of Bennett Medical College assumed in 1909. First class graduated in 1870, and a class graduated each subsequent year. Absorbed the Illinois Medical College in 1910 and the Reliance Medical College in 1911. In 1910 it became by affiliation the School of Medicine of Loyola University; the university assumed full control in 1915. Took over by purchase the Chicago College of Medicine and Surgery in 1917. Two years of college work are required for admission. The faculty is composed of 53 professors, 62 assistants and instructors, a total of 115. The total fees for the four years are, respectively, $165, $165, $165 and $185. The Dean is Dr. Louis D. Moorhead. The total enrolment for 1919-1920 was 204; graduates, 23. The next session begins Oct. 1, 1920, and ends June 15, 1921.

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL OF CHICAGO, 2811 Cottage Grove Avenue.—Organized in 1859. The first class was graduated in 1861. Absorbed the Chicago Homeopathic Medical College in 1904. The faculty includes 65 professors and 27 lecturers, assistants, etc., a total of 92. Two years of collegiate work are required for admission. The course extends over four years of eight months each. The tuition fees for the four years, respectively, are $176, $161.50, $176.50 and $191.50. The Dean is Dr. Joseph P. Cobb. The total registration for 1919-1920 was 48; graduates, 10. The sixty-first session begins Sept. 28, 1920, and ends June 15, 1921.

CHICAGO MEDICAL SCHOOL, an afternoon and night school, located at 3832 Rhodes Avenue.—Organized in 1911 as the Chicago Hospital College of Medicine; chartered in 1912. In December, 1917, the classes of the Jenner Medical College were transferred to it. Total registration for 1919-1920 was 88; graduates, about 15. *Official reports indicate that the diplomas from this college are not recognized by the licensing boards of thirty-nine states.*

INDIANA

Indiana, population 2,854,167, has one medical college, the Indiana University School of Medicine, located at Indianapolis, a city of 314,194* people, except that the work of the first year is offered also at Bloomington, the seat of the University.

Candidates for license to practice medicine in Indiana who matriculated between Jan. 11, 1910, and Jan. 1, 1911, must have completed one year of collegiate work, in addition to an accredited four-year high school course, prior to beginning the study of medicine. Those matriculating subsequent to Jan. 1, 1911, must have completed two years of work in a recognized college of liberal arts.

Bloomington and Indianapolis

INDIANA UNIVERSITY SCHOOL OF MEDICINE.—Organized in 1903, but did not give all of the work of the first two years of the medical course until 1905. In 1907, by union with the State College of Physicians and Surgeons, the complete course in medicine was offered. In 1908 the Indiana Medical College, which was formed in 1905 by the merger of the Medical College of Indiana (organized in 1878), the Central College of Physicians and Surgeons (organized in 1879), and the Fort Wayne College of Medicine (organized in 1879), merged into it. The first class was graduated in 1908. The faculty consists of 64 professors and 87 lecturers, associates and assistants, a total of 151. Two years of collegiate work are required for admission. The work of the first year is emphasized only at Bloomington. The work of the other three years is all at Indianapolis. The fees for the four years, respectively, are $125, $125, $150 and $150. Matriculation fee, $5; microscope fee, $5 to $7.50 per semester. A fifth optional intern year leading to the "M.D. cum laude" has been added. The Assistant Dean at Bloomington is Dr. B. D. Myers; the Dean is Dr. Charles P. Emerson, Indianapolis. The total registration for 1919-1920 was 234; graduates, 48. The next session begins Sept. 14, 1920, and ends June 8, 1921.

IOWA

Iowa, population 2,224, 771, has one medical college, the College of Medicine of the State University of Iowa, located in Iowa City, population 11 267.*

Candidates for license to practice medicine in Iowa who graduated subsequent to Jan. 1, 1915, must have completed two years of work in an approved college of liberal arts prior to beginning the study of medicine, this preliminary college work to have included courses in physics, chemistry, biology and a foreign language.

Iowa City

STATE UNIVERSITY OF IOWA COLLEGE OF MEDICINE, University Campus.—Organized in 1869. First session began in 1870. First class graduated in 1871. Absorbed Drake University College of Medicine in 1913. The faculty is made up of 32 professors, 24 lecturers, demonstrators and assistants, a total of 56. Two years of collegiate work, including courses in physics, chemistry, biology and French or German, are required for admission. The course of study covers four years of thirty-six weeks each. The tuition fee for residents of Iowa is $85 per year and for nonresidents $100, plus a matriculation fee of $10 and a graduation fee of $10. The Dean is Dr. Lee Wallace Dean, Iowa City. Total registration for 1919-1920 was 230; graduates, 53. The fifty-first session begins Sept. 23, 1920, and ends June 14, 1921.

* Figures from 1920 census returns.

KANSAS

Kansas, population 1,874,195, has one medical college. The School of Medicine of the University of Kansas gives its first two years in Lawrence, population 12,456,* and the last two years in Rosedale, a suburb of Kansas City, which has a population of 397,284.

Candidates for license to practice medicine in Kansas who matriculated in the session of 1910-11 and thereafter must have completed at least one year of collegiate work including college courses in physics, chemistry and biology in addition to an accredited four-year high school course. This applies to graduates of 1914 and thereafter.

Lawrence and Rosedale

UNIVERSITY OF KANSAS SCHOOL OF MEDICINE.—Organized in 1880. It offered only the first two years of the medical course until in 1905, when it merged with the Kansas City (Mo.) Medical College, founded in 1869, the College of Physicians and Surgeons, founded in 1894, and the Medico-Chirurgical College, founded in 1897. First class graduated in 1906. The clinical courses are given at Rosedale. Absorbed Kansas Medical College in 1913. The faculty, including lecturers and clinical assistants, numbers 73. The requirements for admission are two years of collegiate work. The course covers four years of nine months each. The total fees for each of the four years are, respectively, $111, $111, $103 and $103 for residents of the state. For nonresidents the fees of the first two years are $121 each year. The Dean is Dr. S. J. Crumbine; Associate Dean, Dr. M. D. Sudler. The total registration for 1919-1920 was 133; graduates, 23. The forty-first session begins Sept. 13, 1920, and ends June 8, 1921.

KENTUCKY

Kentucky, population 2,408,547, has one medical college, the University of Louisville Medical Department, situated in Louisville, a city of 234,891 * inhabitants.

To be eligible for license to practice medicine in Kentucky, all students matriculating in and after the session of 1914-15 and 1918-19, in addition to an accredited four-year high school course, must have completed, respectively, one year and two years of college work, including college courses in physics, chemistry, biology and a modern language prior to beginning the study of medicine.

Louisville

UNIVERSITY OF LOUISVILLE MEDICAL DEPARTMENT, First and Chestnut Streets.—Organized in 1837 as the Louisville Medical Institute. The first class graduated in 1838, and a class graduated in each subsequent year except in 1863. In 1846 the present name was assumed. In 1907 it absorbed the Kentucky University Medical Department. In 1908 it absorbed the Louisville Medical College, the Hospital College of Medicine and the Kentucky School of Medicine. Two years of collegiate work are required for admission. It has a faculty of 29 professors and 90 lecturers and assistants, a total of 119. The course covers four years of thirty-two weeks each. The fees for each of the four years are $200. The Dean is Dr. Henry Enos Tuley. The total registration for 1919-1920 was 136; graduates, 29. The next session begins Sept. 21, 1920, and ends June 2, 1921.

LOUISIANA

Louisiana, having a population of 1,884,778, contains one medical college, the School of Medicine of the Tulane University of Louisiana, situated in New Orleans, a city of 387,408.*

Candidates for license to practice medicine in Louisiana who graduate in 1919 and 1922 must present evidence that they have successfully completed, at an approved college or university, respectively, one year and two years of college work including biology, physics, chemistry and a modern language, before entering on the study of medicine. These requirements apply to all students who matriculated, respectively, in 1915 and 1918.

New Orleans

TULANE UNIVERSITY OF LOUISIANA SCHOOL OF MEDICINE, University Campus and 1551 Canal Street.—Organized in 1834 as the Medical College of Louisiana. Classes were graduated in 1835 and in all subsequent years except 1863-65, inclusive. It was transferred to the Medical Department of the University of Louisiana in 1847 and became the Medical Department of the Tulane University of Louisiana in 1884. Present name in 1913, when it became the School of Medicine of the College of Medicine of the Tulane University of Louisiana. The faculty has 33 professors and 98 assistant professors, instructors, demonstrators, etc., a total of 131. The course covers four years of thirty-two weeks each. Two years of collegiate work are required for admission. Total fees for each of the four years, respectively, are $220, $225, $215 and $245. The Dean is Dr. Isadore Dyer. The total registration for 1919-1920 was 325; graduates, 81. The eighty-sixth session begins Sept. 27, 1920, and ends June 8, 1921.

MAINE

Maine, population 782,191, has one medical college, the Bowdoin Medical School, located in Brunswick and Portland, the latter having a population of 69,196.*

To secure a license to practice in Maine, students matriculating in and after the session of 1915-16 must have completed one year of work in an approved college of arts and sciences before entering on the study of medicine. This applies to graduates of 1919 and thereafter.

Brunswick-Portland

BOWDOIN MEDICAL SCHOOL. The Medical Department of Bowdoin College. The first two years are given at Bowdoin College, Brunswick, the last two at Portland, building located on Chadwick Street.—Organized in 1820 as the Medical School of Maine. The first class graduated in 1821. Present title assumed in 1915. The faculty numbers 58. Two years of collegiate work, including courses in physics, chemistry and biology are required for admission. The course covers four years of eight months each. The total fees are $150 each year. The Dean is Dr. Addison S. Thayer, 10 Deering Street, Portland. The total number of students in 1919-1920 was 43; graduates, 10. The one hundredth session begins Oct. 7, 1920, and ends June 23, 1921.

MARYLAND

Maryland, with a population of 1,384,539, contains two medical colleges, located in Baltimore, a city with 733,826 * inhabitants. They are as follows: Johns Hopkins University Medical Department, and the University of Maryland School of Medicine and College of Physicians and Surgeons, the last two having been merged.

To be eligible to practice medicine in Maryland, all students matriculating in the session of 1914-15 and 1918-19, in addition to a four-year high school education, must have completed, respectively, one year and two years of college work including courses in physics, chemistry, biology and French or German, prior to beginning the study of medicine.

Baltimore

JOHNS HOPKINS UNIVERSITY MEDICAL DEPARTMENT, Washington and Monument Streets.—Organized in 1893. The first class graduated in 1897. The faculty consists of 52 professors and 133 clinical professors, etc., a total of 185. The requirements for admission demand that the applicant either has (*a*) completed the chemical-biologic course which leads to the A.B. degree in the university, or (*b*) graduated at an approved college or scientific school and has a knowledge of French and German, physics, chemistry and biology, such as may be obtained from a year's course. The course extends over four years of eight and one-half months each. The total fees are $267 each year. The Dean is Dr. J. Whitridge Williams. Total registration for 1919-1920 was 390; graduates, 93. The twenty-eighth session begins Sept. 28, 1920, and ends June 21, 1921.

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND THE COLLEGE OF PHYSICIANS AND SURGEONS, Lombard and Green Streets.—Organized in 1807 as the College of Medicine of Maryland. The first class graduated in 1810. In 1812 it became the University of Maryland School of Medicine. Baltimore Medical College was merged into it in 1913. In 1915 the College of Physicians and Surgeons was merged and the present name assumed. The combined faculty numbers 164. Two years of collegiate work are required for admission. The course covers four years of eight months each. The total fees are $215 each year. The Dean is Dr. J. M. H. Rowland. Total registration for 1919-1920 was 244; graduates, 59. The fourteenth session begins Oct. 1, 1920, and ends June 1, 1921.

MASSACHUSETTS

Massachusetts, population 3,832,790, has five medical colleges: Medical School of Harvard University, Boston University School of Medicine, Tufts College Medical School, College of Physicians and Surgeons and the Middlesex College of Medicine and Surgery. They are all situated in Boston, a city of 747,923,* except the last named, which is in Cambridge, a city of 109,456.*

Boston

MEDICAL SCHOOL OF HARVARD UNIVERSITY, 240 Longwood Avenue.—Organized in 1782. The first class graduated in 1788. It has a faculty of 68 professors and 154 instructors and assistants, a total of 222. Candidates for admission must present a college degree or two years of work leading to such a degree with standing in the upper third of the class. The college work must include a year of physics, biology, general chemistry, a half year of organic chemistry, and a reading knowledge of French or German. The total fees for each of the four years are $230, $225, $225 and $225. The Dean is Dr. David L. Edsall. The total registration for 1919-1920 was 413; graduates 96. The one hundred and thirty-ninth session begins Sept. 27, 1920, and ends June 23, 1921.

BOSTON UNIVERSITY SCHOOL OF MEDICINE, 80 East Concord Street.—Organized in 1873. In 1874 the New England Female Medical College,

founded in 1848, was merged into it. The first class graduated in 1874. Became nonsectarian in 1918. Two years of collegiate work are required for admission. The faculty includes 23 professors, 55 associates, etc., making a total of 78. The course covers four years of eight months each. Total fees for each of the four years, respectively, are $175, $162, $160 and $190. The Dean is Dr. John P. Sutherland. Total registration for 1919-1920 was 88; graduates, 13. The forty-eighth session begins Oct. 7, 1920, and ends June 15, 1921.

TUFTS COLLEGE MEDICAL SCHOOL, 416 Huntington Avenue.—Organized in 1893 as the Medical Department of Tufts College. The first class graduated in 1894. It has a faculty of 45 professors and 72 assistants, lecturers, etc., a total of 117. Two years of collegiate work is required for admission. The course covers four years of eight months each. The total fees for each of the four years are $211, $196, $186 and $191. The Dean is Dr. Charles F. Painter. Total registration for 1919-1920 was 338; graduates, 83. The twenty-fifth session begins Sept. 16, 1920, and ends June 15, 1921.

COLLEGE OF PHYSICIANS AND SURGEONS, 517 Shawmut Avenue.—Organized in 1880. The first class graduated in 1882. Total attendance of medical students during 1919-1920 was about 32. There were 9 graduates. *This college has been reported not recognized by the Massachusetts Medical Society and by the licensing boards of forty states.*

Cambridge

MIDDLESEX COLLEGE OF MEDICINE AND SURGERY, Cambridge.—Organized in 1914 under the charter of the Worcester Medical College, which became extinct in 1859. A class was graduated in 1915 and each subsequent year. Was closely related in its interests with an osteopathic college and granted a liberal advanced standing for work done in that and other osteopathic colleges. During 1919-1920 it had a total enrolment of 189; graduates, 14. *This college has been reported as not recognized by the licensing boards of thirty-nine states.*

MICHIGAN

Michigan, population 3,133,678, has three medical colleges. Two of these, the University of Michigan Department of Medicine and Surgery and the Homeopathic Medical College of the University of Michigan, are located at Ann Arbor, a city of 19,516* people. The Detroit College of Medicine and Surgery is located at Detroit, a city of 993,739* inhabitants.

To be eligible for license to practice medicine in Michigan, all students matriculating in and after the sessions of 1914-15 and 1918-19, in addition to an accredited four-year high school education, must have completed, respectively, one year and two years of work in an approved college of liberal arts, including college courses in physics, chemistry, biology and French or German, prior to beginning the study of medicine.

Ann Arbor

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL.—Organized in 1850 as the University of Michigan Department of Medicine and Surgery. The first class graduated in 1851. Present title assumed in 1915. It has a faculty composed of 18 professors and 69 associates, instructors, etc., a total of 87. The entrance requirements are two years of college work, including courses in chemistry, physics and biology, with laboratory work, and a reading knowledge of one modern language. The curriculum embraces four years of nine months each. The total fees for Michigan students are $140 each year and $165 for nonresidents. The Dean is Dr. Victor C. Vaughan. The total registration for 1919-1920 was 389; graduates, 75. The seventy-first session begins Oct. 5, 1920, and ends June 30, 1921.

UNIVERSITY OF MICHIGAN HOMEOPATHIC MEDICAL SCHOOL.—Organized in 1875. The first class graduated in 1877. The work of the first two years is taken under the same teachers and in the same classes with the Medical School of the University of Michigan, and the fees charged are the same. The faculty for the last two years composes 6 professors and 11 associates, instructors, etc. The entrance requirements are two years of collegiate work. The Dean is Dr. W. B. Hinsdale. The total registration for 1919-1920 was 42; graduates, 7. The next session begins Oct. 5, 1920, and ends June 30, 1921.

Detroit

DETROIT COLLEGE OF MEDICINE AND SURGERY, 250 St. Antoine Street.—Organized as the Detroit College of Medicine in 1885 by consolidation of Detroit Medical College, organized in 1868, and the Michigan College of Medicine, organized in 1880. Reorganized with present title in 1913. The first class graduated in 1886. In 1918 it became a municipal institution under the control of the Detroit Board of Education. Entrance requirements are two years of collegiate work. The faculty embraces 34 professors, 175 lecturers, etc., a total of 209. The course covers five years of eight months each (including the hospital intern year). The total fees each year are $150—if residents of Detroit the fees are $25. The Dean is Dr. W. H. MacCraken. The total registration for 1919-1920 was 140; graduates, 41. The thirty-sixth session begins Sept. 27, 1920, and ends June 18, 1921.

MINNESOTA

Minnesota, population 2,345,287, contains one medical school, the University of Minnesota Medical School, situated in Minneapolis, a city of 380,582* inhabitants.

Candidates for license to practice medicine in Minnesota who graduated subsequent to June 1, 1912, in addition to an accredited four-year high school education, must have completed two years of work the equivalent of that done in the liberal arts department of the University of Minnesota, including courses in physics, chemistry and biology, prior to beginning the study of medicine.

Minneapolis

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL.—Organized in 1883 as the University of Minnesota College of Medicine and Surgery, reorganized in 1888 by absorption of St. Paul Medical College and Minnesota Hospital College. The first class graduated in 1889. In 1908 the Minneapolis College of Physicians and Surgeons, organized in 1883, was merged. In 1909 the Homeopathic College of Medicine and Surgery was merged. Present title in 1913. The faculty includes 87 professors and 53 instructors and assistants, a total of 140. The curriculum covers four years of nine months each, and a year's internship in an approved hospital. The school is operated on the four-quarter plan. The entrance requirements are two years of University work, which must include six semester credits of rhetoric, eight semester credits of physics; twelve credits of general chemistry, qualitative analysis and organic chemistry; eight credits of zoology, and a reading knowledge of French or German. Students are required to secure a degree of B.S. or A.B. before the M.D. is granted. Total fees are $186 for residents and $216 for nonresidents, each year of three quarters. The Dean is Dr. E. P. Lyon. The total registration for 1919-1920 was 368; graduates, 60. The Thirty-second session begins Sept. 29, 1920, and ends June 14, 1921. The summer quarter begins June 21.

MISSISSIPPI

Mississippi, population 2,001,466, has one medical college, the Department of Medicine of the University of Mississippi, which is located at Oxford, a city of 1,948* inhabitants.

Candidates for license to practice medicine in Mississippi who matriculate in the sessions of 1915-16 and of 1919-20 and thereafter, in addition to a standard four-year high school education, must have completed, respectively, one year and two years of work in an approved college or university, including courses in physics, chemistry, biology and a modern language, before entering on the study of medicine.

Oxford

UNIVERSITY OF MISSISSIPPI SCHOOL OF MEDICINE.—Organized in 1903. Gives only the first two years of the medical course. In 1908 a clinical department was established at Vicksburg, but was discontinued in 1910 after graduating one class. The session extends over eight and a half months. Entrance requirements are two years of collegiate work. The total fees each year are $133. The faculty numbers 16. The Dean is Dr. W. S. Leathers. The total registration for 1919-1920 was 51. The eighteenth session begins Sept. 15, 1920, and ends May 31, 1921.

MISSOURI

Missouri, population 3,448,498, has six medical colleges. St. Louis, population 772,897,* contains three of these, viz., the School of Medicine of St. Louis University, Washington University Medical School, and the St. Louis College of Physicians and Surgeons. Kansas City, with a population of 297,847, has two colleges, the Kansas City College of Medicine and Surgery and the Kansas City University of Physicians and Surgeons. The School of Medicine of the University of Missouri is at Columbia, a town of 10,681* people.

Columbia

UNIVERSITY OF MISSOURI SCHOOL OF MEDICINE.—Organized at St. Louis in 1845; was discontinued in 1855, but was reorganized at Columbia in 1872. Teaching of the clinical years was suspended in 1909. The faculty includes 9 professors and 18 assistant professors, lecturers, etc., a total of 27. The course covers two years of thirty-two weeks each. The entrance requirements are two years of college work including French or German, 8 hours; general zoology, 8 hours; physics, 8 hours; inorganic chemistry, 8 hours; organic chemistry, 5 hours, and general bacteriology, 3 hours. Total fees are $80 for the first and $56 for the second year. Nonresidents of the state pay $10 per term extra. The Dean is Dr. Guy L. Noyes. Total registration for 1919-1920 was 69. The next session begins Aug. 30, 1920, and ends April 27, 1921.

Kansas City

KANSAS CITY COLLEGE OF MEDICINE AND SURGERY, Twenty-Third and Holmes Streets.—Organized in 1915 as an offshoot of the Eclectic Medical University, a Class C medical school, now extinct. It claims to be an eclectic college, but is reported not recognized as such by the National Eclectic Medical Association. Total registration for 1919-1920 was about 128; graduates, 41. Since this school is an offshoot of a Class C medical college and is *reported not recognized by the Missouri State Board of Health and by the licensing boards of thirty-six other states,* no higher rating can be granted to it, pending an inspection, which it has refused.

* Figures from 1920 Census returns.

KANSAS CITY UNIVERSITY OF PHYSICIANS AND SURGEONS, 729 Troost Street.—Originally chartered in 1903 as the Central College of Osteopathy; charter amended in 1917, by which it obtained the right to grant degrees in medicine, and the name was changed to the Central College Medical Department. Present title in 1918. Very liberal advanced standing allowed for work done in osteopathic colleges, and it still has osteopathic classes. There were 72 medical students enrolled in 1919-1920, of whom 39 graduated. Rated in Class C by the Council on Medical Education. *Reported not recognized by the licensing boards of Missouri and of forty-one other states.*

St. Louis

WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, Kingshighway and Euclid Avenue.—Organized in 1842 as the Medical Department of St. Louis University. In 1835 it was chartered as an independent institution under the name of St. Louis Medical College. The first class graduated in 1843. In 1891 it became the Medical Department of Washington University. In 1899 it absorbed the Missouri Medical College. The faculty comprises 33 professors and 96 lecturers, instructors, etc., a total of 129. Two full years of college work are required for admission, including courses in English, physics, chemistry and biology, and a reading knowledge of German. The course is four years of eight months each. The total fees for the four years are, respectively, $221, $216, $216 and $221. The Dean is Dr. Nathaniel Allison. The total registration for 1919-1920 was 163; graduates, 43. The next session begins Sept. 23, 1920, and ends June 9, 1921.

ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE, 1402 South Grand Avenue.—Organized in 1901 as the Marion-Sims-Beaumont Medical College by union of Marion Sims Medical College, organized in 1890, and Beaumont Hospital Medical College, organized in 1886. First class graduated in 1902. It became the Medical Department of St. Louis University in 1903. The faculty is composed of 46 professors, 86 lecturers and assistants, a total of 132. One year of college subjects preliminary to the four years of medical subjects is given in the medical school. Two years of collegiate work are required for admission. The curriculum covers four years of thirty-two weeks each. Summer semester optional. The total fees are $200 each year. The Dean is Dr. Hanau W. Loeb. The total registration for 1919-1920 was 251; graduates, 63. The next session begins Oct. 1, 1920, and ends May 31, 1921.

ST. LOUIS COLLEGE OF PHYSICIANS AND SURGEONS, Jefferson and Gamble Streets.—Organized in 1869. Classes graduated in 1870 and each subsequent year until 1873, when it suspended. Reorganized in 1879. Classes graduated in 1880 and subsequent years until 1915, when it merged with the Medical Department of the National University of Arts and Sciences. Reestablished in 1916. The Dean is Dr. Waldo Briggs. Registration during 1919-1920 was 144; graduates, 42. The next session begins Oct. 1, 1920, and ends June 3, 1921. *This college is reported as not recognized by the licensing boards of Missouri and forty other states.*

NEBRASKA

Nebraska, population 1,296,877, has two medical colleges, The University of Nebraska College of Medicine and the John A. Creighton Medical College of Omaha, population 191,601.*

Omaha

JOHN A. CREIGHTON MEDICAL COLLEGE, Fourteenth and Davenport Streets.—It is the Medical Department of Creighton University. Organized in 1892. The first class graduated in 1893. It has a faculty of 40 professors and 16 associates, lecturers and assistants, a total of 56. Two years of collegiate work are required for admission. The course of study embraces four years of eight months each. Continuous session adopted for seniors only. The total fees each year for the four years are, respectively, $175, $165, $165 and $170. The Dean is Dr. Hermann von Schulte. Total registration for 1919-1920 was 99; graduates, 23. The thirty-ninth session begins Sept. 20, 1920, and ends June 4, 1921.

UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE, Forty-Second Street and Dewey Avenue.—Organized in 1881 as the Omaha Medical College. The first class graduated in 1882. It became the Medical Department of Omaha University in 1891. In 1902 it affiliated with the University of Nebraska, with the present title. The first two years were given at Lincoln and the last two in Omaha until 1913, when all four years were transferred to Omaha. The faculty is composed of 21 professors and 67 lecturers and instructors, total 88. Two years of collegiate work are required for admission, including courses in physics, chemistry, zoology and a modern language. The fees for each of the four years, respectively, are $140, $120, $110 and $110. The Dean is Dr. Irving S. Cutter. Total registration for 1919-1920 was 184; graduates, 42. The next session begins Sept. 17, 1920, and ends June 4, 1921.

NEW HAMPSHIRE

New Hampshire, population 446,352, has one medical college, located at Hanover, population 2,075.

To be eligible for license to practice medicine in New Hampshire, all students matriculating in and after the session of 1915-16, in addition to a four-year high school education, must have completed at least two years of work in an approved college of liberal arts, prior to beginning the study of medicine.

DARTMOUTH MEDICAL SCHOOL.—Organized as New Hampshire Medical Institute in 1797. The first class graduated in 1798. It is under the control of the trustees of Dartmouth College. Clinical teaching was discontinued in 1914. The faculty is made up of 10 professors and 2 instructors, a total of 12. Two years of collegiate work are required for admission. The course covers nine calendar months in each year, or eight months of actual teaching. Candidates for the A.B. or B.S. degree in Dartmouth College may substitute the work of the first year in medicine for that of the senior year in the academic department. The fees for each year are $200. Dean, Dr. John M. Gile; Secretary, Colin C. Stewart. The total registration for 1919-1920 was 21. The next session opens Sept. 23, 1920, and ends June 22, 1921.

NEW YORK

New York State, population 10,646,989, has nine medical colleges. Five of these, College of Physicians and Surgeons (Columbia University), Cornell University Medical College, the University and Bellevue Hospital Medical College, Long Island College Hospital, New York Homeopathic Medical College and Flower Hospital and Fordham University School of Medicine, are located in New York City, population 5,621,151.* Albany Medical College is located in Albany, a city of 113,344* people. The University of Buffalo Medical Department is situated in Buffalo, population 505,875.* The College of Medicine, Syracuse University, is in Syracuse, a city of 171,647* inhabitants.

To be eligible to receive a license to practice in New York, students matriculating in 1918-19 and thereafter must have completed two years of college work before entering on the study of medicine. This applies to graduates of 1922 and thereafter.

Albany

ALBANY MEDICAL COLLEGE, 58-64 Eagle Street.—Organized in 1838. The first class graduated in 1839. It became the Medical Department of Union University in 1873. In 1915 Union University assumed educational control. The faculty is composed of 25 professors and 42 instructors, assistants, etc., a total of 67. Two years of collegiate work, including college courses in physics, chemistry (including organic), biology, English, and a modern foreign language, are required for admission. The curriculum covers four years of eight months each. The charge for tuition is $200 a year and $5 for matriculation. There are no extra fees except for rental of microscopes, laboratory breakage, and certain expensive supplies. The Dean is Dr. Thomas Ordway. The total registration for 1919-1920 was 82; graduates, 21. The ninetieth session begins Sept. 20, 1920, and ends June 13, 1921.

Buffalo

UNIVERSITY OF BUFFALO MEDICAL DEPARTMENT, High Street, near Main.—Organized in 1846. The first class graduated in 1847. It absorbed the Medical Department of Niagara University in 1898. The faculty is composed of 38 professors and 74 lecturers, assistants, etc., a total of 112. Two years of collegiate work, including college courses in physics, chemistry, biology, English and French or German are required for admission. The course covers four years of eight months each. The total fees for each of the four years are $240, matriculation fee $5. The Dean is Dr. C. Sumner Jones. Total registration for 1919-1920 was 211; graduates, 57. The seventy-fifth session begins Sept. 20, 1920, and ends June 3, 1921.

New York

COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS, 437 West Fifty-Ninth Street.—Organized in 1807 by the regents of the University of the State of New York as their medical department. The first class graduated in 1811. In 1860 it became, by affiliation, the Medical Department of Columbia College. It was made a permanent part of Columbia College by legislative enactment in 1891. That institution became Columbia University in 1896. The faculty is composed of 95 professors and 184 instructors, demonstrators, etc., a total of 279. Two years of collegiate work, including courses in physics, chemistry, biology, English and either French or German are required for admission. The work covers four years of eight months each. The Dean is Dr. William Darrach. The total fees for the four years, respectively, are $250, $250, $332 and $352. Total registration for 1919-1920 was 398; graduates, 101. The one hundred and thirteenth session begins Sept. 22, 1920, and ends June 1, 1921.

CORNELL UNIVERSITY MEDICAL COLLEGE, First Avenue and Twenty-Eighth Street, New York City, and Ithaca.—Organized in 1898. The first class was graduated in 1899. The work of the first year may be taken either in Ithaca or New York. The faculty is composed of 51 professors and 101 assistants, lecturers, instructors, etc., a total of 152. All candidates for admission must be graduates of approved colleges or scientific schools or seniors of approved colleges which will permit them to substitute the first year of this medical school for the fourth year of their college course and will confer on them the Bachelor degree on the completion of the year's work. The candidate must also have such knowledge of physics, inorganic chemistry and biology as may be obtained in college by a year's course in these subjects when accompanied by laboratory work. The fees for each of the four years are, respectively, $240, $235, $235 and $250. The Dean is Dr. Walter L. Niles. Total registration for 1919-1920 was 260; graduates, 51. The twenty-third session begins Sept. 27, 1920, and ends June 9, 1921.

FORDHAM UNIVERSITY SCHOOL OF MEDICINE, Bathgate Avenue and Fordham Road.—Organized in 1905 as the School of Medicine of St.

John's College. Present title assumed in 1907. First class graduated in 1909. The faculty consists of 35 professors and 41 lecturers and assistants, a total of 76. The college was suspended by the trustees in 1919, but is continuing for two sessions to permit the students already enrolled to finish their medical training. Its last class will graduate in 1921. The total registration for 1919-1920 was 118; graduates, 54. The next session begins Sept. 24, 1920, and ends June 15, 1921.

LONG ISLAND COLLEGE HOSPITAL, 350 Henry Street, Brooklyn.—Organized in 1858. The first class graduated in 1860. It has a faculty of 44 professors and 90 assistants, instructors, etc., a total of 134. Two years of collegiate work, including college courses in physics, chemistry and biology, are required for admission. The course covers four years of eight months each. The fees are $350 annually. The Dean is Dr. Otto V. Huffman. Total registration for 1919-1920 was 340; graduates, 76. The sixty-third session begins Sept. 27, 1920, and ends May 31, 1921.

NEW YORK HOMEOPATHIC MEDICAL COLLEGE AND FLOWER HOSPITAL, Eastern Boulevard, between Sixty-Third and Sixty-Fourth Streets.—Organized in 1858. Incorporated in 1860 as the Homeopathic Medical College of the State of New York. The title New York Homeopathic Medical College was assumed in 1869. Present title assumed in 1908. The first class graduated in 1861. The course covers four years of eight months each. It has a faculty of 34 professors and 27 lecturers and assistants. The total fees for the four years, respectively, are $250, $245, $220 and $230. Total registration for 1919-1920 was 142; graduates, 42. The sixty-first session begins Sept. 6, 1920, and ends May 21, 1921.

UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE, 338 East Twenty-Sixth Street.—Organized in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. It is the Medical Department of New York University. First class graduated in 1899. The faculty is composed of 65 professors and 106 instructors, etc., in all 171. The course covers four years of eight months each. Entrance requirements are two years of collegiate work, in addition to a standard four-year high school course, including college courses in physics, chemistry and biology. The fees for each of the four years are, respectively, $270. $270, $270, and $295. The Dean is Dr. Samuel A. Brown. Total registration for 1919-1920 was 465; graduates, 103. The next session begins Sept. 15, 1920, and ends June 7, 1921.

Syracuse

SYRACUSE UNIVERSITY COLLEGE OF MEDICINE, 307-311 Orange Street.—Organized in 1872, when the Geneva Medical College, chartered in 1834, was removed to Syracuse, under the title "The College of Physicians and Surgeons of Syracuse University." Present title assumed in 1875, when a compulsory three-year graded course was established. The first class graduated in 1873 and a class graduated each subsequent year. In 1889 the amalgamation with the university was made complete. Course extended to four years in 1896. Two years of a recognized college course are required for admission. The course covers four years of thirty-five weeks each. The fees are $217 annually; graduation fee, $10. The faculty is composed of 35 professors and 66 associate and assistant professors, lecturers and instructors. The Dean is Dr. John L. Heffron. The total enrolment for 1919-1920 was 147; graduates, 36. The fiftieth session begins Sept. 14, 1920, and ends June 8, 1921.

NORTH CAROLINA

North Carolina, population 2,466,025, has two medical schools, each of which gives only the first two years of the medical course. The School of Medicine of the University of North Carolina is located at Chapel Hill, population 1,149. Wake Forest College School of Medicine is at Wake Forest, population 1,443.

To be eligible for a license to practice medicine in North Carolina, graduates of 1918 and 1922 must have completed, respectively, one year and two years of college work including courses in physics, chemistry and biology in addition to 14 units of high school work before beginning the study of medicine.

Chapel Hill

UNIVERSITY OF NORTH CAROLINA SCHOOL OF MEDICINE.—Organized in 1890. Until 1902 this school gave only the work of the first two years, when the course was extended to four years by the establishment of a department at Raleigh. The first class graduated in 1903. A class was graduated each subsequent year, including 1910, when the clinical department at Raleigh was discontinued. Two years of collegiate work are required for admission. The faculty is composed of 13 professors and 11 lecturers, assistants, etc., a total of 24. The fees for each year are $150. The Dean is Dr. I. H. Manning. The total registration for 1919-1920 was 62. The thirty-fifth session begins Sept. 23, 1920, and ends June 10, 1921.

Wake Forest

WAKE FOREST COLLEGE SCHOOL OF MEDICINE.—This school was organized in 1902. The faculty, including the professors of chemistry, physics and biology, numbers 10. Only the first two years of the medical course are offered after the completion of freshman and sophomore college work, and on this combined course the B.S. degree is conferred. Each annual course extends over nine months. The fees for each year aggregate $120. The Secretary is E. B. Earnshaw. The total registration for 1919-1920 was 45. The nineteenth session begins Sept. 7, 1920, and ends May 27, 1921.

* Figures from 1920 Census returns.

NORTH DAKOTA

North Dakota, population 791,437, has one medical college, the School of Medicine of the University of North Dakota, which is situated at University, a suburb of Grand Forks, a city of 13,950* people. It gives only the first two years of the medical course.

Candidates for license to practice medicine in North Dakota who graduated in 1912 and thereafter, in addition to a four-year high school education, must have completed two years of work in an approved college of liberal arts including courses in Latin, physics, chemistry, botany and zoology, prior to beginning the study of medicine. Beginning in 1918, every applicant for a license must show evidence of having spent at least one year as an intern in a hospital.

University

UNIVERSITY OF NORTH DAKOTA SCHOOL OF MEDICINE.—Organized in 1905. Offers only the first two years of the medical course. Two years' work in a college of liberal arts is required for admission. The fees are about $85 each year. The faculty consists of 6 professors and 9 instructors, a total of 15. The Dean is Dr. Harley E. French. The total registration for 1919-1920 was 31. The fifteenth session begins Sept. 20, 1920, and ends June 14, 1921.

OHIO

Ohio, population 5,273,814, has five medical colleges. Two of these, the Medical College of the University of Cincinnati and the Eclectic Medical College, are located in Cincinnati, a city of 401,247* inhabitants. Cleveland, population 796,836,* contains one medical school, Western Reserve University School of Medicine. Columbus, population 237,031,* contains the two departments of the Ohio State University, the College of Medicine and the College of Homeopathic Medicine.

Cincinnati

UNIVERSITY OF CINCINNATI COLLEGE OF MEDICINE, Eden Avenue, Cincinnati General Hospital.—Organized in 1909 by the union of the Medical College of Ohio (founded in 1819) with the Miami Medical College (founded in 1852). The Medical College of Ohio became the Medical Department of the University of Cincinnati in 1896. Under a similar agreement, March 2, 1909, the Miami Medical College also merged into the University, when the title of Ohio-Miami Medical College of the University of Cincinnati was taken. Present title assumed in 1915. Two years of college work are required for admission. The faculty consists of 55 professors, 121 associates, assistants, etc., a total of 176. The course covers four years of eight month each. The fees for each of the four years, respectively, are $260, $210, $160 and $180. The Acting Dean is Dr. John C. Oliver. The total registration for 1919-1920 was 221; graduates, 44. The next session beings Oct. 5, 1920, and ends June 18, 1921.

ECLECTIC MEDICAL COLLEGE, 630 West Sixth Street.—Organized in 1833 at Worthington as the Worthington Medical College. Removed to Cincinnati in 1843. In 1845 it was chartered as the Eclectic Medical Institute. In 1857 the American Medical College, organized in 1839, was merged into it, and in 1859 the Eclectic College of Medicine and Surgery, organized in 1856, was merged into it. In 1910 it assumed its present title. Classes were graduated in 1833 and in all subsequent years except 1839 to 1843, inclusive. It has a faculty of 29 professors and 10 lecturers and assistants, a total of 39. Two years of college work are required for admission. The course covers four years of eight months each. The total fees for the four years, respectively, are $160, $150, $150 and $150. The Secretary is Dr. John K. Scudder. Total registration for 1919-1920 was 93; graduates, 32. The next session begins Sept. 16, 1920, and ends May 16, 1921.

Cleveland

WESTERN RESERVE UNIVERSITY SCHOOL OF MEDICINE, 1353 East Ninth Street.—Organized in 1843 as the Cleveland Medical College. The first class graduated in 1844. It assumed the present title in 1881. In 1910 it absorbed the Cleveland College of Physicians and Surgeons. The faculty includes 18 professors and 108 lecturers, assistants, etc., a total of 126. The curriculum embraces four years of eight and one-half months each. Three years of college work are required for admission. The total fees for each of the four years are, respectively, $225, $210, $204 and $205. The Dean is Dr. C. A. Hamann. The total registration for 1919-1920 was 178; graduates, 48. The seventy-eighth session begins Sept. 30, 1920, and ends June 16, 1921.

Columbus

OHIO STATE UNIVERSITY COLLEGE OF MEDICINE, 710 North Park Street.—Organized in 1907 as the Starling-Ohio Medical College by the union of Starling Medical College (organized 1847) with the Ohio Medical University (organized 1890). In 1914 it became an integral part of the Ohio State University with its present title. The faculty consists of 30 professors and 61 lecturers, demonstrators, etc., a total of 91. Two years of collegiate work are required for admission. The course covers four years of eight months each. Tuition fees are $152 each year for residents of Ohio; for nonresidents, the fees are $202. The Dean is Dr. Eugene F. McCampbell. The total registration for 1919-1920 was 150; graduates, 23. The next session begins Sept. 14, 1920, and ends June 14, 1921.

OHIO STATE UNIVERSITY COLLEGE OF HOMEOPATHIC MEDICINE.—Organized in 1914, when the property of the Cleveland-Pulte Medical College of Cleveland was transferred to the Ohio State University. The faculty numbers 21. Two years of college work are required for admission. The students are taught largely in the same classes and by the same teachers as students of the College of Medicine during the first two years and the tuition fees are the same. The Dean is Dr. Claude A. Burrett. The total registration for 1919-1920 was 26; graduates, 1. The sixth session begins Sept. 14, 1920, and ends June 14, 1921.

OKLAHOMA

Oklahoma, population 2,377,629, has one medical college, the School of Medicine of the University of Oklahoma. The work of the first and second years is given in the academic laboratories at Normal, a city of about 4,000 inhabitants. The work of the third and fourth years is given in Oklahoma City, which has a population of 91,258 * and which is eighteen miles north of Norman.

To be eligible for license to practice medicine in Oklahoma, all students matriculating in 1914-15 and in 1917-18, in addition to a four-year high school education, must have completed, respectively, one year and two years of work in an approved college of liberal arts, including courses in physics, chemistry, biology and a modern language prior to beginning the study of medicine.

Norman and Oklahoma City

UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE.—Organized in 1900. Gave only the first two years of the medical course at Norman until 1910, when a clinical department was established at Oklahoma City. It has a faculty of 38 professors and 28 instructors, a total of 66. Two years of collegiate work are required for admission. The course is four years of nine months each. An optional course of six years is offered for the degree of B.S. and M.D. The total fees for the four years are, respectively, $70, $40, $40 and $45. The Dean is Dr. Leroy Long, 325 East Fourth Street, Oklahoma City. The total registration for 1919-1920 was 86; graduates, 15. The session begins Sept. 16, 1920, and ends June 7, 1921.

OREGON

Oregon, population 888,243, has one medical college, the University of Oregon Medical School, located in Portland, a city of 258,288 * population.

Portland

UNIVERSITY OF OREGON MEDICAL SCHOOL, Marquam Hill.—Organized in 1887. The first class graduated in 1888. A class graduated each subsequent year except 1898. Became an integral part of the University of Oregon in 1910. The Willamette University Medical Department was merged in 1913. It has a faculty of 16 professors and 88 lecturers, assistants, etc., a total of 104. Entrance requirements are two years of college work or its equivalent. The course is four years of eight months each. The total fees for the four years are, respectively, $165, $160, $160 and $160. The Dean is Dr. Richard B. Dillehunt. The total registration for 1919-1920 was 103; graduates, 14. The thirty-fourth session begins Oct. 1, 1920, and ends May 31, 1921.

PENNSYLVANIA

Pennsylvania, population 8,798,067, has six medical colleges. Of these, Philadelphia, having a population of 1,823,158,* contains five, as follows: University of Pennsylvania School of Medicine, Jefferson Medical College, Hahnemann Medical College and Hospital, Woman's Medical College of Pennsylvania and Temple University Department of Medicine. The other school, the School of Medicine of the University of Pittsburgh, is situated in Pittsburgh, a city of 588,193.*

To be eligible for license to practice medicine in Pennsylvania, students matriculating in the session of 1914-15 and thereafter, in addition to a four-year high school education, must have completed a year's work either in an approved college of liberal arts or a preliminary year in the medical college, including college courses in physics, chemistry and biology, before beginning the study of medicine. He must also have completed an internship of at least one year in an approved hospital.

Philadelphia

UNIVERSITY OF PENNSYLVANIA SCHOOL OF MEDICINE, Thirty-Sixth Street and Hamilton Walk.—Organized in 1765. Classes were graduated in 1768 and in all subsequent years except 1772-79, inclusive. The original title was the Department of Medicine, College of Philadelphia. The present title, School of Medicine of the University of Pennsylvania, was adopted in 1909. It granted the first medical diploma issued in America. In 1916 it took over the Medico-Chirurgical College of Philadelphia to develop it as a graduate school. The faculty consists of 56 professors, associate, adjunct and assistant professors, and 154 lecturers, associates, instructors, etc., a total of 210. The minimum requirements for admission are a standard four-year high school course or its equivalent, plus two years of work in an approved college of arts and science, including courses in French or German, and in physics, chemistry and general biology or zoology, with appropriate laboratory exercises. The first and second year classes are limited to 100 students; third and fourth to 125 each. The course embraces four years of study of thirty-four weeks each. The total fees for each of the four years are, respectively, $343, $320, $320 and $324. The Dean is Dr. William Pepper. Total registration for 1919-1920 was 454; graduates, 131. The one hundred and fifty-fifth session begins Sept. 24, 1920, and ends June 15, 1921.

JEFFERSON MEDICAL COLLEGE, Tenth and Walnut Streets.—Organized in 1825 with its present title as the Medical Department of Jefferson College, Cannonsburg, Pa. Classes have been graduated annually since 1826. In 1838 a separate university charter was granted without change of title, since which time it has continued under the direction of its own board of trustees. It has a faculty of 43 professors, associate and assistant professors, and 124 associates, lecturers, demonstrators and instructors, a total of 167. Entrance requirements are a completed standard four-year high school or college preparatory course, or the equivalent, and in addition two years of work leading to a degree in an approved college of arts and science amounting to at least 60 semester hours, including specified courses in physics, general and organic chemistry and biology, with laboratory work in each subject. The course of study covers graded work of four years of eight and a half months each. The fees are about $320 each year, with a matriculation fee of $5 paid on admission. The Dean is Dr. Ross V. Patterson. The total registration for 1919-1920 was 522; graduates, 165. The ninety-sixth session begins Sept. 22, 1920, and ends June 4, 1921.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA, Twenty-First and N. College Avenue.—Organized in 1850. Classes were graduated in 1852 and in all subsequent years except 1862. It has a faculty of 14 professors and 46 assistants, lecturers, etc., in all 60. Entrance requirements are a completed course in a standard secondary school, and in addition two years of collegiate work, including courses in physics, chemistry, biology and two foreign languages, one of which must be French or German. The curriculum covers four years of eight months each. Fees for each of the four years are, respectively, $198, $202, $184 and $179.50. The Dean is Dr. Martha Tracy. The total registration for 1919-1920 was 89; graduates, 12. The eighty-first session begins Sept. 29, 1920, and ends June 15, 1921.

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL OF PHILADELPHIA, 220-24 North Broad Street.—Organized in 1848 as the Homeopathic Medical College of Pennsylvania. In 1869 it united with the Hahnemann Medical College of Philadelphia, taking the latter title. Assumed present title in 1885. The first class graduated in 1849. Entrance requirements are a completed course in a standard secondary school and in addition two years devoted to a college course, including English and either French, German or Spanish, physics, chemistry and biology. It has a faculty of 33 professors and 62 lecturers, instructors, etc., in all 95. The work covers four years of eight and a half months each. Total fees for each of the four years, respectively, are $230, $232, $232 and $250. The Dean is Dr. William A. Pearson. The total registration for the college year 1919-1920 was 130; graduates, 37. The seventy-third session begins Sept. 27, 1920, and ends May 31, 1921.

THE TEMPLE UNIVERSITY DEPARTMENT OF MEDICINE, Eighteenth and Buttonwood Streets.—Organized in 1901. The first class graduated in 1904. The faculty numbers 102. Two years of college work are required for admission. The fees for each of the four years, respectively, are $175, $171, $160 and $170. The Dean is Dr. Frank C. Hammond. The total registration for 1919-1920 was 114; graduates, 23. The twentieth session begins Sept. 20, 1920, and ends June 1, 1921.

Pittsburgh

UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE, Bigelow Boulevard.—Organized in 1886, as the Western Pennsylvania Medical College and in 1908 became an integral part of the University of Pittsburgh, removing to the university campus in 1910. The first class graduated in 1887. The faculty is composed of 15 professors and 105 associates, assistants, etc., 120 in all. Entrance requirements are two years of recognized college work, to have included essentially courses in English, chemistry (inorganic and organic), physics, biology and a reading knowledge of French or German, Italian or Spanish. The course of study is four years of eight and a half months each. The tuition fee is $310 a year; matriculation fee, $5; diploma fee, $10. The Dean is Dr. Raleigh R. Huggins. The total registration for 1919-1920 was 147; graduates 31. The thirty-fifth session begins Sept. 27, 1920, and ends June 15, 1921.

SOUTH CAROLINA

South Carolina, population 1,660,934, has one medical college, situated in Charleston, a city of 60,734 people.

Graduates of 1922 (matriculants of 1918-19) and thereafter, to be eligible for license to practice medicine in South Carolina must have completed, in addition to 14 units of high school work, two years in an approved college, including courses in English, physics, chemistry and biology.

Charleston

THE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA, 16 Lucas Street.—Organized in 1823 as the Medical College of South Carolina. The first class graduated in 1825. In 1832 a medical college bearing the present title was chartered and the two schools continued as separate institutions until they were merged in 1838. Classes were graduated in all years except 1862 to 1865, inclusive. In 1913, by legislative enactment, it became a state institution. It has a faculty of 37 professors and 28 lecturers, instructors, etc., a total of 65. The course covers four

years of eight months each. Two years of collegiate work including courses in physics, chemistry, biology and a modern foreign language are required for admission, in addition to a standard high school preparation. The total fees are $150 annually. The Dean is Dr. Robert Wilson, Jr. Total enrolment for 1919-1920 was 65; graduates, 14. The ninety-second session begins Sept. 24, 1920, and ends June 2, 1921.

SOUTH DAKOTA

South Dakota, population 735,434, has one medical college, the University of South Dakota College of Medicine, located at Vermilion, a town of 2,590 * people.

To be eligible for license to practice medicine in South Dakota, graduates of 1915 and thereafter must show that they matriculated in and graduated from medical colleges which required at least two years of collegiate work for admission, including courses in physics, chemistry, biology and a modern language. This affects all students who matriculated in the session of 1911-1912 and thereafter.

Vermilion

UNIVERSITY OF SOUTH DAKOTA COLLEGE OF MEDICINE.—Organized in 1907. Offers only the first two years of the medical course. Two years' work in a college of liberal arts are required for admission. The fees are $60 each year. The faculty numbers 8. The Dean is Christian P. Lommen, B.S. The total registration for 1919-1920 was 23. The fourteenth session begins Sept. 27, 1920, and ends June 25, 1921.

TENNESSEE

Tennessee, population 2,321,253, has four medical colleges. Of these, Vanderbilt University Medical Department and Meharry Medical College are situated in Nashville, a city with a population of 118,342.* The College of Medicine of the University of Tennessee and the University of West Tennessee College of Medicine and Surgery are located in Memphis, population 162,351.*

To be eligible for a license to practice medicine in Tennessee, students matriculating in the session of 1914-1915 and of 1918-1919 must have completed, respectively, one year of collegiate work, including courses in physics, chemistry, biology and a modern language, in addition to a four-year high school course before entering on the study of medicine.

Memphis

UNIVERSITY OF TENNESSEE COLLEGE OF MEDICINE, three buildings, 879 Madison Avenue.—Organized in 1876 at Nashville as Nashville Medical College. First class graduated 1877, and a class graduated each subsequent year. Became Medical Department of University of Tennessee 1879. In 1909 it united with the Medical Department of the University of Nashville to form the joint Medical Department of the Universities of Nashville and Tennessee. This union was dissolved in 1911. The trustees of the University of Nashville by formal action of that board named the University of Tennessee College of Medicine as its legal successor. In 1911 it moved to Memphis, where it united with the College of Physicians and Surgeons. The Memphis Hospital Medical College was merged in 1913. Lincoln Memorial University Medical Department was merged in 1914. The faculty includes 54 professors and 53 assistants, instructors, etc., a total of 107. Entrance requirements are a completed secondary education plus two years of collegiate work. Students taking the two-year premedical course in Knoxville may secure the B.S. and M.D. degrees. The total fees for the four years, respectively, are $107, $102, $102 and $127 for bona fide residents of the state, and $50 more each year for nonresidents. The Dean is Dr. McIver Woody. Total registration for 1919-1920 was 50; graduates, 15. The next session begins Sept. 25, 1920, and ends June 7, 1921.

UNIVERSITY OF WEST TENNESSEE MEDICAL DEPARTMENT, Colored. 1190 South Phillips Place.—Organized in 1900. The first class graduated in 1904, and a class graduated each subsequent year. Total registration for 1919-1920 was 10; graduates, 1. *Official reports indicate that the diplomas of this college are not recognized by the licensing boards of Tennessee and forty-one other states.*

Nashville

VANDERBILT UNIVERSITY SCHOOL OF MEDICINE.—This school was founded in 1874. The first class graduated in 1875. The faculty consists of 42 professors and 37 lecturers, a total of 79. One year of collegiate work is required for admission. The course covers four years of nearly eight and a half months each. The total fees for the four years, respectively, are $160, $160, $160 and $185. The Dean is Dr. G. Canby Robinson. The total registration for 1919-1920 was 122; graduates, 29. The forty-seventh session begins Sept. 27, 1920, and ends June 8, 1921.

MEHARRY MEDICAL COLLEGE. Colored. 1118 First Avenue, South.—This school was organized in 1876 as the Medical Department of Central Tennessee College, which became Walden University in 1900. First class graduated in 1877. Obtained new charter independent of Walden University in 1916. The faculty is made up of 13 professors and 17 instructors, demonstrators, etc., 30 in all. The work embraces four years of thirty weeks each. The total fees for each of the first three years are $87 and for the fourth years $97. The President is Dr. George W. Hubbard. Total registration for 1919-1920 was 185; graduates, 39. The forty-fifth session begins Oct. 5, 1920, and ends May 19, 1921.

TEXAS

Texas, population 4,601,279, has two medical colleges. The University of Texas Department of Medicine is located at Galveston, a city of 41,863 inhabitants. The Baylor University College of Medicine is located in Dallas, population 158,976.*

To be eligible for a license to practice medicine in Texas, students matriculating in the session of 1914-1915 and thereafter must have completed a year of collegiate work, including courses in physics, chemistry, biology and modern language, in addition to a standard four-year high school course, before entering on the study of medicine.

Dallas

BAYLOR UNIVERSITY COLLEGE OF MEDICINE, 720 College Avenue.—Organized in 1900 as the University of Dallas Medical Department. In 1903 it took its present name and became the Medical Department of Baylor University at Waco. It acquired the charter of Dallas Medical College in 1904. The first class graduated in 1901. The faculty numbers 54. Entrance requirement is one year of college work in addition to a four-year high school education. For the session of 1918-19 and thereafter two years of collegiate work will be required for admission. The course is four years of eight months each. The fees for each of the four years, respectively, are $165, $160, $160 and $150. The Dean is Dr. E. H. Cary. Total registration for 1919-1920 was 141; graduates, 33. The twenty-first session begins Sept. 27, 1920, and ends May 26, 1921.

Galveston

UNIVERSITY OF TEXAS DEPARTMENT OF MEDICINE, Avenue B, between Ninth and Tenth Streets.—Organized in 1891. The first class graduated in 1892.. It has a faculty of 23 professors and 19 lecturers and instructors, a total of 42. The curriculum embraces four years of eight months each. The entrance requirement is two years of collegiate work in addition to a four year high school education. The total fees for the four years, respectively, are $78, $48, $30.50 and $20.50 for residents of the state; $150 each year additional for non-residents. The Dean is Dr. William S. Carter. Total registration for 1919-1920 was 219; graduates, 51. The thirtieth session begins Oct. 1, 1920, and ends May 31, 1921.

UTAH

Utah, population 453,648, has one medical college, the School of Medicine of the University of Utah, situated at Salt Lake City, which has 118,110 * people.

To be eligible to secure licenses to practice medicine in Utah, students matriculating in and after the session of 1912-1913, in addition to a four-year high school education, must have completed at least one year of collegiate work prior to beginning the study of medicine, this preliminary college work to have included college courses in physics, chemistry and biology.

Salt Lake City

UNIVERSITY OF UTAH SCHOOL OF MEDICINE.—Organized in 1906. Gives only first two years of medical course. Each course covers thirty-six weeks. Two years of collegiate work are required for admission. The medical faculty consists of 11 professors and 13 lecturers and assistants, a total of 24. The fees are $110 each year. The Dean is Dr. Perry G. Snow. Total registration for 1919-1920 was 36. The fourteenth session begins Sept. 28, 1920, and ends June 5, 1921.

VERMONT

Vermont, population 366,192, has one medical school, located at Burlington, a town of 22,779 * people.

Students matriculating in and after the sessions of 1912-1913 and 1918-1919 who desire to practice medicine in Vermont must have obtained a preliminary training, respectively, of one year and of two years of collegiate work, in addition to a standard four-year high school education, this additional years' work to include college courses in physics, chemistry and biology.

Burlington

UNIVERSITY OF VERMONT COLLEGE OF MEDICINE, Pearl Street, College Park.—Organized with complete course in 1822. Classes graduated in 1823 to 1836, inclusive, when the school was suspended. It was reorganized in 1853 and classes were graduated in 1854 and in all subsequent years. The faculty numbers 41. Two years of college work in addition to a four-year high school education are required for admission. The course of study covers four years of nine months each. Continuous session for seniors only. The total fees for each of the first three years are $145, and $170 for the fourth year. The Dean is Dr. H. C. Tinkham. The total registration for 1919-1920 was 103; graduates, 22. The next session begins Sept. 22, 1920, and ends June 20, 1921.

* Figures from the 1920 Census returns.

VIRGINIA

Virginia, population 2,234,030, has two medical colleges, one, the Department of Medicine of the University of Virginia, situated in Charlottesville, population 10,688,* and the Medical College of Virginia at Richmond, population 156,687. Only graduates of medical colleges registered by the Virginia State Board of Medical Examiners are eligible to obtain licenses to practice medicine in this state. Medical colleges to be so registered must require of all students admitted in the session of 1914-1915, completion of at least one year, and in the session of 1917-1918 and thereafter two years of collegiate work, including courses in physics, chemistry, biology and a modern language, preferably German, in addition to a four-year high school education.

Charlottesville

UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE.—Organized in 1827. Classes were graduated in 1828 and in all subsequent years except 1865. It has a faculty of 22 professors and 23 lecturers, instructors, assistants, etc., a total of 45. The requirements for admission are the completion of a four-year high school course, or its equivalent, and two years of college work devoted to English, mathematics, chemistry, physics and biology, and French or German. Continuous session adopted for seniors only. Total fees for the four years, respectively, are $205, $207.50, $165 and $150. The Dean is Dr. Theodore Hough. The total registration for 1919-1920 was 103; graduates, 28. The ninety-second session begins Sept. 16, 1920, and ends June 15, 1921.

Richmond

MEDICAL COLLEGE OF VIRGINIA, Marshall and College Streets.—Organized in 1838 as the Medical Department of Hampden Sydney College. Present title was taken in 1854. In 1913 the University College of Medicine was merged. In 1914 the North Carolina Medical College was merged. Classes were graduated in 1840 and in all subsequent years. It has a faculty of 40 professors and 72 lecturers, instructors, etc., a total of 112. The requirement for admission is a four-year high school education and in addition two years of collegiate work, including courses in physics, chemistry, biology and French or German. The course embraces four years of eight months each. Total fees for the four years, respectively, are $210, $210, $210 and $240. The Dean is Dr. E. C. L. Miller. The total registration for 1919-1920 was 137; graduates, 23. The ninety-second session begins Sept. 15, 1920, and ends May 31, 1921.

WEST VIRGINIA

West Virginia, population 1,439,165, has one medical college, the School of Medicine of West Virginia University, which offers the first two years of the medical course. It is located at Morgantown, a city of 12,117 * population.

Graduates of 1921 (matriculants of 1917-1918) and thereafter, in order to secure licenses to practice medicine in West Virginia, must have completed, in addition to a high school education, one year of collegiate work, including courses in physics, chemistry and biology, before entering on the study of medicine.

Morgantown

WEST VIRGINIA UNIVERSITY SCHOOL OF MEDICINE.—Organized in 1902, and gives only the first two years of the medical course. Two years of college work are required for admission and the Bachelor's degree will be granted to those who finish the two years in medicine. Session extends through nine months. The faculty numbers 16. Fees: For residents of the state, $30 each year; for non-residents, $60. Cadets pay laboratory fees only. The Dean is Dr. John N. Simpson. The total registration for 1919-1920 was 55. The next session begins Sept. 20, 1920, and ends June 15, 1921.

WISCONSIN

Wisconsin, population 2,553,983, has two medical colleges, the Medical School of the University of Wisconsin, which teaches the first two years of the medical course, and is located at Madison, a city of 38,378 * people, and the Marquette University School of Medicine, located at Milwaukee, a city of 457,147 * people.

To be eligible for licenses to practice medicine in Wisconsin, students matriculating in the session of 1915-1916 (graduates of 1919) and thereafter, prior to entering a medical school, must have completed, besides a four-year high school course, two years of collegiate work, including courses in physics, chemistry, biology and a modern language.

Madison

UNIVERSITY OF WISCONSIN MEDICAL SCHOOL.—Organized in 1907. Gives only the first two years of the medical course. The teaching of the third will be given in the fall of 1923, and of the fourth year in 1924. For matriculation at least two years in a college of arts and science or an equivalent training are required, including two years of Latin, a reading knowledge of French or German, and at least a year's work in physics, chemistry and biology. It has a faculty of 18 professors and 30 lecturers, instructors, etc., a total of 48. Tuition fees: for residents of the state, $75 each year; for non-residents, $199. The Dean is Dr. Charles R. Bardeen. The registration for 1919-1920 was 141. The thirteenth session begins Sept. 23, 1920, and ends June 17, 1921.

Milwaukee

MARQUETTE UNIVERSITY SCHOOL OF MEDICINE, Fourth Street and Reservoir Avenue.—Organized in December, 1912, by the merger of the Milwaukee Medical College and the Wisconsin College of Physicians and Surgeons. It has a faculty of 79. The entrance requirements are two years of college work, including courses in physics, chemistry, biology and a modern language. The curriculum is for four years of thirty-four weeks each. The total fees for each year are $250. The Dean is Dr. Louis F. Jermain. The registration for 1919-1920 was 103; graduates, 2. The ninth session begins Oct. 1, 1920, and ends June 14, 1921.

PHILIPPINE ISLANDS

The Philippine Archipelago, having a population of 9,009,802, has two medical colleges, the University of the Philippines College of Medicine and Surgery and the Medical Faculty of the University of St. Thomas. They are located in the city of Manila, which in 1910 had a population of 234,409.

Manila

UNIVERSITY OF THE PHILIPPINES COLLEGE OF MEDICINE AND SURGERY, Manila.—Organized in 1907 as the Philippine Medical School, under the support of the government of the Philippine Islands. Present title in 1910. The faculty includes 34 professors and 36 lecturers, assistants, etc., a total of 70. Two years of collegiate work leading to the degree of Bachelor of Arts are required for admission. The course extends over five years of nine months each with an additional sixth year of intern service. The Dean is Dr. Fernando Calderon. The total registration for 1919-1920 was 147; graduates, 28. The fourteenth session began July 1, 1920, and ends April 4, 1921.

CANADA

The Dominion of Canada has nine medical colleges, all but one of which require a five-year course, including in the first year courses in physics, chemistry and biology. This course is practically equal to that in the colleges of the United States which require one year of college work for admission, including the science courses named. None of the Canadian colleges has a minimum requirement of two years of collegiate work, or its equivalent, preliminary to or as a part of the medical course. The medical school at Edmonton, Alberta, gives only the first two years of the medical course, or three years, including the preliminary science year.

Alberta

UNIVERSITY OF ALBERTA, FACULTY OF MEDICINE, Edmonton.—Organized in 1913. Offers only the first four years of the six-year medical course, including the two preliminary science years. The faculty numbers 26. Fees for the first year are $64; for the second, third and fourth years, each $88. The registrar is Cecil E. Race, B.A. The registration for 1919-1920 was 135. The eighth session begins Sept. 27, 1920, and ends May 12, 1921.

Manitoba

UNIVERSITY OF MANITOBA FACULTY OF MEDICINE, Winnipeg.—Organized in 1883, first class graduated in 1886, and a class graduated each subsequent year. The faculty numbers 90. The total fees for the five years, respectively, are $175, $165, $170, $160 and $160. The entire course covers five years, the first year including premedical courses in physics, chemistry and biology. The Dean is Dr. S. Willis Prowse. Total registration for 1919-1920 was 219; graduates, 24. The next session begins Sept. 14, 1920, and ends April 15, 1921.

Nova Scotia

DALHOUSIE UNIVERSITY, FACULTY OF MEDICINE, Halifax, N. S.—Organized in 1867. Incorporated as the Halifax Medical College in 1875. Reorganized as an examining faculty, separate from the Halifax Medical College in 1855. In 1911, in accordance with an agreement between the Governors of Dalhousie University and the Corporation of the Halifax Medical College, the work of the latter institution was discontinued and a full teaching faculty was established by the University. By an arrangement between Dalhousie University and the Provincial Medical Board of Nova Scotia, the final professional examinations are conducted conjointly by the university and the board, and candidates may qualify at the same time for their academic degrees and the provincial license. First class graduated in 1872. It has a faculty of 40 professors, lecturers and demonstrators. Requires matriculation examination and a graded course of five years, including premedical courses in physics, chemistry and biology. The fees are $140 for each of the first two years and $150 for each of the other three. The total registration for 1919-1920 was 139; graduates, 11. The Dean is Dr. John Stewart. The next session begins Sept. 29, 1920, and ends May 26, 1921.

Ontario

UNIVERSITY OF TORONTO, FACULTY OF MEDICINE, Toronto.—Organized in 1843 as the Medical Faculty of King's College. Abolished in 1853. Reestablished in 1887. In 1902 it absorbed Victoria University, Medical Department, and in 1903 absorbed Trinity Medical College. The course

of study covers six years of eight months each, the first two being devoted largely to physics, chemistry, biology and cultural courses in history, science and English. It has a faculty of 54 professors and 217 lecturers, associates, etc., a total of 271. The fees are $160 each year; graduation fee, $20. The Dean is Dr. A. Primrose. The total registration for 1919-1920 was 1,082; graduates, 74. The next session begins Sept. 28, 1920, and ends May 31, 1921.

QUEEN'S UNIVERSITY FACULTY OF MEDICINE, Kingston.—Organized 1854, first class graduated in 1855, and a class graduated each subsequent year. The faculty was originally a department of the university, but a separation took place in 1866, when the school was conducted under the charter of the Royal College of Physicians and Surgeons at Kingston. In 1892 the school again became an integral part of Queen's University. The faculty includes 22 professors and 28 assistants, instructors, etc., a total of 50. The fees for the six years are, respectively, $140.50, $140.50, $143, $144, $144 and $134; fee for M.D., C.M. degrees, $30. The course covers six years of thirty teaching weeks each, the first year including courses in physics, chemistry, biology, English and French or German. The total registration in 1919-1920 was 229; graduates, 21. The Dean is Dr. J. C. Connell. The next session begins Sept. 29, 1920, and ends May 29, 1921.

WESTERN UNIVERSITY, FACULTY OF MEDICINE, London.—Organized in 1881, first class graduated in 1883, and a class graduated each year subsequently. The medical school has been under the control of the Board of Governors of the Western University since 1913. The faculty numbers 43. The course is six years, of eight months each, the first year including premedical courses in physics, chemistry and biology. The total fees for the six years, respectively, are $150, $145, $145, $153, $153 and $178. The Acting Dean is Dr. Paul S. McKibben. Total registration for 1919-1920 was 119; graduates 11. The next session begins Oct. 4, 1920, and ends May 26, 1921.

Montreal

MCGILL UNIVERSITY, FACULTY OF MEDICINE.—Founded 1824 as Montreal Medical Institution; became the Medical Faculty of McGill University in 1829; first class graduated under the university auspices in 1833. No session between 1836-39 owing to political troubles. In 1905 it absorbed the Faculty of Medicine of the University of Bishop College. The course extends over six years of eight months each, including the two preliminary years. The faculty numbers 135. The total fees for each of the first five years are $167; sixth year $197. The total registration for 1919-1920 was 624; graduates, 52. The Registrar is Dr. John W. Scane. The next session begins Oct. 1, 1920, and ends June 6, 1921.

UNIVERSITY OF MONTREAL MEDICAL FACULTY, Montreal.—Organized in 1843, incorporated in 1845 as the Montreal School of Medicine and Surgery. In 1891, by act of parliament, the Medical Faculty of Laval University (organized in 1878) was absorbed. Present name assumed in 1920. A class was graduated in 1843 and in each subsequent year. The faculty numbers 80. The course extends over five years, including premedical courses in physics, chemistry and biology. The total fees for the five years, respectively, are $110, $118, $126, $126 and $138. The Dean is Dr. E. P. Lachapelle. The total registration for 1919-1920 was 267; graduates, 32. The next session begins Oct. 3, 1920, and ends June 30, 1921.

Quebec

LAVAL UNIVERSITY FACULTY OF MEDICINE, Quebec.—The Quebec School of Medicine, organized in 1848, became in 1852 the Medical Department of Laval University; first class graduated in 1855, and a class graduated each subsequent year. The faculty numbers 35. The fees are $90 each year. The course extends over five years, the first year including courses in physics, chemistry and biology. The Dean is Dr. Edwin Turcot, Quebec. Total registration for 1919-1920 was 149; graduates, 25.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES

The requirements for admission to and graduation from colleges holding membership in this association are 15 units of high school work and two years (60 semester hours) of college work.

CURRICULUM: The entire course of four years shall consist of not less than 3,600 hours, and shall be grouped in divisions and subdivided into subjects, each division and each subject to be allotted approximately the number of hours and percentages of the whole shown in the following schedule:

DIVISION I.

ANATOMY, 684 HOURS (19%). Minimum % of 3,600 Hours.

1. Gross anatomy, including clinical or applied anatomy	19%
2. Microscopic anatomy	
3. Embryology	

DIVISION II.

PHYSIOLOGY AND CHEMISTRY, 468 HOURS (13%).

1. Physiology	8%
2. Biochemistry	5%

DIVISION III.

PATHOLOGY AND BACTERIOLOGY, 468 HOURS (13%).

1. Pathology, including necropsies	8 %
2. Bacteriology, including serology and immunology	3½%
3. Preventive medicine and public health	1½%

DIVISION IV.

PHARMACOLOGY, 216 HOURS (6%).

1. Materia medica and pharmacy	6%
2. Pharmacology	

DIVISION V.

MEDICINE AND MEDICAL SPECIALTIES, 900 HOURS (25%).

1. General medicine, including laboratory diagnosis	15 %
2. Pediatrics	4 %
3. Nervous and mental diseases	3½%
4. Dermatology and syphilis	2 %
5. Medical jurisprudence	½%

DIVISION VI.

SURGERY AND SURGICAL SPECIALTIES, 648 HOURS (18%).

1. Surgery	11 %
2. Orthopedic surgery	2 %
3. Urology	1 %
4. Ophthalmology	1½%
5. Otology, rhinology and laryngology	1½%
6. Roentgenology	1 %

DIVISION VII.

OBSTETRICS AND GYNECOLOGY, 216 HOURS (6%).

1. Obstetrics, including obstetric surgery	4 %
2. Gynecology	2 %

When teaching conditions demand it, a subject may be transferred from one division to another.

MEMBERS OF ASSOCIATION

University of Alabama School of Medicine.
Leland Stanford Junior University School of Medicine.
University of California Medical School, Berkeley.
University of Colorado School of Medicine.
Yale University School of Medicine.
Georgetown University Medical School.
George Washington University School of Medicine.
Howard University School of Medicine.
Army Medical School.
Navy Medical School.
Emory University Medical Department.
University of Georgia College of Medicine.
Northwestern University Medical School.
Rush Medical College.
University of Illinois College of Medicine.
Indiana University School of Medicine.
University of Iowa College of Medicine.
University of Kansas School of Medicine.
University of Louisville Medical Department.
Tulane University of Louisiana School of Medicine.
Johns Hopkins University Medical Department.
University of Maryland School of Medicine and College of Physicians and Surgeons.
Medical School of Harvard University.
Tufts College Medical School.
Detroit College of Medicine and Surgery.
University of Michigan Medical School.
University of Minnesota Medical School.
University of Mississippi Department of Medicine.
St. Louis University School of Medicine.
University of Missouri School of Medicine.
Washington University Medical School.
John A. Creighton Medical College.
University of Nebraska College of Medicine.
Columbia University College of Physicians and Surgeons.
Cornell University Medical College.
Fordham University School of Medicine.
Long Island College Hospital.
Syracuse University College of Medicine.
University and Bellevue Hospital Medical College.
University of Buffalo Department of Medicine.
University of North Carolina School of Medicine.
University of North Dakota School of Medicine.
University of Cincinnati College of Medicine.
Ohio State University College of Medicine.
Western Reserve University School of Medicine.
University of Oklahoma School of Medicine.
Hahnemann Medical College and Hospital.
Jefferson Medical College.
University of Pennsylvania School of Medicine.
University of Pittsburgh School of Medicine.
Woman's Medical College.
University of the Philippines College of Medicine and Surgery.
Medical College of the State of South Carolina.
University of South Dakota College of Medicine.
Meharry Medical College (Affiliated Member).
University of Tennessee College of Medicine.
Vanderbilt University Medical Department.
Baylor University School of Medicine.
University of Texas Medical Department.
University of Vermont College of Medicine.
Medical College of Virginia.
University of Virginia Department of Medicine.
Marquette University School of Medicine.
University of Wisconsin Medical School.

The secretary-treasurer of the Association is Dr. Fred C. Zapffe, 3431 Lexington Street, Chicago.

HOSPITALS FURNISHING ACCEPTABLE INTERNSHIPS

(Revised to August 1, 1920)

The following general hospitals in Section I are considered in position to furnish acceptable internships for medical graduates. The hospitals in Sections II and III offer opportunities for physicians who seek further training along certain specialties. The internships in these hospitals, therefore should be considered as supplementary and should be based on an internship taken in a general hospital.

There are other hospitals which are probably eligible for admission to this list but are omitted either because they have failed to supply information on which any decision regarding them might be based or because they have definitely stated that they do not use interns.

SECTION I. GENERAL HOSPITALS; TOTAL, 469; 2,960 INTERNSHIPS; BEDS, 103,997

Name of Hospital	Location	Number of Beds				Interns		Examined or Apply in	Length of Service	Out-Patient Service	Accident Cases	Necropsies	Med. Library	Salary per Mo.	Training School for Nurses
		Surgical	Medical	Other	Total	Number in Hospital	By Appt. or Exam.								
ALABAMA															
Hillman Hospital	Birmingham	100	60	40	200	8	Ex.	March	1 yr.	yes	yes	yes	no	no	yes
City Hospital	Mobile	60	60	40	135	3	Ap.	.....	1 yr.	yes	yes	yes	no	no	yes
J. A. Andrews Memorial Hosp. (colored)	Tuskegee Institute	yes	yes	yes	60	2	Ap.	April	1 yr.	yes	yes	yes	yes	$6	yes
ARIZONA															
Copper Queen Hospital	Bisbee	40	25	10	75	1	Ap.	May	1 yr.	yes	yes	yes	no	$50	no
St. Joseph's Hospital	Phoenix	yes	yes	yes	100	1	.....	.....	.....	.....	.....	no	.....	.....	yes
CALIFORNIA															
California Hospital	Los Angeles	100	25	50	175	1	Ap.	June	1 yr.	no	yes	no	yes	no	yes
Los Angeles County Hospital [1]	Los Angeles	350	800	130	1,280	30	Ex.	*	18 mos.	yes	no	yes	yes	no	yes
White Memorial Hospital	Los Angeles	yes	yes	yes	64	2	Ap.	May	1 yr.	yes	yes	yes	yes	$10	yes
Franklin Hospital	San Francisco	yes	yes	yes	200	3	Ap.	.....	1-2 yrs.	no	yes	yes	no	fees	yes
Hospital for Children	San Francisco	yes	yes	yes	250	7	Ap.	Indef.	1 yr.	yes	no	yes	no	no	yes
Lane Hospital	San Francisco	55	45	105	200	14	Ap.	May	1 yr.	yes	few	yes	yes	fees	yes
Mount Zion Hospital	San Francisco	yes	yes	yes	150	2	Ap.	May	1 yr.	yes	yes	yes	yes	$25	yes
San Francisco Hospital [1]	San Francisco	yes	yes	yes	600	28	Ap.	May	1 yr.	no	yes	yes	yes	$10	yes
Southern Pacific General Hospital [4]	San Francisco	125	125	.....	250	7	Ap.	May	1 yr.	yes	yes	yes	yes	$20	yes
St. Luke's Hospital	San Francisco	yes	yes	yes	150	6	Ap.	May	1 yr.	no	yes	yes	no	no	yes
United States Marine Hospital	San Francisco	yes	yes	yes	150	2	Ap.	May	1 yr.	yes	yes	yes	yes	yes	no
University of California Hospital [1]	San Francisco	50	49	109	208	14	Ap.	May	1 yr.	yes	few	yes	yes	no	yes
COLORADO															
University Hospital	Boulder	30	30	15	75	1	Ap.	.....	Indef.	no	no	no	no	.....	yes
St. Francis Hospital	Colorado Springs	75	75	.....	150	2	Ap.	April	1 yr.	no	yes	yes	yes	no	no
Children's Hospital	Denver	50	50	.....	100	2	Ap.	April	1 yr.	yes	yes	no	no	$25	yes
Denver City and County Hospital [1]	Denver	100	100	200	400	10	Ap.	†	12 mos.	no	yes	yes	yes	$30	yes
Mercy Hospital	Denver	100	25	25	150	4	Ex.	.....	1 yr.	no	yes	no	small	$25	yes
St. Anthony's Hospital	Denver	yes	yes	yes	175	2	Ex.	April	1 yr.	no	no	yes	no	no	no
St. Joseph's Hospital	Denver	yes	yes	yes	230	3	Ap.	April	1 yr.	no	yes	yes	no	no	yes
St. Luke's Hospital	Denver	140	.....	.....	140	4	Ap.	.....	1 yr.	no	yes	yes	no	yes	yes
CONNECTICUT															
Bridgeport Hospital	Bridgeport	70	60	120	250	6	Ap.	April	1 yr.	no	yes	yes	no	$25	yes
St. Vincent's Hospital	Bridgeport	100	70	55	225	4	Ap.	April	12 mos.	no	yes	yes	no	no	yes
Hartford Hospital	Hartford	180	171	162	513	10	Ex.	‡	20 mos.	no	yes	yes	no	yes	yes
St. Francis' Hospital	Hartford	yes	yes	yes	400	6	Ex.	April	2 mos.	no	yes	few	no	yes	yes
Grace Hospital [1]	New Haven	52	28	20	100	2	Ap.	April	1 yr.	no	yes	yes	yes	$300 (a)	yes
Hospital of St. Raphael	New Haven	60	60	30	150	2	Ex.	Indef.	16 mos.	no	yes	yes	no	no	yes
New Haven Hospital	New Haven	75	50	125	250	9	Ap.	June	1 yr.	no	yes	yes	yes	no	yes
Wm. W. Backus Hospital	Norwich	yes	yes	yes	90	1	Ap.	May	1 yr.	yes	yes	yes	yes	$225 (a)	yes
St. Mary's Hospital	Waterbury	40	40	40	120	2	Ap.	May	1-2 yrs.	no	yes	few	no	$200 (a)	yes
Waterbury Hospital	Waterbury	55	42	83	180	2	Ap.	May	1 yr.	no	yes	yes	no	$25	yes
DELAWARE															
Delaware Hospital	Wilmington	60	40	85	185	4	Ex.	.....	1 yr.	yes	yes	yes	no	no	yes
Homeopathic Hospital	Wilmington	33	22	35	90	1	Ap.	Jan.	1 yr.	yes	yes	yes	yes	$150 (a,b)	yes
DISTRICT OF COLUMBIA															
Central Disp. and Emergency Hospital	Washington	yes	yes	.....	150	7	Ex.	Indef.	1 yr.	yes	yes	yes	no	no	yes
Columbia Hospital for Women	Washington	67	.....	67	134	4	Ex.	Indef.	1 yr.	yes	yes	yes	no	no	yes
Eastern Disp. and Casualty Hospital	Washington	60	10	5	75	4	Ex.	.....	1 yr.	yes	yes	no	no	no	yes
Freedmen's Hospital	Washington	148	75	55	278	11	Ex.	§	1 yr.	yes	yes	yes	no	no	yes
Garfield Memorial Hospital	Washington	yes	yes	yes	250	6	Ex.	April	1 yr.	yes	yes	no	no	$10	yes
Georgetown University Hospital	Washington	86	71	108	265	5	Ap.	April	1 yr.	yes	yes	yes	yes	no	yes
George Washington University Hospital	Washington	40	40	25	105	5	Ex.	July	1 yr.	yes	yes	yes	yes	$10	yes
Providence Hospital	Washington	129	122	49	300	6	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
Sibley Memorial Hospital	Washington	100	20	30	150	2	Ap.	May	1 yr.	yes	yes	yes	no	fees	yes
Washington Asylum Hospital	Washington	75	150	10	235	7	Ap.	April	1 yr.	no	yes	yes	no	fees	yes
FLORIDA															
St. Luke's Hospital	Jacksonville	yes	yes	yes	125	2	Ap.	April	16 mos.	no	yes	yes	no	no	yes
Pensacola Hospital	Pensacola	yes	yes	yes	70	1	Ap.								
GEORGIA															
Davis-Fischer Sanatorium	Atlanta	yes	yes	yes	90	2	Ap.	.....	.....	yes	yes	no	yes	no	yes
Georgia Baptist Hospital	Atlanta	yes	yes	yes	120	2	Ex.	March	1 yr.	no	yes	no	no	$5	yes
Grady Memorial Hospital	Atlanta	100	50	50	200	15	Ex.	¶	1 yr.	yes	yes	yes	no	$8½	yes
Piedmont Sanatorium	Atlanta	yes	yes	yes	57	2	Ex.	March	1 yr.	no	few	no	yes	2d yr.	yes
St. Joseph Infirmary	Atlanta	yes	yes	yes	100	3	Ap.	March	2 yrs.	no	no	no	no	$10	yes
University Hospital	Augusta	yes	yes	yes	270	8	Ap.	June	1 yr.	yes	yes	yes	yes	no	....
Macon Hospital	Macon	yes	yes	yes	150	3	Ap.	.....	2 yrs.	yes	yes	yes	yes	no	yes
ILLINOIS															
Alexian Brothers' Hosp. (male patients only)	Chicago	85	45	120	250	8	Ex.	#	16 mos.	no	yes	yes	no	no	yes
American Hosp. and Tr. School for Nurses	Chicago	60	40	20	120	3	Ex.	April	1 yr.	no	yes	yes	yes	no	yes
Augustana Hospital	Chicago	yes	yes	yes	200	9	Ap.	Indef.	2 yrs.	no	yes	yes	yes	no	yes
Chicago Policlinic and Hospital [1]	Chicago	25	15	10	50	6	Ex.	May	18 mos.	yes	yes	yes	no	no	yes
Columbus Hospital	Chicago	60	41	24	125	5	Ex.	April	1 yr.	no	yes	yes	yes	no	yes
Cook County Hospital	Chicago	600	600	1,500	2,700	85	Ex.	**	18 mos.	yes	yes	yes	no	no	yes
Englewood Hospital	Chicago	40	40	70	150	4	Ex.	.....	18 mos.	no	yes	yes	yes	no	no
Henrotin Memorial Hospital [1]	Chicago	yes	yes	yes	65	3	Ap.	July	6 mos.	no	yes	no	no	no	yes
Hospital of St. Anthony de Padua	Chicago	yes	yes	yes	177	4	Ap.	††	15 mos.	no	yes	yes	yes	no	yes
Illinois Central Hospital	Chicago	yes	yes	yes	110	4	Ex.	.....	.....	yes	yes	yes	yes	$50	no
Mary Thompson Hospital of Chicago for Women and Children	Chicago	35	15	25	75	3	Ex.	Indef.	1 yr.	yes	yes	yes	yes	no	yes
Mercy Hospital	Chicago	170	105	50	325	15	Ex.	**	1 yr.	no	yes	no	yes	no	yes

1. Women interns admitted.
4. No maternity work.
* May and November.
† Every two months.
‡ One every two months.
§ May and August.
¶ April and October.
Every four months.
** May and November.
†† Every three months.
(a) Per year.
(b) Plus fees.

Name of Hospital	Location	Number of Beds				Interns		Examined or Apply in	Length of Service	Out-Patient Service	Accident Cases	Necropsies	Med. Library	Salary per Mo.	Training School for Nurses
		Surgical	Medical	Other	Total	Number in Hospital	By Appt. or Exam.								
Michael Reese Hospital	Chicago	77	36	362	475	23	Ex.	May	1 yr.	no	yes	yes	yes	no	yes
Norwegian American Hospital	Chicago	78	32	40	150	3	Ex.	Indef.	1 yr.	no	yes	yes	no	no	yes
Norwegian Lutheran Deaconess Hospital	Chicago	58	20	22	100	3	Ap.	Indef.	1 yr.	no	yes	yes	yes	no	yes
Park Avenue Hospital	Chicago	25	20	25	70	1	Ap.	Nov.	18 mos.	no	yes	no	no	senior	yes
Post-Graduate Hospital [1]	Chicago	yes	yes	yes	80	2	Ap.	Indef.	1 yr.	yes	yes	yes	no	no	yes
Presbyterian Hospital [3*]	Chicago	200	218	18	436	22	Ap.	††	1-2 yrs.	yes	yes	yes	yes	no	yes
Ravenswood Hospital	Chicago	25	15	10	50	2	Ap.	Indef.	1 yr.	no	yes	yes	yes	no	yes
St. Anne's Hospital	Chicago	53	25	22	100	3	Ap.	Indef.	4 mos.	yes	yes	yes	no	no	yes
St. Elizabeth's Hospital	Chicago	110	110	10	230	7	Ex.	Indef.	18 mos.	no	yes	yes	no	no	yes
St. Joseph's Hospital	Chicago	100	41	25	166	6	Ex.	Indef.	1 yr.	yes	few	yes	yes	no	yes
St. Luke's Hospital	Chicago	237	90	31	358	19	Ex.	May	2 yrs.	no	yes	yes	no	no	yes
St. Mary of Nazareth Hospital	Chicago	150	46	24	220	4	Ex.	Indef.	18 mos.	yes	yes	yes	yes	no	yes
University Hospital	Chicago	yes	yes	yes	100	4	Ex.	May	1 yr.	yes	no	yes	no	no	yes
Washington Boulevard Hospital	Chicago	yes	yes	yes	85	5	Ap.	Indef.	1 yr.	yes	yes	yes	no	no	yes
Washington Park Hospital	Chicago	yes	yes	yes	116	6	Ap.	Indef.	16 mos.	no	yes	yes	yes	no	yes
Wesley Memorial Hospital	Chicago	130	90	55	275	17	Ap.	Indef.	2 yrs.	yes	yes	yes	yes	no	yes
Evanston Hospital	Evanston	yes	yes	yes	125	4	Ap.	.....	18 mos.	yes	yes	yes	no	no	yes
Oak Park Hospital	Oak Park	50	20	30	100	3	Ap.	*	1 yr.	no	yes	yes	yes	$10	yes
West Suburban Hospital	Oak Park	yes	yes	30	125	4	Ap.	May	1 yr.	no	yes	yes	yes	no	yes
St. John's Hospital	Springfield	160	145	20	325	6	Ap.	†	1 yr.	yes	yes	yes	yes	no	yes
INDIANA															
St. Joseph's Hospital	Ft. Wayne	110	35	20	165	2	Ap.	.....	1 yr.	no	yes	yes	yes	yes	yes
Gary Hospital	Gary	yes	yes	yes	120	4	Ap.	.....	1 yr.	yes	yes	yes	yes	yes	no
Indianapolis City Hospital	Indianapolis	150	230	145	525	18	Ap.	‡	1 yr.	yes	yes	yes	yes	$12.50	yes
Methodist Episcopal Hospital	Indianapolis	132	40	98	270	6	Ap.	May	2 yrs.	no	yes	yes	no	yes	yes
Robert W. Long Hospital	Indianapolis	yes	yes	yes	100	4	Ap.	April	1 yr.	yes	yes	yes	yes	$12.50	yes
St. Vincent's Hospital	Indianapolis	100	30	20	150	4	Ap.	April	1 yr.	no	yes	yes	no	$50	yes
St. Anthony's Hospital	Terre Haute	100	100	60	260	2	Ap.	Jan.	1 yr.	no	yes	no	.....	yes	no
IOWA															
Mercy Hospital	Davenport	yes	yes	yes	125	1	Ap.	May	1 yr.	no	yes	yes	yes	no	yes
Iowa Methodist Hospital	Des Moines	yes	yes	yes	225	4	Ap.	April	1 yr.	yes	yes	yes	no	$25	yes
Mercy Hospital	Des Moines	yes	yes	yes	250	4	Ap.	May	1 yr.	no	yes	no	no	no	yes
State University Hospital	Iowa City	132	80	178	390	12	Ap.	May	1 yr.	yes	yes	yes	no	$125 (a)	yes
St. Joseph's Mercy Hospital	Sioux City	yes	yes	yes	200	3	Ap.	March	1 yr.	yes	yes	yes	no	$25	yes
KANSAS															
St. Margarets Hospital	Kansas City	40	25	330	400	7	Ap.	April	1 yr.	no	yes	yes	yes	$10	no
Bell Memorial Hospital [1]	Rosedale	25	35	15	75	3	Ap.	April	1 yr.	yes	yes	yes	yes	$25 (b)	yes
Christ's Hospital	Topeka	50	16	34	100	1	Ap.	May	2 yrs.	no	few	few	no	$50	yes
St. Francis Hospital	Wichita	130	150	20	192	3	Ap.	June	1 yr.	yes	yes	yes	yes	$100	yes
Wichita Hosp. and Tr. School for Nurses	Wichita	yes	yes	yes	140	3	Ap.	Indef.	Indef.	no	yes	yes	no	yes	yes
KENTUCKY															
St. Elizabeth's Hospital	Covington	66	131	183	380	2	Ap.	May	1 yr.	no	yes	yes	no	$25	yes
Good Samaritan Hospital	Lexington	yes	yes	yes	129	1	Ap.	April	1 yr.	no	yes	no	no	no	yes
John N. Norton Memoral Infirmary	Louisville	50	36	14	102	1	Ap.	April	1 yr.	no	no	yes	no	$50	yes
Louisville City Hospital	Louisville	175	175	50	400	19	Ap.	May	1 yr.	yes	yes	yes	yes	§	yes
St. Anthony's Hospital	Louisville	80	50	.....	130	2	Ap.	May	1 yr.	yes	yes	yes	yes	no	no
St. Joseph's Infirmary	Louisville	100	.....	.....	100	1	Ap.	May	1 yr.	no	no	no	no	$25	no
LOUISIANA															
Charity Hospital of Louisiana	New Orleans	365	340	514	1,219	25	Ap.	March	1 yr.	yes	yes	yes	no	no	yes
Illinois Central Railroad Hospital	New Orleans	yes	yes	yes	100	2	Ap.	May	1 yr.	yes	yes	no	yes	$50	no
Touro Infirmary	New Orleans	yes	yes	yes	240	10	Ap.	April	1 yr.	yes	yes	yes	yes	$300 (a)	yes
Shreveport State Charity Hospital	Shreveport	150	150	15	315	6	Ap.	April	1 yr.	yes	yes	yes	yes	no	yes
T. E. Schumpert Memorial Sanitarium	Shreveport	yes	yes	.....	250	2	Ap.	April	1 yr.	yes	yes	few	no	no	yes
MAINE															
Eastern Maine General Hospital	Bangor	60	40	20	120	2	Ap.	Indef.	1 yr.	no	yes	no	yes	yes	yes
Central Maine General Hospital	Lewiston	yes	yes	yes	110	1	Ap.	May	1 yr.	no	yes	no	no	no	yes
Maine Eye and Ear Infirmary	Portland	yes	yes	yes	100	2	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
Maine General Hospital	Portland	84	23	46	153	4	Ap.	June	1 yr.	no	yes	yes	yes	no	yes
MARYLAND															
Church Home and Infirmary	Baltimore	yes	yes	yes	175	6	Ap.	*	1 yr.	no	yes	yes	no	no	yes
City Hospital at Bay View	Baltimore	yes	yes	yes	1,800	8	Ex.	May	1 yr.	no	yes	yes	no	$100 (a)	no
Franklin Square Hospital	Baltimore	yes	yes	yes	100	4	Ap.	March	1 yr.	yes	yes	yes	no	fees	yes
Hebrew Hospital and Asylum	Baltimore	85	81	14	180	11	Ap.	May	1 yr.	yes	yes	yes	no	$25	yes
Johns Hopkins Hospital	Baltimore	85	91	424	600	52	Ap.	June	1 yr.	yes	yes	yes	yes	no	yes
Maryland General Hospital	Baltimore	40	40	120	200	12	Ap.	April	1 yr.	yes	yes	yes	no	no	yes
Mercy Hospital	Baltimore	yes	yes	yes	200	12	Ex.	April	1 yr.	yes	yes	yes	no	$50	yes
South Baltimore General Hospital	Baltimore	30	25	5	60	3	Ap.	April	1 yr.	yes	yes	yes	no	$150 (a)	no
St. Agnes' Hospital	Baltimore	100	100	25	225	7	Ap.	April	Indef.	yes	yes	yes	no	no	yes
St. Joseph's Hospital	Baltimore	190	71	14	275	8	Ex.	April	1 yr.	yes	yes	yes	no	no	yes
Union Protestant Infirmary	Baltimore	yes	yes	yes	112	8	Ap.	Indef.	1 yr.	yes	no	yes	no	no	yes
United States Marine Hospital	Baltimore	60	60	5	125	1	Ex.	April	1 yr.	no	no	yes	yes	$25	no
University of Maryland Hospital	Baltimore	150	72	53	275	14	Ap.	May	1 yr.	yes	yes	yes	yes	$25	yes
MASSACHUSETTS															
Boston City Hospital	Boston	308	283	609	1,200	59	Ex.	¶	1 yr.	yes	yes	yes	yes	no	yes
Boston Floating Hospital	Boston	yes	yes	yes	110	8	Ex.	April	2½ mos.	yes	no	yes	yes	no	yes
Carney Hospital	Boston	70	81	69	220	13	Ex.	Indef.	16 mos.	yes	yes	yes	yes	no	yes
Massachusets General Hospital	Boston	255	84	.....	339	34	Ap.	#	1 yr.	yes	yes	no	yes	no	yes
Massachusetts Homeopathic Hospital	Boston	279	197	84	560	10	Ex.	April	1 yr.	yes	yes	yes	yes	no	yes
New England Hosp. for Women and Child. [2]	Boston	42	37	101	180	4	Ap.	June	1 yr.	yes	no	yes	no	no	yes
Peter Bent Brigham Hospital	Boston	yes	yes	.....	226	18	Ex.	.....	1 yr.	yes	yes	yes	yes	no	yes
St. Elizabeth's Hospital	Boston	40	60	50	200	6	Ex.	June	1 yr.	yes	yes	yes	yes	no	yes
Brockton Hospital	Brockton	22	22	71	115	2	Ap.	May	1 yr.	yes	yes	yes	small	$25	yes
Cambridge Hospital	Cambridge	yes	yes	.....	50	3	Ap.	.....	1 yr.	yes	yes	yes	no	no	yes
Rufus I. Frost General Hospital	Chelsea	33	14	13	60	1	Ex.	May	1 yr.	yes	yes	no	small	$300 (a)	yes
Fall River City Hospital	Fall River	33	38	54	125	1	Ex.	Dec.	1 yr.	yes	yes	yes	no	$600 (a)	yes
Union Hospital	Fall River	83	40	17	140	3	Ap.	**	18 mos.	yes	yes	yes	yes	yes	yes
Burbank Hospital	Fitchburg	50	50	13	113	2	Ap.	April	1 yr.	yes	yes	yes	no	no	yes
Lawrence General Hospital	Lawrence	40	15	75	130	5	Ap.	**	1 yr.	yes	yes	yes	no	$10	yes
Lowell Corporation Hospital	Lowell	yes	yes	yes	100	1	Ap.	April	1 yr.	yes	yes	yes	small	$25	yes
Lowell General Hospital	Lowell	yes	yes	yes	150	1	Ap.	April	1 yr.	no	yes	yes	no	$200 (a)	yes
St. John's Hospital	Lowell	36	29	.....	65	2	Ap.	April	1 yr.	yes	yes	yes	no	no	yes
Lynn Hospital	Lynn	75	40	36	136	3	Ex.	May	1 yr.	yes	yes	yes	yes	no	yes
St. Luke's Hospital	New Bedford	yes	yes	yes	250	2	Ap.	June	1 yr.	no	few	no	small	no	yes
Newton Hospital	Newton	24	23	118	165	2	Ex.	May	1 yr.	yes	yes	yes	yes	no	yes
House of Mercy Hospital	Pittsfield	yes	yes	yes	175	1	Ap.	April	1 yr.	yes	yes	no	no	$50	yes
Salem Hospital	Salem	44	34	22	100	2	Ap.	Indef.	1 yr.	yes	yes	yes	yes	no	yes

1. Women interns admitted.
2. Women interns only.
3. Internships open only to graduates of local medical school.
* April and July.
† May and August.
‡ Two interns each month.
§ Juniors 10, seniors 15 a month, $100 on completion of year's service.
Every two months.
¶ Surgical every 2 months, medical every 3 months.
** Every six months.
†† May and November.
(a) Per year. (b) Last four months.

Name of Hospital	Location	Number of Beds				Interns		Examined or Apply in	Length of Service	Out-Patient Service	Accident Cases	Necropsies	Med. Library	Salary per Mo.	Training School for Nurses
		Surgical	Medical	Other	Total	Number in Hospital	By Appt. or Exam.								
Mercy Hospital	Springfield	93	37	45	175	3	Ex.	April	1 yr.	no	yes	yes	no	no	yes
Springfield Hospital	Springfield	yes	yes	yes	165	4	Ap.	††	1 yr.	no	yes	yes	yes	no	yes
Waltham Hospital	Waltham	yes	yes	yes	110	2	Ap.	May	1 yr.	yes	yes	no	no	no	yes
Memorial Hospital [2]	Worcester	44	44	87	175	6	Ap.	April	1 yr.	yes	yes	yes	yes	no	yes
St. Vincent's Hospital	Worcester	100	30	20	150	1	Ap.	.....	.....	yes	no	no	no	$300 (a)	yes
Worcester City Hospital	Worcester	152	147	51	350	10	Ap.	#	1 yr.	yes	yes	yes	yes	no	yes
MICHIGAN															
University Homeopathic Hospital [1]	Ann Arbor	yes	yes	yes	110	4	Ex.	June	1 yr.	yes	yes	yes	.....	$200 (a)	yes
University Hospital	Ann Arbor	248	209	47	504	11	Ex.	Dec.	1 yr.	yes	yes	yes	yes	no	yes
City of Detroit Receiving Hospital	Detroit	yes	yes	yes	135	5	Ap.	May	1 yr.	yes	yes	yes	no	$25	no
Grace Hospital	Detroit	yes	yes	yes	320	14	Ex.	Indef.	1 yr.	yes	yes	yes	yes	seniors	yes
Harper Hospital	Detroit	280	50	170	500	29	Ap.	Indef.	1 yr.	yes	yes	yes	yes	no	yes
Henry Ford Hospital [5]	Detroit	yes	yes	.....	75	4	Ap.	Indef.	Indef.	yes	yes	yes	no	yes	no
Providence Hospital	Detroit	yes	yes	yes	310	11	Ap.	May	1 yr.	no	yes	yes	small	$25	yes
St. Mary's Hospital	Detroit	150	129	21	300	12	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
Blodgett Memorial Hospital	Grand Rapids	yes	yes	yes	140	2	.....	Indef.	Indef.	yes	yes	yes	no	no	yes
Hackley Hospital	Muskegon	20	28	22	80	1	Ap.	Indef.	Indef.	no	yes	yes	yes	$40	yes
Copper Range Hospital	Trimountain	yes	yes	.....	25	1	Ap.	May	1 yr.	yes	yes	yes	no	$25	yes
MINNESOTA															
Northern Pacific Railroad Hospital	Brainerd	yes	yes	.....	85	2	Ap.	May	1 yr.	yes	yes	few	yes	$25	yes
St. Mary's Hospital	Duluth	yes	yes	yes	200	4	Ap.	April	1 yr.	yes	yes	yes	yes	yes	yes
Abbott Hospital	Minneapolis	yes	yes	yes	50	1	Ap.	March	1 yr.	no	yes	yes	yes	no	yes
Minneapolis City Hospital	Minneapolis	132	140	628	900	23	Ap.	Indef.	1 yr.	yes	yes	yes	yes	no	yes
Northwestern Hospital [1]	Minneapolis	50	30	20	100	2	Ap.	April	1 yr.	no	yes	yes	no	no	yes
Swedish Hospital	Minneapolis	yes	yes	16	160	4	Ap.	April	1 yr.	yes	yes	yes	no	$25	yes
University Hospital	Minneapolis	53	51	96	200	13	Ap.	April	1 yr.	yes	no	yes	yes	no	yes
St. Mary's Hospital	Rochester	yes	yes	yes	300	12	Ap.	Indef.	1 yr.	no	yes	no	yes	no	yes
Bethesda Hospital	St. Paul	10	30	20	120	1	Ap.	April	1 yr.	no	yes	no	no	$25	yes
City and County Hospital	St. Paul	yes	yes	yes	850	20	Ap.	April	1 yr.	yes	yes	yes	yes	no	yes
Mounds Park Sanitarium	St. Paul	42	75	8	125	1	Ap.	Indef.	1 yr.	no	yes	few	small	$30	yes
St. Joseph's Hospital	St. Paul	80	50	20	150	4	Ap.	April	1 yr.	no	yes	yes	no	no	yes
St. Luke's Hospital	St. Paul	yes	yes	10	135	2	Ap.	April	1 yr.	no	yes	yes	no	$25	yes
MISSISSIPPI															
Mississippi State Charity Hospital	Jackson	100	.....	.....	100	3	Ap.	April	1 yr.	yes	yes	yes	small	no	yes
Natchez Hospital	Natchez	60	60	8	128	3	Ap.	April	1 yr.	yes	yes	yes	yes	no	yes
Mississippi State Charity Hospital	Vicksburg	yes	yes	yes	250	3	Ap.	Indef.	1 yr.	yes	yes	no	no	no	yes
MISSOURI															
Christian Church Hospital	Kansas City	yes	yes	yes	140	3	Ap.	April	1 yr.	no	yes	no	no	$50	yes
Kansas City General Hosp. (white and col.)	Kansas City	yes	yes	yes	500	16	Ap.	May	1 yr.	no	yes	yes	no	no	yes
Research Hospital	Kansas City	yes	yes	12	175	3	Ap.	April	1 yr.	no	yes	yes	yes	$50	yes
St. Joseph's Hospital	Kansas City	130	66	16	212	3	Ap.	*	18 mos.	yes	yes	yes	yes	no	yes
St. Luke's Hospital	Kansas City	yes	yes	yes	50	2	Ap.	April	1 yr.	.....	.....	.....	.....	no	yes
St. Mary's Hospital	Kansas City	100	75	.....	175	2	Ap.	.....	1 yr.	no	yes	no	no	$50	yes
Swedish Hospital	Kansas City	yes	yes	yes	55	2	Ap.	Indef.	1 yr.	no	yes	no	yes	no	yes
University Hospital	Kansas City	yes	yes	yes	75	1	Ap.	Indef.	Indef.	yes	yes	yes	yes	$125	yes
Alexian Brothers' Hospital	St. Louis	80	120	.....	200	.....	Ap.	May	1 yr.	yes	yes	yes	no	no	yes
Barnes Hospital	St. Louis	68	70	112	250	15	Ex.	May	1 yr.	yes	yes	yes	yes	no	yes
Jewish Hospital	St. Louis	40	40	20	100	2	Ex.	April	1-2 yrs.	yes	yes	yes	no	†	yes
Missouri Baptist Sanitarium	St. Louis	120	75	205	400	4	Ap.	April	1 yr.	no	yes	few	no	yes	yes
St. John's Hospital	St. Louis	135	59	.....	194	4	Ap.	March	23 mos.	no	yes	yes	yes	$20	yes
St. Louis City Hospital	St. Louis	500	420	350	1,270	48	Ex.	May	1 yr.	no	yes	yes	yes	$25	yes
St. Mary's Infirmary	St. Louis	125	50	.....	175	3	Ap.	‡	1 yr.	no	yes	yes	no	$25	yes
MONTANA															
St. Ann's Hospital	Anaconda	yes	yes	yes	100	1	Ap.	.....	.....	no	yes	no	no	.....	no
Murray Hospital [1]	Butte	64	32	4	100	2	Ap.	May	1 yr.	yes	yes	yes	yes	$50	yes
St. James Hospital	Butte	75	50	25	150	2	Ap.	May	1 yr.	yes	yes	yes	no	$30	yes
Northern Pacific Hospital	Glendive	yes	yes	yes	60	1	Ap.	May	1 yr.	yes	yes	yes	yes	$50	no
Northern Pacific Benefit Assn. Hospital	Missoula	yes	yes	yes	75	2	Ap.	May	1 yr.	yes	yes	yes	no	$25	no
NEBRASKA															
St. Elizabeth's Hospital	Lincoln	yes	yes	yes	125	2	Ap.	Indef.	1 yr.	no	yes	no	yes	$25	yes
Bishop Clarkson Memorial Hospital	Omaha	34	34	12	80	2	Ap.	Nov.	1 yr.	no	no	yes	yes	no	yes
Creighton Memorial St. Joseph's Hospital	Omaha	222	124	54	400	6	Ex.	April	1 yr.	yes	yes	yes	yes	$100 (a)	yes
Nebraska Methodist Hospital [1]	Omaha	yes	yes	yes	210	4	Ap.	Indef.	Indef.	no	.....	yes	no	no	yes
University Hospital	Omaha	50	50	20	120	7	Ap.	April	1 yr.	yes	yes	yes	yes	§	yes
NEW HAMPSHIRE															
Mary Hitchcock Memorial Hospital	Hanover	50	10	10	70	2	Ap.	Indef.	1 yr.	yes	few	few	no	no	yes
NEW JERSEY															
Atlantic City Hospital	Atlantic City	yes	yes	yes	120	3	Ap.	May	1 yr.	yes	yes	yes	no	yes	yes
Bayonne Hospital and Dispensary	Bayonne	39	37	33	109	3	Ap.	June	1 yr.	yes	yes	yes	no	$25	yes
Cooper Hospital	Camden	60	40	50	150	5	Ap.	April	1 yr.	yes	yes	yes	yes	$10	yes
West Jersey Homeopathic Hospital	Camden	65	60	50	175	2	Ap.	April	1 yr.	yes	yes	yes	yes	$50	yes
Alexian Brothers' Hospital	Elizabeth	55	60	.....	115	3	Ap.	Nov.	1 yr.	yes	yes	yes	no	$50	no
Elizabeth General Hospital	Elizabeth	41	38	86	165	4	Ap.	April	1 yr.	yes	yes	yes	small	$100	yes
St. Elizabeth's Hospital	Elizabeth	65	66	29	160	2	Ex.	April	1 yr.	yes	yes	no	no	$150 (a)	yes
Englewood Hospital Association	Englewood	yes	yes	yes	115	2	Ex.	Dec.	1 yr.	yes	yes	yes	no	$140	yes
Hackensack Hospital	Hackensack	yes	yes	yes	120	3	Ex.	June	1 yr.	yes	yes	yes	no	no	yes
St. Mary's Hospital	Hoboken	yes	yes	yes	500	3	Ap.	June	15 mos.	yes	yes	no	no	no	no
Christ Hospital	Jersey City	yes	yes	yes	125	4	Ap.	Indef.	16 mos.	yes	yes	no	no	yes	yes
Jersey City Hospital	Jersey City	yes	yes	yes	600	8	Ap.	Feb.	2 yrs.	yes	yes	yes	no	$500¶	yes
St. Francis' Hospital	Jersey City	116	107	.....	223	5	Ap.	April	1 yr.	yes	yes	yes	yes	no	no
Monmouth Memorial Hospital	Long Branch	67	49	59	175	2	Ap.	April	1 yr.	yes	yes	yes	no	$10	yes
Mountainside Hospital	Montclair	48	74	28	150	4	Ex.	May	1 yr.	yes	yes	yes	small	yes	yes
Hospital of St. Barnabas	Newark	yes	yes	yes	103	3	Ex.	April	1 yr.	yes	yes	yes	no	$12	yes
Newark Beth Israel Hospital	Newark	30	30	40	100	4	Ex.	Indef.	1 yr.	yes	yes	yes	no	$150 (a)	yes
Newark City Hospital	Newark	yes	yes	yes	500	15	Ex.	Jan.	2 yrs.	no	yes	yes	no	no	yes
Newark Memorial Hospital	Newark	68	20	37	125	2	Ap.	May	1 yr.	yes	yes	yes	no	$25	yes
St. James' Hospital	Newark	yes	yes	yes	81	1	Ex.	May	1 yr.	yes	yes	yes	no	$200 (a)	yes
St. Michael's Hospital	Newark	107	235	.....	342	5	Ex.	Feb.	1 yr.	yes	yes	yes	no	no	no
Orange Memorial Hospital	Orange	53	53	44	150	3	Ap.	April	1 yr.	yes	yes	yes	no	$25	yes
St. Mary's Hospital	Orange	80	60	40	150	3	Ex.	April	1 yr.	yes	yes	.....	yes	no	yes
Passaic General Hospital	Passaic	41	27	36	104	2	Ex.	Nov.	1 yr.	yes	yes	yes	no	$100	yes
St. Mary's Hospital	Passaic	yes	yes	yes	60	2	Ex.	Indef.	Indef.	yes	yes	yes	yes	no	yes
Nathan and Miriam Barnert Hospital	Paterson	56	19	10	85	3	Ex.	Indef.	18 mos.	yes	yes	yes	no	$25	yes
Paterson General Hospital	Paterson	46	30	90	166	4	Ap.	May	1 yr.	yes	yes	yes	yes	$25	yes
St. Joseph's Hospital	Paterson	yes	yes	yes	350	1	Ex.	May	1 yr.	yes	yes	yes	yes	no	yes
Muhlenberg Hospital	Plainfield	yes	yes	yes	110	2	Ap.	May	1 yr.	yes	yes	yes	no	$300 (a)	yes
Mercer Hospital	Trenton	71	43	61	175	2	Ap.	May	1 yr.	yes	yes	yes	yes	$400 (a)	yes
St. Francis' Hospital	Trenton	yes	yes	yes	150	4	Ap.	June	1 yr.	yes	yes	yes	no	no	yes

1. Women interns admitted.
5. Conducted during period of the war as U. S. General Hospital No. 36.

* April and December.
† $15 for juniors, $30 for seniors.
‡ May and July.
†† First of Jan., April, July and Oct.

Every two months.
§ One intern receives salary.
¶ On completion of internship.
(a) Per year.

Name of Hospital	Location	Number of Beds				Interns		Examined or Apply in	Length of Service	Out-Patient Service	Accident Cases	Necropsies	Med. Library	Salary per Mo.	Training School for Nurses
		Surgical	Medical	Other	Total	Number in Hospital	By Appt. or Exam.								
William McKinley Memorial Hospital	Trenton	yes	yes	yes	75	2	Ap.	May	1 yr.	yes	yes	yes	no	$100 (a)	yes
North Hudson Hospital	Weehawken	yes	yes	yes	85	2	Ex.	.....	1 yr.	yes	yes	yes	yes	$30	yes
NEW YORK															
Albany Hospital	Albany	yes	yes	yes	490	5	Ap.	May	1 yr.	yes	yes	yes	no	no	yes
St. Peter's Hospital	Albany	yes	yes	yes	110	4	Ex.	May	1 yr.	yes	yes	yes	no	$400 (a)	yes
Auburn City Hospital [1]	Auburn	20	22	58	100	1	Ap.	May	1 yr.	no	yes	yes	yes	no	yes
Binghamton City Hospital [1]	Binghamton	29	28	85	142	2	Ex.	June	1 yr.	no	yes	yes	yes	no	yes
Brooklyn Hospital	Brooklyn	142	66	78	286	12	Ap.	Indef.	1 yr.	yes	yes	yes	yes	no	yes
Greenpoint Hospital	Brooklyn	75	75	60	210	10	Ap.	*	18 mos.	yes	yes	yes	no	no	no
The Jewish Hospital	Brooklyn	100	89	96	285	13	Ex.	Indef.	2 yrs.	yes	yes	yes	yes	no	yes
Kings County Hospital	Brooklyn	278	851	80	1,209	27	Ex.	Indef.	2 yrs.	yes	yes	yes	no	no	yes
Long Island College Hospital	Brooklyn	202	180	192	574	13	Ap.	April	2 yrs.	yes	yes	yes	no	$150 (a)	yes
Methodist Episcopal Hospital	Brooklyn	yes	yes	50	330	9	Ex.	May	2 yrs.	few	yes	yes	no	no	yes
Norwegian Lutheran Deaconess Home and Hospital	Brooklyn	40	40	95	175	5	Ex.	Indef.	18 mos.	yes	yes	yes	small	no	yes
St. Catherine's Hospital	Brooklyn	150	70	35	255	10	Ap.	†	20 mos.	no	yes	yes	.....	no	yes
St. John's Hospital	Brooklyn	yes	yes	yes	100	4	Ap.	Indef.	16 mos.	no	no	yes	no	yes	yes
St. Mary's Hospital [1]	Brooklyn	152	132	16	300	6	Ap.	†	1 yr.	no	yes	yes	no	no	yes
St. Peter's Hospital	Brooklyn	yes	yes	.....	274	4	Ap.	‡	1 yr.	no	yes	yes	yes	no	no
Swedish Hospital	Brooklyn	yes	yes	yes	75	3	Ap.	Indef.	1 yr.	no	yes	yes	no	$50	yes
Wyckoff Heights Hospital	Brooklyn	145	20	10	175	8	Ap.	Indef.	1 yr.	yes	yes	yes	yes	no	yes
Buffalo City Hospital	Buffalo	yes	yes	yes	280	20	Ex.	Indef.	1 yr.	yes	yes	yes	small	$25	yes
Buffalo Columbus Hospital	Buffalo	27	26	.....	53	2	Ap.	April	1 yr.	no	yes	yes	yes	no	yes
Buffalo General Hospital	Buffalo	90	90	195	375	12	Ex.	April	1 yr.	no	yes	yes	no	no	yes
Buffalo Homeopathic Hospital [1]	Buffalo	60	44	56	160	3	Ap.	May	1 yr.	no	yes	yes	yes	$40	yes
Buffalo Hospital of the Sisters of Charity	Buffalo	115	92	.....	207	3	Ap.	Indef.	1 yr.	no	yes	yes	no	yes	yes
Emergency Hosp. of the Sisters of Charity	Buffalo	44	41	.....	85	4	Ap.	Indef.	1 yr.	yes	yes	yes	no	yes	yes
Erie County Hospital [1]	Buffalo	65	200	125	390	8	Ex.	April	1 yr.	no	yes	yes	no	$200 (a)	yes
Westchester County Hospital	East View	50	183	.....	183	1	Ap.	‡	18 mos.	yes	yes	yes	no	yes	no
Arnot-Ogden Memorial Hospital	Elmira	yes	yes	yes	110	2	Ap.	May	1 yr.	no	yes	no	no	no	yes
Flushing Hospital and Dispensary	Flushing	45	35	70	150	4	Ap.	‡	18 mos.	yes	yes	yes	no	$50	yes
Glens Falls Hospital	Glens Falls	yes	yes	yes	80	1	Ap.	May	1 yr.	no	yes	yes	no	$100 (a)	yes
St. John's Hospital	Long Island City	100	106	19	225	6	Ap.	Indef.	18 mos.	yes	yes	yes	no	no	yes
Nassau Hospital	Mineola	yes	yes	yes	70	2	Ap.	Indef.	1 yr.	no	yes	yes	no	yes	yes
Mount Vernon Hospital [1]	Mount Vernon	yes	yes	yes	103	2	Ex.	May	2 yrs.	yes	yes	yes	yes	fees	yes
New Rochelle Hospital	New Rochelle	yes	yes	yes	82	2	Ap.	May	1 yr.	no	yes	yes	no	fees	yes
Bellevue Hospital [1]	New York	487	449	720	1,656	80	Ex.	‡	1½-2 yrs.	yes	yes	yes	yes	$50	yes
Beth Israel Hospital	New York	48	72	22	142	9	Ex.	‡	1-2 yrs.	yes	yes	yes	yes	no	yes
Correctional Hospital	New York	yes	yes	yes	140	4	Ap.	Indef.	1 yr.	no	yes	yes	no	$600 (a)	no
Fordham Hospital	New York	115	83	78	276	13	Ex.	Dec.	2 yrs.	yes	yes	yes	yes	no	no
French Hospital	New York	yes	yes	yes	120	5	Ex.	‡	18 mos.	yes	yes	yes	no	no	yes
Gouverneur Hospital	New York	80	80	25	185	12	Ex.	Feb.	1-2 yrs.	yes	yes	yes	yes	no	no
Hahnemann Hospital	New York	yes	yes	yes	138	4	Ap.	Indef.	1 yr.	no	yes	yes	small	$10	yes
Harlem Hospital	New York	yes	yes	yes	390	18	Ex.	Indef.	2 yrs.	yes	yes	yes	yes	no	no
Italian Hospital	New York	yes	yes	yes	100	4	Ap.	‡	1 yr.	yes	yes	yes	no	yes	yes
Knickerbocker Hospital	New York	30	30	.....	60	5	Ex.	Indef.	15 mos.	yes	yes	yes	no	no	yes
Lebanon Hospital	New York	yes	yes	yes	200	12	Tx.	Dec.	2 yrs.	yes	yes	yes	yes	no	yes
Lenox Hill Hospital	New York	200	125	.....	325	15	Ap.	Indef.	1 yr.	yes	yes	yes	no	no	....
Lincoln Hospital and Home (colored)	New York	116	113	201	430	14	Ex.	Indef.	21 mos.	yes	yes	yes	yes	yes	yes
Metropolitan Hospital [1]	New York	264	341	1,292	1,897	15	Ap.	‡	18 mos.	no	yes	yes	yes	yes	yes
Mt. Sinai Hospital	New York	yes	yes	yes	521	22	Ex.	Feb.	18 mos.	yes	yes	yes	yes	no	yes
N. Y. Homeo. Med. Coll and Flower Hosp.	New York	85	85	30	200	9	Ap.	Indef.	18 mos.	yes	yes	no	no	no	yes
New York Post-Graduate Hospital	New York	yes	yes	yes	400	23	Ex.	Indef.	2 yrs.	yes	yes	yes	yes	no	yes
Park Hospital	New York	40	26	.....	66	2	Ap.	Indef.	1 yr.	no	yes	yes	no	yes	yes
Presbyterian Hospital	New York	97	86	63	246	20	Ap.	‡	2 yrs.	yes	yes	yes	yes	yes	yes
Roosevelt Hospital	New York	yes	yes	yes	285	16	Ex.	Indef.	1 yr.	yes	yes	yes	no	no	yes
Society of the New York Hospital	New York	yes	yes	yes	289	18	Ex.	Dec.	2 yrs.	yes	yes	yes	no	no	yes
St. Francis' Hospital	New York	175	175	.....	350	8	Ap.	‡	2 yrs.	no	no	yes	no	no	no
St. Lawrence Hospital	New York	25	25	.....	50	2	Ex.	Indef.	1 yr.	no	yes	no	yes	no	yes
St. Luke's Hospital	New York	yes	yes	yes	382	18	Ex.	†	2 yrs.	yes	yes	yes	yes	no	yes
St. Mark's Hospital	New York	yes	yes	.....	80	4	Ex.	Indef.	2 yrs.	yes	yes	yes	no	yes	yes
St. Vincent's Hospital	New York	138	70	152	366	16	Ex.	‡	2 yrs.	yes	yes	yes	no	no	yes
Sydenham Hospital	New York	34	20	20	74	3	Ex.	Indef.	2 yrs.	yes	yes	yes	no	$20	yes
Volunteers Hospital	New York	40	30	8	78	6	Ex.	May	2 yrs.	yes	yes	yes	yes	$30	no
United Hospital	Port Chester	18	18	18	54	2	Ex.	Indef.	1 yr.	no	yes	no	no	$100	yes
Vassar Bros. Hospital	Poughkeepsie	36	36	27	99	2	Ap.	Indef.	1 yr.	yes	yes	yes	yes	$250 (a)	yes
Hahnemann Hospital	Rochester	yes	yes	yes	140	4	Ap.	May	1 yr.	no	yes	yes	yes	$25	yes
Rochester General Hospital	Rochester	124	85	76	285	6	Ap.	Indef.	1 yr.	yes	yes	yes	yes	yes	yes
Ellis Hospital	Schenectady	56	44	73	173	4	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
Hospital of the Good Shepherd	Syracuse	yes	yes	yes	250	6	Ex.	§	1 yr.	no	yes	no	yes	no	yes
St. Joseph's Hospital	Syracuse	yes	yes	yes	125	4	Ex.	May	1 yr.	no	yes	yes	yes	no	yes
Syracuse Memorial Hospital	Syracuse	yes	yes	yes	150	3	Ap.	May	1 yr.	no	yes	yes	no	no	yes
Staten Island Hospital	Tompkinsville	49	64	37	150	6	Ap.	¶	1 yr.	yes	yes	yes	yes	no	yes
Samaritan Hospital	Troy	42	48	85	175	4	Ex.	May	1 yr.	yes	yes	yes	yes	no	yes
White Plains Hospital Association	White Plains	8	9	27	44	1	Ap.	May	1 yr.	no	yes	no	no	$75	yes
St. John's Riverside Hospital	Yonkers	46	32	22	100	4	Ap.	Indef.	2 yrs.	yes	yes	yes	yes	$50	yes
St. Joseph's Hospital	Yonkers	41	41	.....	82	3	Ap.	Nov.	18 mos.	yes	yes	yes	no	no	yes
NORTH CAROLINA															
Highsmith Hospital	Fayetteville	55	20	4	79	2	Ap.	May	1 yr.	yes	yes	yes	yes	yes	yes
Rex Hospital	Raleigh	yes	yes	yes	75	2	Ap.	.....	6-12 mos.	no	yes	no	no	fees	yes
James Walker Memorial Hospital	Wilmington	64	64	47	175	2	Ap.	May	1 yr.	yes	yes	yes	no	$25	yes
NORTH DAKOTA															
Bismarck Evangelical Hospital [1]	Bismarck	yes	yes	yes	140	2	Ap.	Indef.	1 yr.	no	yes	yes	no	yes	yes
St. John's Hospital	Fargo	49	32	20	101	2	Ap.	May	1 yr.	no	yes	yes	yes	$300 (a)	yes
OHIO															
City Hospital	Akron	72	32	121	225	3	Ap.	Indef.	1 yr.	no	yes	yes	small	no	yes
Christ Hospital	Cincinnati	60	40	100	200	3	Ap.	April	1 yr.	yes	no	few	no	no	yes
Cincinnati General Hospital [1]	Cincinnati	128	130	592	850	29	Ex.	Indef.	18 mos.	yes	yes	yes	yes	no	yes
Good Samaritan Hospital	Cincinnati	yes	yes	yes	255	3	Ap.	.....	.....	no	yes	no	no	$25	yes
Jewish Hospital	Cincinnati	50	50	20	120	3	Ap.	Spring	1 yr.	no	few	yes	no	no	yes
Cleveland City Hospital	Cleveland	yes	yes	yes	805	17	Ex.	#	1 yr.	no	yes	yes	no	$12.50	yes
Lakeside Hospital	Cleveland	59	60	170	289	12	Ap.	Indef.	1 yr.	yes	yes	yes	yes	no	yes
Mt. Sinai Hospital [1]	Cleveland	yes	yes	yes	155	13	Ap.	May	1 yr.	yes	yes	yes	no	fees	....
St. John's Hospital	Cleveland	yes	yes	yes	150	4	Ex.	May	1 yr.	no	yes	yes	no	$300 (a)	yes
St. Luke's Hospital	Cleveland	yes	yes	yes	140	4	Ap.	April	1 yr.	yes	yes	yes	no	no	yes
St. Vincent's Charity Hospital	Cleveland	105	33	52	290	8	Ex.	**	1 yr.	no	yes	yes	yes	no	yes
Children's Hospital	Columbus	yes	yes	yes	50	1	Ap.	April	1 yr.	yes	yes	yes	no	$600 (a)	yes
Grant Hospital	Columbus	yes	yes	yes	260	2	Ap.	April	1 yr.	no	yes	yes	no	$35	yes

1. Women interns admitted.
* May and November.
† Every six weeks.
‡ November and May.
§ April and July.
¶ Every two and a half months.
May and August.
** Every three months.
(a) Per year.

Name of Hospital	Location	Number of Beds				Interns		Examined or Apply in	Length of Service	Out-Patient Service	Accident Cases	Necropsies	Med. Library	Salary per Mo.	Training School for Nurses
		Surgical	Medical	Other	Total	Number in Hospital	By Appt. or Exam.								
Hawkes Hospital of Mt. Carmel	Columbus	91	43	16	150	4	Ap.	April	1 yr.	no	yes	yes	yes	no	no
Protestant Hospital Association	Columbus	50	50	16	116	6	Ex.	May	1 yr.	no	yes	yes	yes	no	yes
St. Francis' Hospital	Columbus	80	80	.....	160	3	Ap.	May	1 yr.	yes	yes	yes	yes	no	no
Miami Valley Hospital	Dayton	yes	yes	yes	265	6	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
Springfield City Hospital	Springfield	60	40	20	120	2	Ap.	June	1 yr.	yes	yes	yes	no	$25	yes
Youngstown Hospital	Youngstown	150	70	30	250	7	Ap.	May	1 yr.	yes	yes	yes	yes	$10	yes
OKLAHOMA															
St. Anthony's Hospital	Oklahoma City	80	40	30	150	1	Ex.	April	1 yr.	no	few	few	yes	$20	yes
State University Hospital	Oklahoma City	yes	yes	yes	176	4	Ap.	April	1 yr.	no	.....	no	yes	no	yes
OREGON															
Multnomah County Hosptial	Portland	30	60	10	100	3	Ap.	Fall	1 yr.	no	yes	no	no	fees	yes
St. Vincent's Hospital	Portland	225	113	62	400	5	Ap.	April	1 yr.	no	yes	no	no	no	yes
PENNSYLVANIA															
Allentown Hospital [1]	Allentown	96	60	44	200	4	Ap.	April	1 yr.	yes	yes	yes	yes	no	yes
Bryn Mawr Hospital	Bryn Mawr	35	40	.....	75	4	Ap.	May	1 yr.	yes	yes	yes	yes	$50	yes
Chester Hospital	Chester	54	19	70	143	3	Ap.	April	1 yr.	yes	yes	yes	yes	yes	yes
G. F. Geisinger Memorial Hospital	Danville	40	40	10	90	1	Ap.	April	1 yr.	yes	yes	yes	no	no	yes
Easton Hospital	Easton	32	19	54	105	2	Ap.	April	1 yr.	yes	yes	yes	yes	yes	yes
St. Vincent's Hospital [1]	Erie	100	68	32	200	4	Ap.	May	1 yr.	yes	yes	yes	yes	$50	yes
Harrisburg Hospital [1]	Harrisburg	69	40	26	135	4	Ap.	May	1 yr.	yes	yes	yes	no	$600 (a)	yes
Lancaster General Hospital	Lancaster	28	28	71	127	4	Ap.	May	1 yr.	yes	yes	yes	yes	yes	yes
McKeesport Hospital	McKeesport	83	40	37	160	3	Ap.	April	1 yr.	no	yes	yes	no	yes	yes
Frankford Hospital	Philadelphia	50	30	10	90	3	Ap.	April	1 yr.	yes	yes	yes	yes	$30	yes
F. Douglas Memorial Hospital (colored) [1]	Philadelphia	yes	yes	yes	73	4	Ap.	April	1 yr.	yes	yes	yes	no	no	yes
Germantown Dispensary and Hospital	Philadelphia	88	62	25	175	5	Ap.	*	15 mos.	yes	yes	yes	yes	no	yes
Hahnemann Hospital	Philadelphia	96	79	145	320	10	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
Hospital of Protestant Episcopal Church [1]	Philadelphia	250	250	.....	500	12	Ex.	Indef.	2 yrs.	yes	yes	yes	.....	no	yes
Hospital of the University of Pennsylvania	Philadelphia	81	101	224	406	16	Ap.	April	1 yr.	yes	yes	yes	y es	no	yes
Hospital of Woman's Medical College [2]	Philadelphia	18	18	64	100	6	Ap.	Indef.	1 yr.	yes	yes	yes	yes	no	yes
Jefferson Medical College Hospital [1 3]	Philadelphia	116	111	219	446	15	Ap.	Indef.	Indef.	yes	yes	yes	yes	no	yes
Jewish Hospital of Philadelphia	Philadelphia	yes	yes	yes	154	9	Ex.	April	1 yr.	yes	yes	yes	yes	no	yes
The Lankenau Hospital	Philadelphia	143	98	9	250	9	Ex.	†	27 mos.	yes	yes	yes	yes	no	yes
Methodist Episcopal Hospital	Philadelphia	yes	yes	yes	170	7	Ex.	May	1 yr.	yes	yes	yes	no	no	yes
Misericordia Hospital	Philadelphia	100	100	25	225	6	Ap.	May	1 yr.	yes	yes	yes	no	no	yes
Mt. Sinai Hospital	Philadelphia	yes	yes	yes	60	5	Ex.	May	15 mos.	yes	yes	yes	yes	no	yes
Pennsylvana Hospital	Philadelphia	170	145	.....	315	14	Ap.	Indef.	2 yrs.	no	yes	yes	yes	no	yes
Philadelphia General Hospital	Philadelphia	275	1,000	785	2,060	41	Ex.	Indef.	16 mos.	no	no	yes	no	no	yes
Philadelphia Polyclinic	Philadelphia	yes	yes	yes	135	14	Ap.	Jan.	18 mos.	yes	yes	yes	yes	no	yes
Presbyterian Hospital	Philadelphia	85	73	92	250	9	Ex.	‡	1 yr.	yes	yes	yes	no	no	yes
Samaritan Hospital	Philadelphia	37	16	102	155	8	Ex.	Indef.	2 yrs.	yes	yes	yes	no	no	yes
St. Agnes' Hospital	Philadelphia	70	81	121	272	7	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
St. Joseph's Hospital	Philadelphia	57	28	96	181	8	Ex.	May	1 yr.	yes	yes	yes	no	no	yes
St. Mary's Hospital	Philadelphia	185	134	31	350	8	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
St. Timothy's Memorial Hospital	Philadelphia	38	34	78	150	3	Ap.	May	1 yr.	yes	yes	yes	no	no	yes
Stetson Hospital	Philadelphia	28	12	15	55	3	Ap.	May	1 yr.	yes	yes	few	yes	$25	yes
Woman's Homeopathic Association [1]	Philadelphia	71	70	19	160	4	Ap.	May	1 yr.	no	yes	yes	yes	$20	yes
Woman's Hospital of Philadelphia [2]	Philadelphia	yes	yes	50	200	8	Ap.	Indef.	1 yr.	yes	yes	yes	yes	no	yes
Allegheny General Hospital	Pittsburgh	216	220	34	470	5	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
Homeopathic Medical and Surgical Hosp.	Pittsburgh	75	75	20	170	2	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
Mercy Hospital	Pittsburgh	220	125	30	375	15	Ex.	May	1 yr.	yes	yes	yes	yes	no	yes
Montefiore Hospital Association	Pittsburgh	yes	yes	yes	60	3	Ex.	April	1 yr.	yes	yes	yes	no	yes	yes
Passavant Hospital	Pittsburgh	35	35	70	140	3	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
Presbyterian Hospital	Pittsburgh	yes	yes	yes	175	2	Ap.	April	1 yr.	yes	yes	yes	no	no	yes
South Side Hospital	Pittsburgh	75	50	75	200	6	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
St. Francis' Hospital	Pittsburgh	yes	yes	yes	485	12	Ap.	May	1 yr.	yes	yes	yes	no	no	yes
St. John's General Hospital	Pittsburgh	134	23	43	200	4	Ap.	May	1 yr.	yes	yes	yes	no	no	yes
St. Joseph's Hospital and Dispensary	Pittsburgh	yes	yes	yes	118	3	Ap.	May	1 yr.	yes	yes	yes	yes	$120 (a)	yes
St. Margaret's Memorial Hospital	Pittsburgh	40	40	20	100	3	Ap.	May	1 yr.	no	yes	yes	no	yes	yes
Western Pennsylvania Hospital	Pittsburgh	295	195	10	500	21	Ex.	May	1 yr.	no	yes	yes	yes	no	yes
Robert Packer Hospital	Sayre	100	75	25	200	2	Ap.	§	1 yr.	yes	yes	yes	no	$25	yes
Hahnemann Hospital	Scranton	yes	yes	yes	118	3	Ap.	April	1 yr.	yes	yes	yes	yes	yes	yes
St. Luke's Hospital	South Bethlehem	75	40	11	125	5	Ap.	May	1 yr.	yes	yes	yes	small	$10	yes
Mercy Hospital	Wilkes-Barre	50	28	13	148	4	Ex.	March	1 yr.	yes	yes	yes	yes	no	yes
Wilkes-Barre City Hospital	Wilkes-Barre	yes	yes	yes	225	6	Ap.	¶	1 yr.	yes	yes	no	yes	no	yes
Columbia Hospital [1]	Wilkinsburg	28	28	119	175	3	Ap.	May	1 yr.	no	yes	yes	no	yes	yes
PHILIPPINE ISLANDS															
Philippine General Hospital [1]	Manila	yes	yes	yes	600	32	Ex.	Spring	6-12 mos.	yes	yes	yes	no	no	yes
RHODE ISLAND															
State Infirmary	Howard	yes	yes	yes	100	2	Ap.	Indef.	1 yr.	no	no	yes	yes	$300 (a)	no
Memorial Hospital	Pawtucket	yes	yes	yes	72	1	Ap.	#	1 yr.	yes	yes	yes	yes	$200 (a)	yes
Rhode Island Hospital	Providence	200	150	150	500	15	Ex.	Indef.	2 yrs.	yes	yes	yes	yes	no	yes
St. Joseph's Hospital	Providence	52	39	89	180	5	Ex.	Indef.	16 mos.	yes	yes	yes	yes	no	yes
Woonsocket Hospital	Woonsocket	yes	yes	yes	55	1	Ap.	Indef.	1 yr.	yes	yes	yes	no	no	yes
SOUTH CAROLINA															
Roper Hospital	Charleston	128	108	12	248	6	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
St. Francis Xavier Infirmary [3]	Charleston	19	21	10	50	2	Ap.	May	1 yr.	no	yes	yes	no	no	yes
South Carolina Baptist Hospital [1]	Columbia	yes	yes	yes	125	1	Ap.	May	1 yr.	no	few	no	no	$10	yes
TENNESSEE															
Baroness Erlanger Hospital	Chattanooga	yes	yes	yes	150	3	Ap.	April	1 yr.	no	yes	yes	no	$15	yes
Knoxville General Hospital	Knoxville	yes	yes	yes	175	3	Ap.	Indef.	1 yr.	yes	yes	yes	no	$30	yes
Baptist Memorial Hospital [1]	Memphis	260	150	90	500	15	Ap.	**	1 yr.	no	yes	yes	no	.....	....
Memphis City Hospital [1]	Memphis	120	50	76	246	8	Ex.	March	1 yr.	no	yes	yes	yes	no	yes
St. Joseph's Hospital	Memphis	yes	yes	yes	250	4	Ex.	March	1 yr.	no	yes	yes	yes	no	no
George W. Hubbard Hospital	Nashville	yes	yes	yes	75	.....	Ex.	April	1 yr.	yes	yes	yes	yes	$50	yes
Nashville City Hospital	Nashville	yes	yes	yes	160	6	Ex.	Indef.	12-18 mo.	yes	yes	yes	yes	$15	yes
Nashville Protestant Hospital	Nashville	50	20	14	84	4	Ap.	April	1 yr.	no	few	few	no	no	yes
St. Thomas' Hospital	Nashville	yes	yes	yes	200	4	Ap.	May	1 yr.	no	yes	few	no	no	yes
Woman's Hosp. of the State of Tennessee [6]	Nashville	yes	yes	yes	70	2	Ap.	May	1 yr.	no	yes	no	yes	$25	yes
TEXAS															
Hotel Dieu	Beaumont	140	50	20	210	1	Ap.	April	1 yr.	no	yes	yes	no	no	yes
St. Paul's Sanitarium	Dallas	yes	yes	yes	300	5	Ap.	May	1 yr.	no	yes	.....	no	fees	yes
Texas Baptist Memorial Sanitarium	Dallas	yes	yes	yes	250	4	Ex.	May	1 yr.	yes	yes	yes	no	$50	yes
John Sealy Hospital [3]	Galveston	yes	yes	yes	317	7	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
St. Mary's Infirmary	Galveston	yes	yes	yes	275	3	Ap.	May	1 yr.	no	yes	no	no	no	yes
Baptist Sanitarium and Hospital	Houston	yes	yes	10	140	1	Ap.	April	1 yr.	no	yes	.....	yes	$10	yes
Southern Pacific Hospital	Houston	yes	yes	yes	106	2	Ap.	May	1 yr.	yes	yes	yes	yes	$50	no
St. Joseph's Infirmary	Houston	yes	yes	yes	180	4	Ap.	May	1 yr.	yes	yes	yes	no	no	no

1. Women interns admitted.
2. Women interns only.
3. Internships open only to graduates of local medical school.
6. Male patients accepted in private rooms only.
* One every three months.
† Every three months.
‡ April and June.
§ May and August.
¶ May and July.
February and July.
** May and November.
(a) Per year.

Name of Hospital	Location	Number of Beds				Interns		Examined or Apply in	Length of Service	Out-Patient Service	Accident Cases	Necropsies	Med. Library	Salary per Mo.	Training School for Nurses
		Surgical	Medical	Other	Total	Number in Hospital	By Appt. or Exam.								
Robert B. Green Memorial Hospital	San Antonio	yes	yes	yes	200	4	Ex.	April	1 yr.	yes	yes	yes	no	fees	yes
Santa Rosa Infirmary	San Antonio	yes	yes	yes	150	1	Ap.	May	1 yr.	yes	yes	no	no	no	yes
King's Daughters' Hospital	Temple	yes	yes	.....	65	1	Ap.	Spring	1 yr.	no	yes	yes	yes	fees	yes
Santa Fe Hospital	Temple	yes	yes	yes	125	2	Ap.	April	1 yr.	yes	yes	yes	no	$50	yes
Temple Sanitarium	Temple	125	.....	.....	125	3	Ap.	May	1 yr.	no	yes	yes	yes	$600	yes
Providence Sanitarium	Waco	100	32	68	200	3	Ap.	May	1 yr.	yes	yes	yes	no	no	yes
UTAH															
Thomas D. Dee Memorial Hospital	Ogden	yes	yes	yes	70	2	Ap.	May	1 yr.	no	yes	few	yes	$40	yes
Dr. Groves' Latter Day Saints' Hospital	Salt Lake City	yes	yes	16	200	3	Ap.	*	1 yr.	no	yes	yes	yes	yes	yes
Salt Lake County Infirmary	Salt Lake City	32	24	69	125	1	Ap.	.....	1 yr.	no	yes	yes	no	yes	yes
St. Mark's Hospital	Salt Lake City	80	50	25	155	3	Ap.	May	1 yr.	yes	yes	yes	yes	$10	yes
VERMONT															
Mary Fletcher Hospital	Burlington	yes	yes	yes	125	5	Ap.	Indef.	15 mos.	yes	yes	yes	yes	yes	yes
Fanny Allen Hospital	Winooski	50	20	.....	70	2	Ap.	May	1 yr.	no	yes	yes	no	no	yes
VIRGINIA															
George Ben Johnston Memorial Hospital	Abingdon	yes	yes	yes	37	1	Ap.	May	1 yr.	no	yes	yes	no	$25	yes
Hospital of St. Vincent de Paul	Norfolk	106	46	98	250	4	Ap.	May	1 yr.	yes	yes	yes	no	$25	yes
Norfolk Protestant Hospital	Norfolk	65	40	60	165	3	Ap.	May	1 yr.	yes	yes	yes	yes	$25	yes
Memorial Hospital [3]	Richmond	134	60	56	200	8	Ap.	May	1 yr.	no	yes	yes	no	$600 (a)	yes
Retreat for the Sick	Richmond	yes	yes	yes	60	2	Ap.	April	1 yr.	no	yes	yes	no	no	yes
Sheltering Arms Free Hospital	Richmond	25	10	15	50	2	Ap.	April	1 yr.	no	no	yes	no	no	yes
Virginia Hospital	Richmond	80	50	70	200	2	Ap.	May	1 yr.	yes	yes	yes	yes	fees	yes
Stuart Circle Hospital	Richmond	yes	yes	yes	65	2	Ap.	May	1 yr.	no	yes	yes	yes	$25	yes
Jefferson Hospital	Roanoke	yes	yes	yes	70	2	Ap.	May	1 yr.	no	few	yes	yes	$50	yes
University of Virginia Hospital	University	yes	yes	yes	200	11	Ap.	July	1 yr.	yes	yes	yes	yes	no	yes
WASHINGTON															
King County Hospital	Seattle	36	169	20	225	3	Ap.	May	1 yr.	no	yes	yes	yes	$30	no
Seattle City Hospital	Seattle	27	30	33	90	3	Ap.	May	1 yr.	yes	yes	yes	no	$50	yes
Seattle General Hospital	Seattle	75	50	25	150	1	Ap.	Feb.	2 yrs.	no	few	no	no	yes	yes
Marie Beard Deaconess Hospital	Spokane	38	8	19	65	1	Ap.	.....	1 yr.	no	no	no	no	$50	yes
St. Elizabeth's Hospital	Yakima	75	75	15	165	1	Ap.	April	1 yr.	.....	yes	yes	no	$50	yes
WEST VIRGINIA															
Charleston General Hospital	Charleston	yes	yes	yes	120	1	Ex.	April	1 yr.	no	yes	no	no	yes	yes
Sheltering Arms Hospital	Hansford	100	45	5	150	5	Ap.	May	1 yr.	no	yes	yes	yes	no	yes
Ohio Valley General Hospital	Wheeling	80	50	25	155	3	Ap.	†	1 yr.	yes	yes	yes	yes	no	yes
WISCONSIN															
St. Joseph's Hospital	Ashland	75	75	25	195	1	Ap.	May	1 yr.	no	yes	no	no	no	yes
St. Agnes' Hospital	Fond du Lac	yes	yes	yes	130	2	Ap.	Indef.	1 yr.	no	yes	yes	yes	$20	yes
La Crosse Lutheran Hospital	La Crosse	66	32	8	106	2	Ap.	May	1 yr.	yes	yes	yes	yes	$50	yes
St. Francis' Hospital	La Crosse	yes	yes	yes	210	2	Ap.	Indef.	1 yr.	no	yes	yes	yes	$50	yes
St. Mary's Hospital	Madison	50	15	.....	65	2	Ap.	.....	1 yr.	no	few	no	no	$50	no
St. Joseph's Hospital	Marshfield	yes	yes	yes	135	1	Ap.	Indef.	1 yr.	no	yes	yes	yes	yes	yes
Columbia Hospital	Milwaukee	35	20	37	92	5	Ap.	Indef.	1 yr.	no	yes	yes	yes	$25	yes
Milwaukee Hospital	Milwaukee	80	30	52	162	3	Ap.	May	1 yr.	no	yes	yes	yes	$25	yes
Mt. Sinai Hospital	Milwaukee	yes	yes	yes	100	2	Ap.	.....	.....	yes	.....	yes	no	.....	yes
St. Joseph's Hospital	Milwaukee	95	27	12	134	3	Ex.	Indef.	Indef.	yes	no	no	no	no	yes
Milwaukee County Hospital	Wauwatosa	100	200	.....	300	8	Ex.	May	1 yr.	no	few	yes	yes	yes	yes

SECTION II, STATE HOSPITALS AND HOSPITALS FOR THE INSANE; TOTAL, 25; INTERNSHIPS, 72; BEDS, 41,722

Searcy Hospital	Mt. Vernon, Ala.	.....	.....	.....	1,000	1	Ap.	Spring	1 yr.	no	no	yes	no	$25	yes
Bryce Hospital	Tuscaloosa, Ala.	20	50	.....	1,550	2	Ap.	April	1 yr.	no	no	yes	no	$25	yes
Arkansas State Hosp. for Nervous Diseases	Little Rock, Ark.	.....	.....	.....	2,020	1	Ap.	Indef.	1 yr.	no	no	yes	yes	$50	no
Saint Elizabeth's Hospital	Washington, D. C.	.....	.....	3,429	3,429	17	Ex.	Indef.	Indef.	no	yes	yes	yes	$900 (a)	yes
Cherokee State Hospital	Cherokee, Ia.	10	.....	.....	1,150	3	Ap.	April	‡	no	yes	yes	yes	$50	yes
Independence State Hospital	Independence, Ia.	.....	.....	1,200	1,200	0	Ap.	Indef.	Indef.	no	no	yes	yes	yes	yes
East Louisiana Hospital for Insane (white and colored)	Jackson, La.	.....	.....	.....	1,600	3	Ap.	April	Indef.	no	yes	yes	yes	$50	yes
Augusta State Hospital	Augusta, Me.	.....	.....	1,100	1,100	2	Ap.	Indef.	Indef.	no	no	yes	yes	$800 (a)	yes
Psychopathic Dept., Boston State Hospital	Boston, Mass.	.....	.....	.....	110	7	Ap.	Indef.	Indef.	yes	no	yes	yes	no	no
Danvers State Hospital (Hathorne P. O.)	Danvers, Mass.	.....	.....	.....	1,485	3	Ap.	April	1 yr.	yes	yes	yes	yes	yes	yes
State Infirmary	Tewksbury, Mass.	yes	yes	yes	2,500	1	Ap.	.....	1 yr.	no	no	yes	no	yes	yes
State Psychopathic Hospital	Ann Arbor, Mich.	.....	.....	.....	62	1	Ap.	May	1 yr.	yes	no	yes	yes	$600 (a)	yes
Fergus Falls State Hospital	Fergus Falls, Minn.	yes	yes	yes	1,700	1	Ap.	April	Indef.	no	no	yes	no	$50	yes
New Hampshire State Hospital	Concord, N. H.	.....	.....	.....	1,300	1	Ap.	Jan.	8 mos.	no	yes	yes	yes	$50	yes
Central Islip State Hospital [1]	Central Islip, N. Y.	.....	.....	.....	5,180	2	Ex.	Indef.	Indef.	yes	yes	yes	yes	$1,000 (a)	yes
Gowanda State Homeopathic Hospital [1 7]	Collins, N. Y.	.....	.....	.....	1,316	1	Ex.	Indef.	§	no	yes	yes	yes	$1,200 (a)	yes
Kings Park State Hospital [1]	Kings Park, N. Y.	yes	yes	yes	4,500	2	Ex.	Indef.	Indef.	yes	no	no	yes	$1,000 (a)	yes
St. Lawrence State Hospital [1]	Ogdensburg, N. Y.	.....	2,236	.....	2,236	8	Ex.	Indef.	Indef.	yes	yes	yes	yes	$1,000 (a)	yes
Hudson River State Hospital [1]	Poughkeepsie, N. Y.	.....	.....	3,324	3,324	3	Ex.	Indef.	Indef.	yes	yes	yes	yes	$1,000 (a)	yes
Bloomingdale Hospital	White Plains, N. Y.	.....	.....	350	350	2	Ap.	Indef.	Indef.	no	yes	yes	yes	$1,000 (a)	yes
State Hospital at Raleigh [1]	Raleigh, N. C.	.....	.....	1,150	1,150	2	Ap.	April	1 yr.	yes	no	yes	no	yes	yes
North Dakota State Hosp. for the Insane	Jamestown, N. D.	6	180	1,089	1,275	1	Ap.	April	4 mos.	no	yes	yes	yes	yes	no
State Hospital for the Insane	Allentown, Pa.	4	106	1,090	1,200	2	Ap.	April	3 mos.	no	yes	yes	yes	no	yes
State Hospital for the Northern Anthracite Coal Region of Pennsylvania	Scranton, Pa.	63	67	45	185	5	Ex.	May	1 yr.	yes	yes	yes	yes	$100 (a)	yes
Central Hospital for the Insane	Nashville, Tenn.	.....	.....	800	800	1	Ap.	Indef.	Indef.	no	yes	no	yes	no	yes

SECTION III, OTHER SPECIAL HOSPITALS; TOTAL, 99; INTERNSHIPS, 388; BEDS, 215,443

Tuberculosis Hospital	Washington, D. C.	.....	145	.....	145	2	Ap.	May	1 yr.	no	no	yes	no	no	no
U. S. Soldiers Home Hospital	Washington, D. C.	.....	.....	.....	300	5	Ap.	May	1 yr.	yes	yes	yes	yes	$55	no
Chicago Lying-In Hosp. and Dispensary	Chicago, Ill.	.....	.....	110	110	2	Ap.	Indef.	6 mos.	yes	yes	yes	no	fees	yes
Chicago Maternity Hospital [8]	Chicago, Ill.	.....	.....	22	22	1	Ap.	**	6 mos.	yes	no	few	yes	fees	yes
Children's Memorial Hospital	Chicago, Ill.	.....	.....	.....	175	6	Ap.	††	8 mos.	yes	yes	yes	yes	no	yes
Durand Hospital of the Memorial Institute for Infectious Diseases	Chicago, Ill.	.....	.....	50	50	2	Ap.	.....	.....	no	no	yes	.....	no	yes
Home for Destitute Crippled Children [9]	Chicago, Ill.	.....	.....	.....	110	2	.....	.....	.....	yes	.....	.....	.....	.....	.....
Illinois Charitable Eye and Ear Infirmary	Chicago, Ill.	yes	yes	yes	200	7	Ex.	Indef.	1 yr.	yes	yes	no	no	no	no
Halstead Hospital	Halstead, Kan.	73	.....	.....	73	2	Ap.	Indef.	Indef.	yes	yes	yes	no	$200	yes
Pope Sanatorium	Louisville, Ky.	.....	25	.....	25	3	Ap.	May	1 yr.	yes	no	yes	yes	yes	no
Illinois Central Hospital	Paducah, Ky.	100	.....	.....	100	2	Ap.	Indef.	1 yr.	yes	yes	no	no	$25	no

1. Women interns admitted.
3. Internships open only to graduates of local medical school.
7. Previous training required.
(a) Per year.

* May and September.
† May and November.
‡ Summer months.
§ No limit.

8. Women interns preferred.
9. Affiliated with Rush Medical College.
** May and October.
†† April and November.

Name of Hospital	Location	Number of Beds				Interns		Examined or Apply in	Length of Service	Out-Patient Service	Accident Cases	Necropsies	Med. Library	Salary per Mo.	Training School for Nurses
		Surgical	Medical	Other	Total	Number in Hospital	By Appt. or Exam.								
Eye, Ear, Nost and Throat Hospital	New Orleans, La.	.....	.....	.....	30	3	Ap.	Indef.	1 yr.	yes	yes	no	yes	$25 (d)	no
Maine Eye and Ear Infirmary (Gen. & Spec.)	Portland, Me.	yes	yes	yes	100	2	Ap.	June	1 yr.	yes	yes	yes	yes	no	yes
Baltimore Eye, Ear and Throat Charity Hospital [1]	Baltimore, Md.	yes	yes	.....	46	2	Ap.	Indef.	1 yr.	yes	yes	yes	no	no	no
Hospital for Women of Maryland	Baltimore, Md.	yes	yes	yes	125	7	Ap.	July	1 yr.	yes	no	few	no	fees	yes
J. L. Kernon Hosp. for Crippled Children	Baltimore, Md.	75	.....	.....	75	2	Ap.	Indef.	Indef.	yes	few	few	yes	fees	no
Nursery and Child's Hospital	Baltimore, Md.	50	.....	.....	70	1	Ap.	April	1 yr.	yes	no	few	no	no	yes
University of Maryland Lying-In Hospital	Baltimore, Md.	.....	.....	33	33	2	Ap.	May	1 yr.	yes	no	no	yes	no	yes
Thomas Wilson Sanitarium	Mt. Wilson, Md.	.....	70	30	100	3	Ap.	April	3 mos.	no	.....	yes	no	no	yes
Maryland Tuberculosis Sanatorium	State Sanatorium, Md.	.....	440	.....	440	5	Ap.	May	1 yr.	no	no	no	no	$75	yes
Sheppard and Enoch Pratt Hospital	Towson, Md.	.....	150	.....	150	4	Ap.	Indef.	Indef.	no	no	few	yes	fees	yes
Boston Consumptives Hospital	Boston, Mass.	.....	420	.....	422	3	Ap.	.....	6 mos.	yes	yes	yes	small	$1,000 (a)	no
Boston Lying-In Hospital	Boston, Mass.	.....	.....	53	53	8	Ap.	‡	6 mos.	yes	yes	yes	.....	no	yes
Children's Hospital	Boston, Mass.	39	44	67	150	9	Ap.	Indef.	§	yes	yes	no	no	no	yes
Collis P. Huntington Cancer Hospital [7]	Boston, Mass.	.....	.....	26	26	2	Ap.	Indef.	1 yr.	yes	no	yes	no	no	no
Dispensary and Hospital for Children [1]	Boston, Mass.	6	24	.....	30	3	Ap.	Indef.	6 mos.	yes	no	yes	yes	no	yes
Infants' Hospital	Boston, Mass.	.....	50	.....	50	2	Ex.	Nov.	3 mos.	no	no	yes	yes	no	yes
Mass. Charitable Eye and Ear Infirmary	Boston, Mass.	yes	yes	.....	215	8	Ex.	¶	16 mos.	yes	yes	yes	yes	no	yes
St. Mary's Inf. Asylum and Lying-In Hosp.	Boston, Mass.	.....	.....	.....	250	2	Ap.	.....	.....	.....	.....	.....	.....	.....	yes
Free Hospital for Women [7]	Brookline, Mass.	63	.....	.....	63	1	Ap.	Indef.	6 mos.	yes	no	few	small	no	§
Children's Free Hospital [10]	Detroit, Mich.	yes	yes	.....	120	2	Ap.	Indef.	3 mos.	few	yes	yes	no	no	yes
Woman's Hospital and Infant's Home [2]	Detroit, Mich.	30	15	55	100	3	Ap.	Indef.	6 mos.	no	no	few	yes	yes	yes
Morgan Park Hospital	Duluth, Minn.	32	.....	.....	32	1	Ap.	Indef.	1 yr.	yes	yes	yes	no	no	no
Nopeming Sanatorium	Nopeming, Minn.	.....	200	.....	200	3	Ap.	Indef.	Indef.	yes	yes	yes	yes	yes	yes
State Sanitarium for Crippled Indigent and Deformed Children	St. Paul, Minn.	yes	yes	yes	130	2	Ap.	Indef.	Indef.	yes	no	yes	small	no	yes
Children's Mercy Hospital	Kansas City, Mo.	.....	.....	.....	200	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barnard Free Skin and Cancer Hospital	St. Louis, Mo.	20	15	10	45	3	Ap.	May	1 yr.	yes	no	yes	no	yes	no
St. Louis Children's Hospital	St. Louis, Mo.	35	30	75	160	5	Ex.	May	1 yr.	yes	few	yes	yes	no	yes
Montefiore Home Country Sanitarium	Bedford Hills, N.Y.	yes	yes	yes	218	3	Ap.	Indef.	Indef.	no	no	no	yes	yes	no
Kingston Avenue (Cont.) Hospital [1]	Brooklyn, N. Y.	.....	531	.....	531	16	Ex.	Indef.	6 mos.	no	no	yes	yes	$20	no
Children's Hospital	Buffalo, N. Y.	yes	yes	yes	119	3	Ap.	May	1 yr.	yes	yes	yes	yes	$40	yes
Babies' Hospital [1]	New York City	8	64	.....	72	4	Ap.	*	18 mos.	yes	yes	no	no	no	yes
Herman Knapp Memorial Eye Hospital	New York City	.....	.....	51	51	2	Ap.	Indef.	18 mos.	yes	yes	yes	yes	no	no
Hospital for Deformities and Joint Diseases	New York City	69	.....	.....	69	2	Ex.	Nov.	1 yr.	yes	yes	no	no	yes	no
Jewish Maternity Hospital [1]	New York City	.....	.....	50	50	6	Ap.	*	6 mos.	yes	no	yes	no	$25	yes
Lying-In Hospital of the City of New York	New York City	.....	.....	156	156	38	Ap.	Indef.	6 mos.	yes	no	no	yes	no	yes
Manhattan Maternity and Dispensary	New York City	.....	.....	.....	28	5	Ap.	Indef.	3 mos.	yes	no	no	no	yes	yes
Memorial Hospital	New York City	.....	.....	100	100	4	Ap.	Indef.	1 yr.	no	yes	no	yes	yes	no
Montefiore Home and Hosp. for Chr. Dis.	New York City	50	410	.....	460	9	Ex.	*	1 yr.	no	no	yes	yes	yes	yes
Neurological Institute of New York [7]	New York City	yes	yes	.....	96	4	Ap.	Indef.	Indef.	yes	yes	yes	no	$600 (a)	yes
New York Eye and Ear Infirmary	New York City	175	.....	.....	175	10	Ex.	Indef.	16 mos.	yes	yes	yes	no	no	yes
N. Y. Infirmary for Women and Children [2]	New York City	yes	yes	yes	125	5	Ap.	Indef.	2 yrs.	yes	yes	yes	yes	yes	yes
New York Nursery and Child's Hospital	New York City	.....	.....	283	283	10	Ap.	Indef.	6 mos.	yes	no	yes	no	fees	yes
New York Ophthalmic Hospital	New York City	74	.....	.....	74	2	Ex.	*	1 yr.	yes	yes	no	yes	yes	no
New York Orthopedic Disp. and Hospital	New York City	109	.....	.....	109	3	Ap.	.....	1 yr.	yes	no	yes	yes	no	no
New York Skin and Cancer Hospital	New York City	58	42	.....	100	4	Ex.	*	1 yr.	yes	yes	yes	yes	no	yes
N. Y. Soc. Relief of Ruptured and Crippled	New York City	300	.....	.....	300	5	Ap.	Indef.	4 mos.	yes	no	yes	yes	no	no
Riverside Hospital	New York City	.....	585	.....	585	8	Ap.	Indef.	6 mos.	no	no	no	no	no	no
Riverside Hosp. of the City of New York	New York City	.....	344	.....	344	1	.....	Indef.	6 mos.	yes	yes	yes	no	$240 (a)	no
Seton Hospital	New York City	.....	240	.....	240	3	Ap.	Indef.	1 yr.	no	no	yes	no	yes	no
Sloane Hospital for Women	New York City	47	.....	226	273	7	Ap.	.....	4 mos.	no	no	no	no	.....	yes
St. Mary's Free Hospital for Children [7]	New York City	86	42	.....	128	4	Ap.	Nov.	6 mos.	yes	yes	yes	yes	$30	yes
Willard Parker Hospital	New York City	.....	950	.....	950	20	Ex.	Indef.	6 mos.	no	no	no	no	$240 (a)	no
Woman's Hospital	New York City	138	.....	100	238	9	Ex.	Indef.	1 yr.	yes	no	yes	yes	no	yes
United States Marine Hospital	Stapleton, N. Y.	48	154	.....	202	5	Ex.	July	1 yr.	yes	yes	yes	yes	$60	no
Marshall Sanitarium	Troy, N. Y.	.....	90	.....	90	2	Ap.	April	1 yr.	no	no	yes	no	$25	no
Rutherford Hospital	Rutherfordton, N.C.	70	.....	.....	70	0	Ap.	Indef.	Indef.	yes	few	few	yes	no	yes
Cincinnati Tuberculosis Sanatorium	Cincinnati, Ohio	.....	.....	.....	430	2	Ex.	April	1 yr.	no	no	yes	small	no	no
American Oncologic Hospital	Philadelphia, Pa.	.....	.....	.....	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Children's Homeopathic Hospital	Philadelphia, Pa.	88	88	24	200	3	Ex.	May	1 yr.	yes	yes	yes	no	no	yes
Children's Hospital of Philadelphia	Philadelphia, Pa.	16	56	.....	72	5	Ap.	Indef.	6-12 mos.	yes	yes	yes	no	no	yes
Jewish Maternity Hospital	Philadelphia, Pa.	.....	.....	40	40	1	Ap.	.....	3 mos.	no	no	no	no	no	no
Pennsylvania Hospital. Department for Mental and Nervous Diseases	Philadelphia, Pa.	.....	.....	350	350	6	Ap.	Indef.	Indef.	yes	no	yes	yes	no	yes
Philadelphia Hosp. for Contagious Diseases	Philadelphia, Pa.	.....	700	.....	700	6	Ap.	Indef.	Indef.	no	no	few	no	no	yes
Philadelphia Lying-In Charity Hospital	Philadelphia, Pa.	.....	.....	81	81	2	Ap.	Indef.	3 mos.	yes	no	no	no	no	yes
Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases	Philadelphia, Pa.	14	37	85	136	3	Ap.	*	1 yr.	yes	no	yes	yes	no	yes
St. Vincent's Home and Maternity Hospital	Philadelphia, Pa.	.....	.....	.....	450	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Christopher's Hospital for Children	Philadelphia, Pa.	16	16	24	56	3	Ap.	.....	1 yr.	yes	yes	few	no	.....	yes
Wills Hospital	Philadelphia, Pa.	yes	yes	yes	112	2	Ex.	Indef.	18 mos.	yes	yes	no	yes	no	no
West Philadelphia Hospital for Women	Philadelphia, Pa.	yes	yes	yes	70	2	Ap.	Indef.	Indef.	no	yes	yes	no	yes	yes
Woman's Southern Homes Hospital	Philadelphia, Pa.	15	13	24	52	3	Ap.	Indef.	1 yr.	yes	yes	yes	yes	yes	yes
Children's Hospital [7]	Pittsburgh, Pa.	yes	yes	yes	96	2	Ap.	Indef.	1 yr.	.....	.....	yes	.....	$50	yes
Eye and Ear Hospital [1]	Pittsburgh, Pa.	43	.....	.....	43	1	Ap.	.....	2 yrs.	yes	yes	yes	no	yes	no
Roselia Foundling and Maternity Hospital	Pittsburgh, Pa.	.....	.....	.....	215	2	Ap.	.....	.....	no	no	yes	no	no	yes
Tuberculosis League Hospital	Pittsburgh, Pa.	yes	yes	.....	110	2	Ap.	April	1 yr.	yes	no	few	yes	one	yes
Butler Hospital	Providence, R. I.	.....	200	.....	200	1	Ap.	Indef.	Indef.	no	yes	yes	yes	$1,000 (a)	yes
City Hospital (contagious and tuberculosis)	Providence, R. I.	200	.....	.....	200	3	Ap.	Indef.	3-6 mos.	yes	no	no	no	yes	no
Providence Lying-In Hospital	Providence, R. I.	.....	.....	100	100	2	Ap.	Indef.	4 mos.	yes	no	yes	no	no	yes
Newell and Newell Sanitarium	Chattanooga, Tenn.	40	10	6	56	2	Ap.	May	1 yr.	yes	yes	yes	yes	yes	yes
Chesapeake and Ohio Hospital	Clifton Forge, Va.	75	.....	10	85	1	Ap.	Indef.	1 yr.	no	yes	no	no	$50	yes
Elizabeth Buxton Hospital	Newport News, Va.	30	20	10	60	1	.....	.....	.....	no	yes	no	.....	.....	yes
Sarah Leigh Hospital	Norfolk, Va.	.....	.....	70	77	2	Ap.	May	1 yr.	yes	yes	yes	yes	$25	yes
Grace Hospital	Richmond, Va.	50	.....	.....	50	2	Ap.	April	1 yr.	no	yes	no	yes	.....	yes
Johnston Willis Sanitarium	Richmond, Va.	60	.....	.....	60	3	Ap.	April	1 yr.	no	yes	yes	yes	$50	yes
St. Luke's Hospital	Richmond, Va.	80	.....	.....	80	2	.....	.....	.....	no	no	few	yes	no	yes
St. Elizabeth's Hospital	Richmond, Va.	50	.....	.....	50	2	Ap.	Indef.	1 yr.	no	yes	yes	yes	.....	yes
Lewis-Gale Hospital, Inc.	Roanoke, Va.	50	.....	4	54	1	Ap.	April	1 yr.	yes	yes	yes	yes	yes	yes
Fairmont Hospital No. 3	Fairmont, W. Va.	30	8	12	50	1	Ap.	†	6-12 mos.	no	yes	yes	yes	yes	yes
Milwaukee Children's Free Hospital [1]	Milwaukee, Wis.	yes	yes	yes	60	2	Ap.	Indef.	1 yr.	yes	no	yes	yes	yes	yes
St. Mary's Hospital	Oshkosh, Wis.	75	.....	.....	75	2	Ap.	Indef.	1 yr.	no	yes	yes	yes	no	yes

1. Women interns admitted.
2. Women interns only.
7. Previous training required.
10. Interns furnished from Harper Hosp.

* May and November.
‡ Every six weeks.
§ Medical, nine months; surgical and orthopedic, six months.

† April and November.
¶ Every four months.
(a) Per year.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street . . . Chicago, Ill.

Cable Address : : : : "Medic, Chicago"

Subscription price - - - - - Five dollars per annum in advance

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SATURDAY, AUGUST 7, 1920

MEDICAL EDUCATION IN THE UNITED STATES

For the twentieth consecutive year we publish this week statistics dealing with medical education in the United States. The statistics are complete, and one needs but to review them to note the many improvements that have been made since 1901, when the publishing of these statistics was begun.

CHANGES OF THE YEAR

In all medical schools during the last session there were 14,088 students, or 1,036 more than during the previous session. These increases are in the first, third and fourth year classes, smaller second year classes following naturally the small freshman enrolment in the fall of 1918 caused by war conditions. The medical schools have passed the low ebb in enrolments which was expected with the enforcement of higher entrance requirements, and the pendulum is now swinging the other way. It is encouraging to note that the increased enrolments have been most marked in Class A medical schools, the number enrolled this year having increased from 87.9 to 89.6 per cent. of all students. The percentage in Class B schools decreased from 8.3 to 4.8, and in Class C schools it increased from 3.8 to 5.6. The figures for Class C schools, however, are uncertain since they are based on unverified reports.

The number of graduates this year was 3,047, or 391 more than in 1919. Note here, also, that the number of graduates of Class A colleges was increased by 470, while the numbers graduating from Class B schools decreased by 116. Of the Class C colleges, there were thirty-seven more graduates than in the previous year. It is pleasing to note that the number of graduates holding degrees from colleges of arts and sciences increased from 1,180 to 1,321, which is 43.5 per cent. of all graduates.

The number of medical colleges is eighty-five, the same number as last year. One Class B college [1] closed its doors, while a Class A college,[2] previously reported as having closed, determined to continue its existence for two more years.

1. The College of Physicians and Surgeons of Los Angeles, the College of Medicine of the University of Southern California.
2. Fordham University School of Medicine, New York City.

CHANGES IN SIXTEEN YEARS

The improvements in medical education during the last sixteen years have been noteworthy. In 1904, when the Council on Medical Education was created, the United States had more medical schools than all other countries of the world combined, the supply far exceeding the needs of the country. While the number of colleges has been reduced from 162 to eighty-five during the sixteen years, the number enforcing an entrance requirement of two years or more of collegiate work increased from four (2.5 per cent. of all colleges) in 1904, to seventy-eight (92.9 per cent.) in 1920. The number of medical students was decreased from 28,142 to 13,052—the lowest number—in 1919; but, during the same period, the number who had higher preliminary qualifications was increased from 1,761 (6.2 per cent. of all students) in 1904, to 13,408 (95.2 per cent.) in 1920. The number of graduates was reduced from 5,747 to 2,656—the lowest number—in 1919; but the number having higher preliminary qualifications was increased from 369 (6.4 per cent. of all graduates) in 1904, to 2,842 (93.3 per cent.) in 1920. While the annual totals of colleges, students and graduates have been decreased by about 50 per cent., the number of better colleges is nineteen times larger than in 1904, and the numbers of better qualified students and graduates are nearly eight times larger.

OTHER IMPROVEMENTS IN MEDICAL EDUCATION

Other improvements have also been made in medical schools. Formerly, many had no university connection, were conducted for profit, or were dependent solely on students' fees. Most of them had inadequate buildings and laboratory space, inadequate clinical material, and their curriculums were only partly graded. At present, all but a few are integral parts of high grade universities; they are enjoying increased incomes, either from state appropriations or private endowments; many have erected new college buildings and installed more and better equipped laboratories; they have employed larger numbers of full-time teachers; the majority are now carrying on more or less effective research; all have established closer relationships with hospitals furnishing more abundant clinical facilities, and the majority have adopted better methods of teaching in both laboratory and clinical departments. These changes are producing physicians who, both educationally and professionally, are far better equipped to assume the responsibility for the prevention and cure of disease than those graduating in any former period.

COST OF MEDICAL EDUCATION

These improvements have naturally added largely to the cost of medical education. Tuition fees have been increased by some of the medical schools, but not to so great an extent as to cover the cost of medical teaching, which is from three to several times what is charged for tuition fees. The difference, of course, is met by state aid and private endowment. The

increased fees, meanwhile, will not prevent any deserving student from obtaining a medical education through a lack of money. During the last sixteen years, about 350 scholarships have become available in thirty-eight of our better medical schools, and generous loan funds have been provided for students of this class.

FUTURE IMPROVEMENTS NEEDED

The World War materially emphasized the need of still further improvements, many of which were already recognized. Not only should there be improved methods of clinical instruction in our undergraduate schools, but better and more abundant opportunities should be established for physicians to obtain graduate work. Already courses are being established so that physicians can devote from one to three years to work in the various specialties. Shorter courses should also be provided whereby physicians can devote their entire time during a few weeks or a few months to work along any narrow line of work in which they may be particularly interested. The pressing need in medical education today is for better and more abundant opportunities for graduate medical education.

NEW PROGRESS IN OLD FIELDS OF THERAPY

The recognized importance of digitalis in modern therapy is attested by the fact that digitalis preparations of some sort now form a part of the drug armamentarium of every physician. Yet we suspect that few equally well known drugs are the subject of as much uncertainty and variation in efficacy in the hands of the "busy practitioner." Many decades have elapsed since Withering introduced digitalis into medical practice, but its therapeutic possibilities as well as its limitations are still worthy of renewed careful study.

Some of the progress in the field of digitalis therapy was summarized [1] at the New Orleans session of the Association. Foremost, perhaps, is the growing recognition of the need of pharmaceutic digitalis preparations of known potency. Now that the crude leaves which contain the active drugs are collected in many places where they are grown under a diversity of agricultural conditions, it would be surprising, indeed, if the content of potent principles were not variable in different lots. Under these circumstances, galenic preparations must necessarily vary with the leaf from which they are prepared. Thanks to the development of appropriate methods of physiologic assay, however, digitalis preparations can now be evaluated in terms of their real potency. In this way it has been ascertained that pharmacy no longer is dependent on restricted areas for drug plants; furthermore, products can be prepared which are stable and constant, as pharmacopeial standards demand.

Again, the physician has learned, largely through the leadership of Cary Eggleston,[2] how to estimate digitalis dosage on the basis of body weight, whereby the haphazard guesswork of "drops per day" has been improved on. Furthermore, the desirability of employing the drug in doses sufficient to produce the requisite beneficial results is being emphasized as never before. As the possibilities of overdosage can be recognized by the occurrence of symptoms such as nausea, or with greater refinement by the electrocardiogram, it becomes possible to push the dosage speedily to the limit of tolerance with corresponding therapeutic advantages. Under proper control the estimated amount of digitalis has even been given in a single dose so that effects which ordinarily require a week for their manifestation may be obtained within thirty-six hours.[3] There remains the important need of differentiating more clearly the patients for whom digitalis is actually indicated, so that it may be used both wisely and well. Finally, the medical observer should learn from the history of digitalis therapy that even in the long tilled fields of practice, experience and investigation may be applied to yield information that is new and useful.

THE DIETARY VALUE OF FRUITS

"Why do we eat fruits?" Few persons have stopped to consider the answer to this question, and it is somewhat doubtful whether an entirely satisfactory reply can be formulated. It requires only a moment's reflection, however, to conclude that any group of food products which enters so extensively into the dietary of mankind must have some virtue worthy of notice. Investigators are agreed that the fruits do not rank high as sources of energy to the body. Otherwise expressed, their calory values are rather low in comparison with the preponderance of the common food products. The fruits are almost without exception devoid of fats and poor in protein; at most the true nutrients are represented by a small content of carbohydrate, such as the sugars in the banana and the orange. Water forms a large part of their make-up in every instance.

Writers on nutrition in the past have been accustomed to refer to the value of the "mineral nutrients" in fruits, although it would be difficult, indeed, to make any unique claims for them in this respect. Of lime or phosphoric acid, for which the body is most likely to feel a need at times, the fruits surely cannot be regarded as valuable contributors. Many of these plant products contain organic acids, notably in the case of the citrus fruits. To these, dietary tradition has ascribed a laxative potency. When it is recalled, however, that most of the fruits also contain more or less indigestible vegetable constituents, such as waxes, gums and cellulose-like carbohydrates, one may well hesitate

1. West, H. F., and Pratt, J. H.: Clinical Experience with a Standardized Dried Aqueous Extract of Digitalis, J. A. M. A. **75**: 77 (July 10) 1920.

2. Eggleston, Cary: Digitalis Dosage, Arch. Int. Med. **16**: 1 (July) 1915.

3. Robinson, G. C.: Am. J. M. Sc. **159**: 121 (Jan.) 1920.

to choose between organic acids and "roughage" for an explanation of the laxative action popularly accepted.

Certain fruits, as well as a number of green vegetables, have long been understood to exhibit a quite different potency best expressed in their antiscorbutic effects. The latter are now ascribed to vitamins, that group of as yet ill-defined properties or substances which promote well-being in ways that still require elucidation. However indefinable it may be at present, the rôle of orange juice in averting disaster under certain conditions of feeding or in promoting the nutrition on certain dietary regimens is beyond dispute.

Aside from the recognized value of various fruits as antiscorbutics,[1] a reason why they may be used liberally in the diet is given in the new investigations of Osborne and Mendel.[2] They have demonstrated that the fresh juices of the edible parts of the orange, lemon and grapefruit contain the vitamin frequently spoken of as water-soluble B or antineuritic vitamin. The efficiency of these juices is not lost by suitable modes of desiccation. It is, indeed, surprising to learn that the potency of orange juice, for example, in the water-soluble vitamin, is comparable, volume for volume, with that of cow's milk. This must not be understood, of course, to apply to the nutrients as sources of energy, but only to the content of vitamin. It is even hinted that orange juice may contain some fat-soluble vitamin; if so, it will have been demonstrated to yield all the at present known types of vitamins. Little wonder that this citrus fruit has acquired a dietary popularity. The advocates of a national temperance drink may be disappointed in the relatively poorer showing of grape juice as a source of the vitamin.

Apples and pears are not devoid of vitamin of the water-soluble variety, though they cannot be rated as rich in this food factor. Prunes are apparently somewhat richer in it. Osborne and Mendel justly remark that the new observations with fruits place the dietary value of these foods, hitherto recommended because of their salt content, their laxative properties, or their antiscorbutic property, in a new light as sources of water-soluble vitamin. It is not justifiable to ascribe superior virtues in this respect to all fruits, for the banana has already been found lacking in pronounced vitamin potency. What a vitamin-containing product like the orange may contribute to nutrition in man has been demonstrated in the growth of infants by Byfield, Daniels and Loughlin.[3] The fruits, always regarded as palatable, are having their real worth established at length in a scientific way.

1. Scurvy and Antiscorbutics, editorial, J. A. M. A. **71**: 2000 (Dec. 14) 1918; Further Facts Regarding Antiscorbutics, ibid. **72**: 728 (March 8) 1919; Antiscorbutics: I, ibid. **73**: 271 (July 26) 1919; II, ibid. **73**: 338 (Aug. 2) 1919; The Preservation of Antiscorbutic Fruit Juices, ibid. **73**: 538 (Aug. 16) 1919.

2. Osborne, T. B., and Mendel, L. B.: The Occurrence of Water-Soluble Vitamines in Some Common Fruits, J. Biol. Chem. **42**: 465 (July) 1920.

3. Byfield, A. H.; Daniels, Amy L., and Loughlin, Rosemary: The Antineuritic and Growth Stimulating Properties of Orange Juice, Am. J. Dis. Child. **19**: 349 (May) 1920.

Current Comment

HOSPITALS PROVIDING ACCEPTABLE INTERNSHIPS

We publish this week a list of the hospitals which, after careful consideration by the Council on Medical Education and Hospitals, have been considered in position to furnish satisfactory internships for medical graduates. This is the fourth revision of the list first printed in pamphlet form in 1914. Since that time, however, more complete data have been secured so that the present list is correspondingly more reliable. The list includes 593 hospitals having a total of 361,162 beds and providing opportunities for 3,420 interns. Those listed represent only about 10 per cent. of all hospitals in the United States having ten or more beds, although they have about 50 per cent. of the total bed capacity. Altogether, only 1,126 out of the 6,440 reported that they desired to have interns, and only 593 were found in condition to furnish satisfactory interships. Some did not send reports on which a reliable decision could be made. For a general training the student is urged to enter one of the 469 general hospitals. The state and special hospitals are better for those who have already had their general internships but who wish to secure further training in some particular specialty. This list will undoubtedly be of great service to medical students in selecting a hospital where a satisfactory internship can be obtained.

THE HOSPITAL INTERN PROBLEM

As noted in the previous comment, 593 of the 6,440 hospitals in the United States require annually 3,420 interns, or about 400 more than are turned out this year by the medical schools. Nevertheless, these hospitals represent a very small proportion of all hospitals in the country, and the number seeking interns is increasing. It can be seen, therefore, that the number of students graduating annually is not sufficient to supply interns for all the hospitals seeking them, far less to meet the demand if all general hospitals should desire to use them. This, meanwhile, is one of the bases for the claim that there is a dearth of physicians. It can readily be seen, however, that sufficient interns could not be provided for all hospitals even if the annual number of graduates exceeded by several times the normal output for this country. The intern problem must be solved in some other way. Many hospitals, even now, are employing physicians as residents or house officers at increasing salaries or with gradually increasing privileges in the way of practice. Interns, also, should be relieved of much of the work required of them which should be done by orderlies employed for that purpose. History-writing and records, which have depended largely on intern service, can be kept up by staff physicians through the use of stenographers. It is certain that the increased demand for interns does not justify either the lowering of educational standards or a multiplication of medical schools.

BENEFITS FROM MEETINGS OF PROFESSIONAL ORGANIZATIONS

The president of the American Bar Association,[1] in an open letter to the members, defines that organization as the "tie of fraternal interest in all that concerns the profession that binds it together." While the communication is addressed to members of the legal profession, its truth applies equally to physicians. The following statement regarding the value of the annual session is paraphrased but little in order that it shall appeal to Fellows and members of the American Medical Association:

> The sight of the leaders of the medical profession is stimulating. It adds much to the interest with which a medical paper is read if the author is not an abstraction but a creature of flesh and blood, whose personal appearance is known and whose voice has been heard. . . . Of these things I am sure: that the sense of brotherhood and the belief in the friendliness and nobility of the profession will be strengthened by such contact, and that faith in the zeal and integrity of members of the profession will be justified by experience. The reserve potential strength of a profession like ours can be summoned to effective exercise only through an association, national in scope, and wielding the consolidated strength of a united and thoroughly patriotic organization.

The meetings of the constituent state medical associations and of the component county medical societies present opportunities both for an interchange of professional knowledge and for an appreciation of personality which must make all better fitted to render professional services to their fellow men.

CAREERS FOR MEDICAL MEN

The higher educational qualifications now required of medical students and the greatly improved methods of instruction have resulted in multiplying the careers, aside from regular practice, which are now open for graduates of medicine. At the present time, for example, the graduate may enter the medical service of the Army, the Navy or the Public Health, Canal Zone or Indian services; he may find a special opportunity in industrial medicine; in insurance; as a school physician; in public health work; on hygiene boards; in administrative work in general hospitals, or as a medical attendant in an institution for the insane, the crippled or the feebleminded. There is also an increasing demand for medical missionaries and for medical teachers abroad. There is a growing demand for medical teachers and unusual opportunities in medical research. There is an increasing number of research institutes, providing special advantages with fair incomes for physicians especially qualified for investigative work. So many, indeed, are the opportunities for the well educated physician, aside from regular practice, as to more than justify the present reasonably high standards of preliminary and medical education. The great increase in the number of careers open to medical men are not only benefiting larger numbers of well trained graduates in medicine, but also, through their activity and influence, insuring a better understanding in the future of problems relating to public health and the prevention and cure of disease.

1. Carson, H. L.: Reasons for Joining the American Bar Association, July, 1920.

THE DIGESTION OF EGG WHITE BY INFANTS

In the progress of the sciences on which medical knowledge is based, many traditions and items of empiric information have received justification, often most unexpectedly, by the discovery that they are based on significant truths. On the other hand, the enlargement of the horizon of verifiable facts has not infrequently resulted in discrediting prejudices and preferences that have been fostered without demonstrable justification. Thus, uncooked starch has categorically been classed as a substance indigestible in the human alimentary tract and therefore to be shunned as a dietary component. Yet in a recent issue of THE JOURNAL,[1] the untenability of this long taught assumption was pointed out on the basis of unexceptionable evidence that healthy men can ingest, without detriment, quantities of "raw" starch exceeding 200 gm. a day. The myth that infants lack an amylolytic enzyme in their saliva has disappeared before actual investigation of the child rather than by reading a textbook. In fact, we suspect that more than one infant has been given some uncooked starch in the form of cereal decoction without untoward effects. Another tradition of the impotence of the alimentary apparatus in infancy has been broken by Grulee,[2] who has examined the stools after feeding egg white. Despite the fact that the extremely delicate precipitin test was used, the "raw" protein was found to have disappeared from the bowel in almost every case in which the quantity of egg protein ingested was not unduly large. As Grulee concludes, it would seem from his studies that egg albumin is as a rule broken down completely by the digestive processes in infants and children. This holds good even when egg white is used in small quantities for the new-born. The alternative that egg albumin is completely absorbed unchanged is unlikely.

NO DEARTH OF PHYSICIANS

The rapid decrease in the enrolments of medical students and in the number of physicians graduating annually during the last sixteen years has been frequently misinterpreted as having resulted in a scarcity of physicians in the United States. But what are the facts? In 1904, it will be remembered, this country had more than half the world's supply of medical schools; many of these were conducted for profit; competition was strong; solicitors visited offices, factories and crossroads to bring in students. As a result, medical schools were crowded far beyond the normal needs. Then came the campaign for improvement. Mergers of medical schools began to take place; others of extremely low grade ceased to exist, and higher entrance requirements were generally adopted. It was expected that the numbers of medical colleges, students and graduates would be considerably reduced. At the same time, the annual number of graduates with higher educational qualifications was largely increased. The only time in several decades when the demand for physicians exceeded the supply was during the brief

1. Behavior of Uncooked Starch in the Digestive Tract; Current Comment, J. A. M. A. **75**: 111 (July 10) 1920.
2. Grulee, C. G.: Precipitins for Egg Albumin in Stools, Am. J. Dis. Child. **20**: 15 (July) 1920.

period of the war, but then the demand was equally great for skilled workers in all other lines of human endeavor, except during the severe influenza epidemic. There is no scarcity of physicians so far as numbers are concerned, and the supply of better qualified medical men is being rapidly increased. Meanwhile, as shown by the statistics published this week, the pendulum is swinging back and the numbers of both medical students and graduates show marked increases over the previous year. It is satisfactory to know, however, that the increased quantity represents also an improved quality from the standpoint of both preliminary and professional education.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

DISTRICT OF COLUMBIA

Tribute to Dr. Kober.—On the occasion of the seventieth birthday of Dr. George M. Kober, March 28, his pupils, friends and co-workers in the Medical Society of the District of Columbia and allied scientific societies and civic organizations, at a dinner in his honor, tendered him a silver loving cup as a testimonial of their admiration and esteem. The same friends have joined in issuing an anniversary volume, which has just come from the press as the George M. Kober anniversary number of the *American Journal of Physical Anthropology*, of which Dr. Kober has been an associate editor since its inception. Besides a number of scientific articles dedicated to Dr. Kober, the volume contains an account of the special tributes recently paid to Dr. Kober and recounts his work for the cause of scientific medicine, public health and social welfare.

ILLINOIS

Clinics to Be Established.—A venereal disease clinic has been opened in the courthouse at Rock Island under the supervision of Dr. Daniel F. Paul.——Children of Rock Island suffering from tonsillitis or other throat infections may receive free treatment at a clinic to be established at St. Anthony's Hospital under the charge of Drs. Daniel F. Paul, Lewis Ostrom, Jr., Charles E. Robb and Carl J. F. Rochow.

Mobile Diagnostic Laboratory.—The mobile diagnostic laboratory maintained by the division of diagnostic laboratories of the state department of public health is proving of great value, not only in the suppression of epidemics, but in the rapid and accurate completion of communicable disease surveys. Under the present arrangement a laboratory technician may be at any point in the state within a very short time carrying with him all necessary material. This traveling laboratory is so equipped that it may be in active operation immediately after arrival.

Childbirth Mortality During the Influenza Epidemic.—The division of vital statistics has made a detailed investigation of the mortality of women in the puerperal state and of children prematurely born or dying during gestation; on account of the influenza and influenza-pneumonia epidemic. During the epidemic of January and February of this year, in the state outside of Chicago, there were 210 deaths of mothers and 171 deaths of infants from this cause, or a total of 381. Excluding Cook County the highest mortality was in Williamson County with 17 deaths and the next highest in Winnebago County with 15; Lake County was third with 14; LaSalle County fourth with 13, and Kane County fifth in order with 11 deaths.

INDIANA

Hospital Reopened.—Goshen Hospital, which has been closed on account of a difference of opinion between the board of directors and the physicians of the staff, has been reopened under the management of Mrs. Laura Fell White.

Chemical Research Workers Organize.—A new medical society has been organized in Indianapolis to emphasize the value of chemical research. It is composed of members of the Indianapolis Medical Society who are interested in that branch of the profession and starts out with a charter membership of more than sixty-six. Dr. Murray Hadley is president and Dr. Homer Hamer, secretary-treasurer.

MONTANA

Honor Medical Guests.—A dinner in honor of physicians visiting in Butte after the state medical society meeting at Helena was given by members of the staff of the Murray Hospital at the Butte Country Club, July 16. The guests of honor were Drs. Melvin S. Henderson, Rochester, Minn.; Cresswell T. Pigot, Roundup, president of the state medical society; Elmer G. Balsam, Billings, secretary of the society, and George E. Brown, Miles City.

Tuberculosis Fighters Elect Officers.—At the annual meeting of the Montana Association for the Study and Prevention of Tuberculosis held in Helena, July 12, the following officers were elected: president, Mr. H. R. Cunningham, Helena; honorary vice presidents, Gov. S. V. Stewart and senators T. J. Walsh, Helena, and W. A. Clark, Butte; vice presidents, Mrs. P. H. McCarthy, Butte, and Drs. Lewis Allard, Billings, and Oscar M. Lanstrum, Helena; secretary, Mrs. Sara E. Morse, and treasurer, Mr. T. O. Hammond, Helena.

State Health Board Building Dedicated.—The newly completed state board of health building at Helena was dedicated with impressive ceremonies, July 12. The principal addresses were delivered by Prof. W. M. Cobleigh, Bozeman, state chemist, on "The Relation of the Montana Public Health Association to the State Health Agencies"; the governor; Chairman Dan D. Donohue, Butte, president of the state board of health; Dr. James A. Hayne, Columbia, S. C., state health officer of South Carolina; Dr. Henry M. Bracken, Minneapolis, of the War Risk Bureau; Dr. Edward M. Larson, Great Falls, president of the state medical association; Mr. Harry Call, head of the state Red Cross; Dr. Oscar M. Lanstrum, Helena, and chancellor E. C. Elliott of the state schools.

NEW YORK

Counsel of State Society Resigns.—James Taylor Lewis, Esq., for the last twenty years legal adviser of the Medical Society of the State of New York, has resigned to take effect September 1. Mr. Lewis has been compelled to resign because the society has declined to increase his salary to keep up with the ever increasing expense connected with the conduct of his office.

Personal.—Dr. Samuel W. Hamilton, formerly a member of the staff of the Utica State Hospital, has been appointed chief medical director of the Hospital for Mental Diseases, Philadelphia.——Dr. Halsey J. Ball, Glens Falls, has been appointed sanitary supervisor of the district which includes the counties of Oneida, Herkimer, Madison and Otsego.——Dr. G. Walter Zulauf, assistant superintendent of the Buffalo General Hospital, has been appointed superintendent of the Allegheny General Hospital, Pittsburgh, succeeding Dr. John M. Lawler, resigned.

New York City

Jewish Memorial Hospital Acquires Property.—Inwood House, an institution for unfortunate mothers and infants on Two Hundred and Eighth Street, has been sold to the Jewish Memorial Hospital for $260,000. Possession will be given December 1.

Police Sanatorium.—Police Commissioner Richard E. Enright announces that a sanatorium for members of the metropolitan police force who become disabled by accident or disease will be erected in the Catskills or Adirondacks out of funds raised by the police field games this year.

Hospital Buys Seaside Home.—The directors of the Memorial Hospital, Brooklyn, have purchased the former home of the Children's Aid Society at Coney Island. They announce that a campaign will soon be started to raise funds to convert this building into a well-equipped hospital with accommodations for 150 patients.

Physician Obtains Writ.—Dr. Melville A. Hays has obtained a writ requiring the state prohibition director to show by what authority he refused to issue to Dr. Hays a

book of prescription blanks for liquor in accordance with the prohibition law. Dr. Hays claims that the blanks have been withheld in keeping with the policy of refusing to permit a physician to write more than 100 prescriptions for liquor within three months.

Personal.—Dr. Samuel W. Hamilton, Manhattan, medical director of the national committee for mental hygiene, has been appointed medical inspector in hospitals for the insane, with a salary of $5,000.——Dr. Otto U. Hoffman, Brooklyn, has resigned as dean of Long Island College Hospital, and has moved to New York City, to continue the practice of internal medicine.——Dr. Royal S. Copeland, commissioner of health, returned from his trip to Europe, July 15.——Dr. Jacob Geiger has been appointed director of the pathologic laboratories of the New York Diagnostic Clinics.

NORTH CAROLINA

Personal.—Dr. Everett F. Long, Lexington, whole-time health officer of Davidson County, has resigned to accept the same position with Wake County, including the city of Raleigh.——Dr. William H. Scruggs, Jr., Asheville, has resigned as health officer of Buncombe County.——Dr. Andrew J. Warren, health officer of Charlotte, has resigned to take effect not later than October 1, to accept a position with the Rockefeller Foundation.——Dr. Robert A. Herring has been appointed health officer of Wilmington.

Hospital Items.—Dr. Raymond L. Pittman, Fayetteville, announces the early completion and opening of the Pittman Hospital.——Mr. Fred L. Seely, Asheville, announces his purpose to construct and equip at Asheville an orthopedic hospital to contain at the beginning fifty beds and be open to crippled children without regard to residence. Dr. W. Pinkney Herbert and other leading Asheville surgeons will constitute the staff of the new institution.——Drs. Arthur T. Pritchard and James G. Anderson, Asheville, announce the early erection of a general medical and surgical hospital to cost $100,000. It will be of modern fireproof construction, and four stories high.——The Meriwether Hospital, Asheville, has recently become the property of Dr. Eugene B. Glenn, who has bought out the interests of the other owners. Dr. Glenn has announced his intention to continue the operation of the institution without change in the staff or management, but with improvements and additions to the equipment.

OHIO

Personal.—Dr. Joseph H. Wilson, Bellefontaine, is seriously ill as the result of a cerebral hemorrhage, July 16.

Ambassador to Visit Cincinnati.—At the celebration of the one hundredth anniversary of the founding of the Medical College of the University of Cincinnati to be held in Cincinnati, November 4, Sir Auckland Geddes, ambassador to the United States from Great Britain, is to be the principal speaker.

OKLAHOMA

Examining Board Election.—At the annual meeting of the Oklahoma State Medical Examining Board held in Oklahoma City, July 14, Dr. Lewis E. Emanuel, Chickasha, was elected president; Dr. William T. Ray, Gould, vice president; Dr. James M. Byrum, Shawnee, secretary (reelected).

Physician Loses License.—The Oklahoma State Medical Examining Board on July 14, is said to have revoked the license of Dr. John M. Lee, Oklahoma City, on account of claims of the Electro-Medical Doctors Institute, Tulsa, to cure gallstones and kidney disease by an electrical process, with which institute Dr. Lee was connected.

Physicians Must Report Venereal Diseases.—Under the rules which became effective July 1, and which have been promulgated by the state health commissioner, physicians of the state are required to report to the state health officer every case of venereal disease or kindred afflictions. Persons found infected will be detained and subjected to treatment and penalties are provided for violation of these rules.

PENNSYLVANIA

Personal.—Dr. W. S. Moore, Washington, has been appointed a medical missionary to Egypt under the United Presbyterian Board of Foreign Missions and will sail in September——Dr. William J. Crookston, Pittsburgh, associate medical director of the state health department, has been appointed chief of the division of tuberculosis clinics, succeeding Dr. Karl Schaffle, Camp Hill.——Dr. Joseph J. Meyer has been appointed chief of the genito-urinary dispensary, Johnstown.——Dr. Samuel S. Hill, Wernersville, superintendent of the South Mountain Asylum for Chronic Insane, has been appointed chairman of the Berks County Chapter, American Red Cross.——Dr. Thomas H. A. Stites, medical director of the State Tuberculosis Sanatorium at Hamburg since 1914, has resigned, effective August 1, and has entered the U. S. Public Health Service with the rank of surgeon.

Philadelphia

Hospital Item.—Waynesboro has secured more than $200,000 of the $300,000 required for its new hospital.——The Reading Hospital building fund has now more than $400,000 of the $750,000 required.

Personal.—Dr. Chevalier Jackson, professor of laryngology at Jefferson Medical College, has been appointed professor of bronchoscopy in the University of Pennsylvania, but will not sever his connection with Jefferson Medical College.——Dr. David A. Smith has been appointed chief resident physician at the University Hospital, Philadelphia.——Dr. John E. B. Buckenham has resigned as superintendent of the Hospital for Contagious Diseases, to become librarian of the Masonic Grand Lodge of Pennsylvania.——Dr. John Wanamaker III has been reinstated as police surgeon by Director Cortelyou.——Dr. John D. Donnelly has been appointed pediatrician at the State Tuberculosis Clinic.

TEXAS

More Deaths from Bubonic Plague.—Two additional deaths from bubonic plague were announced, July 29, in Galveston by P. A. Surg. J. Holmes Smith, U. S. P. H. S. This brings the total number of cases to five, four of which have proved fatal. Both of the deceased were Mexicans.

Contribution for Venereal Disease Work Necessary.—Dr. Oscar Davis of the state health department, Austin, has informed the city council of Houston that it will be necessary for the city to contribute $12,000 if the venereal disease work is to be carried on for the remainder of the year. For nearly two years the city has furnished half of the annual amount needed to carry on the work, and the federal government one half. The government appropriation for the work is now said to be exhausted.

VIRGINIA

Medical Officers Club Organized.—At a meeting held recently at Hampton Roads Yacht Club, Willoughby Beach, the Medical Officers' Club of Norfolk was organized with an initial membership of fifty. Lieut.-Col. Junius F. Lynch was elected president, and Capt. James L. Stringfellow, secretary.

Appropriation for Inspection and Correctional Work.—The executive committee of the state board of health on July 13, adopted a resolution providing that the sum of $20,000 be appropriated to be used as state aid to counties or communities for medical and physical inspection and correctional work through the public schools. This financial aid is limited to one half of the amount appropriated for the same purpose by the local authorities.

Improvement of Health of Convicts.—A conference was held at the state penitentiary, July 12, to endeavor to bring about ideal health conditions at the state penitentiary, the state farm, and the various convict camps. At this conference were representatives from the board of directors of the penitentiary, the president, faculty and board of trustees of the Medical College of Virginia, the state department of health, the U. S. Public Health Service and the Medical Society of Virginia.

Personal.—Dr. William P. Caton, Accotink, field director for the state department of health of the Pittsylvania County unit, has been appointed health officer of Fairfax County, succeeding Dr. Edward L. Flanagan, Richmond, resigned.——Dr. James H. Hargrave, Petersburg, charged with the performance of a criminal operation was found not guilty, July 1.——Dr. Dean B. Cole, Chilhowie, executive secretary of the state tuberculosis association, has resigned to accept a position on the resident staff of the Bellevue Hospital, New York City.

WASHINGTON

Personal.—Dr. James E. Crichton, Seattle, formerly vice chairman of the Seattle Red Cross, has succeeded Mr. Earl Kilpatrick as division manager of the northeastern division.——Dr. Frank A. Plum, Seattle, has been appointed medical

director of the City Hospital, Philadelphia, succeeding Dr. Paul A. Turner, resigned.

Trudeau Society Election.—The Washington Trudeau Society was organized at the closing session of the annual convention of the Washington Tuberculosis Association at North Yakima, July 9. Membership in this society is restricted to physicians who confine their practice to tuberculosis, and the following officers were elected: president, Dr. Fredericka Slyfield, Seattle; vice president, Dr. Frank M. Miller, Spokane; honorary vice presidents, Drs. Edward R. Baldwin, Saranac Lake, N. Y., and Christen Quevli, Tacoma; secretary, Samuel J. Cary, Seattle, and treasurer, Dr. Leon G. Woodford, Everett.

WYOMING

State Society Meeting.—The Wyoming State Medical Society will hold its eighteenth annual meeting at the Elks' Home, Cheyenne, August 9 and 10, under the presidency of Dr. George P. Johnston, Cheyenne. On the first evening the delegates will be entertained at dinner at the Cheyenne Country Club, by the Laramie County Medical Society. Among the visiting speakers will be Drs. James M. Patton, Omaha, whose subject is "The Doctor and the Adult Blind"; Josiah N. Hall, Denver, who will present a paper on "The Diagnosis of Empyema," with roentgen-ray pictures, and Dr. Thomas E. Carmody, Denver, who will speak on "Focal Infections."

CANADA

New Professors from Great Britain.—Principal Bruce Taylor of Queens' University, Kingston, Ont., and Dr. Walter T. Connell are in England and have engaged Dr. James Miller, Edinburgh, for the chair of pathology, and Dr. L. J. Austin, London, for the chair of clinical surgery at the university. Additional important appointments are shortly to be made.

Public Health News.—During the five year period from 1914 to 1918, and excluding influenza, tuberculosis claimed more lives in Saskatchewan than any other communicable disease. The average death rate for tuberculosis was 45 per hundred thousand as compared with 6.2 for measles; 8.2 for whooping cough; 8.2 for diphtheria, and 8.8 for typhoid fever. There is a steady increase in the death rate from tuberculosis from year to year. In 1914 it was 35.2 per hundred thousand; 1915, 38.2; 1916, 44.6; 1917, 47.4; 1918, 54.5, making the average for the period 45.

Hospital News.—St. Michael's Hospital, Toronto, has in view enlargement of that institution, provided the serum treatment of cancer as introduced by Dr. Thomas J. Glover, Toronto, proves a permanent success. Dr. John A. Amyot, Ottawa, deputy minister of public health, has paid a visit to Toronto and inspected the patients, microscopic specimens and pathologic exhibits, and expresses his opinion that the serum is promising. The hospital authorities have asked Dr. Julian D. Loudon, Toronto, chief in medicine, to work with Dr. Glover, and Dr. Edmund E. King, Toronto, surgeon to the hospital, has also been pressed into service in the cancer clinic.

Personal.—The Canadian Red Cross Society has appointed Dr. Ruggles K. George, Toronto, as director of information on public health.——Dr. Peter MacNaughton, formerly assistant superintendent at the Hamilton, Ont., Hospital for the Insane, has been appointed superintendent of the Coburg Hospital, which was formerly the Ontario Military Hospital, but which has been made a provincial hospital for insane.——Dr. William K. Ross of the Kingston Provincial Hospital for the Insane, has been appointed superintendent of the Brockville Hospital for the Insane, succeeding the late Dr. John C. Mitchell. Dr. Fulton S. Vrooman, who has been assistant superintendent at Brockville, has been transferred to a similar position at the Toronto institution. Dr. George E. Kidd, on the staff at Brockville, succeeds Dr. Vrooman, and Dr. Robert D. Fletcher, Winnipeg, Man., goes to the Toronto institution as an assistant physician.

GENERAL

Secretary of American Medical Association Undergoes Operation.—Dr. Alexander R. Craig was operated on, August 4, for cholelithiasis. As we go to press his condition is reported as favorable.

Diagnosis School Established.—On account of the numerous tuberculosis activities which have centered recently in Springfield, Ill., this city has been selected by the United States Public Health Service as the location for a school of diagnosis for acting assistant surgeons and local examiners assigned to the care of sick and wounded soldiers in the eighth district, comprising the states of Michigan, Wisconsin and Illinois.

Warning.—A Texas physician sends the information that a man calling himself J. P. McLay and claiming to be a representative of the Jones Service Company of Kansas City is traveling in Texas, selling a service fee for $70. He suggests that this may be the same individual against whom a warning was issued in The Journal, July 24, under the name of J. P. McKeen.

Emergency Dressing Parcel.—A standard emergency surgical dressing parcel has been adopted by the American Red Cross, and endorsed by the Surgeon-General of the Army, the Section on Surgery of the American Medical Association, the American College of Surgeons, and the Conference Board of Physicians in Industrial Practice. The parcel is wrapped in heavy brown paper, sterilized and paraffined, and contains ten gauze compresses, one absorbent pad, one rolled wadding bandage, one muslin bandage, one gauze bandage, one triangular bandage and one safety pin.

Appropriation for Social Hygiene Work.—In the sundry civil bill, the sixty-sixth Congress appropriated $1,565,000 to the United States Interdepartmental Social Hygiene Board for use during the fiscal year ending June 30, 1921. This includes $80,000 for the expenses of the board; $400,000 for assisting states in protecting the military and naval forces of the United States against venereal diseases; $750,000 for allotment to the various states for the prevention, treatment and control of venereal disease; $85,000 for payment to universities, colleges and other suitable organizations and institutions to discover more effective measures in the prevention of venereal disease, and $250,000 for payment to universities, colleges and other suitable institutions and organizations to discover and develop more effective educational measures in the treatment of venereal disease.

FOREIGN

Gasoline Privileges for Physicians.—Farmers, physicians and veterinarians are given priority in the distribution of gasoline in France, according to a recent decree.

Appropriation for Work on Heredity.—The Prussian Academy of Sciences has granted Dr. Agnes Bluhm 1,000 marks to continue her experimental work on problems of heredity.

Tribute to Depage.—In recognition of Depage's work at the hôpital de l'Océan, in the narrow strip of Belgium that was not invaded by the enemy, his pupils and friends are planning to present him with a torso bust, the work of a leading Belgian sculptor.

Tribute to Pérez.—Our Vienna exchanges mention that the university authorities recently held a special meeting in honor of Dr. F. Pérez, the ambassador from Argentina in Vienna, in token of gratitude for his efforts on behalf of the university. Pérez' name is associated with the bacteriology of ozena.

Disease Menaces Italian Charcoal Burners.—Pellagra, malaria and influenza are said to have caused the deaths of many Italian charcoal burners in the district of Citta di Castello during the last few months. This is believed to be due to the universal diet of polenta and life in the unhealthy marshes surrounding the town.

Petition to Name a Street for Surgeon.—The *Paris médical* relates that twenty of the members of the municipal council of Paris have signed a petition asking that some street in Paris be named for Dr. H. Morestin in token of appreciation of his services during the war, so many persons owe to him the reconstruction of their faces.

International Surgical Congress.—At the meeting of the Fifth International Surgical Congress, held in Paris, July 19 to 22, representatives of thirteen nations presented papers. During the mornings, clinics were held in the various hospitals of Paris; in the afternoons and evenings, the scientific program was carried out. Sir William MacEwen, professor of surgery in Glasgow University, was elected president, and London was selected as the next place of meeting, the date being fixed as July 16, 1923.

Swedish Government Aids Medical Journals.—The *Svenska Läkartidningen* records the appropriation by the government of 5,000 crowns to aid the Swedish Medical Association in publishing its three journals, the semimonthly, quarterly and transactions. Three journals devoted to hygiene are given from 1,000 to 1,500 crowns, and four specialist journals from 500 to 1,200. To aid in starting the new *Acta Oto-Laryn-*

gologica, 4,000 crowns are appropriated. Each of the journals specified is to donate a number of copies to the university libraries.

Medical Journals Increase Subscription Price.—The medical section of the Italian Association of the Scientific Press has been considering that the cost of paper has gone up 1,000 per cent. and of printing 300 per cent., with other expenses increasing to correspond, and consequently it has voted to increase by 100 per cent. the subscription price of the Italian weekly medical journals for the last half of 1920, even for the subscribers already enrolled. Other journals not published so often are to have the subscription price increased by 50 per cent. The notice appears in the *Policlinico* of June 28, signed by Prof. G. Sanarelli, president of the association.

Medical Center in Constantinople.—Americans in Constantinople have established a hospital as the nucleus of a medical center in the Near East. Admiral Bristol, the American high commissioner, is chairman of the board of directors, which includes representatives of the American Chamber of Commerce, the American Red Cross, the American Committee for Relief in the Near East, the Constantinople College for Women, various missionary boards, and Robert College. The equipment for the hospital, which will have a capacity of 100 patients, is to be supplied by the American Red Cross, and the personnel by the American Red Cross and American Committee for Relief in the Near East. Dr. A. R. Hoover will be director of the hospital, and Dr. Elfie Richards Graff, assistant director.

Deaths in Other Countries

Dr. **J. Bjerrum,** the leading ophthalmologist of Denmark, aged 68. Bjerrum's method of perimetry, test types, etc., and his manuals of ophthalmology have made his name familiar. He retired from his chair in the medical faculty of Copenhagen in 1910.——Dr. **L. Rydygier,** professor of surgery at the University of Lemberg, a pioneer in resection of the stomach and of invagination, aged 70.——Dr. **J. B. Miranda,** formerly professor of toxicology and pharmacy in the medical faculty of Santiago, Chile, at an advanced age.

Government Services

Hospitals to Take War Risk Cases

Sixteen naval hospitals have been notified that they will be expected to take in war risk cases for reconstruction, provided they have sufficient available personnel. These patients are to be in addition to Navy or Marine Corps patients. There are at present 3,200 beds available at naval hospitals. When accommodations can be furnished, local representatives of the Bureau of War Risk Insurance will be notified.

Return of General Gorgas' Body

Instructions have been issued for the United States Army Transport *Pocahontas* to stop at Southampton, England, on its return from Europe to take on board Mrs. Gorgas and the body of General Gorgas. The *Pocahontas* was expected to touch at Southampton, about July 26. The final arrangements for General Gorgas' funeral will not be announced until the arrival of the body in the United States, but the interment will be at Arlington.

Schools for Medical Officers

Arrangements have been made with the Surgeon-General that not to exceed five medical officers of the National Guard may attend the course at the Army Medical School, Washington, D. C., which begins on or about October 1, and continues about eight months. Applications through the Adjutant-General of the respective states should be made to the Militia Bureau before September 15.——The Adjutant-General of the Army has approved the application of the Surgeon-General for the development of the field school for the medical department on the Carlisle, Pa., military reservation. Notice will be given later of the opening of this school. National Guard officers may attend this school and will be entitled to the same pay (not above that of captain), quarters, etc., while actually in attendance at the school, and the same travel allowances to and from the school as are allowed officers of the Regular establishment.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 17, 1920.

The Increased Subscription of the British Medical Association

As stated before, the subscription to the British Medical Association has been increased by 50 per cent.—from $10.50 to $15.75. The reasons given are the depreciation in the value of money and increase in virtually all forms of expenditure. Comparing the year 1919 with 1918, the cost of printing increased by $20,000, paper by $17,500, staff expense by $10,000, and meetings of the council and committee by $11,500. These items, with increased capitation grants to branches, amounted to a total increase of $65,000. Against these increased expenses there was an increase of subscriptions of about $10,000, and from advertisements and sale of the *Journal,* of $45,000. For the year 1920 the estimated expenditure is $435,000 and income $418,000. Almost every item of expenditure is expected to be increased. Moreover, there are new items of expenditure—a Scottish office with a whole-time secretary which will cost $6,000 a year; an intelligence department costing about $4,000 a year, and the newly established lectures, which cost probably $1,000. The increased annual expenditure for 1920 may easily prove to be $75,000. If the subscription were not raised, a net increase of 1,000 members would be expected in 1920. The average number of resignations from the association in recent years has been 472. In 1913, when the subscription was raised from $6 to $10.50, the number of resignations was 2,675. It may be concluded, therefore, that the increased subscription will cost the association 2,200 members. The membership is now more than 22,200, so that if the same number leave the association it would be left with a membership of 20,000. Allowing 7,000 for oversea members and those who pay a reduced fee as junior members of the profession, the association would have $68,000 additional income. A smaller increase of subscriptions would meet the immediate needs, but it is considered necessary to have a reserve so as to be able to meet additional demands without further increase of subscription.

Failure of Sanatorium Treatment

Dr. W. H. Dickinson, medical adviser of the insurance committee of Newcastle on Tyne, gives a depressing picture of the prospects of the industrial consumptive. Out of 1,086 patients, only fourteen in whom tubercle bacilli were found in the sputum had secured "arrest" of the disease and were still alive and well when the report was completed. Even this is not the worst, for in respect of six of these there was some doubt as to the accuracy of the original observation, leaving only eight certain cases. This gloomy outlook is further illustrated by the histories of 1,126 patients, of whom 733 died while receiving sanatorium benefit, and a further sixty-four died after discontinuing the treatment, making a total of 797 known deaths. Treatment was stopped on account of "arrest" of disease in only 108 instances. Of these persons, eighty-one are now working or fit for work, four are known to have died, nine are still alive but have relapsed, and fourteen cannot be traced. The report proceeds: The outlook for a patient of the industrial classes in whose sputum tubercle bacilli have been demonstrated on at least two occasions is well-nigh hopeless under conditions similar to those that have prevailed in the past. Although much suffering has been relieved and many lives have been prolonged, the results achieved, as measured by the number of patients cured or restored to full working capacity, are very disappointing, considering the amount of money and energy expended, and

it behooves us to find out where we have failed and why. Ninety per cent. of the patients treated in the sanatorium were discharged improved in a greater or lesser degree, but the results were not lasting, and in the great majority of the cases relapse occurred under domiciliary treatment owing to failure to reproduce sanatorium conditions, or anything approaching them, in the home. It follows, then, that much of the money expended on sanatorium treatment has been wasted, and this state of affairs will continue until the conditions under which domiciliary treatment is administered are drastically reformed. Domiciliary treatment has proved the weakest link in sanatorium benefit, and this is particularly unfortunate, seeing that more than 80 per cent. of the treatment granted was given to the patient while living in his own home.

PARIS

(From Our Regular Correspondent)

July 16, 1920.

Compulsory Physical Education

The senate recently passed an act to organize physical education on a national basis. The first article of the act provides for compulsory physical education of children of both sexes; boys over 6 years old until their embodiment in the army or navy, and girls in primary and secondary schools, according to the special regulations governing public education.

Medical Theses

At its last session the council of the Paris medical faculty again took up the question of theses. Heretofore, each graduate was required to deposit 200 copies of his thesis; this has been reduced to sixty-five, with the object of reducing the expense incident to printing the pamphlets. As these copies were intended primarily for exchange with foreign universities, it follows that the exchanges would necessarily be restricted and this would detract considerably from the diffusion of French science abroad and of foreign works in France. The council therefore decided that the measure is susceptible of further study, the saving realized by the student being of less importance than the interference with the diffusion of French thought. An inquiry among publishers showed, in fact, that the saving amounts to about 40 francs for each printed signature, perhaps 100 or 120 francs on the average thesis costing 500 francs.

The Dangers of Neomalthusianism

For some time now, contraceptive apparatus have been sold openly by a large number of druggists and rubber merchants, and it is not an unusual sight to see them displayed in the show windows. This deplorable state of affairs moved the Alliance nationale pour l'accroissement de la population française to address a special appeal to all druggists of France, asking them, in the interest of the country, to discontinue the sale of such apparatus. In its appeal, the Alliance laid stress on the fact that the reduction of the birth rate constituted a very grave danger to France.

Unfortunately this is all the more true since at the present time a neomalthusian campaign is under way in certain industrial centers. It has gotten so that at Roubaix-Tourcoing a communist syndicate, the Union des travailleurs, during the first five days of July distributed more than 40,000 copies of a pamphlet in street cars and at factory gates, even tossing them into the doorways of workmen's houses. Although the pamphlet bore the printer's name, no legal action has been brought against the authors, printers and distributors. For that reason the consortium of the textile industries of Roubaix-Tourcoing, constituted of 312 manufactures employing more than 70,000 workers, which, since March 1, has been granting a family bonus of 1 franc for each child and a maternity allowance of 200 francs, has protested vigorously against the inaction of public authorities. The consortium has expended 25,000 francs per day in family bonus since March 1, and it is certainly regrettable that all these efforts are neutralized by an infamous campaign conducted in broad day.

Committee on Social Hygiene

A campaign committee on social hygiene and prophylactic instruction was recently organized for the following purposes: (1) the establishment of a bureau of information, literature and publicity on all questions relating to social hygiene; (2) the creation of centers of popular instruction in social hygiene and of normal courses for teachers and special workers; (3) the collection of propaganda material; (4) the formation of regional committees, and (5) the organization of a congress on social hygiene education.

BELGIUM

(From Our Regular Correspondent)

July 8, 1920.

Federation of International Medical Societies

M. Willems has called the attention of the Academy to the fact that Dr. F. F. Simpson of Pittsburgh recently spent several months in Europe with a view to interesting the medical profession of the world in the project conceived by American scholars of reorganizing on a uniform basis all international societies related to the various branches of medicine. It is proposed to create a federation of these societies and to establish an international medical press bureau which shall be charged with making known all important discoveries to the medical press of the world, thus assuring rapid diffusion of medical knowledge.

A committee of ten, composed of two physicians from each of five countries, Belgium, France, Great Britain, Italy and the United States, has been named and will meet immediately in Paris or London to set the new organization on foot.

Belgium, which already has many reasons for feeling devoted to America, cannot but greet with joy this new achievement of a great people. American genius has distinguished itself by a happy mixture of realism and idealism and it has wrought some remarkable solutions of the economic and scientific problems which mankind faces.

Memorial to Physicians Fallen in the War

The families and friends of physicians who fell on the field of honor gathered, June 10, for the unveiling of a monument commemorating the glorious sacrifice of the fallen heroes. The marble tablet bearing the name of each was placed in the hall of the military hospital of Brussels, and before a profoundly affected assembly, presided over by the minister of national defense, Dr. Wibin extolled the unselfishness of their heroism in impassioned and vibrant terms. To those who have gone, he expressed the deep gratitude of the youth of Belgium for the self-sacrifice which made victory possible.

Honors to Dr. Bainbridge

Dr. William Seaman Bainbridge of New York has just been nominated corresponding member of the Académie royale de Belgique. Besides his works on cancer, special attention is called to the excellent report on war surgery which he published after a trip to both sides of the front.

Venereal Prophylaxis

Although the venereal peril is increasing from day to day in almost all countries, it is impossible to give special attention to all the measures proposed for counteracting the evil. In Belgium, venereal diseases constitute a formidable endemic which the war has only increased. M. Bayet recently maintained before the Académie de médecine that all hope of

effective control through administrative measures should be abandoned. In order to be successful a campaign must be undertaken by the medical profession itself. The profession should have representation on the Conseil supérieur d'hygiène through the colleges and medical societies, it should recommend the candidates for appointment as dispensary directors, and should take an active part in the working of the dispensaries. The Conseil supérieur d'hygiène should be a sort of Conseil d'Etat, which should work out reforms and forward the recommendations to the administrative officers for detailed enforcement. In case of irreconcilable dispute, the question could be submitted to the public through mediation of the Académie de médecine.

The academy voted unanimously in favor of a resolution that the study of all questions of prophylaxis and social hygiene and of the necessary measures of execution should henceforth be confided to competent medical authority: the academy, Conseil supérieur, officers of the government and medical societies, and that the practical enforcement of these measures should be entrusted to the association and general collaboration of all practitioners.

MADRID

(From Our Regular Correspondent)

June 12, 1920.

Cajal and his New Institution

The government has established the Instituto Cajal. It is not an entirely new institution, but the bringing together of several laboratories which operated under the auspices of the Junta de Pensiones para el Extranjero (Foreign Fellowship Board). In fact, the laboratory for biologic investigations (created in 1900 with the Moscow international prize granted to Cajal) is now extended to include sections on general physiology, normal and pathologic histology, neurology, experimental pathology, etc. On the unanimous motion of the government, approved by the king, the new center of education will be named Instituto Cajal. Cajal, in order to devote all of his time to this institute, has resigned as director of the Instituto de Alfonso XIII, which is another state institution devoted to the combating of infectious diseases and the manufacture of biologic products. In connection with the creation of the new institute, there has been much talk of Cajal recently, general homage being rendered to his talents, his activities, and the many excellent qualities of this man, as talented as he is modest. Cajal is as well as ever, is preparing a splendid psychologic histology and exhibits his genius in all the copies of the journal of his laboratory for biologic investigations. Cajal, however, is prone to pessimism, which occasionally makes him believe, as about two years ago, that he suffered from cerebral arteriosclerosis. His words at the time were widely copied in the medical journals, but as a matter of fact and fortunately for science his wonderful brain is not involved at all and his neurons show no signs of senile degeneration.

Cajal's pessimism is always instructive and convinces any one who listens to his arguments. In Cajal's opinion, as he told me, war has its roots in the innermost part of the human soul. "From the cave man (as shown by the war scenes in Cagul's cave and other representations of the prehistoric man who lived more than a hundred thousand years ago) to the modern human being, all men have always considered collective looting and murder honorable and necessary, and have never been at a loss for reasons to explain their aggressions. How can it be hoped that man, who was always a wild beast, will change suddenly his customs and bloody instincts? When I hear that *Homo sapiens* will very soon decide peacefully his quarrels in accordance with the principles of law, I am as much amazed as if they told me that tigers will become some day harmless, herbivorous animals." Cajal takes very much to heart the sad spectacle presented by our politicians, and repeats Humboldt's phrase that the Spaniards lack political sense. In Cajal's opinion he should have added, "They are almost completely deprived of the instinct of preservation." Cajal, however, believes in the intellectual future of the race, but its disintegrated atomism, its wild individualism, handicap the patriotic impulses of the few statesmen we have in this country. Cajal advises a law according to which no politician could become a minister unless he had spent at least three years in Germany, France, England and the United States, learning the difficult science of governing free peoples. He would do likewise with the majors and colonels. "Do you believe," he asked me, "that we would have lost our colonies if the ministers, the generals and the admirals, besides knowing political geography, had spent compulsorily two or three years among the Yankees?"

The Medical Strike

The Spanish socialist party, nowadays evolutionizing toward syndicalism, has its headquarters at the well known Casa del Pueblo, where are planned virtually all the strikes that upset the economic life of this country. One of the institutions utilized by the Casa del Pueblo to influence the Madrid workingmen has been the Mutualidad Obrera, an economic and beneficial association, one of the chief assets of which is the medical service it offers its members. This Casa del Pueblo has in its turn been threatened with a strike by its own physicians, who dared to ask an increase in salary. This was refused to them. The physicians were amply justified in their request, as each of them is compelled to care for 300 families and receives a monthly fee of 50 centimos de peseta (10 cents) for each family; that is, 150 pesetas (about $30). The physicians at this time learned their lesson from labor, threatened to strike, and have obtained an increase of their fees to 275 pesetas (about $55).

BERLIN

(From Our Regular Correspondent)

June 28, 1920.

Socialization of Medical Practice

In order to avoid the evils of kassen practice, which are increased by the brutal demeanor of the officials in the guise of employers, there has lately been an increase in the number of those physicians who without being affiliated with the social democratic party are inclined to vote for so-called socialization of medical practice. This scheme for "state medicine" is part of the Erfurt program of the social democratic party, and under its provisions all medical and obstetric attendance and all medicines would be furnished free of direct charge. The whole notion of the workings of this scheme is shown in an article by Dr. Kollwitz of Berlin, in a recent number of the *Deutsche medizinische Wochenschrift*. "In the present transitional period, physicians are being asked to decide whether they wish to engage exclusively in private practice or place themselves at the disposal of the public service. In the latter event, they will not receive fees for individual services or a capitation allowance but a fixed salary. They will be obligated to remain in the public service for a stated number of years or until disabled. Their period of duty shall generally embrace a certain number of hours corresponding to the normal working day. The appointment entails in addition the grant of a disability pension and care of dependents. The post of duty will be determined by the preliminary training and residence of the physician, but transfers and changes will be prescribed, partly to prevent monotony and partly to furnish relief. Medical attendance will be given free to all. Members of the krankenkassen will

then no longer constitute a special category of patients, and division and tearing apart of the kassen system (from an economic and business point of view one of the most unsatisfactory works of the past) will be superfluous. Since society will furnish medical assistance to everybody, the krankenkassen will disappear entirely or they will function only as auxiliary relief societies. The ambulant sick will be treated in public consultation offices, the bedridden will be attended in their homes, and those suffering from serious illness or contagious diseases will be taken to hospitals. Consultation offices will be distributed, like the schools and postoffices, throughout the country, depending on the particular needs. Physicians will serve at these offices in monthly rotation, and an eight-hour day will be divided into three hours at the office and five hours on house visits or in public health work. General practitioners and specialists will be assigned to each office and their services will be available day and night. Division of duties within the offices will be made by a committee chosen from the interested physicians. The assignment of men to posts in the consultation offices, hospitals, sanatoriums, research laboratories and examination stations will be determined by a council of physicians and finally by the ministry of health." As may readily be conceived, the great majority of physicians recognize that these provisions will bring many disadvantages to physicians and patients alike, and will be in large measure impracticable. Because of a desire for professional freedom, physicians are opposing the socialization of medical practice, except those belonging to the social democratic party and a few fanatics for liberty.

At the meeting of physicians last year, a resolution opposing state domination of medical practice was adopted, in the interest of the patient, the physician and medical science, on the ground that a personal relation of confidence between physician and patient was unconditionally necessary. The consistent introduction of the policy of free selection of physicians, unrestricted by officialdom, in the whole kassen practice will assure most perfectly the fulfilment of the most comprehensive missions of medicine. Fortunately the national assembly rejected the proposal of an independent social democrat to socialize the practice of medicine and obstetrics and the manufacture and sale of drugs under control of the ministry of health. During the debate the minister of the interior declared that he considered socialization of medical practice as inexpedient. Meanwhile, as a result of the elections of June 6, the social democratic party is excluded from the government, and the danger of renewed attempts is temporarily averted.

Marriages

HUGH FRANCIS LENA, New London, Conn., to Miss Helen Frances Gartland of Dorchester, Boston, June 26.

WILLYS MERRITT MONROE, Guabita, Panama, to Miss Edith Marjorie Bates of Cristobal, Panama, July 22.

LAWRENCE KRAMER GUNDRUM, Fontanelle, Iowa, to Miss Ethel Henshaw Martin of St. Louis, June 12.

MAX SHAWEKER, New York, to Miss Mary Kathryn Keplinger of New Philadelphia, Ohio, June 14.

HERBERT MAXWELL NASH WYNNE, Minneapolis, to Miss Ethel Maxwell of Everett, Mass., June 1.

ALBERT ERNEST GALLANT, Forest Hill Gardens, L. I., to Mrs. Mary Claire Parsons, June 14.

ISOM ALFRED RANKIN, Morning Sun, Iowa, to Miss Dorothy Bemis of Bondurant, Iowa, June 18.

JAY CLEVELAND BYERS, Dorchester, Neb., to Miss Linda C. Snow of Alexandria, Va., June 22.

WALKER ELY SWIFT, to Miss Dorothea Valentine Abbott, both of New York, July 18.

EDGAR POE SANDROCK, to Miss Dorothea Gertrude Peters, both of Baltimore, July 22.

Deaths

Burton Jay Merrill ⊕ Stillwater, Minn.; Bellevue Hospital Medical College, 1881; aged 64; coroner and county physician of Washington County, Minn., professor of materia medica and therapeutics from 1886 to 1888 in the St. Paul Medical College; physician to the State Prison since 1889; died, July 16, from heart disease.

Johann Franz Dolina, Dayton, Ohio; University of Königsberg, Germany, 1889; aged 60; a member of the Ohio State Medical Association; died in the Miami Valley Hospital, Dayton, July 12, from hemorrhage following razor wounds of the throat, presumably self-inflicted.

Elias Lester, Seneca Falls, N. Y.; College of Physicians and Surgeons in the City of New York, 1863; aged 86; assistant surgeon, U. S. Army, and brigade surgeon during the Civil War; the oldest member of the Seneca County Medical Society; died, July 18.

Truman P. French, Chicago; Indiana Medical College, Indianapolis, 1878; aged 69; a member of the Illinois State Medical Society; for many years a practitioner of Vermillion County, Ill.; died at the home of his son in Springfield, July 13.

Eli P. Edwards, Paris, Texas; Hospital College of Medicine, Louisville, 1881; aged 69; a member of the State Medical Association of Texas; who was operated on in the Sanitarium of Paris, July 1, died in that institution, July 4.

Hugh Sutherland Kinmouth, Asbury Park, N. J.; College of Physicians and Surgeons in the City of New York, 1870; aged 72; died near Delmar, N. J., July 21, from the effects of poison believed to have been self-administered.

Albert Shunk, Mansfield, Ohio; College of Physicians and Surgeons in the City of New York, 1886; aged 57; a member of the Ohio State Medical Association; died, July 14, from a gunshot wound of the head self-inflicted.

Felix Barrett, Westbrook, Me.; United States Medical College, New York, 1883; Medical School of Maine, Brunswick and Portland, 1893; aged 59; a member of the Maine Medical Association; died, April 27.

John Joseph Kenny, New York; Columbia University, College of Physicians and Surgeons, New York, 1915; aged 37; a member of the Medical Society of the State of New York; died in Roosevelt Hospital, July 24.

Victor Parsonnet ⊕ Newark, N. J.; Long Island College Hospital, Brooklyn, 1898; aged 49; visiting gynecologist and president of the medical staff of the Beth Israel Hospital, Newark; died suddenly, July 20.

Frank Beebe ⊕ Johnstown, N. Y.; Albany, N. Y., Medical College, 1881; aged 65; mayor of Johnstown from 1907 to 1909; died at the home of his daughter in Eau Claire, Wis., July 9, from pneumonia.

Edward Montrose Smith ⊕ Bridgeport, Conn.; College of Physicians in the City of New York, 1882; aged 60; once president of the Bridgeport Medical Association; died, July 14, from pneumonia.

Tinsley V. Ware, Springfield, Mo. (license, Missouri State Board of Medical Examiners, 1883); aged 88; for many years a practitioner and druggist of Lebanon, Mo.; died, July 16.

Charles Frederick Hill, Newark, N. J.; Baltimore Medical College, 1908; aged 38; a member of the Medical Society of New Jersey; died in Pequannock, N. J., July 9, from tuberculosis.

Marie Geraldine Langdon, Englewood Cliffs, N. J., Baltimore University School of Medicine, 1904; Woman's Medical College of Pennsylvania, Philadelphia, 1905; aged 51; died, June 21.

Rozell McGlathery ⊕ Conklin, Colo.; Tulane University, New Orleans, 1908; aged 37; died, July 14, from a gunshot wound believed to have been self-inflicted with suicidal intent.

Charles Oscar Cranston, Parsons, Kan.; Kansas City (Mo.) Medical College, 1894; aged 51; died in St. John's Hospital, Joplin, Mo., July 18, after a surgical operation.

⊕ Indicates "Fellow" of the American Medical Association.

George Frederick Pitts, Warwick, N. Y.; University of the City of New York, 1877; aged 71; a member of the Medical Society of the State of New York; died, July 22.

Walter Samuel Mickler, Lee, Fla.; Southern Medical College, Atlanta, Ga., 1895; aged 47; died in a hospital in Greensboro, N. C., July 21, from gastric ulcer.

Abraham Huntsinger, Mishawaka, Ind.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1877; aged 81; died, June 30, from cerebral hemorrhage.

Christopher C. Rutherford, McDade, Texas; Tulane University, New Orleans, 1881; aged 81; died at the home of his son in Giddings, Texas, July 14.

Joseph Farley ⊕ Philadelphia; Jefferson Medical College, 1886; aged 58; died at his summer home in Atlantic City, July 19, from cerebral hemorrhage.

Harry Chester Ewing, Colorado Springs, Colo.; University of Colorado, Boulder and Denver, 1911; aged 36; died, April 7, from pulmonary tuberculosis.

Harry E. Campbell, Pittsburgh; Jefferson Medical College, 1881; aged 60; died in a rooming house in New York, July 25, from cerebral hemorrhage.

Charles C. Williams, Pittsburgh; Cleveland University of Medicine and Surgery, 1894; aged 48; a veteran of the war with Spain; died, July 21.

Cornelius W. Cramer, Pentwater, Mich.; Hahnemann Medical College, Chicago, 1886; for forty-five years a practitioner; died, about July 12.

George Albertson Parker ⊕ Southampton, Pa.; University of Pennsylvania, Philadelphia, 1875; aged 65; died, July 24, from heart disease.

Henderson Hines, Rago, Kan.; Cincinnati College of Medicine and Surgery, 1866; aged 89; died, July 15, from cirrhosis of the liver.

Horace L. Martin, Atlanta, Ga.; Medical College of Georgia, Augusta, 1893; aged 54; died at a sanitarium in Atlanta, July 2.

Cassius E. Belcher, Barnesboro, Pa.; Cincinnati College of Medicine and Surgery, 1877; aged 60; died, July 15, from nephritis.

Henry Adams Carr, Elmira, N. Y.; University of the City of New York, 1879; aged 77; died in Utica, N. Y., June 25.

John Irving Van Wert ⊕ Patton, Pa.; Bellevue Hospital Medical College, 1887; aged 55; died in New York, July 25.

William T. Gaines, Nashville, Tenn.; University of Nashville, Tenn., 1882; died in an infirmary in Nashville, July 17.

Charles Turner Fisk, Portland, Me. (license, Maine State Board of Registration, Act of 1895); aged 71; died, June 11.

John M. Shutt, Fort Wayne, Ind. (license, Indiana State Board of Medical Examiners, 1897); aged 70; died, July 17.

William L. McNeill ⊕ Port Arthur Texas; Kentucky School of Medicine, Louisville, 1897; aged 53; died, July 3.

Theodore Raymond Parker ⊕ Willimantic, Conn.; University of the City of New York, 1880; aged 64; died, June 18.

Edwin Herbert Russell, Los Angeles, Calif.; Boston University, School of Medicine, 1880; aged 63; died, July 16.

Eva Harding, Topeka, Kan.; Hahnemann Medical College, Chicago, 1882; aged 62; died, July 27, from heart disease.

Israel Albert Loveland ⊕ Keene, N. H.; Dartmouth Medical School, Hanover, N. H., 1875; aged 69; died, July 5.

William Jacobs, Washington, Kan.; American Medical College, Eclectic, St. Louis, 1876; aged 75; died, July 16.

William H. Crowley, Chicago; Rush Medical College, 1896; aged 53; died at his old home, Potsdam, N. Y., July 26.

Thomas Norman Pearson, Morrill, Me.; University of Vermont, Burlington, 1893; aged 55; died, May 28.

Virgil Thompson, New York; New York Homeopathic Medical College, New York, 1862; died, June 8.

Fred Bellinger Casey, Mohawk, N. Y.; Albany (N. Y.) Medical College, 1892; aged 53; died, July 19.

Charles Saraphin Rodier, Manchester, N. H.; Laval University, Montreal, 1887; aged 56; died, June 8.

George Levi Brown ⊕ Buffalo; Harvard University Medical School, 1870; aged 72; died, about July 8.

Orville G. Hutchinson, Rochester, N. Y.; Eclectic Medical Institute, Cincinnati, 1891; died, July 9.

Correspondence

"CREDULITY AND CURES"

To the Editor:—Dr. Peterson's article on "Credulity and Cures" (THE JOURNAL, Dec. 6, 1919) appeals so cleverly to the credulity of the uninformed members of the profession that he is hereby requested to present to the medical profession an unprejudiced scientific discussion of the freudian psychology and the psychanalytic method of treating functional neuroses and psychoses, in order that his own interpretations and insight may be fully evaluated, without taking on faith that his personal standing as a psychiatrist and his personal acquaintanceship with Freud and Jung make it impossible for him to be wrong. His article is misleading physicians to take a prejudiced attitude toward the treatment of neuroses and psychoses without actually considering why, and this unintelligent resistance is preventing many neurotics and psychopaths from finding a solution for serious conflicts and suffering. Dr. Peterson's article is not truly assisting the physician to maintain the attitude that he pleads for in his conclusion, namely, that "we must try to take a middle path" which is "broad enough to know that there are great mysteries in our complex organisms and all the sciences that have to do with them, . . . and not be too prejudiced to weigh, ponder and examine."

He mentions a series of "faith" cures, radical surgical operations, wild drug cures and eccentric therapeutic methods that have had a more or less popular vogue, and, after doing incalculably more harm than good, have gone to limbo.

To this list however, in order to balance judgment and not make men perniciously skeptical, should be added some illustrations of the long, long series of successful clinical anatomic, bacteriologic and physiologic discoveries, surgical innovations, and therapeutic methods that were once derided and scorned by the suave old fathers of the medical profession.

He appeals to the *credulity* of the uninformed physician to accept that he is qualified to attack the work of Freud and Jung because he is personally acquainted with these men, has read some of their writings, knows other psychanalysts, and has seen their failures. I suppose it is fair politics to ask an uninformed stranger to accept that personal acquaintanceship is sufficient to make one an infallible critic and censor; but when Dr. Peterson has their faith in this personal relationship he violates it by making a few, brief, designing, dogmatic assertions which are entirely calculated to bring the theories, methods and discoveries of psychanalysis into disrepute without giving the reader the slightest opportunity to judge for himself and examine the errors of Freud and Jung and others. He attempts to disparage Freud's discovery of the influence of the wish on human behavior by a prejudiced sketch of how the influence of the wish on the mind of children was discovered. Would a reputable surgeon or chemist or psychologist use such methods of criticism of another's work?

This is hardly "trying to take a middle path." Dr. Peterson surely does not condemn vaccination because it was discovered from a cow. Neither would he condemn vaccination and favor laws for its repression because people have died or were mutilated following vaccination. Like Dercum, Peterson still struggles with the theories and methods which Freud advocated twenty years ago.

Is this doleful ignorance or bitter prejudice? Will they deny man the right of self-correction and self-improvement? Have they not changed their own views of psychiatry?

Dr. Peterson appeals to the credulity of the medical profession to disregard psychanalysis because it may take weeks, months or even years to treat a case. Are there not many

diseases, such as tuberculosis, diabetes, arteriosclerosis, nephritis and myocarditis, that require expensive treatment and a great outlay of time? Is the physician justified in condemning the use of a therapeutic method on these grounds? He also argues that it is dangerous, causing some to go insane (a very questionable assertion), others to commit suicide, others to get divorces, or become vile, etc. Is not surgical practice still burying its thousands, and medical practice its tens of thousands? What physician has not had to bury sad regrets with a patient? It is true that many patients are greatly distressed by the psychanalytic method and so do many patients suffer in order to be cured by other forms of treatment. Psychanalysis is not a child's play nor an old man's game. Like major surgery, it requires long training, great care and sound, experienced judgment.

In surgery and medicine, as in all methods of science and commerce, there will always be crude new methods, a margin of failures and fakers. Old methods will always be made to look damnable in the light of newer, while advocates of old conceptions will froth and fume at the work of "faddists," while the "cults" will ridicule the "fossils" and suave mossbacks, even though both may be practicing some excellent as well as ridiculous methods. Let us have fairness of criticism and maturity of judgment. Who knows what apparently absurd little discovery today will not completely revolutionize medical practice tomorrow? The discoveries of the insignificant little germ and tissue-cell overthrew all the dogmas of the old schools of anatomy, physiology, pathology and medical practice. So Freud's discovery that the individual has cravings of which he is unconscious (wishes which have a tremendous influence on his thoughts, behavior and health) is forcing the orthodox psychiatry and psychology of the passing decade into disuse.

Dr. Peterson suggests that if given sufficient encouragement he would advocate the passing of a law prohibiting the psychanalytic method of treating the neuroses and psychoses of young people. Why be intolerable of their sufferings from uncontrollable affective cravings? Why, like Abraham, slay the unhappy son for the glory of God? Why should they not have access to a method of treating maladaptations and fears that has cured hundreds of young men and women and helped them to know themselves? Is it necessary to hew out of mountains great granite slabs and erect in massive letters, so the whole world will be reminded every moment that the most important and most difficult thing in the world is "Know Thyself."

Through the psychanalytic method of studying the insane we have learned that the most potent cause of insanity is *repressed affective cravings;* and this repressive tendency is started early in childhood, not naturally or through the designs of Nature, but through the pernicious influence of prudish, purblind fathers and mothers, and dogmatic teachers who are obsessed with sexual phobias.

Dr. Peterson makes a claim that many psychanalytic case reports show little of the cases and much about the type of mind of the psychanalyst himself. This must be accepted. There will be quite a rush of untrained physicians to psychanalysis, after failing in other lines of work, who regard tentative guessing and questioning of patients as good practice. In every line of endeavor there are fakers and wolves, but—why be like the Prussian officer who destroyed Louvain because one of the citizens committed a crime? Why not "take the middle path" and recognize that we are able to judge much of a man's personality not only by what he writes (as "Credulity and Cures") but also by the manner of his dress, his signature, voice, step, smile, what he reads, the way he operates.

If Dr. Peterson will give us an unimpassioned, unprejudiced discussion of the new psychopathology and psychanalysis, making the fallacies of reasoning apparent by scientific data and logic, so that the medical profession may judge without having emotions appealed to in a manner that is designed to arouse a biased attitude, then his fairness to science and the affront on the credulity of the medical profession may be redeemed.

Dr. Peterson ridicules the importance which the "new psychology" places on the emotional value of symbols and dreams, and yet in his article he uses quite a few symbols to express what he *wishes* to say, as, for example, "our dreams . . . reflect in a moonlight kind of way the thinking processes of our day."

Ten years' experience with the Freudian psychology and the psychanalytic method in hospitals for mental diseases has demonstrated that psychanalysis has made momentous contributions to knowledge of the nature of man, and that the psychanalytic method is of the utmost value in the treatment of selected cases of nervous and mental diseases.

Edward J. Kempf, M.D., Washington, D. C.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

HYCLORITE — DICHLORAMIN-T — SURGICAL SOLUTION OF CHLORINATED SODA

To the Editor:—1. Please give me some information concerning Hyclorite, put out by the General Laboratories, Madison, Wis., as to its antiseptic value and stability. 2. Also concerning Abbott's dichloramine-T. Do these products contain the required amount of chlorin? 3. Also please give me information where I can obtain a chlorin gas to make Dakin's solution.

Charles T. Sturgeon, M.D., Los Angeles.

Answer.—1. Hyclorite has been accepted for New and Nonofficial Remedies, and reference to the 1920 edition will give the requested information, with regard to the stability of this preparation. The description for this product explains that its actions and uses are those of solution of chlorinated soda U. S. P. A general article which precedes this and similar chlorin products contains valuable information about hypochlorites and hypochlorite substitutes.

2. Dichloramine-T Abbott is one of the several brands of Dichloramin-T which have been accepted for New and Nonofficial Remedies and which may be depended on to contain the required amount of chlorin.

3. New and Nonofficial Remedies describes Chlorine-Soda Ampoules marketed by Johnson and Johnson. These are composed of a sealed glass tube containing liquid chlorin and a tube containing sodium carbonate. Directions are furnished for preparing surgical solution of chlorinated soda (Dakin's solution).

LITERATURE ON LUNG ABSCESS FOLLOWING TONSILLECTOMY UNDER LOCAL ANESTHESIA AND UNDER GENERAL ANESTHESIA

To the Editor:—Will you inform me where I can find some information on the subject of lung abscess following tonsillectomy under local anesthesia, also under general anesthesia?

C. N. C., M.D., Washington, D. C.

Answer.—The following articles have appeared on this subject:

Simpson, J. R., and Noah, H. G.: Report of Two Cases of Lung Abscess Following Tonsillectomy Under Local Anesthesia in Tubercular Subjects, *Pennsylvania M. J.*, March, 1920.

Burger, H.: Lung Abscess after Tonsillectomy, *Nederlandsch, Tjdschr. v. Geneesk.*, Nov. 1, 1919; abstr., The Journal, Feb. 21, 1920, p. 570.

Carr, J. G.: Lung Abscess Following Tonsillectomy, *Med. Clin. N. Am.*, July, 1919.

Clendenning, Logan: Cause of Abscess of Lung after Tonsillectomy, The Journal, April 3, 1920, p. 941.

Walters, R. M.: Cause of Lung Abscess after Tonsillectomy, The Journal, April 17, 1920, p. 1116.

Wilkinson, Oscar: Cause of Abscess of Lung after Tonsillectomy, The Journal, April 24, 1920, p. 1183.

Flagg, P. J.: Cause of Abscess of Lung after Tonsillectomy, The Journal, April 24, 1920, p. 1183.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 7. Sec., Dr. Harry C. De Vighne, Juneau.

HAWAII: Honolulu, Sept. 6-10. Sec. Dr. R. W. Benz, 1141 Alakea St., Honolulu.

ILLINOIS: Chicago, Sept. 20-23. Director, Francis W. Shepardson, State House, Springfield.

IOWA: Des Moines, Sept. 15-17. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.

MASSACHUSETTS: Boston, Sept. 14-16. Sec., Dr. Walter P. Bowers, State House, Boston.

NEW HAMPSHIRE: Concord, Sept. 9-10. Sec., Dr. Charles Duncan, Concord.

Massachusetts May Examination

Dr. Walter P. Bowers, secretary, Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, May 11-13, 1920. The examination covered 13 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 21 candidates examined, 6 passed and 15, including 4 osteopaths, failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Boston University		(1919)	76.7
Middlesex College of Medicine and Surgery		(1919) 75.1, 75.1, (1920)	77
Tufts Medical College		(1919)	77.7
Omaha Medical College		(1896)	75
	FAILED		
Chicago College of Medicine and Surgery		(1916)	68
Loyola University		(1919)	72.5
Indiana University School of Medicine		(1917)	69.4
State University of Iowa Coll. of Homeo. Med.		(1915)	63.8
Baltimore Medical College		(1902)	67.1
College of Physicians and Surgeons, Boston		(1920)	66.9
Middlesex Coll. of Med. and Surg. (1919) 67, 71.7, 72.7.			
Meharry Medical College		(1913)	73.3
Laval University		(1919)	68.6

New Mexico April Report

Dr. R. E. McBride, secretary, New Mexico State Board of Medical Examiners, reports that 5 candidates were licensed on diploma, and 1 candidate was licensed by reciprocity, at the meeting held at Santa Fe, April 11-12, 1920. The following colleges were represented:

College	LICENSED ON DIPLOMA	Year Grad.
George Washington University		(1918)
Northwestern University		(1909)
Kansas City Medical College		(1891), (1905)
Vanderbilt University		(1882)

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
St. Louis Univ. School of Med.		(1918)	Missouri

Oregon January Examination

Dr. Urling C. Coe, Oregon State Board of Medical Examiners, reports the written examination held at Portland, Jan. 6-8, 1920. The examination covered 16 subjects and included 92 questions. An average of 75 per cent. was required to pass. Of the 39 candidates examined, 22 passed and 17, including 5 osteopaths, failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
College of Medical Evangelists		(1918)	1
George Washington University		(1919)	1
Chicago College of Med. and Surgery		(1915), (1916)	2
College of Phys. and Surgs., Chicago		(1904)	1
Loyola University		(1917)	1
Northwestern University		(1906)	1
Rush Medical College		(1903), (1906), (1917)	3
Keokuk Medical College		(1895)	1
State University of Iowa, College of Medicine		(1903)	1
Johns Hopkins University		(1915)	1
Harvard University		(1893)	1
Washington University		(1911)	1
Bellevue Hospital Med. College		(1878)	1
University of Oregon		(1916), (1918), (1919, 3)	5
University of Vermont		(1889)	1
			Number Failed
Hahnemann Medical College, Chicago		(1896)	1
Northwestern University		(1910)	1
College of Physicians and Surgeons, Chicago		(1905)	1
University of Louisville		(1907), (1916)	2
Missouri Medical College		(1895)	1
University Medical College of Kansas City		(1912)	1
Eclectic Medical University, Kansas City		(1917)	1
St. Louis College of Physicians and Surgeons		(1918)	1
University of Pennsylvania		(1918)	1
University of Tennessee College of Medicine		(1913)	1
Nippon Special Medical School, Japan		(1910)	1

Book Notices

THE AMOEBAE LIVING IN MAN. A Zoological Monograph. By Clifford Dobell, M.A., F.R.S., Assistant Professor of Protistology and Cytology in the Department of Biology, Imperial College of Science and Technology, London. Cloth. Price, $3.75. Pp. 155. New York: William Wood & Company, 1919.

In this volume the author sums up his researches on amebas in man and the lower animals. He presents the subject more from the standpoint of comparative protozoology than from the medical point of view. He has worked over an immense amount of material—10,000 human stools and 150 kittens experimentally infected with *Endameba histolytica*, together with much special pathologic material from a variety of intestinal diseases observed chiefly during the war. He discusses at considerable length the several varieties of amebas found in man, and also those found in dogs and in monkeys. In the genus *Endameba* he includes three varieties: *E. histolytica, E. coli* and *E. gingivalis*. The first he considers the common cause of amebic dysentery, and the second a common nonpathogen of the intestinal canal. Regarding *E. gingivalis*, he says: "At present, therefore, there seems to be no good evidence to support the hypothesis that *E. gingivalis* attacks the tissues, that it is the cause of pyorrhea, or that it is in any way pathogenic." His manner of presenting a subject is not always concise. The presentation of data is frequently mingled with paragraphs of discussions of an argumentative nature which at times become tedious. Especially does the author criticize Schaudinn, stating that his conclusions regarding the intestinal amebas of man were mostly incorrect. But he approves of and uses Schaudinn's nomenclature of dysentery amebas (*E. histolytica*) and recommends Schaudinn's sublimate alcohol method as the "best fixative for cysts." He does not approve of the term "Craigia," believing that adequate evidence for the existence of this organism has not been presented. At the end there is an excellent bibliography, which is extensive but not "complete." There is also an index. After reading this monograph, one is conscious of at least three difficulties: confusion regarding identification, confusion regarding nomenclature and inadequate knowledge of the life histories of these organisms. Dr. Dobell deserves credit for at least some degree of progress along these lines.

DISEASE OF THE THROAT, NOSE AND EAR. For Practitioners and Students. By W. G. Porter, M.B., B.Sc. F.R.C.S. Third edition, revised under the Editorship of A. Logan Turner, M.D., F.R.C.S., Consulting Surgeon, Edinburgh Eye, Ear and Throat Infirmary. Cloth. Price, $4. Pp. 300, with 79 illustrations. New York: William Wood and Company, 1919.

This is a concisely written volume designed to furnish the practitioner and senior student a single volume embracing sufficient information on the subject to be of value in practice. With this end in view the author has wisely omitted anatomic description except in special instances. Instruments are not illustrated. Major operations are not described. The volume is chiefly devoted to symptomatology, diagnosis and treatment, so far as the latter can be carried out by the non-specialist. This method has enabled the author to produce a valuable book for the general practitioner and student without sacrificing its worth for the sake of brevity. There are four sections devoted, respectively, to diseases of the pharynx, larynx, nose and ear. In each, methods of examination are described, followed by chapters discussing symptoms, diagnosis and treatment of the pathologic conditions ordinarily occurring in these parts. An appendix contains formulas used in the treatments described. The illustrations are good, and the publisher's work is praiseworthy.

Medicolegal

Privileged Communications and Waiver—Unethical Practice

(Bauch v. Schultz (N. Y.), 180, N. Y. Supp. 188)

The Supreme Court of New York, Trial Term, New York County, in denying the defendant's motion for a new trial after the plaintiff had obtained a verdict in this personal injury case, says that the court would not be performing its whole duty if it merely denied the motion, without commenting on certain unusual features presented at the trial. Immediately after the accident an ambulance was called by a policeman, and the plaintiff was taken to a hospital, where he received treatment at the hands of duly licensed physicians connected with that institution. On the trial he testified as to the happening of the accident, the extent of the injuries received, and as to his previous condition of health. He also called experts who testified as to the extent of his injuries. On the trial, without the plaintiff's having previously waived his privilege as required by Section 836 of the Code, the defendant called as witnesses the ambulance surgeon who first treated the plaintiff after the accident, and the two other physicians from whom the plaintiff received treatment while in the hospital, and each of these witnesses, after testifying to material facts learned by him in the treatment of the plaintiff, admitted on cross-examination that he had been employed previous to the trial by the defendant to testify as a medical expert for hire at the trial. Such an utter disregard of the ethics of the medical and legal professions cannot be passed by without serious condemnation by this court.

The relation of physician and patient is peculiarly confidential, and is safeguarded by the law in the interest of the patient, by forbidding disclosures by physicians of material and necessary facts the knowledge of which was gained in the treatment by the physician of his patient, without an express waiver on the part of the patient as provided in the statute. It is clear that the statute in forbidding disclosures by the physician did not intend to place a patient at the disadvantage before a jury of being compelled to object to testimony by his physician, thus manifesting a desire to conceal certain facts. The higher courts in one case have held that, where a plaintiff called two out of three physicians who examined the patient after the accident, the plaintiff must be deemed to have waived the protection of the statute, so as to permit the calling by the defendant of the other physician; also where the plaintiff introduced her physician's certificate as proof of loss that also constituted a waiver of the statute; but this court knows of no sufficient authority for the contention that the mere fact of the plaintiff's testifying to the injuries received and to his condition before the accident constituted a waiver of all the privileges of the statute as to physicians at any time employed by him relative to matters within the issues. Such a construction would practically nullify the statute and defeat its beneficient purpose, so that it would no longer be a shield for the patient.

But the physicians called as experts on this trial did not have the possible justification which would be furnished by such a construction of the statute in agreeing to testify as witnesses, and in accepting employment by the defendant as medical experts in an action brought by their former patient, no such waiver having been made when they accepted employment as experts by the defendant; nor did the case present any evidence of fraudulent claim on the part of the plaintiff such as might explain, though not justify, a disregard of the physician's obligation. The serious question presented for the consideration of the associations of the bar and the medical societies is whether such deliberate and flagrant disregard of the ethics of the medical and legal professions should go unchecked, or whether steps should be taken, by statutory amendment or otherwise, to prevent a recurrence of such incidents. The necessity of some action's being taken was shown by the suggestion of one of the medical experts that, as the plaintiff was a free patient in the hospital, he was not entitled to the protection of the statute. But one who, as a victim of misfortune, incapable of volition in the selection of a physician, is taken to a hospital, is in an exceptional degree entitled to the protection of the law.

The court does not find the defendant's attorney guilty of intentional wrongdoing in connection with the employment of experts, but rather laboring under a misconception of recent decisions, in supposing that they had practically rendered the statute inoperative in cases of this character.

Hospital Records and Conversations with Physicians

(Zipus v. United Railways & Electric Co. (Md.), 108 Atl. R. 884)

The Court of Appeals of Maryland says that in this action brought by a father to recover damages for personal injuries to one of his children a physician who was called as a witness offered in evidence the record of the case during the time that the child was undergoing treatment at a hospital. The record in question was not one which had been made by the witness, nor was he able to tell by whom it was made, whether a student or a physician in the hospital; he knew only that among the records in the hospital this particular one appeared, together with a large number of other records in the same volume. This fell short of the ruling thus far universally observed by this court as to the requirements for making such a record admissible in evidence.

Exception was also reserved during the testimony of the mother of the child, as to conversations had with various physicians who, at one time or another, were attending on the child. But no fault could be found with the action of the trial court in striking out this evidence. It was clearly hearsay evidence, and its relation to the ground of action set out in the declaration too remote to have been properly considered by the jury. The plaintiff contended for its admission as constituting a part of the res gestae or essential circumstances of the case. But some of the testimony in question was with regard to the statements made a year and a half or two years after the accident, and the rule of res gestae has never been so stretched in this state as to make testimony of this description admissible.

Entitled to Examine Notes of Physical Examination

(Richardson v. Nassau Electric R. Co. et al. (N. Y.), 180 N. Y. Supp. 109)

The Supreme Court of New York, Appellate Division, Second Department, holds that there was error, in this personal injury case, in the refusal of the trial justice to compel the plaintiff's medical expert to exhibit the notes made by him of his physical examination of the plaintiff. The court says that the witness was asked on cross-examination:

> By the way, you have notes there, haven't you? A. Notes of my examination. . . . Q. Did you refresh your recollection from the notes that you have there? A. I did, and hearing some of the case yesterday. Q. Do you mind letting me see those notes? A. I don't think I ought to let you see them. There are certain conclusions here.

The trial court ruled that the witness was not obliged to exhibit the notes to the defendant's counsel, and denied the defendant's request that he be allowed to see them, to which ruling the defendant excepted. But this court thinks that the defendant was entitled to examine the notes referred to.

Society Proceedings

COMING MEETINGS

Amer. Assn. of Electro-Therapy & Radiology, Atlantic City, Sept. 14-17
Amer. Assn. of Obstetricians and Gynecologists, Atlantic City, Sept. 20-22.
American Public Health Association, San Francisco, Sept. 13-17.
American Roentgen Ray Society, Minneapolis, Sept. 14-17.
Colorado State Medical Society, Glenwood Springs, Sept. 7-9.
Indiana State Medical Association, South Bend, Sept. 23-25.
Kentucky State Medical Association, Lexington, Sept. 27-30.
Minnesota State Medical Association, St. Paul, Sept. 29-30.
Missouri Valley, Medical Society of the, Omaha, Neb., Sept. 6-7.
Utah State Medical Association, Ogden, Sept. 7-8.
Washington State Medical Association, Tacoma, Sept. 16-17.
Wisconsin, State Medical Society of, La Crosse, Sept. 8-10.
Wyoming State Medical Society, Cheyenne, Aug. 9-10.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

July, 1920, **20**, No. 1

Case of Malignant Thymoma. N. C. Foot, Boston.—p. 1.
*Precipitins For Egg Albumin in Stools. C. G. Grulee, Chicago.—p. 15.
*Hemorrhagic Tendency as Frequent Cause of Cranial Hemorrhage of New-Born. J. A. Foote, Washington, D. C.—p. 18.
*Active Immunization against Diphtheria in a Large Child Caring Institution. J. Blum, New York.—p. 22.
Eye in Hereditary Syphilis. J. Green, Jr., St. Louis.—p. 29.
Review of Literature of Syphilis in Infancy and Childhood. P. C. Jeans, St. Louis.—p. 55.

Precipitins for Egg Albumin in Stools.—It would seem from the results of Grulee's experiments that egg albumin is in nearly every instance completely broken down by the digestive processes in infants and children. This holds good not only for children and older infants, but also where the egg albumin is used in small quantities for the new-born as well. There is only one other possibility, and that is that the egg albumin instead of being broken down in the process of digestion is absorbed unchanged.

Intracranial Hemorrhage and Hemorrhagic Tendency.—The tendency toward hemorrhage in the new-born, Foote says, is frequently first manifested as intracranial hemorrhage, and it is important to recognize that this may be and often is a local manifestation of a general condition. The early use of lumbar puncture and the hypodermic administration of substances that tend to increase blood coagulability are rationally indicated in every case of suspected intracranial hemorrhage of the new-born, even prior to operation. The suggestion is made that blood coagulation tests be performed as a routine of the new-born infant.

Active Immunization Against Diphtheria.—Schick tests made on 1,076 children in an institution during a period of five years show that a negative reaction is evidence of the presence of sufficient antitoxin in the tissues to protect the individual against diphtheria infection. Tests made on seventy-two families showed that the younger members of the same family usually gave corresponding reactions to the Schick test. Where variations did occur, the younger member gave usually the positive and the older the negative reaction. Infants under 6 months, because of the transmitted immunity of the mother, were exceptions to this rule. Changes in the Schick reaction from negative to positive during the first three years of life, due to loss of an inherited immunity, were found to be sufficiently numerous to justify retesting during this period at intervals of a few months. This procedure is especially desirable in infant asylums. The full duration of the active immunity conferred on individuals susceptible to diphtheria by the injection of toxin-antitoxin is not yet ascertained. In one series of cases the immunity persisted in 100 per cent. of the group of fifty children for at least twenty-two months. Workers in research laboratories have found that the immunity once acquired lasts for at least four and one-half years. Blum claims that it is possible to render a child-caring institution diphtheria free. This has been accomplished for a period of five years in one institution by injecting all susceptibles with toxin-antitoxin mixtures.

Archives of Dermatology and Syphilology, Chicago

July, 1920, **2**, No. 1

Lichen Nitidus: Report of Case. R. L. Sutton, Kansas City, Mo.—p. 1.
*Melanotic Tumor of Lip Treated with Radium. D. W. Montgomery and G. D. Culver, San Francisco.—p. 5.
*Frambesia Tropica (Yaws). H. Goodman, New York.—p. 7.
Multiple Benign Cystic Epithelioma Associated with Xeroderma Pigmentosum. S. A. Withers and W. G. Coleman, St. Louis.—p. 27.
Onychauxis due to Hypopituitarism. L. Hollander, Pittsburgh.—p. 35.
*Intraspinal Treatment in Neurosyphilis. J. H. Mitchell, Chicago.—p. 44.
*Unusual Manifestations of Syphilis. N. L. Linneman, Duluth.—p. 50.
*Treatment of Syphilis. W. H. Guy, Pittsburgh.—p. 53.
*Acidosis in Skin Diseases. S. E. Sweitzer and H. E. Michelson, Minneapolis.—p. 61.

Radium Treatment of Melanotic Tumor.—It has been strongly advised not to employ either radium or roentgen rays in the treatment of melanotic tumors. In the case cited by Montgomery and Culver, the alternatives would have been either to allow the affection to pursue its own course, or to perform an extensive and deforming operation. After due consideration, it was determined to employ radium, and fortunately, the case turned out well.

Frambesia Tropica.—The results of a study of the literature with personal observations are presented by Goodman. He does not regard frambesia as being a modified form of syphilis. An extensive bibliography is appended.

Intraspinal Therapy of Neurosyphilis.—In Mitchell's opinion the Swift-Ellis intraspinal method of treatment of syphilis of the central nervous system is superior to intensive intravenous treatment alone. The method is perfectly safe when care is exercised in technic and in the proper selection of cases, and should be resorted to in all cases in which the patient fails to respond to intravenous medication.

Unusual Cases of Syphilis.—A case of gumma of the bladder and one of urticarial syphilid are reported by Linnemann.

Treatment of Syphilis.—Guy prefers to exhaust intensive general medication before resorting to intraspinal therapy.

Acidosis in Skin Diseases.—No marked or consistent change was found by Sweitzer and Michelson in the alkali reserve in psoriasis, acne vulgaris, eczema and seborrheic dermatitis. Therefore, they concluded that promiscuous alkali therapy is unscientific and inadvisable, and may produce a condition of alkalinosis which may be dangerous to the patient.

Boston Medical and Surgical Journal

July 22, 1920, **183**, No. 4

Diagnosis of Accessory Sinus Disease Causing Loss of Vision. L. E. White, Boston.—p. 93.
Ready-to-Wear Braces for Strained Muscles and Ligaments. H. W. Marshall, Boston.—p. 98.
Motion Study of Inoculating Tubes. M. M. Canavan, Boston.—p. 103.
Specific Aortitis. W. D. Reid, Boston.—p. 105.
Hemostatic Forceps for Postoperative Tonsillectomy. F. Kingsley, Boston.—p. 112.

Delaware State Medical Journal, Wilmington

April, May, June, 1920, **11**, No. 2

Diseases of Bile Ducts and Gallbladder. I. J. MacCollum, Wyoming.—p. 2.
Physicians' Fees. C. A. Buswell, Chicago.—p. 13.
Compulsory Health Insurance. G. Frothingham, Detroit.—p. 19.

Journal of Infectious Diseases, Chicago

July, 1920, **27**, No. 1

Nature of Bacteria. H. Bergstrand, Stockholm.—p. 1.
*Effects of Roentgenization and Splenectomy on Antibod; -Production. L. Hektoen, Chicago.—p. 23.
Dysentery and Allied Bacilli. M. Levine, Washington, D. C.—p. 31.
Protection Afforded to Red Cells Against Hemolysis by Eosin. C. L. A. Schmidt and G. F. Norman, Berkeley, Calif.—p. 40.
*Irregular Typhoid Strains and Infections Caused by Them. K. F. Meyer and N. M. Neilson, San Francisco.—p. 46.
*Hemophilic, Anaerogenic Paracolon Bacillus Found in Case of Infected Bilateral Hydronephrosis. K. F. Meyer and F. Hinman, San Francisco.—p. 72.
Opsonic Reactivation of Antipneumococcus Serum. J. Meyer, Chicago.—p. 82.
Toxin for Leukocytes Produced by Streptococci (Streptoleukocidin). Y. Nakayama, Chicago.—p. 86.

Effect of Splenectomy on Antibody Production.—The results recorded by Hektoen show that splenectomy may diminish the output of antibodies, especially when practiced about the same time the antigen is injected. In the rabbit, however, splenectomy under certain conditions may have little or no effect on antibody production, as after a single large dose of sheep blood. On the other hand, even when made several weeks before injection of human blood, removal of the spleen seemed to interfere with the formation of precipitin, but further observations are needed to determine whether such selective effect occurs regularly under these circumstances. On the whole, the effects of splenectomy at

or near the time of injection of antigen appear variable and uncertain, more so, perhaps, than might be expected from the demonstrations that antibodies appear earlier in the spleen than in the blood, that antigen is fixed by the spleen, and that in the presence of antigenic substances cultures of splenic tissue outside the body may produce antibodies. The results of several experiments indicate clearly that after antibody production is well under way, splenectomy has little or no effect on the course of the antibodies in the blood. The antibody content of the blood was not diminished markedly by splenectomy and roentgenization at or near the height of the curve. The nature of this so-called resistance remains obscure.

Irregular Typhoid Strains.—Meyer and Neilson describe the laboratory infections in a vaccinated caretaker exposed to laboratory animals shedding living typhoid bacilli and a laboratory worker also immunized, who was regularly working with strains of the *B. typhosus* group. The last case apparently caused a severe and fatal house contact infection. From the blood and urine of two persons, an irregular, atypical organism, and from the stool and urine of a third typical typhoid bacilli were isolated. The possible bearing of these observations on the epidemiology, clinical aspect and bacteriology of typhoid fever is discussed, and it is suggested that special attention be paid to the occurrence and the detailed study of irregular typhoid strains in the typhoid vaccinated.

Hemophilic Nonaerogenic Paracolon Bacillus.—A bacillus isolated from the urine of a case of bilateral infected hydronephrosis is described by Meyer and Hinman. The bacillus is apparently a member of the paracolon group of bacteria found in urine and is best designated as hemophilic nonaerogenic paracolon. Samples of urine cultured after the patient had been vaccinated with a heat killed, tricresolized bacterial suspension of the original parasitic strain and after a clinical recrudescence, demonstrated the same organism which grew on nonhemoglobin mediums and which in every respect corresponded with the saprophytic strains obtained by successive cultivation on artificial mediums.

Journal of Medical Research, Boston

March, 1920, **41**, No. 3

*Skin Lesion in Measles. F. B. Mallory and E. M. Medlar, Boston.—p. 327.
*Type Cell of So-Called Dural Endothelioma. F. B. Mallory, Boston.—p. 349.
*Regeneration of Smooth Muscle Cells. F. B. Berry, Boston.—p. 365.
*Experimental Production of Pneumonia with Influenza Bacillus of Pfeiffer. R. H. Major, Rosedale, Kan.—p. 373.

Skin Lesions in Measles.—The skin lesions in measles are, without much question, of infectious origin and due to the causal agent of the disease. The reasons for these points of view are as follows: The lesions are focal in character and discrete, not uniformly distributed like the rash in scarlet fever. They are scattered irregularly, sometimes singly, often in smaller and larger groups. If numerous enough, they may become confluent. Small pieces of skin removed during life from thirty-five patients were studied by the authors and the findings are described in detail. The endothelial cells lining the capillaries in the earliest lesions often contain from one to four, rarely more, minute intensely staining spherical bodies which vary a little in size. In the older lesions the bodies are fewer in number and usually more evident at the periphery of the lesion. Still later they disappear entirely. The nature of these bodies cannot be determined. Similar bodies have not been found in the endothelial cells lining the blood vessels in other acute lesions examined for purposes of control. It is suggested that they may be the causal agent; possibly a coccus in various stages of digestion. Their positive reaction to the Gram stain would favor this view. Study of the nasal, pharyngeal, laryngeal and conjunctival secretions, and of the blood in smear preparations, by dark field illumination and by culture on various media, failed to show any micro-organisms which seemed to bear any etiologic relation to the disease.

Dural Endothelioma is a Fibroblastoma.—The result of an examination of perfectly typical specimen of a so-called dural endothelioma leads Mallory to suggest that the dural endothelioma, so called, is in reality some form of fibroblastoma. The phosphotungstic acid hematoxylin stain showed the real nature of the neoplasm. Each cell was surrounded by numerous fine fibroglia fibrils, without question produced by the tumor cells. They were better developed in those places where growth was less rapid, but they were everywhere present and were more prominent than the collagen fibrils. The production of fibroglia and collagen fibrils is the distinguishing characteristic of the type cell known as the fibroblast. The histogenesis of the tumor is discussed.

Regeneration of Smooth Muscle.—The material for Berry's study was a uterus, into the wall of which a curet had been thrust four days previously. Unquestionable regeneration of the smooth muscle was noted. Experimental studies made on animals gave the same results. Berry considers it doubtful if the condition seen in hypertrophic stenosis of the stomach and in Hirschsprung's disease can be ascribed entirely to simple hypertrophy. It would appear, rather, that there must also be some hyperplasia, though in what manner is not clear.

Bacillus Influenzae and Pneumonia.—The results of Major's experiments indicate that the invasive powers of *B. influenzae* are limited. When the organisms are injected intravenously the effects produced are to be explained by a toxic action, rather than any direct bacterial action produced by multiplication and spread through the blood stream. In no cases were the bacilli recovered from the blood cultures in animals which had been injected intravenously with influenza bacilli. Introduction of *B. influenzae* into the trachea was successful, in producing bronchopneumonia. In these cases also, the invasive properties of the organisms were apparently limited, as the bronchopneumonic patches were small, few in number and confined to the hilus of the lungs. The location of these areas also suggested a local direct action of the masses of bacteria, with but little extension to other portions of the lungs. A preliminary irritation of the respiratory tract with chlorin gas permitted an extensive invasion with influenza bacilli injected intravenously or intratracheally. The pathologic changes produced in the lungs were striking and intense in degree, and resembled the lungs in fatal cases of human influenza. In the majority of these cases influenza bacilli were grown from the lungs in pure culture.

Medical Record, New York

July 17, 1920, **98**, No. 3

Tonsil Infections. S. R. Salzman, Toledo, O.—p. 85.
Obesity. H. C. Clapp, Boston.—p. 89.
*Bacteriologic Study of Respiratory Infections and Respiratory Contacts as Encountered in France. H. R. Spencer, Baltimore.—p. 94.
*Treatment of Acute Polyarthritis. S. W. Boorstein, New York.—p. 96.
Value of Immunizing Doses Influenza Vaccine in Prophylaxis and Specific Treatment of Influenza. W. E. Fitch, New York.—p. 100.
*Blood in Influenza. B. Lemchen, Chicago.—p. 102.
Cancer of Omentum. J. N. Study, Cambridge City, Ind.—p. 103.

Pathology and Bacteriology of Pneumonia.—Of the fatal cases (seventy-five) of pneumonia studied by Spencer postmortem, 91.9 per cent. were bronchopneumonias. The lesions were most frequently bilateral, and involvement was most often noted in all of the lobes of both lungs. Of the lobes involved, the lesions were commonly found in the dependent portions. Pleurisy was the most common complication being noted in 72 per cent. of cases. The pneumococcus *Staphylococcus aureus, Streptococcus hemolyticus* and Pfeiffer's bacillus were most frequently noted. While in both the fatal cases of pneumonia and in the contacts, Type IV pneumococcus predominated, the more virulent Types I, II and III were noted more frequently in the pneumonia cases than in the contacts. The number of carriers among the contacts was high, and, as might be expected, the incidence of carriers in the medical wards was greater than in the surgical ward. Pfeiffer's bacillus was encountered as often among the carriers as in the fatal cases of pneumonia.

Medical Treatment of Acute Polyarthritis.—In the medical treatment of acute polyarthritis, or what has been termed arthritis deformans, Boorstein urges that all forms of salicylates, even acetylsalicylic acid, should be avoided. They upset

the digestion and make the condition worse. Only those medicaments aimed to promote digestion, proper bowel activity, proper circulation, and proper character of the blood should be used. It is, therefore, advisable to give strychnin, arsenic, iron preparations, and phosphates. The laxative desired can easily be added to these. In chronic cases, cod liver oil can be added. During the acute or subacute stage, hypodermic injections of sodium cacodylate, given every four or five days in from ¾ to 1¼ grain doses, have been found of great help in raising the resistance power. Tincture of gelsemium, 5 minims, may be used to relieve temporary severe pain. If intestinal putrefaction is present, Boorstein uses guaiacol carbonate, 5 grains three times daily. None of the lithium or radium waters, glandular extracts and vaccines were found to have any value.

Blood in Influenza.—Leukopenia, great diminution of blood platelets, with an increase of the coagulability of the blood were the notable findings made by Lemchen in his series of cases.

Minnesota Medicine, St. Paul

July. 1920, **3**, No. 7

Treatment of Second Stage of Labor; Prevention of Injury to Child and to Pelvic Floor. J. B. DeLee, Chicago.—p. 317.
Surgical Treatment of Bunions. C. H. Mayo, Rochester, Minn.—p. 326.
Tumors of Great Omentum. A. L. McDonald, Duluth.—p. 331.
War Wounds of Major Joints. A. A. Law, Minneapolis.—p. 337.
Modified Inguinal Hernia Technic. G. Earl, St. Paul.—p. 342.
Surgical Shock. S. C. Plummer, Chicago.—p. 345.

New Jersey Medical Society Journal, Orange

July, 1920, **17**, No. 7

The Doctor. G. K. Dickinson, Jersey City.—p. 217.
The State Journal. H. Taylor, Fort Worth, Texas.—p. 221.
Gallbladder Disease. J. W. Martindale, Camden.—p. 226.
Errors in Gynecologic Diagnosis and Practice. F. C. Holden, New York.—p. 229.
Diagnosing Incipient Pulmonary Tuberculosis. C. I. Silk, Perth Amboy.—p. 231.
Good Fellowship. J. M. Rector, Jersey City.—p. 233.
*Primary Sarcoma of Appendix. H. I. Goldstein, Camden.—p. 234.

Primary Sarcoma of Appendix.—Goldstein's patient, female, aged 25 years, had several attacks of appendicitis. The appendix was eventually removed. In its wall was a mass which proved to be a lymphosarcoma. Goldstein claims that only sixteen cases of primary sarcoma of the appendix are recorded in the entire literature of the world. All the cases showed symptoms resembling attacks of acute or recurrent appendicitis.

New Orleans Medical and Surgical Journal

July, 1920, **73**, No. 1

Prevalence of Carriers of Endameba Dysenteriae among Soldiers Returned from Overseas Service. C. A. Kofoid and O. Swezy, San Francisco.—p. 4.
Trachoma in Louisiana. T. J. Dimitry. New Orleans.—p. 11.
Parenteral Injections of Cow's Milk. A. Darier, New Orleans.—p. 16.
American Society of Tropical Medicine. H. J. Nichols, U. S. Army.—p. 29.
Leprosarium of Cabras, Porto Rico. J. A. Diaz, New Orleans.—p. 33.

New York Medical Journal

July 24, 1920, **112**, No. 4

Effort to Standardize Surgical Mensuration. R. T. Taylor, Baltimore.—p. 109.
Diagnostic Tests in Hay Fever and Asthma. W. Scheppegrell, New Orleans.—p. 112.
Cases of Protein Sensitization. M. A. Ramirez, New York.—p. 115.
Peptic Ulcer. J. S. Diamond, New York.—p. 116.
*Benzyl Benzoate Treatment of Whooping Cough. T. E. McMurray, Wilkinsburg, Pa.—p. 122.
Diagnostic Charts as Guide in Study of Gastro-Intestinal Conditions. I. O. Palefski, New York.—p. 123.
Pleural Disease in Infants and Children. H. Lowenburg, Philadelphia.—p. 124.
Treatment of Tuberculosis. B. S. Paschall, New York.—p. 127.

Benzyl Benzoate in Whooping Cough.—Benzyl benzoate, in doses of from 5 to 30 minims every four hours, depending on results, was used by McMurray to good purpose. In some cases decided improvement was noticed from the smaller dose; in other cases larger doses were employed. In almost every instance the treatment determined subsidence of the paroxysms. The effect usually made itself felt within forty-eight hours and in one instance there was relief after the second dose. As a rule, the relief is immediate and complete. No undesirable results were noted. A child 12 months of age was given 20 minims with no evidence of gastric or any other disturbance.

Ohio State Medical Journal, Columbus, Ohio

July 1, 1920, **16**, No. 7

Dietetics of Nephritis. S. R. Salzman, Toledo.—p. 485.
Problem of Acidosis in Relation to Disease. W. W. Beauchamp, Lima.—p. 488.
*Infections of Uterus and Cervix; Treatment. F. I. Shroyer, Dayton.—p. 495.
Gonorrheal Inflammations in Women. E. H. Chapin, Columbus.—p. 498.
Simple Goiter, a Public Health Problem. C. P. McCord and R. C. Walker, Cincinnati.—p. 501.
*Pulmonary Tuberculosis as Sequel of Influenza. S. A. Douglass and W. P. Brown, Mt. Vernon.—p. 506.
Medical Economics. J. A. Duncan, Toledo.—p. 510.
*Effect of Ether on Experimental Tubercle Bacillus Infections. J. B. Rogers, Cincinnati.—p. 509.
Epidemic of Influenza at Delaware Girls' Industrial Home. G. H. Transeau, Columbus.—p. 512.
Syphilis and Feeblemindedness in Alabama State Industrial Schools. T. H. Haines, Jackson, Miss., and W. D. Partlow, Tuscaloosa, Ala.—p. 515.

Infections of Uterus and Cervix.—Shroyer claims that 60 per cent. of all married women and 30 per cent. of all unmarried women have infections of the genital tract. These infections are almost invariably located in the cervical endometrium. The endometrium of the body of the uterus is practically immune to infection. Lacerations of the cervix seldom produce uterine or pelvic symptoms. It is the presence of infection in the lacerations that causes disease. Among the more frequent germs that cause chronic endocervicitis are the gonococcus, the streptococcus, the staphylococcus and the colon bacillus. Infection of the cervix in nulliparous women is frequent, although it is not at all limited to those who have had sexual intercourse nor are these infections always due to the gonococcus, but the mentioned bacteria any one or several may be the causative factor. Properly directed surgical interference offers, at present the only method of cure. The cervical mucosa must be completely enucleated, care being taken not to destroy the muscle, for if the muscle is destroyed during future pregnancies the function of the canal will be lacking.

Influenza and Tuberculosis.—The records of the Ohio State Sanatorium show that epidemic influenza has had a decided etiologic relation to tuberculosis. Forty per cent. of 615 tuberculous patients admitted to the sanatorium since 1919, attributed their active tuberculosis symptoms to influenza. Of the 249 patients, 67 per cent. had a negative tuberculous history prior to the epidemic of October-December, 1918, as far as could be determined, while in 33 per cent. (or 13 per cent. of total admissions) classified as reactivated, a definite or suspicious history of a previous tuberculosis could be elicited. Sixty-two per cent. of the entire group had positive tuberculous sputum. A feature of the activated cases was that 40 per cent. had a nonsymptomatic period averaging five months following influenza, during which, in many instances, the patient returned to work. The tendency in these cases was toward a delay in diagnosis by ascribing the tuberculous symptoms to bronchitic sequel of influenza and therefore supposedly benign and temporary. Douglass and Brown state that these statistics are also quite uniform for the Missouri State Sanatorium and the North Carolina State Sanatorium. The Ohio State Sanatorium, with a patient population of 185 was entirely free from influenza during both epidemics. During the 1918 epidemic no regulations were in effect. It is, perhaps, reasonable to suppose that these "open" cases have a considerable immunity to the associated organisms of influenza, also it is just as reasonable to presume that the open-air-hygienic regimen was a considerable factor in their protection.

Effect of Ether on Experimental Tuberculosis.—Experiments made by Rogers on guinea-pigs showed that ether anesthesia in tuberculously infected guinea-pigs fails to exert any inhibitory action on the progress of the tubercle formation or to prolong the life of the animal. It does not reduce the resistance of tuberculously infected guinea-pigs.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

July 3, 1920, **2**, No. 3105

*Universities in Medical Research and Practice. T. C. Allbutt.—p. 1.
*Place of Preliminary Science in Medical Curriculum. G. Newman.—p. 8.
Course of Study in Science for Medical Students: Biology. S. J. Hickson.—p. 12.
Id. Anatomy. A. Keith.—p. 15.
Id. Physics. E. Rutherford.p. 16.
Id. Relation of Preliminary Science Teaching to Pathology. J. L. Smith.—p. 17.
Id. Chemistry. A. Smithells.—p. 19.

Universities in Medical Research.—In his presidential address before the British Medical Association Allbutt states that the universities, ancient and modern, from Alexandria to Edinburgh, have made the professions. Universities have fostered research, and maintained standards. For each student the university stands for something larger than the field of a particular calling, for a more comprehensive design. Narrow "specialization" is found in medicine, as in other arts, among people of narrow culture. Specializing is prone to be quackish. Education must therefore from the first be an introduction to life; not forgetting that some study is a part of life. In medicine, Allbutt says, the "curriculum" may well be called a race! The enlargement of knowledge and means implies more and more instruction; but the limits of the human mind are not indefinitely extensible. Some easement may be had however by simplifying our studies; by teaching our teachers; by recognizing two curriculums—one of the diploma and another of the university; by postponing some studies till after graduation. The diploma course must play up to outside examiners. Speaking of teachers Allbutt says that almost none of them has been taught to teach; and but few are in a position to compare the methods of others with their own. Short revision or "rubbing up" courses at subsequent dates; as, for instance, of physics and chemistry in the pathology period are advocated. The theses and acts for M.B. and M.D. at Cambridge are held to be invaluable to the young graduate. The debt of other sciences to medicine, research, comparative pathology, psychotherapy, general practice and preventive medicine and clinical practice are subjects which are also discussed by Allbutt.

Needed Reforms in Medical Education.—The main reforms needed in the medical curriculum in Newman's opinion are four: 1. A lightening of the curriculum at both ends; in other words, fuller preparation in science before entrance to the medical school, and a postponement of instruction in certain specialities and in general practice to the postgraduate period in order to provide continued education of the qualified man—teaching which requires organization on the basis of professoriate, hospital, laboratory and clinical experience. 2. A fuller study of the sciences preliminary to medicine and a nearer application of these subjects to clinical work. Above all, there is great need of biology (anatomy and physiology). Its principles are the answer to many of our questionings. It is the fundamental theme. 3. Development of clinical teaching of university standard, particularly in relation to the beginnings of disease (the child and the outpatient), the science of prevention, the closed integration of various forms of clinical practice and of clinical with intermediate study, concentration on the protean diseases of tuberculosis, venereal, malaria, malignant disease, and an understanding of the social side of therapeutics (environment, diet, occupation, and the use of physical agents), as well as the social aspects of disease. 4. There is need of further state aid, though with a minimum of state control. To provide a satisfactory medical education (*a*) we need more teachers, better teachers, and better paid teachers; (*b*) we need clinical units; (*c*) we need improved laboratory accommodation and better equipment; (*d*) we also need an extension of hospital and clinic facilities for teaching. The education of the medical man is no longer a proprietary or merely professional interest. It is of national concern—for the health of the people is the principal asset of the state.

China Medical Journal, Shanghai

May, 1920, **34**, No. 3

Thrombo-Angiitis Obliterans in China. G. D. Whyter.—p. 219.
Uniform System of Eye Tests. H. J. Howard.—p. 226.
Fractures of Femur: Diagnosis and Treatment. J. C. McCracker.—p. 230.
Tuberculosis: Present Status of Tuberculin Treatment. W. H. Venable.—p. 236.
*Asiatic Cholera: Study of One Hundred Cases. L. H. Braafladt.—p. 243.
Cholera in Paotingfu, 1919. J. H. Wylie.—p. 252.
Cholera in Soochow, 1919. J. A. Snell.—p. 253.
Abscess of Liver. A. I. Ludlow.—p. 258.
*Exstrophy of Bladder: Implantation of Ureters into Rectum. A. J. Ludlow.—p. 262.
Gangosa in South China: Report of Two Cases. N. Bercovitz.—p. 263.
Influenza Bacillus in Paranasal Sinus Infections. S. J. Crowe and W. S. T. Neville.—p. 264.
*Nutritive Value of Soy Bean Products. W. H. Adolph and P. C. Kiang.—p. 268.

Asiatic Cholera.—On the basis of Braafladt's study, it would seem that (1) persons over 50 years of age contracting cholera have only a very small chance of recovering, even though they receive treatment; (2) that cholera is a more severe disease in women than in men; (3) that the prognosis is very good if proper treatment is commenced during the first day of the illness; (4) that hypertonic salt solution is the best form of treatment for those in severe collapse, but that it is harmful to those who have not yet developed many of the secondary symptoms; (5) that kaolin is the remedy of choice if the patient does not come under treatment too late.

Exstrophy of Bladder; Implanting Ureters Into Rectum.—A boy, aged 10 years, had a congenital exstrophy of the bladder. The anterior wall of the bladder was absent. Both ureters could be seen. Each ureter, together with a rosette of mucous membrane, was stripped back for a distance of 2 inches. The remainder of the bladder was dissected away. The peritoneal cavity was not opened during the procedure. Forceps were inserted into the rectum and on being passed through the rectal wall the ends of the ureters were seized and implanted into the two separate openings. The day following the operation there was leakage from above. The patient suffered considerable shock and died on the ninth day after operation.

Soy Bean.—The history and uses of the soy bean and its products in China are reviewed by Adolph and Kiang and the important relationship indicated which these food products bear to the Chinese dietary. Soy bean curd is rich in protein, and contains those mineral constituents which are essential for growth. Analyses are given of bean curd, bean milk, and the by-products obtained in their manufacture.

Indian Medical Gazette, Calcutta

June, 1920, **55**, No. 6

Standard Diets. J. A. Shorten.—p. 201.
Typhus and Typhus-Like Fevers in Birjand, East Persia. A. S. Fry.—p. 204.
Outbreak of Relapsing Fever in Turkey in 1918. C. Newcomb.—p. 208.
Influenza. J. H. McDonald.—p. 217.
Improvised Triple-Bladed Bamboo Gastro-Enterostomy Clamps. K. Hysain.—p. 219.
*Epithelioma of Upper Lip in Boy of Fourteen. L. P. Stephen.—p. 220.
Case of Cystic Kidney. A. Viswalingam.—p. 220.

Epithelioma of Lip in a Young Boy.—In Stephen's case the tumor was first noticed when the boy was 12 years old. It was removed by operation and a recurrence took place three months after. On admission to the hospital, in February, 1920, the tumor involved the right upper lip, extended beyond the middle line to the left and involved also the right angle of the mouth and a part of the lower lip. On the right cheek adjacent to the principal tumor were several secondary nodules, which were raised and warty in appearance, but were not ulcerating. The submaxillary and submental glands on both sides were enlarged and hard, but were not adherent to the jaw. The microscopic diagnosis was epithelioma.

Journal of Tropical Medicine and Hygiene, London

July 1, 1920, **23**, No. 13

Treatment of Bilharziasis with Antimony. J. E. R. McDonagh.—p. 165.
Bilharziasis: Sterilization of Ova During Course of Cure by Antimony (Tartarate). J. B. Christopherson.—p. 165.

Lancet, London

July 10, 1920, **2**, No. 5054

*Relation of Preliminary Science Teaching to Pathology. J. L. Smith.—p. 55.
Medical Experiences in Macedonia and Caucasus. A. G. Phear.—p. 56.
*Physical Element in Psychoneuroses. J. S. Bury.—p. 66.
*Influence of Suggestion on Body Temperature. J. A. Hadeld.—p. 68.
*Suggestions for Mass Treatment of Hookworm Infection. S. T. Darling.—p. 69.
*Two Cases of Paralysis Agitans Occurring Before Thirtieth Year. E. D. Atkinson and C. W. Drought.—p. 72.
*Central Pneumonia in a Child of Two. H. O. Gunewardene.—p. 73.

Shortcomings of Medical Curriculum.—Smith holds that the present curriculum is wasteful of the students' time because it gives what may be called a general introduction to the sciences, but leaves it to the later teachers or the students themselves to apply the principles and methods of these sciences in the various branches of medicine; whereas a continuity of teaching would concentrate intellectual effort and would thereby attain with much more certainty the standard of work which the curriculum is designed to reach. Furthermore, the student of medicine should be trained in criticism, and for this all important part of his training the earlier sciences must assume a considerable part of the responsibility. To be a good practitioner of medicine requires that the doctor must possess not only technical knowledge and skill, but also a broad, sympathetic, tolerant conception of life. To secure this nothing could be better than critical reflection on the fundamental conceptions by which the phenomena of life are interpreted.

Psychoneurosis.—Bury regards it as likely that molecular disturbances of the nervous system and altered blood states largely account for the long duration of many cases of psychoneurosis and for the great tendency for symptoms to relapse on the slightest provocation, whether that be undue exertion, loud sudden noises, or family or business anxieties. In the most common type of cases he believes that better results will be attained by fresh air, sunlight, cheerful surroundings, and light work, than by continuous searching for a hidden mental conflict.

Influence of Suggestion on Body Temperature.—Hadfield cites a case in which there was a very remarkable susceptibility on the part of the patient to suggestions of heat and cold, which was not purely subjective, but produced a rise and fall of temperature as measured by the thermometer.

Treatment of Hookworm Infection.—The work of the Malaya board is reviewed by Darling. It is recommended that communities in which the adults have an average of fifty or less worms do not urgently require treatment, while those with more than fifty worms should be treated. In carrying out treatment the two-treatment plan may be pursued, microscopists being dispensed with. Every person in the group, excepting very young children, should be treated. Persons ill with chronic nervous diseases may be treated with thymol or other vermicide. Pregnancy and severe anemia are not contraindications to the administration of chenopodium. The drug and dosage is chenopodium 1.5 c.c., given in single or broken doses in hard gelatin capsules. The preliminary purge before medication may be omitted, but in this case the evening meal should be light and food then interdicted until after the postvermicidal purge, which may be given two to three hours after the exhibition of the chenopodium. The postvermicidal purgation should be very thorough, for it is extremely important that the chenopodium, being a neurotoxic drug with cumulative powers, should be as thoroughly expelled as the worms, and at the earliest possible moment after the drug has accomplished its purpose on the worms. If permanent results are to be achieved, prophylaxis as well as treatment of infection must be considered.

Paralysis Agitans Before Thirty.—The cases cited by Atkinson and Drought are of interest not only on account of the unusually early age (30) but because both patients were soldiers, in whom true paralysis agitans is very rarely seen.

Central Pneumonia in Child.—The unusual features of Gunewardene's case are: (1) that the crisis did not occur till the fourteenth day; (2) that the pneumonia was of the central variety and the physical signs of consolidation did not appear till the ninth day; and (3) that the temperature was maintained at two levels during the course of the illness for about nine days between 103.5 and 104.5 F. and for five days between 102 and 103 F., the fall to the lower range suggests the crisis following the inflammation of the area of lung primarily involved, masked by the fever due to the subsequent involvement of another area; there is also apparent the so-called precritical rise before the arrested crisis. The real crisis was a protracted one.

Annales de Médecine, Paris

1920, **7**, No. 4

*Primary Typhoid or Paratyphoid Phlebitis. G. Etienne.—p. 249.
Nosography of Human Sero-Anaphylaxis. Péhu and Durand.—p. 255.
Phlebitis with Pulmonary Tuberculosis. Halbron and Paraf.—p. 265.
*Elimination of Hippuric Acid. P. L. Violle.—p. 272.
*Rôle of Fats in Nutrition. F. Maignon.—p. 280.
Present Status of the Abderhalden Reaction. Vitry.—p. 301.

Primary Typhoid Phlebitis.—In the first of Etienne's three cases, pain in the ankle was the first positive symptom after eight days of a slightly febrile temperature. Phlebitis developed and at the sixth day the paratyphoid A bacillus was cultivated from the blood. The phlebitis involved the femoral vein on both sides in turn, the temperature showing waves of acute rises. By the third month the blood was sterile but there was still some effusion in one knee six months after the first symptoms. In the second case the phlebitis developed the third day after the sudden onset of intense headache and malaise. The phlebitis assumed the form of phlegmasia alba dolens and involved both legs. The subacute disease progressed with the picture of general septicemia with seroagglutination of typhoid bacilli but no signs of actual typhoid fever, the man of 56 dying in a little less than a month after the first symptoms. In the third case the phlebitis was the first sign of pathologic conditions. Then the temperature rose and the phlebitis spread to the other leg, with subjaundice, the low fever dropping by lysis the third month. The serum agglutinated the typhoid bacillus at 1:80 and the paratyphoid bacilli at 1:40 and 1:30. Etienne does not know of any analogous cases on record.

Elimination of Hippuric Acid.—Violle shows that the amount of hippuric acid eliminated varies with the diet and the state of the kidneys. When the latter are diseased, very little hippuric acid is eliminated, hence systematic examination of the hippuric acid output from time to time, on a given diet, including green vegetables and fruits to supply the benzoic acid from which the hippuric acid is formed, affords insight into the functional capacity of the latter.

Rôle of Fats in Nutrition.—Maignon shows how new facts recently learned have thrown light on the fats as potent modifiers of nutrition, in addition to their rôle as food. His personal research has apparently demonstrated that fats do not serve in the production of glycogen in mammals; hence their usefulness in diabetes. But they aid in the utilization of the proteins in the food, reducing the toxicity and increasing the nutritional value. The practical lesson from this is that fats are needed medicinally in all disturbances of nitrogen metabolism and to aid the protein synthesis in growing children. He explains the reasons why, with menace of coma in diabetes, the rational treatment is to give fats in the place of most of the carbohydrates of the diet; the protein in the diet should be reduced to the maintenance minimum. The fats should be in an assimilable form, such as emulsified and partially saponified oil. With this treatment, none of his diabetic patients have developed coma, although some of them were very grave cases of lean diabetes with intense glycosuria and acetonuria, and extreme nitrogen denutrition. The same treatment applies also to chronic autointoxication from defective utilization of proteins, as in eczema and rheumatismal conditions. He has obtained positive results in some dogs with eczema. Two conditions are indispensable, he reiterates, namely, that the fats must be given not as a supplement but in place of other foods, so that the organism will be obliged to utilize them and not store them up as adipose tissue reserves. This can be kept under control by repeated weighing. The other condition is that the urine must be kept acid with sodium bicarbonate to avert hyperacidity of the urine and hypoalkalinity of the blood, to which he ascribes the cause of acetonuria and acidosis.

Bulletin de l'Académie de Médecine, Paris

June 1, 1920, **83**, No. 22

*Convulsions Cured by Operations. P. Bazy.—p. 501.
Potassii Tartroboras in Epilepsy. P. Marie and others.—p. 504.
Reduction of Contagious Period by Milne Method. G. H. Lemoine and Favre.—p. 515.

Tendency to Convulsions Arrested by Operation.—Bazy reports two cases in which an operation for undescended testicle, with attacks of pain and convulsions, put an end to the pains and convulsions, and there has been no recurrence during the one and fifteen years since. In another case an operation for appendicitis arrested recurring convulsions. The connection here was evidently indirect, as also in a case in which gastro-intestinal disturbances in a young man were cured by a change from an excessive meat to a more vegetable diet, and there were no more of the convulsions to which he had been subject.

Bulletin Médical, Paris

April 21, 1920, **34**, No. 22

Restoration of Function After Concussion of Spinal Cord. A. Barbé.—p. 372.
Tuberculosis in the Gassed. F. Dumarest.—p. 374.

June 5, 1920, **34**, No. 29

Secondary Endocarditis with Heart Disease. P. Ribierre.—p. 513.

June 12, 1920, **34**, No 30

Centers for Infant Welfare Work. H. Méry.—p. 531.
*Treatment of Jaundice. P. E. Weil.—p. 533.
Gastro-Intestinal Disturbance in Children of Rhinopharyngeal Origin. A. Malherbe.—p. 535.

Sugar and Hexamethylenamin in Jaundice.—Weil gives systematically daily by the drop method, by the rectum, 1.5 gm. of hexamethylenamin in a solution of sugar, 45 gm. to 1 liter of boiled water, in all kinds of acute infections except dysentery. He applies it as a daily routine measure from the start. All that we know, he says, of liver physiology supports this treatment theoretically, and experience is confirming it in practice. Sometimes he adds a little epinephrin. This treatment is more active than infusion by the vein or subcutaneously of the sugar solution. It stimulates the liver and kidneys and induces intense diuresis, while the sugar promotes production of glycogen and elimination of nitrogenous waste, and starts a more profuse flow of bile. He uses sugar instead of glucose, as more readily available, and is not certain whether the hexamethylenamin might not be dispensed with. This treatment may transform conditions with jaundice from gallstones so that operative measures may become unnecessary. It fails of course when the jaundice is the result of cirrhosis or neoplasms.

Bulletins de la Société Médicale des Hôpitaux, Paris

May 28, 1920, **43**, No. 19

*Spirochaeta Pallida in Aortic Aneurysms. Y. Manouélian.—p. 742.
Multiple Relapses of Diphtheric Sore Throat. L. Boidin.—p. 747.
Deafmute Androgynoid. Laignel-Lavastine and Gouriou.—p. 749.
Heredosyphilitic Gynandroid. Laignel-Lavastine and Boutet.—p. 754.
Lethargic Encephalitis. Dupouy.—p. 759.
Spirochaeta Pallida in Semen. M. Pinard and Hoch.—p. 762.

Spirochetes in Aneurysm of the Aorta.—Manouélian found *Spirochaeta pallida* in three or four cases of aneurysm of the thoracic or abdominal aorta. The spirochetes seemed to be clustered in foci.

Journal de Chirurgie, Paris

February, 1920, **15**, No. 6

Muscle Flaps to Fill up Bone Cavities. R. Grégoire.—p. 593.
Tendon Plastics for Radial Paralysis. R. Massart.—p. 601.
Access to Foreign Bodies at Base of Brain and in the Sphenomaxillary Fossa. Bellin and Vernet.—p. 616.
Extraction Through Appendix of Pin in Cecum. L. Prat.—p. 624,

Journal de Médecine de Bordeaux

June 10, 1920, **91**, No. 11

Protection of Infants Against Alcohol. Chambrelent.—p. 287.
Nontoxicity of Bismuth Subnitrate. L. Barthe.—p. 293.
*Access to Sella Turcica. Lafite-Dupont and Charbonnel.—p. 294.

Access to Sella Turcica.—This illustrated article discusses the topographical relations between the sella turcica and the sphenoidal sinus. There is wide variation in different cases but one point seems to be established, namely, that the sella is always on the median line in relation to the transverse axis of the skull. Its position in relation to the anterior-posterior axis of the skull may vary.

Journal d'Urologie, Paris

1920, **9**, No. 1

*Indications for and against Nephrectomy. F. Legueu.—p. 1.
*Chronic Disease of Seminal Vesicles. G. Marion.—p. 11.
The Oscillometer as Aid in Urologic Surgery. G. Jeanneney.—p. 19.
New Case of Spontaneous Rupture of Renal Artery. Saint-Cène.—p. 25.
*Paresis of Bladder Cured by Borated Glycerin. Corbineau.—p. 31.

Indications for and Against Nephrectomy.—Legueu relates that thirteen of his 1,008 nephrectomies before 1920 are too recent for decision as to the outcome. Of the 437 others since 1915, in 250 the nephrectomy was done on the findings with catheterization of the ureters, and in 187 on the findings of the Ambard ureosecretory index. With the latter below 0.100, the mortality was 3.6 per cent.; above 0.100, the mortality was 10 per cent. With catheterization alone, the mortality was 3.20 per cent. His experience all speaks in favor of the Ambard index as being a reliable guide alone, especially when it is below 0.100. The higher the constant the greater the risk. The risk is highest when the nephrectomized kidney has been doing part of the work. When the remaining kidney has been doing all the work, the removal of the useless kidney does not affect the total output. With a constant below 0.100 the disease was invariably restricted to one side in his experience. But the constant does not tell which side; for this, catheterization may be necessary unless the diseased kidney can be located otherwise.

Vesiculitis with Prostate Disease.—In Marion's three cases the dysuria of prostatic origin was accompanied by inflammatory processes in the seminal vesicles, and in each case the prostate was the seat of a cancer. In one, the prostate seemed to be merely smoothly enlarged except that the seminal vesicles could be palpated, tender and doughy. This should suggest the possibility of malignant disease unless there is evidence of ordinary chronic prostatitis. The vesicles in each case were knobby and dilated as if the outlet to their secretions had been blocked by the neoplasm. They were the source probably of the violent pains experienced, and the removal of the vesicles with the prostate did not seem to render the prognosis graver.

Borated Glycerin in Paresis of the Bladder.—Corbineau reports two cases which sustain the general impression that boric acid has a stimulating action on the muscle fibers of the bladder. He injected it without first emptying the bladder, injecting 30 c.c. directly into the meatus without a catheter. This small amount was enough in both cases for the patient to regain functional control of the bladder in fifteen or thirty minutes. He used a 10 per cent. solution of the boric acid.

Lyon Médical

April 25, 1920, **129**, No. 8

*Vaginal Cystocele. H. Violet.—p. 341.
*Nepbritis After Pneumonia. A. Giuliani.—p. 347.
War Dyspepsia of War Prisoners in Germany. A. Mollière.—p. 374.

Vaginal Cystocele.—Violet relates that the outcome six to ten years after his operation for prolapse of the bladder has been perfect to date in his twenty cases. Through a median incision in the roof of the vagina, the bladder and muscles are loosened up and pushed back and the uterus—which is usually dragged down also by the cystocele—is freed. He then sutures the fascia together to make a solid floor for the bladder, taking the first stitch in the uterus isthmus. Four stitches are usually enough. His patients were mostly elderly women; others he tided along with pessaries and encouragement until they were old enough for the operation to be advisable.

Bilateral Acute Nephritis After Pneumonia.—Giuliani reports the prompt recovery of a young man after decapsulation of both kidneys, the seat of multiple miliary abscesses developing after a week of pneumonia.

Médecine, París

June, 1920, **1**, No. 9

*Recent Acquisitions in Electroradiology. A. Zimmern.—p. 517.
High Frequency Currents in Therapeutics. D'Arsonval.—p. 526.
The Condenser to Simplify Electrodiagnosis. Cluzet.—p. 529.
*Roentgen-Ray Treatment of Pituitary Tumors. A. Béclère.—p. 533.
Orthodiagraphic Control of Aortitis. Vaquez and Bordet.—p. 536.
Curetting plus Roentgen-Ray for Skin Epitheliomas. J. Belot.—p. 540.
*Roentgen-Ray Treatment of Exophthalmic Goiter. P. Cottenot.—p. 542.
Radium Therapy of Cancer of Uterine Cervix. S. Fabre.—p. 546.
*Carbon Dioxid Snow in Skin Disease. L. Lortat-Jacob.—p. 552.

Recent Acquisitions in Electroradiology.—Zimmern cites with approval Rénon's appeal for roentgen-ray examination twice a year of persons with disease of the respiratory apparatus, to follow the evolution of their disease by keeping a radiologic record. He says that Rist's assertion that a normal lung gives a normal roentgen-ray picture has been proved too absolute by experiences with tubercle bacilli in the sputum when the roentgen-ray picture was quite normal. Mantoux has also demonstrated that a necrosed scrap of lung may not cast any shadow. Zimmern himself regards as of real value only the positive signs. The pneumoperitoneum represents progress; he ascribes the priority to Killing in 1902, and says that to date no mishaps have been reported with it. He adds "The Americans introduced into France during the war high tension apparatus to use with the Coolidge tube as in industrial electricity. Schearer in 1917 had pointed out the possible dangers from this, and the death of the Paris radiologist, Dr. Jaugeas, sadly confirmed the justness of his warning. The Société de Radiologie médicale de France has now taken up the question of means for protecting the radiologist and the subject against the high tension circuit, and numerous methods have been proposed. But there is only one that is absolutely effectual. That is, to have all the high tension apparatus in a cage on the ground, the opening of the cage automatically breaking the circuit."

Roentgen-Ray Treatment of Pituitary Tumors.—Béclère insists that in the constantly widening sphere of radiotherapy, the treatment of pituitary tumors with the roentgen rays is one of the most valuable acquisitions. With it he has succeeded in curing the headache, vertigo, nausea and vomiting; vision is improved more the earlier the treatment is begun, and the changes in the bones are arrested. These results have persisted for over six years to date; in one case for eleven years. One girl of 16 with exaggerated growth, obesity, and genital infantilism, with enlargement of the sella turcica and signs of intracranial pressure and impairment of vision was so improved by the roentgen-ray exposures that the obesity subsided, and ovarian functioning and the secondary sexual characters developed normally thereafter. He exposes different fields on the skull, not through the mouth.

Roentgen-Ray Treatment of Exophthalmic Goiter.—Cottenot says that since he has been using large doses, with thick filters, he has been obtaining very fine results in the typical cases with the complete set of symptoms. The nervous and heart symptoms are those which show the greatest improvement, the tremor subsiding, with the restlessness. The goiter itself and the exophthalmos are modified least and last. The functional disturbances thus are improved or cured, but the objective are more tenacious.

Carbon Dioxid Snow in Treatment of Skin Diseases.—Lortat-Jacob reviews the experiences in different countries with this cryotherapy or cryocauterization as he calls it, showing its success in many forms of dermatoses, its absolute harmlessness, and its efficacy in many cases refractory to all other measures.

Paris Médical

June 5, 1920, **10**, No. 23

*Infectious Diseases in 1920. C. Dopter.—p. 449.
Clinical Diagnosis of Typhus. J. Rieux.—p. 461.
The Influenza Virus. R. Dujarric de la Rivière.—p. 466.
Atypical Bacilli in Bacillary Dysentery. J. Dumas.—p. 470.
*Spinal Fluid in Lethargic Encephalitis. R. Bénard.—p. 474.

Infectious Diseases in 1920.—Dopter reviews the field of infectious diseases describing the most important acquisitions gained during the last five years. Among them is the practice of injecting meningococcus antiserum directly into the ventricle at the first suspicion of ependymitis. Sicard and his co-workers have even rinsed out the meningeal cavities by a kind of spine-ventricle lavage. Boidin, Florand and Méry have each reported excellent results from bacteriotherapy, associated or not with an abscess of fixation, in cases refractory to serotherapy, as also Colard, Sergent and Bordet with microbian injections by the vein. He says of the agglutination of *Proteus X* in typhus, that every normal serum contains traces of agglutinins for *Proteus*, but the serum of typhus patients contains something that reenforces the normal agglutinins and thus ensures the typical reaction. It occurs only in typhus, although the proteus certainly has nothing to do with the causation of typhus. Serotherapy of iceterohemorrhagic spirochetosis has given most encouraging results in the hands of Martin and Pettit; when given in the first days of the disease it may arrest it. Dopter relates that Levaditi and Harvier have apparently established by the identical histologic lesions induced in rabbits by inoculation of an emulsion of brain substance from human cases of epidemic encephalitis, that the virus is filtrable, cannot be cultivated on ordinary mediums, and is essentially different from the virus of poliomyelitis, and is not neutralized by convalescents' serum. In conclusion he refers to Noguchi's *Leptospira icteroides* as one of the finest bacteriologic discoveries of our epoch if his statements are confirmed. In spite of the flood of literature on influenza, no new acquisition can be cited.

The Spinal Fluid in Epidemic Encephalitis.—Bénard remarks that although the cerebrospinal fluid may be absolutely normal, yet this seems to be the exception in the last few months of the present epidemic. Lymphocytosis is common, but the fluid is always clear; there may or may not be albumin and glucose is not constant but the latter is so frequent that a glucose content of from 0.67 to 1.06 gm. is a material aid in the diagnosis. The urea content is normal, unless there is uremia. No specific biologic reaction has been discovered yet.

Presse Médicale, París

June 12, 1920, **28**, No. 39

*Voluntary Apnea Test. L. Binet and M. Bourgeois.—p. 381.
*Fasting Stomach Content. L. Pron.—p. 381.
Degeneration of Lenticular Nucleus. P. L. Marie.—p. 384.

Voluntary Apnea Test.—Binet and Bourgeois recalls that the functional reserves of heart, kidney and lungs can be estimated by the length of time a person can hold his breath after a deep inspiration. Two myxedematous patients were able to hold their breath for 90 and 110 seconds; with chronic bronchitis and pulmonary emphysema the apnea could be kept up only for 21 seconds; with pulmonary tuberculosis, even those with slight lesions, the average was 14 seconds; with well compensated heart disease, 34 seconds, and with failing compensation, 19. The latter figure was also the average with kidney disease, uremia and high blood pressure. The findings with this test do not parallel those of the vital capacity but throw light on the degree of impairment of respiratory functioning.

Fasting Stomach Content.—A previous communication from Pron on this subject was reviewed June 19, 1920, p. 1745. He argues to prove the greater diagnostic value of investigating the stomach content fasting rather than after a test meal. With the latter, a pure mucous catarrh escapes detection, as also microretention; filtering yields an incomplete content; the tint of the chyme masks any pathologic tint, and the slow or rapid rate of gastric secretion may mislead as to the total secretion when examined an hour after the test meal. In short, he declares, cancer is the only pathologic condition in the stomach in which the diagnosis is aided by analysis after the test meal, and even with this we must not forget that achlorhydria may be encountered sometimes, even in the elderly, with nonmalignant conditions.

On the other hand, analysis of the fasting stomach content differentiates frank dyspepsia from dyspepsia secondary to liver disease, by the pure bile in the stomach. With an ulcer, the test meal findings are merely those of ordinary hyperchlorhydria, while the finding, fasting, of a moderate total and hydrochloric acidity (for example, 2 gm. and 0.6 gm.) is highly instructive, and becomes certainty if the Meunier pro-

cedure is applied. After extraction of the stomach content and obtaining a negative Adler reaction, he pours through the stomach tube 200 c.c. of a 1 per cent. solution of acetic acid. Waiting for a few seconds, then aspirating it and testing for the hematin crystals which are constantly present on every ulcerating surface, clinches the diagnosis of gastric ulcer. The fasting stomach content also reveals continuous hypersecretion when the clinical findings otherwise may suggest merely hyperchlorhydria or possibly—from the delayed evacuation, dilatation and atony of the stomach—hypochlorhydria. It may also clear up the diagnosis of some serious stomach condition when there are no decided symptoms but only a bad general condition, lassitude and vague stomach malaise. In one man who weighed 44 kg. and ate at will and had never had vomiting nor pain nor heartburn, the fasting splash, hypersecretion and positive Adler test first revealed the old ulcer.

Progrès Médical, Paris

May 22, 1920, **35**, No. 21

Symptoms with Wounds of Cauda Equina. A. Barbé.—p. 225.
Accidental Amenorrhea. M. Dalché.—p. 227.
Physical Training in Connection with Courses of Mineral Waters. P. Mathieu.—p. 229.
Bismuth in Therapeutics. G. Faroy.—p. 229.
*Perforation of Lung with Pneumothorax. H. Lux.—p. 231.

Spontaneous Perforation of Lung with Induced Pneumothorax.—Lux comments on the comparative frequency of spontaneous perforation of the lung in the course of induced pneumothorax, and the usual effusion which follows it. He reports a case of the kind with prompt subsidence of the symptoms which had never been alarming at any time. The course depends on whether the perforation occurs in comparatively sound tissue; when this is the case little harm results.

Revue Franç. de Gynécologie et d'Obstét., Paris

January, 1920, **15**, No. 1

The Lower Segment of the Gravid and Parturient Uterus and Its "Contracture." L. Demelin.—p. 1.
Colloid Ovarian Cyst; Two Cases. R. Karhausen.—p. 29.
When Should Parturients Get Up? J. Vanverts.—p. 35.

February, 1920, **15**, No. 2

*Trachelopexy for Grave Genital Prolapse. A. Delassus.—p. 49.
*Sterility of the Male. F. A. Deluca and V. Widakowich.—p. 62.
Case of Hysteric Amenorrhea. D. Christidès.—p. 68.

Grave Genital Prolapse.—Delassus gives an illustrated description of the method of fastening the cervix stump, after amputation of the uterus, to the abdominal rectus muscle—a technic which he has applied in fifty cases. He prefers to supplement it with colpopexy at the same sitting. Apart from a case of pneumonia and one of tetanus, there was only one death in his fifty cases. In one case he found later that the cervix stump had stretched from 3 to 12 cm., but there was no further tendency to prolapse.

Sterility of Male Origin.—This article reports the microscopic examination of the sperm of 100 men selected at random at Buenos Aires. In 10 per cent. the semen did not contain spermatozoa. All in this group had had gonorrhea at some time.

Policlinico, Rome

June 7-14, 1920, **27**, No. 23-24

*Medical Treatment of Amebic Liver Abscess. T. Pontano.—p. 607. Concluded.
*Lymphosarcomatosis. C. Zoli.—p. 615.

Efficacy of Emetin Treatment of Amebic Liver Abscess.—Pontano argues that what Rogers calls the presuppuration stage of amebic liver disease—during which alone, the latter says, medical measures are effectual—is in reality the stage of the established abscess. Hence it follows that medical measures are effectual at any stage, and Pontano's experience in ten cases has demonstrated this to be a fact. Not one of his ten patients has had any recurrence during the year or more since to date of writing. In eight of the cases the diagnosis was confirmed by exploratory puncture. He adds that the ameba may not be found in the stools or puncture fluid, but the microscopic aspect of the latter is sufficient to diagnose the abscess by the albumin, cell detritus, scanty degenerated cells, erythrocytes, fat droplets and crystals of fatty acids, even without true pus. Emetin injected intramuscularly, from 0.09 to 0.15 gm. daily for three days, is the rule; two courses the first month, then one course a month for eight or nine months. He gives a mild purge before each course, and sometimes gives a decoction of ipecacuanha by the rectum. The dysentery may flare up at first; this should not modify the treatment, but the pulse and respiration must be supervised, stopping the drug on signs of intolerance. It arrests the necrotic process, and the contents of the abscess are gradually resorbed. He warns, however, that if secondary infection is transforming the products of the abscess to true pus, surgical measures are indispensable. But otherwise, neither the gravity of the abscess, its size or its age contraindicates exclusive medical emetin treatment. This acts on the dysentery itself and on multiple abscesses. Amebic abscess of the liver belongs to medical therapeutics as much as syphilitic disease of the liver.

Lymphosarcomatosis.—Zoli calls attention to the fact that the primary lesion in the case reported was in the inguinal glands, and the malignant disease might have been exterminated if the groin focus had been excised in time.

Riforma Medica, Naples

May 1, 1920, **36**, No. 18

Lethargic Encephalitis. A. Gasbarrini and A. Da Gradi.—p. 421.
Roentgen Findings with Incipient Pulmonary Tuberculosis. C. Guarini. —p. 423.
Paroxysmal Hemoglobinuria. G. Molinari.—p. 432.

May 8, 1920, **36**, No. 19

Vaccine Therapy in Influenza. A. Gasbarrini.—p. 441.
Cerebrospinal Fluid in Lethargic Encephalitis. P. Boveri.—p. 444.
Duodenal Ulcer from Lead Poisoning. R. Cassanello.—p. 445.
Technic for Draining Suppurations. D. Taddei.—p. 447.

May 15, 1920, **36**, No. 20

Anhidrosis with Spinal Cord Disease. G. A. Pari.—p. 462.
Diplococcus Isolated in Case of Lethargic Encephalitis. Tron.—p. 465.
Fibrous Bronchiolitis. D. de Conciliis.—p. 466.
The Blood Pressure. G. Galeotti.—p. 468.

May 22, 1920, **36**, No. 21

*The Pituitary and Scleroderma. G. Izar.—p. 482.
Etiology of Lethargic Encephalitis. O. Paleani.—p. 486.
Primary Epithelioma of the Peritoneum. G. B. Farmachidis.—p. 489.
Chronic Intestinal Stasis. S. Menghetti.—p. 492.

The Pituitary and Scleroderma.—Izar advises in cases of scleroderma to investigate the functioning of the endocrine glands not only in the patient but in other members of the family, endeavoring thus to find which of them is below standard. In this way he deduced that the pituitary was primarily responsible for the scleroderma in a girl of 7, and his assumption was brilliantly confirmed by the rapid cure of the scleroderma under pituitary treatment and the persistence of the cure during the year to date. The sella turcica was rather larger than normal for the child's age, 7 mm. in height and 19 mm. in diameter.

Brazil Medico, Rio de Janeiro

May 4, 1920, **34**, No. 18

*The Conception of Cataphrenias. A. Austregesilo.—p. 277.
*Anthropometric Data with Brazilian Anemia. R. Kehl.—p. 280.
Insect Transmitting Mal de Caderas. E. von Bassewitz.—p. 283.

Cataphrenias.—Austregesilo applies this term to conditions which simulate dementia praecox but in which the condition gradually subsides as the nervous system regains tone. It may have a syphilitic origin or other cause, such as shell shock, and many cases labeled dementia praecox in which the recovery later has baffled the clinician, belong in this category. Insomnia, distaste for the ordinary duties of life, and dislike for other members of the family are among the earliest symptoms, with phobias, and lack of interest in the environment. This first phase merges into apathy, asthenia and mental confusion, or there may be delirium, hallucinations and false phobias. The improvement or complete cure in time refutes the diagnosis of dementia praecox.

Brazilian Anemia.—Kehl is in charge of one of the health stations recently organized in the system of Prophylaxia Rural, and here reports the physical data in regard to the people of the Merity district, showing the extremely low level of development and health.

Semana Médica, Buenos Aires

March 4, 1920, **27**, No. 10

*Exploration of Liver Functioning. Tiburcio Padilla.—p. 319.
Psychophysiology of the Aviator. J. A. López.—p. 336. Cont'n.
*Function of Frontal Lobes. A. M. Sierra.—p. 338.
System of Public Hospitals and Charities in Ecuador, Colombia, Venezuela and Mexico. E. R. Coni.—p. 339.
The Emotion of the Infinite. M. Ruiz Maya.—p. 342.
The Puericulture Institute of the Paris Medical School. L. Mathé.—p. 345.
Hiccup. F. Daltabuit.—p. 346.

Tests of Liver Functioning.—Padilla reviews the whole field of tests to determine the functional capacity of the liver in its various directions, and the accepted interpretation of the findings.

Functions of the Frontal Lobes.—Sierra's patient was a physician with a chronic empyema in both frontal sinuses. The abscess pressed on the poles of both frontal lobes, but the only disturbance was in the use of the hands, the patient having forgotten completely what a fork, spoon, etc., are meant for. He could name them, but looked at them as a baby or a savage would who had never seen table utensils used. His impulse was to eat from the plate with his hands. In three weeks after the sinuses had been cleared out, the apraxia had entirely disappeared.

Siglo Médico, Madrid

May 1, 1920, **67**, No. 3464

*Fractioned Analysis of Stomach Content. R. Sáenz de Santa María y Marron.—p. 321.
*Probable Identity of Hyperchlorhydria and Ulcer. González Campos.—p. 323. Concluded in No. 3466, p. 364.

May 8, 1920, **67**, No. 3465

First Case of Ainhum Observed in Peru. O. Soto and J. L. Raffo.—p. 341.

May 15, 1920, **67**, No. 3466

Case of Associated Scurvy and Beriberi. G. García Urdiales.—p. 361.

Fractioned Analysis of the Stomach Content.—Sáenz leaves the stomach tube in place for an hour or longer and examines the stomach content at intervals. He uses a tube 75 cm. long and 6 mm. in diameter, with a fenestrated olive that weighs 8 gm. The outer end of the tube lies between the teeth and the cheek, and the patient can read and talk. He aspirates the stomach content every fifteen minutes until no more can be obtained by aspiration with the subject on his back, side or in the knee-chest position. Between each aspiration he rinses the syringe and injects air. Acidity, fasting, of over 1 per thousand he regards as a sign of stomach disease. His experience confirms that gastric pain is due to exaggerated peristalsis rather than to hyperacidity. With gallstones, there is usually hyperacidity in the young, while in the elderly the tendency is to achylia or hypochylia, the stomach otherwise normal.

Identity of Hyperchlorhydria and Peptic Ulcer.—González argues that the clinical picture of hyperchlorhydria is probably from an already established ulcer. Fully 66.25 per cent. of dyspeptics in his experience in Spain have hyperchlorhydria. He noted hyperchlorhydria in 96.2 per cent. of 715 positive cases of gastric ulcer, only 2.09 per cent. having normal gastric chemistry. The acidity with ulcer need not be very high. An excess of acid does no harm with normal stomach walls; some solution of continuity is necessary before there can be corrosion. The pain from the ulcer is probably due to this corrosive action and not to excessive peristalsis. He has witnessed extreme peristalsis, during roentgenoscopy, without pain, while in other cases the pain was intense when this revealed no peristalsis. The fact that the treatment which cures ulcer cures also hyperchlorhydria is a still further argument in favor of their identity. He cites from the literature considerable data which, he thinks, sustain this view.

Deutsche medizinische Wochenschrift, Berlin

Jan. 29, 1920, **46**, No. 5

The Sensation of Thirst. L. R. Müller.—p. 113.
*Azurophil Inclusion Bodies in Erythrocytes. G. Walterhöfer.—p. 116.
The Blood Picture Associated with Plasma Cells (Türk). Arneth.—p. 119.
Diverticulum of the Stomach. C. Nauwerck.—p. 119.
*Symptoms from Antirabies Treatment. A. H. Hübner.—p. 121.
*Pneumoperitoneum in Roentgenology of Liver. E. Rautenberg.—p. 123.
Traumatic Tuberculosis. A. Wolff-Eisner and L. Zahner.—p. 124.
*Relation of Hydrochloric Acid to Pepsin. L. Michaelis.—p. 126.
Otogenous Vertigo. A. Güttich.—p. 127.
Mercury Lamp plus Silver Nitrate in Dermatoses. K. Schindler.—p. 127.
Treatment of Furuncles. K. Weigert.—p. 128.
Syphilis and the General Practitioner. M. Joseph.—p. 130.

Azurophil Inclusion Bodies in Erythrocytes.—Walterhöfer states that the pathologic significance of inclusion bodies in erythrocytes lies not so much in the presence of the bodies within the cell structure as the fact that erythrocytes containing them appear in the peripheral circulation. No matter how much the shape and the staining properties of these inclusions may vary, they are always traceable to some reaction in the bone marrow, with exaggerated production of new red corpuscles. It is only in these new red blood cells that the azurophil inclusions are found. He remarks in conclusion that when the observer realizes that the different forms of these azurophil inclusions represent merely different stages of the process of extruding the nucleus of the erythrocyte, the ring bodies and dots are less bewildering. The ring bodies and dots display identical staining properties, and addition of an alkali facilitates the process. These inclusions occur more frequently than has hitherto been recognized. He describes in detail three cases of pernicious anemia in which they were found in large numbers and over long periods. The inclusions found in malaria and in various poisonings have nothing to do with these developmental processes of the red corpuscles; they originate in the corpuscles already in the blood stream. They are the direct expression of the effects of certain definite injuries, and aid in the diagnosis of the nature of the injuries.

Nervous and Psychic Disurbances Following Inoculation Against Rabies.—Hübner reports several cases in which physical and mental disturbances followed injection of antirabic serum. One man of 27 was bitten by a dog, and although there was no evidence of rabies, he received eighteen prophylactic injections of antirabic serum. The last day he received two injections, as he was leaving the city. On the journey home he felt formication in the right side of the face and six hours later right facial paralysis developed, and five days later, the same on the left side, with pains in the right ear. Opening the jaws was painful, and frontal and occipital headache was present and pain in the back at times, testifying to neuritis of the cerebral and certain peripheral nerves, with a certain amount of psychic disturbance. In three months he seemed to have quite recovered and had resumed work. Nothing else was known to explain the facial diplegia; rabies itself, Hübner thinks, can be definitely excluded in the case. In eight other cases he noted weakness and psychic changes after antirabies treatment. His experience thus warns that antirabies treatment is liable to temporarily incapacitate to some extent for regular work and responsibility.

Pneumoperitoneum in Roentgenology of the Liver.—Rautenberg discusses, in connection with seven cases, the liver defects that are revealed by raying after injection of air or oxygen into the abdominal cavity, comparing the clinical with the necropsy findings. As regards the indications for the pneumoperitoneum, he emphasizes that they are quite limited, and that the discomfort of the procedure for the patient must be weighed and compared with the expected gain from a diagnostic standpoint. It is not a question whether this method aids in the diagnosis, but whether we have exhausted all other clinical means of diagnosis, and what more can be reasonably expected from the pneumoperitoneum method.

The Relation of the Hydrochloric Acid of the Stomach to Pepsin.—Michaelis says that pepsin, in order to develop its highest degree of efficiency, must have a very high acidity to work in, irrespective as to whether this degree of acidity furnishes the most favorable conditions for the absorption of water by the protein to be digested. It is simply a wise provision of Nature that the optimal acidity for the action of pepsin coincides with the optimal conditions for water absorption by the ordinary food proteins.

Jahrbuch für Kinderheilkunde, Berlin

1920, **91**, No. 5

*Test Alimentary Glycemia. A. Frank and Lotte Mehlhorn.—p. 313.
*Chlorin Content of Infants' Blood Serum. K. Scheer.—p. 347.
*Pathogenesis and Treatment of Enuresis. A. Pese.—p. 357.
Congenital Atresia of the Duodenum. C. Ritter.—p. 369.

Alimentary Glycemia Test.—Frank and Mehlhorn report the results of thirty-seven different sets of tests on young children. In some of the tests 8 gm. of cane sugar per kilogram were given the child, fasting, and the blood was examined for sugar every half hour. Pronounced hyperglycemia followed in every instance and persisted for several hours. The same was noted with starch given in the same way, but casein and fat did not cause any change in the sugar content of the blood. With the sugar tests, there was always glycosuria, but not with starch. Starch seems to render the kidney filter less permeable for sugar.

The Chlorin Content of the Blood in Infants.—Scheer refers to the chlorin level in the serum and its dependence on the secretion of gastric juice. That is, during digestion the chlorin content of the serum rapidly declines, but rises again after the stomach is emptied.

Enuresis.—Pese says that enuresis nocturna seemed to become more prevalent during the war; at the children's asylum at Breslau 30 per cent. of all the small children and 10 per cent. of the older children were subject to it. He made a prolonged study of twenty-three small children and eleven older children, and became convinced that enuresis is of two types, the symptomatic, and the enuresis connected with the depth of the slumber. This latter form is characterized by its persistence from birth, with slight if any intermissions, the frequent coincidence with constipation, and the fact that therapeutic suggestion has no influence on it. Sedatives aggravate the enuresis, but it can be cured usually by waking the child at intervals before he gets too sound asleep, plus restriction of intake of fluids after midday. Symptomatic enuresis is amenable sooner or later to therapeutic suggestion, but this type may be combined with the "deep sleep type."

Münchener medizinische Wochenschrift, Munich

May 21, 1920, **67**, No. 21

Deep Roentgen-Ray Therapy in Gynecology. R. T. Von Jaschke and P. W. Siegel.—p. 593.
The Technic of Sacral Anesthesia. E. Zweifel.—p. 595.
Treatment of Severe Influenzal Pneumonia. Uffenheimer.—p. 597.
Agglutinoscopy of Bacterial Cultures. P. Kuhn.—p. 600.
Etiology and Diagnosis of Acute Bilateral Blindness. H. Hensen.—p. 601. Conclusion in No. 23, p. 637.
Sensibility of Digestive Tract in Man. L. Fischl.—p. 604.
Health Certificates for Marriage. Schubart.—p. 605.
Treatment of Old Luxations of Shoulder. A. Schanz.—p. 605.
Errors in Diagnosis and Treatment of Muscular Rheumatism. W. Smitt.—p. 606.
*Toxicity of Arsphenamin. K. Taege.—p. 606.
Nature and Cause of Arteriosclerosis. W. Hueck.—p. 606. Begun in No. 19, p. 535.

Toxicity of Arsphenamin.—Taege reports a case in which 3.3 gm. of neo-arsphenamin were self-administered in large doses (0.6 to 0.9 gm.) in five days. The results were transient fever 104 F., rapid pulse, palpitation, sense of oppression, nausea, and vomiting (once only). Over the surface of the body, including soles of the feet and the palms of the hands, was a bright red eruption, with small spots, itching slightly. Taege recommended increased fluid intake and sweating procedures. The question is how the patient could bear such large quantities of arsphenamin without great harm resulting, whereas, in other cases, very much smaller quantities have had a serious or fatal effect. Does the body in disease react differently to arsphenamin than in health? Or is congenital hyposensibility to arsphenamin sometimes present, although its existence is usually denied? The patient in this case was a young physician whose assumption of syphilis following exposure proved later to be erroneous, so his self-dosing was superfluous.

Therapeutische Halbmonatshefte, Berlin

May, 1920, **34**, No. 9

Preventive Inoculations and Vaccine Therapy. H. Langer.—p. 253. Conclusion in No. 10.
The Physician Before the Law. W. Hanauer.—p. 259.

Wiener klinische Wochenschrift, Vienna

May 20, 1920, **33**, No. 21

Injections of Alcohol into the Gasserian Ganglion. H. Pichler.—p. 441. Conclusion in No. 22, p. 473.
Gasserectomy; Sixteen Cases. E. Ranzi.—p. 445.
Surgery and Roentgen Rays in Trigeminal Neuralgia. R. Lenk.—p. 446.
Lichen Trichophyticus. G. Riehl.—p. 448.
Proposed Changes in Medical Education. J. Meller.—p. 448.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

April 24, 1920, **1**, No. 17

Adaptation to Darkness. C. O. Roelofs and W. P. C. Zeeman.—p. 1422.
*Mucocele in Sphenoid Sinus. J. van der Hoeve.—p. 1431.
*High Blood Pressure and the Ambard Constant. J. Lankhout.—p. 1439.
Case of Pure Tetragenus Meningitis. M. van Riemsdijk.—p. 1445.

Mucocele of the Sphenoid Sinus.—Van der Hoeve tabulates the data of eight cases he has found on record and compares them with one personally observed. In the total nine cases one eye was blinded and in three other cases the other eye was threatened. The diagnosis had not been made before the operation in any case; the roentgen-ray findings are deceptive. Treatment can be only operative, best by way of the nose. Fluctuations in the fluid content of the mucocele were evidently responsible for the variability of the clinical picture. The data presented confirm the dictum that when vision is becoming impaired and no cause for this can be discovered, the nasal sinuses should be opened up. This may reveal a mucocele or empyema which otherwise may speedily entail blindness. In a recent case although a little pus was found in the nose, investigation, through the nose, of the nasal sinuses failed to disclose any focus, and the patient became blind in a few days from retrobulbar neuritis. Finally, opening the posterior sinus cavity revealed a large amount of pus on one side and a little on the other. This shows that even the rhinologist, with the aid of the roentgen rays, is not always able to detect sinus mischief without an exploratory opening up of the sinuses.

High Blood Pressure and the Ambard Constant.—Lankhout gives the details of age, blood pressure, urea content of the blood and the Ambard ureosecretory index in twelve cases, and emphasizes that a high blood pressure in itself is not usually a serious matter. The prognosis depends on the complications in kidneys, heart and nervous system, and we are unable to estimate these until they are quite pronounced. The Ambard constant does not help here. We have no grounds for the assumption that the high blood pressure is always secondary to heart, kidney or vascular disease. It has no more significance than the discovery of a murmur or hardening of a normally soft organ. Because we can measure the blood pressure, we have paid too much attention to it, and hidden our ignorance behind the term "essential hypertension." The rise in blood pressure is merely one element of a morbid series which has to be regarded as a whole.

Hospitalstidende, Copenhagen

April 21, 1920, **63**, No. 16

*The Duodenal Tube. A. Tvilstegaard.—p. 241. Conc'n in No. 17, p. 257.
*Gallstones and Achylia. F. Rydgaard.—p. 251.

The Duodenal Tube.—Summarized July 3, p. 72.

Cholelithiasis and Achylia.—Rydgaard reports a new instance of the connection between gallstone disease and achylia. Rovsing found the gallbladder full of stones in doing splenectomy on a woman of 65, but did not molest the gallbladder at the time. Test meal findings showed achylia or hypochylia. Four years later the gallbladder had been entirely destroyed functionally, but the gastric secretion was practically normal. This apparently contradicted Rovsing's assertions that achylia is almost inevitable when the cystic duct is totally obstructed. Necropsy revealed that the common bile duct had dilated until it had formed a new gallbladder. In a recent compilation of eighteen cases of total obstruction of the gallbladder in subjects under 50, Rydgaard found achylia or hypochylia in 83 per cent.; in 52 per cent. in thirty-two in which the cystic duct alone was impermeable, and in 27 per cent. in seven in which the gallbladder alone was shut off.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, No. 7 CHICAGO, ILLINOIS AUGUST 14, 1920

THE RÔLE OF DEEP ALCOHOL INJECTIONS IN THE TREATMENT OF TRIGEMINAL NEURALGIA *

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BOSTON

The injection of the nerves with some tissue fixative as a means of controlling neuralgias, particularly those of the face, is an old story [1] and various substances have been used for this purpose, chloroform introduced by Bartholow in 1874 being possibly one of the first used and first abandoned. Osmic acid, proposed by Billroth and Neuber in 1884, then had its period of popularity, and the injections were first made into the foramina of exit of the nerves from the facial bones. The results were too transitory to give the procedure a very lasting place in surgery.

An improvement on these methods, with much more satisfactory results, was introduced in 1902 in France by Pitres and Verger,[2] and in 1903 by Schlösser [3] in Germany, in the form of deep injections of the nerves near their foramina of exit from the skull—the foramen ovale and rotundum. It was impossible without too great risk of damage to neighboring structures to reach the ophthalmic division in this way, but as the pain in far and away the larger number of cases originates in the territory of the maxillary and mandibular divisions, this was of no great moment.

The method, further developed by Ostwald, and by Lévy and Badoin, reached this country the following year (1907) and was largely popularized through articles by Hauck,[4] Hugh T. Patrick,[5] Hecht,[6] and Kiliani,[7] and there can be no question but that an immense number of needless peripheral operations have thereby been avoided, for the relief from a successful injection should be as enduring as that following a peripheral neurectomy. The popularity with which this procedure was received is evidenced by the fact that, during the six years after his original Sammel-Referate, Flesch,[8] collected from the literature ninety additional titles.

The procedure has its limitations, as all know. The relief is but temporary, and with each successive injection a shorter interval of freedom from pain is apt to be secured. This, however, is true of peripheral operations as well, which in the hands of the inexpert may leave very unsightly scars on the face: but, on the other hand, misplaced alcohol injections may do damage far worse than leaving unsightly scars.

Examples of most distressing after-results of these cases have appeared from time to time in our clinic—such complications as one rarely sees in the present day after a ganglion operation. Paralysis of the oculomotor nerves is one of the commonest. Locking of the jaw from infiltration, and subsequent fibrosis of the pterygoid muscles is another frequent occurrence. Paralysis of the motor fifth is usual after injection of the mandibular division, and function may not be regained. Sloughs of the nasal bones with subsequent ozena have been reported, and some of the intranasal injections have been followed by critical secondary hemorrhages. Certainly there is every reason to decry the intranasal injections as practiced by rhinologists for, as has been pointed out, if there is any reason to inject Meckel's ganglion, it can be reached far more safely by the usual method through the cheek than through the nose. For some unaccountable reason, facial paralysis is not uncommon, whether purposeful or accidental is not entirely clear. Four patients in my series presented themselves for a gasserian operation with a complete facial paralysis due to preceding injections and, as might have been expected, both of them subsequently had a corneal ulcer. Two of them had been injected by the same physician, but I did not venture to make inquiries regarding the procedure employed, though I surmised that the injection into the seventh nerve was intentional.

But if these complications are lamentable, still more distressing are the examples of labyrinthine trouble due to the accidental injection into the middle ear. The eustachian tube is but a few millimeters from the mandibular branch, at the foramen ovale, and if sufficient local anesthetic is added to the alcoholic solution to render the mucous membranes insensitive, the middle ear may become filled with alcohol and a slough result. The following story is not an exceptional one:

In 1905 a woman, then 33 years of age, began having paroxysmal pain in her left lower jaw and teeth. Three were extracted without relief. Six deep alcohol injections were

* From the Peter Bent Brigham Hospital.

* This paper formed a section of the Nathan Lewis Hatfield Lecture on the Major Trigeminal Neuralgias delivered at the College of Physicians of Philadelphia, Dec. 16, 1919. Sections on the varieties of facial neuralgia and on the gasserian operation and its end-results will appear elsewhere.

1. Indeed, as Kurzwelly has pointed out, Francis Rynd (1843), who first employed hypodermic injections, and Alexander Wood (1853), who introduced the hollow needle and syringe, did so with the outspoken purpose of injecting morphin into the painful areas of sciatic neuralgia rather than with the object of introducing solutions of drugs into the body as a whole.

2. Pitres and Verger: Névralgie faciale traitée par les injections modificatrices d'alcool, Soc. de méd. et chir. de Bordeaux, July 25, 1902.

3. Schlösser: Heilung peripherer Reizzustände sensibler und motorischer Nerven, Ztschr. f. Augenh. **10**: 335, 1903.

4. Hauck: The Treatment of Neuralgias with Injections of Alcohol, St. Louis M. Rev. **54**: 505, 1906.

5. Patrick, H. T.: A New Treatment for Trifacial Neuralgia, with Report of Cases; A Preliminary Report, Illinois M. J. **11**: 385-388, 1907.

6. Hecht, d'Orsay: The Methods and Technic of the Deep Alcohol Injections for Trifacial Neuralgia, J. A. M. A. **49**: 19 (Nov. 9) 1907.

7. Kiliani: Schlösser's Alcohol Injection into the Foramen Ovale for Recurrent Trigeminal Neuralgia, After Extirpation of the Gasserian Ganglion, J. Nev. & Ment. Dis. **34**: 777, 1907.

8. Flesch, J.: Die Behandlung von Neuralgien mit Alkoholinjektionen Wien. med. Wchnschr., 1914, Nos. 8 and 9. The literature up to 1909 is given in Flesch's original article: Centralbl. f. d. Grenzgeb. d. Med. u. Chir. **12**: 561, 609, 1909.

given by her brother, a physician, in the attempt to reach the mandibular division. During the course of the last she became suddenly dizzy and deaf, and for some days was extremely ill, with vomiting and vertigo. The drum ruptured and a profuse discharge occurred.

She has suffered from dizziness and tinnitus for the subsequent fourteen years, and the middle ear has never healed despite two radical operations. She still has a bad third divisional neuralgia, but the labyrinthine disturbance so far outweighs this that she bears this lesser torment with stoicism.

It is possible that my impressions of the sorry consequences of deep injections are exaggerated for the reason that the bad results of these measures are likely to gravitate in the course of time to a clinic where the gasserian operation is frequently performed. But I must confess that I never give an alcohol injection myself without misgivings, never use a general anesthetic for the purpose, and never force the injection unless absolutely sure that the needle is in proximity to the main nerve trunk. Under these circumstances but a very small amount of alcohol is needed; and in the series, which is a long one, there has been only a single complication—an abducens palsy which ultimately was recovered from.

So far the balance would appear to weigh distinctly in favor of the simple measure—the injection—if carried out by practiced hands directed by the capacity to visualize deep anatomic structures. This is more or less of a gift, and there are no rules to follow. One introduces the needle to the nerve, and it is difficult to see how the eustachian catheter and the fluoroscope, as suggested by Pollock and Potter,[9] can do more than complicate a procedure whose simple rules were laid down ten years ago and which merely depends on a working knowledge of the deep anatomy of the head.

But at best, even in cases of minor neuralgia the procedure must be often repeated, and most observers agree that nine months of relief represents about the average duration. Flesch [8] reported 262 injections in eighty patients, 102 owing to recurrence; and Patrick [10] in 1911 recorded a series of 500 deep injections (second and third divisions) in 150 patients. Dr. Patrick, who has had as large an experience as any one with these procedures, stated at that time that the results were "good" (successful) in about 30 per cent., "partially successful" in about 43 per cent., and "misses" (unsuccessful) in about 26 per cent. He also stated that in only 18 per cent. of cases could the first attempt at either branch be regarded as successful.

Unquestionably the repetition of injections may be greatly overdone. In an earlier section of this address,[11] a clinical history was given of a young woman who had sixty-two deep injections in the four years before her trigeminal neurectomy was performed. The following case history tells a similar story:

Gasserian Series 311. *Surg. No.* 10250. *A three-divisional neuralgia of many years' duration. Repeated alcohol injections for last twelve years. Gasserian operation with preservation of motor root.*

A woman, aged 72, began having neuralgia in the maxillary division in 1895, twenty-four years before her admission. The early paroxysms were limited to the cheek and lip on the left side. They were of increasing frequency. About a year later they suddenly changed in character and spread over the entire left side of the face and scalp. The pain, invariably paroxysmal in character, would be initiated by touching the skin of the face or hair, or the insertion of food in the mouth.

Attempts were made to control the early attacks with morphin without success. The patient had a series of very severe attacks in 1897, and this experience was repeated for the next nine years. In her worst year she was practically bedridden for eight months.

Matters dragged on until 1907, when she had her first alcohol injection with relief for sixteen months. Since that time, whenever an attack has appeared she has had both the second and third divisions injected, but the procedure has been increasingly inefficient. All told, deep injections have been given during the last ten years on forty-seven different occasions. On admission, the entire left trigeminal area, including the tongue, was involved in the paroxysms.

Her gasserian operation was performed, April 5, 1919. The sensory root was avulsed and the motor root preserved. Total sensory anesthesia has resulted, and one may be confident that the result will be permanent. She would have been spared much suffering has this been done ten—indeed twenty—years before.

There are certain major types of neuralgia often, as in the case of this patient, with early involvement of all three divisions, which are incompletely if at all relieved by these deep extracranial injections, and some neurologists have ventured to go farther in the effort to inject the ganglion itself. It is quite probable that those who have given a large number of deep injections for neuralgia may have occasionally observed that the subsequent anesthesia had spread beyond the limit of the distribution of the trunk, primarily the object of attack. The following is an account taken from the hospital note of my first experience:

P. B. B. H. Surg. No. 2624. *Deep injection of mandibular division with unexpected spread through gasserian envelops.*

Mr. F. S. R., aged 40, had had an involvement of the right third division of six years' duration. I had made an unsatisfactory attempt to give him a deep injection in 1911 without the production of anesthesia, and he had had a number of subsequent attempts elsewhere with no better results.

March 13, 1915: *Accidental injection of ganglion.* On slowly inserting the needle in the direction of the foramen ovale to a depth of about 4.5 cm., it encountered a dense resistance, like cartilage, which made me fear that it might have reached the eustachian tube. During the insertion the patient complained more than usual of local discomforts (of pressure deep in the cheek), but had experienced no pain in the area of distribution of the third division.

It was anticipated that the injection would meet with considerable resistance on the part of the tissues, but to my surprise the first drop or two went in without any resistance whatever. After a moment's delay to determine the effect, the patient suddenly said: "My tongue and lip are getting numb," and then very shortly, "My face is numb." No especial attention was paid to this, except that it was gratifying to realize that the nerve had actually been struck.

During the next five minutes less than half a cubic centimeter of the solution was introduced, when to my astonishment he said: "Why the whole half of my head is numb, tongue and all."

This proved to be the case on examination—anesthesia of all three divisions with loss of the corneal reflex with deflection of the jaw to the right on opening the mouth. The patient complained of feeling somewhat dizzy and a little nauseated, and it was observed that there was a very marked nystagmus to the left side—none to the right. The quick component was to the left with a slow return, but the jerks were very rapid. On looking to the left and on looking upward there was a slight rotary movement.

9. Pollock, L. J., and Potter, H. E.: Experimental Studies of Injection of the Gasserian Ganglion Controlled by Fluoroscopy, J. A. M. A. **67**: 1357-1359 (Nov. 4) 1916.

10. Patrick, H. T.: The Technic and Results of Deep Injections of Alcohol for Trifacial Neuralgia, J. A. M. A. **58**: 155 (Jan. 20) 1912.

11. Cushing, Harvey: Am. J. M. Sc., to be published.

It was surmised that the arachnoid sheath passed down from the ganglion farther than usual along the third division in this patient, and that the fluid had run up and filled the subarachnoid space enclosing the ganglion itself. If this was actually what occurred, it may happen under these circumstances in other cases. This hazard is the strongest argument against the purposeful injection of the ganglion, for if alcohol should happen to get into the arachnoid spaces around the ganglion it would easily pass into the lateral recess of the posterior fossa.

The late reports from this patient show, in spite of the very small amount of alcohol which was introduced, that the second and third divisions including the motor fibers remain completely paralyzed, and there has been no return of pain after nearly five years. If the danger of ganglion injections could be eliminated and if they could be followed by such a good result as this, the surgery of the gasserian would fall into desuetude; but this unfortunately is not the case.

Any one who is familiar with the appearance of the ganglion in the living, bathed as it is with cerebrospinal fluid, would be terror stricken at the idea of blindly injecting alcohol into its arachnoid capsule. The proposal doubtless took its origin in Heinrich Braun's procedure of blocking the ganglion by the injection of a local anesthetic to produce regional anesthesia for operative purposes. But the introduction of a local anesthetic is a far different thing from introducing a tissue fixative. It is difficult to believe that a procedure fraught with so many possibilities of disaster could have been seriously advocated.

First proposed in 1912 by Härtel [12] of Bier's clinic, and introduced in this country by Grinker,[13] the measure has been taken up by many; and, considering the fact that the results at best are with rare exceptions little better than after extracranial injections, and that the complications are as bad if not worse than those seen after imperfect gasserian operations in their worst days, it is certainly time for someone to protest at this blind procedure. In the matter of secondary keratitis alone, Flesch [8] from his review of the cases believes that 50 per cent. have suffered from eye troubles. Härtel not only reports a case of meningitis, but has admitted to corneal complications in one in every four (25 per cent.) of his first twenty-four cases; whereas certainly not one in ten patients after a sensory root avulsion has any subsequent trouble with the eye.

Flesch mentions among the complications, vomiting, fainting, brachycardia, somnolence, ataxia, collapse, severe headache, fever (40 per cent. of cases), stiffness of the neck, cloudiness with increased tension of the cerebrospinal fluid—a so-called aseptic meningitis. Härtel himself warns against the possibility of the mordant entering the lateral system of the posterior fossa.

Some months ago a letter from which the following is a quotation was received from an English surgeon:

> You will remember that I spoke to you about a young girl who was suffering from trigeminal neuralgia, and who had the ganglion injected with alcohol by a well-known neurologist. I do not know whether I told you that the alcohol overflowed from the ganglion, with the result that the abducens and facial nerves were paralyzed, and from the symptoms it is evident that the auditory had also been affected as the patient suffered much from giddiness. I understand from her medical attendant that while the paralysis of the sixth and seventh nerves is being recovered from, the neuralgia is unfortunately returning. I should mention too that there was some ulceration of the cornea which has left a distinct opacity. Her medical attendant has just written to me to say that both he and the neurologist have come to the conclusion that an operation must now be performed for the purpose of dividing the sensory root. . . .

This girl, aged 22, after three years of neuralgia was finally brought here about six months later and I have rarely seen a neuralgic of advanced years in such a desperate condition, and not alone from pain and drugs. For she had such extreme vertigo she could not raise her head, there was an abducens and facial paralysis, a trophic ulcer of the cornea, and she was reduced to 87 pounds weight.

Enough has been said about these injection methods and their consequences. They have been a great boon to innumerable cases of minor neuralgia when given with proper precautions; and in certain cases of major neuralgia of obscure and uncertain type they are of value as a means of certifying the nature of the neuralgia by the brief period of relief which may ensue.

Certainly in the major neuralgias true to type it is procrastination to use them; and when carried to the point of injecting the ganglion itself, the recorded complications are so much worse than any complications which one sees at present after a gasserian operation that there can be no choice in the matter. This is particularly so in view of the permanence of relief after the neurectomy, and a relief of uncertain period even after a successful and uncomplicated ganglion injection.

CONCLUSIONS

1. Deep extracranial injections of alcohol into the maxillary and mandibular nerve trunks near their foramina of exit from the skull have completely superseded peripheral neurectomies.

2. In neuralgias limited to one of the two lower divisions and which may possibly not extend into the other trigeminal areas, alcohol injections represent unquestionably the treatment of choice.

3. When the neuralgia has spread beyond its original area and come to involve that supplied by the adjacent division, a trigeminal neurectomy must be contemplated; but if no preceding deep injection has been given, it may be useful not only in insuring the type of the neuralgia but in giving the patient some warning as to what the numbness resulting from the neurectomy may amount to.

4. They are sometimes useful, furthermore, in determining in doubtful cases whether the syndrome is a true neuralgia of the tic douloureux type or one of the peculiar and rare pseudoneuralgias not amenable to relief either by injections or neurectomies.

5. Even the extracranial injections are not entirely free from risk, and in no cases should they be purposefully pushed to the point of attempting an injection of the gasserian sheath itself.

6. With such perfect and permanent results as may be secured today by a trigeminal sensory root avulsion,[14] the prolonged and repeated use of injections in refractory cases which involve more than one division should be deplored.

12. Härtel, F.: Ueber die intracranielle Injektionsbehandlung der Trigeminusneuralgie, Med. Klin. **10**: 582-584, 1914; Die Behandlung der Trigeminusneuralgie mit intrakraniellen Alkoholeinspritzungen, Deutsch. Ztschr. f. Chir. **126**: 429-552, 1914.

13. Grinker, Julius: A New Method of Treating Neuralgia of the Trigeminus by the Injection of Alcohol into the Gasserian Ganglion, J. A. M. A. **60**: 1354 (May 3) 1913.

14. The mortality of the operation is negligible. In the author's series there have been to date of writing 312 consecutive cases without fatality.

THE TREATMENT OF COMBINED DIABETES AND NEPHRITIS*

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Several possible etiologic relationships may be thought of between such conditions as diabetes, arteriosclerosis and nephritis. First and probably most important, there is the theory that all of these are due primarily to some infectious or toxic process, and the possibility that the same agency which damages one organ may also produce injury in one or more others. With regard to secondary influences, it is scarcely conceivable that a pure nephritis could cause diabetes. It is conceivable, however, that a primary arteriosclerosis might damage both the kidney and the pancreas. It is barely imaginable that nephritis might cause hypertension, and this lead to arteriosclerosis, which in turn might affect the pancreas. There has been in the past a strong suspicion that diabetes is a cause of arteriosclerosis, and in addition to the known frequency of association, especially in elderly persons with diabetes of many years' standing, evidence may be found in the high incidence of gangrene and the fact that this is almost invariably connected with advanced arteriosclerosis. In severe diabetes there is sometimes a form of albuminuria which clears up under diabetic treatment, and albuminuria and showers of casts are well known accompaniments or precursors of diabetic coma. Apart from such direct irritation, diabetes is a disturbance of nutritive function affecting all cells of the body, so that their power of resistance and repair is subnormal and they are more susceptible to all injuries. Diabetes may thus predispose to renal and vascular disorders by increasing susceptibility to accidental injuries. Positive proof of the foregoing interrelationships is lacking, and the evidence is chiefly statistical. The following statistical observations have a bearing on this point.

In 100 unselected diabetic cases in this institute the blood urea was found below 30 mg. per hundred c.c. in sixty-seven; between 30 and 40 mg. in seventeen; between 40 and 50 in ten, and above 50 in six. These figures are mainly those obtained at admission on undetermined diets, but the series also represents more than a thousand analyses on these patients at different stages of treatment. Renal function tests were performed especially when there was any suspicion of abnormality, and the McLean urea index was found below 80 in fourteen cases. Four of these patients were clinically nephritics; two of them were in the fourth decade and two in the fifth decade of life, and one of each pair had hypertension. In addition, there were twelve cases of hypertension with traces of albuminuria, and seventeen cases with palpably sclerosed peripheral vessels without albumin or hypertension. All of these twenty-nine patients were elderly. The sodium chlorid figures are scarcely capable of brief generalization here because of the uncertainty of normal standards, and will be given in detail elsewhere. The impression may be stated that a large proportion of diabetics show noticeably high plasma chlorid concentrations and chlorid thresholds, which perhaps have some relation to the edema of some cases and the hypertension of others. On the whole, it is doubtful whether diabetics show any higher proportion of clinical nephritis or impairment of nitrogen excretion than other hospital patients at corresponding ages; but some special tendency to retention of chlorids, vascular hypertension and arteriosclerosis may be suspected.

There has also been opportunity for study of twenty-two supposedly nondiabetic cases of renal and vascular disease. Six of these patients had marked nephritis, four of them with hypertension; the other sixteen were under treatment for hypertension alone. The question arises as to the incidence of diabetes among such patients, especially as attention has been given in the literature to the occurrence and interpretation of hyperglycemia in hypertension cases. Clinically, we must be governed by the usual criteria. The carbohydrate-rich diet customary for these patients contributes to bring out any diabetic tendency, but an impermeable kidney may sometimes prevent glycosuria. Transitory causes, special intoxications, etc., are known to affect the blood sugar in different ways; but in general, when a patient can take carbohydrate-rich diet for long or indefinite periods with blood sugar within normal limits he is said to be free from diabetes; and when, on the other hand, high diets are accompanied by hyperglycemia which yields to restriction of carbohydrate and of total calories, such a condition is properly regarded as diabetes, even though it be mild and without glycosuria. Two patients of this series were mildly diabetic in this sense, and in one of them the diagnosis was confirmed by marked hyperglycemia and slight glycosuria after ingestion of 100 gm. of glucose. The other patients of the series had normal blood sugars, and glucose tolerance tests which were performed in several of them gave normal results. It is thus evident that hypertension in itself does not produce hyperglycemia. Hyperglycemia found in such cases may be interpreted as evidence of diabetes the same as in other cases. The proportion of pancreatic changes found at necropsies in cases of hypertension and arteriosclerosis fully accords with this conclusion.

The treatment of combined diabetes and nephritis is conducted according to the usual principles for the two diseases. A special difficulty is sometimes supposed to exist in the combined management, but recent methods have largely obviated the conflict. Diabetic treatment by means of a high protein diet, gluten bread and the like may be inimical to an associated nephritis with impaired nitrogen excretion; but it is readily possible to adjust the protein ration to both diseases. If meats are forbidden in the treatment of hypertension, the diet of a diabetic with hypertension is seriously limited; but with restriction of salt[1] such a patient is able to choose his protein at will. One of the greatest dangers formerly consisted in acidosis in conjunction with nephritis; this is avoided under treatment which keeps acidosis strictly absent.

To illustrate these principles, three cases of different types, each being the worst of its type in this series, have been selected for more detailed presenta-

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* Read before the Section on Pharmacology and Therapeutics at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Allen, F. M.: Arterial Hypertension, J. A. M. A. 74: 652 (March 6) 1920.

tion. The first is a youthful patient with valvular disease, severe diabetes and nephritis, with marked tendency to hypertension and nitrogen retention, but without edema, decompensation or toxic symptoms.

CASE 1.—*History.*—A man, aged 33, Irish-American, unmarried, occupation clerical, was admitted Aug. 17, 1919. His father was well at 72. His mother died at 36 of rheumatism followed by dropsy. He has one brother and one sister in good health. The family history was otherwise negative. Th ough born at full term, he was a weak, undersized incubator baby, and always sickly. He had pneumonia in infancy, and measles, mumps, scarlet fever, diphtheria, chickenpox and whooping cough before the age of 10. He never had tonsillitis or true rheumatism. At 18 he had pain in the chest most of the year, and his physician diagnosed endocarditis. The pain left after about a year, and he worked and enjoyed ordinary health, until at 25 years he had acute gangrenous appendicitis, with uneventful recovery after operation. Gonorrhea in 1913 cleared up under his physician's treatment without complications. Syphilis was denied by name and symptoms. The patient had had mild hay-fever for the last four years. He had always had a huge appetite, very active bowels and apparently good digestion, but had remained thin nevertheless. His life had been nervous and hard working but regular, with no excesses in sweets, alcohol or tobacco.

Present Illness.—In the summer of 1918 he caught cold on vacation and was surprised that he required a week to recover. He returned to work unrefreshed, and by mid-September developed thirst and polyuria. His physician then diagnosed diabetes, and stopped the glycosuria by a twenty-four hour fast. He remained at work on a diet till Feb. 22, 1919, taking an occasional fast-day when sugar returned. A well known New York consultant called by his physician at this time found his condition dangerous on account of the combination of heart disease, diabetes, nephritis and hypertension, and therefore kept him in bed for eleven weeks, part of the time on milk diet. The milk was tolerated at first, but later other low-protein diets had to be substituted to avoid glycosuria. The systolic pressure after this treatment remained as high as 218 mm., and he suffered a slight apoplectic stroke, causing partial paralysis of the left arm and right side of the face, which gradually cleared up completely. The diet meanwhile had been kept very low in protein (from 30 to 50 gm.); but about a month before admission, an increase to 75 gm. had been made for the sake of strength. His tolerance meanwhile was progressively falling, so that instead of the 100 gm. of carbohydrate which he could formerly take in his mixed diet without glycosuria, he could take only 40 gm. For three weeks before admission he was kept strictly in bed on a diet of 75 gm. of protein, 40 gm. of carbohydrate, and 1,250 calories.

Physical Examination.—The patient was 5 feet 8 inches in height, and weighed 115 pounds. He was thin and moderately weak, but still retained fair color and cheerfulness. There was no edema, and no irregularity or demonstrable enlargement of the heart; the rate was 96 per minute; the radial arteries were palpably thickened. There was a strong systolic murmur transmitted to the axilla and all over the precordia. The blood pressure was 194 systolic and 142 diastolic. The knee jerks were lively.

Laboratory Tests.—The urine was free from sugar and acetone, but contained heavy albumin and a few hyaline and granular casts, which persisted throughout treatment. The Wassermann reaction of the blood was negative. The plasma sugar was 0.176 per cent. before breakfast, August 18, the plasma chlorids 648 mg. per hundred c.c., the carbon dioxid capacity of the plasma 61.5 volume per cent., the blood urea 134 mg. per hundred c.c. The elimination of phenolsulphonephthalein was 5 per cent. (1.5 per cent. in the first hour, 3.5 per cent. in the second). The urea index, reckoned according to McLean, was 4.7.

Treatment and Progress.—The patient was received as a bed patient because of his mitral regurgitation and hypertension. Immediately after examination, as there was no cardiac decompensation and it was desired to exclude rest as a factor in relieving the hypertension, he was allowed to be up and about the ward freely, with the consequence that his blood pressures registered 206 to 214 systolic and 160 to 170 diastolic, with increased complaints of headache, dizziness and weakness. Treatment was begun with a salt-free, protein-free diet of 50 gm. of carbohydrate and 1,000 calories. This diet consisted of starch and fat, sometimes as puddings, but generally baked into cookies with a variety of flavors to avoid monotony; and, owing to the skill of the kitchen staff, the diet was as usual taken without difficulty. The progress up to September 1 is shown in Table 1.

TABLE 1.—FINDINGS IN CASE 1

			Urine				Blood				Blood Pressure	
Date, 1919	Weight, Pounds	Fluid Intake, C.c.	Volume, C.c.	Specific Gravity	Total Nitrogen, Gm.	Sodium Chlorid, Gm.	Plasma Sugar, per Cent.	Plasma CO_2 Volume per Cent.	Plasma NaCl, Mg. per 100 C.c.	Urea, Mg. per 100 C.c.	Systolic, Mm.	Diastolic, Mm.
8/18	87¼	600	1,150	—	—	—	0.176	61.5	648	134	214	170
8/19	86	800	1,030	1.010	3.25	0.97	—	—	—	—	172	146
8/20	....	150	585	1.010	6.40	0.94	—	—	—	—	150	125
8/21	84¾	450	485	1.013	2.65	0.59	—	—	—	—	165	135
8/22	....	300	485	1.012	2.84	0.71	—	—	—	—	172	130
8/23	82¾	300	470	1.012	2.47	0.53	—	—	—	—	185	130
8/24	....	700	360	1.014	2.03	0.12	—	—	—	—	189	130
8/25	81¼	5,000	910	1.007	....	0.53	0.208	53.2	616	132	189	130
8/26	....	4,100	1,890	1.004	3.56	1.12	—	—	—	—	170	130
8/27	86½	3,800	2,560	1.006	4.82	1.82	—	—	—	—	146	110
8/28	....	5,100	2,780	1.004	4.19	1.64	—	54.1	494	73	148	130
8/29	87	3,500	2,250	1.005	3.43	0.80	—	—	—	—	208	156
8/30	....	3,500	2,300	1.005	2.90	0.41	0.192	52.2	508	48	202	140
8/31	85½	4,000	2,200	1.003	3.10	0.24	— (fast day)	—	—	—	195	140
9/1	....	600	1,490	1.004	2.60	0.46	0.134	57.0	476	36	186	132

The salt exclusion and fluid restriction up to August 25 produced a fall in blood pressure and relief of attendant symptoms, though the blood analyses were not bettered except by a slight fall in the concentration of chlorids. The nitrogen excretion was low; also the low urinary chlorids failed to show any chlorid retention in this edema-free patient sufficient to account for his hypertension. The large fluid intake beginning August 25 promptly produced dizziness, weakness, nervousness and general malaise. The increase of urine was slow and inadequate; the rise of weight indicated retention of considerable water in the body without visible edema, and there were also two or three loose bowel movements daily during this period. The blood pressures recorded are representative of several taken at different times each day; the diurnal variation was slight. In contrast to the immediate symptoms mentioned, the change in the blood pressure was slow. August 28, the pulse pressure was surprisingly and somewhat alarmingly small; thereafter the pressures rose. The fall in the blood urea and chlorids may be ascribed partly to the transitory flushing out (less evident in the nitrogen than in the chlorids of the urine), but probably mostly to dilution, though it should be noticed that such dilution did not greatly alter the plasma sugar or bicarbonate. A fast-day, August 31, improved the blood analyses, particularly the unduly high sugar.

September 1 to 9, the fluid intake (including the moisture of the food) was restricted to 600 c.c. daily, and fat was

increased so as to make the diet 50 gm. carbohydrate and 1,500 calories. Subjective symptoms were promptly relieved, and the blood pressure fell slowly to 148 systolic and 115 diastolic. The increase of the protein-free diet was intended to reduce protein catabolism to a minimum, and the urinary nitrogen actually fell by September 9 to the unusually low level of 1.3 gm. Nevertheless, with the diminished fluids, the blood urea had risen on the same date to 63.8 mg. per hundred c.c., while the plasma sugar was 0.181 per cent. and the chlorids 560 mg. per hundred c.c.

After September 9, the diet was changed to 30 gm. of protein, 30 gm. of carbohydrate and 1,200 calories, with one fast-day weekly. On this program the plasma sugar gradually fell to 0.123 per cent., September 27, and 0.105 per cent., October 13, and remained normal thereafter. The systolic blood pressure remained almost constantly below 160 mm., though the patient was up and dressed all day and spent half of every day in light tasks in the hospital or errands outside. On a few occasions of exceptional strain the systolic pressure went up for a few hours between 170 and 190. Several tests were performed with ingestion of salt as high as 10 gm. daily and water as high as 5 liters, but restoration of the hypertension by this means was impossible. The reason may be found perhaps in the improvement of the diabetes, or perhaps in the ready tendency to diarrhea. The phenolsulphonephthalein

TABLE 2.—FINDINGS IN CASE 2

		Diet			Blood			Blood Pressure	
Date, 1919	Weight, Pounds	Protein, Gm.	Carbohydrate, Gm.	Calories	Plasma Sugar, per Cent.	Plasma Chlorids, Mg. per 100 C.c.	Urea, Mg. per 100 C.c.	Systolic, Mm.	Diastolic, Mm.
9/ 4	138	Fasting	..	...	0.349	580	44	220	140
9/ 5	137	Fasting	..	...	—	—	—	204	100
9/ 6	133½	Fasting	..	...	0.176	612	47	148	88
9/ 7	130¾	(whisky)	..	210	—	—	—	152	90
9/ 8	129½	(whisky)	..	388	—	—	—	172	92
9/ 9	128¼	0	20	160	0.125	640	76	156	90
9/10	128	0	30	390	—	—	—	145	88
9/11	127¾	0	40	790	—	—	—	154	90
9/12	—	8.0	50	1,033	0.283	616	60	148	88
9/13	128	8.0	50	1,033	—	—	—	140	100
9/14	128¼	6.5	50	226	—	—	—	152	90
9/15	128½	7.0	50	1,029	0.179	—	—	146	95
9/16	128	7.0	50	1,029	0.214	580	25	162	85
9/17	127¾	30.0	50	1,201	—	—	—	126	80
9/20	128	30.0	50	1,201	0.183	592	28	134	80
9/27	128¾	30.0	50	1,201	0.185	—	33	162	84
10/ 2	127¾	30.0	50	1,201	0.178	616	—	140	85
10/ 3	129	Fasting	..	.....	—	—	—	145	90
10/ 4	126¾	37.5	40	737	0.114	576	21	172	100

elimination was improved at the lower pressures, ranging in several tests from 21 to 27 per cent. in two hours. On one or two days each week the fluid restrictions were relaxed and 30 gm. of magnesium sulphate given for eliminative purposes. With 2 gm. of sodium chlorid in the diet, the final blood analysis, November 24, revealed: plasma sugar, 0.123 per cent.; plasma chlorids, 531 mg. per hundred c.c., and blood urea, 31.3 mg. per hundred c.c. The chief unfavorable feature was that the diastolic pressure was never reduced below 108 and was more often about 115 mm. The patient was dismissed, November 24, on a diet of 30 gm. of protein, 40 gm. of carbohydrate, 2 gm. of salt and 1,300 calories, at a weight of 78 pounds.

At home, various unintentional mistakes occurred with the diet. On visits to the hospital, blood samples were taken during digestion of breakfast. The worst results were: plasma sugar, 0.25 per cent.; plasma chlorids, 623, and blood urea, 112 mg. per hundred c.c., and blood pressure 180 systolic and 130 diastolic. With further experience the results have remained equal to those in the hospital. It has become possible to change the fast-days to days of half or quarter diet. The patient has resumed his former very light clerical occupation, but can work only half time with great effort. He remains entirely well subjectively, except for the existing degree of emaciation, hunger and weakness.

Although in the majority of combined cases the diabetes or the nephritis or both are mild, this case shows that they are sometimes severe. There is no serious conflict in the treatment even here. The diabetes does not interfere with protein restriction for the nephritis, or salt restriction for the hypertension. There is an actual problem in providing the necessary calories. This is solved by undernourishing the patient to the point at which he can tolerate 30 gm. of carbohydrate. Incidentally, the unusually low protein ration raises the tolerance for carbohydrate. With this carbohydrate it is possible to fill up the rest of the diet with fat without acidosis. The relief of the hypertension relieves the heart, and the patient is capable of more exercise and work than before. At the same time the weakness of diabetes and undernutrition seems not to impair the heart but is the greatest safeguard against overtaxing it, and probably without the diabetes the heart trouble would have become worse. The diet is a hard one, because of the close restriction of carbohydrate, protein, total calories and salt. Otherwise the patient is as comfortable as though he had diabetes alone. His actual prognosis also is that of the diabetes or whichever single condition proves most dangerous, without special influence of the complications.

The second patient is a woman past middle life, with moderate diabetes and nephritis, with dangerous hypertension and retinitis, but slight tendency to nitrogen retention, edema or intoxication.

CASE 2.—This patient was No. 16 in the Rockefeller Institute series, and her history up to the summer of 1917 has been given elsewhere.[2] In two admissions to the Rockefeller Institute Hospital she had been observed by the diabetes and nephritis services, and had been dismissed symptom-free and with a good prognosis from the standpoint of diabetes, and unrelieved and with a bad prognosis from the standpoint of nephritis. The last blood pressure recorded in the publication mentioned was 250 systolic, 160 diastolic. Subsequently the patient was somewhat careless in diet and received treatment elsewhere, in the form of dietary restriction for glycosuria and two days of bed rest each week for the hypertension. The hypertension continued and there were increasing symptoms of headache, weakness, dizziness and mental confusion. Finally, dimness of vision due to an actively progressing retinitis forced her to apply for resumption of treatment, and she was admitted to the hospital, Sept. 4, 1919.

This admission was five years after her first diabetic treatment at the Rockefeller Institute. The age was now 52 years. The weight was 138 pounds, about the same as at the former discharge. The physical examination was essentially as before, except that arteriosclerosis seemed more marked in both the radial and the retinal vessels, and the heart slightly more enlarged. Its rhythm was regular, the sounds very loud, with a systolic murmur at the apex as before. There was slight edema, about equal in the face and limbs. The blood pressure was 220 systolic, 140 diastolic.

The laboratory examination revealed moderate sugar and nitroprussid reactions in the urine, slight albumin, a few hyaline casts and no blood cells. In contrast to the former strong Wassermann reactions, this test was now entirely negative in repeated examinations in the laboratory of Dr. Cyrus Field, perhaps in consequence of previous antisyphilitic treatment. The plasma sugar was 0.349 per cent.; plasma chlorids, 580 mg. per hundred c.c.; blood urea, 43.6 mg. per hundred c.c. The carbon dioxid capacity was at first slightly low (53.2 per cent. by volume), but rose quickly to 61.7 and remained normal thereafter. A single determination of the blood creatinin by Dr. Field revealed 4.2 mg. per hundred c.c.

This treatment differed from the previous treatment at the Rockefeller Institute only in the fact that the fasting was absolute, and salt was omitted from the subsequent diet. The blood pressure, which was known to have been greatly elevated for more than five years, was thus reduced very quickly and easily. The retinitis was also halted completely, whether

2. Monograph 11, Rockefeller Institute, 1919.

by relief of the diabetes or the nephritis is undetermined. The patient was discharged, October 23, at a weight of 125 pounds, on a diet of 50 gm. of protein, 30 gm. of carbohydrate and 1,500 calories, with 2 gm. of sodium chlorid. She had received 30 gm. of magnesium sulphate twice a week in the hospital with apparent benefit, and was instructed to continue this purgation at home. No rigidly normal level of blood sugar was demanded, because of the patient's age and her known tendency to break diet.

At subsequent visits she admitted minor indiscretions in both food and salt, but has held to the diet better than usual because of fears for her eyes. The worst analyses, during digestion forenoons or afternoons, have been: plasma sugar, 0.25 per cent.; plasma chlorids, 619 mg. per hundred c.c.; blood urea, 39.6 mg. per hundred c.c. The best have been: plasma sugar, 0.175 per cent.; chlorids, 605 mg. per hundred c.c.; blood urea, 22.6 mg. per hundred c.c. The highest blood pressure, found at the time of the highest plasma chlorid, was 186 systolic and 90 diastolic. The lowest pressure, found at the time of the lowest plasma chlorid, was 152 systolic and 80 diastolic. The symptoms previously associated with the hypertension now remain absent.

This patient will always be as lax in diet as she dares, and the results will therefore never be ideal. Treatment of diabetes and reduction of obesity sometimes suffice by themselves to reduce blood pressure, as illustrated by one striking case (No. 33) in the Rockefeller Institute series. This observation supports the foregoing statistical view that active diabetes creates some tendency to hypertension. The present patient illustrates the fact that a hypertension which is resistant to these measures and to rest treatment sometimes yields readily to salt privation.

The third patient represents mild diabetes under successful control, on which was superimposed a hopelessly severe nephritis, with slight hypertension and edema, but marked nitrogen retention and intoxication.

CASE 3.—*History.*—A man, aged 46, American, unmarried, physicist, was admitted, Nov. 19, 1919. The father died at 70 with diabetes; the mother at 68 of liver disease; a paternal aunt, at 70, of diabetes. One sister of the patient died in childhood; another died following a cesarean section, sugar being found in the urine after this operation. The entire family were obese. The patient had had as the only known illnesses up to the age of 7, whooping cough, two attacks of measles and some severe intestinal disturbance of unknown nature. He had "brain fever" at 8. Up to this time he had been delicate, but then began to gain weight rapidly, so that at 14 he weighed 190 pounds, and from 17 to 37 held a constant weight of 205 pounds. Life insurance was obtained in 1900. The appetite, digestion and general health had been good, and there had been no excesses except in work.

Present Illness.—In 1901, while working under great strain, the patient suffered apparently an acute nervous breakdown. A physician found the classical symptoms of diabetes, with 9 per cent. glycosuria. In a month on Osler's service at the Johns Hopkins Hospital the symptoms cleared up, and for seven years thereafter the patient carried on his full work and ignored all dietary restrictions. In 1908 the symptoms of nervous breakdown returned, and the patient spent six weeks in a well known physical culture institution, where he

TABLE 3.—FINDINGS IN CASE 3

		Diet				Urine					Blood				
Date, 1919	Weight, Pounds	Protein, Gm.	Carbohydrate, Gm.	Calories	Total Fluid, C.c.	Volume, C.c.	Specific Gravity	Albumin (Esbach), Gm. per Liter	Total Nitrogen, Gm.	Sodium Chlorid, Gm.	Plasma Sugar, per Cent.	Plasma Chlorids, Mg. per 100 C.c.	Plasma CO_2 Capacity, Volume per Cent.	Plasma Urea, Mg. per 100 C.c.	Notes
11/20	137½	1.0	67	641	—	1,040	1.010	2.0	—	5.50	0.180	659	48.1	105	Salt-free diet begun. 7:30 a.m.: R. B. C., 2,900,000. McLean index, 1.2
11/21	—	0.5	108	1,125	250	820	1.010	1.5	—	7.20	—	—	....	—	9 a.m.: R. B. C., 3,400,000
11/22	135½	0.6	110	1,581	600	700	1.010	1.5	7.4	7.40	—	—	....	—	
11/23	—	0.3	115	1,613	830	540	1.012	1.7	7.5	5.20	—	—	....	—	Magnesium sulphate, 30 gm.
11/24	136¼	0.6	110	1,504	500	570	1.013	2.6	2.4	2.80	—	—	....	—	11 a.m.: R. B. C., 3,300,000
11/25	—	0.9	105	1,568	500	340	1.013	2.0	3.7	2.60	—	—	....	—	
11/26	134	0.6	101	1,554	680	320	1.013	2.5	2.5	2.00	0.192	657	....	92	Magnesium sulphate, 30 gm. 8 a.m.: R. B. C., 3,600,000
11/27	—	0.0	52	894	—	640	1.012	1.5	7.3	4.40	0.153	660	46.2	99	10:15 a.m.: R. B. C., 3,450,000; red cell volume, 22.5%; creatinin, 3.2 mg. per 100 c.c.
11/28	—	3.6	104	1,698	1,500	450	1.011	1.8	3.3	3.30	—	—	....	—	Magnesium sulphate, 30 gm.
11/29	131¾	3.6	101	1,205	500	710	1.010	1.4	6.7	4.90	—	—	50.0	—	7 p.m.: R. B. C., 3,150,000
11/30	—	3.6	104	1,236	2,300	1,150	1.011	2.0	5.1	3.10	0.166	643	....	94	10 a.m.: R. B. C., 3,275,000
12/ 1	131	3.6	104	1,236	2,300	500	1.006	0.8	—	6.70	—	—	....	—	Magnesium sulphate, 30 gm.
12/ 2	—	3.7	98	1,414	4,900	2,100	1.007	0.8	3.5	1.60	—	—	....	—	11 a.m.: R. B. C., 3,500,000
12/ 3	133	6.0	103	1,010	—	1,480	1.007	1.0	2.5	1.70	0.144	591	....	90	
12/ 4	—	3.6	68	1,006	560	740	1.008	1.0	—	0.70	—	—	....	—	12:20 p.m.: R. B. C., 3,130,000; hemoglobin, 53.5%
12/ 5	131¼	16.0	87	1,254	1,550	2,730	1.009	—	4.6	1.00	—	—	....	—	
12/ 6	—	15.0	112	1,268	2,320	670	1.006	—	1.4	0.60	—	—	....	—	
12/ 7	132¾	18.0	99	1,069	2,165	2,410	1.006	1.3	4.8	1.06	—	—	....	—	
12/ 8	—	19.0	115	1,453	1,500	960	1.008	1.0	2.4	0.79	0.133	545	40.4	63	8 p.m.: R. B. C., 3,150,000; hemoglobin, 52.5%; creatinin, 1.5 mg. per 100 c.c.
12/ 9	131¾	12.0	96	1,504	1,300	500	1.010	—	1.8	0.35	—	—	....	—	
12/10	—	8.0	57	829	185	670	—	—	2.3	0.41	—	—	....	—	Magnesium sulphate, 30 gm. 11 a.m.: R. B. C., 3,560,000
12/11	—	15.0	87	794	560	670	—	—	2.2	0.38	—	—	....	—	
12/12	—	15.0	87	1,151	650	1,210	1.021	—	4.0	0.63	—	—	....	—	
12/13	120	15.0	87	1,151	650	560	1.035	—	2.3	0.39	—	—	....	—	
12/14	—	8.8	105	850	1,000	780	1.010	1.6	3.0	0.51	—	—	....	—	
12/15	120	8.8	105	850	1,000	650	1.016	1.1	2.5	0.31	0.184	559	57.6	112	McLean index, 1.9
12/16	—	16.0	112	1,126	750	470	1.010	1.2	1.8	0.27	—	—	....	—	5:30 p.m.: R. B. C., 2,600,000
12/17	120	26.0	89	1,514	600	820	1.009	1.0	3.6	0.60	—	—	....	—	6 p.m.: R. B. C., 2,500,000
12/18	—	25.0	100	1,784	650	250	1.012	0.5	1.3	0.15	—	—	....	—	
12/19	—	25.0	100	1,784	650	490	1.016	1.3	2.6	0.09	—	—	....	—	
12/20	—	25.0	100	1,584	700	520	1.020	—	2.2	0.20	—	—	....	—	
12/21	120	25.0	100	1,584	750	580	1.010	0	2.4	0.34	0.111	518	....	124	8:30 a.m.: R. B. C., 3,100,000; hemoglobin, 55%
12/22	—	27.0	122	1,764	800	840	1.011	—	4.1	0.60	—	—	....	—	3 p.m.: R. B. C., 3,300,000
12/23	120	27.0	122	1,764	800	720	1.011	1.1	2.9	0.40	—	—	....	—	
12/24	—	24.5	101	1,128	680	390	1.011	1.0	1.6	0.15	—	—	....	—	
12/25	—	36.0	99	1,489	850	800	1.010	1.0	3.5	0.31	—	—	....	—	7:30 p.m.: R. B. C., 3,450,000; hemoglobin, 55%
12/26	120	24.5	101	1,128	800	570	1.010	—	2.4	0.11	0.149	555	51.9	104	8:30 a.m.: R. B. C., 3,300,000; red cell volume, 25%; hemoglobin, 55%; creatinin, 9.1 mg. per 100 c.c.

went through violent exercise without restriction of diet. He then felt well, and remained so for eighteen months, when another breakdown sent him to his physician, who placed him on a lax diabetic diet. He had lost 13 pounds at the athletic institution, and under the diet treatment lost further in weight and tolerance. In January, 1917, acetonuria began, also a sore on the little toe of the right foot, which gradually spread instead of healing.

He was admitted to the Rockefeller Institute Hospital, March 23, 1917, for diabetes and diabetic gangrene. All symptoms cleared up very easily, and a diet of 75 gm. protein, 100 gm. carbohydrate and 1,750 calories was quickly tolerated without glycosuria. The fasting plasma sugar on two occasions was 0.143 and 0.150 per cent. April 28, 1917, he was dismissed on a diet of 100 gm. protein, 50 gm. carbohydrate and 2,000 calories. The weight on admission and discharge was 162 pounds. Unfortunately, the examinations and records of the hospital period were incomplete, because Dr. Fitz, who had sole charge of the case, was called into military service about this time. Evidently no renal function tests were made, but as diabetes was the only diagnosis and no mention of albuminuria or other signs was set down, there is a strong inference that no obvious nephritis existed at that time.

The patient adhered to his diet with the exception of increasing protein somewhat, and remained free from glycosuria. In April, 1918, a hemorrhage in the left retina practically obliterated vision. Later hemorrhages occurred in both eyes, so that they have been of little use since June, 1919. There has also been an increasing development of headaches, nausea and occasional vomiting, weakness, dyspnea and palpitation on exertion, mental depression, and slight general edema, and recently pain and ulceration of the right great toe.

Physical Examination.—The patient's height was 5 feet 10 inches, and weight, 138 pounds. He was pale, weak and nearly blind, with slight edema, which was about equal in the face and limbs. The oculist reported high grade myopia, retinitis, and old hemorrhages in the vitreous in both eyes, and detached retina in the left eye. Dental caries and pyorrhea were marked. The heart was not enlarged, but there was a short systolic apical murmur. The blood pressure was 190 systolic and 100 diastolic. There was palpable thickening of the radial and other arteries. The knee jerks were diminished. The right great toe was tender, and a small ulcer at its tip oozed thin fluid,

Laboratory Examination.—The urine was negative for sugar and acetone, but contained abundant albumin and casts, which persisted unchanged throughout treatment. The Wassermann reaction of the blood was negative. Other data are given in Table 3.

The diet consisted of starch, fat and a little fresh fruit, with negligible protein and salt content. The edema cleared up and the skin became wrinkled; nevertheless the loss of weight up to November 24 was small in proportion to the chlorid excreted. The blood pressure, November 20, was 198 systolic and 100 diastolic, and by November 25 had fallen to 145 systolic and 70 diastolic. There was a question at first whether the low erythrocyte count represented entirely anemia or partly hydremia, but only a slight increase occurred under the salt privation and low fluid intake. Also with this program up to November 27, there was no important change in the plasmic chlorid or blood urea concentration. Next an attempt was made at "flushing out" by forcing fluids, but the patient could take relatively little on account of nausea. Any success of "flushing out," as judged by the nitrogen and chlorid excretion, is questionable. The body weight rose slightly while actual tissue was presumably being lost, but the blood count was not greatly altered. Under these conditions, December 8, there was found a general fall of urea, creatinin, chlorid and bicarbonate in the blood. There is no reason to assume a retention of acid as the cause of the fall in plasma bicarbonate; on the contrary, the evidence indicates a retention of fluid, in the tissues rather than in the blood, and the distribution of the dissolved substances through this fluid. More direct proof of this explanation will be presented elsewhere. At the same time the patient's condition became alarming because of vomiting, nausea, profound weakness, depression, fainting spells, blood pressure 90 systolic and 50 diastolic, hiccup, and muscular twitchings. This onset of "uremia" was apparently due to the simple excess of water. Accordingly, the fluid ingestion was sharply diminished after December 9, and for a few days was even less than shown, because partly lost by vomiting. The weight fell rapidly, and the blood analysis, December 15, revealed a rise in urea, chlorid and bicarbonate. The threatening symptoms cleared up, and the blood pressure resumed its average of about 140 systolic and 70 diastolic. Thereafter fluids were given in moderation, guided chiefly by the patient's comfort, for fear of too great retention of waste product. Nevertheless, the blood creatinin by December 26 had risen to 9.1 mg. per hundred c.c.

During the foregoing period, protein had been gradually introduced into the diet as shown. After January 1, 2 gm., after January 12, 4 gm., and after January 20, 8 gm. of salt were given daily. These quantities were disposed of without rise of weight or blood pressure, and the impression was that they were definitely beneficial in facilitating fluid ingestion and general diuresis. In this way they may have aided in reducing the blood creatinin, which at the last analysis was 3.4 mg. per hundred c.c. Various other therapeutic measures were tried. Increase of diet up to 65 gm. of protein, 165 gm. of carbohydrate and 2,000 calories failed to strengthen the patient, but ended with the following blood picture: plasma sugar, 0.217 per cent; plasma chlorids, 548 mg. per hundred c.c.; blood urea, 281 mg. per c.c.; red cell count, 1,800,000. Subsequent to December 26, the plasma carbon dioxid capacity never fell below 57.2 volume per cent.; there were no clinical symptoms of acidosis, and sodium bicarbonate administration produced no perceptible benefit. Neither digitan nor theocin seemed of any value for diuresis. Magnesium sulphate purgation failed to modify the blood analyses, and was abandoned because any possible eliminative action seemed to be overbalanced by the weakness and depression produced. Sweating by means of either the electric light cabinet or hot packs likewise seemed undesirably weakening without affecting the blood analyses.

The patient was discharged, Jan. 29, 1920, on a diet of 40 gm. protein, 100 gm. carbohydrate and 1,500 calories, at a weight of approximately 110 pounds. The final blood examination, Jan. 28, revealed: plasma sugar, 0.142 per cent.; carbon dioxid capacity, 57.6 volume per cent.; plasma chlorid, 588 mg. per hundred c.c.; blood urea, 135 mg. per hundred c.c.; red cell count, 1,960,000. The condition appeared hopeless, though some subjective improvement occurred toward the close. In February, a message was received that edema was returning, and the salt ration was therefore ordered reduced from 8 to 4 gm., and later to 2 gm. On the strict diet at home there has been gradual improvement beyond all expectations, so that the patient at present (July, 1920) performs his full daily duties in an occupation not requiring eyesight. The original intention was to report this as a completely hopeless case. The ultimate prognosis remains unchanged, but the treatment seems to have warded off acute dangers and restored comfort and working power for a considerable period.

With the ability to tolerate 100 gm. of carbohydrate, the mild diabetes introduced no difficulty in the treatment of this case. There was evidently harm in too much and too little of both salt and water, and a proper ration of both was necessary for the best diuresis and avoidance of intoxication. The reason for the development of such a severe nephritis in this case is unknown. With earlier thorough treatment there is a chance that the progress might have been arrested, or, whatever the success in other respects, the blindness could probably have been prevented.

CONCLUSION

It may be said that the majority of cases of combined diabetes and nephritis offer much hope when treated with the necessary thoroughness. By the

employment of such measures from the earliest stages, many of the distressing later consequences will be avoided.

ABSTRACT OF DISCUSSION

DR. GEORGE NORRIS, Philadelphia: Many years ago a patient came under my care who had had a severe and progressive diabetes for sixteen or seventeen years. This was before the days when we made blood analyses and when doctors were apt to be more careless about diets than they are at present, and when the subject was little understood. The patient, becoming discouraged with the treatment, decided to work out his problem for himself, which he did in an unusually scientific manner. He found that if he restricted his diet sufficiently and took enough violent exercise to produce copious perspiration every day, he could keep sugar-free. He often made careful tests of the urine several times daily. This went on for years. He finally came to see me, not for the diabetes, which he could control, but for symptoms of angina pectoris. He had an arteriosclerosis which was quite marked and considerable nephritis. His problem was this: If he took his exercise and was sugar-free he had symptoms of angina pectoris; if he omitted the exercise he was free from symptoms of angina but had sugar and diacetic acid in the urine. He decided to continue the exercise and be sugar-free, and died of angina pectoris a few months later.

DR. LEONARD G. ROWNTREE, Minneapolis: What is the relative value of the level of blood creatinin and of the McLean urea index in arriving at the status of renal function, and what influence has diet on each of them? In a group of diabetics studied by my resident, Dr. Beard, at the University Hospital, the salt intake was determined, the patients being permitted to use it at will. Many patients took as high as 20 gm., and one as high as 40 gm. of salt a day. Obviously, diabetics like salt. Even on a markedly restricted diet some of these patients put on weight and some developed edema. Should there be any limit to salt restriction in diabetes or in diabetes complicated by nephritis? We carried on some experiments on cardiorenal cases in Baltimore in which we restricted the salt intake over rather long periods. Subsequently we administered salt and found it retained, apparently without any harm to the patient. The retention seemed to indicate a body need for salt and possibly too great a restriction.

DR. FREDERICK M. ALLEN, New York: We have used chiefly the phenolsulphonephthalein, the McLean urea index and the chlorid threshold as tests of renal function, but I am not able to express an opinion concerning their significance. Creatinin did vary considerably in the last case I mentioned. The organic changes in the kidney are doubtless unalterable by functional treatment, but some disturbances, such as vascular hypertension or renal congestion, may sometimes be relieved and thus some improvement of kidney function be accomplished. The restriction of salt in diabetics is a doubtful question. Diabetics tend toward excess in all flavors and condiments. One patient stated that she ate nearly a teacupful of salt daily. No harm has been demonstrated, except in cases with edema or hypertension, but the plasma chlorids are frequently high, and on general principles we try to keep them within moderate limits. Salt restriction apparently has no bad effects in patients with high chlorid thresholds and persistently high plasma chlorids. These patients may not require the traditional 2 gm. of salt per day. Salt privation in normal persons or in patients with low thresholds causes the plasma chlorids to fall very low; the patients complain chiefly of weakness, and the proper salt ration must be determined by trial for such individuals.

Childhood Infection and Tuberculosis.—The general acceptance of the doctrine of childhood infection, as the cause of later tuberculous disease, has made child-welfare work, and all that it means in the protection of the child and the development of the child, a definite part of a broad antituberculosis program and has likewise made a knowledge of tuberculosis essential in the training of the child-welfare worker. —George T. Palmer, *Am. Rev. Tuberc.* **3**:271 (July), 1919.

A CONSIDERATION OF THE GASTRIC TEST MEAL FROM EXPERIMENTAL DATA

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Gastric analysis resolves itself into an analysis of gastric function or functional analysis and etiologic or specific analysis. These two conceptions must be sharply differentiated, before we rationally approach this subject. The time has now come for us definitely to define the meaning of gastric analysis. This demands that before we lay down the foundation stones for the interpretation of gastric analysis we have an exact conception of the nature and limitations of the gastric response in health. The literature is full of the results of gastric analyses in widely diversified clinical conditions. But the important point, and the one around which the results of all such analyses must revolve, is the knowledge of just what exactly constitutes normal and pathologic gastric function. For instance, we read that hyperacidity occurs in a certain percentage of gallbladder cases, a certain percentage of chronic appendicitis cases and a certain percentage of ulcer cases; yet no one has clearly defined exactly what constitutes hyperacidity. In our laboratories, with the collaboration of a number of chemists,[1] we were able to demonstrate that 42 per cent. of 842 complete gastric curves with all varieties of foods gave an acidity of 100 or over. Furthermore, we were able to demonstrate that while the average total acidity for beef and beef products was 120, for eggs the average total acidity was 80, and for vegetables it was 70. In other words, we were able to demonstrate clinical hyperacidity as estimated by titration findings as an absolutely normal phenomenon with some 40 per cent. of normal men; and animal proteins give persistently high acidities easily classified from clinical standards as equivalent to those encountered pathologically. These contributions emphasize the one important fact that we have failed to base our clinical interpretations on the knowledge of normal limitations in acidity. The conclusion was forced on us that there were several normal types, one clearly belonging to this group, and individuals who do belong to this group show characteristically with every variety of foodstuff a hypersecretory response. Another conclusion was that there are normal fast and slow stomachs, just as there are morphologically steer horn and J stomachs as normal variations under the roentgen ray. It is equally clear that the gastric response varies with the type of the meal, and there is more or less specificity in the response to various foods.

Again, in the consideration of low acidities, it is clear that, with the exception of certain foods, this phenomenon is not a normal one, and from our clinical studies it is equally apparent that the study of low acid curves reveals a variety of mechanisms, all of

1. Bergeim: Am. J. Physiol. **45**: 1 (Dec.) 1917. Bergeim, Evvard, Rehfuss and Hawk: Ibid. **48**: 411 (May) 1919. Fishback, Smith, Bergeim, Lichtenthaeler, Rehfuss and Hawk: Ibid. **49**: 174 (July) 1919. Smith, Fishback, Bergeim, Rehfuss and Hawk: Ibid. **49**: 204 (July) 1919. Fishback, Smith, Bergeim, Rehfuss and Hawk: Ibid. **49**: 222 (July) 1919. Miller, Fowler, Bergeim, Rehfuss and Hawk: Ibid. **49**: 254 (July) 1919. Miller, Fowler, Bergeim, Rehfuss and Hawk: Ibid. **51**: (March) 1920.

which result in somewhat similar curves. For instance, constitutional disturbances and severe anemias can give rise to the same sort of low acid curve that the entire gastritis group can give; but the former is accompanied by simply a depression in secretion, and the latter not only by secretory depression but also by the tangible evidence of mucosal inflammation. Again, there is unquestionably a form purely nervous, and finally there is a form in which the elaboration of secretion by the mucosa is intact, but in which the low acid curve is due to excessive regurgitation of alkaline duodenal secretions. In other words, it is evident that widely different mechanisms can bring about similar conditions in the secretory output of the stomach.

BASIC FACTS

We propose, therefore, in this paper to review briefly the subject of gastric analysis as we see it, based on the contributions from our laboratories, and attempt to outline a crude but sufficiently satisfactory system for the interpretation of gastric analysis. Before we discuss the question of the analysis of pathologic curves, we would call attention to the following important facts which form a basis for the consideration of pathologic data. In other words, we must have a normal standard; and a normal standard demands not only the average responses but also the limitations encountered in health.

1. Gastric digestion is a series of recurring cycles in which digestive phases alternate with interdigestive phases (fasting or resting stomach). Both of these phases must be investigated in an analysis of gastric function.

2. The normal fasting stomach shows a continued secretion, averaging from our studies about 50 c.c., with an average total acidity of 30 and a free acidity of 18. We would place as the outside limit of total acidity 70 and the outside limit of the free acidity as 50, although these figures, or rather limitations, may have to be altered. There should be no gross food retention, no pus or blood, and only traces of gastric mucus. Bile is present in more than 50 per cent. of cases and trypsin in practically all, indicating a tendency toward regurgitation during this period.

3. The digestive phase in health varies with the type of the individual, whether hypersecretory, isosecretory or hyposecretory, all of them being adequately described in contributions on this subject, and also according to the nature of the meal. In normal individuals 74 per cent. of the beef experiments showed an acidity of 100 or more, while only 22 per cent. of the egg cases, 44 per cent. of the responses on milk and cream, 19.5 per cent. of the vegetables, and 7.3 per cent. of the bread and cereals gave an acidity of 100 or over. If, therefore, the average acidity of beef was 120 and vegetables only 70, it is safe to assume that a series of figures which represented the test meal responses for beef must be very different from those obtained on eggs, those on milk, and finally those obtained with toast and tea.

4. The gastric curve is clearly made up of psychic and chemical secretions, both definable by separate laboratory procedures. Today we can accurately measure the psychic secretion, the chemical secretion, the continued secretion in the fasting stomach, and the amount of duodenal regurgitation.

5. Hypersecretion is a phenomenon seen in about 40 per cent. of normal individuals.

EXAMINATION OF THE STOMACH

Therefore, it follows that with the foregoing facts clearly established, we are ready to examine the stomach from several different angles:

1. A test meal to demonstrate the maximum acid output is obviously most readily administered in the form of 100 gm. of beef which in health shows an average total acidity of 120 and an average evacuation time of two hours and thirty-five minutes in the rapid emptying type, and three hours and twenty-five minutes in the slow emptying type.

2. Motor function may be demonstrated as above, or far more satisfactorily by means of the simple Ewald meal, with limitations given below.

3. To demonstrate pathologic products from the gastric wall, the water meal used in our early work and later proposed by Austin is a gastric stimulant and has the advantage of showing any abnormality in gastric output.

4. The psychic secretion is obtained for sight, taste and chewing of food by introducing the fractional tube and performing these several steps preferably with 100 gm. of chopped meat, allowing the subject with the tube in situ to see, smell and taste the cooking beef.

5. A pure chemical curve may be obtained by injecting the meal through the tube.

6. Test meals to reveal specific factors, such as soluble albumin, are those in which this substance is reduced to a minimum, as in the Ewald meal.

ANALYSIS OF GASTRIC FUNCTION

For the purposes of ordinary analysis, however, we clearly want to get information from two separate standpoints: one as to gastric function, the other as to the specific evidence of gastric disease, namely, the demonstration of histologic, chemical or bacteriologic evidence of disease. For the purpose of functional analysis—which is not specific analysis and must not under any consideration be construed as such—we require a fixed standard and an exact knowledge of normal function. We shall never be able to correlate gastric findings with a diversity of test meals. While meats, fish and milk give the highest acid values, breads, cereals, fruits and then vegetables give the lowest normal values. Only six cases out of eighty-two experiments on bread and cereals[2] gave an acidity of 100 or over, indicating that the average output for bread is comparatively low, but emphasizing nevertheless that high acid figures occur in health, and that high acid figures are less important from a pathologic standpoint than low acid figures. But one thing is clear: High acidity is of far more significance with bread and cereals from a pathologic standpoint than it is with meats and animal proteins.

The simple Ewald meal of 35 gm. of toast and 240 gm. of water or tea appears to us as the simplest meal, and the double advantage of inducing a moderate acidity with rapid evacuation time. We can, therefore, accurately delimit the evacuation time or the measure of motor function. An Ewald meal in health is evacuated in from two to two and one-half hours. Anything at one hour and one-half or less, or more than three hours, can be considered outside the normal boundary lines. In health we encounter slow and rapid stomachs, but only rarely we encounter figures in excess or below these limitations. We would,

2. Smith, Fowler, Bergeim, Rehfuss and Hawk: Unpublished data.

therefore, from a motor standpoint divide all pathologic responses into two groups (barring a third pathologic group giving normal evacuation time): one with too rapid evacuation time or hypermotility, and the other with too slow evacuation time or hypomotility. From a study of the clinical cases of one of us, we have found that hypermotility can be ascribed to four causes: (1) a group of subacidity and achylia cases; (2) a very small percentage of duodenal ulcers; (3) a form of scirrhous carcinoma converting the pylorus and antrum into a funnel, and (4) a group due simply to peristaltic overaction, including those very motile stomachs which the French have called "gastric chorea."

From the standpoint of delayed evacuation or hypomotility, we have both intragastric and extragastric causes, the slight delays being found most frequently with gastric myasthenias, atonic stomachs, and muscle defects beginning dilatation; while the marked delays are due to intragastric causes, such as contracting pyloric ulcer, carcinoma of the pylorus, hypertrophic pylorus, benign tumors in that region, pylorospasm, gastric syphilis of the stenosing type, contracting ulcer of the lesser curvature with organic biloculation, and as extragastric causes adhesions to the pylorus and duodenum, tumors interfering with gastric evacuation, such as tumors of the head of the pancreas.

SECRETORY VARIATIONS

From a secretory standpoint, with this meal we have every variation, from exaggerated secretion or hyperacidity and hypersecretion to subacidity, anacidity, achylia and delayed gastric acidity. In practically every case, the variations in the secretory output can be placed in four categories: (1) nervous; (2) circulatory; (3) mucosal, and (4) a disturbance of the tryptic regurgitant mechanism.

We prefer, therefore, in the analysis of the secretory curve to divide all gastric secretory curves into four groups, depending on whether or not they are associated with definite evidence of diseased gastric states. For purposes of analysis, one might divide all gastric responses in disease into four groups: (1) clean digestion, simple secretory variations; (2) secretory variations plus gastric mucus, indicating inflammation of the mucous membrane; (3) secretory variations plus blood (intragastric), indicating ulceration of the mucous membrane, and (4) secretory variations plus blood, pus, mucus and bacteria, indicating ulceration and infection of the mucous membrane.

Group 1. A clean digestion (and by that term we mean no evidence of mucosal irritation or disease), whether there be functional alterations or not, indicates in the presence of gastric symptoms that conditions outside the stomach are responsible for the gastric response, and that the latter is usually a secondary manifestation. For instance, a larval hyperacidity may be encountered in psychic disturbances, or a digestive or postdigestive hyperacidity or hypo-acidity may be encountered, in which case the ultimate analysis will usually reveal factors outside the stomach inducing secretory changes. It is this clean group which is so frequently encountered in certain biliary disturbances, appendical disease, abdominal adhesions, etc. The assumption is that most frequently the effect is produced over nervous pathways and less frequently through the circulation. Clean subacidities and achylias are encountered in metabolic conditions, such as gout, thyroid disease, pellagra and almost any toxic condition which inhibits the vagus or stimulates the sympathetic, or through the circulation produces direct inhibition of the gastric mucosa. This is particularly true of those types associated with focal infections and anemias.

Group 2. A secretory variation with the addition of a pathologic element immediately introduces the element of a gastric pathologic condition. The commonest pathologic element is gastric mucus, which must be differentiated from swallowed mucus. The definite and persistent presence of this element immediately introduces us to a very large group—the gastritis group. There are many varieties; in fact, some time ago one of us was able to collect more than 200 causes of chronic gastritis induced in a variety of ways—direct irritants representing the whole line of dietary indiscretions and food infections, the great group associated with irritants carried by the blood stream, and a third group in which the chronic inflammation was secondary to diseased conditions occurring in most of the body viscera. By widely different mechanisms, these factors are able to produce similar lesions.

Group 3. In this group there is the addition of blood to secretory variations (meaning intragastric and not swallowed blood). Blood in the stomach means ulceration, whether it be minute hemorrhagic erosions, acute ulceration, multiple erosions or chronic round ulcer, or whether it means ulceration or a neoplasm, such as carcinoma or gumma. While it is true that a certain proportion of gastric ulcers do not bleed, nevertheless the continued presence of this fluid immediately indicates the element of ulceration. We have seen stomachs at operation which revealed blood and no visible spot of ulceration; nevertheless there was intense congestion. In our series of ulcers, only 38 per cent. showed high acidities, and 30 per cent., comparatively low acidity. With ulcer of the duodenum an almost pathognomonic finding is blood with tryptic regurgitation or bile, and only at those periods.

Group 4. This is the group in which there is unquestioned evidence of infection and inflammation of the mucosa. In other words, the presence of blood, pus, mucus and bacteria indicates ulceration, inflammation and infection of the stomach, and we have found this syndrome in only three conditions: true infected gastritis, gastric carcinoma, and gastric syphilis. With the exception of rare forms of acute and phlegmonous gastritis, the presence of one of these three can be surmised if it can be demonstrated that these factors are intragastric and not extragastric or swallowed. The latter is discrete and does not persist throughout the curve, while the gastric material will be found throughout digestion and particularly toward the end of digestion.

The fact that alterations of the gastric secretion with persistent mucus content indicate gastritis by no means ends the investigation. As we have pointed out, an investigation must be made as to the correlated causes likely to induce such a disturbance. The analysis of the subacidity, anacidity, achylia and delayed digestion curves demand, therefore, a careful study of all the associated factors.

INTERPRETATION OF GASTRIC FINDINGS

Our idea is simply to propose a rational basis for the study of gastric findings. The establishment of

functional data, such as the type of secretory curve and the evacuation time, does not make a diagnosis; but it constitutes evidence which, when correlated with other factors above mentioned and the general summary of the case, is of the greatest importance. Every gastric curve is a sum total of a series of factors which must be critically analyzed. It is a mistake to put the cart before the horse and say that because so many cases of gastric ulcer reveal hyperacidity, a hyperacid curve is indicative of ulcer. Gastric ulcer can and does occur with a normal secretory and motor mechanism; and, so far as we can demonstrate, no functional variation, a point which is simply another link in the chain of evidence to indicate that certainly some forms of ulcer have neither secretory nor motor variations as etiologic factors, but some other cause, probably toxic, to explain their presence. Gastric cancer in its inception must exist with little or no demonstrable change in function. Gastritis induces changes in function, and as such they are readily demonstrable; and the whole line of muscular disturbances induces changes in evacuation which are readily demonstrable. Let us realize here and now with gastric analysis as with the roentgen ray that neither lies but that it is our interpretation which is faulty. We found out long ago that we could not make our analytic findings fit our preconceived notions of what the case ought to show. The attempt to trace the gastric responses in many of the diseased conditions is laudable; but more laudable is the attempt to analyze in a given case the factors that have brought about such a change.

CONCLUSIONS

In the present state of our knowledge the following assertions seem justifiable:

1. Gastric analysis is either functional or specific, and in both fields it has its limitations. The fractional analysis of a test meal is an exact determination of secretory and motor function, and the results of these two studies can demonstrate only alterations in function. Functional alterations may be functional or organic in origin. To the analysis of motor and secretory function should be added the demonstration of specific pathologic elements, such as blood, pus, mucus and bacteria. Only the evidence of cancer cells or the persistent presence of pathogenic infecting organisms can be considered pathognomonic.

2. The interpretation of gastric analysis presupposes a knowledge of the normal gastric output. This is now well defined for both the periods of gastric activity and rest. These normal variations are given above. The secretory normal response can be divided into three types, but in disease any variation can occur. Disease may alter either the digestive or interdigestive curve or both; it may alter function and it may add its specific elements to the sum total of gastric work.

3. There is no pathognomonic curve in any gastric condition. There is no pathognomonic curve in gastric cancer, ulcer, the inflammations or, for that matter, any of the gastric conditions. We can only say that it may, and usually does, produce definite types of secretory and motor alterations and definite forms of pathologic elements.

4. A sane view of this subject is urgently necessary, and, most of all, is needed constructive work on the factors which induce alterations in function, as well as the isolation and demonstration of those pathologic elements which indicate a true gastric pathologic condition. Nowhere else is this so essential as in the study of gastric carcinoma.

5. We must have clearly defined the variations in health factors which we have attempted in our laboratories and already indicated on studies in beef, pork, lamb, milk, eggs, vegetables, and in articles shortly to appear on the effect of the entire line of foodstuffs on normal gastric digestion.

This paper is presented in the hope that it will suggest a basis for the logical interpretation of gastric findings.

THE COAGULATION TIME OF BLOOD IN THE NEW-BORN

WITH ESPECIAL REFERENCE TO CEREBRAL HEMORRHAGE *

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Interest in this subject was awakened by necropsy findings on infants from the New Born Clinic, University of Minnesota. Statistics from our clinic show that postmortem examinations reveal cerebral hemorrhage in more than 50 per cent. of all infants that die intra partum or during the first few days of life. It was notable that these findings often were made following noninstrumental or even easy deliveries. They were especially frequent following breech presentations and in premature births. Case 2, twins, was an illustration of this. The first, delivered by forceps, showed no cranial complications; the second, smaller and easily delivered by version and extraction, died of cerebral hemorrhage (Case 2). The factor of asphyxia neonatorum to which Little,[1] Cushing[2] and others ascribe the cerebral damage was not always present. It was further noted that at necropsy the blood was often found only slightly coagulated or even fluid.

Historically, there are three landmarks which indicate the progress in our knowledge of cerebral hemorrhage in the infant. Little, in 1861, was the first to call attention to the relationship of what he termed asphyxia neonatorum following difficult or instrumental deliveries to mental and physical defects that developed later—mental deficiencies and spastic states. The classical studies of Sarah McNutt[3] in 1885 showed that cerebral hemorrhage was the specific cause of these lamentable conditions. Cushing's bold pioneer work in 1905 demonstrated that craniotomy with removal of the clot was a feasible procedure and a preventive of subsequent cerebral degeneration with its sad and irremediable train of symptoms.

The great frequency of cerebral hemorrhage has not been fully realized, and the etiology still remains obscure. Old theories of asphyxia and injury from forceps might explain the occurrence only in part. Dealing with this interesting problem, one finds a very

* Read before the Section on Diseases of Children at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Little, W. J.: Tr. Obst. Soc. London **3**: 293, 1861.

2. Cushing, Harvey: Concerning Surgical Intervention for the Intracranial Hemorrhages of the Newborn, Am. J. M. Sc. **130**: 561, 1905. Keen, W. W.: Surgery, Its Principles and Practice, Philadelphia, W. B. Saunders Company, 1908.

3. McNutt, S. J.: Double Infantile Spastic Hemiplegia with the Report of a Case, Am. J. M. Sc. **89**: 58 (Jan.) 1885; Intracranial Hemorrhage in Children, New York M. J. **41**: 104, 1885.

considerable literature during the last two decades. Warwick[4] gives a comprehensive summary, and emphasizes the great frequency of this lesion in the new-born. Weyhe[5] gave his percentage of cerebral hemorrhage in 950 necropsies on the new-born as 12; Beneke,[6] on 100, as 14; Archibald,[7] on 73, as 43; Warwick, on 36, as 50, and Parrot,[8] on 34, as 76. We believe that complete routine necropsies will prove that the figures of the last two writers are not exaggerated. Cerebral hemorrhages are found when least expected. A case of congenital heart lesion with transposition of the viscera (Case 6) gave no symptoms of hemorrhage except prolonged coagulation and bleeding times, but necropsy demonstrated a large hemorrhage over the cerebrum. The figures quoted show unquestionably that by far the most frequent cause of death in the new-born is cerebral hemorrhage. If Little and McNutt were correct in the assumption that intracranial hemorrhage is the most frequent cause of spastic birth palsies, the thousands of these patients drifting about in search of relief add further proof of the frequency of cerebral hemorrhage.

The more rational and in part demonstrated theories as to etiology may be briefly stated. Beneke believes that the hemorrhage is due to the stretching and tearing of the tentorium resulting from elongation of the skull. Cushing ascribes as one cause the rupture of veins over the vertex from overriding of the cranial bones. In a second, he concurs with Little and Abels[9] that rupture of veins occurs as a result of congestion and backing up of blood in the cerebral vessels. Seitz,[10] in an exhaustive study, gives three causes: (1) rupture of the longitudinal sinus or veins emptying into it with blood collecting over the cerebrum; (2) rupture of the transverse sinus or tearing of the tentorium and release of blood over the cerebellum, and (3) rupture of vessels of the choroid plexus with accumulation of blood in the ventricles.

Henschen[11] believes that by far the most frequent site of intracranial hemorrhage is over the cerebrum, over the parietal area and often limited to one side. Seitz and Cushing give as the reason for this the anatomic relations. There are from ten to twelve veins (from four to six of goodly size) extending from the subarachnoid space to the superior longitudinal sinus, which they enter at right angles under cover of the parietal bones. In the adult at the points of entrance occur the pacchionian bodies which afford support to these veins. These bodies are absent in the new-born, so that minimal trauma is capable of destroying continuity of these vessels. Compression and distortion of the skull by instruments, or even the molding of a normal labor, might readily rupture these vessels. Further, the frail vessels and compressible head of the premature infant might account for the rather striking frequency of cerebral hemorrhage in the premature infant.

Massive hemorrhages in the stillborn or in infants that die in the first hours of life probably result from the rupture of large veins, sinuses or tears of the tentorium. Seitz's studies on frozen sections of the skull would seem to support this deduction.

There remains, however, the majority of the cases of cerebral hemorrhage developing insidiously and not until several days after birth, causing symptoms of increasing intracranial pressure, convulsions and death. In these cases, necropsy reveals a large clot with a thick center, thin edges, usually unilateral, and covering the parietal area. There is no demonstrable source of hemorrhage—no torn veins or rents in the sinuses. But further examination will show multiple hemorrhages throughout the body in locations where it is hard to conceive of trauma from normal birth forces or obstetric procedures.

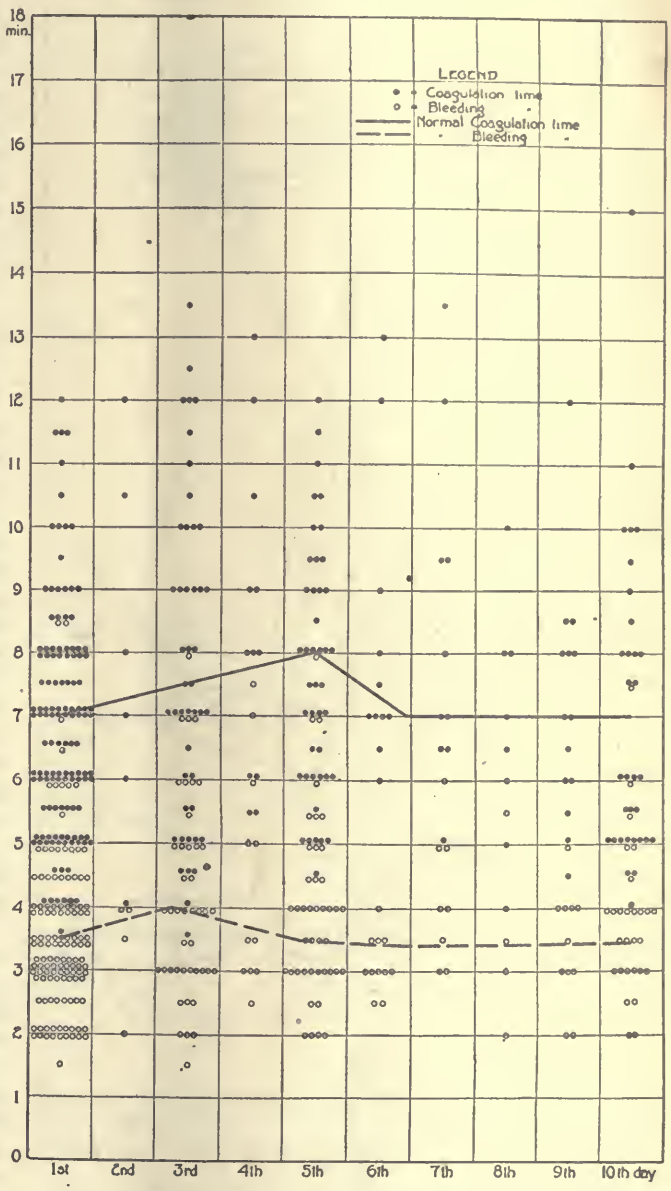


Chart 1.—Determinations of coagulation and bleeding time on various days of first ten.

ILLUSTRATIVE CASES

CASE 1 (No. 14913).—*History*—A girl, whose mother was a multipara, was born by easy breech delivery. During life there was no evidence of sepsis. The temperature curve was normal. Cyanosis, shallow irregular breathing, slow pulse, bulging fontanel, protracted crying, contracted pupils, bloody spinal fluid, prolonged bleeding from the site of puncture,

4. Warwick, Margaret: Cerebral Hemorrhage of the Newborn, Am. J. M. Sc. **158**: 95 (July) 1919.
5. Weyhe: Ueber die Häufigkeit von Hemorrhagien im Schädel bei Säuglingen, Inaug. Diss., Kiel, 1889.
6. Beneke: Tentoriumzerreissungen bei Geburt, München. med. Wchnschr. **57**: 2125, 1910.
7. Archibald: Am. Pract. Surg. **51**: 208, 1908.
8. Parrot: Union méd., No. 11, 1870, quoted from Warwick.
9. Abels: Zur Genese und Symptomatologie intrakranieller Blutungen bei Nengeborenen, Arch. f. Gynäk. **99**: 1, 1913.
10. Seitz: Ueber Hirndrucksymptome bei Neugebornenen in Folge intrakranieller Blutungen und mechanischer Hirninsulte, Arch. f. Gynäk. **82**: 528, 1907.
11. Henschen: Zentralbl. f. Gynäk. **37**: 925-931, 1913.

emesis of blood, a rapidly growing cephalohematoma, and a large subcutaneous hemorrhage over the lumbar region were followed by death on the sixth day.

Necropsy Findings.—Blood ran from the nose. There were subcutaneous hemorrhages over the chest, arms, back and occipital region. Blood was present in the abdominal muscles and under the peritoneum, free blood was found in the pericardial cavity, under the pericardium and in the bronchial tubes. There was profuse hemorrhage into the lung tissue, and there were massive hemorrhages over the temporal and occipital lobes. No source of bleeding was found.

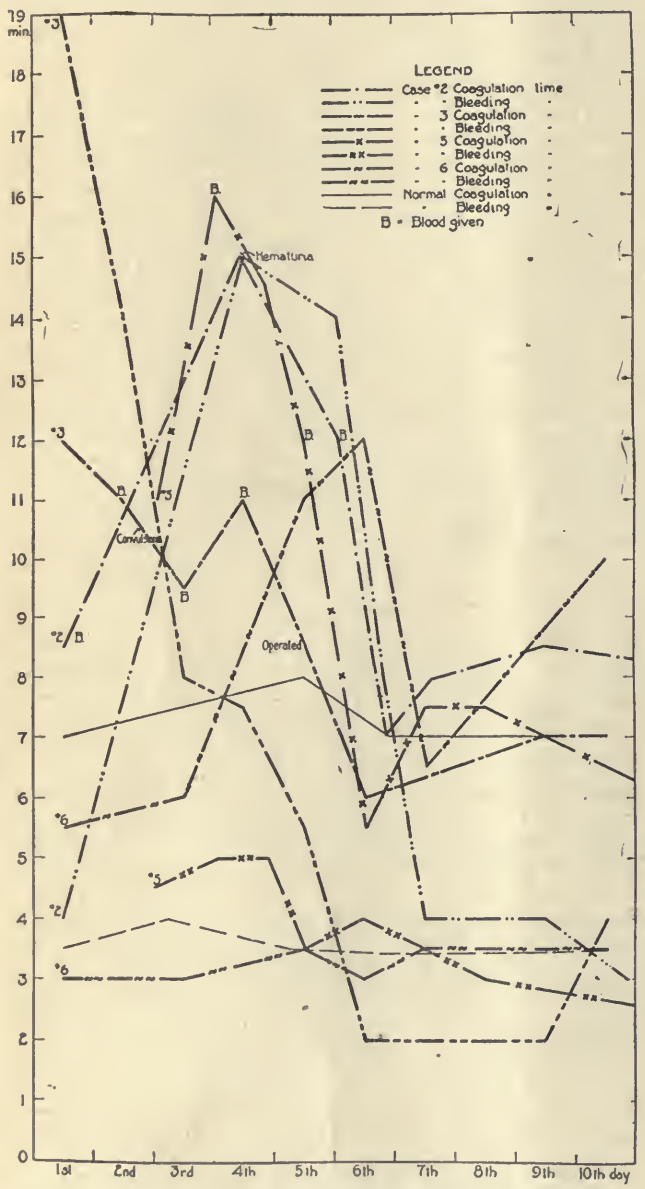


Chart 2.—Coagulation time in a series of cases above the normal range.

Case 2 (No. 16178).—*History.*—L., girl, the second twin, the first delivered with forceps without evidence of trauma, this one delivered by version and later presenting unequal, inactive pupils, bulging fontanel, and spasticity of limbs, died on the fifth day.

Necropsy Findings.—A very large hemorrhage into pericardial sac and about the vessels of the neck was found. Hematoma of the scalp, hemorrhage into the lungs and a massive hemorrhage over the right cerebrum were noted.

Case 3 (No. 8463).—*History.*—R., boy, born after normal labor, showed signs and symptoms of cerebral hemorrhage and died on the third day.

Necropsy Findings.—There was hemorrhage into the heart, lungs and skin as well as a subdural hemorrhage.

Case 4 (No. 14597).—*History.*—P., girl, a premature infant, born after a very easy labor, with no sign of syphilis, died on the second day.

Necropsy Findings.—There was extensive hemorrhage into the lungs and brain.

More than 25 per cent. of all our cases posted show this picture of multiple hemorrhages. Careful analyses of cases reported in the literature by Cushing, Green and others will permit one to duplicate these findings many times.

From these findings, it was concluded that there were factors other than instrumentation and trauma concerned in cerebral hemorrhage, and that perhaps the obstetrician was carrying some burdens unjustly laid upon him. Concomitant symptoms of hemorrhagic disease during life, with the demonstration of multiple hemorrhages at necropsy, suggested further studies on the etiology, and especially on the question of disturbances of the coagulation properties of the blood in the new-born. Credit must be given to Green,[12] who, in 1914, first suggested this factor. I therefore undertook studies on the coagulation time of the blood in patients giving evidence of cerebral hemorrhage.

GENERAL OBSERVATIONS

An account of the method used and the results obtained has already been published.[13]. Certain general observations which were made may be helpful in the present study (Charts 1 and 2).

1. The average coagulation time in the normal newborn, with my method, is seven minutes, with a normal range of from five to nine minutes; the average bleeding time, with Duke's method, is three and one half minutes, with a normal range of from two to five minutes.

2. There is a prolongation of coagulation and bleeding times from the first to the maximum on the fifth day of life, with a return to the average first day determination time before the tenth day. It is significant that this coincides with the age incidence of hemorrhagic disease and cerebral hemorrhage.

3. Evidence of hemorrhages appeared when a prolonged bleeding time accompanied a delayed coagulation time.

4. Delayed times were favorably affected by the subcutaneous administration of whole blood.

For their relationship to the problem in hand, the results obtained in certain conditions of the new-born may be cited:

1. In icterus neonatorum, normal coagulation and bleeding times were found.

2. No cases of sepsis neonatorum were presented for study.

3. Several cases of melena neonatorum gave markedly prolonged coagulation times—up to ninety minutes—and bleeding times of hours, days or until the condition was controlled. Schloss and Commiskey,[14] in their studies, obtained similar results in some of their cases. Symptoms were relieved, and the reactions returned to normal with repeated injections of blood.

4. Suspected and mild cases of congenital syphilis gave normal findings. Severe and progressive cases

12. Green: Intracranial Hemorrhage in the Newborn, Boston M. & S. J. **174**: 947, 1916.
13. Rodda, F. C.: Studies with a New Method for Determining the Coagulation Time of the Blood in the New-Born, Am. J. Dis. Child. **19**: 269 (April) 1920.
14. Schloss, O. M., and Commiskey, L. J.: Spontaneous Hemorrhage in the New-Born, Am. J. Dis. Child. **1**: 276 (April) 1911.

gave prolonged times. Further, though a temporary reduction in the times could be obtained by the administration of blood, it was not permanent, and one patient died of hemorrhage in spite of repeated injections of blood subcutaneously and into the superior longitudinal sinus. This result was quite contrary to that obtained in melena, and may be explained by the presence of some destructive agent rather than a condition of deficiency of certain substances concerned in coagulation.

RESULTS IN CEREBRAL HEMORRHAGE

The results in cases of cerebral hemorrhage, which is under consideration, were rather striking (Charts 3 and 4).

CASE 5 (No. 16178, Chart 3).—*History.*—L., girl, a twin, born March 11, 1919, with breech delivery, was in rather poor condition at birth, mouth to mouth breathing was employed. March 12, the child's condition was good. March 13, pallor, weak pulse and unequal pupils, which failed to react to light, were noted. The head was pulled to the left, the limbs were spastic; the spinal fluid was blood tinged. There was hematoma of the scalp. The coagulation time was thirty-nine minutes. The infant was given 25 c.c. of the mother's blood. March 14 the findings were as before, with paresis of the right side of the face; the spinal fluid was bloody. After standing the supernatant fluid was yellow. (Xanthochromia of the spinal fluid we find to be a rather constant finding if blood is present about the base of the brain or in the upper spinal canal.) The coagulation time was ninety minutes. The infant was given 25 c.c. of the mother's blood; this was repeated, March 15. Icterus and Cheyne-Stokes breathing were present. The spinal fluid findings were the same as on March 14. Twenty-five c.c. of blood was given. The coagulation time was eleven minutes. The child died at 10:45 p. m.

Necropsy Findings.—There were large hemorrhages into the pericardial sac, in the lung, and over the entire right hemisphere; there were small hemorrhages over the tentorium and in the spinal canal. Blood injections appeared to have controlled the coagulation time, but the child died from intracranial pressure.

The twin brother had an emesis of blood on the third day. The coagulation time was found to be fifteen minutes. It was given 25 c.c. of the mother's blood. The subsequent course was normal.

CASE 4 (No. 18583, Chart 3).—*History.*—H., boy, whose mother was a primipara, was born March 13, 1920, with a low forceps delivery. A slow fetal heart rate had been noted. The child's color was good at birth, but he became cyanosed after ligation of the cord. March 14, the child gave a lusty normal cry. There was extreme cyanosis and no heart murmur. The coagulation time was eleven minutes; the bleeding time was four minutes. March 16, physical examination revealed the apex beat in the fourth intercostal space on the right nipple line. The liver was palpated on the left side; the spleen, on the right. A diagnosis of transposition of the viscera was made. The patient's condition was good except for cyanosis. March 17, respiratory embarrassment was extreme; the pulse rate was 40; coagulation time, thirteen minutes, bleeding time, indefinite. Bleeding from the site of the puncture continued for hours. No blood was given, and the patient died.

Necropsy Findings.—Complete transposition of the viscera, rudimentary right heart with lack of the intraventricular septum and a large blood clot over the parietal region were found. During life there were no specific signs or symptoms of cerebral hemorrhage except the blood changes. The slow pulse, noted before birth, and the cyanosis were attributed to the cardiac condition.

CASE 7 (No. 17419, Chart 3).—*History.*—L. M., girl, whose mother was a primipara, was born, Oct. 1, 1919, with normal delivery. She weighed 2,400 gm. October 2, the findings were normal; the coagulation time was seven minutes; the bleeding time, four minutes. October 3 and 4, there was normal progress. October 5, the patient was cyanosed, and Cheyne-Stokes breathing was present. Hematoma over the right parietal region was noted for the first time. The coagulation time was eleven minutes; the bleeding time, eight minutes. The infant was given 15 c.c. of blood subcutaneously and died a few hours later.

Necropsy Findings.—Hemorrhages into the tissues of the scalp with hematoma over the right parietal area were found, also extensive subarachnoidal bleeding over both temporal areas with a small amount of blood over the cerebellum and in the ventricles. This case presents a very late onset of symptoms, apparently a slow hemorrhage.

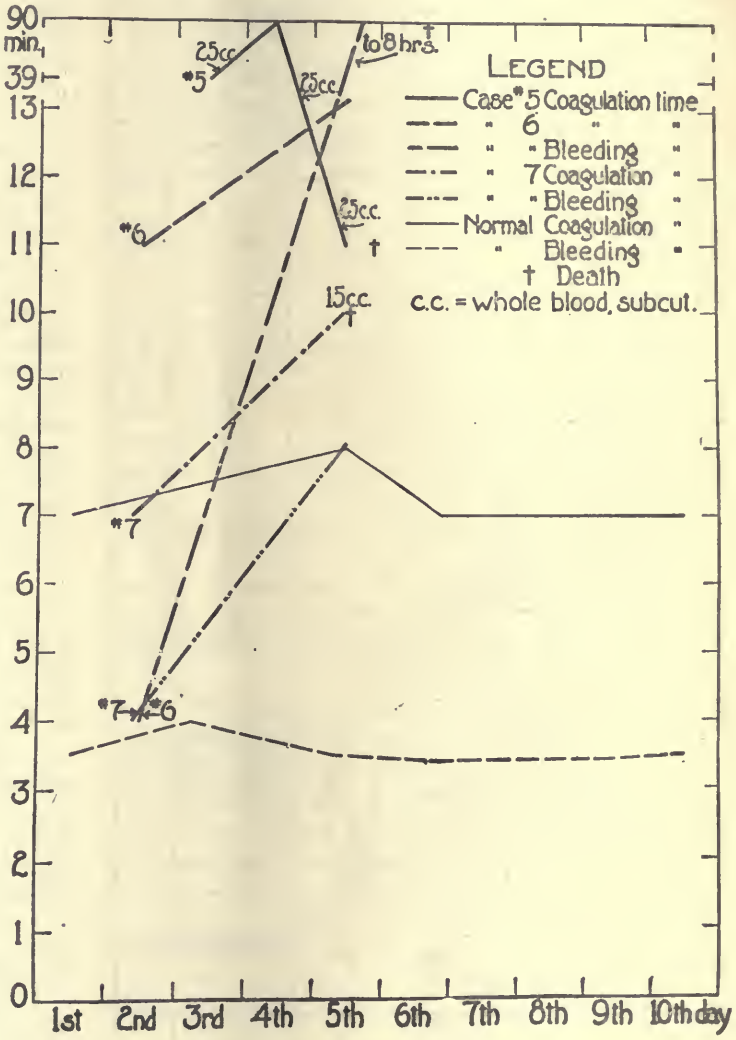


Chart 3.—Findings in cases of cerebral hemorrhage; death ensuing.

CASE 8 (No. 16634, Chart 4).—*History.*—S., boy, was born May 26, 1919, with normal delivery after long labor. May 27, a large cephalohematoma rapidly increasing in size was noted as well as petechial hemorrhages over the arms, chest and abdomen. There was spasticity of the right hand. Twelve hours after birth the patient was given 30 c.c. of blood subcutaneously. Seven hours later 20 c.c. more blood was given. The coagulation time was then four minutes; the bleeding time, eleven minutes. May 28, the coagulation time was four minutes, the bleeding time, four and one-half minutes. The patient had convulsions. The spinal fluid was bloody; the coagulation time was four minutes; the bleeding time, seven minutes. May 29, the findings were the same, the coagulation time was seven minutes, the bleeding time, ten minutes. The patient was given 22 c.c. of blood. May 30, operation was performed by Dr. A. C. Strachauer. A large osteoplastic flap

was turned down and a blood clot removed. There was slight oozing from the wound. The patient was given 25 c.c. of blood. May 31, the condition was as before operation except for lack of convulsions. June 1, spasticity was clearing; the coagulation time was five and one-half minutes, and the bleeding time, six minutes. June 6, there was continuous improvement. The blood reaction times were normal.

Present Condition.—The patient was seen at 10 months; he appeared to me a normal baby, though the head was rather large.

Case 9 (No. 17750, Chart 4).—*History.*—H., girl, was born Nov. 20, 1919, with breech presentation, version and extraction

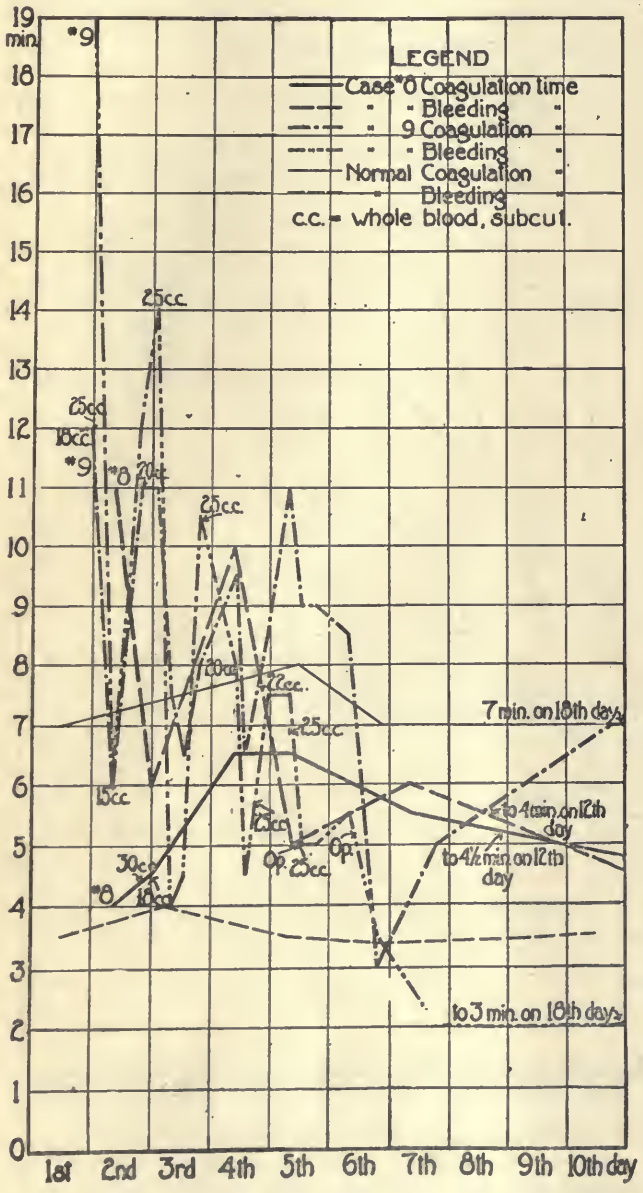


Chart 4.—Findings in cases of cerebral hemorrhage; with operation and recovery.

in forty-five seconds. Asphyxia was present at birth. Shallow breathing, overriding of parietal bones and bulging of fontanel were noted. The patient was given stimulants. The coagulation time was twelve minutes, the bleeding time, nineteen minutes. The patient was given 43 c.c. of blood. November 21, the general condition was better except for pallor. The coagulation time was six minutes; the bleeding time, six minutes. Fifteen c.c. of blood was given. November 22, the patient had convulsions; she was given 25 c.c. of blood twice during the day. November 23, she had convulsions from every five to fifteen minutes, with sharp, piercing cries. The coagulation time was six minutes, the bleeding time, ten minutes. Twenty c.c. of blood was given. Later the patient was given 25 c.c. November 24, the patient had difficulty in swallowing. There were no localizing symptoms. The coagulation time was eleven minutes; the bleeding time, seven and one-half minutes. Twenty-five c.c. of blood was given; November 25, 25 c.c. of blood was given. The coagulation time was eight and one-half minutes; the bleeding time, five and one-half minutes. A decompression operation was performed by Dr. A. C. Strachauer. His notes state: "On incising dura, brain bulged; great pressure; bleeding possibly on other side." After operation, the coalugation time was three minutes; the bleeding time, three and one-half minutes. This striking reduction in time almost immediately after operation may have to do with intracranial manipulation with the release of cephalin. November 26, the patient was much improved; the coagulation time was six minutes; the bleeding time, two and one-half minutes. The patient was discharged on the twenty-seventh day in excellent condition showing a gain of 800 gm. over the birth weight.

Present Condition.—At 4 months she weighed 14 pounds and appeared perfectly normal.

COMMENT

Cases 8 and 9 illustrate the brilliant results of surgery. It may also be concluded that the early and repeated injections of blood controlled the tendency to hemorrhage and contributed to the surgical success.

Analyses of these cases show that administration of blood subcutaneously is capable of bringing the blood coagulation reaction back to normal. This in certain cases may be curative, especially if resorted to early. It may be a necessity if surgery is contemplated, for early operation in the face of uncontrolled hemorrhagic tendencies is a great risk. Otherwise, late operations after eight or ten days may be undertaken if the child survives to this time, since the blood reactions are then usually normal.

Bulging fontanel, respiratory and cardiac disturbances, spasticities and convulsions, the classical signs of cerebral hemorrhage, may present themselves late in the disease or not at all. Prolonged coagulation time and a protracted bleeding time suggest the disturbance. It is now a routine in our clinic to determine these factors early and to administer blood repeatedly if delay is found.

It seems justifiable to conclude that the etiology of cerebral hemorrhage is complex:

(*a*) Severe trauma with resulting rupture of large veins, or sinuses, or tearing of the tentorium produces massive hemorrhages with death at delivery or within the first few hours.

(b) Mild trauma may produce hemorrhages also, but the condition of the new-born blood enters into consideration.

1. If the coagulation and bleeding times are normal, recovery may take place. Kundrat,[15] in necropsies on children several weeks old in whom cerebral hemorrhage had not been suspected, reported blood pigment and signs of old hemorrhage.

2. If the blood shows prolonged coagulation and bleeding times, hemorrhage may be progressive over days until intracranial pressure is increased to the extent of producing symptoms; and if longer continued and not relieved, death ensues.

Hemorrhagic tendencies in the new-born may be latent until an abrasion of the skin, opening of a hematoma, the forcible removal of the cord, or circumcision gives occasion for protracted bleeding. Likewise the rupture or break in some small vein over the brain surface supplies the impulse for the hemorrhage,

15. Kundrat: Ueber die intermeningcalen Blutungen Neugeborener, Wien. klin. Wchnschr. **2**: 887, 1890.

if the hemorrhagic tendency is present. In our work, it was found in hemorrhagic conditions that the bleeding point was often occluded by a soft clot—movement of the limb or contact with bedding often displaced the clot and induced a fresh hemorrhage. Such a clot in a cerebral vessel could easily suffer dislodgment from crying or vomiting, with renewal of the bleeding. This explains the protracted steplike progress seen in many cases of cerebral hemorrhage.

CONCLUSIONS

1. Cerebral hemorrhage is a frequent occurrence in the new-born, and the most frequent cause of death in the first days of life.
2. Cerebral hemorrhage is not always caused by obstetric operations; it may follow normal labors when least expected.
3. Severe trauma results in massive hemorrhages and early death.
4. A more frequent cause of cerebral hemorrhage is mild trauma plus hemorrhagic disease of the newborn, accompanied by findings of delayed coagulation time and prolonged bleeding time.
5. A delayed coagulation time and prolonged bleeding time can be controlled by the subcutaneous injection of whole blood. This is a rational therapy in cerebral hemorrhage.
6. In severe cases, surgery should be employed early; operation should be controlled by blood studies and the injection of blood if indicated.
7. The coagulation time and bleeding time should be determined in every new-born presenting unusual symptoms, or better, as a matter of routine. If reactions are delayed, blood should be administered.

The Children's Clinic, 1717 First Avenue, South.

ABSTRACT OF DISCUSSION

DR. ISAAC A. ABT, Chicago: We are accustomed to think of meningeal hemorrhages in the new-born as the result of trauma, and we frequently blame the obstetrician for the damage when he is not responsible. The most frequent causes of meningeal hemorrhage have already been mentioned. We frequently encounter cases in which meningeal hemorrhage results on the fourth or fifth day, and I have thought that this was due to a trauma during labor. Dr. Rodda pointed out, however, that the hemorrhage may occur as the result of a constitutional state, or on account of the fragility of the blood vessel walls. Dr. Rodda has established a normal coagulation time for the blood of the new-born infant and also worked out the normal bleeding time. He has shown conclusively that a certain number of babies bleed without having received any birth injury. Babies with meningeal hemorrhage bleed slightly at first, though later on a continuous oozing occurs leading to the accumulation of a considerable quantity of blood. If we detect a tendency toward bleeding, or if we recognize the fact that oozing is going on, by Dr. Rodda's method of determining the coagulation time, we will be able to control the hemorrhage. Considering the severity of these cases, particularly the after effects on the nervous system, localization of the hemorrhage should be attempted and surgical treatment should be advised. If nothing else can be done, a decompression may be produced by operation, and possibly the severe results of pressure on the cerebral cortex and the destruction of cells, with subsequent degenerative processes, may be prevented. Of course, there are those who will say at once that there is sufficient decompression already, on account of the natural structure of the infant's skull, but when there is continued oozing the subarachnoid space soon becomes distended; the dura may be incised so as to prevent this overfilling and to relieve compression.

DR. JOHN FOOTE, Washington, D. C.: The work Dr. Rodda has reported on is extremely important, particularly so in view of the observations made by Ballantyne of Edinburgh on the influence of the neonatal death rate on the general infant mortality rate. We have here the condition which necropsy findings have shown to be the cause of perhaps 50 per cent. of deaths in the new-born within the first few days of life. That has been the result of Dr Warwick's observations, at the University of Minnesota, and by Wehe and Kundrat, who have done similar work. Not only that, but this condition has been found in routine necropsies on a large number of infants in whom none of the classical symptoms of cranial hemorrhage had appeared. So we can realize its great importance. Dr. Rodda has standardized the method by which we may obtain definite knowledge, within reasonable limits, of the normal coagulation time of infants' blood. I have been impressed with the importance of this subject for a long time. Three years ago, in discussing Dr. Brady's paper, I stated that in my opinion hemorrhage within the cranium of infants could be, and frequently was, the result of a general hemorrhagic tendency. I have sometimes found it necessary to use thromboplastin or horse serum or blood to induce coagulation. I have obtained very good results with other agents than blood. Some men do not care to use human blood unless they have the proper hemisoagglutination group of donor. Whenever I think of that term I am reminded of what George Eliot said, that "we cover up our ignorance with long Greek names." Whole blood may be injected under the skin regardless of grouping rules.

DR. HOWARD B. HAMILTON, Omaha: We need to remember not only the frightful mortality attendant on this condition, but also the frightful morbidity. When we see these children later, with their deformities of a physical or mental, and perhaps even of a moral character, it gives us food for thought. I have seen some cases due to the use of pituitary extract. The unfortunate results, whether those of mortality or morbidity, are such that extreme measures are justified. If there are localizing symptoms, it seems more than justifiable to operate. If there are those cases which give evidence of pressure, but without localizing symptoms, some one has suggested the utility and the feasibility of doing repeated lumbar punctures, and has reported some cases in which benefit was obtained by so doing. Some one advised going into the cisternae at the base of the brain, through the foramen magnum, which seems to be rather a formidable procedure, but if there is any hope of doing anything for these patients, it would be justifiable, because the results otherwise are of such an unfortunate character that it would seem better to lose the patient with an unsuccessful operation than to have him live in the condition in which many of them are left.

DR. F. C. RODDA, Minneapolis: We were greatly impressed with the frequency of cerebral hemorrhage in the new-born. In our studies of more than fifty necropsies, over half of them showed cerebral hemorrhage. We were at a loss to explain why hemorrhages were so frequent following normal labors, why there was delay in the onset of symptoms as long as five or six days, and why they frequently accompanied multiple hemorrhages throughout the body. In our studies in determining the coagulation time we found repeatedly in hemorrhagic cases that the puncture point in the heel was closed with a very soft clot. This was easily displaced by movement of the limb and bleeding frequently recurred. We feel the situation is somewhat similar in cerebral hemorrhages, that the break in a very small vein is occluded by a soft, insecure clot which becomes displaced by vomiting or crying with subsequent renewal of bleeding. This may explain in part the delayed and steplike progress in many cases of cerebral hemorrhage. Lumbar puncture may give results if the bleeding is below the tentorium; if the bleeding is supertentorial, one can anticipate little benefit from this procedure. Surgery to be of greatest benefit must be resorted to within the first days of life. Early surgery must be controlled by studies of the coagulation time. If the time is delayed, blood should be injected. It would be a formidable operation to attempt surgery in the face of a profound hemorrhagic tendency, such as many of these babes present. If the operation is delayed from ten to fourteen days, then the injection of blood is not essential, since the hemorrhagic tendency is overcome very early in the infant's life, perhaps within the first ten days.

THE TEMPORARY TEETH*

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Seventeen years ago the American Medical Association met in this city, and at that meeting there occurred in this section a lively discussion on the subject of the toilet of the nasopharynx. I recall no word said during that discussion to indicate that any one then present realized the close relationship between the condition of a child's teeth and the nasopharynx.

Shortly after returning from that meeting I was the consultant in the case of a 7-year old girl who was pallid, had a rapid pulse and accelerated respirations, had been losing weight, was without appetite, and had low grade fever. After what I considered a careful examination I concurred in a diagnosis of tuberculosis. The family asked for further consultation with an eminent surgeon. The physician in charge and his consultant objected on the ground that the case was medical, not surgical. This resulted in both being asked to resign from the case. The surgeon was then called in and discovered a gumboil at the site of the first permanent molar, the latter decayed. With proper treatment of the mouth condition the tuberculosis disappeared magically. The girl today is a fine specimen of healthy young woman, but she has a crooked face—all of which is recited to bring out several points, but chiefly to introduce an inquiry as to why pediatric men continue to ignore the subject of dental pediatrics.

I find very little evidence in the subsequent transactions of this section or of any other organization of pediatricians, or in the monographs or in the textbooks of its members, to indicate that due consideration is being given to the subjects of oral hygiene and oral prophylaxis. Can we afford longer to dismiss from our deliberations subjects such as these which are not merely related to pediatrics but are definitely a part of pediatrics?

A favorite complaint from pediatricians has been that the government gives more attention to the breeding of cattle than to the breeding of a race. Such a complaint is hardly consistent when through our efforts huge sums are being spent on the cow's toilet, though we ignore the importance of a toilet for the child's mouth.

Thomas of Minneapolis damns the family dentist who dismisses the little child with the statement: "Oh! I can't do anything with those teeth, they are only temporary and your child will have permanent teeth in their stead." He says the man who first called the deciduous teeth the "temporary" teeth committed a crime against children which only years of painstaking education can eradicate. I agree with him. Probably each of us has experienced much difficulty in securing proper dental care for our little patients. I have at times been explosively impatient with dentists. I realize, however, that dentists are only human and that they are not entirely responsible for conditions now existing wherein the child is denied proper dental rights. Dentists are not to be too much blamed if they give chief attention and most of their time to the seemingly more imperative and the decidedly more lucrative demands on their profession. So many adults in our population have mouths in a deplorable condition that if every dentist in the land were to work twenty hours a day, each could be kept busy with needed reparative and reconstructive work, and there would still be many persons compelled to go unattended. The demand along this line far exceeds the supply.

Notwithstanding notable exceptions such as Fones of Bridgeport, Forsythe of Boston, Ebersole of Cleveland, Oakman, Griffin and Burke of Detroit, Thomas of Minneapolis, Belcher and Burkhart of Rochester, Maud Tanner of Portland and a few others, the majority of dentists have neither the time nor the inclination properly to treat temporary teeth. The dental profession not only admits but insists on the importance and the necessity of oral hygiene and prophylaxis. But just so long as there is a paucity of dentists, so long as the grown man or woman with the toothache can out halloo the child, so long as the adult furnishes the coin, dentists cannot be expected to scramble around and over each other in eagerness to attend to the child's mouth. It simply is not done.

By way of parenthesis I wish to say in justice to the dental profession that the latter embraces as many selfsacrificing, unselfish and philanthropic individuals as does the medical profession—but each has a goodly majority which is looking out for the main chance.

It has been estimated that in spite of antenatal conditions and quite independent of the state of the teeth of parents, the temporary teeth emerge through the gums to all intent and purposes perfect in 98 per cent. of children. Contrast this with the condition of the teeth of children of school age. Leak, New York State dental inspector, says:

> Ninety per cent. of children in the first grades, not only in the slums but in aristocratic and best sections of cities, have bad teeth; one third have abscessed conditions in their mouths, and every fourth or fifth child does not have proper masticating surfaces. Of little tots in the first grades, 7 years of age, 40 per cent. have the six-year molar decayed—a tooth which has not been in the mouth more than one year and yet the first molar of the permanent set, decayed.

Equally bad conditions have been revealed wherever inspections of the mouths of the schoolchildren have been made.

It ought not to be necessary for me to dwell at great length on the dangers to health and on the economical waste which result from such conditions.

Pediatricians everywhere have contended for the rights of the child to a clean, wholesome food supply. A vast amount of time, energy and money has been expended through our efforts on a propaganda for pure food, clean handling and sterile utensils and conditions. Meanwhile, we are overlooking one of the most frequent sources of contamination—the child's mouth, "the mixing chamber of the food" as some one has aptly expressed it. Certainly, food cannot pass clean into the stomach through a foul mouth. Besides many gastro-intestinal disturbances which can be traced directly to this source, an unclean mouth is often responsible for diseased tonsils and other diseased glands. Filth breeds filth both inside and outside the body.

It has been conclusively demonstrated that children with bad teeth are more susceptible to infectious diseases.

Granting, as Hellman suggests, that there should be a more scientific investigation of the causes of mal-

* Read before the Section on Diseases of Children at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

occlusion, that "the condition should be studied from a developmental, racial, pathologic and nutritional standpoint," this does not preclude the already arrived at conclusion that premature loss of the deciduous teeth is the most frequent etiologic factor in maldevelopment of the face and the jaws.

Lest the intent of this paper be lost by provoking a discussion on focal infections, I omit case reports. I am not in the least concerned whether you accept or deny that "the elective localizing powers of streptococci in various types in dental infections have been demonstrated." I am concerned as to whether we, an organized body of pediatricians, admit that there are in our country millions of children whose health is in more or less jeopardy because of their unclean mouths. Probably a majority of these children display no strikingly marked symptom. There may be no pain, no elevation of temperature, no acceleration of pulse rate, no cough, no glandular swelling, no albuminuria, nothing to attract the attention of the ordinary physician, dentist or parent. Many of these children, however, do display symptoms which to the pediatrician ought to be pregnant with significance. The child may not show a proper interest in things that are attractive to the normal child. The appetite may be capricious, the child often spurning good wholesome food while craving sweets. He may be as reluctant to go to bed at night as to get up in the morning. He may be nervous and fidgety or lethargic; he may be emotional or apathetic; he may be precocious or a dullard; sometimes he is incorrigible. To the uncommonly observant, many indications are apparent of the child's being below standard—sometimes mentally, sometimes physically, sometimes in both ways.

Fones once said:

> If our large steel plants and rolling mills were obliged to reroll from 20 to 35 per cent. of their stock, it would not take them very long to find out what was the matter. No business nowadays could stand such a high percentage of loss in doing its work over again. In our public schools throughout the country, it is a fair estimate to say that the percentage of grammar schoolchildren who are reviewing their grade will range between 20 and 35 per cent. In a majority of cities the average will be nearer the latter figure.

This statement was made in 1913. When Fones was enabled in 1914 to introduce oral hygiene into the schools of Bridgeport, what he actually found was that 40 per cent of the entire educational budget was being spent on reeducation. After five years of mouth hygiene in the school this was reduced 50 per cent., only 17 per cent. of the budget being required for the purpose of reeducation.

In every community in which oral hygiene has been introduced as a part of the school system, not merely satisfactory but brilliant results have followed. It has always meant cleaner, better, happier and more intelligent girls and boys. This state of well being is reflected not only on the teachers but on the parents as well. At present oral hygiene has been adopted so exceptionally by school boards that communities in which it exists stand out in marked contrast with their benighted neighbors. Why is it that a system for which so much can be claimed does not become universally adopted by schools? The ardent souls who have approached appropriation boards advocating oral hygiene have been able to present forceful arguments; they have had no difficulty in proving their case, yet few have succeeded in obtaining the necessary funds.

Appropriation boards are too often skeptical of the purposes of a demand which originates and is supported almost solely by dentists or physicians.

While there is no question about the desirability of having oral hygiene made a part of every school system, this desirability will hardly be realized until the campaign for funds gains sufficient momentum to overcome the natural reluctance and skepticism of appropriation boards. If there is any better way to do this than by getting parents back of the movement, it has not suggested itself to me. Even if they had the inclination, dentists have little opportunity to present the matter to parents. Compared with physicians, especially pediatricians, dentists have access to but few homes. When the child is taken to the dentist it is usually only after toothache has developed, at which time injury—often irreparable injury—to tooth or teeth has been suffered. If oral hygiene and prophylaxis only meant brushing the teeth and keeping the mouth clean, pediatric men ought even then to lend cordial support to the movement. The question is broader, in that diet plays an important rôle as an etiologic factor in the development of caries. Dentists who are specializing on children's teeth are emphatic in their assertion that, given the care of the child young enough, they can, with the intelligent cooperation of a pediatrican, reduce diseased pulps and caries to almost nil. Parents are entitled to education along this line. I hope the members of this section will individually and collectively resolve to stop putting the burden altogether on the dentists.

ABSTRACT OF DISCUSSION

Dr. Julius Sedgwick, Minneapolis: We can often clear up the diagnosis in obscure cases by examining the teeth carefully. A child from Oklahoma was believed to have malaria. The organism of malaria could not be found. The teeth were cared for and the supposed malaria disappeared. We have in each of our clinics a staff dentist who examines any case in which the teeth cannot easily be excluded as the cause of trouble. As a prophylactic measure, we have the children sent to the dentist regularly before they have any trouble. The dentist associated with us makes a specialty of the teeth of children. I think this is very important, and it is hard to understand why it has been so long neglected.

Dr. Isaac A. Abt, Chicago: If the teeth are not properly cared for, if oral prophylaxis is neglected, then the teeth decay or produce abscesses and the question of extraction is raised. Most dentists hesitate at extracting these temporary teeth because no room is left in the arch for the eruption of the permanent teeth, and deformity and malocclusion result. They are right. Certain diseases in infancy affect not only the temporary teeth, but also the permanent teeth. Some years ago I reported a number of cases of tetany in infancy causing in later life enamel erosions of the permanent teeth. This whole question deserves further consideration, and I would suggest that some one should investigate the whole subject of the relation of decayed teeth to malnutrition, pointing out the effects of decayed and neglected teeth on nutrition, growth, development, condition of the blood and other organs.

Dr. W. L. Funkhouser, Atlanta, Ga.: Prevention and the early detection of malocclusion in the temporary teeth is a responsibility we must assume. To do this we must recognize the forces which prevent, and the causes which produce, malocclusion. If we will recognize these cases early and have them referred to the orthodontist at once, we will preserve for our little patients a normal masticatory and breathing apparatus.

Dr. Laurence R. De Buys, New Orleans: The care of the teeth should begin when the first tooth erupts. Too frequently

parents wait until several teeth are out of order to begin the dental hygiene. I have been impressed with finding a continuously slightly elevated temperature in children who have had carious teeth over a prolonged period. Whenever a mouth shows carious teeth, the oral temperature should absolutely be disregarded, and the rectal temperature be the guide. In making comparative observations in these cases, even after the teeth have been removed, between the mouth and the rectal temperature, we are often apt to find the rectal temperature at its normal at 99.6 F. and the mouth temperature elevated to 99 or 99.6 F. It is far better practice to extract the carious teeth or the carious permanent teeth even at the risk of a resulting malocclusion, than not to do so and expose the individual to the many conditions which may result therefrom, and which might permanently either partially or completely incapacitate him. Malocclusion, if it should occur, may easily be corrected later.

Dr. Fritz B. Talbot, Boston: Dr. Abt mentioned that children who have had tetany have poorly developed teeth. The recent work of Howland and Marriott on blood examinations in these cases, and Dr. Denis and I have confirmed the work in a large number of cases, shows that the blood in acute tetany contains a very diminished amount of calcium during the acute stages of the disease. Of course, the teeth are formed principally from calcium.

Dr. C. F. Wahrer, Fort Madison, Iowa: The dental association of Iowa passed a resolution two years ago to the effect that they were not going to take orders from any physician, because they knew more about what should be done for a child's teeth, no matter how badly diseased, and what influence they might have on focal infection, than the doctor. So strongly is this opinion held in our state that I had to go finally to the State University to find a dentist who would extract some teeth for my wife, in order to prevent her eyesight from being totally ruined. Between extremes lies an immense amount of truth, and by papers and discussion of this kind, and the use of good judgment and available literature we surely can arrive at the truth of what will be necessary for the child.

Dr. E. C. Fleischner, San Francisco: I have numerous children brought to me with the same statement that the dentist said the teeth are too poor to fill, but he does not want to pull them because of the effect on the eruption of the permanent teeth. I tell every one of those mothers that every tooth is either good enough to fill or poor enough to pull. I have stated that before state dental societies, county dental societies and local dental societies, and I never have found a dentist with sufficient courage of his convictions to challenge that statement. A carious tooth which cannot be filled corresponds absolutely to a sequestrum of bone. It is contrary to all known surgical principles to leave a sequestrum anywhere in the body. Why should an exception be made in the case of the temporary teeth?

Dr. J. Ross Snyder, Birmingham, Ala.: We should talk about prophylaxis and oral hygiene more in pediatric societies. I do not think we ought to begin to condemn or apologize for the dentists until we take a little more action ourselves.

Overconsumption of Sugar.—The observation of Garner on monkeys that they prefer acid fruits when in the wild state but when in captivity soon become enthusiastic about sweets points to sweet eating as a habit. There can be no question as to the important place which carbohydrates must always hold in the diet since with fats they furnish a very large proportion of the energy required, nor can we disregard the value of sugar itself when taken in moderation and with regularity and, under certain unusual conditions, in large amounts. There seems, however, to be no proof that sugar is absolutely essential after the period of infancy, when its presence in considerable amount in the milk of the nursing mother points to its necessity in the early months before the digestive processes have become able to convert starches, but after this digestive ability is established, there is every reason to believe that the effort required in the conversion of starches is of benefit to the development and maintenance of the digestive processes and that added sugar tends to impair these functions.—F. Van der Bogert, *Albany M. Ann.*, June, 1920.

SOME OBSERVATIONS ON THE PHARMACOLOGY OF A DIGITALIS BODY*

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The investigation with which this paper deals was started with a view to preparing a digitalis principle in a form suitable for intravenous administration following numerous inquiries concerning such a preparation. There seems, however, to be a more imperative need of one which is absorbed from the gastro-intestinal tract with greater uniformity than are the tinctures or other preparations made from digitalis obtained from a variety of sources and including wild grown and cultivated American, English and German leaves, partly from the first year's growth, partly from the second, and dried in a variety of ways.

The need of such a readily absorbable preparation has been called to my attention by the complaints of clinicians who were unable to secure the typical effects of digitalis even with large doses of the tincture in use in the hospitals with which they are associated. Several of these tinctures were submitted for examination, and in every case the biologic test showed that they were of a fair degree of activity.

Certain of the digitalis principles are readily absorbable from the gastro-intestinal tract of man, as well as that of animals, while others are absorbed much less readily, and it seems probable that the failures just mentioned arose from the fact that the preparations contained relatively large proportions of the less readily absorbable active principles.

A preliminary report [1] of a method of separating the more readily absorbable principles from those which are less readily absorbable was made about a year ago to the American Pharmaceutical Association. Since then modifications of that method have been employed in the effort to separate the more absorbable fraction in pure form and to estimate the amount in the leaf or tincture quantitatively. The substance obtained by the several modifications of the method is essentially the same, though it differs somewhat in purity. The simplest process for obtaining it consists in placing the wetted ground digitalis on a filter paper resting in water and supported by a wire frame, with a layer of chloroform beneath the water. The active principles of the leaf pass into the water by circulatory solution, and the chloroform takes up the more absorbable fraction, leaving the less absorbable in the water. The chloroform is then evaporated spontaneously, no heat or chemicals being used at any stage of the operation.

There is so much uncertainty regarding the chemistry of digitalis that any attempt at a comprehensive discussion of the subject would be out of place here; but certain salient points of resemblance between this chloroform-soluble substance and digitoxin, and certain dissimilarities may be pointed out. It is now generally accepted that digitalis contains digitoxin, digitalin, and one or two other active principles. Digitoxin is the only one of these that is soluble in chloroform, while all are readily soluble in alcohol, and none except the ill-defined digitalein is easily soluble in water. Nevertheless, water extracts all of the active

* This investigation has been made with the assistance of a grant from the Committee on Therapeutic Research, Council on Pharmacy and Chemistry, American Medical Association.

1. Hatcher, R. A.: J. Am. Pharm. A. 8: 913, 1919.

principles of digitalis almost as readily as alcohol, a circumstance that affords evidence that these principles exist in the leaf in combination, and not in the free state as we know them.

The chloroform-soluble substance resembles digitoxin to a certain degree, both chemically and pharmacologically, and it seems probable that it contains combined digitoxin, though not in its original combination, because when once it is separated the substance is much less soluble in water than before; and furthermore, when it is separated there remains another substance which is no longer soluble in water, and which is evidently thrown out of solution by the removal of the chloroform-soluble fraction.

The chloroform-soluble substance is resinous in character, brittle when cold, but softening with heat; it has a fragrant odor and an intensely bitter taste; it is soluble in chloroform and in alcohol in all proportions, and when water is added to a not too concentrated alcoholic solution the mixture remains clear or slightly fluorescent, though the substance is only slightly soluble in water; it is insoluble in petroleum benzin and in anhydrous ether, but ether dissolves a part of some specimens, leaving a part which is nearly indistinguishable in appearance and in pharmacologic action from the more soluble portion. If a fragment is dissolved in glacial acetid acid, a trace of ferric chlorid added and the solution allowed to flow over an equal volume of sulphuric acid contained in a test tube, without mixing, a dark zone appears at the line of contact, and the acetic acid gradually assumes a green, and then a blue, color, gradually fading to a dirty appearance, the reaction being identical with that given by digitoxin except that in addition the chloroform-soluble substance gives a ruby red color in the upper part of the sulphuric acid.

The behavior of digitoxin following its subcutaneous injection in the rat is peculiar, in that the animal, which excretes certain other digitalis bodies (ouabain and amorphous strophanthin) with extraordinary rapidity, shows a peculiar train of symptoms in which clonic convulsions are prominent, lasting for a period of about a week with just fatal doses. The symptoms following the subcutaneous injection of a just fatal dose of the chloroform-soluble substance are indistinguishable from those following similarly active doses of digitoxin. The rabbit eliminates a nearly fatal dose of digitoxin in a period of two or three hours in marked contrast to the cat and rat. It is significant that the chloroform-soluble substance is also eliminated by the rabbit at almost exactly the same rate as digitoxin. Such striking similarities of behavior in these two animals can hardly be a mere coincidence. The accompanying table gives certain points of resemblance between this chloroform-soluble substance and digitoxin.

One who has never worked with digitalis or other drug of similar complexity can have no adequate comprehension of the extraordinary variety of compounds which are obtained with slight variations in the method of extraction, while the changes in solubility of the active principles in different menstruums, resulting from slight differences in the impurities present, are confusing at times.

In marked contrast to the ease with which these combinations are broken down or altered is the stability of the most active of the principles which resists long continued boiling in weakly acid or neutral solution, and which I have obtained from a specimen of the fluid extract which had stood for nearly forty years. The active substance is associated with a saponin-like material, the greater part of which is separated easily but the last traces of which are removed only with some difficulty. It is difficult to remove traces of chlorophyl with which it is sometimes contaminated.

It was earnestly hoped that a method might be perfected for the quantitative determination of the chloroform-soluble fraction in digitalis leaves or the tincture in order that the dosage might be determined with reference to the content of this readily absorbable fraction, but the effort has not been successful. It appears to be merely a question of overcoming certain difficulties, and it is hoped that a satisfactory method of doing this may be devised.

The chloroform-soluble, or more absorbable, fraction and the aqueous residue, containing the less absorbable digitalis principles, are capable of exerting the typical digitalis action as shown on the frog, in which they induce ventricular systolic standstill, preceded by slowing, irregularity and dissociation of auricles and ventricle, and also by an electrocardiogram (for which I am indebted to Dr. R. Edwin Morris of the University of Minnesota) which shows a typical lengthening of the P-R interval with small doses and complete dissociation of the auricles and ventricles with large doses, together with a gradual flattening and inversion of the T wave in the cat. It also causes emesis through stimulation of the vomiting center in the cat and dog.

COMPARISON OF THE CHLOROFORM-SOLUBLE FRACTION OF DIGITALIS WITH DIGITOXIN

	Digitoxin	Chloroform-Soluble Substance
	White crystalline powder	Greenish; resinous
	Melts at 240 C.	Melts gradually at about 100 C.
	Odorless	Fragrant
	Intensely bitter	Intensely bitter
	Solubilities	
Alcohol	Easily soluble	Very soluble
Chloroform	Very soluble	Very soluble
Ether	Insoluble	Insoluble
Petroleum benzin	Insoluble	Insoluble
Water	Insoluble	Nearly insoluble
Color reaction	Positive	Positive (with ruby red)
Action in rat	Peculiar, hyperexcitability	Indistinguishable from that of digitoxin
Elimination, rabbit	Extraordinarily rapid	Extraordinarily rapid
	Fatal dose per kilogram (Approximate)	
Cat, vein	0.35 to 0.5 mg.	1.0 mg.
Rabbit, vein	1.0 mg.	2.5 mg.
Frog, lymph sac	8.5 mg.	10. mg.

The relative absorbability of the two fractions (the chloroform-soluble, and the chloroform-insoluble) was studied in the following manner: They were assayed biologically by the cat method, which determines the amount required per kilogram of weight when injected intravenously to kill the animal, such an amount being called for convenience a cat unit. The fractions were then administered to cats through a stomach tube in doses varying from one to four cat-units per kilogram of weight, and the symptoms induced were observed. The results were not uniform, but the chloroform-soluble fraction proved to be much the more readily absorbable. The chloroform-soluble fraction is relatively less actively emetic than the residue, apparently, the intravenous injection of about

30 per cent. of the average fatal dose of the residue causing emesis in cats, while about 40 per cent. of the average fatal dose of the chloroform-soluble fraction is required; but the oral doses of as little as one cat unit per kilogram of weight of this fraction usually caused emesis in a short time, whereas oral doses of three and four cat units per kilogram of the aqueous residue sometimes failed to produce any perceptible symptoms. On the other hand, the absorption of the aqueous residue was more irregular than that of the chloroform-soluble fraction, and of two animals that received one, and two and a half, cat units per kilogram, respectively, of the same specimen of the residue the one receiving the smaller dose was nauseated and depressed, while the other showed no perceptible effects. The persistence of action in each case was determined on the following day by the differential test with ouabain (difference between the average fatal dose for a normal animal and that actually required for these cats); and while a single test is not conclusive, the results supported the evidence of absorption just mentioned; the cat which received the larger dose of the aqueous residue required much less of the ouabain than the one which had had the smaller dose. It may be remarked parenthetically, that we have found that the absorbability of several of the digitalis bodies from the gastro-intestinal tract of the cat closely parallels that observed in man.

An effort was made to estimate the relative amounts of the two fractions in a tincture and in a fluidextract which had been sent for examination because of their failure to induce the typical digitalis actions in man when used clinically in large amounts. Though it is impossible to separate these fractions quantitatively, it is at least significant that both of these preparations yielded very low percentages of the more absorbable fraction, and there is little reason to doubt that this fact explains why they proved ineffective in man.

We are especially concerned with the uniformity of action of the tinctures which we use by any given method of administration, and not with the presence in them of a variety of substances, including acids, volatile oils, saponins, resins, chlorophyl, sugar and coloring matter not to mention different active principles of unknown and varying degrees of activity; but since different tinctures vary in their absorbability, and therefore in their activity when administered orally, even though they may be of uniform activity when tested biologically, there is need of a preparation of as nearly uniform absorbability and activity as can be obtained. I wish to lay special stress on the fact that if one could always use the same tincture of digitalis, one would encounter little difficulty with its use after he had learned the dose, and he would probably never have an occasion to use such a preparation as the one now under consideration.

It is with this fact in mind that I present this paper dealing with a substance which I believe to be the most active principle of digitalis in a form more closely resembling that in which it exists in the leaf than any that has been prepared hitherto.

A digitalis body[2] designed for intramuscular or intravenous injection must meet the following requirements: It must be soluble in water, or at least in a weakly alcoholic menstruum; it must be of uniform activitiy; it must exert a minimum of undesired side actions; it must not deteriorate rapidly, and it must not irritate the veins or tissues into which it is injected.

It is commonly assumed that the highest degree of purity is essential for a preparation which is injected intravenously; but while such a degree of purity is highly desirable, it is not an essential, provided the impurities present are not injurious. Tinctures of digitalis from different sources vary widely in their composition; nevertheless they have been injected intravenously with apparently satisfactory results. If clinicians have felt impelled to use the tincture in this way despite its disadvantages, it is obvious that any true digitalis body which possesses the essentials already mentioned must be preferable to the tincture.

The chloroform-soluble substance meets the first of these requirements in that it is readily soluble in alcohol and is then readily miscible with water, the solution thus formed being fairly stable; the uniformity of activity is assured by the biologic assay; it is about as actively emetic as tincture of digitalis, certainly not materially more so; so far as can be determined it does not deteriorate more rapidly than tincture of digitalis; the veins of cats were examined some days after toxic doses had been injected into them and found to be free from evidences of irritation, and numerous doses were injected into one of the ear veins of a rabbit during a period of several weeks. No evidences of pain could be elicited following the intramuscular injection into cats, but the following experiment on man is worthy of notice: An eighth of a milligram of the active substance, equal to an eighth of a cat unit, in 2,000 parts of physiologic sodium chlorid solution containing about 10 per cent. of alcohol, was injected into the deltoid (of the author). After about ten minutes there was a slight burning pain lasting for about twenty minutes. When this had become imperceptible during rest, a sudden violent movement of the arm was made with the purpose of determining whether pain could be elicited. There was a sharp burning pain lasting a minute or two, but this could not be elicited on repeating the movement. There was a slight sense of soreness during the following twenty-four hours when the arm was used, but this was not sufficient to attract the notice. The deltoid is more sensitive than the gluteus, but the dose was much smaller than that required for the full therapeutic effects; hence it is impossible to state whether the pain of the intramuscular injection of a therapeutic dose into the gluteal or lumbar region would be too painful or not.

From the foregoing it seems reasonable to conclude that the weakly alcoholic solution is suitable for intravenous, and possibly for intramuscular, injection in man, but that its ready absorbability following the oral administration renders other modes of administration superfluous in nearly all cases.

SUMMARY

Water exhausts ground digitalis leaves, and from the infusion thus prepared chloroform removes a principle which resembles digitoxin somewhat, both chemically and pharmacologically, and which is more readily absorbable from the gastro-intestinal tract of the cat than is the residue remaining in the infusion.

The chloroform-soluble substance is soluble in alcohol, and the alcoholic solution is miscible with

2. While the terms "digitalis body" and "principle" are used in this paper, it is to be understood distinctly that the substance under consideration is not an alkaloid or glucosid in pure form. The substance probably consists of digitoxin mainly, and it is probably in combination much as it exists in the leaf, although this is only a surmise.

water without precipitation, the weakly alcoholic solution undergoing little change in a period of about a year during which it has been under observation.

It is a true digitalis body, in that it exerts the typical cardiac action of the latter. It is not more actively emetic than is digitalis in proportion to its therapeutic effects.

It is believed that it is suitable for intravenous, and probably for intramuscular, injection, in the relatively few cases in which such methods of administration may be necessary.

It is hoped that a way may be found to estimate the amount of this readily absorbable fraction in digitalis so that the powdered drug, the tincture or the infusion may be used instead of this chloroform-soluble fraction, which is naturally more expensive than the official preparations.

Further pharmacologic studies of the substance are in progress in the hope that the preparation may be made official, should the clinical studies show that it possesses any advantages over the official tincture.

THE ABSORPTION OF A DIGITALIS BODY

PRELIMINARY OBSERVATIONS *

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The greatest diversity of opinion exists relative to the rate and completeness of absorption of digitalis from the human alimentary canal, and very few accurate observations have been made in this important field. In a study of the dosage of digitalis [1] published five years ago, it was shown that the tincture and the infusion, and commercial crystalline digitoxin, were generally absorbed both rapidly and fairly uniformly from the gastro-intestinal tract of man when adequate doses were administered. The precise rate of absorption was not determined, but the fact was brought out that the absorption of a single dose of digitalis was apparently complete within about six hours after its ingestion. It was also proved that full digitalization could be brought about by oral administration within from ten to twenty hours from the beginning of treatment. These observations have been confirmed by White and Morris,[2] and by Robinson.[3]

Robinson showed that the initial effects of digitalis appear in from two to five hours after the oral administration of a single large dose of the tincture, and in an unpublished report on the rapidity of absorption of digitalis from the digestive tract of man, H. E. B. Pardee concluded from his observations that the absorption of a single dose of the tincture is practically complete in about six hours, while a marked degree of absorption is almost always demonstrable in from two to four hours.

These and other observations indicate that, as a general rule, digitalis is rapidly and fairly well absorbed from the human alimentary tract; and the fact that an average oral dose could be established shows that absorption generally takes place with a considerable degree of uniformity. This is borne out by an analysis of the full therapeutic doses recorded in sixty-six cases representing all forms of heart disease, collected from the papers of Pardee [4] and myself, in which only two, or 3 per cent., of the patients showed excessive variation from the average, and in both of these the administration was continued over a considerable period of time. One of these patients required nearly two and one half, the other three, times the average dose.

Admitting the occasional occurrence of a patient who proves unusually tolerant to digitalis through one or another unknown cause, there remains the much more important occurrence of specimens of digitalis which are for some inherent reason poorly absorbed, irrespective of the patient. Thus, Dr. B. S. Oppenheimer [5] records three patients who consumed enormous amounts of a given sample of digitalis without evidences of either therapeutic or toxic action. One of his patients took 540 minims of the tincture and 21 ounces of the infusion (same digitalis) in twenty-three days, equivalent to 134 c.c. of the tincture. A second took 3,090 minims (193 c.c.) of the tincture in thirty-eight days, and the third took 3,735 minims (233 c.c.) of the tincture (or its equivalent in infusion) in forty-three days. These amounts are from five to nine times the maximum average dose required for a sample that is absorbed as well as the average. Even when allowances are made for the long periods over which administration was continued, it is evident that the particular lot of digitalis employed was very poorly absorbed. Similar observations are reported by Wedd,[6] who records five patients who took of a given sample from four to six times the average total dose with no toxic symptoms, and with little or no therapeutic effect. Other instances have come to our attention, but we have insufficient data to warrant their inclusion; nor would anything be added by rehearsing them, since the foregoing are sufficient to indicate how poorly some samples of digitalis are absorbed.

The observations reported by Hatcher,[7] in which he shows that digitalis can readily be separated into two distinct fractions by extraction of its aqueous solution with chloroform, and his observations on the marked differences in the absorbability of the two fractions from the alimentary canal of the cat, opened the way for the clinical study of the absorption of digitalis from a new angle. This study, though begun some months ago, has not progressed as rapidly as was hoped, partly owing to the crippling of our service by the influenza epidemic. I regret, therefore, that I can at present make only a preliminary report, which, however, shows results in close harmony with those obtained by my colleague, Dr. Hatcher, on animals.

In order first to compare the absorption of each of the two fractions with the results previously obtained with various samples of tincture of digitalis made from high grade leaves, the fractions were supplied to me in the form of artificial tinctures in a menstruum of 60 per cent. alcohol. All the samples were prepared so that 1 c.c. represented one cat unit in activity. These were administered to patients and the

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* Read before the Section on Pharmacology and Therapeutics at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

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whole procedure was made to parallel as closely as possible the original plan followed in the determination of the average total human dose of the tinctures. In this way the results could be compared directly with those secured from the use of the official tinctures.

Twenty-three complete courses of administration were carried out in twenty-one patients, using four different samples of the chloroform-soluble, and one of the chloroform-insoluble, fractions. Each of the chloroform-soluble fractions, 8-3-19, 9-23-19 and 2-3-20, was obtained from a different lot of digitalis leaves, while the fraction 3-18-20 was made by mixing the chloroform-soluble extracts obtained from a large number of different samples of digitalis. The chloroform-insoluble fraction 9-23-19 was obtained from the same leaf as the chloroform-soluble fraction of the same number.

The determination of the average total therapeutic dose of each of the chloroform-soluble extracts was the first problem attacked, since its solution would provide the necessary data for the investigation of other problems. The full therapeutic dose of one sample of the chloroform-insoluble fraction was also determined approximately. The results of this phase of the investigation are set forth in the accompanying table, in which the corresponding figures for the tincture of digitalis (seven different specimens) and for crystalline digitoxin are included for comparison.

AVERAGE FULL THERAPEUTIC DOSES AND PERCENTAGE VARIATIONS FROM THE AVERAGES, FOR EACH FRACTION, FOR ALL CHLOROFORM-SOLUBLE FRACTIONS COMBINED, FOR TINCTURES OF DIGITALIS, AND FOR CRYSTALLINE DIGITOXIN

Preparation	Full Therapeutic Dose, Average	Number of Cases	Per Cent. Above	Per Cent. Below
Chloroform-soluble fractions:				
8-3-19	0.153	3	11	20
9-23-19	0.161	6	26	28
2-3-20	0.157	5	20	18
3-18-20	0.182	1	..	..
All chloroform-soluble fractions	0.159	15	28	26
Chloroform-insoluble fractions:				
9-23-19	0.640	4	19	30
Tinctures	0.148	25	97	66
Digitoxin*	0.066	15	66	43

* One very tolerant patient is included in this group; if omitted, the average for the fourteen remaining cases is 0.063, with maximum variations of 35 per cent. above and 40 per cent. below.

Reference to the table shows that the average full therapeutic dose of each of the first three chloroform-soluble extracts studied is approximately the same. The average total dose, calculated from fifteen instances in which one or the other of the four different samples of extract was used, is but slightly higher than the corresponding average for tinctures, as determined from twenty-five cases. The activity of the chloroform-soluble fraction for man, therefore, is not materially different from that of the average high grade tincture of digitalis, when the comparison is made on the basis of the biologic activity of each as determined by the cat method of assay.

The chloroform-soluble extract contains an average of about 1 mg. of solid per cat unit, while the amount of solid per cat unit of the official tincture of digitalis varies widely—between 28 and 44 mg. in three samples tested. These figures give some idea of the degree of purification of the extract. This is further shown by the fact that commercial crystalline digitoxin has an activity of from 0.35 to 0.4 mg. per cat unit, or only about three times that of the chloroform-soluble extract. Dr. Hatcher has shown that the extract gives the typical color reaction for digitoxin, and that it presents many close resemblances to digitoxin pharmacologically. In spite of these close similarities, he has shown that the chloroform-soluble extract of digitalis is not the same as crystalline digitoxin, but that it is probably a somewhat altered combination of digitoxin. It is of interest in this connection, therefore, to compare its behavior in man with that of crystalline digitoxin. The table shows that for man the activity of digitoxin is about two and one-half times that of the purified extract, when the comparison is made in terms of the biologic activity of each as determined by the cat method. When, however, the activity for man is compared in terms of weight, it is found that crystalline digitoxin is about seven times as active as the purified extract. These comparisons make it certain that the chloroform-soluble extract is not the same substance as crystalline digitoxin, and confirm the results of the laboratory investigations previously cited.

Turning now to the question of the absorption of the chloroform-soluble extract, it is seen from the table that the range of variation of dose from the average is much smaller for each of the three fractions investigated, and for all combined, than it is for representative good tinctures of digitalis. Thus, for the chloroform-soluble fraction the greatest divergence from the average dose amounts to only 28 per cent. of the average; that is, one patient of the fifteen developed full therapeutic effects only after he had received 28 per cent. more than the average dose required. This contrasts strikingly with the variation noted among a variety of tinctures obtained from different sources, which rises to 97 per cent. above, and falls to 66 per cent. below, the average. Further, while no variation greater than 28 per cent. of the average dose occurred in a series of fifteen patients receiving the chloroform-soluble fractions, six patients receiving the various tinctures of digitalis showed variations greater than 40 per cent. of the average dose, in a series of twenty-five.

These facts show that the chloroform-soluble extract of digitalis is absorbed from the human alimentary tract much more uniformly than are high grade tinctures of digitalis obtained from different sources, and it should be recalled that some samples of the official tincture obtained from reliable sources are so poorly absorbed that amounts from four to nine times the average full therapeutic dose fail to produce any demonstrable effects, or at most produce only slight and insufficient effects. The fact that the chloroform-soluble extract is absorbed from the human digestive tract with much greater uniformity than is the tincture of digitalis is alone sufficient to render it a valuable advance in the pharmacy of digitalis, even if it should prove to have no other advantages over the cruder preparations. Although at present no definite statements can be made on the basis of clinical investigation, it seems probable that the chloroform-soluble extract will prove to have other advantages, especially on account of its relative freedom from impurities and its ready miscibility with water, so that it should be available for intravenous injection.[8]

Before leaving the subject of the irregularity of the absorbability of commercial tinctures of digitalis which are derived from different sources, I want to call attention to the fact that the biologic activity of the

8. The chloroform-soluble extract has since been administered intravenously to one patient with satisfactory results and without untoward effects.

tincture is not necessarily related to its absorbability from the human alimentary tract. This is well illustrated by the fact that the tinctures which Oppenheimer and Wedd found to be so poorly absorbed were both of approximately average biologic activity, and both were considerably more active than some of the tinctures which I found to be absorbed fairly well and relatively uniformly. It seems certain that this fact will necessitate a radical change in the method of assay of digitalis for human use, and Dr. Hatcher is now approaching the problem of determining both the activity and the absorbability of digitalis as a means of reaching a more accurate estimate of its therapeutic value.

The precise rate of absorption of the chloroform-soluble extract has not yet been determined for man, but the evidence so far obtained indicates that it is absorbed at least as rapidly as the most readily absorbed tinctures, and I can cite one case which was examined at least every hour and in which the maximal therapeutic action had developed within two hours and a half after a single dose amounting to about 0.112 cat unit per pound (15 c.c. total). The persistence of action of this extract has also not yet been determined for man, but again the evidence so far obtained indicates that it is equal to the best digitalis in this respect.

The chloroform-soluble extract has been supplied to several others for the study of its behavior in man, and we have reports from two who have used it in several cases. Dr. B. S. Oppenheimer of New York states that "the purified tincture of digitalis has proved uniformly satisfactory." Dr. R. W. Scott of Cleveland has administered it in eight carefully controlled cases and reports that "(1) digitalis action occurred in from one to two hours after 10 c.c. [single dose] was given by mouth. The certainty with which one could predict a definite improvement in the circulation in from eight to ten hours was indeed striking. . . . (3) Thus far the therapeutic effects have been fairly uniform as indicated by the level to which the heart beat was slowed, with resulting circulatory improvement."

I want to mention the results of the administration of the chloroform-insoluble extract to five patients, two of whom also received the chloroform-soluble extract from the same leaf on another occasion. The average full therapeutic dose of the chloroform-insoluble fraction is about four times that of the chloroform-soluble, in terms of biologic activity, indicating that in man as well as in the cat it is absorbed very poorly following oral administration. Other studies on its behavior in man have not been made as yet, owing to the obvious lack of value of the preparation.

SUMMARY

1. The fairly rapid and complete absorption of digitalis from the human alimentary canal is shown for a number of different high grade tinctures of digitalis.

2. Contrasted with this is the very poor absorption of certain tinctures, of which from four to nine times the average therapeutic dose failed to produce therapeutic effects.

3. The marked uniformity of absorption of the chloroform-soluble extract of digitalis prepared from a variety of different leaves is shown and contrasts sharply with the variations noted in the cases of tinctures from a variety of sources.

4. The chloroform-soluble extract is shown to be absorbed at least as rapidly as the best tincture of digitalis, and its persistence of action is apparently of the same order as that of digitalis of the best grade.

5. The observations indicate that for oral administration the chloroform-soluble extract is not superior to a well absorbed tincture of digitalis, but it is far superior to tinctures which are derived from a variety of sources, the absorption of which shows very marked variations when the individual specimens are compared.

6. The chloroform-insoluble extract is very poorly absorbed from the human alimentary tract, as well as from that of the cat.

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ABSTRACT OF DISCUSSION

DR. HENRY A. CHRISTIAN, Boston: Digitalis is a very good drug. Its use can be improved by investigation. We are getting better products to use in our practice, and consequently this sort of work is of very great importance. Although digitalis is not a perfect drug, it is not fair to blame the drug too often for getting poor results. Even a perfect drug will not give results unless it is used with brains. Digitalis is more often misused than almost any other drug. You can take almost any preparation of digitalis, use it with intelligence, and you can get results in almost any condition. The average doctor does not get the best results because he does not use the drug with intelligence. There is a lack of knowledge as to how to use the drug, and there is a lack of observation as to whether the drug is producing the result it should produce. It is the failure to know whether we are getting the desired results and to guide ourselves by that observation as to whether or not to increase the dosage, which largely is responsible for not getting desired results from digitalis. With these better preparations of digitalis and better methods of using them, poor results are going to be greatly reduced in number, but remember they are not going to disappear because no one can supply you with the intelligence that you may lack, or having it, fail to use.

DR. LEONARD G. ROWNTREE, Minneapolis: Within the last six or seven years we have obtained digitalis effects that we never saw before. I remember quite well when we first used Hatcher's method of standardization in Baltimore. We visited the hospital pharmacy, secured various preparations of digitalis leaves and assayed them by Hatcher's cat method. There was a variation in potency of 400 per cent. in the digitalis leaves which we found there. This emphasizes the absolute necessity of using standardized preparations of digitalis in our clinical work.

I had a striking experience in relation to the introduction of standardized digitalis into clinical work. One day my intern called my attention to some digitalis effects. The charts showed a remarkable drop in the pulse rate. On investigation it developed that it was the new standardized preparation of digitalis, and these were the first cases in which it had been used. We can get infinitely better results therapeutically if, in all instances, we insist on having digitalis that has been standardized. The second great development in digitalis therapy came with the dosage introduced by Dr. Eggleston. Results with standardized preparations, but with ordinary doses, come at the end of forty-eight hours. With Dr. Eggleston's method the same results can be obtained in from eight to twelve hours. This is a tremendous advance, since many patients die because of the time required to elicit the effects of the drug. Dr. Eggleston's dosage unquestionably has saved a very large number of cardiac cases. The marked variation in absorbability is a matter of surprise to me. This may be due to the fact that we have been using exclusively the Minnesota preparation, and, in a large proportion of cases, the Eggleston dosage. In our work in Minneapolis we have never experienced difficulty from lack of absorption.

DR. CARY EGGLESTON, New York: If one can always obtain a good preparation of digitalis there is no need for the refinements introduced in this chloroform soluble extract. Dr. Rowntree is extremely fortunate in being able to work with a preparation of digitalis which is grown and cared for with the greatest of attention from the beginning until it

comes into his hands as a finished product, so that he has a preparation which is of fairly uniform activity and uniformly well absorbed. The preparations generally used come from every conceivable source and are made with every conceivable degree of care and lack of care. So the products, while standardized, may or may not be readily absorbed. We have had several specimens submitted that were irregular in absorption and very poorly absorbed. The more we see of these the more we think there is something to be gained by the effort to reduce this irregularity in absorption, which we try to avoid by the use of the chloroform-soluble preparations described.

OBJECTIVE SYMPTOMATOLOGY OF FOOT STRAIN *

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Since it is now generally acknowledged that we are unable to tell, from the appearance of a foot, to what extent it is or may be the cause of suffering and consequent disability, it seems desirable to have as definite knowledge as possible of such symptoms as may be brought out by careful objective examination. We know that a foot may perform its functions, for a long time at least, painlessly and without undue fatigue in the presence of evidently abnormal relations between the foot and the leg, or between the relations of the bones of the foot toward one another. It is nevertheless to be assumed that individuals with such abnormal conditions bear in them the potential factors of disability, which require only the added element of unusual functional demands, trauma, or infection to call forth a situation which will bring them to us for aid. When this time comes it is often the case that the symptoms are localized at a distance from the foot which, after correct analysis, must be recognized as the fundamental seat of trouble. Failure to recognize this means failure to apply the remedy which will be effective.

The functional interdependence of the large joints of the lower extremity is generally acknowledged; it is easy for one who has studied the mechanics of the joints to understand how continued use of feet which are visibly out of adjustment may in time react injuriously on the mechanism of the knees and call forth symptoms in them without doing so in the foot itself. The situation is more or less akin to that of the patient who suffers from headaches produced by defects of ocular refraction, without knowing or having known that there was anything wrong with his eyes. But there are many who suffer from the same character of symptoms who have no organic defect in the eyeball itself, but in whom the symptoms must be ascribed to muscular insufficiencies which in their turn make it necessary for the organ to do its work at great disadvantage; this it is able to do for greater or less periods until the limit of functional margin is reached. That the approach to this limit is hastened by factors of different kinds is well known; even in the eye these may be said to consist of the same three groups before mentioned, although not in the same order of frequency, thus: unusual functional demand, infection and trauma.

What is not generally appreciated with regard to the foot is that a very large number of persons, by reason of their footgear, have insensibly reduced their muscular working limit or "margin of safety" to such an extent that they enter the phase where the strain of further function makes itself felt either in loco or at a distance, without a cause which is to them perceptible. Since it has not been understood by medical men until quite recently, and since it is even now not commonly borne in mind, it is not strange that it should be difficult to explain this pathologic physiology to patients of even unusual mental grasp. We require, in fact, to sweep first before our own door. The difficulty is one of functional analysis. We have means of determining the absolute and relative strength of functional response in the leg and foot muscles; have we a means of determining by *objective* examination the result of impairment of that strength in the absence of subjective symptoms on the part of the foot? However important deformity may be when it is present, we must acknowledge that it is not to be regarded as the gage, that the patient's power of "accommodation" may be entirely sufficient to neutralize this.

In the days when the physical abnormity of the foot was the clinical index, local tenderness was of second importance only in the examination. It failed of reliability in the same measure as the element of deformity. In older writings on the subject of flatfoot, we usually find allusion to tenderness at the scaphoid tubercle; later in the literature we find discussion of the variability of this symptom, just as we do with regard to the flatness of the foot. In other words, when the individual who has marked pronation-abduction at the astragaloscaphoid joint is suffering, he is very likely to be tender at the scaphoid tubercle by reason of the abduction. A large proportion of cases with evident deformity have, however, but little or none of it in the sense of abduction of the forefoot; it is not surprising, then, that under such circumstances there should be a failure to find tenderness at the scaphoid tubercle.

In considering the nature of foot strain and its remoter symptoms, we are generally agreed that impairment of muscular control is the element of fundamental importance; that deformity need not be at all apparent and that in a quantitative sense it is not even a reliable guide to the severity of symptoms, nor yet as to the difficulty which we shall experience in trying to relieve them. We recognize the fact commonly, on the contrary, that if the ligamentous apparatus is congenitally relaxed, or if it becomes so by reason of such disease as rickets or by the very gradual loss of muscle control, and if under any of these conditions there arises no excess of functional demand, great degrees of physical deformity may be present or may develop in the complete absence of subjective symptoms or disability in an ordinary sense. We agree that the foot pains which bring patients to us seeking relief are to be looked on as reactions on the part of the very sensitive periosteal attachments of the ligaments on which abnormal stresses are permitted to fall because of muscular insufficiency; we realize also that with visible mechanical maladjustments at the lower end of the leg, coarse disturbances of the lines of weight bearing and muscular balance may produce difficulties in function for the knee, hip and even the spinal joints. What we do not usually appreciate is that many individuals with feet muscularly impaired are succeeding in maintaining a quite correct general posture notwithstanding, but that this cannot be done without improper expenditures of muscle power else-

* Read before the Section on Orthopedic Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

where. This is in the same manner as the individual with ocular defect, who manages nevertheless to use his eye with an abnormally great expenditure on the part of his accommodation. There is this, however, to be emphasized; the individual who experiences the effect of such eyestrain is the one who, by reason of inherent energy or great pressure from without, does succeed in obtaining intensive, efficient and long continued function from his handicapped organ. In the absence of such intensive use, the reaction at a distance is scarcely to be expected. In an analogous way, it might be expected that the individual who is going to suffer from muscular strains at a distance from the foot is not the one with general postural "slump"; on the contrary, it is likely to be the one who succeeds in maintaining an attitude more or less correct, and we are for this reason likely to find it in individuals to whom pride of personal appearance is an important consideration.

In the absence of physical abnormality and of subjective symptoms in the foot itself, how shall we then be able to determine that the foot must be looked to as the source from which other functional strains proceed? Surely not by simply satisfying ourselves by muscle tests that weakness exists; such values are of a character too relative; it would perhaps be better to say that they are too unrelated to the individual himself. It would be better to search for a reaction in the patient that might be looked on as the unconscious but necessary result of his diminished muscular capacity.

A thoughtful examination of the anatomy of the foot with respect to the purpose of its structure may well be looked to in order to form a conception of the true meaning of some of the abnormal manifestations there to be observed. That the foot is not meant to be a merely passive support for the body, a pedestal *on* which to stand and walk, but rather a living organ *with* which to stand and walk, has become a truism, but one which is constantly being forgotten. Too much has been thought and said about the arches of the foot; too much, in other words, about its intrinsic structure and too little about its mechanical relationship to the rest of the lower extremity. After all, it is by a study of this relationship, perhaps, that we shall be able to learn more about the remote results of functional disturbance in the foot; having done this we shall be better able to examine the abnormal foot with an eye to the finer details of its abnormality.

Viewed in this way, the most striking feature about the mechanism of the foot, when regarded as a whole and with respect to its functional relationship to the leg, is the fact that its construction is such that a means must be provided to keep it in line with the rest of the lower extremity, during weight bearing. The transmission of the body weight to the ground takes place through a line corresponding to the axis of the tibia, passing through the center of the tibio-astragaloid joint approximately, but which passes through the os calcis not at its center but decidedly mesial or internal to this point. This may be seen in any anatomic drawing of the ligamentous preparation of the foot, viewed from behind. The resulting tendency of the foot as a whole to cant inward on the leg unless prevented by muscular action is emphasized in every description of the foot mechanism.

While the eccentric position of the astragalus on the os calcis is to be regarded as the chief reason for the tendency which exists for the foot to move into pronation, unless prevented from so doing by muscular action, it should not be overlooked that there is another mechanical factor of importance in this connection. This has been emphasized by Roberts,[1] who calls attention to the "globular contour of the inferior bearing surface of the os calcis." He says further: "If the under surface of the bone was flat instead of round, many valgus deformities would never occur." While it is perhaps not justifiable to make this statement in quite so final a manner, there can be little doubt of the importance of this mechanical factor when combined with the eccentric position of the os calcis with reference to the center of gravity of the leg. On the other hand, it seems quite right to say that the obvious purpose of this condition of mechanical instability is to provide for elasticity of gait through the muscular control.

If we examine the illustrations of the ligamentous preparations of the foot as found in Fick's work, or as found in Spalteholz's and Toldt's atlases, we shall find that the ligamentous checks to motion in pronation and abduction lie in the internal lateral ligament of the ankle, chiefly. This ligament, otherwise spoken of as the deltoid ligament, is a composite structure made up of several bands. The band of greatest interest in this connection is that one which, attached above to the tip of the internal malleolus, has an almost vertical course downward, being inserted below to the innermost border of the sustentaculum tali. This band is called the tibiocalcaneal ligament. It may easily be seen that when any movement in pronation is not sufficiently controlled by muscular action, stress will first of all fall on the tibiocalcaneal ligament; if we imagine the os calcis being allowed to cant inward, as it will tend to do under these circumstances, this ligament will be the seat of a cross-breaking strain where it is attached to the inner border of the sustentaculum. Since pronation and abduction of the foot are practically always associated, the tendency is for the head of the astragalus to rotate outward on the os calcis; this implies a movement inward of the posterior part of the astragalus. The ligamentous check to this movement is found in a short band which is attached to the posterior process of the astragalus behind, and which passes almost horizontally forward to the posterior end of the sustentaculum. In the case of latent weakness of the muscles controlling supination and adduction, even though no deformity in the opposite direction be apparent, we shall be able to comprehend that abnormal stresses are continually falling on these two ligamentous bands and that their periosteal attachments are under these circumstances likely to be tender to pressure, for this reason.

It has always seemed to me that if our explanation of the cause of pain in foot strain is correct, that if it is to be ascribed to ligamentous strain because of insufficient muscular control and if the pain must be regarded as proceeding from the periosteal attachments of the ligaments as their only sensitive parts, then it is to be expected that their attachments should be found tender as a rule in such cases. It has, however, been observed that the tenderness at the scaphoid tubercle is very often absent; in my experience it is more often absent than present in cases of undoubted foot strain in which marked deformity in abduction is not a feature. This might be explained by assuming that the seat of strain must for this reason be situated

1. Roberts, P. W.: Am. J. Orthop. Surg. **14**: 720 (Dec.) 1916.

elsewhere. This having been assumed, the study of the ligamentous preparation of the foot resulted in the conclusions just before mentioned. It remained now to investigate the conditions, clinically.

For several years I have made it an invariable practice, in examining the foot for functional strain, to test the sustentaculum for tenderness. I did this for a long time before mentioning it to my associates. I was surprised to find that practically all persons who had undoubted foot strain were tender at this place, whether deformity of the foot was present or not. The degree of tenderness varied considerably, so far as I was able to tell by the patient's response; it was not always severe in proportion to the sensitiveness of the foot or the amount of the patient's suffering. For the last two years, I have taken every opportunity to test the tenderness of the sustentaculum in persons who were free from the symptoms, at least, of foot strain. I was interested to note that a large number of these also presented this tenderness. Many others, particularly men who wore sensible shoes, did not. It seemed, furthermore, that the tenderness in these symptomless feet was less marked and more difficult to demonstrate than in those who presented themselves because of foot discomfort.

With the idea of trying to explain the significance of these observations, it appeared worth while to attempt to find a way to measure the degree of tenderness which could be called forth. It seemed feasible to do this by measuring the amount of pressure required to produce the first appreciable sensation of tenderness on the part of the patient. Even though this involves the personal equation, both of patient and examiner to some extent, it has resulted in findings of quite uniform character, which to me, at least, seem of some value. Having suggested the plan of estimating the degree of tenderness to my associates in the hospital, Dr. D. R. Maddox and I both produced simple appliances, of different construction, for registering the amount of pressure made over a point corresponding in size with the tip of the finger. It has been used in the following manner: After the point of greatest tenderness has been found with the finger, the spot on the skin corresponding is fixed carefully by the eye; the rubber end of the instrument is now carefully placed on this point, and while pressure is very gradually increased, the patient is instructed to say when the first sensation of tenderness is felt. The amount of pressure is then read on the scale of the instrument. While great accuracy cannot be claimed for this method, it is nevertheless surprising to see how constant the readings have been in the same patient; I have made many tests to ascertain this.

Although I have not tabulated them with enough care and in sufficiently large number to justify the presentation of definite conclusions, I have made so many tests on patients that I have thus summarized my own experience:

1. Persons who have symptoms which may be attributed to weakness of supination and adduction of the foot practically always have tenderness of the insertion of the tibiocalcaneal ligament into the sustentaculum tali, or at its posterior extremity.

2. In such persons the tenderness is usually called forth by a pressure of less than 2½ pounds. Most often the reading will be from ½ pound to 1½ pounds.

3. Many persons who have no foot symptoms have tenderness on pressure over this point; this is also true of many persons who have no symptoms attributable to the lower extremities at all. In this group of persons, pressure of 2½ pounds or more is usually required to call forth tenderness.

4. Most persons with strong, symptomless lower extremities are not tender on pressure over the sustentaculum. This tenderness is to be regarded as indicative of potential weakness in adduction and supination. This is true in proportion to the ease with which tenderness is called forth.

5. Further and more extensive experience with this test is necessary before ascribing to it a definite place as a diagnostic measure.

The functional interdependence of the individual segments of the lower extremity has been referred to in the first part of this paper. This has long been recognized in an indefinite manner as the result of clinical experience. Patients with foot strain have told us time and again how they suffered from fatigue and pain in the legs, thighs and back, and we have been able in such cases to dispose of these symptoms by attention to the malposture of the feet. Lowman [2] has shown the importance of the external rotators of the thigh in maintaining the proper relations of the leg to the foot; he has set forth the possibility of assisting the restoration of normal muscular balance by gymnastic cultivation of this group of muscles. It has been my experience to find his statements corroborated in practice. In fact, I am now disposed to regard the exercises for the external thigh rotators as by all means the most important at my disposal.

To say at this time that exercises for the restoration of muscular control should constitute an indispensable part of any treatment for foot incompetence may be considered superfluous or perhaps not even germane to the phases of this subject chosen for discussion. I feel, however, that no opportunity should be overlooked to emphasize this important factor in treatment. Even now it is being often slighted by those in whom it is scarcely to be considered pardonable.

ABSTRACT OF DISCUSSION

DR. JOHN L. PORTER, Chicago: The astragalus is internal to the line of force in the foot. That is why a man standing with his feet widely separated more frequently suffers from foot strain than does the man who actually walks flatfooted. In examining for foot strain many of us have failed to find anatomic evidences of disturbance, but by carefully palpating the foot, we have been able to elicit a tender spot over the sustentaculum tali; that is, it is farther back than in the average case. Most patients complain of pain at the astragaloscaphoid articulation, but often they complain of pain on the outer side of the foot. By palpating carefully you will find the point of tenderness mentioned by Dr. Freiberg.

DR. PAUL B. MAGNUSON, Chicago: Do you apply pressure quickly or slowly? This is a point of great interest when trying to detect malingerers.

DR. ALBERT H. FREIBERG, Cincinnati: Having located the tender spot with my finger, as exactly as I can, I place the rubber tip on it and tell the patient to close his eyes; then very gradually I increase the pressure, telling him when he feels the very first sensation of pain to say "now." I do it just as slowly as I can—that is very important so as to give him opportunity to say when it begins to hurt. If you do it quickly, the value of the test is nil, as far as detecting malingering is concerned. The striking feature about this test is the accuracy with which the patient will say "now" when the same amount of pressure is registered. The method has diagnostic value.

2. Lowman: Boston M. & S. J., Jan. 18, 1912.

INTRACRANIAL LESIONS INVOLVING THE AUDITORY-VESTIBULAR APPARATUS *

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The development of the vestibular tests along with other methods of differential diagnosis in intracranial work has materially extended the field of otology and has increased greatly the usefulness of this specialty, but these things are not so well known as they should be among physicians in general.

The extensive course of the eighth nerve fibers through the central nervous system and the synapses of the vestibular nerve endings with almost every motor nerve in the body are of so great importance that more information about the brain can be obtained from the otologic examination, when made by experienced men, than from any other neurologic test.

The source of the disturbance in otologic trouble should always be located, whether it be in the eustachian tube, the middle ear, the labyrinth, or whether it be of intracranial origin. The manifestation of trouble may be loss of hearing, noises or pain in the head, dizziness, nausea and vomiting, voluntary nystagmus, or any combination of these symptoms. Detailed analysis of the various tests employed in differential diagnosis of auditory vestibular disease cannot be considered in this article, but a brief summary of the important practical points utilized in the examination of neurotologic cases is advisable.

IMPORTANT PRACTICAL POINTS

1. The hearing tests, when carefully made, are of great value in differentiating between middle ear disease and nerve disease from any source, but they are of no practical value in the localization of the nerve lesion, except when they are considered in connection with other findings that may or may not be directly in relation with the auditory vestibular apparatus.

2. The vestibular tests give more information than the auditory tests in the localization of lesions involving the cerebellar fossa and the brain stem, and when considered in connection with the auditory tests they are of great value, although these tests should never be depended on to the exclusion of other methods in arriving at a diagnosis.

3. An accurate history is absolutely indispensable in this work. The exact period at which auditory disturbances came on in relation to other points in the history may be the only means of differentiating a tumor of the auditory nerve from an angle tumor from some other source. Likewise attacks of vertigo and digestive disturbances following an infective process in any place in the body may reveal the origin of a cerebellar abscess that becomes evident as such several years later.

4. Since lesions of the brain stem and cerebral cortex frequently involve the auditory vestibular apparatus, it is necessary in all case carefully to examine the motor and sensory systems, as they may be implicated directly or indirectly, while the various deep and superficial reflexes, along with the cerebellar tests, are also important points to be considered. Usually serologic, urinary and spinal fluid analyses are required, and at times chemical examination of the stomach contents and roentgen-ray investigation of the digestive tract are useful in clearing up mooted questions when vertigo, nausea and vomiting are concerned.

5. The function of all cranial nerves should be tested in most cases; but, owing to the anatomic relation of the fifth and seventh nerves to the eighth nerve in the posterior fossa, they are more likely to reveal some disturbance than other nerves. The seventh or facial nerve, which is in direct contact with the eighth nerve in the posterior fossa, is supposed to be more frequently implicated than other nerves in auditory vestibular disease, but clinical evidence does not bear out this claim. In a series of thirty neurologic cases, all revealing some form of auditory vestibular disturbance, I found that only 10 per cent. revealed seventh nerve trouble, whereas over 80 per cent. revealed fifth nerve disturbance of some nature, including subnormal corneal reaction, anesthesia, hyperesthesia or analgesia of the face, loss of taste, neuralgia, burning sensation in the mouth and nose, and other forms of paresthesia.

INTRACRANIAL LESIONS

Intracranial lesions involving the auditory-vestibular apparatus may be considered to advantage under three heads: (1) lesions primarily involving the cerebellar fossa; (2) lesions primarily involving the brain stem and midbrain and (3) lesions primarily involving the cerebral cortex and subcortex region.

1. Lesions in the region of the cerebellum are of special importance to the otologist, as they include many conditions that are amenable to improvement or cure if they are diagnosed early and properly treated. The lesions most likely to be encountered here are acute inflammatory diseases involving the meninges, acute and chronic abscesses, tumors of the meninges and of the nerve trunks, syphilis in its various forms, traumatism, circulatory diseases, tuberculosis and multiple sclerosis.

Eighty per cent. of the abscesses in the posterior fossa originate from infected ears; consequently, the diagnosis and treatment of this condition falls primarily to the otologist, who must be familiar with the differential diagnosis of lesions in this region and with the various operative procedures required for relief. In all major otologic operations, repeated vestibular tests should be made, as they often indicate impending intracranial trouble long before clinical symptoms develop.

Cushing [1] states that 6 per cent. of all brain tumors and over 20 per cent. of all posterior fossa tumors originate from the eighth nerve, and that the syndrome for the auditory nerve tumor is unmistakable for that of other tumors of this region; yet in thirty-five referred cases reported by him, a definite diagnosis had not been made in most cases before very serious damage had occurred, such as blindness, paralysis or respiratory complications. The eighth nerve syndrome, consisting of primary deafness, followed by fifth or seventh nerve trouble on the same side and later by other angle symptoms, is of great importance to the otologist, as relief from the disturbance, or the life of the patient, depends materially on how early operative procedures are advised.

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Cushing, Harvey: Tumors of the Nervus Acusticus and the Syndrome of the Cerebellopontile Angle, Philadelphia, W. B. Saunders Company, 1917.

At least 50 per cent. of all cases of brain syphilis present some impairment of the auditory-vestibular apparatus; and in many cases bilateral lowering of the high tones and raising of the lower tones, with subnormal vestibular reaction, are the earliest indications of approaching trouble. Neuritis of the eighth nerve, syphilitic meningitis and gummas are the forms of syphilis most often encountered in the cerebellar region.

Traumatism, tuberculosis, circulatory diseases and multiple sclerosis form a group of lesions that occasionally implicate the auditory-vestibular apparatus in the posterior fossa. The treatment of these conditions is far less satisfactory than in the previously enumerated diseases, but these conditions are not hopeless; by careful observation some of them can be materially relieved or improved.

2. Any of the diseases already considered may also involve the auditory-vestibular apparatus in the brain stem; but the symptomatology in brain stem lesions varies considerably from that encountered in the cerebellar region. Certain additional diseases peculiar to the nervous system are encountered in the medulla, pons and midbrain region, such as tabes, syringomyelia and poliencephalitis. However, the preponderance of brain stem lesions are included under syphilis, tuberculosis, circulatory trouble and toxemia.

3. Cortical and subcortical disturbances of the auditory-vestibular apparatus have not been investigated thoroughly. However, the tracts of the auditory fibers are well known and the auditory centers are known to be located in the first temporal convolution on each side of the cerebrum, and lesions in that region may produce disturbance in hearing, especially if bilaterally located. No doubt somes cases of deafness originate from this source which are presumed to be of labyrinth origin, as microscopic study of the pyramidal cells in the first temporal convolution reveals intercellular changes similar to those found in the motor and sensory pyramidal cells, in certain diseases. Possibly in exceptional cases the auditory disturbance in tabes, poliencephalitis, paresis, toxemia, and especially in some of the infectious diseases, are from this source.

The subcortical association tracts in connection with the auditory centers are fairly well understood. The different forms of aphasia from tumors, abscesses, hemorrhages, etc., involving these tracts frequently reveal important information in cerebral localization. Conjugate deviation of the eyes, which is often encountered in the vestibular tests, may arise from lesions situated in the cerebral cortex or deeper structures.

SYMPTOMS FROM TRANSMITTED PRESSURE

According to the best authorities, equilibrium is a muscular act innervated by the cerebral cortex and governed largely by the coordinating influence of the cerebellum, which receives impulses from the labyrinth, from the skin, muscles and joints, and from muscles of the head and eyes. Vertigo is a symptom of disturbance of equilibrium, and in all cases in which the vertigo is of a rotational character the disturbance involves the vestibular apparatus directly or indirectly.

The relation of rhythmic nystagmus to disturbance of the vestibular apparatus is very well understood. Bechterew, Cajal and other investigators long ago described the anatomic connections between Deiters' nucleus, Bechterew's nucleus, and the posterior longitudinal bundle. Clinical observations have verified these assertions and we now know that nystagmus from central origin may be independent of vertigo, and vice versa.

Aside from intracranial lesions that directly involve the auditory-vestibular apparatus, tumors in the supratentorial region, or frontal lobe tumors, may produce symptoms from transmitted pressure that are quite similar to those observed in direct lesions; here, the vestibular tests are frequently very valuable in the differential diagnosis between cerebellar and cerebral lesions.

GRADUATE OTOLOGIC WORK

The localization of intracranial lesions involving the auditory-vestibular apparatus requires more knowledge of the nervous system than is usually taught in postgraduate work on otology. As this specialty has so much in common with intracranial work, possibly, selected courses on brain anatomy, neurology, and special operative work, in addition to the regular clinical courses, would be an improvement over the present system of teaching neurotology in our schools, and would do much to further develop this subject.

ABSTRACT OF DISCUSSION

Dr. Isaac H. Jones, Los Angeles: The most fundamental error which might arise in regard to neuro-otologic work is that in attempting to present a picture of the intracranial pathways, it has never been done with the thought that all of these pathways are definitely established. Miller and Weisenberg many years ago presented a schema or outline of cerebral localization, making it very clear that it did not mean that there was no other work to be done on this subject, but that it was felt advisable in such an utterly new subject to take first of all the pathways that we know definitely and bring out a tentative schema which was most reasonable according to the data already at hand. The same thing is true now, and it surely must be clear that it is but a scaffolding on which to erect ultimately the more definite and exact course of the fibers of this enormous mechanism. Dr. Carpenter has given a very excellent classification of the three types of intracranial lesions in which the tests may be of service.

Dr. Harold I. Lillie, Rochester, Minn.: I do not believe we have sufficient data from the ear examination to warrant us in designating the type of pathology with which we are dealing in the cranium. Be that as it may, there are certain conditions, for instance, in multiple sclerosis, in which the neurologists dislike very much to make a diagnosis of multiple sclerosis without finding some evidence of lesion within the brain stem. In neuro-otologic work we are frequently able to assist in the diagnosis of multiple sclerosis by finding and isolating the lesion affecting one of the tracts in the stem. This has been done repeatedly in our clinic. Meningitis and brain pressure particularly are difficult to differentiate in certain types of cases. New intracranial pressure and old intracranial pressure cause different objective phenomena. A recent increase of pressure is very liable to give an exaggeration of the response; an old pressure may give an obliteration of the response, which makes interpretation of reports difficult and sometimes impossible. A supratentorial lesion may give neurologic symptoms and indications of cerebellar tumor because of the pressure produced. We had one such case, where because we were able to get our response through the cerebellum we said the cerebellum was free. A cerebellar decompression was done. The patient came to necropsy and the lesion was found in the supratentorial anterior fossa. Since that time the surgeons have given a little more consideration to our suggestions. The interpretation of objective findings is difficult and requires intensive study, but I feel certain that if it is done in large clinics where there is ample material for this work, we eventually will arrive at some definite and valuable information.

DR. TOM A. WILLIAMS, Washington, D. C.: The credit in this country for the study of the intracranial lesions which show themselves in morbid vestibular reaction is mainly due to Dr. Jones, and his collaborator, Dr. Fisher. Their cooperation with Dr. Mills, a neurologist, achieved one result at least which is most fruitful, namely, the differentiation of the tract which carries the impulse from the horizontal canal as against the tract which carries the impulse from the vertical canals. While it is most gratifying to find so many otologists now turning their attention to the neurologic aspect of otology, namely, the lesions which occur beyond the vestibular nerve, more particularly within the cranium, yet we neurologists all find that the interpretation of lesions of the brain stem is one of the most difficult tasks of clinical neurology, even for those of us who have devoted our lives to perfecting ourselves in a knowledge of the anatomy, physiology and clinical study of the brain stem. There are so many fasciculi and they are so complicated, and some which are not known, that it is very difficult to form judgment, more particularly when we remember that the same symptom complex may occur whether the lesion causing the disorder is within the brain stem itself or is only pressing on the brain stem. I appeal for closer collaboration with the neurologist in these cases. The assertion has been made that a growth at a distance is more apt to cause excessive function. That is only true, perhaps, of the excessive function of the brain tissue itself. It is not true of the most frequent of all symptoms, namely, the paralysis of the abducens nerve. A large growth may invade the area of the brain without producing any symptoms whatever because the growth infiltrates around the nerve fibers without interfering with their nutrition or subjecting them to pressure.

DR. GEORGE W. MACKENZIE, Philadelphia: I wish to confirm Dr. Williams' remarks and also what Dr. Carpenter said in reference to careful history taking. A patient who had a large cyst of the frontal lobe prior to operation had no symptoms other than severe headaches, very marked choking of both optic nerves and symptoms referred to the vestibular apparatus. Although hearing was normal, spontaneous nystagmus was marked when looking in any direction. The patient had bilateral pastpointing inward of about eight or nine inches. I made a diagnosis of lesion of a silent area, operated, and recovered a large cyst about the size of a goose-egg. The point was, and this applies to the diagnosis of stem lesions as well, that we must reckon with what the Germans call "fernwirkung" symptoms which, by the way, was not original with them. In Sir William MacEwen's work on pyogenic infections of the brain and cord, written in 1893, he dwelt on the fact that lesions such as tumors in one cerebral hemisphere can cause pressure on the opposite side of the medulla oblongata by impinging against the rim of the foramen magnum with symptoms referable to the side of the pressure. We must constantly reckon with symptoms of this kind in all cerebral lesions capable of producing intracranial pressure. Furthermore, it is a generally recognized fact that the earlier symptoms in intracranial conditions, especially when of an inflammatory nature, are irritative in character; later we find them paralytic. In studying the history of a case, if we are able to determine just where the first irritative symptoms began, we are often able to determine the site where the lesion began.

DR. JULIUS GRINKER, Chicago: In the last few years neurologists have been at a loss to know what to do with their cases. The surgeons have taken up brain surgery very reluctantly. Some of them have displayed such ignorance of the anatomy and physiology of the nervous system that I hesitate to refer a case for operation, although the lesion is localizable. Few surgeons know enough about the nervous system to handle the tissues differently from the abdominal viscera, for instance. Otologists seem to know much about the nervous system. I saw Dr. Jones demonstrate his theories of localization in cases subjected to surgical intervention, particularly one in which I made the diagnosis. By his tests he localized the lesion for which that patient had been operated on. There are two distinct sets of symptoms which enable a diagnosis of brain lesions to be made. One is the irritation syndrome, the other the syndrome of destruction phenomena, applicable, generally, in cerebral lesions, and to a lesser degree in cerebellar lesions. In the irritation syndrome cases functions are somewhat exaggerated; instead of a patient losing his hearing, he hears too much, there is tinnitus; instead of a patient losing his sensations of pain, he suffers from hyperesthesia. In the other syndrome there are losses—such as deafness, anesthesia, etc. This applies to manifest cerebral lesions, but for the brain stem we must apply different standards, because these lesions rarely give rise to general pressure symptoms. In these lesions we need your help most, because in the absence of pressure symptoms, the first symptoms seem to be those of the localizing variety. The same holds good for the space between cerebellum and pons.

DR. EUGENE R. CARPENTER, Dallas, Texas: For a long time the ophthalmologist and otologist have been interested in the intracranial side of our specialties, but not until Bárány brought out his work were we so deeply interested. His observations extended over several years. Later, George MacKenzie, of Philadelphia, did some valuable work in reporting his experience while associated with Bárány, and individually in establishing the time of twenty-four seconds for after-turning nystagmus. Harvey Cushing later reported his experience with tumors, especially of the auditory nerve, and other tumors involving the cerebellopontile angle. Still later, Jones and Fisher, of Philadelphia, published their work on equilibrium and vertigo, and although I do not agree with them in everything, it has stimulated interest in intracranial work more than anything that has been produced, and were half the things in the book wrong, we should be grateful for the work they have done. We should be very careful in using isolated neurologic tests for making diagnosis in intracranial work, as it is a most difficult field, and if we do that the time will come when we will bring discredit on ourselves. As to the otologist going into this line of work, it has been forced on us. We waited many years for the neurologist to develop something to help us out materially in reference to deafness. The further development depends on otology.

THE PERSONALITY OF THE PATIENT

A NEGLECTED FACTOR IN TREATMENT *

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The truism that the physician should treat patients rather than diseases has become so much a medical platitude that usually it is not appreciated in its full meaning. To most physicians it means that therapeutic indications depend more on the individual variations of the patients' reaction to the disease process than on any intrinsic nature of the disease itself. This individual organic reaction is ever an important factor in symptomatology, especially in acute diseases; but besides this there is the individual psychologic reaction to disease, which plays an important part in the symptomatology, prognosis and treatment of all diseases, but principally those of chronic course. Disease, and more especially chronic disease, is an added experience element in the life of the patient, and one that must be considered in his adjustment to his life, both present and future. Chronic organic disease usually necessitates a change in the patient's mode of life, makes life more complicated and often less pleasant, and thus forces on him an adjustment to lessened activity and interests usually quite at variance with his former life.

*Read before the New York Physicians' Association, Feb. 20, 1920.

Thus, in all diseases of long duration, frequently there comes sooner or later to the attention of the physician a group of symptoms which, although they have nothing to do with the organic groundwork of the trouble, yet may cause more real difficulty to the patient than those more real in nature. Usually these are passed over lightly as "neurotic symptoms," and the patient is left to suffer more in mind than he does in body. This is a mistake, for these are the symptoms that can be removed, greatly to the comfort of the patient, a process all too frequently done by the "faith healer" or other quack, all to the detriment of the physician. The physician who understands and treats the patient should be the one to understand and remove these symptoms; and only when he does this does the physician justify the ideals which the community holds for him.

My purpose is to point out the origin and nature of these added symptoms appearing in chronic organic diseases, and their importance and significance to the patient. Probably it is better to term them "personality symptoms" rather than simply to name them "neurotic symptoms," for by such a term we are likely to remove them too far from their real connections with disease. They are "patient symptoms" in contradistinction to "disease symptoms," and they represent the psychologic readjustment of the patient to his environment, now further complicated by his disease and his realization of his lessened efficiency, which the true disease symptoms have forced on him. A case in point may not be out of place:

B. D., aged 43, a waiter, came to the Vanderbilt Clinic complaining of insomnia, nervousness, tremulousness, excitability when subjected to sudden noises, and pain and hot feelings in the back of his legs and thighs. Formerly he had had a business of his own, but two years previously he failed and had been obliged to accept a position as a waiter in order to support himself and his family. He had never been content with this adjustment and, with the mounting cost of living, his life had become more difficult. About one year before, the nervous symptoms mentioned began to appear, and they had gradually become worse. For the last thirteen years his vision had been failing, especially his ability to see clearly in the dark or in very bright light. At that time he was told in an eye clinic that he had "night blindness." This condition had progressed but slightly, for his vision now was 20/50. About five weeks before coming to see us he was struck in the leg by a motor truck. He was laid up at home with pain in his leg for a few days, but soon was again obliged to take up his work to support his family. At this time the pains and hot feelings in his thighs and legs appeared, and were present only during the day while he was at work. Physical examination was entirely negative except for some narrowing of the visual fields, and a retinitis pigmentosa of moderate degree.

Most interesting in this case is the fact that the patient voluntarily came to a neurologic clinic with a history of symptoms quite "neurotic." Only on extended questioning was one able to bring out symptoms of the organic disease from which he was suffering. To his mind the psychic symptoms were the more important, for they occupied his thoughts much more than did his vision difficulty, and interfered much more with his efficiency as a worker. These were the "personality symptoms" in this case, and represented the reaction of the patient to his life, now made further unpleasant by the presence of the organic disease whose results he feared.

The meaning of the "personality symptoms" is clear. Excitability to noises, tremulousness and anxiety are all symptoms of fear; and fear was the predominant psychologic element that his organic disease had injected into his life. He had been told he would never get well and in all probability would eventually lose his sight. This prognosis and the fear it engendered altered the whole course of his life. Another individual of different personality, possibly more philosophical, might have accepted the condition as it was and not have developed such active fear, and so not altered his attitude toward life. However, our patient was of different fiber, and complicated his unhappy lot by the addition of a group of fear symptoms of his own making.

He began to take more interest in himself than in his business and, following his business trouble, he accepted the position of waiter because he lacked ambition to build up his own work again, and the position of waiter was an easy compromise in the difficulty in which he found himself. It was not satisfactory, for he felt that his earning capacity had been permanently diminished by factors over which he had no control, namely, the organic disease. This disappointment, then, gave rise to the depression with the anxious coloring which dominated the clinical picture when he came to us, which was manifested by the "neurotic symptoms." These are the symptoms that are capable of removal, while those of his retinitis are not. To remove these symptoms would be to increase his happiness and raise the level of his efficiency as an earner, probably to very nearly his former level. This neurotic part, then, all too frequently neglected, should be the part to receive the greatest attention of the physician, for it is with this part that the best therapeutic results are possible.

This patient reacted psychologically in this way to retinitis pigmentosa. It is most probable that he would have reacted in quite the same way to any other chronic organic disease that impaired his efficiency and darkened his future. In this man we would have expected to see the same symptoms had his organic disease been chronic nephritis, diabetes, chronic arthritis, chronic cardiac disease or arteriosclerosis.

These neurotic or personality symptoms we see appearing in many patients with chronic disease, and in every case they depend on the personality of the patient and his psychologic reaction to his disease, and not primarily on the disease itself. Not all individuals suffering from these chronic diseases complain of the same neurotic symptoms, and many never develop such symptoms at all or allow their disease materially to alter their attitude toward life. This difference depends on the individual psychologic differences between patients: that thing we call personality.

When one comes to analyze the foundation of these "personality symptoms," a number of factors readily come into view. Probably the most important of these is the element of "temperament" of the individual. Often it is extremely difficult to determine on what this is based. We know one person to be optimistic and another pessimistic in his general outlook on life; one is naturally euphoric and another easily depressed; one is care-free and another full of worries; one is goodnatured and another irritable and quick to anger; one altruistic, another primarily selfish. An attempt to analyze such characteristics takes one deep into the field of psychology; yet a few of the most prominent factors may be mentioned.

Age plays an important part. Youth is hopeful; old age is sad. The attitude toward chronic disease fre-

quently reflects this age element. The hopeful attitude of the tuberculous, especially those of early adult life, is proverbial, and most likely depends more on the age of the patient than on anything in the disease itself. The carcinomas, on the other hand, are usually seen in later life, and here again the hopeless depression is, in part at least, a symptom of the age of the patient. Besides this there are many other factors which determine temperament; the racial traits in the patient, the history of his life's experience, the hardships he has undergone, and lastly that thing which we call "feeling of well-being," in which we find many elements, but especially the proper working of his bodily organs, in the disturbances of which his disease itself may play no inconsiderable part.

Given, then, the individual of a certain temperament afflicted with a chronic, but not disabling, disease, we may see extra personality symptoms arising in the clinical picture according to the patient's needs; and often these symptoms completely obscure those of the original disease. Two questions naturally come to mind: Why does the patient need these extra symptoms, and where does he get them?

The need for the extra symptoms springs from the patient's need to express the feelings that his disease engenders in him, in terms more understandable to himself and others. In the first place, the realization that he is diseased brings with it a feeling of personal insufficiency and inadequacy to meet the requirements of his existence. Often he now begins to care for his health for the first time in his life, and this introspection leads to an introversion of interests so that he may give consideration for his health an excessive relative value over the other factors of his life. We then say that he has become "hypochondriacal." He seeks for symptoms in himself; and when he seeks he finds, often in the exaggeration and perpetuation of temporary symptoms formerly unheeded.

Another factor not to be too lightly valued is the striving for sympathy: a real need to the sick human being. While we sympathize with chronic disease as a theoretical proposition, yet in the concrete we sympathize only with symptoms. Hence the need of these extra symptoms to get for the patient the sympathy and consideration he feels is but his just due. If his disease has few outward manifestations to call for sympathy he can, if he needs, develop others, in the form of pains, weakness and anxieties, all of which impress the beholder.

The source from which these extra symptoms are derived is suggestibility, that all-important element in human psychology. Suggestibility is the ability to accept with conviction a communicated proposition in the absence of logically adequate grounds for its acceptance. It is the basis for faith and belief, and the human mind believes always just what it wants to believe. This increased suggestibility of the chronically diseased may depend on one or both of two factors: (1) an abnormal state of the brain caused by the disease process, or (2) a deficiency of knowledge of the nature of the disease and what symptoms it may cause.

To the hypersuggestible patient who needs extra symptoms, suggestion for the formation of new symptoms comes from many sources and in varied forms. From his own past experience with disease and neurosis he may cull much that meets his needs. The conversation of kind and sympathetic friends is usually a rich field for suggestion. The reading of medical books and articles and "patent medicine" circulars will provide any number of useful symptoms. And the suggestion all too frequently comes from the physician, often from an unfortunate chance remark or even from the expression of the face during an examination. It was frequently said in the British army in the war that many soldiers got "soldier's heart" from a medical board.

These extra symptoms in organic disease should receive the most careful attention from physicians. Often they are more disabling than the disease itself. Anyway they are more susceptible of removal, and by their removal the patient's happiness and efficiency is improved. In the technic of removal one must counteract the factors that have caused them. The temperament of the patient is often susceptible of improvement by a better understanding of himself and his motives. The need for the extra symptoms is often still more difficult to combat. This need may be lessened, in the first place, by a more accurate knowledge of the nature of his disease and its processes. Then again, the patient's adjustment to his disease and his lessened efficiency may be made more compatible with mental health and happiness. Many physicians do this by telling of other patients with the same disease who had made better adjustments, and by giving the details of how it was done. And lastly, symptoms due to suggestion may be removed by contrasuggestion. Suggestion has ever been a considerable part of the armamentarium of the successful physician, suggestion by word, by act and by attitude, as well as suggestion connected with physical and chemical therapeutic practices; and this healing suggestion should be applied to the organically ill quite as much as to the pure neurotic.

40 East Forty-First Street.

Clinical Notes, Suggestions, and New Instruments

THE BEDSIDE DETERMINATION OF THE BLOOD UREA NITROGEN *

EDWARD STEINFIELD, M.D., Philadelphia

Although the determination of the urea nitrogen of the blood has become an invaluable procedure as a diagnostic and prognostic indicator in diseases of the kidney, it has been relegated to the laboratory because of the time-consuming and technical details connected with all usual methods. The desirability, however, of having a simplified even though approximate method of measuring nitrogenous waste retention becomes apparent in those cases in which, for one reason or another, the laboratory is not available. Of distinct value in this direction has been the method recently described by Myers.[1] For some time a method similar in principle though differing in its end reading, had been used by me and ample data had accumulated to demonstrate its accuracy to a fair though approximate degree, as a rapid clinical test.

The method utilizes the procedure of Folin[2] for coagulation of blood proteins by sodium tungstate and ⅔ normal sulphuric acid. The tungstate and acid are, however, added first before dilution with water; and, after incubation with urease, this procedure has given rapid coagulation and uniformly clear filtrates. A 1:10 dilution of the filtrate is used, and the color produced by the presence of Nessler's solution is compared to a set of artificial standards described in detail below.

* From the Laboratories of the Graduate School of Medicine, University of Pennsylvania, Dr. John A. Kolmer, director.

1. Myers, V. C.: Chemical Changes in the Blood in Disease, J. Lab. & Clin. Med. 5: 418 (April) 1920.
2. Folin, Otto, and Hsien, Wu: A System of Blood Analysis, J. Biol. Chem. 38: 81 (May) 1919.

The reason for diluting the filtrate is to avoid the greenish discoloration and precipitation produced by the presence of amino-acids and peptones, as pointed out by Folin.[2]

METHOD IN DETAIL

Blood is taken from a vein or finger puncture into a test tube containing a few crystals of potassium oxalate to prevent coagulation. Two c.c. of this sample are allowed to drain from an Ostwald pipet into a large size test tube. A crushed tablet of urease (0.1 gm.) or 1 c.c. of a urease solution prepared after the method of Folin[2] and two drops of a buffer solution[3] are added to the same tube. The test tube is then placed in a tumbler or beaker of warm water with the temperature approximately from 45 to 50 C. for ten or fifteen minutes. At the end of this period 2 c.c. of a 10 per cent.

RESULTS OF BLOOD UREA NITROGEN DETERMINATIONS

Number	Mg. Urea Nitrogen per 100 C.c. of Blood: Clinical Method	Van Slyke-Cullen	Diagnosis
1	80	83	Chronic diffuse nephritis
2	20	22	Normal
3	10	12	Normal
4	100	104	Chronic glomerular nephritis
5	70	68	Chronic glomerular nephritis
6	15	15	Diabetes
7	10	8	Normal
8	10	14	Normal
9	10	12	Normal
10	20	26	Normal
11	70	64	Chronic diffuse nephritis
12	20	14	Primary hypertensive disease
13	70	66	Chronic diffuse nephritis
14	10	12	Normal
15	30	27	Primary hypertensive disease
16	10	14	Normal
17	20	18	Normal
18	80	76	Chronic glomerular nephritis
19	160	147	Chronic glomerular nephritis; impending uremia
20	20	17	Diabetes
21	10	12	Normal
22	120	109	Chronic glomerular nephritis
23	100	87	Same after treatment
24	15	11	Gastric case
25	20	16	Renal sclerosis
26	80	91.7	Chronic glomerular nephritis
27	35	39.5	Chronic tubular nephritis
28	10	16.5	Normal
29	10	10.2	Normal
30	15	24.0	Renal sclerosis
31	10	9.9	Normal
32	10	10.9	Normal
33	15	9.5	Normal
34	15	16.3	Normal
35	15	15.1	Normal

sodium tungstate solution and 2 c.c. of ⅔ normal sulphuric acid are added, the tube being agitated during the addition of both solutions. Thirteen c.c. of distilled water is added if 1 c.c. of urease solution has been used, or 14 c.c. of water if a urease tablet has been used. The contents of the tube are thoroughly mixed, a clean rubber stopper being used if necessary, and filtered through a small glass funnel and filter paper (about 11 cm. in diameter) into a clean test tube. It is advisable to replace the first 1 or 2 c.c. of filtrate back on the filter. During the process of filtration a large size test tube is prepared by placing in it 8 c.c. of distilled water and 1 c.c. or about 10 to 12 drops from a dropping bottle of Nessler's solution. To this tube is added 1 c.c. of the filtrate, and the resulting coloration is compared with a set of artificial standards. To prepare these standards, 1 c.c. of a standard ammonium sulphate solution (of which each 1 c.c. is equivalent to 0.1 mg. of nitrogen[4]) is added to a test tube containing 8 c.c. of distilled water and 1 c.c. of Nessler's solution. The color produced may be imitated by a permanent standard prepared by the mixture of 59 c.c. of fifteenth molar acid potassium phosphate and 41 c.c. of fifteenth molar alkaline sodium phosphate. To every 9.5 c.c. of such a solution is added 0.5 c.c. of a 0.05 per cent. solution of phenol red. The hydrogen ion concentration of this solution lies between p_H 6.6 and p_H 6.8. Since 1 c.c. of the filtrate in the test is equivalent to 0.1 c.c. of blood, a standard prepared as above matched by 1 c.c. of the filtrate would be equivalent to 100 mg. of urea nitrogen per hundred c.c. of blood. A series of standards down to 20 mg. of urea nitrogen with intervals of 10 may be prepared from the 100 by diluting out the color with this prepared solution of phosphates, correcting them afterward by comparison with the corresponding dilution of the ammonium sulphate standard. These artificial standards may then be used and remain constant for some time if kept in tubes of non-sol glass, sealed, and kept in a dark place when not in use.[5] The same precautions in preparing the solution of phosphates are employed as in making standards for hydrogen ion readings. In bloods with low urea content, 2 c.c. of the filtrate should be taken and the result is therefore half of the corresponding standard. The colors may be matched in small test tubes by placing them in a box similar to that used in phenolsulphonephthalein determinations.

Certain precautions are necessary to insure accuracy. All reagents and the distilled water must be free from ammonia. The water must also be free from traces of organic matter. The presence of such ingredients can be detected by adding 1 c.c. of the standard ammonium sulphate to 8 c.c. of distilled water, and last adding about 10 or 12 drops of Nessler's solution. No cloudiness should be produced in the first few minutes.

The urease must be known to be active or be checked up by its action on a known solution of urea. Nessler's solution may be prepared after the method of Bock and Benedict by adding 100 gm. of mercuric iodid and 70 gm. of potassium iodid to about 400 c.c. of water. This is rotated until solution is complete. One hundred gm. of sodium hydroxid is dissolved in about 500 c.c. of water, cooled thoroughly, and added with constant shaking to the mixture in the flask, and then made up with water to the liter mark. The ingredients used must be of highest grade purity. The directions of Folin[2] may be used if satisfactory mercuric iodid cannot be obtained.

The results of a series of tests made with this method and controlled by a standard method, such as that of Van Slyke and Cullen, are outlined in tabular form. The controls to Specimens 26 to 35, inclusive, were performed by the chemist, Dr. R. A. Lichtenthaeler.

CONCLUSIONS

1. The determination of blood urea nitrogen may be made a clinical or bedside procedure by the use of a rapid and simplified method.

2. The results, though approximate, are sufficient to be of diagnostic and prognostic aid, and compare to a fair degree with standard laboratory methods.

3. When possible, the more precise laboratory methods should be used later as a check on the clinical determinations.

3. Fourteen gm. of sodium pyrophosphate in 0.5 normal phosphoric acid up to 100 c.c.

4. Forty-seven hundredths gram of ammonium sulphate of highest purity to a liter of distilled water.

5. The standards and other accessories may be obtained from Edward P. Dolbey & Co., Philadelphia.

A CASE OF PITUITARY DISEASE

CHARLES G. BEALL, M.D., FORT WAYNE, IND.

History.—C. Z., a boy, aged 17, whom I first saw, Aug. 12, 1919, whose mother and father were living and well, had two sisters living and well. The mother's mother was insane. The father was a short, stocky man whom the boy resembled in build. At the age of 12 the patient had mild typhoid, and after this his mother thought he was different, not quite so quick mentally. As a youngster he did well in school; he never failed, and went through the eighth grade at 15 years. One year before I saw him, while messenger boy at the General Electric Works, he noticed that his legs were getting weak, he had insomnia for one month, and the abdomen became large, but in the last six weeks the abdomen had become much larger. In the last year the head, shoulders, back and abdomen had become very fat. The patient had been working for two years. His only complaint now was that his legs were somewhat weak, i. e., his body was too heavy for his legs (and it looked that way). His mother said his hair had always been fine, but it had become thinner in the last year.

When he tried to lift anything he had pain in the lower dorsal region. He had an occasional headache. He said he was not drowsy or sleepy. His mother said there had been no change in mentality. He took thyroid for three months without any change in bodily contour, but it did make him more active. His mother said he was an inch shorter than he was one year before. He had a mustache at 14.

Physical Examination.—He was a short, squat boy, the face very fat, the neck short and obliterated by fat; he was very hairy all over the body. The chest, back and abdomen were fat, the legs and arms almost spindling. The strength of the extremities was greatly diminished. The hands were small, the fingers tapered, cold and clammy. He had a good color. The thyroid was not palpable. There were no palpable glands; the spleen was not palpable, nor was the apex. Cardiac dulness was not increased, and there were no murmurs. The arteries were soft. The systolic blood pressure was 165, the diastolic, 120. The pulse was 80 and regular. The nose, throat and lungs were negative. The liver was not palpable, and there was no mass, tenderness or free fluid in the abdomen. He was very potbellied. There was some tympany. There was much fat in the abdominal wall. The pupils were equal, reacting to light. The knee jerks were sluggish, but equal. The fundi were negative (left eye, error of refraction). There was no edema; the skin was rough and dry, scaly, with many areas of dirty exfoliating epithelium, and several linae albicantes (red). August 12, the urinalysis revealed a specific gravity of 1.017; there was an alkaline reaction; there was no albumin and no sugar; August 18, there was a specific gravity of 1.022, with an alkaline reaction, but no pus, no casts, no albumin, no sugar and no diacetic acid. The phenolsulphonephthalein test, first hour, showed 42 per cent. The glucose test showed sugar in urine.

Roentgen-Ray Examination.—The right lateral and right lateral stereoroentgenogram of the head disclosed a shallow pituitary fossa and erosion of the posterior clinoid processes.

Clinical Course.—The boy continued in about the same condition. December 5, the weight was 121 pounds. The subjective symptoms were practically the same. The pulse was 114, with an occasional systole. The blood pressure was 165. The urine contained a moderate amount of albumin, but no sugar or granular or hyaline casts. His condition remained unchanged, and he was able to do a moderate amount of light work. Jan. 30, 1920, he became acutely ill with fever, cough and bloody expectoration, and these symptoms continued until his death, three days later.

Necropsy.—This was held twenty-four hours after death and after embalming. Examination of the lungs revealed bronchopneumonia and pulmonary edema. The heart was negative. There was cloudy swelling of the liver. There was subacute nephritis. The suprarenals, pancreas, stomach and intestine were negative. There was much fat in the abdominal wall and omentum. The brain was normal. On inspection of the pituitary fossa the body was seen protruding and elevated on the left side. On attempted removal of the sella turcica intact, there occurred a spurt of fluid from the sella, and the body partially resumed its normal position.

Dr. V. H. Moon of Indiana University reported:

"I have made a careful study of sections of the pituitary body which you sent me some time ago. On one side there is a small adenomatous growth of gland cells in the anterior lobe. This growth has crowded the normal gland cells to one side, and is separated from them by a thin wall of fibrous tissue. The growth is very soft and vascular, and the cells are arranged peripherally about the vessels and capillaries four or five cells deep. There is very little fibrous stroma in the growth. The cells are rather regular in size, show no mitotic figures, and are basic staining. They have less of cytoplasm than the cells of the normal gland. There is a delicate diffuse increase of fibrous stroma throughout the normal gland substance of the anterior lobes on both sides. Otherwise the gland substance shows no changes. The substance of the posterior lobe is apparently normal.

"If the cells of the adenomatous growth have the power to produce the characteristic secretion of anterior lobe cells, such a case would show clinical symptoms of hypersecretion. If they do not have that power, there would be evidence of hyposecretion, due to the normal cells being displaced by this nonfunctioning adenomatous growth. Adenomas of this character are described as producing both types of pituitarism."

Special Article

OBSERVATIONS ON SOUTH AMERICA

III. CHILE

WILLIAM J. MAYO, M.D.
ROCHESTER, MINN.

In the latter part of the nine crowded years of Pizarro's life he started two expeditions south of Peru, into the country called Chile. The first expedition was beaten back by the valorous Araucanian Indians. The second met somewhat better success, but the Indians were not conquered. Eventually, after more than 100 years of ruthless warfare, an armistice was arranged which ended in an alliance. It was these brave Araucanians who gave the native strain to the Chileans, the most militant people of South America.

The troops in Chile are German trained. Before the Great War the uniforms, helmets, and general equipment were German, but they have been changed to English designs. The cavalry horses are beautiful and well trained. In the navy the training and equipment have always been British.

The long-standing boundary dispute between Chile, Peru and Bolivia is a source of friction, and a peaceful Pan-America depends on its settlement. There are from four to five million Chileans on 2,700 miles of Pacific coast, an approximate distance of as far as from Alaska to a point opposite Mexico City. Undoubtedly the Chileans feel cramped on this narrow strip of land, a little less than 300,000 square miles, and it is only human that they should look with appraising eyes on the great countries of Bolivia and Peru. The Chilean military attitude is the index to his characteristics, that is, efficiency and self-reliance.

Chile has the finest railroad system in South America, both for military and for civil purposes; American equipment, with Pullman cars, etc., are used. There are no lotteries or open gambling in Chile, and a strong prohibition party exists, with evidences of control of the liquor traffic.

The port towns of Arica, Iquique and Antofagasta have hospitals, all of which we visited. We visited also a large military and civil hospital in Tacna, situated in a fruitful oasis near the Peruvian boundary. The hospitals of Chile are supported largely by the state. The hospitals at Iquique and Antofagasta are much larger and have better equipment than those at Arica and Tacna. They are under the direct charge of a progressive Catholic bishop and are managed by French and Italian Sisters. Each hospital has a training school for about forty nurses, drawn from the lower and poorly educated classes, who are really drudges for the sick rather than nurses, and a training school for about thirty midwives. The bulk of the patients in these hospitals are from the outlying nitrate (saltpeter) mines. The buildings are unscreened, and although flies are not usually numerous, they are uncomfortably evident in the medical wards. Water is scarce in this

rainless region; it is piped from the mountains long distances, and is expensive. Lack of trained nurses, lack of adequate water supply and lack of screens are the weak features in an otherwise excellent hospital system, but these defects are being rapidly overcome. The great American mining corporations on the coast and inland, such as the Guggenheims, have their own hospitals. These corporation hospitals are screened and thoroughly equipped with American appliances, and have American physicians and trained nurses. Dr. W. F. Shaw, who has had twenty years' experience in the tropics, is in charge of the Guggenheim hospital.

Valparaiso, a city of about 280,000, has a number of fine hospitals, built with the high ceilings, verandas and patios typical of the Spanish plan. There are separate hospitals for men and for women, and for children under 10 years of age. All the newer hospitals are built on the general type of the American hospital, with pavilions for men, women and children; the same operating rooms, laboratories, etc., are used for all. There are pavilions for private patients in which the rates, the cheapest of any in South America, range from $2.50 to $10 a day, gold. This includes ordinary nursing and medical care. No fee is charged for operations if they are performed by the surgeon who is paid by the year from the hospital fund. Other surgeons make their own arrangements with patients. The British and American residents maintain a hospital of about 100 beds. It is under the supervision of a British surgeon who, since he has no license to practice in Chile, employs a Chilean licensed physician to act obstensibly as chief. This subterfuge is employed also in some of the large mining hospitals. Needless to say, such arrangements are sources of irritation to the Chilean physician. A hospital is maintained by the German colonists located on a sightly spot on a hill. The attending surgeon is Dr. Münich, grandson of a German colonist, and one of the best surgeons in Chile.

A schedule of operations performed in the hospitals in Valparaiso, Feb. 13, 1920, is as follows:

German Hospital, Dr. Münich:
8:00 a. m. Nephrectomy.
8:30 a. m. Intervention for cholecystitis for an old fistula between the gallbladder and small intestine.
11:00 a. m. Hernia.
11:30 a. m. Hemorrhoids.
Hospital de San Agustin, Dr. Iturrieta:
9:30 a. m. Cancer of the uterus; cesarean section for constriction of the pelvis.
8:15 a. m. Dr. Engelbach: Cholecystectomy for biliary lithiasis.
Hospital of San Juan de Dios, Dr. de la Fuenta: Cholecystectomy.

Santiago, the capital and largest city of Chile, is situated at an elevation of 2,000 feet on the river Mapacho in a valley surrounded by snow-capped mountains. The site of the city is unusually beautiful, and, unlike the cities farther north in Chile and Peru, it is blessed with rain. The city government is progressive and excellent. All things considered, Santiago may be said to be the most beautiful residential city on the west coast, if not in South America.

The hospitals in Santiago are very good. The old ones are being remodeled along American lines. The surgeons are doing excellent work. Prof. Lucas Sierra, well known in America, was abroad preparing plans for greater hospital extension. His colleague, Dr. Amunátegui, dean of the medical school, and one of the foremost surgical teachers of South America, was in the city, but expected to leave shortly to join Dr. Sierra on his mission.

There is but one medical school in Chile, and that is in Santiago. The school compares favorably with medical schools in other countries. Opportunities for English and American physicians in Chile are not alluring. Examinations to qualify for practice are given in Spanish; they are highly technical, and are given under conditions that have not been surmounted by any American physician in recent years. When it is taken into consideration that the school in Santiago has a seven-year course and 1,000 students, of whom only about thirty-five of the senior class succeed in graduating each year, the natural handicap is easily seen. Some of the students who eventually graduate spend eight, nine or even ten years in preparation for the final degree. A fine hospital of 700 beds is directly associated with the medical school. The buildings for both institutions are spacious, dignified and well equipped, and are situated on a large, beautiful tract in the heart of the city. We attended a number of interesting surgical clinics and demonstrations. Professor Noe, who was trained in Italy, showed us some very beautiful specimens of *Ancylostoma duodenale*, with microscopic slides. This disease was first found in men working in the Simplon tunnel in Switzerland and is endemic in certain mines in Chile. We were interested also in the treatment of anthrax by Lugol's solution, which appeared to be extraordinarily efficient.

The Public Assistance Association in Santiago should be mentioned especially. It is supported by the state and municipal governments, and is under the control of the faculty of the medical school. The association has its own hospital, in which all emergency surgery is done. Ambulance stations are located in different parts of the city, centering in one hospital which is in direct communication with the criminal courts. All postmortem examinations are conducted under the medical jurisprudence department of the medical school, in marked contrast to the inefficient coroner system in the United States. All cases of stabbing, shooting and accidental injury pass through the hospital, and the student derives the benefit of all medical and legal examinations. The uneducated native Chilean settles his disputes with the knife and inflicts ghastly wounds, which make the razor slashes of our nonvoting voters south of the Mason and Dixon line appear trivial in comparison. I was told by a Chilean surgeon that when the Roto takes out his knife, all South America squeals and runs. Any one seeing some of the injuries he inflicts would certainly be inclined to lead in the running.

The ambulance service is quite remarkable. This was demonstrated by a call from the Institution of Physical Culture and Therapeutics to one of the most distant stations in the crowded part of the city. The dean stepped to the telephone, put in the call for public assistance, and shortly a peculiar, high-pitched horn was heard in the distance. All traffic stopped at once, and in two minutes and forty seconds an ambulance with two physicians and a nurse in attendance was at the door. Temporary assistance may be had on telephone call day or night in any part of the city by any person, rich or poor, who is sick or in trouble.

The new dental college, connected with the medical school and under the direction of Dr. Germán Valenzuela, professor of maxillofacial surgery, is an institution which is of interest not only professionally but

historically. The equipment is American and is complete in every respect. The instructors are men who have been trained in Philadelphia. The circumstances which led to the building of the dental school would furnish a thriller for the movies; the story was told in the presence of Dr. Valenzuela, who was obviously very much embarrassed.

In 1909, the consul general of Germany was found murdered in the basement of the burned German embassy building in Santiago. The safe had been emptied of a large amount of negotiable securities. Notwithstanding the care of the assassin to destroy completely the building, much of it was saved by the excellent fire department, and the body in the basement was not wholly consumed, and was identified as the German consul by the finger rings, watch, parts of clothing, hair and mustache. The janitor, a younger man of about the same size and general appearance, had disappeared. Germany, at the height of her power, was justly indignant over the crime; Chile, profoundly disturbed, did everything possible to mollify the kaiser, and made preparations for an ostentatious funeral with naval and military parades. Eulogies of the dead consul were made by high officials of Chile and by foreign diplomats. Under the international law the embassies and consulates are under the jurisdiction of the countries they represent, but the Chilean law required an examination of the body before its burial. Dr. Valenzuela, in conducting the examination, observed the perfect condition of the teeth. They were complete, except for one third molar, which had been extracted; this was inconsistent with the age of the consul. The bereaved Chilean wife of the consul was interviewed, and said that her husband had had a great deal of dentistry done, and she gave the name of the dentist who had done the work. The dentist's records showed that various gold fillings, bridges and artificial teeth had been inserted. The janitor's wife stated that her husband had a full set of teeth with the exception of one wisdom tooth.

The two feasible means of escaping from Chile are by the Transandean railway and by the sea, and the former is often obstructed by landslides and washouts. An order was given to close the frontiers, and the German consul in disguise was discovered at the Argentine border, where he had been held on his way to Buenos Aires by an avalanche temporarily obstructing the train. The money taken from the vault was found in a belt around his person. He was tried and executed for the murder of the janitor, whom he had stabbed, shaved, and dressed to change his appearance; he had then robbed the safe and set fire to the building. The affair created a sensation, and Dr. Valenzuela was called before the Chilean senate and congress, who rendered public recognition of his service. He was asked to name his own reward, and made the request that $700,000 should be given to build a dental college on the American plan, a project he had been working on for ten years. The request was granted at once, and the splendidly equipped institution is the result.

The Chilean people are independent and self-reliant. They are imbued with the American spirit of progress and efficient organization. At a banquet one night, wishing to honor the Chileans, I said, "Chileans are the Yankees of South America!" There was no applause and I did not repeat the offense.

Our reception in Chile was very cordial, and everything possible was done by both the government and the medical profession to give us information and opportunities to examine their educational institutions, hospitals and clinics. The medical profession in Chile stands very high in the estimation of the people, and may be said to be the most influential of the professions. The leading medical men have taken postgraduate courses abroad, and many of them are graduates of the best continental schools. The surgeons of Chile are a splendid body of men, and it was a great pleasure to see their work and to study their methods.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

BENZYL BENZOATE (See New and Nonofficial Remedies, 1920, p. 49).

Benzyl Benzoate-Seydel.—A nonproprietary brand of benzyl benzoate complying with the tests and standards for benzyl benzoate.

Seydel Manufacturing Co., Jersey City, N. J.

DESICCATED PITUITARY SUBSTANCE (ANTERIOR LOBE)-ARMOUR (See New and Nonofficial Remedies, 1920, p. 207).

The following dosage form has been accepted:

Tablets Anterior Pituitary-Armour 5 grains.—Each tablet contains desiccated pituitary substance (anterior lobe)-Armour 5 grains.

OVARIAN SUBSTANCE-ARMOUR (See New and Nonofficial Remedies, 1920, p. 202).

The following dosage form has been accepted:

Tablets Ovarian Substance-Armour 5 grains.—Each tablet contains ovarian substance-Armour 5 grains.

RIODINE.—A 66 per cent. solution in oil of an iodine addition product of castor oil. Riodine contains about 17 per cent. of iodine.

Actions and Uses.—Riodine resembles other fatty iodine compounds. See general article, Iodine Compounds for Internal Use, New and Nonofficial Remedies, 1920, p. 143.

Dosage.—From 0.4 Gm. to 1.2 Gm. (6 grains to 18 grains) per day in capsules taken after meals. Supplied only in the form of capsules.

Manufactured by Pharmacie Astier, Paris, France (E. Fougera and Co., Inc., New York, distributors). No U. S. patent. U. S. trademark No. 86974.

Riodine Capsules 0.2 Gm. (3.1 grains).—Each capsule contains 0.2 Gm. riodine, equivalent to about 0.033 Gm. (0.5 grain) iodine.

Riodine is prepared by treating castor oil with hydriodic acid.

Riodine is an oil-like liquid, light amber in color, having a faint alkaline reaction. It is insoluble in water, soluble in alcohol, chloroform and ether.

When heated it is decomposed and purple vapors of iodine are given off. When heated with alcoholic potash, Riodine is saponified and potassium iodide formed.

Diagnosis of Drowning as the Cause of Death.—Dr. E. Stockis, professor of legal medicine at Liége, writes to the *Liége médical* to confirm his assertions in 1919 as to the certainty of drowning when solid particles are drawn with water into the lungs and through the walls of the alveoli into the blood. The solid particles then show up in the blood in the heart, the microscope revealing particles of silica. In normal conditions there is never much silica in the contents of the heart. Negative findings are not conclusive, and to eliminate any possible silica in the reagents used, he filters and applies them in the form of vapors. He ligates the abdominal aorta to hold the blood in the heart. The latter is ligated at the base and taken unopened to the laboratory. He usually applies the same tests at the same time to the plankton where the body was taken from the water.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Five dollars per annum in advance

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SATURDAY, AUGUST 14, 1920

INTERNAL AND EXTERNAL ANTISEPSIS

In the modern history of the biologic sciences and particularly in medicine, antiseptics and germicides have played such unanticipated parts and have been responsible for so much which is good that they have furnished words to conjure with. Every force that can be enlisted against baneful bacteria is promptly welcomed; but there are no "royal roads" to success in the warfare against these invisible foes, just as there are no panaceas with which every human ailment can be relieved. Surgeons of the present day have seen the pendulum of operative practice swing between antisepsis and asepsis without discovering the ultimate ideal of a universally applicable scheme of procedure. Only a few years ago, physicians were greatly exercised by the hope of finding a satisfactory intestinal antiseptic. Naturally the possibility of being able to rid the alimentary tract of its undesirable microbiotic invaders aroused widespread interest. Despite the numerous efforts to demonstrate the efficacy of this or that chemical agent or drug as a gastro-intestinal antiseptic, the outcome has been that the supposed benefits were due to catharsis in most instances rather than to any real effect upon the bacteria in situ. The emptying of the bowel is, in truth, probably the most successful mode of decreasing its bacterial flora, according to present-day knowledge.

An analogous story appears to apply to attempts to disinfect the outside of the body with alleged antiseptic products. For a long time the claims of "healing," "antiseptic" or "germicidal" soaps have been flaunted before the laity as well as the medical profession. Thanks to the efforts of Dr. Norton,[1] working at the University of Chicago under the auspices of the Council on Pharmacy and Chemistry of the American Medical Association, the facts about "antiseptic" soaps have once more been presented in a true light. He has demonstrated that in any event, the cleansing properties of a soap, such as the green soap used in hospitals or even ordinary toilet soaps, are more important than any added antiseptic or germicidal constituent. According to Norton's demonstrations, which confirm previous experiments, sterile hands are not obtained in the ordinary process of hand washing. Large numbers of bacteria are removed thereby, but more were actually found to be removed by ordinary soaps than by the specially advocated brands. The presence of antiseptic chemicals, such as mercury salts, is likely to interfere with the production of a good lather, on which much of the detergent potency depends. Furthermore, soap remaining on the hands after washing does not appear to have a germicidal potency.

Let us by all means get rid of bacteria on polluted hands, which have been incriminated seriously of late in connection with the spread of disease; but let us also learn to avoid a false sense of security which some labels foster. If the public is interested in "buttermilk" soap or "oatmeal" soap, both of which are chemical impossibilities even though they have been advertising actualities, no harm is done except, perhaps, to the pocketbook. But the words "antiseptic" and "germicidal" are too close to the sacred domain of hygiene and public health to be allowed a promiscuous use.

1. Norton, J. F.: Soaps in Relation to Their Use for Hand Washing, J. A. M. A. 75: 302 (July 31) 1920.

BATHING AS A SOCIAL AMUSEMENT

Many persons at the present time look on baths and bathing in the light of hygienic necessity. A study of the history of the bath, however, would reveal this institution as having many other aspects. Its various alleged remedial values are conspicuous in the practices and traditions of hydrotherapy. Bath resorts are proverbially medical centers in many parts of the world. In the ancient days the various modes of bathing and bodily inunctions acquired an immense significance in the life of the élite in particular, as is attested by the elaborate ruins still extant, giving silent evidence of the place of the bath amid the domestic institutions of other times.

The counterpart to a visit to what is left in Rome of the baths of antiquity may be suggested by a trip to the Hot Springs or Carlsbads of today, even though the functions of the modern establishments may appear to be somewhat different. Lest it be assumed that our own continent is devoid of old records of bathing pavilions of a specialized sort, we quote the observations of the pioneer American explorers Lewis and Clark. In the diary of their memorable expedition up the Missouri and across the divide to the Pacific coast in the years 1804-1806 they give a unique description of the sweating baths of Indians they encountered. The vapor bath or sweating house was a hollow square six or eight feet deep, formed in a river bank by damming up the other three sides with mud and covering the whole completely except for an aperture about two feet wide at the top. The bathers descended through this hole, taking with them a number

of heated stones and jugs of water; and after being seated around the compartment they threw the water on the stones until the steam became sufficient for their purposes. This mode of producing vapor appears to have been common.

From the social standpoint it is interesting to learn through the account left by Lewis and Clark that among many of the Indian tribes it was very uncommon for a man to bathe alone. The bather was generally accompanied by one or sometimes several of his acquaintances. Indeed, according to the explorers' information, bathing was so essentially a social amusement among these peoples that to decline going in to bathe when invited by a friend was regarded as one of the highest indignities that could be offered to him.[1] The Indians on the frontiers nearest civilization generally used a bath which was formed of a wickered work of willow about four feet high, arched at the top, covered with skins, and adapted to a single person. In this the "patient" sat until, by means of the heated stones and water, he perspired sufficiently. Almost always these baths were in the neighborhood of a running stream, into which the Indians plunged immediately on coming out of the vapor bath, and sometimes returned again to subject themselves to a second perspiration. "This bath," we read, "is employed either for pleasure or for health, and is used indiscriminately for rheumatism, venereal or, in short, all kinds of diseases." The same sentence might quite as appropriately be written today.

1. History of the Expedition of Captains Lewis and Clark, 1804-05-06, reprinted from the Edition of 1814, Chicago, A. C. McClurg & Co. **2**: 2, 1917.

DO THE CEREALS HAVE UNLIKE VALUES IN NUTRITION?

During the food crisis presented by the World War, it became necessary for the experts of the U. S. Food Administration to consider the seemingly mystical properties of wheat which had made it foremost in popularity among all its competitors in the domain of cereal foods. Wheat is not so unique that it has attained an exclusive use throughout the world. Rye, barley, oats, corn and rice are likewise popular in many places. There are two principal ways of preparing cereals for the table: one by baking into bread, the other by cooking in water. The inhabitants of Europe and North America use their cereals mainly in the form of bread; most Orientals prefer theirs boiled, and use chiefly rice and corn. The cereals differ more in their bread-making qualities than in their food value. The proteins of wheat, rye and barley possess such physical properties that the flour prepared from them can be made into a dough that can be leavened or raised, and baked to form a palatable portable bread of excellent keeping qualities. Oats, corn and rice may be cooked by boiling, but on baking they will yield cakes that are granular and will not hold together, and therefore cannot be transported except in containers.

Despite the fact that the advantages of wheat evidently lie in the external qualities of the products prepared from it rather than in their inherent digestibility, there was much hesitation in employing the cereal substitutes that were urged on our people during the war. This attitude of reserve at first was not occasioned merely by a lack of patriotism in following the requests of the Food Administration, but was due rather to a feeling of uncertainty as to physiologic values. Would the health of the nation be impaired by the use of the substitute cereals, even if they could be made palatable and dietetically attractive? This and similar inquiries were more than once directed to our experts in nutrition.

That all of the common cereals are readily digestible by man may be regarded as finally demonstrated. All of them have virtually the same energy value, approximating 1,600 calories a pound. A 100-calory portion varies only from 25 gm. for oatmeal to 29 gm. for rice. Much of the uncertainty has centered in the problem of the comparative value of the different cereal proteins. Sherman [1] clearly demonstrated that the protein of corn is just as satisfactory to keep the body in nitrogenous equilibrium as is the protein of wheat, even when corn meal provides half of the calories and three fourths of the protein. Subsequently Sherman and his collaborators [2] came to essentially the same conclusions with respect to the protein components of the oat and wheat. With all three of the cereal grains (wheat, maize and oats) tested on man, it was found that a diet in which about nine tenths of the protein was derived from the cereal in the form commonly used as human food, the small remainder being furnished by milk or apple, need contain only from 33 to 40 gm. of protein per 70 kilograms of body weight, or about 0.5 gm. per kilogram, in order to meet the protein requirement of maintenance in adult human nutrition. This is contrary to what some of the German investigators have led us to conclude. The upshot of Sherman's studies is that the proteins of wheat, corn and oats appear to be about equally efficient in adult human nutrition and need only be supplemented with small amounts of milk in order to be fully as efficient as the proteins of ordinary mixed diets had been found to be in earlier investigations.[3]

If further evidence were needed for the essential equivalence of the proteins of the commonest cereals, it could be found in the recently published investigations by Osborne and Mendel.[4] Contrasting wheat

1. Sherman, H. C.: Use of Corn (Maize) as Human Food. J. A. M. A. **70**: 1579 (June 1) 1918.

2. Sherman, H. C.; Wheeler, L., and Yates A. B.: J. Biol. Chem. **34**: 383 (May) 1918. Sherman, H. C., and Winters, J. C.: J. Biol. Chem. **35**: 301 (Aug.) 1918. Sherman, H. C.; Winters, J. C., and Phillips, V.: J. Biol. Chem. **39**: 53 (Aug.) 1919.

3. Sherman, H. C.: Protein Requirement of Maintenance in Man and the Nutritive Efficiency of Bread Protein, J. Biol. Chem. **41**: 97 (Jan.) 1920.

4. Osborne, T. B., and Mendel, L. B.: Nutritive Value of the Proteins of the Barley, Oat, Rye and Wheat Kernels, J. Biol. Chem. **41**: 275 (March) 1920.

with barley, rye and oats in experiments in which these served as the sole sources of protein for growth, these investigators have been forced to the conclusion that the proteins of the four cereals studied are not widely different in efficiency for this physiologic purpose. It should not be assumed from this that the common cereal grains alone or even a mixture of them suffices to afford satisfactory nutrition. The reason for the inadequacy is to be found primarily in a deficiency in certain of the essential dietary components, notably specific inorganic elements and fat-soluble vitamin. However equal the cereals may be from the standpoint of comparative protein values, they need a supplement. In this rôle no product surpasses milk. But the day of "invidious distinctions" between cereals, from the physiologic standpoint, seemingly is past.

THE OUTLOOK FOR THE MANAGEMENT OF DIABETES

In a recent issue of THE JOURNAL,[1] a review of some of the newer experimental studies on partially depancreatized dogs, showing many resemblances to typical cases of diabetes in man, pointed to the conclusion that a spontaneous progressively downward tendency is not necessarily an inherent feature of the disease in the animals. Whether the conclusions arrived at, particularly through the investigations of Allen and his collaborators at the Hospital of the Rockefeller Institute for Medical Research, apply with equal probability to diabetes in man cannot yet be stated. At any rate, through the demonstration that in diabetic animals the chief cause of downward progress is faulty diet, the practitioner is more than justified in attempting to eliminate this cause by avoiding the dietary injuries illustrated in the animal experiments.

The clinical experience of Allen, Stillman and Fitz,[2] in applying the principle of the relief of patients through decreasing their metabolic burden, has given encouraging results, to quote Allen, in proportion as it has received application in practice. He[3] has pointed out that the clinical problem requires the same prolonged careful control of all discoverable symptoms as in animals, and cases too severe for such control, or complicated with infections, violations of diet, etc., are on the same plane as animals in which a similar condition has been produced. Some proportion of cases, especially in young persons, will be found suitable for accurate determination of the question of whether all or most cases of severe diabetes are inevitably progressive and hopeless.

Overenthusiasm for any novelty is sometimes liable to damage the cause that has given birth to it. Even the experiments on animal diabetes indicate limitations to the possibilities of the current proposals to spare the overburdened pancreatic function. There is an unquestioned benefit from exclusion of preformed carbohydrate and limitation of protein (potential carbohydrate) intake in nearly all cases of diabetes—a benefit exhibited by prolongation of life and well-being to some extent in many cases, and perhaps indefinitely in the mildest cases. But even the animal experiments show that in the great majority of instances such a therapeutic result is not permanent, and downward progress is finally observed if the observations are continued long enough. The animal experiments do not support any exaggerated claims of cure. As Allen[3] judiciously summarizes the present situation: In most of these cases, life, strength and assimilation can be preserved for a much longer time by a degree of undernutrition suited to the severity of the diabetes, and accomplished by limitation of fat in the diet. The permanence of such control is supported by the unimpaired or rising assimilation in experiments of one to one and three-fourths years' duration, but still longer observations would be desirable. Diabetes of great severity is controllable only by correspondingly radical undernutrition. In still more severe cases, glycosuria can be abolished only by a degree of undernutrition which entails final death from inanition. In the most severe cases glycosuria cannot be stopped, evidently because the assimilative power is too low to dispose of even the minimum supply of food materials, namely, that derived from the body stores in fasting.

If diabetes represents an organic deficiency, it is unreasonable to expect to cure rather than merely relieve it by diet. This does not negative the possibility, however, that some day we shall be able to stimulate or strengthen the pancreatic function in some direct manner. The newer studies on animals may better pave the way to such an achievement.

1. Newer Considerations Regarding Diabetes, editorial, J. A. M. A. **75**: 320 (July 31) 1920.
2. Allen, F. M.; Stillman E., and Fitz, R.: Total Dietary Regulation in the Treatment of Diabetes, Monograph 11, Rockefeller Institute for Medical Research, New York, 1919.
3. Allen, F. M.: Experimental Studies on Diabetes, I, Production and Control of Diabetes in the Dog; 5, Various Failures of Dietetic Treatment and Their Causes, J. Exper. Med. **31**: 587 (May) 1920.

Current Comment

HEALTH AND THE COST OF FOOD

Conditions entailed by emergencies arising from the war and subsequent events have placed an enormous emphasis on the food supplies of thousands of persons in many parts of the world. The problem of adequate food allowances to certain groups of people is one of the subjects for necessary discussion at the various peace conferences. Relief organizations are debating the same question from other standpoints. As a consequence, the serious consideration of public health factors in terms of calories or nems, if Pirquet's new nomenclature is to be employed,[1] has something more than mere academic import at the present time. In all schemes for nutrition of the masses, the possibilities

1. The Pirquet System of Nutrition, Foreign Letters, J. A. M. A. **75**: 332 (July 31) 1920. Faber, H. K.: The Pirquet System of Nutrition, Am. J. Dis. Child. **19**: 478 (June) 1920.

of a healthful diet are involved, not only by economic conditions,[2] but also by the limitations of income. We have from time to time discussed the question of the minimum wage as it is affected by the price of food. Marketing conditions are changing so rapidly that it is not easy to secure up-to-date estimates. The director of the Dietetic Bureau of the League for Preventive Work, Boston, has recently calculated the cost of food in minumum allowance of essential nutrients necessary for health, on the basis of April, 1920, prices.[3] Assuming that it was spent to the very best advantage, the lowest allowance on which the well-known statistical family of five could be fed safely was placed at $11.50 a week. At a cost of 14.7 cents per thousand calories this would allow, for an adult man, 3,400 calories per day, including 100 gm. of protein, 1 gm. of calcium, 2 gm. of phosphorus and 16 mg. of iron, with an abundance of vitamins. A safer allowance is placed at $14, or 60 cents for each adult daily. In the price of good health which, the slogan says, is purchasable, the cost of adequate nutrition must be included.

THE CHEMISTRY OF ODORS

Man and animals alike depend on their senses not only for physiologic delight but also for the warnings against various danger of their environment. The "twin senses" smell and taste exercise a peculiarly valuable function in that they stand "like sentries at the portals of the body, where they closely scrutinize everything that enters." Slosson[4] has fancifully remarked that these two special senses lead us to the heart of the molecule and enable us to tell how atoms are put together. Sounds and sights may be disagreeable, but they are never fatal. A man can live, Slosson writes, in a boiler factory or in a cubist art gallery, but he cannot live in a room containing hydrogen sulphid. Until recently there has been little dependable information available about the chemical nature of the odoriferous substances encountered in daily life. The so-called essential oils, many of which have a "fruity" odor, have been prepared for some time in the laboratory. Experts remind us, however, that the artificial fruit essences are usually composed of a mixture of substances without any guarantee of their actual occurrence in the fruits whose flavors they are supposed to represent. An actual identification of the principal flavoring constituent of an edible fruit was apparently first accomplished in 1913 by Kleber,[5] who showed by accurate methods that ripe bananas actually contain amyl acetate, the substance commonly designated as "pear oil." Recently Power and Chesnut[6] of the Bureau of Chemistry in the U. S. Department of Agriculture at Washington have unraveled some of the mysteries of the apple. They obtained no evidence that amyl valerate, familiarly designated as "apple oil," is present in the fruit. Its odorous constituents were found to consist essentially of the amyl esters of formic, acetic and caproic acids, with a very small amount of the caprylic ester and a considerable proportion of acetaldehyd. It is not unlikely that some of the alcohol and acids mentioned are also present in the free state. All of these various substances occur in mixtures of varying proportions in the numerous varieties of the apple, thus giving rise to slight differences of odor. The quantities actually present, for example, 0.0007 per cent. in the Ben Davis and 0.0013 per cent. of essential oil in the more odorous crab-apple, may seem small. Nowadays, however, the physician who deals with antigens and antitoxins, with radium, with vaccines and vitamins, has become accustomed to the possible potency of products in small quantities.

2. Mendel, L. B.: Changes in the Food Supply and Their Relation to Nutrition, New Haven, Yale University Press.
3. Gillett, Lucy H.: A Minimum Food Allowance and a Basic Food Order, J. Home Econ. **12**: 319 (July) 1920.
4. Slosson, E. E.: Creative Chemistry, New York, the Century Company, 1920.
5. Kleber, C.: Am. Perfumer **7**: 235, 1913.
6. Power, F. B., and Chesnut, V. K.: The Odorous Constituents of Apples: Emanation of Acetaldehyde from the Ripe Fruit, J. Am. Chem. Soc. **42**: 1509 (July) 1920.

NERVOUS IRRITATION AND TETANY

Tetany is a symptom that manifests itself under a variety of conditions which seem to be decidedly unlike in their pathologic aspects. Thus, one may read of gastric tetany and parathyroid tetany without suspecting any immediate common cause. Until somewhat recently the spasms were generally assumed to have a reflex origin, in those cases, at least, in which they were associated with gastro-intestinal affections. It is, of course, not difficult to conceive of a local irritation of afferent nerve endings leading to a tetanic outcome. Latterly, however, alkalosis has been alleged to play a dominating part not only in the tetany associated with lack of parathyroid function but also in the symptoms attending gastric disturbances. The identity of clinical tetany with experimental parathyroid tetany is by no means established. Palmer[1] has argued that if irritation of the afferent nerve endings in the gastro-intestinal tract is ever of importance in tetany, it should be in that of parathyroid origin; for in this condition there is not only alimentary disorder but also a hyperirritable condition of both the central nervous system and the peripheral nerves. Consequently, he has attempted to determine, in the physiologic laboratories of the University of Chicago, whether afferent influences which reach the central nervous system through the vagi and the splanchnic nerves have any influence on the onset and course of parathyroid tetany. Neither artificial gastro-intestinal irritation nor double vagotomy and splanchnectomy seemed to exert any appreciable effect. If it is justifiable to reason from such observations that these nerves are of no importance in tetanies associated with gastro-intestinal disorder, the logical consequence is to favor a chemical explanation. This is in harmony with the current tendency to emphasize the importance of toxic products of some sort in the genesis of tetany.

1. Palmer, W. L.: The Importance of Vagal and Splanchnic Afferent Impulses on the Onset and Course of Tetania Parathyropriva, Am. J. Physiol. **52**: 581 (July) 1920.

Craving for Sweets.—Children who show symptoms of inherited weakness of the thyroid gland have a very decided craving for large quantities of sweets. Craving can be relied on as an index of body needs only when man reverts to his natural state.—F. Vander Bogert, *Albany M. Ann.*, June, 1920.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Physician Shot.—Dr. James G. Wilbanks, Odenville, was shot and seriously wounded, July 25, by Dr. William P. Cooke, cashier of the bank of Odenville. The shooting is said to have been the result of an old grudge. Dr. Wilbanks is under treatment at the Birmingham Infirmary.

Medical Officers Organize.—Physicians of Birmingham who had served in the Medical Corps or Medical Reserve Corps of the Army during the World War met in Birmingham, and organized the Medical Legion of the United States, electing Dr. William M. Jordan, president; Dr. Gaston W. Rogers, vice president, and Dr. Leo C. Wood, secretary, all of Birmingham.

State Association Supported.—The supreme court has affirmed the decision of the Montgomery circuit court which was adverse to the claims of Dr. Thomas D. Parke, Birmingham, and other physicians of Jefferson County that the legislature exceeded its authority in delegating health work to the Alabama Medical Association. The association will therefore continue to name the state board of health and be the general authority for the enforcement of all state laws regarding health and sanitation.

Medical School to Be Moved.—The supreme court of Alabama has reversed the decision of the Mobile circuit court against the board of trustees of the University of Alabama. The decision enjoined the trustees from moving the medical department of the university from Mobile to Tuscaloosa. The higher court holds that the board acted fully within its powers. The trustees in April ordered the removal of the medical school from Mobile to Tuscaloosa, in accordance with an act passed by the Alabama legislature giving the trustees authority so to do in case the institution at Mobile failed to retain a Class A rating with the Council on Medical Education of the American Medical Association. The university is establishing what will be practically a new medical school. During 1920-1921, only the work of the freshman year will be given and in the following session, two years of work will be given. The clinical courses will not be offered until such time as the university feels that they can be established on a high plane.

CALIFORNIA

Reciprocal Relations Established.—It is stated that reciprocal relations have been established in medical licensure between the New York Board of Regents and the Board of Medical Examiners of California.

Society Reorganized.—At a meeting of physicians of Imperial County, held May 3, the Imperial County Medical Society was reorganized with an initial membership of twelve, and the following officers were elected: president, Dr. William W. Apple, El Centro; vice president, Dr. Roy O. Thompson, Imperial, and secretary-treasurer, Dr. Charles S. Brooks, El Centro.

Personal.—Dr. Fred P. Bowen, Los Angeles, has started for France on his way to the Balkan countries where he is to study typhus fever.——Dr. Alva J. Remmel has been appointed surgeon to the French hospital, San Francisco, succeeding Dr. Bertram F. Alden, resigned.——Dr. William A. Hodkinson has been appointed health officer of Santa Monica, succeeding Dr. Frank J. Wagner, resigned.

COLORADO

Radium Purchased.—It is reported that the largest piece of radium, in the west, weighing ½ gm. and valued at $56,500, was recently purchased by eighteen physicians of Denver.

New Clinic Opened.—A special clinic established in Leadville by Dr. Samuel R. McKelvey, Denver, is open on Mondays and Wednesdays from 4 to 5 p. m., and on Tuesdays, Thursdays and Saturdays from 2 to 6 p. m., under the charge of Dr. Franklin J. McDonald.

Specialists Meet in Denver.—The Colorado Congress of Ophthalmology and Oto-Laryngology held a meeting in Denver, July 23 and 24, under the auspices of the Colorado Ophthalmological Society and the Colorado Oto-Laryngological Society. Drs. Frank L. Dennis, Colorado Springs, Edward Jackson, Denver, Thomas E. Carmody, Denver, and Harry W. Woodruff, presided at the various sessions.

DISTRICT OF COLUMBIA

Personal.—At the annual meeting of the Indiana Society in Washington, Dr. Harvey W. Wiley was elected president.

Regulation of Anesthesia.—The Medical Society of the District of Columbia at a recent meeting adopted resolutions placing the society on record as in favor of the limitation of the practice of anesthesia to licensed physicians, surgeons, dentists and to graduate nurses in cases of emergency or medical students for the purpose of instruction. The society asks that other local, county and state societies adopt similar resolutions. The society also adopted a resolution favoring the establishment of a section of anesthesia in the American Medical Association.

FLORIDA

Sanatorium Opened.—Dr. Marvin Smith announces the opening of his private sanatorium and diagnostic institute at Jacksonville on June 15. The sanatorium is devoted to the treatment of gastro-intestinal diseases and diseases of metabolism.

Another Plague Victim at Pensacola.—John Henry Hudson, Jr., 19 years of age, died at Pensacola, July 14, the fourth victim of bubonic plague. Dr. Ralph N. Green, state health officer, immediately left for Pensacola to investigate the plague situation.

Flagler Hospital Rebuilding.—Following the fire which destroyed its building the Flagler Hospital at St. Augustine has a new building well under way, which it expects to occupy during the coming autumn. The building will have a capacity of 100 beds.

Personal.—Dr. James Q. Folmer, Bonifay, has been appointed assistant physician at the State Hospital for the Insane, Chattahoochie, succeeding Dr. William M. Bemis, who recently resigned to accept a position with St. Elizabeth's Government Hospital for the Insane, Washington, D. C.

Government Buys Hospital.—For the sum of $75,000, Lake City recently conveyed to the government 313 acres of rolling and attractive land with a number of buildings on it, for the site of a proposed government hospital. The ground was originally the site of the Florida Agricultural College and later of the Columbia College, a Baptist institution. According to a provision of the state legislature the money realized from the sale is to be devoted to educational purposes.

ILLINOIS

Physicians Hold Outing.—The midsummer meeting and outing of Jo Daviess County Medical Society was held at Camp 19, near Gordon's Ferry, July 29. The address was delivered by Dr. George B. Eusterman of the Mayo Clinic, Rochester, Minn., who spoke on "The Medical and Surgical Aspects of Chronic Peptic Ulcers."

Personal.—Joseph B. Liston, Carlinville, has been reappointed health officer for Macoupin County.——Dr. Walter H. Watterson, Chicago, has been appointed inspector of public tuberculosis sanatoriums throughout the state.——Dr. Oscar J. Brown, DeKalb, is reported to have been found guilty with other members of the Communist Labor Party, July 30, and sentenced to imprisonment for one year in the county jail.

Typhoid Fever.—An outbreak of typhoid fever is reported in Pinckneyville, Perry County, where seventeen cases have occurred, and a second outbreak at Carmi, Pike County, where twenty cases of the disease have appeared.——An epidemic of paratyphoid fever is reported at Fountain Green, Hancock County, where more than 100 persons are reported to be ill. The cause of the disease is said to be chocolate ice cream which was served at a church sociable.

Chicago

Sentenced for Sedition.—Dr. Karl F. M. Sandberg, one of the organizers of the Communist Labor Party and a delegate to the national convention, is said to have been sentenced, July 30, to imprisonment for one year in the county jail.

Radiological Association Organized.—The roentgenologists of Chicago met, August 5, at the Hamilton Club and organized the Chicago Radiological Association, electing the following officers: president, Dr. Alonzo C. Tenney; vice presi-

dents, Mr. A. M. Olson and Mr. J. H. Brothers; secretary, Mr. J. W. Ross, and treasurer, Dr. John H. Carpenter.

Physician Fined.—Dr. R. Staats, who has an office in the Chicago Savings Bank Building, is said to have been arrested by the Department of Registration and Education for practicing medicine without a license and to have been fined $25 and costs. Staats was charged with treating cancers with a remedy which he says the United States government was very anxious to secure but for which it would not pay the price demanded by him.

Faculty Appointments in Loyola.—Dr. Charles Louis Mix has been appointed professor and head of the department of medicine, and Drs. Milton Mandel and John M. Lilly, clinical professors of medicine in Loyola University School of Medicine. Dr. Edward L. Moorhead has been appointed professor and head of the department of surgery; Dr. William E. Morgan, professor of surgery and clinical surgery; Drs. John F. Golden and Charles F. Sawyer clinical professors of surgery; Drs. Michael F. McGuire, George W. Hochrein and Frank E. Pierce, assistant professors of surgery; Dr. Philip H. Kreuscher, clinical professor of orthopedic surgery; Dr. George T. Jordan, associate professor of diseases of the ear, nose and throat, and Dr. Walter McGuire, assistant professor of obstetrics.

INDIANA

Sentenced Under Liquor Law.—Dr. Tell C. Waltermire, Shelbyville, is said to have been sentenced to the penal farm for thirty days and to have been fined $100 and costs, for having intoxicating liquor in his possession.

State Medical Board Appointments.—The governor has named Dr. Paul R. Tindall, Greensburg, a member of the state board of registration and examination succeeding Dr. Moses S. Canfield, Frankfort; Dr. William R. Davidson, Evansville, to succeed Dr. Solomon G. Smelzer, Richmond, and Dr. Eldredge M. Shanklin, Hammond, to succeed Dr. James M. Dinnen, Fort Wayne.——Dr. William S. Gott, Crawfordsville, secretary of the board, has been reappointed a member.

IOWA

Hospital Site Purchased.—The North Iowa Lutheran Hospital Association has purchased a site comprising one-half block for St. Luke's Hospital, Mason City, the erection of which is to be undertaken in the near future.

Health Board Reappointments.—At the annual meeting of the state board of health, held in Des Moines, July 22, announcement was made of the appointment of the following members to succeed others: Drs. Walter L. Bierring, Des Moines, Charles S. Grant, Iowa City, and George F. Severs, Centerville. Dr. Grant was elected president of the board.

Iowa Medical Women Honored.—Dr. Jeannette F. Throckmorton, Des Moines, read a paper before the Royal Society of Health and Hygiene in Brussels, recently, on "Fashions and Public Health." Dr. Throckmorton is state lecturer for Iowa and an officer in the U. S. Public Health Service, reserve.——King Alexander of Greece has conferred the order of King George the First on Dr. Blanche Norton, Eldon, a member of the American Committee for Relief in the Near East, who has been treating trachoma among Greek orphans in Anatolia.

KANSAS

New County Society.—Physicians of McPherson County met in McPherson, July 30, and organized the McPherson County Medical Society, electing Dr. John C. Hall, McPherson, president, and Dr. Clinton R. Lytle, McPherson, secretary-treasurer.

Personal.—Dr. John L. Fryer, chief surgeon of the Soldiers' Home, Leavenworth, has been appointed governor and chief surgeon of the Soldiers' Home, Hot Springs, S. D. Dr. Arthur W. Bartel has succeeded Dr. Fryer as chief surgeon of the Soldiers' Home.

Campaign for Funds.—Business men of Rosedale have inaugurated a campaign to raise $32,000 to buy suitable land for administration building, laboratories and lecture halls for the medical department of the University of Kansas. The Kansas legislature appropriated $200,000 for a hospital building at Rosedale in 1919.

State Tuberculosis Association Election.—At the annual meeting of the Kansas State Tuberculosis Association, Prof. Frank Strong of the University Law Faculty was elected president, Dr. Samuel J. Crumbine, secretary of the state board of health, Topeka, and Dr. Lewis H. Munn of Stormont Hospital, Topeka, were made vice presidents; Dr. Charles H. Lerrigo, registrar of the state bureau of vital statistics, Topeka, was elected executive secretary, and Dr. Theodorse C. Mueller, treasurer.

KENTUCKY

Society Reorganized.—Oldham County Medical Society has been reorganized at LaGrange, and Dr. Stonewall J. Smock has been elected secretary.

Personal.—Dr. Benjamin F. Reynolds, Carlisle, has been elected full-time health officer of Mason County succeeding Dr. J. H. Rise, resigned to accept service with the state board of health, Albany, N. Y.——Dr. Elwood Wand, Woodbury, suffered a fracture of the rib and severe contusions, recently, when his car overturned near Bowling Green.

Violation of Liquor Act.—The state prohibition director is reported to have received from Prohibition Commissioner Kramer of Washington, reservations to prohibit the sale of liquor on the prescriptions of three Louisville physicians, Dr. Deddo H. W. Borgman, on account of his failure to keep a record of prescriptions, and the abnormal number of prescriptions issued; Dr. George F. Dwyer, who is said to have prescribed whisky to persons having no known ailment, and Dr. William M. Dwyer, who is said to have prescribed whisky in abnormal quantities, and to have issued 2,000 whisky prescriptions in the first twenty days in March.

LOUISIANA

Resigns from State Board.—Dr. Joseph T. Abshire, Kaplan, for several years a member of the Louisiana State Board of Health, has resigned, ill health and lack of time being assigned as the causes for this action.

New Hospital in Mansfield.—A modern hospital, containing twenty-one rooms and a separate department for colored patients, has been opened in Mansfield by Drs. Thomas J. Fleming and Albert S. Cooper.

Leper Home Transfer Bill Passed.—The federal government is now ready to purchase the leper home from the state for $35,000. The bill authorizing the sale having passed both houses of the general assembly. At present eighty-five patients are held in the institution.

Fight on Tuberculosis.—Tangipohoa Parish Anti-Tuberculosis Society, which was organized recently at Amite, will carry on a systematic campaign throughout the parish for educating the people regarding tuberculosis. Prof. W. A. Siseman was elected president and Mrs. H. P. McClendon secretary of the society.

MAINE

Personal.—Dr. George Holden Coombs, Waldoboro, has been appointed director of the division of venereal disease of the Maine State Department of Health, succeeding Dr. Harry E. Hitchcock, Auburn, resigned.

Bubonic Plague Warning.—Dr. L. Everett D. Bristol, state commissioner of health, Augusta, has issued warnings to the seaport towns of Maine to protect themselves against the entrance of bubonic plague. He emphasizes the need of rat campaigns not only in seaport towns but inland, and the rat-proofing of buildings, cellars, docks, etc.

Health Association Purchases Exhibit.—The Maine Public Health Association has purchased an excellent child welfare exhibit of posters which it will use throughout the state at fairs, conventions, churches and other public gatherings. The exhibit consists of twenty sets of colored posters illustrating child welfare subjects. The exhibit and the supplementary lantern slides and lecture material are supplied by the state department of health free of charge. Information concerning this exhibit may be obtained from W. A. Harris, executive secretary of the association or from the Maine Department of Health.

MASSACHUSETTS

Gift to Harvard Medical School.—The Harvard University School of Medicine received a gift of $350,000 from the Rockefeller Foundation for the development of psychiatry, and $300,000 for the development of obstetric teaching.

Floating Hospital.—On June 29, the Boston Floating Hospital went into commission for the summer under the charge of Dr. Henry I. Bowditch. The scope of the work has been enlarged and a clinic for nutritional cases for children up to 8 years of age is to be conducted in the large open air ward

for the day patients. The boat leaves at 9 a. m. daily, returning at 4:30 p. m.

Personal.—Dr. Harlan W. Angler, Gilbertville, has been appointed associate medical examiner for the Tenth Worcester District.——Dr. Daniel D. Murphy, Amesbury, has been reappointed associate medical examiner for the Third Essex District.——Dr. Samuel H. Calderwood, Boston, has been reappointed a member of the board of registration in medicine.——Dr. Albert S. Hyman, resident physician of the Long Island Hospital, resigned, August 1, to become superintendent of Mt. Sinai Hospital, Philadelphia. At a dance given at Long Island, July 24, in honor of Dr. Hyman, the officials of the institution presented him with a traveling bag.

NEW YORK

Convalescent Camp for Wounded Soldiers.—A farm of 2,000 acres near Towners, in Putnam County, has been donated by Mr. and Mrs. Chester W. Chapin for use as a convalescent camp for worthy soldiers or sailors who have been gassed or wounded.

Psychopathic Ward for State Reformatory.—As a result of a riot and other troubles with the inmates of the State Reformatory for Women, a psychopathic ward has been established at the institution under the supervision of Dr. Meanas S. Gregory and his assistants and nurses from Bellevue Hospital.

Free Radium Treatment.—The director of the State Institution for the Study of Malignant Diseases, Buffalo, announces that free radium treatment for sufferers from cancer will be administered beginning October 15. Any citizen of the United States will be treated free of charge, but preference will be given to residents of New York state.

Appropriations for Buffalo University Medical Deparment.—During the past year the council of the University of Buffalo appropriated approximately $132,500 for the use of the medical department. Of this amount $65,000 was subscribed by the medical alumni; $17,500 has been used to purchase property adjacent to the medical building; $15,000 for improvements in the laboratories in the main building, and the balance is being used for the erection and equipment of new laboratories for chemistry, physiology and pharmacology.

Soldiers Allowed to Stay at Saranac.—A recent order from the U. S. Public Health Service directing the transfer of disabled men from the Home Sanatorium at Saranac Lake met with decided disfavor with the men. Out of 210 men 200 voted to be permitted to remain. The American Legion of New York State then recommended to the Surgeon-General that these men be permitted to remain and it has been assured by the Public Health Service that the order directing the transfer of tuberculous patients at the Home Sanatorium will not be enforced except in cases in which it is requested by the men concerned.

Liner Brings Typhus.—The French liner *La Savoie,* which arrived from Havre, August 2, had on board a case of typhus fever which developed during the trip. The 217 steerage passengers were transferred to Hoffman Island for observation, where two additional cases of typhus fever have developed. These passengers are said to have been inspected by physicians of the U. S. Public Health Service at Havre. The records of the health department show that in 1868 there were 157 deaths from typhus fever in New York City; in 1881 there were 612 cases and 163 deaths; in 1893 there were 473 cases, with 200 deaths; in 1919 there were 12 cases, with no deaths. In recent years there have been only a few cases each year, as a rule, among tenement house dwellers.

New York City

Granted Honorary Degree.—At its recent commencement exercises, Yale University conferred the degree of Sc.D. on Dr. William Darrach, dean of Columbia University College of Physicians and Surgeons, for meritorious services performed during the World War, and for his important publications in the field of scientific research.

Personal.—Dr. Jacob Geiger has been appointed director of the New York Diagnostic Clinics and after a survey of the better American laboratories will reorganize the laboratories of this institution.——Drs. Simon Flexner and Alfred E. Cohn, who have been attending the Red Cross Medical Conference at Geneva, arrived in this country on the *Adriatic,* August 5.

Enlighten Public on Benefits of Radium.—Newspaper reporters were invited to attend the regular weekly radium clinic at the Post Graduate Hospital, August 6. The invitation explained that reporters were admitted not for the purpose of witnessing "marvelous cures" but because the hospital feels "that it is not enough that the public should know that radium treatment is available. It feels that the public should know how the treatment is made." It was further explained during the clinic that the hospital had come to realize that the interests of both the institution and the public could be best served by newspaper publicity. The hospital is now negotiating for the purchase of 1 gm. of radium.

Fewer Cases of Sunstroke Under Prohibition.—Officials of the health department state that one of the effects of prohibition is a decided decrease in the number of heat prostrations reported. On the hottest day of this year, June 11, when the thermometer registered over 90 degrees, there was only one heat prostration reported. On May 5, 1919, with the temperature at 86 degrees four heat prostrations were reported, and on June 3, 1919, when the mercury reached 91 degrees, two deaths and eight heat prostrations were reported. The ambulance board reports that in June, 1919, forty-nine cases of heat prostration were treated in the hospitals, while in June of this year only nineteen cases of this kind were so treated. There appears to be less suffering from the heat in the poorer and more congested parts of the city. It is suggested that this may mean that less money is spent for alcoholic beverages, and more is expended for food, so that people are in better condition to withstand the heat.

PENNSYLVANIA

Personal.—Dr. Clarence R. Phillips, Harrisburg, chief of the tuberculosis dispensary of the state department of health, and for a number of years county medical director of Dauphin County, has resigned.

Fined for Unlawful Practice.—In the case of the Commonwealth versus Mrs. Hattie Shannon, Lock Haven, charged with unlawfully prescribing medicine in Clinton County, the defendant is said to have entered a plea of guilty, July 22, and to have been fined $250 and costs, the total being $375.

College Items.—The campaign for funds conducted by the Woman's Medical College of Pennsylvania in January, 1920, brought in something over $221,000. This included the endowment of nine undergraduate scholarships of $5,000 each; a lectureship on nervous diseases, and $32,000 for the endowment of a chair in preventive medicine in memory of Anna Howard Shaw. The balance is to meet various hospital and college needs. During the session 1919-1920 the U. S. Interdepartmental Social Hygiene Board granted $2,550 for assisting to maintain the salary budget in the department of hygiene. This grant is increased to $4,050 for the session of 1920-1921.——The Medical School of the University of Pennsylvania has received $50,000 by the will of Dr. William C. Goodell for the establishment of a chair of gynecology. The University of Pennsylvania also received from the estate of Jane H. Merrill, deceased, the sum of $5,018 for the endowment of a scholarship in the medical school to be named the James Cush Merrill Scholarship in memory of her son.——Jefferson Medical College has purchased for about $100,000 a plat of ground on which to erect a nurses' home in connection with the college hospital. The property adjoining the college building has also been purchased for $30,000 and presented to the college as a gift. A country convalescent home, free of encumbrance, and valued at about $20,000 has been deeded to the Jefferson Hospital. This college has also received three gifts of $5,000 each of which the income of one is to be used for the orthopedic department and of the second for the department of pediatrics. The third gift is to establish a scholarship in medicine.

Philadelphia

Camp for Tuberculous Children.—Health Director Furbush has asked for an appropriation of $4,000 to maintain the camp for tuberculous children at Chestnut Hill, during the summer. The camp has been in operation for a month and has at present in residence forty children aged from 3 to 10 years.

Personal.—Dr. G. Ernest Robinson and Dr. John P. Turner were elected associate chief surgeons of the Frederick Douglass Hospital, July 30.——Dr. James P. Sands has been provisionally appointed senior medical officer, and Miss Mabel A. M. Bond, occupational therapist, at the Philadelphia Hospital for Mental Diseases.

Hospitals to Treat Ex-Service Men Free.—Ninety-nine hospitals throughout the state are to cooperate in giving treatment to disabled ex-service men through arrangements planned by the Americanism Commission of the American

Legion. The announcement of this plan to give medical aid free to members of the legion was made by Edgar F. Baird, State Americanism chairman. Plans have also been made by the commission whereby care and attention will be given to service men who have been released from hospitals and sent home. Interstate cooperation is to be practiced also, to enable men discharged from medical institutions here to receive work and attention in other states.

CANADA

Committees Formed to Combat Disease.—Dr. Gordon Bates, Toronto, has returned from a month's trip through western Canada. His visit was on behalf of the Canadian National Council for Combating Venereal Disease. He attended the annual meeting in Vancouver and reports the organization of provincial committees in Manitoba, Saskatchewan and Alberta, as well as at points in Ontario and Nova Scotia. In Ontario committees have been organized at Toronto, Hamilton and Brantford.

Personal.—Dr. Seymour Hadwin, chief pathologist in charge of the biologic laboratory, health of animals, department of agriculture, Ottawa, has resigned to accept a similar position in the reindeer investigations of the Bureau of Biological Survey, U. S. Department of Agriculture, with headquarters at Unalokleet, Alaska.——Dr. Alexander Primrose has been selected as the new dean of the faculty of medicine of the University of Toronto, succeeding Dr. C. K. Clarke, resigned.

Drug Addicts in Canada Decreasing.—Dr. John A. Amyot, Toronto, deputy minister of public health, reports decided success in the efforts of the department of health to stamp out the opium evil in Canada. The department has also been successful in breaking up several attempts to form an opium ring in the Dominion. The opium and narcotic drug act, passed at the last session of Parliament, will be put into force about September 1. This act requires that all druggists, whether wholesale or retail, and all manufacturers shall keep a record of their receipts, together with a record of the quantity manufactured and a record of their sales.

Canada's Work for Disabled Soldiers.—The Department of Soldiers' Civil Reestablishment has been giving medical services to all disabled soldiers of the Canadian and British forces resident in Canada or the United States. Patients suffering from permanent disability or from recurrence of a disability incident to military service, exsoldiers suffering from unpreventable illness within a year after discharge, and men undergoing industrial training are the special beneficiaries of the department. More than 7,500 patients are now receiving hospital services, approximately 1,850 of these being in tuberculosis hospitals and 770 in hospitals for mental diseases. The department operates twenty-nine general hospitals, eleven tuberculosis sanatoriums and two mental hospitals, and has definite arrangements with fifty-eight other hospitals and sanatoriums. Up to Nov. 1, 1919, more than 7,500 had received vocational training, 19,125 were then in training, and more than 4,000 had been provided with artificial limbs.

GENERAL

Gift for Medical Education.—During the year, Mr. John D. Rockefeller gave an additional $20,000,000 to the general education board to be used in improving medical education in the United States; the income and principal to be distributed within the next fifty years.

Fellowships for Negro Physicians.—Six fellowships for negro physicians have been provided by Mr. Julius Rosenwald of Chicago, amounting to $1,200 each. These are to pay the expenses of qualified negro students doing graduate work in the fundamental medical sciences.

Demonstration of Antiplague Work.—Antiplague work is being demonstrated by the U. S. Public Health Service in cooperation with state health authorities at Galveston, Texas. Surgeon-General Cumming and Assistant Surgeon-General McLaughlin were in attendance. Health officers from all the gulf states were present.

Gifts for Courses in Dietetics.—The will of the late Capt. Joseph Raphael de Lamar of New York provides that his residuary estate be equally divided among the medical schools of Harvard, Columbia and Johns Hopkins Universities; these funds to be used for the study of dietetics and the advancement of preventive medicine.

Prescription Blank Limitation Held Void.—A ruling was made, August 6, by Federal Judge Cochran at Lexington, Ky., holding void National Prohibition Commissioner Kramer's prescription blank limitation for physicians. This decision will make it possible for a physician to issue practically an unlimited number of liquor prescriptions so long as he has a permit. Means of revoking the permit, if the privileges are abused, are provided by law.

Venereal Disease Survey.—Surveys have just been completed by the U. S. Public Health Service of medical, legal, educational and general cooperative measures in force for combating venereal diseases in 444 of the larger cities of the United States. Each community was graded on a basis of a possible 1,000 points. In conducting the survey, information was obtained in answer to approximately 300 questions regarding local conditions. In a great majority of cities venereal diseases were alarmingly prevalent.

Site Selected for Leprosarium.—The Public Health Service has recommended the acquisition by the United States government of the leprosarium at St. Gabriels, Miss. At a recent session of the Mississippi legislature a bill was passed authorizing its transfer to the federal government. Surgeon-General Cumming made an inspection of the property and found it well adapted for the treatment of leprosy. There are at present 100 beds at St. Gabriel. Should the government take it over, however, the capacity will have to be increased.

Illegal Practitioners Exposed.—Through the information collected at the headquarters of the American Medical Association, the Council on Medical Education is in position to expose those practicing either in this country or abroad who may have illegally obtained diplomas from American medical schools. One Victor Richard Ratten was found to be practicing at Hobart, Tasmania, on the basis of a diploma from the Harvey Medical College of Chicago which was shown to have been obtained in an irregular manner. Information also collected exposed the illegal character of the diploma and license held by one Philip Dyment, who was licensed in Georgia in 1914 and in California in 1915. Dyment's Georgia license was recently revoked and action against him is pending in California.

Conference on Venereal Disease.—The All-American Conference on Venereal Diseases under the joint auspices of the U. S. Interdepartmental Hygiene Board, U. S. Public Health Service, American Red Cross and American Social Hygiene Association will be held in Washington, D. C., the second week in December. This is the first of a series of regional conferences authorized by the International Health Conference held at Cannes, France, last year. Representatives from the Western Hemisphere, together with recognized authorities from Europe, will attend the gathering with the object of reporting on, comparing and evaluating present procedures for the control of venereal diseases. The organization is in the hands of an administrative committee composed of four cooperating associations. This committee consists of Dr. Thomas A. Story, Dr. C. C. Pearce, Dr. Livingston Farrand and Dr. William F. Snow.

Bequests and Donations.—The following bequests and donations have recently been announced:

Mount Sinai Hospital, New York City, $5 000; Montefiore Home, New York City, $2,500, by the will of Samuel Hass.

Homeopathic Medical Society of the County of Kings, Brooklyn, a donation of twenty city lots at Freeport Heights for the advancement of homeopathy in that section of the city, by Dr. and Mrs. Otto H. Rohde, Brooklyn.

Presbyterian Hospital, Chicago, Texas oil stocks valued at more than $2,000,000, by the will of George B. Harris, Chicago.

Home for Crippled Children, Atlantic City, N. J., $2,000, by the will of Elizabeth T. Kensil.

National Stomach Hospital, Philadelphia, $5,000, and Methodist Hospital and Home for Incurables, each $1,000, by the will of Mary J. Kensil.

Jewish Hospital, Philadelphia, $2,000, by the will of Simon I. Cohn.

Southampton L. I. (N. Y.) Hospital, about $40,000, the proceeds of a benefit.

For the construction of a tuberculosis sanatorium at Ottawa in connection with the City of Ottawa Sanatorium, a donation of $100,000 in Victory bonds, by Mr. and Mrs. E. C. Whitney.

National Sanatorium and Hospital for Sick Children, Toronto, Ont., $500 each, by the will of Alexander Patterson, Toronto.

LATIN AMERICA

Influenza Fund in Costa Rica.—The government of Costa Rica has provided a fund of 50,000 colones (about $23,500) to combat epidemics of influenza.

Retirement of García Valenzuela.—The professor of chemistry at the medical school at Santiago, Chile, Dr. A. García Valenzuela presented his resignation and retired from the faculty this year.

Prize for Work to Be Published by Medical Journal.—The *Revista Médica de Chile* is published by the Santiago

Medical Society, and an annual prize, to be called the Guzmán Cortés prize, has been founded to be given for the best scientific work published in the *Revista* during the current year.

Cuban Professors Go Abroad.—Dr. Arturo Garcia y Casariego, assistant professor of pathologic anatomy and histology of the School of Medicine of the University of Havana has been designated by the government to make a trip abroad to study matters relating to the teaching of these subjects.——Dr. Gillermo Díaz y Macías, professor of practical pharmacy, has also been commissioned by the Cuban government to study the organization of pharmacologic laboratories abroad.

FOREIGN

Prize for Work on Hygiene.—Dr. L. Muñoz of Madrid has been awarded the Garcia Faria prize of the Spanish Engineering Institute for his work entitled, "Sanitation and Hygienization of Spain."

No More Outings for Vienna Children.—A Danish weekly states that owing to the scarcity of coal, the children's trains taking Vienna children to the Scandinavian countries have had to be discontinued, for the present, at least.

Palestine Medical Association.—The objects of the Palestine Medical Association are to strenghten and coordinate the medical forces of the country, to collaborate with physicians outside Palestine to give the medical work a national as well as a humane value, to prepare a native soil for Jewish scientists and to help in the creation of the Hebrew University.

Medical Journal in Palestine.—The first medical journal in Palestine has made its appearance. It is called *Harefooah,* meaning medicine. It is published quarterly by the Jewish Medical Association of Palestine, and its first issue is dedicated to the memory of the Jewish physicians and nurses who laid down their lives during the years of upheaval in the Holy Land.

Alvarenga Prize at Berlin.—The topic for competing articles for this prize, in 1921, is the question whether lethargic encephalitis has a place apart by its etiology, clinical manifestations and pathologic anatomy. The award is 2,000 marks, and the competing articles must be in the hands of the president of the Hufeland Society, Professor Umber, Kurfürstendamm 45, Berlin, before April 1, 1921.

International Congress of Comparative Pathology.—The first congress of this kind was held at Paris in 1912 and the second meeting was appointed for Rome in 1914. The war caused its postponement but plans are now under way for the second congress to be held at Rome next spring. Prof. E. Perroncito of Turin is chairman of the committee of organization, and the secretary is Dr. M. Levi della Vida of the Istituto d'igiene, Via Palermo 58, Rome.

Cremation Before Death.—Dr. Matsushita introduced a bill supported by twenty-three members of the Japanese diet which provides that bodies must be kept seventy-two hours after death before burial or cremation instead of twenty-four hours, as the present law provides. He quoted a cremator from Kyoto who stated that he knew of six cases in which the supposed dead had screamed as the crematory fires reached them. The bill is strenuously opposed by Japanese physicians, who state that this is absurd and a direct insult to their profession.

The International Urological Society.—The *Présse médicale* announces that the officers of this society have now been chosen, and the first meeting is to be held at Paris, July 7-9, 1921. The honorary presidents are Guyon of Paris and Watson of Boston; president, H. Fenwick, London; vice presidents, Alessandri of Rome and Keyes, Jr., of New York; secretary, Desnos, and treasurer, Pasteau, both of Paris. The committee in charge of the meeting is headed by Legueu of Paris, Verhoogen of Brussels and Brongersma of Amsterdam. The three questions to be discussed are nephritis with uremia; remote results of trauma of the urethra and pyelography.

Proposed Reforms in the Medical Curriculum in Germany.—Delegates from the different medical faculties in Germany met at Halle early in the year to confer on the reforms to be introduced in the teaching of medicine. The preliminary report of the proceedings is quoted in the *Münchener medizinische Wochenschrift.* A single standard of a twelve semester course is demanded, five of the semesters to be devoted to preclinical studies. In teaching the natural sciences, the special needs of the medical students shall be borne constantly in mind. The number of hours devoted to anatomy shall be less than at present, but the two-semester course in anatomic dissection shall be retained. Before entering on the clinical studies, two months of test service in attendance on the sick shall be compulsory. During the clinical semesters, ten months of the vacations shall be devoted to practical training as assistant to a physician, *Zwangsfamulieren.* This can be arranged in hospitals and maternities where the chief is connected with a medical school. Examinations must be better managed so as to weed out incompetents. The foregoing requirements are now under discussion by the organized profession.

CORRECTION

Medical and Surgical History of the War.—In The Journal, July 24, page 255, is a brief statement about the Medical History of the War. This is substantially correct, with the exception of the list of authors of the different volumes, given in small type underneath the second paragraph. While the names of some of the members of this board are identical with the names of the prospective editors of the different volumes, the actual editors of some of the volumes (which will not be ready for the press inside of two or three years from date) have not yet been definitely determined. The manuscripts of the different volumes are in the hands of the present division chiefs of different sections of the Surgeon-General's Office, but the shaping up of the material of these volumes for the press, being a matter of time, may fall into the hands of different persons from those listed.

Government Services

Chamberlain Succeeds Ashburn on Hygiene Board

Col. Weston P. Chamberlain, M. C., U. S. Army, has been appointed a member of the United States Interdepartmental Social Hygiene Board, succeeding Col. Percy M. Ashburn, M. C., U. S. Army, who has been ordered to a field command.

Army Medical Examinations

Announcement has been made that the results of the examinations of civilian physicians for entrance to the Army would not be available for several months. General Ireland says that returns in a considerable number of the examinations have already reached Washington and that the grades of the applicants were far above the average.

Arrangements for General Gorgas' Funeral

Arrangements for the funeral of the late Major-Gen. William C. Gorgas, Surgeon-General, U. S. Army, were announced August 6, by the War Department. On the arrival of the U. S. Army Transport *Pocahontas* at Hoboken, the body was received with military honors and taken to Washington where a military escort conducted it to the Church of the Epiphany, 1317 G Street N.W. There it will lie in state until August 16, at 2:30 p. m., when the funeral services will be held. Interment will be in Arlington National Cemetery with full military honors. The grave of the former Surgeon-General will be near that of Major Walter Reed, who as an Army medical officer demonstrated the transmission of yellow fever by the stegomyia mosquito. It seemed most fitting to Army officials in charge of the arrangements that the remains of these two officers who achieved so much in the suppression of yellow fever should rest in close proximity.

Health Conditions in the Army

Malaria increased during the first six months of 1920 as shown by statistics collected at the Surgeon-General's Office. During the war, when intensive antimalaria cantonment work was being carried on, there was a marked decrease in the admission rate for malaria as compared to the rate in the five years immediately prior to the war, 1911-1915. But since the close of the war there has been another rise. The records show that many patients treated for malaria in the Army relapse shortly after return to duty, and the Surgeon-General points out that, while quinin is rightly regarded as a specific in the treatment of malarial fevers, rest is an important adjunct in the cure of all acute cases.

An epidemic of paratyphoid fever has broken out at Hopewell, Va., a small community located just outside the boundaries of Camp Lee. Fear that the contagion might spread to the troops led to the dispatching of an Army medical officer to conduct an investigation.

Foreign Letters

MEXICO CITY

(*From Our Regular Correspondent*)

Aug. 1, 1920.

Plague and Yellow Fever

So far as plague is concerned, the improvement of conditions in Vera Cruz continues, as only two new cases have been reported in the last two weeks. From the beginning of the epidemic on April 19 to July 30, there have been fifty-six cases, with thirty-four deaths; at present four patients remain in the pest-house. Some 50,000 persons have been vaccinated against plague, and antirat measures are being carried out actively. Among the many rats trapped, some were found infected by the plague bacillus. During the last days, however, none of the rodents examined have shown signs of plague infection. The personal efforts and advice of Dr. Carl Mitchell of the United States Public Health Service have been of great assistance in the antiplague campaign, and both the citizens and the public health authorities have expressed their thanks to him. The newspapers have dwelt on the fact that the first shipment of antiplague vaccine received was taken to Vera Cruz from New Orleans by an American destroyer, which showed the earnest desire of the American government to be of assistance.

In Tampico a case of plague occurred which was discovered only after the patient's death. Through the examination of the gland juice and the guinea-pig inoculation by Dr. A. Gochicoa of Tampico, it was ascertained that the case was of plague and the necessary measures were taken. As several days have elapsed without any other cases being found, and as no case of rat plague has been discovered, it is assumed that the patient went to Tampico from Vera Cruz and died. In view of the thorough disinfection of his residence, it is confidently expected that the disease will not spread in Tampico.

Vera Cruz is now threatened by an epidemic of yellow fever, which had been absent for more than ten years. According to newspaper reports several cases of "black vomit" have occurred. The permanent yellow fever service of Vera Cruz has received instructions to enforce thoroughly the isolation of patients; to investigate the presence in the patient's blood of Noguchi's leptospira in order to demonstrate Pfeiffer's phenomenon, which would confirm the diagnosis according to Noguchi's view; and also to test the curvative value attributed to neo-arsphenamin by Dr. de Beaurepaire and other Brazilian physicians (THE JOURNAL, Sept. 27, 1919, p. 1020), which seems probable, yellow fever being a spirillar disease. The Instituto Bacteriológico Nacional has been instructed to proceed with the preparation of a vaccine made from sterile cultures of leptospira. This is feasible owing to Dr. Noguchi's having presented the laboratory in his recent visit to Mexico with some culture tubes of the germ, which he isolated from patients in the city of Mérida. It would seem advisable that while the above mentioned laboratory studies are being carried out, Vera Cruz should be considered as yellow fever infected, and nonimmune persons should abstain from visiting that city, or if they do so they should take all necessary precautions.

Bacterial Vaccines Measured by Weight

In connection with the Vera Cruz epidemic, the city council of the City of Mexico requested Drs. Cervera and Perrín to prepare in their private laboratories some plague vaccine. Dr. Perrín studied carefully the methods in use in different laboratories for measuring the dosage of the vaccine, and decided to adopt the one used in the Instituto Oswaldo Cruz of Brazil, where antigens are measured by weight. The vaccines delivered by Perrín to the city authorities are measured at the rate of 25 decimilligrams of bacterial bodies desiccated at 100 C., to each cubic centimeter. This method is considered accurate, and permits graduation of dosage in accordance with weight and other individual requirements of the patient.

LONDON

(*From Our Regular Correspondent*)

July 24, 1920.

Immediate Disinfection in the Prevention of Venereal Disease

A deputation from the Society for the Prevention of Venereal Disease submitted to Dr. Addison, minister of health, a resolution that, as the ministry and public bodies have declined to provide the means of delayed disinfection against venereal disease at ablution centers, he should instruct all pharmacists to sell such means of immediate disinfection as are approved by the ministry. The society recommended that the ministry should take steps to educate the public in the hygiene of immediate self-disinfection. Dr. J. H. Sequeira stated that the number of new male patients, mostly ex-soldiers suffering from syphilis, treated at his clinic at the London Hospital in 1919 was 90 per cent. more than the number treated in 1918. Sir Archdall Reid said that 40,000 men passed through his hands during the war, and up to 1917 there was much syphilis. A policy of immediate disinfection was then advocated among the troops, the result of which was that venereal disease had virtually disappeared. A limited number of public bodies have adopted the policy of the city.

In replying, Dr. Addison said that they did not know whether venereal disease was increasing or not, because there were no scientific data on the point. They knew that there was a great increase in the patients attending the clinics. To justify the ministry in issuing instructions to local authorities and to the public, and to avoid the conflict of opinion, an overwhelming case would be necessary. They would have to contend with a great wave of public feeling which would suggest that the government was encouraging vice. The suggested policy might be successful if thoroughly and scientifically applied. But they could not deal with a population of 40 millions on the same basis as that on which Sir Archdall Reid, with iron discipline at his command, could deal with 2,000 soldiers at one time. That was quite different from placing something at the disposal of every citizen with instructions as to use. To adopt the proposal of the council toward the population as a whole—boys and girls, men and women—would be held, he thought, with material ground, to encourage people to run risks. Last year he appointed a strong body of men, who reported to him that certain drugs, if properly applied, were efficacious, but if not, could not be relied on. It also reported that their use would give a false sense of security, and encourage the taking of risks. In spite of the most careful instructions, the issue of packets to soldiers was followed by infection in those who used them. Two experimental centers for disinfection against venereal disease had been established under the Manchester corporation, and so far the result was encouraging. He was watching this experiment with anxiety. The ministry would take any practical measure it could thoroughly recommend for the prevention and treatment of the disease, and was quite prepared, if certain of good results, to face novel methods.

A National Collection of Type Cultures

The Medical Research Council is about to establish a storehouse of bacteria for the use of research workers. It is often difficult for them to obtain "authentic strains" of various bacteria and protozoa. The Lister Institute did much in the

past from its own private collection, but British workers had often to depend on the courtesy of colleagues at home or abroad. The Pasteur Institute in Paris, for example, had a collection maintained by M. Binot. Another collection, on a commercial basis, existed at Prague, from which city it has been transferred to the serophysiologic institute of Vienna. In America the Museum of National History in New York has kept a culture bureau during the last eight years. The new collection will be kept at the Lister Institute. The scheme will be under the general direction, on behalf of the Medical Research Council, of Dr. J. C. G. Ledingham, a member of the staff of the Lister Institute, while Dr. R. St. John Brooks and Miss M. Rhodes have been appointed curator and assistant curator, respectively. It is proposed to collect and maintain bacterial and protozoal strains of medical, veterinary and economic importance. Subsidiary researches on the viability of bacteria in artificial mediums will be undertaken; the staff will also help in identifying strains received from workers at home and abroad. Cultures will be supplied to workers at home or abroad, a small charge being made to cover cost and postage. It is already possible to supply the commoner types of human infection strains. A catalogue will be prepared in due course.

The War Collection at the Royal College of Surgeons

Progress is being made with the arrangement of the extensive war collection at the Royal College of Surgeons, previously described in The Journal. At present, 2,689 specimens have been received. Fifteen hundred have been made into preparations, mounted, described, and placed on exhibition. Several hundred more have been examined and dissected, and are awaiting the means of being displayed. In its final form this magnificent collection, which is to be housed at the college, will consist of 2,000 "wet preparations" illustrating the nature of wounds and diseases to which soldiers are liable under modern conditions of warfare, 300 dried preparations illustrating the character of bone injuries, drawings made by artists of clinical and pathologic subjects, particularly those done by Mr. A. K. Maxwell in France, roentgenograms from military hospitals, and casts models made at special hospitals. Prof. Arthur Keith, Professor Shattock, and Mr. Beadles have handled and arranged this vast collection.

Mr. Barker Again

The attempt to obtain for Mr. Barker, the bonesetter, a medical degree from the Archbishop of Canterbury, by the exercise of an archaic privilege, has been criticized in a previous letter. The archbishop, replying to a petition signed by more than 300 past and present members of Parliament, considers that such a degree would not be of any real value to Mr. Barker, and expresses a hope that some means may be found of marking the public appreciation of Mr. Barker's eminent services to sufferers. He adds that some of those who signed the petition were under the impression that by holding a Lambeth medical degree *honoris causa,* Mr. Barker would become qualified to practice, but that this is a mistake. The degree does not give the right to register as a medical practitioner.

The secretary of the memorialists is now of the opinion that a better and more adequate way of rewarding Mr. Barker would be to procure for him a public title. The lay press, which leaves nothing to be desired in its efforts to boom Mr. Barker, now says that he is something far greater than the registered practitioner. This reminds one of the story of a certain fox. In an interview, Mr. Barker, said: "I am naturally disappointed at the decision, not for my own sake, but for the cause of manipulative surgery. I had hoped that the possession of the Lambeth Medical Degree might have invested me with the necessary official status to demonstrate my methods in the surgical schools of this country. I firmly believe that the diffusion of a profounder knowledge of manipulative surgery throughout the profession would enable its members to cope far more effectively with many physical disabilities which are the cause of so much unrelieved misery today." This, to say the least, is rather curious, for although the press seems always to be fully at Mr. Barker's disposal in advertising his "marvelous skill," he has never at any time given the slightest inkling of his methods. If he is so anxious to make them known, why does he not publish them? If he wants to demonstrate them there is nothing in the world to prevent him from doing so now. If only out of curiosity he could easily get a large medical audience at any hall, but he evidently prefers silence. Omne ignotum pro magnifico!

PARIS

(From Our Regular Correspondent)

July 23, 1920.

International Congress of Surgery

The fifth International Congress of Surgery was formally opened, in Paris, July 19, under the presidency of Dr. W. W. Keen, emeritus professor of surgery, Jefferson Medical College, Philadelphia. Dr. Keen, in his presidential address on "Some Ideas Which Physicians Should Defend," spoke of the professional conscience, maintaining that physicians were exercising a profession and not a trade. When one works at a trade it is always possible to estimate the value of the services rendered, but the services of our profession can neither be weighed in a balance nor measured by figures. We should always maintain our high ideals and we should not seek to obtain profit from our discoveries. A new remedy, a novel fracture apparatus, an original method of suture and an innovation in treatment should be as free to all as the air we breathe. A fracture apparatus invented in Philadelphia should be free to be employed in Paris or Tokyo, on the Cape or in Buenos Aires. A new remedy should be available to physicians and patients in all parts of the world. Whether the patient be in Philadelphia, Paris or London, he should not be denied, even for a single day, the benefit of any measure which may ward off death or invalidism. But what was particularly interesting in Dr. Keen's address was his account of the results obtained in the United States in the campaigns against venereal diseases and alcoholism. Speaking of prohibition, he said that, despite the short period of time which has elapsed since it went into effect, the movement has brought appreciable results. To be sure, private stocks are not yet exhausted, the measures of enforcing the act are still defective and those people who are willing to buy alcohol even at the very high prices now prevailing have no difficulty in obtaining a supply. The arguments which can be drawn from the results obtained so far are nothing if not convincing. Dr. Keen quoted the experience in five large hospitals and a large municipal lodging house of New York: in the latter, the admissions during the first two months of 1919 numbered 22,350; during the same months in 1920, under prohibition, these figures dropped to 4,607. In Philadelphia, the house of correction, which before the days of prohibition harbored more than 2,000 vagabonds and drunkards, has had an average population of from 400 to 500 since the prohibition act went into effect. During the first four months of 1920, the savings realized as a result of the decreased number of employees and the accompanying reduction in expenditures for wages, food and other expenses were enough to meet all the outlays for public charity during the balance of the year. In the first half of 1919, when alcohol was freely obtainable, there were 17,114 arrests for drunkenness in Philadelphia; under war prohibition this number dropped to 6,509 in the following six months, a decrease of

62 per cent. Dr. Keen concluded that experiences on a scale such as that furnished by millions of human beings in the United States and in Russia during the first years of the war are absolutely decisive. Among a people where total abstinence is practiced there is less drunkenness, less crime, less disease, fewer accidents, less expense to city and state. Under these conditions, is it not our duty, considering ourselves as a corporation, to conduct an active campaign in favor of absolute prohibition, thereby bringing to pass the resultant happy consequences from the point of view of health and public welfare?

Opposition to Free School Books

Under the law of June 16, 1881, primary public instruction in France is free, and although this does not apply to the accessories of education, such as books, copy books, etc., the municipal councils of most of the large cities have extended it to include these school supplies by voting special appropriations for the purpose. Dr. L. Meyer, medical inspector of schools, recently called attention to the dangers which are entailed by free distribution of school books. From the standpoint of hygiene alone, it may be readily conceived that books which pass from hand to hand and which are carried by the pupils to their homes, in fact, almost everywhere, may harbor great numbers of micro-organisms. Dr. Meyer suggested as a solution that at the beginning of the school year the parents pay the price of the books and these will then become their property.

League of Red Cross Societies

The medical council of the League of Red Cross Societies, of which Drs. Roux and Calmette of the Pasteur Institute of Paris are members, has just terminated its work in Geneva. Among the suggestions adopted by the council, the following are worthy of note: a recommendation to continue support of the league's campaign against typhus and other contagious diseases; grants and subsidies to laboratories; the creation of child welfare centers and continuance of researches on rickets; organization of an intensive campaign against venereal diseases by regional conferences and scientific and moral propaganda; the establishment of numerous tuberculosis dispensaries, open air schools and sanatoriums. The council approved, in addition, the antimalarial war in Spain, the public health program and investigations in Roumania and Slovakia; it recommended complete international registration of vital statistics by uniform methods, and last, the inception of an international journal of public health to serve as a special medium for medicine and hygiene.

Death of Professor Guyon

Dr. Felix Guyon, formerly professor of the Paris medical faculty, has just died at the age of 89. He was born at Saint Denis (Réunion Island), July 21, 1831, studied at the Nantes school of medicine and graduated M.D. at Paris in 1858. He received the nomination of physician of Paris hospitals in 1862, and of professor agrégé in the following year. In 1867, Dr. Guyon became a member of the staff of Necker Hospital and retained this position until his retirement. In 1877, he was made professor of surgical pathology, resigning from this chair in 1890 to assume the newly created chair in clinical urology, in which he expounded the remarkable teachings that made him known throughout the medical world. Professor Guyon joined the Académie de médecine in 1878, and in 1892 he was elected a member of the Académie des sciences. Professor Guyon was the author of numerous medical works, the best known of which are his clinical lectures and his atlas on diseases of the urinary organs, and his clinical lectures on surgical diseases of the bladder and prostate gland.

BERLIN

(From Our Regular Correspondent)

July 5, 1920.

The Infant Mortality Rate

During the war and the revolution, the public health was greatly affected. The infant mortality rate remained within moderate bounds in the first years of the war, being 16.4, 15.4, 13.6 and 15.5 per cent. in 1914, 1915, 1916 and 1917, respectively, for all Germany. Scarlatina, diphtheria and typhoid fever were widespread, while cholera and typhus were moderately prevalent. As early as 1916, the mortality rate of tuberculosis in the civil population showed a considerable increase. In Prussia, for instance, the number of deaths from tuberculosis in women rose from 25,000 in 1914 to 30,000 in 1916; this increase was further augmented in 1917, when 39,000 women died of the disease. In Leipzig the tuberculosis mortality rate was 91.6 per cent. higher in 1918 than in 1914. A frightful increase occurred in the mortality rate of children in 1917, the increase as compared to the rate for 1913 being 2.4 per cent. in infants, 49.3 per cent. in children aged 2 to 6, and 50 per cent. in children aged 6 to 15; in round numbers 50,000 more deaths occurred in children under 15 years of age.

Tuberculosis

To counteract the increase of tuberculosis, a national tuberculosis act is contemplated, for which Professor Kayserling makes the following basic demands: 1. The apprehension, by means of compulsory notification, of all tuberculous patients who may possibly become sources of dissemination, in the first instance all those having an infectious form of pulmonary tuberculosis. 2. Establishment of public dispensary clinics where all cases of tuberculosis are to be reported. 3. Provision of free sanatorium and domiciliary treatment for all patients with advanced pulmonary tuberculosis who endanger their surroundings. 4. Elimination of all infectious tuberculous workmen from industries in which they come in constant contact with children. 5. General stipulations regarding the necessary preventive measures in industrial and community life. It should be stated that some specialists in public hygiene took certain exceptions to these demands, but the draft of the law has not yet been completed.

Venereal Diseases

After the revolution, discipline was relaxed and many soldiers infected with venereal diseases escaped from supervision. As a natural consequence, venereal diseases, which had been uncommonly prevalent during the war, increased considerably. The diagnostic clinics established by the national insurance institutes in 1916 wrought beneficent results by furnishing expert advice to venereal patients free of charge. By February, 1919, the number of these diagnostic clinics had grown to 125. The important position which this system of supervision and care of venereal diseases had attained may be sensed by the number of patients at the clinics: these increased from 4,839 in 1916 to 19,140 in 1917, and 33,000 in 1918. Treatment is generally precluded at these clinics, in conformity with the wishes of the great majority of physicians, for it was feared that this would deter many from seeking advice. Anxiety over a possible decline in the private practice of physicians played a subordinate rôle. Despite the success of the clinics, it is considered imperative that venereal diseases be fought in more intense fashion by national legislation. A measure which was recently introduced in the lower house contains the following essential stipulations.

Syphilis, gonorrhea and chancre are considered venereal diseases in the sense of this act, and every individual affected with any of these diseases is compelled to submit to treat-

ment by a registered physician. Parents and guardians are in duty bound to furnish medical care to their infected wards. The proper authorities may force persons who are seriously suspected of disseminating the disease to submit to examination at the hands of an authorized physician, to produce a certificate of health, and if conditions warrant, to adopt measures of treatment. Any one who despite knowledge of his infection takes an opportunity to transmit his disease is liable to imprisonment for as much as three years, or to more severe punishment, if circumstances warrant. The prosecution of married and affianced individuals will be undertaken only on the initiative of the injured party. Only physicians registered in Germany are permitted to treat venereal and genital diseases; absent treatment is positively prohibited. Quacks who advertise publicly in print, by illustrations or exhibitions, even in veiled form, are liable to punishment; the same with physicians who tender their services in a sordid manner. Physicians are in duty bound to instruct their patients regarding the nature and infectiousness of the disease and to furnish an official memorandum. If the patient discontinues treatment or his occupational or personal relations prove to be particularly dangerous to others, he may be reported by the physician of a diagnostic clinic. Public clinics must be established throughout the country in accordance with definite regulations to be issued later. Public health officials and employees are enjoined to secrecy. The advertising of remedies, apparatus and methods of treatment of venereal diseases, except to physicians, druggists or authorized trade channels or in professional medical and pharmaceutic journals, is a punishable offense. Specially severe penal regulations are prescribed for the protection of children against infection by wetnurses, and vice versa. The exhibit and advertising of articles for the prevention of venereal disease, provided this is not done in a manner offensive to morals and decency, are permissible.

The great majority of physicians are opposed to compulsory notification of venereal diseases. The Berlin dermatologic society, while opposing compulsory notification, thinks it is necessary to give physicians the right to make a suitable report in cases in which there is great danger of transmission of the disease, and this attitude has been adopted by the Berlin medical society and other professional organizations. Naturally, the endeavor to dam the sources of venereal diseases by rigid regulation of prostitution plays an important rôle in the campaign. The Deutsche Gesellschaft zur Bekämpfung der Geschlechtskrankheiten recommended in 1918 that all regulations and orders regarding certain women under control of the morality police be repealed and that the morality police be converted into a purely social and sanitary office.

Public Health Activities in the New Government

In public health organization the revolution produced complete innovation, especially in Prussia, where the medical section of the Prussian ministry was transferred to the new ministry of social welfare. The sphere of activity of this ministry, which was formed from parts of five other ministries, is divided into three divisions, namely, social welfare, housing and colonization, and child welfare. The division of social welfare has taken over all the duties of the old medical section, especially the sanitary police, bath police, prostitution police, food inspection, medical matriculation examinations (formerly under the ministry of education), sanitary inspection of university clinics and hospitals, occupational hygiene, public food supply (medical phases), veterinary inspection, hygiene of mining and transportation. The government refused to grant the request of many physicians to establish a Prussian ministry of health with a physician at its head, and the same is true of a national ministry. The new ministry of labor has reorganized the section of medical charities and hospitals, which is designed to serve especially for disabled soldiers, more particularly in settling pension claims. For this purpose twenty-five general and 360 local districts have been established, and these require the services of about 1,100 physicians. Many of the extant hospitals have been converted into national hospitals, and, on the average, four of these are to be found in each general district. The professional personnel of the service receives advanced training in medicine at the Kaiser-Wilhelms Akademie für ärztlich-soziales Fürsorgewesen, formerly the army medical school.

VIENNA

(From Our Regular Correspondent)

July 16, 1920.

The Public Hospital Bill in Austria

The Austrian "National Convention," which represents our parliament at present, is busy with what is termed the "Hospital and Medical Bill." Among the paragraphs of general interest apart from those pertaining to the administration and financial reconstruction of these institutions, the following are noteworthy: A patient cannot be operated on without his verbal or, in certain cases, written consent. If he is under 18 years of age, his legal representative—parent, relative or legitimate guardian—must give his consent. If the operation is of such a nature that its postponement would be dangerous to the life of the patient, the operation may be performed without the formal consent. The chief surgeon of the ward or of the institute decides as to the necessity of such an urgent operation, and is responsible for his decision. A postmortem examination on patients who die while under treatment in a hospital will be performed except when a contrary decision is especially expressed by the family of the patient or by himself during his lifetime. But such a wish cannot be complied with in cases of obscure or uncertain diagnosis, or when it is necessary owing to an operation's having been performed; naturally, necropsies for forensic or sanitary reasons do not fall under this paragraph. These will be performed without paying attention to any other wishes. Two resolutions were passed by the committee studying the bill, as an amendment to it: The government is advised to find some means for enabling the medical staff and the nurses to be paid at a rate appropriate to the rise of prices, and secondly to find means for the equipment of all Austrian medical schools in such a way that these institutions will flourish and fulfil their aim as places of modern clinical teaching for the benefit of suffering mankind. Furthermore, a suggestion has been made that the necessity of a health certificate should be incorporated in the bill. This would require that, before entering into matrimony, each partner of the intended marriage should produce a certificate of health, issued by the magistrates of the usual place of habitation of the party. Magistrates would be obliged to keep a record of the health of every inhabitant so far as reported to them by hospitals and physicians in cases of infectious diseases, including syphilis, gonorrhea and tuberculosis, as well as mental diseases. The technic of these notifications which should be made also to the magistrates of the birthplace of the party, and the best and most efficacious way, is now under discussion. The severe drawback of such a procedure consists in the possible refusal of patients to consult medical men or hospitals, with the resulting danger to public health, if they fear that their ailments may become known to strangers or to a possible matrimonial partner.

The Problem of "Restoration of Youth"

Widespread discussion of a scientific publication by Professor Steinach of the Vienna Biologic Institute arose

recently in the lay press. This investigator, who has been working on the problem offered by the internal secretion of the sexual glands, reported his success in restoring old male rats to juvenile strength, function and appearance by ligation of the testicular duct of one side, thus causing hypertrophy of the interstitial tissue of the testicle, while the glandular structure of the testicle atrophied. Professor Steinach claims that this interstitial stroma is a special organ having specific function like the stroma of the suprarenals. He calls it the puberty gland and asserts that the stroma of the ovary has an identical function in the female. This puberty gland by its internal secretion produces the specific sexual differentiation of the male and the female. This experiment on animals, which it is claimed, has been corroborated by competent investigators, enabled him for instance to change at will the sex of juvenile individuals; he could also "revive" the generative power of old rats, and acting on his suggestion, Dr. Lichtenstern, a surgeon in this city, has performed the operation on three men who had become old and weak, and whose entire appearance as well as mental condition has since then improved in a most marked way. In females, application of appropriate doses of roentgen rays seems to have a similar action; and the beneficial results obtained after some operations, like the ligation of the oviduct or the roentgen-ray treatment of tumors of the adnexa, hitherto not quite open for explanation, seem to deserve to be viewed from a different standpoint as regards the etiology. Dr. Steinach has also exposed the testicles to roentgen rays. This procedure likewise seems to stimulate markedly the puberty gland. After the publication of this paper, the widespread interest soon became annoying to its scientific author. It was regarded as a "sensation," and earnest requests by scientists to the lay press were necessary to stop lay comments and to commit the problem to medical hands, where it really belonged. One result of the publicity of the method has been most grateful. Under the impression of the importance of further investigations in this line, an appeal was made by our leading daily paper to collect funds for the biologic institute where Steinach is working, and this appeal was seconded by Professor Roux. Money is coming to both for this purpose.

Measures Against Abuse of Hospital Treatment

The organization of the medical profession has turned the attention of directors of our public hospitals, as well as the chiefs of such hospital departments, to the fact that a large number of patients enjoying the advantages of hospitals or outpatient departments (ambulatories, dispensaries, etc.) are in reality not entitled to these benefits. Such institutes are intended in the first place for persons unable to pay for treatment, and in the second place for cases not suited to home treatment, when the patients are able to pay for it. Therefore the organization earnestly urges all persons in a position to control the working of the institutes to refuse admission to all patients in a position to pay for treatment or belonging to state or municipal or private corporations. The latter should be treated by the physician appointed for them. Only in cases of emergency, as casualties, accidents or riots, should such persons be allowed to turn to hospitals or ambulatories. Since nowadays each patient costs the hospital a sum varying between 65 and 150 kronen a day, and the technical and chemical appliances and apparatus are so very expensive, even the treatment in outpatient departments, if the patients do not pay for it, is a severe burden on the funds of the institutes. At the same time, if members of corporations, friendly societies, sick-clubs and the like will not be admitted free of charge, but have to pay like private patients, these corporations will find it more convenient to appoint physicians and specialists for their members, thus giving the profession again the possibility of earning a decent living for decent work. A severe drawback and a source of constant dissatisfaction among the profession working in our towns was the custom of country practitioners to send their patients requiring special treatment not to a specialist but to a town hospital. These cases were always lost to the private physician. The organization has caused a list of all recognized specialists to be circulated among all the practitioners of the country, with full details, so that they will be in a position to direct the patient to the proper man, with benefit to the physician, the specialist and the patient alike.

"Socialization" of the Drug Business

The government has definitely decided to take over all the drugstores and apothecary shops existing in this country and has convocated a committee of experts for the purpose of working out the methods best suited for this aim. For a long time public feeling was very adverse to the apothecary shops, because of the high prices of medicines they charged and of the alleged enormous profits thus obtained by these tradesmen to the disadvantage of the ill. In spite of the rapid rise of prices of drugs and the chemical constituents of all remedies, which in nearly all instances have to be imported from abroad, the public found that it was charged too high prices. The socialistic influence in the government is still sufficiently strong at least to brag about the desire to improve the matter, and it has been decided that within a year all apothecary shops may be bought by the state. The owner will receive a compensation amounting to a sum varying between fifteen and twenty times the net profits, the last five years being taken as an average. Every apothecary desiring to retire must offer his business to the state, and no new license will be granted to private apothecaries. Thus, within a certain number of years all private owners will die out, so to speak, and the whole trade will be owned by the state. Then these stores will be run for the state, and it is believed that the articles necessary for treatment of patients, including the drugs, will be cheaper for the public than at present. But men in a position to know assert that the government management will result in much higher prices than are in force at present. Also the few wholesale drug stores and drug factories existing in this country will be turned over to the state, within a reasonable time. Already the state controls the trade with alkaloids, alcohol and certain chemical substances used in technical process. In the near future the alcohol chemical trade will be "socialized."

Decreased Population in Austria

The last census of this country's population, taken Dec. 31, 1919, shows that there were 6,320,000 souls living in Austria on that date, or 348,000 less than before the war. Vienna itself has lost nearly 200,000, having now 1,810,000; all other towns, with the exception of one—the industrial center of our coal and iron mines district—show similar losses of between 5 and 10 per cent. of the population. The agricultural districts show partly no change, partly a slight increase. The sex proportion is 53 per cent. females and 47 per cent. males, against 51 and 49 per cent., respectively, in 1913. The differences against prewar times are not due entirely to the mortality caused by the war, as the large emigration is also responsible for the loss because the economic conditions of our mutilated country have prompted many firms and corporations and private persons to shift their occupations and abodes to the neighboring countries. The same census shows that the number of children between 1 and 6 years diminished by approximately 34 per cent. Thus the prospects for the rebuilding of the country are serious and not very encouraging.

Marriages

Francis C. Hertzog, Lieut., M. C., U. S. Navy, to Miss Aldie Sundre, of Staten Island, N. Y., at Norfolk, Va., recently.

James S. Simmons, Major, M. C., U. S. Army, to Miss Blanche Scott of Graham, N. C., at Honolulu, Hawaii, June 29.

Charles R. Applegate, Indiana Harbor, Ind., to Miss Bertha Mitchell, of Indianapolis, at Highland Park, Ill., July 28.

Nicholas Francis Brecker, Philadelphia, to Miss Mary Holland, of Doylestown, Pa., at Pottsville, Pa., July 20.

Henry Walker Decker, Lahore, Va., to Miss Florence Fraser Boston, of Warrenton, Va., June 15.

Zack Perry Mitchell, Colerain, N. C., to Miss Ella Whitlock Taliaferro, of Richmond, Va., June 9.

Ernest R. Brocking, Indianapolis, to Miss Minnie Boyle, of Greensburg, Ind., in St. Louis, July 20.

Armand Goldsmith McHenry, to Miss Irma Russ, both of Monroe, La., in New Orleans, July 14.

Charles Elroy Llewellyn, Richmond, Va., to Miss Pearl Ann Shields, of Hampton, Va., June 12.

Richard Wingfield Vaughan, to Miss Marguerite Stoltz, both of Richmond, Va., June 19.

William Scarff Wiley, to Miss Susan Elizabeth Brown, both of Bristol, Va., June 24.

Bernard Hewitt Kyle, to Miss Putnam Watkins, both of Lynchburg, Va., June 16.

Jacob Piller, Paterson, N. J., to Miss Miriam Liebschutz, of New York, July 1.

Cecil R. Rigby, Spartansburg, S. C., to Dr. Hallie M. Clark, of Baltimore, July 26.

Dabney Kerr, to Miss Eleanor Smith, both of Catonville, Md., August.

Deaths

John Henry Carstens ⊕ the well known surgeon and gynecologist of Detroit; aged 72; died, August 7, from malignant disease, after an illness of several months. Dr. Carstens was born in Kiel, Germany, and came to America with his parents after the revolution in 1848. He was graduated from Detroit Medical College in 1870; and practiced in Detroit since that time. He had been president of the Wayne County Medical Society, the Mississippi Valley Medical Association and the American Association of Obstetricians and Gynecologists.

He had been a teacher almost all his professional life, lecturing first on minor surgery, diseases of the skin, and clinical medicine; and after running almost the entire gamut of medical teaching, served for several years as president of the faculty and professor of abdominal and pelvic surgery in the Detroit College of Medicine. He was chief of staff of the Harper Hospital, and consulting obstetrician to the Woman's Hospital, and the House of Providence.

Dr. Carstens was a good citizen and a man of strong belief in the obligation of public officials to their constituencies. He was chairman of the Republican city committee in 1879, and had served also on the board of education and the board of health. He was a prolific writer in the fields of gynecology and surgery. In Dr. Carstens death not only Michigan but the entire country loses one of its most respected and influential leaders in scientific medicine and surgery.

Walter H. Kirkpatrick, Haven, Kan.; University Medical College of Kansas City, Mo., 1908; aged 39; Lieutenant, Kan. N. G., during the World War, discharged May 26, 1919; while swimming at a summer resort near Boston, recently, died from acute dilatation of the heart.

Charles Henry Struble, Dayton, Ky.; Pulte Medical College, Cincinnati, 1895; aged 47; a member of the Kentucky State Medical Association; Captain, M. C., U. S. Army, discharged Dec. 26, 1918; died, July 19, after a surgical operation.

William A. Cracraft, Wheeling, W. Va. (license, West Virginia State Board of Health, years of practice, 1881); aged 76; a practitioner for fifty-three years; a Confederate veteran; died in Elm Grove, Wheeling, July 22.

Charles Duncan Ferguson, Oklahoma, Okla.; University of Toronto, Ont., 1901; aged 45; a specialist in diseases of the eye, ear, nose and throat; died in Corpus Christi, Texas, June 11, from ruptured aneurysm of the aorta.

Thaddeus McLaughlin, Springfield, Ohio; Eclectic Medical Institute, Cincinnati, 1904; aged 42; a member of the Ohio State Medical Association; died, July 24, from a self-inflicted wound of the throat.

Joseph M. Wolfe, Hugo, Okla.; Memphis (Tenn.) Hospital Medical College, 1895; aged 59; a member of the State Medical Association of Texas; died, July 8, from chronic interstitial nephritis.

Van Hurlburt Wilcox, Minneapolis; University of Minnesota, Minneapolis, 1902; aged 48; a member of the Minnesota State Medical Association; Captain, M. C., U. S. Army; died, July 20.

Ivan Wodrow McDowell, Jr. ⊕ Savannah, Ga.; Medical College of Virginia, Richmond, 1908; aged 34; Lieutenant, M. C., U. S. N. R. F., died in a hospital in Asheville, N. C., July 30.

William Sayers Duff, Fort Payne, Ala.; University of Alabama, Mobile, 1889; aged 59; a member of the Medical Association of the State of Alabama; died July 26, from septicemia.

John George Stiefel ⊕ Baltimore; College of Physicians and Surgeons, Baltimore, 1901; aged 46; a member of the faculty of his alma mater; died, July 26, from heart disease,

Charles Wesley Baker, Kilgore, Ohio; Starling Medical College, Columbus, Ohio, 1898; aged 47; was killed in a grade crossing accident near Denison, Ohio, August 1.

Martin Luther Tisdale, Tampa, Fla.; University of Alabama, Mobile, 1907; aged 39; a member of the Florida Medical Association; died, July 22, from cerebral hemorrhage.

Darsey L. Coffindaffer ⊕ Shinston, W. Va.; Medical College of Virginia, Richmond, 1909; aged 38; was killed in a grade crossing accident at Fairmont, W. Va., July 21.

Lewis Prichard, Charleston, W. Va.; University of Michigan, Ann Arbor, 1867; Bellevue Hospital Medical College, 1876; aged 81; died, July 21, from senile debility.

Israel Hill, Peggs, Okla.; University of Arkansas, Little Rock; a member of the Oklahoma State Medical Association, 1898; aged 61; was killed in a cyclone, May 2.

David H. Thomas, Columbus, Ohio; College of Physicians and Surgeons, Baltimore, 1895; aged 52; a coal operator; died, July 20, from diabetes.

T. S. Wadsworth, Morgan, Utah; College of Physicians and Surgeons, Keokuk, Iowa, 1877; aged 86; died, May 4, from cerebral hemorrhage.

James Thomas Tonks, Lyme, Conn.; Eclectic Medical College of the City of New York, 1892; aged 67; died in a hospital in Boston, July 22.

John Biebinger, Indianapolis (license, Indiana State Board of Medical Examiners, 1897); aged 66; died, May 15, from carcinoma of the liver.

Benjamin Franklin Landes, Burlington, Ind.; Eclectic Medical Institute, Cincinnati, 1879; aged 66; died, July 22, from valvular heart disease.

George R. Harnden, Stillwater, Okla.; Chicago Homeopathic Medical College, 1885; aged 81; died, May 25, from arteriosclerosis.

James Lee Herrod, Cabot, Ark. (license, State Medical Board, Arkansas, 1903); aged 85; a Confederate veteran; died, July 22.

Felix B. Linder, Oxford, Miss.; Memphis (Tenn.) Hospital Medical College, 1883; aged 64; died, July 6, from cerebral hemorrhage.

Robert B. Jenks, Yonkers, N. Y.; New York Homeopathic Medical College, 1868; aged 75; died, July 18, from heart disease.

Thomas H. B. Schooling, Green Castle, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1874; aged 80; died, July 27.

Henry Furtney, Orosi, Calif.; College of Physicians and Surgeons, Keokuk, Iowa, 1888; aged 63; died, about July 19.

Correction.—The notice of the death of Dr. Milton S. Hopper, Gary, Ind., which appeared in The Journal of July 24, page 36, is incorrect. Dr. Hopper writes that he is in good health.

⊕ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE BETHLEHEM LABORATORIES, INC., PREFERRED STOCK

Physicians in various parts of the country have sent in to THE JOURNAL batches of material they have received from the Bethlehem Laboratories, Inc., New York City. This concern tells the physician that he has "been selected as one of two leading physicians" in his community as entitled "to an opportunity to share in the profits of our Company." The physician is told further that the Bethlehem Laboratories, Inc., "control the manufacture of Hyclorite," which, he is reminded, "has been accepted by the Council on Pharmacy and Chemistry of the American Medical Association." Further, the Bethlehem Laboratories, Inc., realizing that the medical profession will be "a great factor in spreading the ethical message of Hyclorite" invites the physician "to share in the profits" of the company. With this in mind the Bethlehem Laboratories state that they "have decided to allow one thousand of the leading physicians a three-day option to purchase four shares of the 8% Cumulative Preferred stock, $400.00."

Accompanying this letter is a very gaudy "Stock Subscription Warrant," printed in the approved "gold certificate," orange-colored ink. It certifies that the recipient—whose name is filled in—is "entitled to subscribe for FOUR shares of the 8% Preferred Stock of the Bethlehem Laboratories, Inc.," by surrendering the "warrant" on or before Aug. 1, 1920—and paying four hundred dollars! One curious point, which may or may not be significant, is noticed in reference to these "warrants." All those that THE JOURNAL has received were sent out July 24, 1920, and each "warrant" bears a serial number. Only one thousand "leading physicians," it will be remembered, were offered this "three-day option." Yet, the serial numbers of all except one of the "Stock Subscription Warrants" sent to THE JOURNAL are considerably over one thousand; in fact, the numbers on some of the "warrants" were well up toward four thousand!

The concern gives a list of the men composing the "directorate of the Bethlehem Laboratories, Inc." The chairman of the board of directors and the president of the corporation is a real estate operator of Bethlehem, Pa. Its secretary is the cashier of one of the Bethlehem banks. Two other men on the directorate are, respectively, president and cashier of another Bethlehem bank. Another member seems to be in the steel business in Bethlehem. Still another is described as a Bethlehem "capitalist." The president of the General Laboratories, Madison, Wis., is yet another member of the board of directors. The remaining two men of the board are alleged to be physicians. One of them is a "Prominent Physician" of Bethlehem, Pa., and the other is "Dr. J. Jay Reilly, Philadelphia; Prominent Philadelphia Surgeon and Consulting Chemist to several large manufacturing drug concerns." One would suppose that the Biographical Department of the American Medical Association, which collects official data on all the physicians of the United States and its possessions, would have some data regarding a "Prominent Philadelphia Surgeon and Consulting Chemist to several large manufacturing drug concerns." Yet, curiously enough, no such individual can be found either in the American Medical Directory or in the latest directory of the American Chemical Society.

Hyclorite was accepted by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies because at the time it was considered it was marketed in accordance with the Council's rules. We know nothing about the Bethlehem Laboratories, Inc., other than what has been stated; nor do we know whether there is any truth in the claim that this concern "controls the manufacture of Hyclorite." As for the investment proposition which the Bethlehem Laboratories, Inc., makes to physicians, it is an insult to decent medical men. THE JOURNAL has repeatedly pointed out that when physicians are financially interested in the products they prescribe for, or recommend to, the sick, the public is not getting a square deal. The composition and medicinal value of therapeutic agents are not the only factors for the medical profession to take into account; the methods of exploitation may be just as important. It is against public interest and a degradation of scientific medicine, for physicians to be financially interested in the products they prescribe.

Correspondence

CONDITIONS IN THE INDIAN MEDICAL SERVICE

To the Editor:—I have recently had occasion to give extended consideration to the medical needs of our native Indian population. I visited a number of reservations in continuation of former inquiries, including this time the Zuñi and Navaho reservations of Arizona and certain Pueblos of New Mexico. In my judgment the medical situation is as deplorable as it is disgraceful, and I am satisfied that if the facts were known and thoroughly understood the organized medical profession, through the American Medical Association, would bring pressure to bear on the government to bring about the required drastic and far-reaching reforms.

The matter is apparently one of indifference to the Commissioner of Indian Affairs, who had every opportunity of presenting *all* the facts precisely and emphatically in his evidence before the Congressional Committee of Inquiry. That evidence does not include, as it should, a complete statement of expenditures on account of the Indian Medical Service, and all that is properly connected therewith. Attention is not drawn to the lamentable underpayment of physicians and nurses on Indian reservations and the total inadequacy of the medical and nursing staff, considering the normal needs of the Indian population. We are under treaty or humane obligations to the Indian tribes under the control of the Indian office to provide adequate medical assistance; but, broadly speaking, in the case of at least all of the larger reservations, such assistance consists of a single physician with possibly a small hospital, insufficient to provide proper care or equipped with an insufficient staff of nurses and other help required for the needs of the patients. There are no pharmacists connected with the Indian medical service, although it is now held and recognized that physicians should not be expected to do their own dispensing or compounding, except in cases of emergency.

There is no adequate dental service, the total number of dentists being less than ten, who travel from place to place over an area of vast extent. There is no adequate provision for eye specialists, although the Indian population is terribly afflicted with trachoma introduced from the outside largely because of negligence and indifference to the risk of infection.

In Serial No. 6 of the Hearings of the Committee of Indian Affairs is a table which may well bring the blush of shame to a government under obligations to provide a proper Indian medical service, and in duty bound to afford those who are rendering such service a means of maintaining a proper standard of life. According to this statement, of the entire staff of physicians other than the chief medical supervisor, who receives a salary of $3,000 a year, only one physician receives a salary of as much as $1,800; four of $1,600; one of $1,500; twenty-two of $1,400; ten of $1,300; and seventy of $1,200!

The total number of regular physicians in the service, Jan. 1, 1917, was 116, against only seventy-nine, Nov. 1, 1918. The number of contract physicians in the service in 1917 was seventy, and in 1918 it was only sixty. The best men are leaving the service, not only because of the totally inadequate compensation, but because of a niggardly policy otherwise which places pecuniary burdens on physicians unwilling to let their patients suffer the results.

Below the $1,200 line are sixteen physicians who receive from $1,000 to $1,100; twenty-two who receive from $700 to $720, and seventeen from $600 to $660! Still lower payments may be assumed to represent the compensation of contract physicians.

These seventy-nine regular physicians, Nov. 1, 1918 (no later data being available through the Indian Office), have the assistance of fifty-five nurses, the number having been reduced from ninety-nine nurses in 1917, also largely because of totally inadequate compensation, unduly prolonged hours of work, and often far from satisfactory living accommodations. In the statement prepared by the Commissioner of Indian Affairs for the information of the Congressional Committee, it is said, "The personnel of the Indian Health Service is made up of the directorate at Washington, D. C., the supervisory force, the administrative officers at each agency, the physicians and nurses, the field matron and all the industrial employees at all schools, agencies and hospitals throughout the entire Indian field; each and all of these persons is intimately concerned *in carrying out some part* of the health program." All of which is contrary to the real facts, for most of the staff referred to have other and far more immediately important functions to fulfil and they are neither paid to render sanitary or subsidiary health services nor are they qualified to do so.

There is, broadly speaking, no Indian health service, and very little is done to prevent the occurrence of disease, though some progress has been made in the control of disease after its occurrence through a medical staff unquestionably much better today than at any time in the past. This, however, is not because of the policy of the government to pay adequately and provide for a medical and nursing staff, but because of the earnest desire of the medical officers and associates to be of service. The high ideals of these men and women are a credit not only to the service but to the nation as well. The situation is so serious that the very existence of certain tribes is at stake. Other tribes suffer a decrease or stationary condition of population because of a death rate which would be inconceivable under modern conditions if it were not sustained by the official records.

The registration of births and deaths is far from accurate and complete. On the Navaho Reservation, which represents one of our finest Indian tribes, the death rate from tuberculosis is appalling (2,847 per hundred thousand, or 48 per cent. of all causes), and the frequency of trachoma is not less than 25 per cent. The examination of the Indian for tuberculosis is made superficially because the medical staff is not available. The sanatorium treatment provided reaches, at best, only a fragment of the population. The required housing reforms have not been initiated, nor are proper efforts made to instruct the Indians in the rudiments of domestic hygiene. In view of the foregoing, which could be much enlarged upon in matters of detail, it is obviously the duty of the American Medical Association to concern itself with this question and to insist on radical and far-reaching reforms. The Association should inquire into the question of adequate compensation and agree on a schedule of salaries commensurate with the responsible duties performed, and it should ascertain the educational status of the physicians, among whom there are reasons for believing that there are some not qualified to practice under the state laws.

In England, assistant medical officers of health receive a minimum salary of £500, or about $2,500, a year. The average health officer receives about £1,000, or $5,000. The chief medical officer of our Indian Medical Service, including more than a quarter of a million Indians, widely scattered over an immense territory, receives a salary of $3,000, or less than what is paid to the veterinary surgeons in the government service, to the chief forester of the Indian Service, and the chief irrigation engineer!

It has been suggested that the Indian Medical Service should be transferred to the Public Health Service. In my judgment such a transfer is called for by the highest considerations of Indian policy. At the present time the Indian is slightly increasing in population, and the danger has probably passed that the Indian race *as a race* will die out; but if important tribes, though relatively small in numbers, are to be saved from extinction, prompt action on the part of the government is urgently needed.

The argument has been advanced by the Commissioner of Indian Affairs that such a transfer would not result in further economies in the Indian medical administration. What is required is easily a fourfold expenditure for the present purpose if our treaty obligations in behalf of our Indian wards are to be fulfilled in the spirit if not in the letter of the law. It is not a question of economy, but a question of life and death. The Commissioner of Indian Affairs in his evidence implies that there is perfect cooperation between the Public Health Service and the Indian Medical Department. My own investigations do not prove this to be the case. Broadly speaking, there is no health service worthy of the name, nor effective cooperation with either the state or federal authorities, with the possible exception of some extraordinary emergency measures during an outbreak of smallpox or bubonic plague. It would therefore seem to me that the American Medical Association should take up the question as to whether the Indian Medical Service should remain where it is at the present time or be transferred to the Public Health Service, where it would seem more properly to belong.

Frederick L. Hoffman, Newark, N. J.

[Comment.—The subject presented in the foregoing communication is not a new one. The conditions result from undertaking to provide for the medical care of these wards of the government through a subdivision of a division of a bureau of the Department of the Interior. In other words, there is no definite fixing of responsibility for the prevention and cure of disease on Indian reservations. What little actually exists rests in a multiplicity of control with all its attending disadvantages. The control of matters affecting the health of the Indians, which should be the work of especially qualified physicians is, in fact, under the direction of laymen, who have the authority but who do not possess the necessary knowledge to consider and pass on such subjects. The Indian Medical Service has suffered, and is suffering, from a vicious circle. Insufficient compensation has made it impossible to secure and retain the services of a capable and sufficient personnel having a high standard of professional proficiency. In turn, stock arguments for economy have seemed to have weight. And so the wheel has turned. A solution, suggested several years ago, was the placing of the Indian Medical Service in the United States Public Health Service. Here again there is a technical, governmental difficulty. The United States Public Health Service is a bureau of the Department of the Treasury, whereas the Office of Indian Affairs is in the Department of the Interior. The time may come when the federal government will establish a department having as its object the study and control of all matters relating to health. Such a department naturally would give deserved consideration to the health of the Indians as well as to that of the other citizens of our country.—Ed.]

UNIFORMITY OF RECORDS IN RADIUM TREATMENT

To the Editor:—The following is the report of the Research Committee which was made at the meeting of the Radium Society in April at New Orleans. It is the desire of the Research Committee that an accurate and uniform record be kept of all cases treated with radium. In this way, uniform statistics may be collected, even though the treatment is given by many different individuals.

LEDA J. STACY, M.D., Chairman, Rochester, Minn.

SCHEDULE SUBMITTED BY RESEARCH COMMITTEE

1. Keeping records of all cases treated.
   First page: short history, diagnosis, grouping based on physical findings.
   Second page:

Case No.	Date of Treatment	Amount of Element or Emanation Screening	Duration	Total Mg. Hours or Mc. Hours

2. Grouping of cases:
   A. Operable.
   B. Borderline or doubtfully operable.
   C. Inoperable.
   D. Advanced and hopeless.
   E. Recurrences: local; regional.

3. Determination of E. S. D. of each tube of radium. The E. S. D. should be the standard of comparison of sensitiveness of the various elementary and diseased tissues

4. The methods of screening and protection of healthy surrounding tissues: (*a*) distance; (*b*) material used.

5. The importance of postmortem examinations and serial sections of organs in toto, this being the only means to determine the correctness of the technic and the actual permeability of the rays, thereby establishing the actual therapeutic value of radium rays.

6. The reexamination of all patients at stated intervals and careful recording of subjective and physical findings at each examination (both visible and palpable).

SYMBOLS FOR EYE PHENOMENA DURING ANESTHESIA

To the Editor:—May I ask for your cooperation to secure suggestions for symbols to indicate the several eye phenomena which are observed during anesthesia. I venture to submit those which I have used for some years and have given to my students at the Long Island College Hospital, Brooklyn:

Lid: muscular tone present, =; absent, <; present and cornea sensitive, the sign for present within a ring.
Pupil: size in mm.; if light reflex present, size within a ring.
Eyeballs: oscillating, ~~; quiet, —; incoordinated, V.
Cornea: moist, M; hazy, H; dry, D.
Sclera: normal, +; injected, ×; bloodless, I.

A. F. ERDMANN, M.D., Brooklyn.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

DIACETIC ACID IN URINE

To the Editor:—In THE JOURNAL, July 17, 1920. p. 206, is an abstract of an article in the *Medical Journal* of Australia, in regard to the ferric chlorid test for diacetic acid in diabetic urine from patients who have been treated with sodium bicarbonate until the urine had become alkaline. I had exactly the same experience as Dr. Maxwell and performed all the tests and experiments which he mentioned and with the same results, about two years ago. I have looked through several books on urinalysis and clinical diagnosis, and have failed to find mention of this reaction, which I think should surely be called to the attention of the various authors. I am writing you to ask whether you can suggest any convenient test to take the place of the ferric chlorid test, which is useless when once the alkaline treatment has been begun. Please reply through THE JOURNAL. HENRY YOUNGS, M.D., Goshen, N. Y.

ANSWER.—The article to which our correspondent refers is "Ferric Chlorid Test for Diacetic Acid in Urine" by L. A. I. Maxwell (*Medical Journal of Australia* **1**:458 [May 15] 1920). The reaction to which Maxwell refers is a well known one in inorganic chemistry and is due to the interaction of the ferric chlorid with the carbonate or bicarbonate radical, giving rise to a red color which is similar to, although not identical with that produced by diacetic acid and ferric chlorid. It is strange that reference to this possibility has not been made in any of the textbooks on clinical diagnosis, but such is the case so far as we have been able to determine. As Maxwell points out, the presence of carbonates or bicarbonates must be excluded before the Gerhardt test for diacetic acid may be relied on, as "the dosage of alkali may be increased in the hope of overcoming an acidosis which in reality does not exist."

To obviate this fallacy of the ferric chlorid test for diacetic acid in the urine, one should acidify the alkaline urine with dilute sulphuric acid and shake out this acid solution with ether, which will extract the diacetic acid if present and will decompose the carbonates or bicarbonates and thus withdraw them from the field of action. The ethereal solution should now be drawn off with a pipet, placed in a second test tube, and shaken with water and a few drops of ferric chlorid solution. If diacetic acid is present in the original urine, a deep red color will be seen in the watery layer. This is the simplest method with which we are familiar for overcoming the difficulty mentioned by Maxwell, and should be used as a matter of routine.

A further test for diacetic acid in urine, which is not given by urines alkaline from carbonates or bicarbonates, is that of Lipliawsky, which is a modification of the older test of Arnold. The technic is as follows: Six c.c. of Solution 1 (consisting of 1 gm. of para-amido-acetophenon, 100 c.c. of distilled water and 2 c.c. of concentrated hydrochloric acid) and 3 c.c. of Solution 2 (consisting of a 1 per cent. solution of sodium nitrite) are treated with the same volume of urine, a drop of ammonia is added and the mixture shaken, when it assumes a brick-red color. According to the probable content of the urine in diacetic acid, from 10 drops to 2 c.c. of this mixture are treated with from 15 to 20 c.c. of concentrated hydrochloric acid, 3 c.c. of chloroform, and from 2 to 4 drops of ferric chlorid solution. The test tube is closed with a cork and shaken gently for from one-half to one minute. In the presence of traces of diacetic acid the chloroform assumes a characteristic violet coloration, while in the absence of this acid the color is yellow or light red. This is an extremely delicate and reliable test for diacetic acid in the urine.

OPPENHEIM MODIFICATION OF HARDY TREATMENT FOR SCABIES

To the Editor:—Kindly advise what is the Oppenheim modification of the Hardy treatment for scabies.

E. L. HILL, M.D., Jacksonville, Ill.

ANSWER.—A modification of Hardy's ointment was employed by Oppenheim for the rapid cure of scabies at the Wilhelminen Hospital, Vienna. Severe eczema and very diffuse impetigo constitute contraindications to the treatment, but not the ordinary forms of eczema and impetigo. The treatment is as follows:

1. The whole body, with the exception of the head, is thoroughly anointed with soft soap for fifteen minutes, special attention being devoted to the regions of predilection, such as the wrist, the axillary folds, the groin and genitals, the buttocks, the popliteal space, between the fingers and in the bend of the elbow.

2. This is followed by a warm bath at 30 C. for half an hour, during which soft soap is liberally employed with a brush.

3. The body is thoroughly dried and anointed with the modified Hardy's ointment (precipitated sulphur, 25; potassium carbonate, 10; petrolatum, 125); the patient is wrapped in a sheet and is covered with a robe.

4. After two hours the ointment is rapidly removed with soap in a warm bath; the body is dried and is anointed with zinc oxid ointment.

The treatment lasts three hours. Meanwhile the patient's linen, and if desired the outer clothing also, is disinfected with hot air.

For children the duration of the treatment varies with the age. The inunctions with soft soap should be continued for from five to ten minutes, the baths for from ten to twenty minutes.

"RACIAL DIETS"

To the Editor:—In THE JOURNAL, July 31, p. 336, a correspondent asked a question about literature on the diets of different races. The *Journal of Home Economics* has recently had three articles: Shapiro: Jewish Dietary Problems, **11**: 47, 1919; Mariotte: Italian Cookery, **11**: 337, 1919, and Wang: The Chinese Diet, **12**: 289 (July) 1920.

KATHARINE BLUNT.
Chairman, Home Economics Department, University of Chicago.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 7. Sec., Dr. Harry C. De Vighne, Juneau.
HAWAII: Honolulu, Sept. 6-10. Sec. Dr. R. W. Benz, 1141 Alakea St., Honolulu.
ILLINOIS: Chicago, Sept. 20-23. Director, Francis W. Shepardson, State House, Springfield.
IOWA: Des Moines, Sept. 15-17. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.
MASSACHUSETTS: Boston, Sept. 14-16. Sec., Dr. Walter P. Bowers, State House, Boston.
NEW HAMPSHIRE: Concord, Sept. 9-10. Sec., Dr. Charles Duncan, Concord.

Indiana February Examination

Dr. William T. Gott, secretary, Indiana State Board of Medical Registration and Examination, reports the written examination held at Indianapolis, Feb. 10-13, 1920. The examination covered 15 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 38 candidates examined, 37, including 4 osteopaths, passed, and 1 osteopath failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Loyola University		(1919)	83.8
University of Illinois		(1919)	90
Indiana University	(1917) 85, 86, 88, (1920) 87, 88, 88, 89, 89, 90, 90, 91, 91, 91, 92, 92, 92, 93, 93, 94, 94, 95.		
University of Louisville		(1919)	82, 92.8
Johns Hopkins University		(1919)	88
College of Physicians and Surgeons, Baltimore		(1913)	89
Harvard University		(1918)	89, 91
University of Michigan Medical School		(1918)	89
Washington University		(1918)	86
Eclectic Medical College, Cincinnati		(1919)	88
Vanderbilt University		(1914)	85

Alabama April Examination

Dr. Samuel W. Welch, chairman, Alabama Board of Medical Examiners, reports the written examination, held at Montgomery, April 6-9, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 2 candidates examined, 1 passed and 1 failed. Two candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Jefferson Medical College		(1919)	88.3
	FAILED		
Birmingham Medical College		(1915)	56.2

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Atlantic Medical College of Phys. and Surgs.		(1913)	Georgia
Medical College of Louisiana		(1906)	Louisiana

Idaho April Examination

Hon. Robert O. Jones, commissioner, Idaho Department of Law Enforcement, reports the written examination held at Boise, April 6, 1920. The examination covered 11 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 13 candidates examined, 11 passed and 2 failed. Nine candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Chicago		(1910)	81
Northwestern University		(1918)	80.2
University of Illinois		(1916) 87.3, (1917)	81.7
University of Maryland		(1905)	83
Detroit College of Medicine and Surgery		(1916)	83.4
Columbia University		(1918)	84.7
University of Buffalo		(1901)	84
University of Oregon		(1918)	82.4
Jefferson Medical College		(1912)	86.7
University of Pennsylvania		(1917)	86.3
	FAILED		
Hahnemann Medical College and Hospital, Chicago		(1897)	*
University of Louisville		(1907)	72

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Colorado		(1919, 2)	Colorado
Rush Medical College		(1917)	California
University of Illinois		(1916)	Utah
Boston University		(1917)	Nevada
John A. Creighton Medical College		(1919)	Utah
University of Nebraska		(1918)	Utah
Coll. of Phys. and Surgs. in the City of New York		(1881)	Oregon
Jefferson Medical College		(1919)	Utah

* No grade given.

Arizona April Examination

Dr. Ancil Martin, secretary, Arizona State Board of Medical Examiners, reports the written examination held at Phoenix, April 6-7, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 12 candidates examined, 8 passed and 4 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Georgia		(1915)	79.1
Northwestern University		(1916) 76.7, (1918)	82.9
University of Illinois		(1911)	86.1
University of Maryland		(1903)	83.1
Boston University		(1905)	85.9
Vanderbilt University		(1908)	79.6
Marquette University		(1916)	82.8
	FAILED		
College of Physicians and Surgeons, Chicago		(1908)	71.4
Southwestern Homeopathic Med. College		(1903)	53
University of Louisville		(1893)*	82.4
University of Pennsylvania		(1906)	69.8

* Fell below 60 per cent. in bacteriology.

Kentucky May Examination

Dr. A. T. McCormack, secretary, Kentucky State Board of Health, reports the written examination held at Louisville, May 17, 1920. The examination covered 11 subjects and included 110 questions. An average of 70 per cent. was required to pass. Thirty candidates were examined, all of whom passed. One candidate received a verification license. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
University of Arkansas		(1920)	82
Oakland College of Medicine and Surgery		(1920)	89
Chicago Hospital College of Medicine		(1918)	83
Loyola University		(1919)	74
University of Louisville	(1919) 71, (1920) 82, 83, 83, 83, 84, 84, 84, 84, 85, 85, 86, 86, 86, 87, 88, 88, 88, 89, 89, 90, 91.		
Eclectic Medical College, Cincinnati		(1918) 72, (1920) 83,	84
Vanderbilt University		(1920)	82

Minnesota April Examination

Dr. Thomas S. McDavitt, Minnesota State Board of Medical Examiners, reports the written, oral and practical examinations held at Minneapolis, April 6-9, 1920. The examination covered 15 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 62 candidates examined, 61 passed and 1 failed. Of 10 physicians who took the reciprocity practical examination, 8 passed and were licensed through reciprocity, and 2 failed. Nineteen candidates were licensed on army credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Northwestern Univ. Med. School		(1920)*	87.2
Harvard University		(1915)	86.5
University of Minnesota Med. School	(1917) 84.1, 86.3, 89.9, (1918) 87.7, 89, (1920*) 85.1, 85.6, 85.8, 86, 86.4, 86.4(86.6,86.7, 87, 87, 87.1, 87.2, 87.4, 87.7, 87.7, 88, 88.2, 88.4, 88.7, 88.9, 88.9, 89, 89.2, 89.3, 89.3, 89.7, 89.8, 90, 90, 90.1, 90.1, 90.3, 90.4, 90.5, 90.6, 90.9, 91, 91.2, 91.3, 91.3, 91.3, 91.6, 91.6, 92.1, 92.3, 92.6, 92.7, 93.1, 93.5, 93.6.		
St. Louis University School of Medicine		(1920)	85.4
University of Nebraska		(1919)	87.6
Columbia University		(1919)	87.8
Univ. of Pennsylvania School of Med.		(1918)	88
	FAILED		
University of Louisville		(1911)	66.5

* These candidates have finished the medical course and will obtain the M.D. degree after they have completed a year's internship in a hospital.

College	RECIPROCITY PRACTICAL EXAMINATION PASSED	Year Grad.	Per Cent.	Reciprocity with
University of Illinois		(1914)	87.1	Wisconsin
Northwestern Univ. Med. School		(1918)	86.2	Illinois
Rush Med. Coll.	(1912) 94, (1916) 95.2,	(1919)	87.1	Illinois

State Univ. of Iowa	(1919, 2) 91.2	Iowa
University of Michigan Medical School	(1914) 91.2	Michigan

FAILED

Pulte Medical College	(1888) 65.2	
Ohio Medical Univ., Columbus	(1898) 67.1	

ENDORSEMENT OF OVERSEAS ARMY MEDICAL SERVICE

College	Year Grad.	Previous License in
George Washington University	(1910)	New York
Bennett Medical College	(1915)	Missouri
Chicago Coll. of Med. and Surgery	(1917)	Illinois
College of Physicians and Surgs., Chicago	(1910)	S. Dakota
Hahnemann Med. Coll. and Hosp., Chicago	(1913, 1917)	Illinois
Northwestern Univ. Med. School	(1911)	Iowa
Rush Med. College	(1916)	Illinois
State Univ. of Iowa	(1915)	Iowa
Johns Hopkins University	(1911)	Maryland
Univ. of Maryland	(1909) N. Carolina, (1912) Ill., (1915)	Maryland
Univ. of Michigan Med. School	(1913)	Michigan
University of Pennsylvania	(1914) Ohio, (1916)	Penna.
Medical College of S. Carolina	(1913)	S. Carolina
Marquette University	(1913, 2)	Wisconsin

Arkansas May Examination

Dr. T. J. Stout, secretary, Arkansas State Board of Medical Examiners, reports the written examination held at Little Rock, May 11-12, 1920. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 18 candidates examined, 13 passed and 5 failed. Thirty-one candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Arkansas		(1920)	89.1
Harvard University		(1916)	84.7
Columbia University		(1918)	83.8
Meharry Medical College		(1920)	75, 76.5, 78.4
University of Tennessee		(1920)	75.6, 78.5, 81.2, 81.5, 82.3, 82.8, 84.7

FAILED

Meharry Medical College	(1902) 39.3, (1912) 68.2, (1918) 64.8, (1920) 63.5, 72.1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas		(1914)	Oklahoma
Atlanta Medical College		(1887) Oklahoma, (1914)	Georgia
Rush Medical College		(1915)	Illinois
Drake University Coll. of Medicine		(1912)	Oklahoma
Kentucky School of Medicine		(1894)	Kentucky
Kentucky Univ. Medical Department		(1904)	Virginia
Tulane University		(1919, 2) Louisiana, (1915)	Mississippi
Johns Hopkins University		(1912)	Maryland
Washington University		(1903)	Missouri
University of Nebraska		(1916)	Nebraska
Medico Chir. College of Philadelphia		(1904)	Penna.
College of Physicians and Surgeons, Memphis		(1908) (1910)	Tennessee
Meharry Medical College		(1907) (1911) (1916) (1917)	Tennessee
Memphis Hospital Med. College		(1913) Tennessee, (1902)	Texas
Nashville Medical College		(1893) (1899)	Kentucky
Univ. of Tenn.		(1913) Oklahoma, (1915) Tennessee, (1916)	Mississippi
Vanderbilt University		(1910) (1917, 2)	Tennessee
Baylor University Coll. of Medicine		(1913)	Tennessee

Nevada May Examination

Dr. Simeon L. Lee, secretary, Nevada State Board of Medical Examiners, reports the written examination held at Carson City, May 3-5, 1920. The examination covered 13 subjects and included 100 question. An average of 75 per cent. was required to pass. Of the 9 candidates examined, 6 passed and 3, including 1 osteopath, failed. Nine physicians were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Georgia		(1913)	78.7
Tufts College Medical School		(1914)	83.3
Columbia University		(1906)	89.6
Jefferson Medical College of Philadelphia		(1911)	85.5
University of Tennessee		(1901)	79.1
Royal College of Surgeons, England		(1904)	92.3

FAILED

California Medical College	(1902)	60.6
Kansas City University of Physicians and Surgs.	(1919)	66.8

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Denver Homeopathic College		(1908)	Colorado
Chicago College of Medicine and Surgery		(1916)	Illinois
National University of Arts and Sciences, St. Louis		(1917)	Missouri
Medical Chir. College of Philadelphia		(1895)	Penna.
Jefferson Medical College of Philadelphia		(1899)	Penna.
University of Pittsburgh		(1909)	Penna.
Western Pennsyvania Medical College		(1899)	Penna.
Memphis Hospital Medical College		(1898)	Michigan
McGill University, Montreal		(1903)	Maine

Book Notices

PEDIATRICS. The Hygienic and Medical Treatment of Children. By Charles Hunter Dunn, M.D., Instructor in Pediatrics, Harvard University. Second edition. Three volumes. Cloth. Price, $23.50. Troy: The Southworth Company, 1920.

This book is based on the teachings of Dr. Thomas Morgan Rotch, for many years professor of pediatrics in Harvard Medical School. It follows the general line of textbooks on pediatrics, but has a number of distinctive features. Subjects are well classified and systematized. By use of various sizes of type in the headings, the information that the book contains is made easily available. The introductory chapters concern the normal development of the child, hygiene and care of infants and children, pathologic anatomy, symptomatology and diagnosis. This section includes a beautifully illustrated lesson on the physical examination of the infant, a chapter on prognosis, and a chapter on treatment. The author is quite up to date in most of his discussions on therapeutics, although it may be noted that he recommends compound syrup of hypophosphites as a tonic and believes that Russian oil is a more refined product than the American brand of liquid petrolatum. In the remainder of the book, he takes up diseases of infancy under the usual headings of etiology, symptoms, diagnosis, prognosis and treatment, concluding most of the discussions with a department on problems and research. Following a discussion of the diseases of the new-born, he takes up the care of premature infants and the subject of infant feeding. Perhaps the most important statements here are: "Feeding the baby is always an experiment. The artificial feeding of infants is not, and never will be, an exact science." This may be especially recommended to those manufacturers of infant foods who believe that their particular formula is suitable for all infants at all times. In his discussion of the treatment of pyloric stenosis, Dunn credits one Dr. James S. Stone with the Rammstedt operation, although this, as recently pointed out by Downes, is itself a modification of an operation originally proposed by Fredet in 1908. Dr. Dunn does not believe in any medical treatment for pyloric stenosis, and makes no mention whatever of the recent work of Sauer and other on this phase of the subject. In the treatment of scarlet fever, there is considerable discussion of the use of antistreptococcic serum, but no mention of the use of convalescent serum. In discussing the etiology of this disease, the author considers the diphtheroid bacillus discovered by Mallory as promising, whereas this has been probably wholly discarded. In discussing the etiology of measles, there are some general statements but no special references. The discussion of diphtheria seems to be complete and accurate. In the discussion of influenza, there is no mention whatever of the great epidemics that have occurred during the last two years. The latter fact is an indication of the general status of the whole work. It is an easily readable work, systematically prepared, but not quite up to date. The illustrations have been given special attention; the many full page plates are among the best features of the work.

TRAVAUX NEUROLOGIQUES DE GUERRE. Par Georges Guillain, Professeur agrégé à la Faculté de médecine de Paris et J. A. Barré, Professeur de Neurologie à la Faculté de médecine de Strasbourg. Préface du Professeur Pierre Marie. Paper. Price, 18 francs net. Pp. 463, with illustrations. Paris: Masson et Cie, 1920.

This is a collection of the papers on the personal and original work of the authors published during the war. It is divided into six chapters, on neurologic symptomatology; wounds of the brain; wounds of the spinal cord; concussion (commotions) due to high explosive shells, without external injury; pathology of cranial and peripheral nerves, and various unclassified subjects. The first chapter is rich in clinical research, and contains the authors' work on certain heretofore undescribed reflexes. These consist of the medioplantar, the posterior tibiofemoral and the posterior peroneofemoral reflexes. The differential diagnosis between clonus due to pyramidal tract lesions and that in which pyramidal tract lesions are absent is considered. Graphic methods of

study of the tendon reflexes in tables are fully described. This chapter contains material which should afford to the American neurologist a stimulus for continued careful research of the reflexes. The second chapter, dealing with injuries to the brain, contains much material on the diagnostic topography of lesions producing hemiplegia, consisting of cases separated into four groups: those possessing cortical lesions, lesions of the pyramidal tract in the subcortical regions, lesions in the internal capsule and lesions of the pyramidal tract associated with injury to the basal ganglion.

Of particular interest at this time is the contribution on the secondary and late complications of injuries to the brain, consisting of epilepsy, cerebral abscess, the meningoencephalitides, cerebral hernia and persistent fistulas. In the third chapter are described fifteen cases of complete section of the spinal cord. These cases were very carefully observed and permit of definite conclusions relative to the changes seen in the tendon and cutaneous reflexes, the reflexes of defense, sensory changes, and disturbances of the bladder. Special importance is given to the plantar reflex, which in the cases with complete section of the spinal cord produced flexion of all the toes. The chapter on the results of the explosion of shells without producing external injury is a contribution which American neurologists will view with great interest. One part alone, namely, that dealing with meningeal hemorrhage, in the absence of external injury, of which twenty cases are described, is sufficiently striking to merit careful study in the light of the absence in American literature of such observations. Many other cases are described in which the examination of the spinal fluid revealed a marked lymphocytosis, the symptomatology of which closely followed that of hysteria and was not associated with external wounds.

The volume is replete with novel ideas, not the least of which is the one that led M. Guillain to describe the nervous troubles following chlorin gas intoxication. It is one of the most instructive and valuable contributions to the literature of war neurology.

Etude sur L'Epilepsie Traumatique. Travail du Service de la Clinique des maladies du système nerveux à la Salpêtrière. Par P. Béhague. Paper. Pp. 320. Paris: Louis Arnette, 1919.

This is another valuable monograph founded on exceptional experience furnished by the great war, the study being based on 439 cases of traumatic epilepsy observed in one service (that of Pierre Marie) at the Salpêtrière. The figures are impressive in more ways than one, and unlike some war material, this has been wisely utilized. The patients were carefully examined, many of them observed for long periods, and proper records were made. With the knowledge thus gained is correlated the experience and opinions of others, all with good judgment and sense of proportion. Consequently, this brochure contains about all we certainly know about traumatic epilepsy, and is a safe guide. In our opinion about the only weak thing in the book is the chapter on pathogenesis. The author agrees that the cicatrix is an irritant that causes the convulsions. But how does the cicatrix irritate? The author's idea is that it is by means of cerebral expansion, which causes pressure on the scar tissue. And this expansion is brought about by increased arterial pressure considerably augmented by the peculiar structure of the choroid plexus. Just what starts the increase of arterial tension he does not elucidate.

Psychology of Dreams. By William S. Walsh, M.D. Cloth. Price, $2.50. Pp. 361. New York: Dodd, Mead and Company, 1920.

Dr. Walsh has prepared especially for the general reader a summary of the literature on dreams, particularly to aid sufferers from nervous diseases better to understand their mental processes. A brief historical sketch cites most of the theories prevalent before the work of Freud. This is followed by a discussion of sleep. This preliminary matter occupies the first twenty-six pages of the book, and all of the remainer is devoted to the dream itself. The author has made a good analysis of the literature, and his book may be read with interest both by physicians and by laymen.

Medicolegal

Rights of Physicians, Associations, Sanatoriums

(Harris v. Thomas et al. (Texas), 217 S. W. R. 1068)

The Court of Civil Appeals of Texas, in affirming an order dissolving a temporary injunction granted the plaintiff, says that he asked that each of the defendants be restrained from interfering with his practice in a certain sanatorium. It was the plaintiff's contention that the defendant physicians could refuse business relations with him only as individuals, and in their organized capacity could not influence others against him; that his exclusion from the organization and the defendants' refusal to affiliate with him and holding that his license as an osteopath did not entitle him to fellowship with them influenced others against him and deprived him of the fruits of his preparation as a practitioner. But if the defendants were acting to further their legitimate purpose or to advance the practice of their profession, this, the court thinks, would be justified, even if it had the result claimed by the plaintiff. Unless the organization was itself illegal or the methods used by it were wrongful, the plaintiff had no just complaint. The county medical association was composed of what is known as regulars, the purpose of which, the defendants answered, was not to injure any one, but to elevate the standards of practice and advance the science of medicine and surgery. It was provided by such association that an applicant for membership must be of good moral character and licensed to practice under the laws of the state of Texas; that he must not support or profess an exclusive system of medicine or advertise as such. A voluntary association has the power to enact laws governing the admission of members and to prescribe the necessary qualifications for membership. Membership therein is a privilege which the society may accord or withhold at its pleasure, with which a court of equity will not interfere, even though the arbitrary rejection of the candidate may prejudice his material interest. This court thinks that such a society as this county medical association was is legitimate and lawful. If it was an organization which was largely composed by the defendant physicians, and if it did directly or indirectly affect the material interest of the plaintiff or in some degree affect him as a nonmember, this would not justify the courts in denouncing it as an illegal or unlawful conspiracy. The association had the right to advance its purpose or interest and that of its members by all legitimate means. If it deemed the defendant an osteopath, and that as such he was supporting an exclusive system, the association and its members were within their rights, under its rules, in rejecting him as a member. They also had a right to refuse to assist him in operations. They could, if they deemed it to the interest of medicine or surgery, or the welfare of humanity, agree among themselves not to assist him in surgery if they did so in good faith and with no intent to injure him. To compel them to receive him into fellowship and accept his view would be to impose his will on them and to force the medical world to accept his theory of the healing art. Courts have no such power. Neither can the court see how a rule by the defendant physicians that there should be present at least three physicians at a major operation could affect the plaintiff. If they saw proper to burden themselves with such a restriction, they alone had a right to have it repealed. Nor was the plaintiff justified in relying on the statutes authorizing the licensing of doctors as establishing that the defendant physicians and the affiliated medical associations, the state and the American, were illegal in refusing to recognize him in their association, practice, etc. Furthermore, the court believes that it was the right of the sanatorium to refuse business relation with the plaintiff, if it saw proper to do so, and also to adopt such regulations as were proper or deemed by it necessary or expedient to improve its efficiency and standards of service therein and to require of those using its equipment that they possess specific medical learning and equipment in order to receive a membership on the medical staff. To accomplish this it was at liberty to employ a committee, as it did in this case, to standardize the sanatorium. If in good faith, with no evil intent to injure

or oppress, the defendant physicians who were so appointed did formulate the rules of standardization and name the staff as directed, they had the right to do so subject to no other control than the governing authorities of the institution.

Duty to Make Proper Diagnosis—Admissible Evidence

(Thorkeldson v. Nicholson (Minn.), 175 N. W. R. 1008)

The Supreme Court of Minnesota, in affirming an order that granted to the plaintiff a new trial after the action had been dismissed at the close of her testimony, says it was alleged in the complaint that, her son being seriously ill, she called the defendant to treat him; that the defendant treated him first for grip, then for typhoid, and lastly for acute kidney trouble; that the patient was not ill with any of such ailments, but was suffering with empyema; and that the defendant carelessly and negligently failed to operate on him for the illness with which he was then suffering. Fairly construed, the complaint charged the defendant with negligently failing to ascertain his patient's ailment. When a physician is called to attend a patient, it becomes one of his first duties to make a proper diagnosis and ascertain the patient's trouble. This constitutes a first step in the physician's treatment of his patient. If the defendant failed to bring to the diagnosis of his patient's case the proper degree of skill and care so as to enable him to administer the proper remedy, he would be guilty of neglect of duty. This was what the complaint charged the defendant with. Bearing in mind the fact that a proper diagnosis constitutes a part of proper treatment, this court encountered little difficulty in this case.

The plaintiff testified that subsequent to the death of her son she said to the defendant: "'Dr. Nicholson, you had the boy for three weeks, and you treated him for three different kinds of sickness, and you kept him there until it was too late to get any help for him'; and he kind of stooped down his head, and he looked at me, and the tears were in his eyes, and he says, 'Mrs. Thorkeldson, I knew that Rudolph had been treated wrong, and I know you can punish me for it, but it will cost me money and it will cost you money, and the mischief is done, and you won't get the boy back again.'"

This conversation, if it occurred, was in the nature of an admission by the defendant against his own interest and was relevant to the issues, and, when considered in connection with other evidence in the case, should have been submitted to the jury as bearing on the issues involved. The testimony, as it stood at the close of the trial, required the case to be submitted to the jury, and the court was justified in granting a new trial.

No Inference from Refusal of Examination

(Cornell v. Great Northern Ry. Co. et al. (Mont.), 187 Pac. R. 902)

The Supreme Court of Montana says that, in this action brought by the plaintiff to recover damages for injury to his left eye, counsel for the defendants requested the court, during the trial, to permit physicians present in the courtroom to make a physical examination of the plaintiff in the presence of the jury. The request was denied. They afterward requested instructions which would have told the jury, in effect, that the refusal of the plaintiff to submit to the examination at the request of counsel made in open court, together with the circumstances, might be considered by them and given such weight as they might in their discretion deem proper. They insisted that the request and refusal should have gone to the jury under proper instructions to be considered by them as competent evidence on the theory that, inasmuch as the episode had taken place in the presence of the jury, they should be permitted to consider it as evidence which the plaintiff had in his possession but refused to disclose. In other words, the plaintiff having refused to submit to the examination, which would have resulted in bringing to the knowledge of the jury stronger and more satisfactory evidence of the condition of his eye at the time, the other evidence on that point produced by him should be viewed with distrust. But the contention was wholly without merit. The defendants had no right to make the demand; and the plaintiff had a right to refuse to comply with it; under the previous holding of this court.

Conviction of Practicing Without License Sustained

(State v. Bohls (Minn.), 175 N. W. R. 915)

The Supreme Court of Minnesota, in affirming an order denying the defendant's motion for a new trial after he was convicted of practicing medicine without a license, holds that an indictment charging that, at a certain time and place, the person named therein did unlawfully practice medicine, and for a fee prescribe, direct and recommend certain drugs and medicine for the use and medicinal treatment (of a certain person) without a license so to do, states an offense under Section 4981 of the General Statutes of Minnesota of 1913. Nor is it necessary, under such statute, that the indictment negative the exceptions in the statute; such exceptions not appearing in the enacting clause of the act. The court says that the indictment in this case stated that the drugs and medicine were for the use and medicinal treatment of one William Frank Bedner. The undisputed testimony showed that at the time stated in the indictment, William Frank Bedner was less than 1 year of age, and was ill at the home of his mother, who called the defendant over the telephone to come and treat the child, and that the the defendant responded to such call, examined the child, left some medicine for him, prescribed further treatment, and received a fee of $15 therefor. The defendant offered no testimony, nor was there any proof that he was licensed to practice medicine. On the trial a druggist of the city was called as a witness. He produced sixty prescriptions issued to divers persons in the vicinity, which had been filled at his drug store, all bearing date during the week mentioned in the indictment. The witness testified that these prescriptions all bore the signature of the defendant in his own handwriting, with the letters "M.D." appended thereto. They were all admitted in evidence, over the defendant's objection, as bearing on the question whether the defendant held himself out as a practicing physician in the vicinity. The supreme court finds no reversible error in the record.

Selection of Physician—Refusal to Undergo Operation—Evidence

(Boa v. San Francisco-Oakland Terminal Rys. (Calif.), 187 Pac. R. 2)

The Supreme Court of California says that the plaintiff, who was 72 years of age, suffered a fracture of the neck of the femur. One instruction given to the jury told them that if they found that the plaintiff was injured through the negligence of the defendant, and that the plaintiff used ordinary care in the selection of a physician and surgeon for the purpose of treating her injuries, it would be no defense to show that the physician or surgeon thus selected by her was unskilful or failed to give her the best or proper treatment, provided she complied with the directions and submitted to the treatment prescribed by such physician and surgeon. That instruction contained a correct statement of the law. Improper treatment, if proved, would be no defense if ordinary care was used by the plaintiff in choosing a physician. Consequently there was no error in sustaining objections to various question propounded to a medical witness for the purpose of showing that the plaintiff had not received proper treatment, there being no evidence in the case tending to show that any information of lack of skill on the part of the physician chosen was brought to the knowledge of the plaintiff prior to the employment, or that she continued with him after being informed of any lack of skill or failure to give proper treatment. The evidence excluded should have been received only in the event that there was evidence in the case from which the jury might reasonably have found that the plaintiff was negligent in the choice of a physician.

Another instruction informed the jury that, in determining whether or not the injuries suffered by the plaintiff were permanent in character, they must bear in mind that the law does not require one injured by the negligence of another to undergo a serious or critical operation which might be attended by some risks of failure, if such person exercised reasonable diligence in caring for her injuries and reasonable means to prevent aggravation of them, and to effect her speedy and complete recovery; and a refusal to undergo such

an operation could not be considered in mitigation of damages, even though under the evidence it might lessen the effects of the injury. It was argued that the medical evidence introduced at the trial of this case proved that the operation referred to in this instruction, if submitted to by the plaintiff, would have effected a permanent cure. It appeared, however, that there was conflicting medical testimony on this point, and, under such circumstances, the giving of this instruction could not be said to have been error.

Unquestionably the physical and mental condition of the plaintiff resulting from the accident was material, and mental suffering occasioned by any reasonable apprehension of future disability or deformity resulting naturally and proximately from her injury was a proper element to be considered by the jury in assessing the damages. The disability apprehended was one arising from the blow occasioned by the defendant's car and could not be considered in any sense remote. It followed that the plaintiff had a right to testify as to her belief at the time of the trial that she would be a permanent invalid. It was insisted, however, that there was error in allowing the plaintiff to state, over objection, that various physicians with whom she had talked concerning her injury had informed her that "in all possibility" she would never recover the use of her limb. Even if it be conceded that the advice of physicians regularly retained in the case is a natural result of an injury to the person, the plaintiff failed to show that the physicians expressing the opinion in question had been regularly retained in a professional capacity. The statements, therefore, could at most be considered as purely casual and not connected with the defendant's wrongful act by an unbroken chain of causation. If, therefore, as this court thought on its original consideration of this case, the plaintiff's mental suffering was to be considered as occasioned by these statements, which bore no legal relation to the injury, the admission of the testimony was prejudicial error. But, while the court is still of the opinion that the admission of the testimony was error, it now holds that it was not prejudicial error, the jury having been instructed to consider the objectionable statements solely for the purpose of determining how the plaintiff felt about her condition at the time of the trial and its effect on her mind.

Comparing Roentgenograms of Both Knees

(City of Terre Haute v. O'Neal (Ind.), 126 N. E. R. 26)

The Appellate Court of Indiana, Division No. 1, says that, in this action brought to recover damages alleged to have been sustained by plaintiff O'Neal in falling down a negligently covered coalhole in the sidewalk, it was contended with reference to the evidence of a physician that the trial court erred in permitting him to state what, in his opinion, based on his examination of the plaintiff, produced the abnormal condition which he had testified existed in her left knee. But this evidence on its face was clearly competent. The fact that the record might disclose, as the defendant contended, that the witness had taken roentgenograms of both the plaintiff's knees, and had examined and considered both of such pictures in forming his opinion as to the cause of the abnormal condition of the left knee, was not a sufficient basis on which to predicate reversible error.

Society Proceedings

COMING MEETINGS

Amer. Assn. of Electro-Therapy & Radiology, Atlantic City, Sept. 14-17.
Amer. Assn. of Obstetricians and Gynecologists, Atlantic City, Sept. 20-22.
American Public Health Association, San Francisco, Sept. 13-17.
American Roentgen Ray Society, Minneapolis, Sept. 14-17.
Colorado State Medical Society, Glenwood Springs, Sept. 7-9.
Indiana State Medical Association, South Bend, Sept. 23-25.
Kentucky State Medical Association, Lexington, Sept. 27-30.
Minnesota State Medical Association, St. Paul, Sept. 29-30.
Missouri Valley, Medical Society of the, Omaha, Neb., Sept. 6-7.
Utah State Medical Association, Ogden, Sept. 7-8.
Washington State Medical Association, Tacoma, Sept. 16-17.
Wisconsin, State Medical Society of, La Crosse, Sept. 8-10.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

July 1, 1920, **52**, No. 3

Amplification of Action Currents with Electron Tube in Recording with String Galvanometer. A. Forbes and C. Thacher, Boston.—p. 409.
*Variations in Respiratory Dead Air Space Due to Changes in Depth of Breathing. R. G. Pearce and D. H. Hoover, Cleveland.—p. 472.
*Subarachnoid and Intra-Arterial Administration of Sodium Bicarbonate and Other Electrolytes. J. B. Collip, Edmonton, Canada.—p. 483.
*Influence of Internal Secretions on Blood Pressure and Formation of Bile. A. W. Downs, Montreal.—p. 498.
Chemical Studies on Gastrin Bodies. F. C. Koch, A. B. Luckhardt and R. W. Keeton, Chicago.—p. 508.
Essentials in Measuring Epinephrin Output: Relation to Rate of Denervated Heart. G. N. Stewart and J. M. Rogoff, Cleveland.—p. 521.
*Effect of Splenectomy on Growth in Young. S. C. Henn, Chicago.—p. 562.
*Importance of Vagal and Splanchnic Afferent Impulses on Onset and Course of Tetania Parathyropriva. W. L. Palmer, Chicago.—p. 581.

Respiratory Dead Air Space.—A new method of determining the capacity of the dead air space is described by Pearce and Hoover. The percentage composition of the alveolar air can be determined with approximate accuracy from analysis of the expired air and an assumed volume of the dead air space, if the depth of breathing is not excessive. This method is said to be as reliable as the best direct methods now used for the determination of the percentage composition of alveolar air, providing the respiratory volume is large enough to completely wash out the dead air space.

Effect of Sodium Bicarbonate on Nerve Cells.—It is held by Collip that the bicarbonate ion has a specific stimulatory effect on the nerve cells of the medulla and the motor cells of the anterior horn. Disturbance in the concentration of the various kations particularly of the calcium ion within the nervous tissue produces most marked effects.

Endocrine and Bile Formation.—As a result of his experiments Downs feels inclined to believe that some at least of the endocrine organs exert a specific influence on the secretory activity of the hepatic cells leading to the production of bile. The output of bile in the dog is increased by the administration of secretin. The output of bile in the dog is decreased by the administration of epinephrin and by mammary, orchic, ovarian, pancreatic and thymic gland substances. The amount of bile secreted is not affected in a constant or definite manner by the substance of the spleen and thyroid gland. Blood pressure is raised by epinephrin. Blood pressure is lowered by pancreatic substance and the secretin preparation employed. A fall of blood pressure, ordinarily preceded by a slight rise, is caused by orchic and mammary gland substances. Oscillations of blood pressure are caused by ovarian and thyroid gland substances. Blood pressure is not usually affected by either splenic or thymic gland substances.

Effect of Splenectomy on Growth.—Henn shows that the spleen is not essential to the life of young rats, rabbits, kittens and puppies and that splenectomy has a negligible influence on growth of rats, rabbits and kittens. In dogs splenectomized while young there is a hastening of the coagulation time of blood. The younger the animals have their spleens removed, the more rapid is the coagulation time of the blood. Corpuscles of young splenectomized dogs have the same property of more strongly resisting hypotonic sodium chlorid solutions, than control and operated control animals, as do animals splenectomized after having reached maturity. Accompanying the removal of the spleen there is an increase of Kupffer cells in the liver and changes in lymph glands and bone marrow that indicate a compensatory function on the part of these tissues in supplying a missing factor in blood formation and destruction. Male dogs, male and female rats, and female rabbits are not rendered sterile through the removal of the spleen while these animals are young.

Tetania Parathyropriva.—Double vagotomy and splanchnectomy Palmer says have no influence on the onset and course of tetania parathyropriva, neither has artificial gastrointestinal irritation.

Archives of Surgery, Chicago

July, 1920, 1, No. 1

*Clinical Lecture on Two Cases of Splenectomy for Splenic Anemia; Pathologic Changes in Splenic Anemia. H. Cushing, Boston, and W. G. MacCallum, Baltimore.—p. 1.
*Diaphragmatic Hernia. A. D. Bevan, Chicago.—p. 23.
*Esophageal Diverticula. E. S. Judd, Rochester.—p. 38.
*Management of Direct Inguinal Hernia. W. A. Downes, New York City.—p. 53.
*Eight Years' Experience with Brain Tumors. E. Sachs, St. Louis.—p. 74.
*Amputation Neuromas; Their Development and Prevention. G. C. Huber, Ann Arbor, Mich., and D. Lewis, Chicago.—p. 85.
*Postoperative Pulmonary Complications. E. C. Cutler and A. M. Hunt, Boston.—p. 114.
*Second Great Type of Chronic Arthritis. L. W. Ely, San Francisco.—p. 158.
*Comparative Study of Sodium Iodid as Opaque Medium in Pyelography. D. F. Cameron, Fort Wayne, Ind.—p. 184.

Splenectomy for Splenic Anemia.—This article is a stenographic report of a clinical lecture to third year students held by Cushing which really conveys the thought that it is most essential to acquire knowledge and judgment by keeping careful notes of cases and published articles. A patient with splenic anemia is the subject of the clinical lecture. To emphasize that a splenectomy, which is suggested as a suitable means of treatment by the student clinician, should not be regarded with too much enthusiasm, Cushing gives the history of two patients on whom a splenecomy was performed in 1898 for this condition. One patient died ten days after the operation from rupture of an esophageal varix; the other patient is still alive and has served in the literature as an example of cure of splenic anemia by splenectomy, the case sometimes having been quoted as "two" cases. The man has had severe hemorrhages ever since, the last in July, 1918. Cushing suggests that the operation may have prevented cirrhosis and ascites. The pathologic changes in the spleens of these two patients were written up by MacCallum in 1900, but the report was not published. In this article it is printed in full, and Cushing calls attention to the fact that during the last twenty years little additional knowledge of the pathology of this disease seems to have been acquired.

Diaphragmatic Hernia.—Four cases are reported by Bevan, who points out that the clinical picture of diaphragmatic hernia of the stomach is by no means a constant one. The picture he has seen has been, first, stomach distress, sometimes daily and sometimes coming on at longer intervals; the daily stomach distress is sometimes associated with pain coming on some time after the ingestion of food, simulating somewhat the picture of ulcer, sometimes that of gallstone disease and sometimes associated with vomiting, simulating the picture of pyloric obstruction. Occasionally, these patients have pain only at long intervals and then apparently when they have overeaten or eaten something that has disagreed with them, perhaps forming a good deal of gas. In one of Bevan's cases the pain was particularly excruciating and came on at such irregular intervals as to suggest strongly the possibility of gallstone colic attacks. The clinical picture of the cases in which the colon is involved may be suggestive of a beginning obstruction from carcinoma, a partial intestinal obstruction relieved by cathartics and enemas, with a disappearance of the symptoms and then a recurrence after an interval of days or weeks. In cases in which a definite diagnosis of diaphragmatic hernia can be made and the patient presents symptoms which can be ascribed to this lesion, unless there is some very strong contraindication, an attempt should be made to cure the patient by operation. Bevan describes a technic which he has worked out and which has seemed quite satisfactory.

Esophageal Diverticulum.—Judd has operated in fifty-four cases of esophageal diverticulum with three deaths. Two of the patients died following a one stage operation, the third following the first stage of a two stage operation. The ultimate functional results have been very satisfactory. One patient was operated on for recurrence, and in one or two cases a sound has been passed because the esophagus seemed too small, but in no instance has a stricture developed.

Direct Inguinal Hernia.—The clinical history of direct inguinal hernia is discussed by Downes, and the various operative procedures usually employed are described. Downes prefers his modification of the Bassini operation, consisting in a complete removal of the sac and the use of the rectus muscle. The percentage of failures in direct hernia has been reduced more than half. Downes cautions that if the condition of the lower abdominal muscles is such that a fair chance of obtaining a cure cannot be offered, the question of operation should be deferred for the time being and the patient advised to take systematic exercises for a period of from six months to one year. There is a small but definite group of patients with poorly developed muscles on whom it is not wise to operate for this condition, as recurrence is almost certain to follow.

Brain Tumor.—Of the eighty-five patients seen by Sachs, twenty-nine died, or 35.5 per cent. Eighteen of these twenty-nine deaths were in patients suffering with glioma, and sixty-four, or a little more than 74 per cent., of the patients had tumors other than glioma, and the mortality in these cases was only 17 per cent. Sachs urges that every brain tumor should be treated on the theory that it may be a glioma, and should be grouped with the most urgent cases that need hospital treatment. Of the gliomas in his series, 26 per cent. were readily removable, though successful extirpations constituted only 14 per cent.

Amputation Neuromas.—The results of a large series of animal experiments are reported by Huber and Lewis. They believe that a neuroma indicates an attempt which is thwarted or blocked by scar tissue on the part of the neuraxes of a divided nerve to seek the distal segment and thus complete nerve repair. When blocked the regenerating neuraxes form spirals and end disks, and become irregularly dispersed throughout the connective tissue of the bulb. The regenerating neuraxes react on the connective tissue elements of the bulb, which, as a consequence, increase in number and maintain their embryonal characteristics longer than is normally the case. The "swing door," or reversed V, operation and crush and tie operation do not prevent neuroma formation. Any method to be successful must be directed against the neuraxes. Absolute alcohol injected into the nerve some distance (from three-fourths to 1 inch) above the plane of section is more successful in preventing neuroma formation than any of the other methods ordinarily employed.

Postoperative Pulmonary Complications.—Fifty-five pulmonary complications with eleven deaths in 1,562 operations constitute the study material of Cutler and Hunt. Postoperative pulmonary complications constitute a serious menace to any patient who submits to operation. Reliable statistics show that one patient in from every thirty to fifty patients operated on, no matter what the anesthetic, develops a pulmonary complication, and one patient among every 150 to 175 patients dies from some such complication. The factors responsible for this are complicated and not always preventable, but an understanding of the mechanism suggests prophylactic measures. Cutler and Hunt believe that embolism from the operative field is the chief factor in the etiology of such complications. It is favored by: (1) sepsis, (2) trauma, and (3) the mobility of the part. Other factors of varying importance are preexisting lung disease, the irritation of the anesthetic and such general factors as old age, chilling and poor general condition. Such embolism may occur immediately during the operation or during the convalescence, and may be the cause equally of pneumonia, bronchitis, pleurisy, empyema, lung abscess or fatal pulmonary embolism. Inhalation anesthesia on top of an existing lung lesion may be the dominant factor in some cases. The following prophylactic measures are suggested: (1) a reduction in operative trauma in an effort to produce as few and small thrombi as possible; (2) every effort in septic cases to prevent further extension of infection so that bacteria will not be present in the blood stream, nor sepsis aid in the setting free of thrombi; (3) to avoid, if possible, operating on patients with an existing lung lesion, however slight; (4) avoidance of chilling both by cold

packs in laparotomies or by widely gaping wounds and by exposure after operation, and (5) to make each case before operation as good a risk as that individual case can be made.

Chronic Arthritis.—Under this head, Ely includes arthritis deformans, osteo-arthritis, hypertrophic arthritis, degenerative arthritis. This is the so-called senile form of arthritis, the "chronic rheumatism" of the elderly, the metabolic form of arthritis. The essential feature of this type of arthritis is an aseptic necrosis with cavity formation in the bone at a short distance from the joint. Infection in the jaws causes only this type of arthritis. Mental emotion and disturbed digestion can only be considered as contributing causes, which change the secretions of the mouth, and make the infection in the jaws more active. Trauma is effective only as straining a joint already mechanically damaged.

Use of Sodium Iodid in Pyelography.—The results of a comparative experimental study of the properties of the substances commonly used in pyelography, together with the clinical results obtained with sodium iodid are detailer by Cameron. He found that the molar, or 13.5 per cent., solution of sodium iodid is fully as opaque as the 3 molar, or 25.2 per cent., solution of sodium bromid and is definitely more opaque than the standard neutral thorium solution, which is correctly designated as a five-sixteenth molar thorium nitrate solution, but is commonly called the "15 per cent." solution. The molar, or 13.5 per cent., sodium iodid solution recommended is prepared by dissolving 15 gm. of the salt in a sufficient amount of water to make 100 c.c. The molar sodium iodid solution is not the least expensive of the pyelographic mediums, but it is free from toxic effects and irritation, as far as can be determined, is easy of preparation, has the lowest viscosity and the lowest osmotic pressure of any mediums so far suggested, colloids and emulsions alone excepted, and it exhibits an opacity to roentgen rays which actually increases relatively with increasing penetration of the rays, definitely surpassing, in this respect, the thorium and bromid solutions.

Boston Medical and Surgical Journal

July 29, 1920, **183**, No. 5

So-Called Lethargic Encephalitis; Its Sequels. J. W. Courtney, Boston.—p. 123.
Lethargic Encephalitis. G. E. Neuhaus, Denver.—p. 130.
Diagnosis and Treatment of Tuberculosis of Genito-Urinary Tract. A. H. Crosbie, Boston.—p. 134.

Illinois Medical Journal, Oak Park, Ill.

July, 1920, **38**, No. 1

Hospital Standardization. C. E. Humiston, Chicago.—p. 1.
Problems in Social Hygiene. L. A. Stone, Chicago.—p. 4.
Blood Pressure Conditions as Studied by a General Practitioner. F. T. Hartman, Waterloo, Ia.—p. 9.
Taking Care of Student's Health at University of Illinois. J. F. Wright, Urbana.—p. 13.
Obstetrics. J. S. Templeton, Pickneyville.—p. 15.
Problem of Tuberculous Pregnant Women. C. H. Davis, Milwaukee.—p. 17.
Need for Closer Relationship and Cooperation between Dentist and Physician, as Revealed by Focal Infections. C. E. Smith, Dekalb.—p. 19.
What Should We Do with Bladder Tumors? G. Kolischer, Chicago.—p. 21.
Treatment of Hemorrhage and Shock by Intravenous Solutions of Whole or Citrated Blood and Gum Salt Solution. E. A. Lynwood, Chicago.—p. 22.
Pernicious Anemia and Allied Disorders. H. A. Durkin. Peoria.—p. 25.

Journal of Biological Chemistry, Baltimore

July, 1920, **42**, No. 3

*Fat Soluble Growth Promoting Substance in Lard and Cottonseed Oil. A. L. Daniels and R. Loughlin, Iowa City, Ia.—p. 359.
Acidity of Ash-Free and of Commercial Gelatin Solutions. H. E. Patten and T. O. Kellems, Washington, D. C.—p. 363.
Sedoheptose, a New Sugar from Sedum Spectabile. F. B. La Forge, Washington, D. C.—p. 367.
Volemite. F. B. La Forge, Washington, D. C.—p. 375.
Optical Properties of a Series of Heptitols. E. T. Wherry, Washington, D. C.—p. 377.
*Influence of Diet on Antiscorbutic Potency of Milk. E. B. Hart, H. Steenbock and N. R. Ellis, Madison, Wis.—p. 383.
Hydrogen Ion Changes in Mosaic Disease of Tobacco Plants and Their Relation to Catalase. R. B. Harvey, Washington, D. C.—p. 397.
*Evidence Indicating a Synthesis of Cholesterol by Infants. J. L. Gamble and K. D. Blackfan, Baltimore.—p. 401.
Degree of Alkalinity Necessary for Phloroglucin Test for Formaldehyd. P. J. Hanzlik, Cleveland.—p. 411.
*Experiments on Carbohydrate Metabolism and Diabetes. I. Intravenous Glucose Tolerance of Dogs. F. M. Allen and M. B. Wishart, New York.—p. 415.
Alkali Reserve of Swine as Affected by Cereal Feeding and Mineral Supplements. E. B. Forbes, J. O. Halverson and J. A. Schulz, Wooster, Ohio.—p. 459.
*Occurrence of Water-Soluble Vitamin in Some Common Fruits. T. B. Osborne and L. B. Mendel, New Haven, Conn.—p. 465.
*Antiscorbutic Property of Vegetables. II. Experimental Study of Raw Dried Potatoes. M. H. Givens and H. B. McClugage, Rochester, N. Y.—p. 491.
Neutrality Regulation in Cattle. N. R. Blatherwick, Washington, D. C.—p. 517.
Effect of Anesthetics on Various Cell Activities. G. Medes and J. F. McClendon.—p. 541.
*Studies in Nutrition. IV. Nutritive Value of Peanut Flour as Supplement to Wheat Flour. C. O. Johns and A. J. Finks, Washington, D. C.—p. 569.
*Metabolic Study of Amyotonia Congenita. M. R. Ziegler and N. O. Pearce, Minneapolis.—p. 581.

Fat Soluble Growth Stimulants.—Lard and cottonseed oil contain appreciable amounts of the fat soluble growth stimulant, but it is demonstrable only when fairly large amounts are fed.

Antiscorbutic Vitamin in Milk.—Evidence is presented by Hart and his associates showing that the concentration of the antiscorbutic vitamin in milk is dependent on the diet. Summer pasture milk is much richer in this nutritive factor than dry feed milk or winter-produced milk, involving the use in the ration of corn silage or sugar mangels. Fifteen c.c. daily of summer pasture milk imposed on the basal ration used afforded protection against scurvy for twenty weeks to one guinea-pig. However, for most individuals this quantity of milk was insufficient for scurvy prevention. Fifty c.c. was a safer limit for complete protection. At least 75 c.c. daily per individual of dry feed milk were needed for complete protection against scurvy. The fact that milk produced from such dry feeds as used contained a measure of the antiscorbutic vitamin shows that the dry feeds themselves are not completely devoid of this nutritive factor.

Cholesterol Synthesis in Infants.—In the experiments reported on by Gamble and Blackfan the relation of the preformed cholesterol in the food to the total cholesterol metabolism was studied in infants by comparing carefully the intake and excretion of cholesterol. Analyses of the nonsaponifiable fraction of infants' stools confirmed the observation of Muller that cholesterol is excreted in infants' stools without undergoing to appreciable extent change to coprosterol. A method for determining cholesterol in milk and stool samples is described.

Action of Pancreatic Hormone in Protein or Fat Metabolism.—The experiments reported on by Allen and Wishart afford no evidence of a direct participation of the pancreatic hormone in protein or fat metabolism, but their decisiveness is said to be open to question.

Water Soluble Vitamin in Orange, Lemon and Grapefruit.—According to Osborne and Mendel the fresh juices of the edible parts of the orange, lemon and grapefruit contain water soluble (B) vitamin. Their potency in this respect is quite similar to that of comparable volumes of cow's milk. The efficiency of these fruit juices is not lost by suitable modes of desiccation. A sample of grape juice tested was less potent than equal volumes of the fruit juices mentioned. The edible portions of apples and pears furnish some water soluble vitamin; the quantity of these fruits necessary to supply this dietary essential is relatively very large, so that from a comparative standpoint they cannot be regarded as rich in this food factor. Prunes apparently are richer in the water soluble vitamin. From preliminary experiments it seems doubtful whether the juices of the lemon or grapefruit contain more than traces, if any, of the fat soluble vitamin. Observations on orange juice are indicative of some potency in this vitamin.

Antiscorbutic Property of Potatoes.—Data are reported by Givens and McClugage concerning the antiscorbutic value of white potatoes subjected to various temperatures and treatments. Ten gm. of raw white potato have protected the guinea-pigs against scurvy for the duration of the experiment, 129 days. The influence of heat on the antiscorbutic vitamin

appears to be related not only to the degree of temperature but to the duration of the treatment, the reaction, the enzymes present, and the manner of heating.

Value of Peanut Flour in Bread Making.—Bread made with a mixture of 25 parts of peanut flour and 75 parts of wheat flour furnished adequate proteins and water soluble vitamin for normal growth. A similar bread containing 15 parts of peanut flour and 85 parts of wheat flour contained proteins and sufficient water soluble vitamin for growth at very nearly the normal rate.

Metabolism in Amyotonia Congenita.—The significant facts observed by Ziegler and Pearce in the metabolism of a case of amyotonia congenita were: (1) a lowered creatinin excretion, in addition to the excretion of creatin on a low protein diet; (2) a normal uric acid excretion; therefore no nucleoprotein broken down; (3) an increased rest nitrogen, accompanied by an increased neutral sulphur; (4) a normal phosphorus excretion; therefore no bone disintegration; (5) a lowered chlorid excretion.

Journal of Experimental Medicine, Baltimore

July, 1920, **32**, No. 1

*Treatment of Experimental Pneumococcus Type I Pneumonia in Monkeys with Type I Antipneumococcus Serum. R. L. Cecil and F. G. Blake, Washington, D. C.—p. 1.
Group of Paratyphoid Bacilli from Animals Closely Resembling Those Found in Man. C. Tenbroeck, Princeton, N. J.—p. 19.
Bacilli of Hog Cholera Group (Bacillus Cholerae Suis) in Man. C. Tenbroeck, Princeton, N. J.—p. 33.
*Calcium and Magnesium Metabolism in Leprosy. F. P. Underhill, J. A. Honcij, L. J. Bogert and M. L. Aldrich, New Haven, Conn.—p. 41.
*Calcium and Magnesium Metabolism in Multiple Cartilaginous Exostosis. F. P. Underhill, J. A. Honeij and L. J. Bogert, New Haven, Conn.—p. 65.
*Experimental Study on Excitation of Infections of Throat. S. B Grant, S. Mudd and A. Goldman, St. Louis.—p. 87.
*Homeotransplantation and Autotransplantation of Spleen. D. Marine and O. T. Manley, Cleveland.—p. 91.

Antipneumococcus Serum Treatment of Experimental Pneumonia.—In experimental pneumococcus Type I pneumonia in monkeys, the intravenous injection of Type I antipneumococcus serum exercises a specific therapeutic effect, frees the blood promptly and permanently from pneumococci, shortens the course of the disease, and greatly moderates its severity. Of five monkeys inoculated intratracheally with lethal doses of pneumococcus Type I, all developed pneumonia, and all recovered following the administration of Type I antipneumococcus serum, while the controls died. Cecil and Blake point out that the earlier the serum is administered the shorter and less severe the pneumonia. Frequent injections are also an important factor in obtaining results. When serum treatment is instituted late in the disease, the injections must usually be continued over a longer period of time in order to achieve success. Normal horse serum exerts no beneficial effect whatever in experimental pneumococcus Type I pneumonia.

Calcium and Magnesium Metabolism in Monkeys.—From the fact that in leprosy there is a definite retention of calcium, and that the more advanced the stage of the disease the greater is the degree of retention, Underhill and his associates believe that the organism of leprous individuals is in need of calcium. Magnesium may also be retained in leprosy, but the degree of retention is much less marked than in the case of calcium. With the exception of the retention of calcium and magnesium the leprous organism responds to changes in the intake of calcium and magnesium in the same manner as normal individuals. The results of this investigation suggest that in leprosy the administration of calcium may be of benefit as an additional therapeutic measure in an endeavor to retard of arrest the progress of the bone changes characteristic of the disease.

Calcium and Magnesium in Cartilaginous Exostosis.—The facts enumerated by Underhill and others suggest that in the early stages of exostosis, that is during the proliferative cartilage changes, the progress of the disease may perhaps be checked by proper dietary procedure, restriction of calcium and magnesium intake.

Reaction Hyperemia.—Improvements are described by Grant and other in the method of following temperature changes, and thus alterations in vasomotor tone, in exposed mucous membranes. The palatine tonsils, like the palate, pharynx, and skin, react to chilling of the body surface with reflex vasoconstriction and ischemia. The hypothesis is advanced that one factor in the beneficial hardening effect of cold bathing and outdoor living, with its incident heightened immunity to respiratory infection, may be the training of the vasomotor system in the direction of development in the pharynx of a reaction of hyperemia following chilling, similar to that observed in the tonsils.

Transplantation of Spleen.—No instance of survival of spleen homeografts beyond the usual taking and persistence for one or two weeks common to most homeografts was noted by Marine and Manley, although the possible advantages of consanguinity, age and splenectomy were fully utilized. This is in sharp contrast to thyroid, sex gland and suprarenal cortex homeografts, with which one may expect 10 per cent. to survive the thirty day period. It suggests that spleen is a stronger antigen and excites a greater degree of immunity more quickly. With autografts survival and growth are the rule, and failures are due to technical errors. Age is an important factor in the growth of autografts. The younger the rabbit the more growth is aided. This beneficial effect decreases gradually and becomes negligible after sexual maturity. Removal of the spleen is a powerful stimulus to the growth of transplants. The effect varies inversely with the age and usually is negligible after sexual maturity. The influence of age and splenectomy suggests that the spleen is most important in early life and after sexual maturity is either unimportant or its functions may readily be assumed by other tissues (hematopoietic). Anatomically, the spleen is a highly complex structure, but biologically all the major elements of the spleen are simple, as indicated by the uniform and marked regenerative capacity. There is a tendency for grafts to involute or atrophy with age, and grafts made in old rabbits without removal of the spleen may undergo complete atrophy. Grafts made in young rabbits, accompanied by splenectomy, have been observed for more than three years and may be said to be permanent. There is some evidence that subcutaneous autografts react to infections in the same way as the intact spleen.

Journal of General Physiology, Baltimore

July 20, 1920, **2**, No. 6

Influence of Substrate Concentration on Rate of Hydrolysis of Proteins by Pepsin. J. H. Northrop, New York.—p. 595.
Enzyme Action in Echinodontium Tinctorium Ellis and Everhart. H. Schmitz, Moscow, Idaho.—p. 613.
Comparative Studies on Respiration. XI. Effect of Hydrogen Ion Concentration on Respiration of Penicillium Chrysogenum. F. G. Gustafson, Cambridge, Mass.—p. 617.
Analysis of Neuromuscular Mechanisms in Chiton. W. J. Crozier, Chicago.—p. 627.
Kinetics of Action of Catalase Extract from Marine Algae; Note on Oxidase. H. C. Hampton and L. G. M. Baas-Becking, Pacific Grove, Calif.—p. 635.
Quantitative Laws in Regeneration. J. Loeb, New York.—p. 651.
Reversal of Sign of Charge of Collodion Membranes by Trivalent Cations. J. Loeb, New York.—p. 659.
Ionic Radius and Ionic Efficiency. J. Loeb, New York.—p. 673.

New York Medical Journal

July 31, 1920, **112**, No. 5

Anatomic and Physiologic Theories of Plato. J. Wright, Pleasantville, N. Y.—p. 141.
*Epidemic of Typhoid Fever of Water Borne Origin and Carrier Transmission. L. H. Cornwall, New York, and J. P. Crawford, San Francisco.—p. 145. To be concluded.
Administration of Digitalis. T. S. Hart, New York.—p. 150.
Hypertension and Arterial Fibrosis. C. T. Hood, Chicago.—p. 152.
Case of Unilateral Choked Disk. F. Krauss, Philadelphia.—p. 157.
Shifting as an Aid to Vision. W. H. Bates, New York.—p. 158.
*Nonleukotoxic Properties of Benzyl Benzoate. E. A. Heller and E. Steinfield, Philadelphia.—p. 160.
Lobar Pneumonia Complicated by Multiple Arthritis. D. Greenberg, New York.—p. 161.

Typhoid Epidemic in A. E. F.—Cornwall and Crawford describe the epidemic of typhoid which occurred at Camp Hospital No. 10, Prauthoy, Haute Marne, A. E. F., France.

Benzyl Benzoate Not Toxic for Rabbits.—Benzyl benzoate was found by Heller and Steinfield to be without toxic effects on the leukocytes of rabbits. Controls of benzol showed the

well known depression of the leukocyte count. Therefore, a wide margin of safety is present between the therapeutic doses and the toxic doses of benzyl benzoate.

Southern Medical Journal, Birmingham, Ala.

July, 1920, **13**, No. 7

*Etiology of Epilepsy. E. B. Block, Atlanta, Ga.—p. 469.
*Active Immunization Against Diphtheria. J. B. Sidbury, Wilmington, N. C.—p. 474.
Rest and Exercise in Treatment of Heart Disease. J. H. Pratt, Boston.—p. 481.
Transduodenal Lavage and Usefulness of Jutte Tube. A. L. Levin, New Orleans.—p. 490.
Patients with Pharyngeal Paralysis Can Swallow Ice Cream When Not Able to Swallow Other Food. C. H. Cargile, Bentonville, Ark. —p. 496.
Fundamental Knowledge Necessary for Health Officers. J. N. McCormack, Louisville.—p. 498.
Minnesota Rural Clinic. E. J. Huenekens, Minneapolis.—p. 501.
Toxic, Non-Exophthalmic Goiter. W. D. Haggard, Nashville, Tenn. —p. 506.
Value of Radium in Treatment of Bladder Tumors. J. T. Geraghty, Baltimore.—p. 511.
*Use of Cautery in Acute Epididymitis. J. C. Vinson, Tampa, Fla.—p. 514.
Traumatic Dislocation of Both Hips. F. C. Hodgson, Atlanta, Ga.—p. 516.
Use of Radium in Gynecology. W. C. Gewin, Birmingham, Ala.—p. 517.
Case of Traumatic Hernia in Petit's Triangle. T. H. Hancock, Atlanta, Ga.—p. 521.
Vincent's Disease. J. J. Shea, Memphis, Tenn.—p. 524.
Radical Mastoid Operation: Indications. E. G. Gill, Roanoke, Va.—p. 529.

Etiology of Epilepsy.—A statistical study was made by Block of the etiologic factors, and some general considerations, in 200 cases of epilepsy. No attempt is made to prove or disprove anything.

Active Immunization Against Diphtheria.—Sidbury is convinced that universal application of the Schick test to all children up to 15 years and the administration of toxin-antitoxin to the nonimmunes, and to all children under 2 years, would practically eliminate diphtheria. The results of his retests show that the administration of toxin-antitoxin reduces the nonimmunes from 100 per cent. positives to 20 or 30 per cent. positives at the end of one year.

Use of Cautery in Acute Epididymitis.—The most dependent point of the scrotum, immediately over the swollen globus minor, is selected as the site for operation. The skin is painted with iodin. The scrotum is held taut; the skin and coverings are infiltrated with procain. The cautery at white heat is passed through the scrotum into the globus minor, where it is permitted to remain for from sixty to eighty seconds. Petrolatum on a sterile dressing is applied to the wound and a suspensory bandage is snugly fitted. The patient is permitted to get up from the table and go home immediately. Thirty-one patients have been treated by Vinson by this method. Without an exception they have experienced an immediate feeling of relief. The reaction from the burn has been of short duration. The wound has healed in from two to four weeks.

Surgery, Gynecology and Obstetrics, Chicago

July, 1920, **31**, No. 1

*Operative Injury of Common and Hepatic Bile Ducts. D. N. Eisendrath, Chicago.—p. 1.
*Surgery and Embryology. J. E. Thompson, Galveston, Texas.—p. 18.
*Icterus in Ectopic Gestation. Modes of Jaundice Production. E. H. Norris, St. Paul.—p. 34.
Repair of Cranial Defects by Autogenous Cranial Transplant. C. C. Coleman, Richmond, Va.—p. 40.
*Successful Experimental Homotransplantation of Kidney and Ovary. C. Dederer, Bay City, Mich.—p. 45.
*Impacted Fracture of Neck of Femur. H. Lilienthal, New York.—p. 50.
Congenital Absence of Vagina and Uterus. M. R. Robinson, New York.—p. 51.
*Artery of Uterine Round Ligament. J. F. Baldwin, Columbus, Ohio. —p. 57.
*Case of Krukenberg Tumor. T. L. Chapman, Duluth, Minn.—p. 58.
Some Principles Involved in Treatment of Empyema. E. A. Graham, St. Louis.—p. 60.
Diet in Pregnancy. C. E. Paddock, Chicago.—p. 71.
Cystadenomyoma of Fallopian Tube. L. B. Wetchagit and A. G. Ellis, Bangkok, Siam.—p. 77.
Foot Piece for Thomas Splint. C. W. Maxson, Baltimore.—p. 79.
Etiology of Ranula. R. M. Lewis, Baltimore.—p. 82.
Prolapse of Female Urethra. T. N. Hepburn, Hartford, Conn.—p. 83.
Esophageal Radium Applicator. C. W. Hanford, Chicago.—p. 84.
Imitation of Mechanical Phenomena of Parturition. New Obstetrical Machine. J. A. Beruti, Buenos Aires, Argentine.—p. 85.
Table for Manikin Demonstrations. H. W. Antz, New Haven, Conn. —p. 89.
Intestinal Obstruction Following Webster-Baldy Operation for Retroversion. E. P. Richardson, Boston.—p. 90.

Operative Injury of Bile Tracts.—Eisendrath reviews the literature, analyzes fifty-one cases of injuries of bile ducts, and points out how injury of these ducts may be avoided during operations by following a proper technic.

Origin of Ranula.—Thompson advances the theory that ranula, submaxillary cysts, and deep cervical cysts are derived from vestigial remains of the branchial clefts; that the primary cyst is derived from the cervical sinus in relation to the external depression of the second cleft; that the cyst is carried from its original position by the shifting of muscles during the formation of the neck, by which part of the cyst (deep cervical) is carried up to the base of the skull by the palate muscles which are derived from the third and fourth arches, and part carried into the submaxillary region and tongue by the migration of the muscles of the hypoglossal group.

Jaundice in Ectopic Gestation.—Jaundice is a not uncommon symptom of ectopic gestation. It was present in two cases reported by Norris. Jaundice is of great importance and may frequently be the symptom which determines the differential diagnosis. In these cases it is probably due entirely to the absorption of blood derived pigments produced by the hemolysis of the extravasated blood. The blood serum often contains considerable quantities of blood pigment (hemoglobin, hematin, hemochromogen, hematoidin). Norris suggests that in the progress of the differential diagnosis the blood serum should be studied both grossly and with the aid of the spectroscope.

Transplantation of Kidney and Ovary.—The left kidney and ovary, together with their blood supply, were transplanted by Dederer from one puppy to the neck of another of the same litter. Circulation through the organs was continuous with the exception of forty-two minutes during which time the organs were simply left out in the air in the field of operation. The function of this kidney was demonstrated from time to time, including one test on the twenty-sixth day after operation, when phenolsulphonephthalein was freely excreted, appearing in two minutes and forty second after its intravenous administration. On the twenty-sixth day the symptoms and signs of intussusception were noticed. Intussusception of the lower small intestine was found at operation. An acute inflammatory lesion, comprising edema of the intestinal wall and ulceration of the mucous membrane, was found at the entering end of the intussuscipiens. The affected area was excised and closed by suture. The dog died the next day. Necropsy showed the signs of distemper, particularly a generalized bronchopneumonia. The transplanted organs were removed and tested as to transplantability by anastomosing renal vessels to the splenic vessels of another dog. Arterial union was satisfactorily made but the venous anastomosis was not accomplished, in a measure, because of the development of a dense adventitia. The arterial blood which entered the kidney was under considerable pressure because only a portion of it escaped at the site of attempted venous anastomosis. However, no damage was observed to result from this influx of blood as was shown by microscopic examination of fixed and frozen sections.

Impacted Fracture of Neck of Femur.—Lilienthal's patient walked from the time of the accident. Three weeks after the accident, roentgen-ray examination disclosed an impacted fracture of the neck of the right femur.

Artery of Round Ligament.—According to Baldwin, no blood supply reaches the uterus through the round ligament, but a minute artery carries blood from the uterus into the ligament. This artery is so small that in the ordinary technic of hysterectomy the round ligament can be cut across with absolute impunity. Baldwin points out that this fact should be emphasized and statements to the contrary in textbooks be corrected.

Krukenberg Tumor.—The primary growth was small, the metastases were enormous in Chapman's case. The patient

was only 14 years of age, but the clinical picture coincides accurately with the indisputable and best authenticated type of the true Krukenberg tumor. There were two tumors, one from each ovary; both were solid. The growths weighed 6 and 7 pounds, respectively. A growth the size of a dollar, or definitely scirrhus-carcinomatus appearance and feel, was found on the lower edge of the anterior wall of the stomach, at the middle of the greater curvature. The patient died about twenty days after operation, apparently from exhaustion. The entire course of her illness from the time enlargement of the abdomen was first noted was less than three months.

U. S. Naval Medical Bulletin, Washington, D. C.

July, 1920, **14**, No. 3

History of U. S. Naval Hospital, Chelsea, Mass., 1915-1918. N. J. Blackwood.—p. 311.
Plan to Increase Efficiency of Hospital Corps Instruction. W. M. Kerr.—p. 338.
*Two Cases of Diabetes Mellitus Seen at U. S. Naval Hospital, New York. L. F. Craver.—p. 345.
Flat Foot in U. S. Navy. C. F. Painter.—p. 359.
Static Defects of Lower Extremities. A. A. Marsteller.—p. 365.
Satisfactory Treatment of Malaria. W. H. Michael.—p. 367.
Postbellum Navy Recruiting. A. H. Cechla.—p. 371.

Comparison of Allen and Joslin Methods of Treatment of Diabetes.—Two cases of diabetes mellitus are reported by Craver which show some interesting comparisons of methods of treatment. One patient with a sugar output of from 106 to 125 gm. per day, had his sugar output only moderately reduced by the old-fashioned protein-fat diet and developed marked acidosis, while with the Allen method of straight starvation followed by alternate feeding and fasting, thirty-four days were required to render the patient sugar-free, and there was produced thereby considerable acidosis, marked weakness, and loss of weight. The second patient, on the other hand, entering with a sugar output of from 300 to 500 gm. per day, required only five days to become sugar-free, and at no time had to undergo the discomforts of complete fasting; this result being accomplished by Joslin's method of first eliminating all fat, then rapidly diminishing protein, and cutting down carbohydrate last of all. This patient remained sugar-free over a period of five days while still getting from 14 to 45 gm. of carbohydrate, and sugar returned only when the diet had reached carbohydrate 63 gm., protein 60 gm., and fat 25 gm. At no time did this patient have more than a slight acidosis, as indicated by the presence of acetone, but the complete absence of diacetic acid from the urine.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, Liverpool

June 30, 1920, **14**, No. 1

Blackwater Fever in Macedonia. J. F. Gaskell.—p. 3.
Nomenclature of Parts of Male Hypopygium of Diptera Nematocera, with Special Reference to Mosquitoes. F. W. Edwards.—p. 23.
Various Types of Malarial Infection and Effect of Quinin Treatment Thereon Among Native Population of Malay Archipelago. N. H. Swellengrebel and J. M. H. Swellengrebel de Graaf.—p. 41.
Heat and Stegomyia Fasciata. J. W. S. Macfie.—p. 73.
Oral Administration of Quinin or Quinin and Arsenic for Short Periods to Young Native Children Infected with Malignant Tertian Malaria. J. W. S. Macfie and M. W. Fraser.—p. 83.
Oral Administration of Quinin Sulphate, Twenty Grains, to Adult Natives Infected with Malignant Tertian Malaria. J. W. S. Macfie. p. 93.
Oral Administration of Quinin Sulphate, Ten Grains Daily, for Two Consecutive Days Only to Native School Boys Infected with Malignant Tertian Malaria. J. W. S. Macfie.—p. 95.
Oral Administration of Quinin Sulphate to Natives Infected with Quartan and Simple Tertian Malaria. J. W. S. Macfie.—p. 111.
Results Obtained from Surveys for Breeding Places of Tree Hole Mosquitoes in Liverpool and Neighborhood. B. Blacklock and H. F. Carter.—p. 115.
Crossocephalus Zebrae. W. Yorke and T. Southwell.—p. 127.

Archives of Radiology and Electrotherapy, London

June, 1920, No. 239

Radium Technic at Memorial Hospital, New York. G. Failla.—p. 3.
History of Electrotherapy. Part III. H. A. Colwell.—p. 20.

Bristol Medico-Chirurgical Journal

June, 1920, **37**, No. 139

*Operation for Cure of Prolapse and Cystocele. W. C. Swayne.—p. 81.
*Causes of Death in Lobar Pneumonia. F. H. Edgeworth.—p. 88.
Case of Erythremia or Splenic Polycythemia. G. Parker.—p. 91.
Effects of War on Mental Condition of Citizens of Bristol. R. H. Norgate.—p. 95.

Operation for Prolapsus Uteri and Cystocele.—Swayne makes a median incision through the vaginal mucous membrane from a point about three-quarters of an inch behind the urethral orifice to the midpoint of the reflection of the vaginal mucous membrane from the cervix. The vaginal mucous membrane is then incised on each side of the cervix to a point just behind the mesial plane of the uterus, the incisions when completed forming a "T" with a curved top. Two lateral flaps are then dissected up roughly triangular in shape and attached by their longer sides. The bladder is separated from the uterus as high as may be necessary to expose the bases of the broad ligaments, and the dissection carried onward on each side until sufficient space is obtained. This suture is then firmly tied, so that the cervix is pushed backward and upward, and two folds of connective tissue can be seen running from just outside the tied suture to the back of the symphysis forming a well-marked triangle with its base at the cervix. These folds are then sewn together by means of a continuous suture of medium catgut, the bladder being pressed upward with a flat retractor. The vaginal flaps are brought together and sutured. The cervix may be amputated or the perineum repaired as the necessities of the case may demand.

Low Blood Pressure Cause of Death in Lobar Pneumonia.—In four of Edgeworth's cases, about 3 per cent., death occurred apparently as the result of a persistent fall in the blood pressure. In three this happened during the fever, in one just when the temperature had fallen by crisis to the normal. In one case one-third grain of tyramin injected hypodermically raised the blood pressure from 80 to 105 mm. Hg within two hours, and its administration every four hours the blood pressure up. On the other hand, in two cases, seen for the first time at the end of the crisis, with a fallen blood pressure—as estimated by the finger—tyramin failed to prevent death. The drug thus seems useful if used directly the blood pressure begins to fall. If this has already fallen to a dangerous point, no treatment will prevent a fatal termination.

Brain, London

May, 1920, **43**, Part 1

Results of Secondary Suture of Peripheral Nerves. J. S. B. Stopford. —p. 1.
Microgyria and its Effects on Other Parts of Central Nervous System. W. P. May.—p. 26.
Psychologic Interpretation of Essential Epilepsy. L. P. Clark.—p. 38.
Psychogalvanic Reflex: A Review. E. Prideaux.—p. 50.

British Journal of Tuberculosis, London

July, 1920, **14**, No. 3

Tuberculosis and Life and Work of Sir William Osler. S. A. Knopf. —p. 97.
Pulmonary Tuberculosis Versus Consumption. H. B. Shaw.—p. 104.
Muscular Changes Occurring in Pulmonary Tuberculosis. J. Craig-MacGown.—p. 106.
Epidemiology of Phthisis. W. Gordon.—p. 112.
*Von Pirquet Reaction in Pulmonary Tuberculosis. W. A. Muir.—p. 115.
Rôle of American Red Cross in Tuberculosis Campaign in France During Great War. E. G. Davies.—p. 120.

Value of von Pirquet Test.—In the case of adults, Muir considered the von Pirquet test as of little value as a diagnostic and prognostic agent, except in a very limited number of cases. A negative reaction is not proof that a patient is nontuberculous because it may be obtained in advanced cases. A markedly positive reaction does not necessarily indicate a good prognosis. The reaction is always positive when tubercle bacilli are present in the sputum, except in advanced cases. The reaction may be negative in 30 per cent. of children with pulmonary tuberculosis. After sanatorium treatment the percentage may be reduced to 17, the reduction indicating an improvement in the immediate prognosis.

British Medical Journal, London

July 10, 1920, **2**, No. 3106

State and Future of Medical Practice. G. Newman.—p. 33.
Consultant. W. Herringham.—p. 36.
Future of Medical Practice from Standpoint of General Practitioner. A. Linnell.—p. 38.
Future of Medical Practice from Point of View of Medical Research. G. Hopkins.—p. 40.
Hospitals. E. W. Morris.—p. 42.

July 17, 1920, **2**, No. 3107

Scope and Equipment of an Anatomic Institute. G. E. Smith.—p. 67.
*Operation for Radical Cure of Inguinal and Femoral Hernia. G. L. Cheatle.—p. 68.
Open Ether, without Chill. L. J. Picton.—p. 69.
Acidosis in Disease. F. G. Hopkins.—p. 69.

New Herniotomy.—In the method described by Cheatle the patient is placed in the Trendelenburg position, an incision is made to one side of the middle line, the rectus abdominis is split longitudinally, and the abdominal wall is retracted to the side of the operation. The peritoneum is smoothed away by a dry swab from the parietes. The operation is conducted without opening the peritoneum. The sac between the internal ring and the surface of the peritoneum is delimited by insinuating the forefinger between it and the external iliac artery and vein. The sac is ligatured at the peritoneal surface. The part of the sac that extends into the inguinal canal is pulled up into the subperitoneal space as far as it will come, tied as low down as possible and then it is allowed to slip back (or is replaced) into the inguinal canal; so that it cannot act as a guide for a recurrent hernia. The delimitation of the sac in the subperitoneal space is simplified by packing back the peritoneum with gauze in a direction upward and away from the seat of operation. The muscle fibers and their sheath are separately sutured. There is nothing to stop a surgeon occluding the internal ring by suture should he desire. The younger the patient the great is the simplicity of the operation. The operation is not applicable to inguinal hernia in which intestinal adhesions exist within the sac.

Dublin Journal of Medical Science

July, 1920, **4**, No. 5

Acute Pneumococcal Lobar Pneumonia. H. F. Moore.—p. 217.
Case of Congenital Cystic Kidneys and Liver, Gastric Ulcer, Gastro-Enterostomy: Later, Gastric Carcinoma; Perforation. T. G. Moorehead.—p. 232.

Glasgow Medical Jouranl

July, 1920, **12**, No. 1

Lethargic Encephalitis. T. K. Monro.—p. 1.
Infectivity in Acquired Syphilis, with Special Reference to Wassermann Reaction: Bearing on Administrative Control of Treatment. C. H. Browning.—p. 13.
Surgical Service of Salonika Army. J. Patrick.—p. 21.
Preventive Mastoidotomy. G. Young.—p. 43.

Indian Journal of Medical Research, Calcutta

January, 1920, **7**, No. 3

Estimation of Erythrocyte and Hemoglobin Content of Blood. W. F. Harvey.—p. 479.
Use of Birds as Laboratory Animals. W. F. Harvey.—p. 492.
*Bacteriologic Investigation of Influenza. R. H. Malone.—p. 495.
Production of Indole by Pfeiffer's Bacillus. R. H. Malone.—p. 519.
*Lethargic Encephalitis in Karachi During an Epidemic of Influenza. R. H. Malone and G. C. Maitra.—p. 526.
*Preparation of Culture Medium Suitable for Growth of Organisms Used as Vaccines. D. Norris.—p. 536.
Method of Utilizing Natural Amboceptor in Hemolytic Serums in Wassermann Reaction. R. B. Lloyd and R. H. G. C. Mitra.—p. 545.
Bionomics of Houseflies. I. Outdoor Feeding Habits of Houseflies, with Special Reference to Musca Promisca. P. R. Awati.—p. 548.
Id. II. Attraction of Houseflies to Different Colors. P. R. Awati.—p. 553.
Id. III. Attraction of Houseflies to Certain Fermenting and Putrefying Substances. P. R. Awati and C. S. Swaminath.—p. 560.
Occurrence of Coleoptera in Human Intestine. R. A. S. White.—p. 568.
Correlation Between Chemical Composition of Anthelmintics and Their Therapeutic Values in Connection with Hookworm Inquiry in Madras Presidency. J. F. Caius and K. S. Mhaskar.
II. Oleum Chenopodii.—p. 570.
III. Oleum Absinthii.—p. 602.
IV. Oleum Tanaceti.—p. 606.
Malaria in Kashmir. C. A. Gill.—p. 610.
Relationship of Malaria and Rainfall. C. A. Gill.—p. 618.
*Pathogenesis of Deficiency Disease. X. Effects of Some Food Deficiencies and Excesses on Thyroid Gland. R. McCarrison.—p. 633.
Secretion and Epithelial Regeneration in Mid-Intestine of Tabanus. F. W. Cragg.—p. 648.

Bacteriology of Influenza.—Malone found that 92 per cent. of the strains of Pfeiffer's bacillus tested produce indol when grown in suitable culture mediums. No other hemophilic organism present in the respiratory tract of healthy persons or of influenza patients is known to possess this property. Therefore, the indol reaction can be used as a means of identifying Pfeiffer's bacillus in pure cultures, and recognizing its presence in mixed cultures. A method described by Malone is claimed to be more accurate and more easily applied than the laboratory methods usually employed for the recognition of Pfeiffer's bacillus in the secretions of the respiratory tract of influenza patients. Malone claims that a transparent solid medium containing heated blood is more satisfactory for the isolation and identification of Pfeiffer's bacillus than ordinary blood agar. Heated pigeon's blood has given the best results in his experience. Ordinary blood agar (human, rabbit or sheep) was used for isolating pneumococci and streptococci.

Lethargic Encephalitis and Influenza.—The history of ten cases seen by Malone and Maitra failed to record an attack of influenza, and in one case only was there influenza in the family. Moderate leukocytosis occurred in all the cases with a definite increase of polymorphonuclear cells. The total leukocyte count varied but little during the illness, but as the patient's condition improved there was noted a decrease in the polymorphonuclear neutrophils and a relative increase in the eosinophils and small monocytes. The cerebrospinal fluid of every case was clear but contained an excess of globulin. There was no increase of cells.

Groundnut Culture Medium.—The preparation of a culture medium from caseinogen (groundnut press cake) is described by Norris and the results obtained from it are compared with those given by a meat medium.

Effect of Vitamin Deficiency on Thyroid.—McCarrison's studies have shown that dietaries deficient in vitamins lead to a reduction in size and weight of the thyroid gland and render it susceptible to the noxious action of intestinal bacteria, or of their products, with resultant atrophic and necrotic changes. A scorbutic diet of crushed oats and autoclaved milk may cause in guinea-pigs considerable enlargement of the thyroid, in the main, the result of congestion and hemorrhagic infiltration of its tissues. Dietaries containing adequate provision of vitamins, but excessively rich in proteins and fats, induce in the thyroid of pigeons in confinement marked degrees of hyperplasia, the extent of the hyperplasia being largely dependent on the duration of the organs' exposure to the goitrigenous influences induced by the excessive protein and fat content of the food. The addition of onions to a dietary excessively rich in protein and fats, while containing at the same time an abundance of vitamins, markedly retards the development of thyroid hyperplasia, and the tendency to acinar budding in pigeons living in confinement. The beneficial influence of the onions is held to be due in part at least to their action in restraining the growth of putrefactive types of bacteria in the gastro-intestinal tract and in retarding the absorption of their products. It is suggested that succus alii might prove of benefit in restraining the thyroid hyperplasia of exophthalmic goiter. The changes in the parathyroids induced by a diet deficient in vitamins and excessively rich in starch and fat appear to be related in their origin to intestinal anaerobes, the noxious action of which is greatly favored by the defective diet.

Journal of Laryngology, Rhinology and Otology, London

July, 1920, **35**, No. 7

Dental Cysts of Superior Maxilla: Their Surgical Treatment. M. Sourdille.—p. 193.
Case of Labyrinthitis; Diffuse Purulent Meningitis; Labyrinthotomy; Recovery with Intravencus and Intrathecal Injections of Colloidal Silver. P. W. Williams.—p. 197.
Antral Infection and Manganese. E. W. Williams.—p. 199.
Aqueduct of Fallopius and Facial Paralysis. D. McKenzie.—p. 201.

Journal of State Medicine, London

July, 1920, **28**, No. 7

Royal Institute of Public Health. V. Sandhurst.—p. 193.

Lancet London

July 17, 1920, **2**, No. 5055

State and Future of Medical Practice. G. Newman.—p. 111.
Myoclonic Form of Acute Epidemic Encephalitis. A. W. M. Ellis.—p. 114.
*Suppression of Urine in Pregnancy and Puerperium. R. Jardine and A. M. Kennedy.—p. 116.
*Hemorrhage Following Operative Treatment of Internal Hemorrhoids. W. B. Gabriel.—p. 121.
Complement-Fixation Test in Gonorrhea. W. Magner.—p. 123.
Removal of Metallic Foreign Bodies. C. F. Bailey.—p. 125.
Infection with Organisms of Vincent's Angina Following Man-Bite. P. H. Hennessy and W. Fletcher.—p. 127.
A Case of Phocomelus. C. Homi.—p. 128.

Suppression of Urine Caused by Cortical Necrosis in Kidney.—Six of twelve cases of suppression of urine in pregnancy seen by Jardine and Kennedy were proved by post-mortem examinations to be due to symmetrical necrosis of the renal cortex. All these patients suffered from what is known as the toxemia of pregnancy.

Hemorrhage Following Hemorrhoid Operations.—Gabriel's paper is based on an analysis of 500 cases of internal hemorrhoids. Ligation was performed in 470 cases; the clamp and cautery method in eighteen, and Whitehead's operation in twelve cases. Of the three cases of intermediate hemorrhage requiring treatment, two followed a ligature and one a Whitehead's operation. Five cases of serious secondary hemorrhage followed a ligature operation, four on the seventh and one on the eighth day after operation. In addition there were eight other cases of slight secondary hemorrhage after defecation, of no special consequence and requiring very little treatment; seven of these followed a ligature operation. Plugging the rectum with a vulcanite or rubber tube Gabriel found is the most generally efficient method of controlling the hemorrhage, which is to be combined with suitable general treatment.

Medical Journal of South Africa, Johannesburg

April, 1920, **15**, No. 9

Hyperpiesia. G. D. Maynard.—p. 198.
Treatment of Syphilis. H. Gluckman.—p. 201.

South African Medical Record, Cape Town

June 12, 1920, **18**, No. 11

Polymyositis Secondary to Furunculosis. A. W. Burton.—p. 202.
Experiences in East African Campaign. R. D. A. Douglas.—p. 203.

Tubercle, London

July, 1920, **1**, No. 10

Some Clinical Characters of Tubercle. W. C. Rivers.—p. 451.
"Pretuberculous" Child. F. G. Collins.—p. 454.

Annales de Médecine, Paris

1920, **7**, No. 5

*The Intrapleural Pressure. H. Flurin and J. Rousseau.—p. 325.
*Tetany from Hemorrhage in Parathyroids. V. Cordier.—p. 346.
*Anaphylaxis. M. Kopaczewski.—p. 361.
Supraclavicular Hollow as Sign of Isolated Paralysis of Serratus Magnus. G. Guillain and E. Libert.—p. 383.

Intrapleural Tension.—Flurin and Rousseau present evidence that most of the physical and functional signs of an effusion in the pleura and several of the mishaps for which thoracocentesis is held responsible are in reality due to modifications of the intrapleural tension. By doing thoracocentesis without attempting to aspirate the effusion, the pressure rights itself and there is no danger of mishaps, and the patient does not become fatigued. He reclines on his back, the edge of the thorax close to the edge of the bed. The puncture is made in the sixth or seventh interspace, as close as possible to the posterior axillary line, and all of the fluid is allowed to escape spontaneously. The tension at the close was always found normal.

Tetany from Hemorrhage in Parathyroids.—In Cordier's case the man of 41 with chronic dysentery and paroxysmal pains in the neck suddenly developed tetany of the arms and hands, and necropsy disclosed a hematoma in the tracheothyroid space which had destroyed the right parathyroids, with hemorrhages in the left parathyroids. Cordier comments on the rarity of hemorrhages in the parathyroids in adults in comparison to its frequency in children. Yanase has reported finding them in 37 per cent. of children, mostly in those with exaggerated electric irritability, but Cordier knows of only one other case of spontaneous tetany in an adult with destruction of the parathyroids demonstrated at necropsy.

Anaphylaxis.—Kopaczewski reports from the Pasteur Institute at Paris experimental and clinical research, commenced in 1915, which has thrown new light on the nature of anaphylaxis and on means to ward it off. He found first that the toxic shock could be induced by contact of the serum with pectin, a nonnitrogenous substance, and Bordet demonstrated the same with pararabin and Schmidt with starch—all free from nitrogen. The ultramicroscope revealed that when the serum had thus been rendered toxic, its micellar structure changes, that is, the ultimate molecular mass of protoplasm becomes agglutinated. This agglomeration occurs exclusively in toxic serums, and does not occur if the toxicity is prevented by the action of antiflaking factors. He reiterates that this is a specific phenomenon. The flaking of the micella seems to be the cause of the morbid phenomena, and they can be prevented by preventing the flaking of the serum, either by reducing the superficial tension or increasing the viscosity of the fluid before bringing the serum into contact with the colloidal substance or suspension of bacteria. His research further demonstrated that only colloidal substances in the gel state, of a certain structure and with a pronounced electronegative charge were capable of this toxic action. All these facts, he says, constitute a solid experimental basis for the assumption of a colloidal flaking which, by obstructing the capillaries, suspends the vital functions.

Archives Médicales Belges, Liége

November, 1919, **72**, No. 11. Issued June, 1920

*Electric Tests in Diagnosis. R. Marchal.—p. 413.
Sanitary Colonies for the Tuberculous. H. Faniel.—p. 420.
Symptomatic Value of Nystagmus. M. Stassen.—p. 432.

December, 1919, **72**, No. 12

History of Military Hospital at Rouen. L. Wilmaers.—p. 465.
Phlegmon of Orbit After Influenzal Pneumonia. M. Danis.—p. 494.
Miners' Nystagmus. M. Stassen.—p. 498.

Electrodiagnosis.—Marchal warns that even when the reaction of degeneration is total, the prognosis must not be based on this alone, while a partial reaction of degeneration permits a favorable prognosis. He recalls further that the waves of the galvanic and the faradic stimulus are of different lengths, and time must be allowed for this in estimating the responses. Faradic bipolar exploration is usually all that is necessary for preliminary classification of cases.

Bulletin de l'Académie de Médecine, Paris

June 8, 1920, **83**, No. 23

*Treatment of Genital Prolapse. S. Mercadé.—p. 524.
*Postoperative Jejunal Ulcer. V. Pauchet.—p. 527.
*Schick Reaction. P. F. Armand-Delille and P. L. Marie.—p. 530.
Bacteriology of Black Tongue. A. Sartory.—p. 532.

June 22, 1920, **83**, No. 25

Trauma of Anterior Segment of Eye. Frenkel.—p. 555.
Preventive Medicine and Medical Institutes. L. Bernard and Delorme.—p. 557.

Treatment of Genital Prolapse.—Mercadé sutures the levator ani muscles together through the roof of the anterior vagina in treatment of prolapse of the uterus, and here reports a case in which, after vaginal hysterectomy, he sutured these muscles together all the way from the bladder to the rectum. This provides a solid floor for the pelvis.

Postoperative Jejunal Ulcer.—Pauchet found scraps of suture material in five of seven postoperative ulcers, at the site of the anastomosis, even when the nonabsorbable suture material had been used only for the serosa-serosa suture. Since then he uses only catgut, but suggests the nonabsorbable material might be used for suturing the mucosa as this would certainly be sloughed off in time. Hyperacidity was the rule in his eleven cases of jejunal ulcers, and for this reason he tries to reduce the secreting area of the stomach in operating on this organ, or makes the anastomosis as far from the pylorus as possible. In one case the ulcer developed at the point where the clamp had been applied, and was the same shape and size as the imprint of the clamp. Erosions of the mucosa from clamp and fingers or submucosa hema-

tomas from pressure by a Murphy button may predispose to ulceration but can scarcely induce it alone in the absence of hyperacidity.

The Schick Reaction in Prophylaxis.—Armand-Delille and Marie found 37.5 per cent. positive reactions to the Schick test for susceptibility to diphtheria in 200 children in various orphan asylums. This and similar experiences suggest, they say, the advisability of applying the Schick test regularly to children on entering school, recording the response on each child's card, and also applying the test to new recruits entering the barracks.

Bulletin Médical, Paris

June 16-26, 1920, **34**, Nos. 31-33

Arsphenamin by Subcutaneous Injection. Emery and Morin.—p. 549.
Advantages of Kaolin in Diarrhea. R. Guillermin.—p. 551.
Mongolism. E. Apert.—p. 563.
*Uterine Fibromas. A. Cauchoix.—p. 581.
Conservative Surgery for Uterine Fibromas. J. Okinczyc.—p. 585.
*Roentgen-Ray Treatment of Fibromas. J. Belot.—p. 589.
*Radium Treatment of Fibromas. J. Gagey.—p. 592.

Uterine Fibromas.—The issue of the *Bulletin* for June 26, No. 33, is devoted entirely to uterine fibromas. Cauchoix reviews the indications for and against the various methods of treatment, saying that Ménard has recently reported three cases in which conception occurred during roentgen-ray treatment of fibromas, with normal course and termination of the pregnancy, confirming Stern's statement that raying the ovaries does not prevent pregnancy later. Before radiotherapy in any form is applied, thorough examination is necessary, as it is liable to whip up beginning necrosis or malignant degeneration. Bégouin has reported a fatal case of activation of incipient necrosis. Concomitant lesions elsewhere in the uterus or adnexa were found by Fredet in fifty-three of his 121 fibroma cases and by Baudet in fifty-seven of 130. In all cases of fibroma, signs of myocarditis should be sought, and this decides the indications for treatment. Toxic insufficiency of the kidneys is comparatively common with fibromas; the indications with this are the same as with heart disease.

Roentgen-Ray Treatment of Uterine Fibromyomas.—Belot states that Foveau de Courmelles was the pioneer in this method of treatment, publishing his results in January, 1904. The statistics from various countries cited by Belot show that the mortality after surgical intervention for uterine fibromas is a little higher than the number of cases which prove refractory to radiotherapy. From 95 to 96 per cent. of cures can be counted on with the latter. He declares that there is no evidence that raying can transform a fibroma into a cancer while, on the other hand, there is constantly accumulating evidence that radiotherapy may cure cancer of the uterus. As Delbet expresses it, "The fibroma, fleeing from the knife, melts away under the rays from the roentgen tube."

Radium Treatment of Uterine Fibromas.—Gagey extols the superiority of radium for treatment of small fibromas, not larger than the ovum of a three or four months' pregnancy. This is the special field for radium. He adds that unless there is latent adnexitis, which might flare up, radium treatment is absolutely harmless.

July 10, 1920, **34**, No. 35

*Alimentary Anaphylaxis. G. Laroche, C. Richet, Jr., and F. Saint Girons.—p. 625.
Vomiting of Infants. J. Génévrier.—p. 629.

Alimentary Anaphylaxis.—Richet and his co-workers have apparently recently demonstrated by humoral reactions the anaphylactic origin of certain cases of chronic gastro-enteritis. From the clinical standpoint, loss of flesh is an important symptom of alimentary anaphylaxis, but as this occurs with ordinary dyspepsia, it does not aid in differentiating. It is possible that the two are usually combined; this hypothesis seems to be sustained by the infants who are unable to digest any kind of milk but thrive on change to other food, and develop acute gastro-intestinal disturbance anew on return to milk, regardless of the small amount ingested. Every pediatrician has seen such cases; they seem to testify to a sensitization which is the main characteristic of anaphylaxis. It has cleared up the matter considerably to substitute the term "alimentary anaphylaxis" for the vague terms "idiosyncrasy" and "digestive intolerance" as the former has well defined experimental and biologic criteria in acute and in certain cases of minor anaphylaxis, and we may soon discover such for dissociated hereditary and chronic anaphylaxis. Even without them, we are reaping a harvest by discovering and dropping the toxic article of food and then overcoming the extra susceptibility by training the digestive tract to bear such substances without harm. The most convenient method for this is to take 0.5 gm. of peptone an hour before meals. In children the pancreatic ferment plus pepsin may be required, as the pancreatic ferment seems to be the only one of the digestive juices which transforms albumin and annuls its anaphylaxis-producing properties. In Nathan's case of intolerance for eggs, the stools revealed insufficiency of pancreas function and under pancreas treatment the boy could eat eggs, but the anaphylaxis reappeared whenever the organotherapy was suspended. A dose of 5 mg. of quinin plus 0.5 gm. of sodium bicarbonate, taken an hour before the ordinary dose of quinin, may banish completely an "idiosyncrasy" to quinin, preventing effectual treatment of malaria.

Bulletins de la Société Médicale des Hôpitaux, Paris

May 21, 1920, **44**, No. 18

Iodin Internally in Treatment of Tuberculous Glands. H. Dufour.—p. 693.
Treatment of Pulmonary Tuberculosis. H. Dufour.—p. 695.
*Treatment of Jaundice. P. Emile-Weil.—p. 697.
Myelocythemia in Influenza. G. Lion and A. Crétin.—p. 703.
Superior Gravity of Influenza in Girls. E. Apert.—p. 706.
Epidemic Encephalitis. L. Lortat-Jacob and others.—p. 707; 708; 730; 734; 738.
Schick Diphtherin Test in the Army. Rieux and Zoeller.—p. 717.
*Autoserotherapy in Hay Fever, Urticaria, etc. C. Achard and C. Flandin.—p. 723.
Hyperhidrosis After Shell Shock. L. Boudon and A. Rouquier.—p. 732.
Posterior Tibiofemoral Reflex in Sciatica. G. Guillain and J. A. Barré.—p. 737.

Treatment of Jaundice.—Weil reported in 1915 his success in treating typhoid with a solution of sugar, plus epinephrin, given by the drop method. His experience since with it has been favorable in all infectious diseases with the exception of dysentery. But his success, he says, has been most brilliant with this method in catarrhal and toxic jaundice. For this he uses a liter of tepid water containing 45 gm. of sugar and 1.5 gm. of hexamethylenamin. The diuresis increases at once, by the fourth day reaching usually 3 liters and keeping at 3 or 4 liters while the treatment is continued. The jaundice disappears and the pruritus, but the bradycardia is seldom and not much influenced. This treatment is often effectual also in jaundice from gallstones, sometimes rendering operative measures unnecessary.

Autoserotherapy in Urticaria, Hay-Fever, etc.—Achard and Flandin state that in conditions in which the factor of anaphylaxis is evident, the serum acquires what they call cryptotoxic properties, and can be utilized to desensitize. They give it in minute doses below the level of those inducing shock or even the hemoclasic crisis, injecting subcutaneously 0.5 c.c. of the autoserum; twelve hours later, 1 c.c. and the next day 1 or 2 c.c.; 2 c.c. the following day, and then every second or third day. Recurring urticaria, angioneurotic edema and hay-fever yielded promptly to this treatment, but little effect was apparent in asthma. Their experience with hay-fever has been limited, but one case cured in 1918 had only very slight symptoms the following year. The effect of this treatment is not like that of ordinary serotherapy but seems to be an actual desensitization.

Lyon Médical

May 10, 1920, **129**, No. 9

*Peptic Jejunal Ulcer. X. Delore.—p. 381.
Associations of Drugs. B. Lyonnet and R. Boulud.—p. 417.

Peptic Ulcer.—Delore refers to peptic ulcers after a gastro-enterostomy, and says that he has had three cases in which all errors in technic can be confidently excluded. He remarks that gastric ulcer frequently coincides with tuberculosis; in one of his cases, the resected gastric ulcer and

the recurring ulcer in the stomach were both of tuberculous nature, and the patient succumbed to pulmonary tuberculosis not long afterward. This is another argument, he says, in favor of resection of gastric ulcer. As the peptic ulcer is liable to perforate into the peritoneum at any moment, no time should be wasted on medical measures.

Presse Médicale, Paris

June 16, 1920, **28**, No. 40

*Practical Interest of Stercobilin. M. Brulé and H. Garban.—p. 393.
*Urea in Spinal Fluid in Epilepsy. G. Laurès and E. Gascard.—p. 396.

June 19, 1920, **28**, No. 41

Inaugural Lecture of Surgical Pathology Course. A. Gosset.—p. 401.

Elements of the Bile in Estimation of Liver Functioning.—Brulé and Garban deny the enterohepatic theory of urobilinuria sustained by Labbé and Carrié. (See recent abstract, July 24, page 277.) They claim that with complete arrest of the passage of bile into the bowel, the bilirubin in the blood may become transformed into urobilin. This may pass into the urine without the participation of the bowel in any respect, and thus without the presence of stercobilin in the feces, or only in small amounts not commensurate with the intensity of the urobilinuria, and irregularly, not paralleling the latter. The presence of stercobilin in these conditions does not testify that the bile is passing directly into the bowel. It may be shut off completely, by obstruction of the biliary passages or some lesion in the liver, and yet stercobilin may pass through the mucosa into the feces. Elimination of the bile pigments is difficult to measure and interpret, and it is more instructive to study the excretion of the bile salts. This can be readily estimated by the blood dust, two or three hours after a meal.

Urea Content of Spinal Fluid in Epilepsy.—Laurès and Gascard tabulate the findings in six epileptics during an epileptic seizure and also during the intervals, also in six men with pronounced hysteria, and in two with what has been called hystero-epilepsy which later proved to be merely abortive epilepsy. The figures cited show a marked rise in the urea content of the cerebrospinal fluid during an epileptic seizure, and a marked drop in the urea content in an attack of hysteria. The chlorid content did not show any variation in either group.

June 23, 1920, **28**, No. 42

*Sheath-Forming Osteitis. L. Rénon and E. Géraudel.—p. 413.
Abuse of Subcutaneous Injections of Camphor. L. Cheinisse.—p. 416.

Sheath-Forming Osteitis.—Rénon and Géraudel give radiograms from a case of what is usually called Marie's hypertrophic pulmonary osteo-arthropathy. This latter term is misleading as only the shafts of the bones are involved, the joints being spared. The photomicrograms show a double process in the bones, the production of a sheath of spongy new bone and calcification of the intercellular, fibrillar and interfibrillar substances. In the case reported in detail all the long bones were thus ensheathed, the whole apparently coming on in the course of six or seven months in a man of 66 with chronic pneumonia complicated with cancer of the lung. They have found five similar cases on record. The bones contain more fat than usual, but the calcium and magnesium content seemed to be normal. Radioscopy shows the essentially irregular bone sheath, and in all the cases on record the connection with disease of the lung was unmistakable, but hippocratic fingers do not belong to this type.

June 26, 1920, **28**, No. 43

*Treatment of Stenosis of the Esophagus. J. Guisez.—p. 421.
*The Oscillometer Ratio. E. May.—p. 423.
Protective Inoculation against Influenza. P. Pagniez.—p. 426.

Stenosis of the Esophagus.—Guisez concludes his illustrated article with the statement that endoscopy alone generally suffices to restore the permeability of the esophagus even when the stenosis is so complete that the patient is unable to swallow fluids, including his own saliva. Passage of a filiform bougie under direct visual control is the key to the whole, wider and wider bougies being used. If this fails, gastrotomy is imperative; this alone, by resting the esophagus, may later allow the passage of the filiform. He warns that it is useless to try to introduce the filiform from below if it cannot be introduced from above under the endoscope. If this does not succeed, then the esophagus is absolutely impermeable, as proved to be the case in two of his 135 cases of grave stenosis.

The Oscillometer Ratio of the Blood Pressure.—The Pachon oscillometer imparts useful information by the amplitude of its oscillations, but this oscillometer index is the result of several factors. Dividing this index by the difference between the maximal and the minimal pressure, gives what May calls the oscillometer ratio. This records exclusively the vascular elements in the pulse, and is thus very instructive in certain conditions.

June 30, 1920, **28**, No. 44

*Technic for Gastrectomy. T. de Martel.—p. 433.
The Oscillometer Index in Asthenia and Mania. R. Benon and M. Leinberger.—p. 436.

Gastrectomy.—De Martel places the patient with the upper part of the trunk horizontal, the rest of the body sloping at an angle of 45 degrees. His incision is on the median line, from xiphoid appendix to umbilicus. If this is not enough, he continues it horizontally to the right, this L allowing ample access to the pyloric end of the stomach, gallbladder, etc. The special instrument he uses clamps the entire width of the stomach, the pressure intensified by a vise device. The suturing can be done through lengthwise slits in the clamp. He prepares the patient by having the teeth put in order and daily lavage of the stomach to accustom him to the stomach tube after the operation. The article is profusely illustrated.

Progrès Médical, Paris

May 29, 1920, **35**, No. 22

Treatment of Conceptional and Infantile Syphilis. L. Bory.—p. 237.
Harmony, Synergy and Reflected Action in Digestion. M. Loeper.—p. 239.
Hydrochloric Acid in Therapeutics. G. Faroy.—p. 243.

June 19, 1920, **35**, No. 25

*Clot in Mitral Stenosis. P. Blum and H. Lux.—p. 269.
Examination for Venereal Disease. Queyrat.—p. 270.
Intestinal Neuralgia and Neuritis, and Courses of Mineral Waters. P. Froussard.—p. 273.
Encephalitis or Hysteria? M. Briand and A. Rouquier.—p. 274.

Thrombosis with Mitral Stenosis.—Blum and Lux describe the characteristic modification of the sounds with mitral stenosis when thrombosis complicates the clinical picture. In the case reported in a woman of 33, small emboli from it were found in the radial, mesenteric and renal arteries and elsewhere. If diagnosed in time, the clot might be extracted.

June 26, 1920, **35**, No. 26

*Etiology of Psoriasis. L. Bory.—p. 281.
Acute Nephritis in Young Children. Hutinel.—p. 285.
Tabes and Courses of Mineral Waters. Macé de Lépinay.—p. 287.

Etiology of Psoriasis.—Bory reviews the evidence in favor of the nervous or parasitic origin of psoriasis. In his 129 cases in soldiers, over 80 per cent. were of recent development, and only in twenty-six of the cases did the first appearance date from before the age of 20. The evidence points strongly to tuberculosis, that is, to an infectious or parasitic origin.

Schweizerische medizinische Wochenschrift, Basel

June 17, 1920, **50**, No. 25. Swiss Surgical Congress Number

*Neurotomy for Trigeminal Neuralgia. Perret.—p. 485.
*Nerve Anastomosis for Facial Paralysis. Perret.—p. 485; Idem. E. Kummer.—p. 489.
Remote Results of Bone Grafting in Jaw. Julliard.—p. 492.
Perthes' Disease. Grob.—p. 493.
Surgery of War Wounds of the Thorax. H. Paschoud.—p. 496.
*Roentgen-Ray Treatment of Surgical Tuberculosis. H. Iselin.—p. 499.
Treatment of Tuberculous Epididymitis. H. Wildbolz.—p. 506.
*Antisepsis with Gases. F. Steinmann.—p. 509.
*Reconstruction of Larynx and Trachea. K. Henschen.—p. 512.
*Resection of Vagus in Stomach Disease. E. Bircher.—p. 519.
Tardy Chloroform Fatalities in Liver Disease. F. Brunner.—p. 528.
Electrocoagulation of Bladder Papillomas. F. Suter.—p. 529.

Neurotomy for Trigeminal Neuralgia.—Perret's illustrated description is of the case of a man of 70 who had suffered agonies from trigeminal neuralgia for twenty years, with intervals of transient relief from injection of alcohol and other measures. Perret finally cured it completely by severing the nerve back of the gasserian ganglion. This isolated

the ganglion by the ascending degeneration of the centripetal fibers of the sensory root, but it left intact the nerve ramification passing from the cavernous plexus to the gasserian ganglion, and also the ophthalmic nerve. Hence there was no danger of neuroparalytic keratitis. The cure has been complete during the three and a half years to date.

Anastomosis of Nerves for Facial Paralysis.—Perret and Kummer each gives illustrations of a successful case of the kind in a young woman.

Roentgen-Ray Treatment of Surgical Tuberculosis.—Iselin analyzes the experiences at Basel 1907-1914 with 1,133 cases. They confirm the possibilities of conservative treatment, especially the extraordinarily favorable prognosis under roentgen-ray treatment. It is useful as an adjuvant to operative measures. Iselin emphasizes that he is a surgeon, not a radiologist, but he regards well planned roentgen-ray treatment as a fine foundation for conservative treatment. Old tuberculous processes yield earlier and more completely to the rays than young and active ones. The efficacy of the rays is seen particularly in the disappearance of tuberculous lesions in glands, omentum, soft parts and joints, of many years' standing, and by the reduction of the virulence of the pus from abscesses in experimental lesions. The ambulatory treatment and the noninterference with the earning capacity compensate for the length of the course.

Gaseous Antisepsis.—Steinmann asserts that his apparatus allows a constant stream of oxygen, plain or medicated, to play on the suppurating tissues, or a jet of air passed through chloroform or other antiseptic. He says that the jet of air passed through chloroform killed lice, nits, bacteria, and even anthrax spores, in three minutes.

Reconstruction of Larynx and Trachea.—Henschen's long article concludes with the assertion that the surgeon with even the technic now available is able to restore the permeability of the trachea and larynx in a most satisfactory manner in the majority of cases, either by a plastic covering or enlarging operation, total plastic operation or complete reconstruction of the larynx and trachea. He gives a page of plates showing the means for plastic reconstruction of the constricted or obliterated larynx and trachea.

Resection of the Vagus in Stomach Affections.—Bircher presents evidence to sustain the importance of the neurotic factor in stomach disturbances and especially in the development of gastric ulcer. A gastric neurosis alone, without anatomic findings, may simulate completely the picture of a gastric ulcer. When the stomach has been opened up in such a case and no anatomic lesion discovered, surgeons usually conclude the intervention with gastro-enterostomy and let it go at that. But with a sagging stomach the gastro-enterostomy may entail more serious disturbances than ever, even without the so-called vicious circle, and Bircher thinks it is more logical to resect the vagus fibers innervating the body of the stomach and the pylorus region. This will eliminate the neurotic element just as we influence exophthalmic goiter by resecting the thyroid. He tabulates the details of eleven cases in which he has done this with surprisingly favorable and permanent results. It arrests hypersecretion and pylorospasm, and the motor functioning returns to approximate normal. He has been surprised to find further that ptosis and atony also subsided. The conception of vagotony has been rather discredited of late, but his experiences have strengthened the conception anew. The cardia is not molested, as disturbances in this region are rare, but three or four fibers of the vagus on the upper margin of the lesser curvature are isolated, torn out both distally and proximally, and cut across. He reaches the fibers on the posterior wall of the stomach through the greater omentum between the stomach and colon, thus exposing the whole rear of the stomach, and removes in the same way the fibers entering the fundus. In one case the vagus resection was done for recurring vomiting, but as a rule the indications were excessive secretion or peristalsis.

June 24, 1920, **50**, No. 26

Treatment of Gonorrhea. B. Bloch.—p. 533.
Slight Rise in Temperature in the Tuberculous. H. J. A. van Voornveld.—p. 539. Conc'n in No. 27, p. 567.
*Roentgen-Ray Treatment of Pituitary Tumors. M. Steiger.—p. 542.

Roentgen-Ray Treatment of Pituitary Tumors.—Steiger adds another to the twenty cases he has compiled from the literature in which the pituitary was systematically exposed to the roentgen rays, all with satisfactory or brilliant success. His patient was a woman of 32 who for seven years had had occasional headaches and for the last four years there had been impairment of vision in the right eye and for a year and a half in the left. Recently the headaches had become severer, spreading to the forehead, orbits and back of the nose. A tendency to acromegaly was manifest, and the shadow of the sella turcica was abnormally large. The right papilla seemed to be completely atrophied, and this eye was almost totally blind; the left had vision of 0.6 after correction, 0.15 before. The roentgen rays were applied in crossfire from seven fields, for fifteen minutes each, from the brow, temples and anterior fontanel, and by the second sitting vision was materially improved. Fourteen exposures were made in the course of four months, and vision constantly improved in the left eye and the right was able to recognize objects. A year later the acromegaly had almost completely subsided, but menstruation had not returned. Treatment with pituitary extract is now planned.

Policlinico, Rome

June 21, 1920, **27**, No. 25

Sugar Content of the Blood. S. Silvestri and G. Aiello.—p. 643.
Epidemic Encephalitis. V. Ronchetti.—p. 646.

May, 1920, **27**, Medical Section No. 5

*Tests for Glycuronic Acid in the Urine. G. Sabatini.—p. 149.
*Clinical Significance of Glycuronuria. G. Lorenzani.—p. 174.
*Elimination of Chlorids in Fevers. G. Marcialis.—p. 184. Conclusion.

Tests for Glycuronic Acid in the Urine.—Sabatani tabulates the findings with different tests in 141 applications in sixty-eight persons, healthy, tuberculous, or with various other grave diseases. Fever did not seem to influence the findings, but the diet modified them. Administration of camphor elicited a positive response with the naphthoresorcin test but not with the alphanaphthol test, confirming the diverse significance of these tests. He commends his modification of the latter test.

Significance of Glycuronuria.—Lorenzani remarks that colorimetry is reliable enough for estimation of glycuronuria. He found it more pronounced the greater the accumulation of toxic matters in the organism. In seven typhoid patients with diarrhea, the range was from 0.018 to 0.0955, while in seven typhoid cases of the constipated type, the range was from 0.072 to 0.3574.

Elimination of Chlorids in Fever.—Marcialis concludes his long study of this subject with the statement that the retention of chlorids in fever seems to be a defensive process, so that the chlorids may attenuate the toxicity of the poisons in the blood stream. Sodium chlorid by the mouth never induced fever in adults in his experiments.

April-May, 1920, **27**, Surgical Section No. 4-5

Rupture of Intestine from Contusion of Hernia. N. Novaro.—p. 113.
Hydatid Cyst in Kidney Grows Through Diaphragm. Pietri.—p. 121.
*Exophthalmic Goiter. B. Schiassi.—p. 126.
*Unusual Case of Renal Calculus. G. Vito Tardo.—p. 145.

Exophthalmic Goiter.—Schiassi presents charts showing the vicious circle set up by abnormal conditions in the cerebellum, sympathetic nervous system and the thyroid, which finally involves other ductless organs. But he explains that in true exophthalmic goiter the thyroid is primarily affected; the disturbance in the secretion leads to toxemia which may prove fatal unless the vicious circle is broken up in time. When the thyroid is only secondarily involved, the disturbance is never so severe. With this latter form there may be periods of health alternating with periods of symptoms over many years, but they never prove fatal. This is the type of cases that are called *formes frustes* of exophthalmic goiter, but this is a misnomer; it is not an abortive form but merely presents a few of the symptoms. An instructive instance cited to show the interrelations between the endocrine glands is that of a physician who injured the thyroid by running into a clothesline in the dark. The swelling and pain in the thyroid and palpitations were accompanied by swelling and pain in the testicles, and priapism. Sexual excitement was accompanied by pain in both testicles and the thyroid.

Renal Calculus.—Tardo gives illustrations of a renal calculus which weighed 804 gm. There had been pain in the kidney at times from early childhood but nephrectomy did not become necessary till the age of 38.

Riforma Medica, Naples

May 29, 1920, **36**, No. 22

Indications with Cancer of the Pylorus. D. Giordano.—p. 501.
*Status Hypoplasticus. N. Pende and V. Fici.—p. 504.
Epidemic Encephalitis. O. d'Allocco.—p. 507.
Fracture of the Skull. E. Aievoli.—p. 509.

Associated Hypoplastic Constitution with Megacolon.—Pende and Fici comment on the light liable to be thrown on the origin of malformations when several occur in the same person, and describe a case of status hypoplasticus, with diffuse gliosis of the spinal cord and congenital megacolon. The latter had caused no special disturbances, except a tendency to rebellious constipation, until the age of 36 when ileus developed, rapidly fatal.

Rivista di Clinica Pediatrica, Florence

May, 1920, **18**, No. 5

*Congenital Fragility of the Bones. G. Frontali.—p. 257.

Congenital Fragility of the Bones.—Frontali's article is accompanied with a number of colored plates and other illustrations of a case of pure fragilitas ossium in which the long bones were composed entirely of spongy tissue without any compact bone. The spongiosa showed the embryonal type, without lamellae or haversian system. The number of osteoblasts was below normal, but the lower layer of the periosteum was calcified, and cast a shadow simulating that of compact bone. The calcium balance and calcium content of the blood were normal, and the infant looked well nourished when it died at the age of 3½ months. There were evidences of thirty-three fractures, and the thymus presented extreme atrophy and sclerosis but the other endocrine glands seemed normal. He urges examination of the thymus in all cases of fragility of the bones, with thymus treatment, possibly by injection of serum from children with a functionally capable thymus. He adds an extensive bibliography on the subject, comparing his case with those on record.

Anales de la Facultad de Medicina, Lima

March-April, 1920, **3**, No. 14

*Measles and Rubeola. J. Arce.—p. 103.
Modern Views on Epilepsy. C. A. Bambarén.—p. 118. Cont'd.
Case of Traumatic Paralytic Neurokeratitis. E. Campodónico and J. S. Losno.—p. 143.
*Sudden Deaths in Peru. F. Quesada.—p. 152. Begun in No. 11, p. 113.
Epidemic Encephalitis. M. González Olaechea.—p. 166.
Language and Speech. L. D. Espejo.—p. 173. Cont'n.
Reactions that Distinguish Balsam of Peru from Other Balsams. M. A. Velásquez and A. Maldonado.—p. 207.

Measles Versus Rubeola.—Arce reports a few cases which show that the mononucleosis which some regard as pathognomonic of rubeola may be absent, and in its place may be found an ordinary polynuclear leukocytosis, which is generally assumed to be typical of measles. When both measles and rubeola are epidemic, as has been the case recently at Lima, there do not seem to be any reliable features to differentiate them; not even Koplik's spots are dependable. The only symptom which he found exclusively in rubeola was the swelling of the epitrochlear lymph nodes. These nodes rarely enlarge with general infections, and Lesieur and Jacquet have called attention to this adenopathy as characteristic of rubeola. He has never found the glands enlarged except in rubeola and in Peruvian verruca. This polyadenitis is one of the earliest signs of this latter disease. The postcervical lymph nodes may enlarge in rubeola; this was the case in some of his patients, the swollen and painful gland as large as a chick-pea.

Sudden Deaths.—Quesada's article is a review of a large number of sudden deaths, most of them the result of congestion of the lung, in alcohol addicts, at the onset of cold weather. The other cases were mostly due to heart failure with chronic heart and kidney disease or to hemorrhagic malaria. He comments on the remarkable preponderance of the unmarried in these cases of sudden death, and the very small proportion of women among them. The ages from 40 to 49 and from 60 to 69 seem to be the most predisposed to sudden death; nearly all the subjects were working men.

Brazil-Medico, Rio de Janeiro

May 15, 1920, **34**, No. 20

*Cartilage in Autografts on the Skull. P. C. de Andrade.—p. 309.
Trachoma in Interior of Brazil. Linneu Silva.—p. 310.

Cartilage Implants in Cranioplastics.—The case of which an illustrated description is given by de Andrade confirms anew the advantages of cartilage autografts to repair a gap in the skull. The defect in this case was the result of recurring suppuration.

May 22, 1920, **34**, No. 21

Technical Terms in Otology. J. Adeodato.—p. 321.
*The Thalamic Syndrome with Cerebral Arteriosclerosis. R. Teixera Mendes.—p. 324.

Disease of the Thalamus.—Teixera differentiates three types: the pure thalamic syndrome, the mixed thalamic syndrome and the thalamic status, and describes a case of the latter type in which arteriosclerosis was evidently a factor. The first symptom fifteen years before had been sensations of heat in the hands, compelling the woman to bathe her hands frequently in cold water. Then came great debility and inability to lift or even grasp objects, with other symptoms of thalamus derangement. She is now 63.

Gaceta Médica de Caracas

March 15, 1920, **27**, No. 5

The Mineral Waters of Caracas. L. G. Chacín Itriago.—p. 53.

March 31, 1920, **27**, No. 6

Experiences with Tartrate of Antimony and Potassium in Treatment of Bilharziasis Mansoni. Martín Vegas.—p. 69.
*Untoward By-Effects from Treatment with Tartrate of Antimony and Potassium. J. R. Risquez.—p. 74.
Sagging Spleen Simulating Ovarian Tumor; Splenectomy. L. Razetti.—p. 75.

By-Effects from Tartrate of Antimony and Potassium.—Risquez reports that the patient was apparently doing well under a systematic course of treatment with tartar emetic for bilharziasis, when suddenly, after injection of 0.09 gm. of the drug, he developed chills and contractures and pains in the muscles. The chill, intense tremor and the aspect were like those of severe malaria, and the temperature ran up to 104 F., with vomiting, but under repose, rubbing with camphorated oil and hot drinks, a purge and an emetic, he recovered. The pain and soreness of the muscles continued for several days. The patient said he felt as if he had just had a severe illness. By the end of the week he had quite recovered, and wanted to go on with the injections.

Semana Médica, Buenos Aires

March 25, 1920, **27**, No. 13

Diagnosis and Treatment of Poisoning. O. B. Montes.—p. 418.
Ravages of Syphilis in the Population and Prophylaxis. A. Bergman.—p. 427; Idem. M. Helman.—p. 433.
Fats in Metabolism. E. Fynn.—p. 429.
Prophylaxis of Suicide. R. Bosch, Jr.—p. 431.
Changes in Emotional Responses as Early Sign of Dementia Praecox. E. Conil Mataró.—p. 436.
General Principles of Treatment of Gonorrhea. E. Castaño.—p. 437.
*Plantar Hyperhidrosis. J. A. López.—p. 443.

Excessive Sweating of the Feet.—López discusses this subject from the military standpoint, and his success in curing plantar hyperhidrosis in soldiers with a dusting powder consisting of 60 parts alum to 40 parts talcum powder. This reduced or checked completely the excessive sweating, eliminated the bad odor, and prevented maceration, etc., from the sweat, while saving the shoes from the constant moisture. He ascribes the cause of the hyperhidrosis and certain vasomotor phenomena, chilblains, varices, hemorrhoids, and similar minor disturbances to some general toxic action, and thinks that incipient, attenuated tuberculosis is responsible for this in many cases. He says that general treatment by the Argentine method of extremely minute doses of tuberculin may be worth a trial, or with Ferrán's antialpha serotherapy or vaccine.

Archiv für Kinderheilkunde, Stuttgart

Oct. 11, 1919, **67**, No. 5-6

Nutritional Disturbances in Infants Due to Protein. J. Adler.—p. 321.
Suppuration in Urinary Tract in Children. J. Duken.—p. 345.
Phantom for Teaching Intubation. D. Sokolow.—p. 354.
Syphilis Inherited by Only One Twin. Grete Singer.—p. 362.
Normal Horse Serum in Experimental Diphtheria. W. Kastenmeyer.—p. 365.
The Blood in Scurvy. Hedwig Brandt.—p. 395.
*Pseudobulbar Paralysis in Children. Hedwig Dibbelt.—p. 414.
*Fever Treatment of Vulvovaginitis in Children. Hertha Schulz.—p. 429.
*Age Limits for Spasmophilia. E. Klose.—p. 439.
Congenital Defect in Parietal Bone. H. Eckhardt.—p. 444.

Pseudobulbar Paralysis.—Dibbelt describes the cases of two children of 6 and 8 with spastic diplegia of a severe form, either congenital or developing soon after birth. There were no eye symptoms and the intelligence was normal. In the thirteen cases on record with necropsy findings, some defect in the cortex was apparent. Treatment must be essentially orthopedic, strengthening the antagonist muscles, with possibly surgical measures for spastic contracture. Indefatigable patience and perseverance are indispensable to train other centers to substitute the lacking cortical centers.

Thermal Treatment of Vulvovaginitis.—Schulz applied to twenty little girls Weiss' method of deep hot baths in treatment of gonococcus processes. Notwithstanding a few instances of transient benefit, she was obliged to abandon this treatment on account of the by-effects, delirium, syncope and even convulsions in some of the children. From fifteen to twenty baths were given, each for twenty or thirty minutes every day or second day. The children complained of violent headache and abdominal pains and, fought to climb out of the hot water; from 38 C. the temperature was raised to 40 or 44 C. (104 or 111 F.).

Age Limit for Spasmophilia.—Klose argues that it is impossible for spasmophilia to develop in infants less than 2 months old. This is the limit below which manifest tetany cannot develop.

Beiträge zur klinischen Chirurgie, Tübingen

1920, **119**, No. 3

*Postoperative Thrombo-Embolism. Capelle.—p. 485.
Surgery of Chest: Garré's Clinic; 300 Cases. T. Naegeli.—p. 518.
Unilateral Exclusion of Part of Intestine. H. Finsterer.—p. 554.
Contusion of the Liver. H. Finsterer.—p. 598.
Calculi in Tonsils. G. Müller.—p. 647.
Central Fibroma of Upper Jaw. W. Müller.—p. 651.
Softening and Hardening of Os Lunatum. W. Müller.—p. 664.
*Intestinal Polyposis. W. Müller.—p. 683.
Chronic Invagination of Small Intestine. A. Buzello.—p. 692.
Hemorrhage in the Gluteal Region. Kehl.—p. 701.
Accessory Spleens. L. von Stubenrauch.—p. 710.

Postoperative Thrombo-Embolism.—Capelle analyzes 15 cases at Garré's clinic in ten years and 10,000 operations. In about a third of the cases the embolism was not diagnosed; an attempt to operate was made in only 2 of the cases and it failed in both. In 4 cases operative intervention might have proved successful as there was an interval of from two to seven days before the fatal outcome. But in one the warning symptoms were mistaken for pneumonia, and in another the symptoms resembled "attacks of weakness" to which the patient had been subject, and he protested against calling the physician. In the 2 others the embolism was recognized, but as in 2 similar cases the patients had spontaneously recovered, this was anticipated in these cases, and nothing was done. This disinclination to active intervention was fostered by the fear of a mistake in the diagnosis. Erroneous assumption of embolism had been made in 35 per cent. of the cases in the course of the ten years. Another reason for refraining is that at the second attack the emboli are usually multiple and scattered.

He warns that when the pulmonary artery has been incised in search for the embolus, the first thing is to relieve the right heart, leaving the extraction of the embolus till later. He regards as the cause of the fatality in one operative case, the neglect to wait for the right heart to obtain relief by pumping out some of the blood through the incision in the artery. It might be useful to have the assistant take the heart in his palm and compress with his fingers the region of the mouth of the cava, squeezing the blood out from the heart into the cava, which can stand the dilatation better. This manipulation should precede the incision of the pulmonary, and be continued during the entire period of extraction of the embolus. This procedure is of great aid in suturing the heart.

Conditions in the inferior vena cava at a laparotomy often invite thrombosis, and embolism from this is favored by resumption of the normal type of breathing, the ample excursions of the diaphragm after the shallow breathing imposed by the pain in the laparotomy wound. This throws light on the date when embolism usually appears. Another point which he emphasizes is the possibility that a small thrombus inside the heart may grow to a fatal embolus. This would explain the cases in which central ligation of the thrombosed vessel did not prevent embolism, and it is a further argument for the necessity of letting the right heart pump out its contents for a few systoles.

Intestinal Polyposis.—Müller emphasizes the danger from hemorrhages and diarrhea with this disease, torsion of the polypous growths entailing hemorrhages, and he cites Doering's statement that of the fifty known cases of intestinal polyposis thirty-one terminated in cancerous degeneration. The roentgenogram is from his case in a boy of 16, the symptoms first noted a year before. The sister, two years old, presents a similar clinical picture. The boy is of the adipose-genital dystrophy type. An attempt with radium treatment has been reported from France, with arrest of the diarrhea and considerable retrogression of the polyps. Roentgen-ray treatment was proposed to Müller's patient, but it was rejected.



Intestinal polyposis.

Deutsche medizinische Wochenschrift, Berlin

Feb. 12, 1920, **46**, No. 7

Causes of Deformities of Growth. A. Fromme.—p. 169.
Tardy Inherited Syphilis of the Liver. Klewitz and Lepehne.—p. 172.
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Synthetic Substitute for Ergot. E. Impens.—p. 183.
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*Discutient Phenomenon in Scarlet Fever. J. Neumann.—p. 566.
Testing Value of Disinfectants. Reiter and Arndt.—p. 568.
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Infectiousness of Latent Syphilis. E. Friedlaender.—p. 572.
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Origin of Acquired Hemolytic Icterus. F. Rosenthal.—p. 574.
"Tendon Transplantation for Radial Paralysis." Gaugele.—p. 574.
Eye Diseases in Wartime. W. Feilchenfeld.—p. 575.
Clinical Value of the Electrocardiogram. H. Straub.—p. 575.
Rhinologic Hints for the General Practitioner. Finder.—p. 577.

Induced Blanching of Eruption in Diagnosis of Scarlet Fever.—In dealing with doubtful cases of scarlet fever, the prompt recognition of which in a large hospital is imperative, Neumann has come to appreciate highly Schulz and Charlton's *Auslöschungsphänomen*, which he has been using for the past year. Schulz and Charlton found that injections of convalescents' serum dispelled the eruption of scarlet fever in the neighborhood of the injection site. Only the scarlatinal eruption was thus blotted out; other scarlatiniform or confluent eruptions showed no change following intracutaneous injections of 1 or 0.5 c.c. of serum. Serum from patients at

the height of the disease does not produce this discutient phenomenon, but all other serums, not only convalescents' serum but also normal serum and serums from cases of other diseases, blotted out the eruption of scarlet fever in the region of the injection. Armed with these two positive facts, first, that only the eruption of scarlet fever is locally dispelled, and, second, that early scarlet fever serum is the only serum that does not produce the phenomenon, valuable aid for the differential diagnosis of scarlet fever seemed to be established, and such has proved to be the case. The local blanching of the eruption appears from six to eight hours following the injection and persists. The diagnostic results border on certainty. No harm resulted in his 200 injections.

Dermatomyositis and Infectious Diseases of Muscles.—Von Niedner regards dermatomyositis as a distinct disease entity from the clinical, etiologic and pathologic standpoints, and hopes by this account of two fatal cases to awaken the interest of the general practitioner in the rather confusing array of infectious diseases of the muscles. All attempts to influence the course of the disease proved futile. By bed rest, Karell diet and the use of calomel it was possible to reduce the edema and thus to bring about a temporary improvement in the appetite and the general condition, but no marked influence on the course of the disease was attained. The very painful deglutition symptoms were partially relieved by steam from water to which epinephrin had been added, so that the patients were able to take sufficient nourishment up to the last. The attempt to improve the glycogen content of the muscles by increasing the sugar intake and thus procuring an increased immunity was unsuccessful.

May 27, 1920, **46**, No. 22

Experimental Typhus and Chemotherapy. Otto and Papamarku.—p. 593.
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Friedmann Treatment in Surgical Tuberculosis. Braun.—p. 596.
Acute Rheuma ic Periostitis. A. Bittorf.—p. 599.
*Renal Glycosuria. A. Galambos.—p. 600.
Transportable Pneumothorax Apparatus. E. Leschke.—p. 602.
*Treatment of Dupuytren's Contracture. F. Momburg.—p. 602.
Objections to Spitzy Operation for Umbilical Hernia. Meyer.—p. 603.
*Abdominal Actinomycosis. Brandenstein.—p. 603.
Hematuria in Influenza. B. Goldberg.—p. 604.
The Campaign against Alcohol. B. Laquer.—p. 605.
Rhinolaryngologic Hints for General Practitioners. Finder.—p. 606.

Transitory Glycosuria of the Renal Type.—Galambos states that so-called renal diabetes is usually regarded as an extremely rare condition. However, he is inclined to think that it is not its occurrence but its recognition that is rare. He finds less than twenty-five cases reported in the literature. To these he adds two cases; the first was in a young man of 28, who had suffered from stomach trouble since he was 12. At the age of 23 he had been operated on for gastric ulcer. At the present admission the sugar content of the urine was 0.2 per cent. By reduction, polarization and fermentation tests the sugar was shown to be glucose. Levulose and pentose reactions were negative. The glycosuria did not disappear when carbohydrates were withdrawn. When the general carbohydrate intake was increased there was no rise of the urinary sugar content. When from 130 to 500 gm. of carbohydrate were ingested within twenty-four hours, sugar excretion was not influenced thereby. The amount of sugar excreted within twenty-four hours varied from 0 to 6 gm., the average being 3 gm. A period with no glycosuria ran parallel to the largest carbohydrate intake (500 gm.). Noorden is cited to the effect that in light and especially in recent cases of diabetes mellitus it may occur that the degree of glycosuria is independent of the carbohydrate intake, but in renal diabetes this is the rule. In renal diabetes, when the kidneys, owing to their sensitiveness to sugar, have excreted sugar in the presence of a subnormal or low blood sugar content, which is an indication that the renal sugar threshold is lowered, it is not surprising if the glycosuria is increased to correspond to the moderate increase of blood sugar caused by the ingestion of 100 gm. of glucose. In other words, a patient with renal diabetes may react toward glucose in the same manner as a true diabetic or as any other patient with reduced sugar tolerance. In the latter cases the increased glycosuria is directly associated with a markedly increased hyperglycemia, while in renal diabetes, on account of the low renal sugar threshold, a very slight rise of the blood sugar content suffices to produce or increase the glycosuria. In diabetes mellitus the blood sugar content and the glycosuria are increased not only by the sugar content of the diet but also by the starch and albumin content. In renal diabetes only glucose increases the glycosuria, and this may be accomplished by a very slight augmentation of the hyperglycemia. In Galambos' case the glycosuria had subsided and did not return during the last ten days of clinical observation, not even after ingestion of 500 gm. of carbohydrate. Galambos has been unable to find any analogous cases on record of transient glycosuria of the renal type.

Treatment of Dupuytren's Contracture.—Momburg finds the radical operation not only laborious but also dangerous on account of the frequent necrosis of the skin flaps. He believes that subcutaneous division of all the contracted fascia is the simplest and most effectual method for treating Dupuytren's contracture.

Abdominal Actinomycosis.—Brandenstein reports a case in a girl of 13 although it rarely occurs in young persons. The actinomycosis had evidently developed from a diseased appendix and had given rise to right pyosalpinx. Although even approximately radical extirpation of the actinomycotic foci was impossible and although the disease process had extended to the back—both of which circumstances pointed to an unfavorable outcome—yet all the signs of the disease disappeared after the operation and there has been no recurrence during the six months to date.

Monatsschrift für Geb. und Gynäkologie, Berlin

May, 1920, **51**, No. 5

*To Promote Rapid Separation of the Placenta. G. Sklawunos (Athens).—p. 291.
*Relations Between Left Adnexa and Sigmoid Flexure. H. Erdmann.—p. 301.
*Injection of Epinephrin into the Heart. Elisabet Heydloff.—p. 318.
*Radiotherapy in 1919. H. Wintz.—p. 331. Conc'n in No. 6, p. 415.

Injection of Fluid to Aid in Separation of Placenta.—Sklawunos injects about 150 c.c. of hot citrated saline through the umbilical vein into the placenta. He cuts off the cord about five fingerbreadths from the vulva, to allow blood to flow freely and avert thrombosis. The fluid is at a temperature of 50 or 60 C. (122 or 140 F.) and it flows from a height of 1½ or 2 m. above the level of the bed. In a minute or two after the fluid enters the vein, the two umbilical arteries begin to swell as the blood is forced into them by the pressure from the inflowing fluid. The arteries are then clamped, and spontaneous expulsion of the placenta awaited. The uterus was always found intensely contracted and hard, while there was no bleeding. Further advantages were the moderate lochia and the attenuation or abolition of afterpains. The hot fluid spreads through the villi and thus acts like a spray on the placental area of the myometrium, causing it to contract and checking any tendency to bleed. It is possible that toxic products from the fetus, accumulated back of the placenta, may thus be forced into the circulation and further stimulate the uterus to contract.

Connection Between Intestines and Adnexa.—Erdmann reports thirteen cases in which the left ovary alone was tender and swollen, in the total absence of puerperal, septic and gonococcus disease. In all there was enteritis in the sigmoid region for which the war diet was probably responsible, and in every case the ovaritis subsided under treatment of the pathologic conditions in the bowel.

Intracardial Injection of Epinephrin.—Heydloff reports that the pulse disappeared suddenly as the placenta was being separated by hand during cesarean section, done on account of contracted, rachitic pelvis. Massage from without had no effect on the pulseless heart, and 2 c.c. of a 1 per cent. solution of epinephrin (adrenalin) was injected directly into the heart through the fourth left interspace, close to the sternum. No effect was apparent and the woman seemed dead, but then the incision began to bleed and the heart was found beating rapidly; artificial respiration had to be kept up for a time. The total arrest of the heart action covered five or six minutes. The case was complicated by the fact that,

owing to some blunder, two injections of scopolamin-morphin had been given, instead of the routine single injection. Artificial respiration and insufflation of oxygen had been continued through the entire operation.

Radiotherapy in Germany in 1919.—In the course of this critical review, Wintz states that Weibel applied radium as a prophylactic measure in 264 cases after operations for uterine cancer, but found that the intestine and the bladder were injured thereby in so many cases that the method has been abandoned. Pranter has reported roentgen ulcer developing in the abdominal wall a year and a half after a course of roentgen-ray treatment for uterine myoma. The tardy ulceration followed immediately after sunbaths, which suggests, Wintz declares, that regions which have been exposed to the roentgen rays should be considered points of lesser resistance, and be protected thereafter against further injury. He adds that Holzknecht has treated 150 cases of "roentgen hands," keratosis, ulcerating epitheliomas, with the roentgen rays, and insists that roentgen keratosis is amenable to treatment by the roentgen rays. Depenthal has reported from Cologne the case of a roentgen nurse who developed in 1907 a roentgen carcinoma of the right thumb and part of the left hand, and, recently, bilateral roentgen mammary cancer compelled amputation of both breasts. This is cited as the first instance known of roentgen-ray carcinoma developing in an organ under intact skin. In all the previously reported cases of roentgen cancer, it started in the epidermis and was of the basement epithelium type. Wintz mentions further some instances in which the amount of ozone generated in the roentgen room surpassed the tolerated maximum.

Wiener klinische Wochenschrift, Vienna

Feb. 12, 1920, **33**, No. 7

Degeneration and Its Signs. J. Bauer.—p. 141.
Influenzal and Lethargic Encephalitis. F. Högler.—p. 144.
Retrograde Incarceration of Abdominal Organs. Oliani.—p. 147.
Differential Diagnosis of Vertigo. S. Erben.—p. 149. Conc'n.

May 27, 1920, **33**, No. 22

Enuresis and Myelodysplasia. J. Zappert.—p. 463.
*Gastrectomy in Perforating Gastric and Duodenal Ulcer. G. Schwarzmann.—p. 469.
Mixed Infection in Surgical Tuberculosis. M. Jerusalem.—p. 471.
*Injections of Alcohol into Gasserian Ganglion. H. Pichler.—p. 473.
Begun in No. 21, p. 441.

Gastrectomy in Perforating Gastric and Duodenal Ulcer.—Schwarzmann states that the radical treatment of gastric ulcer is gaining more and more adherents. The less radical methods: excision or exclusion of the ulcer, or leaving it untouched, are yielding to gastrectomy. The ulcer left in the abdominal cavity is often a source of continued pain. The dangers of hemorrhage and especially of perforation persist. The presence of multiple gastric ulcers and of contact ulcers situated opposite to duodenal ulcers are further evidence of the uncertainty of the excision procedure. Exclusion without extensive resection gives uncertain results, to mention only the appearance of peptic ulcers. Marked meteorism or a septic condition of the patient may be contraindications to gastrectomy.

Injections of Alcohol into the Gasserian Ganglion.—Pichler reports that injections of alcohol into the gasserian ganglion can be relied on to cure trigeminal neuralgia in almost every instance. However, the procedure is by no means simple, but requires much practice. It should be used only when all other methods have failed or when the pain is unbearable. It usually renders gasserectomy unnecessary. Local causes should be searched for and removed. A careful examination of the buccal cavity, the nose and the eyes is essential, in which roentgenography will usually play a part. Neuroparalytic-keratitis is a common complication, hence the need of a careful examination of both eyes before injections are begun. The dose of alcohol required varies greatly. Not infrequently ten times or even fifteen times as much may be necessary as Härtel assigns as the maximal dose (1 c.c.). Peripheral injections and injections at the base of the skull are useless if several branches of the nerve are involved. Resection of the second and third branch (Krönlein) is contraindicated because it makes future injections of alcohol more difficult.

Zeitschrift für Tuberkulose, Leipzig

April, 1920, **32**, No. 2

Influence of the War on Pulmonary Tuberculosis. O. Kieffer.—p. 65. Cont'd.
Pneumothorax Apparatus for Oxygen and Nitrogen. H. Frey.—p. 82.
Trauma and Tuberculosis. J. Orth.—p. 85.

Zentralblatt für Gynäkologie, Leipzig

May 29, 1920, **44**, No. 22

Organotherapy in Disturbances of Menstruation. P. Esch.—p. 561.
Atresia of Cervix Uteri and Pregnancy. H. Lau.—p. 568.
*The War and Puerperal Eclampsia. W. Gessner.—p. 570.
A Case of Syncytioma Malignum. F. Stork.—p. 572.

War and Puerperal Eclampsia.—From the fact that puerperal eclampsia during the four years of the war was progressively reduced under the restricted diet, Gessner concludes that the manifestations are due to a disease process which is amenable to control and which may be easily influenced by dietetic measures.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

May 1, 1920, **1**, No. 18

*Rupture of the Membranes at Delivery. C. Koek.—p. 1527. Reply by I. A. Wijsenbeek in No. 20, p. 1712.
Improved Blood Pressure-Recording Apparatus. Dirken.—p. 1539.
Needle in Pharynx Wall. D. J. De Levie.—p. 1543.

Induced Rupture of Fetal Membranes.—Koek defends the practice of puncturing the bag of waters early to promote delivery, and cites figures from the Leyden Maternity which show that the proportion of instrumental deliveries has been reduced to a tenth of what it was before this became the systematic practice. Among the 1,822 deliveries, there were only eighteen deaths among the children for which some other cause was not palpably evident.

Hospitalstidende, Copenhagen

May 19, 1920, **63**, No. 20

*Effect on the Blood of Restriction of Fluids. V. Rubow.—p. 305.

Action on the Blood of Restriction of Intake of Fluid.—Rubow ascribes part of the benefit from sweating, augmented diuresis and purges, Karell and similar "cures"—the essential feature of which is a dry diet—to the resulting concentration of the blood. Singer's treatment of chronic bronchitis by reducing the intake of fluids is another instance of the advantage that may result with localized infections from reducing the water content of the organism. With the Karell cure only 800 gm. of milk is allowed; this covers only about a third of the requirement for fluid for the twenty-four hours. Rubow found in some cases of ascites given this treatment that the water content of the blood was reduced by 8, 10 or even 12.5 per cent. in the course of a few days. He comments on the neglect of Finsen's recommendation of a dry diet in treatment of ascites, the literature of the last twenty years showing innumerable cases in which cardiac dropsy has been treated with digitalis, strophanthus and strong diuretics, when simple restriction of fluids and less salt in the food might have answered the same purpose in banishing the dropsy. Rubow tabulates the findings during the week of the Karell cure in four cases, showing how the ash of the blood increased from 19.2 to 21.95 in one case. In a case of nephritic dropsy, the sodium chlorid content of the blood ran up rapidly from 0.529 to 0.665 per cent. The diuresis accompanying this he explains as a salt diuresis, like that which can be induced experimentally by rendering the blood transiently hydremic and oversalty by injecting a hypertonic solution of sodium chlorid. In one case of ascites, there was no increase in the sodium chlorid content of the blood, and the diuresis did not increase either under the Karell treatment. The sodium chlorid absorbed from the hydrops was eliminated exclusively in the urine; one day it amounted to 1.54 per cent. of the urine. The hydrops fluid was eliminated by lungs and skin.

Hygiea, Stockholm

June 30, 1920, **82**, No. 12

Technic and Indications for Transfusion of Blood. A. Odelberg.—p. 385.
Symptoms and Etiology of Alkaptonuria. E. M. P. Widmark.—p. 399.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, No. 8 CHICAGO, ILLINOIS AUGUST 21, 1920

STUDIES IN BASAL METABOLISM*

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Metabolism is the basis of life and of all its phenomena. Like Tennyson's "Brook," it goes on forever. Species are cast in various molds, generations appear and disappear, youth is followed by maturity and age, yet through it all, running along on predetermined lines, goes metabolism.

Protoplasm is not mere matter. The cell is the origin of energy, the seat of chemical exchange, of growth, of function and of life. The digestion and assimilation of nutriment, reproduction, growth, inflammation, degeneration, regeneration, exercise of function, motion and emotion are all matters of chemistry. Species, genus and period of existence are incidents determined by heredity, while size, weight and even personal appearance are matters of metabolism. Where life is, metabolism is; and regulating it are the endocrine glands, the glands of internal secretion.

By the aid of calorimetry we learn that in health the regulating factors are adjusted or balanced to yield metabolic rates best adapted to energy requirements and to bodily needs. Thus, during rest and sleep the energy requirement and output are low and the rate is decreased; but as more energy is demanded, the rate of metabolism increases in proportion to the need. The two extraneous factors most commonly and markedly affecting metabolic rates are exercise and food. It is necessary, therefore, to adopt for comparative purposes conditions under which these factors are reduced to a minimum. The resulting rate, designated the "basal metabolic rate," represents metabolism when the body is at complete rest and when the digestive processes are at their normal daily minimum. So perfect is the adjustment in health that under the conditions indicated the basal metabolic rate is found to bear a constant relation to the surface area, the rate thereby becoming mathematically a function of the body surface, while in many diseases metabolism is fundamentally deranged, the basal metabolic rate ranging far above or below normal. In the following paragraphs, discussion will center on some of the more important factors affecting the basal metabolic rate.

TECHNIC EMPLOYED IN DETERMINING THE BASAL METABOLIC RATE

The development of indirect calorimetry is significantly affecting medical practice. The determination of the basal metabolic rate is at present a practical procedure which can be carried out in any well equipped hospital or clinic, at the bedside or in the laboratory. The newer methods enable the physician to gather fundamental information concerning the status of the patient's metabolism formerly available only through elaborate studies carried out in special institutions equipped with costly calorimeters and manned by a highly trained personnel.

In determining the basal metabolic rate, the gasometer method is employed. In our work Tissot's [1] spirometer, with certain modifications introduced by Boothby [2] and Sandiford,[3] has been employed in the collection of air, and in its analysis Haldane's apparatus.

Preparation of the Patient.—The rate is determined after a fourteen hours' fast, that is, in the morning before breakfast, no food having been taken since the meal of the previous evening. Hospital patients are confined to bed and brought to the laboratory on a litter, and after a fifteen to thirty minutes' wait, collection of air is begun. Patients from outside, brought in automobiles or street cars, are subjected by routine to from one-half to one hour's rest, preferably lying down, before the collection of air is instituted. The patients are instructed to breathe as naturally as possible and to avoid forced expiration in an effort to overcome the slight resistance of the apparatus. Patients who are uncomfortable tend to deep and irregular breathing. Obese persons and those with marked thyroid enlargement are accorded special attention as to posture, the head being elevated and the patient placed in as comfortable a position as possible. Control collections are necessary when uncertainty exists as to the comfort of the patient during the period of collection. In nervous and neurasthenic persons, repetition on a subsequent day is also necessary, since not infrequently high rates are encountered in the initial readings.

BASAL METABOLIC RATE IN NORMAL PERSONS

Any method to be of value must yield under proper control consistent normal values in normal persons, and

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* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

* Read before the Section on Pharmacology and Therapeutics at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Tissot, J.: Nouvelle méthode de mésure et d'inscription du débit et des mouvements respiratoires de l'homme et des animaux, J. de phys. et de path. gén. **6**: 688, 1904.

2. In Boothby's modification of Tissot's technic, a face mask replaces the nasal tubes, Douglas' mica valves replace the electrically controlled valves used by Tissot, and a steel tape replaces the automatic measuring device of the original apparatus.

3. Boothby, W. M.: The Clinical Value of Metabolic Studies of Thyroid Cases, Boston M. & S. J. **175**: 564-566 (Oct. 19) 1916. Boothby, W. M., and Sandiford, Irene: Technic of Basal Metabolic Rate Determinations, Philadelphia, W. B. Saunders, 1920.

deviations from normal only when variations actually exist. The basal metabolic rate itself is subject to many and varied influences, while the technic and calculations involved contribute additional possible sources of error. From an experience extending over fourteen months and involving approximately 750 determinations on 350 persons, we believe that the method yields results which vary only within narrow limits, which are reliable and consistent, and which are of practical value in following the clinical course of the case.

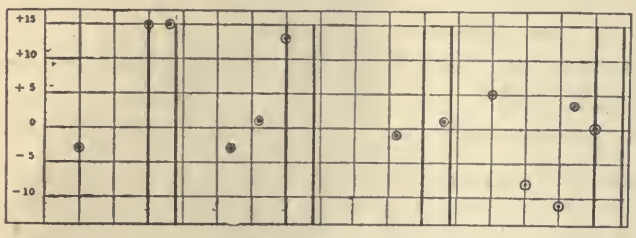


Fig. 1.—Basal metabolic rates in relation to menstruation. The columns represent the menstrual periods.

As controls, a group was studied consisting of twenty-eight healthy students and nurses, and persons suffering from minor ailments entirely unassociated with endocrine disturbances (Table 1).

In order further to control the accuracy of the method and the constancy of the basal metabolic rate, a group of normal persons was subjected to repeated observations. In twenty-five determinations on nine subjects, the greatest variation found in the rate in an individual case was 10.5 per cent., the average variation being approximately 5 per cent. (Table 2).

TABLE 1.—BASAL METABOLIC RATE IN NORMAL PERSONS

A — Normal Persons			B — Patients with Minor Ailments Unassociated with Endocrine Disturbances		
Name	Sex*	Basal metabolic Rate	Name	Sex*	Basal metabolic Rate
M. B.	♀	−6	L. B.	♀	+8
G. H. B.	♂	−6	S. C.	♀	+6
D. D.	♀	+7.8	M. G.	♀	+6
C. W.	♂	−7	M. G.2.	♀	+5
L. Z.	♂	−1	J.	♂	+5
M. M.	♀	+3.1	M. T.	♀	−2
J. M.	♀	+4	R.	♀	+6
W. J. B.	♂	+1	A. P.	♀	+4
R. K.	♀	+2.5	M. A.	♀	+7
L. M.	♀	+1.4	L. K.	♂	+2
R. C.	♀	+2.5	B.	♀	0
E. B.	♀	−2.4	E. S.	♂	+1
R. B.	♀	+3.4	L. B.	♀	−4
F. K.	♀	−1.8	E. L.	♀	−4

* In this column ♂ indicates male, and ♀ female.

TABLE 2.—REPEATED DETERMINATIONS ON NORMAL PERSONS

No.	Name	Sex	Between the Dates	Metabolic Rates	Greatest Variation Between Readings
1	W. J. B.	♂	1/ 3 1/22	+1 −1.2 +1.3	2.8
2	R. K.	♀	11/27 1/10	+2.5 +2.9 +3.2	0.7
3	L. M.	♀	11/15 11/26	+1.4 +0.5 −2.2	3.6
4	R. C.	♀	12/10 2/ 3	+2.5 +5 +2.3	2.7
5	E. B.	♀	12/11 3/18	−2.4 −3.4 −0.5	2.9
6	O. G.	♀	3/ 2 3/11	+2 +1.7	0.3
7	D. D.	♀	11/21 3/11	+7.8 −1 +9.5	10.5
8	McL.	♀	10/ 4 1/16	+3.1 −2.7	5.8
9	H. D.	♀	10/11 1/20	−2.9 −7.7 +1.5	9.2

Effect of Previous Exercise.—As a matter of practical importance, it is necessary to ascertain whether or not moderate exercise in the morning just prior to determination affects the rate, since many patients are sent in from the outside for determination of the basal metabolic rate. Reliable results can be obtained on outpatients after moderate exercise, provided they are subjected to from one-half to one hour's rest; but without this rest the results are unreliable. In order to ascertain the extent to which exercise affects basal metabolism, the rate of several subjects was determined immediately subsequent to moderate exercise, that is, a short walk of 300 yards and the climbing of two flights of stairs, the amount of exercise to which many patients are frequently subjected. The changes encountered emphasize the need of careful control in this connection (Table 3).

The Effect of Menstruation.—Menstruation, a factor usually neglected, is perhaps of some practical importance. So far as we are aware, it has never been allotted any consideration in the studies of metabolism. But it does affect the basal metabolic rate of women at times in health and in disease. To determine the extent of its influence a special investigation has been carried out by one of us (Ford), the details of which will appear shortly in a separate communication. The effect of menstruation can be seen in the chart which represents the findings in a normal student (Fig. 1).

A rather constant rise occurs during menstruation or in the premenstrual period, the rise being followed by a postmenstrual fall. Ten cases have been studied.

TABLE 3.—EFFECTS OF EXERCISE ON BASAL METABOLIC RATE

Name	Sex	Previous to Exercise	After Exercise (Immediately)
H. B.	♀	+5	+63
D. D.	♀	−8	+43
H. P.	♀	+1.8	+88
		+1.5	+67
M. McL.	♀	−2	+32

Of these, two show practically constant rises, and six constant rises, varying from 4 per cent. to 14 per cent., the average being 10 per cent., while in two a drop in rate was encountered. Values outside normal limits, ± 10, are infrequent.

BASAL METABOLISM IN DISEASE

In this connection, detailed consideration will be allotted basal metabolism in certain diseases of the endocrine system. In our studies hyperthyroidism, febrile diseases and leukemia have exhibited the highest rates, while hypothyroidism, polyglandular deficiencies and afebrile conditions resulting from inanition and marked asthenia have yielded the lowest rates. Starvation and prolonged rest in bed tend to result in low rates.

DISEASES OF THE THYROID

The thyroid is the principal or chief "regulator of metabolism." Whereas other endocrine glands may be concerned with specific features of metabolism, such as growth, carbohydrate metabolism or water balance, the thyroid affects primarily the metabolic rate, and secondarily perhaps other features.

Friedrich Müller [6] and Magnus-Levy [7] were the first to direct our attention to the metabolic changes attending diseases of the thyroid.

6. Müller, Friedrich: Beiträge zur Kenntnis der Basedow'schen Krankheit, Deutsch. Arch. f. klin. Med. **51**: 335-412, 1892-1893.

7. Magnus-Levy, A.: Ueber den respiratorischen Gaswechsel unter dem Einfluss der Thyreoidea sowie unter verschiedenen pathologischen Zuständen. Berl. klin. Wchnschr. **32**: 650-652, 1895. The Physiology of Metabolism, in von Noorden, K. H.: Metabolism and Practical Medicine, Chicago, Keener & Co., **1**, 1907.

In the study of various diseases of the thyroid we have found Plummer's [8] classification of the greatest assistance. These groups have been recognized:

1. Hypothyroidism; (*a*) cretinism, (*b*) myxedema.
2. Hyperthyroidism; (*a*) exophthalmic goiter, (*b*) thyrotoxic adenoma.
3. Nontoxic enlargements of the thyroid; (*a*) adenoma, nontoxic; (*b*) adolescent goiter; (*c*) colloid goiter.

HYPOTHYROIDISM

A group comprising thirteen cases of cretinism and myxedema was investigated from the standpoint of basal metabolism. An unusual opportunity for the study of cretinism [9] and juvenile myxedema was afforded through the presence of eight such patients in the State Institution for Feeble-Minded.[10] Through the courtesy of the superintendent, these patients were brought to the University Hospital, where they were subjected to an intensive study which included routine physical examination, Wassermann tests, urinalyses, studies of blood chemistry and of basal metabolic rates, roentgenograms, electrocardiograms, anthropological measurements, dental examinations, and physiologic investigations involving determinations of the auditory reaction time and Binet and performance tests. The patients' ages varied from 15 to 31 years. In all but two cases the objective and subjective manifestations were characteristic (Fig. 2 and Table 4). The thyroid could not be palpated in six, while in two (F. D. and N. D., sisters) cystlike tumors about 2 by 3 cm. and of fibrous consistency were felt in the region of the isthmus. Of the two remaining cretins, one (W. R., Fig. 3) was typical in every respect, while the other, though mild and atypical clinically, represented the lowest metabolic rate encoutered in the entire series.

In the cretins, the metabolic rate varied from —7 to —25. No constant or absolute parallelism between the clinical manifestation and the metabolic rate [11] could be established, although, generally speaking, some agreement existed. The striking exception is seen in Case 9, which represents the lowest rate, although the clinical manifestations were mild. Whether or not environment plays a rôle clinically must be considered, since the patient, the child of wealthy parents, had been surrounded since birth with all the comforts and luxuries of life (Table 4).

HYPERTHYROIDISM

Under hyperthyroidism are included exophthalmic goiter and adenoma of the thyroid with hyperthyroidism (thyrotoxic adenoma).

Exophthalmic Goiter (Parry's, Graves', or Basedow's disease).—Although the first description of this disease appeared in 1827, it was not until 1895 that Magnus-Levy called attention to the increased metabolic rate. In this country special attention has been given the subject by Means and Aub,[12] Du Bois,[13] Plummer,[8] Boothby and Sandiford,[3] and McCaskey.[14]

In our small series comprising thirteen cases, which were all typical clinically, the basal metabolic rate ranged from + 20 to + 82, the rates being approximately proportionate to the clinical evidences of thyroid intoxication. Two patients of the series died. The patient with the highest rate, + 82, died within a month after single ligation. The second patient, rate + 56, did not come to operation, but died of cerebral apoplexy. The rates relative to our cases can be seen in Table 5, and the results of treatment in Table 6.



Fig. 2.—Cretinism and juvenile myxedema: From left to right, back row, A. H., aged 24; I. A., aged 15; front row, C. F., aged 22; F. D., aged 15; N. D., aged 25; W. A., aged 31.

One case was of particular interest, especially in relation to the recent publication of Means and Aub, in which they advocate the use of the roentgen ray in the treatment of exophthalmic goiter. The patient, aged 28, presented a small adenoma in association with a diffuse parenchymatous hypertrophy. More than a year subsequent to lobectomy, the basal metabolic rate was still abnormally high and did not respond to six weeks' rest in bed and courses of sodium cacodylate. A rapid return of the rate to normal, together with marked clinical improvement, followed repeated roent-

8. Plummer, H. S.: The Clinical and Pathologic Relationships of Hyperplastic and Nonhyperplastic Goiter, J. A. M. A. **61**: 650-651 (Aug. 30) 1913; The Clinical and Pathologic Relationship of Simple and Exophthalmic Goiter, Am. J. M. Sc. **146**: 790-796, 1913; The Function of the Thyroid, Normal and Abnormal, Tr. Assn. Am. Phys. **31**: 128-133, 1916.

9. We are indebted to Dr. E. C. Kendall for the thyroxin used in these studies.

10. The details of these investigations will be the subject of a separate report. The question might be raised as to whether or not we are correct in accepting the chronological age as the basis of calculation in determining the basal metabolic rate in cretins of advanced age. Thus in W. A., Case 7, the rate is —7. Were we to accept the mental or physical development (2 to 5 years) as the basis of calculation, the rate would be lower and more in keeping with the clinical findings.

11. An attempt to correlate basal metabolism and mentality, utilizing for this purpose standard psychologic measurements, would probably reveal most interesting relationships

12. Means, J. H., and Aub, J. C.: A Study of Exophthalmic Goiter from the Point of View of the Basal Metabolism, with Remarks Concerning the Effect of Various Forms of Treatment, J. A. M. A. **69**: 33-37 (July 7) 1917; The Basal Metabolism in Exophthalmic Goiter, Arch. Int. Med. **24**: 645-677 (Dec.) 1919. Means, J. H.; Aub, J. C., and Du Bois, E. F.: Clinical Calorimetry, Twentieth Paper, The Effect of Caffein on the Heat Production, Arch. Int. Med. **19**: 832-839 (May) 1917.

13. Du Bois, E. F.: Clinical Calorimetry, Fourteenth Paper, Metabolism in Exophthalmic Goiter, Arch. Int. Med. **17**: 915-964 (June) 1916.

14. McCaskey, G. W.: The Basal Metabolism and Hyperglycemic Tests of Hyperthyroidism, with Special Reference to Mild and Latent Cases, J. A. M. A. **73**: 243-247 (July 26) 1919; Basal Metabolism Determinations in General Internal Diagnosis: Clinical Application, with Illustrative Cases, ibid. **74**: 927-931 (April 3) 1920.

gen-ray treatments[15] (Fig. 4). This case is not presented as an argument for roentgen-ray as against surgical treatment, but it does indicate the desirability of utilizing the roentgen ray when surgical treatment has failed or fallen short of complete restoration to normal.

Adenoma of the Thyroid with Hyperthyroidism (thyrotoxic adenoma).—In analyzing our hyperthyroid material we have followed Plummer, who has clearly separated from true exophthalmic goiter accompanied by hyperplasia and hypertrophy of the thyroid a group of cases of adenoma with thyrotoxicosis.

Plummer's contention as to the thyrotoxic character of the symptoms encountered in this disease, namely, nervousness, tremor, tachycardia and loss of weight and strength, finds confirmation in the increased metabolic rates encountered in the investigations carried on in the Mayo Clinic by Plummer,[8] Boothby[3] and Sandiford,[16] and in the results of our studies here reported.[17]

In our series are eleven cases of thyrotoxic adenoma, three of which exhibited slight but definite exophthalmos. The data in relation to our series appear in Table 7, and the results of treatment in Table 8.

TABLE 4.—CRETINISM AND JUVENILE MYXEDEMA

No.	Patient	Age	Sex	Height, Cm.	Weight, Kg.	Mental Age, Mo.*	Reaction Time, Seconds*	Basal metabolic Rate	Grade†	Treatment	Result
1	H. L., 18410	31	♀	119.3	37	22	Patient too stupid	—20	4	Thyroxin	Markedly improved
2	I. A., 18408	15	♀	136	63	44	0.399	—23	3	Thyroxin	
3	C. F., 18414	22	♀	130	39	54	.....	—14	3	Thyroxin	
4	F. D., 18411	15	♀	99	28.8	32	0.199	—13	2	Thyroxin	
5	N. D., 18413	25	♀	125	44.5	32	0.667	—22	4	Thyroxin	
6	A. H., 18412	24	♀	144	55.2	48	0.289	—12	3	Thyroxin	
7	W. A., 18409	31	♂	115	25.8	55	0.525	— 7	4	Thyroxin	
8	W. R.,	7	♂	90	45	66	.....	—21	2	Thyroxin	Markedly improved
9	K. Mc. P. C.	6	♀	112	18.2	46	.....	—25	1-2	Thyroxin	Markedly improved
10	M. B., 18632	27	♀	132	50	42	.....	—12	2	Thyroxin	
						ADULT MYXEDEMA					
	M. P., 16424 14899	52	♀	137.5	60.1	Mentally fair	Mental reaction slow	—32	2-3	Thyroxin	Myxedema disappeared
	P.	50	♀	164	70.4	Childish mentally	.....	—21.5	1	Thyroxin	
	P. 18609	37	♂	165	70	12½ years	.....	—26	2	Thyroxin	Improved

* Tests made in the department of psychology.
† On a basis of 1 to 4.

TABLE 5.—CONDITIONS IN EXOPHTHALMIC GOITER BEFORE TREATMENT

No.	Patient	Age	Sex	Thyroid	Pulse	Blood Pressure Sys-tolic	Blood Pressure Dias-tolic	Left Ventricular Hypertrophy	Tremor	Eye Signs	Loss of Weight	Nervousness	Grade	Basal Metabolic Rate
1	R. W., 18083	21	♀	Large diffuse, vascular	90	124	76	+	+	+	0	.....	2	+30
2	G. W., 16086	15	♀	Large diffuse, vascular	100-150	160	65	Dilatation +	++	+	+	++	4	+56
3	V. A., 16899 15542	23	♀	Large diffuse, vascular	120	122	56	..	+	+	10 pounds	+	2	+45
4	M. T., 17503	55	♀	Large diffuse, vascular	100	158	80	+	+	+	Very slight	+	3	+52
5	P. O., 17296	30	♀	Large diffuse, vascular	120	124	66	+	Slight	Slight	Slight	+	2	+74
6	C. Z., 17455	47	♀	Large diffuse, vascular	90	150	65	..	+	Slight	..	+	2	+55
7	A. E., 17069	26	♀	Large diffuse, vascular	120	116	48	+	+	+	Very slight	++	4	+82
8	E. P., 9563 18062	28	♀	Small, adenomatous	100	140	80	+	+	Slight	+	+	3	+50
9	E. J. O., 17092 17270	25	♀	Large diffuse, vascular	100-110	112	72	Slight	Slight	Slight	++	+	3	+65
10	M. A., P. C.	37	♀	Large diffuse, vascular	110	...	..	+	++	+	Slight	+	3	+45
11	M. Mc., P. C.	57	♂	Large diffuse, vascular	85-100	185	105	+	Slight	++	Slight	+	3	+54
12	E. P. Y., 18763	31	♀	Moderately enlarged, vascular	110	140	60	+	+	+	+	++	3	+53
13	A. L., 18702	15	♂	Large diffuse, vascular	110	142	64	Dilatation +	+	++	+	+	2	+19

According to Plummer, in thyrotoxic adenoma the enlargement of the thyroid appears earlier in life, the struma persists, as a rule, for a much longer period before the appearance of thyrotoxic manifestations; exophthalmos develops much less frequently and is less marked, and hypertension is of common occurrence. Some cases of this group closely resemble exophthalmic goiter, while in others the cardiovascular phenomena predominate, hypertension playing a great rôle early in the course of the disease, and myocardial degeneration in its later stages.

15. Our data are too meager to permit an expression of opinion concerning the relative merits of the surgical and the roentgen-ray treatment. The subject is being investigated in our clinic.

NONTOXIC ENLARGEMENTS OF THE THYROID

Nontoxic Adenoma.—Adenoma may persist for many years without concomitant toxic manifestations. Plummer states that adenomas appear as a rule about the twenty-second year, but that the toxic manifestations do not usually appear until the thirty-sixth year. Certainly adenomas may exist for many years with the

16. Sandiford, Irene: The Basal Metabolic Rate in Exophthalmic Goiter (1917 Cases), with a Brief Description of the Technic Used at the Mayo Clinic, Endocrinology **4**: 71-87, 1920; The Effect of the Subcutaneous Injection of Adrenalin Chlorid on the Heat Production, Blood Pressure, and Pulse Rate in Man, Am. J. Physiol. **51**: 407-422, 1920.

17. We wish to express our gratitude to Drs. Plummer and Boothby and to Miss Sandiford for assistance in the installation of our metabolic laboratory, and for many helpful suggestions in regard to technic.

entire absence of general symptoms. Our study included a series of twenty-two cases; practically all the rates fell within normal limits.

Adolescent Goiter.—Fourteen girls (a group of university students) presenting adolescent goiter were studied for the basal metabolic rate. With two exceptions the rates fell within normal limits. In neither of the cases with high rates were there either symptoms or signs of thyroid intoxication.

BASAL METABOLISM IN DISEASES OF THE PITUITARY GLAND

The pituitary gland is concerned primarily with phenomena of growth and sex development, and perhaps also with water balance. The relation of the pituitary to the basal metabolic rate and to the function of the thyroid in health and disease has not yet been fully determined.

Hyperactivity of the anterior lobe occurring in youth results in gigantism, and in adults in acromegaly, while hypo-activity results in infantilism, and when combined with deficiency of anterior lobe hormone, in Fröhlich's syndrome or dystrophia adiposogenitalis. Hypo-activity of the posterior lobe and pars intermedia gives rise to diabetes insipidus.

A group of seven pituitary cases has been studied, including two cases of Fröhlich's syndrome and five of primary diabetes insipidus. The basal metabolism in these cases and the effect on it of pituitary extract is shown in Table 9.

Other instances of pituitary disorders (Fröhlich's syndrome and acromegaly) have been encountered, showing marked disturbances of the metabolic rate. These will be reported later.

From the data here represented it is evident that no profound or lasting effect on basal metabolism has resulted from the administration of desiccated powder of the anterior lobe by mouth, or from the subcutaneous use of the extract of the posterior lobe and pars intermedia. The addition of thyroxin to anterior lobe extract resulted in two cases of Fröhlich's disease in a marked increase in metabolic rate which was somewhat in excess of that induced by similar doses in normal persons.

BASAL METABOLISM IN DIABETES MELLITUS[18]

The fall of metabolic rate accompanying the period of fasting in the treatment of diabetes mellitus is striking. As a rule, during starvation bradycardia develops, and concomitantly a fall in metabolism, decreases of from 10 to 20 per cent. being commonly encountered. The variations in rate in a series of patients on an ordinary diet, during the period of fasting, and subsequently on the highest caloric or maintenance diet, are shown in Table 10.

THE INFLUENCE OF DRUGS ON BASAL METABOLISM

Little is known concerning the influence of drugs on metabolism. Organotherapy is the only field of treatment in which any attempt at systematic investigation has been undertaken as yet.

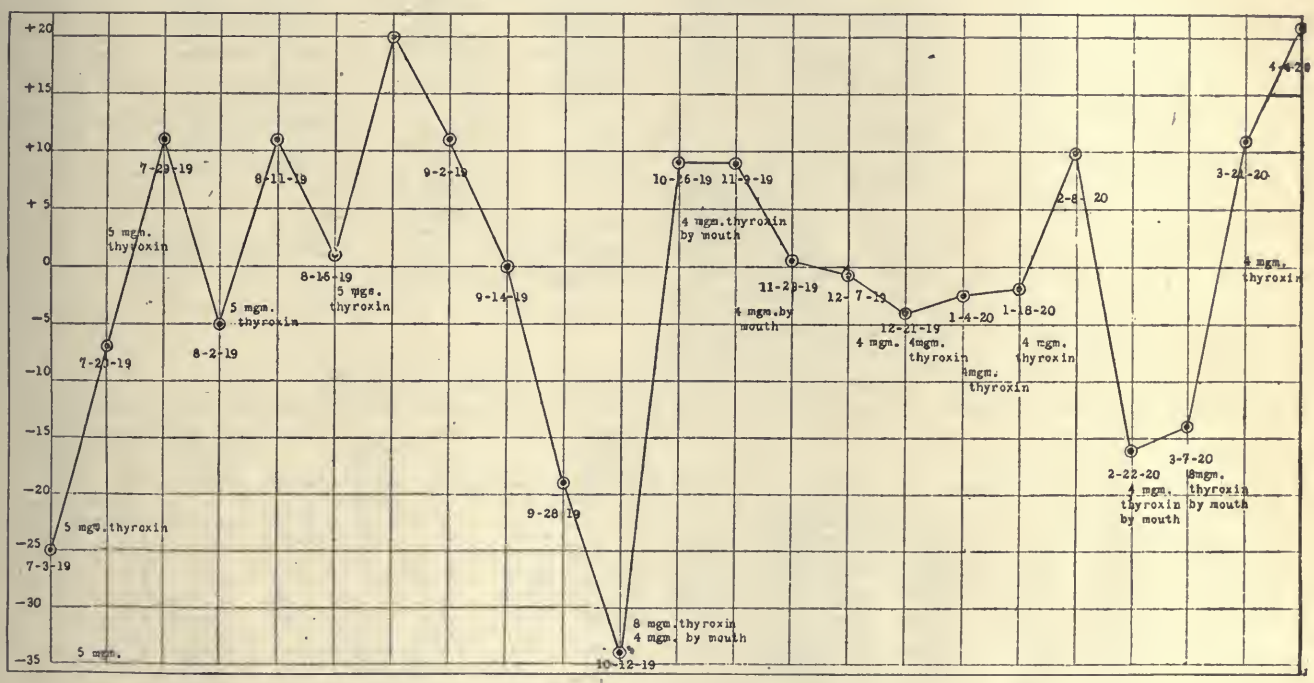


Fig. 3.—Effect of thyroxin in cretinism.

The effect of subcutaneous injections of epinephrin chlorid has been studied by Sandiford. She has demonstrated "an increase of the rate in cellular combustion varying between a calorific increase of from 4 to 48 per cent. This increase is usually accompanied by an increase in the ventilation rate, respiration rate, number of heart beats each minute, volume of each beat, greater utilizing of blood-carrying power, and peripheral dilatation with an increased systolic and decreased diastolic blood pressure. No relation was found between the intensity of the epinephrin reaction and the degree of hyperthyroidism and hypothyroidism." The increased rates encountered she believes to be in harmony with Cannon's "emergency theory," and with Lusk's findings of an increased metabolic rate in carbohydrate plethora.

18. For detailed studies of basal metabolism in diabetes mellitus, the reader is referred to: Allen, F. M., and Du Bois, E. F.: Clinical Calorimetry, Seventeenth Paper, Metabolism and Treatment in Diabetes, Arch. Int. Med. **17**: 1010-1059 (June) 1916. Benedict, F. G., and Joslin, E. P.: Metabolism in Diabetes Mellitus, Pub. 136, Carnegie Inst. of Washington, 1910; Pub. 176, A Study of Metabolism in Severe Diabetes, 1912.

In relation to the influence of other drugs on basal metabolism no information is available except for caffein, atropin, strychnin, morphin and camphor (Edsall and Means,[19] Higgins and Means,[20] Means and Aub,[12] and Du Bois[18]). Means and Aub demonstrated an increase in basal metabolism of from 7 to 23 per cent., resulting from 10 grains of caffein. In therapeutic doses, atropin and camphor have been shown to increase metabolism slightly, morphin to depress it somewhat, while strychnin exerts no appreciable effect.

quently pointed out by Kocher of administering potassium iodid to a patient suffering from adenoma of the thyroid.

Sodium Cacodylate.—In a small series of cases with high rates, sodium cacodylate was administered subcutaneously in courses of 50 mg. daily for six days. The result was disappointing. In one of the milder cases of exophthalmic goiter with a rate of + 31, rest and sodium cacodylate reduced the rate to normal; but in several instances the rate persisted at the same

TABLE 6.—RESULT OF TREATMENT ON BASAL METABOLIC RATE IN EXOPHTHALMIC GOITER

No.	Patient	Initial Rate; Date	Medical Treatment	Rate Following Medical Treatment; Date	Surgical Treatment; Date	Rate Following Surgical Treatment; Date	Comment
1	M. A., P. C.	+45 1/20/19	Cacodylate; four weeks in bed	+44 2/18/20	Lobectomy 2/20/20	+2.3 4/30/20	Marked improvement
2	E. P., 18062	+25 12/13/19	Roentgen ray	+ 7 4/10/20	.....	+43 10/31/19	Lobectomy 14 months previously (Fig. 4)
3	A. E., 17069	+82 8/9/19	Sodium cacodylate; restricted diet; two weeks in bed	+64 8/24/19	Ligation 8/30/19	+33 9/17/19	Severe case; patient died
4	C. Z., 17455	+55 5/1/19 100*	Rest in bed	+12 10/11/19 78*	Lobectomy 10/12/19	+28 11/4/19 80* 2/24/20	Clinically improved; 4/17/20 rate +26; roentgen-ray treatments begun
5	P. O., 17296	+74 9/10/19	One week in bed	+45 9/20/19	Ligation 10/1/19	+24 1/29/20	Clinically improved
6	M. T., 17563	+38 10/25/19	Three weeks in bed; sodium cacodylate	+64 11/15/19	Lobectomy 4/7/20	+28.8	Clinically improved
7	V. A., 15852 15899	+45 3/19/19	Rest in bed	....	Ligation 7/1/19	+45	Lobectomy later; +41.5, 4/23/20; +42.3, 5/5/20
8	R. W., 18083	+32 1/9/20	Four weeks in bed; sodium cacodylate	+ 2	.....	....	Rate rose to +11 just prior to patient's leaving hospital; patient now up and about
9	A. L., 18702	+19 4/3/20 100*	Sodium cyanid daily for six days	+32 4/14/20 110* +33 4/18/20 110*	Roentgen ray	+23.5 5/10/20 105* +23 5/14/20 95*	Clinically no change
10	V. Y., 18763†	+53 4/1/20	Sodium cyanid daily for five days	+33 4/17/20	Lobectomy; ligation of remaining tissue	+9.6 5/12/20	Improved after surgery

* Pulse. † Transferred to surgical department.

TABLE 7.—CONDITIONS IN TOXIC ADENOMA BEFORE TREATMENT

No.	Patient	Age	Sex	Thyroid	Pulse	Blood Pressure Systolic	Blood Pressure Diastolic	Tremor	Eye Signs	Loss of Weight	Nervous	Cardiac Hypertrophy	Grade	Metabolic Rate
1	K. L., 18313	18	♀	Large, adenomatous masses; vascular	90	100	70	+	0	10 pounds	0	+	2	Before KI —2 After KI +53
2	C. G., 18251	40	♀	Large, adenomatous; some colloid; vascular	70	...	..	None	0	0	Slightly	0	1	+31
3	C. M., O. P.	25	♂	Small, adenomatous	90	...	..	Slight	0	+	+	+	2	+25
4	D. T., 18351	23	♀	Small, adenomatous; vascular	90-100	130	80	Slight	0	+	++	+	3	+15
5	F. P., 16862	38	♀	Large, adenomatous; nonvascular	85	130	70	++	0	+	0	+	3	+28
6	M. A. F., 17007	59	♀	Adenoma of isthmus; lobes hypertrophied; nonvascular	80-90	154	75	+	++	As much as 50 pounds	+	+	2	+13
7	R. V., A. H. B.	18	♀	Small granular adenoma of isthmus	80-100	110	65	+	0	++	+	+	1	+10
8	H. O., 18730	38	♀	Adenoma of isthmus and rt. and lt. lobes	100	109	75	+	Slight exophthalmos	+	+	0	1	+20
9	H. S., 16951	21	♂	Diffuse, enlarged	80-90	...	..	Slight	Slight exophthalmos	++	0	+	1	+16
10	M. E., 18550	57	♂	Adenoma of left lower pole; nonvascular	80-90	110	70	+	Von Graefe; no exophthalmos	..	+	+	2	+45
11	B. W., 18629	31	♀	Large adenoma, rt. lobe; small adenoma, lt. lobe	90	122	68	None	Von Graefe; Möbius; exophthalmos	0	+	Slight	2	+15

Potassium Iodid.—The effect of moderate doses of potassium iodid was investigated in seven subjects. In four cases with normal thyroids no increase in metabolism resulted, although in two of these the drug was pushed to the point of iodism (rash and coryza). Three subjects presented small adenomas, and in each, marked increase in basal metabolism resulted, 20 per cent. or more. A most striking result is shown in Figure 5, and serves to emphasize the danger so frequently pointed out by Kocher of administering potassium iodid to a patient suffering from adenoma of the thyroid.

Sodium Cacodylate.—In a small series of cases with high rates, sodium cacodylate was administered subcutaneously in courses of 50 mg. daily for six days. The result was disappointing. In one of the milder cases of exophthalmic goiter with a rate of + 31, rest and sodium cacodylate reduced the rate to normal; but in several instances the rate persisted at the same high level, or actually mounted to higher levels. Since Means and Aub have shown a similar drop for rest alone, or for rest with sedatives (barbital, paraldehyd, bromids and quinin), it is more than probable that the rest, rather than the cacodylate, was responsible for the results obtained.

Cyanids.—On the basis of Hunt's[21] work, in which he showed a markedly increased tolerance for acetonitril in mice undergoing thyroid feeding, sodium cyanid, 3 mg., was administered two or three times daily to patients with exophthalmic goiter and toxic adenoma.

19. Edsall, D. L., and Means, J. H.: The Effect of Strychnin, Caffein, Atropin and Camphor on the Respiration and Respiratory Metabolism in Normal Human Subjects, Arch. Int. Med. **14**: 897-910 (Dec.) 1914.

20. Higgins, H. L., and Means, J. H.: The Effect of Certain Drugs on the Respiration and Gaseous Metabolism in Normal Human Subjects, J. Pharmacol. & Exper. Therap. **7**: 1-20, 1915.

21. Hunt, R., and Seidel, A.: Studies on Thyroid. I, The Relation of Iodine to the Physiological Activity of Thyroid Preparations, Bull. 47, Hyg. Lab., U. S. P. H. S., 1909, 115 pp.

TABLE 8.—RESULT OF TREATMENT ON BASAL METABOLIC RATE IN TOXIC ADENOMA

No.	Name	Sex	Initial Rate; Date	Medical Treatment	Rate Following Medical Treatment; Date	Surgical Treatment; Date	Rate Following Surgical Treatment; Date	Comment
1	E.	♂	+48 3/13/20	None	....	Lobectomy, 3/14/20	+12 3/22/20	
2	P., 16862	♀	+28	Three months' rest; bromids	+ 5	Lobectomy, 3/1/20	....	Cardiac type; syphilitic
3	K. L., 18313 17948	♀	+18	Two weeks in bed	+27	Lobectomy, 2/26/20	+18 3/9/20	Simple adenoma; patient developed toxic symptoms after infection and potassium iodid treatment
4	D. T., 18351	♀	+15	Six weeks in bed	+16	Removal of adenoma, 4/9/20	— 6 4/17/20	Markedly improved clinically; choreiform movements ceased
5	B. W., 18629	♀	+15 +23 +21	1/10 grain sodium cyanid daily for four days	+35 4/18/20 +44.8	4 roentgen-ray treatments 1 week apart	+33 5/1/20	Two weeks of cyanid; rate increased to +45
6	H. O., 18730	♀	+20	Cyanid, 13 days	+12 4/14/20 +25, 4/17/20 +24, 4/24/20	Roentgen-ray treatments, 4/24/20 to 5/11/20; adenoma removed	+33 5/4/20	

TABLE 9.—BASAL METABOLIC RATE IN PITUITARY DISEASES

No.	Patient	Age	Sex	Diagnosis	Initial Rate; Date	Treatment	Rate While Under Treatment	Comment
1	L. K., 18731	33	♀	Diabetes insipidus	+30 3/13/20 —8, 4/18/20	Pituitary extract by hypodermic	+5* 3/20/20 +1.3, 4/20/20	Urine reduced from 11 to 3.5 liters
2	H. O., 293184	30	♂	Diabetes insipidus	—10 3/31/20	Pituitary extract	—4 4/19/20	Urine reduced from 10 to 2 liters
3	C. M.	30	♀	Diabetes insipidus	— 1 4/3/20	Pituitary extract	—1 4/19/20 +2, 4/20/20	Urine reduced from 10 to 2 liters
4	H. N.	28	♂	Diabetes insipidus	— 1 4/3/20	Pituitary extract	—1 4/19/20 +2, 4/20/20	Urine reduced from 12 to 2.5 liters
5	M. L., 18614	53	♀	Diabetes insipidus	+20 3/30/20	Pituitary extract by hypodermic; posterior lobe feeding	+10* 3/26/20 +3.8, 4/3/20	Urine reduced from 9 to 1.5 liters
6	E. T., O. P.	20	♀	Fröhlich's syndrome	+1.6 3/7/20	Anterior lobe feeding; 5 grains 3 times daily for 10 days	—1.2 4/11/20	
7	L. T. B., O. P.	24	♂	Fröhlich's syndrome	—1.2 12/15/19	Anterior lobe, 45 grains a day; thyroxin, 2 mg. every 3d day for 5 doses; anterior lobe feeding 45 grains a day; thyroxin, 2 mg. every 3d day for 5 doses	—2.2 1/10/20 +53.4 2/11/20 —5 2/25/20 +35.4 3/29/20	

* The marked fall from the initial level may have resulted from confining the patient to bed.

TABLE 10.—EFFECTS OF DIETS ON BASAL METABOLIC RATE IN DIABETES

				Normal Diet			Starvation Diet Until Sugar Free				Highest Caloric Diet			
No.	Patient	Age	Sex	Rate; Date	Pulse	Weight, Pounds	Days	Rate; Date	Pulse	Weight, Pounds	Calories; Date	Rate; Date	Pulse	Weight, Pounds
1	P., 18645	23	♂	—6 2/26/20	54	131.5	3	—20 3/31/20	52	127.5	1,220 4/17/20	—11.2 4/18/20	76	123
2	S., 18299	43	♂	—7 2/11/20	80	139	5	—20.3 2/15/20	80	140.5	1,128	—10 3/11/20	68	131
3	B., 18378	16	♂	+12 2/10/20	78	118	5	—7 2/20/20	50	118	1,508	—20 3/11/20	66	108
4	R. McG., 18670	79	♂	+4.5 3/29/20	70	145	1	+13* 3/31/20	56	141	1,990	—8 4/18/20	65	141.5
5	E., 15728	54	♂	+12.9 3/29/20	80	110.5	Ulcer treatment	—7 4/1/20	60	110	Sippy; 3 eggs daily	+0.9 4/18/20	55	110.5
6	L., 18397	53	♀	—10.3 2/20/20	90	125	Intermittent 5 days	—16.1 3/4/20	65	118	Never more than 1,500			

* Patient suffering greatly from pain associated with gangrene of the toe.

TABLE 11.—EFFECTS OF CYANID ON BASAL METABOLIC RATE

No.	Patient	Age	Sex	Diagnosis	Initial Rate; Date	Treatment	Rate Following Treatment; Date	Treatment	Rate; Date	Comment
1	B. W., 18029	31	♀	Toxic adenoma	+23.3 4/1/20	1/20 grain sodium cyanid twice daily for 4 days	+35.2 4/5/20	Rest; cyanid discontinued	+44.8 4/18/20	Patient growing more toxic; cyanid has no effect
2	A. L., 18702	15	♂	Exophthalmic goiter	+18.9	1/20 grain sodium cyanid twice daily for 6 days	+31.8 4/14/20	Dose increased to 1/20 grain three times daily for 4 days	+33.2 4/18/20	Clinically unchanged
3	H. O., 18730	38	♀	Toxic adenoma, cardiac type	+20 4/10/20	1/20 grain sodium cyanid twice daily for 6 days	+25.4 4/17/20	Cyanid continued	+24 4/24/20	Cyanid has no effect; discontinued 4/24/20; +33.2, 5/4/20
4	V. Y., 18763	31	♀	Exophthalmic goiter	+53 4/10/20	1/20 grain sodium cyanid twice daily for 3 days; 1/20 grain sodium cyanid three times daily for 2 days	+32.5 4/17/20	Transferred to surgical department	+21.9 4/30/20	Rest may account for decrease in rate

In three instances an increased rate resulted (Table 11). This is in keeping with the findings of Loevenhart,[22] who demonstrated a definite stimulation of respiration following the intravenous use of small amounts of cyanid. Whether or not this increase in rate persists was not determined, owing to some apprehension in regard to the continuous use of the drug.

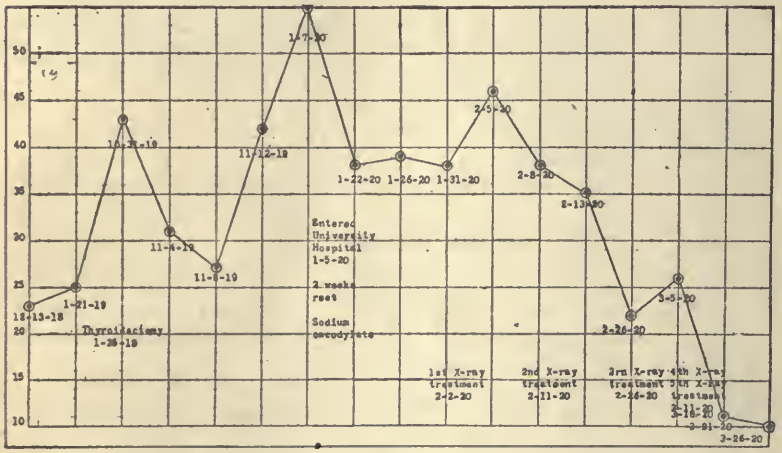


Fig. 4.—Metabolic rates in treated exophthalmic goiter.

CONCLUSIONS

1. The gasometric method of indirect calorimetry is a reliable and practical clinical method for determining the basal metabolic rate.

2. The basal metabolic rate is of the greatest significance in diseases of the endocrine system, particularly in diseases of the thyroid, revealing the extent of the increase in metabolism in exophthalmic goiter and in thyrotoxic adenoma, and the extent of the decrease in metabolism in cretinism and myxedema and allied conditions.

3. The basal metabolic rate furnishes an accurate index to the results of medical and surgical treatment of these conditions, and thereby becomes of value as a guide to treatment.

4. The basal metabolic rate is of value in revealing the effect of drugs on metabolism.

ABSTRACT OF DISCUSSION

DR. NELSON W. JANNEY, Santa Barbara, Calif.: There is no more interesting proof of the value of pure research as applied to clinical medicine than the development of respiratory apparatus. An expert clinical and technical staff and a very large sum of money are required to carry out determinations properly. Recent developments are making it necessary to have at least a respiration apparatus in every medical clinic, for it is of great aid in the diagnosis and treatment of thyroid conditions. It is only fair to question a given laboratory as to the number of controls before accepting point blank even the basal metabolism results. Dr. Rowntree has shown care in his work of carrying out a sufficient number of controls before he used this method clinically. We must demand this at present. In our clinic cases are cropping up illustrating the possibility of a normal metabolism rate not always being an exact criterion of the patient's thyroid condition. As a rule, the return to normal of the respiratory rate is accompanied by marked improvement in the clinical symptoms. We have a few cases of hypothyroidism which exhibit a normal metabolic rate over long periods without satisfactory clinical results. I have also seen two cases of hypothyroidism, each having previously been subjected to a complete hysterectomy, in which it was impossible to bring the metabolic rate to normal without development of symptoms of a somewhat distressing nature, tachycardia, precordial distress and increase in nervousness. It is a question as to whether the loss of ovarian secretion also causes a depression of basal metabolism. This seems possible. Cases of hypopituitarism which show a decreased basal metabolism are also of interest. We have also observed a large fall in the metabolic rate (20 or 30 per cent., or even more) in diabetics undergoing long periods of undernutrition. It seems as though we should consider the fact of a low diet depressing the metabolic rate. We must, however, await further clinical observations before these points will be checked up satisfactorily.

DR. H. S. PLUMMER, Rochester, Minn.: Dr. Rowntree's work corroborates what we have done at Rochester. Since 1910, we have used a clinical chart in hyperthyroidism so as to get a definite rate in every case. We differentiate between the rate from adenoma and the rate from exophthalmic goiter. In adenoma we have a pure hyperthyroidism. Exophthalmic goiter is not pure hyperthyroidism. In one series of cases the average ran within 1 per cent. of the average normal of approximately 39 calories per square meter, while in another series there was a deviation from normal in the basal rate. A patient without a thyroid gland has a rate between 38 and 39 points below normal. In general it takes about a calory of thyrotoxin to maintain the basal rate at normal. In the first case I gave 15 mg. of thyrotoxin intravenously. This is equivalent to about 200 mg. of thyroid extract. The next morning the rate was —17. This gradually raised until on the eleventh day it was 17 per cent. above normal. It remained above normal six days and in three weeks reached its preintoxication rate. This was the first attempt to establish the action and dose of thyrotoxin. The average does not vary more than one point from the figures we have obtained in administering this in about forty cases of high-grade myxedema. We have given thyrotoxin in various conditions and we never fail to get a rise in the metabolic rate, except in cases of exophthalmic goiter with a high rate and in cases of large colloid goiters with a large blood supply. In these cases we could give as high as 15 mg. intravenously without any fluctuation in the rate. We could do the same in exophthalmic goiter. Thyrotoxin has never fluctuated the rate in cases of exophthalmic goiter having a high rate. I think this is due to the fact that the

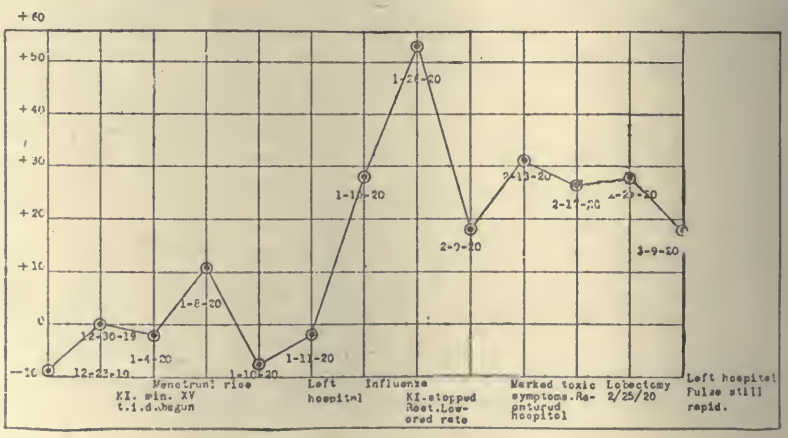


Fig. 5.—Simple adenomatous thyroid becoming toxic after potassium iodid and acute infection.

22. Loevenhart, A. S.; Lorenz, W. F.; Martin, H. G., and Malone, J. Y.: Stimulation of the Respiration by Sodium Cyanid and Its Clinical Application, Arch. Int. Med. **21**: 109-129 (Jan.) 1918.

gland picks up the thyrotoxin. Thyrotoxin is also picked up by the adenomatous goiter. If thyrotoxin is given by mouth there is no reaction. When it is injected intravenously there is a notable increase in rate. If a dose of thyrotoxin is given in other cases, there is a definite, progressive return to approximately normal unless complications are present in the case. All the other cases respond to intravenous doses in just the same way. A patient with a rate below .15 responds definitely to thyroid in myxedema—a differential point in diagnosis. If you give ⅙ mg. to a patient having no myxedema the rate remains normal. Also, patients with myxedema do not seem to absorb desiccated thyroid or impure thyroid. They are very much more apt to absorb pure thyroid. All patients with a rate down require two or three times the normal amount of desiccated thyroid or thyrotoxin to bring the rate to normal. Sometimes you can give 200 or 300 mg by mouth with a flicker in the rate, while 1 mg. given intravenously will bring the rate up. This has been very confusing. Many myxedematous patients say they are well when they are not. This same individual six or eight months later will have a normal rate and will be perfectly healthy. Then again we get the patient who within six weeks after he has lost his entire thyroid gland has developed a high grade myxedema. These patients will return to normal immediately on treatment. Young people who have been myxedematous for only a short time return to health.

DR. BRUCE C. LOCKWOOD, Detroit: As far as we know now, the thyroid has control of the metabolic rate, and an increased basal metabolism means hyperthyroidism, that is, if properly measured and the extraneous influences such as undue excitement, exercise and recent eating are excluded. Many patients formerly considered as psychoneurotics are really formes frustes cases of hyperthyroidism, and it is in this class of cases that the calorimeter has its greatest use. We have had about twenty patients who were treated with the roentgen ray in conjunction with the usual medical treatment. Our results have been excellent. The treatments are given two weeks apart. The basal metabolic rate falls about ten points with each treatment.

DR. LEONARD G. ROWNTREE, Minneapolis: Figuratively speaking, by the use of thyroxin we can convert the sluggish toad into an active frog. The effect following its intravenous injection is remarkable. The cretins who before treatment may have been extremely sluggish, after treatment begin to walk, talk and become playful and kittenish. It is rather interesting to note that the same type of reaction, i. e., marked increased activity, which accompanies the increased rate of hyperthyroidism as in exophthalmic goiter, is encountered on converting the low rate of hypothyroidism to that of normal. The relative increase in rate is accompanied by marked increase in activity, although the absolute rate is only brought to normal. We have had some difficulties with administration of thyroxin by mouth, but we have succeeded in holding some of the patients at a normal metabolism by oral administration. Our purpose is to bring the patients to normal and to hold them there. With intravenous administration we have never seen any reaction within twelve hours but have seen a large increase in the urinary output in from twelve to thirty-six hours. In some instances the rate has returned to normal within five days, but in others not until the tenth or twelfth day. The initial change, particularly the marked increase in urinary output, which may precede the rise in the metabolic rate, is of interest. The flushing of the face and the moisture of the skin may also appear early. Following an operation for adenoma of the thyroid, one girl went to bed and stayed there for ten years. We thought perhaps it was an instance of astasia abasia. She showed no signs of myxedema. We gave her thyroxin over a period of weeks; she became active, walked and finally left the hospital apparently normal. She did not show any signs of myxedema, even with a rate of —30. The psychoneurotics interested us a great deal. A high initial rate is almost constantly found in them. The question arises: Is this high basal rate normal for these individuals? In differentiating psychoneurosis from true hypothyroidism the time element is important. In these cases a series of daily readings may show a plus 40, plus 30 and plus 15, etc. In some instances within three or four days the normal basal metabolic rates may be obtained. We have had many cases where the rate has fallen to normal after operation, under which condition the roentgen ray is not necessary. At present we have a series of patients undergoing roentgen-ray treatment. This form of therapy should be tried at least in all cases where surgery has failed to effect a cure.

THE CAUSES OF EMOTIVITY, AND THEIR MANAGEMENT*

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It is now a commonplace that perturbations of emotion are frequent causes, not only of inefficiency, but also of ill health of the body itself. The physical consequences of emotion are well attested even in the laboratory. To the physician, this knowledge, while a satisfaction, is only a preliminary to the search for its application to the cure of disease. To this end he seeks, first, to recognize such diseases to differentiate them from others, and secondly, to remedy them. Recognition is difficult; for the presence of an emotive state is not enough to signify that the disorder is primarily psychogenic.

Many physical conditions are characterized by disturbances of feeling, emotion. Intoxications, many infections and visceral diseases all disturb the emotions, and often seriously. So do many diseases of the nervous system itself, such as cerebrospinal syphilis, disseminated sclerosis, neoplasms, and what are called the great psychoses. These are all disorders of somatic source, the emotional disturbances being incidental, and not susceptible of being dealt with fruitfully by psychologic means; for only the disappearance of a diseased bodily state will dissipate the morbid emotion in cases of this kind.

The emotions of psychologic origin are numerous. They are not confined, as some writers would have us believe, to sexuality. Not always are they the fruit of an internal conflict; not seldom are they quite independent of attempts to repress them.

For instance, a woman was frequently and explicitly animated by an intense hatred of her mother-in-law which she made no attempt to repress or conceal. This aversion she frankly expressed to her husband without any assuaging of the emotion, or of the suffering it induced, although she recognized that for economic reason it was impossible to split up the household.

Similarly of jealousy. In a number of patients no repression has been attempted, and the jealousy has not even been deplored.

Mortification is a very frequent disabling emotion. It is based on shame and is always due to an inadequate envisagement of the situation. This, in turn, has come about from imperfect knowledge of oneself, and this in turn has often been determined by circumstances giving a false perspective in relation to some mode of feeling or behavior. Quite often this has to do with sex material, but quite as often it is due to social causes and the inculcations of others in the family, in school, in business or in society. Intrinsically it is a fear mechanism; indeed, fear is by far the

* Read before the Section on Nervous and Mental Diseases at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

commonest of the incommoding emotions. When acting chronically it shows itself as anxiety, and is so frequent that some writers have given a special name to the state: "anxiety neurosis." The French have further differentiated, and long ago called "anxiété" the more psychic manifestations, giving the name of "angoisse" when circulatory and respiratory manifestations are conspicuous. It is the state which the Germans call "angst."

Not fear itself, but the feeling of impotence is sometimes the dominant emotion. This may arise from a feeling of incongruity in the situation so marked as to appear insoluble. In some temperaments, rebellion and struggle against this is quickly replaced by resignation. This is particularly true of the incongruity which gives rise to the feelings of disillusionment. This is an emotion most destructive to the employment of the full activity of the personality in work or in human relationships.

It has been the fashion to say that the emotional aspect of all these situations is of transcendent importance in a psychotherapeutic sense. This error is only another instance of the very common one in medicine of being unduly swayed by the conspicuous presenting symptom. Surgeons have long ceased to depend for their judgments on the patient's idea of the relative importance of symptoms. To the psychoneurotic patient, the emotion is all important. To the discerning psychopathologist, the really important matter is the causative one. Now, an emotional situation is very rarely direct. One might almost say that it is invariably determined. It may safely be postulated that emotion occurs only when the subject perceives an occasion for it. The psychologic process is one dependent on sensation, perception, cognition—that is, intellection. This is so even in a rudimentary instance, as that of instinctive reactions of animals, as the scuttling of fish at the sound of a footfall, or a horse running in terror from a strange object.

The emotion is dependent on the perception. Physiologically, too, it may be stated that an emotion is always conditioned by a perception. This is just as true of emotions which appear autochthonous, endogenous. The emotion originally induced by a former perception is now induced by the recollection of it. However, through association another circumstance may supplement, or even be substituted in recollection for the original inducing circumstance, so that an idea apparently quite extraneous to the provocative one may seem at first sight quite incongruous with the emotion it seems to produce. The reaction is then adjudged as a morbid one although in reality it is a perfectly natural response to circumstance. The circumstance itself, indeed, in such cases is not merely what it appears. There has always been added to it an element unperceived by the uninitiated, which is the real determinant of the emotion produced in the subject.

For instance, listening to a sermon in a crowded church would not seem to be sufficient to arouse the emotion of terror to such an extent that it would prevent the subject thereafter from going to church, theater, or crossing the street. It was only sufficient in virtue of its association with a faintness and oppression which had occurred on one occasion. The significance of this association had not been grasped by the patient. Indeed, the circumstance was a memory apart. It was only when the patient was made to grasp the real significance of this circumstance that her belief could be changed regarding situations which for eight years had been arousing terror and panic, and had brought her to such a degree of inefficiency that she could rarely bring herself to cross the street alone.[1]

Even in the dream in which the content seems to be under the sway of the general feeling tone of the moment, in reality the direction of that feeling tone, and the elaboration of the imagery are dependent on former associations, which of course are the fruits of cognition.

IMMEDIATE EMOTIONS

It is just as true that the material of brooding or rumination is very often determined, not intellectually, but by the feeling tone, and that the judgments are thereby vitiated. The recognition of this is so universal, it is such a commonplace, that we can scarcely wonder that psychopathologists have carried into their studies of emotional manifestations the induction that the feeling tone determines the thought, forgetting entirely that while this is true, both of depressions and exaltations, yet that in the very different states of besetment the reverse is the case. To specify, the common saying "to have a jaundiced view" represents the man whose feeling tone, disturbed by physical agents, permits him to harmonize only with depressing circumstances. The disordered metabolism of the constipated or the hyperproteotic disturbs the feelings, so that automatically unfavorable or depressing points of view are more easily adopted than cheerful ones. The consumptive, whose metabolism is speeded up to produce reactions by which to cope with the invasions of the tubercle bacillus, finds his feeling tone stimulated and active; hence he is in harmony with cheerful, hope-giving situations, and passes by without notice the circumstances of depressing character. None of these reactions, nor the many others like them, are ratiocinative. They are purely instinctive and depend on autonomic states. They are not controllable directly by will. The impotence of psychotherapy in such situations is represented by the adage: "Never yet saw one a philosopher with the toothache." It is a truism in business not to expect a judicial decision the morning after a debauch.

THE MEDIATE OR INDUCED EMOTIONS

The contrary mechanism is so simply exemplified experimentally during the study of the secretory sequences of emotion that it is surprising that there are still those who fail to give it due significance. In all the experimental instances it is necessary to provoke the emotion studied by first inducing the cognition of the situation by the animal or the human being experimented on. But without any experimental instances we can again resort to common experience in studying the effect of bereavement or ruin of the mechanism which determines the stampede of a crowd, of the various methods of suggestion, such as the flowing of tears in witnessing a melodrama, or the indignation at the abominableness of the villain in a romance.

Such emotions as the anxiety so often contingent on the accomplishment of work under another, or the fear of losing one's position, or the fear of failure, when analyzed, will always be found to hinge on apperceptions.

No situation apperceived can be divorced from elements contributed by the percipient. To no two men

1. Agoraphobia and Claustrophobia Removed in a Week, Philadelphia Neurological Association. A complete discussion of this case is given, International Clinics 4, 1919, under the title "Differentia of Phobias and Obsessions."

is a given situation alike. This has been expressed in Hamlet by the remark: "There is nothing either good or bad, but thinking makes it so." It is, therefore, the patient's attitude of mind toward the situation that develops the emotion regarding it which disturbs him.

As a matter of fact, however, this is not autochthonous. It is invariably induced. The induction is usually performed by the mechanism of suggestion. This may occur at the moment itself through the word of another directly applied, as when the nurse says to a child, "Do not be afraid," thereby clothing the situation with the idea of danger, regarding which the emotion of fear is legitimate. The suggestion, however, is usually far less simple, and often depends on a logical induction, though of course always unaccompanied by full knowledge of true relationships. For instance, the so-called birth phantasies are frequently constructions of a child's imagination fabricating an explanation by conjoining, with the untruths he has been told, the facts he has observed.

Too frequently to the child are presented utterances in which error or mystery is implicit. Over and over again do psychopathologists find constructs arising logically from material in which the careless word of an elder did not recognize the implicit emotion for the child.

For instance, a feeling of impotence, and hence a diffident emotion regarding the subject of Latin, was the unfortunate heritage donated to a boy by the injudicious insistence of an elder brother that he was too stupid to study the classics. The fixed idea that resulted vitiated his life by turning him in an artistic direction, for which he was ill fitted, and preventing him from going into professional life, for which his scientific mind would have been admirably adapted.

A woman acquired a habit of mumbling because as a child she was ridiculed on account of the shape of her mouth and its size when she laughed. In the endeavor to minimize the conspicuousness she avoided opening the teeth widely, with extensive movements of the lips, thereby affecting the distinctness of her articulation.

Indeed, stammering is very frequently induced by dread of making an error of speech, or misstatement of fact, or of saying something that will arouse mockery. The induction of this emotion is a function of overstressing by parents or guardian, which acts through a mechanism involving in the speech what golfers call of stroke, "pressing." Having failed several times, especially after ridicule, the child is expectant of future failure and becomes ashamed of it. In consequence, he develops phobia at the prospect. The phobic state in turn induces such physical consequence as embarrassed respiration and tautening of phonatory muscles. This in turn may lead to the use of artificial devices in speech, which temporarily assist, but eventually have also to be got rid of when the stammering is dealt with.

THE PRINCIPLE

All this psychologizing would be superfluous were it not that it is absolutely essential for the clear understanding of the principle of the induction of emotion. It is by a grasp of this principle that the psychotherapeutist can best recondition his patients' reactions in such a way that circumstances which formerly induced distressing or incapacitating emotions shall no longer do so. This is most easily done by the patient when he is made to ascertain the component of the situation which really induces the fear. In consequence he can then imbue the situation with the feeling which to it is legitimate. This readjustment cannot always be effected at once. Practice may be required in concentrating on the efforts needed, for in some individuals the very attempt to consider the situation at all calls into play the very emotion which the whole process is designed to undermine. This, however, is merely a matter of habit, and with practice does not take long to overcome. Very often the reconditioning is precipitate, if not at the first interview, then as a culmination or explosion, so to speak, of a consistent effort during several days. It may take even longer.

Obsession in these cases is merely the haunting of the patient by an idea distasteful to him because of some emotion accompanying it. The distress experienced by these patients during their ruminations is a legitimate enough accompaniment of their failure to direct their thoughts into channels which they believe are more proper or useful. But for the emotional element of the obsession it would cease to beset.

Of the tics, which are impulsions, and of course psychogenic, the same thing is true. They are derived from a movement of purposive intent. The movement has been originally adopted either to avoid discomfort in the part moved, or in response to reactions toward psychologic discomfort.

Thus, one woman felt impelled to turn her head to the right and behind, because there sat a fellow worker with whom she urgently desired an explanation regarding a misunderstanding.

Another woman turned her head to the side away from which her niece used to walk because of the fact that this girl had become engaged to a foreigner, and the aunt was strongly imbued by the belief that marriages with foreigners turned out badly; this because of her experience with many in her family and among her friends. Hence, she could not bear to look at her niece on account of the apprehensive grief at the prospect of losing her to misfortune.

Of course, the patients were not aware of these reasons. They had to be sought.

MANAGEMENT

The treatment of morbid emotions of this kind, then, depends on the finding of the situation, the prospect of which determines the emotion. It is with the cognitive element of this that we must deal by persuasion. Although we say that we change the mental attitude of the patient, we in reality change the situation itself by adding to it or subtracting from it the elements which arouse the incommoding emotion.

To do this is an art, and of course requires practice; but no amount of practice is of value unless the mind of the operator is directed toward the proper steps to be taken in performing his physiologic operations.

EXTRAMURAL METHODS

It is true that similar reconditioning of mental attitudes and changing of emotions have always been accomplished by means of religion, philosophy, through charlatans, and by accident; but these agencies all possess serious inconveniences. The modification of the patient's religious belief is not the legitimate function of a physician. The practice of psychotherapy by priests is ineffective, as a rule, because they have not acquired the necessary knowledge of neurology, without which errors of diagnosis are inevitable; nor do they know the kind of psy-

chology necessary for psychotherapeutic reconstruction. Indeed, this kind of psychology requires as an essential basis a sound knowledge of physiology, as well as a very thorough knowledge of clinical psychopathology.

Thus, a sea captain was referred because of distressing facial tics which prevented him opening the eyes at will, so that he could not go about alone without great distress, and could not read at all. The tic was the product of the anxiety induced by intense naval responsibility during the war. The systolic blood pressure was found to be 107, and the diastolic, 63. This I attributed to depleted endocrines. Suprarenal substance quickly raised it to 152 systolic, 108 diastolic, more in conformity with the state of stress at his age, 50. The stoppage of suprarenal substance and reduction of protein then permitted a fall to his norm, systolic 125, diastolic 90, the psychotherapy that cured the tic having also permitted recuperation from exhaustion.

Laymen are not trained to make differentiations of this kind, and the need for them is constant in the practice of medicine, to which the psychologic branch is no exception.

The same reasons make dangerous the work of philosophers and psychologists with these patients. It is still more true of the pseudoscientific modern religious movements which have healing as a function. In one of them, indeed, a destructive negativism is the keystone of the treatment. If the patient can be made to believe that no situation is evil, that which has aroused his inconvenient emotions necessarily ceases to do so; but the negation of reality is far too heavy a price to pay for the dispersal of an inconvenient emotion. The remedy is worse than the disease.

Thus, exhaustion is not only a cause of emotivity; but in some instances it is caused by prolonged emotions. The intricateness of these mechanisms is one of the vicious circles so much spoken of many years ago. Proper delving into genesis eliminates much of the imprecision attached to these cases.

The occasional removal of emotion by charlatans is effected by suggestions usually masked in physical measures, which then act by chance in accordance with the principles set forth in this presentation, namely, the reconditioning of the patient's attitude toward the situation. But when the charlatan does so, it is by accident, so to speak, and without the least knowledge of the great principle at work; hence he very frequently misses fire.

Accidents are sometimes efficient.

Such was the case of the man who had not walked for seven years, after a street car accident, for which he was heavily indemnified, until one night after the plaster fell from the roof his wife found him sitting in the chair in the corner of the room trembling with fright. Thereupon she induced him to make the necessary efforts to stand and walk, the success of which dissipated his phobia regarding his power of maintaining equilibrium.

As against the numerous failures of any of these methods, the almost universal success of the sound method of rational persuasion forms a striking contrast. My personal experience of twelve years shows that it is quite unusual that a morbid emotion cannot be dispelled and permanently so, and that the time taken to do so is more often less than a week than more than a month. The cure of emotions in military life, as during the great war, shows that these pretentions are well justified, and that such success should be the rule and not the exception.

ABSTRACT OF DISCUSSION

DR. JULIUS GRINKER, Chicago: There is no doubt that Freudism is responsible for a flood of publications of the type that Dr. Williams has given us today, and many of these papers differ from each other only in that they use another phraseology. To practice neurology successfully, we must follow the various methods of psychotherapy and choose the method that will suit the individual case. A neurologist who knows how to get into the psychology of the neurotic will be able in most instances to get at etiologic factors without much trouble. But this alone does not cure the patient. It is a question largely of the susceptibility of the patient to suggestion, and no matter how I may struggle against accepting such a view, I think after all the successful treatment of the neuroses is due entirely to suggestion.

DR. DAVID S. BOOTH, St. Louis: I have not been able to get away from the physical basis of the psychoses. I believe that the fundamental element in the production of these psychoneuroses is in the anatomy or physiology or histology, whichever one may appear in a given case. I have not yet accepted the theory that these conditions are caused by suggestion or that they are cured by suggestion entirely. The fact that many of these patients recognize the error of their obsessions shows that they cannot be cured, in all cases at any rate, by suggestion. Such cases show that the disease is not caused by the idea, but by some physical condition of the body. The basis is there, and the idea is the result of this anomaly. Faith cure, or psychotherapy, if you want to give it a name that will be accepted by the medical profession, simply gives these people a settled philosophy of life. If their condition is not severe, by which I mean if the changes in the nervous system are not great, they will, perhaps, recover from that treatment alone. But I believe that in all cases the physical basis of the condition should be treated, at least in conjunction with the mental element.

DR. HYMAN CLIMENKO, New York: There are distinct psychic traumas, distinct psychic conditions, that produce neuroses, and these neuroses are cured by psychic methods, whether Freudian or Christian science or rabbinical, etc., does not matter. The Freudians have contributed largely to the study of psychology, although they have not in the matter of treatment and cure. I know of many cases in which psychanalysis has aggravated the condition. Dr. Williams mentioned high blood pressure. This is often produced by psychic trauma, in which case, the high blood pressure will be reduced simply by talking with the patient and appealing to his reason, in other words, using one or the other type of psychotherapy.

DR. KARL A. MENNINGER, Topeka, Kan.: There is constant talk about curing patients by "persuasion," by "suggestion, by "explanation," by "analysis" but by what particular technic is rarely indicated. It is rarely clear whose method is used or what particular steps are taken; consequently these men only encourage the skepticism of those whom they would convert. I suggest that they come to this meeting and stage an impromptu session of this kind; have a voluntary patient from among ourselves come forward and be treated by the method of the author's choice, here in front of us all. Then all may see what the psychotherapists do instead of hearing about persuasion or reeducation or readjustment by name only which never gives much to some of us because we do not know what the psychotherapist does when he does it, or what he means when he says it.

DR. C. F. NEW, Indianapolis: In regard to the psychogenic origin of the underlying ideas of anxiety, which is the basis of the majority of the fears which beset these patients: A close analysis of a large percentage of these conditions will disclose the fact that there is an underlying source of worry which the patient is trying to overcome and which he does not want any one else to know about, and until that phase of the condition is cleared up or it is suppressed there is no peace of mind for that individual, no matter what you do. Before any psychotherapist or anybody else can make any impression, he must secure the confidence of the patient, and the best way to do this is by detailed, careful examination of the patient, his history and his present condition.

DR. ROSS MOORE, Los Angeles: One neurologist will say that it is impossible to make these people better, while another will say that a great deal can be done by psychotherapy. Both are right, although seemingly opposed to each other, and the reason is this: One man has in mind the classification which refers to the individual whom I call the essential inadequate—the individual who is narrow and cannot be otherwise.

DR. G. H. BENTON, Miami, Fla.: Even here, before a body of neurologists and psychiatrists, the personal reaction to the words psychanalysis and psychotherapeutics tends to bring about at once a very marked personal equation, individual in character, and of emotive quality. This is the very thing that is occurring continually in psychoneurotic patients who are very limited in their field of apperception. Therefore, they lack judgment. Their emotivity has a great range and is very vacillating, but the means which we use to reach them, or in other words, the tools we use, remind me very much of our automobiles. They are selected by virtue of our particular choice, but we all "get there" just the same. And so it is with the neuroses. We accomplish results first, by our own understanding of the case, through our own methods, by our own individual possibilities, by first determining what exists and then by inquiring of the patient what does this mean to you, what does that mean to you, what does this situation lead to, and how do you react to it, and, then, by trying to interpret these things, and to determine further if the patient actually understands the words we use as we understand them. We often observe ourselves jumping around from one theory to another because it does not quite appeal to us or because we can find methods by which we can reach our patients and help them in spite of the individual equation—the patient himself. The personal equation is one of the greatest difficulties we have to contend with. This involves the personal equation of the physician as well as the personal equation of the patient. We are dealing with these things in our hospitals for the psychoneurotics. We are able to reach them to a greater or lesser extent but through very varied methods. Some are brought back to their former mental and physical level, others somewhat above that level. Although sometimes an immense amount of time is spent to attain the results and to insure their permeability, we are getting at it in our own individual ways.

DR. GUSTAVE ROUSSY, Paris, France (Translation by Dr. Williams): Babinski has long maintained that emotion is only an accessory or adjunct factor in these cases, the real factor being the suggestion, and that the emotion quickly disappears when counter suggestions are made. On the other hand, Dr. Roussy and his colleagues, along with Professor Dejerine, contend that the emotion is rather the primitive factor, because people are constitutionally or otherwise over-emotional, and they react in this way to the occasions which arouse the emotion. They think that their experience in the war confirms this opinion, while Babinski and his followers believe that the war confirms theirs.

DR. GEORGE A. MOLEEN, Denver: I think we are privileged to speak of the neuroses as attributable to high elevations, since we find that the susceptibility to this emotional shock, to suggestion, to the other irritable influences, disappears when these persons seek the lower levels, such as the seashore. Some persons cannot live in the high altitudes because of the nervousness induced thereby. They could go to the seashore and become quite relieved and comparatively calm. In the war department manual is given a very clear description of the increase in nervous excitability experienced in high elevations. This, as I pointed out sometime ago, is due in large measure to the lowering of the blood values, the cellular and chemical elements, particularly the hemoglobin. Of course, we recognize the importance of constitutional inferiority and the relation of this constitutional inferiority to the endocrines as well as the conditions on which these high degrees of suggestibility may be premised. Not only do we have disturbances due to the hemoglobin and corpuscular diminution which was observed by Haldane, Barcroft and the men who headed the Anglo-American Pike's Peak expedition establishing the data with reference to the blood, but we can also look to the calcium deficiency as reducing the stabilizing character of the protoplasm so far as irritability is concerned. I do not believe that we should rely too strongly on the external influences, although they have their exciting possibilities, but we must also keep in mind the somatic disturbances and those forces which relate particularly to the body metabolism.

DR. TOM A. WILLIAMS, Washington, D. C.: In my paper I adequately took care of all the physical causes which some speakers have brought forward. Such conditions as essential inadequacy or constitutional psychopathy we are not considering. What Dr. Neu said is justified—we must make the patient cure himself. When dealing with an inadequate you cannot expect of him what you would expect of a normal man. I deal here therapeutically only with cases in which the induction is purely psychogenic. In certain physical states the emotivity is exalted. In hyperthyroidism, for instance, all these factors are highly exalted; you cannot expect to cure that patient's emotivity by psychotherapy. We can only carry these cases along and help the physical treatment. Babinski has helped us to differentiate between organic and functional nervous disease. The differentiation depends largely on the anamneses and partly on the results of treatment. I tried to emphasize that all the emotive reactions of the kind of cases I speak of are purely secondary to the conditioning of an apperception, just as the animal which reacts from the emotive standpoint does so simply because of the apperception of the bell and the meaning attached to bells. As to the challenge to demonstrate a particular method, I am willing to do it, provided the right kind of case is selected, and inasmuch as certain patients have difficulty in doing this before audiences we must have privacy; and a patient should be chosen in whom a rapid cure is possible, and there are many. In the long standing cases that does not suffice: we must penetrate to the foundations of this thing, find the mechanism and reorientate the patient. It takes longer and one has to be familiar with psychopathic disease. It is not a matter of phraseology, it is a matter of principle. Suggestion must be religiously avoided. It is not upbuilding.

We do not need to interpret these things by dualistic philosophy. It is a monistic phenomenon purely. Psychologic reactions are physical reactions in reality, stated, however, dynamically and qualitatively only, as against those of the chemist which are stated ponderately, and those of the physicist which are stated quantitatively.

ENDOCRINE IMBALANCE IN THE FEEBLEMINDED *

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The close relationship that exists between the internal secretions and the central nervous system has long been known. The fine changes of temperament associated with the early stages of pregnancy, the varying neurotic conditions, from slight unrest to grave neurasthenia, that result from a dysthyreosis, is common knowledge of the observant internist and the trained neuropsychiatrist. So impressed were the ancients with the relation of the generative and gonadal influences on the mentality that they regarded the seat of hysteria in the uterus and named it accordingly. Cretinism is an example of a recognized endocrinopathy. The constant association of the athyrea with the marked hypophrenia and microsomia, disproportionate tissue growth, and other characteristics, stamp it as a frank ductless gland disease. The marked resem-

* From the Laboratories of the Massachusetts State Psychiatric Institute.

* Read before the Section on Nervous and Mental Diseases at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

blance of certain factors in other kinds of feeblemindedness with developmental anomalies, uneven growth rate,[1] and various general and special tissue changes to the cretinic hypophrenia, has shown the desirability of further information in regard to the endocrinous factors in feeblemindedness in general.

From the results of careful experimentation in physiology and biochemistry, and accurate clinical observation verified by pathologic study both during life and after death modern scientific opinion is agreed that the development and growth of the animal organism is regulated to a great extent by definite and potent highly complex chemical substances called hormones, the internal secretions of the ductless glands. A constant change in the chemical balance occurs with the progressive periods of growth, more or less independent from the daily or continuous physiochemical balancing of the metabolic functions of the cytoplasm constituting the immediate life.

Besides this hormonic or chemical connection or interrelation between the various parts of the body we have another system which binds the parts together, namely, the neuronic or nervous system. It is by a smooth and well-ordered interworking of the neuronic and hormonic connecting systems that a being is kept in normal poise. An interruption of the nervous or electrical control, or a disproportion between the various elementary substances or internal secretions forming the chemical combining system, or an altered condition of one or more of the constituent hormones, will destroy the balance between the two systems and result in an abnormal or pathologic state.

A great deal of attention and research has been devoted to the nervous control both of the body and also its influence on the glands of internal secretion. I now propose to study the relationship to, and effects of, the internal secretions on the nervous system. As regulators of metabolism, to use the words of Noel Paton, they exert an influence on the growth and function of the brain and nervous system in general, as well as on the rest of the organism.

As a basis for this study, 100 cases of feebleminded-ness that came to necropsy have been taken in chronological order from the pathologic service of the Massachusetts Commission on Mental Diseases. They include cases from the Massachusetts schools for the feebleminded at Waverley and Wrentham, and from other state hospitals.

The cases had been studied clinically in the routine method at the various institutions and after the standardized system developed by Dr. W. E. Fernald at the Waverley School, including Binet-Simon intelligence ratings. The necropsies were complete, including head, cord and soma in all cases, and were performed by Drs. M. M. Canavan and D. A. Thom according to the inclusive method outlined by Southard. The data, clinical and postmortem, were all collected in the usual way, symptoms and signs and pathologic changes and findings being noted by the regular examination methods. Thus, neither during life nor at necropsy was there any particular or special attention given from the endocrine point of view.

Data have been collected from a gross pathologic study of this series of brains and somatic organs, especially the ductless glands. In one third of the cases a microscopic examination of the glands was also made. Aplasia, hyperplasia, pigmentation and interstitial change not due to age, glandular proliferation, anomalies such as absence or accessory organs with lessened or increased function, besides special changes in the secreting epitheliums and cells of the individual and various glands are the main factors included in our summation of the changes.

In a previous study,[2] the question of syphilis was considered. Attributing inflammatory and exudative changes, such as early arteriosclerosis, aneurysm, chronic periostitis, saddle nose, chronic meningitis and vascular changes of a doubtful nature to syphilis, we found eleven cases among those in which there were gland changes. Wassermann reactions were not obtained in many of these cases, so that reliance on grosser pathology was necessary.

TABLE 1.—GLAND CHANGES

	Number
Extreme	10
Marked	11
Moderate	53
Absent	26

The incidence of glandular change is shown in Table 1. Under the designation "extreme changes" are classed those cases in which three or four glands were involved and in which there were marked anomalies of growth, underdevelopment, disproportion of body parts, such conditions as dystrophia adiposogenitalis, etc. There were two cretins.

In the second group eleven cases showed marked endocrine signs, in which at least two glands were involved, correlated with distinct changes in growth and anomalous development. Combining the first two groups, we have 21 per cent. of cases showing presumptive evidence of marked internal secretory disturbance.

The third group included fifty-three cases in which changes of one or two glands were demonstrable, with irregular and unusual combinations.

Gland changes were entirely absent in twenty-six cases.

TABLE 2.—PERCENTILE ANOMALIES

	External	Visceral	Cerebral
Paresis (100 cases)	23	29	27
Hypophrenia (60 Cases)	73	58	75

A tabulation of anomalies (Table 2) divided into external somatic, visceral, including the ductless glands, and cerebral, showed an interesting comparison. In the absence of data on normal individuals, 100 cases of paresis were selected. Paresis being in each case an acquired disease, it was assumed that they might be potentially representative of the normal type.[3]

The marked preponderance of anomalous manifestation in the feebleminded over the cases of acquired disease is striking. Attention is called especially to the third or cerebral group, in which 75 per cent. of hypophrenics showed anomalies, compared with only 27 per cent. of the acquired-disease cases, as significant of a possible influence of the growth regulating secretions on the development of the brain.

Among anomalies of development the stature first demands attention. Our observations on height

1. Goddard, H. H.: Height and Weight in Feebleminded Children in American Institutions, J. Nerv. & Ment. Dis. 39: April, 1912.

2. Raeder, O. J.: A General Nosological Grouping of One Hundred Autopsied Cases of Feeblemindedness, presented before the New England Society of Psychiatry, September, 1919.

3. Only sixty of the hundred cases were selected to compare with the 100 cases of acquired disease because the combined 160 necropsies were performed by the same hand, insuring a more even and regular observation.

agree in a general way with those of Shuttleworth,[4] Tarbell,[5] Wylie[6] and the compilation of statistics by Goddard[1] in that we found the majority of patients undersized. In Table 3, percentile figures show 60 per cent. varying from the normal, of which 51 per cent. were undersized and 9 per cent. taller than the normal given for their ages. Thirty-eight per cent. were normal, allowing a variation of 10 cm. as within normal limits. Data were not available in 2 per cent.

TABLE 3.—HYPOPHRENIA: STATURE IN ONE HUNDRED CASES

	Per Cent.
Undersized	51
Oversized	9
Normal (± 5 cm.)	38
Unknown	2

The question of growth has been studied experimentally in tadpoles by the feeding of various ductless gland substances in the laboratories of Gudernatsch and others. Gudernatsch[7] has shown that tadpoles fed with thymus are overgrown and underdeveloped; also that examples of the same hatching fed on thyroid develop more quickly, but at the expense of size and weight.

In the curves on growth, Tarbell,[5] and especially Goddard,[1] have shown that hypophrenics grow faster but stop sooner than normal children. Allowing for differences in comparative anatomy, the question arises whether this phenomenon may not be due to an imbalance of the thymus and possibly later also of the pituitary gland. Certainly the same overgrowth of the thymus-fed tadpole corresponding to increased height and weight in the preadolescent stage of the feebleminded, as shown by Goddard's tables, and the underdevelopment or immaturity of the tadpole can be correlated later with the stunted development and hypophrenia of the abnormal child.

The incidence of changes in the individual glands is shown in Table 4. The pituitary gland was found

TABLE 4.—ADENOSES

	Per Cent.
Thyroid	19
Pituitary	40
Suprarenal	27
Sex	38
Thymus	12
Others	6

involved oftener than any other gland, in 40 per cent. of cases. The sex glands, the seat of numerous anomalies which brought their score up considerably, were second with 38 per cent. The suprarenal showed involvement in 27 per cent. of the cases and the thyroid in 19 per cent. It is noteworthy that the thyroid falls so low in the scale. With the frequency of thyroid disturbances one might expect a larger number of cases showing a pathologic condition of the thyroid.

Numerous cases showed various combinations of glands involved. Table 5 gives the pituitary polyadenoses. It was involved singly in fourteen cases. Pituitary with gonads, in nine cases, was the most common dual adenosis, though there were combinations of sex and thyroid in four instances, sex and suprarenal in four cases, and in three cases the thyroid pituitary and gonads were affected in triple involvement.

TABLE 5.—POLYADENOSES

	Number
Pituitary	14
Pituitary, Sex	9
Pituitary, Suprarenal	5
Pituitary, Other Glands	11

Furthermore, there were six cases in which the gonads were combined with three other glands; two included the gonads, thyroid, pituitary and suprarenal; two, gonads, thyroid, pituitary and thymus.

Of the third two in which thyroid, pituitary, suprarenal and sex glands were involved, one was a female cretin, and the other an obese eunuchoid idiot who had been castrated in early life. He showed all the typical characteristics — undeveloped penis, and feminine appearance of breasts and extremities, with flabby pendulous abdomen.

REPORT OF CASES

In order to illustrate the striking endocrine characteristics that were found in many cases of idiocy and imbecility, two of the cases have been individually charted and are shown in Figures 1 and 2.

CASE 1.—*History.*—Figure 1 represents a male idiot, aged 10 years. He was admitted to the Massachusetts School at the age of 6. He was 3 feet 9 inches tall and weighed 43 pounds; he was poorly developed and nourished, had chronic bronchitis, had a dry, coarse skin and sparse, coarse, wiry hair; there was a systolic heart murmur at the apex; the genitalia were infantile; there was an umbilical hernia, a protruding abdomen and poorly developed muscles; the hands were thick and short, with stubby fingers; the forehead was bulgy, the face asymmetrical, with large protruding ears; there was a chronic discharge from the nose; the tonsils were enlarged, with adenoids and a fissured tongue. There was some question whether or not the patient was a cretinoid idiot.

There were six children, of whom the patient was the second. The first three children resembled one another rather closely, and all died at the Massachusetts School for the Feebleminded. Three later children were normal, one dying in infancy of diphtheria. An uncle and a sister of the patient had spinal trouble; the sister in question became partially blind. There was a feebleminded and epileptic great-aunt. One of the mother's sisters was migrainous and obese; one living child of the sister had one arm not fully developed. Both the patient's mother and maternal grandmother are stated to have been nervous, and the patient's grandmother was also migrainous. On the father's side one sibling was deformed with spinal curvature. There was also an epileptic and feebleminded great-aunt.

The patient began to talk at about 1 year and to walk alone at 19 months. Peculiarities were first noted at 2 years. The patient had a peculiarity in speech, using "d" for the first letter. He was able to help in dressing and undressing himself and to feed himself with a spoon or fork.

School Progress, School Examination, Practical Knowledge and *Economic Efficiency* were all nil.

Social Reactions.—The patient was stubborn and irritable, running about in his own way, screaming when touched to be dressed or undressed, spitting on the floor, and yelling if he did not wish to be moved; he would not eat if any one was looking at him; he had lost capacity to feed himself, throwing food about; he was attracted by striking colors in dress. If given a toy, he would go by himself to play with it, screaming if another child went near him.

4. Shuttleworth, G. E.: Health and Development of Idiots Compared with Mentally Sound Children, Proc. Assn. Med. Off. Am. Insts. Id. & F. M., 1876-1886, pp. 315-322.

5. Tarbell, G. G.: On Height and Weight and Relative Rate of Growth in Normal and Feebleminded Persons, Proc. Assn. Med. Off. Am. Insts. Id. & F. M., 1876-1886, pp. 188-189.

6. Wylie, A. R. T.: Contribution to the Study of the Growth of the Feebleminded in Height and Weight, J. Psyc.-Asthen. **8**: 2-7 (Sept.) 1903.

7. Gudernatsch, J. F.: Feeding Experiments on Tadpoles, Arch f. Entwickl. d. Organ, **35**, No. 3 (Dec.) 1912; Am. J. Anat. **15**, No. 4 (Jan.) 1914.

Psychologic Test.—The Binet test, performed in May, 1914, at the chronological age of 8 years, gave the mental rating at 1 year.

Further History.—The patient required nursery care. He was in the hospital and infirmary most of the time, with untidy habits. He had frequent illnesses, including chickenpox, measles, bronchitis and indigestion; he grew thin and developed a cough in November, 1915; he had a slight unilateral convulsion with twitching of the right side of the face. There was severe dyspnea with mucus in the throat and a weak pulse. The patient showed symptoms of meningitis and remained comatose. Three days later slight paralysis of the right side developed, followed by death the next day. The cause of death was meningo-encephalitis and hydrocephalus.

In Figure 1 are shown, first, the small stature and general microsomia; secondly, hydrocephalus; this was considered as being evidence of syphilis. A postmortem Wassermann test was negative on the serum; thirdly, various dystrichoses, namely, hairy growth over the chest and abdomen, upper arms and forearms; abundant hair on back and neck, with absence of crines pubis and axillary hair. Over the head it was coarse and rough and arranged in multiple cowlicks; fourthly, microphallus, the penis being small with redundant prepuce. Besides these anomalies and abnormalities, the pituitary was cystic, and there was little sign of activity in the secreting cells of the anterior lobe and marked increase in the pigmentation of the posterior lobe cells.

ENDOCRINOSIS IDIOT
MICROSOMIA
HYDROCEPHALUS
DYSTRICHOSES
MICROPHALLUS
HYPOPHYSITIS
LYMPHNODITIS

Fig. 1.—Case 1.

ENDOCRINOSIS MONGOLIAN IDIOT
MICROSOMIA
HYPOTHYREOSIS
HYPO-ADRENIA
HYPERTHYMIA
OVARITIS
HYPOPHYSITIS
LYMPHNODITIS
DYSGENITALISM

Fig. 2.—Case 2.

CASE 2.—*History.*—Figure 2 represents a female Mongolian, aged 18 years, who rated 3½ by the Binet intelligence scale. She was admitted to the Massachusetts School at 8 years of age. At 17 she was 4 feet 6½ inches tall and weighed 72½ pounds. She later increased 12 pounds in weight. The patient was fairly well developed and nourished; she was a mouth breather. The skin was coarse, the circulation poor; the heart sounds weak, with systolic murmur at the apex; the heart was enlarged; the fingers and toes were short and blunt; the face was asymmetrical; the eyelids were inflamed, the nose flattened, the tonsils large, and the tongue fissured. The Wassermann test was negative.

The patient was the first born of two children. The younger brother is normal. The father had an enlarged heart; he was of a gouty, asthmatic diathesis and died of a paralytic shock. He had an epileptic seizure at the age of 30, and two more after marriage, one just previous to the birth of the patient. He had a violent temper and was subject to severe headaches. The parental fraternity was further checkered with nervosity and paralysis agitans, and there was a question of insanity. On the mother's side two brothers were epileptic, and a sister was backward. Two brothers and one sister are described as normal. A distant cousin had schizophrenia, and her brother was hypophrenic.

Peculiarity in the patient was noticed at 1½ years. She began to walk and talk at 2½ years; she was never able to say such words as "or" and "if"; she did not know the alphabet and could not read or count. She was tidy and could aid in dressing and undressing herself; she could use a spoon but not a knife and fork, nor could she tie her shoestrings. She was described as sometimes obedient and as being fond of picture books and blocks.

School Progress and *School Examination* were nil.

Social Reactions—The patient was quiet and inattentive; her name had to be spoken to attract her attention.

Waverley School History.—The training class records show a deficiency in industrial adaptability. At 12 years she was described as clever at playing simple games, catching a ball, etc. Later on, after the age of 12, she learned to sew and use scissors well. From 1905 to 1909 (age 9 to 13 years) she showed slow but definite improvement. She had changed under training from a repulsive, drooling, finger-sucking, untidy, stupid patient, taking short, choppy steps, to a tidy patient who had completed the first school course and had begun to take part in manual training. Her resistance to disease was low; she was subject to infections of various kinds. She was admitted to the hospital ward, April 23, 1915, with severe bronchitis and pleurisy. She died of tuberculous bronchopneumonia, May 26, 1915.

She was of the usual Mongolian type with the characteristic tissue and developmental changes. In Figure 2 we have abridged the enumeration of these characteristics, showing microsomia, very small thyroid and suprarenals, hyperplastic thymus, an interstitial inflammation of the ovaries and hypophysis, a general lymphnoditis, including tonsils and adenoids and dysgenitalism in the form of unequal labia majora, long urogenital cleft, large, prominent clitoris and a high position of the mammae.

Three of the Mongolians showed extreme glandular change; one showed marked involvement, and the fifth one moderate dysadenosis. Thus all five cases of Mongolianism showed gland changes besides the usual typical characteristics.

SUMMARY

In this study, the developmental, tissue and gland changes have been charted in 100 cases of feeblemindedness that came to necropsy, taken in chronological order from the pathologic service of the Department of Mental Diseases of Massachusetts. Data found in the case histories and necropsy protocols were gathered in the regular way without reference to the endocrine point of view. It has been shown that 21 per cent. of cases showed marked glandular involvement, with changes of a lesser degree in 53 per cent. additional, making a total of 74 per cent. in which there were signs of gland change. In eleven of these there were signs of syphilis. Not having Wassermann reactions in all cases, it may be argued that others of the glandular cases may have been syphilitic. Vice versa, some of those designated as syphilitic because of vascular or chronic inflammatory or exudative changes, may not have been syphilitic. Furthermore, the dysfunction of the endocrine system itself may be due in these cases to syphilitic influence on the secreting cells of the glands. In Figure 1, though the hydrocephalus points to a possible syphilitic involvement, the Wassermann reaction was negative.

The pituitary has been found invaded more often than any other gland. The small stature so common in the feebleminded may be correlated with this fact, in view of the powerful influence of the pituitary gland on growth.[7]

The gonads were shown to be affected in 38 per cent. of cases. Also anomalous development was most rampant here. This is not remarkable when the embryology of the genital tract is considered. The similar, not to say identical, development of the urogenital tract in both sexes up to a certain embryologic stage, and then the more or less arbitrary determination for male or female would seem to give much more opportunity for anomalies, misdevelopments and malformations than in other parts of the organism where the developmental homonomy is not interrupted.

Macroscopic studies of the brain anatomy have shown numerous reversive types and evidences of arrested development or maldevelopment. Microcephaly, especially in the Mongolians, was common. Macrogyria, in one instance almost to absence of any fissuring in the frontal regions of the two hemispheres, was of frequent occurrence. Extraneous fissuring, "affenspalte" lateral inequality, microcerebellum correlated with sprawling gait, and deficiency of parietal and occipital lobes with various degrees of exposure of the cerebellum, were some of the more striking changes found in the encephalon.

MICROSCOPIC EXAMINATION

Among the microscopic findings, interstitial change, aplasia, pigmentation and varied staining reactions were noted. The pituitary was frequently found cystic; especially dilatation of the cleft in the pars intermedia. The cells of the anterior lobe showed varied staining reaction, the most common change being a deficiency of basophil cells. In the posterior lobes, marked pigmentation occurred in several instances in very young individuals.

The aplastic condition of the thyroid was present in the cretins. A hyperplasia of the glandular epithelium was noted in several cases, and increased interstitial elements were also common. In one of the Mongolians an infantile condition of the thyroid with absence of colloid was noted. In a few cases the vesicles were distended with colloid.

The tests usually showed signs of activity in all except the lower grades. The idiots' testes were either inactive and fibrous, or only feeble signs of spermatogenesis were found. The ovary was examined in only a few cases, but seemed less virile than the male gonads. Two cases of imbecility showed no ovarian activity, and in a third case only very slight evidence of function, one graafian follicle in a section, was found.

No characteristic changes were found in the suprarenal gland. In one case—a tuberculous subject—there was considerable involvement of both suprarenals with tubercles, numerous giant cells, etc. There were no signs of Addison's disease present.

CONCLUSIONS

1. The evidence of gland changes observed in these cases by routine examination methods, clinical and postmortem, without particular reference to endocrinology, is so constant and multifarious that we cannot but regard them most seriously. There were gland changes of one sort or another in 74 per cent. of cases. Marked gland changes occurred in 21 per cent.

2. With the constant and characteristic bony and soft tissue changes microsomia, lowered resistance to infection, poor circulation, loose jointedness, and changes in the glands of internal secretion, Mongolian idiocy bids fair to be founded on an endocrine pathology.

3. The internal secretions begin to exert their influence early in the life of the organism. It is known that permanent adjustments of the other glands and tissues follow on the absence or dysfunction of one gland or set of glands. In order to avoid such permanent changes as infantilism, dwarfism, acromegaly, microcephaly and feeblemindedness, it is imperative that these conditions be recognized and remedied by supplying the deficient hormone or inhibiting the hyperfunction of a gland early in the course of the disease. After permanent adjustments have formed, improvement is difficult; with early treatment, results are often little short of marvelous.

4. Much of the finer pathology of the ductless glands is concerned with biochemical reactions. Further studies of feeblemindedness by physiochemical and roentgenologic research would no doubt throw more light on this obscure field.

ABSTRACT OF DISCUSSION

DR. TOM A. WILLIAMS, Washington, D. C.: In the attempt to establish a correlation between endocrine deficiency and poor cerebral development we must avoid the danger of the *post hoc, propter hoc* argument. Dr. Raeder's theory may be tenable, but two objections occur to me.

First, in relation to syphilis. Syphilis affects all structures of the body and the feeblemindedness in congenital syphilitics may be primarily cerebral. Therefore, in estimating a statistic it is perhaps fair to eliminate the cases of syphilis. Secondly, we should have a control, namely: postmortem examination of the bodies of a large number of dead persons. Why say that in 100 necropsies certain evidences were found which tend to establish a correlation between endocrine deficiency and feeblemindedness, when these findings may be the effect of the disease which has terminated in death? These cases must be eliminated. In regard to the microsomia of these patients, is it necessary that it be attributed to hypoendocrinia? Perhaps not. Anomalies of growth are the result of endocrine disturbances; but is the growth of the individual who grows without anomalies dependent entirely on endocrine factors? It is doubtful whether we can include microsomia as one of the effects of endocrine disturbances.

DR. GUSTAVE ROUSSY, Paris, France: (Translation by Dr. Hitchcock): We must be cautious in our conclusions regarding the rôle of the endocrine glands, not too hastily deciding as to the absolute relations of cause and effect in regard to polyglandular syndromes. Indeed, if one examines systematically the endocrine glands at necropsy on subjects dead of the most diverse affections, as I have done in more than 200 cases, there will be found lesions of several internal glands not usually occurring in this type of patient. Besides the endocrines proper, other tissues are concerned. In a case of Parkinson's disease I found lesions of the parathyroids. The causes of lesions of the endocrine glands, as shown at necropsy, are numerous, complex and inconstant, therefore it is prudent not to be hasty or final in drawing conclusions concerning these lesions.

DR. WALTER TIMME, New York: The main difficulty with regard to all internal glandular disturbances is that we do not have a definite static series of organs. The endocrine glands are all of a character designated in mathematics as variables; there are no constants. In order to solve an equation or series of equations which involves variables you must have one more equation than you have variables. Here we have from ten to fifteen variables and only one equation. Hence, we cannot solve the problem. We can only approximate to a solution. If Professor Roussy has examined at necropsy 300 cases of various diseases in which the endocrine glands were found to be involved, then these disturbances are part of the process of the disease. They may have been produced by the disease and they may have indicated the lethal termination. In other words, they are terminal states. But when Professor Roussy states that the presence of such lesions in the feebleminded is nonconclusive as to the pathogenesis of feeblemindedness, I can only ask, Do they not suggest a possible cause? Their absence would beyond peradventure be regarded as conclusive! Dr. Raeder claims that in 100 cases of necropsy on the feebleminded he has seen a large proportion that showed definite changes in the internal glandular system. He has approached the subject in a different way than it has ever been approached before, and he has arrived at a definite, high percentage of disturbance in the endocrine glands. His work presents a distinct advance, a new angle of attack in this problem that hitherto has been attacked entirely on the psychogenic side with practically

little result. If these disturbances of the internal secretory organs produce idiocy, why does not every disturbance of the internal glands produce idiocy? For this reason: It depends on how the glands are constellated. There are certain constellations of these glands which will produce a condition of diabetes, another which will produce giantism, a third acromegaly, a fourth Addison's disease, etc. It depends on the subject's reaction to these disturbances as to which disease will develop. I tried to bring this out in a table of endocrinopathic inheritance some years ago. I examined every member of a family through four generations. The original parents were a giant and a diabetic. Through four generations there were all kinds of endocrine disturbances varying from exophthalmic goiter to microsomia, and including two morons. Heretofore in investigating ancestry all we looked for was mental disease. That is wrong; mental disease is only one phase of a disturbance, just as is epilepsy.

DR. M. A. BLISS, St. Louis: It is only by such extensive studies as this, made under opportunities that come only to those who work in institutions of that size, that we shall be able eventually to arrive at some conclusions in regard to these things. Dr. Raeder has made a definite advance toward, perhaps, finally reaching some conclusions about the association of the endocrine glands with these mental deficiencies and disturbances.

DR. ANDREW L. SKOOG, Kansas City, Mo.: The brain specimens presented by Dr. Raeder are suggestive of hereditary disturbance or secondary anomaly of the brain developing at some early stage. Those who have studied the cases of various types of idiocy will agree that the patients reach full development at an earlier age than does the average individual, and probably more so as related to the central nervous system.

DR. KARL A. MENNINGER, Topeka, Kan.: Work like this furthers the study of the interrelationships of physical and mental disease. We have too long regarded the patient as carrying his brains in one basket and his visceral organs in another, and from our standpoint we have looked only at one basket. Endocrinologists deserve praise for calling attention to their field of the human organism. We have ignored a relationship which is far closer than we know at present, far more intimate and intricate, perhaps, than we even suspect.

DR. OSCAR J. RAEDER, Boston: Syphilis is to be considered in all cases of feeblemindedness. Fifteen per cent. of our 100 cases were syphilitic; only two of the twenty-one endocrine cases were suspiciously syphilitic, but we had no Wassermann in these cases. Some of these cases date back as far as eight or nine years, before the Wassermann test was so regularly done as now. In necropsies on the insane and the feebleminded we frequently find gland changes and many of them are terminal changes. I would not assign that as a cause of feeblemindedness if the patient had been feebleminded. Such lesions frequently are found in necropsies, especially in senile cases. Dr Timme regards feeblemindedness as one manifestation only in an endocrinologic heredity. In every biologic study the relation of the endocrinologic factors to growth and development is very important, as has been shown in experimental work on the frog. The frog fed with thymus gland was overgrown but underdeveloped, while the frog fed with thyroid gland was overdeveloped but undersized. That point was brought out by Dr. Timme in his example of four generations of one family in which there were two morons, some acromegalics, some giants, while some showed other gland changes. I make no claim that endocrinologic factors are the cause of all feeblemindedness. I simply call attention to the marked gland changes found in all cases of feeblemindedness. I would be glad to find one definite glandular syndrome as the cause of one definite feeblemindedness. There are many feeblemindednesses, such as syphilitic, glandular, traumatic, etc. Dr. Menninger and Dr. Skoog emphasized the fact that in the past the nervous system has been studied separately from the rest of the body. We have not sufficiently considered the body as related to the central nervous system. As Dr. Southard used to say, we look at the neurons, but the body is connected up not only by neurons, but also by hormones, and these must be considered together.

THE SURGICAL TREATMENT OF BRAIN ABSCESS*

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ROCHESTER, MINN.

A brain abscess may pass through three distinct phases, the initiatory, the quiescent, and the terminal.[1] It should be operated on in the quiescent stage, not in the initiatory or terminal, as is frequently done.

During the initiatory stage the patient is more likely to present symptoms of diffuse encephalitis and meningitis than of localized tissue destruction. In many instances the disease passes into the quiescent stage with little trouble except for symptoms of intracranial pressure, which are difficult to distinguish from those produced by brain tumor, or it may be interrupted by death in a comparatively short time.

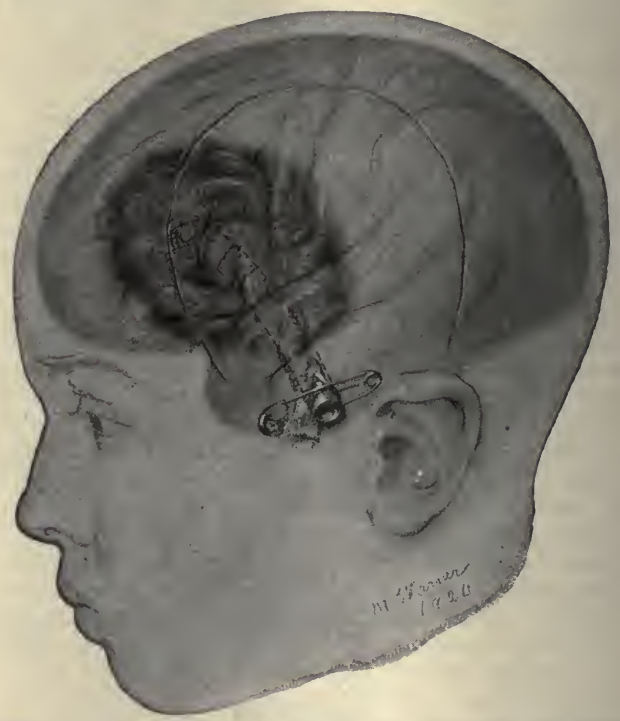


Fig. 1 (A 192143).—Drainage through the base of the osteoplastic flap of a large subcortical abscess of the left frontal lobe containing 6 ounces of pus. The abscess developed subsequent to an acute otitis media.

During the quiescent stage, the abscess usually presents a thickened capsule and the inflammation occasionally quiets down permanently. But if the lesion is not operated on, a secondary infection usually develops which stirs up the old process, produces acute encephalitis, and causes death.

Holmes[2] found that brain abscess is more likely to occur during the second and third decades of life than during the first, and that solitary tubercles are more common than abscesses in children under 5 years of age.

Gowers,[3] in a study of 223 cases of brain abscess, found that 10.7 per cent. occurred in patients less than

*From the Section of Neurologic Surgery, Mayo Clinic.

*Read before the Section on Surgery, General and Abdominal, at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Macewen, W.: Pyogenic Infective Diseases of the Brain and Spinal Cord, New York, the Macmillan Company, 1893, 354 pp.

2. Holmes, J. B.: Multiple Abscesses of the Brain in Infancy, Arch. Int. Med. **17**: 591-606 (May) 1916.

3. Gowers, quoted by Holmes (Footnote 2).

10 years of age, and Okada,[4] in a collection of 141 cases, found that 11.6 per cent. occurred during the first decade, and 37.3 per cent. and 30.8 per cent. during the second and third decades of life, respectively. He also showed that the frequency of cerebellar abscess during the first decade of life was one half that of cerebral abscess. Heimann,[5] in a study of 535 cases of brain abscess of otitic origin, stated that he found only three (1 per cent.) in children under 5 years of age.

The principal causes of pyogenic abscess are middle ear disease, frontal sinusitis, and trauma. The abscess produced is single, and situated in the temporosphenoidal or frontal lobes, or at the point of the injury to the skull. A rather small percentage is situated in the cerebellum. Heimann reports a series of 570 cases of brain abscess of otitic origin, in which 457 were due to chronic otitis media and 113 to acute otitis media; this is significant evidence that brain abscess is prone to occur in chronic suppurative conditions, a theory which is borne out not only in cases of chronic otitis media and frontal sinusitis, but also in cases of empyema, osteomyelitis and general septicopyemia.

A brain abscess may arise from an infected area and extend into the brain by contiguity, or it may develop at a distance from its etiologic factor and be a part of a hemotogenous or lymphatic infection. Frontal lobe abscess following frontal sinusitis with osteomyelitis, and temporosphenoidal abscess following otitis media, are illustrations of infection by contiguity. On account of the good blood supply to the cortex, however, and the diminished circulation in the white substance, an abscess usually develops subcortically and extends toward the middle of the brain.

During the initiatory stage, the process is more likely to be encephalitis or meningitis than cell destruction and pus formation; therefore very little can be accomplished by surgical intervention, as the encephalitis frequently continues and produces death. If the process becomes circumscribed and a true abscess forms, the encephalitis generally subsides, since the capsule becomes thickened and acts as a protection against the absorption of toxic materials. The brain abscess then produces symptoms of intracranial pressure and localization similar to those produced by tumor in the brain. The symptoms, such as delirium, coma, stertorous breathing, meningismus, dilated pupils, rapid pulse and paralysis, which are usually considered diagnostic of brain abscess, are symptoms manifested in the terminal stage, indicative of abscess with diffuse encephalitis, which rarely can be checked by surgical treatment.

REVIEW OF TWENTY-SIX CASES

This study is a review of twenty-six cases of brain abscess examined at the Mayo Clinic during the last five years; the diagnosis in twenty-three instances was verified either by operation or by necropsy. For the purpose of detailed study the twenty-six cases are divided into two groups, nonsurgical and surgical cases.

Nonsurgical Cases.—Of the seventeen patients who were not operated on, seven died shortly after admission or during the time of observation. Seven had been operated on previously for chronic empyema or lung abscess, or they presented symptoms of bronchiectasis or chronic tuberculosis; five of the seven died; necropsies were performed on four; one patient died at home. Two patients recovered (the latter are necessarily uncertified cases). Three patients died following a radical mastoid operation for chronic otitis media with subdural abscess. They belonged to a group of thirty-six cases in which the radical mastoid operation was done for chronic otitis media associated with some form of subdural abscess.

Surgical Cases.—Nine of the twenty-six patients were operated on for brain abscess; five recovered, and four died shortly after the operation. Of the five patients who recovered, four are now living; one died two years following operation; the cause of death was not reported to us.

Etiology.—Five of the twenty-six cases were traceable to chronic otitis media with acute exacerbation, six to frontal sinusitis, two to frontal sinusitis with osteomyelitis, four to injury of the skull, five to chronic empyema, one to chronic empyema with septicopyemia, one to old pulmonary tuberculosis, one to lung abscess, and one to bronchiectasis.



Fig. 2 (A 192143).—Patient three years after operation illustrated in Figure 1. Recovery was complete.

Location of Abscess.—The abscess was located in the frontal lobe in fourteen patients (three uncertified); one patient died after dismissal from the clinic, and two slowly recovered without operative treatment. In four patients the abscess was situated in the temporal lobe, in two in the temporosphenoidal lobe, in one in the occipital lobe, in two in the cerebellar lobe, in one in the midbrain, in one under the temporal lobe, and in one on the cortex, associated with encephalitis.

Symptoms.—Thirteen patients complained of headache, ten of nausea or projectile vomiting, four of blindness, twelve of jacksonian epilepsy, four of grand mal epilepsy, fourteen of paralysis, sixteen of hebetude or coma, two of injury to the skull, nine of meningeal irritation, and ten of fever.

Clinical Findings.—The urinalysis was negative for all but four patients; these showed symptoms of acute

4. Okada, W.: Diagnose und Chirurgie des otogenen Kleinhirnabszesses, Klin. Vortr. a. d. Geb. d. Otol. **10**: 313-450, 1900.
5. Heimann, T.: Ein Fall von akutem, otitischen Schläfenlappenabszess (induziert durch Otitis media suppurativa acuta arteficialis; Einiges zur Statistik der otitischen Hirnabszesse), Arch. f. Ohrenh. **67**: 1, 1905-1906.

nephritis. The average white cell count for the entire group was 16,000; in a few instances the leukocytosis was normal. Since the diagnosis was uncertain during

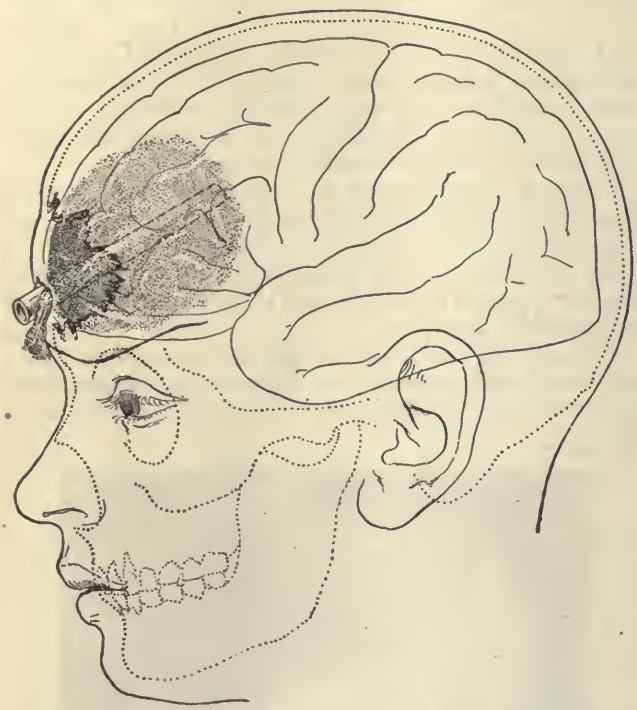


Fig. 3 (A 206923).—Drainage of an abscess of the left frontal lobe through a skull defect caused by a kick from a horse. The frontal bone was crushed, and infected spicules of bone were driven into the brain substance.

examination, except for the increased intracranial pressure, the spinal puncture was not done in all cases. Whenever the abscess was not associated with diffuse encephalitis or meningitis, the cell count was normal:



Fig. 4 (A 206923).—Three months after operation (Fig. 3); recovery was complete except for a cerebral hernia which has now receded.

from two to five lymphocytes to each cubic millimeter. In cases of meningitis with brain abscess, the spinal fluid was cloudy and contained as many as 108,000 leukocytes and lymphocytes to each cubic millimeter. Spinal fluid and blood Wassermann tests were positive in two of the twenty-six cases; this is interesting in that neither of these two patients had any corroborative symptoms of syphilis. Choked disks, ranging from 1 to 7 diopters, were present in nine cases. One patient with a fifteen months' history of brain abscess following a frontal sinusitis had a secondary atrophy with total blindness. Local tenderness was present in twelve cases; in four it was not over the abscess, but a confirmatory symptom in eight of this group. Partial or complete paralysis was present in fourteen cases. Fifteen of the twenty-six cases presented symptoms of mental disturbance, such as lack of attention and cooperation, loss of memory, delirium and coma.

A résumé of the findings reveals urinalysis usually negative, a slight leukocytosis, and if the abscess is unattended with meningitis or cortical encephalitis, a negative spinal puncture. One third of the patients



Fig. 5 (A 270162).—Drainage of a subcortical abscess of the right frontal lobe through a small decompression at the angle of the wound. The abscess, which developed subsequent to a frontal sinusitis, was of fifteen months' duration and contained sterile pus. Patient recovered except for secondary atrophy.

studied had choked disks, ranging from 1 to 7 diopters, one third had local tenderness over the abscess, and one half had a motor or mental impairment.

The duration of the symptoms varied from three days to three years, and each case followed one of three distinct courses. Sixteen patients had an average duration of symptoms of thirty-two days; four of these were operated on for brain abscess and promptly died. The five who recovered following a drainage of the abscess had an average duration of symptoms of six months. Five patients had an average duration of twenty-seven months, two slowly recovered, and three died; two developed secondary infection and encephalitis, and one received an injury which ruptured an old abscess into the ventricle.

The sixteen patients were in the initiatory stage which did not pass into the quiescent stage. Those who were operated on and recovered were treated in the quiescent stage when the immunity was the highest.

The last five patients fall into the terminal group in which an occasional patient recovers without operation, but the chances are greater that a secondary infection and death will occur.

REVIEW OF SURGICAL CASES

Six of the nine patients operated on were explored through an osteoplastic flap, two through a skull defect, the abscess being within close proximity to the site of the injury, and one through a subtemporal decompression, which was not located because of insufficient exposure.

A brain cannula was used to locate the abscess; the pus and broken down brain material were removed by suction, the cavity irrigated with saline solution and then packed loosely about the tube drains with iodoform gauze; in one case, tubes without gauze were used. In all but one case the pus was very thick and

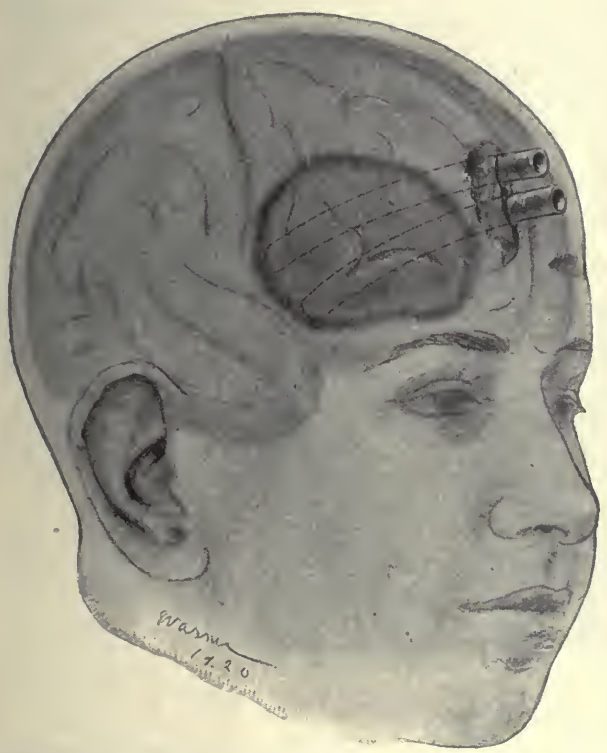


Fig. 6 (A 112525).—Drainage of an abscess of the right frontal lobe through a skull defect which was the result of an osteomyelitis following frontal sinusitis.

ropey and contained pathogenic organisms; in the one the pus was sterile; this patient gave a fifteen months' history of trouble.

RESULTS IN TWENTY-SIX CASES OF BRAIN ABSCESS

Patients		Patients	
Operated on (35 per cent. of 26)	9	Not operated on (65 per cent. of 26)	17
Died (45 per cent. of 9)	4	Died (89 per cent. of 17)	15
Cured (33.3 per cent. of 9)	3	Cured (5.8 per cent. of 17)	1
Improved (22.2 per cent. of 9) (with epilepsy)	2	Improved (5.8 per cent. of 17) (with epilepsy and slight motor impairment)	1

The convalescent course of the patients, save one, who recovered following the operation, was uneventful. This patient developed a local meningitis, osteomyelitis, and infection in the wound; a considerable portion of the skin was destroyed, exposing an area of the bone flap 6 by 9 cm. This patient presented a very interesting and rather singular picture in that we were experiencing considerable difficulty in stimulating granulation



Fig. 7 (A 112525).—Patient ten days after drainage of the frontal lobe. Abscess (Fig. 6) with the drains in place.

over the denuded area, when, accidentally, the patient bumped her head and fractured the outer table of the exposed bone, on removal of which the wound healed rapidly, and skin-grafting was unnecessary. The principle of this healing is of value in the treatment of exposed areas of the skull in cases of gummatous osteitis, and in denuded areas following traumatic loss of scalp. If the sequestrum or outer table is removed, the wound granulates quickly and usually heals without skin-grafting.



Fig. 8 (A 112525).—Patient had an uneventful convalescence.

Another striking feature following drainage of a brain abscess is the rapidity and entirety of mental and motor restoration. This may be explained by the fact

that the abscess usually develops within the white substance of the brain with a tendency to expand the part involved rather than produce actual destruction of brain substance, and on drainage of the abscess the cavity collapses, the edema subsides, the circulation improves, and the function returns.

CONCLUSIONS

1. The four principal etiologic factors in the formation of abscess of the brain are otitic infection, frontal sinusitis, injury to the skull, and hematogenous infection. Brain abscess is usually single, except when it is of hematogenous origin associated with a general pyemia, and then frequently it is multiple.

2. A brain abscess in its course may pass through the initiatory, the quiescent, and the terminal phase. The different phases can be determined more definitely from the history and duration of the complaint than from the physical findings.

3. If the abscess has developed by contiguity, it should be explored through the area of infection; but if the abscess is remote from the source of infection, it should be explored and drained through an osteoplastic flap craniotomy.

4. Surgical treatment is of little value in the initiatory or terminal stages, or in the presence of meningitis, but it is of great benefit during the quiescent stage. If there is doubt as to the differential diagnosis of brain tumor and brain abscess in the quiescent stage, it is advisable to explore rather than to perform a decompression operation for intracranial pressure or to wait for terminal symptoms.

Sugar Consumption in Relation to Health.—Any etiologic connection between the increase of sweet eating in this country and the large number of physical defects and functional disorders, a realization of which has come to us through a more thorough examination of schoolchildren and young men, can be only problematic, writes F. Van Der Bogert (*Albany M. Ann.*, June, 1920). We know only that these defects exist at a time when general errors in diet are exceedingly common and the natural inference is that some causal relationship exists. As suggested by Leonard Williams, "inasmuch as food is agreeable it is safe to assume that such dietetic errors as are habitually committed arise from excess rather than deficiency of its consumption." Sugar, as the most pleasant, must be considered the most dangerous. Dietetic errors certainly have their effect in the production of gastro-intestinal disorders so prevalent in children, and many of the functional nervous disorders of childhood can be directly traced to toxemia of intestinal origin. The most frequent dietetic errors in childhood are carbohydrate excesses and sweets are in great part the determining factor in carbohydrate excess.

CORRECTION OF CONGENITAL CLUBFOOT IN INFANTS

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The most satisfactory age at which to begin treatment of congenital clubfoot (equinovarus) is at the age of 2 weeks. This delay adds no material difficulty to the correction, and the treatment is well advanced when the child is old enough to walk, so that only proper supervision is necessary beyond this stage, in the majority of cases. In the treatment of congenital clubfoot one should strive not only for correction of deformity, but also for obtaining a relatively normal amount of motion, which can be obtained only by considerable overcorrection of the deformity and maintenance of this attitude for many weeks. One must remember that the term "clubfoot" conveys no adequate conception as to the difficulty or ease of correction. Correction may be quite simple or extremely difficult, and one can judge of this when the foot is first examined — noting its pliability or resistance to correction. As to shape, there are two distinct types: the long foot of relatively normal size, and the short, thick, pudgy foot with broadening particularly in the fore part of the foot. With the latter type, one always anticipates trouble. There is one feature of clubfoot not usually appreciated, namely, that whereas in almost all clubfeet, if proper treatment is instituted early, the deformity may be completely overcome manually and a relatively normal amount of motion in the ankle preserved in the majority of cases. These feet do not develop in size as normal feet do, even when their correction has been simple and done early. This is evident in the unilateral clubfoot cases in which there is a normal member for comparison; there is lack of muscular development of the entire extremity —which is usually of no practical significance, however.



Fig. 1.—Position of the foot to be gained before one may feel assured that sufficient correction has been obtained; also a simple and efficient method of maintaining correction by the use of adhesive strips.

The procedure for correction is to overcome the varus completely before attempting any correction of the equinus, because the normal relationship of the astragalus must be restored before beginning dorsal flexion.

This stage of treatment is best conducted by the use of plaster of Paris, changing it at intervals of one or two weeks, a simple method of application being the following: Small strips of cotton are placed between the toes and a flannel bandage applied over

this, beginning at the toes, making every turn in the direction of desired correction with this bandage as well as the plaster bandage. The toes are first covered with a half dozen turns of the plaster bandage; then as much of the varus as desired is corrected, and the application is continued up to the top of the calf of the leg, with an assistant steadying the bent knee.



Fig. 2.—Method of application of plaster of Paris for right foot. Flannel bandage has been applied from toes to top of calf, and half a dozen turns of plaster have been applied, encircling toes and front of foot—front of foot held in left hand, plaster being applied with right.

On the right side, the fore foot caught in the left hand between the thumb on the dorsum and the other fingers around the sole is held in the desired position and the plaster bandage applied with the right hand; on the left side the opposite hands are used, the bandage being applied with the left hand. In some of these cases there is a tendency for the child to kick the plaster off, which may be avoided by applying an adhesive strip on each side of the leg and incorporating it in the plaster.

After the equinus is overcome, the correction is best maintained by adhesive strips applied across the foot in the metatarsal region and then across the leg as a stirrup first encircling the fore foot. It is a good plan to apply a couple of thicknesses of adhesive plaster underneath the strips at the base of the great toe to prevent the edge of the adhesive strips cutting into the skin.

Correction should be continued until the dorsum of the foot is against the lower part of the leg, and this position maintained for from six to eight weeks, when it may be discontinued ordinarily. When this full correction is obtained, deep wrinkles appear in the skin on the outer border of the foot, which will trouble the mother unless she has been forewarned. These later disappear. After the adhesive plaster is discontinued, the mother is instructed to put the foot through the full range of motion opposite the original deformity frequently in the course of the day. For the average case no splint is necessary. The hands of an intelligent parent are more efficient in preventing deformity when the patient is under proper supervision. For special cases, retention splints may be necessary. When the child begins to walk, it is usually desirable to raise the outer border of the shoe one-fourth inch.

After adequate effort, one finds cases in which the equinus cannot be overcome manually after division of the Achilles tendon. This is due to short posterior ligaments and not to shortened ligaments, as some believe. For these cases it is necessary to cut the posterior ligaments, which may be done subcutaneously.[1] We have done a considerable number of these with saisfactory results. After sectioning the ligaments, the foot is encased in plaster of Paris in an attitude of calcaneovalgus, and we then treat the foot as though it had been corrected manually, the same after-treatment being essential.

This technic has been almost entirely evolved through the efforts of Dr. E. L. Barnett of this city, whom I wish to thank.

CONCLUSIONS

1. Treatment of congenital clubfoot should be begun early.

2. Treatment should be continued until the dorsum of the foot rests easily against the lower end of the leg, and this position maintained for about two months, if there is no tendency to recurrence, as in the average case.

3. In the usual run of cases no brace is indicated. Too much reliance is placed in the use of clubfoot braces. The conventional brace is only retentive and not corrective.

4. Frequent daily manipulations, opposite the original deformity, are essential until the correction is assured.



Fig. 3.—Method of application for the right foot. Foot held in right hand, plaster being applied with the left.

5. Many so-called relapses in congenital clubfoot, treated early, are due not so much to the tendency for deformity to recur as to the lack of sufficient treatment.

885 Park Avenue.

1. Zadek, Isadore, and Barnett, E. L.: The Importance of the Ligaments of the Ankle in Correction of Congenital Clubfoot, J. A. M. A. **69**:1057 (Sept. 29) 1917.

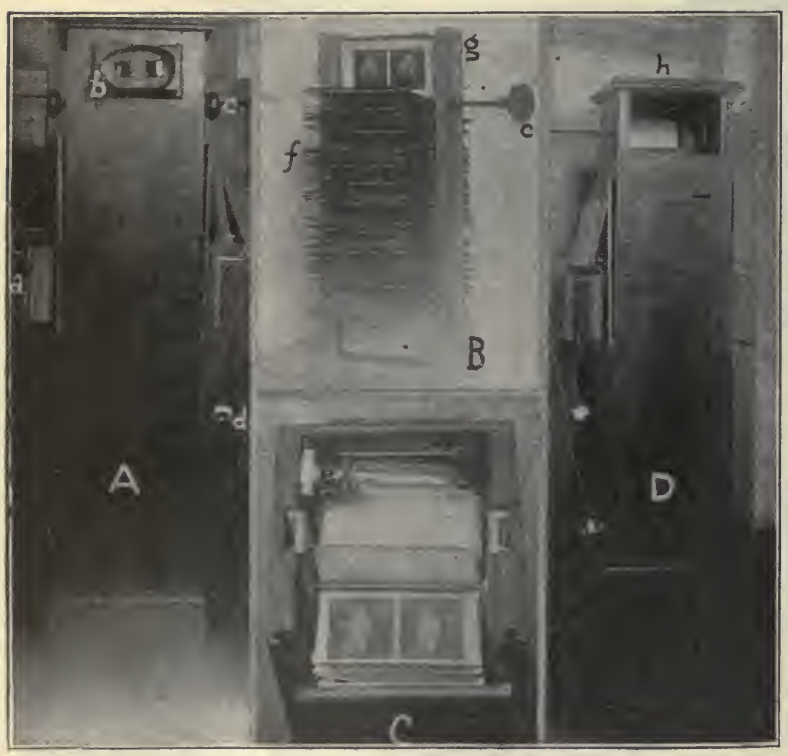
Clinical Notes, Suggestions, and New Instruments

STEREOSCOPIC CABINETS FOR DEMONSTRATION OF ANATOMIC AND PATHOLOGIC PREPARATIONS

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The value of stereoscopic pictures of anatomic preparations has been recognized for some years. Waterston published, in 1906, the Edinburgh Stereoscopic Atlas of Anatomy, consisting of about 250 views. Shortly afterward there was published a series of fifty views illustrative of the science of obstetrics. Within the last few months there has been published in the United States a stereoscopic work consisting of views of operations as performed by well known exponents.

Primarily to meet the needs of a large class of students of anatomy, the apparatus described herewith was designed. The idea, however, is one which is capable of being applied indefinitely, and individual teachers who may possess some special anatomic dissection, some unusual pathologic preparation or some point in operative technic which they regard as an advantage can easily make use of this apparatus. There is nothing novel in the idea, except, I believe, its application to class teaching in the faculty of medicine.



Stereoscopic cabinet: *A*, viewed from front; *B*, framework, showing views mounted on endless chain; *C*, lid removed to show lighting arrangements; *D*, viewed from rear to show portion removed for demonstration of transparencies; *a*, cards with description of views; *b*, face-piece with stereoscopic lenses; *c*, handle for turning views; *d*, plug to fit any socket; *e*, electric bulb for illumination; *f*, cards, each in a metal carrier; *g*, wooden framework; *h*, section removed.

When an atlas consisting of a collection of photographs is placed in a class room, there is always a strong probability that one or more cards will go amiss; they may be lost or be abstracted. Further, it is impossible to be certain that the student will replace them in their logical sequence, and time may be wasted in rearranging them. These disadvantages are overcome by the use of a demonstration cabinet.

The views are mounted in sets of fifty on an endless chain. The framework carrying this chain fits into a cabinet, in one face of which is fitted an adjustable face-piece carrying a pair of stereoscopic lenses. The chain is turned by handles affixed to a shaft, which is square on section. Within the cabinet, above the level of the top of the framework, there is a long, narrow, electric globe. By means of reflected light the views are available for study independently of daylight.

A modification of the cabinet can be made whereby stereoscopic transparencies can be demonstrated equally well. A portion of the side of the cabinet, opposite to the face-piece, is removed, the lid is applied, and the transparencies are looked at by transmitted light.

The apparatus was made for me locally. Since its installation in the anatomy department of the University of Manitoba, it has been much appreciated by the students.

661 Broadway.

A SIMPLE DEVICE FOR MEASURING BASAL METABOLISM

PRELIMINARY REPORT *

HORRY M. JONES, PH.D., CHICAGO

The linear formula of Du Bois[1] has made possible very accurate measurement of the basal metabolism of human subjects by what is known as indirect respiration calorimetry. Specially constructed and equipped respiration chambers for measuring the direct heat output are not demanded for diagnostic purposes. Briefly, all that is required is: (1) measurement of the patient's rate of oxygen absorption per hour; (2) assumption of an average respiratory quotient of 0.82, so as to assign to the oxygen a definite caloric value per liter; (3) calculation of the subject's body area by the linear formula, and (4) from this data calculation of the patient's caloric output per hour per square meter of body area.

Formerly, the only device available to clinicians taking advantage of these simple procedures was the apparatus described by Benedict.[2] The features of the method as carried out by the Benedict apparatus, which obviously limit its wider usefulness, are noteworthy:

1. Although usually known as the "Benedict portable," the fragility of the spirometer bell and necessity for water contained in the apparatus, to say nothing of its shape and weight, limit its portability almost hopelessly, so far as carrying the test to the patient is concerned.

2. Gas-volume changes from standard barometric to room-barometric pressures, and from 0 C. to the various changes in temperature in the spirometer bell, occurring as the test proceeds, form only a part of the corrections necessary to the calculations involved in the method. Slide-rule, logarithms and considerable time are virtually indispensable to the mathematics of the method before the results of the test are known, even after the operator has mastered a knowledge of the mathematical routine.

3. An electrical connection for the motor used for circulating the enclosed air is absolutely essential for carrying out the test.

The practical accuracy of the apparatus is unquestioned, however, when the soda lime is absorbing properly and no leakage of the contained air occurs.

The apparatus illustrated in Figure 1, which will be described in detail in a subsequent paper, was designed with the hope of extending the great clinical usefulness of basal metabolism measurements. Its simplicity in operation, from the technical manipulations to the final calculations, is a feature which it is hoped will increase its usefulness. Its portability, however, is its chief recommendation. It can be

* From the Department of Pathology, University of Illinois College of Medicine.

1. Du Bois, Delafield, and Du Bois, E. F.: Clinical Calorimetry, Fifth Paper, The Measurement of the Surface Area of Man, Arch. Int. Med. **15**: 868 (May) 1915. Sawyer, Margaret; Stone, R. H., and Du Bois, E. F.: Id., Ninth Paper, Further Measurements of the Surface Area of Adults and Children, ibid. **17**: 855 (June) 1916. Du Bois, Delafield, and Du Bois, E. F.: Id., Ten Paper, A Formula to Estimate the Approximate Surface Area if Height and Weight Be Known, ibid. **17**: 863 (June) 1916.

2. Benedict, F. G.: Boston M. & S. J. **178**: 667-678 (May 16) 1918.

dismounted and put away in a carrying case slightly larger than a microscope case. The case, the apparatus and the oxygen cylinder in all weigh 21 pounds. The apparatus can

TABLE 1.—TYPICAL READINGS ON SEVEN SUBJECTS *

Subject	Age	Sex†	Basal Rate in Calories per Square Meter per Hour
S. T.	25	♀	36.5
Wy.	26	♀	37.0
J. J. T.	32	♂	39.6
L. P. G.	24	♂	39.2
F. G.	22	♀	37.5
M. W.	16	♀	41.0
S. P.	13	♂	44.0

* These results should be compared with the values given in the table by Aub and Du Bois.
† In this column, ♂ indicates male and ♀ female.

TABLE 2.—METABOLIC RATES OF EIGHT PATIENTS *

Patient	Age	Sex	Percentage Rise above Basal Rate. Per Cent.
C. C. H.	35	♂	+ 112
H. P.	47	♀	+ 87
P. P.	28	♀	+ 51
F. C.	28	♂	+ 35
W. S.	52	♀	+ 63
M. W.	16	♀	0.0
A. H.	44	♀	+ 26
M. P.	38	♀	+ 22

* The rates given are those of individuals suffering from hyperthyroidism of varying degrees of severity. All of them had been diagnosed as such by Dr. Charles S. Williamson before being tested. The results show the same ranges of variation reported by others in many cases of this disease.

be carried in any position, over rough roads, without fear of disturbing its parts or contents, and can be assembled or taken down in about one minute. It requires no electrical or other special connection for operation. The final result of the mathematics of the test is obtained directly, i. e., without any calculation, from a table attached to the apparatus. The measurement of the gas volume is independent of temperature and pressure.

For limited space the great advantages of making triplicate readings, of shortening the time to three or four minute tests, a discussion of certain trivial sources of error, etc., will be reserved for a later paper. Already I have been criticized by clinicians for undue attention to small sources of error. Certain it is that, at least for clinical purposes, consideration of ± 2 per cent. total error is not of practical value.[3]

For illustrative purposes, Table 1 shows typical readings on a few of the many normal subjects who have been tested by this apparatus.

Table 2 is a record of the metabolic rates of eight subjects, five of whom had been diagnosed previously by Dr. Williamson as frank cases of hyperthyroidism. One of the other three, a young girl at the age of puberty, who had been suspected as a beginning case of hyperthyroidism, proved to have a rate of 41, which is normal for girls at 16 years, according to the table of Aub and Du Bois. From clinical manifestations the other two patients were borderline or suspected cases, a fact which is also well shown in their metabolic rates.



Fig. 1. — Appearance of apparatus used for indirect respiration calorimetry; height, 37 inches; weight, including smallest size oxygen cylinder (40 gallons), 18 pounds; carrying case, 13 inches high; weight, about 21 pounds.

A comparison of the results obtained by this device with those obtained by the Benedict apparatus, when used on the same subject under the same conditions, showed a rate of oxygen absorption of 288 and 291 c.c., respectively, per minute. In another test, with a second Benedict apparatus, in which the apparatus described here was operated by one unacquainted with this instrument, but familiar with the Benedict apparatus, data were obtained which, when calculated by another person present at the test, gave rates of 45.0 and 44.1 calories per hour per square meter of body area, respectively, on the same subject.

SUCCESSFUL USE OF APPARATUS

The apparatus described here has been used over a period of several months in clinical research and in diagnosis. Its portability in a practical sense is demonstrated beyond question. Several duplicates of it have also been distributed and are being used for diagnostic purposes, and for following, from time to time, the effects of therapy, by clinicians and general practitioners, a few of whom, during the last months of its development, have become familiar with the uses and technic of the test. So far, no inherent inaccuracies or technical difficulties have been reported from these sources. In fact, its technical variations, as stated above, have already been shown, by independent and comparative tests, to be well within the limits of individual and physiologic variations, and therefore adequate to the needs of the clinician as an instrument for measuring basal metabolism.

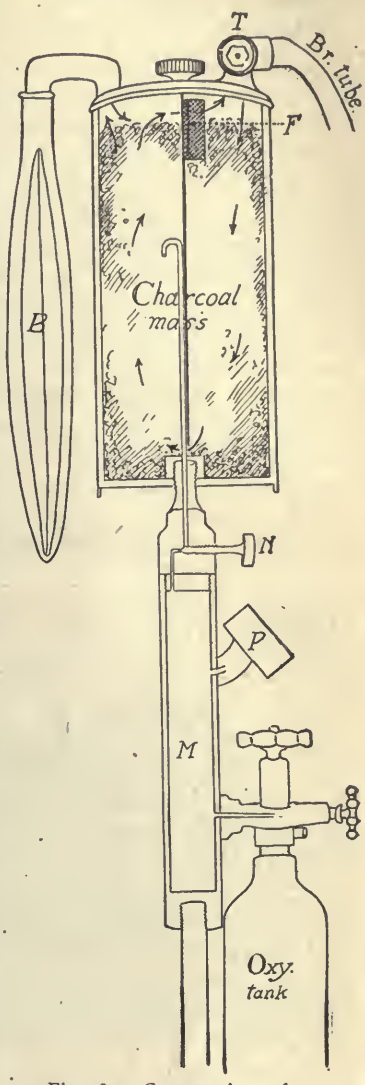


Fig. 2. — Cross-section of apparatus: Arrows indicate direction of movement of inspired and expired air; *Br. tube*, breathing tube; *T*, three-way cock; *F*, flutter valve for directing circulation of gases; *B*, rubber bag to contain measured amount of gas and to allow for expansions and contractions in respiration; *N*, needle valve for releasing the measured amount of oxygen from *M*, the measuring cylinder, into the charcoal-alkali tower above; *P*, pressure gage with room-temperature scale on dial to indicate when 1 liter of dry oxygen at 0 C. and 760 mm. has been released at any given room temperature from the oxygen tank.

UNUSUAL SYMPTOMS CAUSED BY CERUMEN IN AUDITORY MEATUS

REPORT OF CASE

JULIUS KAUNITZ, M.D., NEW YORK

Because of unusual symptoms produced by such a trifle as cerumen in the auditory meatus, I have thought it worth while to report this case:

Mrs. W., aged 73, with unimportant family and personal history, suffered from nausea, vomiting, diarrhea, vertigo and weakness of twelve hours' duration, July 17, 1920. These symptoms the daughter ascribed to ptomain poisoning, resulting from some food, of doubtful merit, ingested the day

3. The assumption of a respiratory quotient of 0.82 has abundant experimental justification, and apparatus for the determination of the respiratory quotient in each individual case is wholly superfluous, especially in diagnosis or in clinical research.

before. The diarrhea I suspected to be caused by a purgative taken on the previous evening.

The patient was well nourished. The thoracic and abdominal organs and extremities were apparently normal. The patient was lying on her right side. An attempt to turn the head to the left immediately brought on the most distressing giddiness, nausea and weakness. The sitting or standing position could be maintained only with the greatest effort, and always with the head and body inclined to the right. Her walking was of a staggering nature. It was necessary to hold on to objects for support. There was a distinct lateral nystagmus when looking to the left, but not when looking to the right. The patient denied any recent ear trouble, deafness or any unusual sounds or sensations in the ears. Examination of the ears, however, disclosed a thin disk of ear wax a quarter of an inch in front of the drum. When this disk was punctured, there was an immediate relief from all the distressing symptoms. The patient could now turn her head to the left, sit, stand or walk as usual. The nystagmus had disappeared.

Special Article

OBSERVATIONS ON SOUTH AMERICA

IV. ARGENTINA

WILLIAM J. MAYO, M.D.
ROCHESTER, MINN.

Argentina is readily accessible from Chile by the Transandean railway. The frontier is reached at a height of about 3 kilometers above sea level, at which point the railway tunnels its way through 4 kilometers of mountain range underneath the old pass. The railroad follows the Rio Blanco River on the Chilean side by a very sharp ascent and many windings, often uncomfortably close to the edge of the narrow ledge on which it is built. On the Argentine side the descent to the pampas or great alluvial plains which extend from the foot of the Andes approximately 800 miles to the sea is less abrupt, and follows the cañon of the Mendoza River.

At least a third of the nine or ten million people of Argentina live in cities, more than a million and a half in Buenos Aires alone. The country is very fertile, naturally without trees, but eucalyptus, Lombardy poplar and weeping willow trees have been planted freely in certain districts. The land resembles that of the Dakotas, and is farmed in very large tracts or estancias. The land owners have become enormously wealthy. Blooded cattle may be seen in herds of many thousands. Argentina, with its rich lands, situated largely in the temperate zone, will eventually become the United States of South America.

The railroad system in Argentina is excellent; the equipment and management are on the continental plan. Buenos Aires, which of late years has been controlled by the radical party, dominates the country politically. Laws controlling the disposition of property on death, to break up the large estates, have been passed recently. Strikes are initiated with or without reason, and industrial disturbances are constantly occurring. Recurring longshoremen's strikes have seriously interfered with shipping for a long time, and grains, hides, wool, sugar, cotton and many other of the world necessities have accumulated in Argentina during this period. Numerically the Italians are the dominant race. The Spanish, English, French, German and American colonies are relatively small.

Buenos Aires is a beautiful city, the Paris of South America. Its gardens, parks, sidewalk cafés, boulevards, statues and ornate buildings give it a charm that is all its own. There is a public lottery system in Argentina, and the profits are used for charities. Horse racing is the national pastime, and in this sport Argentina leads the world. The Jockey Club is controlled by the government, but is privately managed. The betting is princely; thousands of dollars are lost and won each racing day. Little attempt is made to control the liquor traffic.

The general standing of education in Argentina is high. The primary course is five or six years, depending on the ability of the student, and is compulsory. Argentina has 400 schoolbuildings on the American plan, most of them modern and completely equipped, including lunch rooms, where bread and sterile milk are served the pupils without charge. The second course is six years, but is not compulsory. Modern languages are taught in this course, and the pupils are not considered "educated" until they have acquired at least three, at the present time Spanish, French and English. One unique feature of the university system in Argentina is the method of control. One third of the votes are in the hands of the full professors, one third in the hands of the junior professors and instructors, and the remainder with the students. Strikes by the students are not infrequent, and all classes are suspended until a settlement is reached. It is difficult to obtain an unprejudiced opinion of this innovation in Buenos Aires, but it may at least be said that it is popular with the students. The day we visited La Plata University the medical students were on a strike. Even in the primary schools, strikes are frequent. A recent student strike of pupils under 10 had to be settled on bended knees, the parents furnishing the knees and the shingle.

The chief medical school of Argentina is located at Buenos Aires and is a part of the university. The building is a dignified structure and occupies two city blocks. The school has an enrolment of 5,000 students. The course is seven years, but is so rigid, particularly in theoretical branches, that only about one fourth of the students graduate in this time. Many spend eight, nine or even ten years obtaining their degrees. Approximately two of the seven years, however, are spent on physics and chemistry, studies that are premedical in North America. Public health, dentistry and veterinary medicine are under the direction of the medical school. Premedical courses in anatomy, chemistry and the fundamental branches are also given at the La Plata University, about 40 kilometers from Buenos Aires. The Department of Anatomy at La Plata, under the direction of Dr. Pedro Belou, is unusually good. I was much interested in some researches in human and comparative anatomy of the liver and gallbladder which he had under way. The museum of

natural history of La Plata is said to be the finest in South America, and we spent a half day with the curator, the venerable Professor Quevedo, observing its wonders. The anthropological collection is unique.

Many of the thirty hospitals in Buenos Aires are old, but practically all are in a process of reconstruction along modern lines. The hospitals have high ceilings, large window spacing, verandas and gardens, well suited to the tropics, but they are not screened. Trained nurses, as we understand the term in the North, do not exist in South America. There is only a small middle class from which to draw material for nurses; it is obviously impossible under present conditions to obtain students from the cultured class qualified for such work. However, the general average of education is being raised, and new training schools are being established with American nurses in charge. The records in all the hospitals are extraordinarily good. Few hospitals in America can show records equally well kept.

Almost all the hospitals and charities in Buenos Aires are financed by the Woman's Benevolent Association, which collects and dispenses funds. The municipal authorities are said to be very jealous of this organization; but it is so strong, and the money is so well administered, that no real objection can be filed against it.

The Rivadavia Hospital occupies almost an entire block of land and is divided into medical, surgical, gynecologic and maternity departments. In the museum of the latter are many rare and well preserved specimens, as well as a very complete and well selected teaching collection. In the department for children is a fine infants' clinic.

The new medical hospital is under the direction of Dr. Agote. Its organization and its records are models of excellence. Clinical work and investigation of the most extensive and advanced character is being carried on. Dr. Agote was the originator of the citrate method of blood transfusion and has perfected the technic of the procedure. A detailed description cannot be given of all the important features of this institution, but the American student of internal medicine who arranges to spend a year with Professor Agote will, indeed, be fortunate.

The British Hospital in Buenos Aires has 200 beds. Dr. O'Connor, senior surgeon, well known in the United States by his frequent contributions to American surgical journals, and Dr. Robert Hallahan, are the surgeons in charge. Dr. Hallahan, the junior surgeon, was educated in Ireland about twenty years ago. After coming to Buenos Aires he passed the examination given in Spanish. He is quite American in his methods. Many Americans go to this hospital when they are ill.

One of the most respected of Buenos Aires' notable surgeons is Herrera Vegas, a man of great wealth and philanthropy, and an inspiring influence for good in the medical profession. Dr. Vegas speaks four languages fluently. He has contributed to literature several monographs on special surgical subjects, and in conjunction with the eminent surgeon, Dr. Cranwell, is now preparing an important work on hydatid disease. The chapter devoted to hydatids of the lung will be particularly interesting. A large number of these cases were seen in the several hospitals. Hydatid disease is very common in South America, and is thought of whenever a patient presents unusual symptoms. When these cysts occupy the lungs, the fluid can be agitated by motion and the waves can be reproduced in moving pictures. Dr. Vegas has one of the finest private libraries in South America.

Dr Pedro Chutro, one of the professors of surgery at the Medical School, is well known in the United States. He served with the French during the Great War in charge of a large hospital in France, and it is generally conceded that his work was not excelled by that of any other surgeon. At the close of the war he was requested to go to New York to demonstrate in the military hospital there his original methods of dealing with old infected compound fractures with osteomyelitis. Professor Chutro was decorated by the United States with the Distinguished Service Medal; he is one of the few foreign surgeons to receive this honor. Dr. Pasman, one of the professors of surgery in the Medical School, is also well known in the States. All the surgical work we saw in Buenos Aires was good, and carried out with characteristic skill and precision. The surgeons of Argentina compare favorably with those of any other country in the world.



School of Medicine, Buenos Aires.

Progress in Health Work.—Towns, cities and states are beginning to realize that the cheapest form of health insurance may be obtained from well organized and efficiently operated health departments. The demand for trained public health workers has grown so rapidly that it now greatly exceeds the supply. The call for public health nurses alone is so great that several years must elapse before enough women can be trained in the work to supply the communities now calling for the essential service which only a public health nurse can furnish.—*Connecticut Health Bull.*, December, 1919.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Five dollars per annum in advance

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SATURDAY, AUGUST 21, 1920

ORGANIZED VS. INDIVIDUAL EFFORT IN RESEARCH

In his presidential address delivered at the Cambridge meeting of the British Medical Association, Sir Clifford Allbutt [1] pointed out the complexity of disease and the great advantage that has accrued to research by approaching the problems from a comparative standpoint. To proceed in this way, however, requires a breadth of intellect and a wealth of observation and analysis that are ordinarily beyond the possibilities of the individual. Hence Sir Clifford argues for the organization of investigation on a larger scale commensurate with the needs of such a comparative survey, in which many intellectual forces may combine to work toward common ends. At the present time, says Allbutt, "no one stirs, save to gyrate each in his own little circle. There is no integration, no organization of research, no cross light from school to school, no mutual enlightenment among investigators, no big outlook." "Diseases," he continues, "are not 'entities,' nor even recurrent phases of independent events, but partial aspects of a universal series. The young graduates we have, many of them of great capacity; but every day we are losing them because they are not taken up at once into scientific teams; so they slacken, or drift into some other means of livelihood, and things muddle on as before. How blind we are!"

No one will gainsay the wisdom of much of this advice. The organization of scientific effort, the team play of scientific workers, during the World War illustrates well what can be accomplished in speeding up the development of new ideas, if not their actual creation. It is doubtless true that two heads are better than one. But in our modern enthusiasm for organization we are in danger of forgetting that system and survey and encyclopedic knowledge can never supplant real thinking. Thinking is, after all, an individual performance. Companies or groups of persons do not think together or devise or invent anything or any process except so far as they put together—organize, compare—the products of individual human minds.

1. Allbutt, T. C.: Universities in Medical Research and Practice, Brit. M. J. **2**: 1 (July 3) 1920.

This is, perhaps, an opportune moment to sound a note of warning lest we become blind to the limitations of organizing investigative effort. It is likewise a favorable time for uttering a plea for the individual worker in science. He must be encouraged, not merely permitted, to unfold his own personality—his own point of view and perhaps even his seeming eccentricities of mind. He must be permitted, at all events, to preserve the open mind rather than to be biased by the projects of a company of scholars. A league of investigators might promote lasting benefits to the world. No one would expect it to make a scientific discovery. Let us by all means facilitate the progress of science by furnishing the requisites for research by organized effort to promote the aims and set forth the results, by systematic planning and cooperation which will make established facts easily available and widely known. Let us increase the number and variety of national or even international institutes if there is prospect of intellectual, social or economic gain thereby. But amid this growth of the get-together spirit and better intellectual community let us always bear in mind the individual who does the thinking. We need not be blind to the need of integration in science; we must not be forgetful of the man. Genius is found in men, not in organizations.

A PUBLIC HEALTH PROBLEM IN THE PHILIPPINES

In 1908, Garrison [1] thus summarized his experience in the study of alimentary conditions in our insular possessions:

> The population of the Philippines presents a higher percentage of infection with intestinal worms than has ever been definitely reported from any other people, and the condition is essentially a chronic one, the results of which manifest themselves indirectly in the general physical impoverishment of the people and the high rate of morbidity and mortality accredited to other diseases.

This statement was highly significant from the standpoint of public health; even more surprising, however, was the finding [2] of intestinal parasitism in virtually all of a large number of children whose feces were carefully examined. It is, of course, recognized quite generally that infestation with some parasites, such as pinworms (oxyuriasis) and eelworms (ascariasis), is likely to be more common among children than among adults; but these Philippine records for the young were almost overwhelming in their import and raised many serious questions.

A decade later finds the conditions just referred to essentially unaltered. In a report from the Bureau of Science at Manilla, Haughwout and Horrilleno [3] register as the outcome of an examination of 100 sick

1. Garrison, P. E.: Philippine J. Sc., B. **3**: 73, 1908.
2. Garrison, P. E., and Llamas, R.: The Intestinal Worms of 385 Filipino Women and Children in Manila, Philippine J. Sc., B. **4**: 185, 1909.
3. Haughwout, F. G., and Horrilleno, F. S.: The Intestinal Animal Parasites Found in One Hundred Sick Filipino Children, Philippine J. Sc. **16**: 1 (Jan.) 1920.

children in the Philippine General Hospital that ninety-two were parasitized. The earliest case of parasitism was encountered in a child of 7 months; under 1 year of age the incidence was 67 per cent.; all children between the ages of 2 and 13 years were found to be parasitized. The organisms recorded lie in thirteen genera and as many species. The whipworm (*Trichuris trichiura*) was the most prevalent parasite, followed closely in frequency by *Spirochaeta eurygrata* and the eelworm (*Ascaris lumbricoides*). No evidence of cestode or trematode infection was discovered. No protozoon of proved pathogenicity, like *Endameba histolytica,* was encountered, thus suggesting a possible immunity in children. Multiple parasitism was quite common. The observed combination of pinworm and eelworm cannot fail to be objectionable, because the entire alimentary tract becomes involved thereby.

It must be frankly admitted that aside from infestation with notably pathogenic intestinal parasites like the hookworm, no definite pathologic symptoms are at present referable to the presence of the other species. Is this widespread parasitism then to be regarded as without import for childhood and growth? Does the ignorance of definable harm justify an attitude of indifference on the part of pediatricians? It may be well in this connection to review the possibilities of detriment that might be ascribed to the supposedly innocuous invaders. They may, to quote the Manila protozoologists, produce substances directly toxic, cytolytic or hemolytic; their products of metabolism may be harmful; when present in large numbers, parasites may injure mechanically the mucous lining of the alimentary tract; they may aid in the transport of pathogenic organisms; they may interfere seriously with the absorption of digestive products by their actual adherence, as in the case of *Giardia,* to the epithelial surfaces; and the parasites may occasion an actual invasion and destruction of the tissues with all the sequels.

This is, indeed, a formidable array of objectionable possibilities, even when the indictments are not yet proved for the individual cases. It would surely seem as if a serious problem were offered to practical pediatrics by the findings among the Filipino children. One cannot dismiss the suspicion that intestinal parasitism directly or indirectly contributes heavily toward the high death rate among them. The parasitism starts coincidently with artificial feeding; but even breast-fed children are not exempt in all cases. Children are everywhere notably indifferent to sanitary laws; and when to this indifference is added the existence of a highly insanitary environment, the problem of prophylaxis becomes almost insuperable. There is no treatment of proved efficacy against the whipworm, *Trichuris,* and the eggs of this organism remain viable for years. Hence we can understand Haughwout's note of despair when he writes: "One can picture the extent of the 'clean-up' process that would be required to purge a community of *Trichuris* alone, a job that would make the hookworm campaign seem like child's play in some respects." But preventive medicine has become accustomed in these days to tackle big jobs.

THE RÔLE OF DIET AND EXERCISE IN ANTISYPHILITIC TREATMENT

Carefully conducted observations on syphilitic patients have indicated that considerations of diet and exercise may deserve greater attention than is customarily regarded as requisite for the uncomplicated success of antisyphilitic treatment. The occasional appearance of more or less grave signs of intoxication after administration of preparations of arsenic and mercury or both is familiar to all who deal extensively with syphilitic patients. Sometimes the symptoms even resemble those of acute yellow atrophy of the liver, while jaundice is of common occurrence. Bailey and MacKay,[1] working in the Ontario Military Hospital, Orpington, Kent, have discovered that in patients whose livers are damaged by arsphenamin derivatives, an increase of cholesterol in the blood is an early and marked sign; it persists after other clinical signs have disappeared. As hypercholesteremia was found in nearly all of the toxic cases, they suggest, therefore, that routine estimation of blood cholesterol may furnish a valuable sign of a precarious state of the liver in persons under antisyphilitic treatment.

With respect to the values for the urea content of the blood, it appears that although some patients furnished normal figures, in the majority they were above normal. According to the Canadian investigators this was due to the high nitrogenous diet, including 150 gm. of protein a day, and to insufficient physical restrictions placed on the soldiers under observation. The blood figures were usually more favorable when rest was rigorously enforced.

It is known that diet plays a part in the ease of recovery from the effects of delayed poisoning by various drugs, including phosphorus and chloroform, which have been investigated extensively under experimental conditions. For example, Davis and Whipple,[2] who have studied liver damage and repair in dogs poisoned by chloroform, noted that sugar and diets rich in carbohydrates, fed in the days preceding chloroform anesthesia, exert a marked protective action against liver injury. Fats alone, or combinations of food containing fat in large proportion, induce a maximal susceptibility to liver injury. Skim milk alone is highly protective. A diet of bread and skim milk or any rich carbohydrate diet gives the optimal liver repair. A diet of cooked skeletal muscle is not favorable for rapid liver repair.

1. Bailey, C. V., and MacKay, Angus: Toxic Jaundice in Patients Under Antisyphilitic Treatment, Arch. Int. Med. **25**: 628 (June) 1920.
2. Davis, N. C., and Whipple, G. H.: The Influence of Fasting and Various Diets on the Liver Injury, Effected by Chloroform Anesthesia, Arch. Int. Med. **23**: 612 (May) 1919.

If the possibility of damage comparable with "delayed poisoning" in chloroform anesthesia occurs in medication with arsphenamin and related products, we agree with Bailey and MacKay that it would seem advisable in the treatment of syphilis to institute a rich carbohydrate diet low in fat and protein. This diet should precede the treatment by several days and should be continued throughout its full course. The effects of increase of protein in the diet and of exercise might be controlled by the estimation of urea in the blood. At any rate, the consideration of diet in this chapter of medicine constitutes a therapeutic novelty.

THE NATURE OF THE FAT-SOLUBLE VITAMIN

The discovery of the dietary importance of that property of many foods which is now termed fat-soluble vitamin or fat-soluble A represents a contribution of American physiologists [1] to the science of nutrition. It has been repeatedly verified both in this country and abroad. According to the observations made on a variety of experimental animals, the lack of the fat-soluble vitamin in the diet during adolescence may lead to an inhibition of growth together with symptoms of decline in health. Most conspicuous in a specific way is the apparently increased susceptibility to bacterial infection. In the case of rats this lowered resistance first betrays itself in many instances by the appearance of a characteristic disorder of the external eye which has provisionally been classed as a xerophthalmia. It usually begins with a swelling of the lids which is followed by an inflamed and catarrhal condition of the conjunctivae. This rapidly becomes worse, and the discharge, which is at first hemorrhagic, frequently becomes purulent. If untreated, the cornea may become involved and total blindness result. If a food containing fat-soluble vitamin is administered, the symptoms usually clear up in a few days without further treatment, and growth is resumed. The same phenomena have been observed in mice, and more recently in rabbits kept on diets poor in the fat-soluble vitamin.[2] A possible relation of the lack of the latter to the occurrence of phosphatic calculi has also been pointed out by Osborne and Mendel.[3]

Whether and in what manner a dietary deficiency in fat-soluble vitamin plays a part in human disease remains to be ascertained. The probability of the need of this food accessory in the ration of man is large and the possible dire effects of a lack of it are being discussed widely at present, notably in relation to the pathogenesis of pellagra, rickets and xerophthalmia in childhood. The fact that many fats, such as lard, vegetable oils and hydrogenated fats, which have found widespread use in the dietary of man in recent years, are virtually devoid of fat-soluble vitamin has caused some concern owing to the relatively high cost of those fats, like milk fat and egg fat, which are rich in it. It is a relief to know, however, that the fat-soluble vitamin has a far wider distribution in nature than the earlier studies led physiologists to suspect. Only recently the researches of McCollum, Steenbock and their collaborators at the University of Wisconsin,[4] and of Osborne and Mendel [5] in New Haven, have indicated the richness of many sorts of plant tissues in all familiar types of vitamins, thus placing the dietary importance of "vegetables" in a new light.

In commenting on this information, Osborne and Mendel remark that it emphasizes the use of vegetables to supplement the refined foods of the modern food industry which furnishes products rich in proteins, fats and carbohydrates, but in many cases comparatively deficient in the vitamins. The newly acquired facts, they add, serve as a further reminder that the fat-soluble vitamin need not be sought solely in foods known to be rich in fats. Fat-soluble vitamin has never been isolated, nor has it been concentrated in any way which avoids the simultaneous presence of ordinary fats, to some extent at least. Although its reactions and behavior toward solvents suggest a lipoidal character, Steenbock and Boutwell [6] have demonstrated that the fat-soluble vitamin resists saponification with alkalis whereby true fats are converted into soaps. Hence it can scarcely be regarded as identical with fats. This fact, for which some evidence had already been available, represents a distinct step in advance in the study of vitamins.

The extracts containing fat-soluble vitamin as obtained from natural products are invariably colored. Yellow corn is richer in fat-soluble vitamin than is white corn; there is a similar contrast between colorless lard and the yellow milk fat and egg fat. Hence Steenbock [7] has advanced the theory that the vitamin may be a yellow pigment or at any rate a closely associated substance. His latest contribution is corroboratory; it also indicates that the vitamin attends the carotin rather than the xanthophyll variety of pigments, either or both of which may represent the yellow col-

1. McCollum, E. V., and Davis, M.: J. Biol. Chem. **15**: 167, 1913. Osborne, T. B., and Mendel, L. B.: Ibid., p. 311.

2. Nelson, V. E., and Lamb, A. R.: The Effect of Vitamine Deficiency on Various Species of Animals, I, The Production of Xerophthalmia in the Rabbit, Am. J. Physiol. **51**: 530 (April) 1920.

3. Osborne, T. B., and Mendel, L. B.: The Incidence of Phosphatic Urinary Calculi in Rats Fed on Experimental Rations, J. A. M. A. **69**: 32 (July 7) 1917.

4. Steenbock, H., and Gross, E. G.: Fat-Soluble Vitamine, II, The Fat-Soluble Content of Roots, Together with Some Observations on Their Water-Soluble Vitamine Content, J. Biol. Chem. **40**: 501 (Dec.) 1919; IV, The Fat-Soluble Vitamine Content of Green Plant Tissues, Together with Some Observations on Their Water-Soluble Vitamine Content, ibid. **41**: 149 (Feb.) 1920. McCollum, E. V.: Newer Knowledge of Nutrition, New York, 1919.

5. Osborne, T. B., and Mendel, L. B.: The Vitamines in Green Foods, J. Biol. Chem. **37**: 187 (Jan.) 1919; Nutritive Factors in Plant Tissues, IV, Fat-Soluble Vitamine, ibid. **41**: 549 (April) 1920.

6. Steenbock, H., and Boutwell, P. W.: Fat-Soluble Vitamine, VI, The Extractability of the Fat-Soluble Vitamine from Carrots, Alfalfa, and Yellow Corn by Fat Solvents, J. Biol. Chem. **42**: 131 (May) 1920.

7. Steenbock, H.: White Corn vs. Yellow Corn and a Probable Relation Between the Fat-Soluble Vitamine and Yellow Plant Pigments, Science **50**: 352 (Oct. 10) 1919.

oring matter in animal and plant foods. These findings, if they are further substantiated, mark a distinct step in advance toward the goal of discovering the nature of the fat-soluble vitamin.

Current Comment

PIE AND DIGESTION

There is a widely current slang expression which bewails the depressing circumstance that "somebody is always taking the joy out of life." Many Americans have become wedded early to an outspoken liking for pie, that typical national pastry. The predilection for this article of diet seems to grow with the years. Sooner or later, however, the aforesaid somebody, who is more than likely to be a member of the medical profession is certain to issue a note of warning against the alimentary dangers that lurk in pie. Cake, the distant pastry relative, is somewhat less likely to form the subject of objections from the physiologic critic, while puddings usually belong to the immunes, or at least receive tolerant consideration. The proof of the pudding—and why not also of the pie—is the eating. Accordingly, a number of gastro-enterologists [1] at the Jefferson Medical College, Philadelphia, have come to the defense of pie by actually determining the gastric response to it and analogous foods in the healthy human stomach. Direct comparisons of a variety of pies, cakes and puddings representative of American culinary art, on the same persons, indicated that pies "were handled more readily than cakes, and puddings somewhat more readily than either." For those who can think best in terms of statistics, it may be stated that the average gastric evacuation time of puddings was two hours and eighteen minutes, against two hours and twenty-seven minutes for pies; whereas cakes followed in the wake with an average record of three hours and two minutes. Averaging the highest total acidities, values were obtained for puddings of 92, for pies of 90, and for cakes of 90. Some of these values are not widely divergent from the classic data obtained on Alexis St. Martin, whose stomach permitted Beaumont to make his pioneer investigations in gastric digestion. There is no occasion to report here the insignificant distinctions between custard pie and lemon meringue, for example, in their gastric behavior; but it must be admitted that mince pie, so often regarded as an arch offender of the digestive tract, requires a rather long time (from two and three quarters to three and one quarter hours) to leave the stomach. The addition of ice cream to a piece of pie—a unique American combination—does not increase the burden of the stomach to any extent, and the conventional apple pie and cheese likewise give a conservatively good report. To a few persons it may be a consolation to know that angel's food cake remained distinctly longer in the stomach than did devil's food cake. Of course, gastric evacuation is not the sole, complete test of the dietary worth of a food.

1. Miller, R. J.; Fowler, H. L.; Bergeim, O.; Rehfuss, M. E., and Hawk, P. B.: The Gastric Response to Foods, XII, Response of the Human Stomach to Pies, Cakes and Puddings, Am. J. Physiol. **52**: 248 (June) 1920.

VALUE OF THE SCHICK TEST IN RELATION TO DIPHTHERIA

The importance of the Schick test as an index of antitoxin immunity to diphtheria ought to be familiar to physicians. However, the recrudescence of Fourth of July casualties, to which attention was recently called in THE JOURNAL,[1] teaches clearly that it is human to forget easily. Therefore the significant lessons of modern preventive medicine need and deserve to be reiterated again and again so long as they are likely to lead to public benefit. The Schick test, which can be applied with great ease to large numbers of persons, makes it possible to differentiate those immune from those susceptible to diphtheria; and it also facilitates the attempt to increase the number of the immune by suitable prophylactic toxin-antitoxin injections. The testimony as to the value of the test is already fully convincing. Blum [2] recently demonstrated what can be accomplished in a large home for infants where diphtheria had been endemic as late as 1915. When it was ascertained by the Schick test that 37 per cent. of the inmates were susceptible to the disease, attempts were made to establish an immunity in this group. How successfully this was accomplished, through injection of those susceptible, is shown by the result that the same institution has been rendered diphtheria free during the last five years. The outcome with more than a thousand children shows, furthermore, that a negative Schick test is evidence of the presence of sufficient antitoxin in the body to protect the individual against infection with diphtheria. Changes in the Schick reaction from negative to positive during the first three years of life, owing to the loss of inherited immunity, were found by Blum to be sufficiently numerous to justify retesting, at least in large institutions, during this period at intervals of a few months. The duration of the active immunity conferred at different ages on persons susceptible to diphtheria, by injection of toxin-antitoxin mixtures, remains to be ascertained with greater precision. In young children the duration presumably lasts far longer than two years. The lesson is obvious.

THE PHYSICIAN'S OFFICE

The people have money and they are spending it. But, like the woman who bought the pair of silk stockings, they want something to show for it. With incomes anywhere from $8 to $15 a day, the bricklayer who buys a flivver, the cap maker who has a fur coat, the tailor with season tickets for the opera, are able to pay good fees to their physicians. But they want the best, and the physician should equip himself to give it to them. The physician who plods along in shabby quarters, dependent wholly on his five unaided senses for diagnostic ability, his only reference works some dilapidated textbooks of a previous decade, will not suit the taste of the new type of wage earner.

1. This Year's Fourth of July Celebration, editorial J. A. M. A. **75**: 181 (July 17) 1920.

2. Blum, Julius: Active Immunization Against Diphtheria in a Large Child-Caring Institution, Am. J. Dis. Child. **20**: 22 (July) 1920.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Fire Destroys Sanatorium.—White's Sanatorium, Enterprise, has been destroyed by fire at a loss of $30,000.

Memorial Cornerstone Laid.—The cornerstone has been laid for the Soldiers' Memorial Hospital, which is being erected in Montgomery, and will cost about $100,000.

New Quarantine Plant Needed.—The Surgeon-General of the U. S. Public Health Service, appreciating the need for a new quarantine station at Mobile, has recommended that an appropriation of $400,000 be made for this purpose.

Convict Camp Abandoned.—Abandonment of the Mobile County Convict Camp, Mobile, which has been stigmatized as a "health menace," by the state prison inspector, was ordered by the board of revenue and road comissioners, August 2.

GEORGIA

Medical Examiners Needed.—The Federal Board for Vocational Education, Atlanta, announces that it desires to employ a number of physicians as field examiners for disabled exservice men for three months or longer, at a salary of $220 a month and necessary expenses when traveling in the field. Application should be made to Dr. Clarence S. Merriam, District Medical Officer, 814 Forsythe Building, Atlanta.

Dr. Long to Be Honored.—The memory of Dr. Crawford W. Long, Athens, is to be commemorated at the University of Georgia, by a bronze medallion to be placed in one of the university buildings through the generosity of Joseph Jacobs, Atlanta. The board of trustees has accepted the offer and has appointed a committee to arrange for the presentation. ——An appropriation for a statue of Dr. Long in the Capitol Building, Washington, D. C., will be asked of the state legislature by the Medical Association of Georgia. Dr. Garnett W. Quillian, Atlanta, is chairman of the committee appointed for this purpose.

Personal.—Dr. Harry Moses, Macon, while performing an operation at a hospital was stricken with appendicitis and underwent operation at the Macon Hospital, July 24.——Dr. Robert A. Herring, Milledgeville, has been made health officer of Wilmington, N. C., and entered on his new duties July 20. ——Dr. Richard L. DeSaussure, Atlanta, commissioner of health of Floyd County, has resigned to accept a similar position at Brunswick, Glynn County.——Dr. R. W. Todd, Brunswick, has resigned as commissioner of health of Glynn County to accept a similar position in Marietta, Cobb County. ——Dr. Hollis F. Hope, Lafayette, has resigned as commissioner of health of Walker County and Dr. Joseph H. Johnson, Millan, has been elected in his place.

District Society Meetings.—The annual meeting of the Seventh District Medical Society met in Dalton as the guest of Whitfield County Medical Society, July 8. It was unanimously decided to appoint a committee to raise funds for a suitable memorial to Dr. Robert B. Battey, Rome. Rome was selected as the next place of meeting and the committee named to select the Battey memorial was directed to erect it between this time and the date of the meeting of the state medical association which convenes in Rome next summer. Dr. Howard E. Felton, Cartersville, was elected president; Dr. Charles F. McLain, Calhoun, vice president, and Dr. Mather M. McCord, Rome, secretary-treasurer.——The midsummer meeting of the First District Medical Society was held at Savannah, July 15, and the following officers were elected: president, Dr. Charles Usher, Savannah; vice presidents, Drs. J. O. Strickland, Pembroke, and James O. Baker, Savannah, and secretary-treasurer, Dr. B. M. Bishop, Savannah.

ILLINOIS

Field Day.—A field day is to be given to all members of the Chicago Medical Society and their families by the North Side Branch of the society on the grounds of the St. Mary's Training School, near Desplaines, Wednesday, September 15.

Negro Physicians Purchase Hospital.—An association of colored physicians of Chicago, of which Dr. Benjamin R. Bluitt is president and Dr. Fred C. Cade, secretary, has purchased the Fort Dearborn Hospital and Training School for Nurses at 3831-3835 Vernon Avenue.

Hospital Projects Unite.—Urbana has abandoned its hospital project and by a vote of the board of directors will join hands with the board of directors of the Julia F. Burnham Hospital, Champaign, in making a success of the forthcoming drive for $175,000 to remodel the present building and erect the first unit of a new hospital.

Hospital Buildings Chartered.—The secretary of state has granted charters to St. Elizabeth's Hospital, Belleville; St. Francis' Hospital, Litchfield; St. Clara's Hospital, Lincoln; St. Joseph's Hospital, Highland, and St. Anthony's Hospital, Highland. These hospitals are conducted by the Sisters of St. Francis and are affiliated with St. John's Hospital, Springfield, and a number of others in Illinois and adjoining states.

Organization Plans.—The organization committee of the Chicago Medical Society has asked the presidents of the various branches of the society to call a preliminary meeting this month to consider the following matters: important pending legislation, unusual action of osteopaths, chiropractors, naprapaths, Christian scientists and other pseudo-health cults; dangers of socialized medicine to the public as well as the profession, and changed economic standards and the inadequacy of medical incomes.

Hospital Committee Meets.—The committee on medical education and hospitals of the Illinois Medical Society and representatives of the Illinois Hospital Association and of medical colleges met at the Sherman Hotel, Chicago, on Friday, August 13, to discuss the eligibility of hospitals for the training of interns. It was determined that hospitals should have at least twenty-five beds; organized staffs; complete histories and records; laboratories for routine clinical, microscopic, pathologic and bacteriologic work; complete roentgen-ray departments; expert instruction in anesthesia; instruction in obstetrics; and definite rules in regard to the duties and privileges of interns.

IOWA

Gives Library to State.—Dr. Albert A. Anderson, Des Moines, has presented his medical library of 300 volumes to the state library in the Historical Building, Des Moines.

Typhoid Fever in Pella.—On July 14, forty-three cases of typhoid fever were reported in Pella, and D. S. Griswold, the state epidemiologist has been sent to Pella to investigate and to take charge of the situation. The source of infection has been traced to an infected well which was in general use.

Personal.—Dr. Robert E. Jameson, Davenport, who has been seriously ill in Marcy Hospital, is reported to be improving.——Dr. Frederick L. Appel, Muscatine, who has been seriously ill, is reported to be convalescent.——Dr. Oliver G. Winters, Des Moines, has been appointed chief medical director for the Yeomen of America, succeeding Dr. Charles F. Smith, Des Moines.

LOUISIANA

Permit Revoked.—The permit of Dr. Anthony J. Monte, New Orleans, to sell drugs is said to have been revoked recently.

Appropriations Increased.—The appropriation for the state board of health for relief and emergency work has been increased by the legislature from $60,000 to $75,000.

To Aid Drug Addicts.—The Louisiana State Board of Health has decided to arrange for a special section of the Charity Hospital of New Orleans to be devoted exclusively to the treatment of drug addicts.

MICHIGAN

Dean Resigns.—Dr. Wilbert B. Hinsdale, Ann Arbor, for quarter of a century dean of the Homeopathic School of the University of Michigan, has resigned.

Dr. Case Honored.—The July issue of the *Welfare Bulletin*, published by the Battle Creek Sanitarium Welfare League, is devoted almost entirely to the war story of Dr. James T. Case, interestingly told and profusely illustrated.

State to Take Over Tuberculosis Clinics.—Arrangements have been completed whereby the state department of health will take over the free tuberculosis clinics and the tuberculosis work among former service men hitherto conducted by the state antituberculosis association.

Smallpox.—On July 17 it was reported by the Detroit Department of Health, that smallpox was five times as prev-

alent as is customary at this season. Since April 28, the vaccination squads have examined 34,900 people and vaccinated 6,930. About 20 per cent. of the individuals examined were considered to be unprotected against smallpox.

Health Budget.—The budget of the Detroit Department of Health for 1920-1921 allows $1,020,570 for the maintenance of the department, or $1.03 per capita as compared with 95 cents in the previous years' budget. Expenditures of $25,000 for plans for a new city general hospital, and of $1,579,800 for the construction of a 300-bed tuberculosis sanatorium have also been allowed during the last biennium.

Combating Typhoid.—The state health department has purchased a motor truck, equipped as a laboratory, and is touring the summer resorts of the state testing water, milk and sewage at each resort visited. A bacteriologist and sanitary engineer accompany the truck and Dr. C. C. Young, director of laboratories of the department, is giving several special lectures to summer school students and others. The first appearance of the truck was at Adrian, July 19.

MINNESOTA

Alterations at City and County Hospital.—Plans have been prepared and bids solicited for extensive alterations and repairs at the Minneapolis City and County Hospital.

Village to Issue Bonds for a Hospital.—It has been decided that the village of Taylor's Falls will issue bonds to the amount of $10,000 to establish and maintain a hospital.

Typhoid Prevalence in St. Paul.—The incidence of typhoid in St. Paul is now believed to have reached its apex, as no new cases or deaths have been reported during the last week. None of the data on the thirty-two cases which have been reported has given any clue to the source of infection. It is believed, however, to be a typhoid carrier.

Work of Venereal Disease Division.—The division of venereal diseases of the Minnesota State Board of Health, coordinated with the U. S. Public Health Service made a total of 3,043 Wassermann examinations between April 1 and June 30, of which 398 proved positive, 2,368 negative and 277 doubtful. In addition to this seventy-six unsatisfactory tests were made, making a grand total of 3,119, with a positive percentage of 12.6 per cent. During the same period 606 smears were examined for gonococci with a positive percentage of 39.9 per cent.

Dr. Mayo Honored in London.—A dinner was given July 26 by the president, vice president and governors of the American Hospital in London, to Dr. Charles H. Mayo, Rochester. The Earl of Reading presided, Sir William Arbuthnot Lane spoke of the great advantages which would accrue to medical science through the opening of the hospital; Rt. Hon. Arthur J. Balfour expressed the hope that the hospital would prove beneficial to American medical students visiting England, and Dr. Mayo and Ambassador Davis paid tribute to Major-Gen. William C. Gorgas.——Dr. Mayo has returned from his trip to Europe, where he attended the meeting of the British Medical Association at Cambridge, and of the International Surgical Society in Paris. He reports "a most surprising recovery from war conditions" and states that there is apparently "no setback nor depression—in fact, but little to show that they had a war."

NEW JERSEY

Child Hygiene Bureau Stations Opened.—The Bureau of Child Hygiene of the New Jersey State Department of Health has opened two stations, one at Lambertville, and one at Frenchtown, the latter to be the center of work which will include Milford and Stockholm. A social worker has been appointed to work under the direction of Camden Board of Health. Her salary will be paid by the Child Hygiene Bureau, which will also suggest her policies. The Child Hygiene Bureau has taken the initiative in securing cheaper or free ice for families who could not afford to have it otherwise.

Physiatric Institute Opened.—An institution, known as the Physiatric Institute, devoted to diabetes, nephritis, vascular hypertension and other metabolic disorders, has been established at Morristown. The site is the former estate of Otto H. Kahn, comprising some 200 acres. Dr. Frederick M. Allen is the director. The backers are a group of prominent New York and Philadelphia men, and financial support is sought chiefly from the individuals and families afflicted with these diseases. The organization is in three divisions. One is a sanatorium for the treatment of paying patients, the income from which helps to support the other two divisions. The second is a charitable branch, which offers treatment to poor patients at reduced rates or free, as far as the available funds can provide. The third is a research division, aiming to advance the knowledge and treatment of these conditions by all the facilities for clinical and laboratory study which a specialized institution of this kind can offer.

NEW YORK

New Reportable Diseases.—Botulism and lethargic encephalitis have been added to the list of reportable communicable diseases by recent action of the Public Health Council.

Rockefeller Provides Hospital for Women's Reformatory.—John D. Rockefeller, Jr., has agreed to turn over at a nominal rental of $1 a year his social laboratory and bureau as a psychopathic hospital for the State Reformatory for Women, Bedford. He will first make repairs costing $1,000. These buildings will be occupied at once. Dr. Menas S. Gregory announces that several psychiatrists will be added to the staff to classify the prisoners and determine their degree of mental responsibility.

Institution for Mental Convalescents.—A meeting of the directors of the Home and Farm Institution for Mental Convalescents recently held a meeting in New York City at which plans were made for a campaign for a membership of 50,000. At the same time an intensive campaign will be conducted to raise $1,000,000 for the purpose of constructing a large building in the Catskill Mountains, where the poor who are nearing or have reached the borderline of insanity will be treated in an effort to restore them to mental vigor.

Insane Aliens Sent Home.—During the last year 290 insane aliens have been sent from New York institutions to the countries from which they came. Of this number 147 were deported by the immigration authorities and 143 at the instance of the medical examiner of the state hospital commission. According to a report to be issued later 48 per cent. of the insane in this state, or about 17,000, are foreign born, and both parents of 66 per cent. of the state's insane are of foreign birth. Of the 17,000 foreign born insane in state institutions all except 500 are not deportable, having been in this country longer than the five-year limit required for deportation proceedings.

Graduate Bulletin on Orthopedic Surgery.—Bulletin No. 3 of the New York Association for Medical Education deals with orthopedic surgery. The student should be a graduate of a high grade medical school and should have completed a year's internship on the surgical side of a general hospital. The course preparing him for practice as an orthopedic surgeon would consist of from six to twelve weeks of work in applied anatomy, and review courses in the fundamental medical sciences such as embryology, pathology and bacteriology. This work should be followed by an internship of a year or more in some hospital having a large orthopedic service or the student should associate himself with a surgeon practicing this specialty. The *Bulletin* lists the places in New York City where special training in orthopedics may be obtained.

New York City

Smallpox Brought from Jamaica.—Forty-three passengers on the British steamship *Princess May*, which arrived recently from Port Antonio, Jamaica, were sent to Hoffman Island for observation following the discovery of a case of smallpox on the vessel.

Bring Records of Anticholera and Antituberculosis Vaccine.—Dr. Florestan Aguilar, dean of the College of Dentistry of Madrid, and Dr. Sebastian Recasans of Madrid, arrived in New York City on the Holland-American liner *Ryndam*, August 12. They bring with them the records of Professor Ferran on anticholera and antituberculosis vaccine which they expect to present to the Rockefeller Institute.

Personal.—Dr. Charles G. Child, Jr., has been appointed consulting gynecologist to St. Bartholomew's Hospital, New York City, and to Nassau Hospital, Mineola, L. I.——Dr. L. Duncan Bulkley announces that he has retired from the active practice of dermatology and will devote his attention solely to consultation work in dermatology and to the treatment of cancer.——Dr. S. Josephine Baker has been made consultant in child hygiene for the U. S. Public Health Service and has been commissioned as surgeon in the reserve of the service.——Dr. Margaret Brew, the first woman alienist to become a member of the staff of the Binghamton State Hospital, has entered on her duties in the women's ward of the institution.——Dr. Rodney R. Williams, for ten years a member of the staff of the Binghamton State Hos-

pital, has been promoted to the position of first assistant at the Hudson River State Hospital, Poughkeepsie.——Dr. William A. Wovschin, the Bronx, sailed for Europe recently to make a sanitary survey of Ukrainia, Poland and other plague-stricken European countries. He will also make a special investigation for the New York State Board of Health, of the smallpox epidemics reported in Scotland and the north of England.——Dr. Magda Telkes was assigned on August 1 to the roentgen-ray department of the Mayo Clinic, Rochester, Minn., on a Mayo foundation scholarship in roentgenology.

OHIO

Typhoid in Lakewood.—Following a reception held in Lakewood, June 25, thirty-eight of the 211 guests are reported to have been ill from typhoid fever. All the patients are said to be out of danger.

Illegal Practitioners Fined.—In the Cleveland Municipal Court on July 28, L. D. Moore was found guilty of practicing medicine without a license and was fined $500.—On July 29, Leo J. Czechowski, on a similar charge, was fined $50 and costs with an additional $450 to be paid within a year. He was ordered to cease the practice of medicine.

Faculty Changes.—The following promotions and appointments in the School of Medicine of Western Reserve University, Cleveland, are announced: Drs. Marion A. Blankenhorn and Roy W. Scott, promoted from instructors to senior instructors in medicine; Dr. Paul J. Hanzlik, promoted from assistant professor to professor of pharmacology and a member of the faculty; Dr. Guthrie McConnell, appointed associate in pathology.

Personal.—Dr. David Marine, associate professor of experimental medicine in Western Reserve University, Cleveland, has been elected director of laboratories in the Montefiore Home and Hospital, New York City.——Prof. George M. Stewart, director of the H. K. Cushing Laboratory of Experimental Medicine, had conferred on him the honorary degree of Doctor of Laws at the recent commencement exercises of the University of Edinburgh, Scotland.——Dr. James B. Poling has been elected to fill the unexpired term of the late Dr. Arthur L. Jones, as health commissioner of Lima.——Dr. John D. Spellman, Cincinnati, has been appointed assistant superintendent of Mt. Sinai Hospital, Cleveland, and assumed his new duties, August 2.——Drs. George W. Crile, Cleveland, and Charles J. Lukens, Toledo, were the guests of honor at the meeting of the Northwestern Ohio Medical Society at Cedar Point, July 27.——Dr. Isaac Kay, said to be the oldest medical practitioner in Ohio is seriously ill at his home in Springfield.

PENNSYLVANIA

Baby Clinic Opened.—A baby clinic has been opened at the Community House, Marietta, under the supervision of a nurse.

Personal.—Dr. Frederick L. Van Sickle, Scranton, president of the Lackawanna County Medical Society, has resigned to become executive secretary of the Medical Society of the State of Pennsylvania with headquarters at Harrisburg.—— Drs. H. Hershey Farnsler, Clarence R. Phillips and William T. Douglas, Harrisburgh, have resigned from the staff of the Dauphin County Tuberculosis Clinic.

Physician's License Revoked.—At a recent meeting the Pennsylvania Bureau of Medical Education and Licensure revoked the license of Dr. William Bricker, Sr., of Philadelphia, for having performed an illegal operation which resulted in the death of the patient. Following his arrest, Dr. Bricker was released on $40,000 bail but immediately fled to South America where he is now fighting extradition proceedings.

Philadelphia

Tuberculosis Society Examines Children at Playgrounds.—Examinations for physical defects and for malnutrition are being conducted at playgrounds and recreation centers throughout the city by the Pennsylvania State Tuberculosis Association. According to Dr. Jeanette Sherman, the examining physician, most of the children of Philadelphia are from 1 to 10 pounds under weight. Whenever a child is found defective it is sent to the proper institution for treatment.

Farm Opened by Health Council.—Philadelphia's first health-building home for children is being opened at Brown's farm, near Torresdale, by the Philadelphia Health Council and Tuberculosis Committee. It is a direct result of findings in the health council's portable health clinics, started in eleven recreation centers this summer. Of the 999 boys and girls weighed and measured in the clinics during July only 300 were found normal in weight. Virtually all of the 283 given thorough physical examination were found defective in some way.

Relief for Soviet Russia.—The Philadelphia district branch of the Soviet Russia Medical Relief Committee recently held one meeting at which $1,400 was raised and is arranging for a larger meeting to be held August 25, at which Dr. John Ohsol, a member of the second Russian Duma, and M. Isaac McBride, who has recently returned from Russia, will speak. Appeals have been sent to physicians, dentists, druggists and manufacturers asking for contributions of money, drugs, disinfectants, dressings, and other surgical supplies, which are urgently needed. A conference will soon be called to consider the menace to the United States from the epidemic diseases raging in Russia.

TENNESSEE

University of Tennessee Notes.—The University of Tennessee College of Medicine will erect a pathologic laboratory building to cost $75,000 near the Memphis General Hospital. This is in accordance with a contract between the university and the Memphis General Hospital by which the school has entire control of the teaching facilities in the hospital for a period of twenty years and the school will nominate the medical, surgical and laboratory staffs of the hospital. A similar arrangement is also in force with the Baptist Memorial Hospital. During the year, eight scholarships have been established; two amounting to $102 each and six amounting to $60 each.

The Oakville Sanatorium.—Oakville Memorial Sanatorium, now in course of construction, is located on a tract of land of 160 acres near Oakville, and is expected to be ready for occupancy February 1. There are to be five buildings, an administration building, a service building, two one-story buildings for men and women, respectively, and an infirmary for negro patients. The initial capacity of the hospital will be 110 beds. Plans are made providing for an increase to 300 or 400 patients if necessary. The trustees have also reserved a tract of land of 10 acres on which to build a preventorium for children with tuberculous tendencies or who have been exposed to tuberculosis.

TEXAS

Personal.—Dr. Eugene O. Chimene, Houston, has been elected health officer of Floyd County, Ga.——Dr. Sarah Rudnick, Houston, sailed on the steamship *Belvidere* from New York for Serbia, July 15, to do medical reconstruction work for the Serbian Child Welfare Association.

Health Conditions on Mexican Border.—After a conference between the state health officer and the state labor commissioner, July 30, it is announced that steps will be taken to formulate a cooperative program to handle existing conditions on the Mexican border, information having been received that large numbers of Mexicans without authority are crossing into Texas and may constitute a menace to the health of the citizens of the state.

Bubonic Plague.—One death from bubonic plague occurred in Galveston, July 28, and one July 29. This makes a total of five cases of plague in Galveston, four of which resulted fatally.——A negro woman died in the Isolation Hospital, Beaumont, from bubonic plague. One patient in that city continued to show improvement. Beaumont has thus far had eleven cases of plague.——Twenty thousand rats a week are being caught in Beaumont, with a percentage of infected rats of about one fifth of 1 per cent.——A conference of state and city health officers was held in Galveston, August 3 and 4, to consider measures for eradicating bubonic plague and to instruct health officials regarding the control of this disease.

VIRGINIA

Library Founded.—The Roanoke Academy of Medicine and Surgery has organized a medical library to be operated by, and in conjunction with the Roanoke city library.

Sites for New Hospitals Offered.—Twelve bids for sites for the new U. S. Public Health Service hospital have been received by the secretary of the chamber of commerce of Norfolk.

Without Money Clinic Must Close.—Dr. William F. Cooper, health officer of Newport News, has been notified that if the city council does not appropriate enough money to operate the detention house and city clinic, both institutions must be

closed. The detention house and clinic need about $500 a month in salaries and an equal amount or more in food and medicine. The council has been appropriating only $500 a month for both institutions.

University News.—The University of Virginia Medical Department has secured $16,000 from alumni and friends to provide additional equipment and instructors necessary to permit the admission of eighty instead of thirty-six students to the freshman class this fall. Through a relationship established with the Blue Ridge Sanatorium of the Virginia State Board of Health, which is located 2½ miles east of the university, medical students are to serve as clinical clerks, the same as in the wards of the University Hospital. This sanatorium is for tuberculous patients and has a capacity of 120 beds.——Arrangements have been made by the university to send its third-year students to the Catawba Sanatorium for a four-week course of instruction.

WISCONSIN

Personal.—Dr. James P. Dean, Madison, was operated on for appendicitis, July 23, at St. Mary's Hospital, Madison.

New County Hospital Planned.—It is announced that the county board has accepted the plans for the new Milwaukee County Hospital.

New Duties for Health Officers.—It is announced that all health officers in Wisconsin in municipalities of over 750 population are about to be enrolled as assistant collaborating epidemiologists.

Help for Cripples.—At a special session of the Wisconsin Legislature an order was passed making provision to undertake the care of children and adults suffering from deformities. This bill is on the same order as the Haskell-Klaus bill which was passed in Iowa in 1918.

Physicians' Picnic.—The annual picnic of the Beloit Physicians' and Surgeons' Club was held on the grounds of the Beefsteak Club, July 28.——Rock County Medical Society held its annual picnic near Lake Koshkonong, July 29.——Fond du Lac County Medical Society held its annual picnic at Green Lake, July 29.

GENERAL

Tuberculosis Conferences.—The New England Tuberculosis Conference will be held at Concord, N. H., September 29 and 30.——The North Atlantic Tuberculosis Conference will be held at Richmond, Va., October 7 and 8.

Southwestern Pediatric Specialists Organize.—Pediatric specialists of southern California, Arizona and New Mexico, met in Los Angeles recently and organized the Southwestern Pediatric Society, electing Dr. Henry Dietrich, president, Dr. C. Edgerton Carter, vice president, and Dr. Oscar Reiss, secretary-treasurer, all of Los Angeles.

Specialists Hold Session.—At the eighth annual session of the Pacific Coast Oto-Ophthalmological Society held in Portland, Ore., July 29 to 31, the following officers were elected: president, Dr. George W. Swift, Seattle; vice presidents, Drs. Edward E. Maxey, Boise, Idaho, and Joseph O. Chiapella, Chico, Calif., and secretary-treasurer, Dr. Ernest C. Wheeler, Tacoma, Wash.

International Conference on Tuberculosis.—The National Tuberculosis Association announces from its headquarters at 381 Fourth Avenue, New York City, that an International Conference on Tuberculosis will be held in Paris the week of Oct. 7, 1920. The last International Conference on Tuberculosis was held in Rome in 1912. Leon Bourgeois, president of the Council of the League of Nations, will preside.

Sale of Christmas Seals.—The National Tuberculosis Association has appealed to trade journals and class publications for support in a national campaign for the sale of tuberculosis Christmas seals, to be carried out from December 1 to December 11. It requests that publications use a special cover for one issue; use special stories or articles dealing with tuberculosis and the Christmas seal, and use electrotypes or copy for display advertisements.

Burial of General Gorgas.—The body of Major-Gen. William C. Gorgas was interred at Arlington National Cemetary, August 16. Services were held at the Church of the Epiphany, Washington, D. C., whence a military escort of two troops of cavalry, a regiment from the tank corps, a battalion of infantry, two companies of engineers, a company of coast artillery, motor ambulances, and sanitary troops, under command of Brig.-Gen. Grote Hutchinson, conducted the body to the cemetery. Members of the cabinet and of the diplomatic corps, officers of the Army, Navy, Public Health Service and the American Medical Association, noted scientists and physicians participated in the last honors paid to the great sanitarian.

American Congress of French-Speaking Physicians.—The *Bulletin médical de Québec* announces that the Sixth Congress of French-Speaking Physicians of North America is to be held at Quebec, Sept. 9 to 11, 1920. So many have sent in their names already that it promises to be the most successful gathering of the kind yet held. The four subjects appointed for discussion are nephritis; treatment of wounds; industrial accidents, and venereal diseases. There are to be five reports on the last mentioned subjects and two for each of the others. The speakers include Drs. A. LeSage, G. Ahern, A. Simard, and A. H. Desloges. The president and secretary are Drs. Arthur Rousseau and A. Vallée, and they warn to apply early for hotel accommodations.

Suicides Increase.—The semiannual report of the Save-a-Life League reports that during the first six months of this year there were 2,771 suicides in the United States, of whom 1,810 were men and 961 women. There were 2,063 in the same period last year. In New York, according to the report, there were 341 suicides in the first six months of this year. Of these 234 were men and 109 women. The most frequent means employed was illuminating gas, 141 having died in this way. The figures show that there has been an increase in the number of suicides among women, which the league attributes to the complexity of their lives owing to their entrance into business and political life. During the past six months eighty-eight boys and 137 girls have committed suicide, an increase of fifty over last year's report for the same period. Boys most frequently use a gun and girls take poison. These facts, the report points out, call for strictly enforced laws to suppress the sale of firearms and poisons.

LATIN AMERICA

Brazil Extends Medical Facilities to Paraguay.—The government of Brazil has extended the facilities of Brazilian laboratories and clinics to the physicians and medical students of Paraguay.

Uruguayan Commissioner in the United States.—Dr. Francisco Torres Insargarat, special commissioner of the government of Uruguay, is now visiting the most important cities of the United States, including Chicago.

Pavilions for Steerage Passengers.—The National Board of Public Health of Uruguay has been authorized to build several pavilions for steerage passengers in the lazaretto on the Island of Flores at an estimated cost of $25,000 pesos (about $10,000).

Rockefeller Mission in Brazil.—The *Brazil Medico* states that Drs. Rose and Hackett of the Rockefeller mission to Brazil were given a rousing welcome on their recent arrival at Bello Horizonte. The entire faculdade de medicina and other local members of the profession were at the depot to meet them.

Personal.—Drs. O. de Oliveira and Carvalho Azevedo of the faculdade de medicina of Rio de Janeiro recently left for Europe.——Dr. A. Lindenberg and Dr. O. de Sousa have returned from Europe. The latter was on a special commission from the Rio faculdade de medicina and will resume his course on physiology.

New Clinic in Uruguay.—There have just been installed in the Hospital Militar Central, Montevideo, a gynecologic clinic and a polyclinic for the treatment of children's diseases. Dr. Eduardo Blanco Acevedo, director of the surgical service, will be in charge of the clinic and Dr. Nieto Zervino in charge of the polyclinic.

Public Health Board at Guatemala.—The president of Guatemala has appointed the following members of the Superior Board of Public Health: Dr. Alberto Padilla, Dr. Mario J. Wunderlich, Dr. Antonio G. Valdaevellano; Licdo. Héctor Aparicio, Licdo. Juan F. Melgar, Dr. Guillermo Cruz, and Ingeniero Félix Castillo. There has also been organized a public health police under the orders of the board.

FOREIGN

Appropriations for Research on Tuberculosis.—The Robert Koch endowment at Berlin has granted Professor Flügge of Berlin 15,000 marks and Professor Selter of Königsberg 6,000 marks to aid in continuing their research on tuberculosis.

Institute for Research on Proteins.—A sum of 500,000 marks has been donated to the University of Heidelberg to

found an institute for research on albumins. It is to be in charge of Professor Kossel, and to be affiliated with the Institute for Hygiene.

Prize for Work on Orthopedics.—Owing to a recent legacy from Dr. P. Redard of Paris, the Académie de médecine offers a prize of 5,000 francs every fifth year for the best work on orthopedic surgery. Competition is open to physicians of all countries and to interns of the Paris hospitals.

Faure's Hymn to Peace.—The Paris *Figaro* offered a prize for a hymn to peace, and had the best six, among the seventy submitted, set to music. The one selected by Saint-Saëns for his musical setting proves to be the work of Prof. J. L. Faure, the successor of Pozzi in the chair of gynecology in the Paris Faculté de médecine.

Cambridge Gives Americans Degrees.—Prof. John Jacob Abel, professor of pharmacology in Johns Hopkins Medical School, Baltimore, and Dr. Harvey Cushing, professor of surgery in Harvard University Medical School, Boston, had conferred on them the honorary degree of Doctor of Laws by Cambridge University, July 29.

Outings for German Children in Denmark.—The *Deutsche medizinische Wochenschrift* states that 8,000 German children have been given hospitality in Denmark since last October; one institution took 500. About half the total were children of the laboring classes. Each child was given a short outing, new clothes and foodstuffs to bring home to an average weight of 15 kg.

Memorial to Van Engelen.—A tablet on the wall of the Saint-Pierre Hospital at Brussels was recently unveiled with much ceremony in honor of the eminent surgeon, Van Engelen, who died in 1918. The funds collected for the purpose proved sufficient to found in addition an annual prize for an intern in the surgical service, to be awarded in the form of books and instruments.

International Anthropology Institute.—In the second week of September there is to be a gathering at the Ecole d'anthropologie at Paris of a number of persons interested in making this the international center for the anthropologic sciences, including ethnology, eugenics, medical geography, comparative anatomy, etc. Those interested in the matter are asked to send in their names to the secrétariat, Ecole d'anthropologie, rue de l'Ecole-de-médecine, 15, Paris.

Vital Statistics in Spain.—The *Siglo médico* states that 306,394 boys were born in Spain during 1919, and 278,958 girl babies, to a population of 20,355,986. Over 482,000 deaths were recorded, including 163,198 children under 5. Typhoid was responsible for 5,677 deaths, typhus for 228, tuberculosis for 29,700, cancer for 12,525 and heart disease for 37,883, acute bronchitis for 22,166, and chronic bronchitis for 11,705, suicide for 847, and other forms of violence for 6,909.

Medical Work in Palestine.—Medical work in Palestine has advanced rapidly during the past two years stimulated by the physicians and nurses of the American Zionist Medical Unit. Clinics are being held and lectures given at regular intervals. The hospitals and clinics established by the unit in Palestine will be eventually taken over by the Medical College of the Hebrew University, Jerusalem, plans for which are being designed by Prof. Patrick Geddes of the University of Edinburgh.

Monument in Memory of Brissaud.—It is proposed to erect a memorial at Tournai in Belgium to honor the memory of Brissaud who was the first to locate and describe cataract correctly; he thus paved the way for Daviel's extraction. Many leading ophthalmologists of Belgium and France are on the committee in charge of the matter, and appeals are being made for subscriptions which can be sent to the secretary, Professor Terrien, 41, rue Pierre-Charron, Paris, or to any member of the committee.

Memorial to Lannelongue.—A monument to Lannelongue was dedicated in July in his natal town, Verduzan, representatives from the government and scientific societies having charge of the ceremony. One report of the ceremonies adds that his name is perpetuated otherwise by prizes in various scientific organizations, museums he founded, and the numerour works he published on the pathology of the bones, etc., and by the influence he exerted in parliament and as president of different organizations, until his death in 1911.

Malaria in Italian Soldiers.—Representatives of the government departments, of the Red Cross, and others recently conferred and adopted a plan for systematic treatment of the demobilized soldiers in Italy who are still suffering from malaria. A census throughout the country of all such cases is to be taken, and provisions made for treatment at home or in four sanatoriums to be organized in various mountain regions. While the man is staying at the sanatorium, his family is to be paid a certain daily allowance. Vigorous propaganda is now under way to convince the men of the necessity for taking treatment.

The Weekly Cinematophotograph.—A new Paris medical weekly has made its appearance, the *Vie médicale*, which seeks to photograph or, as it says, to cinematophotograph in words, in journalistic style, the happenings of the week in medical circles, like a daily paper. The first issue has thirty-two pages, and contains among other things two comprehensive articles on lethargic encephalitis and comparative human and veterinary medicine. The report of the meetings of the Académie de médecine is written in breezy style by a girl medical student. The *Vie médicale* is issued 48 rue Geoffroy, St. Hilaire 49, Paris, for 25 francs a year. Drs. Aloncle and L. Nass are the director and editor, respectively.

Deaths in Other Countries

Dr. **A. Antonelli,** a prominent Italian ophthalmologist long resident at Paris.——Dr. **C. F. I. von Wahlberg,** a leader in the organization of the profession in Finland, aged 72. Since retirement from practice he has published several novels and dramas.——Dr. **O. Schultze,** professor of anatomy and embryology at the University of Würzburg, aged 61.——Dr. **O. S. Dastugue,** subdirector of the Institute of Physiotherapy at Buenos Aires and assistant professor of radiology in the medical school, aged 30.——Dr. **J. E. García** of Buenos Aires.——Dr. **E. Lombard,** an otologist of Paris.——**Ethel Amy Mordaunt,** Bromley, Kent, England, L.R.C.P., L.R.C.S., Edinburgh, 1908, L.F.P.S., Glasgow, 1908, was struck and killed by a motor scooter in Bromley, recently.——Dr. **Armand Gautier,** formerly professor of chemistry and physiology at the University of Paris, president of the Académie de médecine and of the Académie des sciences, and author of numerous works on chemistry and especially on the therapeutic use of arsenic, aged 83.——Dr. **J. S. Dauriac,** a well known surgeon of Paris whose latest work, "Chirurgie réparatrice des os," had just gone to the printer at the time of his death.——Dr. **C. S. Rodríguez** of Buenos Aires.——Dr. **J. da Costa Lima e Castro,** professor of surgery in the University of Rio de Janeiro, aged 62.——Drs. **Bemfica de Menezes** and **A. Pinheiro,** both of Rio de Janeiro.

Government Services

Conference on Venereal Diseases

An All-American Conference on Venereal Diseases will be held in Washington, D. C., Dec. 6-15, 1920, under the auspices of the U. S. Public Health Service. Dr. William H. Welch has been nominated secretary of the conference.

Enlargement of War Risk Hospital

Alterations and additions at the United States hospital at Perryville, Md., will enable the Public Health Service to care for approximately 250 additional patients under the war risk act. The hospital has accommodations for more than 1,000 patients and will be limited to cases of psychoneurosis.

Course for Health Officers

The U. S. Public Health Service, in cooperation with Georgia state authorities, has established a course of instruction in health work at the University of Georgia Medical School, Augusta. The course is designed to give special training to county health officials of the state and an instructor from the Public Health Service will occupy the chair throughout the term.

Shortage of Chemicals for Water Purification

At the urgent request of the Public Health Service the commission on car service of the American Railroad Association has relieved the shortage of the aluminum phosphate, bauxite, chlorin, calcium hypochlorite, soda ash, copperas, lime, and other chemicals used for the purification of water at municipal water plants. The health of millions of people was threatened by a scarcity of these materials at filtraton plants, due to the failure of the railroads to furnish sufficient cars to the manufacturers.

Plague Prevention Measures

Surg.-Gen. Hugh S. Cumming of the U. S. Public Health Service, after his return from a plague conference at Galveston, Texas, declared that there has been no spread of plague to other gulf ports and that on investigation two suspicious cases in Mississippi and Texas had been proved not to be plague. At the request of local health authorities, rat surveys will be conducted by the Public Health Service in Charleston, S. C., and in Florida and Texas seaports. Plans for radical changes in the construction of business buildings, dwellings and wharves are being drawn up as part of a nation-wide campaign for rat extermination, following recommendations of the health officers in attendance on the conference to study bubonic plague and rat extermination. The specifications will be furnished to the different states and cities in order that they may be incorporated in the building codes throughout the country.

Hospital Service of the Bureau of War Risk Insurance

In the Sundry Civil Bill, which carried appropriations of $46,000,000 for medical and hospital services for beneficiaries of the Bureau of War Risk Insurance, authority was granted to make the necessary expenditures for converting soldiers' homes into hospitals for war risk insurance patients. At a conference between Gen. Leonard Wood, president of the board of managers of the National Homes for Disabled Volunteer Soldiers, Dr. T. W. Salmon, representing the Mental Hygiene Committee, Dr. H. A. Pattison, representing the National Tuberculosis Association, and R. G. Cholmeley-Jones, director of the Bureau of War Risk Insurance, it was decided to convert two of the soldiers' homes for the exclusive treatment of tuberculosis, and one for the exclusive treatment of mental diseases; each of these hospitals will accommodate 1,000 patients. There are now 17,625 war risk insurance patients in hospitals; 7,980 of these are in Public Health Service hospitals, and 9,645 in about 900 hospitals and institutions not under control of the government. It is estimated that by June 30, 1921, approximately 30,000 war risk patients will be under treatment in hospitals. Existing facilities of the War Department will provide for 4,000, the soldiers' homes will accommodate 6,000, and the Navy Department hospitals can make provision for 4,000. Approximately 15,000 beds are already under control of the Public Health Service, and there will therefore be accommodations for 29,000 patients in hospitals owned and operated by the government.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel, and Col., colonel.

CALIFORNIA
Alameda—Moore, L. O. W. (L.)
Sacramento—Munger, A. L. (C.)
San Francisco—Ross, C. C. (L.)

GEORGIA
Decatur—Pitman, J. F. (C.)

ILLINOIS
Chicago—Seifert. E. H. (L.)
Odell—Shankland, J. W. (C.)

INDIANA
Salem—Bierach, J. L. (C.)

KENTUCKY
Holland—White, J. W. (L.)

LOUISIANA
New Orleans—Ney, E. W. (M.)

MICHIGAN
Lansing—Barber, C. L. (C.)
St. Johns—Buck, R. C. (C.)

MINNESOTA
Cloquet—Guittard, V. D. (C.)

MISSISSIPPI
Falkner—Pearce, R. S. (L.)

MISSOURI
Boonville—Lyle, C. F. (L.)
Kansas City—Field, A. C. (L.)

NEBRASKA
Omaha—Davis, A. L. (C.)

NEW JERSEY
Trenton—Denelsbeck, J. G. (L.)

NEW YORK
Amagansett—Babcock, H. E. (M.)
Gloversville—Ward, L. J. (C.)
Little Fall — McGillicuddy, J. G. (L.)
New York—Healy, M. F. (C.)
Rovitti, F. (L.)
Sharlit, H. (L.)
Toomey, J. H. (L.)
Syracuse—Reid, C. D., Jr. (L.)

OHIO
Dayton—Bayless, C. O. (C.)
Plymouth—Holtz, J. F. (L.)

PENNSYLVANIA
Butler—Kettlerer, C. H. (C.)
Meadville—Rosenberger, A. I. (L.)
Philadelphia—John, R. L. (M.)

SOUTH CAROLINA
Cross Hill—Klugh, G. F. (C.)
Spartanburg—Myers, D. V. (L.)

TENNESSEE
Memphis—Baldwin, W. H. (M.)
Oliver Springs—Shelton, W. A. (C.)
Paris—Wiggins, M. C. (L.)

TEXAS
Dallas—Mathewson, E. H. (M.)

WASHINGTON
Sedro-Wooley—Hehir, J. (C.)

WEST VIRGINIA
Elizabeth—Brown, C. N. (C.)
Spencer—McQuain, J. E. (C.)

Foreign Letters

PARIS

(From Our Regular Correspondent)

July 20, 1920.

International Congress of Surgery

The International Surgical Society at its last general assembly, just ended, decided to hold its next international congress at London, July, 1923, under presidency of Professor Macewen, Glasgow. It was voted to continue to exclude the surgeons of the central empires. The International Surgical Society was founded in 1902 through the initiative of the Société belge de chirurgie, and includes about 700 members. It has held five congresses, the first three of which met in Brussels under presidency of Lucas-Championnière in 1905, Kocher in 1908 and Czerny in 1911. The fourth congress was held in New York under presidency of Professor Depage, and the last was just held in Paris under presidency of Dr. W. W. Keen.

The Paris Surgical Society

The Société des chirurgiens de Paris, which hitherto has admitted to membership only the professional surgeons, voted to admit associated members chosen from among physicians who are practicing related specialties or are working in fields which have contributed to the evolution of surgery. The resolution is inspired by a desire for collaboration with the pathologists, bacteriologists, chemists, physiologists, physiotherapists, radiologists and radiumtherapists in particular, and in general with all physicians whose work might be of benefit to the science of surgery.

Death of Gautier

Dr. Armand Gautier, onetime professor of chemistry at the Paris medical faculty, died recently at Cannes. Armand Gautier was born Sept. 23, 1837, at Narbonne, received a scientific and medical education at Montpéllier, and graduated M.D., at Paris in 1862. He was a student of Wurtz, under whom he became professor agrégé in 1869, and succeeded his teacher in the chair of chemistry fifteen years later. In 1879 he was elected a member of the Académie de médecine and of the Académie des sciences ten years later.

Gautier was one of the greatest of modern chemists. His researches on ptomains, discovered by him in 1873, and on alkaloids of bacterial origin, and his discovery of alkaloids from animal tissues, or leukomains, won him a reputation in scientific medicine. On the other hand, his experiments with organic compounds of arsenic led to the practice of subcutaneous injections of sodium cacodylate.

Gautier's most important works are his *Cours de chimie minérale et organique* (1895), *Les toxines microbiennes et animales* (1896), *Leçons de chimie biologique normale et pathologique* (1897), and *L'alimentation et les régimes chez l'homme sain et chez les malades* (1904).

Appreciation of the American Activities Against Tuberculosis

Several months ago I mentioned in these pages (THE JOURNAL, May 8, 1920, p. 1339) the recognition given by the Académie de médecine de Paris on the motion of Professor Letulle, to the activities of the American Red Cross in the campaign against tuberculosis in France during the war. In turn, the Académie royale de médecine de Belgique has also devoted its attention to this subject. M. Sand, in laying before the Academy the report of the Rockefeller Commission for the Prevention of Tuberculosis in France, called special attention to the importance of the demonstrations which, at the invitation of the Ligue belge contre la tuber-

culose, the Rockefeller Commission has been making in Belgium. At Tournai, Namur and Huy, these took the form of a seven day propaganda against tuberculosis. Dr. Linsly R. Williams, director of the commission, Major Stuart, director of propaganda, and Miss F. Elizabeth Crowell, superintendent of visiting nurses, came to Brussels not only for the purpose of conducting a popular campaign but also to demonstrate to a selected public the organization, working methods and practical achievements of the commission. M. Sand found the commission's methods admirably adapted to the popular mentality. They include meetings, the "guignol," moving pictures, postcards, posters and pamphlets. They reach the children, mothers, workers, soldiers, the general public, civil, military, school and ecclesiastic authorities. Everywhere the commission leaves behind a tuberculosis dispensary as a permanent trace of its tour.

The nucleus of the organization is American and it is financed by the Rockefeller Foundation of New York; the consultants, however, are French, and the commission, as soon as its work is finished, commits it to the hands of local committees. Its activities started about three years ago, and in that time it has covered thirty-three departments of France.

Dr. Bordet, director of the Pasteur Institute of Brussels, who has also assisted at the demonstrations of the Rockefeller Commission, thinks that Americans have found the necessary means of making the masses comprehend. He likewise proposed that the Academy put itself on record in favor of a similar organization in Belgium.

LONDON

(From Our Regular Correspondent)

July 30, 1920.

Panel Physicians' Records

The ministry of health has been considering the form in which panel physicians' records should be kept, and has consulted Sir James Mackenzie on the point. He has submitted a characteristic memorandum in which he declares that legislation founded on such statistics as are available today would fail for the reason that, apart from slight affections, such as toothache, from 90 to 95 per cent. of the complaints which the panel physician sees are undiagnosable even by the most experienced, and most of the small percentage that are diagnosed according to present methods would fail to convey an accurate notion of the real nature of the illness. He outlines what he conceives to be the defects in medical knowledge at the present day.

Our present classification of disease in the living is based "upon the morbid anatomy of the dead," and the idea has sprung up in consequence that ailments can be classified according to gross structural changes such as can be seen postmortem. Vast numbers of patients, however, have ailments that cannot be so classified—there is as yet no structural change. Their signs of disease are distressful sensations. Then comes the error: the physician is likely "to take the most prominent symptom or sensation and consider it to be the disease," for example, "neuralgia, dyspepsia, anemia, palpitation, neurasthenia." The truth is that there are always in these cases other symptoms, and when these symptoms are gathered together they are found to show a disturbance of so many different organs that the conclusion is forced that there is a common cause which upsets the balance of the different organs. In consequence, the physician should not be forced to "give a name" to each disease but should keep records that will enable these symptoms to be related one to another and the real underlying diseases to be found. For this purpose index cards are suggested. We spend vast sums on drugs, and yet "there is no accurate knowledge as to the effect of a great many remedies." Moreover, if symptoms of disease, and not diseases themselves, are treated, further waste must occur. Special investigators should study in actual practice the drugs most in vogue, and make known their findings regarding action and uses. Thus a new era in medical treatment would open. To remedy these defects, the physician must be taught how to carry on research into the early symptoms of disease. If there was a scheme by which he could learn how to question a patient intelligently, how to make short but accurate notes, how to watch the patient as he passes from one phase of disease to another, the working of the insurance act would be greatly facilitated year by year, while a great impetus would be given to the investigation of these dark fields of medicine which only the general practitioner can explore.

A committee appointed by the minister of health to report on note taking by panel physicians, and presided over by Sir Humphry Rolleston, has also issued its findings. These are to a great extent in sympathy with Sir James' views. An envelop, it is advised, should be issued to each physician in respect of each insured person on his list. This should bear, when it reaches the physician, the patient's name, address, society, number, the physician's name, the committee's cipher, and the date. There should be different colors in use for female and male. Thus, on visiting the patient the physician will merely require to make a few notes on the envelop, e. g., date of visit, age, etc. The "notes" should be written first on the backs of the envelops and then on cards to go inside the envelop. These should be such as "are likely to be of value to the physician himself, or to any other physician treating the same patient in subsequent illnesses." The physician will thus be able to describe fully the symptoms he sees, and the cards will form in time a full record of each patient's health without being at all irksome to the busiest physician.

The Lister Memorial Fund

The general committee of the Lister memorial fund has received the report of the executive committee appointed in 1912. The subscriptions from the British Empire and foreign countries amounted to $59,230. A memorial tablet by Sir Thomas Brock was unveiled in Westminster Abbey, Nov. 1, 1915, and steps are being taken for the erection of a monument in a public place in London. In order to carry out the scheme adopted in 1912 for the establishment of the international Lister memorial fund, the following proposals were adopted: 1. That $2,500 out of the general fund, with a bronze medal, be awarded every three years, irrespective of nationality, in recognition of distinguished contributions to surgical science, the recipient being required to give an address in London under the auspices of the Royal College of Surgeons. 2. That the award be made by a committee constituted of two members nominated by the Royal Society, two by the Royal College of Surgeons of England, one by the Royal College of Surgeons in Ireland, one by the University of Edinburgh, and one by the University of Glasgow. 3. That any surplus income of the general fund, after providing for the erection of a monument, and after defraying administrative expenses, be either devoted to the furtherance of surgical science by means of grants or be invested to increase the capital of the fund. The continued carrying out of this scheme in future years will require the provision of some permanent and adequate machinery, as the Lister memorial committee cannot, in view of its constitution, be itself permanent. The committee, having ascertained that the Royal College of Surgeons of England would be prepared to become the trustees and administrators of the fund and to carry out its objects, authorized the executive committee to take the necessary steps to give effect to this arrangement.

War Memento from British to American Surgeons

As a memento of the work done in cooperation by American and British surgeons during the war, a number of the latter have had made a silver-gilt mace, which is to be presented to the American College of Surgeons. The gift is the suggestion of Sir Berkeley Moynihan, with whom Sir Anthony Bowlby (president of the Royal College of Surgeons) and Sir D'Arcy Power collaborated. The mace is the work of a well known worker in metal, Mr. Omar Ramsden. A surgeon's mortar dug up in a Saloniki trench was the model for the head, which is surrounded by maple leaves and American eagles. The badges of the British and American Army Medical Corps and the serpents of Esculapius are prominent, the name of Philip Syng, the father of American surgery (who was at St. George's Hospital before he went across the Atlantic), is introduced, and the roll of subscribers will be engraved in due course. An inscription on the mace reads: "From the consulting surgeons of the British Armies to the American College of Surgeons in memory of mutual work and good fellowship in the Great War."

BELGIUM

(From Our Regular Correspondent)

July 28, 1920.

Child Welfare

Under a law passed Sept. 5, 1919, all agencies and interests devoted to child hygiene which were formerly the exclusive object of private charity are incorported in the newly established Oeuvre nationale de l'enfance. These charities have been extending over Belgium for some years, and the war gave even greater impetus to the movement. At the time of the armistice there were infant clinics in about 800 towns and there were numerous maternity canteens; school lunches were being distributed to more than 1,000,000 children, and there were eighty-five colonies in which from 5,000 to 6,000 debilitated children were received in each month.

Minister Jaspar, who recently presided at the opening session of the Conseil supérieur des oeuvres de l'enfance, recalled the favorable results already attained by past activities and outlined the great projects which still await execution. The Oeuvre nationale, such as it is, was conceived by the legislature for the sole purpose, at present, of protecting the younger children by the establishment of infant clinics, maternity canteens, colonies for debilitated children, school lunches and milk stations (gouttes de lait). But this does not mean that its sphere will be limited to these activities. It will have to pass on the establishment of all additional related activities; it will determine especially, as brought to light by the report on the last budget of the Ministry of Economic Affairs, whether besides the maternity canteens there is urgent need of other organizations for the protection of mothers and infants.

The infant clinics are the cornerstone of the whole structure, and more than 800 have been established to date. It is necessary that all infants of the country, and especially those whose parents do not have the means to pay for medical services, should be brought to these clinics in the first months of life.

The maternity canteens will perhaps be attached to coal mines and to other industries employing women, in short, they will be installed wherever proximity to the work of husband or wife gives reason to anticipate that they will be serviceable.

During the war, school lunches were introduced in all the communes of the country, in other words, in all the schools. Thanks to the patriotism of our fellow citizens we did not see a recrudescence of the old school quarrel during that time. Under the Conseil supérieur it should not be revived in the days of peace, and to obviate this, absolute separation of the teaching function from the question of feeding is necessary.

The colonies for debilitated children have already obtained brilliant results. Not only that 10,000 children of the cities and industrial centers, thanks to these colonies and to the generosity of property owners who loaned more than eighty chateaux and houses for the work, were able to spend several months in the open air and to recuperate from their aggravated undernourishment. The average gain of each of these children was from 2 to 3 kilograms. The work of the colonies also contributed greatly to prevent the terrible increase in tuberculosis from affecting the younger generation. It is self-evident that it will be impossible in times of peace to maintain the colonies on the same extensive basis, but it is certainly equally indispensable to give children of all ages from the side streets and alleys an opportunity to go to the country or the seashore. Because of this the system inaugurated, by which the colonies will remain open all year round, seems most favorable.

Federated Biologic Societies

A federation of the Réunions biologiques affiliated with the Société de biologie de Paris was recently formed in the laboratory of Professor Brachet at the Institut anatomique du Parc Leopold. The réunions of Brussels, Lille, Lyons, Nancy, Strasbourg, Bucarest and Copenhagen were represented, and the secretary general of the Société de biologie also attended. Professor Bordet, president of the Réunion biologique de Bruselles, declined the presidency in deference to Professor Bard of Strasbourg. The next meeting is scheduled at Strasbourg in the autumn of 1921.

BUENOS AIRES

(From Our Regular Correspondent)

June 30, 1920.

Lethargic Encephalitis

In a short time there have been observed quite a number of isolated cases of lethargic encephalitis. In some of the Buenos Aires clinics three and four cases have been treated. There have been cases in different towns as far as Salta, which is in the northernmost part of the country. The Argentine Medical Association at its last meeting discussed four cases of the disease presented by Drs. J. Destefano, A. Vitón, S. Dessy, F. Grappiolo, T. Martini and J. Berterini. A few days afterward several cases were also reported before the Society of Pediatrics.

Argentine Medical Association

This association, which includes the majority of the medical societies of Buenos Aires, has decided to increase the number of affiliated societies. So far during this year the societies of biology, medicine and surgery have operated successfully.

Pneumoperitoneum

In the medical section of the Argentine Medical Association there have been presented several papers on the application of pneumoperitoneum to the roentgen-ray diagnosis of abdominal diseases. This method has become popular in several hospitals.

Centenary of the Academy of Medicine

The Academy of Medicine of Buenos Aires has decided to celebrate its first centenary in 1922 with a contest on medicine and allied sciences. Three prizes will be granted for the best papers presented; the first of 5,000 pesos and a gold medal, the second 3,000 pesos and a silver medal and the third 1,000 pesos and a diploma. (A peso is now worth about 40 cents). The academy has announced its purpose of increasing its activities, for so far this association, formed by

fourteen members, has shown little life. Some scientific lectures are planned for the near future, and one has already been given. The academy has asked the government to furnish it with a building of its own.

Institute of Surgery

There is now pending in congress an appropriation to furnish with the necessary facilities the chair of clinical surgery. The school of medicine has under consideration the creation of an institute of surgery.

Meeting of the Argentine Medical Association

The Argentine Medical Association has decided to hold a congress on internal medicine next October. The subject to be discussed will be "Cranial Hypertension."

Titration

Dr. A. Sordelli announces that antidysenteric toxins and serums may be titrated quite accurately with birds as controls.

BERLIN

(From Our Regular Correspondent)

July 15, 1920.

Germany's Food Problem

A memorandum of the national ministry of food and agriculture gives a survey of the food problem of Germany. Because of the extraordinary difficulties during the war and the shortage of labor and fertilizer, the acreage of the most important foodstuffs, such as bread cereals, potatoes and sugar beets, has been greatly reduced and the average yield has simultaneously declined. From 1913 to 1919, the harvest yield per hectare (2.47 acres) of bread cereals decreased 21 per cent., of feeding grains, 25 per cent., of potatoes, 31 per cent., and sugar beets 30 per cent. With the reduced boundaries, Germany's production of bread grains dropped from 13,300,000 tons in 1913 to 8,500,000 tons in 1919, potatoes from 40,300,000 to 21,400,000 tons, and sugar beets from 12,900,000 to 5,800,000 tons. An especially serious complication is the fact that by the loss of productive agricultural sections, especially in the east, Germany is deprived of a considerable food surplus. The number of cattle fell off from 18,000,000 in 1913 to 16,500,000 in 1919, milch cows from 9,100,000 to 7,600,000, hogs from 18,500,000 to 11,500,000, all told, not less than 41 per cent. The average yearly milk yield fell from 2,700 to 1,200 liters, and the total milk production declined from twenty-four to nine billions of liters, while the slaughtering weight of cattle, sheep and hogs dropped as much as 50 per cent. Germany is therefore compelled to continue the rationing of some of the most necessary foods and these rations have been reduced to such an extent that they represent only about one half of the minimum calory requirement of an adult man. Since the country is not yet in position to import the required foods to make up the deficit, the population as a whole is still in a state of undernutrition, a condition which has entailed terrible sacrifices. On the one hand, the growing generation is being sapped of its strength, while on the other hand, the adult populace is unable to regain its full working strength. As a result it is impossible to speed production in the mines and industries. The miners especially have complained repeatedly regarding the insufficient diet, laying particular emphasis on the fact that the bread is made of as high as 80 per cent. filler. The present industrial conditions make it impossible for a growing element of the populace to pay for even the small allowance of food at the reduced prices established by the government. The weekly ration at the present, for instance, consists of legumes, sugar, marmalade and artificial honey, with a calory value of 12,600, but it costs 101 marks as compared to 7.77 marks six years ago. The import requirements of Germany in the next fiscal year will total 2,000,000 tons of bread grains, the same quantity of feeding grains, 750,000 tons of oil seeds, 180,000 tons of meat and bacon, 144,000 tons of fats, 500,000 tons of fish, 500,000 tons of phosphate rock and 350,000 tons of pyrites, with a money value, all told, of 3,403,600,000 gold marks.

The Conflict Between Physicians and Krankenkassen

At a meeting between representatives of the physicians and the krankenkassen, June 4, an agreement was virtually reached, according to which medical arrangements are to be left to free agreements between the krankenkassen and individual physicians or medical societies. Where the free choice of physicians is already in practice, this system must be maintained, provided it does not endanger the existence of the kasse. Under this scheme an insured patient can consult virtually any qualified physician. In rural communities a patient may call the nearest physician, and may call an additional qualified physician in consultation, provided he assumes the extra cost. Payments for services rendered are to be made by the kasse direct, the attending physician's fee for office visits being 4 marks, and for home visits, 6 marks. For other services, the minimum stipulation of the projected revision of the official Prussian fee scale shall apply. Until this is published, a 15 per cent. increase shall be added over the prevailing scale, except in obstetric cases, in which the increase shall be 400 per cent. Lump sum payments shall be subject to local agreement, and in occupied territory an additional increase is granted. The new fees are effective as of April 1, 1920. Travel allowances, which would include compensation for the loss of time as well as actual traveling expenses, shall be 6 marks for every two kilometers by day and 10 marks by night. If the physician is furnished the means of travel, he shall be compensated for the loss of time at the rate of 2 marks for 2 kilometers by day and 4 marks by night. To supplement and improve the medical treatment and to advance the interests of public welfare the kassen are authorized to establish diagnostic, consulting and dispensary clinics and physiotherapeutic and medicomechanic institutes. These shall be placed at the free disposal of the insured members and their dependents. In the future, disputes between the kassen and physicians shall be settled by courts of arbitration subject to appeal to superior courts, the definite establishment of which will follow after supplementary agreement.

Depending on local agreements, certain exceptions are incorporated in the general arrangement. In Berlin, for instance, the system of free choice of the attending physician will be introduced throughout. Beginning with April 1, 1920, the quarterly capitation fee is fixed at 7.50 marks, with an additional 2.5 marks in the first quarter. While the fee scale applies only for 1920, the other provisions will be valid for five years. Subsequent conferences shall determine the procedure regarding any matters still in dispute. General free choice of physicians shall go in effect as soon as the necessary administrative arrangements have been made. The parties to the agreement are in accord on one point, that if any kasse does not introduce the new system, its physicians shall be excluded from obtaining any benefits from other kassen operating under the new system. In Wurttemberg and some other states special agreements have been made between physicians and kassen; some of these are more favorable than that which has been arranged for the whole country. Although the physicians did not obtain all their demands there is considerable cause for satisfaction over the terms One particularly happy feature is the apparent willingness of the krankenkassen to settle the questions relating to the medical care of its members in an amicable manner rather than to seek a quarrel at every opportunity.

Marriages

BERTRAM GROESBECK, JR., Lieut., M. C., U. S. Navy, to Miss Maria Commelas Canals, at San Francisco de Macoris, Dominican Republic, June 19.

LOUIS G. MARTIN, Capt., M. C., U. S. Army, Camp Gordon, Ga., to Miss Caroline Douglas Oden, in New York City, August 2.

ABRAHAM MATTES to Miss Henrietta D. Pearlstine, both of Charleston, S. C., in New York City, July 27.

ERNEST E. PARKER, Oxford, Ind., to Miss Mary Francis Kennedy of Templeton, Ind., at Oxford, July 26.

EARL D. JONES, Roberts, Idaho, to Miss Bessie May Badley of Wichita, Kan., August 6.

ALBERT J. WITTSON to Mrs Mabelle Lindley Burras, both of New York City, August 6.

L. FORREST SWANK to Miss Mary Coryell, both of Indianapolis, July 31.

Deaths

Louis Joseph Dandurant, St. Joseph, Mo.; Central Medical College of St. Joseph, Mo., 1898; aged 45; a specialist in surgery; president of the Buchanan County Medical Society; captain, M. C., U. S. Army, and discharged Dec. 5, 1918; professor of materia medica and pharmacology in Ensworth-Central Medical College, St. Joseph; a member of the local board of health; was drowned in the Missouri River, near Bean Lake, August 1, when his automobile plunged through a washout into the river.

Daniel Clark Jones, St. Louis; Rush Medical College, 1863; Medical College of Ohio, Cincinnati, 1866; aged 82; once mayor of Topeka, Kan.; surgeon-general of Kansas and president of the state board of health; surgeon of the Second Illinois Cavalry during the Civil War, and for eighteen years chief surgeon of the National Homes for Disabled Volunteer Soldiers at Leavenworth, Kan., and Danville, Ill.; died at the home of his daughter, July 27.

Benjamin George Pool, Washington, D. C.; George Washington University, Washington, D. C., 1879; aged 65; a member of the Medical Society of the District of Columbia, and the Association of Military Surgeons of the United States; surgeon of the Fourth Battalion, D. C. N. G., for many years; died at the home of his daughter in Washington, May 25, from myocarditis.

Olga Davis, Chicago; College of Physicians and Surgeons, Chicago, 1909; aged 45; a speciaist in diseases of children, and for many years a member of the staff of the Emanuel Mandel Memorial Dispensary of Michael Reese Hospital; died at Mackinac Island, Mich., August 9, from heart disease, a month after an operation for disease of the gallbladder.

Matthew Joseph Hoey, P. A. Surg., U. S. P. H. S. reserve, San Francisco; College of Physicians and Surgeons, San Francisco, 1905; aged 38; for nine years in the service of the Panama Canal Zone, and quarantine officer at Balboa for six years; died in the U. S. Marine Hospital, San Francisco, August 1, from acute parenchymatous nephritis.

Harold Lee Meierhof, New York City; Columbia University, College of Physicians and Surgeons, New York City, 1917; aged 26; Lieut., M. C., U. S. Army, and discharged Jan. 11, 1919; an intern at Mt. Sinai Hospital, New York City; died in that institution, August 5.

Charles Henry Althans, Brooklyn; University of the City of New York, 1881; aged 83; surgeon of the Fifty-Second New York Volunteer Infantry during the Civil War; a practitioner and druggist for more than sixty years; died in Bellevue Hospital, August 4.

Norman Perkins Quint, West Medway, Mass.; Harvard University Medical School, 1870; aged 73; a member of the Massachusetts Medical Society; medical examiner (coroner) of the Seventh Norfolk District for twenty years; died in a hospital in Boston, July 27.

Arthur Lloyd Jones ⊕ Lima, Ohio; Fort Wayne (Ind.) College of Medicine, 1897; aged 48; captain, M. R. C., U. S. Army, and discharged July 30, 1919; for fourteen years health officer of Lima; died, near Jackson Center, Ohio, July 25, from angina pectoris.

⊕ Indicates "Fellow" of the American Medical Association.

Lynn Ransom Palmer, New York City; Columbia University College of Physicians and Surgeons, New York City, 1903; aged 40; a member of the Medical Society of the State of New York; died at Old Forge, N. Y., July 23, from tuberculosis.

Laura Ann Cleophas Hughes, Boston; Tufts College Medical School, Boston, 1895; aged 60; a member of the Massachusetts Medical Society; a specialist in public health; died in the House of the Good Samaritan, Roxbury, Boston, July 30.

Howard Lankester, St. Paul (license, Minnesota State Board of Medical Examiners, 1883); aged 74; commissioner of health of St. Paul from 1910 to 1914; died in Columbia Hospital, Milwaukee, July 30, from diabetes.

Carey M. Klyne, Youngstown, Ohio; Eclectic Medical Institute, Cincinnati, 1894; aged 48; for two terms coroner of Mahoning County; was drowned while bathing at Milton Lake, near Youngstown, July 25.

Harvey Vickard Murray, Honolulu, Hawaii; University of the City of New York, 1891; aged 53; a member and once president of the Medical Society of Hawaii; died in San Francisco, recently.

Thomas Jackson Charlton ⊕ Savannah, Ga.; Bellevue Hospital Medical College, 1885; aged 56; for many years superintendent of the Savannah Hospital; died, July 25.

James S. Bell, Oak Park, Ill.; Homeopathic Medical College of the State of New York, New York City, 1866; aged 79; died, August 8, from senile debility.

Arthur Birch Lockridge, Danville, Ill.; Indiana Medical College, Indianapolis, 1906; aged 41; died at the home of his parents in Greencastle, Ind., August 1.

Isadore Mayor Joseph Kane, Chicago; Loyola University, Chicago, 1920; aged 29; died in Mercy Hospital, Chicago, August 1, from general peritonitis.

Maria Brown Averill, San Diego, Calif.; Hahnemann Medical College of the Pacific, San Francisco, 1889; aged 85; also a pharmacist; died, July 7.

Benjamin M. Sherwood, Bicknell, Ind.; Missouri Medical College, St. Louis, 1889; aged 64; died in St. Vincent's Hospital, Indianapolis, July 29.

William Francis Farmer, Tewkesbury, Mass.; Harvard University, Medical School, 1905; aged 35; died, June 5, from intestinal tuberculosis.

Thomas D. Aydelotte, Lyons, Ind.; University of Louisville, Ky., 1888; aged 82; a practitioner for fifty-five years; died about July 30.

James J. Concannon, New York City; College of Physicians and Surgeons in the City of New York, 1890; aged 64; died, August 1.

George Phillip Rodemich, Millstadt, Ill.; Barnes Medical College, St. Louis, 1908; aged 47; died, June 12, from nephritis.

Romulus Culver Biggs, Greenup, Ky.; Bellevue Hospital Medical College, 1868; aged 76; died, May 22, from arteriosclerosis.

Moses Chappell Heath, Richmond, Ky.; Bellevue Hospital Medical College, 1871; aged 75; died in Stamford, Ky., July 27.

William J. Young ⊕ Fairfax, S. C.; University of Maryland, Baltimore, 1872; aged 69; died, July 25, from heart disease.

Julius C. Fitch, Hastings, Minn.; Rush Medical College, 1866; aged 79; a veteran of the Civil War; died, July 23.

John Frank Peterman, Lebanon, Pa.; Hahnemann Medical College, Philadelphia, 1886; died, Juy 25, from pneumonia.

Isaac W. Finley, Guthrie, Okla.; Meharry Medical College, Nashville, Tenn., 1912; aged 32; died in Denver, July 22.

Ulrich Harder, St. Louis; Missouri Medical College, St. Louis, 1878; aged 74; died, June 27, from myocarditis.

Samuel Clymer Moyer, Lansdale, Pa.; Hahnemann Medical College, Philadelphia, 1872; aged 73; died, August 4.

James J. Tillapaugh, Wolcott, N. Y.; Baltimore University, 1890; aged 63; died, August 5, from heart disease.

James H. Roberts, Ehrhardt, S. C.; Medical College of South Carolina, Charleston, 1887; died, July 18.

Richard H. Drewry, Brooks, Ga.; Medical College of Georgia, Augusta, 1877; aged 67; died, June 25.

James K. P. Black, Sage, Ark.; University of Nashville, Tenn., 1877; aged 79; died, July 21.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Fraud on the Public and on the Profession

SUKRO-SERUM AND APHLEGMATOL

Report of the Council on Pharmacy and Chemistry

Two years ago, American newspapers contained accounts of an alleged cure for pulmonary tuberculosis "discovered" by Prof. Domenico Lo Monaco of Rome, Italy. At that time no reference to the "cure" could be found in medical journals which had come from Italy and other European countries (The Journal A. M. A., July 13, 1918, p. 142). Later, reports were published of experiments carried out in Italy, according to which the intramuscular injection of solutions of sugar (saccharose—cane sugar) diminished pulmonary secretion and was of considerable value in the treatment of tuberculosis (The Journal A. M. A., Sept. 28, 1918, p. 1083). On the whole, the reports of the trial of what has been called the Italian Sugar Cure for Consumption have been unfavorable. At a meeting in Paris in October, 1918, Drs. Louis Rénon and Mignot reported that they had found that the disease in guinea-pigs was not modified by the treatment and with humans, the results were also negative (Paris Letter, The Journal A. M. A., Nov. 23, 1918, p. 1760).

In view of the exploitation of this treatment in the United States by the Anglo-French Drug Co., which offers "Sukro-Serum," and by G. Giambalvo & Co., which sells "Aphlegmatol," and because of inquiries received, the Council has authorized publication of the statement which follows.

W. A. Puckner, Secretary.

A circular issued by the Anglo-French Drug Co. describes "Sukro-Serum" as a "Sterilized Solution of lacto-gluco-saccharose." By reading the circular to the end, however, one learns that "Sukro-Serum" is not a "serum" in the ordinary sense, but apparently it is a solution of ordinary sugar (sucrose). "Sukro-Serum is a sterilized, specially prepared solution of Saccharose."

Sukro-Serum has been advertised (*N. Y. Med. Jour.*, Sept. 6, 1919) as an "INTRAMUSCULAR INJECTION FOR TUBERCULOSIS" ". . . ready for use in cases of Pulmonary and general Tuberculosis" with the assertion that "It is quite certain that in the near future Sukro-Serum will be largely used and its value fully recognized." The circular received from the Anglo-French Drug Co. contains quotations from an article by Professor Lo Monaco in the *British Medical Journal* (Aug. 24, 1918) setting forth the merits of intramuscular injections of sucrose in tuberculosis. It is recommended that "Néocaine-Surrénine" (which the Anglo-French Drug Co. supplies) be used for the control of pain when Sukro-Serum is injected.

The circular enclosed with a package of "Aphlegmatol," purchased from G. Giambalvo & Co., contained the following with reference to the composition of this preparation:

"A solution of Hydrats of Carbon After the formula of Prof. D. Lo Monaco, Director of the Institut of Physiological Chemistry of the University Of Rome. Contents: *Sucrose* ($C_{12}H_{22}O_{11}$) *Glucose and Galactose* ($C_6H_{12}O_6$)."

The package contained ampules of thin, fragile, brown colored glass, containing approximately 2½ c.c. of light, clear, amber colored, thick, sticky fluid, having a distinct caramel odor. Reaction $p_H = 5.0$. A reducing substance (probably glucose) amounting to 7.4 per cent. was found by using Benedict's method for estimating glucose quantitatively; after hydrolysis with hydrochloric acid, 55.5 per cent. glucose was found. There was no reaction for albumin. No attempt was made to identify the sugars, as it seemed probable that in the preparation caramel had been produced.

The circular which accompanied the package of Aphlegmatol contained the following information (spelling and composition as in original) about its use and effects:

To be emploied wherever a large bronchial secretion is present in the respiratory branches disease. The secretion will diminuish and, in non complicated cases, it will completly disappear.

Fever, cough, hemottisis, night prespiration, vomiting and difficulty of breating are, in the meantime, diminuished.

Aphlegmatol acts also as a riconstituent, being itself a nurrishing composition, improves the digestive function of the body and increases the arterial .pressure.

5 c.c. (2 Phials) of Aphlegmatol per day must be injected intramuscularly in the Gluteus.

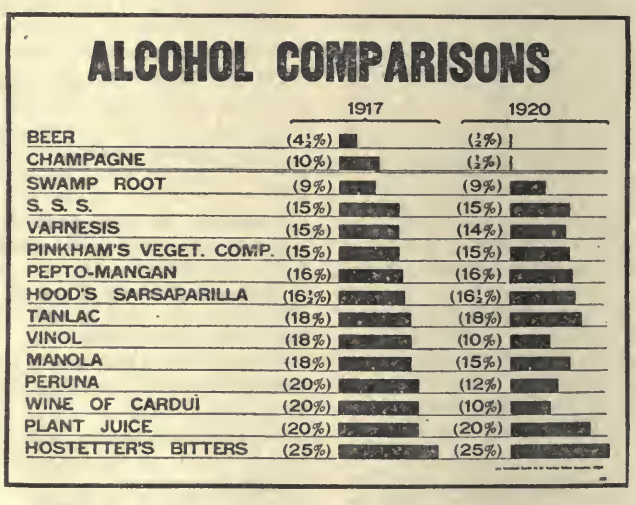
If the patient wishes two injections may be made, one at the right immediatly followed by a second one at the left.

The cure must not be interrupted untill sometime after expectoration has desappeared, which result may be obtained only after fifty or sixty days, in the meantime the patient must be controlled by his home physician, especialy when thermal elevation of the body takes place.

Improvement will be manifested on or about the tenth day of the first injection.

In the advertising circular, which is apparently intended for general distribution, much the same information is given as in the sheet enclosed with the ampules, except that in the directions we find: "If the injections are painful—especially in cases where patients are very emaciated—physicians are advised to inject together with *Aphlegmatol,* as an anesthetic, a vial with 1 c.c. solution of Stovain at 3%." The advertising for Aphlegmatol contains many misspelled words and appears to be the work of those ignorant of the English language.

Tuberculosis is a widespread disease and a majority of the uninformed are only too willing and ready to try such a "cure." The preparations appear to be nothing more than concentrated solutions of sugar. It is probable that a small amount of cane sugar might be inverted to glucose and fructose, but experiments have shown that cane sugar subcutaneously administered in the small amounts used in this instance is largely excreted in the urine unchanged. Less is known about galactose, but the evidence available would indicate that galactose is largely excreted in the urine unchanged when given subcutaneously. Glucose would be absorbed as such, and the amounts under consideration, used by the system much the same as when given by mouth.



Miniature reproduction of one of the educational posters prepared by the Propaganda Department of The Journal. The originals measure 22 by 28 inches.

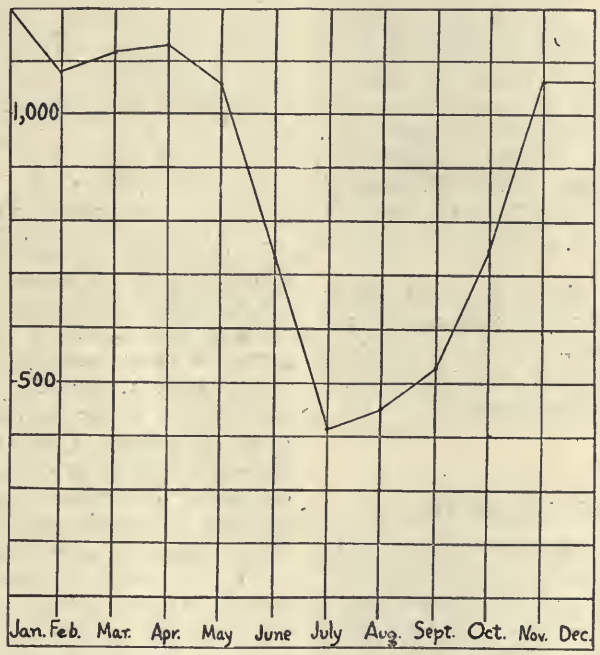
What Is a Health Center?—The term "health center" has been very loosely used as a name for everything from a milk station to a miniature health department. A real health center should be a complete health department. In a small city the health department should be the health center. In larger cities health centers should be established for the purpose of decentralizing official health activity and linking with it every agency carrying on public health activities within the area. It should also serve as a common headquarters in order to effect the closest cooperation with workers for sociologic and economic betterment—A. J. McLaughlin, *Public Health Rep.*, April 30, 1920.

Correspondence

DISEASE TRANSMISSION AND THE SCHOOL

To the Editor:—In the *Weekly Health Review* of May 29, 1920, published by the Department of Health, City of Detroit, and edited by Mr. George F. Palmer, epidemiologist, appears an article entitled "Age and Disease" which expresses such unusual opinions regarding the problem of communicable diseases in the schools that I feel obliged to take exception to it. This is all the more necessary when it is appreciated that the article emanates from no less authority than the department of health of one of our largest American cities. Doubtless many readers, lacking a medical perspective or failing to study the article, will assume the statements to be authoritative instead of purely speculative.

The article opens with the statement that "There are more cases of scarlet fever, diphtheria, measles and chickenpox reported among 6-year old children than at any other time during life. This is the experience in Detroit during 1919." Based on these statistics the question is asked: "Does this mean that there is actually more disease among children just entering school or that more disease is discovered at this time? Judging from the number of cases discovered by school nurses in the homes, it would seem as though schooling does not produce more disease. It simply reveals more disease."



Monthly incidence of scarlet fever, representing medium prevalence for thirteen years in Pennsylvania.

Then follows a table of statistics expressing in percentages the incidence of these diseases by age groups; the actual number of cases on which the study is based is not given, however. It is shown that there is a gradual increase in incidence which reaches its peak at 6 years, followed by a decline which is slightly more abrupt. Certain of the diseases are then discussed in an effort to show that the school is of minor, if of any importance, in their spread. In speaking of scarlet fever the statement is made that "increasing motility and traveling radius with advancing age would seem to have more influence than the act of entering school, for the increase at 6 over 5 or 5 over 4 is no greater than the increments below these ages. This applies to diphtheria as well." Again, "In measles the increase at 5 and 6 is more abrupt. School in this case undoubtedly brings many more cases to light. There is no reason to believe that it is responsible for spreading measles." Still further it is stated that "chickenpox resembles measles in that the reported cases are more numerous at the age of entering school. Here, also, it would seem that school attendance is responsible for discovering rather than spreading the disease." In conclusion, this generalization is made: "It would appear from the above that the exclusion from school of children above 10 years or at least 12 years, because a younger brother or sister has some minor contagion, would hardly justify the time lost from school."

For our present purpose we will assume that the statistics on which this study is based are sufficiently large to warrant conclusions, and on this basis we will inquire into the justification of the conclusions that have been reached. First let us consider the modes of transmission of these infections and whether the school can be a potent agent in furthering such transmission.

All modern authorities agree that these diseases never originate spontaneously but are always transmitted to the well, especially by those in whom the disease is passing from the stage of incubation to the stage of expression, by those having the disease in a mild and unrecognizable form or by those termed healthy carriers. The usual course of transmission is by direct contact; this is true in such a large proportion of the cases that we need not consider the indirect or mediate methods here.

Certainly the school is a fruitful field for direct contact; for hours at a time the pupils are within the zone of droplet infection one with another. All pupils are possible disseminators of such infections. They are drawn together in the school from a rather large geographic area compared with the restricted area covered by playmates at home. It is easy to understand, therefore, how such a disease as scarlet fever may pass from one neighborhood to another through the school.

The author of the report in question constantly belittles the importance of the school as a factor in the transmission of these diseases, but he also states that "increasing motility and traveling radius" exert a decided influence. Certainly he must have in mind that "increasing motility and traveling radius" exert their influence in the same ratio as they increase direct contact. If the contact by this means is important, it is hard to follow the reasoning that leads the author to ignore the innumerable direct contacts in school.

Have we any concrete evidence that points toward the school as a disseminator of disease?

A review of the morbidity statistics for the Commonwealth of Pennsylvania covering a period of thirteen years shows that scarlet fever, for example, varies in its monthly incidence in precisely the same way year after year. In June there is always a rapid decline in incidence, reaching the lowest level in July or August, followed by a rather sharp rise, beginning in September and mounting to its apex in January (as shown in the accompanying chart). Almost the same type of morbidity curve is found for diphtheria. Certainly the opening of the schools about September 1 must account for a considerable part of this morbidity rise. The only material change in the daily routine of a child during the month of September from that of August is his attendance at school during five or six hours a day. In view of the ease with which direct contact can play its rôle in the school, we are justified in concluding that the school does aid very materially in increasing the incidence of disease.

I would further point out that the cases which develop as a result of school contact may propagate the disease in the home. We see frequently families in which the mother, by endless care, has succeeded in protecting her children from these infections until the time comes for the eldest child to enter school. There, he falls heir to lurking measles, scarlet

fever or what not, and carries the disease home, where a household epidemic at once results. The cases that develop in the preschool age certainly are directly assignable to the school, and yet the author of "Age and Disease" seems to consider the school as an institution hermetically sealed from the home, and indicates no appreciation of the rôle which the school plays as a sort of exchange center for diseases.

The last paragraph of the article quoted concludes that the exclusion from school of children above 10 or 12 years because a younger brother or sister has some minor contagion would hardly justify the time lost from school. The "minor contagions" apparently referred to include scarlet fever, diphtheria, measles, whooping cough and chickenpox.

No modifying statements are made which lead us to believe that the author would favor the removal of this older child to an uninfected residence; it is not suggested that he be excluded from school even during the incubation period, nor does it seem to make any material difference whether or not the child is immune to the disease in question. We can therefore only assume that the author recommends that children above 10 to 12 years who are household contacts should be permitted to attend school from the infected household. The possibility of transmission of these diseases by a third person is thereby categorically denied. It does not seem to occur to the author that this child of 10 or more years may become a healthy carrier or himself develop the disease. Yet, in a typical year such as 1915, our morbidity statistics in Pennsylvania show that 25.7 per cent. of the 9,860 cases of scarlet fever occurred in the age group 10 to 19 years and that 18.5 per cent. of the 14,645 cases of diphtheria occurred in the same age group.

From such an experience I can only see a serious danger threatening the community which would subscribe to the views expressed in "Age and Disease."

George K. Strode, B.S., M.D., Harrisburg, Pa.
Chief, Division of School Health, Pennsylvania
Department of Health.

WHY PROPRIETARIES FLOURISH

To the Editor:—The following experiences seem to add one more to the many reasons offered to explain why proprietaries and ready-made preparations flourish at the expense of the official drugs and preparations: A few days ago I prescribed Troches of Ammonium Chlorid, U. S. P., for a patient of exceptional perseverance. The next day he had not yet secured the troches and told me that he had submitted the prescription to seven pharmacies, including the largest, and three of the best known and admittedly the best equipped in New York. All told him that these troches were "Not being made any more," and that they were therefore unable to supply him. He thereupon communicated with one of the largest wholesale manufacturing pharmaceutical houses in America and received precisely the same answer. I then took the matter up with a first class pharmacist whom I knew and induced him to prepare this difficult (!) troche, for which the U. S. Pharmacopeia gives the following directions: "Rub the powders together until they are thoroughly mixed; then form a mass with syrup of tolu and divide . . ."

Seven pharmacists declined to fill a prescription for an official preparation because they could not buy the preparation from a wholesaler, and it required some persuasion to get the eighth to make the preparation. But, even worse, several of the pharmacists offered my patient some ready-made troche more or less closely resembling the official, or offered compressed tablets of ammonium chlorid.

That this is not an isolated example of what often poses as pharmacy is shown by the fact that I have found it extremely difficult to find a pharmacist who would extemporaneously coat pills with gelatin. Most want the physician to alter his prescription so that one of the ready-made gelatin coated pills can be dispensed, if a gelatin coating is necessary. Some gelatin, hot water, a large cork, and a few domestic sewing needles are all that is required for very satisfactory coating of pills with gelatin, yet few pharmacists seem willing to perform this simple procedure.

Two other illustrations, not so recent, have come to me from a colleague. A few years ago he was unable to obtain from either of two pharmacists an emulsion of cod liver oil without the hypophosphites because, as both said, "It does not come without hypophosphites." On another occasion four of the best drug stores in Boston were asked for the Compound Laxative Pill, U. S. P., then official in the pharmacopeia. In every case he was told that he must have meant the compound cathartic pill, which in no way resembles the pill he sought.

With this attitude on the part of the men supposed to be serving the public and the medical profession by the practice of pharmacy, is it any wonder that it is difficult to induce the medical profession to prescribe official preparations or combinations of official drugs in place of ready-made commercial substitutes largely drawn from among the proprietaries or specialties? Real pharmacy by real pharmacists is a necessity if we are to succeed in combating the proprietary evil.

Cary Eggleston, M.D., New York.

"CREDULITY AND CURES"

To the Editor:—Although I am aware that Dr. Peterson is fully able to defend himself against criticism made of him in his position on psychanalysis by Dr. Kempf in The Journal (Aug. 7, 1920, p. 427), I cannot refrain from asking you to permit me to take some part in the general discussion.

Dr. Kempf writes: "Through the psychanalytic method of studying the insane we have learned that the most potent cause of insanity is *repressed affective cravings;* and this repressive tendency is started early in childhood, not naturally or through the designs of Nature, but through the pernicious influence of prudish, purblind fathers and mothers, and dogmatic teachers who are obsessed with sexual phobias."

"We have learned" means psychanalysists have learned—for no one else has learned this.

I recall that Gil Blas associated himself with Dr. Sangrado as an apprentice, and under that master he engaged in the practice of bloodletting. The doctor had found this an infallible remedy. When to Gil Blas it seemed to fail in the face of the death of the patient, Dr. Sangrado pointed out that the bloodletting had been insufficient and that the death of the patient only showed the method was not sufficiently practiced. And, of course, when recovery occurred it was recorded as a triumph of this method of treatment. Christian scientists adopt the same method of reasoning. By their method there can be no failure whatsoever when all conditions are favorable and when their plans are completely carried out.

Only in orthodox medicine are failures recorded, even when conditions and technic are perfect. One could as little argue with a psychanalyst as with Dr. Sangrado or Mrs. Eddy. There simply is no argument with those who hold this position.

I have read the writings of Dr. Freud and Dr. Kempf and those of many others who adopt the Freudian methods. Being a practicing neurologist, it was my duty to do so; and now I do not attempt these methods because they do not appear reasonable; I should not attempt methods which do not appear to me as reasonable and sound and which, moreover, appear to me as unlikely or even dangerous. I know of no good results from the Freudian method, but I do know of harm resulting from it.

Theodore Diller, M.D., Pittsburgh.

NEED OF A PEDIATRICIAN ON THE NATIONAL BOARD OF MEDICAL EXAMINERS

To the Editor:—I was very much interested in the last report of the National Board of Medical Examiners. It is fair to assume that the primary purpose of their examinations is to determine the fitness of the candidates to practice medicine. Therefore it is of more than passing interest that of the eighty questions submitted in their last papers not a single one was immediately concerned with pediatrics.

Three may be said to be remotely connected: the child of 8 with the spots on the tonsils, the differentiation between varicella and smallpox, and the directions to prevent the familial spread of whooping cough.

Is a knowledge of pediatrics necessary to the young practitioner? This cannot be doubted, for, while figures vary, a conservative estimate is that one quarter of the patients seen in the first years are infants and children. It is doubtful whether there is any branch of medicine about which the general practitioner is more at sea. No papers are read with more avidity than those which throw light on the diseases peculiar to infancy and childhood. There are more reasons than one for this state of affairs, but the chief reason is the failure of the medical schools to meet the situation.

Pediatrics needs no brief. Feeding infants properly, training children in personal hygiene, cutting down the incidence of tuberculosis and heart disease at the time when they undoubtedly occur most frequently, linking up community work with child welfare, studying the psychology of childhood, especially the abnormal types seen in outpatient departments, hospitals and children's courts, and seeking to solve the tremendous problem of the contagious diseases are a few concrete examples of the problems which are presented to the pediatric department of the medical school.

Preventive pediatrics is recognized as second to no other branch of preventive medicine. This being so, it seems to me that there is a crying need for the appointment of a pediatrician to the National Board of Medical Examiners. This will lead to two desirable ends: Candidates will know more about the diseases of infancy and childhood, and medical schools will be forced to give courses in keeping with the importance of the subject.

LOUIS C. SCHROEDER, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

QUININ AND UREA HYDROCHLORID

To the Editor:—Could you tell me why quinin and urea hydrochlorid has not become more popular for local anesthesia? Is it less efficacious or more toxic than other preparations? If it is useful, can you name some trustworthy firm or brand? Please omit my name in answering.

L. F. C., M.D., Mexico.

ANSWER.—Quinin and urea hydrochlorid "has the actions of quinin. When injected hypodermically it exerts an anesthetic action much more prolonged than that of cocain" (Useful Drugs, Ed. 4, 1920, p. 127). It has been pointed out editorially in THE JOURNAL (Feb. 14, 1920, p. 462) that quinin has been regarded for more than half a century by toxicologists as a protoplasmic poison capable of destroying various forms of animal and vegetable cells, and hence it need not be surprising that tissue necrosis may be produced by strong solutions of the quinin salts. That this deleterious reaction actually does occur and has mitigated against the general use of quinin and urea hydrochlorid is confirmed by the report of the Committee on the Advantages and Disadvantages of Local Anesthesia in Nose and Throat Work (THE JOURNAL, July 31, 1920, p. 315). To quote:

> The only local anesthetic that produces edema and sloughing is quinin and urea hydrochlorid. So many statements were found in the literature that this anesthetic had been abandoned in other fields of medicine because of edema and sloughing, that writers who had presented favorable reports in nose and throat operations were communicated with by your committee. One writer who had recorded 390 cases of tonsillectomies extolling this anesthetic, which he had used for four years and is still so recorded, now states that he has not used it in two years, although no publication has been made retracting his former endorsement. Still another writer, who stated that quinin-urea came nearest the ideal local anesthetic, now states that he has ceased using it. Your committee finds that as far as nose and throat operations are concerned, this drug has practically gone into "innocuous desuetude."

The anesthesia produced by this drug at the time of operation is good and the recovery of the patient might often be enhanced by its use if it did not have the serious drawback. The product is official in the U. S. Pharmacopeia, and may be obtained from any reputable pharmaceutical house.

SPANISH MEDICAL REVIEWS

To the Editor:—Will you kindly send me the address of Spanish journals similar to the Spanish Edition of THE JOURNAL.

M. MAÑAS, Havana, Cuba.

ANSWER.—We know of no journal in Spanish corresponding to the Spanish edition of THE JOURNAL.

Among the better known medical journals in the Spanish language may be mentioned:

Anales de la Facultad de Medicina, Montevideo. Bimonthly; $2.
Anales de la Facultad de Medicina, Lima, Peru. Bimonthly; 6 soles.
Gaceta Médica de Caracas, Caracas, Venezuela. Semimonthly; 16 bolivares.
Gaceta Médica de México, Mexico City. Irregular; $6.
Prensa Médica Argentina, Buenos Aires. Trimonthly; 35 pesos.
Revista de la Asociación Médica Argentina, Buenos Aires. Monthly.
Revista de la Universidad de Buenos Aires, Buenos Aires. Monthly; $5.
Revista Española de Medicina y Cirugía, Barcelona. Monthly; 24 pesetas.
Revista Médica del Uruguay, Montevideo. Thirty francs.
Semana Médica, Buenos Aires. Weekly; $5.
Siglo Médico, Madrid. Weekly; 20 pesetas.
Medicina Ibera, Madrid. Weekly; 25 pesetas.
Progresos de la Clínica, Madrid. Monthly; 45 pesetas.
Plus Ultra, Madrid. Monthly; 60 pesetas.

We presume the inquirer is familiar with Cuban medical journals, and therefore none is mentioned from that country.

NAPOLEON'S REPLY TO MADAME DE STAËL

To the Editor:—Will you kindly satisfy my curiosity on the following point? Dr. Hayne in his article on "The Rights of the Child" (THE JOURNAL, July 17, 1920) quotes Napoleon's reply to Madame de Staël, "She who has borne the most sons for France." Is that historical or but a paraphrase of Madame Staël-Holstein's reply to Napoleon when, in a fit of ill humor, he bluntly asked her, "What have you given to France?" and she quickly replied, "Three children, your Majesty." "Où n'est pas la femme?"

JOHN A. WIEMER, M.D., Powers, Ore.

ANSWER.—The statement of Napoleon to Madame de Staël is to be found in Gourgaud (le baron Gaspard), Sainte Hélène, Journal inédit de 1815 à 1818, Paris, Flammarion, 1919. The passage reads:

> Jan. 18, 1816: Napoleon related: At a fête at Talleyrand's, Mme. de Staël seated herself next to Napoleon, conversed for two hours, and finally asked him abruptly: "Who is the greatest woman of the past or the present?" Napoleon replied: "She who has or has had the most children."

This is perhaps confused with the statement of Napoleon uttered at St. Helena: "Woman was given to man that she should bear him children" ("La femme est donnée à l'homme pour qu'elle fasse des enfants").

AMOUNT OF WINE THAT MAY BE PRESCRIBED

To the Editor:—Please advise me how much wine a physician can prescribe to any one patient at any one time.

F. D., New York.

ANSWER.—Internal Revenue Regulation 60 defines liquor as including alcohol, brandy, whisky, rum, gin, beer, ale, porter and wine and in addition thereto any spirituous, vinous, malt and fermented liquor, liquids and compounds containing ½ of 1 per cent. or more of alcohol by volume. Article 12, Section 69, Paragraph B of the regulations provides that prescriptions for any alcoholic medicinal preparations may not be issued for more than one pint of spirituous liquor at a time, and that not more than one pint shall be prescribed for the same person within any period of ten days.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 7. Sec., Dr. Harry C. De Vighne, Juneau.
HAWAII: Honolulu, Sept. 6-10. Sec. Dr. R. W. Benz, 1141 Alakea St., Honolulu.
ILLINOIS: Chicago, Sept. 20-23. Director, Francis W. Shepardson, State House, Springfield.
IOWA: Des Moines, Sept. 15-17. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.
MASSACHUSETTS: Boston, Sept. 14-16. Sec., Dr. Walter P. Bowers, State House, Boston.
NEW HAMPSHIRE: Concord, Sept. 9-10. Sec., Dr. Charles Duncan, Concord.

National Board Recognized in Scotland

In the spring of the present year, several representatives of licensing boards of England and France came to this country as guests of the National Board of Medical Examiners, attended one of the examinations and, in a tour through various large cities, visited a number of the medical schools. Dr. Walter L. Bierring, a member of the National Board, who accompanied them on the tour, has recently received a letter from one of these guests, Dr. Norman Walker, a member of the General Medical Council of Medical Education and Registration of Great Britain and a representative of the Triple Qualification Board of Scotland, stating that the latter body had adopted a recommendation that American physicians who hold the certificate of the National Board of Medical Examiners be admitted to the final examination of the Triple Qualification Board.

Clinical Teaching "Elements"

The London *Lancet* states that the reorganization of teaching in St. Bartholomew Hospital provides for a medical "element" or division, and a surgical element, each of which will take its share in the ordinary duties of the hospital, the entire staff of each to work as a single "firm." Each is provided with special facilities for observation and research, and has laboratories for pathologic investigation and routine work. These two teaching elements are closely associated with the medical and surgical work of the hospital. There is free daily communication between them. Certain appointments in connection with the reconstruction of the pathologic department have been announced, including a bacteriologist and lecturer on bacteriology, a lecturer on morbid anatomy and histology, and a chemical pathologist and lecturer on chemical pathology. Three senior demonstrators are whole-time pathologists, and, in addition, there are three demonstrators who are part-time pathologists and eligible for posts as chief assistants in one or other of the clinical elements. It is proposed that all chief assistants in future shall have previously served in the pathologic department, since one of their functions within the elements will be to superintend the pathologic work of the students. These changes in the medical school will make pathology more essentially a part of the clinical teaching.

Florida June Examination

Dr. William M. Rowlett, secretary of the Florida State Board of Medical Examiners, reports the written examination held at Jacksonville, June 14-15, 1920. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 49 candidates examined, 36 passed and 13 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Atlanta Medical College	(1915)	84.3
Emory University	(1920)	91.7, 85.5
University of Georgia	(1920)	86.4, 90.2
Southern Medical College	(1897)	81.3
Indiana Med. College of Purdue University	(1906)	82
Indiana University School of Medicine	(1917)	87.4
University of Indianapolis	(1904)	78.8
University of Louisville	(1920)	89.7
Tulane University	(1920)	86.4, 86.7, 91.6
College of Physicians and Surgeons, Baltimore	(1893)	78.9
Boston University School of Medicine	(1916)	91.4
College of Physicians and Surgeons, Boston	(1911)	88.7
Missouri Medical College, St. Louis	(1887)	82.6
St. Louis Univ. School of Medicine	(1904) 82.3, (1908)	86.4
Fordham University School of Medicine	(1913)	86.2
University and Bellevue Hospital Medical College	(1911)	90.1
University of the City of New York	(1880)	95.7
Jefferson Medical College	(1912) 82, (1915)	88.3
Meharry Medical College	(1916) 80, (1919)	78, 80
Memphis Hospital Medical College	(1895)	79.8
University of Nashville	(1906)	82.2
University of the South	(1907)	80.7
University of West Tennessee	(1911)	75
Vanderbilt University	(1920)	84
University of Texas	(1915)	84.7
Medical College of Virginia	(1914) 80.5, (1918)	86.8
University of Edinburgh, Scotland	(1902)	91.4
FAILED		
University of Arkansas	(1907)	70
Southern College of Medicine and Surgery	(1913)	68.1
Illinois Medical College, Chicago	(1910)	70.7
College of Physicians and Surgeons, Chicago	(1907)	70.7
University of Louisville	(1904)	67.1
College of Physicians and Surgeons, Boston	(1912)	71.6
Beaumont Hospital Medical College	(1889)	61.6
Homeopathic Medical College of Missouri	(1902)	45
Albany Medical College	(1882)	70.9
Long Island College Hospital	(1899)	69.3
Chattanooga Medical College	(1909)	48.5
Memphis Hospital Medical College	(1913)	68.9
University of Nashville	(1909)	72.1

Nebraska June Reciprocity Report

Mr. H. H. Antles, secretary, Department of Public Welfare of the Nebraska State Department of Health, reports 25 candidates licensed by reciprocity at a meeting held at Lincoln, June 9-11, 1920. The following colleges were represented:

College	Year Grad.	Reciprocity with
Georgia Coll. of Eclectic Medicine and Surgery	(1914)	Arkansas
American Medical Missionary College	(1910)	Mass.
Chicago College of Medicine and Surgery	(1917)	Illinois
Jenner Medical College	(1914)	Illinois
Loyola University	(1916), (1918, 2)	Illinois
Northwestern University Medical School	(1919)	Illinois
Rush Medical College	(1915), (1919)	Illinois
Indiana University School of Medicine	(1919)	Indiana
State University of Iowa College of Medicine	(1916)	Iowa
College of Physicians and Surgeons, Kansas City	(1898)	Kansas
Kansas Medical College, Topeka	(1900)	Kansas
Johns Hopkins University	(1916)	Maryland
University of Minnesota Medical School	(1907)	Minnesota
Barnes Medical College	(1910)	Missouri
St. Louis University School of Medicine	(1912)	Iowa
Columbia University	(1909), (1916)	New York
Jefferson Medical College	(1915)	Missouri
University of Pennsylvania School of Medicine	(1898)	Penna.
Meharry Medical College	(1918)	Arkansas
University of Tennessee College of Medicine	(1896)	Oklahoma
University College of Medicine, Richmond	(1907)	Minnesota

Maine July Examination

Dr. Frank W. Searle, secretary of the Maine Board of Registration in Medicine, reports the written examination held at Portland, July 6-7, 1920. The examination covered 10 subjects and included 95 questions. An average of 75 per cent. was required to pass. Seventeen candidates were examined, all of whom passed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Bowdoin Medical School (1920) 80, 81, 82, 82, 83, 84, 84		
Johns Hopkins University	(1919)	84
Harvard University (1898) 82, (1906) 78, (1914) 82, (1920) 81, 82, 83.		
Boston University	(1920)	82
Tufts College Medical School	(1920)	77
McGill University, Montreal	(1920)	83
LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
University of Vermont	(1918, 1919)	Vermont
Royal College of Surgeons, Edinburgh	(1893)	New Hamp.

Arkansas Eclectic May Examination

Dr. Claude E. Laws, secretary, Arkansas Eclectic Board of Medical Examiners, reports the written and oral examination held at Little Rock, May 11-12, 1920. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. The 41 candidates examined were all graduates of the 1920 class of the Kansas City College of Medicine and Surgery, and of the 41, 20 passed and 21 failed.

Book Notices

DIE SCHWEBELARYNGOSKOPIE UND IHRE PRAKTISCHE VERWERTUNG. Von Geh. Med.-Rat Prof. Gustav Killian, Direktor der Laryngo-Rhinologischen Klinik der Universität Berlin. Price, 60 marks. Pp. 78, with 48 illustrations. Berlin: Urban & Schwarzenberg, 1920.

Killian gives the history of his discovery of suspension laryngoscopy, describes the instruments he now uses, and, and presents his technic in detail for examination of the hypopharynx and the trachea, and for introduction of the bronchoscope. In the first chapter he narrates how he rigged up a temporary apparatus for exposure of the larynx in a cadaver so that an artist might make drawings. This was so successful that he then devised instruments for exposing the larynx in the living. The original instruments have been much modified. He now uses the trough shaped spatula for holding up the tongue. The mouth gag and tooth hooks are much after the models of Lynch. The original form of the gallows is retained. His table has a separate support for the head by which it may be raised or lowered independently of the table. The table itself may be raised by means of a long screw so that the surgeon may work standing, if necessary. Killian uses a Kirstein lamp for illumination and so is able to use the mirror of the lamp for a demonstration mirror, enabling students to see in the mirror what the surgeon sees in the larynx. In chapter V he describes in detail his technic of introducing the instrument, and exposing the uvula, the edge of the epiglottis, the arytenoids, the lumen of the larynx, and lastly the anterior commissure. The work of Lynch is mentioned, but no description is given of Lynch's method of exposure of the larynx without having the head hanging over the end of the table. Figures 37, 38 and 39 are wrongly numbered. They should be 38, 39 and 37, respectively. Chapter IX is given to the use of suspension laryngoscopy in children, a procedure of much value, especially in introducing the bronchoscope. There is a considerable list of references to the literature, but naturally few to American literature since the outbreak of the war. The work is illustrated by forty-four cuts in the text and four colored plates showing various normal and abnormal conditions. The colored plates are a little too blue and appear to represent patients rather more cyanotic than they are seen in America. This may be only a result of the war as affecting color printing.

LE SYMPATHIQUE ET LES SYSTÈMES ASSOCIÉS: ANATOMIE CLINIQUE, SÉMIOLOGIE ET PATHOLOGIE GÉNÉRALE DU SYSTÈME NEURO-GLANDULAIRE DE LA VIE ORGANIQUE. Par A. G. Guillaume. Paper. Price, 6 francs 50 net. Pp. 160, with illustrations. Paris: Masson et Cie, 1920.

In this book, emphasis is laid on the fact that the chromaffin organs are from the standpoint of their development and function closely associated with the sympathetic nervous system, and the cranial, thoracicolumbar and sacral portions of the autonomic system, together with these chromaffin organs, form a closely integrated complex, "le grand système neuro-glandulaire de la vie organique." Chapter I contains a brief review of the general morphology and physiology of this system, including the histogenesis, anatomic distribution and functional relationships of its constituent elements. Chapter II presents some details concerning the conduction paths in the autonomic system. The part that deals with the visceral efferent paths associated with the cranial nerves is thoroughly up to date and is accompanied by good diagrams. Chapter III deals with the pharmacologic aspects of the subject, and Chapters IV and V with symptomatology. Chapter VI contains a discussion of the interrelations between the visceral and somatic subdivisions of the nervous system, and especially with referred pain in visceral disease and with reflex trophic disturbances. The volume contains little that is new; and some statements that are presented as representing established facts are certainly open to question. It makes no pretense of being a thoroughgoing review of recent literature. The appended bibliography contains no references to articles representing original investigation, but includes a list of standard reference books and monographs on embryology, physiology, endocrinology, pharmacology and neurology which contain sections dealing with the subjects discussed in the book.

Medicolegal

Evidence of Malpractice—Use of Fracture Basket

(Wojciechowski v. Coryell (Mo.), 217 S. W. R. 638)

The St. Louis Court of Appeals, in affirming a judgment in the plaintiff's favor for $3,000 damages for alleged malpractice, says that a sheet of stel fell on his right leg, causing a compound comminuted fracture of the bones and inflicting lacerations or wounds. He adduced evidence tending to show that it was negligence to place his leg in a wire basket, or fracture basket, after the setting of the bones, and to allow it to remain there for weeks, instead of putting it in a splint or cast of some character designed to hold the bones rigidly in position, unless it could be said, as a matter of law, that the course pursued by the defendant was justifiable because of the condition of the leg, or, at any rate, that because of such condition the defendant's failure to pursue a different course was the result of an error of judgment on his part of such character as would not entail liability under the law. As to the condition of the leg at that time the evidence in the plaintiff's behalf tended with much force to show that no infection, or at least none of any considerable extent, or of a serious or dangerous character, was present. This directly appeared from the testimony of the plaintiff as to the condition of his leg, and inferentially from his testimony, corroborated by that of another witness, to the effect that, after the setting of the leg, the bandage which the defendant placed about the leg and wire basket, which, it was said, completely covered the leg, no openings being left and no drain pipes inserted, was not removed for three weeks or more, the leg receiving no treatment during that time. From the testimony of the plaintiff and said witness, coupled with the expert testimony adduced by the plaintiff, a jury could, with entire propriety, find that there was no infection or other condition present, such as to make it in any wise unsafe to use some one of the devices shown by the evidence to have been in common use, designed to keep the bones of the leg in proper alinement while they were uniting; and the testimony of the plaintiff's expert tended to show that some of these devices, designed so as to afford opportunity for treating the leg, might be used in these cases, though much infection might be present. The court is of the opinion that the evidence was such as to make the question of the defendant's negligence one for the jury. Nor, under the circumstances, does the court think that there was any merit in the contention that under any view of the evidence the defendant was guilty at the most of a mere error of judgment as to the proper treatment to be given the plaintiff's injured leg, and could not be held liable for a failure to give a different treatment. The court is of the opinion that the evidence, when viewed in the light most favorable to the plaintiff, tended to show neglect on the part of the defendant, and that, so viewing the evidence, if there was an error of judgment, it was, prima facie, of such character as to be inconsistent with the use of that degree of skill which it is the duty of every surgeon, under like circumstances, to bring to the treatment of such a case.

It was urged that error was committed in admitting testimony tending to show that the defendant failed to use an anesthetic, failed to take more than one roentgenogram, did not lance the wound, or insert drainage tubes, did not elevate the leg, or apply ice bags, did not call a consulting physician, and did not inform the plaintiff or his family of the seriousness of his condition, as testified to by the defendant. The point made was that the petition charged particular acts of negligence, and therefore evidence as to other specific acts was not admissible. But the court thinks that no reversible error intervened on this score. The testimony complained of was admissible as going to show the character of the treatment, alleged by the plaintiff to have been negligent and unskilful, or as tending to show the condition of the leg, this having an important bearing on the question as to the alleged negligent and unskilful treatment thereof.

Nor was it error to permit the jury to find that the defendant not only failed to use a splint, but "failed to apply any other method or device to cause said fractured bones to unite

in normal and usual alinement." Under the evidence adduced the jury could properly find that in using the wire fracture basket the defendant did not use a method or device such as to cause the fractured bones to unite in normal and usual alinement.

Invalid Provision in Law for Revoking Licenses

(State Board of Medical Examiners et al. v. Lewis (Ga.), 102 S. E. R. 24)

The Supreme Court of Georgia holds that Section 14 of the act approved Aug. 18, 1913, entitled "An act to abolish the present state board of medical examiners and to establish a composite board of medical examiners for the state of Georgia; to define its duties and powers," etc., is unconstitutional and void so far as it provides for the trial and conviction of a licensed physician of certain specified offenses, and the consequent revocation of his license; as the section, so far as it provides for such trial and the penalty on conviction, is violative of the due process clause of the federal and state constitutions, as no provision is made in the section, or elsewhere in the act, for due notice and hearing of the accused. Furthermore, the court holds that, where a licensed physician was tried and convicted under said Section 14, and appealed to a jury in the superior court, where he was again convicted, and then sued out a writ of error to the Court of Appeals of Georgia, where the conviction was sustained, he could subsequently attack the judgments of conviction in the superior court and before the board of medical examiners, and, on proper petition to a court of equity, prevent the enforcement of the penalties imposed by the act on conviction.

The supreme court says that, though in this particular case the accused might have appeared and submitted evidence, that did not cure the defect in the act itself. If such a hearing was granted him, it was by grace, and not by virtue of the requirements of the law. Nor did the right of appeal to a jury in the superior court cure the defect in the law. The statute under which the accused was tried by the state board of medical examiners being invalid and void on the constitutional grounds pointed out, the proceedings before the board, which resulted in finding the defendant guilty of certain specified offenses, were nugatory, and the finding was without effect and void; and the appeal and trial before a jury under the provisions of Section 14 could not have the effect of giving validity to the proceedings and findings before the board, nor could the finding of the jury in the superior court on the appeal be treated otherwise than as void, as the statute under which the trial was had was itself invalid. Nor could the fact that the case was carried to the court of appeals, where the judgment of the court below was affirmed, give validity to the proceedings, or bar the accused from asserting that all proceedings had against him were nugatory.

It was urged that even if the principles stated were sound in criminal cases, the doctrine could not be applied to civil cases; and it was insisted that the proceedings against the accused, which resulted in his conviction and the revocation of his license, were civil proceedings. But the supreme court cannot assent to this proposition in its entirety. The result, it was true, did not subject the accused to imprisonment in the chain gang or the penitentiary, and resulted merely in the revocation of his physician's license and the striking of his name from the record kept in the office of the clerk of the superior court. But this itself was a penalty, and the proceedings were in the nature of criminal proceedings. The proceedings were certainly quasi-criminal in character. The language of the section which authorizes the proceedings, making it the duty of the board to "prefer charges against the physician," and providing for the revocation of his license "in the event of his conviction" by the jury, distinctly imports a trial in a criminal case.

It follows that the accused was entitled to injunctive relief against the threatened action of the state board of medical examiners, which, if carried out, should result in revoking and canceling his license and thereby depriving him of the right to pursue his profession; and it requires no argument to demonstrate that the injury which would thus be inflicted would be irreparable in its character. The court below did not err in granting such injunctive relief.

Society Proceedings

COMING MEETINGS

Amer. Assn. of Electro-Therapy & Radiology, Atlantic City, Sept. 14-17.
Amer. Assn. of Obstetricians and Gynecologists, Atlantic City, Sept. 20-22.
American Association of Railway Surgeons, Chicago, Oct. 6-8.
American Public Health Association, San Francisco, Sept. 13-17.
American Roentgen Ray Society, Minneapolis, Sept. 14-17.
Colorado State Medical Society, Glenwood Springs, Sept. 7-9.
Indiana State Medical Association, South Bend, Sept. 23-25.
Kentucky State Medical Association, Lexington, Sept. 27-30.
Medical Association of the Southwest, Wichita, Kan., Sept. 27-29.
Minnesota State Medical Association, St. Paul, Sept. 29-30.
Missouri Valley, Medical Society of the, Omaha, Neb., Sept. 6-7.
Pennsylvania, Medical Society of the State of, Pittsburgh, Oct. 4-7.
Utah State Medical Association, Ogden, Sept. 7-8.
Vermont State Medical Society, Rutland, Oct. 7-8.
Washington State Medical Association, Tacoma, Sept. 16-17.
Wisconsin, State Medical Society of, La Crosse, Sept. 8-10.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal Medical Sciences, Philadelphia

July, 1920, **160**, No. 1

*Carcinoma of Pancreas. K. Speed, Chicago.—p. 1.
Therapeutic Use of Oxygen. R. D. Rudolf, Toronto.—p. 10.
Case of Splenomegaly with Polymorphonuclear Neutrophil Hyperleukocystosis. E. L. Tuohy, Duluth, Minn.—p. 18.
*Comparative Study of Trypanocidal Activity of Arsphenamin and Neoarsphenamin. J. F. Schamberg, J. A. Kolmer and G. W. Raiziss, Philadelphia.—p. 25.
*Contraction Waves in Normal and Hydronephrotic Ureter: An Experimental Study. W. G. Penfield, Oxford, Eng.—p. 36.
Diets for Ambulant Treatment of Diabetes Mellitus. H. O. Mosenthal and H. J. Wiener, New York.—p. 46.
Acute Infectious Enteritis with a Polyneuritic Syndrome. F. J. Farnell and A. H. Harrington, Howard, R. I.—p. 52.
Functional Blood Pressure. R. F. Ives, New York.—p. 61.
*Study of Blood After Splenectomy: Special Reference to Leukocytes. M. W. Hall, M. C., U. S. Army.—p. 72.
Modern Individualized Dietary Treatment in Diabetes. M. Lauritzen, Copenhagen.—p. 79.
Roentgen-Ray studies of Bronchial Function. J. G. M. Bullowa and C. Gottlieb, New York.—p. 98.
Heteroplastic Bone Formation in Fallopian Tube. G. Asami, Honolulu.—p. 107.
Mercury Bichlorid Intravenously. C. H. Bastron, Lincoln, Neb.—p. 118.

Carcinoma of Pancreas.—Fifty-two cases of primary pancreatic cancer were analyzed by Speed. Over half of these were clinical diagnoses made by the attending staff of Cook County Hospital. In the fifty-two cases the average age at the time of diagnosis of primary cancer was 57 years, the youngest 36, the oldest 76. The most constant symptom was cachexia. This was present in 90 per cent. of the patients at the time of admission and involved a weight loss of from a few pounds to 80 pounds. The next common symptom was jaundice. It was present in 80 per cent. of the cases. Pain was the third prominent symptom, usually of cardialgic or gastralgic character, present in 61 per cent. of the cases. Personal knowledge on the patient's part of an abdominal tumor mass or its discovery on examination was the next common finding in order; 55 per cent of the patients had a mass either in the liver or some part of the midepigastric region. Ascites was present in approximately 20 per cent. as was also hemorrhage, which occurred in eleven patients, two of the mouth, four of the nose, one of the bowel, two in the buttocks and skin and two of the stomach. Constipation was mentioned by nineteen patients; diarrhea occurred in but three. Edema of the lower extremities occurred in 6 per cent. A necropsy was made in eleven cases. The head of the pancreas was most often involved in cancer, the body next and the tail least often. Not one showed pancreatic calculus. Metastases occur usually first in the lymphatic glands around the pancreas and galltract areas. The liver, of all neighboring organs, is most often invaded.

Trypanocidal Activity of Arsphenamin and Neo-Arsphenamin.—From the results obtained by Schamberg and his co-workers it is evident that neo-arsphenamin is a safer drug than arsphenamin; even when doses of 1 gm. of neo-arsphenamin, which approximates 0.6 gm. of arsphenamin in therapeutic activity, are given in the treatment of syphilis there remains a larger margin of safety. The trypanocidal activity of arsphenamin is 1.74 times greater than that of neo-arsphenamin. Accordingly, 0.6 gm. arsphenamin equals 1.05 rather than 0.9 gm. of neo-arsphenamin in therapeutic activity. The trypanocidal dose (dosis therapeutica) of arsphenamin is 4.56 times less the highest tolerated dose for the rat (dosis tolerata); the trypanocidal dose of neo-arsphenamin is 6.35 times less the highest tolerated dose. These results indicate that neo-arsphenamin is a somewhat safer compound than arsphenamin; and that when 1 gm. of neo-arsphenamin is administered as the equivalent in therapeutic activity to 0.6 gm. of arsphenamin, the margin of safety is even then greater.

Cause of Contraction Waves in Ureter Calculus.—It is suggested by Penfield that in the passage of a ureteral stone, trauma and inflammation increase the rate of metabolism in the ureter wall about the stone, a constriction ring results, followed by distention of the ureter and retroperistalsis. This would cause great distention of the renal pelvis and give to renal colic its peculiar rhythmical character.

Leukocyte Count Following Splenectomy.—Following the usual drill a cavalryman was seized with faintness, nausea and sudden sharp pain in the left upper quadrant of the abdomen. He was brought to the hospital in a condition of collapse. A definite diagnosis was impossible, but six hours after the onset of symptoms a laparotomy was done, with the tentative diagnosis of a ruptured viscus. Hemorrhage in the peritoneum was traced to a small tear in the spleen and the organ was removed. The removal of the spleen resulted in a considerable increase in the total leukocyte count which persisted with much irregularity for over three months. In the early period all types of leukocytes were increased in nearly the same proportion, although a slight increase of endothelial cells was noted at the expense of the lymphocytes. In the intermediate period, both total and differential count showed such marked variation as to render averages valueless but the total count usually was high. In the final period, a comparative equilibrium was reached, with a moderate increase in the total count, due entirely to lymphocytes and endothelial cells, while the granular leukocytes showed strictly normal figures. The endothelial cells were constantly increased both relatively and absolutely. The observations on the Arneth index suggest that the increase in the count is at least in part due to the removal of some factor restricting the production of white cells. No eosinophilia appeared during the course of the work.

American Journal of Public Health, Boston

July, 1920, **10**, No. 7

Compensation of Health Officers. J. A. Ferrell, New York.—p. 569.
Influenzal Pneumonia as Influenced by Dish Washing in 370 Public Institutions. J. G. Cumming, Washington, D. C.—p. 576.
Bacteria of Air in Amusement Hall. F. Huddleson and T. G. Hull.—p. 583.
Coordination of Public and Private Agencies in a State Program of Public Health Nursing. J. L. Marriner, Montgomery, Ala.—p. 588.
Sociologic Aspect of Uncinariasis. Oscar Dowling, New Orleans. p. 595.
Epidemic of Pneumonic Plague. W. H. Kellogg, Sacramento, Cal.—p. 599.

American Review of Tuberculosis, Baltimore

July, 1920, **4**, No. 5

Present Status and Future Prospects of Tuberculosis Campaign. V. C. Vaughan, Ann Arbor, Mich.—p. 311.
*Serologic Studies on Tuberculosis. Y. Nishida and S. A. Petroff, Trudeau, N. Y.—p. 322.
Relation of Sound and Light to Interpretation of Roentgen-Ray Examinations of Chest. J. J. Singer, St. Louis.—p. 340.
Work of Commission for Prevention of Tuberculosis in France in Department of Eure-et-Loire. B. L. Wyatt, New York.—p. 347.
*Tuberculosis Situation in Germany. E. H. Bruns, Trier, Germany.—p. 370.
Elimination of Tuberculosis from Army. R. C. Matson, Portland, Ore.—p. 398.

Serologic Studies on Tuberculosis.—Sensitized animal serum having a high titer of antibodies was studied by Nishida and Petroff. It was obtained by inoculation of sheep intravenously with human tubercle bacilli. The titer was 0.0001 c.c. Dead tubercle bacilli or products of tubercle bacilli do not produce as high a titer of antibodies as the living organisms. Complement-fixing antibodies resist heat better than the antibodies for the Wassermann reaction. A temperature of 60 C. will not destroy the tuberculous complement-fixing antibodies obtained in experimental animals. Roentgeon-ray radiation, when a full erythema-producing dose is given, does not destroy the antibody, antigen, or complement. Ultraviolet rays destroy the antibodies and complement, but have slight effect on the antigen. Sunlight at 1,600 feet elevation has a slight effect on antibodies, more on complement and least on antigen. Complement-fixing antibodies are colloids. They are not lipins chemically, but are either globulins or are absorbed by the globulin. The precipitins and complement fixation have been studied parallel with each other. The two antibodies responsible for the two different reactions are probably the same, but represent two distinct phases of one and the same phenomenon.

Tuberculosis in Germany.—An investigation of the tuberculosis situation in Germany particularly in the area occupied by the American Army, was undertaken and the findings are reported by Bruns. The German methods of combating tuberculosis are about the same as those employed by the best state health organizations of our own country. In the area occupied by the American Army, tuberculosis is slightly more prevalent and the death rate relatively higher than that of Prussia. Tuberculosis in all its forms and for all ages has markedly increased during the war. Of all the etiologic factors entering into this increase, the shortage of food is most important. Undernourishment, overwork, the stress and strain of a long war and unfavorable environment prepare a fertile soil for the tubercle bacillus to flourish in all its glory. Tuberculosis patients are dying because they cannot obtain the proper nourishment so essential to the treatment of their disease. Those infected are becoming clinically tuberculous. Unquestionably the children of the poorer classes in the cities and the sick are suffering as a result of the shortage of food and should be the first to receive relief. The increase in tuberculosis is relative to the shortage of food, and improvement of the food supply is necessary for its reduction.

Annals of Surgery, Philadelphia

July, 1920, **72**, No. 1

Duties and Responsibilities of Civil Surgeon When Called to Active Military Service. G. E. Brewer, New York.—p. 1.
Empyema. A. P. C. Ashhurst, Philadelphia.—p. 12.
Operation for Empyema in Young Adults. F. E. Bunts, Cleveland.—p. 66.
Etiology of Chronic Empyema. W. Martin, New York.—p. 70.
Treatment of Chronic Empyema. G. J. Heuer, Baltimore.—p. 80.
Empyema. H. Lilienthal, New York.—p. 87.
*Fatal Postoperative Pulmonary Thrombosis. A. J. Ochsner, Chicago, C. C. Schneider, Milwaukee.—p. 91.
*Calloused Ulcer of Posterior Wall of Stomach. W. J. Mayo, Rochester, Minn.—p. 109.
Failure of Primary Rotation of Intestine (Left-Sided Colon) in Relation to Intestinal Obstruction. E. Rixford, San Francisco.—p. 114.
*Mesenteric Thrombosis; Report of Six Cases. G. G. Ross, Philadelphia.—p. 121.

Prevention of Postoperative Pulmonary Thrombosis.—Ochsner and Schneider believe that in the future it will be justifiable systematically to add the transfusion of 600 c.c. of whole blood to the preliminary treatment in a considerable proportion of cases belonging to a class which has in the past made up the list of deaths from pulmonary thrombosis and that the other precautions will be carried out with greater care. It is likely that this will result in a considerable reduction in the death rate from postoperative pulmonary thromboses. An analysis regarding the etiology of the thrombophlebitis as shown in eight tabulated cases is given.

Ulcer of Stomach and Duodenum.—From July 1, 1914, to July 1, 1919, 647 operations were performed in the Mayo Clinic on 638 patients with gastric ulcers, with an average operative mortality of 4.7 per cent. All patients who died in

the hospital following operation are statistically classified as having died from operation, without regard to the cause of death or length of time after operation. During this same five-year period 2,734 operations were performed on 2,720 patients with duodenal ulcers, with an operative mortality of 1.2 per cent. In twenty-eight of the series of 638 gastric ulcers the ulcers were multiple. Five hundred and thirty-four were located on or around the lesser curvature of the stomach, eight-five involved the posterior wall, nine were on or around the greater curvature, five were on the anterior wall, and five were not located exactly because of the emergency nature of the operation.

Pain Symptom in Mesenteric Thrombosis.—In the five cases which Ross reports pain was a prominent symptom as it is in every acute intestinal obstruction. In Case 1 the patient was taken sick ten days before admission with a severe attack of abdominal pain in the region of the umbilicus, and then becoming general throughout the abdomen. Similar (?) attacks had been noted for fourteen years prior to admission. In Case 2 the attack began suddenly, with abdominal pain, nausea, and vomiting. In Case 3 the chief complaint was pain over the whole abdomen. It is described in detail in the history as beginning seven days before admission as an epigastric pain of gradual onset, becoming worse three days after the beginning of the pain. In Case 4 the illness was described as beginning two days before admission with pain in the right lower abdomen, soon followed by vomiting. In this case the pain remained localized in the right lower abdomen. In Case 5 the patient was seized with a severe pain in the epigastrium. It is evident, then, that in all five cases a very definite history of pain is an early symptom, in only one of the instance described as of gradual onset.

Archives of Neurology and Psychiatry, Chicago

July, 1920, **4**, No. 1

Neuroses of Peace. J. H. Lloyd, Philadelphia.—p. 1.
*Electromyographic Studies of Muscles During Hysterical Contraction. S. Cobb, Boston.—p. 8.
*Doubling of Spinal Cord. B. Lipshutz, Philadelphia.—p. 16.
*Acute Descending Radicular Type of Epidemic Encephalitis. I. H. Pardee, New York.—p. 24.
Four Cases of Encephalitis with Involuntary Movements. R. C. Hamill, Chicago.—p. 44.
*Differential Diagnostic Difficulties in Pernicious Anemia with Associated Mental Disorder. B. L. Jones and T. Raphael, New York.—p. 55.
*Path of Faradic Sensibility. G. P. Grabfield, Ann Arbor, Mich.—p. 63.
*Simple Method for Recording Changes in Cutaneous Sensibility. L. Feinier, New York.—p. 81.

Hysterical Muscle Contractions.—Laboratory evidence is brought forward by Cobb that the involuntary muscular contractions in hysterical conditions are physiologically similar to normal, conscious muscular contractions. The short, repeated, hysterical contractions that clinically resemble tremors can be differentiated electromyographically from such a tremor as that of paralysis agitans, or from clonus, by their slower rate and greater irregularity.

Double Spinal Cord—External examination showed no abnormalities in the case reported by Lipshutz. On opening the dural sac, however, the spinal cord was found divided in its caudal portion into two distinct symmetrical halves, the two entirely enclosed in a single dural sheath. Similarly, the arachnoid stretched across as a single membrane. The bifurcation began at the caudal border of the eleventh thoracic vertebra and extended to the caudal limit of the cord, forming two independent symmetrical halves. The caudal limit of each half was at the level of the cephalic border of the first sacral vertebra. The conus medullaris of each half was independent and at the level of the third sacral vertebra, the halves united into a single large filum terminale, the latter coursing caudally for a distance of 5 cm. to gain attachment to the dorsal surface of the first segment of the coccyx. The cervical and thoracic portions of the cord were normal in appearance. The peripheral nerves cephalic and caudal to the bifurcation presented no variations in the formation of the different plexuses and in their normal peripheral distribution. The inner surface of the dura at the level of the caudal border of the twelfth thoracic vertebra likewise showed an interesting and rare anomaly. Where the division of the cord was total, a distinct band of dura was found projecting between the two halves of the cord. The band of dura was directed ventrodorsally and had a first attachment of 1 cm. on both the ventral and dorsal surfaces of the dura. It was of an hour-glass shape and was placed in the sagittal plane. This band or fold was clearly a part of the dura, being of the same texture and consistency. In the unopened dura it seemingly caused no pressure on the halves of the cord. The division of the spinal cord began 0.5 cm. cephalic to the dural band noted above.

Acute Radicular Epidemic Encephalitis.—Five cases are reported by Pardee, but as all the patients recovered, only a clinical study could be made. The chief symptoms were: (1) sharp lancinating root pains; (2) paresthesia; (3) muscular spasms; (4) hyperesthesia; (5) delirium, and (6) fever.

Pernicious Anemia Mistaken for Arteriosclerosis.—Jones and Raphael suggest that probably more cases of pernicious anemia are mistaken for arteriosclerosis than are generally recognized. Therefore, they advise that patients with doubtful cases of arteriosclerosis, especially those with a history of remissions, should, as a routine procedure, have frequent blood counts made, and neurologic examinations for cord changes. Careful history taking may reveal the so-called "prepernicious" symptoms in cases that otherwise might be mistaken for arteriosclerosis.

Path of Faradic Sensibility.—The evidence collected by Grabfield has been largely gathered from a study of cases presenting certain neurologic lesions or psychiatric conditions, and suggests that faradic stimuli of liminal value probably follow the path of the thermal fibers, while markedly supraliminal stimuli may use other paths. The postrolandic cortex is in all likelihood the arrival platform for these impulses.

Recording Cutaneous Sensibility.—Feinier describes charts used by him and others to record changes in cutaneous sensibility and which can be interpreted easily.

Bulletin of Medical and Chirurgical Faculty of Maryland, Baltimore

April, 1920, **12**, No. 7

Development of Medical Department, U. S. Army. M. W. Ireland, Washington, D. C.—p. 108.
Child and State. H. L. K. Shaw, Albany, N. Y.—p. 111.

California State Journal of Medicine, San Francisco

July, 1920, **18**, No. 7

Neglected Opportunities. H. A. L. Ryfkogel, San Francisco.—p. 242.
Campaign Issues. D. A. Smith, Santa Barbara.—p. 245.
*Formication Test in Peripheral Nerve Injuries — Its Interpretation. C. L. Tranter, San Francisco.—p. 248.
Experiences in Testicle Transplantation. L. L. Stanley, San Quentin.—p. 251.
Uretero-Pyelography and Cystography. G. G. Reinle and E. S. Depuy, Oakland.—p. 254.
Problem of Hospital Dietitian. A. F. Morgan and A. H. Metcalf, Berkeley.—p 255.

Formication Test of Nerve Injuries.—Tranter maintains that the formication test gives definite evidence of regeneration long before muscle reflexes appear or before voluntary motion becomes possible. It frequently tells when a suture has been unsuccessful, as may happen when the ends pull apart after having been sutured under some unavoidable tension. It often indicates the position of a neuroma under a long scar and helps in locating the nerve ends at operation and in telling whether a suspicious palpable mass is a neuroma or not, or in revealing a second unsuspected lesion, and finally, it is of great value in helping to keep up the morale of the patient during the long period before the reappearance of voluntary motion.

Canadian Medical Association Journal, Toronto

July, 1920, **10**, No. 7

Focal Infection. C. K. P. Henry.—p. 593.
Treatment of Club Foot. W. S. Verall.—p. 605.
Scoliosis. A. M. Forbes.—p. 609.
Work of Psychopathic Hospital. A. G. Morphy.—p. 616.

Advances in Knowledge about Blood Cells During Past Six Years. O. C. Gruner.—p. 624.
Medical Education. J. J. R. Macleod.—p. 638.
Fibromyoma; Radium Treatment. E. S. Hicks.—p. 652.
Incipient Diabetes Mellitus. E. H. Mason and C. G. Sutherland.—p. 657.
Heat and Infant Mortality. A. Jobin.—p. 661.

Colorado Medicine, Denver

July, 1920, **17**, No. 7

Management of Ununited Fractures. H. G. Wetherill and C. Powell, Denver.—p. 173.
Medical Work of Federal Board for Vocational Education. A. Filmer, Washington, D. C.—p. 177.
Misleading Conditions in Acute Suppurative Otitis Media. J. J. Pattee, Pueblo.—p. 180.
*Teaching Simplified Infant Feeding. F. P. Gengenbach, Denver.—p. 184.
Relation of Hernia to Military Service. W. W. Grant, Denver.—p. 190.

Simplified Infant Feeding.—The salient features of the method recommended by Gengenbach are: first, boiling the milk; second, a method for determining the amount of each feeding; and, third, a method of calculating the amount of each ingredient in the feeding. Knowing that many infants cannot at the beginning digest cow's milk very well, it is suggested that the feedings at first should containly only 1 ounce of whole milk for every pound of body weight, and that this amount be later gradually increased to 1½ ounces. An infant, 3 months old, weighing 10 pounds, requires 450 calories in daily feed. On a three-hour feeding schedule it is to receive usually seven times 4 ounces, or 28 ounces. Of this amount, 10 ounces are to be in the form of whole milk, and the other 18 ounces in plain or cereal water. These 10 ounces of whole milk (from 20 to 21 calories to the ounce) represent about 200 of the 450 calories required. The remainder are furnished by the carbohydrate added, either sugar alone, or sugar and starch, the latter in the form of a cereal dilution. When tolerated, cereal dilutions are preferable. Barley water is ordinarily used for this purpose, using three level tablespoonfuls of barley flour or two rounding tablespoonfuls of pear barley to a quart of water. The 18 or 20 ounces to be used represent about 60 calories. The remaining 190 calories are provided in the form of sugar, and as 1 ounce of table sugar, represents 120 calories, and 1½ ounces of sugar to the day's feeding.

Endocrinology, Los Angeles

April-June, 1920, **4**, No. 2

*Hypophyseal Disorders with Special Reference to Froelich's Syndrome (Dystrophia Adiposogenitalis). H. G. Beck, Baltimore.—p. 185.
*Relationship between Thyroid and Parathyroids. S. Vincent and J. S. Arnason, Winnipeg, Canada.—p. 199.
Gynecomastia. F. S. Hammett, Philadelphia.—p. 205.
*Fright as a Cause of Epilepsy and How It Acts. E. A. Tracy, Boston.—p. 221.
*Case of Complete Amenorrhea with Fulminating Symptoms: Surgical Demonstration of Ovarian Etiology. C. Dederer, Bay City, Mich.—p. 229.

Operations on Hypophysis.—Beck says that except for the fact that operations on the hypophysis are fraught with considerable danger, the mortality rate being from 10 to 16 per cent., the indications for surgical treatment of disease of this gland would be practically comparable to those for diseases of the thyroid. The complete removal of the gland or any process which totally destroys the substance will lead to the condition known as cachexia hypophysopriva; operations, therefore, are restricted largely to tumors and are resorted to more frequently in conditions associated with hyperfunction.

Conversion of Parathyroids into Thyroid Tissure.—The series of experiments reported on by Vincent and Arnason do not lend support to the view that parathyroids left behind after thyroidectomy become converted into thyroid tissue.

Fright as Cause of Epilepsy.—It is maintained by Tracy that severe fright can produce idiopathic epilepsy in a child without a predisposition to the disease. It acts by causing a hypertonia of the sympathetic nerves. A hypertonia of sympathetic nerves was the evident beginning of the disease in a case reported.

Relationship Between Amenorrhea and Ovary.—A case is reported by Dederer in which a patient suffered from amenorrhea for about fourteen years following the surgical removal of parts of both breasts, for reasons not now known. Sectioning of the sympathetic nerves to the ovaries and resection of the adventitia of the ovarian vessels was followed by the establishment of normal menstruation.

Florida Medical Association Journal, St. Augustine and Jacksonville

June, 1920, **6**, No. 12

The New Era. Wm. E. Ross, Jacksonville.—p. 220.

Indiana State Medical Association Journal, Fort Wayne

July 15, 1920, **13**, No. 7

*Case of Temporary Incarceration of Transverse Colon Within Bilateral Hernial Sacs. D. J. Royer, Fort Wayne.—p. 227.
*Epidemic Encephalitis in Northern Indiana. R. V. Hoffman, South Bend.—p. 228.
The Physician; the Training of an Intern. F. B. Wynn, Indianapolis.—p. 232.
Acute Appendicitis. R. C. Ottinger, Indianapolis.—p. 235.
Autogenous Bone Graft. L. T. Rawles, Fort Wayne.—p. 238.

Transverse Colon Incarcerated in Hernia Sac.—Royer's patient gave a history of "stomach and bowel trouble" dating back twelve or fifteen years. He had no gastric or intestinal symptoms, but complained of a feeling of distress in the left side of his abdomen in the left lumbar region. He said there was something in there that would not let the food pass out of his stomach. He had no constipation, yet he said the stool was very small. At a variable time after eating this distress would come on and he would have to use an enema to obtain relief. For some time past he had been using rectal dilators nearly every morning, and thought they were a great help. His trouble was attributed to his work, i. e., lifting and carrying heavy articles. He also mentioned that he had a small lump in each groin, one of which he had had for several years, while the other had appeared within the past year. Roentgen examination of the gastro-intestinal tract revealed a transverse colon apparently markedly dropped, and manipulation was attempted to ascertain the degree of mobility. Instead of displacing the intestine upward as anticipated, it was found to be firmly bound down behind the pubes. On digital examination, bilateral hernias were found. At the end of a week, another barium meal was given to study further the incarcerated colon, and to determine accurately the degree of stasis present. At the twenty-four hour period, instead of finding the expected condition, the transverse colon was in a practically normal position with no evidence of the hernias. The small bilateral hernial sacs were repaired. The case emphasizes the advisability of a second examination for verification where uncommon conditions are found.

Treatment of Epidemic Encephalitis.—The use of frequent spinal drainage, and the employment of hypertonic solutions intravenously in selected instances of epidemic encephalitis are advocated by Hoffman as an addition to our therapeutic armamentarium.

Iowa State Medical Society Journal, Des Moines

July 15, 1920, **10**, No. 7

Some Typical Recoveries in Iowa from Chronic Convulsive Toxemia (Epilepsy) Following Surgical Correction of Abdominal Viscera. C. A. L. Reed, Cincinnati.—p. 204.
Clinical Significance of Bacteriologic Examination of Accessory Nasal Sinuses and Ears. M. Armstrong, Iowa City.—p. 209.
Chronic Sinus Infection. O. Wolfe, Marshalltown.—p. 212.
Thyroid. C. H. Magee, Burlington.—p. 216.

Journal of Industrial Hygiene, Boston

July, 1920, **2**, No. 3

Health Hazards in Pearl Button Industry. E. G. Birge and L. C. Havens, Iowa City.—p. 81.
Disposition of Tuberculosis in Industrial Organization. J. S. Billings, New York.—p. 90.
Anthrax. T. M. Legge, London, England.—p. 96.
Industrial Hygiene in High School of Commerce. M. Levine, New York.—p. 103.
Housing Problems in Great Britain and Ireland. J. S. Hodgson, Boston.—p. 106.
Phthisis and Occupation. T. Oliver, Newcastle-upon-Tyne.—p. 115.

Journal of Laboratory and Clinical Medicine, St. Louis

July, 1920, **5**, No. 10

*Leukoplakia of Pelvis of Kidney; A Study in Metaplasia. DeW. G. Richey, Pittsburgh.—p. 635.
*Chemical Changes in Blood in Disease. V. C. Myers, New York.—p. 640.
*Bacillus Influenza in Normal and Pathologic Throats. L. Arnold, Nashville, Tenn.—p. 652.
*Localization of Hallucinations. H. I. Gosline, Howard, R. I.—p. 657.
*Alkalimetry of Whole Blood. J. B. Rieger, Detroit.—p. 668.
Variations in Wassermann Reaction. E. R. Wilson, Los Angeles.—p. 670.
Leukocytes in Anaphylaxis of Serum Sickness. J. Rosenbloom, Pittsburgh.—p. 671.
Machine for Shaking Blood Counting Pipets. R. L. Haden, Detroit.—p. 672.
Method of Demonstrating Gastric Movements on a Small Animal. T. L. Patterson, Iowa City.—p. 674.

Leukoplakia of Kidney Pelvis and Ureter.—Leukoplakia of the pelvis of the kidney and ureter is regarded by Richey as being a pathologic entity which seeks logical explanation on the basis of true metaplasia, entailing a transformation from the normal transitional epithelium, even presenting a superficial layer of keratin. It would appear that the absence of a demonstrable membrana propria, plays an important rôle in the metaplastic process by permanently altering the environment of the lining cells. The loss of the basement membrane is the outcome of repeated insults wrought by long continued trauma, either inflammatory, mechanical or both. It is possible that a certain number of cases of pyelitis are refractory to appropriate treatment as a result of leukoplakia of the pelvic mucosa. As in the buccal cavity, bronchi, esophagus, gallbladder, urinary bladder, prostate, fundus uteri and elsewhere, leukoplakia of the renal pelvis and ureter may be a potential site for subsequent malignant metamorphosis.

Studies on Blood Sugar.—The general subject of blood sugar and the values for blood sugar and diastatic activity in normal individuals, diabetics, nephritics, and endocrine cases are discussed by Myers.

Prevalence of Influenza Bacillus.—Observations were made by Arnold on the prevalence of *B. influenzae* in average normal throats, in cases of acute rhinitis, and in throats of patients suffering from "influenza"—which was epidemic in Nashville, Tenn., in February, 1920. Avery's sodium oleate method was used. Of eighty apparently normal throats examined, twenty-eight were positive, making 35 per cent. carriers of *B. influenzae*. Of forty-five cases of acute pharyngitis and rhinitis examined, thirty-five were positive, making 77.7 per cent. positive. One hundred and four cases were selected at random from cases diagnosed as "influenza" in the acute stage. Ninety were positive, making 87.5 per cent. positive. *B. influenzae* in nasal secretions from acute rhinitis, directly exposed to the air, are not viable if planted on artificial culture medium after ten hours; if exposed to light, but desiccation being prevented, they are viable for twenty-four hours anyway.

Psychology of Hallucinations.—On the basis of laboratory psychology, Gosline says that all mental functions can be reduced to the simple processes, sensation, association, reaction and inhibition. On the basis of this psychology the hallucinations are reduced to simple processes and the results are correlated with the anatomy of the nervous system. Psychology is carried into psychopathology for the purpose of making anatomic localizations. Gosline attempts to conclude from the patient's symptoms as to whether the pathologic process is an irritative one or a destructive one.

New Method of Alkalimetry.—Rieger describes in detail a method of alkalimetry which he says gives promise of service in the early stages of acidosis, the prognosis of the more severe grades and the early recognition of impairment of renal function.

Journal of Orthopaedic Surgery, Lincoln, Nebr.

July, 1920, **2**, No. 7

Open Operation for Congenital Dislocation of Hip. H. P. H. Galloway, Winnipeg, Can.—p. 390.
Variations in Anatomic Structure of Lumbar Spine. J. E. Goldthwait, Boston.—p. 416.

Journal of Pharmacology and Experimental Therapeutics, Baltimore.

June, 1920, **15**, No. 4

Anurias Occurring in Normal Animals During Use of General Anesthetics. W. deB. MacNider, Chapel Hill, N. C.—p. 249.
*Local Anesthetic Actions of Saligenin and Other Phenyl Carbinols. A. D. Hirschfelder, A. Lundholm, and H. Norrgard, Minneapolis.—p. 261.
Antagonistic Actions of Epinephrin and Potassium Chlorid on Tonus and Tonus Waves in Excised Terrapin Auricles. C. M. Gruber, Boulder, Colo.—p. 271.
*Pharmacologic Studies on Arsphenamin. M. I. Smith, Washington, D. C.—p. 279.
*Perfusion of Medulla of Turtle. A. D. Bush, University, N. D.—p. 297.
Mechanism of Toxic Action of Cyanogen Chlorid. C. I. Reed, Lawrence, Kan.—p. 301.
*Tyramin as a Morphin Antagonist. H. G. Barbour and L. L. Maurer, New Haven, Conn.—p. 305.
Blood Volume and Blood Volume Methods. P. D. Lamson and T. Nagayama, Baltimore.—p. 331.
*Presence of Histamin in Extracts of Posterior Lobe of Pituitary Gland and on Preliminary Experiments with Pressor Constituent. J. J. Abel and T. Nagayama, Baltimore.—p. 347.
Histamin and a Histamin-Like Substance as Decomposition Products of Albumoses. T. Nagayama, Baltimore.—p. 401.

Anesthetic Value of Saligenin.—From all the facts presented by Hirschfelder and his associates, it would appear that saligenin represents the least toxic or irritant and best anesthetic of all the phenylcarbinols thus far studied by them, that it is many times less toxic than procain, apothesine and similar anesthetics, and that it is well suited for use in practical surgery. Although weak solutions of saligenin are devoid of anesthetic effects the epithelial mucous membranes, strong solutions exert a definite numbing effect. This is especially marked when freshly prepared 12 per cent. solutions are used. When a 12 per cent. solution of saligenin is applied to the mucous membranes of the mouth or nose, a definite dulling of sensation results.

Action of Arsphenamin on Circulation.—The mechanism of the action of arsphenamin on the pulmonary circulation, and its relation to the other circulatory effects produced by arsphenamin was studied by Smith. Experimental data on the toxicity of arsphenamin following continuous intravenous injection of various preparations into dogs are also presented. A few preliminary observations relating to the chemical behavior of arsphenamin toward serum are discussed, and the relation of this to the circulatory phenomena produced by this drug is pointed out. The rise in pulmonary pressure produced by intravenous injections of arsphenamin is shown to be due to an obstruction of the pulmonary vessels. The nature of the obstruction is chiefly mechanical blocking, or to a constricting action of the pulmonary vessels, depending on the amount of alkali used in making the solution. The cardiac dilation following the intravenous injection of arsphenamin does not appear to be a direct effect of the action of the drug, but rather secondary to the pulmonary obstruction, causing the right heart to work under undue strain and, secondarily, to dilate.

Action of Epinephrin on Cardio-Inhibitory Center.—Bush states that epinephrin does not seem to exert a registrable influence on the cardio-inhibitory center of the striped turtle.

Tyramin as Morphin Antagonist.—The respiratory stimulants commonly employed to antagonize morphin depression (caffein, atrpin, scopolamin, narcotin, etc.), Barbour and Maurer claim do not posses the advantage of ecbolic action which is exhibited by tyramin. Tyramin (from 1.6 to 20 mg. per 100 gm.) antagonizes the respiratory effects of morphin (from 1 to 1.8 mg. per 100 gm.) when the two are injected in the same solution. The most complete antagonism was noted when 1 mg. of morphin was injected with from 6 to 20 mg. tyramin, the average maximum decrease from normal volume amounting to only one fifth. Simultaneous injection of morphin and tyramin in separate subcutaneous regions results in a greater exhibition of respiratory depression than when the drugs are given in the same solution but this is followed promptly by an unusually marked antagonism. To account for all of the results obtained it appears necessary to assume both a nonacid and an acid factor in the stimulating action of tyramin.

Histamin in Posterior Lobe of Pituitary.—Infundibular extracts made with care from fresh glands, that is to say, with the avoidance of long boiling or of long exposure to acids Abel and Nagayama found contain a small, but readily detectable amount of histamin. Extracts such as are employed in therapeutics contain larger quantities of this amin. It was estimated in one experiment, that nearly, if not quite, 2 mg. of histamin were present in eighty 1 c.c. phials of one of the more powerful commercial extracts. A 1 c.c. phial would, therefore, contain approximately 0.025 mg. of this powerful base.

Kansas Medical Society Journal, Topeka

July, 1920, **20**, No. 7

Polycythemia Rubra (Erythremia); Report of a Case. W. A. Baker, Leavenworth.—p. 183.
Epilepsy. O. S. Hubbard, Parsons.—p. 188.
Tuberculosis. J. D. Gibson, Denver, Colo.—p. 191.

Kentucky Medical Journal, Bowling Green

July, 1920, **18**, No. 7

Pyelitis. W. T. Briggs, Lexington.—p. 238.
Appendicitis in Children. B. F. Robinson, Berea.—p. 242.
Prevalence of Hookworm in Kentucky. E. M. Trabue, Pembroke.—p. 243.
Physical Examination of Patient. J. M. Morris, Berea.—p. 246.
Man and Microscope. A. Baker, Berea.—p. 249.
Tuberculosis Clinic. O. O. Miller, Louisville.—p. 252.
Early Diagnosis of Valvular Heart Disease. C. W. Dowden, Louisville.—p. 256.

Laryngoscope, St. Louis

July, 1920, **30**, No. 7

Local Diagnostic Value of Tuning Fork Tests. A. Retjo, Budapest, Hungary.—p. 408.
Technic of Tonsillectomy under Local Anesthesia. M. M. Cullom, Nashville, Tenn.—p. 419.
*Case of Multiple Bone Formation in the Tonsils. J. E. Calhoun, Dubuque, Iowa.—p. 428.
Tonsillectomy in Adult under Local Anesthesia by the Sluder Method. R. McKinney, Memphis, Tenn.—p. 429.
Germ Life; Mastoid Bone as a Living Medium. A. Kahn, New York. p. 434.
Diagnosis of Brain Abscess. L. Casamajor, New York.—p. 436.
Rupture of Tympanum from Shell Explosions. F. Chavanne, Lyons, France.—p. 441.

Bone Formation in Tonsils.—In the case cited by Calhoun, numerous small, hard white masses found in both tonsils were proved microscopically to be bone.

Medical Record, New York

July 24, 1920, **98**, No. 4

*Evolution of a Children's Clinic. F. H. Richardson, Brooklyn.—p. 127.
Electrochemism in Etiology and Therapeusis of Cancer. E. P. Robinson, New York.—p. 133.
Evaluation of Minor Surgery. M. W. Ware, New York.—p. 138.
*Eczema of Vermilion Border of Lips. D. W. Montgomery and G. D. Culver, San Francisco.—p. 141.
*Intestinal Parasites as a Cause of Appendicitis: Report of a Case. W. W. Cress, Mare Island, Calif.—p. 143.
*Prostatic Backache. A. Gottlier, San Francisco.—p. 144.
Mental Conflict. H. Laveson, New York.—p. 145.
*Benzyl Benzoate in Persistent Hiccup. D. I. Macht, Baltimore.—p. 146.

July 31, 1920, **98**, No. 5

Some Phases of Blood Chemistry of Practical Use to Practitioner. H. A. Higley and C. W. Field, New York.—p. 169.
Congenital and Acquired Heart Conditions which Give Rise to Symptoms; Their Significance and Treatment. O. S. Wightman, New York.—p. 173.
Vegetable Protein Treatment of Pulmonary Tuberculosis. E. Zueblin, Cincinnati.—p. 176.
Roots of Evil. W. B. Konkle, Montoursville, Pa.—p. 179.
Malnutrition from Underfeeding in a Two and One-Half Year Old Child. B. K. Rachford, Cincinnati.—p. 181.
Dreams as Cause of Death and Disease. M. Chideckel, Baltimore.—p. 182.
Cause of Roentgen Ray Burns. J. Remer and W. D. Witherbee, New York.—p. 183.
Suggestion for Dietetic Prescription Blank. E. E. Cornwall, Brooklyn.—p. 185.
Alcohol: Its Status Quo Ante, Never! D. Nathan, Norristown, Pa.—p. 186.

Children's Clinic.—This paper sets forth, in a mixture of history and prophecy, the evolution of a pediatric dispensary in its progress from average toward (not to) the ideal.

Eczema of Lip.—Among the cases of eczema of the lip Montgomery and Culver describe a group of dry, scaly, precancerous affections. A dry, scaly line forms from side to side across the lip, situated about midway between the cutaneous border and the summit. It may stretch from one corner of the mouth clear across to the other, or it may be broken. It may be a roughened, brown line of dry epithelium, or it may be a narrow, brown, facetted line. The authors believe this line to be the same one seen in the "rosebud mouth" of the infant, and to represent the junction, in the fetus, of the mucous membrane resembling the cutaneous surface with the mucous membrane resembling that of the oral cavity. It is in this line, when roughened, that an epithelioma is apt to develop, and the recognition of this line is of importance because the epithelial degeneration, of which the epithelioma represents the maximum degree, extends out along it for a vry considerable distance on each side of the epithelioma proper. Therefore, any operation failing to take this into consideration is liable to be a failure as not being inclusive enough.

Lamblia Cause of Appendicitis.—Cress reports a case of appendicitis which he believes was caused by Lambia intestinalis. The appendix was not examined microscopically but the stools contained many of these parasites.

Backache of Prostatitis.—In the course of chronic prostatitis, Gottlier says low backache is a frequently complained of symptom. The patient attributes it, as a rule, to "kidney trouble" although the pain is located in the sacral, sacrolumbar and sacroiliac regions of the spine, and is aggravated by spinal motion and a lasting upright position. The treatment should be constitutional and local to the prostate and the back. The most effective treatment of the back is the application of heat followed by ionization, diathermy, vibration and massage, and support to the pelvis and back, as well as correction of any possible foot abnormality. A canvas corset or pelvic belt is worn to rest and support the strained muscles.

Benzyl Benzoate in Hiccup.—Macht has found benzyl benzoate to be an invaluable medicine in the treatment of persistent hiccup of both adults and children. Not only has it been found useful in allaying the ordinary mild forms of hiccup so common in infants, but the drug has been found to be efficient in stopping those forms of hiccup termed pernicious, that is, those cases in which the phenomenon persisted for long periods of time, from twenty-four hours to several days, and in which the singultus was unaffected by all other forms of medicinal treatment, both external and internal. Macht believes that benzyl benzoate also is of diagnostic value in differentiating between the hiccups of a purely central origin, on the one hand, and those which are due to some peripheral origin, on the other. Inasmuch as benzyl benzoate exerts its chief effect peripherally on the smooth muscle structures, the author is inclined to believe that this drug may be most useful in the treatment of hiccups of peripheral origin. The benzyl benzoate exerts its action best when given in a 20 per cent. solution in alcohol. Of this solution the patient is directed to take from 20 to 40 drops in water or milk. The author has not found it either convenient or advantageous to administer the drug in suspension in various elixirs or syrups, and administration in capsules has been found by him in some cases to produce local irritation, and in others to render the therapeutic action too slow. To children the solution can be conveniently administered in sugar water or milk.

Michigan State Med. Society Journal, Grand Rapids

July, 1920, **19**, No. 7

Changes in Relations of Public and Medical Profession. C. H. Baker, Bay City.—p. 263.
What Should be the Attitude of Physicians Toward Health Insurance? F. R. Green, Chicago.—p. 273.
Compulsory Health Insurance; a Modern Fallacy. E. H. Ochsner, Chicago.—p. 283.
Compulsory Health Insurance is a Sign of Economic Degeneration. G. L. Apfelbach, Chicago.—p. 288.
Health Insurance, Considered from an Economic Standpoint. W. D. Chapman, Silvis, Ill.—p. 292.
Community Hospital Training School. J. G. R. Manwaring, Flint.—p. 295.

August, 1920, **19**, No. 8

Immediate Opportunities Open to Medical Profession. E. L. Eggleston, Battle Creek, Mich.—p. 355.
Infections of Upper Urinary Tract. D. N. Eisendrath, Chicago.—p. 356.
Lethargic Encephalitis Symptoms and Physical Signs. W. D. Mayer, Detroit.—p. 360.

Some Points in Roentgengraphic Examination of Chest with Particular Reference to Lungs. J. H. Dempster, Detroit.—p. 364.
Traumatic Chest Surgery. R. E. Balch, Kalamazoo, Mich.—p. 369.
*Sphenopalatine Ganglion Headaches. R. A. Barlow, Rochester, Minn. —p. 371.
*Case of Wound Diphtheria. G. J. Curry, Flint, Mich.—p. 376.

Sphenopalatine Ganglion Headaches.—The twelve cases cited by Barlow show that there is ample evidence to demonstrate the existence of a sphenopalatine ganglion syndrome and to distinguish it from the so-called migraine headache. The results of treatment in thus type of headache are sufficiently encouraging to warrant its study and investigation. Barlow believes that eventually a form of operative treatment will be developed such as is now used in the gasserian ganglion cases, which will offer more complete and permanent relief. In the meantime, by conservative measures many patients can be relieved whose suffering may even result in an economic loss to society.

Wound Diphtheria.—In Curry's case, the condition developed in a suppurating wound following the excision of the right fibula for chronic infective osteomyelitis, of twenty years' standing. Eighty-one days elapsed from the time of the first positive culture until the last negative one, the first fifty-six days of this period being the active stage of the disease.

Military Surgeon, Washington, D. C.

July, 1920, **47**, No. 1

Modern Military Medical and Surgical Reconstruction and Measures of Cooperation Practiced by Medical Department of Army and Federal Board for Vocational Education. F. Billings, Chicago.—p. 1.
Spectacles for Soldiers; Comparison of American and German System of Supply. R. A. Fenton, Portland, Ore.—p. 14.
Relation of Defective Mental and Nervous States to Military Efficiency. F. G. Norbury, Springfield, Ill.—p. 20.
Compound Fractures Treated by Bone Graft. L. J. Owen, Ft. Sheridan, Ill.—p. 40.
Some Newer Work on Nephritis. E. D. Kremers, Ft. Sheridan, Ill.—p. 48.
Operation of Medical Division of Air Service Since Signing of Armistice. A. E. Truby and J. Dibble.—p. 67.
Malaria Drainage Operations at Port of Embarkation. W. B. Herms, Newport News, Va.—p. 81.
Some Commonly Misapprehended Points in Diagnosis of Pellagra. J. Goldberger.—p. 94.
Lessons of War Which May be Applicable to Civil Practice. J. Smyth. —p. 100.
Chronic Urethritis and Prostatitis, Dependent on Colon Bacillus Infection. C. E. Verdier.—p. 109.

Missouri State Medical Association Journal, St. Louis

July, 1920, **17**, No. 7

Use of Radium in Carcinoma of Face, Jaws and Oral Cavity. E. Fischel, St. Louis.—p. 267.
Actual Cautery in Treatment of Superficial Cancers. C. F. Sherwin, St. Louis.—p. 269.
Modern Treatment of Malignancies. L. A. Marty, Kansas City, Mo. —p. 271.
Inoperable Cancer. W. E. Leighton, St. Louis.—p. 273.
Treatment of Syphilis. E. L. Spence, Fulton, Mo.—p. 276.

Nebraska State Medical Journal, Norfolk

July, 1920, **5**, No. 7

Rights of Patient. H. W. Orr, Lincoln.—p. 185.
*Intestinal Indigestion in School Children. H. M. McClanahan, Omaha. —p. 189.
Malignancies of Mouth and Neck. E. H. Skinner, Kansas City, Mo.—p. 194.
Value of Lumbar Puncture as Diagnostic and Therapeutic Procedure. A. A. Johnson, Omaha.—p. 197.
Intra-Abdominal Injection of Oxygen as an Aid in Roentgen-Ray Diagnosis. C. H. Ballard, Omaha.—p. 199.

Intestinal Indigestion in Children.—In this paper is presented a review of the histories of ninety-six children, ranging in age from 6 to 12 years. The chief symptoms in all of these cases pertained to the gastro-intestinal system. In none was there any organic disease. The outcome of the cases verified the conclusion that perverted function, what might be termed functional pathology of the digestive organs, was the cause of the symptoms. Among the predisposing causes mentioned by McClanahan, are heredity (in twenty-four cases in this series, there was a history of some nervous condition in one or both parents), home conditions, and the habits of the child also figure in the etiology. Contributing factors are: tonsils and adenoids, diseased teeth, an excess of the acid type of foods in the diet, and anatomic conditions. Treatment along common sense lines as suggested by roentgen-ray findings resulted most satisfactorily in probably 90 per cent. of the cases. McClanahan insists that a thorough examination of the child be made before treatment is begun. In the diet he has included the cereals, milk, meat only once a day, potatoes, rice and tapioca and such vegetables as parsnips, carrots, beets, cauliflower, squash, lettuce, celery, fruit, both cooked and raw. The diet is varied with the individual case. Tea and coffee are not allowed. Intelligent cooperation of the mother, good will and obedience of the child are aids in carrying out proper treatment. Plenty of sleep and rest are also essential. Drugs have an important place in the treatment, but often they are used to excess. For the relief of constipation McClanahan gives the following powder once a week; resin podophyllin, 1/10 grain; rhubarb, 2 grains; sodium bicarbonate, 5 grains. This is given at bedtime, and the following morning before breakfast a cathartic is given, usually sodium sulphate in hot water. A little lemon juice added to this will make it more palatable. When the stools were hard, liquid petrolatum was of advantage in fifteen cases; in five it produced no result. Another cathartic is a combination of equal parts of fluidextract of senna and aromatic cascara, from one-half to one teaspoonful, at bedtime. In cases of meteorism, milk of magnesia, ½ ounce at bedtime, is of apparent benefit. A bitter tonic after meals has given good results or tincture of nux vomica alone. In cases complicated by secondary anemia, Blaud's pill, 3 grains, morning and night is of value. In three cases with considerable abdominal distention associated with pain, the abdominal binder gave decided relief.

New Orleans Med. and Surgical Journal, New Orleans

August, 1920, **73**, No. 2

Importance of Early Recognition and Treatment of Glaucoma. D. T. Atkinson, San Antonio, Texas.—p. 50.
Spastic Constipation. J. M. Perret, New Orleans.—p. 53.
Leprosy in United States. I. Dyer, New Orleans.—p. 57.
Case of Multiple Lesions in Leishmaniosis. O. Torres, Bahia, Brazil. —p. 61.

New York State Journal of Medicine, New York

July, 1920, **20**, No. 7

*Antiscorbutic Vitamin. A. F. Hess, New York.—p. 209.
*Fat-Soluble Vitamin. L. B. Mendel, New Haven, Conn.—p. 212.
Water-Soluble Vitamin. T. B. Osborne, New Haven, Conn.—p. 217.
Comparative Study of Diagnosis of Specimens from Cases of Typhoid Fever, Tuberculosis and Diphtheria in Different Laboratories of New York State. F. Finley and J. S. Lawrence, Albany, N. Y.—p. 226.
Surgical Treatment of Hyperthyroidism — Relation Existing between Amount of Gland Removed and Permanency of Relief. G. E. Beilby, Albany, N. Y.—p. 230.

Antiscorbutic Vitamin in Canned Tomato.—Canned tomato, Hess says, is the most serviceable antiscorbutic for artificially fed infants. It is well borne, comparatively inexpensive, and is available. Canned tomatoes may be regarded, from a nutritional standpoint, as a palatable solution of the three vitamins. Hess recommends it unreservedly in doses of 1 ounce a day. By substituting it for orange juice a great saving has resulted.

Fat-Soluble Vitamin in Butter.—About 0.1 gm. butter fat fed daily in addition to an otherwise adequate diet Mendel says suffices to enable rats to reach adult size before they show symptoms of nutritive decline that are remediable by further increments in this supply of fat-soluble vitamin. With feeding results were even more favorable, incipient decline being averted until a later period. Even more striking have been the results with dried tomato which served, in daily doses of approximately 0.1 gm., as the source of fat-soluble vitamin in a period of fourteen months within which the animals rapidly grew to large adult size. These illustrations indicate the relative richness of some of the edible vegetable products in fat-soluble vitamin.

Northwest Medicine, Seattle

July, 1920, **19**, No. 7

Diseases of Ethmoid and Sphenoid Sinuses. J. H. Harter, Seattle.—p. 165.
Diagnostic Value of Estimation of Basal Metabolic Rate. J. E. Else, Portland, Ore.—p. 171.

Interpretation of Basal Metabolism Determinations; Hypothyroidism and Hyperthyroidism. B. N. Wade, Portland, Ore.—p. 175.
Medical Aspects of Exophthalmic Goiter. C. F. Morsman, Spokane.—p. 178.
Goiter. A. A. Matthews, Spokane.—p. 183.

Oklahoma State Medical Ass'n Journal, Muskogee

July, 1920, **13**, No. 7

Mediastinal Neoplasm. H. T. Price, Tulsa.—p. 247.
Diagnosis of Cancer. D. N. Eisendrath, Chicago.—p. 251.
Paget's Cancer: Eczema of Nipple, or Paget's Disease. M. E. Stout, Oklahoma City.—p. 253.
Acidosis. C. J. Fishman, Oklahoma City.—p. 254.

Pennsylvania Medical Journal, Athens

July 1, 1920, **23**, No. 10

Blood Transfusion. W. H. Furness, and W. E. Lee, Philadelphia.—p. 577.
Roentgen Ray as Aid to Diagnosis of Chest Conditions. A. Z. Ritzman, Harrisburg.—p. 579.
Conservative Operation on Nasal Accessory Sinuses. J. J. Sullivan, Scranton.—p. 581.
Care of Premature Baby. E. L. Meyers, Wilkes-Barre.—p. 584.
Child Welfare in Pennsylvania. D. Child, Philadelphia.—p. 588.
Phlyctenular Disease and Its Cause. H. M. Langdon, Philadelphia.—p. 590.
Muscular Imbalance—Its Relation to Eye Strain and Correction. F. N. Emmert, Chambersburg.—p. 592.
Importance of Reconstruction in Civil Accident Surgery. J. B. Lowman, Johnstown.—p. 594.
Hospital Treatment of Compensation Cases. D. D. Test, Philadelphia.—p. 594.
Joseph Price. A. P. Butt, Elkins, W. Va.—p. 597.
Hysteric Paralysis. I. G. Shoemaker, Reading.—p. 601.
Fractures Between Ankle and Middle of Tibia. W. H. Ammarell, Birdsboro.—p. 602.

Philippine Journal of Science, Manila

February, 1920, **16**, No. 2

Philippine Turtles. E. H. Taylor.—p. 111.
Some Bees from Panay. T. D. A. Cockerell.—p. 145.
Low Sun Phenomena in Luzon. W. J. Fisher.—p. 151.
Higher Basidiomycetes from Philippines and Their Hosts, II. O. A. Reinking.—p. 167.
*Biochemical Study of Copra Meal. F. O. Santos y Alvarez.—p. 181.
Coleoptera Fauna of Philippines. W. Schultze.—p. 191.
Philippine Bees. T. D. A. Cockerell.—p. 205.

Food Value of Copra Meal.—The nitrogen partition in that portion of copra meal insoluble in hot water was studied by Alvarez and he found that copra meal is rich in the amino-acids necessary for maintenance and growth. The alkali-soluble protein is the most abundant in copra meal. Copra meal contains: oil, 12.2 per cent.; crude protein, 20.1 per cent.; carbohydrates, 37.0 per cent.

Social Hygiene, Menasha, Wis.

July, 1920, **7**, No. 3

Venereal Disease Clinics. E. H. L. Corwin.—p. 337.
Social Hygienist in Modern World. A. G. Spencer.—p. 349.
Colonies for Mental Defectives. E. A. Prince.—p. 357.
Antivice Movement in California. F. Highborn.—p. 365.
Venereal Disease in Czecho-Slovakia. P. S. Platt.—p. 377.
Workable Plan for Quarantine. E. H. Hooker.—p. 385.
Opportunities for Sex Education in English Classes. L. B. Thompson.—p. 391.
Will in Life. J. Walsh.—p. 400.
Unadjusted Girl. C. W. Smith.—p. 401.

Southwest Journal of Med. and Surg. El Reno, Okla.

June, 1920, **28**, No. 6

Renal Function and Urological Surgery. C. K. Smith, Kansas City, Mo.—p. 101.

Southwestern Medicine, El Paso, Texas

June, 1920, **4**, No. 6

Obstetric Situation. A. Kirmse, Globe, Ariz.—p. 1.
Benign Tumors of Bladder and Their Treatment. K. D. Lynch, El Paso, Texas.—p. 3.
Pain Due to Non-Suppurative Intranasal Disorders. J. J. McLoone, Phoenix, Ariz.—p. 8.
Adenoma and Malignancy of Thyroid. E. B. Rogers.—p. 11.
Oral Infection and Systemic Disease. E. J. Cummins.—p. 14.

July, 1920, **4**, No. 7

Lesions Found in Twelve Hundred and Fifty Roentgen-Ray Examinations of Gastro-Intestinal Tract. W. W. Watkins, Phoenix, Ariz.—p. 1.
American Youth as Mirrored by World War: Some Timely Lessons. C. E. Yount, Prescott, Ariz.—p. 13.

Tennessee State Medical Ass'n Journal, Nashville

July, 1920, **13**, No. 3

Tumors of Kidney. W. D. Haggard and H. L. Douglass, Nashville.—p. 81.
Treatment of Cervical Carcinoma and Uterine Fibroma with Radio-Active Rays. E. T. Newell, Chattanooga.—p. 88.
Pyelitis in Infancy and Childhood. R. H. Perry, Nashville.—p. 93.
Efficient Professional Service. J. D. Brewer, Dyersburg.—p. 97.
Tuberculosis of Kidney. R. W. Grizzard, Nashville.—p. 100.
Focal Infection from Dental Standpoint. D. P. Houston, Chattanooga.—p. 104.
Significance of Choked Disk. A. C. Lewis, Memphis.—p. 107.

Virginia Medical Monthly, Richmond

July, 1920, **47**, No. 4

*Relation of Foci of Infection to Grave Anemias. F. C. Rinker, Norfolk.—p. 147.
Atropin Treatment of Pylorospasm in Infants. C. Willcox, Norfolk.—p. 149.
Management of Renal Insufficiency. W. B. Newcomb, Norfolk.—p. 152.
Use of Radium in Gynecology. E. C. S. Taliaferro, Norfolk.—p. 153.
Artificial Pneumothorax. C. L. Harrell, Norfolk.—p. 155.
Postoperative Care of Female Bladder. E. T. Hargrave, Norfolk.—p. 158.
Prognosis and Treatment as Observed in Sixty-Seven Cases of Pneumonia. H. M. Doles, Norfolk.—p. 159.
Diagnosis of Conditions Obtaining During Normal Labor, without Vaginal Examinations. B. Lankford, Norfolk.—p. 161.
There is not only a Disease which has the Patient, but a Patient who has the Disease. W. W. Silvester, Norfolk.—p. 165.
Laryngeal Stenosis. L. P. Royster, Norfolk.—p. 167.
American College of Surgeons. S. Leigh, Norfolk.—p. 169.
Abortion; Its Causes and Treatment. P. S. L. Moncure, Norfolk.—p. 173.
*Intestinal Obstruction Due to a New Growth Incarcerated in Hernial Sac. Report of a Case. G. W. Schenck, Norfolk.—p. 174.
Cases in Ophthalmic Practice. B. R. Kennon, Norfolk.—p. 175.
Importance of Children Having Their Eyes Examined under Mydriasis, before Entering School. A. D. Morgan, Norfolk.—p. 176.

Focal Infection Cause of Anemia.—It is suggested by Rinker that focalized infections may be the underlying cause of the so-called idiopathic and primary types of anemia. After the removal of primary foci of infection, a thorough search for secondary foci should be made, and they should be removed.

Intestinal Obstruction from Tumor.—In a case of incarcerated right inguinal hernia with symptoms of strangulation, the incarcerated loop of ileum showed a tumor about the size and shape of an egg—hard and irregular—located at the lowest point of the ileum, about 15 inches from the ileocecal junction. There were several small ulcerations on both sides of the tumor, the mesentery being involved. The tumor having the appearance of a malignant growth, a wide resection was made. About 30 inches of the ileum was resected, and lateral anastomosis to the cecum was done. The pathologist's report was a fibrosis surrounding an area of central fat necrosis; scattered through the fibrous tissue were numerous large endothelial cells filled with pigment.

West Virginia Medical Journal, Huntington

July, 1920, **15**, No. 1

Testing of Donors for Blood Transfusion. C. W. Waddell, Fairmont.—p. 6.
Visceroptosis from Neurologist and Psychopathist Standpoint. A. R. Mackenzie, Huntington.—p. 13.
Treatment of Visceroptosis. R. J. Wilkinson, Huntington.—p. 17.

August, 1920, **15**, No. 2

Determination of Heart Disease, Diagnosis and Prognosis of Certain Forms. G. H. Barksdale, Charleston.—p. 41.
Dreaded "Second Summer" of Neglected Babies; Plea for Proper Feeding and Environment. R. A. Ashworth, Marshall County.—p. 46.
Typhoid Fever from Laboratory Standpoint. K. D. Graves, Roanoke, Va.—p. 51.

Wisconsin Medical Journal, Milwaukee

July, 1920, **19**, No. 2

Treatment of Gunshot Fractures in Base Hospital. P. Rogers, Milwaukee.—p. 55.
Impressions of Medical Department of German Army. D. Bruins, Milwaukee.—p. 58.
War Injuries. T. J. Snodgrass, Janesville.—p. 62.
Reminiscences from Base Hospital 1, New York City. G. N. Brazeu, Milwaukee.—p. 65.
Hypertension and Chronic Nephritis. H. P. Greeley, Madison.—p. 68.
Etiology and Pathology of Chronic Gastric and Duodenal Ulcer. D. Hopkinson, Milwaukee.—p. 71.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Japan Medical World, Tokyo

June 12, 1920, **10**, No. 24

Pathology of Puerperal Eclampsis. K. Obata.—p. 517. To be cont'd.

June 19, 1920, **10**, No. 25

Pathology of Puerperal Eclampsia. K. Obata.—p. 541. To be cont'd.

Journal of Tropical Medicine and Hygiene, London

July 15, 1920, **23**, No. 14

Fifteen Years' Experience with Malaria in Upper Congo. A. Pearson.—p. 177.
Colloidal Drugs in Treatment of Bilharziasis in Young People. F. G. Cawston.—p. 180.
*Quinin Prophylaxis. W. M. McDonald.—p. 182.
Use of Tourniquet in Operations for Elephantiasis of Scrotum. R. Howard.—p. 183.

Quinin Prophylaxis Against Malaria.—MacDonald is convinced that quinin prophylaxis, efficiently and promptly applied to troops entering for the first time a malarious region, would greatly reduce the incidence of malaria and should eliminate the possibility of any sick rate from benign tertian infection. To be of value, however, quinin should be administered on parade so as to avoid the probability of the dose being lost or hidden if left to the individual to take or not as he pleases. Secondly, as it is of importance that the parasites should be caught in the early stages, quinin should be administered daily, 7.5 gm. per day, in preference to large doses at intervals of several days.

Lancet, London

July 24, 1920, **2**, No. 5056

*Psychology of Special Senses and Their Functional Disorders. A. F. Hurst.—p. 169.
*Nerve Symptoms in Acute Infections. T. Horder.—p. 174.
Intravenous Use of Acetyl-Aminophenyl Salt of Antimony (Stibenyl). P. Manson-Bahr.—p. 178.
Sudden Deaths on Active Service. T. H. G. Shore.—p. 180.
*Intrinsic Cancer of Larynx. St. C. Thomson.—p. 182.
Psychologic Aspect of Effort Syndrome. M. Culpin.—p. 184.
*Symbiotic Growth of B. Proteus and B. Tuberculosis. E. T. Thompson.—p. 186.
Mixed Cultures. R. A. O'Brien.—p. 187.

Psychology of Special Senses.—Cutaneous sensibility and cutaneous anesthesia are the topics taken up by Hurst in this lecture. Apart from actual hysterical symptoms, there are no underlying physical or mental symptoms or group of symptoms, which precede and accompany them and persist after their disappearance, to which the term hysteria can be applied. It is clear, therefore, that while it is easy to define hysterical paralysis and hysterical anesthesia, "hysteria" cannot exist in their absence. The only possible definition of hysteria is "the condition in which hysterical symptoms are present," hysterical symptoms being in turn defined as "symptoms which result from suggestion, and are curable by psychotherapy"; hysteria is thus a condition in which symptoms are present which have resulted from suggestion and are curable by psychotherapy. The subject is discussed fully and amplified by case reviews.

Nerve Symptoms in Acute Infections.—The mechanisms, physiologic and histologic, by which nerve symptoms in acute infections are produced are discussed by Horder. Nerve symptoms arising as part of the interaction already referred to are directly referable to one or more of three different processes by which the nervous system becomes implicated: (1) by toxemia; (2) by infection of the meninges; (3) by infection of the nerve tissues themselves. In the first of these three mechanisms the nerve symptoms manifested by the patient are chiefly "functional" in origin; in the second and in the third of these mechanisms the symptoms are chiefly "organic" in origin. The great significance of these mechanisms lies in this distinction. The mechanism of toxemia is the one operative in diphtheria and tetanus in the great majority of cases. It is also that by which nerve symptoms arise in most cases of pneumonia, typhoid fever, scarlet fever, and rheumatic fever. Secondary infection of the meninges occurs not infrequently in pneumococcus infection and is relatively more common when the primary infection occurs in the middle ear. In measles the nerve symptoms are usually toxemic, but the specific virus, though it causes meningism not infrequently, rarely causes a true meningitis. That it occasionally sets up an encephalitis or a myelitis, however, has been long recognized. In mumps an actual inflammation of the central nerve structures sometimes occurs, and recent experimental work suggests strongly that the virus in this disease has group affinities with the causative virus or poliomyelitis. It is possible that the virus of infantile cholera has similar affinities. In generalized tuberculosis the mechanism of encephalitic as well as meningitic involvement may be added to that of a toxemia. In cerebrospinal fever the meningococcus attacks the pia arachnoid in primary fashion, and this is by far the chief mechanism of production of the long series of symptoms presented in the disease. In poliomyelitis and in encephalitis, be the virus identical or only possessed of group affinity, the primary infection is in the central nervous system itself, through intimate vascular infiltration. The nerve symptoms present in influenza, though protean in nature, are probably due, in the main, to a toxemia, which may be of any degree from mild to intense; meningism is not uncommon; meningitis is rarely present.

Mobility of Cord in Cancer of Larynx.—Of forty-four cases analyzed by Thomson the affected cord was quite mobile in twenty-seven. In the remaining seventeen cases its movements were more or less impaired, the degree varying from mere sluggishness to complete fixation. In three of these latter cases the effect in movement developed while the cases were under observation. It was only possible to remove a satisfactory portion of growth before operation for microscopic examination in ten out of these forty-four cases. But it is noteworthy that in eight of these ten cases the cord moved freely. Concluding, Thomson says that impaired mobility of a cord is not a necessary or frequent symptom of intrinsic cancer of the larynx. It is, in fact, only met with in a minority of cases presenting themselves for diagnosis. It is more apt to be met with in an early case when the growth is embedded in the cord or growing into it than in a distinctly sessile or even pedunculated tumor. It is also more usual with growths situated on the inner surface or the subglottic area, than with those seated on the upper surface of the cord. Otherwise, fixation indicates an advanced case. When present it is a very valuable symptom in distinguishing a malignant from an innocent tumor. It is of little value, and may even be misleading, in diagnosing a malignant growth from a tuberculous or syphilitic deposit. As regards prognosis, it is an unfavorable symptom.

New Organism Discovered by Symbiotic Growth.—Four strains of *B. tuberculosis hominis* and one strain of *B. tuberculosis* (bovine) were grown by Thompson on large tubes of glycerin-brain agar for one month, after which time sufficient glycerin-veal broth was added to cover the growth, and inoculated with *B. proteus*. In all the mixtures a diphtheroid organism was observed at the end of ten days. Yeastlike odor is apparently characteristic of this remarkable phenomenon, as it was noticed in all the tubes. Furthermore, the dense turbidity due to the growth of *B. proteus* had disappeared on the formation of this new organism. Subcultures made on surface agar showed no growth at the end of seven days, the proteus having died out. In stab glucose agar, inoculated from the mixture, a growth was observed at the end of three days, which was strictly anaerobic. The growth was a compact one, starting about half way from the surface of the glucose agar. On microscopic examination it was found to be the diphtheroid organism observed in the mixtures. Morphologically and culturally this organism is identical with the acne bacillus. Thompson suggests that his experiments show that the acid-fast organisms and the streptothrices are closely related.

Medical Journal of Australia, Sidney

June 19, 1920, **1**, No. 25

War Amputations of Lower Limb. A. V. Meehan.—p. 571.
Vincent's Disease. J. V. Duhig.—p. 575.
*Food Poisoning due to Bacillus Aertrycke. R. Dick.—p. 576.
Splinter of Wood in Anterior Chamber. J. L. Gibson.—p. 577.
Neuro-Muscular Atrophy. A. Watkins.—p. 577.

Poisoning with Bacillus Aertrycke.—In Dick's cases of acute gastro-enteritis, sausage meat was the source of the infection. No sample of the incriminated sausage was obtainable, but from the symptoms shown by these patients and the results of the serum reactions, Dick concludes that this is an example of food poisoning due to *B. aertrycke*.

South African Medical Record, Cape Town

June 26, 1920, 18, No. 12

Experiences in East African Campaign. R. D. A. Douglas.—p. 223.
Advances in Medicine Since the War. A. W. Falconer.—p. 229.

Annales de Médecine, Paris

1920, **7**, No. 3

Advantage of Measuring Size of Pleural Cavity in Course of Pneumothorax. L. Bard.—p. 169.
Schick Diphtherin Reaction. J. Renault and P. P. Lévy.—p. 180.
*Phenomena with Reinjection of Serums. Péhu and P. Durand.—p. 196.
Premonitory Local Pains with Cancer Metastases. A. Cramer.—p. 226.
Present Status of Yellow Fever. J. Paraf.—p. 232.

Phenomena with Reinjection of Serums.—Péhu and Durand analyze seventy-eight cases in which the antiserum or antitoxin had been reinjected within three months, and forty-two in which the interval was longer, comparing them with others on record. Darré has applied to intraspinal serotherapy the Besredka method of a preliminary small dose, waiting from one to three hours before the main injection. They emphasize, however, that this protects only against the immediate phenomena, the nervous or cardiovascular shock. It does not protect against serotoxic eruptions and edema. These are liable to occur after any injection, first or second, and the hypersusceptibility may long persist. The serotoxic reactions are usually harmless.

In their experience, preexisting heart symptoms did not afford any predisposition to cardiovascular shock, and the serotoxic symptoms were not reenforced. The reaction to the first injection is no criterion as to what the reaction to the second will be; the route for the injection seems to be the preponderant factor, especially the intraspinal and intravenous routes. In two of their cases there was intense cardiovascular shock in less than two minutes after the second injection; in the child of 4, a preliminary intraspinal injection of 0.5 c.c. had been given, followed in half an hour with 1 c.c. The collapse was alarming, but two hours later 10 c.c. of the antiserum was injected without incident. The child died ten days later, the meningitis having flared up anew. In the other case, 2 c.c. had been injected by the vein, and the symptoms of severe collapse and shock subsided in two hours and the child recovered. Three other children of 2 and 4 died after the reinjection, given nearly five, six and nine weeks after the first. Necropsy showed nephritis in two; a large thymus (15 gm.) and small cheesy focus in the right lung in the other. Horse antitoxin had been used first, and, for the second injection, goat serum from the renal vein; possibly crossed anaphylaxis might be incriminated. In conclusion they report success with Méry's method of repeating the injection weekly, whether there are other indications for it or not, thus warding off the development of anaphylaxis. They gave the weekly reinjections subcutaneously, and no phenomena followed, but this method is applicable only when the second injection can be made during the weeks immediately following the first. If acute nervous or cardiovascular shock develops, the fluid injected into the spine can be withdrawn. Epinephrin in cardiovascular shock has often rendered valuable service.

Archives de Médecine des Enfants, Paris

July, 1920, **23**, No. 7

Natality and Infant Mortality. P. Nobécourt and G. Schreiber.—p. 385. Cont'd.
*Alimentary Test in Infants. E. Terrien.—p. 404.
*Ether Treatment of Pneumonia in Children. M. Lassalle.—p. 414.
Amyotrophy in Infant from Shell Concussion. P. Haushalter and P. Kahn.—p. 423.

The Fiction of the So-Called Alimentary Test as Guide in Infant Feeding.—Terrien presents arguments that the alimentary test—the reaction to cow's milk when the amount is increased, watching whether the infant gains or loses in weight and thrives—is far from being a reliable guide to the proper food for the child. The fact that the child is unable to digest unmodified cow's milk does not prove that it cannot digest other foods.

Ether Treatment of Bronchopneumonia in Children.—Lassalle recalls that this disease is nearly always secondary to a pathologic state, measles, whooping cough, influenza, etc., and that the infection spreads in two different ways, causing the common or the suffocative variety according to whether the infection is direct or caused by embolization of the septic agent. He compares the evolution of bronchopneumonia to that of a furuncle and points out the striking analogy between these two processes, the main difference being the medium in which the infection acts. The treatment of a furuncle, after incision, being asepsis, he conceived the idea of treating bronchopneumonia with ether, to realize asepsis, and obtained wonderful results. The injected ether leaves the body through the lungs, and being a powerful disinfectant is capable of impairing the vital conditions of the microbes in the lungs. Unlike oxygen, ether enters everywhere; its action is: (1) anti-infectious, (2) anti-thermic, (3) anti-spasmodic, and (4) toni-cardiac, while it is harmless. The result depends less on the quantity than on the moment of the injection; the earlier it is made, the better. Generally, 1 c.c. every four hours will do, sometimes even only morning and night. Often one injection is enough. The treatment of bronchopneumonia should thus be first, ether, then heart tonics, and then revulsion with mustard. He reports some typical cases to show the benefits of this treatment, and states that he never witnessed any injurious by-effects in his more than 200 injections of the kind.

Bulletin de l'Académie de Médecine, Paris

June 29, 1920, **83**, No. 26

*Common Origin of Varicella and Zona. A. Netter.—p. 588.
*Splenectomy in Hemolytic Jaundice. H. Hartmann.—p. 599.

Common Origin of Varicella and Certain Cases of Herpes Zoster.—Netter has compiled from the literature fifty-nine cases in which herpes zoster was followed by chicken pox in the contacts, and ten cases in which varicella was followed by cases of herpes zoster. This connection between varicella and zona was evident in three cases in his service. Several cases of one of these diseases developed after a case of the other, with scarcely a possibility for contagion from outside. The intervals were about the same as the intervals with varicella. In sixteen of the cases the two diseases ran their course in the same person almost simultaneously. The eruption which sometimes develops along the course of herpes zoster resembles closely that of varicella.

Splenectomy in Hemolytic Jaundice.—In Hartmann's case the patient and a brother had both presented hemolytic jaundice since childhood and the spleen was extremely large. On exposure of the spleen to the roentgen rays, pains developed in the region, but after splenectomy not only the pains but also the jaundice disappeared in two days. In two other cases the erythrocytes numbered only 1,200,000 and 1,870,000, but the blood picture rapidly improved after splenectomy. This group of three cases is the first to be published in France, he says, in which the outcome was a great success. In the discussion that followed, Vaquez related that he was the first to remove the spleen for hemolytic jaundice with splenomegaly (1907), but his patient died and he was severely criticized for his "reckless interference."

Bulletins de la Société Médicale des Hôpitaux, Paris

May 14, 1920, **44**, No. 17

Epidemic Encephalitis. P. Marie and others.—p. 661; 668; 685; 689.
Skin-Bronchus Fistula. C. Achard and A. Leblanc.—p. 664.
*Oculopilomotor Reflex. J. A. Sicard and J. Paraf.—p. 676.
Silent Abscess in Frontal Lobe. G. Guillain and E. Libert.—p. 680.

Oculopilomotor Reflex.—Sicard and Paraf relate that slight rubbing or pinching of the intercostal region may be followed by a pilomotor reflex in the arm on that side, if goose-flesh is easily induced. This positive reflex can be arrested by compressing the eyeballs. This inhibiting reflex seems to be constant, but the pilomotor positive reflex is variable and inconstant, even in the same person. It shows that compression of the eyeballs may have multiple and varied effects

not only on the pneumogastric, slowing the heart rhythm—the oculocardiac reflex—but also on the sympathetic, inhibiting the pilomotor reflex. There are also the oculopolyuric reflex, the oculoglycosuric reflex, and the oculo-albuminuric reflex. These reflexes generally occur dissociated in different subjects, and they must not be taken too seriously in differential diagnosis.

Journal de Médecine de Bordeaux

April 25, 1920, **91**, No. 8

Monstrosities of the Brain. G. Jeanneney.—p. 195. Conc'n.
Medicolegal Cases of Infanticide. P. Lande.—p. 200.
Sarcoma of Small Intestine. Recurrence Three Months After Double Resection. A. Charrier.—p. 202.
Congenital Displacement of Kidney. Jeanneney and Blanchot.—p. 204.

May 10, 1920, **91**, No. 9

Immobility of the Thorax with Emphysema. Creyx.—p. 227.
*Continuous Aspiration in Surgery. L. Rocher.—p. 235.
Spa Treatment and Otorhinolaryngology. Got.—p. 237.

Continuous Aspiration in Surgery.—Rocher expatiates on the advantage of keeping up aspiration at all operations, but especially with abdominal and throat surgery. If the assistant manages the suction tube skillfully, the whole operation proceeds clean and fast; there is less danger of hemorrhage as there is no need to wipe off bleeding surfaces and thus open the bleeding mouths of the vessels. The operation is shortened by a half, and with it the danger of hemorrhage. When pus escapes into the peritoneum or elsewhere, the continuous aspiration sweeps it away in many cases otherwise doomed. The assistant watches for any escaping pus and sucks it up at once as the first drops appear. Two cases of gangrenous appendicitis are described to show the advantages of this technic, which he has been applying for years, dispensing with sponges and warding off vomiting.

Journal de Radiologie et d'Electrologie, Paris

February, 1920, **4**, No. 2

Facial Paralysis and Radiotherapy. Delherm and Laquerrière.—p. 49.
Radiography of Head of Femur to Aid in Operating. P. Japiot.—p. 65.
Radiography of Shoulder. Chassard.—p. 68.
Dorsal Luxation of Wrist. F. Arcelin.—p. 71.
Luxation of Semilunar Bone in Wrist. R. Desplats and P. Buffe.—p. 73.
Radiography of Subphrenic Gas Abscesses. I. Solomon.—p. 74.
Radioscopy of Pulsion Diverticulum. Lagarenne and Guilleminot.—p. 76.

Paris Médical

June 12, 1920, **10**, No. 24

Radiology of the Kidneys. Ribadeau-Dumas and others.—p. 481.
Splenopneumonia and Interlobar Pleurisy. P. Ardin-Delteil and Raynaud.—p. 487.

June 19, 1920, **10**, No. 25

Microbian "Carapace" Dermo-Epidermitis. H. Gougerot.—p. 407.
Lethargic Encephalitis. G. Laroche and Filassier.—p. 501.
*Valsalva's Experiment in Semeiology of the Heart. Maudru.—p. 504.
Congestion of the Apex in Typhus. Dumitresco-Manté.—p. 505.
Apneic Origin of Emotional Jaundice. L. Plantier.—p. 506.

Valsalva's Experiment in the Semeiology of the Heart.—Maudru says that forced expiration, after a deep inspiration, the mouth, nose and glottis being tightly shut, deserves attention as a means to distinguish an organic from an inorganic heart murmur. The effort experiment allows a better exploration in this sense that, by holding the lung still and slowing the pulsations of the heart, it becomes easier to recognize whether the murmur is organic or inorganic; and by the more intimate contact of the pericardium layers, a hitherto unsuspected or more characteristic friction sound may be heard.

Presse Médicale, París

July 3, 1920, **28**, No. 45

*Diagnosis in Psychiatry. M. Laignel-Lavastine.—p. 441.
*Incision of the Cervix to Promote Delivery. A. Schwaab.—p. 443.
Mineral Waters and Anaphylaxis. J. Galup.—p. 445.

The Diagnosis in Psychiatry.—Laignel-Lavastine comments on what he calls the picturesque phase of mental disease, that is, the phase in which the painter portraying the attitude, the costume and the reactions to the environment shows at a glance the nature of the mental disturbance. The picturesque, the psychiatric and the biologic diagnosis have to be considered in turn and in the proper perspective, and he relates four typical cases to demonstrate how this should be done, "proceeding from the picturesque reaction to the syndrome, the affection, and the malady." One of his examples is that of an unmarried woman interned at the request of her physician, the object of her erotic persecution. The perspective diagnosis was erotomania in a hypomaniac from hyperthyroidism resulting from acute articular rheumatism at the age of 24. As a rule, however, psychiatry, as well as internal medicine, rests on the tripod: alcoholism, tuberculosis and syphilis.

Incision of the Cervix to Promote Delivery.—Schwaab recommends lateral rather than median incisions, and states that the only one of his seven patients treated in this way who had developed fever was already febrile when the cervix was incised. He declares that this method for rapid dilatation of the cervix is no more dangerous than other emergency procedures for the purpose, and has a well defined place in obstetrics.

July 7, 1920, **28**, No. 46

Ear and Throat Complications of Typhus. A. Costiniu.—p. 453.
*Mental Disturbances in Syphilitics. A. Barbé.—p. 454.

Mental Disturbances in Syphilis.—Barbé reviews extensive literature on this subject, and reiterates that there is no special type of psychoses peculiar to syphilis. It has only recently been recognized that syphilis, like any infectious disease, can induce mental disturbances, besides those of general paresis. The true toxic-infectious syphilopsychoses are those of the secondary period, traceable to the meninges. They usually appear about the fortieth day after the primary lesion, and the onset is sudden, like a toxic delirium. Loehe has reported a case of jacksonian epilepsy, coma and death, three months after infection, and hemiparesis has been observed, and one case of hemiplegia is on record, but there is nothing characteristic about the mental confusion or toxic psychosis of this phase except the improvement under specific treatment.

July 10, 1920, **28**, No. 47

*Grave Anemia with Uremia. C. Aubertin and J. Yacoel.—p. 461.
*Vertigo. M. Vernet.—p. 462.
Glioma of Nasal Fossae. Anglade and Philip.—p. 464.

Severe Anemia with Chronic Nephritis.—Aubertin and Yacoel relate that the anemia was so grave in some of their eleven cases of nephritis with uremia that it masked the causal kidney disease, as also in one of six cases without uremia. There was a tendency to edema in only four of the total seventeen, but the polynucleosis averaged 80 per cent. although the leukocyte count was generally normal and there were no secondary infections to explain it. The marrow seemed to be incapable of replacing the destroyed corpuscles, and hence the evolution of this grave anemia was rapid. In two cases described in detail, the girl of 21 and man of 27 died in six and eight months after the first symptoms. The anemia seems to be usually the work of the uremia and fluctuates with this.

Epinephrin in Treatment of Vertigo.—Vernet remarks that hitherto little has been done to combat the primal cause of vertigo which he defines as a loss of vasotonic balance in the internal ear from disturbance in the sympathetic nervous system. We have in epinephrin, he says, a means to restore the balance as it stimulates the nerve terminals, regulates the blood pressure and has an antitoxic action. In the last four years he has thus treated large numbers of patients, giving from 5 to 20 drops of the 1:1,000 solution of epinephrin twice a day, suspending it for a time after ten days, then resuming. Old and advanced lesions of the cochlea were not benefited; in some cases drugs to act on the vagotonia were found useful adjuvants. He regards this endocrine treatment as more promising than any other yet known.

July 14, 1920, **28**, No. 48

"Bone Transplantation," not "Grafts." R. Leriche and A. Policard.—p. 473.
*Inorganic Motor Disturbances. M. Briand and A. Rouquier.—p. 473.
Pains Like Electric Shock Consecutive to Trauma of Back of Neck. R. Dubois and J. Ribeton.—p. 474.
*Nature and Treatment of Diabetes. F. Farges.—p. 475.

Inorganic Motor Disturbances.—Briand and Rouquier state that they have encountered recently a number of cases of

motor disturbances which would most certainly have been classed as hysteria if it were not for the prevailing epidemic encephalitis. Evidently they belong in this latter group, and they sustain the assumption of some infectious element as a factor in the so-called inorganic motor disturbances.

Diabetes.—Farges recalls that the sugar in the blood is derived from the glycogen in the liver and not directly from the food, and that levulose and lactose do not induce glycosuria or hyperglycemia in diabetics. Even when glucose or saccharose is taken with the lactose, no further reducing power is conferred on the diabetic urine. His course of treatment is with restriction to 2 liters of milk to which he adds 200 mg., more or less, of lactose. In one of his twenty cases the man had 20 gm. sugar per liter, with 2,100 c.c. of urine, when first examined. His diet was not changed except that he took 20 gm. of lactose daily for a week. The glycosuria was then 7.85 per liter; then the diet was restricted to 2 liters of milk and 100 gm. of lactose, and in four days the urine was free from sugar. Then eggs, veal, chicken and green vegetables were allowed in addition, and during the several months to date his health has been perfect, with no trace of glycosuria. One woman of 61 with 37.76 per sugar per liter and 2,400 c.c. urine was put on the milk and 125 gm. of lactose, and in three days the urine was free from sugar. In another group of cases the glycosuria showed marked reduction under the lactose, from 85.5 gm. in the twenty-four hours, to 3.15 gm. for example, after a week of the milk and lactose, but when this threshold of sugar excretion was reached it was impossible to drive it any lower down. This individual threshold keeps invariable, and it is exclusively for glucose. The higher the threshold in the urine, the higher the glucose content in the blood. With a threshold of 50 gm., the prognosis is favorable under dietetic restrictions, but above 200 gm. death is imminent within a few months. The threshold seems to be determined by the liver, he says; it produces more sugar, the graver the disease. Diabetes, therefore, is the result of a perversion of a physiologic function, the sugar excretion of the liver. Experimental research, he adds, has confirmed this.

Progrès Médical, Paris

June 5, 1920, **35**, No. 23

Classification of Epidemic Encephalitis. H. Roger.—p. 247.
Mineral Waters in High Blood Pressure. A. Piatot.—p. 249.
Lactic Acid and Lactic Ferments. G. Faroy.—p. 253.
*Sex of Skeleton Shown by Atlas. M. Baudouin.—p. 255.

June 12, 1920, **35**, No. 24

Classification of Digestive Disturbances in Infants. A. B. Marfan.—p. 259.
Mineral Waters in Chronic Rheumatism. L. Bertier.—p. 262.

Diagnosis of Sex of Skeleton by Shape of the Atlas.—Baudouin has found that the glenoid fossa is longer and wider in men than in women, and says that this "glenoid index" will determine the sex of a skeleton. He gives the findings in twenty-two skeletons from the Vaudancourt prehistoric burying place.

Schweizerische medizinische Wochenschrift, Basel

July 1, 1920, **50**, No. 27

*Tuberculin Treatment. H. Sahli.—p. 557.
*Chemistry of Thyroid Secretion. E. Herzfeld and R. Klinger.—p. 567.
*Significance of Slight Rise of Temperature in the Tuberculous. H. J. A. van Voornveld.—p. 567. Begun in No. 26, p. 539.

Intradermal Tuberculin Treatment.—Sahli inaugurated the multiple inoculation of tuberculin with his *Nadelschnepper*, and states that this is proving in many hands a convenient and effectual method for tuberculin treatment. The large number of pricks multiplies the areas for absorption, while patients do not shrink as much from it as from a subcutaneous injection. But he now prefers intradermal injection of the tuberculin as an improvement over all other methods. This allows greater precision in the dose, and the local reaction to the tuberculin generates local production of antibodies, which aid in immunizing. It has further the advantage that the local reaction is an index of the degree of immunization that has been realized and a guide to the dose of tuberculin to use to avoid injurious effects, as the skin seems to be far more sensitive to tuberculin than all other tissues. He emphasizes that intradermal tuberculin treatment and prophylaxis belong to the general practitioner, as he sees the cases in the earlier stages when tuberculin treatment offers the greatest chances for success.

Chemistry of the Thyroid Secretion.—Herzfeld and Klinger report the results of experiments on tadpoles which apparently demonstrated that thyroid extract from which all traces of iodin had been removed displayed the same biologic action as if the iodin had not been extracted. They regard this as testifying that the iodin content of the thyroid secretion has nothing to do with its biologic action.

Significance of Slight Fever in the Tuberculous.—Voornveld warns that when the rectal temperature shows a rise to 37.7 or up to 38 C. (100.4 F.) after an hour's walk, this suggests suspicion that something is wrong but it by no means testifies to tuberculosis, not even when the temperature goes still higher than this. Individual habits must also be considered; a letter carrier would react differently from an office clerk. Half an hour of repose after the test exercise should bring the temperature down to within three tenths of a degree Centigrade of what it was before the walk. [Three tenths of a degree Centigrade is nearly six tenths of a degree Fahrenheit.] If the temperature takes longer than this to decline, it is strongly suspicious of serious pathologic conditions, and tuberculosis is usually responsible. On the other hand, the lack of a temperature reaction is not an infallible sign that conditions are normal.

When the thermal reaction to exercise is approximately normal in the tuberculous, this testifies that the focus is more or less healed and isolated. Abnormal fluctuations in the temperature during repose, even if the rise is very slight, demand strict enforcement of repose. This point is the one most often neglected; either the rise is overlooked or is regarded as too slight to be heeded. He says that he has seen hundreds of patients die from the progress of their disease because the slight rises in temperature during the early, curable stage had not been heeded. Physicians must realize that it is just as wrong to allow patients with even a slight rise in temperature to go for a walk or to work as for a surgeon or obstetrician to neglect asepsis. He records the temperature every two hours at first to ascertain the individual type, also the monthly type in women. The temperature is taken several times a day in the febrile and from once to three times in the afebrile, then gradually only once in two, three or seven days, interposing an occasional day in which the temperature is taken oftener. These conclusions are drawn from Voornveld's own observation and experience, but are sustained by literature which he cites.

Policlinico, Rome

May 24-31, 1920, **27**, No. 21-22

*Medical Treatment of Dysenteric Abscess of Liver. T. Pontano.—p. 571. Conc'n in No. 24, p. 607.
*Fatal Sero-Anaphylaxis. A. Pozzo.—p. 585.

Medical Treatment of Liver Abscess.—Summarized recently, page 438.

Fatal Sero-Anaphylaxis.—Pozzo reports from Venice the necropsy findings in the case of a woman of 34 given repeated injections of commercial antistaphylococcus serum in treatment of acute articular rheumatism. He ascribes to anaphylactic toxic action the fresh thrombophlebitis in the common iliac, the fatty degeneration in liver and kidneys, and the cyanosis of the limbs with symmetrical gangrene of the palms.

June 28, 1920, **27**, No. 26

Addison's Disease in Malaria. A. Furno.—p. 668.
*Endocrine Factors in Gastric Ulcer. T. Silvestri.—p. 673.

Endocrine Origin of Gastric and Duodenal Ulcer.—Silvestri compares the results of his own experimental research with suprarenalectomy and that of others in this line, pointing out that the results differed in respect to consecutive development of ulcer according to whether the animal was gravid or not. The tendency to ulcer production is sustained by vagotonia, but castration and pregnancy neutralize vagotonia and hence arrest the tendency.

Semana Médica, Buenos Aires

March 11, 1920, **27**, No. 11

*Inflammatory Endotheliomas. A. Gutiérrez.—p. 353.
*Spontaneous Abortion of Diseases. C. Citrino.—p. 357.
*Functional Diagnosis of the Liver. Tiburcio Padilla.—p. 363.
History of Care of Insane at Buenos Aires. J. Ingenieros.—p. 376.

Endotheliomas.—In Gutiérrez's case the previously healthy woman of 33 developed a progressive subacute subcutaneous dermatitis—inflammatory lymphangi-endotheliomas with neoplastic elements. Some of the bunches were excised but more and more kept coming. Treatment with radium caused the subsidence of some of the bunches, but the region ulcerated. Nine photomicrograms are given.

Aborting of Diseases.—Citrino recalls that any and every disease may get a foothold and then die out before it has had time to develop the characteristic clinical picture. This is the explanation of many puzzling transient morbid conditions, and it also explains the development of disease in the apparently healthy when the vitality becomes depressed from any cause. This was shown by the development of malaria in France in native troops from malarial zones who had not had malaria at home. It was disconcerting to observe that malaria could be acquired in France, but it soon proved that the men had been healthy carriers. The stress of army life had broken down their resistance.

Tests of Liver Functioning.—Tiburcio Padilla gives the technic for the various functional tests in vogue, but comments that none of them can be relied on implicitly, as kidney functioning may modify the findings in blood and urine. Bile itself has comparatively little importance as it is merely a residual product, like coke in a gas plant. The conclusions as to liver functioning have to be based on the oversight of the whole, the persistency, and the intensity of the responses to the tests. The only liver test which throws light on the prognosis is the camphor test, although even this is not infallible. He has obtained negative results with this test in transient jaundice or other conditions in which there could be no question of an irreparable loss of the liver function.

March 18, 1920, **27**, No. 12

*Menacing False Croup. F. Cardey.—p. 389.
Gonorrhea; Diagnosis and Pathology. E. Castaño.—p. 392.
Etiology of Measles. J. A. López.—p. 396.
*Pepsinogenesis and Lymphocytosis. A. J. Pavlosky.—p. 398.
Pathologic Suicide. R. Bosch, Jr.—p. 405.

False Croup.—Cardey explains that grave false croup is an inflammation of the larynx and trachea in children with the exudative diathesis. Intubation is of little use, the excessive secretion blocking the lumen of the tube and preventing its getting a hold so that it is promptly expelled, and it is impossible to keep replacing it through the whole course of the tracheitis which may last three weeks or more. In several of his cases, the difficulty in breathing was just as pronounced the twentieth day after tracheotomy as at first, whenever he attempted to remove the tube. Diphtheria antitoxin is absolutely useless, and usually aggravates the condition. He ascribes the croup in great part to the improper food the children are getting, which aggravates the tendency to the exudative diathesis. The children were all between 1 and 4 years old, the age at which improper diet causes the greatest disturbances. The practical conclusion from his experience is that children with this diathesis should have their diet regulated with exceptional care to ward off this false croup. If it develops and resists ordinary measures, tracheotomy should be done without delay. The air should be kept moist with steam, and moist heat should be applied to neck and chest; and the food be mainly cereal and vegetable gruels and soups, with fruit juices.

Origin of Pepsin.—Pavlovsky reports research which has apparently demonstrated the important share of the spleen in the formation of the gastric ferments, and that injections of spleen extract increase the quantity and improve the quality of the secretion in the stomach. Injections of fresh leukocytes and red corpuscles from the horse acted in the same way. All confirm the rôle of the spleen in normal digestion as well as in blood production, and sustain the principle that the secretion of an organ is perhaps the best stimulant to promote its secretory function. He gives the details of series of tests on dogs with a Pawlow gastric pouch, given an intramuscular injection of 25 c.c. of a 25 per cent. decoction of spleen tissue, the blood count recorded over long periods, and the units of gastric digestion.

Deutsche medizinische Wochenschrift, Berlin

June 3, 1920, **46**, No. 23

Exotic Diseases and Diagnostic Errors. I. P. Mühlens.—p. 617.
Case of Cystic Colitis. E. Keeser.—p. 619.
Effect of Nutrient Medium on Weil-Felix Reaction. Michaelis.—p. 619.
Case of Atypical Muscular Dystrophy. A. Böttner.—p. 620.
*Conservative Treatment of Bone Cysts. F. Lotsch.—p. 620.
Arc-Lamp Phototherapy in Laryngeal Tuberculosis. Blegvad.—p. 621.
More about Spirochaeta Trimerodonta. E. Hoffmann.—p. 625.
Aromatic Nitro Compounds as Abortifacients. J. R. Spinner.—p. 626.
Acute and Chronic Vagotonia. L. Feilchenfeld.—p. 627.
*Support of Perineum in Labor. Pfleiderer.—p. 629.
Dilated Pupil Following Barbital Poisoning. J. Fleischer.—p. 630.
Intravital Microscopy of Eye with Gullstrand-Nernst Lamp. Koeppe.—p. 630.
Rhinolaryngologic Hints for General Practitioner. Finder.—p. 633.

Healing of Solitary Bone Cyst.—Lotsch reiterates that the bone should never be resected for a single focus of fibrous osteitis, and reports a case in a girl of 10 in which roentgenograms taken every ten days showed bone tissue gradually filling up the cavity of the solitary cyst, after curetting. By the eleventh month not a trace of the cavity could be detected.

Support of Perineum in Labor.—Pfleiderer discusses his method of supporting the perineum to prevent laceration. He commonly avoids antepartum irrigation of the vagina. He avoids also, in most cases, putting his hand or even a finger into the vagina. In case external palpation does not inform as to the presenting part, he palpates through the rectum. Through the rectal wall he can distinguish the outlines of the head, rump, foot, hand or umbilical cord. Only very rarely does it become necessary to enter the vagina. When the head begins to distend the vulva markedly, he places the patient on the right side, requesting her to draw up the legs as much as possible. He takes a position in front of the patient and lays his right hand on the head of the child in such a manner that the tips of the fingers of the outspread hand rest on the perineal border. Then, as the head of the child advances, he pushes the perineal margin ahead of his finger tips and over the head of the child, so that the distance from the anal opening to the edge of the perineum is not much greater than it was before the head began to protrude through the vulva. Especial caution is required when the edge of the perineum reaches the chin of the child. Here he checks a too rapid advance of the head. By this method the number of perineal tears has been much reduced. Even primiparae of advanced age are frequently brought through childbirth without injury to the perineum.

Jahrbuch für Kinderheilkunde, Berlin

1920, **91**, No. 6

*Anaphylactoid Purpura. E. Glanzmann.—p. 391.
*Calcium Content of Blood. Ida Handovsky.—p. 432.
*Vascular Thrombosis in Young Children. R. Hamburger.—p. 439.

Anaphylactoid Purpura.—Glanzmann explains that the etiology of a pathologic predisposition to bleed is extremely complex. In the purpura hemorrhagica group the composition of the blood itself is the main factor; in the anaphylactoid group, chemical (toxic) influences acting on the capillaries are responsible, inducing stasis, orthostatic purpura, and angioneurotoxic bleeding. In a third group, mechanical-dynamic factors are mainly involved; this includes the hemorrhagic phenomena in whooping cough, and with thrombosis, etc. The anaphylactoid hemorrhages, on the other hand, have no connection with high blood pressure or local inflammatory processes. This classification points the way to treatment, arsenic and transfusion of blood in the hemorrhagic purpura type, and serotherapy in the anaphylactoid type.

Calcium Content of the Blood in Connection with the Face Phenomenon.—Handovsky reports that in twelve adults exhibiting the Chvostek sign and in nine free from it the calcium content of the blood was within the same range in all. This conflicts with Stheeman's statement that the calcium content is low when this sign is positive.

Thrombosis in Children.—Hamburger analyzes twenty-six cases in young children of sinus thrombosis and three of thrombosis elsewhere. The youngest child was 11 days old, and none were older than 4 months. The somnolency and cerebral vomiting were not characteristic, but in a few cases there was stasis in the peripheral veins, with edema in face and head. Symptomatic convulsions, encephalitis, etc., reveal the bacterial infection of the brain, the cerebral localization of a general infection in which the sinus thrombosis develops so insidiously as to be usually a necropsy surprise.

Monatsschrift für Geb. und Gynäkologie, Berlin

April, 1920, **51**, No. 4

*Signs of Abnormal Ovarian Functioning. R. Schröder.—p. 217.
*Indications for Interrupting a Pregnancy. R. T. von Jaschke.—p. 232.
*Status Hypoplasticus. E. Mathias.—p. 249.
Carcinoma of Vagina with Genital Prolapse. E. Kleeman.—p. 252.
Mental Condition of Parturients. F. Poensgen.—p. 256. Conc'n.

Clinical Signs of Abnormal Functioning of the Ovaries.—Schröder says that constitutional factors may be responsible for excessive functioning of the ovaries, or the loss of inhibitory factors from other endocrine glands. Chronic metroendometritis may develop as the consequence of long continued ovarian hyperfunctioning, but transient hyperfunction is usually a period of increased physical, mental and sexual vigor. Secondary insufficiency of the ovaries may be traced to pelvic disease; to excessive or deficient functioning of the thyroid, suprarenals or pituitary; to cachexia of any kind; or acute and chronic intoxication of medicinal or parenteral nature from metabolic or nutritional disturbance; to anemias or chlorosis; to carbon dioxid intoxication from defective circulation; to nervous or mental derangement, possibly from abnormal distribution of the blood; or to unknown causes, as from change of climate. If all these can be excluded, primary insufficiency of the ovaries may be assumed, and proper treatment instituted. Perverted ovarian functioning is manifested in irregular bleeding from the uterus from the persistence of ripe follicles without any corpus luteum stage. With cystic degeneration of the ovaries, the follicles do not ripen, but with this hemorrhagic metropathy the persistence of the follicles keeps the endometrium in a constant state of proliferation. Another anomaly for which perverted ovarian secretion is known to be responsible is the persisting corpus luteum. It may be so large as to simulate extrauterine pregnancy.

Justified Indications for Interrupting a Pregnancy.—Von Jaschke reviews the whole field of pathologic conditions in which the continuance of the pregnancy seems fraught with special dangers, his conclusion being that such conditions are few and infrequent. In 385 cases in which others advised intervention he was able to escape it in 278. Only when cough, night sweats, evening fever and progressive loss of weight continue in spite of sanatorium treatment, does he regard abortion as indicated. After the first three months, he intervenes only if the lung process is mild or only recently flaring up; otherwise we cannot hope to influence the disease with any measures. If the woman has several living children, or if there is laryngeal tuberculosis, or this is the first pregnancy in far advanced tuberculosis, he interrupts the pregnancy and sterilizes the woman. With acute heart disease during a pregnancy he advises to empty the uterus by anterior colpohysterotomy under lumbar anesthesia after the acute manifestations have subsided. With chronic heart or valvular disease, even symptoms of failing compensation do not justify it unless the heart was manifestly insufficient before the pregnancy. In these cases and with albuminuric retinitis the woman should be under constant supervision in an institution while the question of intervention is being considered. He has encountered only four cases in which uncontrollable vomiting compelled interruption of the pregnancy.

Status Hypoplasticus.—Mathias insists that this condition explains many otherwise mysterious instances of death from fright, sports, and under anesthetics. One man of 20 died after three months of increasing weakness and subnormal temperature; blood pressure 60 or 70 mm. Necropsy disclosed an extremely narrow aorta. In a case reported in detail the woman of 23 died suddenly after spontaneous delivery, and necropsy showed marked hypoplasia of the blood vessels and suprarenals, lymphatism and embryonal shape of the kidneys—thus a biologically substandard organism unable to stand the stress of childbirth plus a little chloroform.

Münchener medizinische Wochenschrift, Munich

Jan. 30, 1920, **67**, No. 5

*Roentgen-Ray Treatment of Cancer. W. Lobenhoffer.—p. 119.
Serotherapy in Tuberculosis. A. Strubell.—p. 120.
*Experience with Silver Arsphenamin. E. Galewsky.—p. 124.
Pulmonary Tuberculosis During the War. F. Reiche.—p. 127.
*Lymphogranulomatosis. R. Bierich.—p. 128.
Lethargic Encephalitis. F. Groebbels.—p. 131.
Roentgen-Ray Outline of the Lungs. H. Assmann.—p. 134; Reply. H. Chaoul.—p. 134.
Urology and the General Practitioner. E. Kraft.—p. 135.

Feb. 13, 1920, **67**, No. 7

Increase of Mental Disease in Spring and Summer. Wilmanns.—p. 175.
Changes of the Hilum Shadows in Heart Disease. H. Assmann.—p. 177.
Roentgen Irradiation in Rectal Carcinoma. H. Chaoul.—p. 179.
Irradiation of Cancers of Buccal Cavity. H. Tichy.—p. 181.
Roentgen Radiometer. Glocker and Reusch.—p. 181.
Malaria in Bavaria. F. Eckstein.—p. 183.
Mumps in Soldiers. Bardachzi and Barabas.—p. 185.
Ethyl Chlorid Narcosis. Voll.—p. 185.
"Utilization of Surplus Human Milk." Grumme.—p. 186.
"Urology for the General Practitioner." Schlagintweit.—p. 186.

Roentgen-Ray Treatment of Cancer.—Lobenhoffer advocates postoperative irradiation of cancer, but states that no detail of operative technic should be neglected with the idea that irradiation can be relied on to make up the deficiency, as such is not the case—it cannot always be relied on. In inoperable carcinomas, raying is a good adjuvant in the care of the patients, as it may lessen their suffering and prolong their lives. More than that we cannot expect at present. Roentgen-ray treatment cannot as yet be considered specific for cancer, and its application is neither so simple nor so harmless that it can be carried out without careful study of the indications and critical consideration of all the factors concerned. He does not think that roentgenotherapy in cancer is sufficiently developed to be used by the general practitioner.

Two Years' Experience with Silver Arsphenamin.—Galewsky has used silver arsphenamin for more than two years and in that time he has given 2,000 injections. He considers silver arsphenamin sodium as the most efficacious of all arsphenamin remedies that have appeared so far. With no other arsphenamin preparation has he had so few side reactions, but the dosage must be carefully regulated, being gradually increased and also adapted to accord with idiosyncrasies. He begins with a small dose, 0.05 gm. in the case of weakly women, otherwise 0.1 gm., and increases the dose every four or five days until he reaches the maximal dose, 0.3 gm. for men and 0.25 gm. for women, although ordinarily he does not give men more than 0.25 gm. and women more than 0.2 gm. as the maximal dose. If these heavy doses are not well borne by the patients—if they are sensitive to arsphenamin—he gives smaller doses more frequently and increases the dosage very gradually. He always waits for any untoward effects such as headache, nausea, dizziness, vomiting, weakness, etc., to subside before giving a new injection.

Anaphylaxis in Lymphogranulomatosis.—Bierich discusses the pathogenesis and the differential diagnosis of lymphogranuloma. The portal of entry has not as yet been demonstrated. The essential biologic characteristics of the lymphogranuloma are that a granulation tissue presents at one and the same time different stages of specific inflammation, while a tendency to retrogressive metamorphosis is noticeable. Characteristic albumin decomposition products are present. In uncomplicated cases (from 30 to 50 per cent.), when this stage is reached, local and general anaphylactic symptoms appear. At a later stage, either with or after development of the retrogressive phenomena, connective tissue proliferation, frequently with hyaline degeneration, takes place, which leads finally to the induration of the granulation tissue. The latter is not usually confined to the lymphadenoid tissue that was first attacked. In the microscopic preparation it can be

seen breaking through the physiologic borders and sending its proliferative infiltrate into the neighboring regions. In the manner of its local extension the lymphogranuloma closely resembles lymphosarcoma. For the differential diagnosis the clinical symptoms must often be taken into account. The proof has not yet been presented, however, of the hypothetic specific anaphylaxis-producing albumin catabolites in this disease.

Therapeutische Halbmonatshefte, Berlin

March 1, 1920, **34**, No. 5

Modern Treatment of Mental Diseases. R. Raecke.—p. 129. Conc'n.
Treatment of Flat-Foot. Wollenberg.—p. 134.
*Vaccine Therapy in Furunculosis of Infants. H. Langer.—p. 138.
Subcutaneous Injections of Quinin. M. Klotz.—p. 141.
*Neo-Arsphenamin Taken Mistakenly Internally. M. Friedmann.—p. 142.

Vaccine Therapy in Furunculosis of Infants.—Langer recommends vaccine therapy in the treatment of furunculosis in infants. The injections are given daily, from 500 to 1,000 million bacteria being employed. He finds that the danger from secondary infection is less with intramuscular than with subcutaneous injections. Two or three injections will usually bring about remarkable results. It has been shown that the new-born infant lacks the power of forming specific antibodies. Langer, therefore, does not explain the favorable effect of vaccine therapy in infants on the basis of the formation of specific antibodies, but is rather inclined to bring it under the head of nonspecific protein therapy. Older children, who have developed more or less fully the power of forming antibodies, require for this reason different treatment. He uses a commercial vaccine.

Neo-Arsphenamin Taken Mistakenly Internally.—Friedmann reports a case in which the patient through a misunderstanding took internally 1.8 gm. of neo-arsphenamin. She found the powder almost tasteless, but difficult to take on account of the extremely strong odor. She had taken every evening for six consecutive days 0.3 gm. of neo-arsphenamin in a glass of water. For ten minutes after the ingestion of the powder she had suffered from slight abdominal pain. Three days after taking the first internal dose, diarrhea set in, but at the end of the six days the stools were again normal. The patient showed no objective pathologic symptoms; the urine was free from albumin and sugar; the Abelin and the Marsh tests were negative. The Wassermann reaction was still positive three days after the last of the six internal doses. One peculiar feature was that the patient through the internal doses of neo-arsphenamin got entirely rid of the oxyurids, with which she had been troubled for some time.

Wiener klinische Wochenschrift, Vienna

Feb. 5, 1920, **33**, No. 6

Vertigo and Its Diagnostic Interpretation. S. Erben.—p. 119. Conc'n in No. 7, p. 149.
Mediastinal Emphysema. S. Wassermann.—p. 122.
*Infections Following Manicuring. H. Körbl.—p. 127.
Typhus Fever. E. Schweinburg.—p. 129.
*Syphilitic Tracheo-Esophageal Fistula. M. Krassnigg.—p. 130.

June 3, 1920, **33**, No. 23

Operative Treatment of Chronic Stenosis of Larynx and Trachea. G. Hofer.—p. 485. Cont'd.
Tuberculosis Infection. Peyrer.—p. 488.
Treatment of Meningitis with Staphylococcus Vaccines; Two Cases; One Fatal. L. Schönbauer and H. Brunner.—p. 491.
Complement Fixation Test in Spanish Influenza. Engel.—p. 493.
Hints on Roentgen-Ray Diagnosis. A. Henszelman.—p. 494.

Infections Following Manicuring.—Körbl reports thirty-two cases of infection of the fingers following manicuring. In most of them the infection had led to severe inflammatory processes that required long treatment and caused more or less severe functional disturbances. In several instances the infection even threatened the life of the patients. The primary clinical picture was that of cutaneous panaritium. In most of the cases the patients did not come for treatment until the primary stage had passed. Bacteriologic examination revealed in most cases mixed infection, streptococci, however, predominating. Of the thirty-three patients only nine had manicured themselves. In twenty-four cases the patients had secured the services of professional manicurists. It seemed evident that the infection had been transmitted by instruments or ointments that had become infected. In view of the foregoing facts, Körbl suggests that manicurists should be required by law to disinfect their instruments and, by using an instrument, to avoid contamination of ointments, etc.

Tracheo-Esophageal Fistula of Syphilitic Origin.—Owing to its comparative rarity, Krassnigg reports a fatal case of formation of a tracheo-esophageal fistula in a syphilitic. He states that the vast majority of tracheo-esophageal fistulas are of carcinomatous origin, though a small portion are caused by ulceration from a foreign body in the esophagus. A small number are tuberculous and congenital fistulas. In Krassnigg's case the direct cause of death was bilateral inhalation pneumonia, which had induced incipient gangrene of large portions of the right lung. Artificial feeding through a stomach tube is strictly indicated in such cases, and the patient must be cautioned against laying aside the stomach tube even for once. As for specific antisyphilitic treatment, this may increase the size of the fistula instead of diminishing it. Surgery does not promise much when the site of the fistula is so low down as was here the case. The interposition of thyroid tissue has not gone beyond the stage of animal experimentation.

Zentralblatt für Gewerbehygiene, etc., Berlin

July, 1920, **8**, No. 7. Only medical articles listed.

*Toxicity of Anilin Dyes. Bachfeld.—p. 113. Cont'd.
*Toxic Action of Arseniuretted Hydrogen. F. Koelsch.—p. 121.

Toxicity of the Anilin Dyes.—Bachfeld's experience as physician to the large dye factory at Offenbach has not confirmed Weil's assertion in 1912 that 70.9 per cent. of the 107 dyes he investigated are toxic to handle. In six years, with an annual total of from 640 to 1,008 full time workers (300 days) only 32 developed skin disease, with a loss of 595 working days in all. Of this group of 32, in only 7 was the skin disease traceable to handling the finished dye, and in only 2 was this beyond question. In these two instances the dye was black *schwefelfarbe* or *echtmarineblau*. In handling the crude and the intermediate materials, 2 or 3 per cent. of the full-time workers were affected, and of those engaged in direct production of the dyes, 3 or 4 per cent. The article is to be continued.

Industrial Poisoning with Arseniuretted Hydrogen.—Koelsch adds eleven new cases to the 119 already on record in which AsH_3 generated in the course of the work caused severe destruction of the blood, with a mortality of 27.7 per cent. The cases occurred in chemical laboratories, metal works, balloons, and in making toy balloons; in Koelsch's cases, during the manufacture of vanadium iron from ore containing vanadium (6 per cent.), lead (30 per cent.), copper (9 per cent.), and arsenic (0.3 per cent.), which was extracted with sulphuric acid. This work had been going on for three years without mishap when, for some unexplained cause, the dangerous gas was generated and all but two of the thirteen men were affected, and one died. No special odor was noticed in the room.

Of the five classes of hemolytic poisons, this is the only one likely to be encountered in the industries, and in the mild cases the symptoms suggest gastro-intestinal catarrh or catarrhal jaundice until the clear, dark red urine with quantities of albumin is noted. The hematuria does not appear until after eight hours, the jaundice not till the second day, and the aspect may be more of a bronzing on account of the cyanosis. There is no production of methemoglobin, in contrast to intoxication with the nitro bodies. The blood shows destruction of from 75 to 80 per cent. of the erythrocytes by the end of a week, and the hemoglobin drops to 16 or 20 per cent. Oxygen has to be supplied to tide the patient along, and may have to be used for days and even weeks. Given under pressure, this saturates the remaining hemoglobin, and even the serum may absorb up to 2 per cent. To keep up the secretion of urine, fluids should be supplied in abundance by the rectum, with eventually venesection and infusion of Ringer's fluid or physiologic saline. In prophylaxis, ores as free from arsenic as possible should be used. Some have sug-

gested keeping birds in the room, and a hydrarsenioscope has been devised which reveals the presence of the gas in the air by the yellow tint assumed by mercuric chlorid.

Zentralblatt für Gynäkologie, Leipzig

May 8, 1920, **44**, No. 19

Ovulation and the Hormone Doctrine. R. Meyer.—p. 473.
*Obstetric Compression of the Aorta. H. H. Schmid.—p. 479.
*Spontaneous Amputation of Left Adnexa. B. Schweitzer.—p. 487.
Two Cases of Adenomyositis Uteri et Recti. H. Becker.—p. 490.

Manual Compression of the Aorta in Third Stage of Labor.—Schmid states that serious hemorrhages during the third stage of labor or postpartum, of whatsoever origin, may be checked by the Momburg rubber tube or the Sehrt clamp, but that in the absence of these devices manual compression of the aorta should be resorted to, which is a well known though somewhat negiected procedure. Not only obstetricians but midwives also should familiarize themselves with this and use it when occasion demands. The use of the Momburg rubber tube is associated with some danger as is shown by a number of injuries and a few deaths. It is allowable only when the patient is in danger of bleeding to death.

Unilateral Spontaneous Amputation of Adnexa.—Schweitzer reports a case in which laparotomy revealed that spontaneous amputation of the left adnexa had occurred, and the separated organs were receiving their blood supply through secondary adhesions. On account of retraction of the omentum and stretching of the adhesions, the adnexa had migrated to the middle of the abdominal cavity and had no connection with their original site.

May 15, 1920, **44**, No. 20

The Sigwart Sign of Virulence of Streptococci. H. Neu.—p. 508.
Pendulous Abdomen and Cesarean Section. T. Micholitsch.—p. 514.
*Supravaginal Hysterectomy for Genital Prolapse. K. Tittel.—p. 517.
*Spasm of the Nipple. R. Zimmermann.—p. 520.
Rarity of Eclampsia on War Diet. B. Váró.—p. 522.

Supravaginal Hysterectomy for Prolapse of Uterus.—Tittel's operation that he has used in seventeen cases has given entirely satisfactory results, namely, the von Holst supravaginal amputation of the uterus, suturing the stump to the abdominal wall. He recommends this operation especially for total prolapse in elderly women.

Spasm of the Nipple.—Zimmermann describes a peculiar condition of the nipple in an otherwise healthy primipara. When the child was 7 weeks old, he observed that a few minutes after it had nursed, the nipple began to turn white. At first a white spot the size of a pinhead could be seen in the center; it gradually spread over the whole nipple and resembled a Braun wheal induced on the skin. The nipple felt hard. At first the pain was confined to the nipple but later radiated to the whole mamma. The phenomenon lasted from five to eight minutes and receded slowly. A similar condition had been noted at times during pregnancy. Therapeutic attempts proved unsuccessful.

Arbeiten a. d. Anat. Institut. d. Univ. Sendai, Japan

May 15, 1920, No. 4

Microscopic Anatomy of the Truncus Cerebri in Mammals. G. Fuse.—pp. 1 to 107; 93 plates.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

May 8, 1920, **1**, No. 19

*Deviation of Complement in Tuberculosis. J. Hekman.—p. 1612.
One-Sided Diet and the Vitamins. D. J. Hulshoff Pol.—p. 1625.
*The Sachs-Georgi Reaction K. Dekenga and Plantenga.—p. 1631.
Pathology of First Months of Life. Cornelia de Lange.—p. 1633.
Case of Hypernephroma of Kidney. L. J. van der Mandele.—p. 1638.

Deviation of Complement in Tuberculosis.—Hekman found that all the human serums he examined laked sheep erythrocytes, but that this laking property could be checked with tuberculous serum when an antigen, such as a 1 per cent. solution of tuberculin, was added to the serum. He adds a little casein to absorb some of the hemolysins and reduce the tryptic power of the serum by diverting it away from the tuberculin. It also serves to avert the nonspecific binding of the complement by the tuberculin. The test gives a positive response in all cases of established tuberculosis, regardless of its location, the central nervous system excepted. The prognosis depends on circumstances; an intense response, showing large amounts of antibodies, is a favorable sign, but the extent of the lesions may be beyond recuperation. From his observations in the course of this research and the experiences related by veterinarians, and his theoretical reasoning, he has become quite skeptical in regard to possible benefit from vaccine treatment of tuberculosis.

The Sachs-Georgi Reaction in Syphilis.—Dekenga and Plantenga report here the parallel findings with the Wassermann and Sachs-Georgi tests as applied to their last 1,000 serums examined. The last mentioned test becomes negative under treatment sooner than the former, and the findings with the two tests were occasionally conflicting in different senses. Hence the latter cannot be relied on alone, but in combination with the Wassermann test it may prove instructive.

May 15, 1920, **1**, No. 20

*Children Predisposed to Disease. C. J. van der Loo.—p. 1689.
Slight Virulence of Strain of Tubercle Bacilli. L. K. Wolff.—p. 1701.
Secondary Suture in Surgery of Trauma. H. Rath.—p. 1707.
Hallux Valgus. H. J. Lycklama à Nijeholt.—p. 1711.
*Epinephrin Arrests Abdominal Pains. A. G. W. van Waveren.—p. 1716.

Physical Standards of Children.—Van der Loo measures the side-to-side diameter of the chest as the child stands with arms stretched horizontally at the sides, and the diameter through sternum and spine as the arms are extended forward. The average difference between these two diameters gives the most instructive chest measure, compared with the circumference of the chest, the vital capacity, the weight, and the height. The records from 330 children are compared, confirming that by such measurements it is possible to sift out the children who are peculiarly predisposed to tuberculosis and start them on the right track in time.

Epinephrin in Treatment of Abdominal Pain.—Van Waveren describes as a typical instance of the benefit occasionally to be derived from epinephrin, the case of a woman whose abdominal pains persisted unmodified after appendicectomy. He ordered 50 mg. of dry suprarenal substance daily, but this dose had to be reduced to 25 mg. Under this the abdominal pains subsided and the stools became regular. Then the dose was continued for two weeks on alternate days, and clinically normal conditions were restored for a time. Then the complaints began anew, and again the symptoms yielded to the epinephrin, as also at a third recurrence. Three months have elapsed since the last recurrence, and the abdominal conditions have been apparently normal since. The patient is undoubtedly neuropathic; and epinephrin probably stimulates the ganglion cells to better functioning.

Hospitalstidende, Copenhagen

May 26, 1920, **63**, No. 21

*Absorption of Visible and Ultra-Red Rays by the Skin. C. Sonne.—p. 321. Conc'd in No. 23, p. 353.

June 2, 1920, **63**, No. 22

Papillomatous Tumors in the Thyroid; Two Cases. A. Sennels.—p. 337.

Absorption of Visible and Ultra-Red Rays by the Skin.—This communication from the Finsen Light Institute seeks to explain the action of the general arc light baths by comparing effects of the light rays and of infra-red rays on the skin of the forearm. Sonne announces as the result of his extensive research that the arm can bear without burning 3.11 calories per minute of the visible rays and only 1.79 per minute of the "inner ultra-red" rays and 1.33 per minute of the "outer ultra-red" rays. None of the latter are reflected back from the surface while 35 per cent. of the visible and of the "inner ultra-red" rays are turned back, leaving only 2.02 calories to be absorbed. Hence this figure represents the amount of the visible rays that can be absorbed without burning. The temperature at the surface of the skin may therefore be 43.8 C. under exposure to the visible rays but 45.5 C. under the "outer infra-red" rays. With the latter, the temperature decreases down to body temperature at a depth of 1 cm., while with the visible rays the temperature increases with the depth to a certain point—about 0.5 cm.—

where the temperature reaches 47.6 C. (117 F.). At this point, the temperature with the infra-red rays is only 41.7 C. In short, he declares in conclusion, with exposure of the skin to the light rays we are able to raise the temperature of the blood in and under the skin higher than can be realized with the strongest bearable dark heat rays. The difference may amount to as much as 5.8 degrees centigrade.

Hygiea, Stockholm

June 16, 1920, **82**, No. 11

Typhoid Epidemic at Sundbyberg, 1919. O. Karlén.—p. 353.
*Stability in Suspension of the Blood Corpuscles. K. G. Ploman.—p. 363.

Stability in Suspension of the Blood Corpuscles.—Ploman examines the blood circulation in the retina during pressure on the eyeball, and records the length of the interval between the arrest of the arterial circulation in this way and the appearance of a tendency to agglutination. The findings parallel those obtained in vitro by Fahræus' method, as he describes. In the eighty-three persons examined, wide individual variations were found.

Norsk Magazin for Lægevidenskaben, Christiania

July, 1920, **81**, No. 7

*Serum Sickness and Anaphylaxis. Y. Ustvedt.—p. 625.
*Is Tuberculous Meningitis Curable? F. Harbitz.—p. 644.
*Treatment of Acute Empyema. E. Platou.—p. 666.

Is Serum Sickness Anaphylaxis?—Ustvedt presents arguments to the effect that serum sickness and anaphylactic shock are two different reactions.

Is Tuberculous Meningitis Possibly Curable?—Harbitz cites evidence from the literature that tuberculous meningitis can pass into a phase of fibrous transformation which results in the complete cure of the active disease. Rössle has reported a case of chronic tuberculous meningitis in a woman of 37 with final fatal coma after seventeen months, and Harbitz here describes a similar chronic case with a five and possibly eight months course in a man of 38 with necropsy findings showing mild tuberculous meningitis just entering a phase of anatomic healing. Another feature of the case was the spreading of the infectious process along the blood vessels into the brain and spinal cord, thus presenting the picture of diffuse tuberculous encephalitis and myelitis. In 60 per cent. of cases of tuberculous meningitis, the patients are infants, and in them it is invariably fatal. The instances of a chronic course and recovery are nearly all in adults, the resisting powers or increased immunity aiding in the struggle against the infection. Epidemic cerebrospinal meningitis often entails hydrocephalus and changes in the brain, with mental disturbance. But tuberculous meningitis seems to escape this tendency. If the patient recovers he is not left with defects. Lumbar puncture and tuberculin treatment may contribute to the favorable outcome. In conclusion Harbitz cites a case from Overland's practice in which a girl of about 7 had long presented symptoms of tuberculous meningitis, but finally recovered and in time married and has borne two children.

Treatment of Empyema.—Platou reports a death rate of 17.1 per cent. in his 105 cases of acute empyema after influenza. He operated in ninety-nine cases, three of his patients dying without an operation and three recovering without one. The best results were realized with resection of ribs and valve drainage. This technic is simple and easy and should be applied in all cases in which the acute empyema is not frankly fetid. After the pus has been aspirated out, he explores with a finger to remove fibrin deposits, and then drains with a retention catheter and valve tube. The dressings do not have to be changed for eight or ten days.

Svenska Läkaresällskapets Handlingar, Stockholm

March 31, 1920, **46**, No. 1

Influenza and the Nervous System. H. Marcus.—p. 1.
*Serotherapy of Complications of Gonorrhea. J. Reenstierna.—p. 39.

Serotherapy of Complications of Gonorrhea.—Reenstierna enhances the effect of the antigonococcus serum by adding some substance that will induce fever, hoping thus to render the gonococci more susceptible as they are unable to bear a high temperature. To induce this "antibody fever" he used killed cultures of bacteria, for example, those of typhoid. He has applied this combined serotherapy in 100 cases of different complications of gonorrhea, especially arthritis, epididymitis and prostatitis, and the outcome has been extremely satisfactory, he says, in the majority of cases. Some very grave cases of gonococcus arthritis subsided completely in a week or two after one or two injections. In a very few cases no benefit was apparent and he thinks that secondary infection was probably responsible for this. Prostatitis was generally cured in a week, and in one case a large gonorrheal abscess in the perineal region healed after a single injection. His antiserum is prepared by intravenous immunization of goats with cultures of living gonococci. Various reports on this polyvalent serum have been published in the last four years, his research at the state bacteriologic laboratory dating from 1914.

Ugeskrift for Læger, Copenhagen

June 10, 1920, **82**, No. 24

*Acute Digestive Disturbances in Infants. C. E. Bloch.—p. 745.

Acute Digestive Disturbances in Young Infants.—Bloch lists four types: acute dyspepsia; the grave form, acute gastro-enteritis; acute gastro-enteritis in the course of chronic dyspepsia; and the cases in which the diarrhea and vomiting are not due to any independent pathologic condition of the digestive tract, but are merely a symptom of some pathologic condition in some other part of the body. The acute digestive disturbances represent merely the way in which the young infant reacts to any acute infection, regardless of its localization. Even overheating, without infection or intoxication, may induce these symptoms in the digestive tract. Czerny calls this fourth group "nutritional disturbances with parenteral infection," but Bloch thinks the term "symptomatic diarrhea" is more accurate, as not only the cause and course are different, but the treatment differs from that of actual nutritional disturbances. His mortality in the above four groups was zero in eighty-five cases of acute dyspepsia; 17 per cent. in the 310 cases of acute gastro-enterititis, and 26 per cent. in the seventy-seven cases of acute gastro-enteritis in chronic dyspepsia. The mortality specified does not include the 4 and 7 per cent. that died within twenty-four hours of being admitted to the hospital. The grave form of acute gastro-enteritis is of infectious origin, mostly due to colon bacilli which are not pathogenic for older children, but in 10 per cent. of 217 cases, paradysentery, typhoid or paratyphoid bacilli were isolated. The clinical picture was very much alike in all these. The main point in treatment is to supply water, especially by the mouth, but also saline subcutaneously. Weak tea instead of plain water may aid in stimulation. This restriction to water acts in acute gastro-enteritis regardless of its causal factors, but it should not be kept up for more than one, two or three days at most, as inanition promotes acidosis. He warns that sugar and carbohydrates are liable to bring back the symptoms, and gruels are the worst food that can be given at these times. He feeds one part milk to two parts water, boiled for two minutes in the Soxhlet apparatus. The effects have surpassed those of albumin milk, etc., in his experience. He continues this milk-water diet for not longer than a week at most, and emphasizes the importance of stimulants, stating that he makes extensive use of camphorated oil injections, digitalis preparations and caffein, as indicated. Infants bear these stimulants well and they have often an unmistakably favorable action on the small pulse, subnormal temperature and other symptoms of impending collapse.

July 1, 1920, **82**, No. 27

The Metabolism and Internal Secretions. N. R. Christoffersen.—p. 838. Cone'n in No. 28, p. 879.
*Salivation and Hyperacidity. V. Andresen.—p. 850.

Salivation and Hyperacidity.—Andresen suggests that possibly excessive acidity of the stomach might be reduced by reflex action from rinsing the mouth with an acid solution. This induces increased production of saliva, and at the same time the saliva alkalescence is more than doubled in five minutes.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, NO. 9 CHICAGO, ILLINOIS AUGUST 28, 1920

TOTAL HYSTERECTOMY IN FIBROID TUMORS OF THE UTERUS

A PLEA FOR THIS PROCEDURE IN PAROUS WOMEN WHEN OPERATION IS NECESSARY *

JOHN OSBORN POLAK, M.Sc., M.D.
BROOKLYN

Is supracervical hysterectomy the operation of choice in treating those fibroid tumors of the uterus, in parous women, which require surgical intervention? This question is one which should be definitely settled in the interest of the patient for, owing to the ease with which the average supracervical hysterectomy can be done, the procedure has become routine with most surgeons and many gynecologists, who seldom consider the type of the operation to be selected by individual study of the character of the tumor, the condition of the cervix, and the age of the patient, and the subtotal procedure is therefore performed even in the presence of these cervical conditions which should demand total ablation of the uterus. Hence the woman is frequently left with an infected, lacerated or hyperplastic cervix, which remains the seat of a focal infection. Such a cervix, with its coexisting cervicitis and endocervicitis, tends to keep up from its infected glands a persistent and intractable leukorrheal discharge; and because of the extension of the infection through the lymphatic channels in the broad and uterosacral ligaments, the parametric tissues become thickened, sensitive and painful. This explains the backache and pelvic pain so frequently complained of after the partial removal of the uterus.

Furthermore, metrorrhagia is not an uncommon complaint when the retained cervix is lacerated, and the lips everted and eroded, from the overgrowth of the delicate intracervical lymphoid tissue. This lymphoid tissue is easily irritated by vaginal contact, and bleeding results. Hence in the subtotal extirpation, our follow-up work has shown that the lacerated or infected cervix remains as a constant menace to the woman's health; for not only does the retained infected cervix cause leukorrhea, metrorrhagia and backache, but this cervix with its lacerations, eversion and erosion paves the way for the occurrence of epithelial cancer in the retained stump.

That this danger is real and not fanciful is proved by the fairly frequent occurrence of epithelioma in the conserved cervical stump.

In reviewing the literature to establish the frequency of this occurrence, I have been struck by the relative infrequency of reported cases. The paucity of these data is in direct contrast to the answers received from personal inquiry. Altogether, in America, I have been able to collect 256 cases in which cancer has occurred in the cervical stump after subtotal hysterectomy for fibroid tumors. This includes some of those cases already recorded by Leonard, but excludes all of those in which the cancer made its appearance within a year after the original operation; for it is fair to suppose that in these cases the disease was present at the time of the removal of the original tumor.

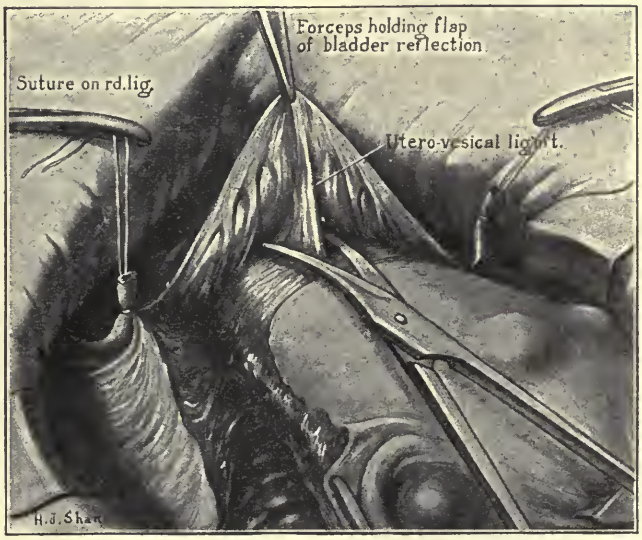


Fig. 1.—Separation of bladder from cervix and upper vagina.

Schottlaender, Spencer and Noble have shown by routine serial section of the uteri removed in more than 900 total hysterectomies that carcinoma of the cervix actually coexists in more than 2 per cent. of all fibroid tumors of the uterus. It is also significant to note that in these cases the malignant changes were undiagnosed at the time of the uterine extirpation; consequently, it is reasonable to suppose that there was nothing suspicious about the cervix except possibly lacerations at the time of operation. And while it is admitted that a routine preliminary curettage and microscopic study of the scrapings might have shown cancer cells in all of these series, yet the fact remains that the occurrence of the new growth in the cervix in the reported cases, when a secondary operation has been done, as well as in those cases that were inoperable at the time the surgeon first saw the patients, has appeared at periods varying from five to twenty-one years after removal of the original tumor.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

This fact must convince the thinking gynecologist that the parous cervix, with its traumatisms, eversions and erosions, is always problematic and has a potentiality which cannot be estimated by the absence

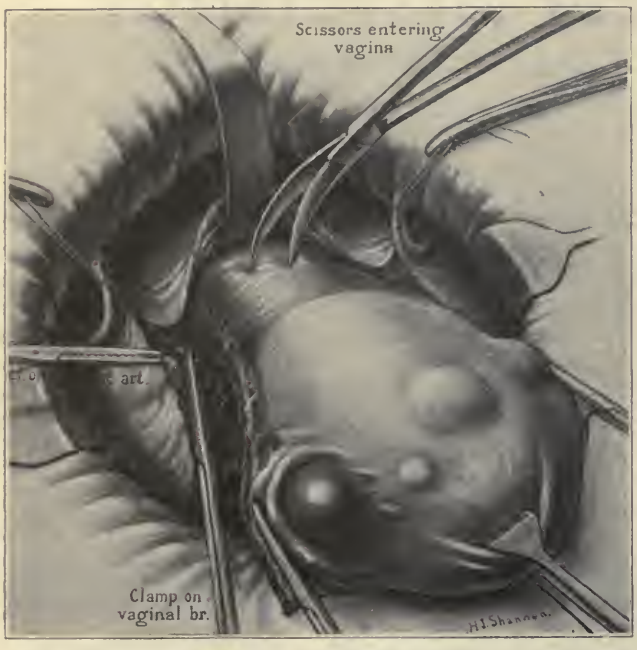


Fig. 2.—Bladder retracted; incision being made into vagina with sharp-pointed scissors.

of cancer cells in the scrapings from an individual case at the time of the primary operation, and cannot be removed by cauterization or coning out of the cervical canal; for such treatment does not reach the most common point of origin in cervix cancer, i. e., the vaginal portion.

The advantages claimed for the subtotal operation are: 1. The operation is more easily performed.



Fig. 3.—Separating cervix from vagina at cervicovaginal junction.

2. It can be done more rapidly and with less loss of blood. 3. It has a lower morbidity. 4. It has a lower mortality. 5. It does not shorten the vaginal walls. 6. By retaining the cervical stump we leave the keystone of the arch, and thus maintain the conformity of the vaginal vault. Therefore we are less likely to get prolapse of the vaginal walls.

Are these contentions actually borne out by the experience of the trained gynecologic surgeon, and do they counterbalance the risks of leaving the cervix in the parous woman? To these questions we must answer in the negative, for only by following the end-results of these operations by a proper follow-up system as we have used for a number of years can we apply the acid test of the end-result to these contentions.

Regarding the ease of performance and the time consumed in the operation, my personal experience is opposed to these claimed advantages, both of which are technical matters and depend largely on the training of the individual operator.

My experience has been that the morbidity is lower in the total operation, while the mortality is 0.5 per cent. higher in the complete extirpation (2 per cent.) than in supracervical amputation (1.5 per cent.).

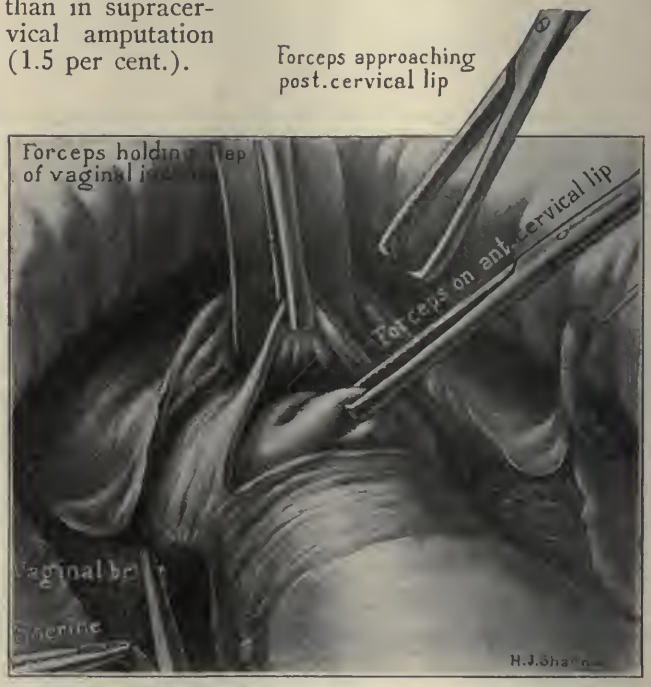


Fig. 4.—Cervix being everted through vaginal incision.

Unless a wide cuff of vaginal wall is excised, the vagina is not materially shortened; and if the same care is taken to suture the round ligaments into the vaginal vault, and the cardinal ligaments are attached to the uterosacrals, as in the subtotal procedure, the vault of the vagina retains its high position.

In observing the results from many clinics, we find that pelvic floor repair, even though it be necessary, is neglected by the average surgeon when he comes to take out the uterus; consequently, inversion of the vaginal walls is liable to happen in the subtotal, as well as in the total, unless due consideration is given to the matter of support from below and above. For there is no reason to suppose that the cervical stump will remain high in the pelvis, unless it has its natural support from above and below; and this can be done just as well with the vaginal vault after the cervix has been removed, if the round, cardinal and uterosacral ligaments are attached in the vaginal stump, and the levators have been reunited, as when the cervix is left in place.

It is incomplete gynecology that has brought about the criticism of the specialty by the general surgeon.

Finished gynecology leaves a cured patient who does not seek the advice of other surgeons. Again, in the parous woman I must repeat that it is always unsafe to leave the cervix, for cancer and the symptoms already referred to are actualities which any clinic with a follow-up system can demonstrate to the satisfaction of its clinical workers.

The technic that we employ has been so planned as to obviate and overcome the criticisms of total removal and the claims for the incomplete operation; and the end-results have been so satisfactory that I have come to consider total hysterectomy as one of the curative measures that we can offer the woman with extensive fibroid disease.

TECHNIC

The technic which we advocate is substantially as follows:

After the patient has been catheterized and the vagina and cervix and cervical canal rendered sterile by thorough

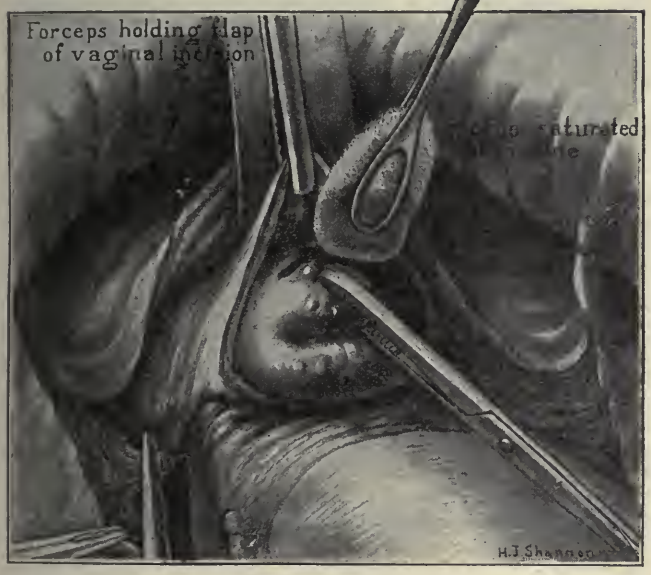


Fig. 5.—Iodizing cervix as it is dragged up with Jacobs forceps.

iodization, the patient is anesthetized in the Trendelenburg posture, the Trendelenburg being gradually increased while the patient is going under the anesthetic. This allows the intestinal coils to gravitate into the upper portion of the abdomen with each expiration. The abdomen is then opened by a long abdominal incision to the right or to the left of the median line, extending from the pubis to the level of the umbilicus; or, if the tumor is a large one, it may be carried to a considerable distance above this point. The peritoneum is opened in the lower portion of the incision, and two fingers are introduced into the lower angle of the wound, and the edges of the abdominal incision are lifted up. This, as suggested by Guthrie, permits air to enter the peritoneal sac and further displaces the intestinal coils upward. The wound edges are then protected by towels and the tumor exposed by proper retraction. With a large pair of Jacob's forceps, the tumor is grasped and drawn out through the abdominal wound and eventrated as completely as possible. This traction greatly facilitates the freeing of tubal, ovarian and intestinal adhesions, as it brings the field of operation directly into view. After the tumor has been completely mobilized and it is drawn well over to one side to expose the infundibulopelvic and round ligaments, a clamp is placed close to the uterus including the tube, utero-ovarian ligament and the upper part of the uterine artery.

The infundibulopelvic ligament is now tied distal to the ovary and cut free, proximal to the ligature. The round ligament is now picked up and tied and cut on the uterine side of the ligature. The tumor is then carried to the opposite side and the same procedure repeated. Traction is now made on

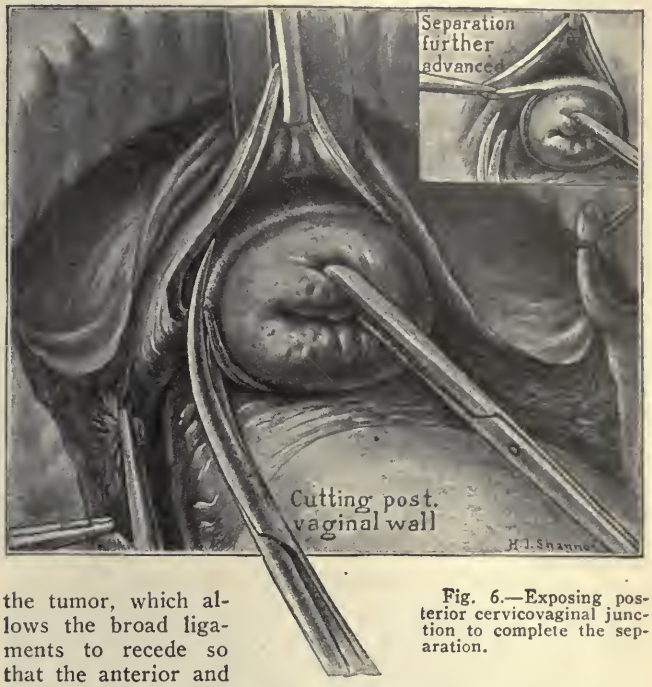


Fig. 6.—Exposing posterior cervicovaginal junction to complete the separation.

the tumor, which allows the broad ligaments to recede so that the anterior and posterior layers may be easily separated and the uterine artery exposed as it courses up the side of the uterus. The anterior flap is now caught with a pair of mouse-trap forceps just anterior to the round ligament, and a pair of Mayo scissors passed beneath it across the front of the uterus. As these are spread they separate the vesico-uterine fold from its uterine attachment, and when it has been completely detached it is cut across from round ligament to round ligament.

This permits us to separate completely the bladder from its uterine and vaginal attachments, which naturally increases the mobilization of the uterus. The tumor is now pulled forward over the pubis, and the posterior fold of the peritoneum incised transversely just above the point of attachment of the

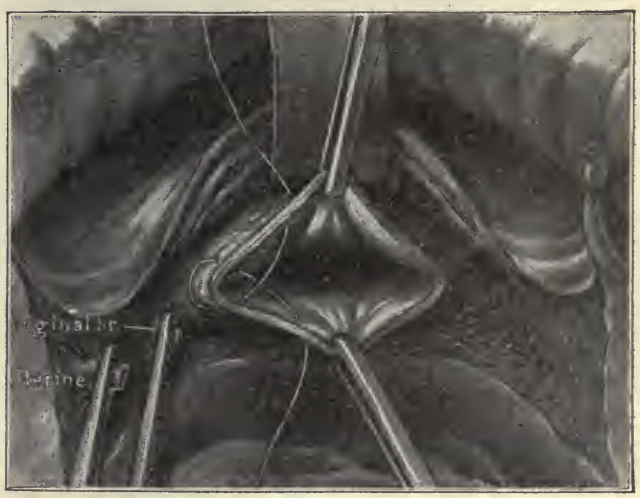


Fig. 7.—Closing vaginal tube with figure-of-eight sutures.

uterosacral ligaments, and with a pair of Mayo scissors this flap of peritoneum is carefully separated from the posterior surface of the uterus. This freely exposes the uterine arteries as they enter the uterus from the pelvic side, and by traction on the tumor the arteries are drawn upward and the ureters

naturally slip out of the way; thus the arteries can be grasped by a Kocher clamp with perfect safety and the uterus cut free proximal to the clamp.

If the arteries have been properly isolated and the clamp has been applied at a point just distal to the origin of the vaginal branch, the remainder of the operation is practically bloodless.

The bladder is then retracted with a Doederlein retractor and the vagina exposed just below the cervical junction. With a long pair of sharp-pointed curved scissors the vagina is entered by a transverse incision just below its attachment to the cervix, and the anterior vaginal wall grasped in a pair of Jacob's forceps. As the air enters the vagina it at once balloons it, and a pair of Jacob's forceps grasps the anterior lip of the cervix. While upward traction is being made on the anterior lip of the cervix, the cervix and vaginal wall are again iodized and a strip of iodin-soaked gauze is passed from above downward through the wound. We then continue the incision of the vaginal wall completely around the cervix at the cervicovaginal junction. This is greatly facilitated by placing a Jacob's traction forceps on the posterior cervical lip and drawing it upward through the vaginal wound, as by this traction the cervicovaginal junction posteriorly is exposed.

It may be necessary before cutting the uterus free to apply a Kocher clamp transversely so as to include the posterior vaginal wall and each uterosacral ligament. This absolutely controls all of the hemorrhage from the cut edge of the vagina and allows us to free the uterus from its posterior attachments.

The tumor and uterus having thus been removed, we next place a suture through the anterior and posterior vaginal walls, whipping these two surfaces together, mucous surface to mucous surface. This insures complete hemostasis of the vessels in the cut edges of the vaginal tube, and when tied gives a traction suture which is of considerable advantage in the subsequent steps of the operation.

With the hemorrhage completely controlled, the tumor removed, and the vaginal vault closed, the round ligaments are now brought into and sutured into the vaginal vault. While this is not considered by some surgeons as a necessary step, we find that when the ligaments are sewed into the vault, relaxation of the vaginal walls is less likely to occur. Furthermore, in this technic, we have taken care to preserve the uterosacral ligaments, and they are also attached to and sutured into the vaginal vault, thus maintaining its high position in the pelvis.



Fig. 8.—Tied sutures acting as guys.

The next and final step in the procedure is the peritonealization of all raw surfaces. This is done by uniting the posterior fold of the broad ligament with the anterior, burying the stumps of the ovarian and uterine arteries, and carrying the bladder reflexion of the peritoneum over the vaginal stump. When the toilet is complete there should be no raw surfaces exposed, but a smooth peritoneal face extending from one pelvic wall to the other.

CONCLUSION

When it is necessary to operate for fibroid tumor of the uterus in the parous woman or in those who have had trauma or infection of the cervix, total hysterectomy is the operation of choice.

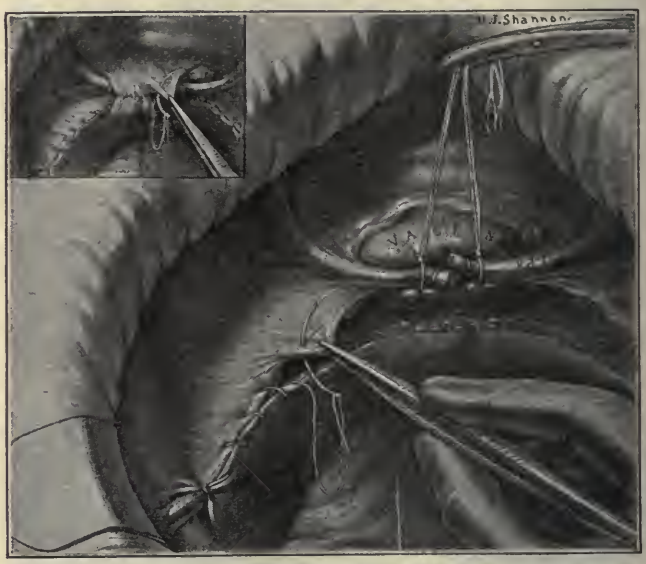


Fig. 9.—Round ligaments sewed into stump, completing the peritoneal toilet.

287 Clinton Avenue.

ABSTRACT OF DISCUSSION

DR. EDWARD E. MONTGOMERY, Philadelphia: In the majority of cases of malignant disease the cervix is the seat of the disease because of its liability to injury during childbirth. More or less disturbance from subsequent efforts at repair and its retention in hysterectomy renders this structure more prone to the development of malignant degeneration. It is not always so easy to perform this operation as you may be led to believe from the diagrams the doctor has shown us. The fibroid growths may be situated in the anterior, posterior or lateral wall, spreading out into the broad ligament, rendering it difficult to reach the cervix from any point. Sometimes a preliminary reduction of the size of the mass by enucleation may be necessary. In one case the growths were packed into the pelvis so that they had to be removed separately before complete extirpation of the uterus could be accomplished. In many cases the approach to the cervix from in front will be the most expeditious procedure. The ureters will be in less danger of injury. When the tumor occupies the broad ligament of one side, it is better to enter the vagina opposite. Traction on the cervix will permit the growth to be rolled out of the ligament without injury to a displaced ureter. The plan presented for closing the vagina saves delay in healing. The recommendation to remove the entire uterus should appeal to the careful operator.

DR. ALBERT GOLDSPOHN, Chicago: I fully concur in Dr. Polak's conclusions, but I am rather inclined to extend the indication beyond parous women. It happens not infrequently that the retained cervical canal, even in the nullipara, remains the focus of considerable trouble. I have observed endocervicitis in a number of such cases. Some of these women had been treated rather unwisely by caustics which had caused stricture and sometimes occlusion of the cervical canal. Such conditions then become very troublesome; and in the view of the profession nowadays as to focal infection, it seems to be dangerous even in that regard. I myself have

seen two cases of cancer of the cervix that remained after some one else had removed the uterus. The operation, as Dr. Montgomery very prudently pointed out, is not quite as easy always as would be indicated by the operation designated by Dr. Polak. It is the procedure to which I have given preference, however, for about six years, and in view of the superior results, the difficulty in technic is not to be considered, except in cases where the added surgical risk should not be assumed.

DR. WILLIAM KOHLMANN, New Orleans: I am glad that Dr. Polak emphasized his preference for the total over the subtotal hysterectomy. Many years ago I saw a case of carcinoma develop in the cervix after removal of the uterus. It was difficult to remove the cervix. There are two reasons, mainly, why I have always done a total hysterectomy. First, if you leave a lacerated cervix it will cause disturbances, such as discharge and heaviness, symptoms which are observed in many cases, but not when both ovaries are removed. This procedure is not, however, advisable as a rule. In case of removal of both ovaries, the cervix would shrink considerably in a short time. The second cause is the danger of cancer of the cervix. I have seen seven such cases in the last ten years. I believe that radium, preferably, would be indicated for primary treatment. Regarding the operation, as Dr. Polak suggests, I believe it can be followed more or less in every respect. In my opinion, opening the vagina in front is the easier way to proceed. He calls attention to the use of the round ligament, which I believe is very acceptable, although I do not make any special use of the ligament.

DR. A. C. SCOTT, Temple, Texas: If I understand Dr. Polak correctly, the primary reason for which he advocated total hysterectomy in preference to subtotal hysterectomy was that out of 900 fibroid cases investigated 2 per cent. showed cancer. Further, that 253 cancers have been found by others in the retained stump following subtotal operations. It would be interesting to know how many thousand subtotal hysterectomies were performed in the series in which these 253 cancers of the cervix were observed. A guess of 25,000 would not be unreasonable. The occurrence of cervical stump cancer in 2 per cent. of all fibroid uteri subjected to total hysterectomy in a series of 900 cases seems large, but I dare say that by reason of the higher mortality, more than 2 per cent. could not have had the chance to develop cancer of the cervical stump had it remained. On the other hand, if all the cancers found in the series cited had occurred in the cervix after subtotal hysterectomy, which is not at all likely, most all the patients would have had still another chance for their lives. Occasionally cancer of the cervix exists at the time that a subtotal hysterectomy is performed, but if the operator is careful in his examination, he is very apt to find definite evidence of a diseased cervix before operation. I do not wish to be understood as advocating supravaginal hysterectomy in the presence of distinct disease of the cervix, but in the absence of apparent disease of the cervix, supravaginal hysterectomy should be given preference in all cases of fibroids of the uterus because the mortality is so low. In my own series of more than 500 cases the mortality is a trifle over 1 per cent. Operating with the patient in the combined position, the vaginal part of the cervix is so readily and satisfactorily examined while the pelvis is elevated and the abdomen open, that disease of the cervix predisposing to cancer is not likely to be overlooked, hence the danger of cervical cancer following subtotal hysterectomy is reduced to a minimum.

DR. JOHN O. POLAK, Brooklyn, N. Y.: Dr. Montgomery has brought out the technical difficulties of the complete operation. I do not want to leave with you the impression that panhysterectomy or total hysterectomy is any less difficult than supravaginal hysterectomy. To the man who is unskilled in doing panhysterectomy, in his first few cases he will have a great deal more difficulty, but if he will follow out the detailed technic described, it is amazing how readily he can handle his more difficult cases. The same thing was true in Wertheims' operations. It was difficult for us at first to isolate the ureters; but after isolating the ureters in fibroid cases, we found that there was no difficulty in isolating them when it was necessary to do a Wertheim operation. We practiced exposure of the ureter in every easy hysterectomy until we had perfected the technic. The report of twenty additional cases of cancer in the retained stump by those who discussed my paper, only goes to show that these cases are not so infrequent. That makes 276 cases. Dr. Scott is right that there is a higher mortality in panhysterectomy, from 1.2 to 1.25 per cent, while the mortality in the subtotal operation is only 1 per cent. In America it has not been the custom to have serial sections made of the entire uterus in these cases of fibroid tumor. Hence, we have no positive way of knowing the incidence of cancer. In the 900 cases I reported complete serial sections had been made. They showed an incidence of 2 per cent. of undiagnosed cancer in the cervix. In the 256 cases reported, the cancerous involvement of the retained cervix occurred in from five to twenty years after the original operation. Consequently, a preoperative curettage could not have saved these women. If we are to save women from cervical cancer, we should repair or amputate the lacerated infected cervix.

GENTIAN VIOLET IN THE TREATMENT OF PURULENT ARTHRITIS

WITH A DISCUSSION OF ALLIED PROBLEMS

JOHN W. CHURCHMAN, M.D.
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In the treatment of purulent arthritis by lavage and staining, interest first centered in the development of a satisfactory technic and the records of the early cases do little more than record improvement. Three years ago the technical difficulties were overcome. An apparatus was devised in every way satisfactory; and



Fig. 1 (Case 1).—Purulent arthritis due to Staphylococcus aureus: result of treatment—normal flexion and extension.

the cases treated since that time have been so studied that bacteriologic and other evidence is at hand on which to base an opinion on the merits of the method. With the present report of these cases is included a discussion of some of the questions raised by the laboratory studies. Nothing need be said here of the technic used, as this has been recently described in THE JOURNAL.[1]

Of the cases of arthritis there are three groups, all acute and all purulent.[2]

1. STAPHYLOCOCCUS ARTHRITIS

(*a*) CASE 1.—*Purulent arthritis of the left knee, following an abrasion on the lower leg.*—Pus withdrawn from the joint contained cocci on smear; there was a pure culture of

1. Churchman, J. W.: Treatment of Acute Infections of the Joint by Lavage and Direct Medication, J. A. M. A. **70**: 1047 (April 13) 1918.
2. Roentgenograms were made in all these cases; they were negative.

Staphylococcus aureus. There were fever and tenderness, with marked limitation of motion.

Treatment and Result.—One lavage and staining resulted in prompt cure; there was limpid synovial fluid at second



Fig. 2 (Case 2).—Purulent arthritis (Staphylococcus aureus) associated with compound, comminuted fracture of patella: final result.

aspiration, which was sterile. Knee motions were normal (Fig. 1).

(*b*) CASE 2.—*Purulent arthritis of the left knee, accompanying compound comminuted fracture of patella.*—Thick bloody pus was withdrawn, which contained gram-positive cocci. A pure culture of *Staphylococcus aureus* was obtained.



Fig. 3 (Case 3).—Pneumococcus purulent arthritis: result of treatment—normal flexion and extension.

There was the usual disability accompanying fractured patella, and the usual signs of purulent arthritis. A large granulating incised wound of the soft parts just below the patella was present.

Treatment and Result.—After one lavage and staining, the arthritis subsided and the fluid aspirated from the knee



Fig. 4 (Case 4).—Gonorrheal arthritis: result of treatment—normal flexion and extension.

became normal in character and sterile bacteriologically. The granulating skin wound below the patella was allowed to heal, and the joint was opened. It was normal in appearance and sterile bacteriologically. The patellar fragments were approximated by suturing the prepatellar fascia.

The result was cure of the arthritis, healing by first intention, and restoration of an absolutely normal knee (Fig. 2).

2. PNEUMOCOCCUS ARTHRITIS

CASE 3.—*Gonorrheal arthritis, with marked limitation of motion* (this was the picture and also the clinical diagnosis).—A Canadian soldier had received a penetrating pulmonary bullet wound some months previously, and the projectile was still in the lung, though causing no symptoms. The golden serum aspirated contained diplococci, which, by mouse injections, were proved to be pneumococci. The type was not determined.

Treatment and Result.—After one lavage and staining, the knee promptly returned to normal (Fig. 3).

3. GONORRHEAL ARTHRITIS

Three of my early cases, not included in this report, were gonorrheal, and the results of treatment were

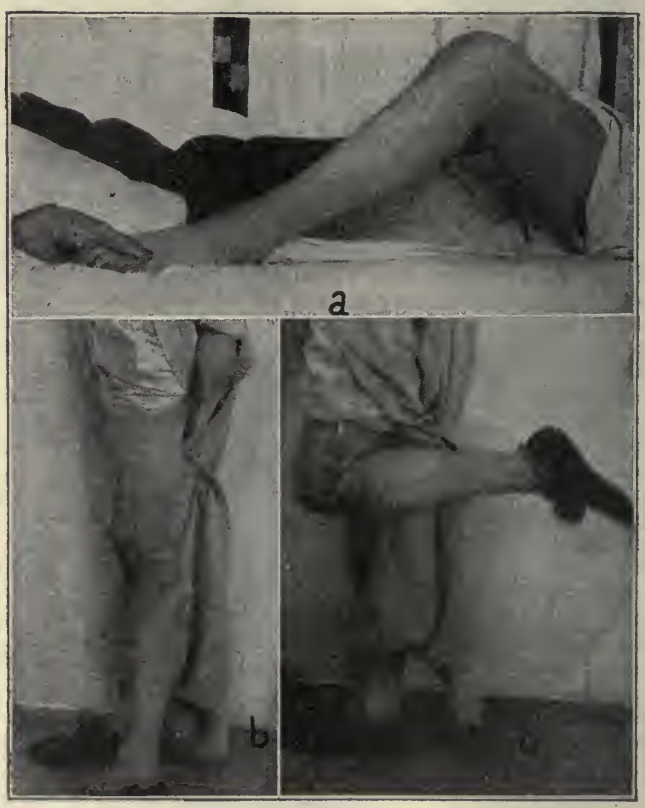


Fig. 5 (Case 5).—Gonorrheal arthritis: *a*, condition on admission; *b* and *c*, condition on discharge.

good, but no more striking than in three of the four cases here reported. Complete bacteriologic evidence in this type of arthritis is not always possible to obtain, owing to the difficulties of obtaining the organism. In these cases the evidence obtained by examination of smears corroborated, so far as it went, the clinical proof that the arthritis had been cured. Our inability to grow the gonococcus in a single case accounts for a regrettable, though unavoidable, gap in the evidence.

It is true that the gonococcus is gram-negative and might be expected to be unaffected by gentian violet. All my attempts to determine experimentally the effect of the dye on this organism have been defeated by its failure to grow at all, even on the most favorable medium, with any constancy.[3] Whether the gonococ-

3. In a personal communication from a former pupil, Dr. C. L. Deming, who at my suggestion has been working on this problem, I am informed that he has succeeded in developing a technic by which constant growth of the gonococcus may be readily obtained.

cus is gentian violet positive or gentian violet negative is therefore not at present known.[4]

CASE 4.—*Gonorrheal arthritis of the left knee.*—The usual picture was presented, not particularly severe in type. Golden yellow fluid with fibrin clots was obtained on aspiration. There was marked limitation of motion. The aspirated fluid contained gram-negative diplococci, but the cultures were sterile.

Treatment and Result.—One lavage and staining were given, following which there was a prompt return of the knee to normal (Fig. 4).

CASE 5.—*Purulent arthritis of the left knee.*—The clinical picture of a moderately severe gonorrheal synovitis was presented, though the attack was ushered in with a sore throat. There was a golden yellow fluid containing fibrin clots at aspiration. Intracellular gram-negative diplococci were found in the pus cells. The cultures were sterile.

Treatment and Result.—After one lavage and staining, all clinical symptoms disappeared and the knee motions became normal. A small amount of fluid, however, reaccumulated; this was aspirated; it contained no pus cells or organisms. A second lavage and staining was done, and on the reaccumulation of fluid, a third. The patient was discharged well (Fig. 5). I have recently seen her (about one year after treatment) and the knee is practically normal; there is slight tenderness at the lower border of the patella. Motions are normal and there is no swelling. She complains of pain in wet weather. An arthritis, similar to that present in the left knee one year ago, is now developing in the right knee, and she complains slightly of her left wrist and ankle.



Fig. 6 (Case 6).—Gonorrheal arthritis; final result.

CASE 6.—In this patient no bacteriologic evidence whatever could be obtained, but the clinical picture and the character of the fluid (golden yellow with fibrin clots) were those associated with gonorrheal arthritis. The effusion was a large one, but limitation in motion was only moderate.

Treatment and Result.—One lavage and staining were given. Normal motions were restored, and all clinical symptoms disappeared (Fig. 6).

CONCLUSIONS AS TO THE EFFECT OF LAVAGE AND STAINING

The conclusion that pyogenic arthritis, due to *Staphylococcus aureus* or to pneumococcus, may be cured by this method is warranted by the facts. It is also clear that normal mobility may thus be retained. Whether the joint in this type of infection should ever be opened, unless the infection has become largely extra-articular, seems more than doubtful. The evidence for these statements, while slender in quantity, is of such quality as to justify them. Case 2 may be regarded as a crucial experiment in a human being. Every control that could be desired was here present. There was a granulating wound and a comminuted fracture of the patella. The joint fluid on the admission of the patient was positive bacterio-

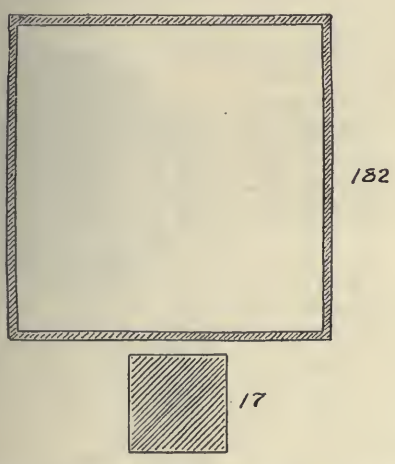


Fig. 7.—Schematic representation of effect of gentian violet on gram-positive organisms; study of 182 strains. The central white square represents the number killed by the dye (165); the shaded border the number unaffected (17). The area of the shaded border is shown in the shaded square.

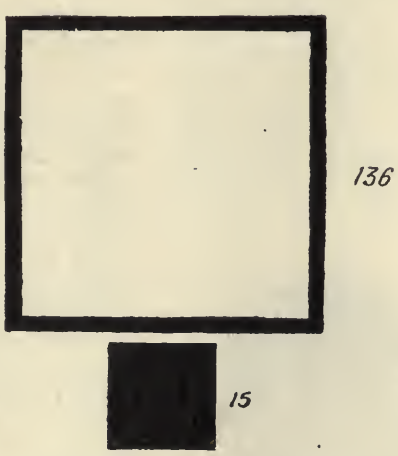


Fig. 8.—Schematic representation of the effect of gentian violet on gram-negative organisms; study of 136 strains. The central white square represents the number unaffected by the dye (121); the black rim the number killed (15). It will be noted that the facts are just the reverse of those for the gram-positive organisms. The area of the black border is shown in the black square.

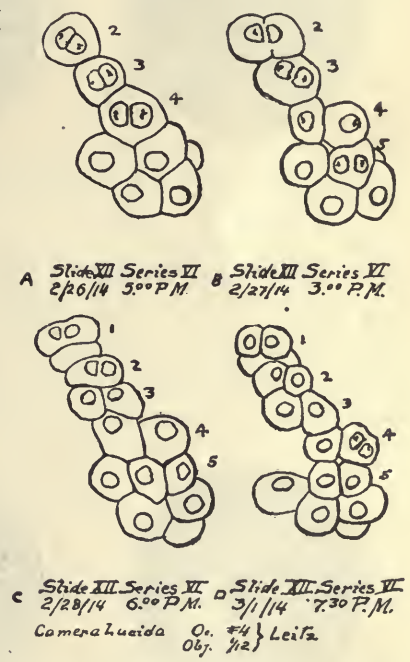


Fig. 9.—Diagrams made on four successive days of endothelial cells from the pericardium of an adult frog, grown in plasma containing gentian violet 1: 20,000. Cells and nuclei are stained, and it will be seen that division of the stained cells and nuclei is observed from beginning to completion. Figures 1, 2, 3, 4 and 5 have been placed so that it is possible to follow the individual cells in the four diagrams.

4. Simon's objection to the terms "violet positive" and "violet negative" is well founded, as the selective property of the dye is in no way dependent on its color. The terms were used in early publications purely for brevity's sake; but it was there suggested that "gentian positive" and "gentian negative" are more accurate.

logically. After lavage and staining, the joint fluid ceased to be purulent and became sterile, and clinical symptoms subsided. Inspection of the joint surface at operation demonstrated a normal synovial membrane, and cultures from the joint were negative. Healing of



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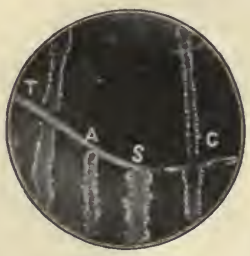


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Fig. 10.—Gentian violet was injected into a rabbit's ear vein. An hour and a quarter later blood was withdrawn from it and was used in making the upper half of this divided plate. The selective power of the dye has disappeared. (*T*, B. typhosus; *S*, B. subtilis; *A*, M. aureus; *C*, B. coli; the same lettering is used in Figures 11, 12, 14 and 15.)

Fig. 11.—Upper half of the divided plate contains gentian violet and oxalated blood, which have been allowed to stand mixed for one week. Contact with the blood has not robbed the dye of its selective power.

the sutured patella and of the skin occurred just as if bacteria had never been present, and normal knee motions were retained.



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Fig. 12.—Upper half of divided plate contains gentian violet and blood which has been oxidized by the addition of sodium phosphate and hydrogen peroxid. Oxidation of the blood does not rob the gentian violet of its selective power.

Fig. 13.—An illustration of the selective action of gentian violet on a mixture of gram-positive and gram-negative organisms. A divided plate, the upper half containing gentian violet agar, and the lower half plain agar. The left half of the plate has been stroked with a mixture of B. subtilis and M. aureus, both gram-positive. The luxuriant growth in the plain agar ceases at a distance from the dividing line, and there is no growth whatever in the gentian violet agar. The right half of the plate has been stroked with the same mixture plus B. typhosus (gram-negative). At the point where the growth of B. subtilis and M. aureus ceases, a pure culture of B. typhosus is seen crossing the line and growing well in the gentian violet agar.



14



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Fig. 14.—The selective action of other triaminotriphenylmethane dyes is identical with that of gentian violet. An experiment with ethyl violet is here illustrated.

Fig. 15.—Experiment with rosolic acid: the upper half of the plate contains rosolic acid agar; the result is the same as with gentian violet.

Concerning the gonorrheal cases, somewhat more cautious statements must be made. And yet, making due allowance for the mild character of the cases treated (they were, of course, not selected cases), and for the fact that complete bacteriologic proof of cure could not always be obtained, the satisfactory clinical course warrants the belief that lavage and staining offer a method of controlling this disease. Such bacteriologic evidence as it has been possible to obtain strengthens this conviction.

STAINING OF ORGANISMS IN THE TISSUES

The clinical and bacteriologic studies make it seem likely that dye injected into a joint stains bacteria which lie in the depths of the synovial membrane. Proof that this occurs is not at hand, though it has been sought experimentally. A technic was recently described [5] by which it has been possible to demonstrate microscopically that the stain does reach the deep cells of the mucosa; and clinical evidence has been presented,[5] from a study of the effect of the dye on amputation stumps, to show that the bacteriostatic property of the dye, which persists in and about the cells, is of importance.

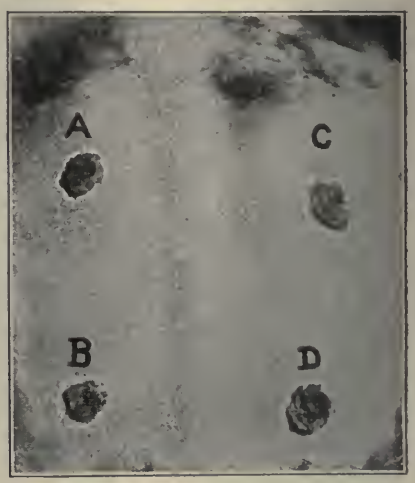


Fig. 16.—*A* and *B* are the controls; *C* and *D* the vaccinations with stained virus; the takes have been equally good.

THE GRAM STAIN

The facts as to the parallelism between the Gram stain and the gentian violet reaction, revealed by a study of 318 bacterial strains, are represented in Figures 7 and 8.[6] Whether this parallelism is accidental or depends on some fundamental structural or chemical difference between the gram-negative and the gram-positive organisms is a problem susceptible of experimental solution; and the solution is now being sought.[7]

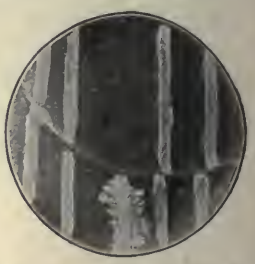


Fig. 17.—The selective action of gentian violet within a bacterial species: the upper half of the plate contains agar to which the dye has been added, the lower half plain agar. The plate has been stroked with five strains of the gram-negative B. enteritidis; four of these have followed the rule; the fifth (at center) refuses to grow in the presence of the dye.

THE EFFECT OF GENTIAN VIOLET ON TISSUE CELLS

It is possible to stain with gentian violet the living epithelium of the mucous membrane of the bladder, in experimental animals without doing any appreciable damage

5. Churchman, J. W.: Selective Bacteriostasis in the Treatment of Infections with Gentian Violet, J. A. M. A. **74**: 145 (Jan. 17) 1920.

6. The original observations as to this parallelism have been amply confirmed by the work of others. Crossley, in a paper read before the Dye Section of the American Chemical Society, found the parallelism complete, not only for gentian violet, but also, in confirmation of my findings, for other members of the triphenylmethane group. (J. Am. Chem. Soc. **41**: 2083 [Dec.] 1919.) The technic he used was that described in 1912.

7. Crossley, in the article mentioned in Footnote 6, also calls attention to the fact that the effectiveness of the dye is governed by two factors: the composition of the dye and the nature of the organism. It is caused by the presence of reactive groups in the structure of the bacteria which are capable of readily combining with the dyes through certain reactive groups in their structure. Crossley agrees with my statement that this variation in the susceptibility of bacteria to destructive chemical agents is of the greatest practical therapeutic importance.

to the tissue cells. The absence of signs or symptoms of irritation in the human beings whose knee joints have been injected justifies the assumption that the process is equally harmless for synovial epithelium. This assumption has received experimental confirmation from a study of the effect of the dye on protozoa (oxytricha and paramecia), and on living tissue growing in vitro. The view is commonly held that the living nucleus cannot be stained. My experiments justify the conclusion that gentian violet does actually penetrate the living cell and its living nucleus. The division of stained cell and stained nucleus (Fig. 9) cannot be interpreted as a survival phenomenon. It proves that life proceeds uninterrupted in the stained cell.[8]

FATE OF THE DYE IN THE ANIMAL BODY

Gentian violet injected into the circulation soon disappears from the blood stream (Fig. 10). This change is not due to mere contact with blood, as can be demonstrated by repeating the experiment with oxalated blood which is kept in contact with the dye in vitro (Fig. 11). Nor does the disappearance of the dye depend on blood oxidation; for if oxidation be produced by the addition of sodium phosphate and hydrogen peroxid, selective bacteriostasis is as sharply marked as when venous blood is used for the plates (Fig. 12).

No such rapid transformation of the dye occurs when it has lodged in epithelial cells. Yet even here it is not permanent; it is slowly changed and ultimately disappears. A chemical substance which kills many bacteria of clinical importance, which does not injure tissue cells,[9] which persists for some time, but is finally disposed of, and which penetrates tissue, apparently possesses certain valuable properties not found in other bacteriostatic agents.

APPLICATIONS OF SELECTIVE BACTERIOSTATIC PROPERTY OF GENTIAN VIOLET IN PRACTICAL BACTERIOLOGY

The possible application of the selective bacteriostatic property of gentian violet to the elimination of

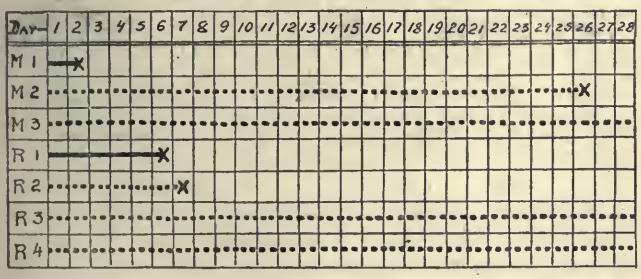


Fig. 18.—The results of animal inoculation with stained B. anthracis: *M*, mouse; *R*, rabbit. The course of control animals is represented by a solid line; the course of experimental animals by a dotted line; X indicates that cultures, at death, from heart's blood and spleen were positive for B. anthracis. The survival of M3 and of R3 and R4 is important; but the most interesting feature of the experiment is the death of M2 from anthrax twenty-six days after the injection was made.

gram-positive organisms in cultural work was suggested in early publications. The original experiment indicated the kind of thing that might be done (Fig. 13). The following applications of these observations have been made by others:

(*a*) Petroff's method for cultivation of tubercle bacilli directly from sputum and feces.[10]

(*b*) Elimination of spurious presumptive tests for *B. coli* in water, by the use of gentian violet.[11]

(*c*) Elimination of spurious presumptive tests in the examination of milk.[12]

(*d*) Selective elimination of the hay bacillus from cultures of obligative anaerobes by the use of gentian violet.[13]

(*e*) Experiments done during the epidemic of influenza to determine whether the dye might be of use in the isolation of *B. influenzae* (not yet complete).

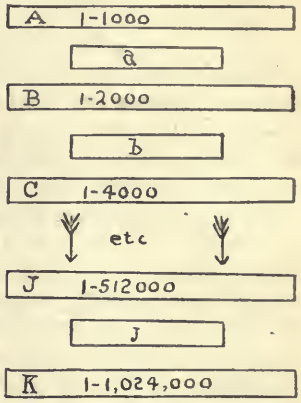


Fig. 19.—Schematic representation of what probably occurs when stained organisms are injected into animals. *A*, first generation; *a*, first daughter cell; *B*, second generation at adult size; *b*, second daughter cell. Generations intervening between *C* and *K* are omitted for brevity; *K*, eleventh generation. By fission and growth the stain is reduced from 1:1,000 in *A* to 1:1,024,000 in *K*.

SELECTIVE BACTERIOSTASIS AND CHEMICAL STRUCTURE OF THE DYE

It was early recognized that the selective property of gentian violet was also possessed by other dyes having a similar chemical structure (members, that is, of the triphenylmethane series).[14] Figure 14, for example, illustrates a divided plate experiment with ethyl violet. The result is the same as if gentian violet had been used. A large number of experiments have also been made with substances that possess a simpler molecular formula than does gentian violet. In Figure 15, for example, an experiment with rosolic acid is represented.[15] The purpose of these experiments, and others of a chemical nature now under way, is to determine the portion of the triphenylmethane molecule responsible for the selective property.[16]

EFFECT OF GENTIAN VIOLET ON TOXINS, ENZYMES AND ULTRAMICROSCOPIC INFECTIONS

The interest in the effect of a bacteriostatic agent, though centered in its action on bacteria, should not be confined to this field. The effect of the dye on four

8. There is some evidence for thinking that anilin dyes may exert a selective influence on tissue growth (possibly stimulating epithelium and retarding connective tissue) similar to their selective influence on bacteria.

9. This statement is not absolutely true. There is probably no substance which is entirely without injurious effects, if applied to cells in sufficient strength, or repeatedly; gentian violet is certainly irritating and probably destructive when used in great strength or continuously. The statement is accurate for the dilutions of dye which have been used.

10. Petroff, S. A.: J. Exper. M. **21**: 38 (Jan.) 1915.

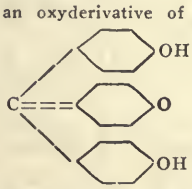
11. Hall and Elepson: J. Bacteriol. **3**: 329 (July) 1918; J. Am. Water Works Assn. **6**: (March) 1919.

12. Hall and Elepson: J. Bacteriol. **3**: 355 (July) 1918.

13. Hall, I. C.: Selective Elimination of Hay Bacillus from Cultures of Obligative Anaerobes, J. A. M. A. **72**: 274 (Jan. 25) 1919.

14. Churchman, J. W.: J. Exper. Med. **17**: 373 (April) 1913. Dahlia, parafuchsin, magenta, pararosanilin, rosanilin, crystal violet and methyl violet were the substances studied; all possessed the selective power. The assumption was made that the power was inherent in all the triphenylmethanes. Crossley inclines to the same belief and thinks that the selective action is related to the basic nitrogen; he finds that an increase of these groups and a substitution of methyl radicals for aminohydrogen intensifies the bacterial action. Gentian violet is a mixture of dextrin, hexamethyl-p-rosanilin-hydrochlorid, penta-methyl-p-rosanilin-hydrochlorid, and certain lower homologs, particularly the tetramethyl compounds. It is not synonymous (as is sometimes thought) with benzyl violet or with pyoktanin (methyl violet).

15. Rosolic acid is an oxyderivative of triphenylmethane, and has the formula



16. Simon and Wood (Am. J. M. Sc. **47**: 247 and 524, 1914) conclude that the essential factors in the inhibitive power of the basic triaminotriphenylmethane dyes are the underlying triphenylmethane group in combination with the three strongly auxochromic amino groups.

other groups of active agents has been studied: (*a*) The unorganized ferments (ptyalin, pepsin, trypsin, rennin and thrombin) are unaffected by staining. (*b*) The organized ferment (yeast cells) is killed by staining. (*c*) The toxins of tetanus and diphtheria are unaffected, beyond a possible slight impairment of toxicity in the case of tetanus.[17] (*d*) Of the ultramicroscopic infections, rabies and vaccinia [18] (Fig. 16) are unaffected by the dye. Experiments with the virus of poliomyelitis yielded conflicting results.

SELECTIVE ACTION ON CLOSELY RELATED BACTERIAL STRAINS

The phenomenon of fastness, which accounts for the failure of certain bacterial and protozoan strains to yield to chemical agents capable of killing other strains of the same species, is well known. Spirochetes occasionally occur, for example, which are fast to arsphenamin, and malarial parasites are encountered on which quinin has no effect.[19] In a study of the action of gentian violet on the *B. enteritidis* group, a unique instance of what might perhaps be termed reversed fastness was encountered. The members of the *B. enteritidis* group are gram-negative bacilli, closely allied to *B. coli,* and would be expected to grow on the gentian violet half of divided plates and to survive staining with the dye. In a study of five stains of this organism, one was encountered that acted toward gentian violet exactly as the gram-positive organisms do (Fig. 17). This strain, first studied in Baltimore and later encountered in the collection of the Museum of Natural History in New York, constantly exhibited this reversal of fastness, which in both the Baltimore and New York samples had been retained through hundreds of transplantations, both being descendants of a strain originally isolated in 1900 by Dunham of Cambridge. Throughout their careers, subsequent to the original transplantation, they had maintained this astonishing characteristic, though indistinguishable from the other four strains by every other known test, including reaction to the higher sugars.

ANIMAL INOCULATIONS WITH STAINED ORGANISMS

In order to determine whether organisms stained with gentian violet were really killed or only injured so that they would not grow on ordinary mediums, the stained organisms were injected into animals. A strain of blastomyces pathogenic for guinea-pigs, and a virulent *Staphylococcus aureus,* were used for this purpose. In both instances the results were positive. The control animals died, and the organism was readily isolated from them. The animals receiving stained organisms survived. When *B. anthracis* was used different results were obtained. Huge doses of bacteria were injected into mice. The control animals all died within forty-eight hours. In the animals receiving stained organisms life was prolonged, and occasionally the animal survived. In the animals that did eventually die, death was brought about by anthrax. For instance, Mouse 2 (Fig. 18) was perfectly well for twenty-five days; on the twenty-sixth day it died, and the heart's blood and spleen swarmed with organisms. The animal behaved as though it had received the injection more than three weeks after the injection had actually been made. When the experiments were repeated in the less susceptible rabbit, survival of the animals was more frequent. That the organisms were not really killed by staining is shown by the death of some of the experimental animals. That they were so injured as to be nearly harmless is shown by the occasional survival of the susceptible mouse and the frequent survival of the less susceptible rabbit.

What happened to the organisms in an animal like Mouse 2? They were not killed, for the animal eventually died of the disease; yet they remained impotent for a long period, finally flooding the capillaries in the normal manner of this organism. Of the several explanations suggested for this phenomenon, the one that has been adopted as a working hypothesis is shown in Figure 19. It is assumed that by slow fission and growth the intensity of stain in the bacteria is gradually reduced; so that if we start with a dilution of 1:1,000 (Fig. 19 *A*) by the time the eleventh generation is reached (Fig. 19 *K*) the dilution has been reduced to 1:1,024,000. Here the stain loses its effect and development proceeds normally. Is any machinery of protection developed during this period? Did Mouse 2 acquire a partial, Mouse 3 and Rabbits 3 and 4 a complete, immunity? These questions are now being investigated.

Meanwhile it is important to recognize the fact that survival of animals that have received organisms subjected to the action of a "bactericidal" agent is no proof that the organisms have really been killed, and, on the other hand, to appreciate that a substance that does not actually kill organisms may still be an important antiseptic by reason of its bacteriostatic properties.

15 East Tenth Street.

17. Hall and Taber (J. Infect. Dis. 15:566, 1914) have followed this lead in an interesting attempt to devitalize toxic cultures of B. tetani intended for immunization of horses.

18. Vaccinia is placed in the group of ultramicroscopic infections purely for convenience.

19. Examples of fastness among bacteria have been less frequently observed than among protozoa. Morgenthal's production of drug-fast pneumococci is one of the well-known instances in the bacterial field.

EXPERIENCES WITH LUMINAL IN EPILEPSY *

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Luminal is comparatively unknown in the treatment of epilepsy. Introduced in this country shortly before the war, its importation was stopped before the medical profession became thoroughly acquainted with its properties. Thus it happened that the claims made for it by German writers in the medical journals of 1912 and 1913 have not been verified until quite recently.

My attention was directed to the value of luminal in epilepsy by the casual reading of an article by A. Hauptmann, published in 1912 in the *Münchener medizinische Wochenschirft,* and confirmed by others.

Hauptmann selected for his tests cases of epilepsy which had been previously under supervision for several years, or in which an exact history was obtainable. Most of these had received large doses of bro-

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

mids for long periods. In reviewing his experience he says:

Luminal tends to exert a favorable influence on epilepsy by reducing the number and severity of the attacks. Its field of applicability will be chiefly in those very severe cases of epilepsy which can no longer be controlled by the largest doses of bromids. In cases of medium intensity the attacks failed to occur under doses of 0.15 to 0.2 gm. (2 to 3 grains) daily, while in the more intense 0.3 gm. (5 grains) need not be exceeded. No injurious by-effects of any kind have been observed after months of daily administration, and especially no cumulative action has developed. Therefore, luminal can advantageously replace the bromids even in the milder cases where these appear contraindicated on account of by-effects.

My clinical experience with luminal began toward the end of 1913 in the case of a clergyman's son, whose history is as follows:

CASE 1.—A boy, 13 years old, was first seen, June 4, 1913. The family history is negative: Father, a well-balanced clergyman, mother, brothers and sisters are well and there is no epilepsy in the collateral branches of that family. Born in normal labor, patient developed as other children, with diseases usual in childhood, but no serious illnesses. Teething was unaccompanied by convulsions; but there were peculiar spells described by the mother as so-called "inward" convulsion, and certain attacks which were undoubtedly those of "minor" epilepsy. About thirteen months before coming under my observation a severe nocturnal convulsion occurred—the first major attack—and one month before my examination a similar attack occurred. Meanwhile the minor attacks have become quite frequent—five to six daily. In these the patient never falls, but remains standing and appears dazed for a few seconds only. Any slight indisposition such as a cold or indigestion, seems to cause an increase in the number of spells. The examination revealed no sign or symptom of organic disease.

An acne-like eruption covered the patient's face, due largely to the bromids administered for the attacks. My treatment at first consisted in giving the well-known Bechterew mixture—sodium bromid, 15 grains; Fowler's solution, 4 drops, in an infusion of adonis vernalis, three times daily. Though there was improvement, the severe and the light attacks did not entirely disappear, and I decided to try luminal in daily doses of 1½ grains. The effect was marvelous and almost instantaneous. No more attacks were reported and the acne rapidly disappeared. The boy progressed in his school studies. There were no attacks of any kind during the following two years. However, after some indiscretion in diet two slight attacks were noted, but none after that.

Shortly after observing the effects of luminal in this case, I cautiously administered the drug in other cases, with similar results.

In the discussion following Dercum's paper on Epilepsy with Special Reference to Treatment,[1] read before the Section on Nervous and Mental Diseases of the American Medical Association in 1916, I was the first in this country to express an opinion on the use of luminal in epilepsy. Dr. Ball, who participated in the same discussion, also emphasized the value of luminal in the treatment of the epileptic attack. At that time my experiences was limited to few cases, but since then I had the opportunity of studying over 100 cases of "essential" epilepsy, which constitute the basis for this report.

In order to avoid misunderstandings as to what may be expected from the use of luminal, we must be reminded that in spite of the numerous attempts at a rational, or causal, therapy of epilepsy, most of the methods hitherto proposed have proved fallacious, as has been so well shown by Russell G. MacRoberts. Our therapy is still limited to the prevention of the convulsion or, failing in this, we endeavor to render the attacks less frequent and less severe. The convulsion being only a symptom, though the most conspicuous one, we are far from deluding ourselves into a belief that in causing the arrest of convulsions we have succeeded in curing the disease. But the convulsion, or its equivalent, being nevertheless the one symptom which stigmatizes the individaul suffering from it as an epileptic, it is necessary to concentrate our efforts in the direction of ameliorating the epileptic's lot. Though we cannot cure his *disease,* we endeavor to influence the *attacks* which make his life so burdensome.

It would be wasting time were one to enumerate all the drugs which have been recommended for the treatment of epilepsy. It will suffice to state that the bromids have held undisputed sway since their introduction by Laycock in 1857.

Physical Properties of Luminal.—Luminal, whose chemical name is phenobarbital or phenyl-ethyl-barbituric acid, occurs in tablets of 1½ grains and in the form of a white, odorless and slightly bitter powder. It is almost insoluble in cold water, slightly soluble in hot water, soluble in alcohol, ether and chloroform, and in alkaline solution.

There is also a soluble preparation of luminal, *luminal sodium,* which is phenobarbital sodium. This preparation is principally used for hypodermic injection in the form of a 20 per cent. solution, prepared by dissolving the salt in boiled and cooled distilled water. The dose of luminal sodium is 10 per cent. greater than that of luminal.

Actions and Uses.—The drug was first recommended as a hypnotic and substitute for barbital (veronal), whose formula differs from the latter in the fact that one phenyl group displaces one ethyl group, and it is claimed that this change increases the hypnotic power of luminal (phenobarbital) over that of barbital. The dose of luminal as a hypnotic is from 3 to 5 grains, increased if necessary to 12 grains.

Method of Administration of Luminal in Epilepsy.—I usually prescribe luminal in doses of 1½ grains, either in tablet or capsule, to be given at night before retiring. The patient is instructed to report within a few days. If the dose administered suffices to reduce the attacks or cause them to subside, it is given regularly in the same manner. If this dose is found to be insufficient to cause a cessation of attacks, it must be increased to 2 grains, given at night. Should this dose also prove too small, then another daily dose of luminal is added to the preceding one. In that event my rule is to prescribe a small dose, say 1 grain, to be given in the morning, while the larger dose is administered before retiring. Only rarely have I been compelled to give three daily doses of luminal, but one need not hesitate when it becomes necessary to increase the dose in order to get results. For instance, in one case of severe epilepsy of many years, the patient suffered from six to twelve convulsions daily, and nothing less than 3 grains three times daily caused any change in the patient's condition. After several days or weeks, it will usually be possible to return to the smaller doses, when the effects will be as favorable as with the initial larger doses. When drowsiness and apathy appear, it is always time to reduce the dose. My invariable rule is to give as little as is necessary to keep the patient

1. Dercum, F. X.: Epilepsy with Special Reference to Treatment, J. A. M. A. **67**: 247 (July 22) 1916

free from attacks, and no more. In cases that have been treated with bromids continuously for long periods of time it is advisable to begin the luminal treatment with somewhat larger doses at first, to be reduced later. The treatment is continued for years systematically; any interruption is apt to be followed by a number of severe attacks—the same as with the bromid treatment.

A point worthy of mention is the experience that even moderate doses of luminal seem to exert a favorable effect on the minor attacks, while the bromids are comparatively ineffective in these conditions.

Contraindications.—I know of no definite reasons why luminal should not replace the bromids in most cases of epilepsy requiring drug treatment.

Regarding skin eruptions, I can report that among my number of treated cases (100) I have only seen two patients with rashes that necessitated a discontinuance of the luminal treatment.

Urinary disturbances from luminal I have never seen, though continental writers speak of their occurrence and advise as a preventive measure to omit one day's treatment out of the seven.

On the whole, I believe that there are not contraindications to the administration of luminal in kidney or cardiovascular conditions.

To demonstrate more clearly the results of treatment with luminal on the attacks and general condition of epileptics, I have made the following abstracts from the records of several representative case histories.

CASE 2.—Miss M. G., aged 23, with negative family and personal history, came under my observation, March 2, 1918. Though her health and development during infancy were of the average kind, peculiar "crying" spells without apparent cause are reported by the mother, and also the circumstance that even slight illnesses were accompanied by physical upset and high temperatures. Menstruation was regular and painless.

At 18, while at college, the first "fainting spell" occurred; the second came one year later. Then followed several similar attacks in periods varying from six months to one year apart. The last attack, one month before consulting me, was attributed by the patient to "shock from dental work."

The first few attacks were accompanied by loss of consciousness, biting of tongue, frothing at mouth and the striking of head against objects encountered in falling. Duration of attack, five minutes; it is usually followed by severe headache and sometimes by sleep. The earlier attacks were more severe than any of the later ones, during the last of which she experienced premonitory warnings in the nature of a "receding" feeling, lasting long enough to enable her to lie down before the attack actually appeared. In addition to the attacks described, there are present smaller ones, consisting of peculiar sensations accompanied by dizziness and lasting only a second—evidently "petit mal" attacks.

I prescribed luminal in doses of 1½ grains, to be taken at night. The results were satisfactory. Though the patient has visited me monthly, there has been no record of a single attack since beginning the new treatment. This means that not only have convulsions disappeared, but also the minor attacks.

CASE 4.—W. X., aged 24, with negative family and personal history, was first examined, Sept. 13, 1914. The beginning of his trouble was while a cadet at a military academy; then after a strenuous march he suffered from a so-called "fainting spell." Within a half year five similar attacks appeared in rapid succession. In all of these he became unconscious and keeled over, but consciousness quickly returned. These were undoubtedly minor attacks of epilepsy. His first major attack occurred two years before consulting me; the second one about a year after the first. While the severe convulsions have been coming on an average once yearly, many minor attacks have been noticed in the interval.

The administration of luminal in the usual doses (1½ grains nightly) was followed by happy results: not one attack has appeared in two years, in spite of additional duties imposed on the patient by the necessities of the war. Only once or twice has patient suffered mild attacks while taking luminal—always, however, after disregarding essential hygienic rules.

CASE 7.—Mrs. J. D., first seen, Feb. 20, 1916, is 54 years old, has been married thirty-five years, and gave birth to three healthy children. The first convulsion occurred only six months before consulting me; three months after the first came a series of convulsions. The examination in this case pointed clearly toward a vascular cause for the epileptiform attacks.

The administration of luminal in 1½ grain doses nightly failed to exert any appreciable effect on the attacks. The dose was consequently increased to 2 grains. There have been no attacks in two years.

CASE 8.—A Sister of Charity, 22 years old, was seen June 28, 1918. The first convulsion occurred when she was 4 years old. Following this there was a long period of freedom from attacks until puberty. Then "fainting spells" appeared, and a little later attacks of momentary "abstraction." The last kind of attack occurred very frequently. Still later, regular convulsive attacks came to dominate the scene; at first only once or twice yearly, but recently every seven to ten days.

Luminal in doses of 1½ grains, increased later to 2 grains, nightly, caused a disappearance of attacks during the past one and one-half years.

CASE 10.—H. B., a factory girl, aged 23, under observation since Aug. 27, 1918, had suffered from teething convulsions at 1½ years and subsequently was backward in school. Two and a half years before visiting me she had her first nocturnal epileptic convulsion. There also developed petit mal attacks, consisting of peculiar automatic movements of the fingers, blanching of the face, and momentary losses of consciousness.

After the administration of luminal there were no attacks during a period of three weeks. Patient considered herself cured and omitted taking the medicine for four days. Then a series of attacks occurred, worse than any she had had before.

This case seems to support the statement frequently made, that with cessation of treatment, the attacks recur even in greater severity than before taking luminal.

In this connection it must be stated that several of my patients returned after having taken luminal for a short time believing themselves cured. I always explain to such patients that there is great danger in discontinuing treatment abruptly and that I expect worse attacks than they ever had before, if they omit the remedy. Such a statement often has the desired effect.

In other instances, patients fail to put in appearance and act as though they were cured, neglecting every sort of rule and leading a riotous life. A series of convulsions usually brings them to their senses. Then they visit the physician and promise to be good. For a time rules are adhered to, the medicine is regularly taken, and the patient is again in fine spirits. They often fall from grace more than once, before they finally learn their lesson.

CASE 12.—Mr. H. F. B., aged 34, was first seen, Aug. 30, 1918. At 16 years his first convulsion occurred, since which time convulsions appeared at irregular intervals. There are both major and minor attacks. The patient's general health and habits are good, and there is no evidence of syphilis. A relationship has been noticed between his habitual constipation and the frequency of epileptic attacks.

The treatment consisted in regulating the bowels and the administration of luminal tablets in 1½ grain doses. Up to the present time there has been no recurrence of attacks

excepting one minor attack. For this reason the dose was increased to 1¾ grains of luminal nightly. There have been no attacks since and the patient is able to attend to the business of a large banking house.

Some of my cases have been free from attacks for a period of three to four years, others from one to two years, and still others, and these constitute the large majority of cases, for a number of months. Owing to the scarcity of luminal during the war, I was often obliged to use sodium luminal, of which there was still a quantity left. However, the dose is much larger and the effects do not equal those of luminal. Fortunately, both products are now being manufactured in America.

SUMMARY

Luminal in small doses, from 1½ to 2 grains, once or twice daily, has been found capable of causing an arrest of convulsions in epilepsy.

Larger doses than those mentioned are seldom required, but may be safely given.

Large doses may be administered when beginning treatment, especially after sudden withdrawal of the bromid treatment; even in such cases the dose may be gradually reduced to what constitutes an average dose, namely, 1½ to 2 grains.

No harmful effects have thus far been observed from the long-continued administration of luminal.

It does not appear to be a habit-forming drug.

The effect on the mentality of patients taking luminal for epilepsy was surprising. Patients receiving average doses of luminal do not show the peculiar mental torpor of those taking bromids.

25 East Washington Street.

ABSTRACT OF DISCUSSION

DR. GEORGE A. MOLEEN, Denver: I can second what Dr. Grinker has so well brought out with reference to the sedative power of luminal in epilepsy, and it seems to be more effective in the severer cases. I cannot agree with Dr. Grinker, however, in that it is free from all danger particularly in the renal cases. I think it participates in the danger common to all the series of barbituric acids, especially in the more commonly used barbital (veronal) as well as luminal and the sodiums salts of these two radicals. I have seen uremia precipitated in a case of renal insufficiency which resulted in death, and I am a bit chary about the use of any barbituric derivative in cases in which this complication is a possibility. On the other hand, it replaces the bromids with less of the mental torpor that is commonly found with them and even is superior to the von Leube modification of the bromid treatment. Even with the addition of the opiates to the bromids I think luminal has a more favorable effect in cases of epilepsy of long standing, but one must be very guarded about its use during convulsive seizures in general for they may possibly be of toxic origin and renal insufficiency may play a part.

DR. MARVIN L. GRAVES, Galveston, Texas: My own experience with luminal in the treatment of epilepsy is not quite so favorable as that of Dr. Grinker. Unfortunately, we have no definite etiology on the pathologic classification of the epilepsies so that we might know just what we are dealing with and apply our therapeutics accordingly. It appears to me that luminal will be found to be definitely an antispasmodic or anticonvulsive possessing a considerable degree of efficacy. A certain number of epileptics that have been under my care have responded to from 3 to 4½ grains administered daily, the convulsive seizures ceasing, the mental symptoms becoming greatly improved and in all respects the patients appearing to be much better. After the patient has taken the drug for a little while, however, and then ceases taking it, it is not long before the convulsive seizures recur. Moreover, I have seen cases in which luminal, administered in doses as high as 7 or 8 grains daily, has produced no cessation in the convulsions, which, as a rule, occur nocturnally, but which are somewhat controlled by the bromids. Luminal is a valuable drug in ½ to 1½ grain doses, but it is not a curative drug in epilepsy; it is simply palliative, and, perhaps, one of the best palliatives.

DR. ANDREW L. SKOOG, Kansas City, Mo.: It is the general consensus of opinion on the part of students of this disease that epilepsy should be termed epilepsies rather than epilepsy. There are many different causes for epilepsy; some we are able to discover, and others we are not. These cases are classified as idiopathic or essential epilepsies. My experience with luminal has been favorable in many cases. I had used it for a short time only before the war, then after a certain period I was unable to obtain any of the drug. I did use some luminal sodium, but I did not get the same results with this drug that I had formerly obtained with luminal. I have begun using luminal again, and in one case of a severe type of epilepsy there has been complete cessation of the seizures. From a review of the literature and personal experience with the drug I would say that it is worthy of serious consideration, especially in certain types of epilepsy. However, in view of reports on the toxicity of the drug, we should exercise considerable caution relative to the dosage and period of continuance. I wonder whether Dr. Grinker has had any cases in which he has discontinued the drug for many months, or a year, with no recurrence of attacks. In view of the fact that we favor the term epilepsies rather than epilepsy, the therapeutics of this group of diseases must be multiple. In a certain number of cases surgical treatment is indicated. Hygiene plays an important rôle, particularly as regards diet. I agree with Dr. Grinker that bromids have been used in excess. In Europe it has been the custom to administer considerably larger doses than we use. I prefer sodium bromid. The toxicity of a bromid may be lessened by certain laxatives, particularly cascara and occasionally liquor potassii arsenitis.

DR. DAVID S. BOOTH, St. Louis: My experience with luminal has not been as favorable as I had expected; however, the results obtained have probably been as good as those obtained by the use of bromids. It is true that bromids have ill effects, but calcium or sodium bromid is the least injurious. In those cases in which the bromids cause pustules, there is usually some focal infection.

DR. E. BATES BLOCK, Atlanta, Ga.: I have used luminal in more than sixty cases, and my experience has been very favorable. I do not give over 3 grains in each twenty-four hours, and that at bedtime. It does not cure epilepsy, but it has a controlling effect over epileptic convulsions. Luminal has an advantage over barbital and chlorbutanol in that it does not have any effect left over the next day when it is given at night. I have seen no ill effects from luminal. The bromids tend to produce or light up or increase any preexisting inflammatory condition. I would not give bromids in tuberculosis, nor in any inflammatory condition.

DR. F. B. WYNN, Indianapolis: Generally speaking, we continue the use of any remedy with the idea of diminishing the frequency of epileptic attacks. I do not know of any drug which has been abused more than the bromids. When I was connected with an institution we gave bromids ad infinitum, but the longer I remained, the less I gave, whether for epilepsy or for excited and extreme cases of mental agitation. The mental apathy, the developing transient stuporous state of the individual, impairment of the digestive functions—all came in the wake of the use of bromids. That is what we are apt to do with luminal. It seems to me we are getting away from the fundamental principles in treating epilepsy. We should keep the bowels free by dietetic and therapeutic measures. We overlook the psychogenic factor. Chronic epilepsy patients with dementia go for long periods without any epileptic attacks. Psychology produces that remarkable result. Patients with idiopathic epilepsy, who have been treated by all known measures without getting relief from their attacks, get well following a visit to a religious shrine.

It is simply a matter of getting away from an old environment —a different psychology. We should apply the principle in the management of cases of chronic epilepsy. The physician in charge at our institution in Indiana says that there is a great deal in the psychogenic treatment of epilepsy. Vary the patient's occupation and tell him that it will help him, and it will. It is strange what a wonderful effect the change and inspired hope will have upon the course of the epileptic seizures.

DR. ROY M. VAN WART, New Orleans: About ten months ago I accidentally made the observation that barbital would control epileptiform attacks. Experiments with barbital in small doses produced practically the same results as luminal. I have treated about 200 patients. Patients are usually given from ½ to 2 grains once daily. In most cases it seems to act almost instantly. It reduces the number of attacks very greatly.

DR. JULIUS GRINKER, Chicago: Dr. Moleen spoke of convulsive seizures of toxic origin. I do not include these among the so-called epilepsies. I think there is only one kind of epilepsy, and that is, genuine or idiopathic epilepsy. McRoberts wrote a very illuminating article on this subject, which deserves careful perusal. Dr. Graves objects to treatment with luminal because it does not cure. I did not claim to have a cure for epilepsy, but was only offering a substitute for bromid, a drug which has always been used as a palliative. When a patient has no more convulsions it does not mean that he is free from epilepsy. The convulsive phenomenon is only one of several features which go to make up epilepsy. As to whether any of my patients has not been given luminal for a year and remained free from attacks: I have not dared take one off the drug for that length of time because of the fear that convulsions may return. I have had cases in which the omission of treatment for only a short period caused a return of the attack. Dr. Booth stated that his results were not as favorable as mine. His patients were drowsy. It is a question of proper dosage. Again in some isolated cases luminal will not take the place of the bromids. Nobody has claimed that luminal will affect every case favorably. Dr. Booth also spoke of focal infection being present in some cases. So-called epilepsy due to focal infection is not true epilepsy. The bromids do tend to produce acne. Some patients have a susceptibility to drug eruptions, and this we attempt to remedy by the addition of Fowler's solution. With luminal, however, we do not need Fowler's solution. Dr. Wynn is opposed to the continuous use of any drug. He offers objections to the use of bromids, and if these are true, we should discard bromids altogether. If he had any experience with luminal, he would not be able to mention any contraindication to its use, and certainly would be in favor of continuing the drug as long as it makes patients comfortable. As regards cessation of convulsions because of a change to a new treatment, it is true that most of us have occasionally noticed this phenomenon. A patient may say that he has taken bromids for three years but has given them up, and now is free from attacks. Then something happens, and the attacks are worse than ever. There are longer or shorter intervals between attacks not necessarily due to treatment. Taking a patient off the bromids may precipitate an attack of serial epilepsy or he may be entirely free from attacks. This is no argument against the use of luminal, for, as a matter of fact, certain patients cannot take bromids, but do well under luminal.

Barbital is toxic and habit-forming, and in the few cases in which I used it, the convulsions were uninfluenced, whereas luminal has never proved toxic, except in large doses and in a few susceptible individuals.

Is Your Community Fit?—Who is responsible for the health of your city? Have you a health officer? Does he give all his time to his office? Or, are you depending on a busy doctor who accepts this position at a nominal salary for the honor he feels attached to it? It is well to bear in mind the truth of the motto: Public health is purchasable; in a large measure a community can limit the degree of prevalence of disease within its borders.—*Pub. Health Rep.*, April 25, 1919.

THE VALUE OF POSTMORTEM WASSERMANN REACTIONS*

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For nearly six years the Wassermann test has been performed almost as a routine on the blood of subjects coming to necropsy in the pathologic laboratory of the University of Louisville Medical Department and of the Louisville City Hospital. In the brief time allotted to this paper it is desired to summarize the findings in this study. Statistics and details of the technic are purposely omitted, as these may be found in two previous articles based on parts of the same study.[1] In brief, it may be said that the clinical method as outlined by Kolmer has been followed.

The only variation in technic has been that in the last few hundred tests cholesterinized alcoholic antigens alone have been used, but at least two antigens have been employed in each set and each antigen has been controlled with tubes containing double the dose of that particular antigen. No result has been considered if the control containing double the dose of antigen has shown any anticomplementary tendency.

No apology is made for the use of cholesterinized antigens. Nearly a thousand tests were made with cholesterinized and crude alcoholic antigens side by side. It was found that the crude alcoholic antigens missed many early and late lesions, and that the cholesterinized antigens did not give false reactions so far as could be ascertained from clinical data. Moreover, the cholesterinized antigens have been found much more delicate in treated cases, and the best clinicians working in correlation with the laboratory have come to depend on the cholesterinized antigens. Several reliable serologists have privately expressed the opinion to me that they believed the cholesterinized antigens were the most delicate and did not give false reactions if used properly and titrated frequently enough, but that they employed also a crude alcoholic antigen, because some clinicians mistrusted the other. The cholesterinized antigens do tend to become anticomplementary more frequently and more suddenly than other antigens, and must be carefully controlled.

The average clinician has no particular interest in a complement fixation test of blood after the patient is dead; but to the pathologist working in the postmortem room it affords a valuable check on gross pathologic diagnoses and frequently solves the postmortem problem, while in medicolegal cases it is of great value if reliable. That it is not reliable was indicated in 1918 by Symmers, Darlington and Bittman,[2] who asserted that from 31 to 50 per cent. of patients, who gave during life a negative Wassermann reaction, showed at necropsy positive evidence of syphilis, while the Wassermann reaction was positive during

* From the Pathologic Laboratory of the University of Louisville Medical Department and of the Louisville City Hospital.
* Read before the Section on Pathology and Physiology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Graves, Stuart: A Study of 290 Postmortem Wassermann Reactions, J. Immunol. **2**: 53 (Dec.) 1916; Postmortem Wassermann Reactions, J. A. M. A. **70**: 1751 (June 8) 1918.

2. Symmers, Douglas; Darlington, C. G., and Bittman, Helen: The Value of the Wassermann Reaction as Indicated by Postmortem Investigation in Three Hundred and Thirty-One Cases at Bellevue Hospital, J. A. M. A. **70**: 279 (Feb. 2) 1918.

life in 30 per cent. of the cases which did not show any evidence of syphilis after death. In this view they agreed with some of the older German writers.[3]

Larkin, Levy and Fordyce [4] answered the paper of Symmers and his co-workers somewhat emphatically, supporting the positive Wassermann reaction as the most constant finding in syphilis, and criticizing the Bellevue men on the grounds of questionable serologic technic and careless survey of pathologic material. Certainly our findings in nearly 500 necropsies in which Wassermann tests have been made postmortem do not conform to those of Symmers, Darlington and Littman, as shown by the accompanying table.

RESULTS OF POSTMORTEM TESTS

	First Series	Second Series	Third Series	Total	Per Cent.
Class 1. Wassermann tests positive with apparent syphilitic anatomic lesions or positive evidence of syphilis in histories	76	28	20	124	25
Class 2. Wassermann tests negative with no apparent syphilitic anatomic lesions, and no evidence of syphilis in histories	161	39	39	239	48.5
Class 3. Anticomplementary, specimens hemolyzed or otherwise unfit for use	8	14	27	49	9.9
Class 4. Wassermann tests negative with apparent syphilitic anatomic lesions or positive evidence of syphilis in histories	7	3	3	13	2.8
Class 5. Wassermann tests positive with no apparent syphilitic anatomic lesions and no positive evidence of syphilis in histories	38	26	3	67	13.8
Total	290	110	92	492	100

According to these figures, in 73.5 per cent. of 492 cases the postmortem serology harmonized with anatomic findings or clinical histories, usually with both. The serums were unfit in 9.9 per cent. of cases, the incidence being nearly four times as much in the last series as in the first two. This was during the war, when the laboratory was lacking in experienced helpers and was overwhelmed with work. It is rare that serum is unfit when the blood is taken with a sterile pipet through a hole made by piercing the seared surface of the right auricle with the hot point of scissors, the blood being kept subsequently in an ice chest. Right here it may be said that good results with the Wassermann test, before as well as after death, depend to a great extent on the technic followed in obtaining the serum, a point which clinicians frequently do not appreciate. Kolmer has shown that a trace of acid or alkali as low as 1 : 10,000 affects the reaction sufficiently to give an incorrect reading.

In this series positive reactions obtained six hours postmortem agreed with positives antemortem; negative reactions twenty-four hours postmortem similarly agreed.

The apparent discrepancies in Classes 4 and 5 of the first two series have been discussed in previous papers. In the last series these apparent discrepancies are found in only six cases, or 6.5 per cent.

Three of the cases belonged to Class 4, with a negative postmortem Wassermann reaction, and positive anatomic findings.

CASE 1 (A 18-22).—A patient with syphilitic sclerosis of the liver, with Wassermann reaction ++++ seventeen months before death, was subjected to six months' intensive treatment; the postmortem Wassermann reaction was negative.

CASE 2 (A 19-1).—A white man, aged 55, of whom no Wassermann test had been previously made, died from aneurysm of the arch of the aorta; the postmortem Wassermann reaction was negative.

CASE 3 (A 20-7).—A white man, aged 21, born syphilitic, with a saddle nose and wizened face, who had lived for months with a tracheotomy tube, died of starvation caused by stricture of the posterior pharynx.

The other cases were in Class 5, with positive postmortem Wassermann reactions and no anatomic or clinical evidence of syphilis.

CASE 4 (A 18-29).—A white boy, aged 6 years, died of generalized tuberculosis and tuberculous meningitis. The postmortem Wasserman reaction was ++++; the spinal fluid Wassermann reaction had been negative one week before death. The family history was incomplete.

CASE 5 (A 19-9).—A white man, aged 39, with an incomplete history and no previous Wassermann test, died of lobar pneumonia, empyema and acute edema of the glottis. The postmortem Wassermann reaction was +++.

CASE 6 (A 19-23).—A white woman, with no record of a Wassermann test, died of generalized tuberculosis. The postmortem Wassermann reaction was ++.

Of these six, Case 1 is certainly not really contradictory. Cases 2 and 3 were undoubtedly cases of late and congenital syphilis, in which antemortem Wassermann reactions are frequently negative. In the first series all seven of the cases offering postmortem anatomic evidence of syphilis with negative postmortem Wassermann reactions showed aneurysms, but nearly thirty other cases of aneurysm found postmortem in this laboratory have had associated positive postmortem Wassermann reactions.

Of the last three cases, it can only be said that there is no evidence that the patients were not syphilitic. Certainly other comparisons indicate that reactions varying from ++ to ++++ mean syphilis without doubt. Moreover, it is not remarkable to find 13.8 per cent. of positive Wassermann reactions in cases not showing anatomic lesions of syphilis. It must be appreciated that many cases with histories of syphilis and positive Wassermann reactions in life do not show anatomic evidence of the disease. Moreover, in many of the cases coming to necropsy in this series, the accompanying history charts, while they did not offer evidence of syphilis, did not offer much of any other information; so that, while these cases must be put in this class under the circumstances, they would be put in Class 1 if the histories had been the result of searching investigation.

Moreover, it must be appreciated that the lack of anatomic evidence of syphilis is the lack apparent on gross inspection and ordinary microscopic examination; such special search as has been made by Warthin at Ann Arbor would undoubtedly reveal microscopic changes characteristic of syphilis in many of these cases.

Of the value of the Wassermann test during life there is, fortunately, no longer doubt in the minds of

3. Frankel and Much: Ueber die Wassermannsche Serodiagnostik der Syphilis, München. med. Wchnschr. **55**: 2479, 1908. Pick and Proskauer: Die Komplementbindung als Hilfsmittel der anatomischen Syphilisdiagnose, Med. Klinik **4**: 539, 1908. Krefting: Deutsch. med. Wchnschr. **36**: 366, 1919. De Besche: Wassermanns Serodiagnose mit Leichenserum, Berl. klin. Wchnschr. **47**: 1259, 1910. Bruck: Verhandl. d. deutsch. dermat. Gesellsch. **10**: 144, 1908. Seligmann and Blume: Berl. klin. Wchnschr. **46**: 1116, 1909. Nauwerck and Weichert: München. med. Wchnschr. **57**: 2329, 1910. Lubarsch: Jahresb. f. ärztl. Fortbild., 1911, No. 1, pp. 67-74. Lucksch: Verhandl. d. deutsch. path. Gesellsch., 1910, p. 249. Grüber: München. med. Wchnschr. **59**: 1718, 1912. Von Werdt: Cor.-Bl. f. Schweiz. Aerzte **41**: 993, 1911. Schmidt: Die Wassermannsche Reaktion am Leichenserum, Deutsch. med. Wchnschr. **38**: 802, 1912. Reinhart: Ueber die Wassermansche Reaktion, Berl. klin. Wchnschr. **49**: 1730, 1912. Löhlein: Folia serolog. **4**: 227, 1910.

4. Larkin, J. J.; Levy, I. J., and Fordyce, J. A.: The Value of the Wassermann Reaction: A Reply, J. A. M. A. **70**: 1589 (June 1) 1918.

most well informed men. "In all the fluctuations of opinion as to the significance and value of this test one fact has remained clear, viz., that a strongly positive reaction means syphilis (barring leprosy and yaws)."[5] Therefore, if proof is offered that the postmortem Wassermann reaction corresponds to the antemortem reaction in the same cases, the main point is proved, namely, that the postmortem reaction is a reliable diagnostic sign of syphilis. With this end in view, postmortem results have been checked against antemortem reactions. In ninety cases so controlled, there are only eight differences. In two, the degree of difference was + and ±. These two can be practically disregarded. In one, a ++++ reaction seventeen months before death was followed by six months' intensive treatment and a negative postmortem reaction. This is hardly contradictory, especially as the negro had a typical syphilitic sclerosis of the liver. In another, a male negro gave a history of syphilis seven years before death, had shown a negative reaction three years and eight months later (probably after treatment), and showed a +++ reaction after death with an ulcer scar on the penis. In two other cases the postmortem reactions of +++ and ++++ respectively had been preceded by fairly recent negative reactions on the spinal fluid. These are hardly contradictory, for the spinal fluid is frequently negative when the blood is positive. One was in generalized tuberculosis in a white boy of 6 and the other in a case of cerebral hemorrhage in a male negro of 35. This leaves two flat discrepancies in ninety cases, an average of about 2.2 per cent. If any series of tests extending over a period of six years show no more discrepancies, which might have been due to error on the part of the persons who took the serums, they can be considered fairly reliable.

It seems strange that no more attention has been paid to the use and reliability of the postmortem Wassermann reaction. In two recent medicolegal cases, it was the deciding point for the insurance companies. No one else in this country has written on the subject, except Moody, Jackson and LeCount,[6] who concluded:

> It would seem fair to state that under certain conditions the Wassermann reaction in the fluids collected after death is of value. Where the blood or spinal fluids have remained in the dead bodies long enough for postmortem changes to occur in them, then the results cannot be relied on. Finally, in individuals dying from acute infections, the test is often positive in many instances independently of a syphilitic infection or its absence.

With their conclusion that the test is often positive in persons dying from acute infections independently of a syphilitic infection or in its absence, the results in these series do not agree. Nor is the fact that a positive reaction is found in cases of tuberculosis or carcinoma at all indicative that the positive reaction is due to these conditions. In one case (A 20-20), in which a ++++ reaction was obtained after death from operation for epidermoid carcinoma of the tongue, there was found a typical syphilitic aortitis; there had been a ++++ reaction about two weeks before death. Kellert[7] has reported a case of carcinoma, syphilis and tuberculosis coexistent in the same patient.

In this connection the views of Moore[8] are of interest. Basing his opinion on the study of syphilis from histologic, bacteriologic and clinical points of view, he believes that:

> Postmortem appearances interpreted as being evidences of syphilis are the least valuable as proof and often actually misleading, contrary to the view expressed by Symmers and Darlington.
>
> Syphilis is an anatomic disease, but the postmortem anatomic changes are often better regarded as the results of a disease, of a process which has come to an end before the death of the individual, rather than as the disease itself; hence the fallacy of correlating the results of a reaction, which necessarily depends on the active disease process, with terminal fibroid changes.
>
> The Wassermann reaction presupposes that there are certain substances in one or both of two body fluids, the presence of which is determinable by that procedure.
>
> A patient may have syphilis; but if the so-called Wassermann bodies are not present in the blood serum or spinal fluid, the result will be negative. This may occur in cases of chancre before the end of the fourth week. . . .
>
> A vastly different and more reliable picture is presented by clinical syphilis than is presented by the postmortem appearance, and it is the correlation of the Wasserman test with this evidence that determines its usefulness. . . .
>
> Clinical syphilis and the dark field microscope should establish the validity of the Wassermann test in known cases. The Wassermann test should establish the presence of syphilis in unknown cases.

It is in these unknown cases, which the pathologist frequently faces at the necropsy table, that the postmortem Wassermann test is of great value.

In our laboratory more than 15,000 Wassermann tests have been done in hospital and clinic cases in which the clinical evidence could generally be correlated with the serologic evidence, and I am fully convinced, as was Rosenberger[9] in a study of 10,000 Wassermann reactions in the Philadelphia General Hospital, that the Wassermann test is the most delicate and reliable means of diagnosis of active syphilis. I am as fully convinced that the postmortem reaction is just as reliable as the test during life, if the serum is properly taken and preserved.

CONCLUSIONS

1. In ninety controlled cases there were flat discrepancies between antemortem and postmortem Wassermann reactions in only two.

2. In 124 cases showing evidence of syphilis, postmortem or clinical, 137, or 90.5 per cent., gave a positive postmortem Wassermann reaction.

3. The reliability of the Wassermann test depends to a considerable extent on the care used in obtaining and keeping the blood.

4. Cholesterinized antigens are the most delicate and do not give false positive reactions if properly used and controlled.

5. Observation of more than 15,000 reactions as correlated to clinical evidence substantiates the belief that the Wassermann test is the most delicate single test for syphilis.

6. The postmortem Wassermann test is practically as reliable as the antemortem test if the serum is properly taken and shows nothing unusual in the serum control tube.

100 West Chestnut Street.

5. Pollitzer, Sigmund: General Prognosis of Syphilis in the Light of Recent Progress, J. A. M. A. **74**: 775 (March 20) 1920.
6. Moody, Jackson and Le Count: Tr. Chicago Path. Soc. **9**: 129, 1914.
7. Kellert, Ellis: Carcinoma, Syphilis and Tuberculosis Coexistent in the Same Patient, J. A. M. A. **63**: 1819 (Nov. 21) 1914.
8. Moore, J. A.: The Criteria of the Wassermann Reaction, correspondence, J. A. M. A. **70**: 643 (March 2) 1918.
9. Rosenberger, R. C.: New York M. J. **108**: 584 (May 11) 1918.

ABSTRACT OF DISCUSSION

DR. A. M. MOODY, Chicago: Dr. Leila Jackson and I made a series of tests a few years ago on postmortem fluids collected by Dr. Le Count. We ran one series at Presbyterian Hospital and another at St. Luke's Hospital, and we checked everything very closely. At that time, in 1912, there was not a satisfactory collection of fluid in many instances. Proper precautions were not always taken in regard to the containers. That would account for a large number of anti-complementary reactions which we got at that time. Then we made Wassermann tests in every case; many of the fluids were in such a state of decomposition that no valuable result could be obtained. Our conclusions at that time were that when a positive reaction is present it is a valuable sign of syphilis, that is, in the presence of the lesions of syphilis. If other diseases are present which may interfere with the reaction in some way, a positive reaction will not mean syphilis, but in cases of sudden death from a disease other than acute infections it gives valuable information, and especially is that true of the aortic lesions of ordinary syphilis. I think Dr. Graves has come to the same conclusion. We believed at that time that persons dying from pneumonia and other contagious infections did not give reliable Wassermann reactions in their postmortem fluids. We examined other fluids besides the spinal fluid, but they all bore out the statement Dr. Graves made, except that we found that the Wassermann test was not positive in the case of patients who died of acute infection. From a medico-legal standpoint, a positive Wassermann reaction in a patient dying from syphilis should be just as valuable as one made on the living subject.

DR. WARD BURDICK, Denver: It is a matter of great importance that we establish the value of the postmortem Wassermann test. Having been coroner's physician of Denver for a number of years, I can recall several instances in which the result of such a test could have been used as evidence, but by reason of there being so little in the literature with reference to its value, it had no legal status. Have you had difficulty in securing these serums hemoglobin free? What is your technic for securing the specimens of blood?

DR. R. G. OWEN, Detroit: One of the important factors is the question of cholesterinized antigens. We realize that the Wassermann reaction is not 100 per cent. accurate and we must make up our minds whether we are going to get false positive or false negative reactions in certain cases. You do get a certain percentage of false positive reactions with cholesterinized antigens. We recently completed a series of examinations of 2,241 specimens, which were run with cholesterinized antigen, one hour incubation, and with plain alcoholic heart extracts with four and fifteen hour fixation in the icebox. Five hundred and seventy-one tests were positive with all three methods; 1,558 were negative throughout. One hundred and twelve gave different results with the three methods. One and one-half per cent. were positive only with the cholesterinized antigen, but these were all in old, treated cases, some patients having gone as long as fifteen to twenty years without any definite symptoms. There were, however, about 3 or 4 per cent. of what we considered false positive reactions given by the cholesterinized antigen. In these cases, the history and physical findings were carefully reviewed and no evidence of syphilis could be elicited. To make a diagnosis of syphilis with a cholesterinized antigen alone is dangerous.

DR. F. F. RUSSELL, Washington, D. C.: In the last hospital where I was stationed we made it a rule to do postmortem Wassermanns. We did from twenty-five to thirty postmortems a month, and we came to have a great deal of confidence in the postmortem results, where the body was fresh enough to get a good serum. Dr. Graves said that he did not get a positive Wassermann in an acute infectious disease. I can confirm that statement. We might get a slight reaction, but nothing that was confusing. There never were any strong reactions obtained in yaws or leprosy or malaria unless the patient had syphilis also. I do not think that we realize what a common complication syphilis is in leprosy. In the leper asylum at Ancon, C. Z., we had between 40 and 50 per cent. of syphilitics. Naturally, we got a very high percentage of positive Wassermanns in our leprosy cases. As time went on, and these patients lived for years, the clinical signs of syphilis became evident. To illustrate by one case: A man was admitted to the hospital with typhoid fever. During the course of the disease he was found to be a leper in the earliest stage of the disease. Before he convalesced from the typhoid he developed a primary lesion of syphilis and also a pulmonary lesion. His pulmonary lesion did not clear up and it became evident, after a time, that he was suffering from acute pulmonary tuberculosis. During his typhoid, his tuberculosis and his leprosy he had a positive Wassermann, all because he also had syphilis.

DR. JOHN A. KOLMER, Philadelphia: Did you get a positive Wassermann in your case?

DR. RUSSELL: We got a weak positive reaction.

DR. KOLMER: A case of yaws in Philadelphia diagnosed by Dr. Schamberg gave a positive Wassermann reaction. So far as my own experience is concerned, there are only two diseases other than syphilis which may consistently yield positive Wassermann reactions, namely, leprosy and yaws.

DR. WARD BURDICK, Denver: The statement has been made, has found its way into the literature, and has become more or less firmly fixed in the minds of many physicians, that some tuberculous patients give a positive Wassermann reaction when syphilis is not present. I have never found this to be the case.

DR. KOLMER: I can confirm what Dr. Burdick said. A patient with tuberculosis gives a negative Wassermann even with cholesterolized extracts unless he is likewise syphilitic.

DR. F. M. JOHNS, New Orleans: I have had occasion to make many Wassermann tests, even using cholesterinized antigen, on active malaria patients. Dr. Bass and I took many specimens of blood from very heavily infected patients, and series of Wassermanns were made with cholesterinized antigens, alcoholic antigens and others of a tentative specific nature for malaria. We frequently found a 4 plus Wassermann with a cholesterin fortified antigen and very slight fixation with the alcoholic antigens only. These same patients would give a negative Wassermann with cholesterin antigen on the abatement of active symptoms.

DR. STUART GRAVES, Louisville, Ky.: Frequently, in postmortem examinations we make a routine blood culture even in patients who have been dead from twelve to forty-eight hours. Postmortem Wassermanns are of value if the serum is collected under proper precautions and if the tests are properly controlled. They are often of far more value than the routine blood culture. The routine Wassermann should be done at each postmortem, provided the body is not too old. I think we found positive postmortem Wassermanns agreeing with antemortem Wassermanns as late as twelve hours, and negative postmortem Wassermanns agreeing with negative antemortem reactions as late as twenty-four hours. Often in acute infections we found the serum considerably tinged with hemoglobin. In taking the serum, the right auricle is seared thoroughly with a hot iron and punctured with an old, hot scissors blade. Then, with a sterile pipet, the serum is sucked up and deposited in a sterile tube. If the blood appears hemolyzed, or if the controls are not perfect, that serum is thrown out. In relation to the cholesterinized antigen, it all depends on what is considered a positive reaction. We have come to depend on no reaction as diagnostic if it is not more than plus. With each antigen carefully titrated and controlled with a double dose of that antigen, a result of 2 plus, 3 plus or 4 plus is diagnostic of syphilis, but one plus we do not interpret as positively diagnostic, although we consider it as being suspicious. It is generally recognized that a Wassermann test properly done is the most reliable means of diagnosing syphilis. In checking up the postmortem reactions by antemortem reactions, the positive postmortem reactions corresponded almost exactly to the antemortem reactions in about 97 per cent. of the cases. If, in a large series, uniform reactions are obtained by two laboratories or by corresponding tests, it is pretty reliable.

MILD CHRONIC NEPHRITIS IN CHILDREN *

LEWIS WEBB HILL, M.D.
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Acute nephritis in children is often a very long drawn out affair; a case probably should not be called chronic until albuminuria has persisted at least a year. The classification of chronic nephritis, whether it be in the child or in the adult, has always offered considerable difficulty. The variations in the clinical picture which may be presented are many, depending on the amount and kind of damage that has been done, and the stage of the disease in which the patient may be at the time. The older pathologic classification has not been satisfactory for practical purposes, is gradually being done away with, and is being replaced by a simple clinical classification. In children the situation is somewhat different from that in the adult as we do not ordinarily have to take the general wearing out process of the organism into consideration; we are dealing with kidneys that have been suddenly damaged when healthy instead of with kidneys that may have gradually suffered injury due to the wear and tear of life over a long period of time. Also, in adults with chronic nephritis the picture is usually complicated by concomitant cardiac and vessel damage; in children this factor does not ordinarily have to be considered.

It is best, I believe, in accordance with the teachings of the internists, notably those of Dr. Henry Christian, to follow a simple clinical classification in considering chronic nephritis in children—the simpler the better. For practical purposes we may divide cases of chronic nephritis in children into two broad groups: (1) "ordinary" chronic nephritis, further subdivided into the mild and the severe cases, and (2) chronic nephritis with infantilism, or "chronic interstitial nephritis," as it is more often called—an excessively rare condition in children.

The severe "ordinary" cases and the rare "interstitial" cases are represented by somewhat similar pictures in the adult; the mild forms which I wish especially to discuss are seldom seen in older persons. The etiology of the condition is usually some infection, with tonsillitis playing the most important rôle. I have never seen a chronic case that I could feel sure was due to dental infection, although this must be a possibility.

Chronic nephritis in childhood may present a totally different picture from chronic nephritis in the adult. A child is brought to the outpatient department complaining of lack of appetite, loss of energy, failure to gain in weight, slight anemia, etc.—the common type of outpatient child. We examine him carefully and find nothing essentially abnormal. We get a urine specimen, and find a small amount of albumin, a few casts in the sediment and perhaps a few red blood cells. We then take the blood pressure and find it normal, or perhaps slightly below normal. nor is there any hypertrophy of the heart. If the urine contains blood and casts, we can be practically assured that we are dealing with a mild case of chronic nephritis. If there is no blood and only a rare cast, or none at all, the case may be one of nephritis or of orthostatic (postural) albuminuria. If the patient has never been seen before, and if the existence of a previous acute nephritis is not obtained in the history, these cases may offer considerable difficulty in diagnosis. The patient must be put to bed and several examinations made on urine passed while recumbent and while up and around. The second urine specimen passed after the patient has been put to bed should be free from albumin if the case is one of postural albuminuria, and the albumin returns in the specimens passed while the patient is up and around. Change from the recumbent to the upright position has, of course, no influence on the presence or absence of albumin if the case is one of chronic nephritis. Another point of some importance, which has been emphasized by Janeway, is that the majority of nephritics show only albumin coagulable by heat, while postural cases often show protein precipitated by acetic acid in the cold, which may be euglobulin.

These mild cases are not the most common type of case, unfortunately; of our recorded cases of chronic nephritis they represent about one third. The heart is not at all hypertrophied, the blood pressure is not elevated; indeed, it is likely to be lower than normal. There may be occasional periods of hemorrhage from the kidney, when the urine will contain considerable blood. These acute exacerbations may be brought about by any acute infection that happens to attack the child, or sometimes occur without apparent cause, and are likely to be accompanied by slight or moderate edema; but the amount of edema is never excessive. I recall one girl who has had in the last four years several such acute exacerbations without obvious cause, and the last time that she was seen, about a year ago, she was apparently perfectly well in every way, and her urine contained no albumin, casts or blood.

The various tests for renal function often help in determining the status of these mild cases, and indeed it is in just this group that they help us more than in any other, far more than in the acute or in the severe chronic cases. In the mild type of case there are two functional tests which we have found of value: (1) the phenolsulphonephthalein test, and (2) the "two-hour" renal test, adapted from that of Mosenthal.

The phenolsulphonephthalein test is so well known that it need not be discussed in detail; let me merely say that the normal for a child is higher than for an adult. The lowest I have seen for a normal child is 64 per cent. and the average of some thirty normal cases was 76 per cent. This test is usually not much diminished in mild chronic nephritis, except during the acute exacerbations. Indeed, I have seen normal phenolsulphonephtalein tests in several very severe cases in which there was undoubtedly much kidney damage; so a high phenolsulphonephthalein excretion does not necessarily mean that the kidney is normal. A phenolsulphonephthalein test below 55 or 60 per cent., however, means in children that the kidney is severely damaged, and would tend to make us give a more guarded prognosis than would otherwise be the case.

The two hour renal test is a valuable one, but is so delicate that it must be interpreted with some caution. The principle of the test is well expressed by Mosenthal: [1]

* Read before the Section on Diseases of Children at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Mosenthal, H. O.: Renal Function as Measured by the Elimination of Fluids, Salt and Nitrogen, and the Specific Gravity of the Urine, Arch. Int. Med. **16**: 733 (Nov.) 1915.

The kidney expresses its diminished power to functionate by a fixation of its power of concentration. The normal kidney yields a urine of medium, low or high specific gravity according to the proportion of fluids and solids that must be excreted in order to maintain the composition of the body fluids at a constant level. The diseased kidney, on the other hand, loses this flexibility, and the power to answer the demand for a more concentrated or a more dilute urine no longer exists.

We have used this test in children as follows:

The child is put on a full normal diet containing a considerable amount of protein, especially with the noon meal. A capsule containing 1 gm. of salt, and a 2 grain pill of caffein sodium benzoate is given with each meal, to take the place of the tea or coffee used in the adult test diet. Here we have a diet containing a considerable amount of salt, protein and diuretic material, all of which will stimulate the kidney to its maximum efforts. Exactly 10 ounces of fluid is given with each meal, and no fluid or food whatever between meals. The urine is collected in two hour periods from 7 a. m. to 7 p. m., and the night urine from 7 p. m. to 7 a. m. Then all that is required is to record the specific gravity of each sample of urine. The normal response shows a wide variation in gravity between the different specimens; in fifteen normal children there was always a variation of at least eight points between the lowest and the highest. The night urine in normal children is small in amount, and almost always has a specific gravity of 1.020 or over. The child with damaged kidneys, on the other hand, is unable to vary the concentration of the urine in this way, and the gravity of the individual specimens may vary only one or two points. The fixation may be at a high or at a low level, and may be high or low in the same patient at different times. I remember testing one girl in 1915 whose gravity was fixed at from 1.005 to 1.007, and in 1917 the same girl showed a fixation at from 1.020 to 1.022. It is apparently the fixation of gravity which is important, and not the level at which it is fixed.

This is a most practical test for everyday use. There is nothing complicated about it; the food does not have to be weighed, nor is it necessary for the patient to eat all of it; it is merely essential that he consume a good full diet. The rules for fluid intake must be strictly adhered to, however. This is a kidney test that can be made by any one, and it gives considerable information of value.

Children with mild chronic nephritis often show a fixation when the phenolsulphonephthalein test is normal. A fixation does not necessarily mean a severely damaged kidney, but it is undoubtedly fair to say that if fixation exists, the kidney function is abnormal. The few blood urea examinations that have been made in this type of case have been normal, and I do not believe that the damage to the kidney is ever severe enough to cause a marked urea retention. I should expect to get no information of value from blood urea determinations in these cases.

TREATMENT

A French writer, Hutinel,[2] ten years ago wrote:

> Let me insist that in dealing with these nephritic children it is especially important to pay attention to careful nursing and hygiene. It is by these measures that the malady is cured, or, in the more serious forms, that life is prolonged. Use drugs as little as possible. Especially is it important not to irritate the kidney, and to forbid the patient eating any substances whose end-products he cannot eliminate. It is necessary, moreover, to do away with any coexisting infection, however insignificant it may appear, and to watch carefully the mouth, digestive tract, respiratory apparatus and skin. In a word, one must remember that the kidney is delicate, and spare it as far as possible.

These words sum up most succinctly in one paragraph the general principles of treatment of mild chronic nephritis in childhood. The details of the treatment may be considered under two heads:

1. *General Hygiene.*—General hygiene is, I believe, of far more importance than the diet. The lives of these children should be most carefully supervised. In this modern day all of us are continually seeing children who are overtired; overtired from too much school, too much music lesson, too much excitement, too much everything. The strenuous life must be strictly forbidden to these nephritic children. They must be treated along the same lines that Dr. Smith of New York and Dr. Emerson of Boston have insisted on for their classes of underweight children—plenty of rest, both physical and mental, and plenty of suitable food. The question of sea or fresh water bathing often comes up, and I have had a good many mothers with nephritic children ask whether this may be allowed. I do not see any reason for forbidding a nephritic child to bathe in warm water, that is, 70 F. or over, but should certainly forbid it if the temperature of the water was below this. Chilling of the body surface is not good for a nephritic, and it is not unusual to have hematuria or albuminuria increase if this occurs.

The tonsils and teeth should receive very careful attention. Certainly if the tonsils have been the cause of the nephritis, as they undoubtedly are in a great many cases of this mild type, they should be removed, and even if they have not been apparently the original cause of the trouble, they should be removed if there is the slightest suspicion that they are at all diseased. Although dental infection is probably not at all a common cause of nephritis in children, the teeth of a nephritic child should be attended to, and any existing focus of infection eradicated. It is of the utmost importance to guard the child against all sorts of acute infections, such as colds, bronchitis, or measles, as often these conditions, while not serious in themselves, may cause a flaring up of the nephritic process. The kidneys of these children are hypersusceptible, and they should therefore not be called on to excrete toxins of any sort. If an acute exacerbation occurs, the child is of course put to bed, and is treated the same as an acute case would be.

2. *Diet.*—While it certainly would not be wise to allow an unrestricted diet to these children, it is a worse mistake to restrict it too closely. There is no reason for omitting meat entirely from the diet, nor is there any good evidence that red meat is any less desirable than white. It is not at all certain what the minimum protein requirement of any child is, but it is undoubtedly a considerable amount, and in a long drawn out condition, such as chronic nephritis, there is no necessity of depriving the child of meat. Meat once a day will certainly do no harm. Meat soups I do not believe in, as their food value is practically nil, and it is possible that the kidney might be injured by the considerable amount of extractive material they contain. There does not seem to be, however, any actual proof that meat soups do harm, though all writers on

2. Hutinel: Bull. méd. **24**: 95, 1910.

nephritis are agreed that they should not be given. Epstein's high protein diet does not come into consideration here, as this is a nephritis with little or, at most, moderate albuminuria; and large amounts of albumin are not being lost from the body, as in the cases to which he refers. If a child likes his food very salty, this taste should be discouraged; otherwise there is no especial necessity for salt restriction. For the severe cases of chronic nephritis with edema a low salt intake is, of course, desirable.

Water is one of the best therapeutic agents there is for many diseases, and a nephritic child without edema should be encouraged to drink water in order to keep his urine at a low specific gravity, and to dilute the products that are execreted through it.

The diet of these children may be thus summed up: meat, fish or eggs once a day; no meat soups; a moderate salt intake, and plenty of water. Otherwise the diet can be the same as for any other child.

3. *Prognosis.*—The prognosis of any diseased condition is what, after all, interests the patient most. There are three prognostic possibilities to be considered in mild chronic nephritis. First, the kidney may recover entirely, after a period of several years' albuminuria. Secondly, a severe and fatal chronic nephritis with large amounts of albumin in the urine, and edema, may supervene; and thirdly, contracted kidney may develop, giving rise to the clinical picture known as chronic interstitial nephritis. The first two of these possibilities I know may occur, but I have followed no cases long enough to be sure of the third. The reparative power of a growing child is remarkable, and it is quite possible to recover entirely from this mild type of nephritis. I have seen one patient apparently recover after four years of albuminuria, and another after two. On the other hand, not a few cases get worse, particularly after each acute exacerbation, and on the whole, the chance for recovery is probably not as good as for the development of a severe nephritis in the course of time. The functional tests already referred to are of considerable value in prognosis. Repeatedly low phenolsulphonephthalein tests usually indicate a bad prognosis, and yet I can recall one girl who never has had a phenolsulphonephthalein test above 40 since the development of her nephritis, and who is still alive and apparently getting on very well after five years. Normal phenolsulphonephthalein tests are not of much value in prognosis, as it is possible for severe kidney damage to exist with phenolsulphonephthalein outputs of from 60 to 70 per cent. If a child has a normal two hour test, on the other hand, his kidneys are probably only slightly damaged, as this is a very delicate and reliable test. An abnormal two hour test, with a considerable degree of fixation, means a damaged kidney, but not necessarily a severely damaged one. By the combined information which these two tests give us it is possible to get a fair representation of the kidney's functional power. In acute nephritis it is possible to estimate the severity of the kidney damage by the general condition of the child—in the mild type of chronic nephritis, when the child looks fairly well, and when the urinary examination does not tell much regarding the degree of kidney damage, the functional tests may help a good deal. As Sir James McKenzie once said, prognosis of chronic disease is what most of us know least about, as we often lose track of our patients after a few years, and it would be necessary to follow a large number of these cases over a period of at least ten years in order to have any really adequate idea concerning their prognosis.

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ABSTRACT OF DISCUSSION

Dr. C. F. Wahrer, Fort Madison, Iowa: These affections are seldom primary. They are secondary to rheumatism, often cardiac conditions, and sex. The boy has a good deal to do with it. He goes fishing all day, for instance, crosses the creek and comes home wet; or in the wintertime he indulges in snowballing, and gets thoroughly wet. In the case of a girl, the present tendency of dress will not help a great deal. We are told that diet has a great deal to do with it. Diet is an important factor, as is also the wearing of proper clothing in the cooler parts of the year. Do not bear too heavily on drug treatment, because although you may succeed for a short time, you might awaken an exacerbation of a nephritis in one of these chronic cases. The prognosis is favorable rather than unfavorable. The majority of patients will ultimately recover, though so gradually that only repeated tests will satisfy you that the patient is doing well.

Dr. John Lovett Morse, Boston: One of the hardest things to determine in connection with this class of cases is when a subacute nephritis ends and a chronic nephritis begins, because almost all of the cases start as an acute hemorrhagic nephritis, become subacute, and then finally chronic. I have never quite made up my mind as to what it was in the urine that showed when a case was subacute and when it was chronic, or as to what length of time made the diagnosis. The vast majority of physicians are satisfied when they get the urine free from albumin in acute nephritis. They examine the urine, find no albumin and call the patient well. You cannot call a patient well on one negative examination for albumin. The patient is not well until his urine is clear when examined microscopically after being centrifuged. My plea, therefore, is to endeavor to prevent the development of a chronic nephritis by sufficiently long treatment of the acute nephritis, and to prevent it by the same line of treatment Dr. Hill mentioned in speaking of the curative treatment.

Dr. George Dow Scott, New York: In one hospital we have quite a number of nephritis cases after the acute contagious diseases. The younger the patient the quicker the recovery. Urine examination should be made always and it is interesting and instructive to see the urine change for the better often from day to day. I take issue with Dr. Hill in giving animal proteins in such cases. Clinical experience would warrant me in choosing the vegetable and fruit proteins instead. Frequent bathing and open fresh air are essential.

Dr. H. M. McClanahan, Omaha: Twenty-seven years ago I attended a child with scarlet fever, complicated by acute nephritis of the hemorrhagic type, and general anasarca. The child was seriously ill, but recovered. I have kept in touch with that young man until the last two years. He was a football player and an athlete. He is a very well man. On the other hand, a girl who recovered clinically from acute nephritis again developed nephritis two years later, probably as the result of a tonsillar infection, and died. I wonder whether in any of these cases an acute acidosis developed as in nephritis in the adult; and if so, what the treatment was.

Dr. Lewis Webb Hill, Boston: I have not seen any acidosis in these cases. I believe it is more likely to occur in adults with contracted kidney than in these children. I do not mean to say that chronic nephritis in childhood, as a rule, is mild, because that is not so. The particular type of case I was speaking about today is mild. Children have very severe forms of nephritis, just the same as adults. And many of them die from it. As Dr. Morse said, it is very important to pay a good deal of attention to the urinary sediment before discharging the patient. A little albumin in the urine I would not mind much, providing the sediment were perfectly clear, but if there were still a few red blood cells in the sediment, I should be very careful about letting that patient up. I said that I would begin to call a case chronic after it had been going for about a year. That is purely arbitrary, and possibly some people would not agree with that.

UMBILICAL CONCRETIONS

REPORT OF CASE

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History.—Mrs. C. E. C., housewife, aged 62, married thirty years, sterile, was referred to me by her family physician because of a tumor in the umbilicus. The menses came on at 12 years, when she flowed freely for more than a week and then stopped for a year, and was never regular afterward. She never flowed enough to require a napkin. The menopause occurred at 52. The patient had lung fever when 12 years of age. She had had stomach trouble for fourteen years which at one time was pronounced gastritis, and two years before I saw her the diagnosis of cholecystitis was made. She had had a great deal of stomach distress and vomiting, with no typical gallstone colic and no jaundice. She had had a black spot in the navel for three years. When 16 or 17 years old she had an attack of inflammation of the umbilicus accompanied by swelling, redness, pain and discharge of pus, and was in bed for about a week. The family history was negative except that the mother died at 52 years of age from rupture of the gallbladder, and one sister had a tumor of the breast removed fourteen years before I saw the patient. Her general health was quite good, but she was annoyed by a lump in the navel which had appeared a month before and which at times felt quite sore.

Examination.—The patient was well nourished, rather short in stature, and of medium complexion. The chest was negative. The abdomen was covered, especially in the upper part, with a large number of pigmented moles. On the right was one as large as a kidney bean and papillated, and which the patient said "shed its seeds" at times. A very dark tumor was present at the orifice of the navel, which orifice was three-sixteenths inch in diameter. There was no abnormality of the skin about the navel, and no discharge. It could not be determined positively whether or not the tumor extended into the abdomen. The tumor seemed to be about the size of a filbert, hard and quite tender. There was marked tenderness over the gallbladder, but no tumor. Based on the history and examination, a diagnosis was made of pigmented mole of the umbilicus and chronic cholecystitis. In view of the possibility of malignancy, together with intra-abdominal involvement, it was advised that the abdomen be opened and that further surgical procedure depend on the findings.

Operation.—A short vertical incision was made in the epigastrium through the inner border of the rectus. There was found no intra-abdominal extension from the umbilicus. The gallbladder was thin and contained many stones. The incision was enlarged and cholecystectomy was performed. The peritoneal cavity was closed with a small roll of rubber dam placed at the upper end of the wound for drainage. The umbilicus with the contained tumor was excised by an elliptical incision down to but not through the peritoneum. This wound joined the vertical incision at its lower end at right angles. Closure of the wound was now made in the usual way. The large mole on the right of the abdomen above referred to was excised.

Postoperative Findings.—The walls of the gallbladder seemed normal to the unaided senses, and contained a small amount of yellow mucilaginous bile and a number of light colored mulberry calculi. The opening in the navel was enlarged by an incision, whereupon it was found that the tumor consisted of a firm, hard collection of skin detritus which could be delivered from its nest after the opening was enlarged. The concretion after delivery was found to be spherical with a nipple-like projection which was dark brown, while the rest of the concretion was pearly white in color.

COMMENT

The criticism may well be made in this case that a closer examination of the umbilicus would have revealed the true condition, which could have been cured by enlarging the umbilical orifice and removing the concretion. As we believed that we had a mole to deal with that was possibly malignant, all unnecessary manipulation was avoided as dangerous. However, here was a woman of cancer age, with a number of pigmented moles on the abdomen, one of which was annoying her at times, and a pigmented tumor of the umbilicus, which could be seen though a narrow opening at the bottom of a rather deep well, and with a chronic cholecystitis. Cancer of the umbilicus is usually secondary to cancer of the stomach, the intestine or the gallbladder,[1] and cancer of the gallbladder is superinduced by gallstones and infection of the gallbladder. In view of all the facts, the course as outlined above was decided on. The question of an umbilical concretion was not entertained. If it had been, the result would have been a trivial operation relieving the patient of the concretion and leaving her with her gallstones and quiescent cholecystitis with the attendant dangers of this condition. As it is, the woman is relieved of both her gallbladder disease and her umbilicus, with its contained concretion. Such a mistake may occasion some little chagrin to the physican, but it leaves the patient with no cause for regret. That my confrères may avoid the little annoyance that was mine because of this mistake is one of the reasons for this paper.

Umbilical concretions are rare. Gould and Pyle[2] refer to two reported cases, and Cullen[3] in his classic work reports twenty-eight cases. No reference was made to the subject in quite a number of works on surgical diagnosis, pathology and tumors consulted in the preparation of this paper. So far as I know, Cullen's work is the only one which treats the subject in a thorough way, and I have drawn on it freely for the facts that follow. Rarely is the condition recognized until some complication calls attention to it. Pain referred to the umbilical region is usually the first symptom noted, but the pain may be referred to the whole abdomen, very severe, cramplike, periodic and sometimes leading to the extrusion of the concretion. In the majority of cases the symptoms are those of local infection, but occasionally these symptoms are removed a short distance from the umbilicus.

Chronic or periodic discharge from the umbilicus, accompanied by signs of infection, should lead one to suspect the presence of a concretion. The condition has been mistaken for cancer, tuberculosis and dermoid cyst, and, in one case at least, it was the cause of a primary cancer. Granulomas quite frequently form as a result of the long continued infectious process, and these may be, and indeed have been mistaken for cancer. The condition but seldom leads to serious consequences, and, as Cullen says, "The history of these cases is characteristic and there should be little difficulty in establishing a diagnosis." It is pertinent to add that there would be little difficulty in establishing the diagnosis in a given case, provided the physician during his examination had in mind the condition.

The treatment, of course, is simplicity itself, consisting of dilatation of the opening, complete removal of the foreign substance, and cleaning of the cavity. Prompt recovery always follows.

1. Keen, W. W.: Surgery, Its Principles and Practice, Philadelphia, W. B. Saunders **6**: 446, 1913.
2. Gould and Pyle: Anomalies and Curiosities of Medicine, 1897, p. 792.
3. Cullen, T. S.: The Umbilicus and Its Diseases, Philadelphia, W. B. Saunders, 1916, p. 250 et seq.

Umbilical concretions are more common in males than females. As a matter of interest, it may be well to call attention to the fact that this woman was sterile, that she did not menstruate normally, and that she had a more than ordinary growth of hair on the face.

A CASE OF CEREBELLAR ABSCESS DIAGNOSED POSTMORTEM

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History.—A man, aged 29, born in Germany, whose parents, one sister and four brothers were living and well, who showed no hereditary predisposition to tuberculosis or diseases of the nervous system, who denied venereal infections, and who had been married recently, was struck over his right ear with considerable force seventeen years before, by his schoolteacher. He fell against an object, subsequently suffered from pain and a purulent discharge from the right ear for a long time, and his sense of hearing became impaired on that side. Since that time the discharge had recurred about once every year up to about seven years before I saw him, during which period there had been no recurrence. There was an indefinite history of occasional dizziness and slight headaches, but he had no vomiting, vertigo, or any disturbance in walking. There was no cough, expectoration or loss of weight. His appetite was good, digestion perfect and bowels regular. He drank beer and smoked in moderation. He slept well and worked as foreman in a sausage factory. About two years before his right foot had been operated on. From the description of the case, I judged it to have been an osteomyelitis of the metatarsal bones. The wound healed promptly and had remained closed since. The origin of the infection was unknown at that time. There was no history of trauma.

The present illness dated back to Feb. 13, 1920. It began with frontal headache, blocking of the nasal passages, chilly sensations, muscular pains and slight fever. The patient considered it an ordinary cold. The next day he perceived pain in his right ear and noticed some moisture. The frontal headache shifted to the right parietal region. It was a sharp and boring headache. He consulted an ear doctor in his office, and received some drops for the ear, and the day after he was somewhat relieved. However, the next day the headache and fever reappeared. He received some additional treatment and was relieved for a few days.

February 21, his symptoms reappeared and I was called to his home for the first time. His chief complaints were frontal and right parietal headaches, slight pain in the right ear, blocking of the nasal passages, pains in the lower extremities, anorexia and some fever.

Physical Examination.—The patient was 5 feet 8 inches in height and weighed 160 pounds. He did not appear very ill. His respirations were normal, the temperature was 101 F., and the pulse 96, of good quality and regular. The skin and mucous membranes showed a slight degree of anemia. There were no enlargements of any lymphatic glands. There were several scars on the right foot. The pupils were normal in size and shape, equal, and reacted to light and accommodation. There was no nystagmus. There was no palsy of any ocular muscles. The eye grounds were normal. He had a hypertrophic rhinitis, a deviation of the septum to the right, and a prominent superior turbinate on the same side. The olfactory function was present. The right eustachian tube was blocked by mucus. The pharynx was markedly injected; it had the reddish appearance that we often see in grip cases. The left tympanic membrane was normal in appearance, and hearing was perfect on this side. The right external canal contained a small amount of mucopurulent material. The drum had a gray, necrotic appearance, and showed an irregular postero-inferior perforation. The hearing was markedly impaired on this side. The right mastoid process was slightly larger than the left, but there was no redness or swelling, and no tenderness at any point. The heart, lungs and abdominal organs were negative. There was no Kernig sign, no Babinski reflex, and the knee jerks and the reflexes of other parts of the body were normal. The urine examination was negative.

Treatment and Course.—In view of the fact that the chief complaints were those we usually find in grippal infections, it was natural to suppose that such infection had awakened the old ear condition and that therapy ought to be directed toward the primary cause. Accordingly, I ordered absolute rest in bed, plenty of fresh air, proper hygiene and diet, the usual internal medication, and local treatment for the ear, nose and throat. The results were very encouraging. The patient improved every day. The temperature remained normal without any antipyretics. The appetite reappeared, and convalescence was rapid. February 27, he was up and about, feeling perfectly well, his general appearance improved, and the discharge of the ear diminished considerably. He demanded to be permitted to resume his vocation, but I cautioned him to take another week for recuperation. Against my advice, he went to his place of business and celebrated his recovery with beer and sausages. This resulted in some gastro-intestinal disturbance, but it cleared up promptly.

Second Attack.—March 4, I was called and found the patient complaining of virtually all of the original symptoms. It was reasonable to assume that he suffered from a relapse, a common occurrence in grippal infections, and the previous treatment was immediately instituted. Within twenty-four hours after this, I was convinced that he did not respond to the treatment so well as previously. The headache was not relieved. It was more agonizing, intense and boring in character. He showed signs of pain in the face. He had no vomiting and no dizziness. The urine examination was again negative.

In the presence of a chronic ear discharge, the first inclination was to explain the aggravation of the symptoms by a deep seated progression of the infection into the neighboring areas of the middle ear. There was no tenderness over the mastoid. Pressure and percussion over the skull elicited no tender area. The headache was most intense over the right parietal region. I urged immediate hospital observation in order to obtain the aid of a neurologist, aurist, roentgen ray and laboratory. Having some prejudice against hospitals, they refused my advice and were willing to obtain such services at home.

A roentgenogram revealed a marked difference between the right and left mastoids. The cells of the right were entirely obliterated, and a definite involvement of the mastoid was thereby pronounced. However, the absence of clinical evidences of a mastoiditis led one to suspect a brain abscess. A neurologic examination failed to reveal any signs that would localize a destructive area of brain tissue. There was no functional disturbance of any cranial nerves, especially the optic nerve. The sensorium was perfect. He perceived and localized pain, touch, heat and cold. The reflexes were normal and equal on the two sides of the body. Muscular coordination was perfect. There was no staggering gait, no scanning speech. The field of vision was not contracted. There was no diplopia. A lumbar puncture was negative, except that the pressure was rather high. There was no vomiting, no bradycardia, no rise in blood pressure. Up to that time there was no excitation, such as delirium, and no depression, such as drowsiness or stupor. However, during the night of March 5, there was a sudden change. The headache became unbearable, delirium set in and increased continuously up to the time of operation. March 6, Dr. I. M. Heller examined him and convinced the people that he must be operated on immediately.

The history, present physical findings and roentgenogram pointed to an intracranial infection of otic origin. Ordinarily, one would first attempt to localize the remote brain infection in order to determine which part of the cranium should be trephined, whether or not it could be reached through the mastoid route. But in this case, in view of the sudden alarming symptoms, procrastination was contraindicated. The plan was to explore the mastoid, a procedure advocated by most aurists, especially in cases in which a brain abscess is not

localized. The object of this is manifold. The primary focus should be exposed in the mastoid and the track of infection traced to facilitate the localization of the abscess in the cranium; to establish temporary drainage in those cases in which a definite localization becomes impossible or the patient's condition does not permit any further exploration at this period.

March 6, at 3:30 p. m., the operation was started with ether anesthesia. The usual radical mastoid operation was performed. The unusual findings were an absence of all landmarks due to previous inflammatory processes. The cortex was exceedingly dense and sclerosed. There were no mastoid cells encountered; no pus was found until the antrum was reached, and there we found only a few drops. A search for a track leading into the cranium was unsuccessful. There was no necrosis or softening of bone at this point that would permit the passage of a probe. The operation was very difficult and the necessary speed could not be employed. In the first place, the dense bone prevented the operator from using the rongeur, an instrument that saves considerable time. Secondly, the sinus was in an anomalous position. It was through skill and vigilance that the sinus was saved. Throughout the operation the condition of the patient was not satisfactory. He was cyanotic and the respirations were irregular. The operator was compelled, under these circumstances, to give up the plan of entering the cranial cavity at this stage. He felt that it would be to the best interest if he postponed further manipulations until the patient rallied. Unfortunately, the patient died in the ward shortly after the operation, from paralysis of respiration. Dr. Brakestone of Lebanon Hospital House staff performed a partial necropsy and found a cerebellar abscess. The cultures revealed a mixed infection, with a pneumococcus as the predominating organism.

COMMENT

This case is a concrete example of the serious complications to which the human organism is subjected in the presence of a chronic focal infection. In this man, it was the cause of a cerebellar abscess and very likely the osteomyelitis of the foot.

Did this man walk around with a so-called latent abscess, lying dormant for many years and only aroused to mischief by an intercurrent secondary pneumococcus infection? That this is not uncommon in spite of the absence of definite symptoms, has been established by numerous observers. To explain how this takes place it is necessary to recall the cardinal symptoms and signs of a cerebellar abscess, namely, headache, mostly occipital, persistent vomiting, dizziness, vertigo, staggering gait, etc. These are the very signs and symptoms of a labyrinthitis, a condition invariably associated with cerebellar abscess in those instances in which the infection travels by contiguity through the labyrinth from the mastoid to the cerebellum. However, in those cases in which the infection travels through the small veins from a necrotic area in the cells of the mastoid, the destruction of the cerebellar tissue is a slow and gradual process, and the labyrinth remains intact, capable of taking up the function of the cerebellum. It is for this reason that in this variety there are no signs and symptoms, and the Bárány test is also negative. In addition to the labyrinth, the destruction of cerebellar tissue is also compensated by the cerebrum, the vestibular nuclei and the sensory tracts.

We may inquire into the immediate cause of the death in this case, but a true explanation is only problematic. In other reported cases of similar outcome, it was thought to have been caused by the pressure of the abscess on the medulla, as a result of an increasing edema from ether congestion of the brain. It is for this reason that some authorities advise judicious and careful administration of chloroform in preference to ether in diagnosed cases of cerebellar abscess, believing that it produces no congestion in the brain. Another important factor must be considered in the causation of immediate death, and that is the performance of a lumbar puncture while the patient was still on the operating table, about twenty minutes before he died. Although only 10 c.c. of cerebrospinal fluid was withdrawn, under apparently high pressure, nevertheless it must have influenced the pressure of the abscess on the vital centers in the medulla, especially the seat of respiration. This is in accord with the established dangers of performing lumbar punctures in cerebellar tumors or abscesses.

It may be of interest to recall that the most deceptive element in the course of this man's illness was the fact that he improved and was well for a while. This interval of well-being usually diverts our attention from the suspicion that we are dealing with a serious disease. This interval has occurred in many cases that are recorded, and some observers have come to look on this as a characteristic feature of the course of the disease.

320 East One Hundred and Sixty-Sixth Street.

OBSERVATIONS ON THE SALT CONTENT OF HUMAN MILK*

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While in practice slight variations occur as a result of individual experience, the fact is generally recognized that the "normal" or standard amount of fat, carbohydrate and protein to be used in the diet of infants has in a large measure been established. It is also recognized that a large class of infants when fed on so-called "rational mixtures" or even on breast-milk may develop intestinal disorders. In the treatment of such infants, attention has heretofore been directed entirely to the attainment of a proper adjustment of the relative and absolute proportions of the fat, carbohydrate and protein, with an absolute disregard of the mineral constituents of the food, the practice being, of course, based on the assumption that the salts are present in excessive amounts even in human milk, and that this excess has no deleterious effects on nutrition.

About a year ago we embarked on a study of the mineral constituents of human milk and of the various modifications of cow's milk ordinarily used in infant feeding. Our objective was to obtain evidence as to whether some of the more obscure nutritional disorders of infants might be due to abnormalities in the mineral content of the food, as it is perfectly conceivable that an excess of inorganic salts may be as deleterious to nutrition as a deficiency.

In this report only the chlorids of human milk will be considered.

As the result of the examination of about 400 samples of milk, taken from the first day to the seventeenth month of lactation, we have found that after the first

* From the Department of Pediatrics and the Chemical Laboratory of the Massachusetts General Hospital.
* Read before the Section on Diseases of Children at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

week, during which slightly higher figures prevail, the average chlorid content of breast milk varies but little, being about 50 mg. per hundred c.c. of milk.[1] This is about the average figure given in most textbooks. We feel, however, that these average figures are of little practical importance on account of the huge variations that may occur.

It has been found that mothers may give milk with a constant chlorin content as low as 20 mg. per hundred c.c. or as high as 110 mg. Also, it has been noted that certain mothers show a variation of 100 per cent. or more in the chlorin content of specimens of milk obtained over a period of from twenty-four to forty-eight hours. Our attention has been directed to the problem of ascertaining the cause and significance of this variation. The effect of diet on the chlorin content of milk has been studied from an experimental point of view and will be reported later.

From our present observations on human milk we feel that diet is not the essential cause in the variation in the chlorin content, and that some other factor must play an important part.

As it is well established that the percentage of chlorin in the blood is constant, it seemed possible that the threshold for chlorin secretion may vary in different subjects and also may be very unstable in certain mothers, and thus explain the variation found in different specimens. As many of these mothers were well known to us it was possible to study their history, and it was found that in most instances the stable, phlegmatic type of mother gave a milk that showed essentially no variation in the chlorin concentration in specimens collected every three hours during the day. The mothers, on the other hand, whose milk showed marked variation in almost all instances were very unstable types. There was no constant relation between the amount of milk obtained from these mothers and the chlorin content of their milk. It was interesting to note that the babies of the stable phlegmatic mothers giving an adequate amount of milk always gained satisfactorily, while in many instances the babies of the "nervous" mothers often developed diarrhea and failed to gain normally.

These observations on the chlorin content of human milk emphasize the great variation of this constituent, and we feel that while this fact alone may or may not be of chemical importance, it may be an index of abnormalities of some of the other mineral constituents.

ABSTRACT OF DISCUSSION

Dr. Fritz Talbot, Boston: I have watched this work in its progress. It opens up some very interesting possibilities. When we are feeding a baby on a whole milk mixture, for example, and for various reasons put it on a mixture of whey, cream and sugar, sometimes that baby has a diarrhea. Very often babies on the breast also have more movements than they should have. This work suggests that sodium chlorid has something to do with the diarrhea. It does not tell us why one baby can take a high sodium chlorid content in the milk, and why another baby cannot, but the coincidence is such that it is very suggestive that that may be the basis of some of the diarrheas. Another interesting fact is a clinical observation that Dr. Sisson made, that the character of the nervous system of the mother who has the high chlorids in the milk is apt to be less stable than of the mother whose milk is supposed to be normal. Of course, much more work must be done on this subject to settle exactly what it means, but it is a new field, and it opens up very interesting possibilities.

1. The details of these analyses will appear in a forthcoming publication.

THE PROGRAM OF THE AMERICAN RED CROSS *

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I want you to forget, if possible, all of the definitions which you have already heard with reference to the Red Cross program.

One cannot think of any organization entering on any kind of program unless it very carefully examines itself to see whether it is the kind of organization which should proceed with that program. Therefore, let us bring our thoughts together (I know you have thought about it, and I want to think with you) and get the data before us, before we consider the final points. The first question is this:

What kind of an organization is the American Red Cross?

Again will you please forget the definitions of the American Red Cross which you have heard.

COMPOSITION OF THE AMERICAN RED CROSS

First, the American Red Cross is an organization of about 25,000,000 folks—members. Now don't think that we are unaware that numbers of folks have become members of the American Red Cross by being buttonholed in hotels or on street corners and having a dollar extracted from them. But a large number of folks are members of the American Red Cross because they choose to be. It is, then, an organization of some 25,000,000 members grouped into chapters, auxiliaries and branches, scattered all over the United States and the possessions of the United States.

Second, it is an organization of which 10,000,000 members have had definite practice in service for other folks. Now, there is a good deal of difference between having an ideal of service and having actually spent your time and muscle in service. The American Red Cross is an organization which has probably 10,000,000 members who have taken some time away from their daily tasks and have given that time to the service of other people. They are attuned; if you will, to service on behalf of the other folks.

The American Red Cross is composed of members whose service has had a romantic background. There is considerable importance attached to the fact that a service is backed by romance, and the service that has been given by the millions of members of the American Red Cross has been backed with such romance as to add a greater significance to the emblem of the American Red Cross.

The American Red Cross is composed of members whose service has brought to them certain rewards. It is true in child training that the thing which a child does the next time is the thing that brought joy the "last time." In this respect, most of us are just grown up children—the things we tend to do tomorrow are the things which brought us satisfaction yesterday. Thus, service which was rendered on behalf of humanity, service to other folks which has brought the approbation not only of our countrymen but of the world, tends to be repeated or continued tomorrow. We have experienced satisfaction as a

* Read before the Section on Preventive Medicine and Public Health at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

result of having served; therefore we are inclined again to undertake service in the same way, in the same field tomorrow. This inclination is a tremendous power which we must take into account when we consider the American Red Cross as a force. The service given by American Red Cross workers is a service rendered under a definite banner, a banner which has stood for service for a long time, a banner which has been added to by all of these services so that when one sees the American Red Cross today one sees much more than just two crossed red stripes. There has been woven into that banner so much of romance, so much of feeling of satisfaction, that there is a tendency, not a great tendency, mind you, nor is there a tendency on the part of all people, but there is a tendency on the part of many of those who have served under or supported that banner to continue—to "carry on"—under its leadership. They had carried out that idea. It makes no difference that there are other forces in the field which might expand to do things which the Red Cross is proposing to do. The Red Cross is ready now. When a better fitted or more logically chosen organization is ready to accept and carry on the responsibilities of any work begun by the Red Cross, an adjustment will be desirable and can be made.

Meantime, here we have a big national organization composed of workers, and people ready to support those workers. Here we have a nation awake as never before to its social needs—and large among these are health needs. Shall we discard this organization because the emergency which necessitated its rapid development and expansion has ceased to exist? Shall we begin again at the bottom (or at the near-bottom of coordinating other people's beginnings), to build up a similarly great force, with a similarly great backing? Can the directors of the American Red Cross say to you social health workers: "We will junk this whole thing and let it die, because we don't need such a standing army for emergency work; but we know there is much peace time work for such a social force as the American Red Cross"?

Should we not rather say: "Here is a great social force born for service. Here is a great opportunity for national service. How can this organization help to meet the country's needs? Where can the American Red Cross Service spirit best serve the American nation? What piece of work in the general peace program of reconstruction and new construction is the Red Cross best fitted to undertake?"

RECORD OF THE ORGANIZATION

It seems to me that the second point that we must discuss with reference to a program is the record of an organization. Therefore we ask: "What is the record of the American Red Cross in the field of health?" because we are talking about a health program.

I want to go over very rapidly some of the things that would indicate the record of the American Red Cross. What are the achievements? What is the thing to which we are attuned? What is the thing to which the American Red Cross member looks when he wants to tell somebody else what "my association" has done? Those things form the background on which we must build a sane program for the future. For instance, the American Red Cross has placed in communities some 500 Red Cross nurses. It has done in health education, for instance, a thing which is tremendous: just for 1918 there were about 50,000 women graduated from the course in home care for the sick—home nursing. About 16,900 in that one year were graduated from the class in dietetics. There were 25,000 graduated from the first aid courses. Now these are just bare figures indicating those women who were certificated from these classes and do not at all include the thousands of persons who were trained to do special pieces of work during great epidemics and disasters.

In the past the American Red Cross has done two things in the health field:

1. It has cooperated with our national health agencies, with our legally constituted local health authorities, with the United States Public Health Service, in doing different kinds of things in the health field; it has cooperated with these agencies in supporting financially, morally and with volunteer service movements which these agencies were promoting; picturing to its chapters the movement which another national organization was putting forward, in such a way that the chapters took it up and added their influence and their energy and their work to the whole movement.

2. It has always done health work in disasters; it has done all kinds of work during the war; it fought typhus in Serbia; it fought tuberculosis in Italy; it fought infant mortality in France; it fought malnutrition in Belgium, and so you could go on. All over war-stricken Europe, the American Red Cross did health things, so there is behind the American Red Cross a tradition of doing health things. It is, then, an organization of millions of persons attuned to service which has brought to them great satisfaction, and which in turn elicits enthusiasm, and it has a record of successful achievements in the field of health here and abroad.

THE NURSE AND THE HEALTH CENTER

Now, with those two things in mind, that is, (1) the kind of organization it is, and (2) its record in the health field, the American Red Cross sat down to determine what specific things it should do in this country in the field of health. I think is was wise for the American Red Cross to sit down and determine what the specific thing was that it should do. I am glad it didn't jump into it all at once. In considering national organizations from the standpoint, now, not of the physician or health worker, but from the standpoint of sociologist or psychologist, there are some very important considerations which have to be brought into this discussion.

First, no national organization (I am speaking now rather dogmatically, and there might be exceptions to this) has ever grown up on a basis of a broadly diversified program, that is to say, without pretty sharply defined aims, and objects capable of concrete expression. A national organization which depends on lay membership for support must profess aims, propose activities, and produce results, which folks, not you and I, but I mean lay-folks, can see.

We believe that there must be definite projects which are to be held before those members for those members to see. As definite a thing, for instance, as a Red Cross nurse in the field of health, projects that they can see and projects that answer the question: "What does your chapter do?" If the Red Cross member thus accosted can reply "Oh, we hire a Red Cross nurse," well, that answers the question.

Now, then, in the field of health the American Red Cross will set out to establish certain things. One of those things is the Red Cross nurse, and another of those things is health education, which folks don't see so very well. But a definite and powerful factor in health education which folks can see, which is coming now to mean something in the subconsciousness of all of us, is the health center, doing two things, harnessing the interest in health, which is dominant, and harnessing an interest in centering our efforts on some declared objective.

The health center, then, is the one other activity which the American Red Cross wishes to idealize before its chapters so that when you or anybody else may say to a chapter, "What does your chapter do?" the chapter may answer, "We have a health center," and the question is answered.

I want, in closing, to give this idea of what is forming in my mind as to the health center proposed by the American Red Cross.

In the first stage, a health center has to do purely with striving for an education for people along health lines of telling them "how." It must develop methods of enticing people inside its center and putting them in touch with the literature that is available all over the United States, adding the personal touch to the literature. This first type may be undertaken by any chapter. I am thinking in terms of my little town of about 300 population. The next step adds a diagnostic clinic, next the operating clinic, and probably later adds hospital facilities for the whole county, becoming a unit taking care of the health and sickness of all dwellers in that county.

This is the program of the American Red Cross.

ABSTRACT OF DISCUSSION

Dr. J. W. Schereschewsky, Washington, D. C.: I listened very attentively to the exposition of the program of the American Red Cross, and I did not hear Dr. Peterson say one word concerning in what way these activities are to be correlated with the activities of the properly constituted health authorities of the country. We all agree that in an emergency all kinds of volunteer agencies and organizations are required to help in order that we may attain our goal quickly and decisively, but the problem of conserving the health of the people of the United States, of building a health structure on broad and firm foundations, is one that cannot be solved in a few months or a few years. It means steady work carried on from day to day, from week to week, from month to month, from year to year—even from decade to decade and from century to century. This means that there must be a permanent, properly maintained organization. It also involves the exercise of police powers on the part of states and communities, and the carrying out of health laws which can only be executed by the proper official agencies of the country. Therefore, it would follow that the program of the American Red Cross can only have two ends in view: either that the American Red Cross ought to become the official health organization of the country, or that the American Red Cross should be an auxiliary aid organization to the properly constituted health authorities of the country. That ought to be the program of the American Red Cross, and then when that has been achieved, they should retire from the field. If the program of the American Red Cross is to receive the support of all health officers, the American Red Cross must make some definite statement concerning its plans as to the way in which its efforts are to correlated with those of the health officers, what purpose it has in mind to achieve, and what goal it will endeavor to attain.

Dr. Philip King Brown, San Francisco: I would like to know what it is proposed to do with the 2,000 additional nurses the Red Cross desires, and how much supervision over the nursing program and public health the national headquarters of the American Red Cross will assume, and how much the local chapters will assume. What is the present relationship that exists between the National Public Health Nurses' Association and the nurses of the American Red Cross? All over this country people are asking what the program of the American Red Cross is to be, and how the Red Cross proposes to correlate its efforts with those of the already existing organizations. No one can know the wonderful work that the National Association for Public Health Nursing has done and not want to assist them in every way possible to enlarge in their field. And when you ask for 2,000 more nurses, it is natural that we should want to know what you expect to do with those nurses, when we take into account the tremendous shortage that exists in the nursing field of the country today.

Dr. John D. McLean, Philadelphia: In Pennsylvania there has already been established a very direct cooperation between the American Red Cross and the state department of health. We have health centers in a number of places. The local Red Cross agencies have cooperated with us in all things. A number of times the words "health officer" have been used. We in Pennsylvania do not like that term, "officer." We do not want to be "officers," and we do not want to carry to the public what unfortunately that word has carried too often in the past, the idea and suggestion of police powers. That is not, as we see it, our status. Only in the very last extremity do we want to exercise in the full those powers which we have. It is only in an extremity that we wish to use "police powers." The Red Cross nurses are working with us.

Dr. John P. Davin, New York: I am merely a private practitioner. Most of you are engaged in public health work. I was very glad to hear Dr. Peterson say that the private practitioner is a health asset in the community as well as the constituted health authorities. The tendency has been, I think, to drift away from the work and the influence of the private physician to that of the state or the public health officer. Regarding the treatment of those people who are earning only $5 a week it was said that such persons were unable to go to the private practitioner because they could not pay, and that, therefore, it was the duty of various health organizations to take care of them. I say that you should leave them where they have been in the past, to the average general medical practitioner. The spirit of the average physician is to treat the man who comes to him, no matter what his wages may be. Dr. McLean has spoken about the power of the health officer. Under the laws of the state of New York the health officer, whether right or wrong, is supreme. In New York state a measure was introduced into the legislature providing that the testimony of a health officer in court could not be controverted, but would have to be accepted as a matter of record. I am glad to say that this measure failed to pass and become law. The arbitrary powers of the health departments are tremendous. Dr. McLean is right in his attitude concerning the word "officer." One of the most unfortunate things connected with that service is the fact that they are termed "officers"; that they are considered, in a way, as being policemen, and that, therefore, it follows that many people have that terrible fear of health officers which is very unfortunate. This should not be. We should think of the health officers rather as helpers and advisers than as policemen. In his speech of yesterday I heard the governor of Louisiana say that politics would not in any way enter into his program for the welfare of the lunatics, feebleminded, and all those suffering from mental troubles in the state of Louisiana. This is the position taken by Governor Smith of New York on this question. The spirit of preventive medicine is to be helpful rather than to sit in stern judgment. Finally, the object of all medical service is teaching, is helpfulness; telling people how to keep from getting sick, how to remain well.

Dr. C. W. Goddard, Austin, Texas: The title "health officer" should be associated with the individual. The use of the title can be held back and not emphasized. But if you take from the individual the name "health officer," the laity will misinterpret this action, and it will be said, especially in

the rural districts, that the title has been taken from the health officer in general, and that will have a bad effect. It will lessen in the minds of the laity, the authority of the health officer, and will limit his field of usefulness. I believe the better plan, under all conditions, is not to emphasize that title of authority given to health officers. With reference to the cooperation of the American Red Cross with the various state and local boards of health in Texas we have very satisfactory cooperative activities. When we established the bureau of child hygiene we obtained the services of a woman who had been district director for the American Red Cross Nursing Department, and she retained this directorship for the state of Texas. In this way we have a splendidly correlated work. The nurses are nominated by this director of the bureau, and we are placing them just as rapidly as we can. We have in the past three months placed about thirty public health nurses in counties, and could today place more if they were available. When these nurses are placed on duty they are given by the executive officer of the state board of health an appointment as sanitary inspector of the state board. This is done quietly, without being emphasized to the people generally. We issue to the nurses what we term standing orders, a set of rules which outline the sphere of activity of each of these nurses. This set of rules is submitted to the local medical society for approval. The nurse acts under the rules so agreed on. Her relations to the medical profession are thereby outlined, and she knows what her sphere of activity is, and is governed accordingly. We find this method a most agreeable one. The nurses are furnished with blanks on which to make their reports of conditions of interest pertaining to public health. If the nurse finds conditions in her community that are necessary to report to the state board of health, she makes her report in triplicate, sends a copy to the state board of health, one copy to the local officer and retains the third copy for herself. This report is then taken up through the local health officer. We are getting splendid results by that method of procedure in our section.

DR. E. LUTHER STEVENS, St. Augustine, Fla.: How can we take to our communities the basic ideas presented by the chairman, and the program presented by Dr. Peterson in his paper? How can we reach three distinct classes: The business men, to get their support; the educators, those who are immediately connected with the school program, to get their cooperation; and the various organizations that are interested in welfare movements? What is the cooperative plan in connection with the charity organization idea? And what is the relation of this movement to the rapidly growing organization among the churches, the interchurch movement, which now seems to have so much of the attention of the people? The practical things which the American Red Cross organizations do, and which we have all had experience with, and have seen personally, are things that should be done in active cooperation, in thorough cooperation with all existing organizations. Does the program alluded to provide for such cooperation?

DR. ERVIN A. PETERSON, Washington, D. C.: The health service department of the American Red Cross has very definitely this ideal, that eventually the legally constituted health authority will be the only health agency in a community. I do not know how soon the American Red Cross and other private health agencies are going to work themselves out of jobs. I am convinced, however, that when our democracy becomes a real democracy, that the health officer, or the legally constituted health authority, will be able to handle all the health problems of our country and of the different states and communities, but until that time I think he will not. The health service department of the American Red Cross is definitely convinced that there surround the health officer certain very great weaknesses which are not inherent in the officer himself, but have to do with social and political conditions. There is a definite feeling on the part of many people that the health officer is a "cop," and that it is as justifiable to "beat" the cop there as it is to "beat" him on his beat. It seems to me that that has been one of the underlying reasons why great national organizations such as the National Tuberculosis Association, the Cancer League, the Child Hygiene Association, the new Heart Disease Association, have arisen. And those organizations have gotten tremendous support. Why? People are interested in something tangible. You can see tuberculosis; you can see infant mortality. You can see venereal disease. On the other hand, public health is big; folks cannot grasp it. Therefore, it is difficult to work up interest in it. Many folks like to do things that officials do not do. We like to assume the prerogatives of officials. Until the time comes when the health officer is accepted by all as the leader in the health field, there will be a place for such organizations as those I have mentioned, and there will be much work for them to do. There are many examples all over the country of health officers who have gotten far beyond and ahead of the position of being merely cops, and have taken the lead in health movements, and are not only handling the situation from the standpoint of the law, acting as an officer of the law, but are doing a tremendous work in health education. That is the job of the public health officer of today. The American Red Cross will endeavor in every way possible to help the health officer by means of nurses and health centers. The American Red Cross is simply calling attention of the people to the need of wider knowledge of and wider activity in the field of public health, and when that is done you will have less trouble in getting money for work in public health.

There is a great demand for public health nurses. The Red Cross could place 2,000 on the pay rolls of its different chapters if nurses were available. The Red Cross is proceeding in its nursing work with the idea that public health nursing is the function of health departments and as rapidly as such departments are ready to take over nurses hired by Red Cross chapters they are being turned over. The Red Cross nursing department is cooperating with state health departments in employing supervising nurses who direct the work of the Red Cross nurses as well as those hired by the states. The Red Cross is now giving its attention to ways and means of getting a larger number of women to enter training.

Our studies have proved to us that there are large numbers of people in every community who do not go to the general practitioner, either through poverty or ignorance, or because of fear of the charge which will be made. Therefore, there is a considerable number of people in every community who ought to be taken care of. And the answer is the clinic. In organizing for the health center each chapter is advised and urged to secure as an advisory council representatives of all the operating agencies in the field of health. The health officer, a representative of the board of education, the medical profession, the dental profession and of all health association, national, state and local, operating in the community. The health center will do just what each of these agencies is very anxious to do, namely, educate the community in health and each agency ought to have many ideas to suggest. We therefore hope to see on the advisory council, which will be something different from a paper council, the health officer of each community in which a health center is started.

DEATH FROM APOTHESIN SPINAL ANESTHESIA

REPORT OF CASE *

W. S. DUBOFF, M.D.
EDGEWATER, COLO.

As apothesin has largely replaced stovain and procain for spinal anesthesia, and a study of the literature has revealed no instance of death from its use, it is desirable to place this case on record:

REPORT OF CASE

A man, aged 43, with an extensive bilateral fibroid tuberculosis and a subacute tuberculous laryngitis, because of severe dysphagia especially for fluids, entailing great suffer-

* From the Sanatorium of the Jewish Consumptives' Relief Society.

ing, was offered a gastrotomy operation, which he accepted. On account of the profound cachexia and the unfavorable pulmonary condition it was thought advisable to use spinal anesthesia. For the last year we have been using apothesin, following the technic described by Orth.[1]

All instruments used were washed and boiled in distilled water. Puncture was made in the second lumbar space with an ordinary Quincke needle. Seven cubic centimeters of spinal fluid were withdrawn, the patient sitting up at the time, with the back arched. Flow was at first slow, but became rapid in a few seconds. The spinal fluid was added to a previously prepared solution of apothesin (one 1¼ grain tablet dissolved in 3 c.c. of distilled water and boiled for three minutes), thoroughly mixed and slowly injected. The patient was then promptly placed on his back with the head slightly raised on a pillow. The pulse was at this time between 80 and 90, regular and of good force and size. At the end of one minute the patient was unable to raise either leg, but could feel pin pricks. At the end of the second minute there were anesthesia to the iliac crests. At the end of three minutes the surgeon was told he could proceed. But before the patient could be draped, he suddenly became ashy, complained of a tightness in the chest, an inability to draw his breath, and announced that he was dying. The pulse could not be felt at this time. The respirations became very labored and ceased a few seconds later. The pupils were equal and somewhat contracted till after death. There had been no preliminary hypodermic of morphin.

There seems to be little doubt that the anesthesia was directly responsible for this patient's death. The very definite and rapid ascending paralysis, culminating in cardiac and respiratory failure, could be due only to diffusion of the drug into medullary centers. It also seems to be clear that cardiac failure preceded a respiratory failure. Disappearance of the pulse before failure of respiration was also noted by Yount [2] in a death due to stovain injected intraspinally.

Reported deaths from spinal anesthesia bear a considerable similarity, regardless of the drug used.

Orth [1] had no deaths in 700 cases, apothesin or procain having been used. He insists that spinal anesthesia "when properly given, with apothesin or novocain is as safe as a local anesthesia with these drugs." Yount [2] reports 7,000 operations under spinal anesthesia with stovain, and only one death attributable to the anesthetic. Boyd and Yount [3] record 6,229 cases with four deaths, only one of which was directly caused by the anesthetic—stovain. Kahle [4] reported twenty-four successful spinal anesthesias with punctures as high as the eleventh dorsal space. Stanley [5] had 280 cases without fatality from the use of tropacocain, while Weston [6] had 170 cases without untoward effects from stovain. The death reported here occurred in a small series of twelve cases, five under stovain and seven under apothesin.

1. Orth, D. A.: Surg. Clinics, Chicago **3**: 201 (Feb.) 1919.
2. Yount, C. C.: Surg., Gynec. & Obst. **25**: 40 (July) 1917.
3. Boyd, A. S., and Yount, C. C.: Routine Spinal Analgesia, J. A. M. A. **68**: 601 (Feb. 24) 1917.
4. Kahle, P. J.: New Orleans M. & S. J. **71**: 366 (Feb.) 1919.
5. Stanley, L. L.: Spinal Anesthesia, J. A. M. A. **66**: 1090 (April 8) 1916.
6. Weston, T. A.: Brit. M. J. **2**: 794 (Dec. 9) 1916.

Special Article

OBSERVATIONS ON SOUTH AMERICA

V. URUGUAY

WILLIAM J. MAYO, M.D.
ROCHESTER, MINN.

Uruguay, with one and one-half million inhabitants, has a great agricultural future. In general, the people



Fig. 1.—Montevideo Medical School.

are like the Argentinians. The public administration is extraordinarily efficient. Montevideo, the capital, has about 400,000 inhabitants. It is a clean, attractive city, with streets well paved, even in the outskirts, and many fine parks, boulevards and suburban seaside resorts. It is considered by many travelers the most beautiful and healthful residence city on the east coast of South America. One of the boulevards, extending



Fig. 2.—Montevideo Chemical Laboratories.

8 miles along the ocean, is named for President Wilson. The city is 100 miles below Buenos Aires on the outlet of the La Plata River, which forms the southern boundary, the ocean forming the eastern boundary.

The primary school course in Uruguay is five years and the secondary course six years. The medical school, a part of the University of Uruguay, is a large, ornate and dignified building (Fig. 1). Six hundred students are enrolled, and the graduating classes number from sixty to seventy. The course in

medicine is seven years. The medical school has a fine library. The laboratory facilities and equipment are excellent (Fig. 2), and there is ample material for dissection. Postmortems are permitted on all patients dying in the hospitals.

The hospitals in Montevideo are modern and equal to any in South America. The older hospitals are built in the Spanish pavilion style, usually one story, with gardens between the pavilions. The new hospitals are several stories high (Fig. 3). Here, as elsewhere in South America, there are few trained nurses and an absence of screens. I was told that when screens were placed no one respected their use, and, indeed, in the few instances screens were seen they were carefully propped open. With the exception of the hospitals maintained by the colonies from various countries, those in Uruguay are supported by the government. Accommodations are provided for pay patients, and the price of rooms in the private pavilions ranges from $3 to $6 a day. One beautiful hospital (for women) is under the direction of Dr. Pou Orfila, a noted surgeon. The Italians have a very beautiful hospital with many interesting features (Fig. 4). To prevent flies from entering the operating rooms, persons pass from the main corridor through a small antiroom which has blue glass ceiling, sides and door. It has been demonstrated that flies will not pass through this blue-lighted space.

The chief surgeon of the British Hospital, Dr. García Lagos, professor of surgery in the government



Fig. 3.—Hospital Montevideo.

medical school, is particularly interested in surgery of the stomach. He has developed a method of dealing with gastrojejunal ulcers and hemorrhages from the gastro-enterostomy opening by making an incision in the anterior wall of the stomach, drawing the gastro-enterostomy completely through, and then proceeding according to the necessity of the case. I have employed this method twice in emergency, such as hemorrhage immediately after gastro-enterostomy, but have never used it in the manner described by Dr. García Lagos for a direct attack on chronic conditions involving the stoma. It would appear to have merit in suitable cases. Dr. E. Pouey, the leading gynecologist of Uruguay, has a fine hospital for women, just completed by the university. Dr. A. Navarro, another prominent surgeon of South America, has splendid hospital facilities and surgical material.

Gambling is a legitimate pastime, or vice, throughout

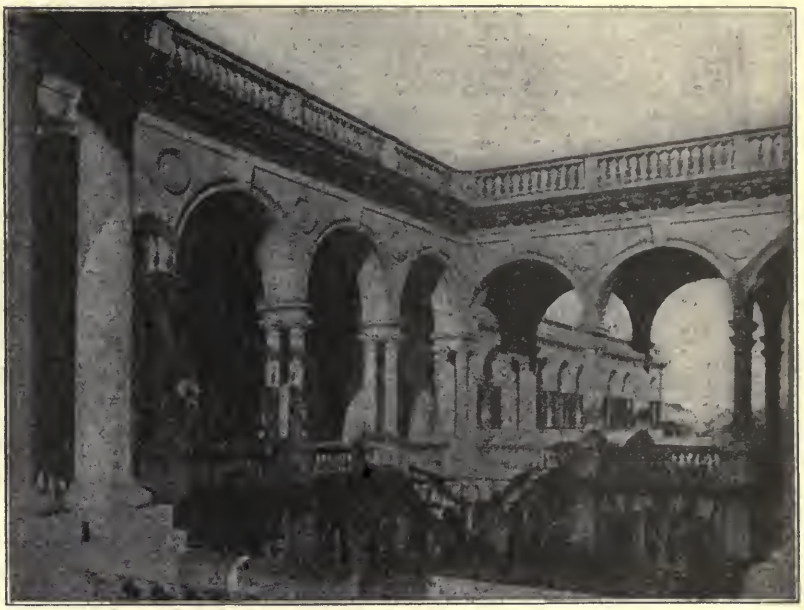


Fig. 4.—Italian Hospital, Montevideo.

South America, and Uruguay is no exception. The government supports beautiful hotels, seaside pavilions, hospitals and other charities from the proceeds of the roulette wheels. Montevideo is the Monte Carlo of South America.

During the Great War, Uruguay stood staunchly with the United States, and her president, Señor Baltasar Brum, a brilliant young statesman who is well known in diplomatic circles in Washington, and the able foreign minister made decisions which will be permanent additions to international law: in substance, first, that a republic fighting for her sovereign rights is not a belligerent and has the right of asylum and protection from all republics, and second, that when the United States is forced into war to protect her rights she is protecting the rights of all republics, and all republics become parties to the conflict. Uruguay promptly followed the United States in declaring war on the Central Powers.

The Ideal Health Department.—An ideal health department in a nation such as ours demands a partnership of federal, state and local health departments, in order to secure team work of all agencies from the federal government to the ultimate unit of health work—the individual citizen. This partnership should be so clearly defined, so universally understood and so conscientiously utilized that all fields of public health work will be covered with the minimum of overlapping and friction.—A. J. McLaughlin, *Commonhealth,* November-December, 1919.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Five dollars per annum in advance

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SATURDAY, AUGUST 28, 1920

THE CONDITIONS IN THE BRAIN DURING STAMMERING

In attempting to ascertain the various factors, psychologic and physiologic, that enter into the involuntary stops in uttering syllables or words, which constitute the phenomenon known as stammering, several studies of the circulatory changes accompanying it have been made. These agree in suggesting that stammering and shock, such as result from surprise, fright or comparable manifestations, are induced emotional disturbances accompanied by vasomotor changes. Observations on the peripheral blood vessels have been made by various plethysmographic methods with the resulting demonstration that there is almost invariably a marked vasoconstriction. According to the investigations of Robbins [1] in the psychologic laboratory at Harvard University, unusually intense shock (such as the unexpected report of a pistol) is accompanied by greater vasomotor changes in the periphery than is stammering. Severe stammering, on the other hand, is accompanied in most subjects by greater vasoconstriction in the finger than is shock produced by any stimulus but the pistol. The time of recovery is about the same for stammerers as a class both in stammering and in shock, but is greater for most individuals in stammering than it is in shock produced by stimuli other than the pistol. In stammerers, peripheral vasoconstriction continues throughout the stammering interval; whereas, if any vasomotor change accompanies normal speech, it is vasodilatation as a rule.

Physiologic investigations on trephined but otherwise normal persons have made it possible to study the vasomotor changes that occur simultaneously at the periphery and in the brain. Observations made under these conditions have demonstrated that a sudden shock is always accompanied by vasoconstriction in the periphery and by vasodilatation in the cerebral tissue. As Robbins had likewise noted a peripheral vasoconstriction during stammering, he made the inference, in 1919, that stammering, like shock, is accompanied by vasodilatation in the brain and hence by cerebral congestion. He pointed out that the latter condition affects speech more easily than it alters any other human activity. Robbins learned from normal persons whose introspection was reliable that the words they were about to speak suddenly left their minds when the whistle blew, and did not return for several seconds. Some of them still visualized the words, and their minds seemed otherwise to work normally; yet the sounds of the words left them and hence they were unable to say the words. When vasoconstriction in their fingers ceased, the sound of the words returned and they were able to speak them. The same phenomenon occurs in stammering. According to Robbins, the fear of stammering and the excessive effort put forth in forcing out difficult words cause cerebral congestion, which induces the auditory images of the words the stammerer is about to speak to disappear as he attempts to utter them, just as the whistle banished the sound of the word the normal speaker wished to use and made of him a temporary stammerer.

The theory of cerebral congestion defended by Bluemel [2] in 1913 was, after all, an indirect inference. Actual measurements of the circulatory changes in the brains of stammerers had never been made. Although there are thousands of stammerers in the United States, it might have seemed unlikely that one could be found whose skull had been trephined. Yet when a request for possible information regarding such a hypothetic person was published in THE JOURNAL [3] last year, a suitable individual was promptly discovered.

As a result of this fortunate circumstance, Robbins [4] has been enabled to furnish the missing evidence regarding the actual condition of the brain during stammering. The patient had sustained a bullet wound of the right frontal region without evidence of any brain injury. Evidently the bullet was removed and a small trephine hole left open. Through the skin loosely covering this, pulsations of the brain mass were often conspicuous, and a glass plethysmograph was readily applied to record the volume changes in what is, so far as we are aware, a unique case for study in medical literature. The observations show that pronounced shock, fear of stammering and emotions of every kind always brought about increase in brain volume accompanied by increased size of pulse. Stammering was accompanied by much more marked increase in brain volume than could be accounted for by either the physical or the mental work used in normal speech. When the stammerer read as normal speakers do, there was a return of the brain volume to normal; it is reasonable to conclude that increase in brain volume is an important factor in the production of stammering.

The theory of Bluemel that stammering is caused by transient auditory amnesia in the auditory speech cen-

1. Robbins, S. D.: A Plethysmographic Study of Shock and Stammering, Am. J. Physiol. **48**: 285 (April) 1919.

2. Bluemel, C. S.: Stammering and Cognate Defects of Speech, New York, 1913.

3. Finding the Proverbial Needle, Current Comment, J. A. M. A. **73**: 1704 (Nov. 29) 1919.

4. Robbins, S. D.: A Plethysmographic Study of Shock and Stammering in a Trephined Stammerer, Am. J. Physiol. **52**: 168 (May) 1920.

ter brought on by cerebral congestions has at length found substantiation in the results of direct observation on man. Evidently the fear of stammering and the forcing out of hard words which accompanies stammering cause vasoconstriction in the periphery and cerebral congestion. As Robbins expresses the situation, the congestion blurs verbal imagery, especially auditory verbal imagery, and makes it impossible for the stammerer for the time being to recall a part or the whole of the word he wishes to speak at the moment he has to say it. In order to correct stammering, both the fear of stammering and the abnormal muscular contractions which usually accompany stammering must be eliminated.

THE MEANING OF REST TO PATIENTS

One of the fundamental dicta with regard to metabolism is that it increases with work or muscular effort. How large, comparatively, the increment may be is less well appreciated. The answer to the question has an important bearing on the food requirements of the working person; there is also a significant relationship of effort to energy expenditure in the case of the sick who need to conserve or gain. The doctrine of rest, either complete or limited, is one that the physician finds desirable to inculcate often. What is gained thereby in the mere conservation of food fuel or body tissues can be well understood by a consideration of what exertion really entails. The expenditure of energy in the body is affected by a number of factors, which include age, size, sex and occupation. The loss of energy per unit of accomplishment is greater in those cases in which the worker is untrained and the muscles are unpracticed for their tasks. Fatigue also causes inefficient performance.

The activities of a recuperating or resting patient are comparable in some degree with the lightest types of housework. What this may mean in terms of energy has recently been described by Langworthy and Barott [1] of the Office of Home Economics, U. S. Department of Agriculture. Light tasks, such as sewing, chrocheting or embroidering, call for an average expenditure of about 9 calories an hour more than that of the same person sitting quietly in a chair. Tasks regarded as "harder work" than sewing, such as washing, sweeping or scrubbing, require an increment of at least 50 calories an hour.

The government experiments have shown how the mere change in the height of the table at which work is being done may cause an increase of from 20 to 40 per cent. in the calories required. This illustrates, to quote the report, the importance of choosing equipment to "fit" the worker. If the lesson is applied to the sick room, however, it serves as a patent reminder of what is too often overlooked by both the patient and attendants, namely, that it requires only a seemingly small degree of discomfort or added effort to waste a relatively large fraction of available "strength" and energy. Conversely, complete rest represents the possibility of real conservation if the food intake and the metabolic capacity are not impaired. Even easy work—indeed, sometimes mere sitting up or the operation of dressing—means a real cost to the body which it may be well to save in times of nutritive stress, when economy of energy is an immense gain to the patient.

1. Langworthy, C. F., and Barott, H. G.: Energy Expenditure in Household Tasks, Am. J. Physiol. **52**: 400 (June) 1920.

THE CARE OF CARDIAC PATIENTS

Patients with cardiac disease present one of the most difficult therapeutic problems confronting the medical practitioner. More attention seems to have been bestowed on diagnosis than on any phase of cardiac disease; indeed, treatment has been well summed up under the simple terms rest, digitalis and general hygiene. The outlook for the future of such patients has therefore not been particularly encouraging. However, one of the few benefits of the great war was the directing of the attention of physicians and educators toward reconstruction of persons disabled and handicapped, and certainly the patient with a weak heart is as crippled as the one who has lost a limb. An indication of this interest appears in a recent issue of the *Hospital Social Service Quarterly,* which contains two contributions on the care of cardiac patients.

St. Lawrence and Adams [1] report in detail the efforts being made for cardiac children. Diagnosis once made, the first step is the elimination of such factors as focal infection and undue physical stress, which may hasten the gradual decline that has been an invariable feature of the lives of such children. Classes are formed in which regular examinations are made and thus unfavorable complications prevented. Rheumatic manifestations, chorea and focal abscesses are sought for. The capacity of these patients for work is determined, and the patients are divided into groups of first, second and third degree, indicating the amount of work that the patient may undertake. First degree patients have a normal exercise tolerance; second degree patients have a lessened tolerance, and third degree patients are referred to a hospital ward. The graduated exercises include calisthenics, climbing of stairs, and the ordinary forms of games and sports.

Arrangements have been made through the organization for sending children to the country following severe operations, prolonged ward residence or failure of improvement. The patients are followed into their homes, and arrangements are made for vocational training and education. According to the authors, the results obtained have been excellent. Whereas formerly work with cardiac patients was discouraging and uninteresting, under this systematic method of control, the future seems promising.

1. St. Lawrence, W. P., and Adams, E. Louise: The Organized Care of Cardiac Children, Hosp. Social Service Quart. **2**: 151 (May) 1920.

A further effort toward the care of persons handicapped by cardiac disease is outlined by the director [2] of the employment bureau for the handicapped, which is maintained by the Hospital Social Service Association of New York City. One of the greatest difficulties to be overcome in the care of chronically diseased or permanently disabled persons is the establishment of a hopeful outlook for their independence. Such patients more than anything else fear poverty and dependence. Therefore the successful establishment of an organization which will find for them occupations suitable to their condition is a step forward.

From June, 1919, to February, 1920, 305 patients with cardiac disease were referred to the bureau. Of these, 161 were placed in good occupations, of whom 117 were still in their original positions. In finding employment for cardiac workers, it is necessary to remember that such patients cannot do heavy lifting, cannot climb stairs, and cannot operate any but small hand-machines. They are, however, quite well suited for light sedentary work, such as may be found in fountain pen factories, the jewelry industry, piano factories and the tobacco industry. Women are referred to positions in carding jewelry and in sewing and mending laces. Others are placed in hotels where light work has been found for them. One of the chief difficulties of the bureau has been to assure employers that such employees would not "drop dead" at work. The records indicate that there have been no sudden deaths and no accidents among these persons placed by the bureau, and that no workmen's compensation has had to be paid to any of the persons employed. The results are good evidence of what may be accomplished through careful study of individual tolerance and selection of occupation to suit the physical condition. The cooperation of the physician in such social service is fundamentally necessary, and he should be prepared to take an active part in the work.

2. Duggan, Ida M.: Employment for the Handicapped, II, The Care of the Cardiac, Social Service Quart. **2**: 227 (May) 1920.

DANGERS OF PLASMA DEPLETION

In clinical practice as well as in the experimental laboratory, occasions frequently arise when it becomes highly desirable to secure some acceptable substitute for blood. The recognition of this need in the case of surgical or traumatic shock, in particular, has led to a prolonged search for the "ideal" substitute. As has been pointed out at various times in THE JOURNAL, few if any of the proposed fluids for introduction into the circulation meet the essential requirements. Some, like physiologic sodium chlorid solution, disappear so rapidly that their influence in maintaining the desired effectiveness of the circulation is speedily lost. So far as the restoration of a depleted blood volume with consequent maintenance of an adequate blood pressure is concerned, the use of fluids containing colloids, such as gum acacia, has lately found some favor. Owing to the osmotic pressure of the colloid gum, which cannot readily escape from the blood vessels, fluid which would otherwise disappear is retained within the blood vessels.[1] But even this solution is no panacea. Evidently there are numerous conditions under which poisonous products may arise in the body in direct or indirect relation to circulatory failure. These factors making for harm are as yet only imperfectly understood.[2]

A further possible agency in the failure of the various "substitutes" for blood has been brought into notice by the experimental studies of Whipple [3] and his collaborators at the Hooper Foundation for Medical Research, University of California. After withdrawal of large amounts of blood by hemorrhage, they have attempted to replace the loss with various fluids in all of which red corpuscles of the same species were returned to the circulation. If the fluid returned is protein-free, one may speak in such cases of plasma depletion or plasmapheresis to indicate a loss of plasma protein by means of hemorrhage followed by the replacement of like amounts of red corpuscles. When this process of depletion is carried out to a considerable extent, complete restoration of the lost serum proteins is only slowly accomplished. According to the latest findings, when the depletion of the total serum proteins is carried below 1 per cent., fatal reactions are likely to ensue. This is not due to mechanical factors, such as the removal or return of fluids to the circulation; for when a mixture of red blood cells and serum instead of saline solution is returned to the blood stream, the ill results do not follow similarly.

The symptoms observed in animals deprived of undue amounts of serum proteins represent the clinical picture of "shock." Whipple believes that the serum proteins represent an essential part of the "environmental complex of the body cells." The blood serum proteins are looked on as "stabilizing or protective factors," and their alleged rôle in the interrelations of blood to tissues is regarded as the most important function of these plasma colloids. At present they are not believed to be concerned primarily with the nutrition of the body, although this was long assumed to be the foremost use of the serum proteins.

As yet the etiology of the condition of shock observed in the plasma depletion just defined remains obscured in hypothesis. The California investigators

1. Bayliss, W. M.: Intravenous Injection in Wound Shock, New York, Longmans, Green & Co., 1919.

2. Factors Facilitating Circulatory Shock, editorial, J. A. M. A. **75**: 247 (July 24) 1920.

3. Smith, H. P.; Belt, A. E., and Whipple, G. H.: Rapid Blood Plasma Protein Depletion and the Curve of Regeneration, Am. J. Physiol. **52**: 54 (May) 1920. Whipple, G. H.; Smith, H. P., and Belt, A. E.: Shock as a Manifestation of Tissue Injury Following Rapid Plasma Protein Depletion, ibid., p. 72. Belt, A. E.; Smith, H. P., and Whipple, G. H.: Factors Concerned in the Perfusion of Living Organs and Tissues, ibid., p. 101; Kerr, W. J.; Hurwitz, S. H., and Whipple, G. H.: ibid. **47**: 356, 370, 379 (Dec.) 1918.

believe that certain body cells, notably those of the liver, are decidedly sensitive to changes in the content of circulating serum protein. The essential injury under these circumstances is, they assert, cell protoplasm injury induced by a sudden change in the colloidal solution which forms the normal environment of these cells. This, they add, may be a new type of cell injury, but it may help us to understand the more complex cell injury which is probably responsible for "surgical shock." It is suggested that the suspension of tissues in saline solutions prior to transplantation, and likewise the perfusion of organs with such protein-free mediums, may be detrimental to the purpose to which they are to be put. These solutions may be objectionable because of what they lack rather than because they contain positively toxic ingredients. Perhaps far more consideration will necessarily be given in the future to the harmfulness of diluted blood plasma, if slight modifications of it can actually produce such profound effects on the body cells.

Current Comment

DECLARING THE ALCOHOL PERCENTAGE

And now comes the *American Druggist* and suggests that the National Food and Drug Act be amended so as to delete the requirement of statement of alcoholic content on the labels of drug products. According to this representative of pharmacy, to require longer a declaration of the alcohol content on medicines would be inimical to the public welfare as the statement "is an incentive to the uninformed and depraved to resort to the use of drug preparations containing alcohol, as a necessary constituent, for intoxicating purposes." If our memory serves us there were at least a few people who "resorted to the use of" Peruna and similar nostrums for "intoxicating purposes" long before the Food and Drugs Act required these products to declare their alcohol percentage. According to this same authority, alcohol in medicinal preparations "is used at present, almost exclusively, for solvent, preservative and extraction purposes, and not for therapeutic purposes." Was there ever a proprietary remedy in which the alcohol—ranging from 10 to 47 per cent.—was *admittedly* a therapeutic ingredient? Another argument advanced is that processes of manufacture are trade secrets and should not be required to be divulged and as the "vehicle of a drug preparation is a part of the process of manufacture, and since the vehicle is frequently alcoholic [We'll say it is!—Ed.] a statement of alcoholic content often deprives the manufacturer of one of his legitimate means of competition." But the crowning argument of all made by our esteemed contemporary is that "the deletion of the now unnecessary alcohol statement would permit the inclusion of more important information on the label." Yes, indeed! The words *"CONTAINS 25 PER CENT. ALCOHOL"* take up so much valuable room; space, doubtless, that the manufacturer of proprietary remedies would prefer to use in giving the public information regarding some of the other ingredients of his nostrum that the federal law does not require to be declared on the label. With the appropriations for the Bureau of Chemistry cut down to a point where it will be rendered impotent to proceed against fakes in medicine, and with the drug trade, apparently, about to insist that the teeth of the Food and Drugs Act shall be drawn, the nostrum interests must be looking forward to prosperous times.

RENAUDOT AND THE FIRST FRENCH NEWSPAPER AND MEDICAL JOURNAL

The first French newspaper was founded in 1631 by Théophraste Renaudot, a physician and great humanitarian. Renaudot was graduated from the medical school at Montpellier in 1606 before he had reached his twentieth year. He had inherited a considerable fortune from his parents. "Recognizing the fact that a physician should be of a certain age before he can reasonably expect to command the confidence of his fellow men," Buck [1] says, "he decided to utilize the time following his graduation in visiting some of the more important capitals of Europe." Renaudot visited Italy, Holland, Belgium, Oxford and Cambridge, and on his return to France took up the study of chemistry. During his life in Paris he became aware of the terrible condition of the poor, and looked about for some method of improving their condition; but, all his efforts unavailing, he returned to his birthplace in Loudon. While there he met an influential Capuchin monk who brought him to the notice of the great Cardinal Richelieu. Regardless of the fact that Renaudot was of the Protestant faith, he was able by his honesty and good presence to secure the strong support of the great cardinal, and shortly returned to Paris. He now founded a central employment bureau for the employment of poor persons, where, on payment of three sous, any person might be registered and where employers might arrange to meet prospective employees, no charge being made in the case of a poor person. As a further step, Renaudot ultimately organized a loan office with the motto, "Lend money without expectation of profit," the taxes on loans being fixed at 3 per cent. His solution of the social problem was summed up in the aphorism, "In every organized community or state the rich shall afford aid to the poor, all harmony between the two classes ceasing when one of them grows richer at the expense of the other." In the search for the source of socialism, this aphorism has, perhaps, been overlooked. It is particularly interesting to read how the newspaper came to be founded. It was issued first as an official sheet containing news received from the outside world, the king's edicts, and treaties made with other nations. Realizing how valuable such a paper might be for personal interests, Richelieu strongly supported it and Louis XIII finally granted to Renaudot "the privilege to make, print and sell, through any agent whom he might select and wherever it seemed to him best to sell copies, the news,

1. Buck, A. H.: The Dawn of Modern Medicine, New Haven, Yale University Press, 1920.

the official appointments and accounts of all events occurring both within and outside the kingdom." This paper, known as the *Gazette de France,* was first published in four pages to sell for half a sou. One year later it was increased by four pages under the title *Nouvelles,* and the price increased to one sou. It is reported to have been a brilliant success from the first day of its publication in 1640. After nine years, Renaudot changed its scope by adding to it the character of a medical journal; thus began the first French medical journal. He continued to edit it as a medical journal until 1653. In 1640, he was permitted by the king to establish a bureau for the free treatment of the sick poor. This was so well organized as to compare favorably with our modern free dispensaries. In fact, this dispensary soon attracted many physicians and began to take on the character of a school for clinical instruction, at that time an entirely new feature. In sketching the life of this French physician, Professor Buck has done a real service to the history of medicine. It is rare that executive ability, humanitarian ideals and enterprising originality of the character which Renaudot displayed are combined with a scientific mind. When the combination does occur the world profits.

THE LIVER ESSENTIAL TO PROTEIN METABOLISM

The importance of the liver in the metabolism of protein in the body has been strikingly upheld by recent observations at the Hospital of the Rockefeller Institute for Medical Research in New York. As there is convincing evidence that urea, the conspicuous end-product of nitrogenous metabolism, can be formed in tissues other than the liver, some doubt has arisen as to whether the hepatic function is, after all, as paramount in relation to the reactions ending in urea production as has been supposed. There is reason to believe that amino-acids are the foremost representatives of disintegrating protein in the body. The catabolism of protein therefore means primarily the breaking down of amino-acids. It is accordingly conceivable that when this chemical disintegration is interfered with, free amino-acids will accumulate in the tissues and fluids, notably in the blood. It does happen, in fact, that the blood sometimes is richer than normal in amino-acids. Almost invariably, however, when this occurs other nitrogenous excretory substances, such as creatinin, uric acid and even urea, also accumulate in the blood, thereby indicating that it is an impaired and inadequate renal function rather than any insufficient metabolic activity which accounts for the undue amount of amino-acids detected at the moment. In acute yellow atrophy of the liver, an extremely rapid autolysis of the tissue liberates amino-acids in enormous proportions. According to analyses of Stadie and Van Slyke,[1] they may then appear in the blood to a degree unequaled in any other known condition. The urea content of the blood is not thus enhanced, indicating that somehow the amino-acids are not being deaminated and converted into urea as readily and rapidly as they ought to be. The amino-acids circulate and are excreted as such in unusual amounts. The important fact is not merely the formation of amino-acids on a large scale. This happens in other conditions of autolysis, for example, during resolution in pneumonia. Urea is nevertheless formed readily, and amino-acids do not remain unconverted. Tissue waste results in definitely increased excretion of amino-acids only when the destruction of the liver cells is almost complete, as in yellow atrophy. In this disease, organ systems other than the liver are not prominently involved, if one may judge from histologic evidence. Hence, as Stadie and Van Slyke observe, their analyses support the view that in the deamination of amino-acids and synthesis of urea the liver bears a part that cannot be entirely assumed by the rest of the body.

1. Stadie, W. C., and Van Slyke, D. D.: The Effect of Acute Yellow Atrophy on Metabolism and on the Composition of the Liver, Arch. Int. Med. **25**: 693 (June) 1920.

DIETARY JUSTICE TO THE PEANUT

The statistics of the peanut crop in the United States attest the growing popularity of the product. For many years peanuts were eaten essentially as "extra" foods, like candy and other sweetmeats. Latterly, they have begun to claim a more substantial place in the diet. Under the appealing designation of peanut "butter," the ground peanuts are finding widespread use as a palatable, wholesome food. Peanut oil is now expressed in large quantities from shelled peanuts, and has received commendation. From the resulting press cake, peanut flour has been prepared by grinding. Peanuts are unusual in containing a considerable proportion of protein along with both fat and carbohydrate. Water-soluble vitamin is also not lacking. Experts in the Office of Home Economics at the U. S. Department of Agriculture [1] have shown that the nutrients of peanuts are easily digested by man. Johns and Finks [2] of the same department have given an added worth to the food by demonstrating convincingly the high physiologic value of the peanut protein. Various investigators have demonstrated that bread made from wheat flour of current composition is inadequate as the only source of protein in the diet. The government workers have found, however, that bread made with a mixture of 25 parts of peanut flour and 75 parts of wheat flour furnished adequate proteins for normal growth of experimental animals. The proteins of the peanut bread were utilized for gain almost twice as well as those contained in wheat bread. This does not mean that the familiar "staff of life" should be abandoned or regularly diluted with peanut flour; it does, however, put a stamp of real nutritive merit on a food product that many a physician still thinks of solely in terms of a trouble maker for digestion.

1. Holmes, A. D.: Bull. 717, U. S. Dept. Agric., 1918.
2. Johns, C. O., and Finks, A. J.: Studies in Nutrition, IV, The Nutritive Value of Peanut Flour as a Supplement to Wheat Flour, J. Biol. Chem. **42**: 569 (July) 1920.

Protection of Health and Life.—As in the beginning, so now, and throughout all time, the first business of government will be the protection of human health and life, and the government that discharges this, its first duty, will guarantee its own greatness and permanency through the development of a vigorous and happy citizenship.—W. S. Rankin, *Tr. Assn. Life Ins. Presidents,* 1919.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

GEORGIA

Division Changes Name.—The title of the Division of Rural Sanitation of the Georgia State Board of Health has been changed to that of Division of County Health Work.

Full-Time Health Officers.—On July 26, it was announced by the state department of health that twenty-five counties of the state have established county boards of health with full-time health officers in accordance with the provisions of the Ellis law. The latest to establish county boards of health were Hall, Telfair, Jasper and Brooks counties.

Health Centers Established.—Health centers have been established at the Grady Hospital Clinic and at the Woman's Club, Atlanta. One is soon to be established in the Moreland Avenue School district, and others will be opened later in other sections of the city, all under the direction of the child welfare department of the state board of health, of which Dr. Lydia A. de Vilbiss is head.

ILLINOIS

Personal.—Dr. John H. Fulgham, East St. Louis, has resigned as clinician for the East St. Louis Tuberculosis Society.——Dr. Ora J. Cubertson, East St. Louis, suffered burns on the face, hands and arms from the explosion of a can of gasoline, August 3.

Funds Sought for New Hospital.—The Chicago Polyclinic after thiry-four years of service is preparing to launch a drive to collect funds for the purpose of erecting a hospital building. The plan is to put up this building on land joining the present Henrotin Hospital, and it is hoped to establish a modern hospital center in which all the health activities of that district will be housed.

MARYLAND

New Standard for Ice Cream.—Under a legislative act which went into effect June 1, ice cream is defined as a frozen product of cream and other milk substances containing not less than 8 per cent. of butter fat. Not exceeding 1 per cent. of pure gelatin, tragacanth or vegetable gum may be added.

Last Health Lecture of Summer Series.—The last public lecture of the summer series at the Johns Hopkins University was given on the closing day of the summer school by the director of the school of hygiene and public health, Dr. E. V. McCollum, on "Nutrition as a Factor in Preventive Medicine." It was followed by a reception to all the students of the summer school at the civil engineering building.

Investigation by Health Department.—An investigation to determine the cause of an unusually large amount of dysentery in Baltimore this summer is under way at the health department. Fifteen to twenty new cases have been reported in the last two days and the cooperation of physicians of the city has been asked to determine the exact type of the disease. The death rate among babies under 2 years of age is suddenly increasing and nurses are looking into the cause. Until last week, the mortality among infants dropped, as compared with 1919. Fifty infants died last week, twenty more than the same week a year ago.

Personal.—Dr. John Jacob Abel, professor of pharmacology at the Johns Hopkins University, has been honored with the degree of Doctor of Laws by Cambridge University, England. Dr. Abel is editor of the *Journal of Pharmacology and Experimental Therapeutics,* and a member of the National Academy of Sciences.——Dr. Harry J. Moss, superintendent of the Hebrew Hospital, Baltimore, will sever his connection with that hospital in September to become superintendent of the Brownsville and East New York Hospital, Brooklyn.——Dr. Howard A. Kelly, Baltimore, who is spending the summer months at Indian Point on Ahmic Lake, Ont., fell and broke his leg recently while alone in the Canadian woods.——Dr. D. L. Gifford, Zion, Cecil County, who has been ill in a Philadelphia hospital for several months, has returned to his home greatly improved in health.——Dr. Martin L. Jarrett, Jarrettsville, is a patient at St. Joseph's Hospital.

Drive to Aid University Hospital.—Preparations for a statewide drive to raise funds for the university hospital were recently made at a meeting of the executive committee in charge of the campaign. The drive will last eleven days, beginning October 2 and ending at midnight October 12. The amount of money to be raised by the drive has not yet been determined, but it is thought that it will exceed $500,000. This drive is one of the first undertakings attempted by the board of regents of the University of Maryland since the recent consolidation of the professional schools of the University of Maryland and the Maryland State College into a state university. The vital problem of supplying the different hospitals in the city with nurses and homes for nurses was discussed as well as the need for more room for maternity cases in the hospitals. It was decided that what was most needed by the university hospital and the city were a nurses' home and a maternity hospital. There is a working agreement between the university hospital and the Johns Hopkins Hospital for the Broadway institution to take care of as many of the maternity cases east of the Fallsway as it can. But it was pointed out that the hospitals in Baltimore can no longer handle all of these cases with their present facilities, and a new maternity hospital is imperative. The committee will also attempt to raise sufficient funds to enlarge the present accident service, which now maintains a twenty-four hour service.

MASSACHUSETTS

Rockefeller Foundation Appropriation. — The Medical School of Harvard University has received $350,000 from the Rockefeller Foundation for the development of psychiatry, and $300,000 for the development of the teaching of obstetrics.

Personal.—Dr. S. Burt Wolbach of the Medical School of Harvard University, who has been working abroad for six months in an effort to establish definitely the organism causing typhus fever, has returned to the United States. ——Cambridge University has conferred the degree of Doctor of Laws on Dr. Harvey Cushing, professor of surgery in the Medical School of Harvard University.

Lepers to Be Returned for Further Treatment.—The two lepers at the State Colony on Peninkese Island whose condition had shown such marked improvement that their provisional release was being considered, are to be returned from Boston to the island. Newspapers had reported them as cured and had stated that a new remedy for leprosy had been discovered. The commission of physicians appointed by the state board of health reports as follows: No open lesions in the throat or elsewhere were found on either; both showed small nodules in the throat and soft palate, presumably leprous, with no tendency to ulceration; scars were present in the nose and throat of both, one had a perforated septum which had healed; one had a nodule on the septum which was excised for examination (no report yet); both showed still some palpable enlargement of the ulnar nerves; both showed no definite loss of sensation even over scarred areas; both showed some possible diminution in the power of sensation on the forehead; both gave positive Wassermann reactions; both gave repeatedly abundant lepra bacilli on scarification of the mucous membrane of the septum of the nose, and the lepra bacilli were not only abundant but were found in their characteristic roseate form of clustering; the swab cultures from the nose without scarification were negative. The board concluded to return them to the colony for further treatment. Treatment had been by chaulmoogra oil as used in the Philippines; that is, given by mouth to the limit of tolerance and also administered in what is known as the C. C. R. combination hypodermically—chaulmoogra oil, camphor and resorcin. Dr. Frank H. Parker is medical superintendent of the hospital.

MINNESOTA

Personal.—Dr. Edward W. Buckley, St. Paul, has been made a Chevalier of the Legion of Honor on account of services rendered in France as an official of the Knights of Columbus.

MISSISSIPPI

Sanitary Engineer Appointed.—The state board of health has appointed Mr. H. A. Kroeze as sanitary engineer. Mr. Kroeze has been assistant sanitary engineer for the Minnesota State Department of Health.

Site for Home for Feebleminded Selected.—It is announced that the bid of Ellisville for the Mississippi Home for Feeble-

minded has been accepted. The offer of Ellisville included $20,000 in cash and 2,570 acres of improved land with forty residences, worth at least $200,000.

Health Teaching by Moving Pictures.—Mr. E. G. Pope, the director of health work in Granada County, has begun a series of lectures illustrated by moving pictures to further hygiene and sanitation. He has two assistants, one of whom is a representative of the American Red Cross.

Personal.—Dr. Bowman L. Robinson, Meridian, was shot and seriously wounded by a negro with whom he had an altercation, July 18.——Dr. William A. Carpenter, Meridian, has resigned as health officer of Lauderdale County, and expects to move to Cleveland, Miss.——Dr. James H. Fox, Jackson, has been appointed medical member of the state board of nurses, succeeding Dr. Benson B. Martin, Vicksburg.——Dr. Francis M. Sheppard, Richton, has succeeded Dr. Willis Walley who has resigned as superintendent of the State Charity Hospital, Jackson.——Dr. Augustine J. Podesta has succeeded Dr. J. F. Anderson as a member of the staff of the Natchez Charity Hospital, and Dr. E. Floyd Brown has been elected medical director and manager of the hospital.

NEW YORK

Almshouse Will Become Hospital.—The Kings County Almshouse has been closed. The buildings are to be renovated and fitted as a new hospital for chronic cases, the first institution of its kind administered by the city. The department of public welfare explains that this step has been taken because of the great need for a hospital for chronic cases. When ready for occupancy the Kings County Hospital will transfer about 600 chronic cases to the new institution. Various forms of handicrafts will be taught the patients.

Group Consultation Clinics for Rural New York.—The *Bulletin* of the New York State Health Department for July announces that the department is planning a series of consultation clinics throughout the state. Of the fifty-seven counties of the state, exclusive of greater New York twenty-one have no clinic or dispensary service of any sort and nine others have but one clinic each and that for a single specialty. These group consultation clinics will be held in cooperation with physicians practicing in the smaller cities and rural communities and with health centers where such exist, and will make available laboratory and other special facilities for diagnosis.

Reconstruction Home for Crippled Children.—An organization has been formed, several thousand dollars have been raised or pledged, and a house in Ithaca, formerly used as a private hospital, has been rented and equipped as a home for children who have been severely paralyzed as a result of poliomyelitis. In some of the rural districts of the state, children who were paralyzed in 1916, at the time of the poliomyelitis epidemic, have reached an age when they should attend school; but owing to their disability it is impossible for them to attend local schools. There has heretofore been no institution of this kind in the state. The home was formally opened July 10, and can accommodate about twenty patients. The orthopedic work of the home will be directed by the state orthopedic surgeon and the district nurse. It is intended to make a charge for the maintenance and treatment of patients sufficient to make the institution self-supporting. Patients will be admitted on equal terms from any part of the state.

Personal.—Dr. Ethan A. Nevin, Newark, has been elected president and Dr. Charles H. Bennett, Sodus, vice president of the Wayne County Tuberculosis Committee.——Dr. Willis E. Ford, Utica, was seriously injured, July 22, by a fall.——Dr. Clarence L. Hyde announces his intention of resigning as superintendent of the J. N. Adam Memorial Hospital, Perryburg, to accept a position as superintendent of a hospital in Akron, Ohio.——Dr. Hermann M. Biggs, commissioner of health of New York state, has been given the honorary degree of Doctor of Science by Harvard University in recognition of his work in combating tuberculosis.——Dr. Edward H. Marsh, Brooklyn, consultant in venereal diseases, state department of health, has been appointed assistant professor of hygiene and preventive medicine at Long Island Medical College.——Dr. Edward S. Godfrey, Jr., Albany, has been appointed director of the division of communicable diseases of the state department of health.——Morris Scherango, formerly head of the bacteriological department of the University of Kentucky, has accepted the position of assistant bacteriologist in the state laboratory.

New York City

Addition to Sanitary Code.—The department of health at a recent meeting adopted a resolution regulating the sale of clinical thermometers and defining a clinical thermometer and fixing its accuracy.

Addition to Hospital.—The Jewish Memorial Hospital, formerly the Philanthropin Hospital, has purchased the Inwood House at Two Hundred and Second Street and Broadway, and will renovate it so as to accommodate 150 patients. The building is expected to be ready for occupancy June 1, 1921.

Course of Study in Roentgenology.—The *Bulletin* of the New York Association for Medical Education for July 15 announces that plans have been drawn up for a course of instruction in roentgenology, and that one of our universities has expressed a willingness to open and develop such a department. A staff of roentgenologists have agreed to serve as a teaching body. All that remains to be done in order to put the plan into effect is the provision of a comparatively small amount of money to purchase the equipment and start the work.

Housing Shortage Overcrowds Institutions.—The committee of the united hospital fund gives out figures showing that one reason for the increased use of hospital facilities lies in the housing crisis, which makes it impossible for many families to care for their sick in cramped quarters. The New York Post-Graduate Medical School and Hospital estimates that there are 25 per cent. more private rooms in use today than at any time last year, while the general wards show the general enrolment. The same condition prevails at the New York, Mount Sinai, Presbyterian, Nursery and Child's and Sloane hospitals. There is said to be no increase in the sick rate of the city.

Personal.—Dr. Otto V. Huffman has resigned as a member of the faculty, dean, and acting provost of Long Island College Hospital, Brooklyn, and has been appointed a member of the faculty of the New York Postgraduate College and Hospital and chief of the medical clinic.——Edric Brooks Smith, B.S., has been appointed business manager, and Frederick Stanley Howe, A.B., assistant business manager of the Rockefeller Institute for Medical Research.——Drs. Simon Flexner and Alfred E. Cohen of the Rockefeller Institute returned from Europe, August 6.——Thomas D. Wood, director of the health council of the National Educational Association and chairman of the joint committee of the National Educational Association and of the American Medical Association on health problems in education, was given a luncheon, July 8, at Salt Lake City as an expression of appreciation of his achievement in effecting a complete change in the attitude of educators toward health problems.——Dr. Emil F. Hartung, Brooklyn, is seriously ill at his home as the result of injuries sustained in an encounter with robbers who called him to a rooming house on the pretext of sickness and robbed him $4,000 in jewelry and cash.

NORTH CAROLINA

New Diagnostic Clinic.—A diagnostic clinic has been opened at Raleigh by Drs. Harold W. Glascock, Amzi J. Ellington, Ivan M. Procter, Jr. The Mary Elizabeth Hospital is operated in connection with the clinic.

Personal.—Dr. Ben M. Meriwether, Asheville, sustained a fracture of several ribs when his automobile ran off an embankment, August 3.——Dr. Edward F. Long, Lexington, has accepted a position as superintendent of public health for Wake County, including the city of Raleigh.

OHIO

New Hospital.—A new hospital is being erected at the Boys' Industrial School.

New Venereal Clinic.—A venereal disease clinic was opened at Fairview Hospital, Cleveland, August 1, under the supervision of the municipal division of health. The clinic is open evenings under the charge of Drs. Harry H. Ward, Richard Dexter and Henry L. Sanford.

Health Bulletin to Be Issued.—A monthly health bulletin is to be issued jointly by the health departments of Springfield and Clark County. This month the bulletin will contain health data and will be a résumé of the work of the health department. It will be issued under the direction of Dr. Rush R. Richison, Springfield.

Academy Picnic.—The annual picnic of the Academy of Medicine of Cleveland was held in conjunction with that of the Cleveland Dental Society and the Northern Ohio Druggists' Association at Port Stanley, Ont., August 18. The principal address was delivered by Frederick L. Hoffman, LL.D., New York City, on "Health Insurance."

Personal.—Dr. Thomas J. Arundel, Youngstown, has had bestowed on him by the pope the decoration of the Gold Cross "pro ecclesia et pontifice" for war service in Italy. Dr. Arundel served under the auspices of the Knights of Columbus and was active in war relief work in Paris before the armistice was signed, after which he was sent to Rome.

Citizens to Decide Hospital Issue.—The board of commissioners of Montgomery County having considered a petition for a memorial hospital have decided to submit the issue to the voters. It is said they are of the opinion that the building of another hospital at Crawfordsville in addition to the Culver Union Hospital might make the operation of both institutions unprofitable.

PENNSYLVANIA

Licenses Revoked and Reinstated.—The licenses of Dr. Victor O. Humphrey, Port Allegany, and Herbert L. Lantz, Wilkes-Barre, are said to have been revoked, August 7, by the state bureau of medical education and licensure, on account of drug addicton.——The license of Dr. Walter W. Senn, Williamsport, has been reinstated by the board.

Personal.—Dr. Howard L. Hull, Camp Hill, chief medical inspector of the state department of health, has resigned.——Dr. George K. Strode, West Chester, chief of the division of school hygiene, has resigned to become connected with research work with the Rockefeller Institute.——Dr. William L. Estes, for nearly forty years a practitioner of South Bethlehem, announces his retirement from the staff of St. Luke's Hospital, having reached the age limit of 75 years.——Dr. James P. Sands has been provisionally appointed senior medical officer of the Philadelphia Hospital for Mental Diseases.

TEXAS

Personal.—State health officer, Dr. Charles W. Goddard, Austin, is reported to be ill with malaria at his home.

Hospital Under Construction.—Work has been begun on a brick and tile building at Gonzales to be used as a hospital by Dr. George Holmes.

State Appropriation for New Hospital.—The state legislature having appropriated $110,000 for a new hospital at the State Confederate Home at Austin, it remains now for the state board of control to award a contract for construction.

The Plague Situation.—On August 17 the confirmation of the diagnosis of the eighth case of bubonic plague at Galveston was announced by the U. S. Public Health Service. Another case is still under observation. August 12, the fifth death from bubonic plague occurred at Beaumont, where twelve cases have been reported.

State Public Health Service Work.—In a pamphlet sent to all parts of the state the Texas Public Health Association advocates a thorough physical examination once a year for every person in the state as an aid in the prevention and cure of tuberculosis. The pamphlet tells the symptoms that would suggest tuberculosis and the means of its prevention. During the last year the association distributed more than 1,000,000 pieces of literature in this propaganda.

Indigent Migratory Consumptives.—The Texas Public Health Association has issued a report on the indigent migratory consumptive problem. The population of the community under discussion is approximately 16,000, and the statistics cover a period for one year from Sept. 1, 1918. During this period there were 208 deaths from the disease, with a death rate of 1,300 per hundred thousand, a little lower than the United States tuberculosis death rate at large. Of the 208, eighty were caused by tuberculosis, or a death rate in the community of 500 per hundred thousand. This appears unfavorable when compared to the tuberculosis death rate of the United States which is 146.6 per hundred thousand and it is evident that the excess of the death rate was caused by the great number of tuberculous people migrating to Texas. During the period covered by the survey a relief organization spent $1,128.70 on indigent tuberculosis sufferers, and only forty had applied to the organization for aid. Of the 193 persons interviewed, seventy were single; more than 37 per cent. of the total number were high class physicians, professional men, or workers in trades or skilled occupations; 8.25 per cent. had been farmers. Of the number interviewed, sixty-three, or more than 32.5 per cent., were in a precarious condition; fifty-nine had been in other communities on account of their health, and sixty-four had had sanatorium treatment. The conclusion is that the migratory tuberculosis problem is acute in the Southwest, and it is recommended that study of the problem be made in many communities throughout that territory, so that there may be some basis on which to place a request for legislation to prevent the indigent migratory consumptives from entering the state, or at least to provide care for them.

UTAH

New Hospital Building.—A new building for the State Mental Hospital is now in course of construction.

Personal.—Dr. Hardy Carroll has been appointed medical supervisor of the Brigham Young University, Provo.

Sanatorium Burns.—The Ogden Canyon Sanitarium was destroyed by fire, August 2. Two persons were reported to be missing.

Appropriation for Health Education.—The Department of Hygiene and Preventive Medicine of the University of Utah, Salt Lake City, has secured a second appropriation of $12,000 from the Interdepartmental Social Hygiene Board, Washington, D. C., to carry on the work of the department in connection with the university and the state. During the last year, 294 public health lectures were delivered and the plans for service next year include a course of instruction in nursing and the standardization of training of nurses throughout the state.

CANADA

Canadian Society of Anesthetists.—The Canadian Society of Anesthetists was recently formed with Dr. Samuel Johnston, Toronto, as president. The objects of the new society will be the promotion of the science, practice and teaching of anesthesia. Dr. Wesley Bourne, 34 Mark Street, Montreal, is the secretary-treasurer.

To Sell Arsphenamin.—The Ontario government provincial laboratories have been manufacturing arsphenamin for some time past, and now have a considerable stock on hand. Under the law they are not permitted to sell it in the province of Ontario, but it will be sold to other provinces at a reduction of from 25 to 30 per cent. on the charges by wholesale firms. It is further stipulated that it must be used for free treatment.

Red Cross Scholarship Awarded.—The Canadian Red Cross Society has awarded a scholarship of $1,500 in public health nursing to be held for one year at the University of London, England, to Miss Jean E. Browne, Regina, Sask. Miss Browne is an honor graduate of the Toronto Normal School and was also winner of the general proficiency scholarship in the Toronto General Hospital Training School for Nurses. In 1911, she organized the health work of the Regina public schools, and has been director of hygiene for the Department of Education of Saskatchewan since 1917.

Personal.—Major-Gen. Guy Carleton Jones, C.M.G., formerly director of medical services for Canada, has left Ottawa, and is at present residing in Italy.——Sir William Smith, head of the Royal Institute of Public Health of England, has arrived in New York on his way to Canada.——Dr. William Boyd, professor of pathology in the University of Manitoba, Winnipeg, has declined the offer of the chair of pathology at the medical school, Cairo, Egypt.——Dr. John G. Adami, vice chancellor of the University of Liverpool, and formerly professor of pathology and bacteriology in McGill University Faculty of Medicine, has been elected an honorary fellow of Christ College, Cambridge, England.

Fighting Venereal Diseases.—Miss Violet Trench, at a recent banquet tendered her in Toronto by the Canadian National Council for Combating Venereal Diseases, at which Dr. Frederick W. Marlow, Toronto, presided, related the beginning of the British National Council for similar purposes. Miss Trench said that condemnation led to concealment, and that the presence of disease does not prove guilt. The unequal standard in the sexes is a lie. The standard which is the right of every human being, and one lived up to by many men and women, is the standard of absolute chastity before marriage and absolute faithfulness after marriage.

Hospital News.—Although there are approximately 2,500 men contributing to the maintenance of the Cobalt Mines Hospital, Cobalt, Ont., during the last week of July there was

not a single patient in that institution, the first time in the history of the hospital that neither a case of accident nor of illness has occurred.——The Cochrane Hospital in New Ontario, The Lady Minto Hospital, is faced with a new problem—the problem of obtaining nurses. The Victorian Order of Nurses at Ottawa is under agreement to supply a staff of nurses but has not been able to supply the demand. The Sisters of Providence offer to purchase the building and operate the hospital as a general hospital, but under the terms by which the hospital was established in 1911 it was to be conducted free from any religious or denominational control.——Freeport Hospital, Kitchener, Ont., which has been under the direction of the Military Hospitals Commission, will be vacated by the commission and its staff by the end of August. It will be turned into a hospital for patients suffering from consumption and will be known as the Waterloo County Sanatorium.

GENERAL

Problem of the Deaf Child.—The American Association to Promote the Teaching of Speech to the Deaf has adopted resolutions to the effect that it has heard with pleasure of the interest of the American Medical Association in the problem of the deaf child and requests the assistance of the Association in all its efforts to reach a special solution of these problems.

Registration of Vital Statistics.—The National Conference of Commissioners on Uniform State Laws was in session in St. Louis, August 2, and considered the report of the Committee on Vital Statistics, of which Col. Nathan William MacChesney, Chicago, is chairman. The commission is considering a draft of a uniform law governing the registration of all vital statistics.

Bequests and Donations.—The following bequests and donations have recently been announced:

To establish a hospital at Fairfax, S. C., the bulk of the estate, estimated at more than $300,000, by the will of Dr. William J. Young, Fairfax.

City Hospital, Indianapolis, and Witham Memorial Hospital, Lebanon, Ind., each $10,000, by the will of James Alexis Lane.

St. Margaret Memorial Hospital, Pittsburgh, $10,000 by the will of Charles H. Spang; $5,000 by the will of J. W. Paul, and $500 by the will of James N. Cooke.

Preacher Becomes Healer.—An authentic report states that a Rev. J. J. Ramsey appeared recently at Boca Grande, Fla., and, without first securing a license, announced himself as an M.D. and began to practice. He claimed graduation from the Eclectic Medical University of Kansas City, Mo., but a report from the officers of that school declares he had attended only one session. There is no record of his having graduated from any medical school or having received a license to practice in any state. Following inquiry in regard to him, he is said to have left Florida for Chicago.

Conferences on Tuberculosis.—The Northwestern Conference on Tuberculosis will be held at Cheyenne, Wyo., September 9 to 13.——The eighth session of the Mississippi Valley Conference on Tuberculosis will be held in Duluth, Minn., September 2 to 4. The work of the conference will include on the first day a general session; on the second day, work in the sociologic, clinical, and nurses sections, and the Mississippi Valley Sanatorium Association, and on the third day a summing up, together with special features such as a children's pageant and other entertainments.

Attempts to Defraud Physicians.—A person calling himself "Dr. C. Benjamin Schoenfeld" is reported in January, 1920, to have been calling on various physicians in California, claiming that he was a registered physician, and that he represented fifty or more manufacturers, and endeavoring to secure $20 as a fee for a bonding company. In May, 1920, a San Francisco paper reported that Dr. C. B. Schoenfeld, an osteopath, was held on a charge of attempting to pass a fraudulent check for $20. In June, 1920, according to a report, Dr. C. H. Schoenfeld was arrested at Sacramento for passing bad checks. It is stated also he is wanted for embezzlement in Berkeley and San Francisco. His whereabouts, at present, are unknown. He has evidently gone elsewhere to further impose on the medical profession.

Chairmen Elected.—The National Research Council elected the following chairmen of some of its scientific divisions for the year beginning July 1, 1920: division of educational relations, Vernon Kellogg, professor of entomology, Stanford University and permanent secretary of the National Research Council; division of physical sciences, Augustus Trowbridge, professor of physics, Princeton University; division of chemistry and chemical technology, Frederick G. Cottrell, director of the Bureau of Mines; division of medical sciences, Surg. George W. McCoy, U. S. P. H. S., director of the U. S. Hygienic Laboratory since 1915; division of biology and agriculture, C. E. McClung, professor of zoology, University of Pennsylvania; and division of anthropology and psychology, Clark Wissler, curator of anthropology, American Museum of Natural History, New York City.

Industrial Surgeons to Meet.—The officers and board of directors of the American Association of Industrial Surgeons have called a midyear meeting of the association to be held in conjunction with the health service section of the Nations' Safety Council at Milwaukee, September 28 and 29, under the presidency of Dr. Otto P. Geier, Cincinnati. On the first day, Dr. Harry E. Mock, Chicago, will speak on "Preventive Medicine and Surgery in Industry." On the second morning the president will deliver the annual address on "The Future of Industrial Medicine and Surgery," and Dr. William S. O'Neill Sherman, Pittsburgh, will read a paper on "Industrial Surgery." On the afternoon of the second day Dr. Amos W. Colcord, Clairton, Pa., will speak on "The Physical Examination of Employees."

Better Conditions for Children.—A striking development in the movement to obtain better conditions for children is described in a pamphlet issued by the Children's Bureau of the United States Department of Labor entitled "State Commissions for the Study and Revision of Child Welfare Laws." Nine years ago, Ohio appointed the first commission to study conditions surrounding children in the state, and to codify and revise laws relating to children. Since that time, sixteen other states and the District of Columbia have appointed similar commissions, and almost two thirds of the states have now taken some definite action toward state legislation as it affects children. In almost every one of these states a carefully planned educational campaign has been carried on, covering the safeguarding of health, school attendance, regulation of employment, protection against exploitation or corruption of morals, special provision and training of dependent and neglected children, methods of dealing with delinquent children and the state supervision of agencies and institutions.

Hospital Association to Meet at Montreal.—The twenty-second annual conference of the American Hospital Association will be held at Montreal, October 4 to 8. Each of the sections on dispensaries, social service, nursing, hospital construction and hospital administration has a special program. The discussions will cover hospital problems that exist in both large and small hospitals. In connection with the meeting, there will be reports from the American Conference on Hospital Service and also from committees studying the nursing problem as well as from the committee studying hospital social service. The Social Service Section will have the cooperation of the American Association of Hospital Social Service Workers. A model venereal disease clinic will be held through the cooperation of the Division of Venereal Diseases of the U. S Public Health Service. The United States government is sending a physician, nurse and technician trained in this work. Hotel reservations may be arranged through Mr. H. E. Webster, chairman of the local committee, Royal Victoria Hospital, Montreal. Inquiries of a general nature should be addressed to Dr. A. R. Warner, executive secretary of the American Hospital Association, 22 East Ontario Street, Chicago.

LATIN AMERICA

Section on Psychiatry in Uruguay.—The Medical Association of Uruguay has recently added a section on psychiatry, the chairman of which will be Dr. B. Etchepare.

Uruguayan Physician in the United States.—Dr. Pedro I. Martino of Montevideo, Uruguay, is in the United States visiting otorhinolaryngologic and pediatric clinics.

Medical Society of Cartagena.—The Academia de Medicina de Cartagena has recently elected the following officers: president, Dr. Manuel F. Obregón; vice president, Dr. Constantino Pareja; treasurer, Dr. Miguel A. Valiente; librarian, Dr. José A. Caballero; secretary, Dr. Manuel Ramón Pareja; editor, Dr. Nicolás M. Paz.

Ciudad-Bolívar Medical Society Election.—The officials recently elected for a two year term by the Sociedad de Médicos de Ciudad-Bolívar, Venezuela, include Dr. A. Bello, president; Dr. P. H. Carranza, vice president; Dr. R. Velásquez Márquez, treasurer, and Dr. M. F. Flores, librarian, with Dr. C. E. Salom, secretary, and Dr. J. M. Agosto Méndez, editor of the *Gaceta Médica*, now in its sixth year, published by the society.

FOREIGN

Personal.—Dr. Richard A. Berry, professor of anatomy in the University of Melbourne, has been appointed Stewart lecturer in that institution.

Appropriation for Experimental Work.—The Prussian Academy of Science has granted Dr. Agnes Bluhm an appropriation of 1,000 marks to continue her experimental work on problems of heredity.

Fined for Refusing to Wear Mask During Influenza Epidemic.—The *Policlinico* relates that Dr. Fox, a physician at Glebe, Australia, has been fined 250 pounds sterling because he refused to wear the protecting mask during the epidemic of influenza.

Tribute to Bajardi.—On the occasion of the retirement of Prof. D. Bajardi from the chair of surgery at the University of Turin, on account of having reached the age limit, a bronze portrait tablet was unveiled with much ceremony in the hall of the institute for surgical pathology.

Lectures to Be Delivered.—The Harveian Oration of the Royal College of Physicians of London will be delivered by Sir Frederick Andrews, October 18; the Horace Dobell lecture, by Sir William Leishman, November 2; the Bradshaw lecture, by Dr. C. B. Wall, and the FitzPatrick lectures, on the history of medicine, by Dr. E. T. Browne of Pembroke College, Cambridge, November 9 and 11.

Scarcity of Nurses in Calais.—The *Vie médicale* states that the municipality of Calais has appealed to the Roman Catholic nuns who were discharged from a leading hospital fifteen years ago when the authorities "laicized" the hospital service. They are now asked to return to take charge of the nursing service as it is impossible to obtain sufficient lay nurses. The scarcity is so great that there is scarcely any night service at all in the hospital.

Restoration of Libraries of Serbia.—A subcommittee of the society on "Intellectual Relations with the Southern Slavs" is making a special appeal for donations of good books in good condition to aid in the reconstruction of the libraries of Belgrade and other towns in Serbia. The University of Belgrade contained the best library in the Balkans, and the most complete collection of literature on the Balkans, but in the last invasion of Serbia during the World War this collection was pillaged and destroyed. A medical faculty is being organized at the University of Belgrade, and foreign medical and biologic works would prove especially valuable.

Classification of Professors by Seniority.—Professors of the Paris Faculty of Medicine have been placed in two classes according to seniority, those in the first class receiving a salary of 25,000 francs and those in the second class a salary of 23,000 francs. By a recent ministerial decree, Professors Richet, Pouchet, Hutinel, De Lapersonne, Gilbert, Roger, Nicolas, Ribemont-Dessaignes, Quénu, Prénant, Widal, Chauffard and Weiss have been put in the first class; and Professors Delbet, Marfan, Hartmann, Bar, Marie, Broca, Teissier, Desgrès, Lejars, Achard, Robin, Legueu, Letulle, Couvelaire, Carnot, Besançon, Vaquez, Dupré and Jeanselme in the second class.

Prize for Means to Disinfect Tuberculous Sputum.—The German Antituberculosis Society offers a prize of 3,000 marks for a new and superior method for disinfecting the sputum of the tuberculous, effectual, inexpensive and easy to apply, particularly in the home. The announcement of the offer states that none of the methods now in vogue answer all these requirements for home use. The competing articles must be addressed "Preisbewerb betreffend Auswurfsdesinfektion" (with a mark, the name in a sealed envelop), and be sent to the Geschäftsstelle des Deutschen Zentralkomitees zur Bekämpfung der Tuberkulose, Berlin W 9, Königin-Augusta Str. 7, before March 31, 1921.

Questionnaire on Venereal Diseases in Switzerland.—The Swiss Society for the Repression of the Spread of Venereal Diseases has appealed to the profession throughout the country to compile data on the prevalence of these diseases as a basis for prophylaxis and treatment. The society has already established numerous centers for propaganda and advice. A number of blank forms are to be sent to every physician and 50 centimes will be paid for each one filled out and returned to the society. The period of observation is to be from Oct. 1, 1920, to Sept. 30, 1921. The appeal is signed by the federal service for public hygiene and the Commission médicale suisse as well as by the special society. The last few years have witnessed such a flaring up of venereal diseases that it is hoped no one will prove indifferent to the appeal, as in years past.

Cows Being Sent to Germany.—The *Deutsche medizinische Wochenschrift* for July 22 states that the plan of German-Americans to send to the fatherland 100,000 milch cows, to restock the dairy farms, is on the point of being realized. The German agent in London, Sthamer, has notified the officials of the maritime service of the reparation commission that the American Dairy Cattle Company at Chicago is holding several thousands of milch cows, presumably 100,000, with the requisite fodder, ready to deliver to the German authorities in charge of relief. Germany has to provide transportation for the cows, and in order to avoid losses it should be concluded before cold weather. As the German government has no means for transporting the cattle, Sthamer appeals to the reparation commission of the Red Cross at Berlin.

The Problem of "Restoration of Youth."—Referring to the work of Professor Steinach of the Vienna Biologic Institute, described in the Vienna Letter in THE JOURNAL of August 14, p. 490, our German exchanges state that Steinach's first report on the subject was presented to the Vienna Academy of Science, Dec. 5, 1912, but he refrained from publishing it until he was absolutely certain of the results. He now publishes it, he says, " offering it without scruples to specialists and medical circles in general." The aim is to prevent the escape of the testicular secretion from one of the testicles, and for this the ligation is between the testicle and the head of the epididymis, two ligatures being thrown around the entire bunch of efferent ductules, and they are severed between the ligatures. Roux of Halle explains in the current *Münchener medizinische Wochenschrift*, p. 918, the exact technic, adding that it is possible that the products formed in the resulting acute degeneration of the tubuli seminiferi may cooperate in the effect. The *Medizinische Klinik* comments editorially that the specific phenomena were observed in only a relatively small proportion of the surviving animals, but adds that in the three clinical cases (mentioned in the Vienna Letter) the Steinach operation was done without the patient's knowledge, during some operation for another purpose, so that suggestion could not have been a factor. Steinach's pamphlet is entitled "Verjüngung durch experimentelle Neubelebung der alternden Pubertätsdrüse," and is published by Julius Springer of Berlin.

Standardization of Artificial Limbs.—For more than three years the Ministry of Pensions, London, have had under consideration the standardization of the types of artificial legs supplied to pensioners, the object being to facilitate repair and replacement. Work on this standardization was carried out last summer by a committee under the chairmanship of Admiral Sir Reginald Bacon, and completed by the minister's advisers, Sir Charles Kenderdine, K.B.E., director of artificial limb supplies; Mr. T. H. Openshaw, C.B., C.M.G., M.S., F.R.C.S.; Mr. L. Muirhead Little, F.R.C.S.; Mr. R. C. Elmslie, C.B.E., M.S., F.R.C.S.; Mr. Michael Longridge, C.B.E., past president of the Institution of Mechanical Engineers, and Mr. A. D. Bailey, technical adviser to the Ministry of Pensions. The specifications for these standard limbs have now been approved by the advisory council to the ministry and Col. Sir Lisle Webb, K.B.E., C.B., C.M.G., director-general of medical services. In a few months all artificial legs of wood or leather supplied to pensioners will comply with the new specifications. The method adopted has been to standardize the mechanism of the limb and the metal component parts, leaving the actual limb to be fitted to and assembled for the individual pensioner by the limbmaker. The latter point is of great importance as every limb must necessarily be adapted to the individual needs of the man. Standardization is not to be allowed to interfere with progress. It is a standardization of those types of limbs which have been thoroughly and extensively tested, and of which about 35,000 have been issued. Further improvements will be made and the types will be modified as these are tested and proved. The ministry have had in hand the problem of providing a lighter artificial leg made of metal instead of wood and leather, and one type of this light limb has now received the approval of the advisers. Light limbs have evident advantages for certain cases. The pattern now approved will, it is hoped, be capable of being made by an engineering firm in such a way that only the actual fitting to the man need be carried out by a skilled limb fitter.

Deaths in Other Countries

Dr. **G. Calderini**, professor emeritus of obstetrics and gynecology at the University of Bologna.——Dr. **F. Paladino** of Palermo, victim of an assassin.——Dr. **G. Barricelli**, formerly president of the Italian Association of Health Officers and vice president of the Red Cross.——Dr. **M. Alsberg** of Cassel, Germany, a writer on anthropology, aged 80.

Government Services

Removal of the Headquarters of the Surgeon-General

The office headquarters of Surg.-Gen. M. W. Ireland of the War Department has been moved to the Munitions Building, Nineteenth and B Streets N.W.

War Risk Insurance Hospitals

Assistant Surg.-Gen. W. G. Stimpson of the Public Health Service is making a tour through the Central Western states to investigate the need for additional hospital facilities for disabled and discharged soldiers. The itinerary of the trip includes Chicago, St. Louis, San Francisco and other points on the Pacific Coast.

France Honors Dr. Judd

July 14, in the presence of the governor of Hawaii and others, Dr. James Robert Judd, Honolulu, received from the hands of Dr. Augustus Marques, consul for the French Republic, the decoration of the Legion of Honor of the French Republic on account of his services in two hospitals in France, both before and after the United States entered the World War.

Immigration and the Public Health

A return of immigration to prewar proportions entails a largely increased amount of work in the medical inspection of immigrants by officers of the Public Health Service. At the ports of New York, Philadelphia, Boston and elsewhere, special precautions are being taken to prevent the introduction of typhus fever and other epidemic diseases now prevalent abroad.

Distinguished Service Medals Awarded

The United States government has awarded the Distinguished Service Medal to the following French medical officers for especially meritorious and distinguished service which was of great consequence to the American Expeditionary Forces: Major-Gen. Alexandre Bernard Lasnet, medical inspector, French army; Brig.-Gen. Jean François Pouy, medical inspector; Gen. Jules F. L. Rouget, medical inspector; Prof. R. Roux, medical inspector and director of Pasteur Institute in France; Prof. T. Tuffier, medical inspector, and M. Wyssmans.——Lieut.-Col. Richard Derby, M. C., U. S. Army, has been awarded the Distinguished Service Medal. "As sanitary inspector of the Second Division, and in charge of the front-line hospitalization and evacuation of the wounded during the active operations of the division in the Marne area, and later as division surgeon during the Meuse-Argonne offensive, he demonstrated high professional attainments, excellent judgment and gallantry in the execution of his important duties. Due to his energy, the sanitary units under his control were amply provided with facilities for the proper care of the sick and wounded in the field. He has given services of significant worth to the A. E. F."

Conference on Venereal Diseases

The program for the All-American Conference on Venereal Diseases under the auspices of the U. S. Interdepartmental Social Hygiene Board, U. S. Public Health Service, American Red Cross and American Social Hygiene Association, to be held in Washington, D. C., Dec. 6-11, 1920, includes discussion of the problems relating to medical investigations, to education as a means of controlling venereal diseases, to law enforcement and protective social measures with individuals, and problems relating to social influences in the control of venereal diseases. Administration measures of control will be discussed widely and will include the measures adopted and enforced by federal, state and local governments in the United States, Canada, Latin America and other countries of the world. The officers of the conference are Dr. William H. Welch, Baltimore, president; Mr. John Poole, Washington, D. C., treasurer, and Drs. Thomas Storey, U. S. Interdepartmental Social Hygiene Board; C. C. Pierce, U. S. Public Health Service; Livingston Farrand, American Red Cross, and William F. Snow, American Social Hygiene Association, administrative committee.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Aug. 6, 1920.

Public Hygiene and the League of Nations

The Council of the League of Nations recently discussed the report of M. da Cunha, delegate from Brazil, on the formation of an international organization of hygiene as provided by the treaty of Versailles. The purpose of this organization is principally to advise the League of Nations in matters of hygiene; to communicate promptly recommendations designed to combat epidemics and diseases in general; to conclude international agreements bearing on hygiene and to revise existing treaties; to protect the workingman and to cooperate in this endeavor with the international labor organization and the Red Cross, and to organize medical missions on the demand of the League of Nations. This constitutes, in fact, an amplification of the first Office international de l'hygiène publique, which was created by a conference held in Rome in 1907, and an adaptation of the latter organization to the League of Nations.

The new organization will be formed (1) of a general committee of survey composed of the delegates of all the states which adhered to the Rome conference in 1907, (2) of a permanent committee consisting only of delegates of countries represented in the Council of the League of Nations, and (3) of a secretarial office. The permanent committee will consider all projects which will be submitted to the approval of the general committee, and the latter will transmit the proposals to the respective governments who will have final decision in all matters. The expenses of this new organization will be borne by the general budget of the League of Nations.

The Dangers of Table Salt

Professor Rappin, director of the Pasteur Institute of Nantes, recently read an interesting paper on the subject of "The Dangers of Table Salt," at a meeting of the Association française pour l'avancement des sciences, just held at Strasbourg. Table salt can become the starting point of dangerous changes and fermentative processes, not only in industrial food establishments but even in the kitchen itself. Salt does not inhibit the vitality of micro-organisms for the destruction of which it has been commonly used. Collected in a careless way without special precautions from mines and salt marshes, salt contains a great number of micro-organisms capable of jeopardizing the keeping qualities of foods to which it is added for the purpose of preservation. Experiments show that the anthrax bacillus resists the action of a saturated solution of salt for two days; the erysipelas bacillus and streptococcus survive after twenty days' immersion; the typhoid bacillus and the staphylococcus resist for five months; the diphtheria bacillus remains active after three weeks, and the tuberculosis bacillus even after three months. Only the colon bacillus and cholera vibrio seem to be more vulnerable.

Even after cleansing in the ordinary processes of refining, salt contains quite a number of micro-organisms. Rappin

has found, for instance, in a gram of salt from 1,300 to 38,000 bacteria and from 100 to 400 fungi. These figures are considerably greater if the examination is made on dirty or crude salt, and such salt was found to contain between 6,000 and 51,000 bacteria per gram and, in several instances, between 76,000 and 300,000, with the content of fungi varying between 150 and 700. Brines, prepared for pickling, contain even more micro-organisms. In a sample of pork brine prepared two months before, the number of colonies on the eighth day reached a total of 960,612 per cubic centimeter. Professor Rappin thinks there is no doubt that when food industries use such dirty salt, for example, for butter and cheese, they invite serious mishaps. From the point of view of hygiene, then, it would be desirable to employ in preservation of food products no salt that has not been purified and divested of all bacterial contamination.

Centenary of the Academy of Medicine

The Académie de médecine will celebrate its centenary in December next, and on this occasion Professors Chauffard, Delorme, Pinard, Vaillard, Camus, Meillère and Henriot will recount the work of the academy from 1820 to 1920. Moreover, Dr. Paul Richer, member of the Académie de médecine and of the Académie des Beaux-Arts has just engraved a beautiful commemorative medal.

Amebic Dysentery in France

Although before the war, amebic dysentery was rarely seen in France, the situation has completely changed since then, a fact to which Dr. Marcel Labbé recently called special attention. Dr. Labbé attributes this change to the following causes: 1. A great number of French soldiers on duty with the forces in the Orient returned in an infected condition. 2. Colonial troops on duty in Europe brought dysentery with them. 3. Systematic examination of the stools has led to the disclosure of isolated and autochthonous cases, probably of long standing, in various districts. Be that as it may, amebic dysentery represents today an infection to be reckoned with in France, being found even among elements of Parisian society the members of which have never been in the colonies and have not come in contact with colonial troops. Besides this, it is probable that the war has favored dissemination of the disease through the agency of discharged soldiers acting as carriers of the amebae, and that the foci of amebiasis established in city and country will continue to multiply. It becomes the concern of individuals and of society in general, then, to ferret out these foci promptly.

LONDON

(From Our Regular Correspondent)

July 30, 1920.

Vital Statistics for 1918

The report on the vital statistics of England and Wales in 1918 has recently been issued by the registrar-general, Sir Bernard Mallet. The year was extraordinarily healthy, notwithstanding the exceptional prevalence of influenza toward its close. The civilian deaths numbered 587,828, a rate of 17.6 per thousand of the estimated population, which rate is reduced to 17.1 by correction for age distribution of the living. The extent of the reduction was increased during the war by the withdrawal from the civilian population of men at an age when mortality is below the general average. But this effect has been masked by the high influenza mortality of 1918 which occurred at these ages. Of the total deaths, only 10.5 per cent. were those of infants under 1. This is by far the lowest rate of infant mortality recorded, the percentage so recently as 1901-1910 having been 22.6. The change is partly due to increased influenza fatality at the higher ages, but mainly to the rapid fall of infant mortality, and to reduction in births. In terms of total births, infant mortality in 1918 was equal to 97 per thousand or 9.3 per cent. below the average in the ten preceding years. It is one of the lowest rates on record, only three previous years having infantile mortality of less than 100 to 1,000 births. The provisional figures for 1919 show a rate of 89 per thousand, or 2 per thousand below that of 1916, the lowest rate yet attained. The comparison, however, is affected by the fact that in 1916 the birth rate was falling, while in 1919 it was rising; and when the necessary allowance has been made for these movements, the rates for the two years appear to be about equal.

As compared with the preceding year, typhoid, measles and diarrhea showed a lower mortality, while scarlet fever, diphtheria and whooping cough showed a higher. The deaths from typhoid numbered 950, of which sixty-five occurred among noncivilians. The resultant mortality, 26 per million living, is the lowest ever recorded in this country. To some extent the fall is due to absence, on foreign service, of a large number of men of the ages at which typhoid mortality is highest. The remarkable fall from 300 deaths per million living in 1869 to 26 in 1918 may be followed in a new table, which indicates that the loss of life from this disease is now only one third of what it was even ten years ago. The disease is rapidly losing its significance as a cause of death in this country.

The influenza epidemic, which commenced about midsummer in 1918, increased the deaths from this cause from 5,000 to 10,000 usually recorded in a year to no fewer than 112,329, the death rate being 3,129 per million living. In addition, the epidemic led to a large increase in the loss of life assigned to diseases of the lungs, including tuberculosis. The total deaths attributable to influenza have been estimated at 132,000.

Tuberculosis in its various forms accounted for 58,073 deaths, or 2,139 more than the previous year. The mortality among the civilian population amounted to 1,694 per million, a figure in excess of that recorded for any year since 1904. The increase was probably due to the epidemic of influenza, had it not been for which the tuberculosis mortality would probably have shown some reduction on that of 1917. The mortality from influenza among sufferers from phthisis greatly exceeded that of the general community. A remarkable increase in deaths from tuberculosis in lunatic asylums has been continued throughout 1918, when the fatal cases amounted to 5,605, against 4,189 in the previous year, and an average of 1,800 in the three years 1912-1914. This increase has occurred notwithstanding a decline in the number of inmates. It is ascribed mainly to reduction in quantity and deterioration in quality of food (particularly flour). Other causes of a secondary importance are deterioration of the asylum staffs and want of space for isolation, owing to the evacuation of some asylum buildings for war purposes, and consequent congestion of the remainder. Cancer mortality, if stated in the form of an ordinary crude death rate, was higher than in any other year; but if comparison is made by means of standard rates which allow for the abnormal age constitution of the male civilian population, there is an appreciable decrease from the previous year's record.

The Influenza Pandemic in India

The report of Lieutenant-Colonel Forster of the Indian Medical Service, sanitary commissioner for the Punjab, which contains an estimated population of 20,000,000, gives a graphic account of the ravages of the pandemic of influenza in 1918. The death rate of the province rose to 81 per thousand, the highest recorded since 1867. The excess was entirely due to influenza. As occurred in England, the disease selected

adults for its victims and was complicated by a peculiarly fatal type of pneumonia. From October 15 to November 8, the state of the province was such as to defy adequate description. The hospitals were choked so that it was impossible to remove the dead quickly enough to make room for the dying; the streets and lanes of the cities were littered with dead and dying people; the postal and telegraph services were completely disorganized; the train service continued, but at all the principal stations dead and dying people were being removed from the trains; the burning ghats and burial grounds were literally swamped with corpses, while an even greater number awaited removal; the depleted medical service, itself sorely stricken by the epidemic, was incapable of dealing with more than a minute fraction of the sickness; nearly every household was lamenting a death, and terror and confusion reigned everywhere. The great malaria epidemic of 1908 and the worst years of plague fade into insignificance beside this epidemic, which in three months, October-December, killed 962,937 people. This mortality is equivalent to 45.8 per thousand of the estimated population. The European population escaped lightly. Among commissioned officers and their families and for Europeans generally, the mortality was trifling, well under 5 per cent. of the cases. For the Indian population of the better class, and among those provided with medical aid, it is estimated at about 6 per cent.; among the poorer classes "anything from 50 per cent. upward." Among the jail population in the province there were 4,475 cases and 520 deaths from influenza, giving a case mortality of 11.6 per cent. Rural areas suffered more than the towns, this being due to the two circumstances that for practical purposes the rural areas, even in normal times, are without qualified medical aid, and the rural population is unable to benefit from communal effort—itself energized by competent directing authority—to anything like the same extent as the urban population.

Increased Workmen's Compensation

The workmen's compensation act of 1906 rendered employers liable to pay compensation for injuries to workmen arising in or out of their employment. A committee appointed by the government has recommended large increases, which will no doubt be adopted, and also state supervision of the rates charged by insurance companies with a view of restriction of their profits. Not more than 30 per cent. of the premium income is to be expended in profits, management expenses and commission. Insurance, which was previously optional, is with certain exceptions made compulsory on employers. It is proposed to bring within the scope of the act large new classes of persons: 1. Persons employed otherwise than by way of manual labor whose remuneration is at a rate not exceeding $1,750 a year, instead of $1,250 under the existing act. 2. Casual employment for the purpose of any game or recreation when the persons employed are engaged or paid through a club. Otherwise casual employment is to remain as at present. 3. Taxicab drivers, who, on the ground that they are the bailees of their cabs rather than the servants of the cabowner, are at present excluded. 4. Shore fishermen employed in the trawler industry. 5. Shore fishermen employed in the herring or other fishery to be brought within the act by order of the commissioner, if he is satisfied after public inquiry that they ought to be included. 6. All persons ordinarily resident in this country who are employed or are traveling in the course of their employment in a British ship.

Benefits are to be much increased. In fatal cases the benefits for total dependents are to be on the following scale: 1. When a widow is left, $1,250. 2. When the person killed leaves a child or children, a weekly allowance of $2.50 for the first, $1.75 for the second, and $1.50 for every other child. The allowances are to be provided by the payment by the employer into a central fund of $2,500 in every case of a workman's dying and leaving a child or children under 15 years of age. 3. When other dependents are left, in addition to the benefits mentioned above a further sum of $2,500. 4. When dependents are left, not including widow or children, $1,250. The maximum liability for compensation in respect of a workman's death will thus be $4,000, which compares with a present maximum of $1,500. The provision for investing money for children is new. In the case of partial dependents, a sum representing the value of the late workmen's contributions to the support of the partial dependents shall be payable, with a maximum of $1,250. Burial and medical expenses are to be increased to $75. The original maximum benefit payable in the cases of total incapacity was $5 a week. In September, 1917, this was raised to $6, at which rate it was continued until the end of 1919. January 1 last the maximum became $9. It is now proposed that the total payment shall be 66⅔ per cent. of the average weekly earnings, with a maximum of $15. In the event of partial incapacity, payment is to be on the basis of two thirds of the difference between the average weekly earnings before the accident and the average amount the workman is earning or is able to earn in some suitable employment after the accident. Provision is also made that when the workmen can show that the rate of wages generally paid by employers to workmen in that occupation in the district at the time of his accident has at any time thereafter increased by upward of 20 per cent., he is at liberty to claim compensation on the basis of the difference between what he is at present earning or able to earn and what he would at that time have been earning or able to earn, had he received the benefit of such rise; the employer to be entitled to make a corresponding application for reduction in respect of a wage decrease. Any medical and surgical aid necessary in addition to the medical treatment already available under the national health insurance acts is to be provided for the injured workman at the cost of the employer under a comprehensive scheme to be worked out by the proposed commissioner in cooperation with the ministry of health.

The American Hospital in London

Considerable progress has been made in establishing the American Hospital in London, mentioned in previous letters. The hospital will be incorporated under the laws of the state of New York, and a campaign will be opened to raise an endowment fund of several million dollars. The American Hospital will give medical aid by modern American and British methods, irrespective of nationality or creed. It will act as the American headquarters in Europe for all Americans who seek a further and specialized medical education overseas. The plans of the building include laboratories, libraries and other facilities for graduate medical study, with conference and lecture halls. The hospital will be managed by joint American and British committees, but the London council of management will consist, as to three fourths of its members, of American citizens. The presidency in the United States has been accepted by Hon. William H. Taft, the Earl of Reading having consented to act as president in this country. The board of governors includes the best known members of the American colony in London. Two medical committees have been appointed to act in each country. That in the United States consists of Drs. G. W. Crile, W. J. Mayo, C. H. Mayo, A. J. Ochsner, Rudolph Matas and Franklin Martin. This committee will have the duty of nominating the American members of the staff, and will work in close conjunction with the English medical committee consisting of Sir Arbuthnot Lane, Sir Humphry Rolleston, Sir John Bland-Sutton, Sir John Y. MacAlister and Mr. Philip Franklin.

The Imperial Entomological Conference

Under government auspices the Imperial Entomological Conference, consisting of delegates from various parts of the British Empire, has met in London. The subjects for discussion were mainly economic: "Legislation in Regard to Plant Pests in the British Empire," "Cotton Pests," "Organization of Entomological Work in the Sudan," "The Education of Economic Entomologists," "The Tsetse-Fly Problem," "Resistance of Plants to Insect Attacks," "Insect Pests of British Guiana," "Insect Pests of Trinidad," "Artificial versus Natural Methods of Control of Insect Pests," and "Insects in Relation to Afforestation." The conference has arisen in connection with the Imperial Bureau of Entomology, which was founded by the Colonial Office at the beginning of the century. It was decided that representatives from all places where economic entomology is studied should be invited to attend a periodic meeting in London. The bureau is financed by the various governments, who contribute annually sums of money ranging from $2,500 a year from the home government, Canada, India and Nigeria, down to $125 a year from the Seychelles and Newfoundland, and $100 from Malta.

The bureau issues two quite important publications. The first is the *Review of Applied Entomology,* a monthly periodical divided into Series A and B, the former dealing with plant injuries caused by insects, the latter with insects harmful to man and domestic animals. This review contains abstracts from current literature from all parts of the world, and forms a very complete survey of applied entomology throughout the world. By it, medical officers, veterinary surgeons and entomologists in the remotest outposts of the empire are informed of the latest developments in their subjects. The bureau also publishes the *Bulletin of Entomological Research.* This consists largely of papers founded on the material sent home from the numerous collectors, and papers, chiefly of a systematic and bionomic character, contributed by various zoologists and other investigators. Perhaps the most important work the bureau undertakes is the identification of insects. This is a colossal task. Since 1913, no fewer than 1,218 collections have been received, comprising more than 300,000 insects, of which about one third were blood sucking, and the number of specific identifications involved has amounted to more than 20,000. Most of this work has been done by the staff, but various experts have been from time to time called in and have readily given their special knowledge to the bureau. Named collections of injurious insects have been sent out to nearly forty different institutions. Further, much progress has been made in the preparation of a catalogue of plant pests throughout the world. Another duty the bureau has undertaken is to train young entomologists for work in the field—mainly in the American field—and this they have been able to do through the generosity of the late Mr. Andrew Carnegie. The bureau has also sent out special expeditions dealing with such subjects as the habits and distribution of the tsetse-fly, which conveys sleeping sickness, blood-sucking flies of the family *Tabanidae* (horse-flies, or gadflies), and the occurrence of *Stegomyia* in the East, which, owing to the opening of the Panama Canal, may become a danger to eastern Asia, as this mosquito is a carrier of yellow fever.

Anthrax in the Navy

At the recent Brussels conference on public health, Surg.-Capt. Bassett Smith read an interesting paper on the occurrence of anthrax in shaving brushes. He pointed out that owing to the war the supply of shaving brushes was cut off. Previously manufacturers realized the importance of not making brushes from hair derived from Russian, Japanese or Chinese sources, as the hair from these countries was infected with anthrax in a large proportion of cases. Some of the small manufacturers starting during the war to manufacture brushes in England, being ignorant of this danger, used the Chinese source of supply. The result was that a number of anthrax-infected brushes were now on the market. Six cases occurred in the navy, with four deaths. Those who died showed marked cerebral symptoms, and were diagnosed in the first instance as having "cerebrospinal fever"; but the anthrax bacillus was later recovered from the cerebrospinal fluid.

The violent nature of the cases was perhaps due to the original infection being on the face. Preventive measures consisted in bacteriologic examination of all samples of hair or brushes, and rigid discarding of any consignment in which even one infected brush is found. Routine sterilization of brushes should also be carried out. In previous letters, cases of anthrax in civil life due to the use of Japanese shaving brushes have been reported, and the government has in consequence prohibited their importation.

MEXICO CITY

(From Our Regular Correspondent)

Aug. 15, 1920.

Plague and Yellow Fever

As far as plague is concerned, conditions are quite satisfactory at Vera Cruz, since no new human cases have occurred besides the fifty-eight already mentioned. At the pesthouse there remain only four patients. The rat plague epizootic is apparently decreasing, as few of the trapped animals are found infected by *B. pestis.* The president of the department of public health has ordered the reopening of the port, although some precautionary measures will still be enforced, as the detention and examination of notoriously unclean persons, who may carry fleas; forbidding the taking out of cats through Vera Cruz, as they might contain the same parasites; and declaring antiplague vaccination optional. Ships must remain at a distance from the wharf, the cables will be properly protected, and fumigation of shipholds will be compulsory before leaving port. It has just been ordered that all cellars must be made rat-proof in a month, and the antirodent campaign will be continued indefinitely.

In the port of Tampico another case of plague was discovered two days ago. The campaign is being pushed in order to prevent the spread of the disease.

As regards yellow fever, I cannot speak so favorably. The disease has increased, and fifty-two cases with twelve deaths have been reported up to yesterday. Possibly not all these cases are real "fever," but the majority undoubtedly are. There have occurred at Mérida two other cases of the same disease and three in the port of Progreso. In view of the alarming increase of the epidemic, the department of public health ordered Dr. B. Vasconcelos to proceed to Vera Cruz to make an inspection and report on the causes of the reappearance and spread of yellow fever. As a result of his report, energetic measures have been adopted. The personnel in charge of the campaign at Vera Cruz was changed, and Dr. Manuel Macías, who was in charge of the work in Dr. Licéaga's time, has again been made chief of this service. An engineer has been sent to carry out the sanitary works considered most urgent, and the number of sanitary inspectors has been increased in order to detect all patients and water containers not properly protected. The number of "oilers" has also been increased. In view of the fact that yellow fever was eradicated twelve years ago, the people have grown careless with regard to water containers, and a campaign of publicity will be carried out through the newspapers, public lectures and films. Dr. Carl Michel of the U. S. Public Health Service has promised to obtain some appropriate

films from his country. It has been advised to continue the use of neo-arsphenamin in patients as it has given encouraging results, and the campaign will be intensified until the epidemic is completely eradicated. It may be well to mention that the presence of yellow fever was confirmed not only by purely clinical data, but also through infecting a series of guinea-pigs with the patient's blood. In one of these animals there was found in the blood and liver a parasite, conforming to the characters of Noguchi's leptospira, which, though not studied culturally thus far, is considered identical. These identification studies have been carried out by Dr. Pedro Pérez Grovas, in charge of the plague laboratory established recently.

The preparation of the bacterial vaccine tried by Noguchi on guinea-pigs has been begun; and while no accurate information is available as to the results obtained on human patients in Peru, it is hoped that it may be a powerful aid against yellow fever. Some persons who had to visit the infected port asked to be vaccinated, and for this purpose there was employed a small quantity of vaccine that Noguchi presented when he was last here.

Opium Traffic

The police seized in an express office more than 500 kg. of "cooked" opium, received from Manzanillo, and shipped to a person with a fictitious name, who has not been identified. This opium has an estimated value of 200,000 pesos and has been placed at the disposal of the public health department by orders of the president. It is assumed that this opium was intended, as on previous occasions, to be smuggled into the United States, as in this country there are not many opium addicts.

New Scientific Society

There has been organized the Mexican Society of Biology which for the time being will hold its meetings at the headquarters of the National Academy of Medicine. The officers of the association are: president, Dr. D. Fernando Ocaranza; treasurer, Dr. Eliseo Ramírez, and secretary, Dr. Isaac Ocheterena. The society has ten charter members, practically all physicians. The address is Av. del Brasil, No. 33, Mexico.

Scientific Delegation to Latin America

Dr. D. Sebastián Recasens, a prominent Spanish physician, and Dr. D. Florestán Aguilar, King Alphonso's dentist, are planning a trip of cultural propaganda in Latin America, during which they will visit Argentina, Chile, Mexico and other countries on this hemisphere. At the same time they will invite American physicians to attend the Spanish-American Medical Congress that will meet in Seville, and try to establish personal relations between Spanish and Latin American physicians.

Personal

The Academy of Medicine has just received as a member in the section of legal medicine Dr. F. Castillo Nájera, who presented a thesis on hematologic investigations on the cadaver, in order to determine whether traumatic lesions presented by dead bodies were caused in vita or postmortem. ——Dr. Carl Michel has arrived from Vera Cruz for a conference with the head of the department of public health on matters relating to sanitary conditions at the above mentioned port. Dr. O. González Fabela, who until recently was in charge of the yellow fever campaign at Vera Cruz, arrived with Dr. Michel.——Dr. Nicolás Remírez de Arellano has resumed his functions as a member of the board of public health. He had obtained this position many years ago in open competition and was deprived of it by the previous government. He had also been professor and dean of the School of Medicine.

Marriages

SAMUEL H. JAMES, Major, M. C., U. S. Army, Whipple Barracks, Prescott, Ariz., to Miss Afra Myron of Glenwood, Minn., recently.

GEORGE E. PICKETT, Lieutenant, M. C., U. S. Army, to Miss June D. Oglesby of Salt Lake City, at Washington, D. C., August 19.

RUSSEL DAVID BUSSDICKER, Lieutenant, M. C., U. S. Navy, Philadelphia, to Miss Lulu Blanche Gillis, at Kinsman, Ohio, August 11.

CLARENCE M. DARGAN, Beverly Hills, Chicago, to Miss Madge Grove of Pontiac, Ill., August 3.

ROWLAND W. BACHMAN, Allentown, Pa., to Miss Rose Elizabeth Johnson of Easton, Pa., August 4.

JOHN W. WILCE, Columbus, Ohio, to Miss Minerva W. Conner of Cincinnati, August 2.

Deaths

Emil Heuel ⊕ New York; University of the City of New York, 1883; aged 57; a member, secretary, vice president and president of the American Electro-Therapeutic Association; a Fellow of the New York Academy of Medicine; visiting surgeon to St. Joseph's, St. Luke's and Polyclinic hospitals; Lieutenant, M. C., N. Y. N. G.; a specialist in diseases of the nose and throat; died, August 11.

Daniel J. Phelan ⊕ San Jose, Calif., formerly of New York; Bellevue Hospital Medical College, 1895; a specialist in pediatrics; aged 56; visiting physician to St. Luke's, St. Elizabeth's and Bellevue hospitals, who had been operated on twice at the O'Connor Hospital, San Jose; died, August 9.

Thomas H. McKee ⊕ Buffalo, N. Y.; University of Buffalo, N. Y., 1898; aged 57; Major, M. C., U. S. Army, and discharged November 9, 1918; lecturer on surgical anatomy and dean of the faculty of his alma mater; president of the Roswell Park Club; died, August 1, from pneumonia.

Kirby Curtis Garner, St. Louis; Beaumont Hospital Medical College, St. Louis, 1901; aged 41; a member of the Missouri State Medical Association, died in the St. Louis City Hospital, August 5, from injuries received in a collision between his automobile and a motorcycle.

John Kenwood Dawson, Sterling, Colo.; Queens University, Kingston, Ont., 1903; aged 45; a member of the Colorado State Medical Society; a veteran of the war with Spain; president of the Northeastern (Colo.) Medical Society in 1918; died, August 8, from heart disease.

Sherman Cooper, New York; New York Medical College, New York, 1857; for sixty years a practitioner of Westfield, N. J.; aged 87; surgeon of U. S. Volunteers during the Civil War; died at the home of his daughter in New York, August 9.

Henry Elsifer Mereness, Albany, N. Y.; Albany (N. Y.) Medical College, 1874; aged 71; a member of the Medical Society of the State of New York; acting assistant surgeon, U. S. P. H. Service since 1880; died, August 4, from heart disease.

William Monroe Handleman, New York; Long Island College Hospital, Brooklyn, 1911; aged 30; Lieutenant, M. C., U. S. Army, and discharged May 14, 1919; attending physician to the Hebrew National Orphan Asylum; died, August 8.

Redfield Benjamin West, Guilford, Conn.; University of the City of New York, 1879; aged 72; a member of the Connecticut State Medical Society, state chemist since 1893; health officer of Guilford since 1897; died, July 12.

George David Heist ⊕ Philadelphia; Jefferson Medical College, 1917; aged 35; Lieutenant, M. C., U. S. Army, and discharged June 6, 1919; died in the Jewish Hospital, Philadelphia, August 8, from cerebrospinal meningitis.

⊕ Indicates "Fellow" of the American Medical Association.

Charles Earl Daily, Lake Taneycomo, Mo.; Central College of Physicians and Surgeons of Indianapolis, 1898; aged 50; died at a hospital in Springfield, Mo., June 8, from peritonitis, following an operation for appendicitis.

John W. Howell, Bryan, Texas; Southern Medical College, Atlanta, Ga., 1883; aged 61; chairman of the board of directors of the First National Bank of Bryan; died in a hospital in Galveston, Texas, August 6.

Peter H. Heller, Pueblo, Colo.; Georgetown University, Washington, D. C.; aged 74; a member of the Colorado State Medical Society; physician to the Sacred Heart Orphanage; died, August 3, from nephritis.

Beniah L. Lewis, Harrington, Del.; University of Pennsylvania, Philadelphia, 1873; aged 72; once a member of the Delaware state senate and speaker of the house of representatives; died, July 30.

Charles W. Radway, Mexico, N. Y.; New York Homeopathic Medical College, New York, 1876; a member of the Medical Society of the State of New York; died, August 2.

Lorenzo John Locy ⊕ Davison, Mich.; University of Michigan, Ann Arbor, 1881; aged 64; died in the Goodrich (Mich.) General Hospital, August 16, from cerebral hemorrhage.

Thomas Upham Coe ⊕ Bangor, Me.; Jefferson Medical College, 1861; aged 82; a large timber owner; died at his summer home in Kineo, Me., July 31, from pneumonia.

Roselette Bird, Beaver Dam, Wis.; College of Physicians and Surgeons, Keokuk, Iowa, 1894; aged 71; died in Waukesha, Wis., July 10, from bronchopneumonia.

Ernest Theodore Kegel, Gainesville, Fla.; State University of Iowa, Iowa City, 1896; aged 45; a member of the Florida Medical Association; died, August 11.

George W. Beach, Apalachin, N. Y.; Yale University, New Haven, Conn., 1864; aged 81; died in Binghamton, N. Y., June 10, from senile debility.

George Eliot Klingerman ⊕ Oakland, Calif.; George Washington University, Washington, D. C., 1910; aged 32; died in Glendale, Calif., May 27.

Orville B. Thompson, Oklahoma City; Bellevue Medical College, 1866; aged 79; died at the home of his daughter in Ardmore, Okla., July 30.

Samuel George Barton, Toronto, Ont.; University of Victoria College, Cobourg, Ont., 1887; aged 58; died, April 21, from heart disease.

William C. Lewin ⊕ Buffalo, N. Y.; Niagara University, Buffalo, N. Y., 1895; aged 57; a specialist in ophthalmology; died, August 1.

Frederick A. Strasenburgh ⊕ Avon, N. Y.; University of Buffalo, N. Y., 1886; aged 57; died, August 2, from cerebral hemorrhage.

Karl J. Severance ⊕ Keeseville, N. Y.; Hahnemann Medical College, Chicago, 1889; aged 54; died, July 28, from meningitis.

Stanley Davis Terry, New York; College of Physicians and Surgeons in the City of New York, 1875; aged 73; died, August 8.

James F. Sherman, Rochester, N. Y.; University of Buffalo, N. Y., 1885; aged 58; died at his summer home, White City, August 4.

Edward W. Crecelius, Norwalk, Ohio; Cleveland Homeopathic Medical College, 1900; aged 48; died, July 10, from tetanus.

Mary E. Smith, Elk Run, Pa.; Homeopathic Hospital College, Cleveland, Ohio, 1887; aged 72; died, July 30.

John A. Bland, Edinburg, Ind.; Cincinnati College of Medicine and Surgery, 1865; aged 82; died, August 12.

Jay D. Van Wirt, Johnsonville, N. Y.; Albany (N. Y.) Medical College, 1883; aged 61; died, July 22.

Henry C. Chapin, Oil City, Pa.; University of Wooster, Cleveland, 1878; died, August 3, from asthma.

John L. Butterworth, Nashville, Tenn.; University of Nashville, Tenn., 1888; aged 51; died, August 2.

William J. Karlsioe, New York; University of Louisville, Ky., 1893; aged 71; died, August 8.

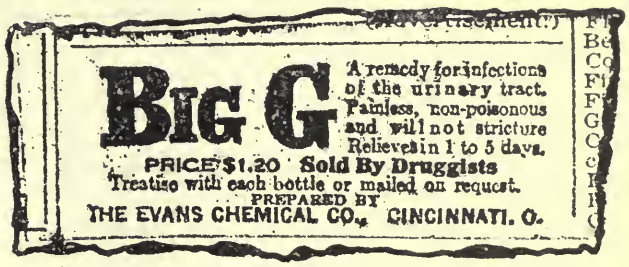
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

MORE MISBRANDED NOSTRUMS AND DRUG PRODUCTS

Tonic Remedy.—Ten boxes of this preparation were consigned in November, 1918, by Teele & Co. of San Francisco, and were seized by the federal authorities in Seattle. The preparation, a nostrum of the alcoholic type, was labeled "A Remedy for Chronic Diseases, Nervous System, Blood, Stomach, Kidney Troubles and Rheumatism" and was said to be "Prepared by Dr. Yan Nin Tong, Canton, China." It was declared misbranded because the label failed to show the quantity or proportion of alcohol present and because the therapeutic claims were false and fraudulent. No claimant appeared and the court adjudged it condemned and forfeited and ordered that it should be destroyed by the United States marshal.—[*Notice of Judgment No. 7009; issued July 7, 1920.*]

Big G.—In January, 1919, the Evans Chemical Co., Cincinnati, Ohio, shipped a quantity of "Big G," which was labeled in part "A Compound of Borated Goldenseal." Analyzed by the federal chemists, it was shown to consist essentially of a watery solution of boric acid and berberin. There was no hydrastin present. The stuff was declared adulterated because, while it was labeled borated goldenseal, it contained no borated goldenseal and therefore its strength and purity fell below the professed standard and quality under which it was sold. It was declared misbranded because it was falsely and fraudulently represented that the product was effective in the treatment, cure or prevention of unnatural discharges of the urinary organs, gonorrhea, gleet, stricture, spermatorrhea, bubo, gonorrheal cystitis, balanitis, leukorrhea, whites and a number of other diseases "when in truth and in fact the article did not contain any ingredient or combination of ingredients capable of producing the effects claimed for it." In July, 1919, no claimant having appeared, the court condemned the property and ordered the United States marshal to destroy it.—[*Notice of Judgment No. 7210; issued August 16, 1920.*]



"Plantation Sarsaparilla," "Magic Eye Salve" and "Femenina."—The Van Vleet-Mansfield Drug Co., Memphis, Tenn., shipped in May, 1918, from Tennessee to Alabama and Mississippi, a quantity of "Plantation Sarsaparilla," "Magic Eye Salve" and "Femenina." The federal chemists reported that "Plantation Sarsaparilla" was found to consist essentially of potassium iodid, alcohol, plant material, sugar and water. This was falsely and fraudulently represented as a cure for chronic rheumatism, lumbago, syphilis, scrofula, cancer, pimples, congestion, chills, etc. The "Magic Eye Salve," according to the chemists, was found to consist essentially of zinc oxid, benzoic acid and petrolatum. This was labeled as a cure for all diseases of the eye both acute and chronic. These claims, of course, were declared false and fraudulent. "Femenina" was reported by the federal chemists to consist essentially of alcohol, sugar, water and unidentified material with indications of valerian. It was falsely and fraudulently

represented as a cure for diseases peculiar to females, for making women strong and healthy and giving them full sexual capacity, as a cure for falling of the womb, nervousness, "hysterics," headache, habitual constipation, etc. In September, 1919, the Van Vleet-Mansfield Drug Co., pleaded guilty and was fined $150 and costs.—[*Notice of Judgment No. 7144; issued July 27, 1920.*]

Balsam Copaiba, Salol Compound, and Methylene Blue Compound.—The Evans Drug Mfg. Co., Greensburg, Pa., shipped in January and February, 1918, a number of boxes of capsules, some of which contained Balsam Copaiba, some contained Methylene Blue Compound, and others contained Salol Compound. Analyses by the Bureau of Chemistry showed that the Copaiba capsules were deficient in quantity from 13 per cent. to 23 per cent. and that the contents consisted of approximately 50 per cent. cotton seed oil. The Methylene Blue Compound capsules were deficient in quantity between 25 per cent. and 28 per cent. and the contents consisted of approximately 50 per cent. cotton seed oil. The Salol Compound capsules consisted of a mixture containing from 50 per cent. to 60 per cent. cotton seed oil. They were declared adulterated because they were below standard in strength and purity and they were declared misbranded because of the false and misleading statements regarding the contents. No claimant appeared for the property and on June 30, 1919, the court condemned the product and ordered the United States marshal to destroy it.—[*Notice of Judgment No. 7177; issued August 13, 1920.*]

Pabst's Okay Specific.—In March, 1919, the Pabst Chemical Co., Chicago, shipped a quantity of "Pabst's Okay Specific" which was seized by the federal authorities because it

YOUNG MEN!
For private diseases get Pabst's Okay Specific. It is the ONLY medicine that will do the work in each and every case, no matter how serious or of how long standing it may be. Results from its use will astonish you. It is absolutely safe, prevents stricture, and can be taken without inconvenience and detention from business. PRICE $3.00
For sale by all reliable druggists or sent prepaid by express, in plain wrapper, on receipt of price, by
Circular mailed on request. Pabst Chemical Co., Chicago, Ill.

was misbranded. The preparation was analyzed by the federal chemists who reported that it consisted essentially of volatile and fixed oils, plant extractives, including cubebs, balsam of copaiba and buchu and over 29 per cent. of alcohol. The stuff was declared misbranded because the claims on the trade package represented that the article was effective for the treatment, remedy or cure of gonorrhea, gleet, urethritis and chronic mucous discharge. These claims were declared false and fraudulent because the article did not contain any ingredient or combination of ingredients capable of producing the effects claimed. In June, 1919, no claimant having appeared, the court ordered the stuff condemned and destroyed by the United States marshal.—[*Notice of Judgment No. 7250; issued August 16, 1920.*]

Liebig's Diarrhoea Cordial.—Parker-Blake Co., Ltd., New Orleans, shipped in July, 1918, a quantity of Liebig's Diarrhoea Cordial. The government chemists reported that this product was found to contain ⅛ grain of morphin sulphate to each fluidounce and 6.27 per cent. of alcohol by volume and to consist essentially of a solution of morphin sulphate, catechu, tannin, oil of cassia, oil of peppermint, sugar, alcohol and water. It was declared misbranded, first, because it was falsely and fraudulently represented as a remedy for cholera and dysentery and, second, because it was falsely and misleadingly represented as a product that "may be taken with perfect safety by infants while teething," although the stuff contained morphin sulphate. In June, 1919, the Parker-Blake Co., Ltd., pleaded guilty and was fined $10.—[*Notice of Judgment No. 7143; issued July 27, 1920.*]

Correspondence

"DISEASE TRANSMISSION AND THE SCHOOL"

To the Editor:—My article (*Weekly Health Review*, May 29, 1920, published by the Detroit Department of Health), to which Dr. Strode referred in The Journal last week, page 557, was a review of the age distribution of certain diseases in Detroit during the calendar year 1919. The percentage of cases by age groups from 1 to 9 was given, as well as a summary which indicated that there had occurred prior to the tenth year of age 70 per cent. of all scarlet fever, 62 per cent. of diphtheria, 89 per cent. of measles, 96 per cent. of whooping cough and 83 per cent. of chickenpox. In all but whooping cough the greatest amount of disease occurred at 6 years. The point was made that, although the child beginning school showed more disease than at other ages, this did not necessarily mean that the school was responsible for more disease, but rather that the school revealed more disease. To support this contention, it was pointed out that the increase in the sixth year over the fifth year was no greater in most instances than the increase of the fifth over the fourth or the fourth over the third year or the second over the first year.

If the school were primarily responsible for spreading communicable disease, we should naturally expect a marked increase in disease at school age, an increase greatly in excess of the increases from year to year among preschool children. Such a marked increase among those entering school did not occur in Detroit in 1919. The figures on which the conclusions were based represented 2,664 cases of scarlet fever, 3,576 of diphtheria, 1,773 of measles, 860 of whooping cough and 927 of chickenpox.

I maintain that with medical and nursing service, such as is provided to the school by the modern city department of health, the influence of the school in spreading disease need be no greater than the influences at work among children at home or at play. City children have ample opportunity for contracting disease by contact with other children outside the school. These opportunities are so multiple that the opportunity offered by contact in the schools makes little, if any, difference. The influence of contact through school attendance in spreading disease is offset by efficient inspection to eliminate the sick in the early stages of the disease.

The reason for stating that the school reveals more disease is founded on the work of the nurses. In October, November and December, 1919, our nurses found in the schoolroom 22 cases of scarlet fever, 8 of diphtheria, 14 of whooping cough, 9 of measles, 15 of chickenpox and 6 of mumps. By going to the home to investigate suspicious absences from school, the nurses discovered 21 cases of scarlet fever, 13 of diphtheria, 26 of whooping cough, 135 of measles, 45 of chickenpox and 2 of mumps. Many of these cases would never have come to the attention of the health department but for the vigilance of the nurses at the school.

Nearly 50 per cent. of Detroit's population was born abroad. Many of the foreign born do not call a physician at times of illness. During January, fourteen deaths occurred from measles, and only three of the number had been reported as cases to the health department. In ten cases the physician had been in attendance less than five days prior to the death, or usually not till pneumonia had developed. The failure to report was thus due mainly to the fact that the patient was not being attended by a physician. Consequently, many cases of disease exist and remain unreported. However, when a child of school age is sick, the fact is soon revealed. Reports made to the health department will be more complete for children of school age than for those below.

It is quite conceivable that in rural communities with families widely scattered and without adequate medical inspec-

tion, the school serves as an important center for the transmission of communicable disease. This need not be true with efficient medical inspection.

Dr. Strode offers, as supporting evidence that the school spreads disease, the morbidity records for Pennsylvania by months. Disease is high in the months when school is open. It is lowest in the summer, when the schools are closed. This fluctuation is not peculiar to Pennsylvania. It is common to the United States as a whole. If there were no seasonal changes, we should suspect the school; but climate, weather and season play a great part in the disease fluctuation. Scarlet fever is almost an unknown quantity in tropical climates, and yet children go to school.

Scarlet fever, diphtheria and measles are low in Los Angeles and New Orleans. They are high in colder northern cities.

Dr. Strode believes that the prevalence of children's diseases during the school session incriminates the school. Pneumonia is likewise greater during the school session. Lobar pneumonia is not a child's disease. Lobar pneumonia is a disease of adults. It varies with the seasons, as do scarlet fever and diphtheria, and yet the school influence is wanting.

In view of the fact that such a great amount of minor contagion (meaning measles, whooping cough and chickenpox, as distinguished from scarlet fever and diphtheria) occurred under 10 years of age, I offered the comment that the "exclusion from school of children above 10 years or at least 12 years, because a younger brother or sister had some minor contagion, would hardly justify the time lost from school." It is the custom in many cities to exclude from school all children in families where there is communicable disease, particularly if the previous disease history of the well children is not known. It is assumed that they are susceptible or dangerous as possible carriers, and they are kept from school as a safeguard to other children. In minor contagion where an isolation of the sick person has been established, it would seem to be the wiser course to give the well children in the household the opportunity of continuing at school, having them report each morning to the nurse or physician. If suspicious symptoms appear, then exclusion is in order. If not, the children remain at school. By this procedure many days of unnecessary absence from school will be avoided.

GEORGE T. PALMER, D.P.H., Detroit.
Epidemologist, Detroit Department of Health.

"WHY PROPRIETARIES FLOURISH"

A Pharmacist's Point of View

To the Editor:—The experience of Dr. Eggleston and his colleagues (described by Dr. Eggleston in THE JOURNAL, August 21, p. 558) is a severe arraignment of present day pharmacy. Briefly stated, the conditions are: 1. Instead of prescribing pharmacopeial drugs and depending on the pharmacist to compound the prescriptions, a very large proportion of the medical profession prescribes the ready-made tablets, pills, elixirs and what-not of the pharmaceutical houses or the shotgun mixtures exploited by pharmaceutical specialty concerns. 2. As a result of these conditions, the pharmaceutical houses pay little attention to the manufacture of official pharmacopeial preparations, but "push" their own "formulas." Also, because of the rare demand for pharmaceutical training, the present day pharmacist all too often devotes his energy to the promotion of sales of cigars, soda water and toilet articles rather than to the practice of professional pharmacy.

How physicians become dependent on pharmaceutical houses for the formulation of their prescriptions is a story that has been told repeatedly in THE JOURNAL. To some extent these conditions are being changed through better instruction in medical schools and by the efforts that are being made by the Council on Pharmacy and Chemistry. It is a pity, though, that in the meantime men with thorough pharmaceutical training and high professional ideals are, to a very large extent, driven to discard professional aspirations and devote themselves to drug "trade" for all there is in it.

It requires no special pharmaceutical skill or costly equipment to prepare troches of ammonium chlorid, compound laxative pills or emulsion of cod liver oil, or to coat pills with gelatin; and the failure of the pharmacists to fill the prescriptions for these preparations, as cited by Dr. Eggleston, and which I acknowledge is just criticism, shows a lamentable condition of lassitude or an inexcusable state of ignorance on the part of the pharmacists in question.

In justice to professional pharmacy, however, it should be appreciated that there are trained pharmacists in every large city—and in small ones too—who are competent and anxious to fill prescriptions such as Dr. Eggleston and his colleagues write. However, their professional modesty prevents them from self advertisement. It behooves Dr. Eggleston and his associates to find them.

ANDREW SCHERER, PH.G., Chicago.

"FURTHER NEW ZOOPARASITES OF MAN"

To the Editor:—In THE JOURNAL, July 17, an editorial headed "Further New Zooparasites of Man" indicates that the newly discovered parasite *Rhabditis hominis* (temporarily named) reported from the Chosen-Government General Hospital, at Seoul, differs in at least one respect from *Strongyloides stercoralis,* in that the former is viviparous, the ova being found in the feces as a differentiating point in the latter. As a matter of fact, ova of *Strongyloides stercoralis* are never found in the stools of individuals so infested, their presence being determined only by identifying the young, rhabditiform worms. Compared to some of the less frequent intestinal parasites, *Strongyloides stercoralis* is a rather common infestation in his part of the country, the young worms being readily detected in the stools of adults as well as in children. In my examination of a large number of stools, over a period of ten years, the incidence of *Strongyloides stercoralis* would compare favorably with findings in the Korean investigation, referred to in this article, in which the new parasite was found in a goodly percentage of more than a thousand schoolchildren examined. However, in none of my cases have the ova of *Strongyloides stercoralis* been identified, which is more than suggestive of the viviparous nature of this parasite. Without further points of differentiation, other than their nature of propagation, these parasites may easily be one and the same.

ROBERT F. FENNELL, M.D., Guntersville, Ala.

GRADUATE MEDICAL STUDY ABROAD

To the Editor:—Now that the war is over, many American physicians will again attend the medical clinics of Europe. With this point in mind, I am prompted to relate my experiences of the last few months in Europe. I attended clinics in many of the large cities of Germany, such as Hamburg, Berlin, Breslau and Leipzig, hoping to find conditions in one or more of these cities suitable for my work. Abundant material was found everywhere, especially in the dermatologic clinics, where I devoted most of my time. At present there is no organized course for postgraduate instruction; and owing to the overcrowded conditions, the lack of proper equipment and the scarcity of physicians, the work

is necessarily performed quite differently from what it was under normal conditions. The German physician is not ignorant of these conditions, and naturally has very definite ideas as to the cause of the great change. The object of this letter, however, is not concerned with the cause. It is simply to remind the American physician who contemplates postgraduate work in Europe that we have been at war with Germany and that this fact is still fresh in the minds of the German physicians.

The postgraduate schools of France, Belgium and England are too well known in America for any comment in this letter. However, it seems that there are some advantages in the London school which are lacking in other places. There is a distinct effort in London to arrange the work in each hospital in such order as to time and place that will enable one to devote the maximum time to his special line. For example, in dermatology one is able to devote virtually the whole day to clinical demonstrations. The courses are outlined in a bulletin that is issued each week by the Fellowship of Medicine and Post-Graduate Medical Association which includes the work at the different hospitals and medical schools, such as clinical instruction in wards and outpatient departments, clinical lectures and demonstrations, afternoon demonstrations, laboratory work, etc. All of this work is open to the members of the postgraduate school for the nominal sum of £4 a month.

J. Richard Allison, A.B., M.D., London.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

BIOGRAPHIES OF PHYSICIANS NOMINATED FOR THE HALL OF FAME

To the Editor:—Please give a brief biographic sketch of the following physicians and surgeons, whose names have been placed in nomination for the American Hall of Fame: (1) Frank Abbott; (2) William Tillinghast Bull; (3) John Murray Carnochan; (4) Charles T. Jackson; (5) William Shippen, Jr., and (6) Lyman Spalding. Please omit my name.

J. C. T.

1. Frank Abbott is not found in any available list of prominent physicians. There was a practitioner of dentistry of that name, author of a work on "Dental Pathology and Practice," Philadelphia, 1896.

2. William Tillinghast Bull (1849-1909) was an eminent surgeon of New York, professor of practice of surgery and clinical surgery at the College of Physicians and Surgeons, New York, and is credited with an early successful laparotomy for multiple gunshot wounds of the intestine.

3. John Murray Carnochan (1817-1887) was a pioneer American surgeon, and is credited with the early performance of several daring operations. He successfully ligated the femoral artery just below the deep femoral in 1851, was the first in America to excise the entire lower jaw at one operation (1851); to excise the ulna (1853), the radius (1854) and the calcaneum (1857); to excise the superior maxillary nerve, including Meckel's ganglion, for facial neuralgia (Carnochan's operation, 1856), and to ligate the carotid artery on both sides (1867).

4. Charles T. Jackson (1805-1880) was one of the principal figures in the anesthesia controversy. In 1835, he opened the first laboratory for the teaching of analytic chemistry in the United States at Boston, and was the first to direct attention to the mineral resources of the southern shore of Lake Superior. After the successful introduction of ether anesthesia, Jackson claimed that he suggested the use of sulphuric ether to Morton, and his contentions to the right of discovery were recognized by a considerable number of followers here and abroad.

5. William Shippen, Jr. (1736-1808), of Philadelphia, established the first systematic course in anatomy and obstetrics in the United States (privately in 1762), and was professor of anatomy and surgery in the medical department of the College of Philadelphia, the first medical school in the United States, organized by John Morgan in 1765. He succeeded John Morgan as director-general of the military hospitals and physician-in-chief of the American Army (1777), and was one of the founders of the Philadelphia College of Physicians.

6. Lyman Spalding (1775-1821) is best known as the originator of the United States Pharmacopeia (1820), the detailed plan for which he submitted to the Medical Society of the County of New York in 1817. He assisted Nathan Smith in the foundation of the Dartmouth Medical College (1797), was a pioneer in testing publicly the efficacy of vaccination against smallpox (1801), and was a distinguished lecturer on anatomy.

TECHNIC OF WASSERMANN TEST

To the Editor:—I understand that there has been a new method perfected for making the Wassermann test without the use of fresh sheep's blood. I am trying to establish a laboratory in connection with my office and for some cases in a near-by hospital. My chief difficulty has been that in supplying the great demand for the Wassermann test in this vicinity, I am unable to procure sheep's blood or the use of guinea-pigs. It has been my impression that this new Wassermann test appeared in one of the recent numbers of The Journal, but I have been unable to find the article. If you know of this method and feel that it is equally reliable, if more simple than the older methods, may I not ask you to assist me in obtaining the information I desire?

Henry B. Dorr, M.D., Ocean Grove, N. J.

Answer.—In the performance of the original Wassermann test the use of fresh or of well preserved sheep's blood is essential. However, some years ago, Noguchi (*J. Exper. Med.* **11**:392, 1909) introduced a human hemolytic system to replace the sheep hemolytic system of the original Wassermann test, using as the cells to be hemolyzed a suspension of human blood cells but employing guinea-pig serum as complement. More recently he (*J. Exper. Med.* **28**:43 [July] 1918) has brought out a complete homohemolytic system for the test using human serum as complement instead of the guinea-pig serum employed in all other modifications as complement. This modification eliminates the foreign complement and corpuscles from the test for the serodiagnosis of syphilis, utilizing fresh human serum for the source of complement for the production of hemolysis on the human corpuscles in the presence of an adequate amount of the specific antihuman amboceptor. Full details of this test are outlined in the article mentioned above. The results obtained with this modification seem satisfactory and apparently as reliable as those obtained with other modifications of the original technic.

SILVER SODIUM SALVARSAN

To the Editor—Please let me have information on silver sodium salvarsan, especially as regards its curative powers, compared to other arsenic compounds, dosage, preparation and strength of solutions, reactions, contraindications, etc., and also whether it is better to combine it with mercurial treatment. Please omit my name.

Dr. J. C. R., Mexico, D. F.

Answer.—Ehrlich and his co-workers experimented with the possibility of combining arsphenamin with other metals; they succeeded in making "copper-arsphenamin." A recent development along the same lines is "silver salvarsan." According to a recent report of the Medical Research Committee of Great Britain, "silver salvarsan" is apparently a similar molecular combination of "606" with silver in some form, though no details are available as to its exact formula. According to Kolle, Ehrlich's successor at Frankfort, the ratio of the dose which apparently cures experimental syphilis in rabbits to the maximum dose tolerated by the animal is 1:40, as compared with 1:10 in the case of "606." The substance is on trial and its promiscuous use at this time would be ill advised. In the United States no license has been granted by the Treasury Department for "silver salvarsan" and it cannot be sold in interstate commerce. Recent abstracts on the subject that have appeared in The Journal are:

Rille and Frühwald: Silver Salvarsan Sodium in the Treatment of Syphilis, *München. med Wchnschr.* **66**: 1226 (Oct. 24) 1919; abstr. The Journal, Feb. 21, 1920, p. 568.
Nägeli, O.: Silver Sodium Salvarsan, *Schweiz. med. Wchnschr.* **50**: 161 (Feb. 26) 1920; abstr. The Journal, May 1, 1920, p. 1239.
Kolle, Schlossberger and Leupold: Means to Ward Off Acute Effects of Arsphenamin, *Med. Klin.* **16**: 355 (April 4) 1920; abstr. The Journal, July 10, 1920, p. 139.

Medical Education, Registration and Hospital Service

PLANS FOR MODERN OFFICES FOR PHYSICIANS

RICHARD E. SCHMIDT, F.A.I.A.
CHICAGO

In planning an office for the physician with a large practice, several points should be kept in view. A waiting room of liberal dimensions with an interesting outlook and attractively furnished and decorated should be provided. In a suite occupied by several physicians, it may be necessary to have a clerk in the reception room in addition to the telephone operator. In any plan it is desirable to have the patients' record files accessible to the clerk, so that records may be delivered to the physician in proper sequence and in advance of the admission of the patient into the physician's office. The necessity for an inside private corridor with an exit other than that through the reception room is obvious. There is the question whether there should be fewer examination or treatment rooms and more dressing rooms, rather than a large number of examination or treatment rooms with no dressing rooms. Both arrangements occupy about the same amount of space, but the latter appears to be more satisfactory.

To locate an office in a new building is obviously more advantageous than to locate it in an existing building, as conduits for wires, pipes for water, steam, waste and air can be concealed behind the plaster or under floors, and extended to points immediately adjacent to apparatus, resulting in the neatest arrangement; whereas in an old building many of these service pipes must be extended on the face of the walls, resulting in disfigurement and requiring additional labor to keep them in a presentable condition. When a physician obtains a lease of office space while the building is in an early stage of construction, the wiring, plumbing and heating pipes and other work can be installed in concealed places without the loss caused by alteration of existing work. Furthermore, outlets may be placed immediately adjacent to the equipment, and there are no unsightly pipe extensions.

The selection of materials for walls, floors and finish depends on the use of the offices. For treatment or surgical work, those standard for hospital work should be used; if the offices are purely consulting or medical, any furnishing or finish suitable for high grade business offices will be satisfactory.

In the physician's suite illustrated in Figure 1, the entire floor (1,635 square feet) is tiled with 1¼ inch white ceramic mosaic tile, with rugs in the waiting room and in the private office. The walls and ceilings of the private corridor and of the treatment rooms are finished in gloss white enamel. The long walls of the filing room back of the bookkeeper's desk are filled with steel safes for records. In the private corridor are 25 lineal feet of instrument cabinets, extending from floor to ceiling. These cabinets have sliding doors and a unique arrangement by which instruments are suspended from metal bars and placed in regular order, according to their size. Instruments arranged in this way are found more quickly than if lying on shelves or in drawers.

The roentgen-ray room is arranged for complete roentgenologic treatment; it also contains a plate display box. The laboratory is equipped with microscope stand, centrifuge, constant temperature water bath, gas and electric sterilizer, refrigerator, incubator, water still, and specimen and other cabinets. All of the treatment rooms in this suite have running water and modern enameled metal equipment and furniture.

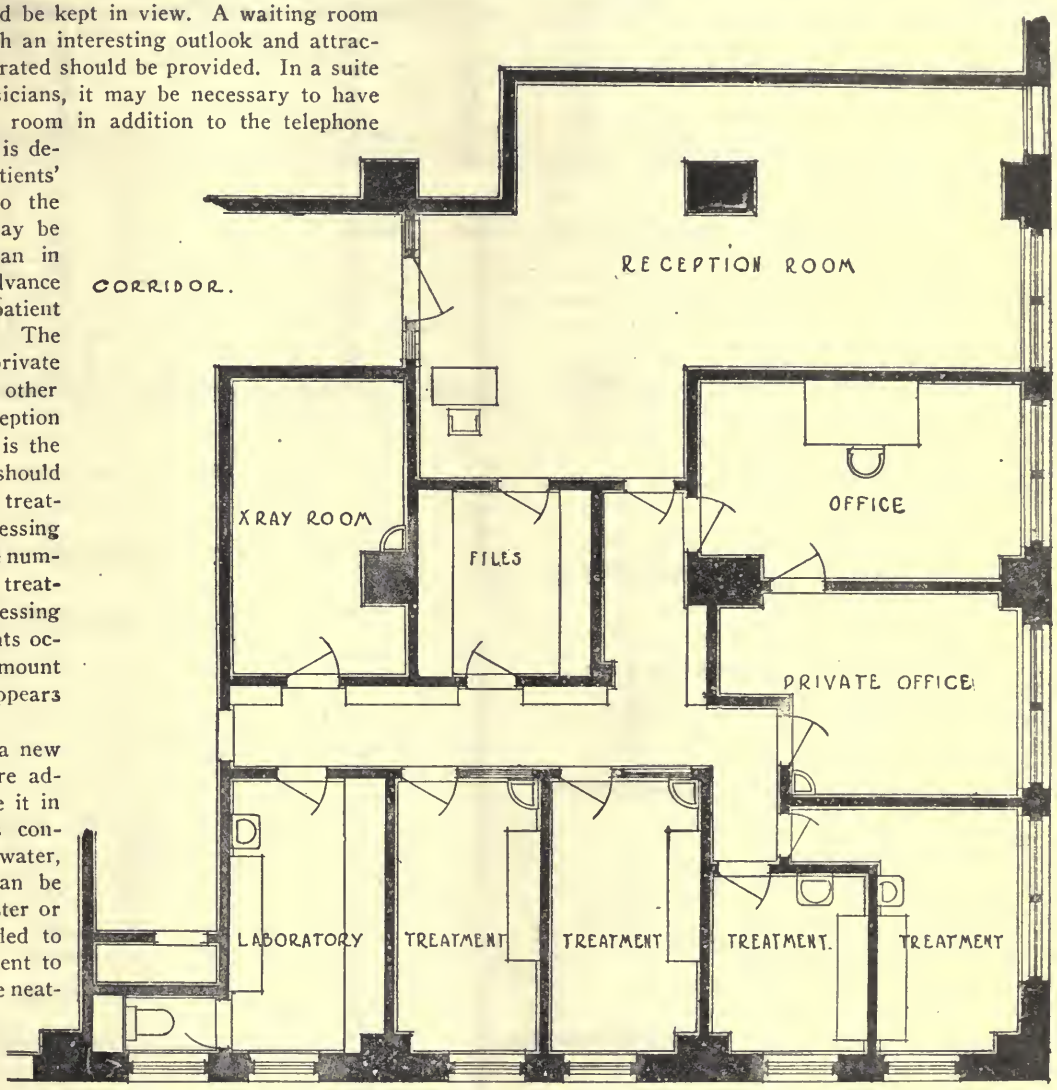


Fig. 1.—Physician's suite. The special features here are the number of treatment rooms with absence of dressing rooms, placing of instrument cases in corridor, and proximity of file room to recepton room attendant's desk.

The office illustrated in Figure 2 is located in a new office building where the space permitted an excellent and liberal arrangement. The roentgen-ray department has a suite consisting of office and plate room, machine room, roentgenographic room, fluoroscopic room, dark room, and toilet and dressing rooms. There are two laboratories, one of which has a separate dark room and a small room for metabolism tests. This small room is equipped with couch and respiration apparatus. The laboratory is equipped with autoclave, still, centrifuge, incubator, etc. The several offices are equipped with call buttons, buzzers and intercommunicating and city telephones. The installation of running water in the laboratory and dark room sinks is unusually liberal. The conveniences and appointment will obviously be appreciated by the public and by the physician, because of the facility with which service can be rendered.

Figure 3 shows how a suite of offices was planned for an existing building. This group of offices accommodates four specialists representing, respectively, medicine, surgery, dentistry and eye, ear, nose and throat. Each office is completely furnished with the equipment adapted to its particular service. It will be noticed that three of the suites have patients' dressing rooms with double exits. The private corridors furnish necessary intercommunication and exit from the office. One of the important features in connection with this group of offices is an exceptionally large and attractive reception room.

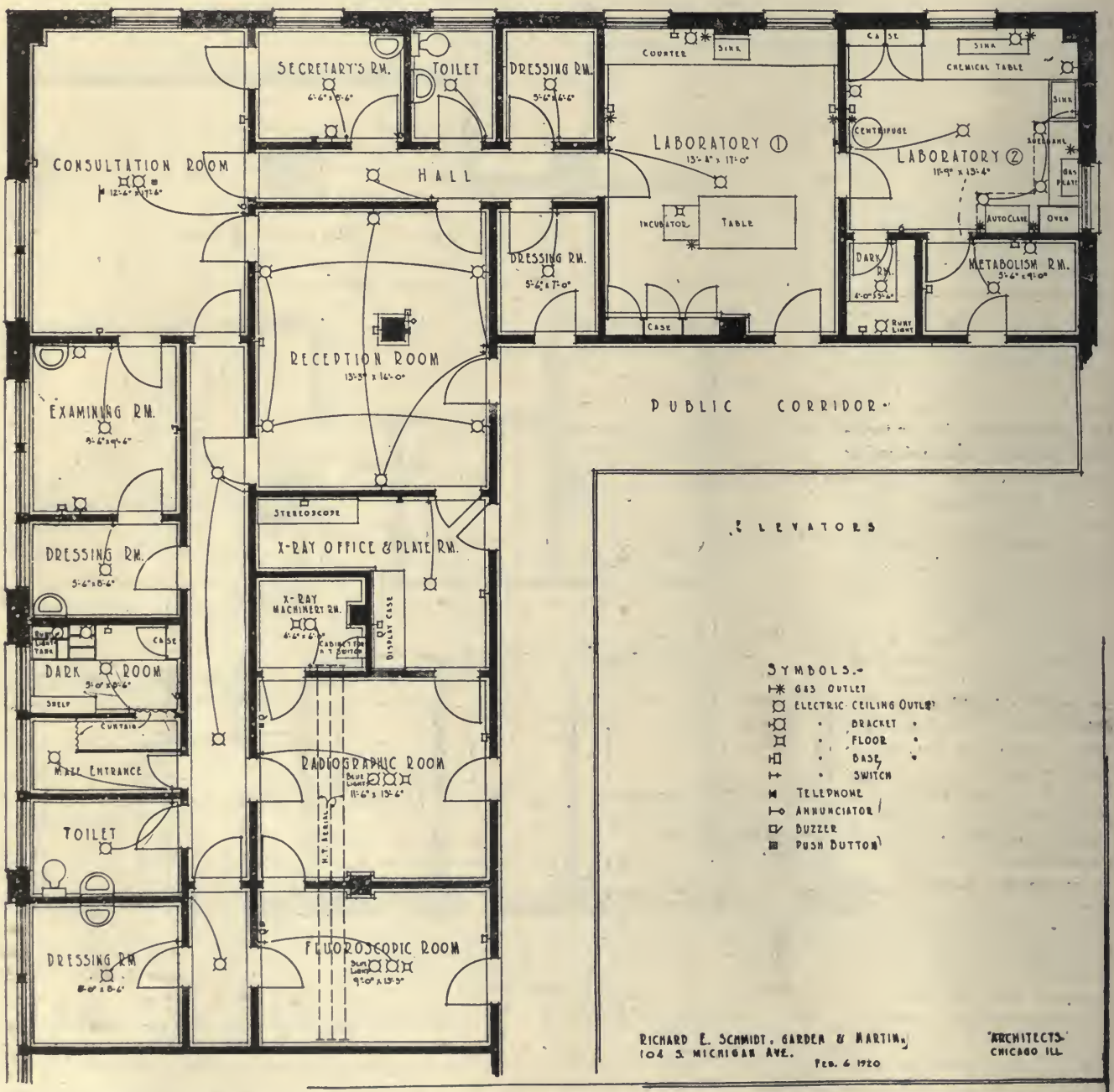


Fig. 2.—Noteworthy features here are the liberal size of the laboratories, roentgen-ray, consultation and reception rooms, and the arrangement of roentgen-ray rooms and auxiliaries.

Graduate Course in Public Health

We are informed that a graduate course in public health has been offered at the Ohio State University in cooperation with the state department of health since 1915. During the session of 1919-1920, there were three professors and two instructors in addition to the eleven staff members of the state department of health. The course extends over one year and leads to the degree of Master of Science in Public Health. The applicant for admission must be a graduate of

a Class A medical school or hold a bachelor's degree from an approved college, in the preparation for which he has completed courses in chemistry, physics, zoology, anatomy, physiology and bacteriology. A thesis is required for graduation. Nine graduate students were enrolled during the session, and of this number four graduated with the degree of Master of Science. An extension course of two and one-half months was offered and attended by forty-two health officers (physicians). Two courses also were offered in public health nursing, one extending over four months and the other over one year, the latter leading to a certificate of public health nursing. Two nurses received this certificate during the last year. There is also a five-year course in science-nursing leading to a certificate of graduate nurse and a Bachelor of Science degree.

Book Notices

HEALTHY LIVING. Book One: How Children Can Grow Strong for Their Country's Service. By Charles-Edward Amory Winslow, D.P.H., Professor of Public Health, Yale Medical School. With a Chapter on "Physical Exercises" by Walter Camp. Cloth. Price, 76 cents. Pp. 248, with illustrations. New York: Charles E. Merrill Company, 1920.

HEALTHY LIVING. Book Two: Principles of Personal and Community Hygiene. By Charles-Edward Amory Winslow, D.P.H., Professor of Public Health, Yale University Medical School. With a Chapter on "Sport and Health" by Walter Camp. Cloth. Price, $1.04. Pp. 405, with illustrations. New York: Charles E. Merrill Company, 1920.

In a kindly statement to the children who may use these books, Professor Winslow explains their conception and purpose. He has tried to describe the human body and how it works. He has told of its enemies and how they may be combated. He has illustrated his technical points with interesting stories, and he has kept to the foreground the patriotism which should animate citizens of a great country to develop that state of health which may enable them best to serve their country. He has succeeded remarkably in this difficult task. Those who know of the scientific achievements of the author may well wonder at the pedagogic ability displayed in this work. Perhaps the great interest of the author in his "daughter, Nancy, aged 10 years," who read the manuscript of the book and criticized it from the standpoint of the children who may use it, is partly responsible. Certainly, other children of 8 or 10 years will be interested. The two

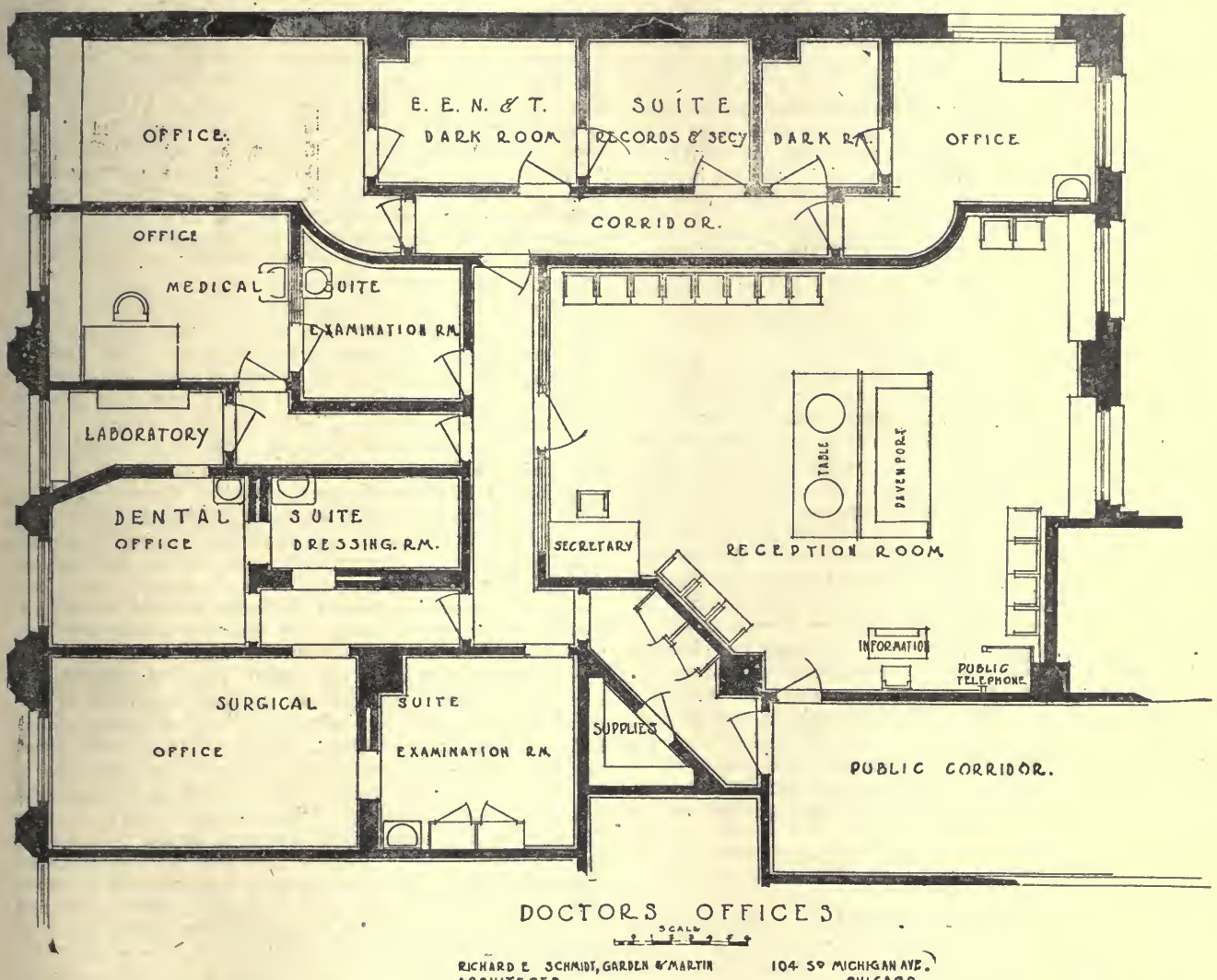


Fig. 3.—Suite of offices for four specialists. Note the liberal dimensions of the reception room, also convenient arrangement of eye, ear, nose and throat suite for eye work.

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 7. Sec., Dr. Harry C. De Vighne, Juneau.
ARIZONA: Phoenix, Oct. 5-6. Sec., Dr. Ancil Martin, Phoenix.
COLORADO: Denver, Oct. 5. Sec., Dr. David A. Strickler, Denver.
IDAHO: Boise, Oct. 5. Commissioner, Hon. Robert O. Jones, Boise.
HAWAII: Honolulu, Sept. 6-10. Sec. Dr. R. W. Benz, 1141 Alakea St., Honolulu.
ILLINOIS: Chicago, Sept. 20-23. Director, Francis W. Shepardson, State House, Springfield.
IOWA: Des Moines, Sept. 15-17. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.
MINNESOTA: Minneapolis, Oct. 5-7. Sec., Dr. Thomas S. McDavitt, St. Paul.
MONTANA: Helena, Oct. 5. Sec., Dr. S. A. Cooney, Helena.
NEW YORK: Albany, Buffalo, New York and Syracuse, Oct. 4-7. Assistant Prof. Examinations. Mr. Herbert J. Hamilton, Albany.
PORTO RICO: San Juan, Oct. 5. Sec., Dr. M. Quevedo Baez, San Juan.
RHODE ISLAND: Providence, Oct. 7-8. Sec., Dr. Byron W. Richards, Providence.

volumes form an excellent text for schools, each chapter being followed by a number of questions for review. The work is graded so that the final chapters of the second book are well adapted to higher grades and older years.

THE DAWN OF MODERN MEDICINE. An account of the Revival of the Science and Art of Medicine Which Took Place in Western Europe During the Latter Half of the Eighteenth Century and the First Part of the Nineteenth. By Albert H. Buck, B.A., M.D., Consulting Aural Surgeon, New York Eye and Ear Infirmary. Cloth. Price, $5. Pp. 288, with illustrations. New Haven: Yale University Press, 1920.

Professor Buck's earlier work on the "Growth of Medicine" was reviewed in this department several years ago. The present book is a continuation of that volume, amplifying some of the points there brought out, and bringing up many new points which receive but scant attention in other works on medical history. The book is arranged according to geographic distribution. It discusses the medicine of the middle ages in relation to the various portions of Europe in which the great advances were made. Special chapters, however, deal with smallpox, the development of surgery, and with the growth of hospitals and teaching institutions. The style of the author is pleasing, biographic facts being frequently supplemented by philosophic editorial comment and extensive quotation. To those interested in medical history —all physicians should be—the book will be not only an instructive but also an interesting companion for leisure hours. It is well illustrated and exceptionally well printed.

THE MICROBIOLOGY AND MICROANALYSIS OF FOODS. Albert Schneider, M.D., PH.D, Professor of Pharmacognosy, College of Pharmacy, University of Nebraska. Cloth. Price, $3.50 net. Pp. 262, with 131 illustrations. Philadelphia: P. Blakiston's Son & Co., 1920.

In the complex civilization of the present, when such a large proportion of the population is in cities, the problem of food supply assumes great importance to the physician as well as to the consumer of foods. In late years many serious epidemics have been accredited to contaminated foods. Fortunately, methods for the detection of the unfitness of foods for human use are for the most part known. It remains only for the systems of inspection to be adequate to protect the public health from most of the diseases due to this source. The microbiology of foods is a subject of great complexity. In a book of but 262 pages, such a broad proposition must necessarily be treated briefly and in some directions superficially. This book discusses the decomposition changes which may take place in foods, the principal groups of organisms concerned in food spoilage, foods that are especially liable to be harmful or dangerous, and special and general microanalytic methods. Chapters are included on the microanalytic rating of food products and legal standards of purity. The book will be of interest to dietitians, nutrition experts, canners, microanalysts and others interested in the control of stored foods.

Medicolegal

Liability for Malpractice Regardless of License

(Hansen v. Pock (Mont.), 187 Pac. R. 282)

The Supreme Court of Montana says that it is the rule, recognized by the courts generally, that when one holds himself out as a physician or surgeon, whether licensed or not, and accepts employment as such to treat a patient, he assumes toward the patient the obligation to exercise such reasonable care and skill in that behalf as is usually exercised by physicians or surgeons of good standing, of the same system or school of practice in the community in which he resides, having due regard to the condition of medical or surgical science at that time. It will be observed that under the rule the liability of a physician or surgeon in any particular case is to be determined by an answer to the inquiry whether he has pursued the rules and regulations of the system or school to which he belongs. The law, however, is not concerned so much about the school to which he claims to belong, nor where he gained the qualifications necessary to enable him to practice. It is concerned about the fidelity with which he has met his obligations, and whether he has acquitted himself in the treatment of the particular patient, according to the measure of the standard of those of recognized schools who practice in the same or similar communities.

For example, in the case of *Nelson* v. *Harrington*, 72 Wis. 591, 40 N. W. 228, the court was called on to decide the question whether one who holds himself out as a clairvoyant physician, there being no recognized school designated as a clairvoyant school, having fixed principles or formulated rules for the treatment of diseases, should be held to the standard which is applicable to ordinary physicians. The court concluded that, there being no recognized school of clairvoyant medicine, the defendant was properly held liable by the trial court, on the ground that, having held himself out as other physicians, he had not met the requirements of the rule of law applicable to them. So the Supreme Court of Missouri, in *Longan* v. *Weltmer*, 180 Mo. 323, 79 S. W. 655. held that a magnetic healer was liable to a patient to whom the defendant administered treatment which, in the opinion of ordinary physicians, could not be justified by the rules of recognized schools, though they knew nothing of the principles of magnetic healing. In the case of *Musser's Ex'r* v. *Chase*, 29 Ohio St. 577, the Supreme Court of Ohio held that a farmer, who held himself out as a cancer doctor having skill and experience in the treatment and cure of cancer, came within the rule which "requires the exercise of such skill and care as are usually possessed and employed by the general physician in the treatment of such maladies."

In the case here before the court, plaintiff Hansen had been suffering from pulmonary tuberculosis some twenty years, so that the disease had become chronic. He was led to consult the defendant, a Chinese herb doctor, by having his attention accidentally called to an advertisement of the latter, in a newspaper, which read: "Dr. Huie Pock. Professional services to the public, and a guaranty of a sure cure for all kinds of diseases, including chronic cases of long standing," etc. The defendant examined him superficially by feeling his pulse and inspecting his tongue, though Hansen gave him a history of his case, telling him that he suffered from hemorrhages due to tuberculosis. The defendant made no examination of his lungs, nor did he test his sputum or urine, informing him that his trouble was not tuberculosis but a disease of the kidneys which he could cure. Hansen thereupon put himself under the defendant's care for treatment, and took the medicine prescribed by the defendant, prepared from herbs which the defendant stated had been brought from China. Realizing, after nearly seven months, that, though he had not suffered from hemorrhage, his condition was not being improved, but he was growing weaker, Hansen ceased to visit the defendant and to take his medicine. The defendant's evidence showed conclusively that he was simply a charlatan, without skill or scientific knowledge, who made it his business to practice on the ignorant and unwary for gain; and, while the evidence tending to show that the plaintiff was injured and the amount of damages he was entitled to recover was not very satisfactory, it did furnish a basis for the inference that he suffered some injury. The court thinks that the amount of the verdict, $2,500, was excessive; but, as no complaint was made of it on that ground, the court does not think that it should disturb it.

Physical Examinations Under Workmen's Compensation Law

(Texas Employers' Ins. Ass'n v. Downing (Texas), 218 S. W. R. 112)

The Court of Civil Appeals of Texas holds that, while in the ordinary case the court is without power to order a physical examination without the consent of the plaintiff, authority to do it is given by the workmen's compensation law of Texas. The court says that it thinks it clear that it was the intention of the legislature that the provisions for physical examination should be applicable after the proceeding should have been transferred to the courts, as well as while it was pending before the industrial accident board. The court has found no authority which denies the consti-

tutional power of the legislature to enact such laws, and it concludes that the court had the power to order such an examination as was asked in this case, in which a motion was made by the defendant insurance association for an order requiring plaintiff Downing to submit himself for examination before a committee of three physicians, to be named by the court, one of whom should be a roentgenologist, and one an eye and ear specialist. Article 5246—42 of the law gives the association the privilege of having a physical examination made by a physician of its own selection. The law does not expressly provide how this privilege shall be enforced nor the penalty for refusal. The court takes it that in case of refusal the association should apply to the board or court having jurisdiction of the case, for an order for the examination, and it would then be the duty of such tribunal to provide therefor under the power granted by the first paragraph of the section. It is probably true that the association, before it could complain of the action of the court in refusing to order an examination under its general discretionary authority, would be required to allege that it had requested an examination and been refused. But when the proceeding has reached this stage, that is, request for examination by physicians named by the defendant has been made and refused by the plaintiff, the court thinks that the defendant may then apply to the general power of the court, rather than insist on an examination's being made by physicians of its own choosing. When the examination is to be made under the order of the court, it would seem obvious that an examination by disinterested experts chosen by the court would be more conducive to the ascertainment of the truth than that of physicians selected by the plaintiff's antagonist, whose examination and opinions are more likely to be partisan, and in the ordinary case it is more appropriate to request the court to name the examiners. The court is therefore of the opinion that if the facts were sufficient to show that an examination was reasonably necessary to a proper development of the truth of the issues for trial, the defendant ought not to be precluded from complaining of the abuse of the discretion of the court in refusing to order the requested examination, merely because the defendant requested the court to appoint physicians, instead of naming the physicians itself in the motion.

Important Part of Medical Practice Act Not Covered

(People v. Walker (Ill.), 126 N. E. R. 120)

The Supreme Court of Illinois, in reversing a judgment of conviction of the defendant, who was fined $500 for practicing medicine without a license, says that an information was filed in the municipal court of Chicago charging that the defendant, not being then and there licensed to practice medicine and surgery in all their branches, did practice medicine and surgery, and did, on a certain date, practice medicine and surgery by treatment of one Gall. The defendant was a gradute of a school of chiropractic and an eclectic school of therapeutics. Gall testified that he took 115 treatments from him for deafness; that he paid $2 a treatment for the first fifteen treatments and was to pay the same for additional treatments if a cure was effected; that the treatments did not help him and that he paid no more; that the defendant worked around the ears of the witness with an electric vibrator, and with his hands manipulated the neck and spine of the witness; that he used no drugs or medicine and performed no surgical operation; that he rubbed some glycerin inside the ears of the witness and told him to do the same occasionally while at home. While the evidence clearly showed that the defendant treated Gall by a system or method of treating human ailments without the use of drugs or medicine and without operative surgery, there was no pretension to charge in the information a violation of that part of the medical practice act forbidding such system or method of treatment without first obtaining a license so to do. The municipal court erred in finding the defendant guilty, and the judgment is therefore reversed. Other defects in the information were alleged, but there being a complete failure of proof to sustain the judgment, the court does not deem it necessary to consider them, nor the constitutionality of the medical practice act, which was assailed.

Society Proceedings

COMING MEETINGS

Am. Acad. of Ophthal. and Otolaryng., Kansas City, Mo., Oct. 14-16.
Amer. Assn. of Electro-Therapy & Radiology, Atlantic City, Sept. 14-17.
Amer. Assn. of Obstetricians and Gynecologists, Atlantic City, Sept. 20-22.
American Association of Railway Surgeons, Chicago, Oct. 6-8.
American Child Hygiene Association, St. Louis, Mo., Oct. 11-13.
American Public Health Association, San Francisco, Sept. 13-17.
American Roentgen Ray Society, Minneapolis, Sept. 14-17.
Colorado State Medical Society, Glenwood Springs, Sept. 7-9.
Delaware State Medical Society, Wilmington, Oct. 11-12.
Indiana State Medical Association, South Bend, Sept. 23-25.
Kentucky State Medical Association, Lexington, Sept. 27-30.
Medical Association of the Southwest, Wichita, Kan., Sept. 27-29.
Minnesota State Medical Association, St. Paul, Sept. 29-30.
Missouri Valley, Medical Society of the, Omaha, Neb., Sept. 6-7.
New England Surgical Society, Providence, R. I., Oct. 6-7.
New Mexico Medical Society, Roswell, Oct. 15-16.
Pennsylvania, Medical Society of the State of, Pittsburgh, Oct. 4-7.
Utah State Medical Association, Ogden, Sept. 7-8.
Vermont State Medical Society, Rutland, Oct. 7-8.
Washington State Medical Association, Tacoma, Sept. 16-17.
Wisconsin, State Medical Society of, La Crosse, Sept. 8-10.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Syphilis, St. Louis

July, 1920, **4**, No. 3

Recognition of Syphilis and the Syphilitic. W. W. Graves, St. Louis.—p. 402.
Initial Lesion and Its Differentiation from Other Lesions. J. Grindon, St. Louis.—p. 407.
Early and Late Skin and Mucous Membrane Reactions. M. F. Engman, St. Louis.—p. 412.
Reactions of Bones and Joints. A. E. Horwitz, St. Louis.—p. 426.
Reactions of Ear, Nose, and Throat. W. E. Sauer, St. Louis.—p. 430.
Reactions of Ocular Apparatus. W. F. Hardy, St. Louis.—p. 438.
Reaction of Cardiovascular Apparatus. E. S. Smith, St. Louis.—p. 445.
Reactions of Alimentary Tract and Extra-Abdominal Viscera. R. W. Mills, St. Louis.—p. 453.
Reactions on Nervous System. F. R. Fry, St. Louis.—p. 462.
Reaction of Lung. L. C. Boisliniere, St. Louis.—p. 466.
Reactions in New-Born and Growing Child. P. C. Jeans, St. Louis.—p. 473.
Reactions in Women. G. Gellhorn, St. Louis.—p. 480.
Studies in Standardization of Wassermann Reaction. Methods for Preparation and Preservation of Hemolysins. J. A. Kolmer and A. Rule, Philadelphia.—p. 484.
Methods for Adjusting Hemolytic System, with Special Reference to Titration of Complement. J. A. Kolmer, T. Matsunami and A. M. Rule, Philadelphia.—p. 518.
*Syphilitic (?) Parenchymatous Nephritis. J. H. Stokes, Rochester, Minn.—p. 547.
*Analysis of One Hundred Cases of Neurosyphilis. A. W. Morrison, Minneapolis.—p. 552.
Atypical Syphilis of Nervous System. W. A. Jones, Minneapolis.—p. 560.

Syphilitic Parenchymatous Nephritis.—Stokes reports a case of parenchymatous nephritis at first believed to be of syphilitic origin, which responded temporarily to arpsenamin therapy with subsequent complete and permanent relapse. The case illustrates some of the difficulties which the diagnosis of this apparently rather rare condition may present.

Neurosyphilis.—In the 100 cases of neurosyphilis selected at random by Morrison, examinations of the spinal fluid were positive in eighty-six in one or more of the four reactions. In those cases with a normal spinal fluid the diagnosis was made on the clinical evidence. These cases are grouped as follows: tabes dorsalis, fifty-three; cerebrospinal syphilis, thirty-two; general paralysis, eleven, and miscellaneous, four cases. There were seventy males and thirty females. A history of syphilitic infection could be secured in less than half of the number. Seventeen cases were wrongly diagnosed before admission. Pain, from a dull aching character to lightning pains and crises, was by far the commonest symptom occurring in over 50 per cent. of all cases. The site of election was particularly the abdomen and legs in the tabetics, but more common in the head in the cerebrospinal cases. Difficulty in walking was complained of first by only 1 per

cent. of tabetic cases, while lassitude (general tire and weakness) was the next commonest complaint in cerebrospinal syphilis. The remaining symptoms are pretty well scattered. It is interesting to note that 9 per cent. of the total cases gave a history of trauma as the exciting cause of their symptoms, among the secondary complaints. Here again pain is the most prominent symptom but close to it comes difficulty in walking (38 per cent. in tabetics and 19 per cent. in cerebrospinal syphilitics); 26 per cent. of all cases have some bladder difficulty, and this is about equally prominent in each group. Impaired sexual power, numbness of the extremities, girdle sensations, failing vision, weakness, and lassitude, are the next most frequent complaints in tabes. In cerebrospinal syphilis failing vision, failing memory, loss of consciousness, and vertigo are the next most prominent symptoms, while paretics gave a history of mental symptoms and speech difficulties. In analyzing the objective physical findings, the pupillary signs, sensory changes and abnormal reflexes were the most frequent.

Archives of Dermatology and Syphilogy, Chicago

August, 1920, **2**, No. 2

*Nocardiosis Cutis Resembling Sporotrichosis. Report of Case. W. H. Guy, Pittsburgh.—p. 137.
*Histogenesis of Molluscum Contagiosum. L. B. Kingery, Ann Arbor, Mich.—p. 144.
*Prolonged Ice Box Versus Short Water Bath Incubation in Wassermann Reaction. W. Burdick, Denver.—p. 163.
*Malignant Degeneration in Benign Dermatoses. C. M. Williams, New York.—p. 168.
*Production of Tumors in Absence of Parasites. E. F. Smith, Washington, D. C.—p. 176.
*Roentgen Rays or Radium Combined with Excision in Treatment of Keloids. G. E. Pfahler, Philadelphia.—p. 181.
*Effect of Mercury Salicylate on Wassermann Reaction. H. Goodman, New York.—p. 193.
*Folliculitis Decalvans and Lichen Spinulosus; Report of Cases. F. E. Senear, Chicago.—p. 198.
*Association of Herpes Zoster and Varicella. E. L. McEwen, Chicago.—p. 205.
Syphilis in English Colonies of North America. J. E. Lane, New Haven, Conn.—p. 215.

Nocardiosis Cutis.—A case that agrees with the description of sporotrichosis clinically, but which was found to be caused by an organism other than the sporotrichium of Schenck, is reported by Guy.

Molluscum Contagiosum.—Kingery points out that an abundance of clinical and pathologic evidence favors the existence of the analogue of molluscum contagiosum in fowls. Presumptive evidence points to the identity of molluscum contagiosum in man and molluscum epitheliale in lower animals. Final proof of the development of molluscum contagiosum from the surface.

Icebox Incubation in Wassermann Reaction.—Burdick says prolonged, twelve hours, primary icebox incubation possesses decided advantages over the short period, one-half hour, incubator or water bath treatment. Serums giving doubtful reactions by the later method of primary incubation frequently are frankly positive by the former method. In the series studied both methods gave uniformly negative results in 100 per cent. of the clinically nonsyphilitic cases, and positive results in 100 per cent. of the second stage untreated cases. In the second stage treated cases, however, there was a decided difference, especially in the higher percentage positives obtained by the prolonged primary icebox incubation method. Likewise this method gave a decidedly higher percentage of positives in the third stage untreated (attaining 100 per cent. as compared to 55 per cent. by the half-hour water bath method) and the third stage treated cases. In the examination of spinal fluids from patients cerebrospinal syphilis there frequently is obtained a positive reaction by the prolonged icebox incubation, whereas the conventional water bath method may be negative.

Malignant Degeneration of Dermatoses.—There are many causes which lead to keratoses and scars, and keratoses and scars are more prone to malignant degeneration than is normal skin, but Williams says the number of keratoses and of scars is so enormous and the number of epitheliomas relatively so small that the danger in each individual case is slight indeed. Physicians should aim to prevent the formation of these precancerous conditions; to watch and protect them when they appear; to remove them when exposed to injury or when they show signs of changing their character. But to recommend the removal of every scar, every naevus, every keratoma, when every person has at least one of these blemishes, or to frighten the public with tales of the menace of such growths, is not justified by the facts.

Tumor Production by Limiting Oxygen Intake.—Smith has produced hyperplasias (1) by the direct application of dilute acids and alkalis to susceptible plant tissues; (2) by the introduction into the tissues of certain foreign organisms (especially the crown gall bacterium which produces acids and alkali in flask cultures and probably also inside the cells as a result of its metabolism), and (3) Smith can now bring about the same results in the absence of parasites and their products by limiting the intake of oxygen, thus compelling the cells themselves to manufacture the stimulus which leads to the development of hyperplasias. He suggests that this might take place only as the result of an anaerobic cell respiration acting on the youngest, most active cells of a tissue; but there must be always some oxygen of the air present, otherwise there will be complete asphyxiation of the tissues, as happened in my first experiments. Probably overgrowths due to freezing and to mechanical injuries will also be found to depend on local interference with cell respiration.

Radiotherapy of Keloid.—Either the roentgen rays or radium can be depended on for the reduction of a keloid. The best results will generally be obtained when radiotherapy is combined with excision.

Effect of Mercury Salicylate on Wassermann Reaction.—Eighty-seven previously untreated latent syphilitic patients with 4 plus Wassermann reactions were given 1 grain of mercury salicylate intramuscularly at weekly intervals for courses of from six to eight injections. The Wassermann reaction immediately after treatment remained strongly positive in 66 per cent. of the cases. In only 9 per cent. was there a reversal to negative; and in some such patients who were given a third Wassermann test after an interval without treatment, the reaction was positive. Goodman says it seems fair to conclude with Nelson and Anderson, who carried on a similar study in 1915, that mercury salicylate alone in the dosage and for the period given does not qualify as a curative agent in syphilis. In the future he will use mercury salicylate in increasing doses up to 2 and 2.5 grains weekly in an effort to learn whether mercury salicylate in larger doses is effective.

Folliculitis Decalvans.—Senear's four cases occurred in women, aged, respectively, 55, 43, 43 and 30 years. In all four folliculitis decalvans was of long standing (ten, two, ten and twenty-one years, respectively), followed by the rather sudden development of follicular eruption of the body whose clinical picture was that of lichen spinulosus. Senear supports Adamson's theory of a toxic etiology.

Herpes Zoster and Varicella.—McEwen reports the cases of a man with zoster who developed varicella which he passed on to a daughter not otherwise exposed, and presents certain recommendations deduced from an examination of the literature on this particular association which, he says, if followed, would contribute to the clarification of a subject on which there is now great confusion.

Archives of Diagnosis, New York

April, 1920, **12**, No. 4

Study of Thirty-Five Cases of Typhoid and Paratyphoid. H. J. Smyly.—p. 213.

Bulletin of Johns Hopkins Hospital, Baltimore

July, 1920, **31**, No. 353.

*Striking Elevation of Temperature of Hand and Forearm Following Excision of Subclavian Aneurysm and Ligations of Left Subclavian and Axillary Arteries. W. S. Halsted, Baltimore.—p. 219.
*Bacillary Dysentery in Children. W. C. Davison, Baltimore.—p. 225.
Behavior of Syphilitic and Normal Serums Toward Certain Colloidal Solutions. V. R. Mason, Baltimore.—p. 234.
*An Experimental and Clinical Therapeutic Study of Whooping Cough. D. I. Macht, Baltimore.—p. 236.
Pigmented Epithelium of Embryo Chick's Eye Studied in Vivo and in Vitro, with Special Reference to Origin and Development of Melanin Pigment. D. T. Smith, Baltimore.—p. 239.

Elevation of Surface Temperature Following Resection of Aneurysm.—In 1918 Halsted ligated the left subclavian and carotid arteries near their origin from the aorta for the cure of a huge subclavian aneurysm. For a year the aneurysm decreased steadily in size. Then it increased in size and developed a faint pulsation. It was finally excised and the subclavian and axillary arteries were ligated, it was noticed that the left hand and forearm, which for two years had been strikingly cold, had become abnormally warm—appreciably warmer than the corresponding limb. About five weeks after operation the hand and forearm became cold again—at first in small areas—remaining cold for only a day or two. The sixty-ninth day after the operation, the back of the left hand was quite cold, whereas the left palm was about as warm as the right. The temperature of the hand and forearm varied from day to day and from hour to hour; certain small, quite well-defined areas remained uniformly cool; otherwise, the hand and forearm maintained their normal warmth. The case is described in full, and Halsted also translates one of the papers of Leriche on periarterial sympathectomy and its results published in the *Presse médicale,* April 20, 1916.

Causes of Bacillary Dysentery.—The material for Davison's report consisted of the study of 134 cases of diarrhea. More than 80 per cent. of acute cases of ileocolitis were due to infection with *B. dysenteriae. B. dysenteriae* (either Flexner or Shiga) was not found in the stools of sixty-three cases of simple diarrhea nor in those of 100 normal children. Davison suggests that the name ileocolitis should be changed to dysentery in children and the disease made reportable to the health authorities. The agglutination reactions of the patient's serum by standardized technic is of assistance in the diagnosis of dysentery. *B. morgani* No. 1, *welchii, B pyocyaneus, B. proteus* and the *Streptococcus fecalis* are not the cause of dysentery (ileocolitis) or diarrhea.

Benzyl Benzoate in Whooping Cough.—The number of cases studied by Macht was about 115. All these cases were characterized by whooping and in many the paroxysms were accompanied by vomiting and small hemorrhages. Most of the patients before coming under Macht's observation had been treated by parents or doctors with paregoric and other popular drugs without any benefit, while others had been left alone without any treatment whatever. A number of the patients received vaccine treatment, but the results in these cases were also not at all striking. All other medication was discontinued and the patients were given a 20 per cent. solution of benzyl benzoate by mouth. The dosage varied from 5 to 40 drops in water, three or four times a day and oftener, depending on the age of the patient and the severity of the disease. In cases in which the simple alcoholic solution of benzoate was found to be too distasteful to the young patients, it was flavored with a few drops of benzaldehyd and the medicine was administered in sugar, water or milk. The addition of a little benzaldehyd to a solution of benzyl benzoate in amounts varying from 1 to 5 per cent. produced a mixture which seemed to act more effectively in cases of whooping cough than benzyl benzoate alone. It was found that the administration of benzyl benzoate in the form of a suspension in simple elixir, in syrup of yerba santa and other syrups or elixirs was not a satisfactory method either of disguising the taste or administering the drug over long periods of time. About 90 per cent. of all the patients showed more or less beneficial effects; about 50 per cent. exhibited marked improvement in the symptoms. The therapeutic effects of benzyl benzoate were not of a curative character but were of a distinctly palliative nature.

Florida Medical Association Journal, St. Augustine and Jacksonville

July, 1920, **7**, No. 1

Surgical Treatment of Congenital Hypertrophicpyloric Stenosis. J. S. Helms, Tampa.—p. 1.
American College of Surgeons. F. H. Martin, Chicago.—p. 4.

Journal of Parasitology, Urbana, Ill.

June, 1920, **6**, No. 4

Sarcocystis Tenella Railliet. J. W. Scott.—p. 157.
Life Cycle of Two Species of Acanthocephala from Freshwater Fishes. H. J. Van Cleave, Urbana.—p. 167.
Sourse of Infection of Dog and Cat with Echinochasmus Perfoliatus (V. Ratz) and Infection of Man with Distomes of the Family Echinostomides. J. Ciurea.—p. 173.
Structure of Some Microsporidian Spores. R. Kudo.—p. 178.
Abnormal Courses of Infection of Paragonimus Ringeri. S. Yokogawa and S. Suyemori.—p. 183.
A Newly Discovered Parasitic Nematode. N. A. Cord.—p. 188.
Criteria for Differentiation of Schistosome Larvae. E. C. Faust.—p. 192.
*Gamasid Mite Annoying to Man. H. E. Ewing, Washington, D. C.—p. 195.

Gamasid Mite.—Ewing describes a small gamasid mite (*Hyletastes missouriensis* Ewing) that gets on the skin of the legs, and for that matter on any part of the body, and causes a considerable annoyance and a "creepy" sensation by running about over the skin. In addition to the annoyance thus occasioned, the mites have a faculty of stopping in the folds of the skin and inserting their mandibles, thus causing actual pain. At present it has not been determined whether they engorge blood from man or not.

Medical Record, New York

August 7, 1920, **98**, No. 6

*Diagnosis and Treatment of Recurrent Cholecystitis without Stones. M. Einhorn and W. Meyer, New York.—p. 211.
Allergy, Anaphylaxis and Immunity in Hay Fever and Asthma. W. Scheppegrell, New Orleans.—p. 216.
Relation of Teeth to General Medicine. L. M. Gompertz, New Haven, Conn.—p. 217.
Study of Man After Death. A. MacDonald, Washington, D. C.—p. 219.
*Bordeaux Conception of Lethargic Encephalitis or Epidemic Encephalomyelitis. R. Cruchet.—p. 225.
Epidemic Encephalitis. E. D. Friedman, New York.—p. 226.
Clinical Localization of Vermiform Appendix. A. Abrams, San Francisco.—p. 229.

Recurrent Cholecystitis.—The basis of this paper are eighteen cases of recurrent cholecystitis without stones in which operation was performed and in this way the diagnosis corroborated per autopsiam in vivo. Einhorn states that a diagnosis of chronic recurrent cholecystitis can frequently be made, even when stones are absent, by the symptoms present in conjunction with a direct examination of the bile. When operating for cholecystitis, he advises that a chronically diseased gallbladder should be excised, even if no stones are found in the affected organ. As to the surgery of the gallbladder, Meyer states that so far as indications point today, it appears to be better surgery to extirpate the infected gallbladder without stones, than to drain, or leave it in place. Such a bladder, stitched to the abdominal wall, though at first drained for quite some time, may in the future come to represent an infected focus from which the system is intermittently flooded with toxins. If secondary cholecystectomy is refused by the patient, chronic pancreatitis may develop in addition to the chronic recurring cholecystitis, and invalidism may develop for the remainder of life. The results accruing from cholecystectomy are almost as good as those of appendectomy.

Lethargic Encephalitis.—The Bordeaux conception of lethargic encephalitis or rather epidemic encephalomyelitis (or Cruchet's disease, as it is still called in the Gironde region), is that which has been adopted in England, the United States, Spain, and the South American countries; accepted first in France in the great local centers such as Lyon, Nancy and Bordeaux, it has finally been accepted also in Paris.

Minnesota Medicine, St. Paul

August, 1920, **3**, No. 8

*Auricular Fibrillation and Life Expectancy. F. A. Willius, Rochester, Minn.—p. 365.
*Therapeutic Application of Benzyl Alcohol Benzoate and Some Homologous Compounds. A. D. Hirschfelder, Minneapolis.—p. 380.
*Blood Transfusion: Methods and Indications, with Special Reference to Sustaining Value of Repeated Blood Transfusions in Pernicious Anemia. F. H. K. Schaaf, Minneapolis.—p. 382.
Conditions Contra-Indicating Operation with Stone in Kidney and Ureter. W. F. Braasch, Rochester, Minn.—p. 387.
Use of Thomas Bed Knee Splint for Routine Treatment of Fracture of Shaft of Femur. W. H. Cole, St. Paul.—p. 391.

Mortality in Auricular Fibrillation.—An analysis of 500 cases by Willius has shown that the mortality attending auricular fibrillation doubles and in some groups trebles that occurring in similar types of heart disease not complicated

by this arrhythmia. It is logical to conclude, therefore, that patients suffering from heart disease in whom auricular fibrillation has not occurred have a considerably greater life expectancy.

Better Way to Give Benzyl Benzoate.—To overcome the unpleasant, bitter, burning taste of the alcoholic solution of benzyl benzoate Hirschfelder gives pure benzyl benzoate, 10 parts; emulsion of acacia, 5 parts; elixir eriodictyon aromaticum (N. F.), 35 parts; dose, one teaspoonful. He has been able to secure relief of symptoms in a considerable number of cases of conditions caused by spasm of smooth muscle, cardiospasm, pylorospasm, pain in gastric ulcer from aspastic constipation. The relief occurs within half an hour after taking and lasts. Benzyl benzoate brings about relief in many, but by no means all, cases of bronchial asthma, just as is true of atropin or other drugs that inhibit the vagus. Still more striking results have been obtained in the treatment of dysmenorrhea. About 80 per cent. of the patients have had relief from pain after from one to three doses.

Blood Transfusion.—The sodium citrate method is the method of choice, Schaaf says, especially in hemophilia, purpura and melena neonatorum. In cases of severe streptococcic infections transfusion is of no value, but in low grade, subacute infections, and in toxemias, it will increase the patient's resistance and help toward recovery. In pernicious anemia in a majority of cases, it will produce immediate general improvement and facilitate feeding by increasing the appetite and causing the disappearance of nausea and other symptoms annoying to the patient, when other therapeutic measures would require weeks to produce the same efforts. In many cases of pernicious anemia transfusion may cause a remission, but whether by direct stimulation of the bone marrow or indirectly by improving the general condition and circulation has not been decided. Transfusion may have to be repeated again and again to keep the patient alive until another remission occurs. In pernicious anemia the transfussion of blood has a decidedly beneficial influence, but has no curative value whatsoever.

Missouri State Medical Association Journal, St. Louis

August, 1920, **17**, No. 8

Pathology and Surgical Treatment of Peripheral Nerve Injuries. R. D. Irland, Kansas City, Mo.—p. 307.
Symptomatology and Diagnosis of Nerve Lesions. G. W. Robinson, Kansas City, Mo.—p. 313.
*Summer Diarrhea of Infants. J. Zahorsky, St. Louis.—p. 317.
*Feeding of Athreptic Infants. M. J. Lonsway, St. Louis.—p. 319.
Neurological Reactions in Gonad Insufficiency. F. M. Barnes, Jr., St. Louis.—p. 323.
Physical Defects Found in School Child. W. H. Thaler, St. Louis.—p. 326.
High Blood Pressure as Factor in Insomnia. J. F. Chandler.—p. 330.

Summer Diarrhea of Infants.—An examination of the stools of more than 300 infants suffering from diarrheal diseases has convinced Zahorsky of the value of such examination in differentiating the functional from the inflammatory varieties of diarrhea. It has become a routine practice with him to examine all stools in regard to their cell content. In the treatment of these diarrheas he has been impressed with the clinical value of fruit juices with the water in these cases—orange juice, grape juice, apple juice and peach juice have been used.

Feeding Athreptic Infants.—The essential points brought out by Lonsway are: first, the condition depends on starvation which may be due to insufficient food, vomiting, or failure of absorption because of diarrhea. These, in turn, result in circulatory disturbances with more or less functional incapacity of practically all the vital organs. The condition may be prevented by proper attention to the feeding, emphasizing the importance of breast milk or if this is not obtainable, a properly modified cow's milk mixture. The treatment consists of administering a food which can be given in sufficient amounts to achieve a gain in weight without causing a digestive upset. Breast milk is always to be preferred, but if this is not available an excellent substitute is whole lactic acid milk with added carbohydrate in the form of corn syrup. This mixture can be given in large amounts over long periods of time with the happiest results.

Ohio State Medical Journal, Columbus, Ohio

August 1, 1920, **16**, No. 8

Therapeutic Possibilities of Blood Transfusion: Methods, Indications and Results. E. R. Arn, Dayton.—p. 566.
Medical Aspects of Blood Transfusion. L. A. Levison, Toledo.—p. 571.
*Craniocerebral Injuries. T. S. Jackson, Cleveland.—p. 574.
Problem of Forceps Prehension in Obstetrics. W. Gillespie, Cincinnati.—p. 578.
Lesions of Prostate and Their Treatment. H. P. Pomerene, Canton.—p. 584.
Acne Vulgaris. C. J. Shepard, Columbus.—p. 588.
Observation, Management and Treatment of the Cataract Patient Before and After Operation. W. H. Snyder, Toledo.—p. 589.
Choice of a One-Stage or Two-Stage Operation for Cataract. R. Sattler, Cincinnati.—p. 592.
*Old and New Technic in Operating for Removal of Cataract. D. T. Vail, Cincinnati.—p. 594.
Health Insurance is Impracticable from Viewpoints of the Three Groups Vitally Concerned. O. P. Geier, Cincinnati.—p. 601.

Brain Injury Causing Hemianopsia.—Jackson reports the case of a soldier who sustained a severe head injury. A large fragment of shell case entered the right occipital lobe carrying with it a portion of cap, hair and bone fragments. The patient was received twelve hours after injury in a semiconscious condition. Jackson excised the wound and removed all damaged skull tissue, but could not follow out the en bloc method, as the hole was too large and stellate lines of fracture radiated from the wound. The damaged brain, indriven bone fragments and foreign bodies were removed, the tentorium being exposed in the process. A few months after operation about the only real signs of his wound were the deep occipital depression, and an almost complete hemianopsia.

Removal of Cataract.—The object of Vail's paper is to encourage those who undertake the operation for cataract to adopt Smith's method throughout in every case where the lens will show a disposition to be borne without strain and to furnish a method to fall back on in case of imminent disaster; and also to teach that the best time to operate for cataract is before blindness and senility have set in. The rule he adopts is to operate when the patient can no longer read newspaper print with his best glasses in ordinary light.

Psychobiology, Baltimore

June, 1920, **11**, No. 3

Need for Analytical Study of Maze Problem. J. F. Dashiell, Chapel Hills, N. C.—p. 181.
Effect of Alcohol on Hand and Eye Coordination. K. Dunlap.—p. 187.
Psychologic Effects of Deprivation of Oxygen; Deterioration of Performance as Omdocated by a New Substitution-Test. H. M. Johnson and F. C. Paschal, Mitchel Field, L. I., N. Y.—p. 193.
Momentary Character of Ordinary Visual Stimuli. P. W. Cobb, Mitchel Field, Garden City, N. Y.—p. 237.
Relative Distance as a Factor in White Rat's Selection of a Path. J. E. De Camp.—p. 245.
Interrelation between Habit Formation and Feeling Qualities of Voluntary Movements. L. W. Kline.—p. 255.

South Carolina Medical Ass'n Journal, Greenville

July, 1920, **16**, No. 7

Gastric Lavage. G. M. Niles, Atlanta, Ga.
Folliculosis vs. Trachoma in our Schools: A Warning. J. W. Jervey, Greenville.—p. 167.
Diagnosis of Pulmonary Diseases in Children. W. P. Cornell, Columbia.—p. 176.

Texas State Journal of Medicine, Fort Worth

July, 1920, **16**, No. 3

Ethmoid Problem. R. H. Skillern, Philadelphia.—p. 116.
Surgical Problems in Otologic Work. E. R. Carpenter, Dallas.—p. 121.
*Two Atypical Cases of Acute Mastoiditis. W. D. Jones, Dallas.—p. 123.
Report of Selected Cases of Foreign Bodies in Bronchi and Esophagus. J. L. Burgess, Waco.—p. 128.
Abortive Treatment of Peritonsillar Infection. W. R. Thompson, Fort Worth.—p. 129.
Status of Tonsillectomy in Texas. S. N. Key, Austin.—p. 130.
Plea for More Careful Tonsil and Adenoid Operation. F. Boyd, Fort Worth.—p. 131.
Tonsil Operation, with Special Reference to Hemorrhage Control. G. S. McReynolds, Temple.—p. 132.

Atypical Mastoiditis.—In one of the cases cited by Jones, if there was any drainage at all from the mastoid, it was through the eustachian tubes, as the patient had never had a paracentesis or rupture of the drum membrane. In the second case, the ear had not discharged for three weeks and showed only a slight redness in Shrapnell's membrane, and sagging of the posterior superior canal wall.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

February, 1920, **1**, No. 1

*Is Hemolyzed Blood Toxic? W. M. Bayliss.—p. 1.
Determination of Reaction of Bacteriologic Culture Mediums. J. McIntosh and W. A. M. Smart.—p. 9.
*Sympathetic Fever and Hyperpyrexial Heat Stroke. W. Cramer.—p. 31.
*Serologic Classification of Meningococci. P. Fildes.—p. 44.
*Testing of Renal Efficiency; Observations on "Urea Coefficient." H. Maclean and O. L. V. de Wesselow.—p. 53.
Simple Method of Recording Automatically Gas Produced by Bacteria in Culture and of Oxygen Absorbed by Acrobic Non-Gas-Forming Bacteria. A. Fleming and F. J. Clemenger.—p. 66.
Litmus Solution Suitable for Bacteriologic Purposes. J. McIntosh.—p. 70.

Is Hemolyzed Blood Toxic?—No evidence was obtained by Bayliss that hemoglobin or any other product of hemolysis is toxic. If the blood pressure is low the renal secretion may be reduced, but it can be restored by injection of gum saline. Hemoglobin in solution serves as a carrier of oxygen. When hemolysis is produced by transfusion of incompatible blood the serious results are not to be ascribed to the hemolysis as such, but probably to some effect of foreign protein allied to anaphylaxis. Rabbits are not to be used for experiments of the kind described, because of their frequent death by intravascular clotting and the irregularity of this reaction.

Experimentally Produced Fever or Heat Stroke.—A short but virulent fever can be produced by the subcutaneous injection of B-tetra-hydronaphthylamin. The temperature rises within one hour of the injection and the animal dies in hyperpyrexia with convulsions and deeply congested lungs. The dose necessary to produce this effect depends on the climatic conditions under which the animal is kept. Thus a dose which will kill a mouse in a warm room will have no effect in a cold room. Again, a small dose which has little effect even in a warm room will produce a fatal pyrexia if ten or twelve animals are crowded together in the cage. It is argued by Cramer that this is an experimental "heat-stroke" comparable to that in man—namely, a deficient cooling, due to the environment, acting on an organism which is under the influence of a hyperactive nervous system. In the treatment of heat stroke, the importance of drastic cooling is emphasized. Chloral and anesthetics are suggested as accessory aids to treatment. Morphin aggravates the condition.

Classification of Meningococci.—A polyvalent meningococcus serum was absorbed with a number of strains of meningococci and then its agglutinating action was tested by Fildes on all of these strains. The strains were then classified according to the effect they had on the one serum. This is considered more satisfactory than classification by means of monovalent serums. It was found that the cocci could be divided into two distinct groups and that each group was further divisible in two subgroups. All cocci in the main groups displayed the characters of each of the subgroups to a greater or less extent. A selection of standards for closely defining subgroup characters is an arbitrary proceeding, and may lead to confusion if one and the same strain is not maintained as standard. The use of monovalent serums will fail to reveal certain cocci as meningococci.

Proteinuria Not Sign of Defective Kidney.—The question of albuminuria is discussed by Maclean and Wesselow and evidence brought forward to show that the presence of protein in the urine is more common than is generally supposed. Proteinuria by no means shows that the kidneys are defective in function and its significance as an indication of renal disease can only be ascertained when other efficiency tests are used as well. In severe cases of interstitial nephritis the best indication of the extent of kidney damage is obtained by an estimation of the blood urea. In normal individuals this should lie between 15 and 50 mg. per hundred cubic centimeters of blood, while in severe cases of nephritis it may rise as high as 200 to 300 mg. per hundred cubic centimeters or even more. The inability of the diseased kidney to excrete urea at a high concentration is utilized as a new test of kidney efficiency. The patient empties the bladder and then swallows 15 gm. of urea dissolved in water. One and two hours afterward he passes water, and these samples are tested for concentration of urea. The test is a better indication of renal efficiency than others now in use. An investigation on Ambard's coefficient showed that this test is of value only in bad cases where there is a definite accumulation of urea in the blood it has no advantages over a simple blood urea estimation. A short scheme of the method now used by the Ministry of Pensions for the investigation of renal cases is given.

April, 1920, **1**, No. 2

*Value of Mechanism of Colloidal Gold Test. J. Cruickshank.—p. 71.
*Experimental Transmission of Lethargic Encephalitis to a Monkey. J. McIntosh and H. M. Turnbull.—p. 89.
Conditions Which Are Conducive to Production of Shock by Histamin. H. H. Dale.—p. 103.
Comparative Oxygen Avidity of Normal and Malignant Cells Measured by Their Reducing Powers on Methylene Blue. A. H. Drew.—p. 115.
Etiology of Influenza. P. Fildes and J. McIntosh.—p. 119.
*Technic for Demonstration of Capsules of Bacteria. S. L. Baker.—p. 127.
*New Medium for Growth of B. Influenza. P. Fildes.—p. 129.

Value of Colloidal Gold Test.—The results of other workers regarding the value of the colloidal gold test in the diagnosis of general paralysis are confirmed by Cruickshank. The substance in the spinal fluid of general paralytics which causes precipitation of colloidal gold is not dialyzable and resides in the globulin fraction of the protein and in this respect resembles the Wassermann reacting substance. It is not altered by heating to the coagulation point of protein. The reaction is not due to peptone. The various types of reaction can be simulated by mixtures of globulin and albumin, the globulin acting as a precipitating agent and the albumin as an inhibitory or protective one. Syphilitic reactions are due to an amount of albumin sufficient to obscure partially the precipitating effect of the globulin. As the globulins obtained from negative spinal fluids, even when used in concentrated form, are almost inactive, the precipitating action of paretic fluids cannot be ascribed solely to the increase in globulin, but is probably dependent on a specific alteration of the physical state of the globulin, which is associated with a positive electric charge. Human serum globulin has the characters of a positive colloid, but the paretic and syphilitic reactions of spinal fluids cannot be attributed merely to the passage of serum globulin into the spinal fluid. The meningitic reactions, on the other hand, may be due to the leakage of plasma through damaged meninges.

Experimental Lethargic Encephalitis.—McIntosh and Turnbull describe the reproduction of lethargic encephalitis in a Pafas monkey by combined intraperitoneal inoculation of filtered emulsion of cervical cord, pons and basal nuclei, obtained from a fatal case. On the sixth and forty-eighth days after inoculation the monkey had fits; after the second fit it was lethargic, rigid and trembling until death on the fifty-sixth day. Macroscopic and microscopic examination revealed no lesions in the viscera. An extensive microscopic examination of the central nervous system revealed engorgement, hyalin thrombosis, a very few hemorrhages into "perivascular canals," edema of certain cranial nuclei, extensive degeneration of bodies of neurons and an inflammatory infiltration confined to the posterior part of the left basal ganglia, focal areas of the cerebral pia and the wall of a vessel in the right trapezoid body. In its strict localization, its situation, its distribution in the affected areas and in its cytology the infiltration resembled closely that in human cases. A description is also given of the ambiguous result of similar inoculation of the emulsion, unfiltered, into a Macacus monkey.

Stain for Capsule of Bacteria.—A film of the bacterium, preferably in suspension from agar, is dried on a slide and a film of India ink superimposed. The slide is then stained with hot gentian violet followed by iodin. The bacteria are blue-black; the capsule is colorless against the ink background.

Medium for Growing Influenza Bacillus.—A peptic digest of blood is neutralized and added to agar or broth. The advantages are that initial materials need not be sterile; it is rapidly prepared; has constant value; remains unchanged indefinitely; "giant" growth. An accurate adjustment of the reaction of the blood is essential.

British Medical Journal, London

July 24, 1920, **2**, No. 3108.

*Surgical Treatment of Gastric Ulcer. B. G. A. Moynihan.—p. 99.
Diagnosis of Glaucoma. R. H. Elliot.—p. 108.
Blood Transfusion. A. Cooke and J. W. McNee.—p. 111.
Quinin and Its Related Alkaloids in Pharmacology and Therapeutics. W. E. Dixon.—p. 113.
Blackwater Fever in Macedonia. J. F. Gaskell.—p. 122.
Treatment of Lupus Vulgaris by Liquid Acid Nitrate of Mercury. H. G. Adamson.—p. 123.
Healing of a Trophic Ulcer of the Great Toe in an Aged Glycosuric Patient. H. C. Barlow.—p. 124.
*Method of Treating Hay Fever and Paroxysmal Rhinorrhoea. M. Agar.—p. 125.

Surgery of Gastric Ulcer.—In 835 operations performed by Moynihan on 834 patients, there were twelve deaths—a total mortality of 1.43 per cent. Excluding the cases of jejunal ulcer 808 operations were done for gastric and duodenal ulcers with ten deaths—a mortality of 1.23 per cent. Posterior gastro-enterostomy was done most often, 660 times, with gastrectomy next in eighty cases. Excision of the ulcer was done forty-two times.

Silver Nitrate Applications in Hay-Fever.—The method employed by Agar consists essentially in treating the vestibule of the nose with an astringent lotion, silver nitrate, 30 grains to the ounce. The rubbing is carried out thoroughly and systematically; particular attention is paid to two spots, the first is high up on the outer wall and the second is the floor, from half to three-quarters inch back from the orifice. No part of the vestibule must be missed, and the nostril must be stretched to open up the folds. No application is made to the mucous membrane. All patients with nasal rhinorrhea treated by this method have been cured. Good results are obtained also with patients suffering from hay-fever. Some cases of asthma have also been treated, but the results have been less satisfactory, although some improvement has been obtained.

Japan Medical World, Tokyo

June 26, 1920, **10**, No. 26

Pathology of Puerperal Eclampsia. K. Obata.
*Amylolytic Enzyme Found in Cerebrospinal Fluid. Z. Saito.

July 3, 1920, **10**, No. 27

Anemia in Children. K. Takasu. (To be continued.)

July 10, 1920, **10**, No. 28

Distribution of Some Enzymes in Blood of Some Animals. S. Ozawa, H. Nishiori, K. Hiruma and K. Hirota.
Results of Practical Application of Influenza Vaccine (Pure Pfeiffer's Bacillus Vaccine). T. Kitano.

July 17, 1920, **10**, No. 29

Vital Fixation of Auricular Organs and Staining of Nerves. F. Tanaka and C. Yoshida.

Amylolytic Enzyme in Spinal Fluid.—Saito found that the amylolytic power of the normal human cerebrospinal fluid is 0.001-0.004, while that of purulent cerebrospinal meningitis was not strong, even if there were no remarkable changes in the fluid. The cerebrospinal fluid of tuberculous cerebrospinal meningitis possesses a remarkably increased amylolytic power. The fluid taken from a dead body had also a remarkably increased amylolytic power.

Lancet, London

July 31, 1920, **2**, No. 5,057

Toxic Idiopathies. J. Freeman.—p. 229.
*Psychology of Special Senses and Their Functional Disorders. A. F. Hurst.—p. 235.
Symptomless Influenzal (Streptococcal) Mastoiditis. C. Grantham-Hill.—p. 241.
*Classification of Pulmonary Tuberculosis. L. S. Burrell.—p. 242.
Sulfarsenol in Treatment of Syphilis. F. C. Doble.—p. 243.
Pleural Obliteration: a Complication of Artificial Pneumothorax. W. C. Rivers.—p. 244.
Vertigo: Its Relation to Errors of Refraction. C. E. Pronger.—p. 245.

Psychology of the Special Senses.—Hurst concludes his Croonian lectures by stating that hysterical pain is a very real thing and cannot be distinguished from pain caused by organic disease by its character or by the absence of associated sympathetic phenomena. It may, for example, give rise to tachycardia, dilatation of the pupils, pallor, and sweating, if the original organic pain did so, because the afferent tract of the reflex paths involved offers so little resistance to impulses excited by peripheral stimuli that the latter still produce marked effects, even if they are so slight that if the patient would cease to expect pain and so allow the normal resistance to return, they would either produce no effect at all or only an insignificant amount of pain and little or no sympathetic reflexes.

Classification of Pulmonary Tuberculosis.—The classification Burrell suggests is based on the life history of the patient. The first stage, A, is subdivided into (1) the hospital stage, and (2) the sanatorium stage. The hospital stage includes patients in whom pulmonary tuberculosis has just been diagnosed and who require observation in hospital or in bed at home to enable the physician to determine the proper treatment and to see the patient's response to treatment. It may be regarded as the stage of initial rest. If the patient improves sufficiently to stand a sanatorium life he passes into the sanatorium stage. Here the patient remains until he reaches the stage of maximum improvement. He then passes into the second stage. B. This includes all patients who, having received the maximum benefit from institutional treatment, are holding their own, but in whom the disease is not arrested. Stage 3 is the stage of decline, and includes patients who are losing ground in spite of treatment. These stages are subdivided as follows: A. Stage of institutional treatment.—1. Hospital stage. a. In bed, or up less than two hours a day. b. Up from two to six hours a day. 2. Sanatorium stage.—a. Capable of less than half a day's work. b. Capable of half a day's work. 3. Capable of a full day's work. B. Stage of maximum improvement.—1. Capable of a full day's work. 2. Capable of part-time work. 3. Unable to work. C. Proof of decline.—1. Able to do some work. 2. Unable to work. 3. Bedridden.

Quarterly Journal of Medicine, London

July, 1920, 13, No. 52

*Beriberi in Mesopotamian Force. C. A. Sprawson.—p. 337.
*Rectal Absorption of Glucose. K. H. Tallerman.—p. 356.
*Heart and Its Rhythm in Acute Rheumatism. J. Parkinson, A. H. Grosse and E. B. Gunson.—p. 363.
Malignant Malaria in Macedonia. J. F. Gaskell and W. L. Millar.—p. 381.
Tetany and Administration of Alkalis. P. S. Henderson.—p. 427.
Adult Tetany and Methylguanidin: A Methabolic Study. L. Findlay and J. S. Sharpe.—p. 433.

Beriberi.—The results of Sprawson's observations are summarized as follows: The disease called beriberi is a syndrome which may arise from various causes under different circumstances. One class of case is not due to a food deficiency; but appears to result from an infection. Other cases are due to a vitamin deficiency in the food: this takes a few months to operate in a previously healthy subject and may be called "primary beriberi." In yet another class the syndrome arises apparently from the effect of some depressing influence or secondary infection on a subject previously rendered susceptible to the disease. These cases may be considered to have been suffering from "latent beriberi." In all classes the clinical appearance is approximately the same, there being differences only in the relative frequency of various manifestations in the three groups.

Rectal Absorption of Glucose.—Experiments were made by Tallerman to detect any absorption of sugar administered per rectum taking place by an analysis of the blood, a direct measurement in the rise of blood sugar being made after an injection of glucose by rectum. Solid glucose, 60 gm.; was dissolved and made up to about 180 c.c. with physiologic sodium chlorid solution. This was injected slowly into the rectum in the same manner as that used in ordinary rectal feeding. About ten minutes were taken over this injection; it was given in a single dose. He found that absorption does take place, the maximum being usually attained in about 1:20; the average rise at this being 0.03 per cent. With the exception of two cases, the glucose was well retained and no ill effects resulted; there is therefore no reason to suppose that the high concentration of glucose used had an irritating or inhibitory effect on the gut, but at the same time the concentration is probably a factor in the question of absorption.

Heart Disturbances in Rheumatism.—Information was collected by Parkinson and others on the nature, incidence, and

significance of the acute disturbances in the myocardium observed during the course of a consecutive series of fifty cases of acute rheumatism. In thirty-five cases the apex beat was palpable, and the heart increased in size in ten, decreased in ten, increased ten decreased in three, and remained unchanged in twelve. No definite relationship was found between the development of systolic murmurs at the apex and apparent enlargement of the heart. Sinus arrhythmia was present after the attack in forty-seven of the fifty cases. The authors conclude that the presence of sinus arrhythmia does not indicate that the heart has escaped infection. Premature auricular contractions appeared in seven cases (14 per cent.). Acute heart-block (a.-v.) developed in fifteen of the fifty cases proceeding to the degree of dropped beats in four (8 per cent.). It often appeared quietly in the absence of other signs, such as pyrexia and tachycardia, and it invariably disappeared during convalescence. The general conclusions are that acute heart-block of some grade is common in acute rheumatism; that it indicates acute myocarditis; and that it may, therefore, be premonitory of chronic myocarditis and eventual heart failure.

Archives des Maladies de l'Appareil Digestif, Paris

April, 1920, **10**, No. 8

Compression of Trachea from Aerophagia with Idiopathic Dilatation of Esophagus. L. Bard.—p. 449.
*Painful Dilatation of Right Colon. R. Grégoire.—p. 456.
*Paroxysmal Pain in Solar Plexus. F. Moutier.—p. 471.
*Pathogenesis of Gastric and Duodenal Ulcer. R. Dahl.—p. 483.

Painful Dilatation of Right Colon.—Grégoire declares that dilatation of the colon induces pain liable to be mistaken for appendicitis although there is no specially tender point; the whole flank is painful. The ptosis and movability may kink the bowel, and he is convinced that many severe disturbances in adults are traceable to ptosis of the colon in childhood which might have been easily remedied then. The only appreciable manifestation of the ptosis is the dilatation and pain. He reports five cases in children, from 12 to 16 years old, in which colopexy put an end to all disturbances. He fastened the ascending colon to the posterior wall of the flank and the middle portion of the transverse colon to the abdominal wall. The mesentery is usually abnormally long or not properly fastened. Some of these patients get relief by reclining with the pelvis higher than the head, the colon thus sliding back into place. The tissues are usually strong and the colopexy holds in the young.

Physostigmin in Treatment of Abdominal Pain.—Moutier advocates eserin (physostigmin) in treatment of sympathetic abdominal pain and vasomotor phenomena, with accessory secretory phenomena, independent of any organic lesion in stomach or intestines. They are most common in persons with the ordinary symptomatic triad of neurasthenia, inanition and ptoses, but they may be encountered likewise with ulcer or colitis, mitral stenosis or hyperthyroidism. Atheroma of the aorta, and tumors interfering with the circulation in the abdomen may also be factors in these sympathetic paroxysms. The pain and the pulsation in the aorta, visible in the epigastrium, distinguish these solar crises. In treatment he has found eserin most effectual, giving 30 drops in the twenty-four hours, fractioned, before meals, of a mixture of 0.01 gm. neutral physostigmin salicylate, with 3.5 c.c. glycerin and 1.5 c.c. of distilled water, to which alcohol is added Q. S. to 10 c.c. He begins with 10 drops and gradually increases to 60 drops and then reduces in the same way. He never went above 60 drops. The best results may be anticipated with sympathicotonia as was evident in nine cases he reports; in four others, atropin proved more effectual.

Origin of Gastric and Duodenal Ulcer.—Summarized May 15, 1920, p. 1432.

Bulletin de l'Académie de Médecine, Paris

June 15, 1920, **83**, No. 24

The Parkinson Syndrome in Lethargic Encephalitis. P. Marie and G. Lévy.—p. 539.
Pott's Disease with Radicular Syndrome. A. Rémond.—p. 547.
*Cerium Salts in Treatment of Experimental Tuberculosis. A. Frouin.—p. 549.

Salts of Cerium Earths in Experimental Tuberculosis.—Frouin reports further experiments with intraperitoneal injection of sulphates of the cerium earths in fifty rabbits and thirty guinea-pigs after they had been inoculated with bovine tuberculosis. The final outcome confirms, he says, what might be expected considering the inhibiting influence of these salts on cultures of tubercle bacilli and the reduction of the fat and wax content of the bacilli cultivated in the presence of these salts. The animals injected developed sclerosis in the organs presenting signs of tuberculosis, and, with a few exceptions, survived from two to five months longer than the controls. In the rabbits, the tuberculous lesions in the lungs after inoculation in the ear remained restricted to the lungs. In conclusion he states that the experimental data recorded explain the clinical results realized by Grenet and Drouin (mentioned in these columns July 24, 1920, p. 246 and 276).

Bulletin Médical, Paris

July 17, 1920, **34**, No. 36

Bilharziasis in French African Colonies. Abbatucci.—p. 643.
Tuberculous Peritonitis in Older Children. H. Stévenin.—p. 644.

Bulletins de la Société Médicale des Hôpitaux, Paris

June 11, 1920, **44**, No. 21.

*Argyria. Guillemot, Mme. Michaux and H. Duval.—p. 792.
*Ether Injections in Whooping Cough. J. Audrain.—p. 795.
*Administration of Epinephrin by the Digestive Tract. Lesné.—p. 800.
Lethargic Encephalitis. Babonneix and others.—p. 801; 828.
*Emetin in Treatment of Asthmatiform Attacks. R. LeClerc.—p. 802.
Typhus at Paris Contracted in Poland. Netter and Salanier.—p. 804.
*Diabetic Epilepsy. G. Guillain.—p. 808; Idem. M. Labbé.—p. 810.
*Pernicious Anemia in the Tuberculous. A. Pissavy and others.—p. 812.
*Secondary Diphtheria. J. Renault and P. P. Lévy.—p. 816.
*Electric Chorea. C. Achard and L. Ramond.—p. 823.
Chronic Inflammatory Stenosis of Cardial Esophagus. de Jong and Boulan.—p. 826.
*Pulsus Alternans. C. Lian and R. Boulot.—p. 832.

Chronic Silver Intoxication.—In the case of argyria reported, silver nitrate pills had been taken internally for tabes, a daily dose of 0.01 gm., for ten years. The tabes had developed unmodified, but aside from the indelible pigmentation of the derma, there did not seem to be any symptoms from the argyria.

Ether in Treatment of Whooping Cough.—Audrain gives an intramuscular injection of 1 c.c. of ether in treatment of whooping cough in infants, and 2 c.c in older children, on alternate days, and has always found it successful in arresting the disease except when adenoids are a factor in the spasmodic coughing. In the discussion that followed, Dalché reported the attenuation of whooping cough in a young woman under three injections of ether, but Courcoux reported a negative case in an infant of 2 months, and Variot two negative cases in young children, but the latter added two more positive cases to the list, the effect being a complete cure after four or five injections. Audrain ascribes its action to its disinfecting properties.

Epinephrin by the Rectum.—Lesné cites research which has shown that rabbits can bear twice the fatal dose of epinephrin if it is injected directly into the stomach or small intestine, but injected into the rectum the toxic action seems to approximate that with subcutaneous injection. Neither pepsin nor pancreatin modifies epinephrin in the test tube, but the liver neutralizes its toxic action. The liver barrier seems to arrest the epinephrin ingested while, given by the rectum, thanks to the wealth of anastomoses of the hemorrhoidal veins, it can pass directly to the vena cava system. Hence he advises to give epinephrin by the rectum rather than by the mouth, as the effect will be much greater and with a smaller dose.

Emetin in Asthmatiform Attacks.—In the two cases described by Le Clerc, pulmonary emphysema was responsible for the attacks resembling asthma in the boys of 10 and 14. He arrested the distressing attack with tartar emetic, and then continued treatment with injections of from 0.02 to 0.04 gm. of emetin daily for five days, then suspension for five or ten days and then recommencing. The mother continued to give the injections to the younger boy whenever there were symptoms of return of respiratory disturbance, but after eighteen months it was never needed. When last seen, nearly three years later, the child had apparently entirely outgrown the tendency. This use of emetin is com-

parable to that recommended by Ramond in chronic bronchitis.

Diabetic Epilepsy.—Guillain reports a case of epileptic seizures developing for the first time in a soldier in the course of acute diabetes. The seizures subsided under treatment of the diabetic acidosis, and with them the left hemiplegia which had developed at the same time. In Labbé's four similar cases, the connection between the grave diabetic acidosis and the seizures was equally evident.

Pernicious Anemia in Tuberculosis.—Pissavy remarks that the case he reports differs from the few others on record in that the pernicious anemia was caused by tuberculosis of the mediastinal and mesenteric glands, the lungs being scarcely touched.

The Schick Diphtherin Reaction in Contagious Diseases.—Renault and Lévy applied the Schick test to forty-two children with measles and forty-five with scarlet fever or other contagious disease, and found that secondary diphtheria could be foretold with certainty when the reaction was positive, with virulent diphtheria bacilli present in the environment, and the rhinopharyngeal mucosa inflamed, as is the rule in the eruptive diseases. Secondary diphtheria does not develop if one member of this trio is lacking. They expatiate on the useful information to be derived from the Schick reaction in connection with the clinical and bacteriologic findings.

Electric Chorea.—Achard and Ramond say that lethargic encephalitis has thrown light on the etiology of chorea. It is probably responsible for certain cases of choreiform myoclonias and of acute chorea. Dubini's electric chorea is probably identical with it, but there is another form of electric chorea, the Henoch-Bergeron type, which differs completely from it, as they prove by the history of a case in 1904. It is mild and is cured by suggestion or tartar emetic, but it occurs in epidemic form. Of Bergeron's seven cases, three were encountered in one week.

Pulsus Alternans.—Lian and Boulot noted pulsus alternans in ten of sixty persons with high blood pressure in a recent four month period. In eight of the ten cases the alternans was not pronounced, but even in this form it is readily recognized when the sphygmomanometer cuff is inflated with a pressure equal to that of the maximal arterial pressure.

Gynécologie et Obstétrique, Paris

1920, **1**, No. 3

*Antityphoid Vaccination in the Pregnant. Guérin-Valmale and E. Vayssière.—p. 217.
*Varicocele in the Adnexa. A. Chalier and C. Dunet.—p. 239.
*Total and Subtotal Hysterectomy. De Rouville.—p. 250.
Stereoradioscopy in Measurement of the Pelvis. E. Lévy-Solal.—p. 255.
Caudal Appendage of Probably Amniotic Origin: Two Cases. A. Laffont.—p. 266.
Hermaphrodism in Man and Mammals. A. Lacassagne.—p. 273.

Antityphoid Vaccination in the Pregnant.—The experimental and clinical experiences related show that the pregnancy progresses the same in the vaccinated as in the non-vaccinated, and the fetus shows no injurious influence from the vaccination even during the last half of the pregnancy. The fetal serum acquires agglutinating power, although the placenta seems to interpose a barrier; the barrier yields more readily, the larger the amount of vaccine used.

Tubo-Ovarian Varicocele.—The varicocele can be differentiated by the appearance and disappearance of the tumor palpated, according as the patient stands, sits or reclines.

Hysterectomy Both Total and Subtotal.—De Rouville combines the advantages of both the total and subtotal technics by leaving the cervix but at the same time scooping it out to leave merely an empty shell. Hemostasis is ensured by low ligation of both uterine arteries above the point where the vaginal branch diverges.

Journal de Chirurgie, Paris

1920, **16**, No. 1. Rec'd July, 1920

*Suboccipital Pott's Disease in Adults. T. Tuffier.—p. 9.
*Circular Suture of Brachial Artery. M. Roussiel.—p. 18.
*Pseudarthrosis of the Leg. C. Dujarier.—p. 31.
Diaphragmatic Hernias. L. Prat.—p. 43.

Suboccipital Pott's Disease in Adults.—Tuffier has applied the Albee technic in seventeen cases of this kind. Necropsy eight months later in one woman showed that the bone insert had slipped to one side where it was held quite firm with fibrous bands. This shows the importance of preparing the bed for the implant so that it cannot possibly slip out, and he advises making the bed amply long enough, down to the seventh cervical vertebra.

Circular Suture of Brachial Artery.—Roussiel adds three personal cases to the seven he has found on record. The operation failed in only three and this was on account of the extent of the war wound.

Pseudarthrosis of the Leg.—The pseudarthrosis was in the leg in twenty-four of Dujarier's total 130 cases. He operated by the Albee technic, and fracture occurred in the bone transplant in three cases. This warns, he says, that some support had better be worn for a year at least. Consolidation was complete in from two to four months in 90 per cent. of the leg cases, but in one case in which the leg had not been immobilized, the patient being kept merely in bed, there was no trace of consolidation in two months, and a further operation was necessary.

Journal de Médecine de Bordeaux

May 25, 1920, **91**, No. 10

Pathogenesis of Fracture of the Skull. A. Laubie.—p. 255.
Total Anterior Tarsectomy. R. Villar.—p. 265.

June 25, **91**, No. 12

*Ipecac in Infants' Dyspepsia. R. Saint-Philippe.—p. 315.
Local Application of Streptococcus Antiserum in Dermatology. L. R. Montel.—p. 319.
Streptococcus Antiserum in Pleuropulmonary Disease and in Sepsis. Cheyrou.—p. 321.
Surgical Treatment of Chronic Constipation. Bardon and Coiquaud.—p. 323.
Attitude of the Profession Toward Labor Strikes Involving Public Utilities. P. Tissié.—p. 328.

Ipecac in Digestive Disturbances in Infants.—This article was summarized on page 136, when it appeared elsewhere.

Journal de Radiologie et d'Electrologie, Paris

January, 1920, **4**, No. 1

*Radiotherapy of Uterine Fibromyomas. A. Béclère.—p. 1.
Roentgenography of Upper Femur. F. Arcelin.—p. 12.
*Radiotherapy of Hypertrophied Prostate. Haret.—p. 19.
Pneumoperitoneum in Radiodiagnosis. L. Mallet and H. Baud.—p. 23.
Anthracosis with No Physical Signs. C. Picheral.—p. 34.
Radiography of Lower Jaw. Leulero.—p. 36.

Roentgen-Ray Treatment of Uterine Fibromyomas.—Béclère's work in this line has been repeatedly mentioned in these columns. He has applied this treatment in well over 400 cases, preferring mild weekly doses, of about 3 H units, never over 3½, and postponing the sitting if the skin shows the slightest trace of inflammatory reaction.

Roentgen-Ray Treatment of Hypertrophied Prostate.—Haret insists that when there is merely glandular hypertrophy, radiotherapy is logical and may rapidly reduce the size of the gland, but when there is hyperplasia of connective tissue, radiotherapy is not of much benefit. He gives the details of eleven typical cases, remarking that as the patients stop coming when they are relieved, complete return to normal size is seldom realized.

Lyon Médical

June 25, 1920, **129**, No. 12

*Dorsal Tender Point with Liver Colic. R. Pauly.—p. 517.

Dorsal Tender Point with Liver Colic.—Pauly found constantly in twenty-one cases of pain in the liver that there was an extremely sensitive point in the fourth or fifth right intercostal space, about half way between the spine and the spinal margin of the scapula. The pain on pressure at this point is sharper, the severer the liver colic, and it disappears when the gallstone disturbances subside into a latent phase. The pain cannot be mistaken for neuralgia as it is not so close to the spine as the latter. This tender point could not be discovered in three cases of gastric ulcer, two of Laennec's cirrhosis of the liver, in a case of simple catarrhal jaundice, acute appendicitis or secondary cancer of the liver. The histories of the total thirty cases are appended.

Lyon Chirurgical

March-April, 1920, 17, No. 2

Pseudarthrosis of the Humerus. G. Cotte.—p. 153.
*Immobilization of Sacro-Iliac Articulation. J. Hertz.—p. 199.
*Purulent Pericarditis. M. Durand and P. Wertheimer.—p. 206.
*Epigastric Hernia. Barthélemy.—p. 217.
Thoraco-Abdominal War Wounds; Two Rare Cases. Bolognesi.—p. 223.
*Bone Growth Near Cartilage Implant. Policard and Murard.—p. 228.
*Fistula into the Colon. Guilleminet and Guérin.—p. 232.
*Evolution of Wounds of Vessels. R. Leriche and A. Policard.—p. 242.
*Ligation of Brachial Artery. R. Leriche and A. Policard.—p. 250.

Fixation of Sacro-Iliac Joint.—Hertz gives an illustrated description of a method of driving a bone peg into this articulation which immobilizes it completely and stimulates osteogenetic power. He has recently applied it in three cases for suppurating sacrocoxalgia, and in a fourth case after the suppuration had subsided. The bone insert healed in place without the least drawback, and experiments on the cadaver confirmed the solid fixation that can be realized by this means.

Drainage of Purulent Pericarditis.—Durand and Wertheimer report prompt and complete cure of a streptococcus infected hemopericardium after a stab wound treated by incision and drainage through the space left by resection of the seventh costal cartilage and lower portion of the sternum.

Epigastric Hernia.—Barthélemy noted in his thirteen cases of epigastric hernia that the round ligament was frequently adherent to the opening; traction from this was responsible for the symptoms common with this form of hernia.

Bone Growth with Cartilage Graft.—Policard and Murard report a case and cite others on record in which a cartilage implant led to actual bone production in the adjacent connective tissue, a lump of bone forming.

Fistula Into the Colon.—Guilleminet advocates direct resection of the parts involved in a large suppurating fistula, without wasting time on preliminary measures to divert the course of the feces.

Traumatic Lesions of Vessels.—Leriche and Policard discuss the physiologic factors involved in the arrest of hemorrhage in an injured vessel and in secondary ulceration of the vessel. They ascribe the latter to changes induced by the proteolytic substances secreted by the leukocytes attracted to the spot. The microscope may reveal a scrap of thread or of the clothing in the vessel wall.

Ligation of Brachial Artery.—Among the practical conclusions of this analysis of the results after high ligation of the brachial artery are that the artery should be ligated in the lower third also, just above the branching of the inferior internal collateral. Otherwise this collects and wastes blood in a useless blind pouch. But ligation of the brachial artery should be avoided whenever possible; it is dangerous here. The artery should be sutured instead of ligated. Suture is not necessary, however, for lesions lower down; ligation here does not interfere with the nourishment of the arm in the same way.

Médecine, Paris

July, 1920, **1**, No. 10. Digestion and Nutrition Number.

*Diseases of Digestion and Nutrition. Lortat-Jacob.—p. 581.
*Alimentary Factors in Diabetic Acidosis. M. Labbé.—p. 590.
*Glycemia as Guide in Diabetes. F. Rathery.—p. 593.
*Examination of Fasting Stomach. P. Carnot.—p. 598.
*Different Forms of Nervous Anorexia. H. Surmont.—p. 603.
Leanness and Symptomatic Emaciation. J. C. Roux.—p. 606.
*Pancreatic Dyspepsia. A. Cade.—p. 610.
*Angiocholitis and Infectious Jaundice. M. Garnier and J. Reilly.—p. 612.
*Recent Ideas on Jaundice. M. Villaret.—p. 617.
Scurvy in Infants. G. L. Hallez.—p. 623.
*Insufficiency of the Liver. P. Brodin.—p. 625.
Constipation. G. Vitry.—p. 629.

Diseases of Deranged Digestion and Nutrition.—Lortat-Jacob reviews the progress of the last six years in this line. It is mainly in our better knowledge of the vitamins, of amebiasis, spirochetal jaundice, and diabetes insipidus, war skull wounds having cleared up much of the obscurity in regard to nervous polyuria. Improvement has been realized in some cases of pituitary diabetes by pituitary treatment, but the improvement was transient. He adds that the more common use of the duodenal tube is further progress as this throws light on conditions in that important crossroads in the body. He refers to the large number of cases of amebic dysentery in France, an aftermath of the war, and recalls that diarrhea is not a feature of dysentery; constipation is the rule. Like other protozoal diseases, malaria and syphilis, it may require treatment for months and years. An amebic abscess in the liver may develop insidiously, the rapid loss of flesh and a diffuse ache in the enlarged liver almost the only signs. The onset of spirochetal jaundice is frequently accompanied with diffuse and sometimes intense muscular pains and a meningeal reaction. Contagion may occur during the weeks following the convalescence, the urine containing at times large swarms of spirochetes.

Dietetic Factors in Diabetic Acidosis.—Labbé relates that, in his tests, the acetonuria declined in diabetics fed with abundance of butter while it increased when the diet contained much meat. Butter, olive oil and cream have serious advantages in the diet in acidosis; up to 100 gm. of butter can be given to a *diabétique acidosique* without harm. Oatmeal days, etc., owe their usefulness to the lack of proteins, especially of meat protein. The albuminoids of meat, he continues, consist mainly of ketogenous amino-acids, while those of vegetables contain much less of these. Hence he advocates legumes as contributing to maintain the nitrogen balance without the ketogenous amino-acids. It is possible that diacetic acid and oxybutyric acid are not so important from the pathogenic standpoint as we have been assuming. They reveal the acidosis, but other products may be primarily responsible for it. This assumption is sustained by the disturbance in protein metabolism and the considerable quantities of amino-acids and of residual nitrogen eliminated by diabetics with nitrogen denutrition.

The Blood Sugar in Diabetics.—Rathery reiterates that repeated determination of the sugar content of the blood is important both for the prognosis and the treatment. The variation in the glycemia, determined before and after ingestion of a test amount of glucose, and the fluctuation of the glucose threshold, are extremely instructive. When the threshold fluctuates readily, the glycosuria can usually be kept under control by dieting; otherwise not.

The Fasting Stomach Content.—Carnot gives the interpretations of the findings liable to be encountered when the content of the fasting stomach is examined.

Nervous Anorexia.—Surmont appeals to the general practitioner to be on the lookout for nervous anorexia; lacking proper treatment it may entail serious disturbances. This usually monosymptomatic neurosis is encountered at all ages, even in infants and in the aged, in both sexes, and in all classes of society. It is frequently liable to be mistaken for cancer, pernicious anemia, diabetes, suprarenal insufficiency or pulmonary tuberculosis.

Pancreas Dyspepsia.—Cade emphasizes that while the diagnosis of pancreas dyspepsia is based on analysis of the stools, negative findings do not exclude it.

Acute Angiocholitis and Infectious Jaundice.—Garnier and Reilly comment on these two distinct chapters of the pathology of the liver, although they may be associated. Most of the micro-organisms capable of generating the infectious jaundice do not thrive in bile; the icterohemorrhagic spirochete and the pneumococcus are killed by addition of 1 per cent. bile to their cultures. The streptococcus seems to be the only exception. Even the typhoid group are seldom involved. They encountered only four cases in which typhoid or paratyphoid bacilli seemed to be responsible for the infectious jaundice in a total of 1,300 cases of the latter during a recent three year period. It is usually a secondary invasion.

Jaundice.—In referring to spirochetal jaundice, Villaret says that treatment is mainly symptomatic, diuretics (lactose drinks, hexamethylenamin), baths to reduce fever, and venesection with uremic symptoms. Cases have been observed recently at Paris. The jaundice which occurs after arsphenamin treatment is usually mild, and does not always require suspension of the drug, but we must be on the watch for it and direct treatment according as the jaundice is due to superposed infection, flaring up of the syphilis or too intensive treatment.

Insufficiency of the Liver.—Brodin explains that the liver frequently suffers in the course of infectious diseases although not to a degree that entails jaundice. This insufficiency can be remedied, he asserts, by giving an extract of the whole liver. This, in powder form, is preferable to preparations of bile as the latter are liable to entail enteritis.

Nourrisson, Paris

May, 1920, **8**, No. 3

*Ordinary Diarrhea in Infants Fed on Cow's Milk. A. B. Marfan.—p. 129.
*Syphilitic Jaundice in Infants. G. Blechmann.—p. 145.
*Anemia with Splenomegaly in Infants. G. L. Hallez.—p. 154.

Treatment of Diarrhea in Infants Fed on Cow's Milk.—Marfan gives minute directions but emphasizes that rules must not be too absolute in dietetic treatment of infants; the directing principles must be adapted to each individual case. Restriction to water for one or two days and gradual resumption of the feeding are the main points, never forgetting that fluids must be supplied to the amounts the child was taking daily in health, that is, about 125 gm. per kilogram of weight for infants less than a year old and above this a liter at least. Buttermilk made for medicinal use as he describes effectually combats diarrhea. The fresh milk is sown with a little sour milk from the day before and set aside for twenty-four hours, then skimmed, churned for forty minutes, passed through a fine sieve, 30 gm. of sugar per liter are added, and 10 gm., about a tablespoonful, of rice gruel (crème de riz) and a pinch of salt, and the whole slowly heated to boiling point, taking twenty or twenty-five minutes, stirring constantly with a cream whip.

Syphilitic Jaundice in Young Children.—Blechmann presents evidence that inherited syphilis is often responsible for different forms of jaundice in infants which have hitherto been ascribed to other causes, or even regarded as physiologic. Early rachitis affecting predominantly the skull is strongly suggestive of inherited syphilis, as also early adenoids, early enlargement of the spleen and bilateral enlargement of an epitrochlear gland. Congenital strabismus, if convergent, and early convulsions are also suggestive. The frequent cure of habitual vomiting of breast-fed infants under mercury lactate is further illuminating, and intracranial hemorrhages during delivery suggest a special vulnerability of the cerebral vessels for which syphilis may be responsible. In any event, he concludes, jaundice calls for scrupulous investigation and if other signs of syphilis can be detected, he advises intravenous injection of arsenical salts, possibly by the jugular or epicranial veins.

Splenomegaly with Anemia in Infants.—Hallez' study of pseudoleukemic splenomegaly is accompanied by reports of two grave cases.

Paris Médical

July 3, 1920, **10**, No. 27

*Cardiovascular Disease in 1920. P. Lereboullet and J. Heitz.—p. 1.
Auscultation of Pulmonary Stenosis. Gilbert and Chabrol.—p. 12.
Treatment of Syphilitic Aneurysm of Aorta. W. Oettinger.—p. 15.
How and When to Give Digitalis. O. Josué.—p. 17.
*Auscultation of Arteries. L. Gallavardin and L. Tixier.—p. 25.
Diagnosis of Tricuspid Insufficiency. P. Ribierre.—p. 31.

Recent Progress in Cardiology.—Lereboullet and Heitz say in this annual review of progress in diseases of the heart and vessels that the Pachon oscillometer has won an important place not only in general practice but in neurologic and psychiatric investigation, and in the operating room and maternity. It reveals the apparent death of the newly born, and allows estimation of the heart action of the parturient. It shows not only the maximal and minimal blood pressure but also the condition of the peripheral circulation and the relative vasoconstriction of different arteries, and throws light on their anatomic state. They cite further the occasional regulation of irregular heart action by quinin. One case has been reported in which auricular fibrillation yielded to quinin, but in some other cases the results were negative. Clerc and Pezzi have recently reported that quinin has a tendency to slow and depress the myocardium and the blood pressure, and thus is a true antagonist to epinephrin. They warn further that with asystole the Ambard ureosecretory constant must be interpreted with reservations.

Auscultation of Arteries.—Gallavardin and Tixier apply auscultation to determine the ascending phase of the arterial pulse, and describe how it is possible to detect the gaps caused by aortic stenosis, thus adding another peripheral sign to the semeiology of aortic stenosis.

Presse Médicale, París

July 17, 1920, **28**, No. 49

*Asthma in Infants. A. B. Marfan.—p. 481.
*Physiologic Sosias in Human Pathology. H. Frenkel.—p. 483.
Application of Tincture of Iodin to the Eye. L. Cheinisse.—p. 486.

Asthma in Infants.—Marfan describes a typical case in an infant of 8 months with diffuse bronchitis. Small doses of potassium iodid kept up for months or years have proved useful to ward off the tendency, but for the attack itself, subcutaneous injection of epinephrin in artificial serum, once or twice a day, has been remarkably effectual in his hands on several occasions. The dyspnea can be combated with a mixture of equal parts of syrup of codein and syrup of ether, a teaspoonful three or four times a day, and burning an antiasthma powder in the room. (The syrup of codein of the French Codex contains 0.2 per cent. codein while the syrup of ether contains 2 per cent. ether.)

Physiologic Doubles in Human Pathology.—Frenkel uses and defines the term "sosie" as a "person who has a striking resemblance to another," and applies it to a series of physiologic conditions the exaggeration or transformation of which would constitute a morbid entity, and also to a series of physiologic conditions which have merely a superficial resemblance to certain pathologic conditions. He reviews the field of both types.

Revue Médicale de la Suisse Romande, Geneva

June, 1920, **40**, No. 6

*Tuberculin in Therapeutics. Jaquerod.—p. 333.
Lethargic Encephalitis. V. Demole.—p. 352 and p. 353.
*Occupational Poisoning with Phosgen. Irène Gerber.—p. 356.
Pneumococcus Thyroiditis and Prevesical Abscess. Kummer.—p. 362.
Ingestion of Gram of Cocain. Bonjour.—p. 368.
Historical Instances of Sudden Blanching of Hair. C. G. Cumston.—p. 384.

Tuberculin Treatment.—Jaquerod recalls that immunization to a certain extent against tuberculosis can be obtained naturally and artificially, and hence vaccination of man is no idle dream. To date it has not been fully realized, but tuberculin treatment reenforces the resisting powers, and usually, in the course of months, slight improvement may be counted on if the forces of the organism are still capable of opposing resistance to the infection. The tuberculin is merely an adjuvant, but his fifteen years of experience with it have demonstrated its efficacy in many cases. He warns that in tuberculosis every physical trauma, no matter how insignificant, augments the virulence of the bacilli and reduces the resistance of the cells in the foci. He reiterates that repose is indispensable in treatment of the tuberculous. They must avoid all work, all sports, and everything that induces fatigue. Tuberculin must never be given in amounts large enough to induce an appreciable reaction in the focus. It probably always acts on the focus, but this action must never be pronounced enough to be clinically apparent. The diagnostic importance of tuberculin is sustained anew by his three cases in which supposedly healthy persons gave a positive ophthalmoreaction but, as they never showed any signs of tuberculosis, no attention was paid to the findings of the test, until three years, six and eight years later extremely severe tuberculosis became manifest. He adds that it would be absurd to treat for tuberculosis every one giving a positive skin or intradermal test, but that this should be the rule when tuberculin tests elicit exaggerated positive responses.

Occupational Phosgen Poisoning.—Gerber's patient was a manufacturing chemist; with two men he was experimenting with phosgen, passing it through alcohol. Each felt some irritation after several hours' work but the two men soon threw off the conjunctivitis and cough. The other after four hours of slight symptoms showed signs of pulmonary asphyxia progressing to a fatal termination the twenty-fourth hour.

Schweizerische medizinische Wochenschrift, Basel

July 8, 1920, **50**, No. 28.

Lethargic Encephalitis in Children. E. Wieland.—p. 581.
Hemoglobinuria after Influenza. G. Huber-Pestalozzi.—p. 590.
Emphysema in Influenza. A. Glaus.—p. 593.
Lethargic Encephalitis. T. Schaeppi.—p. 595.

Policlinico, Rome

June 21, 1920, **27**, No. 25

*Sugar Content of the Blood. S. Silvestri and G. Aiello.—p. 643.
Epidemic Encephalitis. V. Ronchetti.—p. 646.

Determination of Sugar in the Blood.—Silvestri and Aiello warn that the presence of creatinin in the blood may interfere with tests for sugar, as in pathologic conditions the creatinin content is exaggerated. Bang's micromethod, on the other hand, is difficult and has several sources of error. They describe what they say is an improved technic, first applying Folin's sodium tungstate and phosphoric acid method to obtain a protein-free blood filtrate, and then a modification of Bertrand's method after adding 10 mg. of glucose to the filtrate. The normal average fasting, from a number of persons on the hospital diet was 0.78 and 0.70 per thousand in the total blood and 0.84 and 0.78 per thousand in the plasma. In a case of diabetes, the figures were 2.70 and 3 per thousand. Their test requires 2 c.c. of blood.

June, 1920, **27**, Medical Section, No. 6

Recent Progress in Field of Malaria. T. Pontano.—p. 193. Cont'd.
Hemoglobinuria in Malaria. C. Moreschi.—p. 216.

June, 1920, **27**, Surgical Section, No. 6

Resection of Rectum for Cancer in Man of Twenty. R. Botteselle.—p. 169.
Pyoculture and Seroculture. A. Cassuto.—p. 174. Cont'd.
*Acute Dilatation of Stomach. P. Gilberti.—p. 180.
*Operative Treatment of Gastric Ulcer. D. Giorgacopulo.—p. 187.

Acute Postoperative Dilatation of the Stomach.—Among the various causes to which this postoperative complication has been ascribed, Gilberti cites suprarenal insufficiency, and reports a case in which the transient benefit from epinephrin, and the cheesy process discovered in the suprarenals at necropsy seemed to point to this etiology. He agrees with those who regard acute hyposuprarenalism or the flaring up of the chronic as the common basis for the postoperative disturbances credited to the anesthetic, or to infection, or irritation of the peritoneum or sympathetic system. The practical conclusion is that epinephrin is called for in all postoperative complications except those from mechanical traction.

Gastro-Enterostomy Versus Resection for Gastric Ulcer.—After long discussion of this subject, the author's verdict is that resection is undoubtedly the operation of the future. Its only disadvantage is the high mortality, and time is constantly reducing this.

Riforma Medica, Naples

June 5, 1920, **36**, No. 23

*Slow Malignant Endocarditis. E. Ruggeri.—p. 522.
Convalescents' Spinal Fluid in Treatment of Lethargic Encephalitis. C. Cantieri and R. Vegni.—p. 525.

Slow Malignant Endocarditis.—Ruggeri reports a case in a young man who had had at the age of 15 an attack of acute febrile rheumatism which had left a well compensated aortic insufficiency. At 20 superposed infection transformed the clinical picture to that of chronic endocarditis with irregular fever, and *Streptococcus viridans* was found in pure culture in the blood. No drugs to date have modified the course of this slow endocarditis, but a few communications suggest the possibility of serotherapy.

June 12, 1920, **36**, No. 24

Case of Jaundice Following Influenza. S. Corinaldesi.—p. 542.
*Double Acquired Athetosis. C. Todde.—p. 544.
Deep Congenital Angioma of the Neck. P. de Tommasi.—p. 548.
*Mastoid Versus Vertebral Suppuration. G. Molinari.—p. 550.

June 19, 1920, **36**, No. 25

Operative Intervention in Cases of Hypochondriac Delirium. G. Milone.—p. 562.
Perforation of Meckel's Diverticulum. F. d'Agostino.—p. 565.

Double Acquired Athetosis.—Todde reports the case of a young woman who developed athetosis accompanied by pain in the lumbar region and contractures interfering with swallowing, chewing and speaking. The extremely severe condition has persisted almost stationary during three years to date. The constant incoordinated involuntary movements subside somewhat in repose and almost entirely during sleep. To control the tendency for the head and shoulder to jerk backward, the young woman sits and stands with her back against the wall or other support. By exclusion, Todde accepts some lesion in the cortex complicated with chronic changes in the spinal cord and nerves. This would explain the exaggerated knee-jerk, Babinski sign, neuralgic pains, trophic changes in certain muscles, paresis of the extensor muscles of fingers and toes and the muscular spasms. The inability to speak distinctly is evidently due to contracture of the muscles involved.

Differentiation of Mastoiditis and Pott's Disease.—Molinari emphasizes the occasional difficulty in distinguishing between suppuration in the mastoid and a tuberculous process in the vertebrae below, while opposite treatment is required for the two. Roentgen-ray findings may be the only instructive guide.

Rivista Critica di Clinica Medica, Florence

May 25, 1920, **21**, No. 15

*Syphilitic Lesions in Stomach. A. Furno.—p. 169. Begun in No. 14, p. 157.

June 5, 1920, **21**, No. 16

Disappearance of Systolic Murmur with Mitral Insufficiency. G. Galli.—p. 181.

Gastric Syphilis.—Furno emphasizes that a syphilitic origin for stomach disturbances should be suspected when the pains are exclusively nocturnal and there is anacidity; also when there are symptoms of gastric ulcer with hypoacidity and low digestive power. Plastic linitis should also suggest the possibility of syphilis, and likewise hour-glass constriction of the stomach. He declares that normal or exaggerated gastric chemistry excludes the possibility of a gastric syphilid, but he never omits a tentative course of treatment as for syphilis in every case of gastric tumor before resorting to radical measures.

Archivos Españoles de Pediatría, Madrid

March, 1920, **4**, No. 3

*Meningitis in Nurslings. C. Pelfort.—p. 129.
Intravenous Medication Through Longitudinal Sinus. J. Bravo Frías and J. A. Alonso Muñoyerro.—p. 140.

Meningitis in Nurslings.—Pelfort reports five cases of meningitis in young infants. The pneumococcus or streptococcus was cultivated from four of the cases; the other was of tuberculous origin. The infants were from 22 days to 10 months old, and none survived.

Brazil-Medico, Rio de Janeiro

May 8, 1920, **34**, No. 19

*Correction of Femoral Hernia. A. Brandão, Jr.—p. 295.
Surgical Aspects of Chronic Constipation. J. Monjardino.—p. 297.

May 29, 1920, **34**, No. 22

Mathematical Expressions of Muscular Work. M. Ozorio de Almeida.—p. 339.
Normal Horse Serum in Treatment of Anthrax. Cassio de Rezende.—p. 340.
*Simple Stain for Malarial Parasite. N. B. Gonçalves.—p. 341.

Treatment of Femoral Hernia.—Brandão has worked out on the cadaver a technic for herniotomy which, he says, has the advantages and none of the drawbacks of both the femoral and the inguinal methods, but he has had no opportunity to apply it in the clinic as yet. The incision passes from a little outside of the neck of the hernia to the external ring of the inguinal canal and the region is exposed as for an inguinal hernia, down to Cooper's and Gimbernat's ligaments. The lower lip of the incision is then drawn down until the anterior wall of the femoral canal is exposed, and the hernial sac is then pushed up to the inguinal canal and treated there as if it were an inguinal hernia. The femoral canal is then closed by bringing together the lower margins of the transversalis, the obliquus internus, Cooper's ligament and the aponeurosis of the pectineus.

Stain for Malaria Parasite.—This article is republished in No. 24, as it contains several misprints.

Gaceta Médica de Caracas

April 15, 1920, **27**, No. 7

*Wandering Spleen. L. Razetti.—p. 79.
*Surgery of Stomach. L. Razetti.—p. 79.
Pneumogastric and Lumbar Plexus Neuritis. Salom.—p. 83.
*Neuro-Amebiasis. C. E. Salom.—p. 86.
*Beriberi. C. E. Salom.—p. 87.

April 30, 1920, **27**, No. 8

Methylene Blue in Therapeutics. C. E. Salom.—p. 94.

Spleen in Right Iliac Fossa.—Razetti found that the supposed ovarian tumor in the right iliac fossa was the spleen with a twisted pedicle more than 20 cm. long. He says it is the first case of the kind in Venezuela and the first splenectomy.

Surgery of the Stomach.—Razetti concludes this lecture with an appeal to physicians not to wait for more than one, two or three months in cases of gastric or duodenal ulcer if no improvement is manifest under medical measures, but call in the surgeon at once.

Neuro-Amebiasis.—Salom emphasizes the importance of differentiation of neuritis for which amebic dysentery is responsible. Emetin offers a prospect of cure except in the fulminating form in which a fatal termination is the rule, unless the heart can be sustained and respiration maintained with amyl nitrite and similar measures until the effect of the emetin becomes apparent.

Beriberi.—Salom remarks that beriberi is one of the great scourges of his state, Bolívar in Venezuela. A change of climate should be advised in every case of beriberi, even if the change is only to a short distance. Moderate exercise on foot and a nutritious diet should be ordered, with nerve tonics, diuretics if there is a tendency to edema, and tonics for the heart and respiratory apparatus. The paralytic and edematous forms get well with mere change of climate, but the fulminating cases are usually promptly fatal. Beriberi patients should be kept apart from others.

Deutsche medizinische Wochenschrift, Berlin

Feb. 26, 1920, **46**, No. 9

Treatment of Influenza. F. Kraus.—p. 225.
*Acute Yellow Atrophy of the Liver. E. Fraenkel.—p. 225.
Pathogenesis of Acquired Hemolytic Icterus. C. Lewin.—p. 228.
*Record of Effect of Drugs on the Heart. E. Weber and A. Sperling.—p. 232.
*Heart Findings in Illuminating-Gas Poisoning. H. Zondek.—p. 235.
*Aids in Disease of the Intestine. Ganter and van der Reis.—p. 236.
Treatment of Lung Tuberculosis with Silicic Acid. Kesseler.—p. 239.
Bone Transplantation. M. Katzenstein.—p. 240.
Methods of Estimating the Work of the Heart. F. Klewitz.—p. 242.
Heart Output per Beat. G. Wiedemann.—p. 243.
Hygiene and Social Hygiene. H. Reiter.—p. 243.
Dermatologic Hints for General Practitioner. M. Joseph.—p. 244.

Acute Yellow Atrophy of the Liver.—Fraenkel had lately the opportunity of examining directly the liver of two living subjects while suffering from acute yellow atrophy, and he agrees with Umber to the extent that the acutely atrophic living liver differs in its macroscopic appearance from the acute atrophic liver of the cadaver, but his findings do not confirm the conclusions reached by Umber in regard to a postmortem autolytic product. In Umber's case the patient recovered so he was not in a position to compare his intravital with postmortem findings, whereas in Fraenkel's cases the patients died, so that a direct comparison of vital and postmortem conditions in the liver was possible. He adds that more or less ascites was found in over 20 per cent. of thirty-three cases of acute yellow atrophy of the liver he has encountered.

Estimation by the Plethysmograph of the Effect of Drugs in Heart Disease.—Weber and Sperling state that it is not only the cumulative effect of cardiac remedies that may be injurious, but that often the first dose exerts a harmful influence, for which reason it is important to be able to test the effect of a drug on a patient by the plethysmograph right from the start. While the arm is in the plethysmograph jar, the foot is vigorously exercised. The findings are thus reenforced and are instructively characteristic. They add that a subcutaneous injection of 0.5 mg. of atropin half an hour before giving the heart tonic sometimes rendered it possible for the first time for the drug to exert the desired action, as the atropin reduced the hyperirritability of the vagi.

Heart Findings in Experimental Illuminating-Gas Poisoning.—Zondek found that in rabbits, illuminating gas produced a dilatation analogous to that observed in man; the auricles especially were affected, and the condition persisted from twenty to thirty hours. No anatomic changes of the heart muscle were noted. In cats, in which the heart muscle is more strongly developed, the dilatation was not observable, which furnishes experimental proof of the rôle played by the organic predisposition of the heart.

Clinical Aids in Diseases of the Intestine.—Ganter and van der Reis describe two capsules, to be swallowed, and then opened by the action of a magnet from without. With one, it is possible to take from any part of the intestine material for examination, and, with the other, to pour out the solution of a drug at any point of the intestinal canal, for local treatment.

Deutsche Zeitschrift für Chirurgie, Leipzig

September, 1919, **151**, No. 3-4

*Operative Correction of Paralytic Drop-Foot. R. Klapp.—p. 145.
*Sensibility of Stomach and Intestines. A. W. Meyer.—p. 153.
*Stretching the Skin for Plastic Operations. A. W. Meyer and Struckmann.—p. 164.
*Four-Fingered Hand. E. Paul.—p. 174.
Chordoma with Metastases. W. Peters.—p. 191.
*Actinomycosis of Neck and Brain. E. Geymüller.—p. 200.
Unusual Internal Hernias. P. Deus.—p. 222.
Relations between Colitis and Appendicitis. F. Bode.—p. 234.
*Ascaris Ileus. Rost.—p. 251.
*Traumatic Origin of Sarcoma. K. W. Eunike.—p. 262.
Aneurysm of Renal Artery. O. Orth.—p. 272.

Operative Correction of Drop-Foot.—Klapp gives an illustrated description of a case in which he restored functional use of the foot by arthrodesis. The foot was slit horizontally from end to end, through soft parts and bones into the tibiotarsal joint, thus turning back a tongue-shaped flap comprising nearly the entire dorsum. The dorsum flap did not fit into place as the foot was brought up to a right angle, as this shortened the expanse. The end of the flap was cut off to fit to the raw surface, and it was fastened with periosteum and periosteum-tendon sutures. The patient was a girl of 17, and the paralysis dated from a febrile disease at the age of 7. The foot after the operation was placed in a cast. Morphin was required for the severe pain at first, but in three months the girl was walking on the foot, which had consolidated with solid arthrodesis. Klapp ascribes the success of the intervention mainly to the displacement of the tops of the numerous bones and joints, bringing sawed joints in contact with raw bone surface. The tops of all the metatarsal joints had been included in the flap. Kirschner has recently reported a similar operation to gain access to all parts of a diseased foot.

Sensibility of Stomach and Intestines.—Meyer experimented on twenty-six cats, and states that the walls of the stomach and intestines and the serosa covering them did not display the slightest sensibility to adequate stimuli, but traction or manipulation of the mesentery always elicited responses showing sensibility.

Stretching the Soft Parts with Plastic Operations.—Meyer and Struckmann comment on the large amount of skin and soft parts that can be loosened and drawn up from below for reconstruction of the chin and lips, and be held there by traction applied long enough. To ensure this they run two skewers from side to side through the skin of the chin, the ends of the skewers fastened parallel in a frame. The traction on the frame is by means of threads fastened to a long spring projecting from a headpiece.

Malformation of the Hand.—Paul theorizes to explain the causes of the malformation of the wrist with a four-fingered hand.

Acinomycosis of Central Nervous System.—Geymüller reports from Basel a case in which the diagnosis of a tuberculous process in the atlas was corrected to actinomycosis by puncture of a swelling in the neck, disclosing actinomyces. Similar cases on record are compared with this. As the lesions are multiple, surgical measures are of little use.

Ascaris Ileus.—Rost had occasion to operate last year in five cases of abscesses in the bile apparatus caused by

ascarides, and in five cases of ascaris ileus. In two of the latter there was no mechanical obstruction in the bowel, and he was able by experiments on animals to determine that total extracts of ascarides bodies exaggerate the tonus of the bowel of warm-blooded animals, while an extract of the skin of the helminths has the opposite effect. This throws light on the spastic conditions found with clinical ascaris ileus; the spasm of the bowel is strictly localized in one loop, as a rule. All his patients with ascaris ileus complained of violent abdominal pains. The tonus-reducing property of the ascaris skin may be responsible for certain functional disturbances in subjects with helminths, possibly contributing to clumping of the helminths.

Traumatic Sarcoma.—Eunike reports six cases of sarcoma developing at the seat of a trauma; in four it was an occupational injury. The importance of the trauma as a factor was unmistakable, but the rarity of the development of malignant disease after a trauma shows that other factors are indispensable.

Monatsschrift für Kinderheilkunde, Berlin

May, 1920, **18**, No. 2

Flour and Butter Porridge in Infant Feeding. E. Moro.—p. 97.
Prognosis of Tuberculosis in Early Childhood. Eichelberg.—p. 123.
Esophageal Stenosis with Multiple Spasms. H. Ringsdorff.—p. 131.
*Amaurotic Family Idiocy. Starck.—p. 139.
Apparent Motion of Cranial Bones in Infants. Petényi.—p. 142.
Milk Hygiene and Dairy Management. W. Grimmer.—p. 144. Conc'n.

Amaurotic Family Idiocy.—Starck had an opportunity of observing a typical case of Tay-Sachs' amaurotic family idiocy in a nobleman's family in a Russian Baltic province. There was no history of Jewish ancestry. The first child and the fourth child—both girls—had died from the disease at 12 months. The second child, a boy of 12, and the third child, a boy of 10, developed normally and showed no signs of the disease. The fifth child, a girl, was a year old when seen by Starck, and the indications then were that it could not live long. It was peculiar that the disease developed in a very similar manner in all these girls of the family, although a special sex incidence is not otherwise recorded. It was also significant that the parents were apparently healthy and living in easy circumstances.

Monatsschrift für Geb. und Gynäkologie, Berlin

June, 1920, **51**, No. 6

*Transverse Stenosis of Vagina. H. Peters.—p. 363.
*Premature Separation of Normally Located Placenta. F. Lieven.—p. 377.
*Forceps Delivery and Viability of the Child. A. Mayer.—p. 389.
Radiotherapy in 1919. H. Wintz.—p. 415. Conc'n. Summarized p. 514.

Transverse Stenosis of Vagina.—Peters suggests that an obstructing transverse membrane may yield at childbirth and escape detection, but in some cases laceration induces severe hemorrhage. Neugebauer compiled 1,000 cases of the kind, with delivery by the natural route in 245, but the mortality in this group was 10.55 per cent. The laceration may extend into the wall of the vagina and increase the danger of infection. Peters recommends excision, with suture and ligation of vessels, unless the membrane is thin and delicate, but warns that the operation may entail further stenosis later. The stenosis was evidently congenital in the six personal cases he reports.

Premature Separation of the Placenta.—Lieven attributes to pregnancy intoxication this serious complication. In the sixteen cases at the Bonn clinic, albumin was not evident in the urine except in one case. Three of the women barely escaped with life from the severe hemorrhages, and one died, as also 56 per cent. of the children.

Forceps and Fetal Mortality.—Mayer analyzes the obstetric experiences at the Heidelberg maternity to decide whether forceps deliveries are responsible for deaths which might have been avoided by adopting other measures. Forceps were applied in 1.35 per cent. of 5,914 deliveries and 3.23 per cent. of the children died during delivery or in twenty-four hours afterward, and 3.8 per cent. were stillborn. The statistics from twenty German maternities show that forceps were used in about 3.97 per cent. of all the deliveries. In compiling statistics he urges to omit from the calculations all the newborn less than 35 cm. in length and weighing less than 1,500 gm., as these belong in a separate group.

Münchener medizinische Wochenschrift, Munich

Feb. 6, 1920, **67**, No. 6

*Irradiation of Superficial Carcinomas. Seitz and Wintz.—p. 145.
*Effect of Cholelithiasis on the Stomach. C. Rohde.—p. 150.
*Intravenous Strophanthin Therapy. H. Roderburg.—p. 152.
Malaria in Mountain Regions. Von Neergaard.—p. 155.
Granuloma of Venereal Origin. W. H. Hoffmann.—p. 159.
Factors Determining Sex. G. Rittershaus.—p. 162. Idem. F. Lenz.—p. 164.
*Sulphosalicylic Acid Test for Albumin. Schall.—p. 164.
Taenia as Cause of Acute Appendicitis. W. Krieger.—p. 165.

Irradiation of Superficial Cancers.—Seitz and Wintz state that, while it would seem that cutaneous and subcutaneous carcinomas ought to be easily cured because they are so easy to reach, such is not the case, and give as the reason that they can be irradiated from only one angle. It is easy to kill the topmost layer of carcinoma cells that lie next to the tube, but as these carcinomas usually penetrate the deeper tissues and commonly have considerable lateral extension, the more distant cells receive an insufficient dose or sometimes only a stimulating dose. Carcinoma of the uterus, on the other hand, owing to its central location, can be irradiated from six or seven different angles, which makes the prognosis more favorable.

Effect of Cholelithiasis on the Stomach.—Rohde finds that with a tendency to gallstones, hypoacidity is usually present as the result of the loss of the function of the gallbladder. When hypoacidity is noted after removal of the gallbladder, it is therefore not the result of the operation, as it had preceded the latter. With chronic cholelithiasis, the stomach and duodenum may change their shape and position, as can be seen with the roentgen rays. In many cases there are, at the same time, motor disturbances from adhesions between the gallbladder and neighboring organs. Patients are, however, seldom much affected in their general health by these changes. If operation is in any wise indicated, cholecystectomy, with or without a T drain, is always to be preferred to any more conservative operative method, as it is a question of removing a gallbladder that is entirely useless from the physiologic and functional standpoint, while the operation protects the patient against further evil consequences which might result from retention of the organ.

Intravenous Strophanthin Therapy.—Roderburg states that intravenous strophanthin is indicated in mild cardiac insufficiency, of whatever origin (vitium, myocarditis, hypertonia), but that it is not adapted for combating circulatory insufficiency following acute infectious diseases. When indicated, it is superior to digitalis by mouth or vein, as is especially noticeable in cases of the type of congested liver. Certain cases of dropsy of nonrenal origin are not influenced by strophanthin, and yield only to theobromin preparations. The strophanthin injections are absolutely harmless, even with very high blood pressure and in the final stages of chronic nephritis. In fact, he says, severe cardiac insufficiency associated with nephritis is more liable to be influenced by the intravenous use of strophanthin. As an initial dose he recommends not more than 0.5 mg., and often uses not more than 0.3 to 0.4 mg. The maximal dose is from 0.75 to 1.0 mg. The intervals should be at least twenty-four hours, and are usually from two to five days. He has thus treated about 100 patients in the last eight years.

A Source of Error in the Sulphosalicylic Acid Test for Albumin in Urine.—Schall reports that sulphosalicylic acid when combined with urine containing large amounts of calcium produces a precipitate which so closely resembles albumin as to cause confusion. The precipitate is, however, denser than any sediment or other clinical findings. Control tests with other albumin reactions, heating, or previous dilution of the urine, serve to avoid diagnostic errors.

June 11, 1920, **67**, No. 24

Clinical, Anatomic and Etiologic Aspects of Disease Nomenclature. F. Marchand.—p. 681.
Influenzal Pneumonia. Treupel and Kayser-Petersen.—p. 686.
Epidemic Encephalitis. W. Cohn and I. Lauber.—p. 688.
No Uniform Carcinoma Dose in Roentgenotherapy. Jüngling.—p. 690.

*Stain for the Color-Blind for Tubercle Bacilli. K. W. Jötten and P. Haarmann.—p. 692.
Diabetes Insipidus with Serous Meningitis. A. Foerster.—p. 694.
Minimal Food Requirements of Man. W. Prausnitz.—p. 696.
Sunlight in Relation to Malaria Recurrence. F. Lenz.—p. 697.
Air-Embolism Following Metreurysis with Normally Located Placenta; Recovery. F. Lichtenstein.—p. 699.
Eczema Resulting from Sweat Band. Schemel.—p. 700.

Comparison of Recent Staining Procedures for Tubercle Bacilli.—Jötten and Haarmann commend their modification of the Spengler method for the demonstration of tubercle bacilli. After the smear has been stained, in the usual manner, with carbolfuchsin solution, it is decolorized (twenty seconds) with a 15 per cent. nitric acid solution. It is then briefly rinsed and again treated for ten seconds with nitric acid; rinsed again and afterward counterstained for about thirty seconds in Spengler's picric acid-alcohol mixture (saturated aqueous picric acid and absolute alcohol, equal parts). The smear is again rinsed and allowed to dry and is now ready for microscopic study. Out of 170 sputum specimens the Ziehl-Neelsen method yielded fifty-nine positives and the Spengler original method gave sixty-one, whereas the modification just described furnished sixty-two positives. Furthermore, the average number of bacilli visible in the field was thirty-one for the modification, twenty-six for the Spengler original method and only thirteen by the Ziehl-Neelsen method.

Wiener klinische Wochenschrift, Vienna

Feb. 19, 1920, **33**, No. 8

Epidemic Choreiform Encephalitis. L. Dimitz.—p. 163.
Clinical Types of Lethargic Encephalitis. J. Gerstmann.—p. 165.
Intermittent Choked Disk and Abducent Paralysis with Influenza or Lethargic Encephalitis. E. Urbantschitsch.—p. 166.
Studies on the Action of Nuclein. III. P. Habetin.—p. 168.
Developers for Instantaneous Roentgenograms. J. M. Eder.—p. 169.

Zeitschrift für Kinderheilkunde, Berlin

1920, **25**, No. 4-6

*The Metabolism in Rachitis. P. Grosser.—p. 141.
The Blood Picture and Platelets in the Newly Born. E. Slawik.—p. 212.
*Immunity of the Newly Born to Diphtheria. F. von Gröer.—p. 227.
Criticism of the Tubercle Bacillus Partial Antigens. H. Langer.—p. 232.
The Teeth with Congenital Syphilis. Else Davidsohn.—p. 249.
*Inflammation in the Dental Sac in Young Infants. M. Zarfl.—p. 266.
Diagnosis of Solitary Tubercle in Spinal Cord. R. Wagner.—p. 322.
*Arhinencephalia Monstrosity. Alice Goldstein.—p. 328.

The Metabolism in Rachitis.—Grosser devotes seventy-one pages to the metabolic findings and other minute details of experiments on ten infants injected parenterally with different calcium and phosphorus compounds, on comparable diets, in an effort to learn which of the different calcium salts are most readily assimilated by the child with a tendency to rachitis. He does not draw any general conclusions from the research.

Possibility of Diphtheria in the Newly Born.—Gröer comments on the importance of the passive antitoxin immunity to diphtheria possessed by certain newly born infants. Rominger has recently reported that 23.2 per cent. developed diphtheria among forty-three newly born known to be carriers of virulent diphtheria bacilli; 76.8 per cent. showed no sign of the disease. Gröer has found that the general proportion of the immune is about 84 per cent. at birth, but drops to 71.9 by the fourth month, to 56.6 per cent., by the end of the sixth and to 30 per cent. by the end of the year. Of course if the mother is not able to generate antibodies, the newly born will lack this protection.

Inflammatory Process in Dental Sacs in Nurslings.—Zarfl gives an illustrated description of six cases of the phlegmonous or osteomyelitic form of inflammation of the dental germ with production of sequesters, and discusses the condition from eleven different standpoints. The permanent teeth do not seem to be injured by the stormy process in the alveoli, but the first teeth involved are destroyed. Recovery is known in only one of the twelve cases on record, and a tendency to recovery in one other. Erysipelas of the face was the primary disease in some of his cases. The prognosis is better in the phlegmonous form, with the primary process in the gums. No instance is known of infection of the mother or wetnurse by the child's nursing, but it would be safer to feed the child with drawn breast milk.

Arhinencephalia.—Goldstein's study of a monster with the olfactory lobe and most of the hind brain missing seems to confirm the assumption that pressure or traction from the amnion is responsible for such deformities, and also for cyclops monstrosities.

Zentralblatt für Chirurgie, Leipzig

June 12, 1920, **47**, No. 24

Exclusion of the Jejunum in Treatment of Jejunal Ulcer. E. Pólya.—p. 585.

Zentralblatt für innere Medizin, Leipzig

May 15, 1920, **41**, No. 20

*The Clinical Significance of Cylindroids. F. Eigenberger.—p. 354.

The Clinical Significance of Cylindroids.—On the basis of examination of 81 cases of uncompensated heart disease, Eigenberger reports that his results confirm the views of von Jaksch and Quensel, who ascribe to cylindroids a certain clinical importance as signs of disturbance of renal circulation. Eigenberger could demonstrate cylindroids in 36, or 44 per cent., of his 81 cases. In most of the cases in which cylindroids were present there were strong clinical signs of disturbed renal circulation. In 2 of the cases with large numbers of cylindroids, necropsy disclosed marked renal stasis.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

May 29, 1920, **1**, No. 22

Introduction to Study of Physiology. G. van Rijnberk.—p. 1906.
Medical Service in British Aviation Department. P. M. van W. Palthe.—p. 1920.
*Heterochromia. P. J. Waardenburg.—p. 1929.
*International Scientific Terms. J. E. Schulte.—p. 1941.
Unusual Causes of Ileus. J. F. O. Huese.—p. 1944.

Heterochromia.—Waardenburg compares the various theories in regard to diversity of color in irises, and describes 7 cases in which it accompanied paralysis of the sympathetic nerve. In his 73 cases of heterochromia in man, in 37 only one iris showed a diversity of coloring. In 5 there was melanosis of one eye and in 6 there were other anomalies in the eye.

International Scientific Terms.—Schulte expatiates on the international character of medicine as a science and as an applied art. Other sciences, law, perhaps chemistry, etc., have a more national character, but medicine is preeminently international—its object being to help the sick man regardless of all other circumstances. He refers with envy to the time when all scientists were familiar with Latin; half of Boerhaave's students were foreigners from all parts of the civilized world, and all were equally at home in his lecture room. Medicine in particular, he says, needs international terms as it is not a finished structure but is being built up by contributions from all lands, and the easier the intercourse between workers, the more rapidly the building proceeds. New ideas call for new terms to express them, and the names given to new discoveries are accepted at once the world around, like "telephone," "automobile," etc. The new names may not please the purists; he quotes Anatole France's remark, "Diseases, the horror of man, have names that are the horror of the philologist." The anatomists, Schulte adds, are fortunate in having internationalized the terms they use.

Ugeskrift for Læger, Copenhagen

June 17, 1920, **82**, No. 25

*Familial Pernicious Anemia. E. Meulengracht.—p. 777.

Familial Pernicious Anemia.—Meulengracht relates that four of the sons in a family with thirteen children and the son of one of the daughters developed typical pernicious anemia. Three of those affected have died. Achylia was found in the three whose stomach content was tested. He suggests that possibly an inherited predisposition to achylia may have been the primary factor. In any event, the familial occurrence confirms the assumption of one or more endogenous factors.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 75, No. 10 Chicago, Illinois September 4, 1920

THE USE OF ARSPHENAMIN IN NONSYPHILITIC DISEASES*

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It has been shown by Bronfenbrenner and Noguchi,[1] Akatsu,[2] and Akatsu and Noguchi[3] that the spirochetes, especially those parasitic to the higher animals, have many characteristics to a greater or less degree in common. This is to be noted in their morphology, motility, cultural peculiarities and methods of growth, their reaction to certain compounds especially those sometimes known as spirocheticides, and their thermal death point. While between some of the various species of spirochetes there is quite a little difference in morphology, there seems to be a sufficient number of characteristics in common to justify our placing them in a single group.

The following examples will serve to illustrate gradations in pathogenicity:

Spirochaeta plicatilis, Ehrenberg, 1833, a free living organism found in stagnant water.

Cristispira balbiana, Certes, 1882 (*Spirochaeta balbianii*), has developed parasitic properties for a cold blooded animal and is found in the crystalline style of the oyster.

Treponema dentium, Koch, 1887 (*Spirochaeta dentium*), is ordinarily a saprophytic organism found commonly in the normal human mouth. It may invade damaged tissue, but its exact rôle in such invasion is not known.

Spironema vincenti, R. Blanchard, 1906 (*Spirochaeta vincenti*), is the probable cause of local lesions on the human mucous membrane, and it invades the underlying tissues but is not believed to invade regularly the blood stream.

Spironema recurrentis, Lebert, 1874 (*Spiroschaudinnia recurrentis, Spirochaeta recurrentis*), invades the human blood stream but does not produce local lesions, it produces an acute disease of a relapsing type and is self-limiting.

Spironema morsus-muris (*Spirochaeta morsus-muris*), the organism of rat-bite fever, produces a local lesion at the point of entrance and passes through the lymph nodes and invades the blood stream and tissues. It produces an acute disease of a relapsing type and is self-limiting.

Treponema pertenue, Castellani, 1905 (*Spirochaeta pertenuis*), begins its invasion by a local lesion, invades the blood stream, then localizes and produces surface and occasionally deep lesions. It may also spread by autoinoculation. It is self-limiting. Yaws is not a congenital disease.

Treponema pallidum, Schaudinn, 1905, (*Spirochaeta pallida*), produces at first a local lesion, invades the blood stream and involves all tissues and may be transmitted to the next generation. The disease does not tend toward recovery.

In considering the effect of arsphenamin in nonsyphilitic disease, it should be remembered that the original work which led to the production of arsphenamin was done not only with *Treponema pallidum* but also with *Spironema recurrentis* of relapsing fever, *Spironema gallinarum* of a disease in fowls and *Treponema pertenue* of yaws. Ehrlich and Hata's first monograph on salvarsan is called "The Experimental Chemotherapy of Spirilloses (Syphilis, Relapsing Fever, Chicken Spirillosis and Yaws)."[4]

The favorable action of arsphenamin is to be considered as a group effect due to a chemical affinity between the drug and the vital structure of the organism. It was logical to expect that other affinities, to a greater or less degree, would be found among others of the spirochetes and that when present, they could be demonstrated therapeutically. From the beginning, therefore, the action of arsphenamin was studied as a group effect on spirochetal diseases rather than from the standpoint of syphillis alone. It has been given in almost every pathologic condition to which human flesh is heir, but for specific effect, its proper therapeutic field would seem to be limited among nonsyphilitic diseases to those caused by spirochetes and in a few instances in lesser degree to certain protozoal and bacterial infections. Favorable results had also been observed in one disease of unknown etiology, in rat-bite fever. Later, the cause of the disease was found to be a spirochete. An attempt should not be made to carry the group effect too far as there are apparently some spirochetal diseases, such as Weil's disease and yellow fever, in which arsphenamin has no beneficial effect.

* Read before the joint meeting of the Section on Pharmacology and Therapeutics and the Section on Dermatology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

* Because of lack of space, this article is abbreviated in The Journal. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the latter will be sent by the author on receipt of a stamped addressed envelop.

1. Bronfenbrenner and Noguchi: J. Pharmacol. & Exper. Therap. **4**: 333 (March) 1913.
2. Akatsu: Arb. a. d. k. Gsndhtsamte **25**: 494, 1907.
3. Akatsu and Noguchi: J. Exper. Med. **25**: 363 (March) 1917.
4. Ehrlich and Hata: The Experimental Chemotherapy of Spirilloses, Berlin, Julius Springer, 1910.

CONSIDERATION OF SPECIAL SPIROCHETAL DISEASES

Vincent's Angina.—Vincent's angina is a form of ulceration of the mucous membrane produced by a spirochete known as *Spironema vincenti* (possibly *Spironema buccalis,* which has for some reason become pathogenic), in connection with a fusiform bacillus. The relationship of these two organisms to the disease has not been entirely worked out, as some observers attribute the lesions to the fusiform bacillus, Tunnicliff,[5] however, gives an excellent description of a phase of the pathology, showing the zone of spirochetes in advance of the fusiform bacilli in the affected tissue. This disease is ordinarily located in the pharynx, but may occasionally involve other portions of the body.

In civil practice it is not a very common disease, it is generally susceptible to treatment with local antiseptics and rarely assumes epidemic form. In the military service, conditions are different and this disease must receive serious consideration as a cause of considerable invalidism and occasional deaths. Bouty [6] states that Vincent's angina forms from 2 to 3 per cent. of throat troubles in the French army in peace times. Recent statistics in a British hospital in France show the proportion to be as high as 23 per cent. Campbell and Dyas [7] give a very adequate description of the epidemic among the English soldiers at Bramshott, England, and detail the different types and forms of manifestations. They note that syphilitics seem to react worse to this affection. They advise that in mild cases, any of the numerous recommended applications will frequently bring about a cure, but they consider the most useful remedy to be arsenic in the form of arsphenamin or neo-arsphenamin, as a local application.

Tixer and Tobe [8] discuss the disease as found among the French soldiers. They advise various local applications, giving first place to neo-arsphenamin. They advise the intravenous administration of neo-arsphenamin when the lesions of stomatitis or angina are particularly extensive or when they are accompanied by complications. Bouty [6] describes the serious results which may follow the appearance of Vincent's angina in the military service. He recommends the use of neo-arsphenamin either in solution or powder applied locally to the affected portion. Renon and Desbouis [9] report a series of cases treated in this same manner, with very satisfactory results. Niglot and Levy [10] report six cases treated with local applications of neo-arsphenamin in powder, directly to the lesions. The results were prompt and satisfactory. Rolleston [11] describes the satisfactory results obtained from the use of a glycerin swab dipped in arsphenamin powder and applied directly to the lesion. Greene [12] describes the excellent results obtained from arsphenamin both by local applications and by intravenous injections.

Summing up the foregoing, it is probable that among local applications, the best results are obtained by the use of neo-arsphenamin applied in powder form or with a glycerin swab, or by local applications, twice daily, of 10 per cent. arsphenamin in glycerin. This form of treatment is probably more essential in military than in civil practice. Ordinarily, this treatment will suffice; but if it fails to control the disease, if the lesions have become extensive or if serious complications exist, it is advisable to give intravenous injections of neo-arsphenamin in medium-sized dosage.

Pulmonary Spirochetosis; Fetid Spirillar Bronchitis; Pulmonary Gangrene.—From a number of widely separated sources, different observers have described a form of spirochetal lung involvement. From Uganda, Taylor [13] describes a condition with pneumonic symptoms and termination by crisis. Loygue, Bonnet and Peyre [14] found many organisms in fourteen of twenty-seven grave cases of influenza and in four fatal cases. In one case the spirochetes were also found in the urine. Ribeyro [15] describes a prolonged case in Peru. A series of cases was reported from Egypt by Farrah.[16] Castellani [17] found two types of spirochetal pulmonary involvement in soldiers of the Italian army, the one lasting only several weeks and appearing as an acute bronchitis; the other as a chronic bronchopneumonia of months' or years' duration or becoming malignant with irregular fever, hemoptysis, emaciation and death. Violle [18] described a mild type with good prognosis. Nolf and Spehl [19] described a condition which they met during the war, similar to a baronchitis or a bronchopneumonia, and always characterized by a fetid breath. The causative organism is described by Nolf [20] and seems very similar to what Noguchi has termed *Treponema macrodentium.* It is also to be found in pulmonary gangrene, which may be a termination of this condition. Nolf [20] states that arsphenamin exercises a decidedly curative effect if given early. If delayed, the prognosis is not so favorable, or it may be necessary to administer repeated doses over a period of several weeks. In such a case it will be noted that, coincident with the treatment, there is a diminution of the spirochetes and a disappearance of the fetid odor of the breath.

Pyorrhea alveolaris.—Little is known of the etiology of the several conditions resulting in this disease. In some cases, arsphenamin has a decided effect (which many not be permanent,) and in others, no results are noticeable. Where improvement is shown, the spirochetes are probably responsible, either primarily or secondarily.

Relapsing Fevers.—All the reports available from those who have used arsphenamin and neo-arsphenamin in the treatment of the various types of relapsing fever have been favorable.

Among those recommending unqualifiedly the use of arsphenamin in relapsing fever are the following: Stitt,[21] Manson,[22] Robledo,[23] Jarno [24] and Iversen.[25]

Manson and Thornton [26] present a summation of the results obtained from novarsenobillon, neosalvarsan,

5. Tunnicliff: J. Infect. Dis. **25**: 132 (August) 1919.
6. Bouty: Brit. M. J. **2**: 686 (Nov. 24) 1917.
7. Campbell, A. R., and Dyas, A. D.: Epidemic Ulceromembranous Stomatitis (Vincent's Angina) Affecting Troops, J. A. M. A. **68**: 1596 (June 2) 1917.
8. Tixier and Tobe: Progrès méd. Third Series **33**: 245, 1918.
9. Renon and Desbouis: Bull. et mém. Soc. méd. d. hôp. de Par. **26**: 247, 1913.
10. Niglot and Levy: Lyon méd. **122**: 1181, 1914.
11. Rolleston: Proc. Roy. Soc. **1**: (Oct. 10) 1912.
12. Greene: Northwest Med. **4**: 50, 1914.
13. Taylor, J. A.: Ann. Trop. Med. **8**: No. 1 (April 20) 1914.
14. Loygue, Bonnet and Peyre: Bull. et mém. Soc. méd. d. hôp. de Par. **42**: (No. 29) 1918.
15. Ribeyro: Cronica med. Lima **35**: No. 665, 1918.
16. Farrah: Lancet **2**: 608 (Oct. 4) 1919.
17. Castellani: Presse méd., 377, 1917.
18. Violle: Rev. gén. de clin. et de thérap. **32**: 144, 1918.
19. Nolf and Spehl: Arch. méd. belges **71**: 1, 1918.
20. Nolf: Arch. Int. Med. **25**: 429 (April 15) 1920.
21. Stitt: Diagnostics and Treatment of Tropical Diseases, Ed. 3, Philadelphia, P. Blakiston's Son & Co., 1919, p. 86.
22. Manson: Tropical Diseases, Ed. 6, New York, William Wood & Co., 1919, p. 243.
23. Robledo: Rev. de med. de Bogotá **37**: (Jan.-March) 1919.
24. Iversen: Russkivy Vrach **15**: 505.
25. Jarno. Wien. klin. Wchnschr. **28**: (April 22) 1915.
26. Manson and Thornton: J. Royal Army M. C. **33**: No. 2 (August) 1919; ibid. **33**: No. 3 (September) 1919.

Inargol, galyl and salvarsan in the African type of fever:

1. Give arsphenamin or one of its substitutes.
2. Of these, novarsenobillon, 0.9 gm., gave most satisfactory results.
3. Give it on the first attack of fever and, failing this, wait until the first relapse, and give it then on rise of temperature.
4. Administer it always on the rise of temperature and never in the apyrexial period.
5. Should a further relapse occur, repeat the dose as before on the rise of temperature.
6. If such a course is followed, we are of the opinion that we have means at our disposal whereby an attack of relapsing fever in the African native can be cured.

From the available reports and opinions, it would seem that neo-arsphenamin is the drug of election and will serve as a specific in all types of relapsing fever.

Rat-Bite Fever.—Rat-bite fever has been known in Japan for many years, but only since Mayake's report in 1910 has attracted general attention. Cases have been reported from England, United States, Italy, East Africa and other countries.

Rat-bite fever should not be confused with streptothrix infection, which may be conveyed in the same manner. It is caused by *Spironema morsus-muris*, which is transmitted through the bite of a rat, probably as the result of abrasions or hemorrhages of the gums.

The spirochete lodges in the skin and, after a varying period of incubation, produces a local lesion at the site of injury. It then spreads through the lymphatics and involves the blood stream, the skin and nervous system. The pyrexia is of an intermittent type. Immunity develops and the disease is therefore self-limiting.

According to Stitt [27] some success in treatment seems to have followed the use of arsphenamin. Bergamini [28] reports a case which was apparently cured by the intravenous administration of arsphenamin, after the failure of all other measures. Hata [29] reports on the use of arsphenamin in eight cases of rat-bite fever. He used intravenous injections of from 0.3 to 0.6 gm. of arsphenamin in adults. He concluded that the treatment was the best available but in no way a specific for the disease. Tileston [30] reports two cases of rat-bite fever which had resisted other treatment but had responded readily to 0.3 gm. of arsphenamin administered intravenously. Delal [31] reports a case of rat-bite fever treated with one intravenous injection of 0.9 gm. of neo-arsphenamin. He felt that it hastened recovery. Surveyor [32] reports on the intravenous injection of 0.7 gm. of neo-arsphenamin in a case of rat-bite fever, with apparently good results.

It is difficult to draw final conclusions as to the comparative value of arsphenamin in this disease, until larger series of cases are reported on and more comparisons obtained with other forms of treatment as well as experimental work done with the lower animals susceptible to the disease. Meanwhile, we are justified in assuming that arsphenamin has a beneficial therapeutic effect.

Weil's Disease.—Leptospira icterohaemorrhagiae (*Spirochaeta icterohaemorrhagiae*) is a very delicate organism and measures from 4 to 9 microns in length and about 0.2 micron in width. It tapers gradually toward the finely pointed ends, either one or both of which are curved for purposes of propulsion when the organism is in motion. It is tightly wound at short and regular intervals of about 0.5 micron to each section.

Experimental work carried out by Inada and his associates indicates that it is possible for *Leptospira icterohaemorrhagiae* to penetrate the apparently uninjured skin of the guinea-pig within a period of five minutes. It may therefore be possible for the organism to be transmitted through direct contact with the excreta of an affected person. This disease is more important from the military view than from the standpoint of the civilian physician. During the year 1915, cases of infectious jaundice were observed among the English soldiers. Stokes and Ryle [33] demonstrated the organism in the blood and urine of affected soldiers. Ryle [34] found the organism in rats captured in the trenches where the cases of infectious jaundice had originated.

Inada, Ito, Hoki, Kaneko and Ito [35] performed some experimental work on guinea-pigs to determine the effect of arsphenamin in this disease. This animal is unfortunately not well adapted to such work, as it has weak resistance against arsenic. Their results were inconclusive. Stokes and Ryle [36] report on the administration of 0.3 gm. of arsphenamin given in one case without apparent effect. Stokes, Ryle and Tytler [37] state that "the treatment at present is purely symptomatic." It was later shown by Griffith [38] and Inada, Ido and others,[39] that there is a well-marked bacterial immunity, and that serum treatment instituted in the early stages, or up to the fifth or sixth day, reduces the severity and duration of the disease and has a beneficial effect on the hemorrhages and suppurative processes. We must therefore conclude for the present that arsphenamin is not in any way a specific, nor has it any marked action on the course of the disease.

Yellow Fever.—Noguchi [40] apparently has demonstrated that yellow fever is due to a spirochete whose morphology is very similar to that of *Leptospira icterohaemorrhagiae*. He has called this organism *Leptospira icteroides*.

The literature on the treatment of yellow fever with arsphenamin is scanty, and apparently little work has been done. Arago [41] reviews the South American reports and states that those who have tried it have obtained good results. He advises that the first dose be given intravenously and in as large quantities as 0.9 gm. Noguchi [42] states that arsphenamin in 1:200,000 solution will, after two to three days' contact, destroy the organism of yellow fever in vitro but that experimental work with susceptible animals has failed to demonstrate that arsphenamin has any beneficial effect on the course of the disease. While it is desirable to have further reports of the treatment of the disease in man, yet even in the absence of such, we are justified in assuming that yellow fever is one of the spirochetal diseases not favorably influenced by arsphenamin or neo-arsphenamin.

27. Stitt: Diagnostics and Treatment of Tropical Diseases, Ed. 3, Philadelphia, P. Blakiston's Son & Co., 1919, p. 407.
28. Bergamini: Policlinico (sez. prat.) **26**: 1225 (Oct. 12) 1919.
29. Hata: München. med. Wchnschr. **59**: 854, 1912.
30. Tileston, Wilder: The Etiology and Treatment of Rat-Bite Fever, J. A. M. A. **66**: 995 (April 1) 1916.
31. Delal: Practitioner **92**: 449, 1914.
32. Surveyor: Lancet **2**: 1764, 1913.
33. Stokes and Ryle: Jour. Royal Army M. C. XXVII, 1916.
34. Ryle: Lancet **1**: 142, 1917.
35. Inada, Ito, et al.: J. Exper. Med. **23**: 377, 1916.
36. Stokes and Ryle: J. Royal Army M. C. XXVI, 1916.
37. Stokes, Ryle and Tytler: Lancet **1**: 142, 1917.
38. Griffith: J. Hygiene **18**: 59 (April) 1919.
39. Inada, Ido, et al.: J. Exper. Med. **23**: 377, 1916.
40. Noguchi: J. Exper. Med. **29**: 547, 565, 585 (June) 1919; ibid. **30**: 1, 9, 13 (July) 1919; ibid. **30**: 87, 95 (Aug.) 1919.
41. Arago: Brazil-medico **33**: 201 (June 28) 1919.
42. In a personal communication to the authors, April 8, 1920.

Dengue and Pappataci.—These are two diseases which closely resemble yellow fever except that their manifestations are of a far milder type. Craig,[43] in a discussion of the three diseases, concluded that when the causal organisms were discovered they would be found to be closely related species, belonging to the same genera.

We have found no literature bearing on the treatment of these diseases with arsphenamin and neo-arsphenamin. We should expect the results to be about the same as with yellow fever. As a matter of scientific interest, reports of such treatment would be of value.

Yaws or Frambesia.—This disease is found in the tropical regions of Africa, Asia, America and Australia. It is the spirochetal disease most resembling syphilis both in its manifestations and in the characteristics of the organism. It is very doubtful whether *Treponema pertenue,* the cause of yaws, can be differentiated from *Treponema pallidum* on a basis of morphology, except perhaps after prolonged observations and measurements at the hands of an expert. The growth in the rabbit is very similar and can be differentiated from syphilis only after considerable experience. The cultural characteristics are practically the same. The disease gives a positive though weaker complement fixation to the ordinary Wassermann technic.

We have both demonstrated to our entire satisfaction the curative effect of arsphenamin in experimental yaws in the rabbit.

According to Stitt,[45] it can certainly be stated that in arsphenamin we have an absolute specific for yaws, the results which are obtained in a few days being almost miraculous when one considers the protracted normal course of the disease. The method of administration is the same as in syphilis, and results are best obtained when the arsphenamin is given early in the course of the disease. A dose of 0.4 gm. of arsphenamin usually suffices and often effects a cure. Bergen noted relapses in about 4 per cent. of cases treated with arsphenamin and neo-arsphenamin. Manson[46] states that arsphenamin, or preferably neo-arsphenamin, has a rapid and remarkable curative effect in every stage of the disease. It is the recognized specific treatment and may be given intravenously or intramuscularly. He further recommends the systematic used of arsphenamin in getting rid of the endemic. Castellani[47] says: "The most efficacious and quickest treatment is by arsphenamin or neo-arsphenamin. These drugs seem to act in frambesia more quickly and powerfully than in any other spirochetal or treponemal condition. In fact, 'therapia sterilisans magna' in Ehrlich's meaning, by a single dose, can there be realized."

There are many reports available which confirm these opinions, and no adverse testimony. It may therefore be accepted that we have in arsphenamin and neo-arsphenamin, specifics for yaws. Intravenous injections of from 0.4 to 0.6 gm. of arsphenamin should be given and repeated as the progress of the case shows necessary.

Gangosa.—Gangosa is a disease found in the West Indies, Africa, Guam, Australia and other tropical countries. Briefly speaking, it consists of an ulcerative and destructive process, having the characteristics of the granulomas, and usually involves the nasopharyngeal tissues. The end-result is frequently the complete destruction of the tissues entering into the structure of the nose with resultant cicatrization and a destruction of the pharyngeal vault. Similar ulcers have been noted on the extremities.

The reports of all observers are unanimous and show conclusively that there is no disease more amenable to treatment with arsphenamin than is gangosa. Early cases show an almost miraculous improvement within the course of twenty-four hours. There is no apparent tendency toward relapse. When there has been a considerable destruction of tissue, it is of course impossible to do more than to delay the further progress of the disease and to induce cicatrization of the affected area.

Verruca Peruana.—This is a little known disease found in South America on the west slope of the Andes. It had been supposed by some observers to be a severe type of yaws. Strong[52] concludes that verruca is not a variety of yaws but a distinct disease. the lesions are dissimilar, he was unable to find any constant organisms in the lesions, the lesion in the rabbit's testicle was not characteristic of yaws, and no spirochetes could be found in the testicle. Finally, the disease is not cured by arsphenamin.

SPIROCHETAL DISEASES AMONG THE LOWER ANIMALS

Equine Influenza.—The disease known as equine influenza is due to an unknown filtrable virus. The pneumonias which follow are undoubtedly due to a secondary infection. Arsphenamin was first used for this disease in 1911 by Rips and Kirsten in Germany and Linizky in Russia. Their reports, and those of Nevermann and Naess of Norway, are convincing as to the value of the treatment. They recommend the use of arsphenamin given intravenously, 0.01 gm. per kilogram of body weight. In a later report, Rips and Neven advise the use of neo-arsphenamin in equivalent dosage. There follows a slight rise in temperature for a few hours, and then an amelioration of symptoms which ordinarily disappear within twenty-four hours. Torgensen states that in the presence of pneumonia and extreme weakness, untoward results may occur. It would follow that treatment should be given early in the course of the disease, and on account of expense it would probably be limited in its use to the treatment of valuable animals.

Spirochetosis of Fowls.—A very exhaustive report on the spirochetosis of fowls found in the Sudan, South American and possibly the United States deals with the effect of arphenamin on *Spironema gallinarum* (*Spiroschaudinnia marchouxi*). The fowls were cured in a number of cases, though some of them proved somewhat resistant. Repeated doses were occasionally found necessary, and young fowls did not stand the arsphenamin well. The drug was mixed in olive oil and injected into the tissues.

PROTOZOAL DISEASES

A considerable amount of work has been done in the treatment of protozoal diseases with arsphenamin and with some claims of favorable results, though not so favorable nor so much in accord as with certain of the spirochetal diseases.

43. Craig: New York M. J. **93**: 360, 1911.
45. Stitt: Diagnostics and Treatment of Tropical Diseases, Ed. 3, Philadelphia, P. Blakiston's Son & Co., 1919, p. 349.
46. Manson: Tropical Diseases, Ed. 6, New York, William Wood & Co., 1919, p. 668.
47. Castellani: Manual of Tropical Diseases, 1913.
52. Strong: Harvard School of Tropical Medicine, Report of First Expedition to South America, Cambridge, 1915.

Malaria.—The various types of malaria have been reported on from many sources, but the results are not on the whole so favorable as with quinin. Stephens, Yorke and Blacklock [53] found that in simple tertian malaria, single intravenous injections of neo-arsphenamin in doses of from 0.45 to 0.9 gm. stop the paroxysms and eliminate the parasites from the cutaneous blood, as a rule within one day. Parasitic relapses occur, on an average, in twenty-one days. The curative effect of a single injection is of no permanent value. Stott [54] found that arsphenamin had apparently some specific action on the asexual forms of malarial parasites, but no influence in the prevention of the evolution of the sexual cycle. It does not produce the immediate and progressive beneficial effect in malarial diseases which commonly follows the administration of quinin. He concludes that it may be of some value as an adjuvant. Neff [55] reports on the use of arsphenamin in five cases of tertian malaria which had resisted the administration of quinin. Results seemed to indicate a cure in all cases for periods of from four to eight weeks during which they were under observation. Reed [56] and Goldthwait [57] each report a case of malaria resistant to quinin, which yielded to a single intravenous injection of arsphenamin. Manson [58] states that recent experiments show that although arsphenamin and neo-arsphenamin have some effect on the quartan and tertian parasites, they have but little, if any, on the estivo-autumnal. Kopanaris, [59] having seen some benefits in tertian malaria in man from the use of arsphenamin, made a very thorough study of the effect on proteosoma which is the similar organism causing bird malaria. He found that infected birds treated with arsphenamin in both large and small doses, showed far greater intensity and continuance of infection than the control birds which had not received arsphenamin. He also found that treatment with arsphenamin lowered the resistance of normal birds to subsequent infection. On the other hand, the usual effect was obtained from the administration of quinin in this disease. J. W. W. Stephens [60] obtained no curative results whatever from the use of neo-arsphenamin in malignant tertian malaria. The addition of arsenic to quinin is no more effective than quinin alone. Bohme [61] recommends the combined use of quinin and neo-arsphenamin. Worner [62] considers neo-arsphenamin useful for general treatment and for improving the state of the blood but of no value for gametocyte carriers.

The mass of literature on the treatment of malaria is so great, and the recommendations of arsphenamin and neo-arsphenamin when made are so half-hearted, that we must conclude, for the present, that these drugs have a limited influence on the course of the disease.

Trypanosomiasis.—The condition in man due to infection with *Trypanosoma rhodesiense,* or the less severe infection due to *T. gambieuse,* as well as other animal trypanosome infections, have been studied in their natural host as well as experimentally. On account of the close relationship of these organisms, the material will be grouped under this one heading.

Sleeping Sickness: Broden and Rodhain [63] report good results from the Congo, following the use of arsphenamin, but only when examination of the spinal fluid indicates no involvement of the nervous system. Atoxyl is probably a more efficacious form of medication, and it is possible that any good effects may be due only to the contained arsenic. Lurz [64] makes a further report on the use of arsphenamin in sleeping sickness. All patients having over 10 cells per cubic millimeter were rejected. Patients weighing less than 50 kg. were given 0.3 gm., and those weighing over 50 kg. were given 0.4 gm, every other day for two weeks. The results were unsatisfactory. Branden [65] reported a favorable effect in human trypanosomiasis, but believes that not all trypanosomes are affected alike. Some attempt has been made to use a modified form of Swift-Ellis treatment in those showing nervous involvement, but no conclusive results have been reported.

Surra: This trypanosome infection, due to *Trypanosoma evansi,* is a fatal disease of horses, camels and cattle, and is found in southern Asia, Malaya and the Philippines. Arsphenamin seems to have little favorable effect, though Strong [66] reports some good results from the use of arsenophenylglycin given intravenously.

Dourine: Dourine, or mal du coit, is caused by *Trypanosoma equiperdum.* It affects stallions, brood mares and donkeys, and is found in South Europe, North Africa, Chile, and has been imported into the United States. Some good reports have been made of the use of arsphenamin in this disease, though they are not yet conclusive. The experimental study of Schamberg, Kolmer and Raiziss [67] is, however, very convincing as to the favorable effect of arsphenamin on the organism in rats. They conclude that the trypanosomes react in a large measure to the influence of drugs as do the spirochetes.

Mal de Caderas: Mal de caderas is caused by *Trypanosoma equinum,* and is found in horses in Panama and Colombia. Teague and H. C. Clark showed that arsphenamin had a favorable effect in this disease.

Nagana: *Trypanosoma brucei* is the cause of nagana, which is a fatal disease of horses and cattle and is found in Africa. It is shown [68] that arsphenamin causes a temporary decrease in the number of organisms in infected gerbils, and will delay death for several days. Schilling recommends arsphenamin for horses affected with *Tr. brucei,* and advises the use of 0.05 gm. per kilogram of body weight.

From the foregoing it would seem that arsphenamin may have a favorable effect on some of the trypanosomes, but that it may vary in different species. Further investigation is necessary before definite conclusions can be reached.

Leishmaniasis.—This term includes kala azar, or tropical splenomegaly, oriental sore, and espundia of South America. Stitt [50] states that arsphenamin has been tried in leishmania infection but without much success. In a study of kala azar [68] it is stated that on

53. Stephens, Yorke and Blacklock: Ann. Trop. Med. **12:** 197, 201, 211, 217 (Oct. 13) 1918.
54. Stott: Indian Med. Gaz. **50** (July 15) 1915.
55. Neff, F. C.: Report of Five Cases of Tertian Malaria Treated with Diarsenol Intravenously J. A. M. A. **67:** 1058 (Oct. 7) 1916.
56. Reed: U. S. Nav. M. Bull. **7:** 1913.
57. Goldthwait: Mil. Surg. **31:** 1912.
58. Manson: Tropical Diseases, Ed. 6, New York, William Wood & Co., 1919, p. 129.
59. Kopanaris: Archiv f. Schiffs- u. Tropen-Hyg. **15:** 566, 1911.
60. Stephens, J. W. W.: Ann. Trop. Med. **13:** 63, 69, 73, 75 (May 12) 1919.
61. Bohme: Med. Klin. **15:** 458 (May 11) 1919.
62. Worner: Med. Klin. **15:** No. 25, 1919.
63. Broden and Rodhain, in Manson: Tropical Diseases, Ed. 6, New York, William Wood & Co., p. 179
64. Lurz: Archiv. f. Schiffs. u. Tropen-Hyg. **23:** 308 (July) 1919.
65. Branden: Arch. f. Schiffs- u. Tropen-Hyg. **17:** 845.
66. Strong: Philippine J. Sc. **5:** (Feb.) 1910.
67. Schamberg, J. F.; Kolmer, J. A., and Raiziss, G. W.: Summary of Chemotherapeutic Studies in Experimental Trypanosomiasis, J. A. M. A. **65:** 2142 (Dec. 18) 1915.
68. Fourth Report of the Wellcome Research Laboratory, London, Baillière, Tindall and Cox, 1911.

the whole the effect of arsphenamin has been favorable, but that nothing in the nature of a curative effect was obtained. These diseases also require further study before final conclusions can be reached, though some marked favorable action may eventually be demonstrated.

COMPLICATIONS OF SYPHILIS

Pneumonia, Secondary Infections, Anemias, etc., in Syphilitics.—Head and Seabloom [69] call attention to the fact, noted by a number of other observers, that certain acute diseases or disturbances of metabolism will so derange the protective mechanism of the body that an old infection apparently dormant will become reactivated. They have noticed that syphilitics having pneumonia are liable to show delayed resolution for weeks or months at a time. They cite instances showing very prompt resolution following the administration of arsphenamin. This should be borne in mind in the diagnosis and treatment of the various conditions, both medical and surgical, including postoperative, not readily amenable to treatment, which take place in syphilitics.

OTHER DISEASES

Arsphenamin and neo-arsphenamin have been administered by many investigators in many other diseases, including anthrax, glanders, sporotrichosis, leprosy, Malta fever, influenza, meningitis, typhus fever, pellagra, plague, rabies, various pyogenic affections and pulmonary tuberculosis, but with the following exceptions, the reports have not been sufficiently encouraging to warrant citation and analysis.[70]

Chronic Pemphigus.—There has been considerable written of the use of arsphenamin in chronic pemphigus, and it would appear that in a number of cases its administration has been followed by a beneficial effect. The question of the differentiation of this disease from bullous dermatitis herpetiformis should, however, be considered as well as the occasional tendency toward spontaneous involution. It would appear doubtful whether results are obtained in the acute septic type. This form of treatment has been discussed by R. L. Sutton,[71] Eschweiler,[72] J. de Azua,[73] Merz,[74] Lindemann,[75] A. P. Bergsonoff,[76] Stumpke,[77] Frieboes,[78] and Wolfe.[79]

Sprue.—We were unable to find any information on which to base a favorable opinion of the use of arsphenamin in sprue.

Tuberculids.—It seems established that good effects have been obtained by a number of authorities in the treatment of tuberculids with arsphenamin. Articles have been presented by John H. Stokes,[80] Benoit,[81] A. Zanck and E. Pelbois,[82] Morin and Julia,[83] and Ravaut.[84] The possibility of a generalized involvement after such treatment has been suggested.

Amebic Dysentery.—As is to be expected, there are a number of reports on the use of arsphenamin in this disease, and some of them appear favorable. Winn [85] treated twelve cases of intestinal amebiasis, and states that the amebia disappeared from the stools in from twenty-four to seventy-two hours, and that the stools were changed materially in character and reduced in number. Willets [86] describes the treatment of 132 cases of dysenteric and nondysenteric ameba carriers. In the nondysenteric cases he found that neo-arsphenamin freed the bowel of endameba in 100 per cent. of cases, ipecac in 70.6 per cent, and emetin in 36.8 per cent. of cases. The treatment of seventeen cases of amebic dysentery is reported on by Gunn.[87] He concludes that a radical cure is difficult to obtain either with emetin or arsphenamin used separately but that, if combined, radical cures may be expected in a large number of cases, especially if the arsphenamin be given while the patient is under the influence of the emetin. This form of treatment is also recommended by Ravaut and Krolinitzky.[88] Milian [89] reports the rapid cure of amebic dysentery by arsphenamin. Others who have reported favorably are Valencia,[90] Chalmers and Archibald,[91] Ravaut and Charpin [92] and Mink.[93]

Anthrax.—Of all bacterial diseases treated with arsphenamin, the most favorable results have been reported in anthrax. Case reports have been published by Bettman and Laubenheimer,[94] Becker,[95] and Mokrzecki.[96] Reports of cultural and experimental studies have been made by Bettman and Laubenheimer,[94] Schuster [97] and Roos.[98] The number of cases treated is too small for our purposes, though the reports are most encouraging. It seems to have been demonstrated beyond question that with rabbits, the immediate injection of 0.04 gm. of arsphenamin per kilogram of body weight will save the life of the animal from a lethal injection of anthrax. With guinea-pigs, practically the same results can be obtained. In the latter animal, if the injection is delayed for six hours or until some edema is present at the site of injection, death will be prevented in some instances and delayed in others. If delayed for from sixteen to twenty-two hours, death of the animals could only be delayed. Becker [95] believes that arsphenamin acts as an internal disinfectant for both anthrax and glanders. Roos [98] demonstrated that arsphenamin has a very decided effect on anthrax in vitro, compared with certain bacteria, as paratyphoid and the cocci, also that the serum of treated animals is strongly bactericidal to anthrax in culture. He also believes that the action is due to a deposition in the substances of the organisms, as with *Treponema pallidum.*

While recognizing that anthrax acts somewhat differently on man than on the animals mentioned in the foregoing, it would seem established that arsphenamin does have a prophylactic and curative effect on anthrax, and that it should be given in medium-sized doses intravenously, as early as possible in the course of the disease.

69. Head, G. D., and Seabloom, J. L.: Arsphenamin in Pneumonia with Delayed Resolution in Syphilitic Soldiers, J. A. M. A. **73**: 1344 (Nov. 1) 1919.

70. In order that this paper may be more complete, the paragraphs on pemphigus, sprue, tuberculids and amebic dysentery have been added since the paper was read.

71. Sutton: Boston M. & S. J. **164**: 336, 1911.

72. Eschweiler: Dermat. Centralbl. **17**: 262, 1913.

73. de Azua: Rev. clin. de Madrid **8**: 218, 1912.

74. Merz: Deutsche med. Wchnschr. **37**: 2231, 1911.

75. Lindemann: Inaugural Dissertation, Jena, 1912.

76. Bergsonoff: Dermatologiya **2**: 818, 1913.

77. Stumpke: Berlin. klin. Wchschr. **44**: 1267, 1912.

78. Frieboes: Deutsche med. Wchnschr. **39**: 1916, 1913.

79. Wolfe: Deutsche med. Wchnschr. **37**: 527, 1911.

80. Stokes: Am. J. M. Sc. **157**: 522, 1919; Arch. Dermat. & Syph. **38**: 573 (May) 1920.

81. Benoit: Union méd. du Canada **45**: 111, 1916.

82. Zanck and Pelbois: Ann. de dermat. et syph. **5**: 65, 1914.

83. Morin and Julia: Ann. de dermat. et syph. **5**: 89, 1914.

84. Ravaut: Ann. de dermat. et syph. **4**: 479, 1913; Bull. Soc. franç. de dermat. et syph. **24**: 308, 1913.

85. Winn: Proc. Canal Zone M. Assn. **5**: pt. 1, 7, 1912.

86. Willets: Philippine J. Sc. Section B, **9**: 93, 1914.

87. Gunn: Calif. State J. M. **16**: 240, 1918.

88. Ravaut and Krolinitzky: Bull. Soc. path. exot. **9**: 510, 1916.

89. Milian: Bull. et mém. Soc. méd. d. hôp. de Par. **39**: 950, 1915.

90. Valencia: Repert. de med. y cirurg. **7**: 260, 1916.

91. Chalmers and Archibald: J. Trop. Med. **18**: 181, 1915.

92. Ravaut and Charpin: Paris méd. **22**: 125, 1919.

93. Mink: U. S. Nav. M. Bull. **8**: 653, 1914.

94. Bettman and Laubenheimer: Deutsche med. Wchnschr. **38**: (Feb. 22) 1912.

95. Becker: Ehrlich Festschrift, Jena, G. Fischer, 1914.

96. Mokrzecki: München. med. Wchnschr. **60**: 1089, 1913.

97. Schuster, in Ehrlich: Abhandlungen über Salvarsan **3**: 378.

98. Roos: Ztschr. f. Immunitätsforsch. u. exper. Therap., Orig. **15**: 487, 1912.

Arsphenamin has been recommended as an alterative in various conditions, but under ordinary circumstances has little advantage over liquor potassii arsenitis.

SUMMARY

For practical therapeutic purposes, the beneficial effects of arsphenamin and neo-arsphenamin are most apparent in a limited number of spirochetal diseases.

They act as a specific in Vincent's angina, relapsing fever, yaws, gangosa and pulmonary spirochetosis (if given early) in man, and in equine influenza.

A therapeutic effect is noted in rat-bite disease, in certain dental conditions and in fowl spirochetosis. The complete measure of the effect in the latter condition has not yet been established.

No apparent benefit has been found in such other spirochetal diseases as Weil's disease and yellow fever.

Good results have been obtained in syphilitics, in a number of nonsyphilitic conditions, which are influenced adversely by that disease.

Their use has been recommended in conditions in which arsenic is indicated. In such case the effect is alterative rather than specific, and ordinarily there is no special advantage over liquor potassii arsenitis.

There is a limited effect on certain protozoal diseases, as malaria (tertian and quotidian), some of the trypanosomiases and leishmaniasis. It is possible, however, that this effect may be nonspecific.

With the exception of anthrax, and possibly glanders, few favorable results are reported in bacterial diseases.

Except in Vincent's angina, arsphenamin and neo-arsphenamin should be administered intravenously in medium-sized dosage. Two or three injections usually accomplish the desired purpose, except in pulmonary spirochetosis, which may require a series of injections. In diseases showing liver involvement, it has been recommended that neo-arsphenamin be given on account of its supposed lesser degree of toxicity.

OPPORTUNITIES AND RESPONSIBILITIES OF THE PHYSICIAN OF TODAY

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The last decade has seen great changes in our conceptions of life and its social reactions. Intercourse between nations, business and professional relations, individual and community obligations have all undergone radical changes and are still in a condition of flux. None knows what the morrow will bring forth. Each is living a day at a time. The problems of the present demand our time and attention. The needs of the present hour apparently outweigh all other considerations, and we are bending our efforts to maintain a seeming orderliness and not permit the established customs of thought and action to be carried beyond our grasp and control by the rushing tide of feverish impatience to set up a new social and economic order.

In no occupation or profession is this change becoming more apparent than among physicians and their related professional and social activities. Struggle as we will to maintain the noble conception of professional ethics and community relations, indications are not lacking that new opportunities are bringing into play new responsibilities, and we must so order our professional lives as to meet these opportunities and responsibilities with a determination to make them serve the best interests of the individual and the community.

Medical practice of the past has been largely that of individualistic endeavor without consideration of community needs. True, all physicians have given without stint of their time and knowledge to social work by serving the needy without thought of monetary return. But the solution of the problem of how best to serve the public while still serving their own interests only recently has been seriously considered.

Until recent times the individual, although realizing his community relations, has followed his desires, his thoughts and his actions without considering their effect on the public. Now we are coming to think in the aggregate, and so to conduct our individual lives that our actions may be reflected in community betterment.

THE MOVEMENT FOR REFORM

What are the indications on which the foregoing assertions are based? Strange to say, these indications are more largely in evidence in the thoughts and actions of the laity than they are in the medical profession. In times of need the profession has been aroused to forestall hasty action by legislatures and other bodies in placing mandatory legislation on the statute books that was inimical to the interests of physicians. I refer particularly to health insurance and similar schemes which their proponents have attempted to force on the community without due consideration of all the factors involved. There are individuals, societies and cults who feel it their duty to impose restrictions on the actions and conduct of the medical profession, and who feel that by so doing they are rendering some great additional service to the community. In recent years almost every legislative session in some states has been besieged by these organizations in order to obtain the passage of their so-called "reform" measures. They work on the sympathy of the public by insisting that such opposition as is voiced by the medical profession is due entirely to selfish and sordid motives. Unless we are constantly alert to such attempts to restrict our freedom of action and saddle on us new and untried schemes of social endeavor, we shall sooner or later find some disagreeable legislation on the statute books.

We hear much these days about health centers, prenatal care, infant welfare, child hygiene, physical education in our schools, diagonistic clinics, and so on through a long list of activities having for their object the betterment of the health of the individual and the community. Have we ever stopped to analyze the forces behind these movements which to a large extent must depend on the cooperation of the medical profession to be carried to a successful conclusion? If we make such an analysis we find them in many cases initiated, stimulated and directed by others than medical men and women. The physician is asked to execute the work, not to direct it. I would not belittle the motives or the personnel behind these most worthy movements, but I fear for the successful realization of their hopes without the counsel and advice that only our profession can give. Sooner or later the physician will be called into the work; but if he has had no part in formulating the policy of the endeavor, can he be held responsible for its unsatisfactory end-

ing? Nevertheless, in the majority of cases he will be called on to bear the major responsibility of failure.

I feel that the time has come when the physician must assert himself in these movements and, laying aside his mantle of individualism, prepare to render his share of service in these forward-looking changes which are going on all about us. The state, which is composed of communities, has the right to expect certain services from physicians owing to the fact that they receive special distinction in being licensed by the state to practice their profession. The distinction is further emphasized by their exemption from certain civic duties demanded of others. It may be said in refutation that they are already giving largely of their services to the state in the care of the indigent and needy sick. This is true, but only half true. They are applying remedial measures, but how about preventive measures? Are they studying the case to find the cause, and having found it are they indicating ways and means to prevent a recurrence of that and similar cases?

There is being developed a group of men and women, not all of whom are physicians, who are carrying on this work in prevention in our municipalities and states. They are doing effective work and accomplishing excellent results.

We have only to consider the results that have been accomplished in health betterment in communities which have undertaken work in one or more lines of preventive hygiene. Our infant death rate has shown a marked decrease where intensive work in infant welfare has been undertaken. Communities employing the services of a capable full-time health officer have seen their morbidity and mortality rates decline in proportion as they supported his constructive activities. During the last decade typhoid fever has been reduced to a point far below what the most sanguine dreamed as possible at the beginning of that period.

What have been the determining factors in the accomplishment of these results? They can be expressed in one word, education. The community has seen the value of such work demonstrated over and over again until at last it is willing to attempt some effort along the lines of preventive work. Each new accomplishment served as a demonstration of the value of this work, and it was supported accordingly. It is significant that when the community spirit is once aroused to the value of preventive medicine its scope is never curtailed, but is broadened as opportunity offers. All of these results are accomplished by demonstration and education.

THE CALL TO GREATER SERVICE

Although much good has been accomplished, much more remains to be done. Take puerperal mortality, for instance. It is stated by Dublin that in the experience of the Metropolitan Life Insurance Company there was a death rate from puerperal diseases of more than 70 per hundred thousand. Many of these cases had been looked after by the visiting nursing service of this organization. Dublin says: "It is a national blemish that the death hazard involved in bearing children is greater than that in mining coal or in railway service."

Will any one dispute the statement that a large percentage of these mothers could have been saved if they had had the proper prenatal and confinement care? Infant death rates have been reduced greatly in communities that have gone to work aggressively to provide proper supervision over diet and habits of their infant population. But the irreducible minimum has not been reached. We are not even in hailing distance of it. What has been done is an admirable demonstration of the possibilities of this work and if the medical profession will get squarely behind this and similar movements it will be the means of saving other thousands of lives and tens of thousands of cases of illness.

I do not believe it is through fear of loss of personal gain that more preventive work is not done by physicians; rather it is due to an absorbing interest in the work in hand. Utopia in matters of health will not be reached for several generations, and no capable physician of the present day need fear such a marked lessening in the need for his professional services as seriously to embarrass his material return.

When modern industrial machinery was invented there was great opposition to its use, based on the plea that as one machine could do the work of several hands the opportunities for employment would be lessened to a marked degree. But instead of lessening the need for workers the use of machinery caused such an expansion of factory work that more hands than ever were needed, and in addition each worker could make a higher wage because he could turn out more work.

Instead of lessening the work of the physician, the increased interest in community, home and personal hygiene will call for greater service on his part although this service will doubtless need to be met by a different method, that of preventive medicine rather than curative medicine. The old oriental custom of paying a physician to keep well rather than to cure illness is coming into more extended use in this day.

Social workers and others trained to thinking along the lines of community needs have uncovered large problems that must be met and solved if our economic and social welfare is to progress. They are digging deep into the causes of present conditions and bringing to light many problems hitherto unrecognized. Some of these problems have been indicated earlier in this paper. All of them have a distinctive medical phase with which only our profession can cope.

METHODS TO BE ADOPTED

No hard and fast rules can be laid down for the solution of these problems. The problems of each community are different from those of every other community. The specific conditions to be met are a large number in the aggregate, but certain basic principles underlie all this work. The question is to lessen sickness and mortality by removing the causes, and to strengthen the resistance to baneful influences by increasing the bodily and mental vigor of the population.

In order to prosecute this work without needless overlapping of function, it will be necessary to coordinate existing agencies and direct their efforts toward the one end and along parallel lines. Federal, state, municipal and private agencies are working in this field today, in many instances duplicating one another's work. This should not be. Federal health authorities should exercise supervisory power only over the work which the state health authorities are doing. They should institute research into problems of nation-wide application. They should advise with state health

authorities when these larger problems have a definite bearing on conditions within that state. State health authorities in turn should study health problems within their own borders and be thoroughly acquainted with local problems. Here also their powers should be largely advisory. They should be in a position to assist local communities in the solution of their problems by advice and supervision, using mandatory powers only in extreme cases when the local authorities have failed to act to protect their own people.

To the local health authorities should be delegated the power and authority to meet the needs of the community. They should be familiar with these needs and with their resources for health work, and having this knowledge should so organize and apply it as to improve the health and living conditions of their own people. The state health organization should be called in only for advice, and such educational assistance as has a wider scope of influence than that of the local community.

Private agencies for social work having only a local influence should be subject to supervision by the local health organization, while those having a more extended or state-wide field of endeavor should be under the supervision of the state health officials. In order to exercise the necessary control over these private and semiprivate agencies, it might be well to establish some form of charter or permit under which they could operate; and while it might be difficult in some cases to bring existing agencies under such control, those arising in the future could be taken care of by statutory provision which would make it necessary for them to operate under the supervision of state health officials in order to fulfil the purpose for which they were created.

I think we are all agreed that much money, time and energy are now wasted in useless duplication of social work, and that much of the work now being done could be better done if it had more able supervision. By a system of control as indicated this result could be accomplished.

As this whole question of health betterment is a medical one, primarily, there are opportunities all along the line for physicians to exercise a definite constructive influence on the work. In the execution of the local policies the work touches their personal lives more closely, and here is where their influence will be manifest to the greatest degree.

NEED OF PREVENTIVE WORK

One of the greatest surprises and shocks to our minds was the findings of draft boards in the examination of men for the army. Nothing has brought home to us so clearly as have these figures the lack of interest and care that has been given the people of our communities during the last generation. Stimulated in a large measure by these findings, though in some cases antedating them, the examination of schoolchildren has shown a much greater percentage of defects that will exert a harmful effect on their lives if they remain uncorrected.

The publication of these findings has drawn attention to the great need of preventive work. It is now realized that the perpetuation of such conditions as have been brought to light by these investigations cannot be permitted. The physicial improvement of our population must be undertaken. Hence the different lines of activity which have been indicated previously have been begun to meet this need.

THE INDUSTRIAL FIELD

Another striking illustration of the need of a physician in community work is seen in the introduction of medical supervision into industrial establishments. Our conception of medical ethics until recently has caused us to consider such work as not in accord with the best traditions of our profession. A few hardy souls who had the vision of the possibilities in this work and the courage to stand against the criticisms of their fellows have demonstrated that such work calls forth not only the finest professional qualities of the physician but also his humanitarian and executive qualities as well. As few others these men see the value of preventive measures. Many a worker must needs be denied employment on account of some defect that has proved serious, but which could have been remedied if taken in early life. The findings from the physical examination of applicants for employment and employees, covering as they do all ages beyond that of school life, only emphasize the findings of similar examinations of schoolchildren and army recruits. Yet our industries are so organized that, as shown by a recent study of this question, less than 5 per cent. of nearly a half million workers examined were denied employment on account of their physicial condition—truly a remarkable showing.

The physicial examination of workers and treatment in industrial accidents, while important, does not comprise the end and aim of industrial medical practice. The prevention of accidents with their consequent economic loss both to the individual and to the industry is a matter of prime importance. Often the cause of accidents lies far afield in the home or community life of the injured worker. By teaching and example the industrial physician often can bring about a change in home or community environment that is of the greatest value. His opportunities and responsibilities in this line are in direct ratio to the extent that the organization with which he is associated dominates the community.

The industrial physician's influence for good is not confined to matters of health. He is often able to influence the attitude of the employee toward his work. To do this he must have a fair knowledge of the processes as carried on within the plant; he must know their relation to the finished product as well as their risks. By adjusting the worker to his job, the plant physician makes it possible for him to do his work with the least effort; and by so doing, the worker is able to produce more and thereby receive greater remuneration for his services.

All must agree that treating the defect after it has rendered its victim more or less handicapped will not remedy the situation. Patching up preventable disabilities and deformities will not cause a lessening in their number. If a machine is broken by trying to make it handle material for which it was not designed, we do not replace the broken part and go on feeding it the same sort of material. Only such work as that machine was designed for will be given it to do. Just so with the human machine. What is the use of repairing defective and broken parts, meanwhile making no effort to prevent their development?

CARE OF CHILDREN

When we send our young men and women forth into the industrial world should they not have sound bodies, at least? Is it fair to neglect their formative

years, permitting their lives to be influenced and perhaps marred by lack of care and oversight during this period? And too, is it fair to their mental development to force them to carry throughout their school lives preventable physical handicaps?

It is a poor mechanic who waits until his machinery wears out and gives way to make the necessary repairs and adjustments. If he does he is sure to find it a difficult matter to restore that machinery to its original productive power. Ever after the initial breakdown it will require closer attention and a more frequent renewal of parts. He will find it more to his advantage to inspect it carefully at frequent intervals, thus preventing the trouble sure to follow from neglect.

Why should not a human being have the same care and attention that is given to inert and lifeless wood and steel? All children born into this world have the right to be well born. Their future standing as citizens gives them the right to an equal chance. Their entrance into the world is not of their volition, and the state owes it to them and to itself to see that they enter life surrounded with the best attributes it can provide. The least of these attributes is healthy parentage. This is hard to obtain in many instances; but this fact should not lessen the determination to achieve the desired result whenever and wherever possible. Each and every expectant mother should have such medical supervision as will cause her to bring into the world a sound, healthy child. Accidents of development and birth will continue, but they can be greatly lessened by a systematic and rational method of prenatal care. No one can give this care and supervision as can the physician.

Granted that the number of well-born children will be increased by intelligent prenatal care, our next problem is so to watch over them that they will be carried safely past their first precarious years. Then, as school life opens before them they encounter other conditions which make careful oversight necessary.

If supervision is exercised over the life of the growing child, it can be sent out to face the world with the best possible preparation. It will know what clean living means, what right personal hygiene has to offer, and what a violation of its rules will bring; it will have a clearer conception of its relation to its fellow workers, and with a healthy body and well developed mind it can produce more and better results whether it be in the office, the shop or elsewhere.

OPPORTUNITY FOR CONSTRUCTIVE WORK

This is not utopian, it is common sense. As I see it we are rapidly and surely shaping our state and national lives to this end. Bills have already been introduced into our national Congress and state legislatures bearing on many of the points raised in this discussion. It is only a question of time until some definite and far-reaching action will be taken toward the solution of these problems. How much better it will be if this initial action has the right guiding force to direct its ways, rather than left to the whims and fancies of well-meaning but misdirected persons and societies.

If a restatement of our ethical principles is necessary to enable us to participate in this work, by all means let such a step be undertaken. New times demand new thought and action. In matters vitally touching our lives we have no right to fold our arms and say we have no part in them as they transgress the conception of our relation to our fellow man. Rather we must accept the challenge of the times and throw the weight of our influence into the balance, striving to maintain the position of trust, honor and dignity which has been accorded our profession in the past.

Owing to their exemption from certain civic duties demanded of others, such as jury duty and military service, physicians have grown apart from a feeling of the need of participation in a discussion of community problems. They have been taught to feel that their service was of a type above the more common things of life and that participation in the ordinary civic activities was not in accord with their professional attainments. Recent events, however, have brought us face to face with the fact that our old conceptions and teachings cannot be adapted to present conditions.

At no time in the history of our profession has such an opportunity been presented for doing constructive work. The matter in hand and in the immediate future deserves and demands the best thought and the wisest direction that can be given it. No class or profession is so vitally interested in, or so looked up to, by the general public for assuming the direction of this work as is the medical profession. The opportunity is offered of so influencing the new order of our social fabric by our thoughts and actions as will be an everlasting honor to those who are privileged to have a part in it. Thoughts of today are translated into action tomorrow. Will the call to action find the medical profession united behind a clearly thought out and practical plan for directing this forward movement into the wisest channels productive of the greatest good to the community and the state? It is our opportunity, it is our privilege, it is our duty to use such abilities as we possess to bring about a happy consummation of this task. Our profession has never yet failed in time of need, and I have no fear that it will be found wanting now; but we must prepare to face the issues with one mind, and work shoulder to shoulder for the common good of all concerned.

10 East Thirty-Ninth Street.

Physician at Head of Swedish System of Regulation of Sale of Alcohol.—A letter in the *Nederlandsch Tijdschrift* relates that the entire system of alcohol control in Sweden is the work of a physician, Dr. Bratt. The principle is a maximum allowance of 4 liters of alcohol per family per month. The consequence is that the consumption of alcohol has declined astonishingly, considering that in 1820 it was 4 liters per month per person. Nowadays all alcohol and wines which enter or are made in Sweden are purchased exclusively by the central office of which Dr. Bratt is head. This central office sells only to companies, called "systemen," which make a business of selling liquor and pay their shareholders 5 per cent. All the other profits from the business are devoted to public purposes such as building homes for working men, public libraries, etc. The restaurants and individuals can buy liquor only at these "systemen," and only at a single one. This one delivers them a booklet in which are inscribed their purchases. Wine is free from restrictions as to amount but has to be obtained in the same way, and the purchases recorded in the booklet. In saloons, only soft drinks, beer and wine are servel; in restaurants, an allowance of one small glass of liquor is obtainable at every meal costing at least 2 crowns. Drunkenness is rare and is punished by the forfeiture of the booklet.

INTESTINAL EXTRACTION OF ADSORBED ALKALOIDS *

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The purpose of this work is to determine whether alkaloids adsorbed on Lloyd's reagent, a variety of fullers' earth, are extracted from their adsorption compounds in the intestinal tract and thus rendered therapeutically available. It may be stated as axiomatic that animal experiments still afford the only reliable means of determining whether an adsorbed drug, administered orally, is or is not assimilated in the intestinal tract.

Nevertheless, in a recent publication on intestinal ipecac preparations, Sollmann [1] inferred from test tube experiments, unsupported by experiments on animals, that the ipecac alkaloids when administered orally in the form of "Alcresta Ipecac" (an adsorption compound of the ipecac alkaloids on Lloyd's reagent) are not released and absorbed in the intestinal tract and are consequently therapeutically "inactive." Sollmann did not employ intestinal contents or the extract of intestinal mucosa as the extracting medium, but confined his experiments to the use of distilled water or water rendered very slightly alkaline by the addition of 1 per cent. sodium bicarbonate, with and without the addition of bile salts, and found that these solutions failed to extract any appreciable amount of alkaloid from the adsorption compound. He stated that "It appeared from these experiments that the assumption of the intestinal liberation of emetin from alcresta ipecac is untenable."

Sollmann did not refer to the published results of Bass,[2] Stephens [3] and others on the favorable action of adsorbed ipecac in pyorrhea, dysentery, etc. and concluded his paper with the statement that "the pharmacologic literature of alcresta ipecac confirms that the emetin remains entirely inactive."

To understand the significance attached by Sollmann to the factor of intestinal alkalinity in this connection, it is necessary to review briefly the history of this subject.

The use of the adsorption compound of the ipecac alkaloids for therapeutic purposes followed the observations of J. U. Lloyd [4] that alkaloids were actively adsorbed from acid aqueous solutions by means of fullers' earth, and liberated by ammoniacal chloroform. Since stomach contents are acid, it appeared probable that the emetic effect following oral administration of the ipecac alkaloids might be avoided by administering the adsorption compound of the alkaloids on Lloyd's reagent, the adsorbed alkaloid passing through the acid stomach contents unchanged, but being extracted on reaching the intestinal tract. This proved to be the case, many times the emetic dose of the alkaloids have been taken in this form without producing either vomiting or nausea.

Therapeutic effects following the use of this preparation were noted by various investigators in dysentery and subsequently in pyorrhea, etc., and these effects, as well as the diarrhea induced by too large a dose of the adsorbed ipecac alkaloids, afforded at least presumptive evidence of their release in the intestinal tract.

In attempting to explain the release of the ipecac alkaloids from their adsorption compound in the intestinal tract, Eli Lilly and Company and other investigators appear to have attached too much importance to the factor of intestinal alkalinity, and to have overlooked the possible rôle of organo-extractives and protoplasmic constituents of the cells of the intestinal mucosa in effecting the release in question. Sollmann's recent demonstration that the theory of extraction of alkaloids by weak aqueous alkalis is untenable does not, however, constitute a refutation of the clinical and pharmacologic data on which the theory was based.

In the subsequent experimental section it will be demonstrated that:

1. Sollmann's experiments do not justify the deductions drawn therefrom.
2. Not only emetin, but also quinin, strychnin and atropin, administered by mouth in the form of their adsorption compounds with Lloyd's reagent, from which they are not released by extraction with water or weak alkali, are absorbed in the intestinal tract and produce pharmacologic effects that can only be attributed to the specific alkaloids themselves.
3. The alkaloids in question are released from their adsorption compounds when the latter are introduced into the neutral peritoneal cavity, from which it must be concluded that protoplasmic extraction of the alkaloids proceeds in the absence of alkalinity.
4. Furthermore, soaps and other substances occurring in the intestinal tract and in living protoplasm extract the alkaloids from their adsorption compounds with comparative facility in either a neutral or a faintly alkaline solution.

EXPERIMENTAL

For the sake of convenience, the experimental section of this paper will be divided into two portions:

1. A pharmacologic demonstration that emetin, quinin, strychnin and atropin, when present in an adsorbed state in Lloyd's reagent, are released in the intestinal tract or the peritoneal cavity, producing pharmacologic effects which can only be attributed to the alkaloids themselves.

2. A physical and chemical demonstration that the alkaloids in question may be extracted from their adsorption compounds by means of soaps, lipoids and other substances occurring in the intestinal contents or normally present in protoplasm, even though the alkalinity does not exceed that set by Sollmann and others as the level for intestinal contents, thus affording a satisfactory physicochemical explanation as to how the alkaloids are absorbed by the body cells, although not extracted by water.

It should be noted that throughout these experiments, unless otherwise stated, adsorption preparations of the alkaloids on Lloyd's reagent were employed containing 4 per cent. or less of the alkaloid. These preparations had been exhaustively washed with water prior to commencement of the experiments, until no trace of alkaloid was present in the wash water. On testing they were found to

* From the Research Laboratories of Eli Lilly and Company.

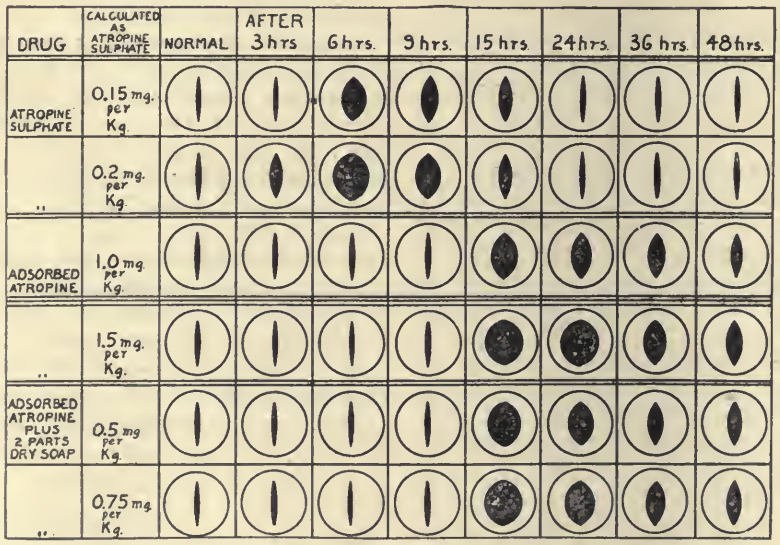
1. Sollmann, Torald: The Solubility of Intestinal Ipecac Preparations, J. A. M. A. **71**: 1125 (Oct. 11) 1919.
2. Bass, C. C., and Johns, F. M.: Pyorrhea Dentalis and Alveolaris, J. A. M. A. **64**: 553 (Feb. 13) 1915.
3. Stephens, J. W. W., and Mackinnon, Doris L.: A Preliminary Statement on the Treatment of Entamoeba Histolytica Infections by "Alcresta Ipecac," Ann. Trop. Med. & Parasitol. **10**: 397 (Feb.) 1917; Protozoological Investigation of Cases of Dysentery Conducted at the Liverpool School of Tropical Medicine, ibid. **11**: 27 (June) 1917.
4. Lloyd, J. U.: Discovery of the Alkaloidal Affinities of Hydrous Aluminum Silicate, J. Am. Pharm. Assn. **5**: 381, 1915.

yield no alkaloid in acid aqueous solutions having approximately the same concentration of acid as the stomach contents, and only such negligible traces as Sollmann himself observed when they were extracted with such weak alkaline solutions as the 1 per cent. sodium bicarbonate which Sollmann selected as his standard for intestinal contents.

Since it is difficult to measure the effects produced by means of emetin, it was decided to carry out the initial experiments on animals with atropin and strychnin on account of the facility with which the characteristic effects of these alkaloids may be recognized.

ATROPIN

Adsorbed atropin given by mouth to cats causes full dilatation of the pupils with failure to react to light. Control experiments on the same animals with atropin sulphate indicate that approximately seven times as much adsorbed atropin as free atropin is required in order to produce mydriasis. A very important observation is that the adsorbed atropin exerts its effect less rapidly; the effect, however, being more uniform and lasting much longer, a point of considerable clinical importance. Furthermore, as an indicator of the mechanism whereby the atropin is extracted from its adsorption compound, it is interesting to note that the amount of adsorbed atropin required to produce mydriasis is lowered 50 per cent. if a small amount of neutral soap is given with the adsorbed atropin when administered orally.



Mydriatic effect of atropin given orally to a cat.

While cats exhibit variations in their sensitivity to atropin sulphate and adsorbed atropin administered orally, the relative proportions of these substances required to produce comparable results in individual cats are approximately the same.

The accompanying diagram, based on results obtained with the same animal, illustrates the extent to which dilatation of the pupil is maintained when subjected to a bright light, thus affording an index of atropin effect at various periods of time after the administration of the alkaloid. From these experiments it is immediately apparent that the adsorption compound, which fails to yield any alkaloid when tested on the basis proposed by Sollmann, nevertheless gives up a sufficient proportion of alkaloid to the intestinal mucosa to produce full dilatation of the pupil with complete failure to react to strong light. It is extremely interesting to note the delay in development of the maximum effect and the prolongation of effect as compared with results obtained with the free alkaloid.

Adsorbed atropin introduced directly into the conjunctival sac produced a typical dilatation of the pupil of the treated eye.

STRYCHNIN

The adsorbed strychnin preparation employed in these preliminary experiments contained 4 per cent. strychnin and yielded no alkaloid on extraction with water or 1 per cent. sodium bicarbonate. This preparation induced typical strychnin effects when administered orally to rabbits, the minimum lethal dose representing 20 mg. strychnin sulphate per kilogram of rabbit. It was found that the adsorbed strychnin in this preparation possesses about one eleventh of the toxicity of free strychnin, but it is interesting to note that, as in the case of atropin, when dry soap is given at the same time the toxicity is doubled, from which it must be concluded that the soap facilitates the release of the strychnin from its adsorption compound and its passage into the mucosa.

TABLE 1.—MINIMAL LETHAL DOSE FOR RABBITS EXPRESSED AS STRYCHNIN SULPHATE

	Mg. per Kilogram
Free strychnin sulphate	1.8
7.5 per cent. adsorbed strychnin	7.7
4 per cent. adsorbed strychnin	20.0
4 per cent. adsorbed strychnin with two parts dry soap	10.0

The lethal dose is considerably diminished by using adsorption compounds containing more than 4 per cent. of strychnin, although none of these compounds yield alkaloid on extraction with water or 1 per cent. sodium bicarbonate. Seven and seven-tenths mg. of strychnin sulphate administered in the form of the 7.5 per cent. adsorption compound exerted an effect equal to 20 mg. in a 4 per cent. compound and to 1.8 mg. free strychnin sulphate.

The animals which received lethal doses of adsorbed strychnin exhibited characteristic strychnin symptoms, hypersensitiveness followed by convulsions and death within four or five hours. While the foregoing experiments demonstrate that extraction by means of a 1 per cent. sodium bicarbonate solution affords no index regarding intestinal absorption, they do not settle the question as to whether intestinal alkalinity or even the intestinal contents themselves are factors of primary importance in effecting the release of the alkaloids in the intestinal tract.

Previous experiments carried out with adsorbed strychnin and marine larvae at Woods Hole in the summer of 1919, suggested the possibility that the alkaloid may be extracted directly from its adsorption compound by protoplasmic constituents of the cells of the intestinal mucosa.

To insure approximate neutrality of the tissues and solutions involved, and to rule out the intestinal

tract and its contents entirely, experiments were carried out in which the above mentioned preparations of adsorbed strychnin were introduced directly into the peritoneal cavities of rats. The lethal doses were found to be approximately 11 mg. of strychnin sulphate for the 4 per cent. adsorption compound, and 6.4 mg. of strychnin sulphate for the 7.5 per cent. compound, per hundred grams of rat; the animals receiving these doses exhibited typical strychnin symptoms and died in two or three hours. The dose of strychnin sulphate required to cause death when introduced into the peritoneal cavity in a single dose was found to be from 0.2 to 0.3 mg. per hundred grams, or approximately one-fortieth the amount present in the lethal dose of the 4 per cent. adsorbed strychnin. This does not, however, afford a fair basis

TABLE 2.—STRYCHNIN INTRAPERITONEALLY IN RATS

Drug	Dose per 100 Gm. Rat Calculated as Strychnin Sulphate, Mg.	Results
Strychnin sulphate, single dose....	0.175	Survived
	0.2	Death in 75 minutes
Strychnin sulphate, divided doses: 0.065 mg. every 15 min.	0.455	Died after 7 injections in 1¾ hours
0.065 mg. every 20 min.	0.455	Died after 7 injections in 2 hours
0.065 mg. every 30 min.	0.975	Survived after 15 injections in 7 hours
4 per cent. adsorbed strychnin.....	10	Convulsions in 1 hour; recovered
	11	Convulsions and death in 2 hours
7.5 per cent. adsorbed strychnin...	5	Survived
	6.4	Convulsions and death in 1 hour
4 per cent. adsorbed strychnin in collodion sack	12	No effect in 24 hours; sack opened; death in 2 hours
	50	No effect in 4 days; sack opened; death in 1 hour
Strychnin sulphate in collodion sack	0.5	Death in 5 minutes

of comparison, since the free strychnin sulphate is rapidly absorbed and exhibits a high peak effect, while there is every reason to believe from the experiments on atropin, presented above, that the alkaloid is given off from the adsorption compound slowly, evenly and with far less peak effect.

A fairer basis of comparison is afforded by the use of divided doses of strychnin sulphate, fractional amounts being administered at from fifteen to thirty minute intervals; the total dose required to cause death in from two to three hours being determined. Working on this basis, rats weighing 100 gm. were found to withstand the intraperitoneal administration of 0.13 mg. of strychnin sulphate per hour without convulsions, but doses of from 0.2 to 0.25 mg. per hour proved fatal at the end of from one and three-fourth to two hours. From this it may be concluded that 0.5 mg. of free strychnin sulphate, when administered in divided doses, is about equivalent to 11 mg. of strychnin sulphate in the form of the 4 per cent. adsorbed strychnin, and 6.4 mg. of 7.5 per cent. material, giving ratios of 20:1 and 13:1, respectively, figures which correspond roughly with extraction data to be presented subsequently.

It may be concluded from the foregoing that alkalinity is not necessary for cellular extraction of strychnin from its adsorption compound.

In order to determine to what extent direct contact between the protoplasmic surfaces of the peritoneum and the adsorption compound was a necessary factor for the extraction or release of the alkaloid, collodion sacks were prepared containing a sufficient proportion of glycerin to render them freely permeable to strychnin or soap, and moderately permeable to albumin, but still impervious to cells or particles of Lloyd's reagent (Table 2). Lethal doses of the 4 per cent. adsorbed strychnin preparation were then introduced into the sacks, which were sealed and placed in the peritoneal cavities of rats. No toxic effects whatever were observed for a period of two or three days. The sacks were then exposed, cut open, and the peritoneal cavity once more closed. In all such cases even a minimal fatal dose, after remaining two or three days in the sack, during which time it had exerted no strychnin effect, was found when the sack was opened to possess its full toxicity, the death of the rat occurring just as rapidly as would have been the case had a corresponding amount of adsorbed strychnin been introduced into the peritoneal cavity, from which it must be concluded that during the period that the adsorbed strychnin remained in the sack, there had been no loss of strychnin through the sack wall. Since the sacks permitted a comparatively free diffusion of aqueous fluids, and control tests showed that strychnin sulphate passed through with sufficient rapidity to cause the death of animals in a few minutes, these experiments afford some support of the view that the release of strychnin from its combination with Lloyd's reagent, both in the peritoneal cavity and in the intestinal tract, is to be attributed primarily to direct contact between the adsorption compound and the protoplasm of the cell, and is not dependent on the alkalinity of the intestinal contents.

QUININ

An adsorbed quinin preparation, containing 4 per cent. of the alkaloid and yielding no quinin on extraction with water, was administered orally to dogs, the amount excreted in the urine being determined with as much accuracy as possible. Quinin sulphate was given orally to the same dogs for control purposes.

TABLE 3.—EXCRETION OF QUININ WHEN ADMINISTERED AS QUININ SULPHATE AND AS ADSORBED QUININ

	Quinin Sulphate, per Cent.	Adsorbed Quinin, per Cent.
Dog 1	21.4	19.8
Dog 2	30.9	19.3

The low recovery of quinin in the urine is probably attributable to oxidation. It is interesting to note that in the case of quinin, the alkaloid is extracted from its adsorption compound and is excreted in amounts comparable to those following the administration of quinin sulphate.

EMETIN

Emetin as a free alkaloid or alkaloidal salt does not lend itself to experiments designed to compare its effects with those exerted by the Alcresta tablets of ipecac or emetin adsorbed on Lloyd's reagent, because the free emetin cannot be given orally without producing emesis. When Alcresta tablets of ipecac which yield no alkaloid on extracting with water, are administered orally to dogs in fairly large doses, a diarrhea is produced which affords evidence that some of the alkaloid is released in the intestinal tract, since Lloyd's reagent alone is not a laxative.

Furthermore, following oral administration of as small a dose as 2 grains of adsorbed emetin, the alkaloid may readily be detected in the urine. In all experiments with dogs, some emetin has been recoverable in the urine.

The ipecac alkaloids are much less toxic than strychnin, and their effect is more delayed and is not accompanied by any readily recognized symptoms; consequently it is difficult to parallel the adsorbed strychnin results in the intestinal tract and peritoneal cavity. By using a 10 per cent. adsorption compound of emetin on Lloyd's reagent, a preparation which yields no emetin on extraction with water or 1 per cent. sodium bicarbonate, lethal effects were exerted on cats to which the preparation was administered orally, and on rats when it was introduced into the peritoneal cavity. Emetin appears to be absorbed very slowly from the intestinal tract, but exerts a cumulative effect, causing lethargy and loss of appetite, death occurring in four or five days after the oral administration of the 10 per cent. adsorption compound to cats in a dose of 60 to 70 mg. of adsorbed emetin per kilogram of body weight. Similarly, 20 mg. of emetin in the form of the 10 per cent. adsorption compound, when introduced into the peritoneal cavity of rats weighing 100 gm., causes death in twenty-four hours. When adsorption compounds of emetin were introduced into the peritoneal cavities of guinea-pigs, emetin was demonstrable in the urine, as much as twenty-four per cent. being recovered in the urine of a guinea-pig which had received 60 mg. of emetin in the form of the 10 per cent. adsorption compound.

A series of experiments was carried out to demonstrate that soaps and fatty acids may play a rôle in releasing the ipecac alkaloids from their adsorption compound. While large doses of 3.6 per cent. Alcresta ipecac may be administered to cats without causing emesis, on addition of soap or even fatty acid, considerably smaller doses of the adsorbed alkaloid caused vomiting. Adsorbed ipecac alkaloids taken by mouth in moderate doses for three or 4 days usually produce a laxative effect in man, while larger doses are cathartic. The data accumulated by Bass, Stephens and others indicate the release of the ipecac alkaloids from their adsorption compound in the intestinal tract. One of us (Walters[5]) has personally studied and observed the destructive effect exerted on endamebas in pyorrhea lesions by ipecac alkaloids derived from the 3.6 per cent. adsorption compound administered orally. Space limitations preclude a detailed discussion of the available clinical and pharmacologic data; but it is clear that clinicians who have employed the adsorption compound have generally agreed that a larger dose is required to produce a given effect than is the case when emetin hydrochlorid is employed. The data presented by Fantus,[6] Eggleston and Hatcher,[7] referred to by Sollmann, appear to indicate that lack of emetin symptoms, delay in development of pharmacologic effects, and increased dosage required are all factors which may well be attributable to a delayed release of the alkaloid and the avoidance of peak concentrations.

EXTRACTION EXPERIMENTS

It has been demonstrated in the preceding experiments that alkaloids adsorbed on Lloyd's reagent in such a manner that they could not be released by extraction with water could nevertheless be extracted, at least to a certain extent, by living tissues. It now remains to be determined whether this extractive capacity is dependent on the use of living protoplasm or whether similar results may be obtained by utilizing substances occurring in protoplasm, particularly lipoids, soaps, etc., or by egg yolk, in which alkaloids might be expected to be more soluble than in distilled water.

Soap was found to be an excellent solvent for quinin and other alkaloids. From our data it may be stated that the addition of 1 per cent. soap raises the solubility of quinin in water tenfold, and 16 per cent. soap raises the solubility ninetyfold.

It has been noted repeatedly in the preceding section that soaps and fatty acids facilitate the release of alkaloids from their adsorption compounds in vivo. Since soap is a good solvent for alkaloids, it might well be expected that it would also facilitate extraction in vitro, and this was found to be the case. A comparison was made of the relative facility with which various alkaloids were extracted from their adsorption compounds on fullers' earth by water, weak alkali of the strength selected by Sollmann, and various soap solutions. Quinin was most readily extracted by means of soap, and atropin, strychnin and emetin less readily; but in all cases the yield of alkaloid was considerable, the ratios observed suggesting some correspondence with those observed in the preceding animal experiments. It is particularly interesting to note that soap, to which oleic acid had been added in order to reduce its alkalinity below that of the 1 per cent. sodium bicarbonate solution used by Sollmann, was nevertheless an excellent solvent, removing 32 per cent. quinin and from 7 to 10 per cent. of the other alkaloids, while the sodium bicarbonate solution extracted only negligible traces.

TABLE 4.—ALKALOID EXTRACTION WITH SOAP*

	Alkaloid Contained in Adsorption Compound				
Amount Extracted by:	Quinin, 4.8%	Atropin, 2.5%	Strychnin, 5%	Ipecac Alkaloids, 7.5%	Alkaloids, 3.6%
Water	Nil	Nil	Nil	Nil	Nil
1% sodium bicarbonate P_H approximately 8	Trace	Nil	Nil	Nil	Nil
N/10 sodium oleate	56.6%	20.7%	15.3%	....	10.5%
N/5 sodium oleate + oleic acid to P_H 7.2 to 7.5	32.4%	9.7%	8.8%	11.9%	6.0%
	32.2%	8.5%	8.8%	....	7.8%

* In each experiment, 2 gm. of the adsorption compound of the alkaloid on Lloyd's reagent was subjected to two extractions with 25 c.c. of solvent, the total amount of alkaloid extracted being recorded in the table as a percentage of the total amount originally present in the adsorption compound.

While it is not within the scope of this paper to discuss at great length the extractive action of soap on these adsorption compounds, it may be stated that when higher concentrations were employed, as much as 90 or 95 per cent. of the alkaloid present could be removed from a 5 per cent. adsorption compound by two or three extractions. Under similar experimental conditions to those reported above:

Egg yolk extracted 10 per cent. ipecac alkaloids and 13 per cent. quinin.

Horse corpuscles extracted 6 per cent. ipecac alkaloids and 9 per cent. quinin.

Intestinal contents extracted more than 1 per cent. of all alkaloids tested.

Macerated intestinal mucosa extracted from 1 to 4 per cent. of all alkaloids tested.

The foregoing results lend support to the theory previously advanced, that soaps, fatty acids, lipoids, etc., present in or near the surface of the cell proto-

5. Walters, A. L.; Baker, W. F., and Koch, E. W.: Pharmacological Studies of the Ipecac Alkaloids and Some Synthetic Derivatives of Cephaeline, J. Pharmacol. & Exper. Therap. **10**: 341 (Nov.) 1917.

6. Fantus, Bernard: Fullers' Earth: Its Adsorptive Power and Its Antidotal Value for Alkaloids, J. A. M. A. **64**: 1838 (May 29) 1915.

7. Eggleston and Hatcher: J. Pharmacol. & Exper. Therap. **7**: 241, 1915.

plasm, facilitate a direct extraction of the alkaloid from the Lloyd's reagent.

It is believed that the experimental data presented above afford substantial evidence that the alkaloids atropin, quinin, strychnin and emetin, adsorbed on Lloyd's reagent, are extracted in the intestinal tract and thus rendered therapeutically available.

SUMMARY

It has been demonstrated that alkaloids, adsorbed on fullers' earth in such a manner that they cannot be extracted by water or an aqueous solution of sodium bicarbonate having the alkalinity of intestinal contents, are released in the intestinal tract when administered orally, and that this release is not dependent on intestinal alkalinity.

The proofs of this are:

Adsorbed atropin administered to cats by mouth produced prolonged dilatation of the pupil of the eye.

Adsorbed strychnin administered by mouth caused convulsions and death in rabbits and rats.

Adsorbed strychnin introduced into the peritoneal cavity of rats caused convulsions and death.

Adsorbed emetin administered orally in large doses caused the death of cats; introduced into the peritoneal cavity it caused the death of rats. Emetin was excreted in the urine when the adsorbed alkaloid was administered orally or introduced into the peritoneal cavity. Adsorbed emetin administered orally caused diarrhea in men and animals.

Quinin was recovered in considerable amount in the urine after oral administration of the adsorbed alkaloid.

In all of the foregoing cases the dose of a given adsorbed alkaloid required to produce a specific effect was found to be larger than that of the free alkaloid, and it was demonstrated that the rate of absorption was retarded and the action of the alkaloid prolonged, thus avoiding a peak concentration.

While the alkaloids were not extracted from their adsorption compounds by water or a 1 per cent. aqueous sodium bicarbonate solution, they were extracted with considerable facility by slightly alkaline and neutral soaps.

The alkaloids were extracted to a certain extent by egg yolk, blood corpuscles, plasma, intestinal contents and macerated intestinal mucosa.

The foregoing data agree with Sollmann's findings that the ipecac alkaloids are not released from "Alcresta Ipecac" by extraction with a 1 per cent. aqueous sodium bicarbonate solution in vitro, but they do refute the inference drawn by Sollmann that the ipecac alkaloids are not liberated in the intestine when administered orally in the form of this adsorption compound.

Curability of Syphilis.—Probably no greater problem confronts us today in dealing with syphilis, even in the presence of our knowledge of the disease, its specific organism, the methods of diagnosis, the available drugs which we know to be thoroughly efficient in its treatment, and the vast amount of work done within recent years by the world's best syphilologists, than the one of knowing when a case is cured. Neglected syphilis, long considered an incurable disease, still requires a vast amount of study before it can be stated, without fear of contradiction, that it is curable; in the strictest sense primary syphilis is curable, and evidence is sufficient to prove this belief because of the number of cases known to become reinfected.—H. Gluckman, *Med. J. Australia*, April, 1920.

PHYSICAL FACTORS IN MENTAL RETARDATION *

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During the year 1918-1919, at the clinic for mental and nervous diseases, fourteen children were diagnosed mentally deficient and eighteen mentally retarded. A review of the statistics clearly emphasizes the importance of distinguishing between these two conditions. It was obvious from a study of the histories of the eighteen children that the question of acquired mental retardation was, unfortunately, scarcely ever the first consideration. The child who is "backward," who is "two or three years below the grade" of children corresponding to his actual age, or who has "not been promoted," who is "slow," "apathetic," "indifferent," "plodding," "mopey" or what not, is very likely to be convicted of feeblemindedness before he has been even superficially tried in a court of medical inquiry. Once regarded as mentally deficient, the next logical step is an institution, and therefore the problem of the retarded child is often visualized and at least potentially disposed of before a physical examination has been made. It was evident, too, from our cases that the important matter of such a child's future must not be decided by a psychometric measurement alone, however scientific and exact it may be. A mental test is only of relative value and should never be the primary factor on which judgment is based. If we had depended solely on such a restricted psychologic point of view, it would have been necessary to regard each one of our eighteen patients as definitely feebleminded and to have taken steps to have them placed in custodial institutions. Following the plan of making first a thorough physical examination and then intensively investigating every clue uncovered, we were able to determine that in eighteen, or 56 per cent., of all our cases, congenital mental deficiency did not exist at all, and in fifteen, or 84 per cent., of the retarded group, there were significant underlying physical factors on which the mental retardation depended. In other words, according to our experience there is more than an even chance that unless a careful search is made for possible physical causes, the diagnosis of true mental deficiency may be an error and the child may be mistakenly admitted to an institution for defectives. In our list there were six instances of congenital syphilis, including one with anemia and ozena; one case of chronic suppurative tonsillitis and valvular heart disease; one of rachitis; one of angular gyrus lesion; one of hypopituitarism; and five children who, although they had no definite organic disease, were nevertheless markedly undernourished and underdeveloped as a result of economic and environmental conditions.

TYPICAL PROBLEMS

It is not within the scope of this paper to discuss exhaustively the histories of all these patients. Most of them present instances which may be duplicated in any large clinic. However, in no case was the condition obvious, and the basic factor would have been easily overlooked if it had not been carefully searched

* Read before the Thirty-Fifth Semiannual Meeting of the Association of Trustees and Medical Superintendents of State and Incorporated Hospitals for the Insane and Feeble-Minded of Pennsylvania, Woodville, Pa., May 28, 1920.

for. In this connection it is interesting to note that three of the syphilitic children came to the clinic with elaborate psychologic reports, which, however, disregarded the physical side of the problem. The child with ozena, a boy of 10, was shy, timid and almost seclusive. The fact that he was shunned by his fellow schoolchildren, on account of the nasal condition, shut him off from many of the usual avenues of learning and had much to do with his supposed "feeblemindedness." In a measure the same thing held true for a girl of 11 who had chronic tonsillitis and valvular heart disease, and was considerably below her proper grade. Not being able to enter into the play and games of the other girls, she soon found herself more or less alone, and reacted by gradually falling behind in her classroom work. Our observation of the entire group from the therapeutic standpoint leads us to believe that eleven will eventually regain a normal level, and that most of the others will show marked improvement.

Two of the cases are unusual enough to merit more detailed description. They illustrate the urgent necessity of applying every advance and refinement of modern medicine to the study of this group of patients.

CASE 1.—*Hypopituitary disease.*—A. C., a girl, aged 12 years, was brought to the clinic because she was "backward," "troublesome" and constantly being returned as "undesirable," by the various families with whom the aid society attempted to place her. The consensus was that the child was forgetful, sluggish in her movements, gluttonous, indifferent and sleepy. She was so hopelessly outclassed at school that it seemed useless to continue to send her. The girl was 61 inches in height and weighed 165 pounds. On superficial observation the skeletal overgrowth seemed generalized, but careful anthropologic measurements brought out a decided relative increase in the length of the long bones. There was a pathologic amount of adipose tissue, particularly in the axillae, breasts, over the abdomen and in the gluteal region. The temperature was continuously subnormal. The psychometric measurement (Binet-Terman) gave a mental age of 7.5 years, being a retardation of 4.5 years. The sugar tolerance was extremely high: for sucrose, 400 gm. and for glucose, 325 gm. Sugar could not be made to appear in the urine unless pituitary extract was injected subcutaneously after the glucose ingestion. Thyroid extract promptly produced mild toxic symptoms. Doses of pituitary gland, varying from 30 to 300 grains daily, were given, and the effect noted and paralleled with the blood sugar curves. Finally, the character of these curves changed to one which might be expected in a normal individual, and, following glucose ingestion, sugar appeared for the first time in the urine. Here was an index of reestablished carbohydrate metabolism. We assumed therefore, that we had determined the correct dosage of pituitary extract, namely, 10 grains three times daily, which will be continued indefinitely.

At present the child is much brighter and takes an almost normal interest in life. She is no longer forgetful, gluttonous or sluggish. She is with a private family and attends school regularly, making at least the average amount of progress. The outlook today is decidedly more hopeful than it was six months ago, when an institution for mental defectives seemed to be the only solution.

CASE 2.—*Alexia.*—W. O., a girl, aged 15, was brought to the clinic because she was slow, indifferent, sullen, and had "no intelligence." Her mother was discouraged about the future, and requested that the child be sent to an institution. Physically there was anemia, and in one eye extreme hyperopia. The patient was unresponsive, but finally cooperated to the extent of answering a few questions and performing some simple tests. It was at once noticed that while she had little difficulty in regard to general and current information, she was apparently unable to read or write more than a dozen single syllable words. A comprehensive neurologic examination revealed almost complete word blindness and agraphia. There was considerable difficulty in recognizing the letters of the alphabet, and B, and D, M and N, and X and Z were often misread. There was neither hemianopsia, astereognosis nor sensory changes.

At this point a history of the previous condition was requested. It had not been submitted at the first interview because the mother's principal object in having the patient brought to the clinic was to determine the degree of mental deficiency and to decide whether or not she could be committed to an institution. I will now quote from the very illuminating report of the social service workers. "W. was apparently normal before having typhoid fever. She was inclined to *learn too fast* in school, and never had any trouble with her work. The attack of typhoid fever occurred in March, 1913, and was very severe. She was delirious much of the time. As far as I am able to gather, W. could not tell one letter from another after she had typhoid, and could not read or write at all. She knew they were letters, but could not tell one from another. She could not recognize even simple words, written or printed, or write from dictation. Last October (1919) she began to distinguish letters and could copy a few. 'Mother' was the first word she could write."

We felt justified in making a diagnosis of alexia. Possibly, from the description, the "typhoid fever" was in reality a meningitis and probably there had been an occlusion of the blood supply to the angular gyrus.

In subsequent interviews with this patient we were able to overcome much of her unwillingness to cooperate. We found that she had almost entirely withdrawn from the companionship of other children, because she feared that they would comment on her educational shortcomings. In a large measure her sullenness and apathy were the rather natural result of a combined shame and defense reaction in an adolescent girl, who found herself, through no fault of her own, cut off from the normal social intercourse which means so much at this time of life.

To have depended on an intelligence measurement alone in this case would have been utterly futile. Answers to questions involving a knowledge of reading and writing classed the patient as an idiot; on the other hand, some of the average adult tests not requiring these faculties were well within the scope of her mental powers.

This child has been under treatment for less than three months. The social service worker who has undertaken her reeducation reports considerable progress. She writes: "W. has been trying to read the cook book, and with a little help made out one whole recipe. She can read sentences in the first reader quite well and can spell quite a few words." The vocabulary has been greatly augmented and now the patient is able to write a short letter. We are planning a course at the Y. W. C. A. which should serve the double purpose of supplying her educational deficiencies and of establishing social contacts. There is still a lack of confidence, and her initiative and ambition need to be further stimulated. With this end in view we are seeking suitable employment for her. It seems reasonable to believe that this girl may be made a useful member of society instead of spending her life in an institution for mental defectives.

THE DIAGNOSTIC CLINIC IDEA APPLIED TO MENTAL RETARDATION

It is interesting to estimate the amount of medical effort required for the study and diagnoses of our eighteen mentally retarded children. In each case there was a neurologic, psychiatric and psychometric examination. Extensive consultation was necessary, and the internist, surgeon, laryngologist, otologist, rhinologist, ophthalmologist, gynecologist and surgical dentist were called into service. The clinical laboratory was asked to examine the urine, the sputum, the blood as a routine and for the Wassermann reaction, and the spinal fluid. There were roentgenograms of the head, teeth and other parts of the body. The biochemist studied the metabolism through chemical

analyses of the blood, particularly with reference to carbohydrate tolerance as affected by the administration of endocrine substances. Basal metabolism was determined. At times it was deemed necessary to extend special medical and laboratory consultation and social service surveys to the families of the patients. Often results of intensive work along some of these lines were negative, and the sole contribution to diagnosis was the elimination of a more or less remote possibility. One must expect to wash much gravel before "pay dirt" is struck.

FEASIBILITY AND ADVANTAGES

I have briefly sketched the diagnostic clinic idea as applied to mental retardation. The idea is so simple and so logical that it is surprising it has had such a limited application. There are several questions which may be fairly asked by physicians, trustees of hospitals, legislators and the lay public, who must foster and encourage the plan if it is ever to be put into general operation. In the first place, is it feasible? The question of the location of such a clinic would have to be determined by practical considerations, existing facilities, ease of access and distribution of population. Probably the most direct method would be the establishment of a diagnostic center in one of the institutions for mental defectives. Proximity to a large city would insure an adequate consulting staff. The laboratory facilities would have to be sharply reorganized. The intramural personnel should include, at a minimum, a scientific director, a pathologist with an assistant, a biochemist and a roentgenologist. To such a scientific center the mentally retarded child would be sent for intensive study. The ultimate object would be to make a competent diagnosis and to decide whether there was actual congenital deficiency which would call for institutional care; or, if the condition was capable of correction, the patient would be returned to the community after contact had been made with an agency which would supervise the details of treatment. Such agencies already exist, and it would only be necessary to broaden their scope. A further function of such a diagnostic clinic would be the examination of children referred to the various institutions for admission, and a survey of those already being cared for. This would constitute a most valuable and productive form of research.

What would be the cost? The initial outlay would be considerable. A suitable building would have to be erected. However, if this was planned in conjunction with a much needed new institution, the cost could be kept within reasonable limits. If the work was carried on at one, or at most two points, duplication in the matter of staffing, equipment and maintenance could be avoided. The entire expense would compare favorably with the amount involved in certain projects now being considered by various state legislatures.

Finally, is it really worth while? Entirely aside from altruistic considerations, it seems highly important for purely material reasons to reconstruct as many of these children as possible. If mental retardation is preventable and correctable, as it often appears to be, then it is entirely reasonable to assume that the wastage involved in a failure to recognize conditions which can be corrected must in the end be returned as a tremendous economic and social liability. There remains the question of our duty in this matter. The individual who is suffering from a physical ailment, such as typhoid fever, pneumonia, tuberculosis or appendicitis, be he ever so indigent and dependent, has at once the advantage of every resource of scientific and modern medical and surgical research. The spread of the psychopathic hospital idea will eventually insure the same advantage to the mentally sick. Is the child, who through no fault of its own is mentally handicapped in the stuggle for existence by the effect of some physical disease, to be denied a chance merely because such disease may be obscure and consequently difficult and expensive to discover?

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THE NONOPERATIVE DETERMINATION OF PATENCY OF FALLOPIAN TUBES

BY MEANS OF INTRA-UTERINE INFLATION WITH OXYGEN AND THE PRODUCTION OF AN ARTIFICIAL PNEUMOPERITONEUM *

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The determination of patency of fallopian tubes has hitherto been possible only by direct inspection and palpation obtained by laparotomy. Physical examination was wholly inadequate because it still left the question of patency a matter of speculation. This is especially true when, as in certain instances, the tubes are sealed tight at their fimbriated end, although no distention of the lumen is present. In other instances it is hard to diagnose occlusion of the tube due to hydrosalpinx when the walls are flaccid. Some tubes are closed by adhesions secondary to a peritonitis that arises outside of the gynecologic domain. No matter how clear the history, the question as to whether such a tube is patent or not is always a matter of doubt. The same holds true in cases in which the tube may be occluded by a tumor.

It is often not possible to distinguish whether a mass in either lateral fornix is due to disease of the tube or the ovary. Even in the presence of a bilateral mass, the tubes may nevertheless be patent despite suspicions directed against them. I have seen a patient who refused operation, although the surgeon assured her that she had pus tubes and would not only be sterile, but would remain an invalid. I have since established that her tubes are patent by the use of intra-uterine oxygen inflation. In her case the ovaries were undoubtedly at fault.

An accurate knowledge of the anatomic patency of the tubes is admittedly important in formulating prognosis and therapy of female sterility. If we are aware that a patient is sterile because her fallopian tubes are closed, plastic operations on the cervix, curettage, dilatation and opotherapy will obviously be useless. Indeed, the disease in the tubes is often clinically manifest after an operation on the cervix, as evidenced by a rise of temperature, pain, tenderness and swelling to one or both sides of the uterus developing within a short time after the operation. The patient may in all innocence charge this to the surgeon, when in reality it is simply a lighting up of an old latent infection.

* From the Second Gynecological Service and the Roentgen-Ray Department of Mount Sinai Hospital.
* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.
* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of several illustrations. The complete article appears in the Transactions of the Section and in the author's reprints.

The impossibility of fecundation in unsuccessful cases is due to obstruction in some portion of the tube, either at the uterine ostium, along its lumen, or at the fimbriated end. In the presence of a small cornual polyp blocking the uterine insertion of the tubes, or occlusion by salpingitis isthmica nodosa, hydrosalpinx or some malformation within the tube lumen (complete spurs, blind canals, etc.), any operation on the lower uterine portion must result in failure.

INCIDENCE OF STERILITY DUE TO DISEASE OF THE TUBES

It is well to remember, as Giles states, that practically 11 per cent. of female sterilities is due to tubal disease. In women under 24 years of age it is higher, reaching 14.4 per cent. Add to these 4.4 per cent. of cases due to blocking of the fallopian tubes by peritonitis, and we have an average incidence of 15 per cent. of cases of sterility due to pathologic tubes. For convenience we will not include tumor formations and malformations. It will then be seen that one out of six or seven women owes her sterility to closed tubes.

Here it may be mentioned that, in certain cases in which no gross physical abnormality can be elicited by examining the woman (2 per cent. of cases) and the potency of the male partner is established by the finding of live spermatozoa in the cervix and fundus uteri, a congenital atresia of the tubes or of some part of the lumen may be the real cause of the sterility. One naturally hesitates to subject such a woman to an exploratory laparotomy, so that a method whereby patency of the tube could be demonstrated without surgical means is eminently desirable.



Fig. 4.—Pneumoperitoneum: 250 c.c. of oxygen injected into the peritoneal cavity by way of the uterus and fallopian tubes. Diaphragm visible on the right side, not on the left. Slight downward displacement of the liver.

INTRA-UTERINE OXYGEN INFLATION AS A METHOD OF DIAGNOSIS

This I believe has been effected by the combination of oxygen with fluoroscopy and roentgenography. It is possible to determine whether the tubes are patent or otherwise by inflating the uterus with oxygen and in normal cases filling the peritoneal cavity with a measured quantity of oxygen. The artificial pneumoperitoneum establishes definitely the patency of the fallopian tubes. In a preliminary report I pointed out that the peritoneum tolerates the oxygen introduced by way of the uterus and fallopian tubes equally as well as by direct abdominal puncture. There is no doubt, however, that the result is the same whether the peritoneum is filled with oxygen through the abdominal wall by puncture or through the uterine cavity without puncture. For general abdominal diagnosis at least a liter to a liter and a half of gas is necessary. For the specific purpose of establishing the fact of open fallopian tubes the amount of oxygen need not exceed 300 c.c., and in the last of my cases tested by this method about 150 c.c. would be the average volume used.

In one case from Dr. H. Lilienthal's service I injected oxygen by way of the fallopian tubes for the diagnosis of a possible perinephric abscess complicating an operation for acute perforative appendicitis. An abdominal sinus at the site of the appendix incision was proved to communicate with the peritoneal cavity because most of the oxygen escaped through it. Bubbles of gas were seen to form through the moisture at the sinus opening, and this leakage prevented the formation of an enclosed pneumoperitoneum.

The small volume of oxygen has the advantage of enabling us to examine the patient in the office without the necessity of her going to bed for twenty-four hours or more. Symptoms of phrenic irritation are decidedly less, and the patients may go about their daily work. When a greater amount of oxygen is injected, the patient is more comfortable in a moderate Trendelenburg posture. This causes the oxygen to rise to the pelvis, and the excursions of the diaphragm are less hampered by the column of oxygen.

In the first patient in whom I injected oxygen through the uterus I did not measure the quantity but allowed it to pass into the peritoneal cavity till a moderate amount of visible distention resulted. The fluoroscopic and roentgenographic pictures were the same as described by Stein and Stewart, who introduce the oxygen through a trocar or needle thrust into the abdominal wall. This patient was allowed to go home one hour after the examination and advised to lie down in a bed with the foot elevated. She was reexamined at the end of the third day, and a small amount of oxygen was still present below the diaphragm. The estimated amount she must have received was from 2 to 2.5 liters.

In the next thirty-two cases of sterility examined by intra-uterine oxygen inflation it was endeavored to establish several points: (1) the tolerance of the patient for the method as a diagnostic procedure; (2) the possible danger of infection; (3) the danger of embolism; (4) the diagnostic reliability of the findings and interpretation, and (5) the minimum volume of

oxygen necessary to produce the pneumoperitoneum which could be seen by fluoroscopic examination.

1. *Tolerance of the Patient.*—The patients stood the examination with very slight discomfort. At most it was like the pain produced in some patients by the introduction of a uterine sound. Nervous women complained more from fear than actual pain, because the vast majority of the patients made no complaint during the injection. The passing of the oxygen into the peritoneal cavity is painless. Uniformly there is some sense of pressure about the diaphragm within five or ten minutes, and slight "sticking" sensations in one or both shoulders. A half liter of oxygen causes very moderate symptoms. A liter of oxygen is followed by greater epigastric oppression and shoulder pains. When more than a liter is used, the symptoms are proportionately increased. When from 100 to 200 c.c. are injected, the symptoms are very slight and do not interfere with the patient's daily routine.

2. *Possible Dangers of Peritoneal Infection.*—There are no pelvic symptoms after the gas inflation. In no case was there evidence suggestive of peritoneal irritation. Not a single one of the symptoms characteristic of peritoneal infection was noted. There was no nausea or vomiting, pains, rigidity or tenderness, or rise in temperature or pulse rate. The patients were all closely observed. They were followed through three or four menstrual periods to note any late sequel of the oxygen test.

3. *Possible Dangers of Embolism.*—In no instance were there symptoms suggestive of air embolism. This question gave me some concern in first contemplating the method. By actual experiment on the dog I found that the animal tolerated 350 c.c. of oxygen introduced directly into the leg vein without any symptoms attending the injection or following it. The rate of oxygen flow was the same as employed in my sterility patients. As 350 c.c. is the very maximum amount required, I felt that the accident of embolism from oxygen could be disregarded. I have since learned that a number of army surgeons use this method of intravenous oxygen injection for therapeutic purposes, especially in pneumonia.

4. *Diagnostic Reliability of the Findings and Interpretation.*—When an artificial pneumoperitoneum was produced, it was conclusive in proving the patency of the genital canal from the external end to the internal abdominal end. This, however, could result when only one tube was patent and the other closed, as well as when both tubes were actually patent. For practical purposes in the consideration of sterility it suffices that one fallopian tube is patent. Future observations may make it possible for us to draw definite conclusions on the question of unilateral or bilateral patency, and, if unilateral, which side is open or closed. At this time I am not prepared to present data on this point.

When an artificial pneumoperitoneum does not result from the intra-uterine oxygen inflation, the probability is that there is some obstruction in the genital canal above the internal os. It may be at the uterine ostium of the fallopian tubes, along their course, or at the fimbriated end. Whether this be by uterine cornual polypi occluding the opening as a ball valve or inspissated mucus in the tubal lumen, or agglutination of the plicae of the endosalpinx or a sealing over of the fimbria, the result will be the same. One negative result is not enough to establish nonpatency. In such an instance the test is repeated once or twice, a little more gas being used each time. If in the repeated tests the oxygen fails to pass through, we may conclude that the patient is sterile because of this mechanical blockade. Occasionally, however, when the stenosis operates like a ball valve, as in the case of a polyp at either uterine horn, the greater pressure by the increased gas volume may succeed in forcing the oxygen through, and then a pneumoperitoneum would result. In such an event, however, the test would still have a certain diagnostic value and might serve to indicate the proper therapeutic measure to be adopted to overcome this difficulty. Inspissated mucus at the uterine end of the tube would have the same effect, and here, too, the negative result is significant of a mechanical cause of sterility.



Fig. 7.—Case of ablated tubes. Bilateral salpingo-oophorectomy two years before. Speculum and intra-uterine cannula in situ. Large Thomas pessary also visible. Oxygen injected by syringe (40 c.c. used). Uterine cavity, transversely pear-shaped, plainly visible.

These results I was able to demonstrate on the extirpated uterus with adnexa attached. In one case [1] I had the opportunity to confirm by operation the clinical findings as obtained by the oxygen test:

This was a patient, aged 27, who had been married twelve years and had three children, the youngest of whom was 2 years old. Since the birth of the youngest child she believed herself pregnant twice; each time an abortion was performed. She complained of pains in the pelvis and prolonged menstrual flow. Examination by Dr. H. N. Vineberg, attending gynecologist, disclosed a moderate cystic enlargement of the right adnexa, which was slightly tender, the left side being apparently normal. The uterus was enlarged about

1. In another case, in which the condition was diagnosed as multiple fibroids, the oxygen failed to produce an artificial pneumoperitoneum. At operation both tubes were closed (double hydrosalpinx).

100 per cent. The temperature was normal, the pulse, 80. A diagnosis of diseased adnexa on the right side was made. As inflation of this uterus under a pressure of 190 failed to produce an artificial pneumoperitoneum, I felt that the left tube was also diseased and closed. Laparotomy in this case, performed six days after the oxygen injection, revealed an old standing pelvic peritonitis; both tubes were closed at the fimbriated end, that on the right side being moderately distended, while the left tube was but slightly swollen. They were both embedded in adhesions, in which the ovaries were also slightly involved. The inflation with oxygen was attended by no pain or discomfort. There had been no fresh lighting up of the process. The patient made an absolutely uneventful recovery from the operation.

While I should not advocate the use of this method in frank inflammatory conditions, this one experience has a definite value, in demonstrating its safety of application. On the specimen removed by operation I was able to repeat the oxygen injection and to corroborate the findings both as to the intra-uterine pressure and as to patency. When the pressure reached 190, the oxygen began to regurgitate through the external os. By tightening the latter around the cannula, the pressure rose to 210 and then fell slightly as the gas escaped along the sides of the instrument. This greater pressure failed to force the oxygen through the tubes or to distend them.

In order to see whether the stream of oxygen bubbles might force infective material into the peritoneal cavity, I opened the clubbed end of one of the pus tubes and repeated the oxygen injection in the same way as before. Again the same findings; no pus escaped into the basin of water into which the tube was immersed. The explanation for this is that the intramural portion of the tube lumen, normally only about 1 or 2 mm. in diameter, becomes plugged in pathologic conditions with pus or mucus. In addition, the swelling of the endosalpinx as well as that of all the coats of the tube results in practically obliterating the lumen of the tube and shutting it off from the uterine cavity. While in certain rare cases a large hydrosalpinx or pyosalpinx drains into the uterus, in the majority of cases the uterine end of the tubes remains occluded and resists the usual pressure to which the oxygen is subjected in testing for patency. When the fimbriated ends are clubbed, there is absolutely no danger of forcing them open. It requires many times the pressure necessary for the practical application of the method. Besides, the external os acts as a safety valve, allowing the oxygen to escape as soon as a certain pressure is reached.



Fig. 9.—*a*, Keyes-Ultzmann cannula perforated at the tip by several small apertures with urethral rubber tip for obturation of the external os of the cervix; *b*, a piece of rubber tubing with glass connecting tube originally used in the apparatus (this is not absolutely necessary).

As far as introducing infective material from the uterine cavity into normal tubes and thence into the peritoneum is concerned, several factors make that highly improbable. One is that the cavity of the body of the uterus is in most cases free of infection. Pus or mucus, if present, is more likely to descend from infected tubes. When the uterine discharge is frankly purulent, the method is not to be used. Against this theoretical objection is the practical fact that in none of the seventy cases has there been such an occurrence.

In the nonpatent cases one may also use thorium or bromid as a control. The citrate thorium solution or sodium bromid solution may be injected into the uterus, and under obturation the roentgenogram may be made. I did this a few times in the earlier experiments, but have been able to dispense with it in my later work.

TECHNIC

The technic of the procedure is very simple. The instruments needed for the intra-uterine injection are (1) a metal cannula (Keyes-Ultzman type) perforated at the tip by several small apertures (Fig. 9); (2) a tenaculum (bullet) forceps; (3) a uterine sound; (4) a dressing forceps; (5) a bivalve vaginal speculum (Graves type), and (6) an oxygen tank connected with a water bottle. The rubber stopper is perforated at three points through which bent glass connecting tubes pass into the bottle; one of these glass tubes connected with the oxygen tank dips down below the water level. The two other glass tubes dip down for 1 or 2 inches, and do not reach the water level. One of these is attached by rubber tubing to a mercurial manometer and the other is attached in the same way to the metal cannula. In order to determine the volume of oxygen gas released from the tank, it is allowed to pass through the water bottle in a stream of discrete bubbles. These should not exceed 300 per minute. The actual amount per minute can then be measured by displacing an equivalent quantity of water from a graduated bottle into another.

It will then be seen that, for example, the gas displaces from 200 to 250 c.c. of water per minute. The same rate is then maintained in the intra-uterine injection. The water bottle that is connected with the oxygen tank contains hot boiled water or some mild antiseptic solution.

The cervix is exposed by means of the speculum; the vagina is carefully wiped clean and the cervix is cleansed dry and painted with tincture of iodin. If there is any uncertainty regarding the direction of the uterine cavity, it may be determined by passing the sound. The cervix is steadied with tenaculum forceps grasping its anterior lip. The oxygen, which has been released from the tank and regulated, is now allowed to pass from the water bottle through the glass and rubber connecting tubing to which the metal cannula is attached. By pinching the rubber tubing near the cannula one can make sure that all the joints are air tight. The mercury immediately rises in this case. If there is some leakage between the oxygen source and the cannula, the pressure will be negative. This is a very important point to be observed. Having made certain of the pressure, the air valves in the manometer are opened and the catheter is then inserted into the uterine cavity to a point well beyond the internal os. This is done so that there is no immediate escape back along the cervical canal and out into the vagina. The rubber urethral tip, placed ordinarily from 1½ to 2 inches away from the cannula tip, is then fitted into the external os, insuring better obturation. This is not essential in the nulliparous intact cervix, but is required in the irregular patulous external os resulting from previous operations or from lacerations attending childbirth. The air valves are now closed. Within a few

seconds after the oxygen enters the uterine cavity, the pressure as noted in the mercury manometer will rise; within from one half to three quarters of a minute in the patent cases the mercury reaches its maximum point. It then fluctuates for a few seconds or drops rather sharply from 10 to 30 points, maintaining the last level more or less for the rest of the time. There may be a slight audible escape of oxygen from the external os in the cases of patent tubes, but as a rule there is none till the cannula is removed, when slight regurgitation is present.

In the nonpatent cases, the pressure usually rises steadily for three quarters of a minute to a minute or longer, and then drops sharply as the gas regurgitates into the vagina. As the time required for sufficient oxygen to pass into the abdomen where it can be detected by fluoroscopic examination is one and a half minutes, the cannula is not withdrawn till this time limit is reached. If the pressure reaches 200 mm. in one minute, it is well to open one of the air valves (needle valve) to prevent it from mounting higher. In all our patent cases this high level was not reached.

The intra-uterine gas pressure has been a valuable adjunct in checking up the time required for the gas to pass through the tubes and reach the peritoneal cavity. In our earlier cases we had decided on a three-minute interval as being necessary. In that time from 750 to 850 c.c. were released from the oxygen tank. We had no way of telling when the gas actually passed through the fallopian tubes. The symptoms were naturally accentuated. The pneumoperitoneum was excessive. A liter of oxygen was not necessary when a quarter of a liter was just as valuable for the purposes of establishing the fact of patency. With the manometer attached to the water bottle we can decide, knowing the rate of flow beforehand, how much we wish to inject into the abdomen. From the moment the pressure falls, we allow the gas to flow for from one-half to one minute, and can estimate the quantity used with reasonable accuracy, allowing for an error of 50 c.c., which for practical purposes is unimportant.

Various types of pressure devices were tried to estimate intra-uterine gas pressure. The mercury manometer of the standard type was finally adopted. For this advice I am indebted to Dr. Arthur J. Bendick, associate roentgenologist to Mount Sinai Hospital. This was particularly important, because of the theoretical possibility of air embolism resulting from too great pressure which might force the oxygen into the blood vessels. In none of the first group of cases, in spite of the absence of accurate control, did such an accident occur. It has been clearly demonstrated that oxygen, as used in this method, does not cause embolism.

In the first group, ten patients were reexamined two or three times because they had had minimal amounts of oxygen. Most of these were found to have patent tubes when a sufficient volume of oxygen under pressure was injected. When the pressure test was adopted, it became unnecessary to repeat the examination in the negative cases except when in a nervous patient it had to be interrupted. This happened in one case; and on reexamination the patient, being reassured, submitted to the complete test. She then proved to have patent fallopian tubes. It is a good rule to repeat the test at least once in the nonpatent cases in order to check up the result of the first examination.



Fig. 10.—The apparatus set together. The same rate of flow of oxygen as previously determined by displacing water is maintained before and during the intra-uterine oxygen inflation. The mercurial manometer may be of the standard type, as illustrated here, or it may be of the Tycos type, and can then be inserted directly into the rubber stopper of the water bottle.

In the positive patent cases, the pressure need not exceed 40 mm. The average pressure is from 60 to 80; occasionally the pressure rises to 100 or more before the oxygen will pass through the uterine ostium of the fallopian tubes. When the pressure reaches 150 or more, the likelihood is that the tube lumen is closed completely or stenosed, but not necessarily in every case. A pressure of 200 is tolerably certain to be due to closed tubes. *Fluoroscopy, however, should always be employed to check up the partially stenosed cases, as sometimes oxygen will succeed in escaping into the abdomen, though the pressure required to force it in is comparatively high.*

While the pressure gage as studied in the second series of thirty-seven cases is an excellent indication of patency of the fallopian tubes, it is well always to examine the patient with the fluoroscope. It occasionally happens that with the greater pressure a slight amount of gas succeeds in entering the peritoneal cavity and reaching the subphrenic space on the right or left side, where it can be detected by the roentgen ray.

In the positive cases, that is, when the tubes are patent, the oxygen will be seen as a clear space below the diaphragm, most often on both sides, but occasionally on one side only. The space varies, depending on the volume of oxygen injected. In the average case in which from 150 to 250 c.c. is used, this clear

space below the diaphragm varies between one-quarter to 1 inch in depth. The diaphragm appears as a transverse septum above the dense liver shadow on the right side and over the pale stomach margin on the left. It is unmistakable, and is readily seen when the patient breathes deeply. In all our cases in which we have made roentgenograms the finding was always confirmatory. Stout patients require a somewhat greater amount to allow for the density of the abdominal wall.

The whole examination is complete within five minutes. When the minimum volume of oxygen has been used, that is, from 100 to 150 c.c., the symptoms are negligible. There is the slightest discomfort around the diaphragm, and slight sticking pains referred to one or both shoulders. The patient dresses herself and is able to go home with comfort, and performs her duties as though she had had a simple cystoscopy. When, however, more gas has been used, the symptoms may be somewhat annoying. In such cases it is well for the patient to lie down for a few hours on reaching home, with the foot of the bed elevated (moderate Trendelenburg posture).

In the negative cases, that is, when the tubes are occluded, no artificial pneumoperitoneum results. These patients have no discomfort after examination, and have none of the referred pains in the shoulders or about the diaphragm.

In none of the cases are there pains in the pelvis following the intra-uterine oxygen injection. A little bloody oozing for a few minutes follows a withdrawal of the cannula, particularly in cases just before or just after the menstrual period. It is well, therefore, to make the examination about ten days after the menstrual period.

RESULTS OF EXAMINATION

Altogether seventy cases were examined by the method of intra-uterine oxygen inflation; thirty-three without the control of the manometer, and thirty-seven with the manometer. In the first group various quantities of gas were used to establish particularly the minimum amount required to produce an artificial pneumoperitoneum without, however, the annoying symptoms which would destroy the usefulness of the method as a diagnostic aid. Various types of sterility cases were tested. Some were primary sterilities, the marriage dating back from one to twelve years or more and in which no operations were performed either to relieve the condition or for tubal, ovarian or uterine disease. Some of the patients had had one or several curettages for the relief of sterility; some for alleged miscarriages. A few had had one child and became relatively sterile for a number of years. A few cases in which it was definitely known that one or both tubes were ablated on account of pyosalpinx were used as controls to check up the diagnostic value of the method. A few patients had had plastic operations on the cervix for the cure of primary sterility.

INDICATIONS FOR THE APPLICATION OF THE METHOD

The method is indicated:

1. In all cases of primary sterility in which all factors except that of tubal disease may be excluded. Here it has a definite prognostic as well as diagnostic value.

2. In cases of primary sterility in which the patient is known to have passed through a pelvic infection of gonorrheal origin.

3. In cases of primary sterility in which the patient had peritonitis of appendicular origin.

4. In cases of relative sterility in which the patient had a pelvic infection following childbirth or abortion, particularly when induced.

5. In cases of one child, sterility without the definite history of pelvic infection.

6. In cases in which it had been necessary to remove one whole tube and part of another for hydrosalpinx or pyosalpinx (conservative surgery).

7. After unilateral ectopic pregnancy to determine the patency of the residual tube.

8. After cases of salpingostomy for the cure of sterility of tubal origin to demonstrate the success of the operation which was calculated to effect open tubes.

9. After sterilization by tube ligation to test the patency of the tied or severed tubes.

10. After multiple myomectomy to make certain that at least the uterine ostium of the tube has been left intact.

CONTRAINDICATIONS

The method is not to be used in the presence of any acute subacute pelvic infection, nor in the presence of purulent diseased bartholinian glands, urethra, vagina or cervix.

FINDINGS IN SEVENTY CASES IN WHICH EXAMINATION WAS MADE FOR PATENCY OF FALLOPIAN TUBES

First Series: Cases examined without pressure control				33
A. Absolute sterility			25	
(a) Patients previously operated on		8		
Tubes proved patent	5			
Tubes proved nonpatent	3			
(b) Patients not previously operated on		17		
Tubes proved patent	10			
Tubes proved nonpatent	7			
B. Relative sterility			8	
(a) Patients previously operated		4		
Tubes proved patent	1			
Tubes proved nonpatent	3			
(b) Patients not operated on		4		
Tubes proved patent	3			
Tubes proved nonpatent	1			
Second Series: Cases examined with pressure control				37
A. Absolute sterility			10	
(a) Patients previously operated on		8		
Tubes proved patent	2			
Tubes proved nonpatent	6			
(b) Patients not operated on		5		
Tubes proved patent	5			
Tubes proved nonpatent	0			
B. Relative sterility			27	
(a) Patients previously operated on		15		
Tubes proved patent	12			
Tubes proved nonpatent	3			
(b) Patients not operated on		12		
Tubes proved patent	9			
Tubes proved nonpatent	3			

The causes of sterility are too often obscure and undetermined. It appears, however, that at least the mechanical factor of patency should be possible of determination in most cases. The method of intra-uterine oxygen inflation with the production of an artificial pneumoperitoneum obviates the necessity of surgical exploration and is especially serviceable in the obscure cases.

261 Central Park West.

ABSTRACT OF DISCUSSION

Dr. John O. Polak, Brooklyn: Dr. Rubin suggests a most ingenious method to establish the patency of the tubes. It is, of course, along the same lines as the introduction into the uterus and tubes of argyrol under pressure, and the use of thorium. I have used both these methods and have discarded them, as they gave very little information, except pictorial. I am not convinced that it is a safe procedure to inflate the uterus and tubes under the pressure necessary to introduce

oxygen into the peritoneal cavity by way of the tube and produce pneumoperitoneum. Again, the irritability of different uteri must be considered. In some women simple manipulation of the cervix or the introduction of anything into the cervix will cause most severe uterine reaction and no one has ever told us how to select the individual case. That of itself would prohibit the general use of this method, although it certainly has very many apparent advantages. When sterility exists, we can do a great deal by a proper investigation of the forces that produce sterility. Among 687 sterile women examined, 400 had tubal disease. In many of these cases of one-child sterility, the woman denies infection, yet she has had a parametritis, a pelvic peritonitis and a perisalpingitis. It is only in the straight gonococcal cases, without any mixed infection, that regeneration is possible. In sterility the two chief causes outside of the male, are endocervicitis and the infections involving the tube either from the inside or the outside. We can follow that up very well by the aspiration of the ejaculated semen at different periods after copulation and at different locations, and if we find living spermatozoa in the uterus, it is reasonable to suppose the existence of a tubal or ovarian condition which justifies abdominal section. With such a history it would be safer to do abdominal section than to inflate the tubes or uterus with gas.

DR. ISADOR C. RUBIN, New York: The objections raised by Dr. Polak are not unknown to me. These were the very objections we had, but they were overruled by actual experimentation. About the irritability of the uterus, the vast majority of these patients tolerated the method very well. One very nervous woman could not stand the method on first trial, but she did on second trial. The method is no more of a procedure so far as the tolerance of the patient is concerned than is cystoscopy. The bladder is no more irritable to the introduction of a cystoscope than the uterus is to a sound. Of course, there are cases in which you will not use that method, but even in these cases the method is absolutely safe. Of the safety of the method I am thoroughly convinced. I do not recommend it in cervices pouring out pus, or when there is much fever, nor when there is pelvic infection. There are cases in which it is impossible even to go in for the spermatozoa, because the method is not tolerated by the uterus. As soon as the inflation reaches the point where the pressure overcomes the tight slit in the uterine end of the tube, the pressure drops from 60 or 80 to 40 or 30 or even 20. The amount of pressure required is not so enormous. It is surprising how much the uterus can stand. The cervix acts as a safety valve. I feel that the method has a scope.

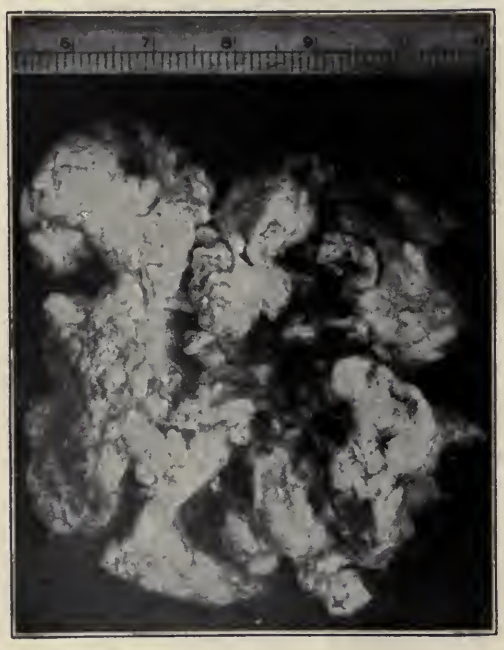
Paid Dispensary Service.—The time is coming, and may not be far distant, when hospital staff physicians will receive compensation for their professional services to so-called free patients, not because they have not given their best service in the past, but because the public demands a greater service than doctors are able to give freely and at the same time earn their livelihood. The patient who, by reason of circumstances, is obliged to seek free medical advice is entitled to the best treatment that can be provided, not alone for his own sake, but for the sake of the community, which is thus spared the danger from spread of disease, and from the necessity of caring for dependent individuals.—Lucy C. Catlin, The Hospital as a Social Agent in the Community.

THE USE OF SATURATED SALT SOLUTION INTRAVENOUSLY DURING INTRACRANIAL OPERATIONS

PRELIMINARY REPORT *

ERNEST SACHS, M.D.
Professor of Neurologic Surgery, Washington University Medical School
AND
GEORGE W. BELCHER, M.D.
Intern in Surgery, Barnes Hospital
ST. LOUIS

It is a fundamental principle of intracranial surgery that if a dura is under tension above the normal it must never be opened until the pressure has been reduced. Such a condition is encountered in traumatic cases in which there has been contusion and laceration of the brain, and in cases of brain tumor. If the dura is opened in such cases without reducing the pressure, the brain cortex often ruptures and very serious damage may result. The method we have practiced for a good many years to reduce this pressure has been to withdraw cerebrospinal fluid. Whenever possible the fluid is removed by ventricle puncture, as removing it from the spinal meninges is a dangerous procedure attended by a considerable mortality in this type of case. In fracture cases the ventricle puncture offers no difficulty, and one is virtually always able to reduce the pressure; but in tumor cases, especially those above the tentorium of the cerebellum, this may be impossible, as the ventricle may be compressed and contain no fluid. Under such circumstances, up to the present time we have been obliged to open the dura while still under tension, and serious trouble has resulted frequently from the protruding brain.



Tumor removed from Patient I. N.

Recently Weed and McKibben described the result of experiments on animals when saturated salt solution (35 per cent.) was injected intravenously; they found that as a result of the dehydration of the tissues the brain shrank in volume. They also observed no untoward effects on their animals. The method seemed to offer a means of reducing cerebral edema, a very common accompaniment of even the most gentle manipulation in the intracranial cavity.

In a recent tumor case (I. N., Surgical No. 8704) presenting marked pressure symptoms, a right sided subtemporal decompression was undertaken. The patient was in no condition to stand an attack on the tumor itself. The dura, on being exposed, was found enormously tense. Puncture into the inferior cornu of the right ventricle resulted in a dry tap. Ventricle

* At the meeting of the American Neurological Association in New York, June 2, Dr. Harvey Cushing presented a paper on experiments in the use of saturated salt solution for reducing brain volume. This paper had been written before that meeting but had not been sent to the publishers.

puncture into the left ventricle yielded a few drops of fluid, but not enough to affect the pressure. The dura was opened rapidly, but in spite of an immediate closure of the muscles the cortex ruptured at several places. The patient did not clear up and was stuporous, as was to be expected. He was therefore given 100 c.c. of saturated salt solution intravenously, about 1 c.c. per minute. The result was startling. Before 15 c.c. had been run in the patient brightened up, answered questions and showed marked signs of improvement. This improvement lasted about twelve hours, when the patient again relapsed into a semicomatose condition. On three successive occasions, administrations of the saturated salt solution improved the patient. After the third injection the patient improved steadily. Daily examinations of the blood to determine whether or not the red corpuscles had become more fragile were carried out at the suggestion of Dr. Marshall, but no change was noted. The fragility never varied beyond normal limits, being always between 0.35 and 0.4 per cent. The blood pressure during the first injection rose rather alarmingly from 150 to 185. The patient within a few minutes expressed a desire to void, and the diuretic effect of the salt was quite striking.

The subtemporal decompression wound sank in so that what had been a tight, bulging hernia became a marked concavity. Dr. Belcher urged me to make use of this method during an operation. It seemed justifiable to try the method in a case in which the intracranial pressure could not be reduced by ventricle puncture. The case of I. N. seemed an ideal one. During the course of the operation the salt solution was injected and reduced the intracranial pressure so that a tumor of considerable size in the temporo-occipital region could be removed. The patient made an uneventful operative recovery.

We have used the solution in the wards to control cerebral edema, and believe that the solution has decided uses for this purpose. Our observations are, however, too few to justify more than mere mention of them.

We have reported this one instance of the use of salt during operation because we believe it offers a method of dealing with one of the most difficult groups of brain tumors, namely, those in which the ventricles have been collapsed by the tumor.

Until we know whether there are any dangers and what they are in the use of salt in such concentrations it should be used guardedly. We are at present conducting an investigation on animals to determine this and also to determine if possibly other solutions may be as efficacious but less harmful.

We have made this preliminary report because we feel that it opens up great possibilities. But we feel that the method must be subjected to severe tests and its limitations determined before it can become a recognized method in intracranial operations. The method may possibly find application in cases of increased brain bulk when the skull is closed, but that its use in the closed skull may be attended by some danger is suggested by a statement of Weed and McKibben's that they found some histologic changes when salt was injected and no trephine opening had been made.

Instinct and Diet.—Instinct fails civilized man in respect both of the quality and the quantity of his food.—*Clin. J.*, July 14, 1920.

POSTDIPHTHERITIC PARALYSIS OF THE RESPIRATORY MUSCLES

REPORT OF CASE TREATED BY PROLONGED ARTIFICIAL RESPIRATION *

W. McKIM MARRIOTT, M.D.
ST. LOUIS

The paralyses following diphtheria are essentially temporary in character, and complete restoration of function is to be expected within a relatively short period of time. When, however, there is extensive involvement of the respiratory muscles, death by suffocation is very likely to occur before recovery from the paralysis has taken place. An additional factor rendering the prognosis even more grave is the myocardial involvement so frequently present coincident with the multiple neuritis. Respiratory difficulties of a mechanical nature serve further to embarrass the damaged heart.

If, in the case of a patient suffering from these serious sequelae of diphtheria, the respirations could be maintained by artificial means until the respiratory muscles had once more regained their function, one of the possible causes of death would be eliminated and the danger of death from cardiac failure somewhat minimized.

The case here reported demonstrates the practicability of applying artificial respiration more or less continuously for a long period of time to a patient suffering from paralysis of the muscles of respiration.

REPORT OF CASE

Rosie W., aged 10 years, was admitted to the St. Louis Children's Hospital, Jan. 3, 1920, six weeks after a severe attack of pharyngeal diphtheria. The physician attending the child, at the time of the attack, had administered 10,000 units of antitoxin intramuscularly. About one week following the attack of diphtheria the child began to show signs of palatal paralysis. The muscles of the eyes, extremities, back and neck subsequently became paralyzed.

On admission to the hospital the patient was unable to move the legs or body or to hold up her head. She could swallow only with the greatest difficulty. There was almost complete aphonia, and much difficulty in expectorating mucus from the throat. The heart was enlarged, the left border being 3 cm. outside the nipple line. Electrocardiographic tracings showed evidences of myocardial involvement. There was moderate dyspnea and slight cyanosis. The abdomen retracted during inspiration. The temperature was normal, the throat culture negative for diphtheria. The urine contained a small amount of albumin and a few hyaline casts.

The child's respiratory difficulties increased. No motion of the diaphragm could be detected, and ultimately the intercostal muscles and accessory muscles of respiration became involved. Cyanosis deepened and the child became semicomatose. There were no signs of pneumonia or of obstruction in the air passages. It was evident that death from suffocation would result within a very short time unless some means of artificial respiration were employed.

At Dr. Erlanger's suggestion we made use of an apparatus described by Gesell and Erlanger.[1] This apparatus was designed to convert a continuous air current into an intermittent one of any desired rate and volume and has been used extensively in physiologic laboratories for administering artificial respiration to animals. A nitrous oxid mask connected to the apparatus was applied closely to the child's face. There was at first no cooperation, partly on account of the child's semicomatose condition. Within a few moments,

* From the Department of Pediatrics, Washington University School of Medicine and the St. Louis Children's Hospital.

1. Gesell and Erlanger: Am. J. Physiol. **23**, Proc. p. xxxiii, 1914.

however, the slight cooperation necessary was obtained and air was forced into the lungs. The effect was almost immediate; cyanosis disappeared, and the patient became sufficiently conscious to cooperate well. The rate of respiration of the machine was adjusted to correspond with the child's respiratory efforts. After a period of about ten minutes the child fell asleep and the mask was removed. Cyanosis slowly developed again and was again relieved by a period of artificial respiration. The artificial respiration was kept up during most of the time that the child was awake. It was possible to discontinue it for short periods when she dropped off to sleep. The artificial respiration was kept up at intervals for five days, and at the end of that time the respiratory muscles had so far regained their function that the artificial respiration was necessary only at relatively infrequent intervals. It was not necessary at all when the child was perfectly quiet; but after any exertion, such as coughing or after feeding with the nasal tube, it was necessary to apply the respiration apparatus for a short period. The function of the respiratory muscles steadily improved, and at the end of a week it was possible to dispense entirely with the artificial respiration.

The child was discharged from the hospital, January 31, in excellent condition. She is now (six months later) well and apparently normal in every way.

COMMENT

In view of the fact that the majority of patients with postdiphtheritic involvement of the respiratory muscles die, it would seem distinctly advisable to attempt some form of artificial respiration in every severe case. Other means than the one adopted might well be used. The possible danger of a resulting aspiration pneumonia should not influence one against the employment of such methods when the paralysis of the respiratory muscles is so complete that death from suffocation is certain, unless mechanical aid is employed.

TEMPERATURE FACTOR IN DETERMINING THE AGE OF MATURITY AMONG THE ESKIMOS

VILHJALMUR STEFANSSON
NEW YORK

It has been generally supposed that among the peoples of the earth the age of maturity comes earliest in the tropics, and increases gradually as one goes northward through the temperate and eventually into the polar zone. It has been presumed that a similar condition would be found in going south from the equator toward the southern pole.

If the age of maturity increases with fair regularity as one goes north through Europe from Sicily to Lapland, it would seem reasonable that this has a direct connection with the decrease in temperature, and the assumption has accordingly been generally made. Tables, the sources of which are not always unassailable, have been published to show a direct connection between the age of maturity and the temperature.

But in North America this rule, if it be a rule, has a striking exception. It is not rare among Eskimo women that they have their first child at the age of 12; and children born before the mothers were 11 have been recorded in places where the age of the mother can be in no doubt, because of the fact that her birth had been recorded by a resident missionary.

Cases of this sort were first called to my attention by Dr. H. R. Marsh, a medical missionary of the Presbyterian Church, long resident at Point Barrow, Alaska, about 300 miles north of the arctic circle. It is only where missionaries are stationed that reliable records are obtainable, for the Eskimos themselves do not take any interest in their own age or the age of their children as measured in years, and it is seldom possible to get a reliable estimate of how old a person is unless his birth can be checked up by comparison with some known visit of an explorer or whaling vessel or some event of that sort.

Since the early maturity of Eskimo girls was first pointed out to me by Dr. Marsh, I have had a chance to observe a considerable number of Eskimos through a period of ten years, and in many cases when it has been possible to check up the age correctly I have found the age of maturity to be about as given by him for Point Barrow (tenth to thirteenth year). But I have a general impression that in the places where I have been, the age of maturity is now getting higher gradually.

When I first learned of this low age of maturity among people living in a cold climate, I thought I had found evidence for thinking that the factors of racial difference, or possibly kind of food and manner of life, had much more importance than previously considered in determining the age of maturity, and that the general correspondence, if there were such, between the increasing age of maturity and decreasing temperature as one goes north through Europe would be found to be partly a matter of accident. It is a curious thing that during twelve years of association with the Eskimos, during which time I have spoken and written a great deal about their manner of life, it never occurred to me until some two or three months ago that their early maturity is strictly in accord with the supposition that the hotter the environment, the earlier the maturity.

For to all intents and purposes the typical Eskimo in the country known to me lives under tropical or subtropical conditions. During the winter of 1906-1907 I recorded the estimate that the average temperature within doors of the Eskimo house in which I lived at the mouth of the Mackenzie River was a good deal above 80 F., and frequently rose to 90 F.[1] From the point of view of those who spent most of the winter indoors in that house, it was a matter of no consequence that the temperature was perhaps 40 or 50 degrees below zero outdoors, when the outdoor air seldom came in contact with their bodies. Even when they go out, this cold air does not have a chance to come in contact with the body, except for the limited area of the face. When an Eskimo is well dressed, his two layers of fur clothing imprison the body heat so effectively that the air in actual contact with his skin is always at the temperature of a tropical summer. It is true, therefore, that while an Eskimo is indoors his entire body is exposed to a local climate as warm as that of Sicily, and when he is outdoors he carries that climate about with him inside his clothes and applicable to 90 or 95 per cent. of his body area.

If it be supposed that early maturity in such a country as Sicily is due to the direct effect of heat upon the body, in some such way as when heat brings early maturity to flies cultivated under experimental conditions, then we see that on this theory the Eskimo

1. Bartlett estimates the temperature within doors in winter of the houses of the Eskimos and Eskimo-like people of northeast Siberia at 100 F. (Bartlett, R. A., and Hale, R. T.: Last Voyage of the Karluk, Boston, 1916, p. 211).

has every reason to mature about as early as the Sicilian. The same conclusion follows if we consider that early maturity is due to the acceleration of the processes of metabolism due to the strain on the body in adjusting itself to excessive heat. When an Eskimo comes into such a house as the one in which I lived in 1906-1907, he strips off all clothing immediately on entering, except his knee breeches, and sits naked from the waist up and from the knees down. Cooking is continually going on during the day, and the house is so hot that great streams of perspiration run down the face and body of every inhabitant and are being continually mopped up with handfuls of moss or of excelsior, or, according to later and more civilized custom, with bath towels; and there is drinking of cup after cup of ice water. We have, therefore, produced locally within doors the same conditions that may be supposed to accelerate the metabolism of a dweller under the tropical sun.

When flies are being experimented on in an incubator, the same results would presumably be arrived at in Africa and Norway if the temperature within both incubators is kept between 80 and 90 F. And if one set of flies lives in an incubator at 80 F. in Norway and another set lives at 80 F. outdoors in the Hawaiis, the temperature factor should in each case prove equally potent in promoting growth or decay. Why may not the same apply to human beings, the incubators in the case of the flies being replaced by the houses and cold-proof clothes in the case of the Eskimos?

The effect of the overheated houses is more direct among the Eskimos on the women than on the men, for they remain indoors a larger part of the winter. So far as the warmth of the body outdoors is concerned, the conditions are even among the sexes, for they are equally warmly clad.

In countries like Europe where the clothing, whether it is of cotton or of wool, is generally porous, forming a poor protection against the weather and especially against a cold wind, and where the houses are similarly badly adapted for shutting out cold, and where temperature within doors is controlled by fires that, for one reason or another, cannot be uniformly maintained, it is generally true that the farther north you go the colder the air that actually reaches the bodies of the people and has an effect upon their life processes. In North America among the Indians, as one goes north from Mexico toward the Arctic Sea similar conditions generally prevail, and the farther north the Indian, the colder the average temperature of the air that is in contact with his body throughout the year. The most northerly of the Athabasca Indians, for instance, appear to suffer a great deal from cold.

One winter I traveled about for several months with the Dog-Rib and Yellow Knife Indians. I found they were so poorly clad that during the day when outdoors they had to be continually moving, for if they stopped for even half an hour at a time they became so chilled that their hands became numb. These Indians are really in continual fear a large part of the winter of ever ceasing from active motion when outdoors. In the evenings their wigwams are cheerful with a roaring fire, but by no means comfortable, for while one's face is almost scorched with the heat of the flames one's back has hoar-frost forming upon it. At night the Indians go to sleep under their blankets, covering up their heads and shivering all night. It is, therefore, in accordance with the theory that the age of maturity increases with the increased cold of the air applied directly to the body, to suppose that the statements of Hudson's Bay traders and others in the North are reliable when they say that the common age of maturity of Indian girls is as high as or higher than that of north European whites.

But when one goes north from the Slavey and Dog-Rib Indians to the Eskimo country, the conditions suddenly change. One now comes in contact with a people that has a system of living almost perfectly adapted to a cold climate, while the northern Indians have a system almost unbelievably ill adapted to the conditions in which they live. Here, accordingly, there is a shift back to a subtropical early age of maturity which at first seems to be a direct contradiction of the accepted theory, but which, when properly understood, is in accordance with it.

American Geographical Society, Broadway at One Hundred and Fifty-Sixth Street.

INOCULATION AGAINST HAY-FEVER

AN EXPERIENCE, A WARNING AND A SUGGESTION

WILL WALTER, M.D.
EVANSTON, ILL.

As the season for the genuine (ragweed) hay-fever (pollinosis) approaches—August 15 in this region—physicians may be interested in a recital of our experience. Pursuing the plan of preliminary desensitization by graded and gradually increasing dosage, aiming at immunization, I have for several seasons tried out various extracts. This was first done with the fluid-extract of ambrosia—the whole plant—concurrently, as it happened, with the original work of Holbrook Curtis, some years ago. With this extract some twenty persons were treated. The only appreciable effect was a delay of about five days in the incidence of the attack.

Of late years I have employed the pollen extracts as developed commercially. In 1919 we were provided with more definitely prepared and graduated solutions to be used under skin test control. So far as I could tell from the limited experience, the effects were much the same as I had had with the plant extract in the original tryout, namely, a delay in incidence and a modification of the early severity. However, it has seemed to me all along that sensitization to ragweed was increased with many of the inoculated subjects after the first few days of the attack; that these patients suffered more during the height of the attack when the massive pollen contact came, than those who did not have the preliminary treatment.

The whole scheme as evolved by the commercial houses, some of them acting on the advice of interested clinicians, is based on the postulate that preliminary inoculation with the pollen extract at intervals will lead to the evolution of antibodies—bodies anti to the pollen protein—to such a degree that, at season, the pollen protein will be without effect on the mucous surfaces.

My experience teaches that in this particular protein the phenomena of desensitization does not follow the usual course of the bacterial protein, so far as symptoms show. We must, therefore, proceed on slightly different lines. This may be done without violating the fundamental principles of inoculation.

It is an interesting observation that the early mild pollinoses, namely, those from rose, timothy, daisy and the like—the so-called "rose colds"—are helped by inoculations of their respective proteins.

We have a different problem with ragweed, and search must be made to find reason for this failure to prevent hay-fever and for the ill effects of preseason inoculation.

The pollen of ragweed is a microscopic bur—a bur with more penetrating qualities than other pollens. It is capable of breaking the surface of the thin mucosa. We know that mass contact is more likely; that the dosage at season is thus much larger than of other pollens both from the mass and from the break in the membrane, and that the ragweed protein is more toxic than that of other pollens when split up by the sensitized subject. Then we have to deal not only with this massive dosage, but with the secondary infections which naturally follow on the injury to the mucosa from these more penetrating burs and the greater irritation. Local conditions grow worse as the season advances.

It is to be feared, therefore, that when the mass of pollen comes, the split products go to flood tide; an anaphylatoxic poisoning results, and that preliminary inoculation cannot be carried far enough with ragweed protein to evolve antianaphylactic bodies on account of the size of the dose of ragweed protein at season. An alarming case demonstrates the point and furnishes the warning:

Mr. A. B., aged 40, who had a severe and a typical case of genuine hay-fever, was started early and went through the schedule with his immunization. The incidence of his attack was delayed, as with most patients, until about the fifth day after his attack was due. The *freedom from all signs* led me to feel that at last the great desire had been achieved; but to make doubly sure, the last previous dose was repeated hypodermically on the fifth day of the expected attack. Within ten seconds there was violent sneezing which quickly developed into paroxysms. In about five minutes the patient went into profound anaphylactic shock. The blood pressure dropped to 80. The pulse was hardly palpable. The patient was cyanotic, asthmatic, and coughed glairy mucus. This altogether alarming state lasted about two hours.

Here was a case in which a previously harmless dose produced anaphylaxis when added to the local pollen absorption.

With this experience before me, I gave no more large doses at season and am withholding all preseason inoculation with ragweed pollen protein.

It being a well established principle that anaphylatoxic poisoning is best met by increasing blood alkalinity and by administration of minute doses of homologous protein, we adopted an alkaline dietary and regimen, and the frequent use of fractional doses of the pollen protein hypodermically in all cases at season.

The results so far have been universally encouraging.

Occupational Tuberculosis.—Among the various types of workers liable to industrial tuberculosis, grinders and other users of abrasive materials are recognized as being among the worst sufferers; and it has generally been assumed that the mineral particles thrown into the air from the abrasive material itself are as important factors as the metallic dust from the object subjected to the grinding or polishing treatment. Yet, curiously enough, so far as we are aware, no one has hitherto called attention to the peculiar hazard which menaces the workers engaged in the manufacture of the abrasive materials themselves.—*Public Health Reports*, May 30, 1919.

Clinical Notes, Suggestions, and New Instruments

A CASE OF SYPHILIS AND HERPES ZOSTER

MIGUEL LAVANDERA, M.D., NEW YORK
Assistant Cystoscopist, French Hospital

In an editorial on the relationship between herpes zoster, syphilis and chickenpox,[1] these statements were made: "The significance of herpes zoster is still a matter for speculation. While technically a disease of the skin, the condition is one that has always been of interest to the neurologist and to the general practitioner." Hence the report of this case.

REPORT OF CASE

C. A., a man, aged 32, single, mechanic on board ship, complained, Nov. 12, 1919, of severe pain in the lower lumbar region and the left side of the chest for the preceding four days. He was pale and depressed, and unable to work. There had been an initial lesion eighteen months before; he treated himself with copper sulphate. The history was of no moment otherwise.

He was muscular and well developed. The buccal mucosa was negative; the inguinal and epitrochlear lymph nodes were shotty and discrete, but not painful. The anterior aspect of the left chest, at the twelfth intercostal space, revealed a patchy group of vesicles on a red base. The chest wall surrounding the vesicles was very tender on pressure or motion. There was a smooth scar with slightly raised edges, the size of a 10-cent piece, in the dorsum of the corona at the mucocutaneous junction. Both testicles and cords, particularly the left, were considerably enlarged and hardened, but not painful. There was no fluid in either side. The left testicle bore an irregular, hard depression on the outer aspect. There was no fever. The Wassermann test was ++++.

Immediate injection of 0.4 gm. of neo-arsphenamin and 1 grain of mercury was given. Four days later the patient was free from all pain, the vesicles having disappeared. He now received a second treatment as before, sailed for Germany, and was lost sight of.

COMMENT

While this report proves no definite relation between herpes zoster and syphilis, the case is interesting in this connection because it supports the view of Brown and Dujardin, quoted in the editorial referred to.

808 West End Avenue.

CASE OF ACUTE VERONAL (BARBITAL) POISONING SIMULATING EPIDEMIC ("LETHARGIC") ENCEPHALITIS

G. B. HASSIN, M.D., AND M. S. WIEN, M.D., CHICAGO

A white woman, aged 33, was admitted, Dec. 9, 1919, to the medical service of Dr. Frederick Tice in a somnolent state. From her friends and afterward from her own confession it was found that when much despondent, the patient would take large doses of barbital. Otherwise, she had not been using this or any other drug, but was a heavy cigaret smoker. In January, 1919, a "large dose," the amount not given, rendered her lethargic for about ten days. Another similar incident took place in April of the same year. Nov. 27, 1919, she took twelve 5-grain tablets of "veronal," after which she lapsed into a somnolent state. She was removed to a hospital, which she left after four days' stay, not fully recovered. December 7, she took barbital for the fourth time, six 5-grain tablets, became lethargic, and was brought to the Cook County Hospital. On admission she was in a profound sleep from which she could be aroused with difficulty. When awakened she gave intelligent answers, and talked coherently but sluggishly, falling asleep during the conversation. The color of the skin and the visible mucous membranes was not changed; there was no cyanosis, signs of external injuries,

1. The Relationship Between Herpes Zoster, Syphilis and Chickenpox, editorial, J. A. M. A. **73**: 1445 (Nov. 8) 1919.

deformities or paralysis of the extremities. The right eye exhibited a slight ptosis and weakness of the external rectus muscle. The objects shown to her were constantly doubled in number, that is, the patient had a diplopia which she claimed was also present during the previous attacks of barbital poisoning. The respiration was 24, pulse 84, temperature 98. The tendon and mucous reflexes (conjunctival, pharyngeal) were normal; the abdominal reflexes could not be elicited; the plantar gave a normal response (no Babinski or Oppenheim). The lungs, heart, abdominal organs, urine and blood were negative. The Wassermann test for the blood was also negative; for the spinal fluid it could not be determined as the spinal puncture was unsuccessful. The temperature on the next day was 100 by rectum, pulse 88, respiration 20.

During the following days, the temperature, pulse and respiration were normal; the lethargy gradually subsided, having lasted thirteen days and following a dose of 90 grains of barbital (from November 27 to December 9). March 27, 1920, she reentered the Cook County Hospital after she had taken ten 5-grain tablets of barbital and turned on the gas with the intention of ending her life. The condition was virtually the same as recorded, except the absence of the ocular signs and the diplopia. She left the hospital after two days' stay.

COMMENT

The tentative diagnosis, before the patient's history was learned, was that of lethargic encephalitis. A typical picture of the latter, characterized by somnolence (lethargy), paralysis of some of the eye muscles, fever and general weakness (asthenia) may be caused by many other pathologic brain conditions. For instance, tumors or hemorrhages in the midbrain, especially the third ventricle, syphilitic basilar meningitis, paroxysmal attacks of sleepiness, as they occur in hysteria and epilepsy (so-called narcolepsies), postepileptic conditions, all may yield the foregoing symptoms typical of lethargic encephalitis. More or less pronounced in our case, they could, however, be interpreted only from the history and the course. The latter, as well as the history, is of great value in the differential diagnosis of lethargic states. Always acute in barbital poisoning, they are subacute in lethargic encephalitis, brain tumors, syphilitic meningitis, etc. It is advisable, therefore, in doubtful cases of lethargy, to wait with the final diagnosis of epidemic encephalitis; for being sometimes, so to speak, slow in unfolding its full and definite clinical picture, an epidemic encephalitis may mask some morbid conditions which, as this case demonstrates, have nothing to do with organic diseases of the brain.

Cook County Hospital.

AN UNUSUAL CASE OF MERCURIC CHLORID POISONING

CLAYTON MCPEEK, M.D., COLUMBUS, OHIO

Mrs. S. L., a young matron, aged 20, used a douche of mercuric chlorid to prevent conception. The syringe, of the large straight nozzle spray type, had a defective and open tip. A tablet of mercuric chlorid, of 7⅗ grain strength, was dropped through the open nozzle into the bulb and water poured in. This preparation was used so hastily that the tablet did not have time to dissolve. As a result, the tablet and water were forced into the posterior vaginal vault, the tablet remaining there.

She retired immediately, and after two hours of fitful sleep awoke, suffering violent pain in the lower abdomen and vagina, nausea, vomiting, irregular heart action and syncopal attacks. Three hours after the douche was taken I was called. A hypodermic injection of caffein sodiobenzoate was administered, after which a vaginal examination was made and particles aggregating about half a tablet were removed. Copious douches of albumin and a so-called Seiler's solution[1] were then given. Although the patient denied having taken any tablet by mouth, the antidote was given, vomiting induced, and the vomitus tested for the presence of mercury. A negative reaction was obtained.

The subsequent history is important. Within thirty-six hours a black area or line made its appearance on the upper and lower gum surfaces, extending as much as three-fourth inch to each side of the gingival margins. The teeth became loose and sore. Salivation was very marked. In the days following, the gums sloughed and the mucosa of the hard palate was partially detached. The nasal mucosa sloughed, and capillary oozing continued from the mouth and nose for a period of twelve days. From the third to the seventh day the patient could not talk. The senses of smell and taste were lost for four weeks.

The vaginal mucosa detached in large pieces. Optical examination revealed a large ulcer on the posterior part of the cervix, which persisted for six weeks.

Forty-eight hours after the douche was taken the quantity of urine excreted was 50 per cent. of normal; in seventy-two hours there was complete suppression, which continued for three full days, when 1 ounce was removed by catheter. The quantity after this time increased 1 ounce a day for four days, then to 14 and 34 ounces. Urine examination on the sixth day revealed albumin, blood cells, blood and granular casts, bladder cells and débris.

The alimentary tract began to act vigorously on the fifth day, when thirty-three stools in thirty hours were noted. Long shreds of intestinal mucosa and clots of blood were present. The bowel condition subsided in three days, after which action was induced as needed by the subcutaneous use of pituitary extract.

The treatment was at first antidotal and supportive, then eliminative.

In a general way the patient made a recovery, although after four months the urine still shows albumin and casts.

715 North High Street.

1. Oral Cleanliness, J. A. M. A. **61**: 1812 (Nov. 15) 1913.

Special Article

OBSERVATIONS ON SOUTH AMERICA

VI. GENERAL REMARKS

WILLIAM J. MAYO, M.D.
ROCHESTER, MINN.

I have been asked a number of times, Do you mean to say that all the surgeons of South America are of this high grade you speak of? I can only answer that all the work I saw was high-grade, but I saw only the best men, and not by any means all the best men. Relatively the comparison with other countries is a fair one. As I have traveled at home and abroad year after year to see surgical work and to learn surgery by direct observation of the surgeons and their clinics, I have seen only the best. And why should I do otherwise? If I wanted merely to see bloodshed, that could be seen at the stockyards; if I were looking for poor work, that could be seen at home as well as abroad. Since the object of travel is primarily self-improvement, time should not be wasted looking for things done badly and for things to criticize.

I learned much in the short time I was in South America, not only of surgical conditions as they are seen in the United States, but of the surgical complications of so-called tropical diseases. Many of the diseases are tropical in the sense that they exist as yet only in the tropics, probably because easy means of communication to other countries have heretofore been lacking. In the future we can expect them to spread from one country to another. Such diseases are to be found in the northern islands of Japan under climatic

conditions similar to those in the northern part of the United States and in Canada. There is a rare opportunity for our medical men to study these diseases in South America and to learn from the experience of the medical profession there how best to care for them. In like manner the physicians of South America may learn from us with regard to the forms or phases of diseases in North America. Exchange of professors and exchange of students will mean much to the health conditions of both countries. The medical profession of South America will be glad to undertake such cooperation. The Spanish edition of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is having a great deal of influence in establishing closer relations between the medical profession throughout Central and South America.

In trying to account for the underlying causes of the present undercurrent of unfriendliness in South America to the United States, it should be remembered that American business interests have sent emissaries to South America for the purpose of establishing trade relations that would be profitable to the United States without much regard for the manner in which the South Americans would be affected, and we certainly have been very patronizing when we have talked about the Monroe Doctrine. Fortunately, our government has men of the highest diplomatic standing representing us in South America. I had great pleasure in meeting the chargé d'affaires, Mr. William Walker Smith, in Lima, Peru; the American consul, Dr. Cameron, in Tacna, Chile; the American ambassador, Mr. Frederick J. Stimson, in Buenos Aires, and Mr. Robert Jeffery, American minister to Uruguay, in Montevideo. These gentlemen are highly respected and are doing everything possible to promote a better understanding.

Many evidences are now apparent of a new spirit in our business relations with South America. Today the great American business firms are establishing South American branches and view the trade question not only from the standpoint of the United States, but also from the standpoint of fairness to South America, with the idea of developing her resources. American methods and American labor-saving machinery are rapidly being introduced in the building of docks, railroads and industries. An example of this was shown in building the railroads in Chile. Mr. Wenceslao Sierra, one of the great railroad builders of Chile, was anxious to introduce American methods, but his people said, "We have thousands of laborers who work cheap. We do not need to consider labor." They did not see that the price for a ton of food would be much greater than that for coal to produce the same amount of energy, and that even if people worked for nothing, much of the work could be done cheaper by machinery. Mr. Sierra came to the United States and bought steam shovels and dump cars; he secured a sufficient number of skilled technicians to operate them and returned to Chile. He completed his work in advance of the specified date, and the profits on time contracts alone ran into millions of dollars.

The American motor car is seen everywhere in South America. Henry Ford may not be a great historian, but he certainly has done more than any other man for the effective transportation of the individual, for the building of good roads, for the contentment and prosperity in the rural districts, and in South America, for the improvement of the somewhat dubious reputation of the American square deal, as related to 100 cents of worth for the dollar invested. Reliable American concerns, such as the General Electric, United States Steel, American Express, Baldwin and American Locomotive, Pullman, Swift, Wilson and Armour, are gradually building up the confidence of the South American public. Large American banks, for example, the National City Bank of New York and the Boston National Bank, are establishing South American branches and a system of credit satisfactory to the merchants of South America. The genius of the American people lies in their ability to develop the natural resources of a country, and South America is the land of opportunity.

It is to be feared that the average young American, as an individual, will not have a great opportunity in South America. The exceptional man will have opportunities; but the projects to be undertaken are so vast and require such enormous capital that they can be handled only by large moneyed interests, and these must be managed by empire building men of the type of the late James J. Hill. Times in South America will be troublous for years to come; for that matter, they will be troublous in North America; but we have a great middle class which holds the balance of power and renders our institutions safe. When South America introduced compulsory education, aristocracy was doomed. People cannot become educated and remain contentedly in poverty and squalor. The safety of any country lies in the development of a contented middle class. The so-called radical party, through politics, has gained many much talked of rights, but as yet acknowledges few if any duties. Labor in South America is rapidly becoming as laborless as in other countries.

Our reception in South America by the medical profession, the people and the government officials was everywhere most cordial. The organization we represented, the American College of Surgeons, is based on principles that appeal to the Latin Americans, as they do to all right-thinking, unprejudiced men. Preliminary steps were taken to render this organization Pan-American, and the success of our mission was most inspiring.

The Latin races have high ideals and are inspired by that which appeals to their imagination. When approached on this ground they are most cordial and ready to reciprocate freely, but the United States has not heretofore approached the people of South America in this spirit. North America can appeal to South America if the appeal is based on altruism, but the present supercilious attitude must be discarded and an honest perspective of the South American people and their ideals obtained.

Denatured Alcohol.—In 1906, Congress enacted a law permitting the general use of a tax-free industrial (denatured) domestic alcohol in order to stimulate industrial purposes for which the high cost of grain alcohol was prohibitive. Denatured alcohol usually consists of 90 per cent. grain alcohol and 10 per cent. wood alcohol, thus rendering it unfit for drinking. It is being increasingly substituted for wood alcohol in many industrial uses, to eliminate the great dangers attendant on the use of the latter.—*Illinois Health News,* October, 1919.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Five dollars per annum in advance

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SATURDAY, SEPTEMBER 4, 1920

THE PROPHYLAXIS OF SIMPLE GOITER

The existence of endemic goiter in certain districts has long been known. The mountainous regions of the Alps, the Pyrenees, the Carpathians, the Himalayas and the Andes—places where the occurrence of abnormalities of the thyroid glands in a large number of persons native to the districts has been common in the past—are by no means the only places where goiter is noticeably prevalent. The United States also has goiter regions. For example, approximately half of the young girls examined in some of the public schools in the region of the Great Lakes show a detectable enlargement of the thyroid.

The investigations of Marine and Kimball [1] of the Western Reserve University, Cleveland, on the prevention of simple goiter in man have been referred to in THE JOURNAL on previous occasions. Their work, aided by a grant from the Committee on Therapeutic Research of the Council on Pharmacy and Chemistry of the American Medical Association, started early in 1917 with a survey of the incidence and types of thyroid enlargement in the schoolgirls of Akron, Ohio, from the fifth to the twelfth grades, inclusive. In the course of this they studied the value of the prophylactic use of sodium iodid given in the arbitrary dose of 0.2 gm. (3 grains) daily for ten consecutive school days, repeated each spring and autumn. The latest report,[2] including the results of annual surveys over a period of thirty months and involving many hundreds of children examined and treated consecutively, indicates a striking difference between those not taking and those taking iodin. The difference is manifested both in the prevention of enlargement and in a decrease in the size of existing enlargements, i. e., therapeutic effect. It appears to have been a successful experiment on a grand scale. Here are the facts brought out in the report: Of 2,190 pupils taking 2 gm. of sodium iodid twice yearly, five have shown enlargement of the thyroid, while of 2,305 pupils not taking the prophylactic, 495 have shown enlargement of the thyroid. Of 1,182 pupils with thyroid enlargement at the first examination who took the prophylactic, 773 thyroids decreased in size, while of 1,048 pupils with thyroid enlargement at the first examination who did not take the prophylactic, 145 thyroids decreased in size.

It might be supposed that toxic conditions such as give the symptoms of hyperthyroidism would occasionally arise under the therapy instituted; but this does not seem to have been the case. An occasional child may show signs of iodid rash, which disappears promptly when the treatment is stopped. The untoward effect of such iodin idiosyncrasy is negligible. In individual cases, on the other hand, the presence of pathologic conditions may modify the usual efficiency of the prophylactic treatment.

If the simple goiter of adolescence can be prevented easily and cheaply in otherwise normal persons, it merely remains to secure public approval and systematic introduction of the procedure in those places where it seems indicated. Marine and Kimball conclude that, in the region with which they have been concerned, probably the maximum of prevention, coupled with the minimum of effort, would be obtained by giving iodid between the ages of 11 and 17 years. As thyroid enlargement is approximately six times as frequent in girls as in boys, the question of the inclusion of both sexes in systematic treatment may be debated. In any event, the Cleveland experts believe that the existing system of organization of the schools, public and private, is sufficient to handle all the details without additional aid or expense. Education of the pupils would be combined with the actual administration, so that after leaving school they could continue the treatment, if necessary. Physicians in industrial medicine could render an important service in this field.

It is becoming apparent that there is likewise a considerable incidence of simple thyroid enlargement in the fetal period and in pregnancy. These are equally amenable to the corrective influence of iodin administered in simple form as iodid, syrup of ferrous iodid, or syrup of hydriodic acid—as U. S. P. preparations. Responsibility here clearly rests with the individual and his physician; but the existence of an occasional need of iodin deserves a wider recognition than it now has. What it means in animal nutrition and how easily danger can be averted has lately been emphasized in the studies of fetal athyreosis [3] and the "hairless pig malady" of some of the Western states. With respect to dosage, further careful observation may be necessary. It is quite possible that in extremely goitrous regions, as in some of the valleys of Alaska and British Columbia, thyroid enlargement can be prevented only by larger doses of iodin; and incidentally, other clin-

1. Marine, David, and Kimball, O. P.: The Prevention of Simple Goiter in Man, J. Lab. & Clin. Med. **3**: 40 (Oct.) 1917. Kimball, O. P., and Marine, David: The Prevention of Simple Goiter in Man, Second Paper, Arch. Int. Med. **22**: 41 (July) 1918. Kimball, O. P.; Rogoff, J. M., and Marine, David: The Prevention of Simple Goiter in Man, Third Paper, J. A. M. A. **73**: 1873 (Dec. 20) 1919. Marine, David, and Kimball, O. P.: Prevention of Simple Goiter in Man, Fourth Paper, Arch. Int. Med. **25**: 661 (June) 1920.

2. Marine, David, and Kimball, O. P.: Prevention of Simple Goiter in Man, Fourth Paper, Arch. Int. Med. **25**: 661 (June) 1920.

3. Fetal Athyreosis, editorial, J. A. M. A. **69**: 43 (July 7) 1917.

ical conditions may further alter the efficiency of the treatment. In large outline, however, the problem of simple goiter seems to have been subjected to an easy solution.

THE BRITISH PROPRIETARY MEDICINES BILL

In discussing the nostrum business, THE JOURNAL has frequently pointed out that the passage, in 1906, of the national Food and Drugs Act in the United States resulted in a marked change in the claims made for package medicines. Infallible cures for consumption became mere tonic appetizers, and sure cures for falling of the womb became only female tonics. THE JOURNAL has also pointed out that in the case of American-made "patent medicines" that were sold on both sides of the Atlantic, the same false and fraudulent claims that were eliminated from the American packages after the passage of the Pure Food Law were retained in their pristine blatancy on the packages as sold in the British Isles.[1]

The British medical profession and the more enlightened part of the British laity have long recognized the need of some restrictive legislation against the nostrum evil of the British Isles. In fact, two years before the war a Select Committee on Patent Medicines was created which went into the whole subject with extreme thoroughness. The committee's labors extended over nearly two years. The report of the committee, which was published in the latter part of 1914, was discussed at length in THE JOURNAL at the time. The committee recommended several legislative enactments; but the war favored the nostrum interests, and no parliamentary action was taken on the matter. During the last year, however, there have been insistent demands that the shameful state of affairs disclosed by the Select Committee shall be abolished or at least mitigated, and on July 13 the Proprietary Medicines Bill was introduced in the House of Lords by Viscount Astor, the Parliamentary Secretary to the Ministry of Health. In general, the provisions of the bill follow the recommendations contained in the Report of the Select Committee of the House of Commons.

In its original form the bill prohibits under penalty of heavy fine or imprisonment the sale of remedies purporting to cure cancer, consumption, deafness, epilepsy, diabetes, paralysis, Bright's disease, rupture and one or two other serious ailments that are of such a nature as to be obviously out of the class of ailments that can safely be self-treated. Another provision forbids the "patent medicine" exploiter from entering into personal correspondence with those who buy his nostrums, and also prohibits the enclosing in the trade package of one "patent medicine" a circular advertising and recommending another "patent medicine." The bill further requires that all preparations sold under proprietary names and of secret composition shall be registered by the Ministry of Health, and their composition disclosed in confidence to the authorities.

It is interesting to note the reaction of those directly or indirectly affected by the proposed bill. Those who followed in careful detail the fight that was staged in the United States in 1905-1906 when the bill that became our national Food and Drugs Act was before Congress are able to realize the truism that history repeats itself. The same stock arguments are being used by the British nostrum exploiters and their defenders as were used by the American "patent medicine" interests fifteen years ago. The Proprietary Medicines Bill, according to these critics, is a shrewd scheme on the part of the "Medical Trust" to deprive the poor man of his medicine and make it necessary for him to patronize the doctor to the doctor's great financial advantage!

But especially in the attitude of the nostrum interests and their supporters toward formula disclosure is a close parallelism found. As has been so often pointed out, formula disclosure is the nightmare of the nostrum man. Take away his mystery element and you have practically destroyed his business. And his argument is always the same. Whenever it has been recommended in this country either as a federal, a state or a municipal law, American "patent medicine" makers have denounced formula disclosure as un-American and unconstitutional. And only three or four weeks ago a member of the Upper House in opposing the formula disclosure requirement, remarked in the House of Lords that it seemed to him "rather un-English" to demand a full disclosure of ingredients unless a very strong case could be made out for doing so. Undoubtedly, if Great Britain had a constitution, the noble lord would have declared that such a suggestion was unconstitutional. As it is, we may expect to hear that it violates the Bill of Rights and Magna Charta. Yet the English manufacturer of foodstuffs for animals and of manures for the soil for years has had to disclose the composition of these articles, proving that in the British Isles, as in the United States, cattle and crops are of more importance than human life.

That the Proprietary Medicines Bill will become a law in its original form is not to be expected. The "patent medicine" trade in Great Britain is as powerful as it is in the United States. It has millions behind it, and it forms a substantial section of the London Chamber of Commerce. British newspapers may be counted on, practically as a unit, to fight any bill that will restrict the sale of "patent medicines"; some of them have already published editorial denunciations. The American medical profession will watch with interest the Parliamentary vicissitudes of this much needed piece of legislation in Great Britain.

1. A number of interesting examples illustrating this point were given in the article "American and British Labels," published in the Propaganda Department of THE JOURNAL, July 20, 1912, and reprinted in "Nostrums and Quackery."

THE PRESSURE IN THE BLOOD CAPILLARIES

In the exchange of materials—the metabolism of food and oxygen, and the removal of waste—which goes on between the living tissues and the blood, the capillaries have an important part. Despite the recognition of this fact it cannot be said that the condition of the blood in the capillary vessels has received as much attention as its physiologic significance seems to warrant. To any one who has given only cursory consideration to the subject it may come as a surprise to learn that uncertainty still exists regarding the part of the vascular system in which the principal loss of energy occurs and where the high blood pressure characteristic of the larger arteries drops toward the low level of the venous areas. Formerly it was taught that the conspicuous fall in pressure takes place in the capillaries; latterly, however, the greatest fall has been associated with the small arteries. The importance of securing precise information about the conditions in the capillaries is further emphasized by the part which has rightly or wrongly been assigned to them in recent investigations of shock. The contentions of Dale [1] and others that in certain types of this circulatory disturbance the capillary walls are damaged by circulating poisons so that they lose tone have been referred to before in these columns.[2] In effect, a considerable volume of the blood is believed to become pooled in the capillary area, whereby a primary fall in arterial pressure results. This is further accentuated, we are told, by a transudation of blood plasma through injured capillary walls so that an actual decrease in circulating blood volume ensues.

One reason why so much of the current information about the capillaries is speculative rather than exact in character lies in the lack of suitable methods of direct observation. Devices for estimating capillary pressures have by no means been entirely wanting. Most medical students will recall the scheme of von Kries by which the pressure required to produce pallor in an area of the skin is determined. The procedure, however, has not justified itself so as to take a place along with the refined methods now in use for measuring arterial pressure. Recently Danzer and Hooker [3] of the physiologic laboratory at Johns Hopkins have devised an improved technic which differs from all previous methods in the criterion adopted for taking the readings. It depends on the production of stagnation of the flow of corpuscles in the capillaries which are observed microscopically. In this way, the capillary blood pressure in normal persons in the sitting posture has been found to average 22 mm. of mercury. The Baltimore investigators specially remark on the constancy of the figures for persons of both sexes regardless of age.

Judging by these studies, the diurnal variations in human capillary blood pressure, contrary to current belief,[4] are very slight at most. Postural changes are readily brought about, the lowest pressures occurring in the horizontal position and the highest in the vertical, the capillary pressure in the sitting posture being midway between the two. There is no doubt left by the measurements that cold lowers and heat raises capillary blood pressure. As this result may be noted even when the sources of heat or cold are not directly over the capillaries observed but are applied to the skin at some distance from them, reflex effects are evidently involved.

Of greater interest, we believe, is the conviction of Danzer and Hooker [3] that pallor of the skin cannot be regarded as evidence of capillary collapse. The prevalent conception attributes the redness of the skin to its capillaries. On this hypothesis pallor means capillary emptying. It must be remembered, however, that there are three venous plexuses in the cutis and one in the subcuticular layer.[5] When pressure is applied to the skin these plexuses are more or less emptied of their contained blood. Pallor occurs, but this is not necessarily accompanied by a cessation of flow in the capillaries. The latter undoubtedly contribute somewhat to the color of the skin; nevertheless their rôle is said to be relatively slight in comparison with that of the venous plexuses As might be expected, venous compression increases the pressure in the capillaries. It will be of interest to learn the physiologic significance of the increased capillary pressure which is bound to occur in persons having a high venous pressure either as a result of cardiac insufficiency or of disturbed intrathoracic pressure due to emphysema, asthma and pleural effusions; for one outcome of the new studies is the demonstration that capillary blood pressure is more closely dependent on venous than on arterial pressure.

1. Dale, H. H., and Laidlaw, R. P.: J. Physiol. **52**: 355 (March) 1919. Dale, H. H., and Richards, A. N.: Ibid. **52**: 110 (July) 1918.
2. Tissue Poisons in the Genesis of Shock, editorial, J. A. M. A. **73**: 38 (July 5) 1919.
3. Danzer, C. S., and Hooker, D. R.: Determination of the Capillary Blood Pressure in Man with the Microcapillary Tonometer, Am. J. Physiol. **52**: 136 (May) 1920.
4. Friedenthal, H.: Ztschr. f. exper. Path. u. Therap. **79**: 222, 1917.
5. Spalteholtz: Arch. f. Anat. u. Physiol. (Anat. Abth.), 1893, p. 1.

"HAIR FOOD"

"He who can grow hair can grow rich," provided he can grow the hair at demand on others. As yet, the achievements of our alopecic dermatologists with tonics and stimulants, or the maneuvers of our barbers (frequently bald-headed themselves) with singes, massages, vibrators and manipulations, have not been such as to deprive us of interest in the possibilities of other and newer methods. Biologic chemists having shown that certain amino-acids are necessary to secure growth of the organism as a whole, why not secure the growth of individual elements of the body by suitable selection of the nutritive needs of that part, even as savage warriors secure courage by eating the heart of a brave but vanquished foe?

One of Germany's most esteemed physiologists and experts on nutrition has undertaken experiments on selective nutrition of the hair, with a seriousness which commands respect even while his report awakens amusement.[1] The essential point is that hair, as well as nails, feathers and epidermis, is characterized by a high cystin content, there being from 7 to 8 per cent. of this sulphur-containing amino-acid in keratin, as contrasted with from 0.07 to 2.5 per cent. in other animal proteins, and from 0.25 to 0.45 per cent. in vegetable proteins. Therefore, why not feed cystin to the bald? Professor Zuntz began his experiments on himself, and states that whereas before beginning treatment he grew an average of 5 mg. of hair per day on his head and face, after consuming from 1 to 1.5 gm. of hydrolyzed keratin every day for two months, his average production of hair was 9.22 mg. He then tried its effects on sheep, as Germany was suffering from a wool shortage until, as will be recalled, paper trousers had become the vogue, and found an increased wool production 1.74 times the original amount. Two youths "who under the influence of the war had become nearly bald" were greatly benefited by the keratin diet, but a "Herr Kollege" gave up the treatment because he had to shave twice a day! And now a German firm has two preparations of hydrolyzed keratin on the market, one for man and one to grow wool on sheep.

While the author of this interesting as well as entertaining communication has earned the deep respect of all scientific men, so that his suggestion will undoubtedly be taken seriously and subjected to proof, one may properly take a skeptical view of the proposal. In the first place, almost any ordinary diet probably contains far more cystin than is required for the production of the amount of keratin that needs to be replaced, and secondly, in the large number of recorded cases of cystinuria, in which great quantities of cystin are wasted every day throughout life, a deficiency in keratin formation does not seem to have been a noticeable feature.

1. Zuntz, N.: Deutsch. med. Wchnschr. **46**: 145, 1920.
2. Stefansson, Vilhjalmur: Temperature Factor in Determining the Age of Maturity Among the Eskimos, this issue, p. 669.

Current Comment

TEMPERATURE AND MATURITY

On another page of this issue of THE JOURNAL.[2] the arctic explorer Stefansson has recorded observations regarding the surprisingly early age of maturity among Eskimo women. He is authority for the assertion that it frequently falls between the tenth and thirteenth year, reminding one of what is alleged to be a fact in the tropics. It has been an assumption that the sexual and developmental maturity is delayed to a later and later age as one goes northward on the European continent. We are not certain that dependable statistics, if indeed such are available, would support this belief. Nevertheless, the offhand conclusion has been reached that the age of maturity has a direct connection with climate, i. e., temperature, rather than with racial or dietary factors. Stefansson has ventured to explain the seeming contradictory conditions among the female Eskimos by the environmental rather than the hereditary factor. He points out that "to all intents and purposes the typical Eskimo lives under tropical or subtropical conditions." This is due to the fact that a high temperature from 80 to 90 F. (27 to 32 C.) is ordinarily maintained during the cold season in the Eskimo houses, and the natives are very warmly clad outdoors even when the weather is coldest. While an Eskimo is indoors, Stefansson naively remarks, his entire body is exposed to a local climate as warm as that of Sicily, and when he is outdoors he carries that climate about with him inside of his clothes over virtually his entire body area. The effect of temperature increments in stimulating metabolic and developmental processes is well known to biologists. Can it be, as Stefansson surmises, that an exceptionally warm environment for man similarly promotes those changes which lead to secondary sexual development?

HYGIENIC DISH WASHING

During the great epidemic of influenza the problem uppermost in the minds of hygienists and physicians was the prevention of infection. The use of face masks to prevent the possibility of the mouth and nose acting as portals of entry was proposed and adopted in many communities. An army medical officer, after a thorough study in army camps, became convinced that hand to mouth infection through the use of dishes after incomplete washing was in part responsible for the spread of this disease.[1] As a result, the whole process of handling food containers and dining accessories has been investigated in the army; and a recent number of the *Medico-Military Review*,[2] issued by the Surgeon-General's Office, devotes considerable space to dish washing. Physicians know that a dish may appear quite clean, yet at the same time from a hygienic standpoint be contaminated. As it is impossible to test every dish for freedom from bacteria, it is necessary to standardize the method of cleansing to insure freedom from gross dirt as well as from bacterial contamination. The two factors for cleanliness are soap and heat. In handling large quantities of dishes, dish-washing machines are used which, when operated properly, fulfil the requirements. Where such machines are not available, as in the ordinary home and in many hospitals, the method adopted in one of the camps would seem to have considerable advantage: The dishes are placed in large trays. Immediately after a meal, the food is scraped from the dishes, which are then scrubbed in the kitchen sink,

1. Cumming, J. G.: Rôle of Hand in Influenza, Mil. Surgeon **43**: 597 (Dec.) 1918; Influenza Pneumonia as Influenced by Dish Washing in Three Hundred and Seventy Public Institutions, Am. J. Pub. Health **9**: 414 (June) 1919.
2. Medico-Military Review, Surgeon General's Office **3**: 44 (Aug. 15) 1920.

hot, soapy water being used. After rinsing in hot water, the trays are placed in a tank or boiler which contains about two inches of water. The lid is placed on the tank and the water boiled about ten minutes. The trays are then lifted from the tank and the dishes allowed to dry by their own heat. This requires about two or three minutes, and eliminates the necessity of wiping with a towel. While the method is adapted particularly to army or institutional use, and may seem complicated for ordinary home purposes, it is, in fact, relatively simple. It is reported that the dishes after washing and drying by this method are not only clean but have a high polish.

REST AS A THERAPEUTIC MEASURE

When Weir Mitchell proposed the "rest cure" for the neurasthenic, he propounded no new principle in therapeutics but made of rest a ritual and thereby secured the patient's cooperation. It is interesting in this connection to read an extract from a letter written to Sir Philip Rose in 1846 by Benjamin Disraeli, later Earl of Beaconsfield and prime minister of England. Both great men suffered at times from what is commonly called "nervous breakdown." Rose had just returned from a trip abroad to recover from one of these attacks. Disraeli says:

> My present condition of health and career may convince you that there is more of distress than danger in these exhaustions of the nervous system. But if not duly checked, the trial they inflict is severe. Repose is the best medicine, and we should guard against the belief that there is any cure for them but a gradual one. Repose, however, is a rare medicine, and impatient suffering is too apt to take refuge in quacks.

If all laymen were intelligent—if all could realize that processes of repair in human tissues are not miracles but gradual evolutions in natural processes, which the physician assists and augments—the task of the physician would be less difficult.

HEALTH EDUCATION FOR CHILDREN

The attention of the average child grows listless if he is compelled to sit very long and listen to a talk about the advantages of oatmeal and spinach, of increased weight, of tooth-brushing, baths or any other steps in personal hygiene. It has therefore been a difficult pedagogic problem to develop methods for child health education. However, through a body—the Child Health Organization—headed by an executive committee containing such distinguished names as Holt, Pisek, Sachs, Winslow, Heiser, Mrs. Frederick Peterson and Hon. Franklin K. Lane, these problems are being studied and remarkably effective methods of propaganda developed. Among the chief features are Cho-Cho, a health clown—named in honor of the organization; the picture man—a health cartoonist, and the health fairy. The services of these specialists are available for teaching the child the essential rules of the health game. Cho-Cho, because he is a clown, has the undivided attention of every child. He teaches the simple facts of health and hygiene while for forty minutes in an atmosphere of jollity and happiness he demonstrates the right way to eat, bathe, sleep and brush the teeth. The picture man is a cartoonist who, by rapid drawings in colored chalks, illustrates the simple rules of health. The health fairy, in a gown of chiffon with silver wings, tells the smaller children the elementary rules which the organization believes every child should know. The organization also issues a series of booklets of special interest to children, such as "Cho-Cho and the Health Fairy," "The Child's Health Alphabet," cards and pictures which must by their artistic character fascinate and interest every child. There are many physicians unfamiliar with this work who will, no doubt, welcome an opportunity to avail themselves of this service.[1]

THE PERMEABILITY OF THE PLACENTA FOR HORMONES

The circulation of the mammalian fetus is peculiar in being anatomically distinct from that of the mother. On this account the placenta has a special rôle as an intermediator in the transfer of substances between the maternal and fetal tissues. It has long been realized that not all substances pass the placental barrier with equal readiness. The recent investigations of Slemons[2] and his collaborators, in particular, have shown that amino-acids, urea and blood sugar, for example, evidently diffuse easily and promptly so as to secure an equilibrium between the composition of the bloods of the mother and the fetus. Shimidzu[3] has attempted to ascertain whether hormones can pass through the placenta with equal ease. The problem is obviously important, because endocrine regulation is currently believed to be potent in the physiologic functioning of the organism, and particularly during pregnancy. Shimidzu used epinephrin as an illustrative hormone to be tested in this connection. This choice may not have been an ideal one from the standpoint of endocrinology. However, the experimental evidence pointed against increase of epinephrin in the fetal blood after injection of the substance in large amounts into the mother; in other words, this hormone, at least, does not pass through the placenta to the fetus.

1. Child Health Organization, 156 Fifth Avenue, New York.
2. Slemons, J. M.: The Nutrition of the Fetus, New Haven, Yale University Press, 1919.
3. Shimidzu, Y.: On the Permeability of the Placenta for Adrenalin in the Pregnant Rabbit and Albino Rat, Am. J. Physiol. **52**: 377 (June 3) 1920.

Education in Mothercraft.—Lack of knowledge on the part of the mother is one of the chief contributory causes of illness and even death among infants. The mother is not born with an instinctive knowledge of infant management, but an acquaintance with the simple laws of health, which must be followed in order to rear her child successfully, is essential to her. The sensible, well informed mother will successfully surmount numberless difficulties of environment and social circumstance which might prove disastrous to the children of less careful, more ignorant women, and the loving, well meaning, but uninstructed mother, may unwittingly cause much suffering to her children. There is no lack of maternal affection and desire to act rightly, there is great lack of knowledge as to what to do and how to do it. Thus, education in "mothercraft" is of the highest importance.—*J. State M.*, July, 1920.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Cottage Hospital.—The first unit of a cottage hospital plant has just been completed for Roosevelt Hospital, Pasadena. The plan includes the development of a hospital with the addition of cottage units as needed, and also private cottages for patients who desire special accommodations.

Personal.—Dr. Walter M. Dickie, Los Angeles, has been appointed a member of the state board of health, succeeding Dr. Irving R. Bancroft, Los Angeles, resigned.——At the meeting of the state board of health in San Francisco, August 7, Dr. Dickie was elected secretary and executive officer of the board.

Malaria Control Results.—Last year $10,000 was granted from the emergency funds of the state board of health for malaria control work at Anderson, Shasta County. An extensive campaign against mosquitoes was carried on, and a new antimalaria clinic conducted. As a result, while in June, 1919, 98 per cent. of the persons questioned gave histories of having suffered from malaria during the spring months, in June, 1920, only five cases of malaria had been reported or heard of at any time during 1920.

COLORADO

Dr. Farrand Goes Abroad.—Dr. Livingston Farrand, Boulder, chairman of the American Red Cross, sailed on the steamer *Olympic* for Europe, August 4.

Course in Public Health Nursing.—During the last school year, the University of Colorado and the Colorado Fuel and Iron Company successfully conducted two courses in public health nursing of four months each at the Minnequa Steel Works and Hospital, with field work in Pueblo and the surrounding mining camps. The third course will be given, beginning September 20 and ending in June of next year. The course consists of lectures and class recitations, conducted by members of the university faculty and physicians and surgeons, and is directed by a representative of the Colorado Fuel and Iron Company, the dean of the University of Colorado Medical School acting in an advisory and supervisory capacity.

FLORIDA

Plague Rat is Found.—The twenty-fourth rat with bubonic plague was found near the custom house at Pensacola, August 7. The health authorities estimate that more than a million dollars will be spent in making buildings rat-proof in Pensacola.

Tuberculosis Commission Appointed.—The governor on August 12 appointed Dr. Robert H. McGinnis, Jacksonville, Mr. John D. Baker and Mr. E. E. Cohen as tuberculosis commissioners for Duval County. Duval is the first county in the state to take advantage of the tuberculosis hospital law passed by the legislature several years ago.

GEORGIA

Personal.—Dr. M. A. Fort has been elected commissioner of health of Brooks County.——Dr. Joe D. Applewhite has resigned as commissioner of health of Lownes County and has been elected to a similar position in Clark County, with headquarters at Athens.——Dr. Eugene O. Chimene has been elected temporary commissioner of health of Floyd County, with headquarters at Rome.——Dr. Calvin C. Applewhite, passed assistant surgeon, U. S. Public Health Service, has been detailed to establish a school of public health and hygiene in the medical department of the University of Georgia, Augusta.

IDAHO

Personal.—Dr. Frank W. Almond, city physician of Boise, has been appointed director of the state bureau of public health service, succeeding Dr. E. E. Laubugh, resigned.——Dr. Joseph M. Downes has resigned as city physician of Boise.

Pocatello Selected.—Pocatello has been named by the government as the public health central office for central Idaho. Dr. Charles H. Sprague is the director of the work, and connected with his office are Drs. Frank Sprague and Joseph V. Clothier and Thomas Mullen. This office, in addition to caring for service men, is in immediate charge of all the men taking federal vocational education work at the Idaho Technical Institute.

ILLINOIS

Hospital Completed.—The new hospital at the Cunningham Deaconess Home, Champaign, has just been completed. It has accommodations for twenty children.

Personal.—Dr. George H. Stacey has been appointed by the mayor of Peoria, director of the venereal disease clinic soon to be opened in this city.——Dr. Alice Barlow Brown, Winnetka, is reported to be ill in Serbia.

Reading Room Open.—The board of directors of the John Crerar Library, Chicago, announces that it has made arrangements for limited service of current periodicals, both general and medical, in a temporary reading room at 156 North Michigan Boulevard. The reading room will be open from 9 to 5:30 daily.

Clinic Opens.—A physician from the Jacksonville State Hospital and Miss Lucy Capron, social worker at the same institution, opened a mental hygiene clinic in St. John's Hospital, August 17. Patients from Springfield and surrounding cities go to the clinic for examination, and advice to some paroled patients from the Jacksonville State Hospital is also given.

Antituberculosis Propaganda in Montgomery County.—A meeting was held at Litchfield the first week in August, presided over by Dr. Christian H. Zoller, Litchfield, at which the plans were announced for the fight to be waged against tuberculosis in Montgomery County. These plans included the establishment of free tuberculosis clinics, the gathering and tabulation of health data and the employment of a visiting nurse.

INDIANA

Nurses' Home.—The state board of health has presented an ordinance to the Indianapolis city council authorizing a bond issue of $350,000 for the construction of a nurses' home. Tentative plans were approved for a three-story building to accommodate 150 nurses.

Physician Reinstated.—Dr. Charles Landfair, Bluffton, whose license was revoked sixteen years ago, when he was convicted of illegal practice and sentenced to the state penitentiary, was reinstated when he was granted a license by the state medical board, August 5.

Hospital Addition Begun.—Methodist Hospital of Indianapolis has begun work on an addition, 60 by 120 feet, the cost of which is estimated at $300,000. Among the conveniences will be steam tables for the diet kitchen, ranges for cooking and roentgen-ray equipment in every room.

State Board Officers Reelected.—At the reorganization meeting of the state board of medical registration and examination, held in Indianapolis, August 13, Dr. William A. Spurgeon, Muncie, was reelected president and Dr. William T. Gott, Crawfordsville, secretary, and Dr. Paul R. Tindall, Greensburg, was elected treasurer.

City Hospital Has Pay Patients.—Dr. Harry Foreman, superintendent of the City Hospital, Indianapolis, reports that the total collections from pay patients for the first six months of 1920 amounted to $10,344.13, as compared with $2,716.29 for the same period in 1918. The social service department checks up on patients to determine which patients are financially able to pay or have access to compensation funds.

New Clinic About to Open.—The McKeen homestead, Terre Haute, which was recently purchased by Drs. Frank H. Jett, Charles N. Combs, Joseph H. Weinstein, H. J. Pierce, John R. Gillum, Oliver O. Alexander and William G. Crawford, has been remodeled and is now almost ready for occupancy. There are to be seven consultation rooms and seven examination rooms in the remodeled building in addition to the general offices and special rooms required.

Personal.—Dr. Benjamin H. Cook, Anderson, who was operated on for appendicitis recently in St. John's Hospital, has returned home, convalescent.——Dr. Charles J. Brockway, formerly of Lafayette, has located in Brookston.——Dr. Thomas J. Stephenson, Lapel, left for England, August 7.——Dr. Fred L. Bunch, Muncie, who has been seriously ill following a surgical operation, is reported to be improving.——Dr.

James A. Rawley, Brazil, was operated on at the Rawley Hospital, August 17, for the removal of a gangrenous appendix.

IOWA

Clinic Established.—Articles of incorporation have been filed for the Correctionville Hospital and Clinic with a capital stock of $10,000. Dr. Homer A. Smith, Correctionville, is president; Dr. Alfred H. Bullock, Cushing, vice president, and Dr. Junius K. Oates, Correctionville, secretary-treasurer of the corporation.

Personal.—Dr. Raymond E. Peck, Davenport, has returned from a trip to Alaska.——Dr. James W. Morgan, Wapello, suffered a cerebral hemorrhage, August 1.——Dr. Robert E. Jameson, Davenport, is convalescent after several weeks' confinement in Mercy Hospital following a surgical operation. ——Dr. Frederick L. Appel, Muscatine, who has been seriously ill for several weeks, is reported to be improving. ——Dr. Amos W. Bennett has been appointed health officer of Iowa City, succeeding John P. Mullin, who has sailed for Europe.——Dr. Thomas F. Duhigg, Des Moines, was nominated for Congress at the seventh district caucus.

LOUISIANA

Lepers' Home Sold.—The state legislature has authorized the sale of the leprosarium at Carville to the government for $35,000 to be used as a national leprosarium. By the terms of the sale, the lepers, now inmates of this institution, are taken over by the U. S. Public Health Service.

Breakfast to Health Officials.—A number of noted health officials who had been in attendance at the recent public health conference in Galveston regarding the extermination of rats were breakfast guests of Drs. Oscar Dowling, president of the state board of health, and Dr. William H. Seemann, city bacteriologist, at New Orleans, August 5.

Honor Dr. Mahon.—The regular meeting of the Rapides Parish Medical Society at Alexandria, August 2, was turned into a "good-bye" meeting in honor of the outgoing superintendent of the Baptist Hospital, Dr. R. P. Mahon. Dr. Mahon was presented with a silk umbrella and a cane, the presentation address being made by Dr. John L. Wilson, president of the hospital staff.

MARYLAND

Surgical Instruments Presented to Museum.—The Archeological Museum of Johns Hopkins University, Baltimore, has been presented with a set of thirty-six Greco-Roman surgical instuments, which were found near Kolophon in Asia Minor.

Physician Pleads Guilty.—Dr. Samuel A. Rosse, Crisfield, charged with violation of the prohibition law, is reported to have pleaded guilty with the understanding that he would be permitted to change his plea before the United States court. He was released under a bond of $3,000.

Presentation to Dr. Brush.—Dr. Edward N. Brush, who recently retired as physician in chief and superintendent of the Sheppard and Enoch Pratt Hospital, Towson, was presented by a number of friends, including employees of the institution, on July 8, with a life-sized portrait of himself. Hon. Frank J. Duncan delivered the presentation address.

The Magruder Obsequies.—Funeral services for Dr. Ernest Pendleton Magruder, chief surgeon of the American Red Cross, who died during the typhus fever epidemic at Belgrade, Serbia, in 1915, were held in Washington, D. C., July 29. Drs. George Tully Vaughan, Sterling Ruffin, Ethan F. Butler, Col. Clarence H. Connor representing the American National Red Cross, and Hon. Henry Stockbridge, judge of the Court of Appeals of Maryland, were honorary pallbearers.

Penalties Under Narcotic Control Act.—On August 13, the following druggists are said to have been found guilty of violating the provisions of the Harrison narcotic act and fined: Richard L. Esslinger, $6,000; Louis F. Sherman, $5,400, and J. Frank Katzen, $5,000. Under the provisions of the same act the following physicians are said to have been found guilty and fined: Dr. Thomas H. Magness, $4,500; Dr. Albert D. Driscoll, $1,000; Dr. Joseph J. Nurkin, $450; Drs. Hugh M. Boring and John I. Cuhn, each $400, and Dr. William M. Wright, $300. The operation of these sentences was suspended until October 4. The fines were made especially heavy because of aggravating circumstances; in almost every case information had been obtained by the authorities that narcotics were being dispensed in large quantities. They made a raid on the druggists and physicians named and seized a large number of prescriptions. The physicians contended that the prescriptions had been written in the regular course of treatment of addicts who were their patients, while the druggists maintained there was nothing illegal in filling the prescriptions as they had been issued by licensed physicians. It was shown to the court, however, that the quantities of narcotics called for by the prescriptions exceeded greatly the doses given in cases such as those under consideration were alleged to be.

MICHIGAN

Money Raised for Ambulance.—Jules C. Stein and Harry A. Singer, members of the senior class of Rush Medical College, Chicago, have raised $1,020 for an ambulance for Charlevoix, from the proceeds of a carnival held at the Charlevoix Beach Hotel.

County Hospital at Big Rapids.—Pending the result of the coming election on the establishment of a county hospital at Big Rapids, a twenty-bed general hospital is being operated by Mrs. Sadie Sawyer. The present arrangement was instituted after the destruction of Mercy Hospital by fire, Dec. 1, 1919.

Personal.—Dr. Edwin R. Vander Slice, Lansing, for several years medical director of the Michigan Anti-Tuberculosis Association, who has been very active in the establishment of permanent clinics in Michigan, has resigned to enter private practice in Lansing. He is to continue his work in connection with the U. S. Public Health Service as tuberculosis specialist.——Dr. Periam B. Hardy, Tecumseh, recently returned from a six months' trip to Australia.——Dr. Frank B. Walker, Detroit, has been selected as chairman of the general committee of the first convention of the Officers of the Great War to be held in Detroit, September 7 to 9.

NEW HAMPSHIRE

War Surgeons Hold Outing.—The first annual outing of the New Hampshire Society of World War Surgeons was held at Hampton Beach, July 28, and the following officers were elected: president, Dr. George V. Fiske, Manchester; vice president, Dr. E. O. Grossman, Manchester; secretary, Dr. Dennis E. Sullivan, Concord, and treasurer, Dr. Melvin P. Badger, Manchester.

The Tuberculosis Fight.—At a meeting of the executive committee of the New Hampshire Tuberculosis Association held in Manchester, August 3, Dr. Clarence O. Coburn presiding, the executive secretary, Dr. Robert B. Kerr, Pembroke, announced that clinic case finding and survey work are being done in every county except Carroll. New clinics and nursing service have been established at Dover for Strafford County; at Berlin, for Coos County; at Keene, for Cheshire County; at Concord, for Merrimac County, and at Peterboro, for Hillsboro County, exclusive of Nashua and Manchester. Clinics will soon be established at Lebanon, Laconia, Exeter and Newmarket, and it is stated that new health centers in Grafton, Belknap and Rockingham counties will be open by the middle of next month.

NEW YORK

Personal.—Dr. Isaac W. Brewer, city health officer of Watertown, who has been under treatment in Buffalo for several weeks, has recovered and resumed work.——Dr. Philip S. Goodwin, Perry, sustained painful injuries when his automobile crashed into a tree, August 12.——Drs. Frederick R. Driesbach and John H. Burke have been appointed directors of the Dansville General Hospital.——Dr. William E. Hartigan, Norwich, has been reelected president of the Chenango County branch of the American Legion.

First Rural Consultation Clinic.—The first rural consultation clinic held in the United States was conducted at Goshen, Orange County, on August 24, 25 and 26, under the direction of the New York State Department of Health and with the cooperation of the state department of education, state charities aid association, American Red Cross, state hospital commission and commission for the feebleminded. The clinic was subdivided into the following groups: diseases of children, diseases of adult life, diseases of women, mental and nervous disorders, orthopedic surgery, venereal diseases and oral surgery.

New York City

Infirmary Reopens.—The New York Infirmary for Women and Children, 321 East Fifteenth Street, has been reopened after considerable alterations and improvements and is now

in a position to accept interns (women only) for its medical, surgical, obstetric and children's services.

Personal.—Dr. Pearce Bailey has resigned from the board of managers of the state reformatory for women at Bedford. ——Dr. Archibald Keightley, who has resided in London for several years, has resumed practice in New York City, paying special attention to disorders of metabolism.

New Milk Committee Organizes Service Bureau.—Acting on the suggestion of the National Commission on Milk Standards, the New York Milk Committee has organized a service bureau, with headquarters at 30 Broad Street. This bureau is prepared to furnish speakers, literature and other assistance to local health departments on measures pertaining to milk and milk products. In this way the New York Milk Commission, it is believed, can be an aid to those cities in need of better official control of their milk supplies.

Ships Bring Disease.—The Italian liner *Dante Alighieri*, which arrived from Naples and Genoa, August 23, was placed in quarantine as a case of smallpox had appeared among the steerage passengers all of whom were sent to Hoffman Island. The first and second class passengers were vaccinated and allowed to leave the steamer.——Two cases of typhus fever were discovered among the steerage passengers who arrived in New York, August 12, on the steamship *Niagara* from Bordeaux. The ship was held in quarantine.

OHIO

Civil Service Examinations.—Civil service examinations were held, August 5, to fill from ten to twelve positions as assistant physicians at state institutions, with pay ranging from $1,020 to $1,920 and with full maintenance.

PENNSYLVANIA

New Hospital Established.—Twenty Pottsville physicians have established a new hospital in Pottsville which will be named after Mrs. A. C. Miliken, a philanthropic resident of Pottsville. The Pottsville Hospital, the only other institution of the kind in Pottsville and which is supported by the state, is much overcrowded.

Outing for Lycoming County Physicians.—Dr. Victor P. Chaapel, former president of the Lycoming County Medical Society, Williamsport, and his wife entertained at dinner physicians of the county and a number of physicians from adjoining counties, eighty-four guests in all, at their summer home, Elk Lake, August 13. A presentation was made to Dr. Chaapel, and addresses were also made by Dr. Cyrus Lee Stevens, Athens, president of the Medical Society of the State of Pennsylvania, and by Dr. Donald Guthrie of the Sayre Hospital.

Physician Granted Mandamus.—Dr. Samuel S. Colver, Colver, is said to have been granted a mandamus, August 16, by Judge Hargest of Harrisburg, to compel the state board of medical registration and licensure to grant him a license to practice medicine. Dr. Colver alleges that he obtained a license in Maryland in 1895, and that he is entitled to a Pennsylvania license by reciprocity, but that the state board has refused him a license because it does not recognize the Maryland college from which he was graduated. The board was given until September 17 to file answer in the suit.

Personal.—Dr. Howard L. Hull, Camp Hill, chief medical inspector of the state department of health, Harrisburg, has resigned.——Dr. George K. Strode, West Chester, chief of the division of school hygiene of the state department of health, has resigned to take up research work with the Rockefeller Institute.——Dr. George Hay, Johnstown, announces his retirement from the practice of medicine, in order that he may assume the second vice presidency of the Auto Gas and Oil Service Company.——Dr. William H. Sears, Huntingdon, was in attendance at the Ophthalmological Congress in Oxford, England, July 15 and 16.

Philadelphia

Personal.—H. L. Harned was appointed consulting chemist and R. L. Sebastian, reasearch industrial chemist, to the state department of health laboratories, August 16.—Drs. Luther C. Peter and S. Lewis Zeigler were present at the Ophthalmological Congress, Oxford, England, July 15 and 16, and Dr. Peter, by invitation, opened the discussion on "Newer Methods of Perimetry."

Drug Addicts Denied Mail and Visitors.—The house of correction has been closed to visitors and even to packages of mail for inmates as a means of wiping out the "dope traffic" between drug addicts and the outside world. The visiting ban has been placed on the institution by Dr. Blair S. Spencer, physician-in-chief of the department of public welfare.

Health Probe of Schoolchildren Urged.—An appeal to parents to support the White William Foundation in its efforts to secure better physical efficiency among schoolchildren was made by Dr. Edwin B. Twitmeyer, psychologist at the University of Pennsylvania. He said that from 10 to 15 per cent. more public schoolchildren would be promoted if they had a physical examination before entering school in September. The school nurses' report for the year ending June 30 showed that 5,911 cases of badly diseased tonsils were discovered in public schools during the year by medical examiners.

Nursery Aids Sickly Children.—The need of a place where physical abnormalities would in time be minimized through home surroundings for patients rather than through constant use of medicine prompted the donation of an estate on Germantown Avenue near East Grovers Lane, to be used for the cause. Forty children from the Philadelphia General Hospital, all predisposed to tuberculosis, and ranging from 2 to 14 years of age, are enjoying the benefits of the donation. The progress made by the children who are constantly in the open air, taking even their meals on a porch of the house, is marked by the nurse. The physical defects of these children are being overcome by the application of the natural life rather than through the use of methods more fitted to older persons.

VIRGINIA

Apartment Turned Into Hospital.—The Waverly Apartment at the north end of Court Street, Richmond, has been purchased by an association of physicians for $82,500, and it is understood the purpose is to convert the building into a hospital with from fifty to sixty private rooms.

Suit Settled Out of Court.—Suit for $10,000 damages brought by a negro boy against Dr. Joseph C. Dunford, Portsmouth, the allegation being injury to the boy's sight, is reported to have been settled out of court, July 21, by payment of $1,000 and court costs of the complainant.

Personal.—Dr. Eppa H. Heaton, Waterford, who suffered a cerebral hemorrhage at his home, August 8, is reported to be improving.——Dr. Henry H. Levy, Richmond, who has been under treatment in the Stuart Circle Hospital for several months for a fracture of the hip, is making slow progress toward recovery.——Dr. Kenneth R. Glennan, Newport News, has resigned to resume private practice in Kentucky, and Dr. Charles Bell has been appointed his successor as port surgeon on duty with the Immigration Department.

CANADA

Florence Nightingale Medal Awarded.—The Florence Nightingale Medal, an international decoration, which is only awarded to women whose work in the cause of humanity has been of paramount importance, has been awarded by the International Committee of the Red Cross to Miss Margaret Clotilde Macdonald, matron-in-chief of the Canadian Expeditionary Forces during the World War.

Personal.—Dr. John Bryce McMurrich, Toronto, who, after serving overseas for several years, went to China, has returned to Toronto to resume practice.——Dr. Henry Crawford Scadding, Toronto, has sailed for England.——Dr. Herbert A. Bruce, Toronto, has had conferred on him by the king of the Belgians, the Order of the Crown (Chevalier), in recognition of his services to Belgium during the great war. ——Dr. Robert D. Defries, Toronto, has been appointed associate director in charge of the antitoxin division of the Connaught Laboratories, Toronto, and Dr. Alfred Hans Waring Caulfield has been appointed part-time research associate.

GENERAL

Change of Location.—The National Industrial Conference Board announces that after August 23 its headquarters will be transferred from Boston to 10 East Thirty-Ninth Street, New York City.

America Leads World.—Red Cross membership reports show that the United States leads the world in Red Cross membership with more than 10,000,000 adult members; Japan is second, with 1,900,000 members; Italy, third, with 300,000 members, and France, fourth, with 250,000 members. The figures for England, Canada and Australia are not available.

North Carolina Leads South.—During the year from June, 1919, to July, 1920, 5,505 women and girls completed courses

in home hygiene and care of the sick given by the Southern division of the American Red Cross. In this work North Carolina led with 736 students taking the full course and 581 taking the modified course. Tennessee came next with 567, taking the complete course and 309, the modified course.

Missouri Valley Physicians to Meet.—The annual meeting of the Medical Society of the Missouri Valley will be held in Omaha, September 6 and 7, under the presidency of Dr. Charles Ryan of Des Moines, Iowa. The headquarters will be at the Hotel Fontenelle where the annual dinner will be given on the evening of September 6, following which Dr. Karl Albert Meyer, Chicago, will deliver the oration in surgery on "Ulcer Cure Following Gastric and Duodenal Perforation."

Standard Ratproofing.—The U. S. Public Health Service has drawn up plans for radical changes in the construction of business buildings, dwellings, and wharves as part of the nation-wide campaign for rat extermination. While the Public Health Service can concern itself directly only with the problem of plague prevention, the economic problem that enters into the situation is, according to authoritative estimates, that there is one rat for every person in the United States, and that to maintain this huge number of rats costs the people of this country approximately 1 cent per person every day for rat food, an intolerable and unnecessary burden for the people to carry.

First-Aid Contests.—The International First-Aid Contest will be held in Denver, September 9 to 11, and sixty-three first-aid teams, representing seventeen states in which mining is one of the chief industries, have already sent in their entries. These entries also include teams from the mining regions of Canada and Mexico. The meet is being held under the auspices of the United States Bureau of Mines in cooperation with the Bureau of First-Aid of the American Red Cross. Dr. Edward R. Hunter, Delanco, N. J., of the American Red Cross, has been selected chief of judges with Dr. John W. Amesse of Denver and R. Z. Virgin of Pittsburgh, as assistants. In addition to the bronze medal awards to members of winning teams in the first-aid events by the American Red Cross, prizes will be given by mine owners and operators and others interested in the advancement of first-aid work.

Bequests and Donations.—The following bequests and donations have recently been announced:

Addison Gilbert Hospital, Gloucester, Mass., $4,000, by the will of Mrs. James S. Ayer, Gloucester.

Eastern Maine General Hospital, Bangor, $10,000, by the will of Dr. Thomas Opham Coe, Bangor.

Mount Sinai Hospital and the Montefiore Training School for Nurses, each $10,000; and Mount Sinai Pension Fund, St. Vincent's, Presbyterian and Beth Israel hospitals, New York, each $2,500, by the will of Watman Haas, New York.

Mount Sinai Hospital, New York, $5,000; Montefiore Home, New York, each $2,000, by the will of Samuel Haas.

Methodist Hospital, Indianapolis, $50,000; St. Vincent's Hospital, Indianapolis, $25,000, by the will of Charles W. Fairbanks.

Visiting Nurse Association and Children's Memorial Hospital of Chicago, each $250,000; the United Charities of Chicago, $150,000; Chicago Nursery and Half Orphan Asylum, and Chicago Home for Destitute Crippled Children, each $25,000; Country Home for Convalescent Children, $10,000, by the will of Mrs. Nellie A. Black, Chicago.

Congress Against Alcoholism.—The fifteenth International Congress Against Alcoholism will be held in Washington, September 21-26. The program includes addresses by many famous scientists, the congress being concerned almost exclusively with the scientific phase of the subject. Dr. Ley, professor of psychiatry at the University of Brussels, will speak on "Alcohol and Criminality;" Dr. Legrain, Paris, on "Nervous and Mental Diseases and Their Relations to Alcoholism;" Professor Aschaffenburg, director of psychiatric clinic, Cologne, on "Heredity and Environment as Causative Factors in Alcoholism;" Dr. Charles R. Stockard, Cornell University, on "Latest Scientific Investigation in America of the Action of Alcohol on the Brain, the Nervous System and Heredity," and Dr. Eugene L. Fisk, medical director, Life Extension Institute, New York, on "The Relationship of Alcohol to Modern Health Ideals." This congress will be noteworthy because of the fact that it is the first to be held in a prohibition country. The last meeting was held in Milan, Italy, in 1913.

LATIN AMERICA

New Medical Subjects Taught in Salvador.—The department of public education has added gynecology, which will be taught in the fourth year, and pediatrics in the fifth, to the subjects now being taught in the school of medicine.

Hospital Presented by Brazil to France.—The French chamber of deputies recently voted an appropriation of 1,133,000 francs for the Brazilian Hospital at Paris to equip it to serve as a surgical service for the medical faculty.

New Public Health Law in Costa Rica.—A new public health law has been adopted in Costa Rica, placing all public health matters in charge of the national government, which will exert its powers through the local authorities. A superior board of health will administer the law, which deals specifically with the various public health subjects.

School Hygiene in Bolivia.—There has been recently organized in Bolivia a school hygiene service. In the capitals of the department this service will be in charge of special physicians, while in the small towns the city physicians will perform these duties. There will be a general office of school hygiene, headed by a physician, in the department of public education.

Medical Congress of Venezuela.—The organizing committee of the Third Venezuelan Medical Congress has finally decided to hold the congress from July 24 to 28, 1921. The first and most important topic will be a symposium on the medical geography of Venezuela. Dr. F. A. Rizquez will open the discussion. Other subjects on the program are malaria, beriberi, yellow fever and the medical flora of Venezuela.

New Professors in Chile.—There have been made recently the following appointments in the school of medicine of Santiago de Chile: Dr Luis Vargas Salcedo, professor of descriptive anatomy, and Dr. Armando Larraguibel, professor of experimental pathology.——The number of medical students enrolled during this year was so large (210 new students, and 130 who failed to pass), that it was decided to have parallel courses this year to accommodate all the students.

New Hospital in Uruguay.—The public assistance authorities of Uruguay have decided to build the Hospital Gallinal-Hebert on a suitable place on the sea shore, for the treatment of children with tuberculosis, rickets and similar diseases. The funds for the construction of this hospital are a gift from Dr. Alejandro Gallinal.——Dr. J. P. Capdevila has been sent to Europe to obtain sanitary equipment for the army.——Dr. Julio Mailhos has been sent to Europe and the United States to study the preparation of itch remedies.

School for Sanitary Police in Paraguay.—The board of public health of Paraguay has decided to establish a school for sanitary police in the city of Asunción.——The government has placed all public health matters in the hands of a commission consisting of three members, besides the director of the national department of public health, who will act as chairman.——In order to combat the spread of epidemics, the entire country has been divided into three sanitary zones.——The president has ordered the establishment of an eye, ear, nose and throat dispensary under the national department of public health.

Tropical Disease Institute Planned.—An effort is being made to bring about the establishment in Panama of an international institute for research on tropical diseases as a memorial to the late Major-Gen. William C. Gorgas, Surgeon-General, U. S. Army. Panama has been chosen as a location in view of the fact that General Gorgas' most noteworthy health research was accomplished there. The Panama government will, it is said, donate the million dollar St. Thomas Hospital for the proposed institute, and it is hoped that the Rockefeller Foundation, which did so much to rid Panama of hookworm, will cooperate in this laudable undertaking.

FOREIGN

Personal.—Prof. H. Mygind of Copenhagen was elected honorary member of the Otolaryngologic Society of the Northland at its meeting in June.

Medical Officer on Railway Trains.—The Japanese state railway administration has decided to maintain a physician and install medical facilities on each of the principal trains leaving Tokyo.

Red Cross Island.—Proti Island in the Black Sea which has been occupied by a relief hospital station for Russian refugees maintained by the American Red Cross Unit under the command of Dr. Edwin B. Godfrey, Springfield, Ill., is now known as Red Cross Island in honor of the work done by that organization.

Prize for Research on Nervous Diseases.—The *Bulletin médical* announces that the Belgian Académie de médecine has a new prize to offer for research on the clinical, pathogenic and therapeutic aspects of diseases of the nerve centers and of epilepsy in particular. The prize amounts to 7,500 francs and competing articles must be received before Oct 15, 1922.

Retirement of Quénu and Robin.—The *Bulletin médical* says that Dr. A. Gosset, professor of external pathology of the Paris medical faculty, has been appointed to the chair of clinical surgery left vacant by the retirement of Professor Quénu, Dr. Vaquez, professor of internal pathology has been appointed in the same way to succeed Professor Robin in the chair of clinical therapeutics. The retirement of Quénu and Robin occurs Nov. 1, 1920.

Donations of the Munich Medical Weekly.—The *Münchener medizinische Wochenschrift* is published by a group of fifteen professors, including Bier, von Leube, von Merkel and Bäumler, representing ten different German universities. At the recent annual meeting of the board, the usual donations to scientific and professional relief purposes were made, totaling this year 9,000 marks, notwithstanding the difficulties attending the publication of periodicals at present. The price now for the United States is $6. The price in Germany has been increased within a year from 34 to 80 marks.

Smallpox in Glasgow.—A smallpox epidemic has been prevailing in Glasgow, and up to July 25, 379 cases of the disease, with sixty-five deaths, were officially reported. Unfortunately for the efforts at public control, the necessity for vaccination is not appreciated by many of those most exposed to infection. The mortality rate among those vaccinated in infancy has been 12 per cent., among the unvaccinated, 34 per cent., and among those without definite evidence of vaccination, 20 per cent. The occurrence of mild unrecognized cases and the tendency to conceal information regarding contact are also creating difficulties in dealing with the outbreak. Night raids on model lodging houses have recently been undertaken with a view to discovering concealed cases.

Japan Said to Be Doping Chinese.—The international Antiopium Society, Peking, composed of American, British, Chinese, Spanish and Danish representatives has presented a strong indictment to the United States congressional party now in China, against the practice of the United States Government of permitting the manufacture and exportation of unlimited quantities of morphin and other opium derivatives. It is asserted that the Japanese import great quantities of habit-forming drugs from America and sell them in China in violation of the international agreement to stop the sale of narcotics to Chinese. The society also makes specific recommendations that American laws be revised to prevent exportation of drugs to China and to prohibit the shipment of these drugs to other countries whence they may be shipped to China.

The German Krankenkassen and the Friedmann Remedy for Tuberculosis.—The *Medizinische Klinik* states that a woman insured in the Hamburg krankenkasse insisted on being treated by the Friedmann remedy, and the insurance physician complied, as she paid the 24 marks that the remedy cost. The krankenkasse refused her demand to be reimbursed, saying, "The curative value of the Friedmann remedy is by no means established. It is generally known that in medical science and practice the remedy is predominantly regarded with skepticism and its curative value as problematic. As long as new remedies are in the tentative stage, the krankenkassen are not obliged to give them to the insured. They can use only such remedies as in the present status of science promise successful results. . . . When new methods of treatment and new remedies have not yet won the favor of the overwhelming majority of the professors and practitioners who have been testing them with scrupulous care, the krankenkassen cannot be expected to apply these measures, and the insured persons might well object to serve as test subjects for trying the efficacy of the remedies in question, the harmlessness of which has not yet been assured."

Epidemic Diseases.—On August 20, an increase in the number of cases of yellow fever in Vera Cruz was reported, with an average of five new cases daily.——A severe cholera epidemic is said to exist in Cheng Tu, Szchuan Province, West China.——Cablegrams on August 11 from Seoul stated that 3,125 cases of cholera have been reported in Korea with 600 deaths.——It is reported that all of the quarantine material of the American typhus expedition in Poland which has been cooperating with the Polish workers, has been seized by the Bolsheviki, thus doing away with all possibility of protection against the introduction of typhus fever from Russia.——Batum reports a cholera epidemic, with about fifty new cases daily and with a mortality of about 50 per cent.——Cholera has disappeared from Sebastopol and the Crimea, but typhus fever is reported to be assuming epidemic proportions in all the Crimean cities.——An epidemic of dysentery is reported by the Red Cross to have broken out in Poland where four fifths of those arriving on sanitary trains are said to be suffering from the disease.——Four cases of bubonic plague are said to have been recognized in Paris hospitals, and one death has occurred in a suburb of Paris.

Deaths in Other Countries

Dr. **Adam Politzer,** aged 85, the Hungarian otologist who shed luster on the Vienna medical school for so many years. He began his work there in 1861 and retired in 1907. (See Vienna Letter, this issue.)——Dr. **Elisabeth V. C. Hamburger,** a practitioner of Copenhagen and communal venereologist, aged 65.——Dr. **Ernesto Delgado,** a well known surgeon of Caracas, Venezuela, died at New York after an operation, aged 54.

CORRECTIONS

Northeastern Arkansas Society Officers.—The report of the Northeastern Arkansas Medical Association published in THE JOURNAL, July 24, page 250, omitted the name of Dr. Joel A. Banks, Blytheville, who was elected president and erroneously named Dr. E. L. Fern, Osceola, as president instead of vice president.

Hanzlik Appointment.—Dr. Paul J. Hanzlik, Cleveland, calls attention to an error in the Ohio news in THE JOURNAL for August 21, in which it was stated that Paul J. Hanzlik had been promoted from assistant professor to professor of pharmacology. His promotion was from assistant professor to associate professor.

Government Services

Typhoid Fever in the Army

Since October, 1919, there have been only four cases of typhoid fever among troops. The last case was just reported from Fort Slocum, a recruit depot, and it is believed that the recruit was admitted to the army during the incubation period. The Surgeon-General has not yet received information whether the victim acquired typhoid fever after inoculation with the triple vaccine.

Army Portable Field Laboratory

Surgeon-General Ireland has approved a portable laboratory for use in the field. The equipment has been developed as a result of experiences obtained in the American Expeditionary Forces in France, and consists of a series of small chests containing glassware, chemicals, apparatus and instruments, incubator, autoclave, hot air sterilizer, supplies for work in histopathology, clinical microscopy, water analysis, bacteriology, venereal disease control and water chlorination.

Typhus Fever in Eastern Europe

Lieut.-Col. Harry Plotz, M. C., U. S. Army, has just returned from Europe after spending several months in investigating the spread of typhus fever in infested regions. Typhus fever is raging in Poland, Southern Russia and Eastern Europe in general, and unless it is checked, there is danger that it will spread over all Europe. It is suggested that the League of Nations initiate a campaign against the epidemic in Poland by sending steam and hygienic bathing apparatus into that country.

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

ILLINOIS
Chicago—Shale, R. J.
Quincy—Bitter, A. H.

MICHIGAN
Detroit—Perkins, R. A.

NEBRASKA
Omaha—Coady, C. C.

NEW YORK
Albany—Craver, L. F.
Oneonta—Becker, P. B.
Oswego—Powers, R. T.

PENNSYLVANIA
Conoquenessing—Christie, R. M.
Langhorne—Walter, T. A.
Philadelphia—Carp, I. J.

TENNESSEE
Como—Rodgers, C. W.

VERMONT
Burlington—Leffler, H. H.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Aug. 13, 1920.

The Student's Record of Educational Attainments

Beginning with the opening of the school year 1920-1921, every student desiring to matriculate or register in a faculty or school of higher education must come provided with a special university booklet (livret). This livret will contain entries indicating (1) the civil status of the student with his legal signature (space will be reserved for the student's photograph); (2) the proofs or grades which at the time entitle the student to admission to the faculty or school, showing the place and date of school attendance, the teachers and institutions, the marks obtained, and an attestation that authenticated documents were presented to secure the particular entry in the livret; (3) scholarship, successive matriculations, regular or cumulative terms, and exemptions and equivalents; (4) the courses of study, lectures, laboratory exercises and practical work pursued by the student (at the demand of the student, a record of his diligence may be added over the signature of the professor or the director of the institute or school), and (5) the exeat, completion of studies and transfer of the records. Should any livret contain avowedly false entries, it will be revoked without prejudice to any disciplinary measures that it may be desired to take against the culprit.

The Value of Prophylactic Injections of Antitetanic Serum

The value of prophylactic serotherapy of tetanus still constitutes a timely subject, and was recently a topic of discussion at the fifth International Congress of Surgery.

Dr. Sieur, medical inspector of the Service de santé militaire, reviewed the arguments that have been advanced against this measure. He acknowledged that the serum has been without efficacy in certain cases, but these cases are extremely rare. In fact, among several hundred thousands of wounded, Sieur could find only a very small number of cases of tetanus, and in these the greater the number of injections, the lower was the mortality rate. In patients with two protective injections, the percentage of deaths was 77; with three injections, 33. Besides, it should be taken into consideration that in inoculated individuals the tetanus is often partial or mild (tétanos fruste) and susceptible of cure.

Dr. Pothérat, surgeon to Paris hospitals, while admitting the value of prophylactic serum injections, thought that the treatment did not suffice to prevent the onset of tetanus. The serum is not, in fact, a vaccine, and its rôle is to neutralize a given quantity of toxin, nothing more, and the doses that can be injected are strictly limited in view of the danger of anaphylaxis. Therefore, local treatment of the injured focus, where the toxin is elaborated, is the very basis of all prophylactic measures. It was due as much to insufficient treatment of the wound as to the absence of a sufficient quantity of serum that we saw so many cases of tetanus early in the war. From a therapeutic point of view, this surgical measure is likewise the essential element. Of other measures, Baccelli's method and chloral are perhaps more efficacious than serotherapy.

Dr. Arnd of Berne announced that for more than fifteen years he made systematic prophylactic injections of serum (in three doses on the first, fifth and tenth days) and débridement of the wound. Nevertheless, he has had three cases of tetanus, and each time the necropsy revealed that this was due to insufficient cleansing of the wound area and the retention of a small foreign body, enough to explain the development of the tetanus.

Reparative and Orthopedic Surgery

From many points of view, the World War yielded an experience which by its very magnitude surpasses almost all that hitherto could possibly be imagined. Thus, surgeons found themselves facing numbers and varieties of wounds such as at no previous time in history were ever seen or even approached. It would have been regrettable if the enormous experience acquired in the course of the war had been lost to humanity, and this all the more since in times of peace it has extensive application in the treatment of industrial accidents. A certain number of eminent surgeons therefore conceived the idea of collecting the surgical lessons of the war in one large treatise, "Chirurgie réparatrice et orthopédique," published by Masson et Cie, Paris, under the editorial supervision of Professors Jeanbrau (Montpellier), Nové-Josserand (Lyons) and Ombrédanne (Paris). Among the forty odd contributors are found the names not only of prominent surgeons but also of neurologists, radiologists and other specialists, for as a matter of fact wounds may involve all of the great systems of the body, especially the nervous system. It is precisely this that lends interest to the two volumes, for all that relates to the subsequent evolution of wounds is covered in the work. From this point of view, the work really fills a gap and is all the more serviceable as the text is supplemented throughout by excellent illustrations.

MEXICO CITY

(From Our Regular Correspondent)

Aug. 15, 1920.

Regulation of Practice

Pursuant to the powers conferred by the constitution on the department of public health, this body has decided that all persons that practice medicine, odontology, obstetrics, pharmacy, veterinary surgery, or homeopathy in the Federal District must register their diplomas with the board of public health, and only those fulfilling this requirement will be authorized to advertise their profession and use professional stationery. Other persons now practicing these professions and lacking diplomas may apply to the university authorities, who will grant them only after examination. Those failing in the examination or not applying for diplomas must state in their advertisements the profession they practice and the fact that they have no diploma. Physicians will not dispense medicines, magistral formulas can be dispensed only in drugstores in charge of a licensed pharmacist; no physician can advertise himself as a specialist unless he possesses an additional diploma for his specialty; medical laboratories cannot advertise unless authorized by the board of public health. Those violating these provisions will be fined up to 500 pesos for the first offense and twice as much in case of a second offense, being in addition deprived of the signs containing their fraudulent advertisement, which will be replaced by a poster stating the action taken. As it will be seen, the regulation is very liberal, as healers and other quacks are allowed to practice. They are only forbidden to advertise with attempt to deceive, so that those going to them will do so with full knowledge. Midwives of dubious reputation, foreign exploiters and native homeopaths have protested bitterly, calling this measure unconstitutional. It is therefore expected that they will appeal to the courts for "amparo" (the Mexican equivalent to mandamus), and the supreme court will finally decide this important public health question. Meanwhile, the municipal authorities of Vera Cruz have adopted a similar measure, and it is expected that soon other state authorities will follow suit.

Nurses' School

In the Hospital of the Red Cross there has been established a training department under the direction of Dr.

Julián Villarreal. Several physicians will instruct all applicants who present themselves in anatomy, physiology, hygiene, transportation and care of patients and wounded, bandaging and handling apparatus, anesthesia, preoperative care, etc. Besides these lectures that will be given once or twice a week, monthly lectures will be given on subjects of general interest. Dr. Gregorio Mendizábal, president of the Mexican Medical Association, will deliver a series of lectures on individual and professional ethics. Those completing the course are entitled to a diploma as Superior Officer of the Mexican Red Cross, and those completing one subject will be given a certificate to this effect.

Dr. Silva's Funeral

Dr. Miguel Silva was a prominent physician who exercised his profession with distinction in the city of Morelia. He made several trips of study to Europe and the United States at his own expense. He won the affection of his fellow citizens because of his charities, and distinguished himself at professional meetings. Finally, he was elected by popular vote governor of the state of Michoacán. To escape the persecutions of the previous administration, Dr. Silva had to exile himself to Havana, where he died from laryngeal cancer, being refused by his political enemies his wish of dying in his own country. Now that conditions have changed, a group of Dr. Silva's admirers and friends have brought his body to Mexico for burial.

Personal

Owing to the fact that the secretary of foreign affairs has been appointed minister at London, Dr. Cutberto Hidalgo, the subsecretary of the department, is acting secretary.—— Dr. Gabriel Garzón has been appointed acting governor of the state of Vera Cruz.——Dr. Alfonso Cabrera, former governor of Puebla, has been placed at liberty.——Dr Carl Michel of the United States Public Health Service continues acting as adviser to the plague committee of Vera Cruz.—— Dr. Alexander Gadsky has been appointed Mexican consul at Antwerp.——Dr. Francisco Valenzuela has been appointed chief of the antiplague campaign at Vera Cruz.

VIENNA

(From Our Regular Correspondent)

Aug. 14, 1920.

Death of Professor Politzer

The sudden death of Prof. Adam Politzer, the aurist, who died a few days ago from apoplexy, came as a severe shock to the large number of friends, pupils and patients, in spite of the age of 86 which he had attained. Politzer's name is known wherever otologists work, his method of air inflation into the tympanic cavity, published by him in 1863, assuring him international fame. But Politzer was more than the inventor of a method of treatment. He was a real pioneer of a new branch of medicine. To him we owe the methodical and scientific investigation of the organ of hearing. He made otology what it is now, one of the most interesting and grateful parts of our art. He taught the methods of anatomic, physiologic and pathologic investigations of the ear; and by selecting from among his pupils those men who were most able and apt to continue such research work, he founded a real school of otology. Between 1870 and 1900, Vienna was the center of medical teaching, and a large proportion of the foreign students came from America and England. In fact, the number of English-speaking students who took classes with "old Politzer," as he was styled, amounts to more than 7,000, and they had the advantage of being taught otology in their native tongue. This clinic, of which he was appointed director in 1870, soon rose to be "the" ear clinic of the continent; at that time this was equivalent to "the world." From his school nearly all the eminent otologists of Europe originated. Alexander and Neumann (Vienna), as well as Bárány, who is now in Sweden and is the bearer of the latest Nobel prize, are well known to every American otologist. Politzer, who was of Jewish origin, swept away by his genius the obstacles placed in his way by racial and national prejudices. After graduating in Vienna in 1859 he went to Germany, where he studied physiology and acoustics with Helmholtz; thence to Paris, where Claude Bernard and König by their teaching had a marked influence on his training, and thence to England, where Toynbee's collection of specimens of the ear were of inestimable value to him. He soon returned to Vienna and was appointed assistant of the pathologic ward and afterward head of the new ear clinic. His invaluable collection of anatomic and pathologic specimens is bequeathed to the ear clinic of Vienna, a gift unique in its universality, while his library falls to the Vienna University Library. Politzer was the author of numerous scientific books and papers; his book on otology is a standard.

Eiselsberg's Sixtieth Birthday

Professor Eiselsberg, who is head of the first surgical clinic of Vienna, celebrated some time ago his sixtieth birthday, and was the object of numerous honors and festivities. Eiselsberg plays an eminent rôle in Vienna. He is "the" professor of surgery, both for students and for patients, and holds a commanding position in the medical faculty of Vienna. In fact, nothing important takes place in medical life here without the professor's opinion having been ascertained. He is esteemed by all comrades, and the profession owes him much gratitude for his incessant endeavors to lighten the economic burdens of our poorer brethren by obtaining for them help from all quarters. He has made his clinic a model institute. He was an assistant of Billroth, and has succeeded in keeping up the surgical tradition of Vienna by his surgery of goiter, of intracranial diseases and of the medulla. During the war he was engaged in the organization of surgical units for the mountain campaign.

An Outbreak of Dysentery

A serious outbreak of dysentery that occurred recently in the barracks of the metropolitan police demanded very stringent measures to suppress it. About 100 persons obtaining their meals from a mess in the house were attacked, and five died, among them two chief officers of the police. The investigations resulted ultimately in the detection of a carrier, a cook who harbored the ameba, without having been manifestly ill. Lack of proper cleanliness, as well as unsatisfactory quality of the food used for the preparation of the meals, were also found, and the outbreak was speedily controlled thereafter. This is the first instance of an outbreak of dysentery in this city.

Reduction of Military Hospital Beds

Among other arrangements necessitated by the demobilization, the reduction in the number of military hospitals was one of the most necessary and most difficult items. During the last months of the war, when the morale of the soldiers was slowly but surely breaking down, the hospitals were filled with malingerers; and when the upheaval ensued and the old empire broke asunder, those who by some means or other had managed to come into a hospital were not willing to leave it. Later on the invalids regarded it as their privilege to stay in a hospital, and every soldier who during the war had been wounded or sick claimed to be an invalid and claimed a pension. The abuse was really embarrassing. Especially the real and would-be invalids had organized and formed a powerful union, who demanded certain privileges for themselves—and obtained them. They refused to be dis-

missed from hospitals, they chose their own hospital staffs and clerks, and on dismissal—when this was enforced—they obtained substantial "grants." Thus, in the small state now representing Austria, no less than 34,000 hospital beds were occupied by sick military patients, who preferred to stay there because they found no work or were unable to work—for there were real invalids among them too. The present government faced a serious position in this respect, and the present minister of health, Professor Tandler, succeeded by tact and energy and much good will to reduce the number of the military hospitals. Gradually wards were evacuated, patients concentrated in large hospitals, and work for the would-be invalids provided; and the report of the board of health, published a few weeks ago, shows that now only about 8,000 beds are occupied by bona fide military patients. Still the proportion of clerks and staff to the patients is unsatisfactory, being one to every three patients. Gradually, however, these disproportions will be done away with, and normal conditions may be expected soon, with a beneficial influence on both the morale of the population and the finances of the state.

LONDON

(From Our Regular Correspondent)

Aug. 7, 1920.

Bill to Control the Sale of Proprietary Medicines

A bill to control the sale of proprietary medicines, which previously has been so unfettered that bogus claims of all sorts to cure the most serious diseases have been freely advertised, has received a second reading in the House of Lords. The bill is only a reproduction of recommendations made by a select committee of the House of Commons, which reported in August, 1914, just before the declaration of war. The committee found that there was a large and increasing sale of "patent" and proprietary remedies and appliances and medicated wines. These differed widely in character, and included: (*a*) genuine scientific preparations; (*b*) unobjectionable remedies for simple ailments, and (*c*) many secret remedies, making grossly exaggerated claims of efficacy, causing injury by leading sick persons to delay in securing medical treatment, containing in disguise large proportions of alcohol, sold for improper medication, professing to cure diseases incurable by medication, or essentially or deliberately fraudulent. The committee declares that the last class (*c*) constitutes a grave and widespread public evil. The existing law is chaotic and has proved inoperative in regard to these matters. Amendment of the law is urgently needed. The government now proposes that no one shall manufacture or prepare for sale any proprietary medicine or any proprietary surgical appliance unless (1) he is registered under the act for the purpose; (2) the medicine or appliance is registered under the act, and (3) in the case of a medicine, it is compounded of the ingredients and in the proportions specified, and in the case of an appliance corresponds to the specimen furnished. Security against divulgence of the ingredients of a medicine to the public is granted by the ministry of health, keeping a confidential register. Registration is to be signified on the medicine or article by a number. The prohibition of sale save under these conditions is to operate six months after notice in the London *Gazette* that applications for registration will be received. After six months from the passing of the act, it shall not be lawful to sell any medicine or surgical appliance purporting to prevent cure or relieve any of these diseases: cancer, consumption, lupus, deafness, fits, epilepsy, amenorrhea and other diseases peculiar to women, diabetes, paralysis, locomotor ataxia, Bright's disease and rupture. Power is reserved to the minister to extend the schedule. The advertisement of any article which might be used to induce abortion is prohibited. Misleading advertisements are dealt with severely. The following are prohibited: invitations by correspondence to take up remedies; the use of fictitious or misleading testimonials; the issue of a statement that a medicine or appliance is recommended by a duly qualified physician without including in the particulars names and qualifications, and in the case of a living person, the address of the physician; the publication of a false statement that a medicine or appliance was discovered, invented or compounded by a physician. The minister of health may, if he thinks fit, direct that the name and quantity of any poisonous or dangerous drug forming an ingredient in any registered medicine shall be stated on the vessel or package, and require that every proprietary medicine containing more alcohol than he deems to be properly contained therein shall show on its vessel or package the proportion of alcohol contained. Another regulation prohibits any statements being made by an owner that a medicine or appliance possesses any therapeutic qualities other than such qualities as are specified in the register. The minister is to have authority to remove any medicine or appliance from the register, subject to appeal to the high court against such removal. The penalties laid down for "misdemeanors" under the act are imprisonment for a term not exceeding twelve months or a fine not exceeding $500, or both such imprisonment and fine. If a person is found guilty of any offense under the act he is to be liable on summary conviction to a fine not exceeding $100, with a further fine not exceeding $25 a day for each day during which an offense continues after conviction.

In introducing the bill, Viscount Astor, undersecretary for the ministry of health, said he was told that the press was going to oppose the bill. He was well aware that it derived a large revenue from advertising "patent" medicines, but he had too high an opinion of it as a whole to believe that it would try to stop this bill. It, like the state, had the duty to prevent fraud and dangers to health arising from the sale of these remedies. The bill would enable the government to deal with the real scandal and bring England into line with other countries. The consternation with which this bill is viewed by the interests affected is shown by two articles which have appeared. The press, however, has on the whole had sufficient intelligence not to be led into such demonstrations. "A Bad Little Bill," is the title under which the *Daily News*, the leading liberal organ, describes the measure. It complains that "persons without the means of adopting the expensive treatment cannot get even temporary relief at a pharmacist's shop for cancer, consumption, lupus, diabetes, Bright's disease." The capacity of the pharmacist to furnish such relief is evidently taken for granted! The *Daily Express*, an organ in the opposite political camp, heads its article "Earthquakes for Pills," and describes the bill as "reeking of bureaucratic tyranny." It complains that "no vender of patent medicines may enter into correspondence with any sufferer in order to give advice." Of the value of such advice, the writer is discreetly silent.

The Osler Memorial

In March last it was determined, at a large and representative meeting of members of the University of Oxford and of the medical profession, to raise a fund to the memory of Sir William Osler. It was held that the most appropriate memorial would be an Osler Institute of general pathology and preventive medicine. Under the patronage of the Prince of Wales, the American ambassador, the high commissioner for Canada, and others, an appeal is now being made for funds. It is stated that such a memorial would have been appreciated by Osler himself, for, beginning his life with his chief interests directed toward pathology, he ended with an enthusiastic belief in the future of preventive medicine. It

would be a fitting expression of the world's indebtedness to him alike as a physician, a teacher and an investigator, while it would at the same time be, what he himself would greatly have valued, of practical and daily utility to the advance of medical science. Osler was a great and good physician, but he was more than this, and for future generations of students there could be no better example. He recognized no breach between science and the humanities. His influence on the progress of medicine was profound, not only from his own contributions to knowledge, but also from his genius in promoting, distributing and organizing it. Combining with this a wide knowledge of human thought, a constant striving for the welfare of his fellow men, an unlimited capacity for friendship, a loftiness of ideal and a singular fortitude in his outlook on life, he justified the universality of those tributes paid to his memory which are still fresh in men's minds. A member of a distinguished Canadian family, he had the unique experience of exercising his wide and beneficent influence in Canada, in the United States and in England, in each of which countries he was successively a professor of medicine; and few men can have done more to foster and consolidate friendship between them. This international character of his career and the range of his knowledge and sympathies merit a conspicuous and permanent tribute, for the remembrance of Osler's life-work is singularly fitted to bring home to the minds of all—whether our own undergraduates, Rhodes scholars or foreign students—the fact that knowledge knows no boundaries.

BERLIN

(From Our Regular Correspondent)

Aug. 6, 1920.

Deleterious Influences Operating Against Medical Science

German medical science is having some serious difficulties because of the financial stringency. Complaints are heard on all sides that the necessary means for conducting experimental investigations are not available, owing to the high prices of laboratory animals and other supplies. The appropriations allotted to many state institutions are sufficient only to cover the salaries of the employees and the cost of coal. The libraries are laboring under identical difficulties. Because of the high cost of paper and printing, the journals were forced to increase their subscription rates considerably. The four largest German medical weeklies today cost almost four times as much as before the war (80 marks as against 24), and books sell at the rate of 100 marks or more for each volume. The increased prices are especially noted in respect to foreign periodicals because of the unfavorable exchange rates. The annual subscription price of the *British Medical Journal* lately represented 1,000 marks on the basis of current exchange. It might readily be conceived that not even the libraries, and certainly no individuals, are in a position to expend such tremendous sums for journals, and the number of subscriptions for foreign periodicals at the Berlin Staatsbibliothek has consequently dropped from 3,000 to 250. Several hundred German publications, among them a considerable number of medical journals, were forced to discontinue during the year. The financial difficulties are even threatening the very existence of Frankfurt University, which was founded during the war by an endowment of 12 million marks from the corporate bodies of Frankfurt and wealthy citizens. Through the impoverishment of German communities and the decrease in private fortunes (a process which will be intensified by the enormous taxes and the so-called national emergency impost), the income of the university has been reduced considerably. The deficit for 1920 was estimated at 600,000 marks, and this will be increased to 1,500,000 through operation of a new ordinance regulating salaries. The government has temporarily granted the necessary financial assistance to tide the university over its present difficulties, but nevertheless the medical school will be forced to curtail certain activities. At several hospitals the number of beds has been reduced, while some small hospitals have been closed entirely.

CURTAILMENT OF SCIENTIFIC INVESTIGATIONS UNDER THE NEW GOVERNMENT

These lamentable conditions governing German medical science are due only in part to the pecuniary impoverishment. Political affairs constitute an additional basis for dissatisfaction. The revolution did not give Germany a purely democratic republic, but one which is overwhelmingly social democratic. The social democratic party is composed almost exclusively of laborers, and this class has naturally become the ruling element and determines to a great extent the political and economic status of Germany. Psychologically, it is readily conceivable that those circles of the population whose political and economic rights were greatly restricted under the old régime are striving to take full advantage of their altered status as masters. This occurs both intentionally and unconsciously. After the revolution, the workingmen became fully conscious of the fact that they constitute the most important class of the populace and that their interests take precedence over all others. In consequence of this concept and of the lust for power, manual labor now outranks brain-work, and the demands of science have become subordinate to those of day laborers. Intelligent leaders of the social democratic party have repeatedly complained publicly that the revolution has degenerated into a wage movement.

If now the appropriations for scientific investigations are curtailed by these political upheavals, responsibility for other injurious effects on German science must be ascribed to the same conditions. Under the parliamentary system that has been introduced, the ministerial appointments are based on the relative strength of the various political parties that make up the government. The social democratic party consequently controls the majority of the ministries, and since the intellectual and specially talented classes are not very numerous in its ranks, the men in power have hitherto had little sentiment for science. If their sense of responsibility and knowledge is inversely proportional to their sense of power, then science and her votaries will suffer as a natural consequence.

FRIEDMANN AGAIN

This lamentable result is noticed especially in Prussia. The minister of public instruction is a social democrat by the name of Haenisch, without any academic training and formerly editor of a newspaper. To him may be attributed the unfortunate Friedmann affair. In 1917, as democratic representative in the Prussian diet, Haenisch made the following remarks regarding the generally condemned Friedmann "cure."

"I call attention also to the fact that open humbuggery, such as the Friedmann tuberculosis remedy which was introduced to the world several years ago by loud advertising tomtom, has again received special encouragement from university circles, and that such ventures have repeatedly been shaped under university authority. Such frauds as this alleged tuberculosis remedy almost invariably end in miserable collapse, but they have one advantage in that they meanwhile make the discoverer a wealthy man."

As minister of public instruction, Haenisch supposedly now feels called on to make retribution for the wrong which was formerly done to Friedmann, and to promote his interests personally and publicly. It must be admitted for Haenisch that he is acting in good faith and that he became convinced through the judgment of various men of science. Late in 1918, Kraus, the Berlin clinician, in his characteristically impulsive manner, published an article

in which he reported permanent beneficial effects from the Friedmann treatment in some cases of pulmonary tuberculosis. An even deeper impression was made on Haenisch by an offer from Professor Kruse, a noted bacteriologist and director of the Leipziger Hygiene Institut, to take charge of the production of the Friedmann vaccine. In addition to this, two prominent physicians, Professor Schleich of local anesthesia fame, and the gynecologist, Professor Dührssen, came out with uncritical enthusiasm in its favor. What other means were employed to influence Haenisch cannot be definitely determined. At any rate, Friedmann, of whom some assert that he is more of a business man than a paranoiac, while others maintain the reverse, has lately been appointed extraordinary professor at the University of Berlin against the explicit vote of the medical faculty. A portion of a large military hospital has been placed at his disposal for clinical purposes, and he has erected an immense sanatorium in a Berlin suburb for the treatment of private patients. Haenisch therefore succeeded in doing for Friedmann what he severely condemned in the same man three years before. There is, in fact, a constant dispute regarding the scientific and practical value of the Friedmann remedy; but the opinion of those who from the very first were skeptical is gradually being shared by everybody. Some successes cannot be combated; still, they are no greater than the results attained with other specific measures against tuberculosis. The best results have followed its use in surgical tuberculosis, in which nearly the same results are obtained by climatotherapy, phototherapy and other measures. The most important fact is that the experiments conducted by reputable investigators with the turtle tubercle bacillus led to mishaps. Some weeks ago, Professor Selter, director of the hygienic institute at Königsberg, reported in the *Deutsche medizinische Wochenschrift* that there is no difference in the course of tuberculosis in guinea-pigs treated with Friedmann's turtle vaccine and in the controls. The Friedmann bacillus did not, therefore, develop a homologous antigen reaction, although the experiments were conducted under as favorable conditions as possible. Selter concludes, therefore, that the Friedmann bacilli are ordinary bacilli from cold blooded animals which act only as acid-fast saprophytes toward human beings or tuberculous warm blooded animals. Treatment with the Friedmann remedy would, then, correspond to a nonspecific vaccine treatment. Even less favorable was the result of the clinical work of Professor Bacmeister of Freiburg, published in the same number. He was unable to determine either a permanent curative action in any of his patients, or any lasting increased immunity to tuberculosis. He does not think it has been proved that the remedy is harmless. A revolution in the treatment of tuberculosis is not to be expected from the Friedmann method, and the efforts of its originator to force this revolution by exclusion of methods of treatment hitherto found effective are unjustifiable and constitute a serious danger to tuberculous patients. What lends particular spice to Selter's article is the fact that he is one of Kruse's most distinguished pupils and in this matter he takes issue with his master. Last year Kruse, with a deplorable lack of discrimination, warmly commended the Friedmann treatment, and in his animation he went so far as to ascribe partisanship and sordid motives to J. Schwalbe, editor of the *Deutsche medizinische Wochenschrift*, who at the time critized severely Friedmann's appointment as extraordinary professor. This action of Kruse met with universal condemnation, more especially because it was felt that since he had a financial interest in the exploitation of the Friedmann remedy (it is hinted he receives at least 50,000 marks per annum) he should not have entered into a personal and scientific defense of an unfounded method. It is very strange that Kruse has never published the results of his experimental studies on the protective and therapeutic relations of the Friedmann turtle bacilli, which were definitely planned two years ago. We are anxiously waiting to see whether he will have the courage to publish unfavorable results and in this way to disavow his former contentions.

OPPOSITION TO SCIENTIFIC MEDICINE

The Friedmann case is not the only indication of the arbitrary and unscientific spirit of the Prussian minister. He attempted to use his personal influence in getting a professorial appointment at the University of Berlin for a former police physician, Dreuw, who because of his inordinate abuse of salvarsan in the daily papers of low class was in such bad repute that the columns of the medical journals were closed to him for some time back. Because of the opposition of members of the faculty and other men of influence, this attempt was unsuccessful. It is tragicomic to observe that Dreuw is now attacking his erstwhile patron in the same lay papers, and this because of the latter's favoritism for Friedmann. The fondness of many social democrats (owing to their lack of biologic and other education) for all opponents of scientific medicine determined the minister's efforts in the interests of naturopathy, and so he lately appointed a naturopath and former country schoolteacher to succeed Professor Brieger as director of the hydrotherapeutic institute at the University of Berlin. It is to be hoped that there will soon be an end of this régime, which is doing injury to the reputation of medicine. The Prussian parliamentary elections which are scheduled for this fall may be expected to bring results similar to those in the national elections several weeks ago when the citizenry, especially its intellectual elements, awoke and restricted the unjustifiable influence of the social democrats on the political, scientific and social life of Prussia to its proper bounds.

Medical Activities of the Department of Social Welfare

The Kaiser Wilhelms Academy has been incorporated in the social welfare department (Heilfürsorge-Abteilung) of the ministry of labor, and with this connection it occupies an important sphere of activity. Its excellent facilities for scientific and practical investigations and education will hereafter be devoted to the special cause of social medicine in the broadest sense. Its library of 85,000 volumes, one of the largest medical collections in Europe, has been made available to the medical centers throughout Germany. The statistical division will make a statistical study of all questions relating to social medicine. The chemical division will undertake examination of textiles, drugs, pharmaceuticals and other supplies for the hospitals and medical centers. The sanitary and bacteriologic laboratory will make diagnostic examinations for the hospitals, including Wassermann tests for patients within the medical district of Greater Berlin, and it will conduct physiologic and clinical investigations on subjects essential to pension adjudications, such as on fatigability after injuries, tendon transplantation and the psychologic after-effects of brain injuries, and on subjects dealing with social hygiene. In the division of pathologic anatomy, the injuries and diseases of war will be subjected to systematic study with special reference to occupational injuries and their late results; a large and possibly unique collection of specimens and models is at the disposal of the division. The physical division has control of an enormous accumulation of roentgenograms, and it will subject these to a critical evaluation with a view to creating a collection for jurisprudential and educational purposes. At the present time, this division is also making roentgen-ray examinations of tuberculous children in cooperation with school physicians. Although naturally these establishments and their equipment are primarily at the disposal of the social welfare department and its physicians, they will also be available to the other medical circles.

Marriages

LIEUT.-COL. ROBERT URIE PATTERSON, General Staff (M. C.), U. S. Army, to Miss Eleanor Reeve of Brandywine, Md., in Washington, D. C., August 14.

EDWARD CARY RUSHMORE to Miss Olive Louise Williams, both of Tuxedo, N. Y., at Cobourg, Ont., August 16.

HAROLD CHARLES GOLLY, Utica, N. Y., to Miss Beatrice C. De Garmo of New York City, Dec. 16, 1919.

JOHN WILLIAM DREYER to Miss Rhoda Wheeler Denney, both of Aurora, Ill., August 21.

HERMAN CHARLES FURMAN to Miss Christine A. Pfenning, both of Brooklyn, August 18.

WILBERT C. WARNER, Cleveland, to Miss Bessie Dickles, at Pelham, N. Y., August 8.

Deaths

Walter Wesselhoeft, Cambridge, Mass.; Harvard University Medical School, 1859; aged 82; professor of clinical medicine in Boston University Medical School until 1909 and since that time emeritus professor; consulting physician to, and a member of the board of trustees of, the Massachusetts Homeopathic Hospital; died at his summer home at Sandwich, Mass., August 17.

Everett J. Brown ⊕ Decatur, Ill.; Northwestern University Medical School, Chicago, 1888; aged 55; for six consecutive terms treasurer of the Illinois State Medical Society; medical director of the Protective League Life Insurance Company; one of the most prominent internists of central Illinois; died, August 30, from spinal disease, after an illness of several months.

Richard A. Nunn, Portland, Ore.; University of Dublin, Ireland, 1883; aged 61; professor of diseases of the eye, ear, nose and throat in the University of Oregon Medical School, Portland; who served during the World War in the Royal Army Medical Corps in France and England; was found dead at the home of his brother in Estacada, Ore., August 17.

Wilbur Daniel Cook, Chicago; Hahnemann Medical College, Chicago, 1900; College of Physicians and Surgeons, Chicago, 1909; aged 57; a member of the Illinois State Medical Society; for many years attending physician to the John Worthy School; a specialist in diseases of the eye, ear, nose and throat; died, August 23, from cerebral hemorrhage.

Minerva M. Newbecker, Berkeley, Calif., formerly of Ord, Neb.; Northwestern University Woman's Medical School, Chicago, 1893; aged 69; for six years physician to the woman's department of the Nebraska State Hospital for the insane, Asylum; died, about August 7.

Albert Laurendeau, St. Gabriel de Brandon, Que.; Ecole de Médecine et de Chirurgie, Montreal, 1879; aged 63; vice president of the College of Physicians and Surgeons of the Providence of Quebec and for several terms president of the county medical society; died, August 19.

Haley P. Cartwright, Bowling Green, Ky.; Vanderbilt University, Nashville, Tenn., 1882; University of Louisville, Ky., 1883; aged 71; a member of the Kentucky State Medical Association; died at the home of his daughter in Helena, Ark., August 23, from angina pectoris.

John Cain Adams ⊕ Superior, Wis.; Bellevue Hospital Medical College, 1888; aged 53; acting assistant surgeon, U. S. Army, from 1889 to 1894, with service during the Indian wars; local surgeon for the Northern Pacific system; died, August 23, from cerebral hemorrhage.

Herbert Terry ⊕ Providence, R. I.; Harvard University Medical School, 1880; aged 65; a specialist in neurology; a member of the staff of Rhode Island Hospital since 1883; a member of the staff of the Providence Lying-In Hospital from 1895 to 1902; died, August 25.

Calvin Worchester Day Clark, Toronto, Ont.; Queens University, Kingston, Ont., 1885; L. M. & S. Apothecaries' Society of London, 1886; died in the General Hospital, Toronto, July 15, from myocarditis following a gastro-enterostomy for duodenal ulcer.

Frederick Luke Classen, Albany, N. Y.; Albany (N. Y.) Medical College, 1881; aged 63; a member of the Medical Society of the State of New York; died in the Albany Hospital, August 13, four days after an operation for acute appendicitis.

William Henry Furness III, Wallingford, Pa.; University of Pennsylvania, Philadelphia, 1891; aged 52; a fellow of the Royal Geographical Society, an explorer and author of a standard work on the head hunters of Borneo; died, August 11.

Henry W. Roby, Topeka, Kan.; Hahnemann Medical College, Chicago, 1877; aged 78; a member of the staff of Christ's Hospital; a veteran of the Civil War and afterward a court reporter in Kenosha and Milwaukee, Wis.; died, August 22.

John S. Walbridge, Berlin, Wis.; University of Michigan, Ann Arbor, 1874; University of the City of New York, 1881; aged 70; a member of the State Medical Society of Wisconsin; died, August 20, from cerebral hemorrhage.

Daniel P. Murphy, Elmira, N. Y.; University of Buffalo, 1902; aged 46; local surgeon for the Delaware, Lackawanna and Western Railroad; a trustee of St. Joseph's Hospital, Elmira; died, August 17, from heart disease.

Winthrop F. Thatcher ⊕ Oberlin, Ohio; University of Pennsylvania, Philadelphia, 1891; aged 45; while driving over a grade crossing, near Castalia, Ohio, August 12, was struck by an interurban car and instantly killed.

George H. Alden, Indianola, Iowa; State University of Iowa, College of Homeopathic Medicine, Iowa City, 1902; aged 44; a member of the Iowa State Medical Society; died, August 10, from carcinoma of the lung.

Edward Wagner, New York City; College of Physicians and Surgeons in the City of New York, 1891; aged 51; a member of the Medical Society of the State of New York; died, August 14, at Warrensburg, N. Y.

Jacob Wilbert Light, Kingman, Kan.; Pulte Medical College, Cincinnati, 1884; aged 60; a member of the Kingman County Medical Society; died in Santa Monica, Calif., August 12, from heart disease.

William Hervey ReMine ⊕ Lieut., M. C., U. S. Army, San Francisco; Medical College of Virginia, Richmond, 1916; aged 25; died in the Letterman General Hospital, San Francisco, August 13.

William Steed Florence, New York City; Columbia University College of Physicians and Surgeons, New York City, 1920; aged 23; an intern in Bellevue Hospital; died, August 22.

Alexander K. Berry, Burlington, Kan.; State University of Iowa, Iowa City, 1894; aged 68; while delirious, fell from a window of his house, August 18, and died, August 20.

Christian Frederick John Laase ⊕ New York City; University of the City of New York, 1894; aged 50; visiting surgeon to St. Mark's Hospital; died, August 24.

Milton Wykoff White, Sioux City, Iowa; State University of Iowa, Iowa City, 1882; Bellevue Hospital Medical College, 1888; aged 64; died, August 11.

Thomas J. Washam, Millsap, Texas (license, Texas); aged 41; was found dead at Weatherford, Texas, August 13, from a gunshot wound of the head.

Adoniram J. Osborne, Binghamton, N. Y.; Long Island College Hospital, Brooklyn, 1878; aged 74; died, August 15, from cerebral hemorrhage.

James A. Barbour, New London, Conn. (license, Connecticut State Board of Health, 1893); aged 72; died, July 28, from heart disease.

Arthur M. Shabad, Chicago; College of Physicians and Surgeons, Chicago, 1894; aged 52; died, August 23, from angina pectoris.

Josiah Ginsburg, Chicago; University of the City of New York, 1888; aged 56; died on a street car from heart disease, August 22.

Milton Cooper Egbert, Pittsburgh; Western Homeopathic College, Cleveland, 1860; aged 82; died, May 21, from senile debility.

George Henry McLin, Huntington, Ind.; Hahnemann Medical College, Philadelphia, 1871; aged 77; died, August 17.

Frank Howard Miller, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh; aged 55; died, August 24.

Edwin S. Detweiler ⊕ Chicago; Rush Medical College, 1888; aged 62; died, August 26, from carcinoma.

Michael Glennon, Stoughton, Mass.; Bellevue Hospital Medical College, 1883; aged 65; died, July 30.

Perry Gregg, Dayton, Ohio; Toledo (Ohio) Medical College, 1883; aged 80; died, August 6.

⊕ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

"SECRET REMEDIES IN AMERICA"

What the London Lancet Thinks of the Propaganda for Reform

Largely through the efforts of the British medical profession, there is at present before Parliament a bill known as the "Proprietary Medicines Bill" that has for its object the same protection of the English public against fraudulent and sophisticated drug products as is given the American public under the National Food and Drugs Act. The London *Lancet* in its issue of August 14, under the caption quoted above, discusses editorially the federal Food and Drugs Act of this country and the part that the American Medical Association had in shaping public opinion to support such a bill. We quote:

The Proprietary Medicines Bill has passed the Committee stage in the House of Lords, and this should turn English legislators to examine the success which has crowned the efforts of American reformers in a similar direction during the last 15 years. By the Federal Food and Drugs Act the sale of "misbranded" drugs became illegal. For five years it was held that a drug was misbranded if the description published on the package or label claimed a cure for diseases which in effect the drug did not cure. Later a decision of the Supreme Court confined this term to descriptions of composition and sources of origin. [Later still the Sherley amendment restored this power and penalized false and fraudulent claims for therapeutic effects.—ED.] But during those five years many significant changes appeared on the labels of proprietary medicines. California Syrup of Figs, which has preserved its old description in Great Britain even to the present day, was known in America, from the passing of the Federal Act, as Syrup of Figs and Elixir of Senna. The American also is told that the mixture contains 6 per cent. of alcohol—a fact of which many Englishmen are doubtless in ignorance. In other cases the change was more radical. The labels on Dr. Kilmer's Swamp Root as sold in England continued to assert:

"It cures enlargement of prostate gland, seminal weakness, spermatorrhea, generative debility, and general languor. Drives malarial poison out of the system . . . purifies the blood."

In America the following modest claim had to be substituted:

"It will be found very beneficial in cases of debility."

Such illustrations are instructive as evidence of the possibilities of legislation in combating this dangerous trade. The Food and Drugs Act has been in force for nearly 15 years and there are still many fraudulent and thriving concerns in America, but with English cooperation their days are now numbered. The American federal authorities are also able to prosecute any firm which can be shown to be "conducting a scheme for obtaining money through the mails by means of false and fraudulent pretences, representations and promises." Against such firms a fraud order is issued and the business is closed down. In a leading article which appeared in the *Lancet* of June 12th (p. 1274), before the present bill was introduced, we set out the amazing story of the "Medical Mail Order Frauds" in America, coupling the toast with the name of Sargol.

More than any other single organization the American Medical Association have been responsible for the advances which have been made. Their propaganda began when in the year 1905 they reprinted in booklet form a series of articles which had been appearing in *Collier's*. That was the beginning of their public campaign, although for some years previously they had directed their efforts to eliminating certain proprietary articles from the armamentarium of American practitioners. Since 1905 THE JOURNAL of the Association has published many articles exposing various nostrums and many of these articles have been reprinted. The earlier ones have also been collected into book form.[1] The Association maintains a Council on Pharmacy and Chemistry, which decides not only the therapeutic merits of the advertised prescriptions, but even the more delicate question of whether a harmless concoction is being sold at too high a price. Naturally, a chemical laboratory is kept busy analyzing and researching into the value of various orthodox and unorthodox remedies. In the matter of propaganda—for which a special department has been created—they are careful to insist that their work is educational and not punitive. Their office is richly furnished with references and cross references, stored by the card-index system, and has become a clearing house of information on medical frauds of all kinds. The poster has of late been used with success for popular education. A catalogue of these posters is sent gratis on application as well as a list of the publications of the department.

MORE MISBRANDED NOSTRUMS AND DRUG PRODUCTS

Beecham's Pills.—In January, 1919, B. F. Allen & Co., New York City, shipped to Philadelphia, 660 packages of "Beecham's Pills" which were declared misbranded under the Food and Drugs Act. Some of the claims made for the pills were:



"Beecham's Pills will cure Bilious and Nervous Disorders, Indigestion, Want of Appetite, Fulness after Meals, Vomiting, Sickness at the Stomach, Torpid Liver, Sick Headache, Cold Chills, Flushings of Heat, Lowness of Spirits, etc."

"Females from sixteen to twenty-five are often subject to serious derangements in their usual monthly periods, which are either unduly delayed or are poor and insufficient, and, if left unattended to, are followed by dire results. No medicine can be found to equal Beecham's Pills for assisting Nature at this important time."

". . . the process of eradicating the (syphilitic) poison from the system will be materially assisted by the aid of a perfectly safe but reliable searching, cleansing, purgative medicine; and nothing better for that purpose can be used than Beecham's Pills."

"Women, as soon as they find any unusual delay or departure from regularity at the proper time, should assist Nature by taking two or more Beecham's Pills morning and night."

The pills were declared misbranded because the curative claims made for them were false and fraudulent and "applied to the article with a knowledge of their falsity for the purpose of defrauding purchasers thereof." They were further declared misbranded because some of the packages contained statements indicating that the pills were manufactured in England when as a matter of fact they were made in the United States. The Philadelphia Wholesale Drug Company, which claimed the shipment, withdrew its answer to the libel and judgment of condemnation and forfeiture was entered and it was ordered by the court that the product should be released to the claimant on payment of the costs and the execution of a bond of $1,000.—[*Notice of Judgment No. 7062; issued July 26, 1920.*]

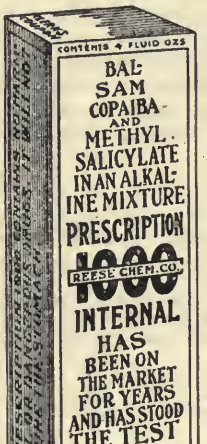
Pike's Liver, Kidney and Stomach Remedy.—In December, 1918, the Pike Medicine Company, Winston-Salem, N. C., shipped 1,186 bottles of "Pike's Liver, Kidney and Stomach Remedy" into the state of Virginia. The government chemists analyzed samples of this nostrum and reported that it was an acid, astringent solution consisting essentially of magnesium sulphate (Epsom salt), ferric chlorid, arsenous acid, hydrochloric acid, coloring matter and water. According to the claims on the label, the preparation would relieve indigestion, biliousness, kidney or bladder troubles, piles, loss

1. Nostrums and Quackery, Chicago: American Medical Association Press. Second edition, 1912. $1.

of appetite and other conditions. These claims were declared false and fraudulent. The Pike Medicine Company having consented to a decree, the court entered judgment of condemnation and forfeiture and ordered that the product should be delivered to the concern after it had paid the cost of the proceedings and executed a bond in the sum of $300.—[*Notice of Judgment No. 7071; issued July 26, 1920.*]

Ergot Apiol Compound.—The Evans Drug Co., Greensburg, Pa., shipped in July, 1918, a quantity of "Ergot Apiol Compound" which was declared misbranded. The product was labeled "Capsules Ergot Apiol Compound, Apiol 5 min., Oil Savin ½ min., Egotin 1 gr., Aloin ⅛ gr." Examination showed a shortage ranging from 18 per cent. to 25 per cent., the analysis disclosing that the product was composed of at least 50 per cent. cotton seed oil and resins from apiol and oil of savin. Misbranding was also alleged because the product was an imitation of, and was offered for sale under the distinctive name of another article; namely, "Ergot Apiol Compound." No claimant appearing for the property, the court on June 30, 1919, condemned it and ordered the United States marshal to destroy it.—[*Notice of Judgment No. 7174; issued August 13, 1920.*]

Prescription 1000.—In January, 1919, a number of packages of "Prescription 1000" consigned by the Reese Chemical Co. of Cleveland, Ohio, were seized by the federal authorities on the charge that the product was misbranded. The nostrum came in two forms, for internal and external use, respectively. The federal chemists reported that "Prescription 1000 Internal" was essentially a slightly alkaline emulsion of copaiba flavored with methyl salicylate; "Prescription 1000 External" consisted essentially of a dilute watery solution of potassium permanganate. The curative and therapeutic claims made for these products were declared false and fraudulent. In June, 1919, no claimant having appeared, the court condemned it and ordered that the product should be destroyed by the United States marshal.—[*Notice of Judgment No. 7206; issued August 16, 1920.*]



Rival Herb Tablets.—The Rival Herb Co., Detroit, Mich., in January, 1919, shipped in interstate commerce a quantity of "Rival Herb Tablets" that were misbranded. The federal chemists who analyzed this nostrum reported that the tablets consisted essentially of aloes, podophyllum resins, capsicum, buchu, and plant extractives; the tablets were coated with calcium carbonate and sugar. They were declared misbranded, first, because they were labeled "chocolate coated" when in fact they were not chocolate coated; second, because they were represented as a remedy for dyspepsia, liver and kidney disorder, rheumatism, stomach trouble, female complaint, eczema, all skin and blood diseases, constipation, loss of nervous energy, and many other conditions. These curative claims were naturally declared false and fraudulent. On June 30, 1919, no claimant having appeared for the property, the court ordered it condemned and forfeited and instructed the United States marshal to destroy it.—[*Notice of Judgment No. 7158, issued August 13, 1920.*]

Wilson's Solution Anti-Flu.—The Cooper Medicine Co., Cincinnati, Ohio, shipped in November, 1918, 900 dozen bottles of "Wilson's Solution Anti-Flu." This was labeled in part:

"A Powerful Antiseptic to be used as a preventive against Influenza, Colds and Grip. G. F. Willis Company, Atlanta, Georgia, Distributor."

The federal chemists analyzed the stuff and found it to consist essentially of oil of eucalyptus, methyl salicylate, and a small amount of thymol, or oil of thyme. The claims made on the trade package were such as to create in the mind of the purchaser the belief that the product was effective as a remedy for influenza, colds and grippe. These claims the government declared were false and fraudulent and had been applied knowingly and in a reckless and wanton disregard of their truth or falsity. On June 30, 1919, no claimant having appeared the court condemned the stuff and ordered it to be destroyed.—[*Notice of Judgment No. 7188; issued August 13, 1920.*]

Castor Oil.—The Evans Drug Co., Greensburg, Pa., shipped in December, 1918, 4½ gross of capsules of castor oil. When analyzed by the government chemist, these capsules showed a shortage in quantity varying from 6 per cent. to 22 per cent., the contents consisting of a mixture of castor oil and cotton seed oil. Because of this shortage and because of the claims made for the product, the shipment was declared adulterated and misbranded. No claimant appearing for the property, the court on June 30, 1919, condemned it and ordered it destroyed by the United States marshal.—[*Notice of Judgment No. 7192; issued August 13, 1920.*]

Correspondence

"CONDITIONS IN THE INDIAN MEDICAL SERVICE"

To the Editor:—Having lived in New Mexico for forty years, I am necessarily interested in the communication of Frederick L. Hoffman (THE JOURNAL, Aug. 14, 1920, p. 493) regarding the Indian Medical Service. Much of what he says is true. As in other branches of government service, there is nothing to attract physicians save a feeling of public spirit.

I live within 13 miles of a Pueblo population of about 1,000. The government physician in charge lives 40 miles away and has several Pueblos under his charge scattered at distances varying from 10 to 40 miles. It is impossible for him to supervise health matters properly, and to combat tribal customs and prejudices. In this particular instance he is able to visit the village once a month. You can well imagine the consequences. Much as he might work, his results are nullified by racial traditions and ignorance, so the matter comes down to a question of general education of the individual Indian, and until that is attained, no results in the matter of health can be expected.

I am glad to be able to state that the majority of Indian service physicians are capable and well meaning. They are handicapped by interminable red tape and insufficient salaries, however, and the department seems to take a vicious delight in "spurring a willing horse." The trouble lies in Washington, and the circumlocution office.

JAMES H. WROTH, M.D., Jemez Hot Springs, N. M.

HYPODERMIC INJECTION OF SODIUM CACODYLATE

To the Editor:—Hypodermic administration of sodium cacodylate is rendered painless by the addition in the syringe of about 5 minims of a 1 per cent. solution of procain. The burning is overcome and soreness much reduced.

I used sodium cacodylate for several years, but was practically always confronted with the complaint of severe pain or a severe ache, at the point of injection, lasting several minutes. This necessitated abandoning treatment in many nervous patients and particularly in children; also in cases of extreme emaciation, such as is found in pernicious anemia and tuberculosis. Until I myself was compelled to be at the "sharp end" of the needle, in the use of sodium cacodylate, I did not realize that this burning, especially from the stronger solutions, was quite so intense. The common idea that injections in the muscle are painless is incorrect.

At first I diluted the solution with plain sterile water. Then it occurred to me to use a solution of procain in connection with the arsenical preparation. The result was extremely gratifying to me and has been so to numerous other victims requiring this valuable medicament.

A 1 per cent. solution of procain will not precipitate the ordinary dose of sodium cacodylate. Stronger solutions, however, will do so.

A. A. ROBINSON, M.D., Ogden, Utah.

REMOVAL OF ADHESIVE PLASTER WITH GASOLINE

To the Editor:—In a recent note, Dr. J. H. Carstens, in advocating the use of adhesive plaster in closing abdominal incisions, says: "In ten or twelve days the plaster comes off easily and the patient does not complain, or only slightly. It can be soaked with alcohol, but the alcohol hurts more than removing the plaster without it." If an advocate of the use of plaster is not familiar with a better way of removing it, certainly there are many others to whom this note may give a hint. Take a little gasoline in a common medicine dropper, scratch up with one's finger nail the tip of a corner of the plaster, let a drop of gasoline flow under the edge, and instantly an inch of plaster will loosen. Another drop will remove the next inch, and so on. A bit of gauze held in place by plaster makes the best dressing for nearly all wounds or incisions about the eyes, face, neck, hands, etc. The plaster dressing can be removed daily, if desired, with absolutely no discomfort to the patient. If one once begins to use plaster, he will soon find that he has but little use for the slipping bandage.

ALANSON J. ABBE, M.D., Fall River, Mass.

To the Editor:—In THE JOURNAL, July 24, Dr. J. H. Carstens suggested that adhesive plaster be used in closing abdominal incisions. He speaks of removing the plaster at the end of ten or twelve days, if necessary by soaking it with alcohol, which is not altogether satisfactory, as "the alcohol hurts more than removing the plaster without it." If one will use gasoline instead of alcohol, wiping the plaster over with it, and then with a little gasoline soaked gauze or cotton peeling the plaster back from the skin, beginning at the edges, until it has been removed entirely, the patient will be happy and so will the physician. Cleansing the plaster accumulation at the edges of the strips in the same manner is easy. Some years ago I found that this worked so well that I adopted it as a routine. It is certainly a satisfaction to avoid the needless, nagging discomfort of plaster removals in so simple a manner.

R. E. DICKSON, M.D., Holyoke, Mass.

HISTORY OF THE MOSQUITO THEORY

To the Editor:—About Nov. 1, 1912, I submitted a brief note in regard to early observations on the relation between mosquitoes and yellow fever. I stated that I had seen an interesting reference to the subject in an old copy of either the *Edinburgh Review* or the *London Quarterly Review.* I attempted to quote the article from memory, and now I find that I made several errors in doing so. Commenting on the article, you stated that you had written to the Library of Congress and had had both the *Edinburgh Review* and the *London Quarterly Review* searched for the article on yellow fever, and that the library had reported that no reference to a mosquito theory had been found. In March, 1920, I chanced to be in Washington and, recalling the facts, visited the Library of Congress and asked for an index of the *Edinburgh Review.* I was rewarded by promptly finding the article (Quarantine, Smallpox and Yellow Fever, *Edinburgh Review* **98**:206 [July-Oct.] 1853). I desire to call attention to the fact that this article quotes original observations made by Dr. Blair, of the British Medical Service, as is evident from the following brief quotation:

> In December, 1843, the Mate of the "Matilda Luckie" was admitted with the gravior form of the disease and of a low type of which he died. His bed was in a sheltered corner of No. 2 and had mosquito netting all around. Into this bed a seaman named Broughton, who was admitted for disease other than yellow fever—a slight indisposition—was put for several days without any infection of any kind following. The writer states further that the experiment was repeated many times and invariably gave the same results.

I am glad to bring this to your attention, even though eight eventful years have passed over our heads since the first squib appeared. I find that I was in error in regard to the year as well as to the author, but I still feel that the matter is of some interest.

FRANK J. MCKINLEY, M.D., Philadelphia, Miss.

[COMMENT.—In answer to the earlier letter referred to in the foregoing, THE JOURNAL, Nov. 9, 1912, p. 1733, briefly sketched the history of the mosquito theory. A quotation from the Sanskrit Susruta (fifth century, A. D.) was cited as a fairly clear statement of the mosquito hypothesis in relation to the causation of "chills and fever." Reference was made to the fact that in 1848, Josiah Clark Nott of South Carolina already regarded the mosquito as a vector of yellow fever, so far as his own observations were concerned, and that in 1854, Louis Daniel Beauperthuy described the *"Zancudo bobo* à pattes rayées de blanc" as the agent of transmission. Granting that the author of the sentences quoted by our correspondent intended thereby to advance the theory of mosquito transmission, the passage is of interest as an early casual hint to the possible relation of mosquitoes to yellow fever.—ED.]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

ACTION OF ARSPHENAMIN ON LEPTOSPIRA ICTEROIDES

To the Editor:—I shall be obliged to you for letting me know whether any experimental investigations have been made on the action of arsphenamin on *Leptospira icteroides* which would furnish a scientific basis for its application to the treatment of yellow fever, as tried in Brazil. See THE JOURNAL, Sept. 27, 1919, p. 1020. If possible, I should like a list of references.

A. B. VASCONCELOS, M.D., Mexico City.

ANSWER.—In an extensive review of the use of arsphenamin in nonsyphilitic diseases (THE JOURNAL, Sept. 4, 1920, p. 645) Reasoner and Nichols discuss its applicability to the treatment of yellow fever (p. 647) and give citations to the literature.

"BIOGRAPHIES OF PHYSICIANS NOMINATED FOR THE HALL OF FAME"

To the Editor:—In THE JOURNAL, August 28, p. 626, it is stated that "Frank Abbott is not found in any available list of prominent physicians." Dr. Abbott was born at Shapleigh, Maine, in 1837. He was graduated from the New York University Medical College in 1871. He was dean of the New York College of Dentistry from 1871 to 1897. He was a member of the New York County Medical Society and the New York Academy of Medicine. He died, April 20, 1897. He was the author of several works on oral surgery, and always followed closely oral surgery in his practice. His biography appears in several works on prominent men of the United States. I am his son.

FRANK ABBOTT, M.D., Baltimore.

P. A. Surgeon, U. S. P. H. S.

Poverty and Tuberculosis.—Consumption is with us all. Some races, some families, some individuals are more susceptible or less resistant than others, and with them the tubercle bacillus can thrive. There is no one cause to account for this lack of resistance in some. Of all causes the greatest are those which come under the heading of poverty.—L. S. T. Burrell, *J. State Med.*, December, 1919.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 7. Sec., Dr. Harry C. De Vighne, Juneau.
ARIZONA: Phoenix, Oct. 5-6. Sec., Dr. Ancil Martin, Phoenix.
COLORADO: Denver, Oct. 5. Sec., Dr. David A. Strickler, Denver.
DISTRICT OF COLUMBIA: Washington, Oct. 12-15. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.
GEORGIA: Atlanta, Oct. 12-14. Sec., Dr. C. T. Nolan, Marietta.
IDAHO: Boise, Oct. 5. Commissioner, Hon. Robert O. Jones, Boise.
HAWAII: Honolulu, Sept. 6-10. Sec. Dr. R. W. Benz, 1141 Alakea St., Honolulu.
ILLINOIS: Chicago, Sept. 20-23. Director, Francis W. Shepardson, State House, Springfield.
IOWA: Des Moines, Sept. 15-17. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.
KANSAS: Topeka, Oct. 12-13. Sec., Dr. H. A. Dykes, Lebanon.
MASSACHUSETTS: Boston, Sept. 14-16. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.
MICHIGAN: Lansing, Oct. 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.
MINNESOTA: Minneapolis, Oct. 5-7. Sec., Dr. Thomas S. McDavitt, St. Paul.
MONTANA: Helena, Oct. 5. Sec., Dr. S. A. Cooney, Helena.
NEW HAMPSHIRE: Concord, Sept. 9-10. Sec., Dr. Charles Duncan, Concord.
NEW MEXICO: Santa Fe, Oct. 11-12. Sec., Dr. R. E. McBride, Las Cruces.
NEW YORK: Albany, Buffalo, New York and Syracuse, Oct. 4-7. Assistant Prof. Examinations, Mr. Herbert J. Hamilton, Albany.
OKLAHOMA: Oklahoma City, Oct. 13-14. Sec., Dr. Jas. M. Byrum, Shawnee.
PORTO RICO: San Juan, Oct. 5. Sec., Dr. M. Quevedo Baez, San Juan.
RHODE ISLAND: Providence, Oct. 7-8. Sec., Dr. Byron W. Richards, Providence.
WEST VIRGINIA: Charleston, Oct. 12. Sec., Dr. S. L. Jepson, Charleston.

District of Columbia July Examination

Dr. Edgar P. Copeland, secretary, District of Columbia Board of Medical Supervisors, reports the oral and written examination held at Washington, July 13-15, 1920. The examination covered 16 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 26 candidates examined, 24 passed and 2 failed. Three physicians were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University		(1920)	80.5, 83.3, 85.2
George Washington University		(1919)	80.2, (1920) 78.7, 79.1, 80.1, 80.8, 82.3, 82,6, 84.3, 84.7, 84.7, 85, 85.3, 86.1, 86.2.
Howard University School of Medicine		(1919)	76.7, 81.8
College of Physicians and Surgeons, Baltimore		(1914)	78.5
Kansas City University of Physicians and Surgeons		(1920)	77.7
Washington University of St. Louis		(1906)	80.3
Columbia University		(1915)	88
Cornell University		(1918)	85.8
	FAILED		
Howard University School of Medicine		(1919)	65.8
University of Maryland		(1918)	74

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Howard University School of Medicine		(1909)	Virginia
Jefferson Medical College of Philadelphia		(1916)	New Jersey
University of Virgina		(1916)	Virginia

New Mexico July Examination

Dr. R. E. McBride, secretary, New Mexico State Board of Medical Examiners, reports the oral examination held at Santa Fe, July 12-13, 1920. The examination covered 13 subjects and included 100 questions. An average of 75 per cent. was required to pass. Three candidates were examined, all of whom passed. Ten candidates were licensed on diploma and two on reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Hahnemann Medical College and Hospital of Chicago		(1919)	75.1
North Carolina Medical College		(1916)	83
University of Louisville		(1907)	82.4

College	LICENSED ON DIPLOMA	Year Grad.
University of Colorado		(1918)
Indiana Medical College		(1906)
Tulane University		(1901)
Barnes Medical College		(1897)
University of Nebraska		(1910)
Long Island College Hospital		(1871)
Davidson School of Medicine		(1899)
Starling Medical College		(1903)
Jefferson Medical College of Philadelphia		(1896)
Medical College of Virginia		(1918)

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Homeopathic Medical College of Missouri		(1902)	Kansas
University of Tennessee		(1909)	Tennessee

Kansas February Examination

Dr. Henry A. Dykes, secretary, Kansas State Board of Medical Registration and Examination, reports the written examination held at Topeka, Feb. 12, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 8 candidates examined, 6 passed and 2 failed. Twenty-seven candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Rush Medical College		(1917), (1920, 2)	3
Johns Hopkins University		(1919)	1
Columbia University		(1918)	1
University of Wuerzburg		(1896)*	1
	FAILED		
University of Heidelberg		(1914)*	1
Medical College of Kansas City		(†)*	1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
George Washington University		(1915)	Dist. Colum.
Georgetown University		(1891)	Penna.
Northwestern University		(1918)	Illinois
Rush Medical College (1905) Indiana, (1914), (1915), (1916)			Illinois
University of Illinois		(1913) Illinois, (1917)	Wisconsin
University of Louisville		(1909)	Kentucky
Tulane University of Louisiana		(1913) Missouri, (1918)	Louisiana
Harvard University		(1917)	Mass.
University of Michigan		(1916)	Michigan
Barnes Medical College		(1903)	Missouri
Kansas City Medical College		(1900)	Oklahoma
Kansas City Hahnemann Medical College		(1916)	Arkansas
St. Louis University		(1911), (1913)	Missouri
Union Medical College of Kansas City		(1907)	Missouri
Washington University		(1912), (1917)	Missouri
John A. Creighton Medical College		(1916)	Nebraska
Eclectic Medical College, Cincinnati		(1919)	Nebraska
Woman's Medical College of Pennsylvania		(1895)	Penna.
University of West Tennessee		(1915)	Missouri
Milwaukee Medical College		(1909)	Wisconsin

* Graduation not verified.
† No date given.

Louisiana June Examinations

Dr. E. W. Mahler, secretary, Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, June 10-12, 1920. The examination covered 12 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 71 candidates examined, 69 passed and 2 failed. Nine candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Arkansas Industrial University		(1889)	80
University of Arkansas		(1920)	83.3
University of Louisville		(1920)	87
Tulane University of Louisiana		(1920)	75, 80.2, 80.4, 81.3, 81.7, 81.8, 82, 82.1, 82.3, 82.7, 83.1, 83.3, 84, 84, 84, 84, 84.4, 85, 85, 85, 85.4, 85.6, 85.7, 86, 86, 86.5, 86.5, 86.9, 87, 87, 87, 87, 87.4, 87.5, 87.7, 88, 88, 88, 88, 88.2, 88.5, 88.8, 88.9, 89, 89, 89.4, 89.5, 89.8, 90, 90, 90, 90.3, 90.7, 90.9, 91, 92.
University of Maryland		(1910)	82
University of Pennsylvania		(1916)	85.1
College of Physicians and Surgeons, Memphis		(1910)	75
Meharry Medical College		(1920)	77.3
Memphis Hospital Medical College		(1906)	69*
Vanderbilt University		(1917) 86, (1920)	81
University of Edinburgh		(1916)	91 †
	FAILED		
Meharry Medical College		(1917) 44.2, (1918)	67

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Atlanta Medical College		(1915)	Georgia
Kentucky School of Medicine		(1907)	Arkansas
University of Louisville		(1908) Alabama; (1912)	Kentucky
University of Maryland		(1907)	Maryland
University of Cincinnati		(1919)	Kentucky
Jefferson Medical College of Philadelphia		(1898)	Georgia
University of Tennessee		(1917)	Arkansas
University of Texas		(1918)	Texas

* Thirteen per cent. allowed for years of practice.
† Temporary permit until completion of citizenship. Graduation not verified.

Book Notices

GEORGE MILLER STERNBERG; A BIOGRAPHY. By His Wife, Martha L. Sternberg. Cloth. Price, $5. Pp. 232, with illustrations. Chicago: American Medical Association, 1920.

From 1893 until 1902, General Sternberg was Surgeon-General of the United States Army. Some of his conspicuous achievements were the creation of the army medical school, organization of the army nurse corps and dental corps, establishment of the tuberculosis hospital at Fort Bayard, and the direction of the United States Army Medical Corps during the Spanish-American War. However, aside from his part of official leadership, he had already done much important bacteriologic work, and in the evening of his life after his retirement from active duty in the army, he interested himself in social service work with results to which the city of Washington will bear grateful witness even today. He is fortunate in having as his biographer his wife, Martha L. Sternberg, sharer in his trials and achievements, a sympathetic partner who reveals a grace of literary style and judgment seldom found in such intimate biographies.

The biography sketches Dr. Sternberg's early life, his Civil War record, his studies after the war and various stations which he held, an account of a trip to Europe, Indian battles, etc., and then in Chapter VIII comes an account of the beginning of Dr. Sternberg's scientific research. He was a member of the first yellow fever commission, did some work on malaria, discovered the pneumococcus, and did work on disinfectants which resulted in his receiving the Lomb prize. In 1893 he was appointed Surgeon-General, and without doubt succeeded, during his administration, in introducing into the corps the scientific spirit which was his greatest delight. In 1897 he became president of the American Medical Association. Unfortunately, his duties in the Spanish-American War prevented his attendance at the annual session in Denver. In his annual address, he displayed a general knowledge of medical interests surprising in a man whose work had been predominantly that of a single bureau of the government.

The Spanish-American War naturally receives much attention in the book, as do also sanitation and hygienic work in the Philippine Islands. On his retirement as Surgeon-General, Dr. Sternberg interested himself particularly in housing and antituberculosis work in Washington.

The American Medical Association has done a service to American medicine in publishing this biography. It has placed on permanent record the achievements of an American physician who was a practical leader, a pioneer among American army surgeons in the study of bacteriology, a clear thinker and an admirable character. As the great historian Sudhoff says: "The intuition of the true investigator and pathfinder of today and tomorrow must find its own way to new guiding principles from the work of yesterday, before yesterday, and the distant past."

MANUAL OF PSYCHIATRY. Edited by Aaron J. Rosanoff, M.D., Clinical Director, Kings Park State Hospital, N. Y. Fifth edition. Cloth. Price, $4. Pp. 684. New York: John Wiley & Sons, 1920.

This manual first appeared in 1905 as a translation of the French "Manuel de psychiatrie," by J. Rogues de Fursac. In the successive editions, material by the translator has been added. In the present one he has contributed chapters on psychanalysis, psychoneuroses, extramural psychiatry, intelligence and association tests, and other subjects. Professor Hollingworth of Columbia University writes on certain psychologic aspects; Miss Mary C. Jarrett, on the application of sociology in psychiatry, and Dr. Clarence A. Neymann contributes an appendix dealing with lumbar puncture, cell count, and chemical tests of cerebrospinal fluid. These additions are useful and add to the value of the book for purposes of reference; but the Kent-Rosanoff association tests and the Stanford revision of the Binet-Simon intelligence scale are given so much space that the book has lost some of its original proportions as a well balanced and concise manual. Seventy-eight pages are devoted to the association tests, only thirty-two pages to dementia praecox, and twenty-five to manic-depressive insanity. The discussion of these diseases, however, is excellent, and altogether the book gives in a clear and entertaining manner an up-to-date account of the various mental disorders, both those technically belonging to insanity, and those on the borderland. The material is so well classified and subdivided that the reader will have no difficulty in selecting what he needs at a given time, whether he may be looking for practical points concerning the diagnosis or management of a particular type of insane patient, or for modern psychologic interpretations. Numerous and definite references to important articles in the literature are a great help to readers in search of more detailed data.

UEBER DIE SYMPTOMATOLOGIE UND THERAPIE DER MAGEN UND DUODENALGESCHWÜRE. Von Dr. Eugen Rosenthal, Assitent der Klinik, Paper. Price, 12 marks. Pp. 72, with 81 illustrations. Berlin: S. Karger, 1920.

The author presents a systematic study of 326 cases of ulcer observed at a clinic in Budapest over a period of three and one-half years. The symptoms and diagnostic signs are carefully analyzed. Emphasis is laid upon the need for prolonged study of the doubtful cases and especially upon repeated examination of the stools for occult blood, when the patient is on a meat-free diet. During the three and one-half years, 3,500 patients presented themselves at the clinic, and a diagnosis of ulcer was made 326 times. This is about 10 per cent. of all the cases. Attention is called to the frequency of ulcer on the lesser curvature. In the history of the case and in the physical or chemical examination there is no constant outstanding feature which is positive, except the roentgen-ray evidence. The roentgen ray did not present any evidence of ulcer in some of the cases. The medical treatment is given only in outline. Several cases under prolonged medical management showed healing of the ulcer crater, and successive roentgenograms are reproduced to demonstrate that this really occurs. Statistics are presented to prove that the majority of ulcers heal under medical management, and that surgical measures are indicated only in the minority. The recommendation of the author for prolonged medical treatment for large penetrating ulcers of the lesser curvature seems risky because of the great danger of such ulcers to undergo a carcinomatous change.

STANDARDS AND TESTS FOR REAGENT CHEMICALS. By Benjamin L. Murray. Cloth. Price, $3. Pp. 385. New York: D. Van Nostrand Company, 1920.

It is of vital interest to both physician and patient that the medicinal substances prescribed shall be of standard strength and purity. These facts can be determined only by the proper use of reagents in the hands of competent chemists. Hence the purity of reagents is of indirect interest to physicians. Although the preface does not so state, this book is evidently a rewriting and elaboration of Schenek's translation of the second German edition of Merck's "Prüfung der Chemischen Reagenzien auf Reinheit." What appears to have been a predecessor of the German work was Krauch's "Die Prüfung der Chemischen Reagentien auf Reinheit," which was translated into English by William and Dupré. The present book, therefore, appears to be little more than a late revision of these earlier works. It is regrettable that credit has not been given to the earlier authors, since the book might be taken for an original publication. In addition to the specific tests for impurities in chemicals, considerable information is given concerning the physical properties of chemicals, the actions of light on them, and the precautions necessary in their storage, all of which is of value to the analyst. Maximum limits of permissible impurities are given, but it does not appear by what authority these standards have been established. Since mention of the book is being used in the trade advertisements of a particular brand of reagent chemicals, it is presumable that the standards suggested are the arbitrary requirements adopted by the manufacturing house, of which the author is an employee. Standards for reagents should, of course, be established by law by a centralized governmental authority, such as the Bureau of Standards; but, since there is no provision for such work by the government, the standards adopted by manufacturers must be accepted in lieu of less biased ones. The book will be useful to analysts and manufacturers but only indirectly to physicians.

Medicolegal

Sufficient Evidence of Surgeon Exceeding Authority

(Wells v. Van Nort (Ohio), 125 N. E. R. 910)

The Supreme Court of Ohio says that the plaintiff, Mrs. Van Nort, sued defendant Wells, in the court of common pleas, alleging that she had employed him as a surgeon to perform an operation for appendicitis, but that he had, in addition to removing the appendix, removed both of her fallopian tubes without her knowledge or consent. The defendant answered, admitting that he had performed the surgical operation on the plaintiff, but denying every other allegation in the petition. The general purport of the plaintiff's testimony was to the effect that prior to the operation she was in good health, but about that time she suffered her first attack from a cause diagnosed by the defendant as appendicitis; that he said that the operation would be merely a scratch; that the incision would be large enough for the insertion of two fingers only; that the only operation which she consented to was an operation for appendicitis; that none other was talked about or intended at the time of the diagnosis; and that in the course of such operation, while the plaintiff was under an anesthestic, the defendant removed both of her fallopian tubes, which he claimed to have found in a diseased condition. The plaintiff's husband testified that he was present in the hospital during the time of the operation, and that he heard nothing about the diseased character of the tubes until the surgeon told him about them after the operation, when the surgeon said to him: "I found her tubes in bad shape and I removed them. I could have treated them, but the chances are that she might have been in the hospital two or three months; so I thought I had better take them out." The testimony further disclosed that the removal of the fallopian tubes would produce sterility and prevent conception. On the trial, the plaintiff having introduced her evidence and rested her case, a motion of the defendant to arrest the testimony from the jury was sustained by the court, on the ground that there was not evidence sufficient to submit the case to the jury. The court thereupon entered judgment in favor of the defendant. This judgment was reversed by the court of appeals, and the case remanded to the court of common pleas for further proceedings, after which error was prosecuted to the supreme court to reverse the court of appeals. For the purpose of this case the supreme court must take the testimony produced by the plaintiff on the trial as true. It was incumbent on her to prove that she did not consent, either expressly or impliedly, to that part of the operation which resulted in the removal of the fallopian tubes. It appeared that her only express assent was to the operation for appendicitis. Whether there was such an assent, either express or implied, was a question of fact for the jury. Since the plaintiff's testimony tended to prove that there was no express assent to the removal of the fallopian tubes, but that the only operation discussed was for appendicitis, and that the fallopian tubes could have been treated by the surgeon in two or three months' time at the hospital, the case should have been submitted to the jury. Wherefore the judgment of the court of appeals is affirmed by the supreme court.

Unconstitutional Provision for Vasectomy

(Mickle v. Henrichs et al. (Nev.), 262 Fed. R. 687)

The United States District Court in Nevada, in rendering a decree in favor of the plaintiff, restraining the warden and the physician of the Nevada State Prison from performing the operation of vasectomy on the plaintiff, holds that the Nevada statute which provides that "Whenever any person shall be adjudged guilty of carnal abuse of a female person under the age of 10 years, or of rape, or shall be adjudged to be an habitual criminal, the court may, in addition to such other punishment or confinement as may be imposed, direct an operation to be performed on such person, for the prevention of procreation: Provided, the operation so directed to be performed shall not consist of castration," violates the provision of the state constitution forbidding cruel or unusual punishments. The court says that, Mickle, having pleaded guilty to the charge of rape, was sentenced to be imprisoned in the Nevada State Penitentiary for an indefinite period of not less than five years, and it was also ordered as a part of the judgment that an operation be performed on his person sufficient to deprive him of the power of procreation.

It appeared from the record that Mickle was an epileptic. That fact was accorded considerable weight by the court in pronouncing judgment. Possibly in the exercise of its police power, it may be lawful for the legislature to adopt reasonable measures, adequate and sufficient to prevent degenerates and persons afflicted with transmittable mental defects, physical disease, or criminal tendencies from begetting children; but legislation of that character must operate on all unfortunates of the same class, and the classification must operate reasonably with relation to the end sought to be accomplished.

If the purpose of the Nevada statute be to prevent the transmission of criminal tendencies, it must be noted that it does not apply to all convicted offenders, not even to all who are habitual criminals, or to all persons adjudged guilty of rape or carnal abuse of female children, but only to such habitual criminals and persons guilty of rape as the court, in the exercise of a discretion, which is in no wise directed by the statute, may designate. It is a notorious fact that many judges do not regard mutilation as a wise or lawful method of punishment. It is only those of the contrary opinion who will prescribe vasectomy as a part of the punishment for this offense. Again, it is doubtful whether our penal institutions contain more than a small minority of those undesirables who are inclined to lawlessness and crime. It is easy, too, to imagine that a brute guilty of rape, or who has a tendency to commit such a crime, might regard it rather an advantage than otherwise to be sterilized. As a preventive of this crime, vasectomy is without effect. Once free, the convict who has been so punished is still capable of committing the offense. These considerations, however, were beside the issue. There was no attempt by the defendants to support the judgment on the ground that vasectomy is calculated to promote the general welfare.

Vasectomy in itself is not cruel; but, when resorted to as punishment, it is ignominious and degrading, and in that sense is cruel. Certainly it would be unusual in Nevada. Reformation of the criminal is a wise and humane purpose of the law, to be disregarded only when the death penalty is inflicted. It needs no argument to establish the proposition that degrading and humiliating punishment is not conducive to the resumption of upright and self-respecting life. True, rape is an infamous crime, and the punishment should be severe; but even for such an offender the way to an upright life, if life is spared, should not be unnecessarily obstructed. For him, and for society, a fair opportunity to retrieve his fall is quite as important as the eugenic possibilities of vasectomy.

Society Proceedings

COMING MEETINGS

Am. Acad. of Ophthal. and Otolaryng., Kansas City, Mo., Oct. 14-16.
Amer. Assn. of Electro-Therapy & Radiology, Atlantic City, Sept. 14-17.
Amer. Assn. of Obstetricians and Gynecologists, Atlantic City, Sept. 20-22.
American Association of Railway Surgeons, Chicago, Oct. 6-8.
American Child Hygiene Association, St. Louis, Mo., Oct. 11-13.
American Public Health Association, San Francisco, Sept. 13-17.
American Roentgen Ray Society, Minneapolis, Sept. 14-17.
Colorado State Medical Society, Glenwood Springs, Sept. 7-9.
Delaware State Medical Society, Wilmington, Oct. 11-12.
Indiana State Medical Association, South Bend, Sept. 23-25.
Kentucky State Medical Association, Lexington, Sept. 27-30.
Medical Association of the Southwest, Wichita, Kan., Sept. 27-29.
Minnesota State Medical Association, St. Paul, Sept. 29-30.
Missouri Valley, Medical Society of the, Omaha, Neb., Sept. 6-7.
New England Surgical Society, Providence, R. I., Oct. 6-7.
New Mexico Medical Society, Roswell, Oct. 15-16.
Pennsylvania, Medical Society of the State of, Pittsburgh, Oct. 4-7.
Utah State Medical Association, Ogden, Sept. 7-8.
Vermont State Medical Society, Rutland, Oct. 7-8.
Washington State Medical Association, Tacoma, Sept. 16-17.
Wisconsin, State Medical Society of, La Crosse, Sept. 8-10.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

March 15, 1920, **27**, No. 1

Studies on Striped Muscle Structure. H. E. Jordan, Charlottesville, Va.—p. 1.
Study of Lipoid Content of Kidney Tubule. C. Smith, Ithaca, N. Y. —p. 69.

May 15, 1920, **27**, No. 2

Criticism of Theories of Pulmonary Evolution in Mammalia. G. S. Huntington, New York.—p. 99.
Development of Uterine Glands in Man. E. A. Baumgartner, M. T. Nelson and W. Dock, St. Louis.—p. 203.
Reactions of Cells in Tail of Amphibian Larvae to Injected Croton Oil (Aseptic Inflammation). E. R. Clark and E. L. Clark, Columbia, Mo.—p. 221.

American Journal of Ophthalmology, Chicago

March, 1920, **3**, No. 3

Anomalous Condition of Ocular Fundus. W. C. Finnoff, Denver.—p. 161.
Alterations in Twilight Vision in Occupational Nystagmus. L. Weekers, Liege, Belgium.—p. 162.
Improved Method for Total Enucleation of Eyeball. F. Krauss, Philadelphia.—p. 166.
Effect of Nose and Throat Infections on Ocular Functions of Aviators. C. Berens, New York, and C. T. Uren, Omaha.—p. 170.
Eye Lesions Produced by Light Rich in Ultraviolet Rays. Senile Cataract, Senile Degeneration of Macula. J. Van der Hoeve, Leyden, Holland.—p. 178.
Nasal Infection Basis of Certain Ocular Lesions. J. B. Potts, Omaha. —p. 195.
Practical Observations on Refraction. I. W. Haughey, Aurora, Neb. —p. 197.
Heterophoria and Heterotropia. W. Walter, Chicago.—p. 201.

American Journal of Public Health, Boston

August, 1920, **10**, No. 8

Nation's Greatest Need: A National Department of Health. S. Harris, Birmingham, Ala.—p. 633.
Program for Organizing and Coordinating Industrial Clinics. B. J. Newman, Washington, D. C.—p. 637.
Biology of Pfeiffer Bacillus. E. O. Jordan, Chicago.—p. 648.
Health Quotations. J. A. Tobey, Washington, D. C.—p. 649.
Types of Fatigue. P. G. Stiles, Boston.—p. 653.
Anthrax Problem in Massachusetts. S. H. Osborn, Hartford, Conn. —p. 657.
*Application of Vaccines in Public Health Work. G. W. McCoy, Washington, D. C.—p. 666.
Relation of School and Special Feeding to Defective Nutrition. J. C. Gebhart, New York.—p. 669.
What is the Matter with Public Health? H. W. Hill, St. Paul, Minn. —p. 673.

Vaccine Therapy in Influenza.—Speaking of influenza vaccines, McCoy says that his own experiments and those carried out by persons closely associated with the Hygienic Laboratory were all carefully controlled and in every instance failed to show any evidence in favor of the vaccine, whether the latter was made from Pfeiffer's organism alone or included, in addition, pneumococci and streptococci. Some of the most careless work McCoy and his associates have ever encountered has been in connection with this subject of vaccination against influenza and its complications.

Archives of Internal Medicine, Chicago

July, 1920, **26**, No. 1

*Study of Renal Function and Associated Disturbance in Acid-Base Equilibrium of Blood in Certain Experimental and Naturally Acquired Nephropathies. W. deB. MacNider, Chapel Hill, N. C.—p. 1.
*High Protein Diets and Arteriosclerosis in Rabbits. L. H. Newburgh and T. L. Squier, Ann Arbor, Mich.—p. 38.
*Alkali Reserve in Pellagra. M. X. Sullivan and R. E. Stanton, Spartanburg, S. C.—p. 41.
*Recovery from Tuberculous Meningitis After Treatment with Intraspinal Injections of Antimeningococcic Serum. A. W. Hollis and I. H. Pardee, New York.—p. 49.
Lethargic Encephalitis: Symptomatology and Histopathology. E. M. Hammes, St. Paul and J. C. McKinley, Minneapolis.—p. 60.
Trench Fever. H. F. Swift, New York.—p. 76.
*Study of Phosphate Retention from Standpoint of Blood Analysis. W. Denis and A. S. Minot, Boston.—p. 99.
New Electrode for Use in Clinical Electrocardiography. A. E. Cohn, New York.—p. 105.
Frozen Sections from Case of Protruding Aneurysm of Arch of Aorta. G. W. Norris and G. Fetterolf, Philadelphia.—p. 114.
*Results of Antemortem Lung Punctures in Lobar Pneumonia.—H. M. Thomas and F. Parker, Boston.—p. 125.

Relation of Kidney Function to Normal Acid Base Equilibrium.—From anatomic and functional observations the inference is drawn by MacNider that the tubular epithelium is of more importance in maintaining a normal acid base equilibrium of the blood, and is more concerned with the elimination of phenolsulphonephthalein, urea and creatinin than is the vascular mechanism of the kidney. The investigation, which has been concerned with certain functional and anatomical studies in different types of nephropathic processes, tends to minimize the importance of the glomerulus as a functional unit and to emphasize the relative importance of the tubular epithelium. The investigation furthermore points out the influence of a disturbance in the acid base equilibrium of the blood on the histology and functional capacity of the renal epithelium.

High Protein Diets and Arteriosclerosis.—An examination of the aoras of fifty-nine rabbits showed that arteriosclerosis of the aorta is a very uncommon lesion in untreated rabbits. In a group of rabbits fed a high protein diet the diet either directly or indirectly was the cause of an arteriosclerosis. The microscopic appearance of the lesion was that of an advanced intimal atherosclerosis in varying stages up to and including secondary atheromatous change with cholesterin formation. This description tallies with true arteriosclerosis as it occurs in the human being.

Alkali Reserve in Pellagra.—Of the fifty-six patients tested by Sullivan and Stanton for alkali reserve by the alveolar air method and by the determination of the carbon dioxid bound by the blood plasma, none showed a marked depletion of the alkali reserve, about one-third showed a slightly subnormal level, while the greater number were within normal limits. There would seem to be little uncompensated acidosis in pellagra.

Antimeningococcic Serum in Tuberculous Meningitis.—There are reported in the literature thirty-eight undoubted cases of cured tuberculous meningitis, and fifteen in which the diagnosis is doubtful. Except for these cases, the treatment as shown by hospital statistics has been 100 per cent. ineffectual. Hollis and Pardee employed intraspinal injections of antimeningococcic serum, combined with frequent spinal drainage, and report two cases of tuberculous meningitis and two others possibly tuberculous meningitis showing recovery under this method.

Phosphate Retention in Nephritis.—A study of the inorganic phosphate content of plasma made by Denis and Minot showed that about 65 per cent. of the nephritic and cardiorenal cases, taken at random from the material found in the hospital wards, gave unmistakable evidence of phosphate retention. Fatal cases showed a rapid and progressive increase in plasma phosphate, increases of more than ten times the maximum normal value having been noted; the nonfatal cases, even though the patient was seriously ill, presented a relatively slight increase. The results obtained suggest the possible prognostic importance of the determination of inorganic phosphates in the plasma of persons suffering from nephritis and allied disorders.

Lung Puncture in Lobar Pneumonia.—A study of lung punctures performed at different stages of lobar pneumonia made by Thomas and Parker shows that the death of the organisms in the lung does not occur, in every case, at the time of crisis, but may occur several days before or after crisis. This leads to the belief that the antibacterial forces may proceed at one rate of speed while the detoxifying mechanism is going on at a different rate. The nature of the toxic substance in lobar pneumonia is imperfectly understood but the demonstration of toxic split proteins does not finally rule out the possibility of a true toxin-antitoxin reaction.

Boston Medical and Surgical Journal

Aug. 5, 1920, **183**, No. 6

Diagnosis and Treatment of Hemorrhagic Diseases. R. C. Larrabee, Boston.—p. 151.
Use of Quartz Light in Dermatology. E. L. Oliver, Boston.—p. 155.
Ductless Gland Therapy. C. H. Lawrence, Boston.—p. 160.
Various Types of Diabetics under Present Method of Treatment. F. G. Brigham, Boston.—p. 165.
*Use of Serum of Convalescents in Treatment of Influenzal Pneumonia. G. P. Sanborn, Boston.—p. 171.

Convalescent Serum in Influenzal Pneumonia.—One hundred and one patients who had bronchopneumonia following epidemic influenza were treated by Sanborn with the serum of convalescent patients. The dosage for adults was 100 c.c. and for children 50 c.c. From one to six doses were given each patient according to indications, at eight to twenty-four hour intervals. Those patients only were used as donors who had recovered from an undoubted bronchopneumonia which had followed epidemic influenza. Of the sixty-seven patients who recovered, fifty-nine required one or two doses; seven, three, and one, six. The maximum dosage of serum in a given case in the recovered group was 700 c.c. Of thirty-four who died, seventeen who received one dose did not live a sufficient length of time to receive a second. The remaining seventeen received two to four doses and two then received 500 c.c. and 700 c.c., respectively, as the total dosage. Reactions following serum were conspicuous by their absence. There were practically no complications in recovered cases. The mortality rate in this series of 101 serum treated cases was 33.6 per cent. In 184 cases of influenzal pneumonia not treated by serum, the mortality was 21 per cent. Sanborn maintains that the mortality rate for this series was not a measure of the value of convalescent serum, but was an index of the severity of the disease in the group as a whole. Convalescent serum appeared to have value when it was administered during the first three days of the pneumonia. Its value rapidly decreased when administered after the third day of the pneumonia as indicated by rapidly increasing mortality rates, according as administration was delayed from day to day. The time factor, that is the period between onset and day of treatment, had a close relation to the mortality rate and seemed largely to determine success or failure.

Aug. 12, 1920, **183**, No. 7

Florence Nightingale. May 12, 1820-1920. A. Worcester, Waltham, Mass.—p. 193.
Muscles and Ligaments of Lumbar and Pelvic Regions: Their Mechanical Arrangement and Treatment of Their Weaknesses. H. W. Marshall, Boston.—p. 201.
*Effect on Blood Pressure of Injection of Epinephrin in Dementia Praecox. L. G. Lowrey and W. W. Wright, Boston.—p. 209.

Effect on Blood Pressure of Epinephrin.—From an analysis of the blood pressure reactions to the injection of epinephrin in seventy-eight psychopathic cases, Lowrey and Wright are convinced that it does not have the value in differential diagnosis which has been claimed for it, at least in early cases, since some cases of dementia praecox show a rise and other cases show a fall. In fifty-four of sixty cases of dementia praecox there was an increase in blood pressure, forty of these showing rise of more than 5 mm. Hg. In eighteen cases of other types taken for comparison there was a depressor reaction in four.

Aug. 19, 1920, **183**, No. 8

Acidosis of Recurrent Vomiting Type. W. W. McKibben, Worcester, Mass.—p. 219.
Preventive Medicine as Applied to the Individual. J. P. Bill, Boston.—p. 227.
*Drainage in Cholecystectomy. J. T. Bottomley, Boston.—p. 232.

No Drainage After Cholecystectomy.—No drainage following cholecystectomy is advocated by Bottomley. The disuse of drainage means careful dissection and separate ligation of the cystic duct and vessels. The stump of the cystic duct is sterilized and its end protected by a tab of fat from the neighboring gastrohepatic omentum. The deep field of operation is usually cleansed with gauze saturated with ether. The folds of peritoneum dissected off the gallbladder need not be sutured over the denuded area in the liver, but may simply be laid on it. Slight oozing in the liver is controlled by hot packs applied temporarily or by laying omentum against the oozing surface. Bottomley has regarded moderate persistent oozing that he could not entirely control as a contraindication to the disuse of drainage; in such instances drainage has been provided for from twenty-four to thirty-six hours. Cases, too, in which there has been a good deal of soiling from an apparently infected gallbladder should be protected by drainage. Bottomley has done fifteen cholecystectomies without providing drainage of any kind. One patient died, probably of peritonitis, on the third day. The other fourteen cases were eminently successful from every point of view.

Illinois Medical Journal, Oak Park

August, 1920, **38**, No. 2

Compulsory Health Insurance; Modern Fallacy. E. H. Ochsner, Chicago.—p. 77.
Compulsory Health Insurance Sign of Economic Degeneration. G. L. Apfelbach, Chicago.—p. 81.
Health Insurance, from Economic Standpoint. W. D. Chapman, Silvis.—p. 84.
Legal Aspect of Birth and Death Records and Duty of Physician to his Clients. R. J. Folonie, Chicago.—p. 95.
Plans for Development of More Efficient Health Organization for Cities and Rural Sections of Illinois. C. St. C. Drake, Springfield.—p. 99.
Interpreting Findings in Heart Case. C. T. Hood, Chicago.—p. 102.
Prevention and Treatment of Wound Shock in Theater of Army Operations. D. Macrae, Jr., Council Bluffs, Iowa.—p. 108.
Treatment of Gonorrhea in Women by Methylene-Blue Process. W. A. N. Dorland, Chicago.—p. 114.
Approved Methods of Venereal Disease Control. G. G. Taylor, Springfield.—p. 119.
*Plea for Rectal Examination in Labor. D. Monash, Chicago.—p. 123.
Importance of Routine Examination of Duodenal Contents in Selected Cases. M. M. Null, Seattle, Wash.—p. 126.
Examination of Feces. C. J. Drueck, Chicago.—p. 130.
Mumps Meningitis Found at Camp Taylor Base Hospital with Necropsy Findings. W. R. Larkin, Chicago.—p. 133.
Neurocirculatory Asthenia. N. S. Davis, III, Chicago.—p. 135.
Roentgenographic Studies in Shadow Density, from the Standpoint of the Clinician. C. L. Wheaton, Chicago.—p. 138.
Stricture of Urethra. F. Stewart, St. Louis.—p. 140.
Dead Teeth and Antral Pathology. J. Novitzky, San Francisco.—p. 143.
*Tubercular Goiter Patient. E. P. Sloan, Bloomington.—p. 144.
Treatment of Septic Fractures. D. W. Crile, Chicago.—p. 144.

Rectal Examination in Labor.—In view of the tremendous annual death rate from puerperal sepsis, a preventable disease, and a five-fold greater morbidity rate, Monash says the medical profession must fairly face the facts and preach and practice and teach those methods that are known to demonstrably lessen the dangers to the child-bearing woman. The danger of puerperal infection is in direct proportion to the number of vaginal examinations and the lack of an aseptic environment. To the purpose and end of definitely diminishing the incidence of puerperal infection the rectal examination is recommended to replace the vaginal examination in labor, it having nearly all the advantages and none of the disadvantages of the latter. Every physician attending labor cases should neglect no opportunity to perfect himself in the method of rectal examination, and control his rectal findings by vaginal examination, if necessary. The rectal route for pelvic exploration in labor should be taught in medical schools and practiced in every maternity. Particularly in private practice in the home it should be the examination route of first choice and should be the examination route of first choice and should be given an intelligent, thorough and honest trial. Practical experience justifies the claim that the general use of the rectal examination before, during and after labor will cut down the incidence of puerperal infection, thereby saving the lives of thousands of mothers.

Tuberculosis and Goiter.—Three cases are reported by Sloan in which tuberculous patients developed goiter. They were operated on. Two women seem to have recovered from the tuberculosis; the third has improved greatly, in fact, she seems to be well.

International Journal of Public Health, Geneva, Switzerland

July, 1920, **1**, No. 1

*Protection of Mankind against Tuberculosis. A. Calmette, Paris.—p. 3.
Anti-Typhus Campaign in 1915 in Serbia Considered in Connection with Present Typhus Epidemic in Poland. R. P. Strong, Cambridge, Mass.—p. 3.
*Use of Protein Milk in Infant Clinic. Ad. D'Espine, Geneva.—p. 34.
*World Sanitation: A Twentieth Century Possibility. G. C. Whipple, Cambridge, Mass.—p. 39.
Definition and Scope of Social Medicine. G. Tropeano, Naples.—p. 58.
International Mind in Nursing. A. Fitzgerald.—p. 65.

Protecting Mankind Against Tuberculosis.—Calmette pleads for concerted action in antituberculous prophylaxis. He emphasizes that since every human being under the present social conditions is exposed from an early age to bacillary infection, it is most necessary that children be kept under strict supervision, so that by means, for example, of tuber-

culin tests repeated every six months, any recent contamination can be detected, and its source determined. This source once known, the child can be removed from contact with a dangerous infecting environment. The guiding principle in the social campaign against tuberculosis is the protection of healthy subjects, whether infant or adult, against massive or frequent infections. This fundamental idea should be made known among the public by every possible means.

Use of Protein Milk.—D'Espine's experiences at the Infant Clinic of the University of Geneva lead him to conclude that protein milk, prepared according to the formula of Finkelstein with the addition of from 3 to 5 per cent. of Soxhlet sugar, is a medicinal food of value in the treatment of the gastro-enteritis of infants. It is superior to buttermilk, in the first place because more readily taken by the child, and also because it hastens recovery and cure.

World Sanitation Possible.—World sanitation is believed by Whipple not to be impossible of attainment, but it will not come until there are sanitarians in every land and clime. The work must be started by men already skilled in sanitation who are willing to go from place to place, studying conditions, teaching public health, and inciting communities to utilize the principles of modern science. Each country and each nationality must have its own sanitary engineers just as it must have its own physicians, men who speak the language of the place, who know its people and their habits, its climate and the thousand and one details which comprise what are termed "local conditions." There are relatively few schools of public health in the world today, schools where medical science, hygiene, chemistry, biology, engineering, and administration are brought together, but the large and rapidly increasing demand for the graduates of these schools shows the need for such special training. The first step, therefore, would appear to be to organize and coordinate schools of public health (faculties of hygiene and sanitary engineering) in one or more universities in each country. To these schools should go students of the country, but also students of other countries where there are at present no such schools. Active work in public health organizations trains men in a most useful way. In fact active work should always supplement university training. There must also be a great spreading of the gospel of cleanliness throughout the world among all classes, men, women and children. All phases of the subject are discussed by Whipple.

Journal of Infectious Diseases, Chicago

August, 1920. **27**, No. 2

*Complement Fixation in Tuberculosis, and a Comparison of Wassermann and Hecht-Weinberg-Gradwohl Systems. J. B. Rogers, Cincinnati.—p. 101.
*Use of Tissue in Broth in Production of Diphtheria Toxin. G. H. Robinson and P. D. Meader, Baltimore.—p. 106.
*Influence of Creosote, Guaiacol and Related Substances on Tubercle Bacillus and on Experimental Tuberculosis. L. M. DeWitt, B. Suyenaga and H. G. Wells, Chicago.—p. 115.
*Noma in Dog. J. McI. Phillips and F. Berry, Columbus, Ohio.—p. 136.
*Intestinal Obstruction; Influence of Bacterial Flora on Toxemia of Acute Obstruction. P. R. Cannon, L. R. Dragstedt and C. A. Dragstedt, Chicago.—p. 139.
*Once a Typhoid Carrier, Always a Typhoid Carrier. S. H. Osborn and E. A. Beckler, Boston.—p. 145.
Bacillus Perfringens: Toxin and Antitoxin Production. A. H. W. Caulfeild, Toronto.—p. 151.
Infectious Abortion of Swine. L. P. Doyle and R. S. Spray, Lafayette, Ind.—p. 165.
Effect of Carbohydrate on Amino-Acid Utilization of Certain Bacteria. H. M. Jones, Chicago.—p. 169.

Value of Complement Fixation Test in Tuberculosis.—In Rogers' opinion the complement fixation test in tuberculosis is a valuable aid when taken in conjunction with other means of diagnosis and treatment, but the reliability of this test has not been sufficiently established to be used as a criterion in the diagnosis or to determine the presence of activity in a known case of tuberculosis. The phenomenon is not a specific antigen-antibody combination, but tends toward a group reaction. Next to the tubercle bacillus, the other acid-fast organisms such as *B. smegmatis, B. leprae* and Moeller's grass bacillus, give the higher degree of fixations. Other substances such as staphylococci, *B. coli, B. subtilis* and concentrated solutions of peptone gave occasional fixations. Antigens from living, virulent tubercle bacilli seem to be the best preparations to use in routine tests. The Hecht-Weinberg-Gradwhol system, when used with tubercle bacillus antigens, gave a lower degree of fixation than the Wassermann test. When used with syphilitic serum the results were the same in 98 per cent. of the cases.

Tissue Broth for Producing Diphtheria Toxin.—Robinson and Meader claim that diphtheria toxin can be produced regularly in broth to which pieces of sterile guinea-pig liver have been added. The medium must be inoculated immediately after the addition of the tissue. Broth prepared with certain American peptones gives satisfactory results when enriched with liver tissue. The most favorable initial reaction of the broth ranges from plus 0.3 per cent. to neutral to phenolphthalein. The broth at the time of testing should have a reaction ranging from p_H 8.0 to p_H 8.3, although a favorable reaction is not the only essential for toxin production. The addition of liver tissue reduces the necessary period of incubation. Strains of *B. diphtheriae* other than Park-Williams No. 8 have produced a toxin of high potency by this method.

Effect of Guaiacol Group on Tubercle Bacillus.—In order to determine whether there is any reason for believing that the various members of the guaiacol series should be expected to have any direct action on tuberculosis, the inhibitory or bacteriostatic action of a considerable number of the series was tested by DeWitt and her associates on the bacillus of human tuberculosis. None of the compounds belonging to the guaiacol series, showed definite therapeutic action in experimental tuberculosis in guinea-pigs Virulent human tubercle bacilli are inhibited from growth (bacteriostatic action) on artificial mediums containing a concentration of 0.01 per cent., or 1 part in 10,000 each of resorcin, thymol, paracresol, orthocresol and metracresol; 0.05 per cent. (1 : 2,000) is the lowest concentration which completely inhibited in the case of creosol and pyrocatechin. Guaiacol, creosote, hydroquinone and guaiacol cacodylate required a concentration of 0.1 per cent. (1 : 1,000) to inhibit growth completely. Sodium guaiacolate inhibited completely at 1.7 per cent., and partially at 0.8 per cent. Thiocol did not inhibit in 1 per cent. concentration and styracol, which is insoluble, did not inhibit in 10 per cent. concentration (suspension). Many bactericidal and therapeutic tests were made but the result always was the same, negative. The authors state, however, that the failure to observe any beneficial therapeutic effect on tuberculous guinea-pigs is, in view of the low bactericidal power of the substances tested, to be expected. It does not mean that these substances may not have value in open tuberculous infections in man in which other bacteria than *B. tuberculosis* are involved. But it does substantiate the opinion that seems to have been generally reached by careful clinical observers, that creosote and guaiacol do not have a specific action on tuberculous infection.

Noma in Dog.—A condition in a dog apparently identical in symptomatology and bacteriologic findings with the disease known as noma is recorded by Phillips and Berry. Attention is called to the possibility of contagion of Vincent's organisms from dogs to man.

Toxemia and Intestinal Flora in Intestinal Obstruction.—The intestinal flora of white rats was effectively controlled by Cannon and the Dragstedts through regulation of the diet. The feeding of a high protein diet produced a markedly proteolytic flora while the addition of lactose or dextrin in definite amounts brought about a predominance of aciduric organisms. The work of Hull and Rettger is confirmed. The toxemia incident to acute intestinal obstruction is uniformly associated with the presence of a proteolytic intestinal flora and that irrespective of the nature of the flora before the obstruction is produced. It is not possible to prevent the onset of toxemia in acute intestinal obstruction in animals by feeding diets which in normal animals bring about an aciduric intestinal flora. However, the onset of the toxemia may be delayed in proportion to the degree that the aciduric flora may be maintained, presumably developing simultaneously with the appearance of a proteolytic flora.

Typhoid Carrier.—The "carrier list" of Massachusetts now contains fifty-one known carriers, who were apparently

responsible for 493 cases of typhoid fever. Of the fifty-one carriers, twenty-one, or 41 per cent., transmitted the infection to others by milk, and eighteen, or 35 per cent., were food handlers, infecting others probably by food. The remaining twelve carriers, or 24 per cent., were in such occupations that they could have caused the cases associated with them, by food or contact. The intermittent nature of the carrier danger is manifest in several carriers. For instance, one carrier caused no known cases in 1909, 1910, or the period 1914 to 1918, inclusive, yet in 1919 there were twenty-nine cases on his milk route and for the first time, typhoid bacilli were isolated in his excreta. Similarly, three carriers showed the same peculiarity and indicate the grave menace a carrier is during his lifetime.

Journal of Orthopaedic Surgery, Lincoln, Nebr.

July, 1920, **2**, No. 7

*Open Operation for Congenital Dislocation of Hip. H. P. H. Galloway, Winnipeg, Manitoba.—p. 390.
Variations in Anatomic Structure of Lumbar Spine. J. E. Goldthwait, Boston.—p. 416.

Open Operation for Hip Dislocation.—Galloway prefers the open operation to manipulative reposition because of the practical impossibility in most cases of passing the head through the constricted portion of the capsule. Very exceptionally, in the youngest patients, this can be accomplished, but in the hips Galloway has opened it was clearly a physical impossibility in at least 95 per cent. of the cases. He describes his operative methods.

Laryngoscope, St. Louis

August, 1920, **30**, No. 8

Deaf Child. M. A. Goldstein, St. Louis.—p. 479.
Demonstration of Reconstruction Section of Defects of Hearing and Speech. C. W. Richardson, Washington, D. C.—p. 487.
How the Deafened Rebuild Their Lives. A. W. Peck, New York.—p. 490.
Psychology of Deafened People from a Layman's Point of View. J. de R. Storey, New York.—p. 496.
Ears and Job. E. E. Samuelson, New York.—p. 501.
Studies by Barany Rotation and Caloric Tests of Tumors of Nervus Acusticus. H. H. Vail, Cincinnati.—p. 505.
Peroral Endoscopy and Laryngeal Surgery. C. Jackson, Philadelphia.—p. 520.
Bronchoperiscope. W. Freudenthal, New York.—p. 527.
Essential Points in Successful Laryngologic Practice. L. H. Lanier, Texarkana, Tex.—p. 530.

Medical Record, New York

Aug. 14, 1920, **98**, No. 7

*Dilatation of Bronchi. Review of Forty Cases. J. H. Elliott, Toronto.—p. 253.
Clinical Value of Systematic History Taking in Gallbladder Disease. A. M. Crance, Bay City, Mich.—p. 260.
Study of Natural Saratoga Nauheim Baths at Saratoga Springs, N. Y. J. P. Humphrey, Saratoga Springs, N. Y.—p. 262.
*Proposed Vegetable Drug Deletions. A. R. Bliss, Jr., Atlanta, Ga.—p. 265.
Problem of Efficacy of Topical Applications of Methylene Blue in Female Gonorrhea. W. A. N. Dorland, Chicago.—p. 268.
Rabelais in Libraries. D. W. Montgomery, San Francisco.—p. 269.

Dilatation of Bronchi.—In twenty of the forty cases recorded by Elliott the onset of the cough was associated with a bronchitis which became chronic. Clubbing of fingers was noted in twenty-two. In twelve there was spitting of blood in quantity of a teaspoonful or more, and in five of these the hemoptysis was large. An unpleasant odor was present in the sputum of only six. Physical signs which would localize the lesion were absent in seven cases, and in eight others were suggestive but insufficient to localize. In thirteen of a group of fifteen cases the intracutaneous tuberculin test was applied. Of the thirteen, four gave a slight reaction and nine did not react. Six children were tested and none reacted. All were lower lobe or perhaps in some middle lobe cases. Many showed upper lobe involvement.

Deletion of Vegetable Drugs from Pharmacopeia.—A list of 121 United States Pharmacopeia vegetable drugs (excluding active principles like the alkaloids, glucosids, etc.) was compiled by Bliss and mailed to the entire medical profession of Atlanta with the request that each man study the list and then strike out those drugs that he believed it would be wise to drop from the Pharmacopeia. A study of the prescription files of the retail pharmacies of Atlanta was also begun in order to determine what substances are actually being prescribed by the medical profession of that city. Over 75 per cent. of the medical profession of Atlanta cooperated. All agreed on thirty vegetable drugs to be retained; 50 per cent. favored deleting thirty-one drugs. Among the brief reasons given are "inert," "useless," "limited utility," "obsolete," "worthless," "never used," "questionable value," "no advantages over other U. S. P. drugs of similar activity," "preparations unreliable and not uniform." It is interesting to note that of the thirty-one drugs, but one of these (red rose) is found in "Useful Drugs." The percentage of physicians advising the deletion of other drugs mentioned in "Useful Drugs" was very low, camphor being lowest with but 2 per cent. favoring its deletion, and cardamon next highest to red rose with 28 per cent. The remaining ones run close to 10 per cent. Not a single drug in the list of thirty-one proposed for deletion by 50 per cent. or more of the Atlanta men possesses any medicinal actions or virtues which demand its presence in the Pharmacopeia and recognition as an important medicinal agent. Not a single member of this list possesses any useful physiologic action that is not also possessed by one or more of the remaining members of the list. Therefore why retain them? Bliss believes that a further study of this subject in other sections will most likely disclose the fact that there is general unanimity of opinion concerning the drugs included in the list of thirty-one above, recommended by Atlanta physicians as worthy candidates for dismissal, and possibly also add several more drugs to the deletion list.

Neurological Bulletin, New York

November-December, 1919, **2**, Nos. 11 and 12

Acute Infectious Myoclonus Multiplex and Epidemic Myoclonus Multiplex. J. R. Hunt, New York.—p. 391.
Aims of Biochemistry of Nervous System. G. Pighini, New York.—p. 395.
*Evolution and Functional Significance of Medulla Oblongata. F. Tilney, New York.—p. 413.
*Atypical Case of Progressive Muscular Dystrophy. A. D. Finlayson, New York.—p. 431.

Functions of Medulla Oblongata.—The functions of the medulla oblongata are summarized by Tilney as follows: The gray matter of the medulla embodies a dominant autonomy over the vital processes of life. It mediates an essential control over respiration, cardiovascular activity, phonation, articulation, deglutition, digestion, secretion and metabolism. It also acts as an important relay station for the auditory nerve. The white matter of the medulla represents the continuity in all of the major conduction paths which serve to maintain efficient relations between the receptors and effectors of the body. The medulla is not only traversed by many of the most important afferent and efferent pathways of the nervous system, but is the site of decussation of several systems of fibers, notably the mesial fillet, Deiterospinal, olivocerebellar and pyramidal tracts.

Progressive Muscular Atrophy in Young Boy.—The case cited by Finlayson is of interest for the following reasons: the onset at the age of 16 (although there is a possibility that there was facial involvement earlier); the absence of heredity; the first recognized appearance in the muscles of the shoulder girdle, and the absence of any appreciable degree of pseudohypertrophy. The case presents some of the symptoms of all of the three subgroups mentioned by Oppenheim. About the time of puberty the patient showed a general lessening of physical strength, and at the age of 15, or about five years ago, definite muscular weakness appeared in the right upper extremity, then the left, and consecutively the back, hips, and lower extremities. Shortly after the muscular weakness made its appearance, atrophies of the muscles of the shoulder girdle were noted, and these have been progressive, until a typical "winged scapula" is present on each side. A résumé of the muscular condition is as follows: a slight weakness of the orbicularis oris giving a "tapir" mouth effect; weakness of all the muscles of the shoulder girdle to about one half of their normal efficiency; preservation of the muscular strength of the forearms and hands; a weakness of the anterior and posterior trunk groups, more especially the latter; weakness of the posterior thigh group and the anterior leg group,

including the dorsiflexors of the feet and toes; no atrophies below the waist line, but possibly some hypertrophy of pseudohypertrophy of the high and calf groups. The mode of arising from a supine to an erect position and from a sitting to an erect position is particularly characteristic. The electrical reactions show only a quantitative change in excitability and in no instance was there an alteration of polarity. The onset, course, subjective and objective symptoms exhibited, including the mode of arising from the supine and sitting positions to the erect position, together with the electrical reactions, seem to indicate that the case is a primary myopathy of the progressive muscular dystrophy type.

New Jersey Medical Society Journal, Orange

August, 1920, **17**, No. 8

Modern Cardiac Methods. H. M. Ewing. Newark.—p. 253.
Development of American Evacuation Hospital; Outline of Initial Treatment of War Wounds. G. Blackburne, East Orange.—p. 267.
Practical Methods of Infant Feeding. M. C. Pease, New York.—p. 273.
*Umbilical Colic of Friedjung in Older Children. A. Stern, Elizabeth.—p. 279.
Scarlatina. H. I. Goldstein, Camden.—p. 257.

Umbilical Colic in Children.—Friedjung described in 1904 a typical form of hysteria in older children from 3 to 10 years, which is characterized by sudden attacks of abdominal pain in the neighborhood of the umbilicus. He gave these attacks the name of umbilical colic. The most prominent symptoms in these children are sudden attacks of pain, which come on, while the child is running or jumping and which disappear sometimes rapidly, so that the child has almost recovered by the time it reaches home. This pain lasts as a rule from a quarter to half an hour and during this time the child feels sick, becomes pale, complains about a very severe pain in the upper abdominal region, puts its hand to the stomach and afterward appears to be weak the whole day. These attacks repeat themselves at irregular intervals and last sometimes through months and even years. The bowel movements are normal and from the history of previous attacks it is not difficult to make a diagnosis of this condition. Stern reports three such cases.

New York Medical Journal

August 7, 1920, **62**, No. 6

Bordelaise Conception of Lethargic Encephalitis. R. Cruchet, Bordeaux, France.—p. 173.
Symptoms of Epidemic Encephalitis Structurally and Functionally Considered. I. S. Wechsler, New York.—p. 175.
Lethargic Encephalitis; Clinical Aspects. J. H. Leiner, New York.—p. 178.
Lethargic Encephalitis: Report of Cases. S. Schwartz, New York.—p. 182.
Lethargic Encephalitis in France and Switzerland. C. G. Cumston.—p. 185.
Intravenous and Intraspinous Treatment of Meningococcus Meningitis. D. Goldblatt, New Yor.—p. 187.
Epidemic of Typhoid Fever of Water Borne Origin and Carrier Transmission. L. H. Cornwall, New York, and J. P. Crawford, San Francisco.—p. 189.
Chronic Peritonsillar Abscess. M. Quackenbos, New York.—p. 193.

Aug. 14, 1920, **112**, No. 7

Diagnosis and Treatment of Hyperthyroidism. M. H. Fussell, Philadelphia.—p. 205.
Industrial Medicine. S. D. Hubbard, N. Y.—p. 212.
Condition of Chest in Influenza. L. J. Hammond, Philadelphia.—p. 212.
Abdominal Symptoms in Influenza Simulating an Acute Surgical Lesion. T. H. Russell, New Haven, Conn.—p. 216.
Treatment of Drug Addiction. T. F. Joyce, N. Y.—p. 220.
*New Method of Detecting Drug Habitués. H. C. Lane, Denver.—p. 222.
Bacteriologic Study of Ripe Olives. R. C. Rosenberger, Philadelphia.—p. 222.

Detection of Drug Habitués.—The finger of a suspected opiophagic patient is stabbed with an automatic lance. The blood is drawn into a Gower's blood pipet holding 2 cm. This is expelled into a small test tube 5 by ⅝ cm. containing 1 c.c. of physiologic sodium chlorid solution. This is repeated for five more tubes. The tubes are numbered 1, 2, 3, 4, 5 and 6. Each tube is gently shaken immediately after the blood is introduced. Two more tubes are prepared and numbered 7 and 8. If any shreds or clots of blood should be present, they are removed with a sterile platinum wire. As a rule, they will not be present. Tubes 1 and 2 are controls, containing only saline solution and blood. To tubes 3 and 4, 0.2 c.c. of a 1:100 solution of morphin sulphate in distilled water is added. The solution should be neutral. It must not be either acid or alkaline, therefore it should be tested with red and blue litmus paper and with phenolphthalein and methyl orange indicators. To tubes 5 and 6, 0.2 c.c. of a 1:200 solution of morphin sulphate made with a good grade of the drug in distilled water is added. Tubes 7 and 8 contain the blood of normal persons. After standing at room temperature out of the light for from twelve to twenty-four hours, or even less, tubes 1 and 2 (controls) show complete inhibition of hemolysis with a clear supernated fluid. Tubes 3 and 4 show almost complete inhibition of hemolysis with a very cloudy supernated fluid. This flocculent flaky appearance if the positive test for a drug habitué. Tubes 5 and 6 show a modified flocculent appearance of supernated fluid. Tubes 7 and 8 (true controls of normal blood) show a clear supernated fluid with complete inhibition of hemolysis.

Aug. 21, 1920, **112**, No. 8

Word to General Practitioner About Handling of Eye Cases. E. B. Miller, Philadelphia.—p. 237.
Report of Five Operative Eye Cases. E. B. Miller, Philadelphia.—p. 241.
Eye Conditions of Interest to General Practitioner. L. F. Love, Philadelphia.—p. 242.
History of Acidosis: W. H. Donnelly, Broolyn.—p. 246.
Child Health Work in Solvay Schools. G. M. Retan, Syracuse, N. Y.—p. 248.
*Case of Melanoma. S. R. Monteith, New York.—p. 252.
Nephritis. H. I. Goldstein, Camden, N. J.—p. 254.

Melanoma.—Three features of this case stand out: First, the volcanic rapidity of its clinical course; secondly, the distribution of the metastases as shown at necropsy, and the comparatively minute quantity of pigment seen in the tumor masses. The patient, aged 23, carried a tumor growth of the back five years without subjective symptoms. Then some event applied the torch. Within four weeks from her first discomfort, she was brought into the hospital so acutely ill that the diagnosis on admission was pneumonia. The picture presented was not unlike many seen in fatal pneumonia: cyanosis, jaundice, rapid pulse and extreme dyspnea. The absence of macroscopic change in liver and spleen was striking. Interesting features are the degree of involvement of the heart, pancreas and right suprarenal. The findings in the muscles were rather unusual. The lack of pigmentation also is a point worthy of note. Only one of the tumor masses, in the left lung, showed black deposits to the naked eye or under the microscope.

Rhode Island Medical Journal, Providence

August, 1920, **3**, No. 8

Surgical Lessons of Great War. A. G. Rice, Springfield, Mass.—p. 139.

Surgery, Gynecology and Obstetrics, Chicago

August, 1920, **31**, No. 2

*Roentgenographic Appearance, Diagnosis and Pathology of Some Obscure Cases of Bone Lesions. R. W. Lovett and S. B. Wolbach, Boston.—p. 111.
*Uretero-Ureteral Anastomosis. R. Peterson, Ann Arbor, Mich.—p. 132.
*Conservatism in Treatment of So-Called Essential Uterine Hemorrhage. S. H. Geist, New York.—p. 142.
Lung Abscess from a Practical Surgical Point of View. W. Whittemore, Boston.—p. 144.
*Physiology of Ovulation. S. S. Shochet, Chicago.—p. 139.
*Adenomyoma of Uterus. DeW. N. Casler, Baltimore.—p. 150.
*Late Hereditary Syphilis. M. R. Castex and D. del Valle, Jr., Buenos Aires, Argentine.—p. 160.
Technic and Indications of Radium Therapy in Uterine Carcinoma. H. Schmitz, Chicago.—p. 177.
*Experimental Ligation of Hepatic Artery. M. Behrend, Philadelphia.—p. 182.
Utility of Rubber Tube in Intestinal Surgery. D. C. Balfour, Rochester, Minn.—p. 184.
A Self-Filling Syringe for Local Anesthesia. W. W. Babcock, Philadelphia.—p. 193.
A Large Inaccessible Vesicovaginal Fistula following Hysterectomy. J. A. Corscaden, New York.—p. 195.
*Plastic Abdominal Incision for Colostomy. G. M. Linthicum, Baltimore.—p. 197.

Obscure Bone Lesions.—Lovett and Wolbach discuss the results of a diagnostic clinical and roentgen-ray study of twenty-six cases of obscure bone lesions in children. The important lesson drawn from the study is the reminder that tuberculosis in bone may simulate any other infectious process

in location and character of the lesion. Diagnosis from roentgen studies alone is, therefore, occasionally impossible and recourse must be had to other clinical evidence, and when possible to pathologic examination.

Uretero-Ureteral Anastomosis.—Peterson reports one personal case and gives a summary of seventy-two cases recorded in the literature.

Essential Uterine Hemorrhage.—Marked hypertrophy of the endometrium with cystic dilatation of many of the glands of the uterus were found by Geist in the uterine tissues examined. The one important finding in the ovaries examined was the presence of numerous cystic follicles with degeneration of the epithelium and ova and the occurrence of cysts lined by lutein cells. Somewhat similar ovarian lesions are present in cases of fibromyomata uteri associated with bleeding. It seems, in view of the possible etiologic significance of the ovarian lesion, that a more conservative treatment of these organs would be productive of good results both symptomatically and generally.

Specific Enzyme Cause of Ovulation.—The liquor folliculi was tested by Schochet as to a digestive action and if it possesses a specific enzyme that can be demonstrated by dialysis or other tests. The study is not completed but Schochet feels warranted to state that ovulation is due to a specific enzyme, its nature being similar to the enzyme erepsin. Apparently there are other proteolytic enzymes in the liquor folliculi; also a lipase. Atresia of the follicles is due to this proteolytic enzyme or enzymes. Schochet believes that these experiments offer a rational explanation for the use of thyroid extract and corpus luteum in sterility.



Fig. 1.—Primary incision.

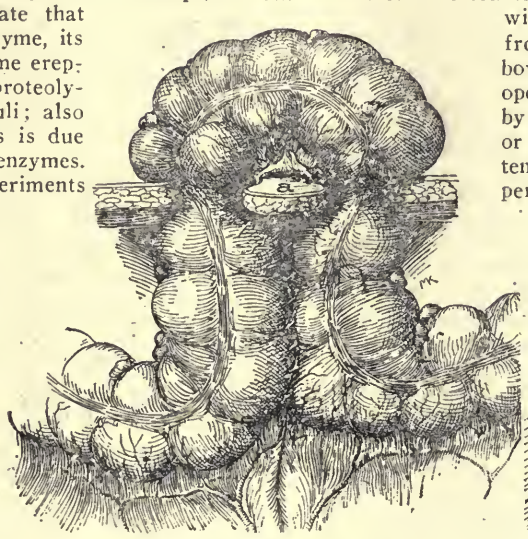


Fig. 2.—Lateral view through.

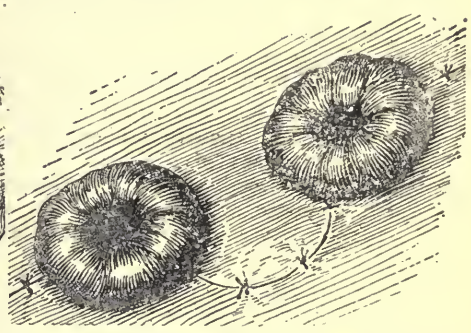


Fig. 3.—Operation complete, showing distal and proximal ends.

Adenomyoma of Uterus.—Casler describes a case of unique, diffuse, uterine tumor, really an adenomyoma, with stroma, but no glands. After complete hysterectomy, menstruation continued due to uterine mucosa in the remaining ovary.

Hereditary Syphilis Cause of Membranous Perienteritis.—Hereditary syphilis is regarded by Castex and del Valle as being a very frequent cause—perhaps the most frequent—of membranous perienteritis and analogous conditions. Its pathogenesis is complex as several factors operate, which in chronological order are: defects of conformation in the intestinal walls because of the faulty endocrine function which presides over and governs their development. These malformations on the one hand, and the abnormal function of the nervous system (sympathetic and autonomous), owing to the endocrine deficiencies, produce defects in the gastrointestinal statics and dynamics. As a consequence of the latter we have intestinal stasis which brings on chronic inflammation of the colon. From the wall of the colon the inflammation spreads to the surrounding serous membrane, aggravating the existing congenital lesions. The primary cause of all this is hereditary syphilitic infection, generally in the form of a late manifestation. These patients, first of all, should be given mixed antisyphilitic treatment with mercury chiefly. The surgical treatment is not to be abandoned, but is to be restricted to cases in which definite indications confirmed by clinical and radiologic diagnoses point to mechanical alterations of importance (kinks, adhesions, etc.); or to coexisting inflammatory lesions of adjacent organs: ovaries, tubes, appendix, gallbladder, duodenum, and stomach. Surgical treatment should consist in separating membranes and in molding and mobilizing the peritoneum, together with careful peritonization and removal of the adjacent affected organs.

Ligation of Hepatic Artery.—A case of rupture of the hepatic artery, the result of trauma, which terminated fatally fourteen days after ligation of the torn artery led Behrend to make an experimental study of this problem. Dogs were used. The hepatic artery and its branches were tied in different animals and always death occurred about five days after operation.

New Incision for Colostomy.—Linthicum suggests in such cases of rectal carcinoma as demand a permanent artificial anus, that which may be called a mortise and tenon skin incision which presents some advantages over the straight incision. The technic also possesses advantages in strengthening the usual coaptation in other abdominal incisions, such as for herniotomies, or in multiplying cross union in long abdominal incisions. Instead of being continued in a straight line at a mid-point, the primary incision for the artificial anus is diverted to one side, so as to form a neck with a width of 1 cm. to a button shape terminal of from 1.5 to 2 cm. in diameter. When the bowel is brought through the incision, an opening is provided through the mesentery by suitable suturing where the gut is kinked or bent. Through this opening the skin extension is protruded, so that the bowel in its permanent attachment is sutured to the skin margin, around its entire circumference. In closing the wound the button is sutured back in its original position, as in a skin plant of full thickness. When the bowel is cut across at the time of operation, or subsequently a distinct skin separation results between the two open segments of the cut intestine, and no possible sagging back into the abdomen can result, thus producing a much more effective result. The use of a rod support for the bowel at the time of operation is not needed as this graft acts as a support.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

July 31, 1920, **2**, No. 3109

Present Position of Vitamins in Clinical Medicine. F. G. Hopkins.—p. 147.
Treatment of Calculi Impacted in Pelvic Portion of Ureter. F. Kidd.—p. 160.
Acute Edema of Lungs. W. C. Davidson.—p. 163.
*Treatment of Ringworm. R. Hughes.—p. 164.
*Poisoning with Hydrochloric Acid. H. Stratford.—p. 164.

Treatment of Ringworm.—After shaving the affected area and washing thoroughly with soap and water and finally ether, Hughes paints the part with tincture of iodin. When thoroughly dry the painted area is sprayed with ethyl chlorid. The active agent is the small amount of ethyl iodid formed. The treatment is repeated twice a week. The average dura-

tion of treatment does not exceed a month for scalp cases, while in body cases it is even shorter.

Poisoning with Hydrochloric Acid.—Stratford records the case of a man who had swallowed about 3 ounces of fuming hydrochloric acid. He had just previously had a heavy meal. He was found a few minutes after the occurrence and promptly given a tumblerful of hot water and mustard. He vomited and continued to do so, bringing up with much retching quantities of dark brown material with mucus and bloodstained froth. He was given morphin hypodermically (which was repeated), milk by the mouth, and within a few minutes sodium bicarbonate in water in fairly large quantities, which was mostly returned. He was also given strychnin and caffein in large doses hypodermically, and put to bed with hotwater bottles. Later he was given bismuth carbonate 1 dram made into a paste with paraffin by the mouth, sodium bicarbonate in albumin and water by the mouth, and in the enemas in view of the possibility of acidemia. He slowly recovered without any serious complication beyond some left-sided dry pleurisy which subsided and some nocturnal delirium. The highest temperature was 101.8 F. The back of the throat was white and corroded, but gradually cleared.

August 7, 1920, 2, No. 3110

*Diabetes in Relation to Ductless Glands. W. L. Brown.—p. 191.
Treatment of Venereal Diseases in Women. M. Rawlins.—p. 194.
*Treatment of Syphilis in Infancy and Childhood. L. Findlay.—p. 197.
Laparotomy for Ruptured Uterus; Cesarean Section in Placenta Prævia. J. Byers.—p. 202.
Relations of Disease and Injury. A. McKendrick.—p. 203.
Meat Diet in Sprue. P. Conran.—p. 206.
Acute Pulmonary Edema or "Acute Suffocative Catarrh." J. A. Henderson.—p. 207.
Fatal Hepatic Cirrhosis in a Young Man. H. Brookman.—p. 208.

Diabetes and Endocrines.—The accelerating endocrine glands are controlled by the sympathetic and the retarding cooperate with the parasympathetic. These constitute the two divisions of the lowest level of the nervous system—the visceral, vegetative, or autonomic system, which, acting apart from the will and normally without exciting sensation, subserves the functions of organic life. The sympathetic is katabolic in its activity, converting the reserves of the body into kinetic energy, and defensive in its manifestations, while the parasympathetic is anabolic, building up reserves. The sympathetic is militant, the parasympathetic peaceful. One of the most important steps in this mobilization Brown says concerns the blood sugar. The sympathetic mobilizes the sugar into the blood by means of the endocrine glands, for purposes of defense, while the parasympathetic stores it in the tissues as a reserve. Ordinary diabetes shows no other signs of endocrine disease, while endocrine glycosuria betrays other evidences of that origin. On the basis of these conditions Brown makes the following classification of cases of glycosuria: (1) Organic origin, with structural changes in the endocrine glands leading to (*a*) overaction of suprarenal, thyroid, pituitary, or (*b*) underaction of the pancreas. (2) Sympathetic origin, with no evidence of structural changes in any endocrine gland, but producing a functional (*a*) overaction of suprarenal, thyroid, pituitary, and (*b*) underaction of pancreas. Diabetes is a sign of exaggerated metabolism, evoked through the sympathetic and the associated endocrines, which first asserts itself in relation to the most abundant food material, the carbohydrates, but as it advances expresses itself in relation to all.

Treatment of Congenital Syphilis.—Ideal treatment of congenital syphilis Findlay says means treatment of the syphilitic mother, but, in order that this may be carried out efficiently, compulsory notification is essential.

Journal of Laryngology, Rhinology, and Otology, London

August, 1920, 35, No. 8

Ear in Relation to Certain Disabilities in Flying. S. Scott.—p. 225.
Aqueduct of Fallopius and Facial Paralysis. D. McKenzie.—p. 244.

Journal of Tropical Medicine and Hygiene, London

August 2, 1920, 23, No. 15

Experiences of Medical and Prison Work in a New Country (Kedah, Malay Peninsula). A. L. Hoops.—p. 189.

Lancet, London

Aug. 7, 1920, 2, No. 6

*Bacterial Intoxication. F. H. Teale.—p. 279.
*Psychology of Special Senses and Their Functional Disorders. A. F. Hurst.—p. 285.
*Normal Basal Metabolism in Man. G. Dreyer.—p. 289.
*Significance of Blood and Soluble "Albumin" in Stools. R. Coope.—p. 291.
Two Actions of Alcohol. W. Burridge.—p. 293.
*Reformation of Elbow Joint. W. F. Buckley.—p. 294.
*Epileptiform Fits and Coma in Syphilis. C. H. Savory.—p. 296.
*Opium in Acute Dilatation of Heart. J. T. R. Davison.—p. 296.

Bacterial Intoxication.—In Teale's opinion the toxin is apparently not due to (*a*) proteolytic degradation of the bacteria by the antibodies; (*b*) autodigestion of the plasma; (*c*) preformed specific endotoxin; but is due to some interaction, the nature of which is as yet obscure, occurring between the tissue and to a lesser extent the free antibodies and the infecting bacterial protein, and according to the intensity of interaction more or less intoxication occurs. The type of intoxication which suggests itself as occurring during the interaction is to his mind closely paralleled by the autopoisoning produced from damaged muscles during wound shock.

Psychology of Special Senses.—In this, the second Croonian lecture, Hurst discusses hearing, listening and hysterical deafness.

Basal Metabolism and Body Size.—The relation of basal metabolism to the size of the body and age is discussed by Dreyer and he sets forth some formulas by means of which it is possible to predict the basal metabolism of a normal person with greater accuracy than by the methods hitherto suggested.

Blood and Soluble Albumin in Feces.—Coope claims that examinations of feces for blood are fallacious unless previous dieting and drugs have been suitably regulated. The test for soluble "albumin" in the feces is probably even more important than that for blood (though both taken together are specially valuable); it indicates either failure of digestion and absorption of food "albumin" (a very rare condition), or the existence either of hemorrhage or ulceration of the gut. It is almost always associated with some serious condition. The presence of both "albumin" and blood in the stools indicates (*a*) hemorrhage with or without ulceration not very remote from the anus, or (*b*) a severe hemorrhage higher up the gut. The presence of blood alone indicates hemorrhage. The nearer the bleeding is to the anus, the less significance it has. The presence of "albumin" alone usually indicates serous exudation, without bleeding, probably near the anus, and presumably the further the lesion from the anus, the larger the exudation must have been. More rarely it indicates a failure of digestion and to an absorption of food "albumins." Lavage of the large intestine, and investigation of the fluid so obtained, often gives valuable help in localizing a gastro-intestinal lesion.

Reformation of Elbow Joint.—Buckley cites a case in which, after gunshot injury of the left elbow joint with fracture of the humerus and extensive loss of bone, the joint was ultimately re-formed. Over a period of three years, there was a steady growth downward of the lower end of the humerus toward the ulna and an actual re-formation of the joint, with hardening and rounding off of the lower end of the humerus on the inner side to fit into the cavity of the ulna. The downward growth of bone continued for two years, the new joint forming in the third year.

Epileptiform Fits and Syphilis.—The four cases cited by Savory he thinks suggest that epileptiform fits in syphilis may not be so uncommon as is commonly thought, and may be an early manifestation. Cases of "epilepsy" suddenly occurring in adults, when there is no previous or family history of epilepsy, might with advantage be investigated for syphilis. Savory emphasizes the rapid relief apparent after early lumbar puncture and allowing cerebrospinal fluid to come away until it flowed at a normal rate. Potassuim iodid appeared to assist matters very considerably.

Opium in Acute Cardiac Dilatation.—In Davison's case of aortic regurgitation compensation had been established for several years, but was temporarily lost owing to an extraordinary physical effort. The patient's condition was made

worse by taking a glass of milk when in an acutely exhausted state. As a consequence the myocardium gave way and extreme dilatation supervened. Hypodermic injections of camphorated oil, digitalin, and oxygen inhalations were administered without avail. A hypodermic injection of an opium product and rest gave relief and the patient recovered.

Medical Journal of Australia, Sidney

June 26, 1920, **1**, No. 26

Congenital Word Blindness. R. A. MacLeod.—p. 593.
Medicine at Time of Pharaohs. J. K. Adey.—p. 596.
Prolapse of Rectum. H. Stubbe.—p. 597.

July 3, 1920, **2**, No. 1

Some Medical Aspects of Flying. H. W. Davies.—p. 1.
Experiences with Shipway Anesthetic Apparatus. G. Brown.—p. 4.

Medical Journal of South Africa, Johannesburg

May, 1920, **15**, No. 10

Traumatic Rupture of Globe of Eye. E. B. Israel.—p. 220.

Sei-I-Kwai Medical Journal, Tokyo

March-June, 1920, **39**, Nos. 1 and 2

Postmortem Examination of Influenzal Pneumonia. M. Okasaki and T. Fujii.—p. 1.

South African Medical Record, Cape Town

July 10, 1920, **18**, No. 13

Problem of the Deaf. J. L. Aymard.—p. 243.
*Gangrenous Appendix Complicated with Advanced Pregnancy. H. Lewis.—p. 251.

Gangrenous Appendicitis and Pregnancy.—Lewis cites what he regards a rare and unusual case, occurring in a native, a pure-bred Tembu who was about seven months pregnant. At operation he found a ruptured gangrenous appendix, with general peritonitis. After removing the appendix he performed cesarean section, and delivered a living female child weighing 2¼ pounds. The child lived in spite of there being no incubator, etc., available.

Tubercle, London

August, 1920, **1**, No. 11

Treatment of Pulmonary Tuberculosis. C. Riviere.—p. 499.

Archives des Maladies du Cœur, etc., Paris

April, 1920, **13**, No. 4

*Patent Ductus Arteriosus. C. Laubry and C. Pezzi.—p. 145.
*Interfering Double Sinus Rhythm. P. Schrumpf.—p. 168.
Advantage of Condenser in Electrocardiography. Daniel Routier.—p. 174.

Patent Ductus Arteriosus.—Laubry and Pezzi discuss the pathogenesis and the clinical manifestations of the persisting duct of Botalli, reproducing some electrocardiograms and other details of some typical cases. Many are the cases, they add, in which the anomaly causes no or slight symptoms, and the necropsy findings are a surprise. Valsalva's experiment has proved useful in differentiating it in some cases under roentgenoscopy; otherwise there are no symptoms pathognomonic of a patent ductus arteriosus.

Interference of Two Sinus Rhythms.—The electrocardiogram reproduced by Schrumpf apparently sustains the assumption of a dual action by the right and left nodes of Keith. The auriculoventricular heart block in this case was due not to modification of conductivity but to the weakness of the influx.

May, 1920, **13**, No. 5

*The Heart in Diphtheria. III. Aviraguet and Lutembacher.—p. 197.
Terminal Ventricular Tachycardia. L. Gallavardin.—p. 207.
*The Heart in Influenza. D. Simici.—p. 213.

The Heart in Diphtheria.—In this third communication on this subject, a case is described in which there was a complex extrasystolic arrhythmia with paroxysmal tachycardia and deranged conductibility in a boy of 10, with ultimate recovery.

The Heart in Influenza.—Simici urges fractioned doses of strophanthin by the vein to sustain the heart during influenza, as the heart beat becomes accelerated in contrast to the temperature curve.

Archives Médicales Belges, Liége

March, 1920, **73**, No. 3

*Criminal Responsibility. L. Lefèvre.—p. 195.
Crown Suture in Correction of Strabismus. G. Kleefeld.—p. 214.
Infantile Mortality in Belgian Congo. M. Dossin.—p. 223.

Attenuated Criminal Responsibility.—Lefèvre summarizes the principles which should guide the medicolegal expert, and declares that the doctrine of attenuated responsibility has no scientific justification. An act cannot be at the same time an act of reason and of dementia. With hysteria, epilepsy and alcoholism, only those acts show lack of responsibility which bear the stamp of the disease; not those committed by hysterics, epileptics or alcohol addicts. Constitutional diseases elsewhere than in the brain, such as tuberculosis, do not modify the anterior mental point of view, any more than a blow on the head. As the subject recovers from his comatose condition his character emerges anew, just as it does on waking every morning. Lefèvre reiterates that there is no localized point in the brain the destruction, inhibition or irritation of which can transform an honest man into a thief or forger, or delinquent, and he adds, "Society is a body. The presence of gangrenous limbs impairs its health and may entail disease."

Bulletin de l'Académie de Médecine, Paris

July 6, 1920, **84**, No. 27

*Pseudotumors from Mineral Oil Excipient. Letulle and Alglave.—p. 9.

Pseudotumors from Use of Liquid Petrolatum as Excipient.—Letulle and Alglave report three cases of inflammatory tumors developing one, five and sixteen years after injection of camphor or other drug in liquid petrolatum. These pseudotumors develop slowly but progressively and may resemble an abscess or woody phlegmon. The only treatment is to excise the whole process, but this is often impossible, as the droplets of the mineral oil spread in all directions like a drop of oil in marble. They are not absorbed but persist indefinitely as a foreign body. In their first case, the camphorated petrolatum had been injected at numerous points on the buttocks and thighs, and some of the resulting tumors were as large as the palm of one's hand, and interfered with the young man's walking and prevented prolonged muscular work, but were not painful in repose. The other cases were in women; some of the tumors were as large as a fist. They were in the breasts or flank, and mammectomy was done in one case. Five photomicrograms show the structure of these subcutaneous fibroid cystic tumors, a grave, progressive, incurable infirmity created by medicinal injections in a previously sound body, from the use of a mineral instead of a vegetable oil for the excipient.

July 20, 1920, **84**, No. 28

Medical Institutes as Centers for Biologic Research. E. Delorme.—p. 28.
Vaccination of the Newly Born. L. Camus.—p. 35.
*Attacks of Hemolysis in Raynaud's Disease. A. Souques and R. Moreau.—p. 44.
*Nitrogen Content of Blood in Cancer. A. Robin.—p. 51.
Distomatosis of the Liver in Man. Guiart.—p. 52.
Advantages of Formaldehyd in Preparation of Vaccines. S. Costa.—p. 55.
*Suprarenal Virilism. P. Mauclaire.—p. 57.

Hemolysis in Raynaud's Disease.—Souques and Moreau report experiences which apparently demonstrate that there is more than one kind of the Raynaud vasomotor neurosis. In some cases, holding the hands in very cold water for half an hour induced a silent and symptomless phase of hemolysis, or *crise hémoclasique*, followed by a drop in blood pressure and general malaise, the Raynaud cyanosis and painful paresthesia. This occurred in six tests in a woman who for seven years had presented in the winter typical Raynaud's disease. The tests were also positive in two other cases, the response resembling in every respect the spontaneous winter attacks. In two other cases, as also in normal subjects, the attack of hemolysis could not be elicited. The form of Raynaud's disease accompanied with general phenomena is probably rare; it is evidently the result of a hitherto unsuspected transient phase of hemolysis.

Total Nitrogen in the Blood Serum with a Cancer.—Robin found the total nitrogen content of the serum higher with malignant disease than in normal conditions.

Suprarenal Virilism.—Mauclaire reports another case in which a tumor in the suprarenal cortex was apparently responsible for the development of male characteristics in the woman of 38. In the course of six years the mammae had atrophied, the outlines of the body become less rounded, and a beard developed, compelling the woman to shave. He refers to similar cases on record and theorizes that the ovaries or the principal or accessory suprarenal glands in degenerating may acquire functions like those of the testicle hormone. (In reporting this meeting for the *Vie médicale*, the girl medical student who wrote the report exclaims in regard to this case, "Que Dieu veille sur mes glandes endocrines!")

Bulletin Médical, Paris

July 3, 1920. **34**, No. 34

Papulous Chancroid. A. Gendron.—p. 607.
*Case of Oïdiomycosis of the Lungs. Nathan.—p. 608.

Oidiomycosis of the Lungs.—Nathan remarks that mycosis of the lungs is often mistaken for tuberculosis. The patients are sent to a sanatorium where in time they acquire tuberculosis so that the course of the case ultimately confirms the erroneous diagnosis. Nothing resembles pulmonary tuberculosis so closely as oïdiomycosis, and only search for the fungi in the sputum will allow promptly effectual treatment. In a case reported the young woman had been healthy until the last three years when symptoms indicated tuberculosis, and she had been treated at a sanatorium for two years, the treatment addressed to the lungs and an assumed tuberculous focus in the cervical vertebrae. Discovery of the oïdium in the sputum and treatment with iodid was followed by a complete cure in two weeks. Nathan reiterates that mycosis of the lungs is regarded as a rare disease when in fact merely its recognition is rare.

Bulletins de la Société Médicale des Hôpitaux, Paris

June 18, 1920, **44**, No. 22

Lethargic Encephalitis. H. Bourges and others.—p. 842; 848; 881.
*Sudden Death During Puncture of Pleura. Apert and P. Vallery-Radot.—p. 852.
Preservation of Anatomic Specimens. M. Renaud.—p. 858.
Abscess of Right Parietal Lobe. P. Merklen.—p. 859.
Gonococcus Septicemia. P. Ribierre and J. de Léobardy.—p. 862.
Case of Mal Perforans without Tabes. Achard and Rouillard.—p. 865.
*Cancer of the Thymus. C. Gandy and R. Piédelièvre.—p. 867.
*Spastic Paraplegia Left by Epidemic Encephalitis. A. Léri and R. Gay.—p. 876.
Cure of Enterococcus Septicemia under Autovaccine. Monziols and Collignon.—p. 883.
Proteus X in Blood of Typhus Patient. Collignon and Monziols.—p. 885.

Sudden Death After Exploratory Puncture of Pleura.—The boy of 4 seemed to be healthy when pleurisy developed. A simple exploratory puncture was followed by a fatal syncope. In forty-five cases of syncope after puncture compiled by Jeanselme, the effusion was serous in only three and only in eight of Cordier's compilation of eighty-four cases. In this group of eight all were adults, and the syncope proved fatal. In Cordier's compilation, thirteen of the cases were in children; the condition of the heart was not specified. In the case here reported, the effusion was serous and hemorrhagic, and the microscope revealed diphtheric myocarditis. There had been unrecognized diphtheria about a month before the pleurisy. Myocarditis and pericarditis were also discovered in six of Cordier's group of eight and heart disease was probably responsible in a number of other fatal cases.

Cancer of the Thymus.—Gandy and Piédelièvre relate that a man of 40 with signs of ordinary left pleurisy suddenly developed symptoms indicating obstruction of the superior vena cava; this led to the diagnosis of a tumor in the anterior mediastinum originating in the thymus. It proved fatal in twelve days.

Spastic Paraplegia After Epidemic Encephalitis.—In Léri and Gay's case the typical organic spastic paraplegia could not be traced to traumatism, Pott's disease or syphilis but a history of abortive epidemic encephalitis cleared up the etiology, confirmed by the retrogression of the paraplegia.

Journal de Chirurgie, Paris

1920, **16**, No. 2

*Operation for Cancer of Stomach. V. Pauchet.—p. 129.
*Access to Large Vessels in Neck. H. Costantini.—p. 150.
*Reconstruction of Lower Jaw. L. Dufourmentel.—p. 171.

Cancer of the Stomach.—Pauchet had an operative death rate of from 12 to 20 per cent. in his 300 gastrectomies for malignant tumors, and the survivals have ranged from six months to nine years. His twenty years of experience have convinced him that pessimism in regard to gastrectomy for cancer is unjustified. He removes with the half of the stomach a large part of the omentum, above and below, in a single piece, and gives the details of the operation in seventeen illustrations, with minute directions for the preparation of the patient and the after-care. Before the operation he has the teeth cleaned by a dentist, and the gums painted with iodin morning and night, and the mouth rinsed with hydrogen dioxid to prevent parotitis, thrush, etc. The nose is disinfected also with an antiseptic oil, morning and night, and the patient is trained in deep breathing through the nose, and is accustomed to the semiseated position. The stomach is rinsed out several times during the preceding two days to train the patient to bear this, and if there is obstruction of the pylorus, he gives an alkaline water up to 2 or 3 liters a day by the drop method by the rectum or by subcutaneous injection in the axillae or under the mammae. If haste is imperative, he gives intravenous injections of Enriquez' 30 per cent. glucose-artificial serum or, in case of acidosis, a 30 per cent. sodium bicarbonate solution, with epinephrin and other stimulants as needed. He operates always under local, regional or spinal anesthesia, and keeps up the lavage of the stomach as long as there is vomiting, using hot saline. Fluid to 3 liters a day must be supplied in some way, and deep breathing for five or six times be enforced every hour. If there is coughing, steam should be inhaled to loosen the secretions.

Access to Main Vessels in the Neck.—Costantini gives eleven illustrations of the preferable technic for treatment of wounds of large vessels in the neck, axillae and region above the heart.

Reconstruction of the Lower Jaw.—Dufourmentel's illustrations sustain his assertion as to the excellent outcome in every way of his method of reconstructing the jaw after the loss of the entire horizontal portion. A broad flap, tapering above, is turned over from each cheek and sutured to form the inner lining of the chin. Then the chin is remodeled, and covered with a broad straight flap cut in the scalp from the ear to the vertex and twisted around to meet its mate at the point of the chin, where the two are sutured together. The hair grows on the scalp flaps forming the chin, this "beard" concealing all defects.

Journal de Médecine de Bordeaux

July 10, 1920, **91**, No. 13

Psychopathology of Memory. Hesnard and A. Régis.—p. 347.
Double Ureter. R. Villar.—p. 352.
Opodidymus Cat Monster. G. Jeanneney.—p. 354.
Primary Mesenteric Thrombosis. J. Peyrot.—p. 355.

Journal d'Urologie, Paris

1920, **9**, No. 3

*Effect of Temperature on the Tonus of the Bladder. J. Roskam.—p. 161.
Congenital Dilatation of the Ureters. F. Corsy.—p. 185.
*Technic for Nephrostomy. R. Toupet.—p. 191.
Anuria from Tumor of Pelvic Colon. R. de Butler d'Ormond.—p. 199.
*Technic for Urethrotomy. Rafin.—p. 201.

Temperature and Tonus of the Bladder.—In Roskam's experiments on dogs at the Physiology Institute of the University of Liége, the bladder contracted under the influence of every change of temperature, the effect of sudden application of heat being more rapid and intense than application of cold. He explains this contraction as a complex phenomenon, the central nervous system participating in an inhibiting manner.

Technic for Nephrostomy.—Toupet has never applied on the living subject the technic he describes, with illustrations, but

it has been done on the cadaver by himself and his pupils hundreds of times, and seems to be logical and effectual. Instead of working blindly from the convex side of the kidney down to the pelvis, he exposes the pelvis first and works a forceps from the pelvis up through the kidney to the convex surface. Here, the tip of a bougie sound is seized by the forceps, and is drawn down into the pelvis, and pushed down a short way into the ureter. The pelvis is sutured, and the sound is held in place with sutures on the convex aspect. The kidney is then sutured to the incision in the skin; thus all the urine is diverted outward. To insure this beyond question, it may be well to ligate the ureter temporarily below.

Search for the Urethra Stump at Urethrotomy.—When the stenosis is impermeable, the central stump of the urethra may be rendered visible by massaging out the secretions in the prostate and seminal vesicles. The milky drop that appears shows the location of the urethra stump.

Lyon Médical

July 10, 1920, **129**, No. 13

The Incision for Interval Appendicectomy. M. Durand.—p. 557.
*Medicine and Statistics. A. Gonnet.—p. 598.

Medicine and Statistics.—Gonnet emphasizes that statistics are misleading unless we have a third term for comparison, but this point is frequently overlooked. For example, unless we know the prevalence of syphilis in the general population, we may be misled by Fournier's statement that he found unquestionable syphilis in 80 per cent. of his cases of tabes. If we assume, for argument's sake, that 90 per cent. of the population have syphilis, then what becomes of the 80 per cent. among tabetics? They would actually show a lesser proportion than the nontabetics.

Paris Médical

June 26, 1920, **10**, No. 26

*Variations in Day and Night Urine. J. Cottet.—p. 513.
Prosthesis for Stump of the Thigh. C. Roederer.—p. 519.
*Technic for Intercricothyroid Injections. G. Rosenthal.—p. 521.
*Relations between Incontinence, Hysteria and Diabetes. Papastratigakis.—p. 523.

Diagnostic Import of Variations in Day and Night Urine.—Cottet has the urine collected in three periods, from 7 to 9 a. m., from 9 to 9 p. m. and from 9 p. m. to 7 a. m. At 7 a. m. about a pint of water is ingested fasting, and the effect on the diuresis is noted reclining, and on another day with the subject up and about. The normal ratio between the day and night urine is ¼ or ½ but in pathologic conditions it may surpass 1:1. This variation may be due to the kidneys or to sluggish circulation. The density of the urine may vary widely in the normal day and night urine, but with pathologic conditions it keeps fairly constant, confirming the loss of normal adaptation to varying conditions. This nycthemeral testing of the specific gravity is particularly instructive. In four cases of chronic nephritis the density ranged only from 1.008 to 1.0105, while in several healthy subjects the lowest and highest figures were 1,001 and 1,025. With a tendency to oliguria, when the amount of urine voided at night surpasses that of the day, and the night urine is highly concentrated, there is retention of chlorids and of water and a more or less apparent tendency to edema. If the urine is pale and with low specific gravity, we can assume that the kidneys are chronically diseased, with atrophy, and great reduction of secreting power, and weakness of the heart, unless we know that the subject has not been drinking enough fluids or has been losing fluids in diarrhea or vomiting. Excessive polyuria may be of nervous, hysteric or diabetic origin.

This fractioned control of the day and night urine enables us to distinguish between the renal and the extrarenal factors governing the output. One practical point it brings out is the danger for the healthy from insufficient intake of fluids, thus compelling the kidneys to void a highly concentrated urine which may damage them in time. On the other hand, persons with chronic Bright's disease and high blood pressure are liable to drink too much water, in the effort to "rinse out their kidneys," ingesting more than their kidneys are able to take care of, and thus exaggerating the nocturnal polyuria. They regard this as a sign of the good work being done still by their kidneys, when in fact it is a sign that their cardiovascular apparatus is being needlessly overworked and fatigued, and hastening the final breakdown.

Intratracheal Injections.—Rosenthal gives fifteen views of his method of introducing a tube into the trachea through the cricoid and thyroid cartilages for direct medication of the region and lungs. He says that this medication by the drop method with a permanent fistula into the trachea is opening new fields for therapeutics and nourishment, and has transformed the prognosis of bronchopneumonia.

Hysteria and Diabetes in Relation to Incontinence.—The man of 29 had incontinence of urine from infancy to the age of 20. The persisting hysteric tremor developed later, with extreme polyuria and pollakiuria. Papastratigakis accepts them as manifestations of the underlying tendency to neuroses, confirming the law of alternations in neuroses.

July 10, 1920, **10**, No. 28

*Vagotonia and Asthma. C. Lian and J. Cathala.—p. 37.
Courses of Mineral Waters and Immunity. P. Ferreyrolles.—p. 41.
Tuberculous Meningitis Secondary to Pulmonary Lesions. Giroux.—p. 46.

Oculocardiac Reflex in Asthma.—Lian and Cathala found the oculocardiac reflex exaggerated in patients with bronchitis and attacks of suffocation at night resembling asthma. This is probably also the case in essential asthma, testifying to hyperirritability of the vagi. This suggests treatment of asthma with drugs to combat vagotonia, and they have found belladonna very effectual. They prescribe it in pills of 0.01 gm. each of the powder and extract. Two, three or four pills a day, supplemented with atropin sulphate in the severe cases. To check the attack itself, they give an intramuscular injection of epinephrin.

Presse Médicale, Paris

July 21, 1920, **28**, No. 50

Ocular Manifestations of Lethargic Encephalitis. F. de Lapersonne.—p. 493.
Tuberculous Lesions in Upper Skull. C. Lenormant and Soupault.—p. 494.

July 24, 1920, **28**, No. 51

Inaugural Lecture in Physiologic Chemistry. M. Nicloux.—p. 501.
*Hemiplegia in Children. C. Ducroquet.—p. 504.

Hemiplegia in Children.—Ducroquet shows in this profusely illustrated article the gait with hemiplegia, and advocates active movements of the knee and hip joint as the best means to restore functional use of the muscles. They may have to be preceded by passive exercises to stretch the contracted muscles. The knees, for example, can be strapped to a board as the patient sits with his back against a wall or the straight back of a chair. The equinus deformity of the foot can be corrected in young children by an elastic, fastening up the tip of the foot. An appliance should be worn at night to maintain this correction. Tenotomy may be indispensable in the severer cases, but much can be accomplished by pressure on the metatarsus as the knee is flexed. This relaxes the triceps at its attachment to the femur. Holding this corrected position with a plaster cast, the muscle finally relaxes permanently and two or three casts complete the process. Healing is complete sooner if the knee is enclosed in the cast.

July 28, 1920, **28**, No. 52

Unity of the Syphilitic Virus. J. A. Sicard.—p. 513.
*Pain from Enlargement of Lumbar Vertebra. G. Nové-Josserand and A. Rendu.—p. 514.

Sacralization of Lumbar Vertebrae.—Nové-Josserand and Rendu found the fifth lumbar vertebra abnormally large or thick or malformed in the roentgen-ray picture in 19 cases; in 6 this malformation was bilateral and symmetrical, and in 6 cases it was unilateral, including 3 in which the left side was normal. He knows of 4 cases in which the redundant bone was excised to relieve mechanical pressure. Bertholotti and Rossi have relieved the pains by electricity and other physical measures while others have been successful with radiotherapy. Operative intervention has not proved such a decided success that it can be unconditionally commended, and patients are seldom incommoded enough to accept it.

Progrès Médical, Paris

July 5, 1920, **35**, No. 27

*Education of Epileptic Children. G. Paul-Boncour.—p. 291.
Present Status of Pterygium. De Lapersonne.—p. 293.
Aortitis and Mineral Water. A. Mougeot.—p. 295.
Belladonna and Atropin. G. Faroy.—p. 297.

Education of Epileptic Children.—Boncour is physician in chief of the public Institut Médico-Pédagogique at Ivry, and on the basis of this long experience he discusses the proper training of epileptic children. They should always be educated apart from normal children, he declares; for one reason because they are almost invariably irritable and get angry easily. Another reason is that their seizures interfere with their keeping up with their class, and the efforts they make to do this are too much of a strain. Even intelligent epileptics should be placed in a special institution. Otherwise their whole future may suffer from both the mental and the physical standpoint.

July 10, 1920, **35**, No. 28

*Cryotherapy in Dermatology. Lortat-Jacob.—p. 303.
Asthma and Mineral Waters. E. Perpère.—p. 306.
Sodium Phosphate and Phosphoric Acid. G. Faroy.—p. 307.

Cryotherapy in Dermatology.—Of all the forms of applying extreme cold to the skin for therapeutic purposes, Lortat-Jacob has found most convenient a carbon dioxid snow container in which the carbon dioxid is mixed with acetone. The refrigerant action is more pronounced than with the snow alone. The temperature is the same for both; the tip of the snow pencil is always surrounded by a layer of gas which impedes its cryotherapeutic action. This is not the case with the acetone-snow cryocautery, the copper tip registering minus 80 C. He gives a number of illustrations showing the complete disappearance—without a trace of scar—of epitheliomas, angiomas on infants, nevi, keloids, nodular folliculitis, and roentgen ray dermatitis. He regards it as superior to all other measures for the latter.

Revue de Chirurgie, Paris

March, 1920, **39**, No. 3

*Ileus in Course of Tuberculous Peritonitis. A. Aimes.—p. 177.
*Temporary Disarticulation of the Foot for Tuberculosis. J. Revel.—p. 205.
Primary Sarcoma of the Rectum. N. C. Lapeyre.—p. 223. Cont'n.
Radiotherapy of Uterine Fibromyomas. P. Mornard.—p. 244.

Ileus in Course of Tuberculous Peritonitis.—Aimes comments on the small number of such cases on record, ascribing this to the nonrecognition of the true cause of the ileus in many cases. In the 68 operative cases he has compiled, 23 of the patients were under 16; 45 of the 68 recovered. The immediate mortality was 55 per cent. and the total mortality within a year was 63 per cent. The death rate was only 27 per cent. in the cases in which intervention was restricted to cutting adhesions binding down the bowel. If the peritonitis is extinct, the entire abdominal cavity should be explored to discover adhesions. With a florid peritonitis, simple exposure to the air may cure paralytic ileus, or the feces can be manipulated through the contracted segment, or profuse irrigation with heated serum may cure. The agglutinated mass of intestines was resected in one case, the patient dying; while the 3 patients treated with anastomosis all recovered. Canessa injected 10 liters of oxygen into the abdominal cavity, with the recovery of the patient. Even in apparently the most desperate cases, cautious surgical intervention may prove successful.

Temporary Disarticulation of the Foot for Tuberculosis.—Revel gives an illustrated description of three cases in which severe and extensive tuberculous processes in the foot, one of thirty years' standing, were cured by excision of all the morbid tissues. Access is obtained by Delbet's method of opening up the foot across, at the mediotarsal articulation or between the tarsus and the metatarsus cutting the tendons, vessels and nerves of the dorsum of the foot. The joint thus opened up, the fore part of the foot is swung down and the region is thus exposed like an opened book. Supplementary lengthwise incisions afford still more complete access, and the diseased soft parts and bones can be scraped and cleaned as perfectly as in preparing an anatomic specimen. The fore part of the foot is then sutured back in place and heals by primary intention. The foot is shortened by the total of bones that have had to be resected, but it answers the purpose of a foot, and the tuberculous lesion is a thing of the past. In one of the cases described, the lesion was of two years' standing, and he had to resect the scaphoid, cuboid, third cuneiform and part of five metatarsal bones; in another, the entire anterior tarsus and part of four metatarsal bones. In the third the astragalus had to be removed.

Revue Franç. de Gynécologie et d'Obstét., Paris

March, 1920, **15**, No. 3

Conservative Cesarean Section after Rupture of Membranes. A. Weymeersch.—p. 97.
*Heliotherapy in Genital Tuberculosis. E. Exchaquet.—p. 102.
How Soon Should Patients Get Up After Operations? J. Vanverts.—p. 106.

Heliotherapy in Female Genital Tuberculosis.—Exchaquet reports excellent success with heliotherapy in 17 cases, including salpingitis and pyosalpinx, and 3 cases of tuberculous perisalpingitis and pelvic peritonitis with tuberculosis of the cecum. The heliotherapy was applied by Rollier's technic. Mixed infection did not prove amenable to this treatment, superposed colon bacillus or gonococcus infection flaring up in a menacing manner under the heliotherapy in his 3 cases of the kind. In 8 cases the treatment was continued to a complete cure, averaging thirty-three weeks. In the others the patients were satisfied with the results realized in thirteen weeks on an average, and did not continue the course further. The ease and simplicity of the treatment commend it, he adds, except in the case of pyosalpinx, in which possibly surgical measures might be preferable.

Schweizerische medizinische Wochenschrift, Basel

July 22, 1920, **50**, No. 30

Etiology of Typhus. R. Doerr.—p. 637.
Colloid Chemistry and the Thyroid Problem. K. Kottmann.—p. 644.
Pulmonary Tuberculosis Plus Syphilis. K. Zehner.—p. 651.

Chirurgia degli Organi di Movimento, Bologna

May, 1920, **4**, No. 2

*Projectiles in Vertebrae. U. Stoppato.—p. 123.
*Supernumerary Bones in Tarsus. M. Lupo.—p. 141.
*Deformity from Missing Tibia. O. Nuzzi.—p. 164.
*Pseudarthrosis of Hip Joint. L. Debernardi.—p. 197.
*Index Finger as Substitute for Thumb. L. Tonnini.—p. 213.
*Tenotomy of Achilles Tendon. O. Nuzzi.—p. 239.
*Arthrodesis for Shoulder Paralysis. S. Vacchelli.—p. 253.
*Rubber for Orthopedic Splints, etc. F. Delitala.—p. 269.

Trauma of Vertebrae Without Injury of Spinal Cord.—Stoppato reports three cases of a projectile in the lumbar vertebrae without direct injury of the cord, and summarizes six other cases.

Supernumerary Bones of the Tarsus.—Lupo gives thirteen roentgenograms of the supernumerary bones that may be found in the tarsus, and discusses the disturbances characteristic of each.

Congenital Absence of the Tibia.—Nuzzi tabulates the details of eighty-one cases of congenital deformity of one or both legs from this cause, including three operative cases from the Rizzoli Institute. He advises postponing amputation as the growth of the child will modify the stump. The technic for conservative intervention varies from case to case as there are usually other deformities, but those of knee and ankle are generally secondary which facilitates functional use of the limb.

Decapitation of Femur in Pseudarthrosis of Hip-Joint.—Debernardi does not agree with those who regard decapitation of the femur as the only method of treating pseudarthrosis of the hip-joint, although he describes two successful cases of the kind in which this was done. One man of 53 now walks without a cane; the excursions of the joint have progressively increased during the two years since the operation.

Substitution of Index Finger for Thumb.—Tonnini's study of the anatomy and physiology of the thumb and the index

finger demonstrates the feasibility and advantages of slipping the index finger along to graft it on the stump of the thumb.

The Vessels and Sheath of Achilles' Tendon.—Nuzzi gives illustrations of the rich vascularization of Achilles' tendon, preliminary to discussing tenotomy. It is important to reduce the trauma of the sheath of the tendon to the minimum as, even at the best, a number of vessels are lacerated. But the circulation of each half of the sheath is practically separate, and hence a longitudinal incision on the median line is best. It can be extended transversely on one side at the top of the straight incision and on the other side from the lower end of the incision.

Arthrodesis for Paralysis of Shoulder After Poliomyelitis.—Vacchelli gives illustrated descriptions of six cases of successful suture of the head of the humerus to the glenoid cavity with stout silk, after exposing the bone surface of each. The functioning has shown constant improvement. In conclusion he emphasizes the importance of fastening the humerus in the proper rotation. In one case paralysis of the supinators detracts from the use of the joint.

Rubber in Orthopedic Prostheses.—Delitala describes some devices to remedy pseudarthrosis and paralysis of the arm, made from sheets of rubber, reenforced or not.

Policlinico, Rome

July 5, 1920, **27**, No. 27

Laboratory Diagnosis of Typhus. A. Abbruzzetti.—p. 691.
*Foreign Body in Esophagus. F. Rossi.—p. 696.
Rupture of Intestine from Contusion; Peritonitis; Recovery after Laparotomy the Third Day. J. Aboularage.—p. 697.
*Ileus from Megacolon. E. Casati.—p. 699.
Retrocolic Cholecystenterostomy; Recovery. E. Casati.—p. 700.
Present Status of Meat Inspection. S. Gabulsera.—p. 700.

Extraction of Foreign Body in Esophagus.—Rossi commends his practice of extracting the foreign body under ether, the patient lying on the roentgen-ray table. With this he extracted easily a coin from the esophagus of a child of 4, using merely the Kocher forceps, not having an esophagoscope available, and not missing it.

Obstruction of Megacolon.—Casati's experience indicates that megacolon is more common than generally realized, but it escapes detection unless it becomes obstructed. He reports a case of obstruction in a child and two in adults in which the obstruction was overcome at once by introducing a tube into the rectum and then raising the foot of the bed quite high, so that the pelvis sloped abruptly down toward the shoulders. Almost immediately the contents of the megacolon were expelled with great force. The rectum in these cases was empty, but through the rectal wall he could palpate the mass of the distended colon. The weight of the feces had dragged it down farther and farther until the sigmoid loop had been kinked, and total obstruction resulted. By raising the pelvis, the weight dragged down the other way, unkinking the loop. The effect was identical in all three of the cases, confirming the correctness of this explanation.

Rivista Critica di Clinica Medica, Florence

June 15, 1920, **21**, No. 17

Atypical Forms of Epidemic Cerebrospinal Meningitis. A. Varisco.—p. 193. Conc'n in No. 18, p. 205.

July 5, 1920, **21**, No. 19

Filtrable Polymorphous Coccus Cultivated from Cases of Epidemic Encephalitis. S. Pisani and A. Varisco.—p. 217.

Rivista di Clinica Pediatrica, Florence

June, 1920, **18**, No. 6

*Treatment of Congenital Megacolon. I. Magliani.—p. 321.
Lympho-Angio-Endothelioma in Small Pelvis of Two Months Babe. L. Sironi.—p. 334.
*Prosthesis for Cleft Palate in Nurslings. L. Arnone.—p. 347.
*Influenza an Eruptive Disease. C. Francioni.—p. 355.

Treatment of Congenital Megacolon in Children.—Magliani describes Francioni's method of treating this condition by introducing a long flexible tube into the rectum. This overcomes the kink that is the cause of the obstruction. He assumes that the sigmoid loop is unusually long or for other reason gets kinked or otherwise occluded. By allowing the escape of gases and feces, the disturbances are corrected and time is given for the anomaly to be outgrown or compensated. He leaves the tube in place for a number of hours, up to thirty-six, and reintroduces it at intervals of four or five days or oftener as symptoms develop. In two cases reported in detail, an infant 19 days old and a child of nearly 3 presented intense tympanites, cyanosis and stupor, but almost immediate relief followed the intubation. In each case the tube seemed to meet with an obstacle past which it had to be worked. Conditions were apparently permanently corrected in the infant in a few days, but the treatment was kept up intermittently for several months in the older child. This intubation should certainly be given a trial, Magliani adds, before resorting to surgical measures in young children.

Prosthesis for Cleft Palate.—Arnone reports the absolutely satisfactory result obtained with a rubber plate, made according to dentistry technic, with which the cleft in the palate was closed, enabling the child to take the breast approximately normally. A string from the prosthesis was tied around the ear. In one of the two cases the cleft was bilateral and unusually large. The plate is illustrated.

Influenza an Eruptive Disease.—Francioni explains that the eruption is limited to the mucosa of the air passages, mouth and nose, but the disease belongs, he asserts, in the group of exanthemata.

Anales de la Facultad de Medicina, Lima

May-June, 1920, **3**, No. 15

Anatomy of Sculptured Head (1750). F. Quesada.—p. 207.
Opening Lecture of Physiology Course. H. F. Delgado.—p. 215.
*Epilepsy. C. A. Bambarén.—p. 221. Begun in No. 13, p. 18.
*Reconstruction of Forefinger. E. Delgado G.—p. 248.
Influenza in Children. R. Eyzaguirre.—p. 251.
Normal and Pathologic Speech. L. D. Espejo.—p. 264. Begun in No. 9, p. 169.
Microscopic Study of Balsam of Tolu. A. Maldonado.—p. 287.

Epilepsy.—Bambarén concludes his review of the present conceptions of epilepsy with an appeal for individualization in managing cases of epilepsy according as the brain or the endocrine system is responsible for the disease. The thyroid and parathyroids may be responsible for it directly or only secondarily, in the endocrine group, but in the cerebral group the primal cause may be infectious, toxic, traumatic, or from physical malformation or tumor growth. He remarks that the Abderhalden reaction has confirmed the cortical site of the cerebral lesion. Treatment should aim to remove the cause and supplement deficient endocrine functioning, with possibly nonspecific antigen therapy.

Transplantation of Toe to Hand.—Delgado's illustration shows the excellent results accomplished by transplanting a toe to lengthen the short stump of the right index finger, this and the two middle fingers being rudimentary.

Gaceta Médica de Caracas

May 15, 1920, **27**, No. 9

Magnesium Sulphate Subcutaneously in Constipation. J. R. Risquez.—p. 105.
Hydatid Cyst of Liver in Venezuela. J. M. García Parra.—p. 106. Idem. L. Razetti.—p. 111.

May 31, 1920, **27**, No. 10

Silver Salvarsan. J. Iturbe.—p. 117.
Sodium Citrate in Treatment of Pneumonia. F. de P. Ruiz Mirabal.—p. 119.
Hydatid Cyst of the Liver in Venezuela. A. Ortega.—p. 121.

Semana Médica, Buenos Aires

April 22, 1920, **27**, No. 17

*The Vitón Tuberculin Test and Treatment. J. J. Vitón.—p. 545.
Activities of the Plasma; Halogens and Tuberculins. S. de Madrid.—p. 552.
*Mercuric Cyanid Fatality. L. U. Rabuffetti.—p. 561.
Prophylaxis of Venereal Disease in Laboring Classes. L. Bard.—p. 562.
Polymorphism of Influenza. R. Rivas Jordan.—p. 565.
Retro-Omental Hydatid Cyst. L. U. Rabuffetti.—p. 567.
Organotherapy in Dementia Praecox. M. Helmann.—p. 569.

April 29, 1920, **27**, No. 18

Present Status of General Anesthesia. A. Rodríguez Egaña.—p. 577.
Glycogen in Auriculoventricular Conducting System. P. Rojas.—p. 591.
Conjunctivitis; Classification and Treatment. R. Argañaraz.—p. 595.
Present Status of Treatment of Visceral Syphilis. T. Pontano.—p. 605.

Vitón's Tuberculin Test and Treatment.—The "Argentine method" of giving extremely minute doses of tuberculin has been repeatedly mentioned in these columns. Vitón insists that in applying the tuberculin test it is as important to avoid an appreciable local reaction as a general febrile reaction, as both do serious damage. The optimal dose has to be determined tentatively for each individual. The diagnostic reaction is when there is a decided improvement in the focus, not an aggravation. This decided improvement in the focus and in the general condition is maintained by continuing the optimal dose until its effect is exhausted, and then increasing the dose a little. He argues that as statistics show that nearly every one of us is tuberculous, this infection must be a factor in many affections in which hitherto tuberculosis has not been incriminated. By his method of tuberculin treatment in extremely minute doses, this factor is eliminated more or less completely, and the system is then able to throw off the whole affection.

Dilutions of the tuberculin from 1:100,000,000 to the figure with fifteen zeros are what he uses in the subacute and chronic rheumatism of Poncet, neuralgias, dorsal myalgias, disordered heart action, arrhythmia and functional disturbances of various kinds without much impairment of the general health, and in all cases of mild impregnation with tuberculous toxins with little if any derangement of the metabolism. This is the "tolerant group" of patients. The "sensitive group" includes external glandular processes, paratuberculosis dyspepsia, endocrine derangement (exophthalmic goiter, hyperthyroidism, ovarian disturbances, etc.), diabetes, neuritis, and lesions of the eyes. In this group he uses dilutions of the tuberculin with from fifteen to twenty zeros. His third group embraces asthma, tuberculous nephritis, mild tuberculous toxemia and incipient apical disease. This group is treated with dilutions of from twenty-one to twenty-six zeros. The fourth group, the "hypersensitive," includes frankly febrile lesions and softening and cavity formation in the lungs. In this group he uses the tuberculin diluted to twenty-seven zeros. With these minute doses of tuberculin the organism is helped, not damaged at first before help is applied, as is the case with ordinary tuberculin treatment. He advises a tentative course of the kind in every pathologic condition which, contrary to expectation, shows no tendency to recovery under persevering classical treatment. Also in every slow chronic syndrome of whatever nature, and every pathologic condition for which no definite cause can be discovered. He has had great success, he relates, in tuberculous affections of the eyes rebellious to all other measures, including tuberculin by the ordinary excessive dosage. It does not conflict with other treatment, and systematic prophylaxis by this means in jails, schools and factories might modify the predisposition to phthisis and thus ward it off.

Fatal Injection of Mercuric Cyanid.—The drug was not deposited in the vein, as intended, and the region ulcerated. This involved the brachial artery and induced a fatal hemorrhage during slumber in the night.

Deutsche medizinische Wochenschrift, Berlin

Feb. 5, 1920, **46**, No. 6

Specific Nourishment of Keratic Tissues. N. Zuntz.—p. 145.
*Tonus of Smooth Muscle of Hollow Organs. J. Pal.—p. 146.
Sun-Lamp in Treatment of Children. Hamburger.—p. 147.
*Sachs-Georgi and Wassermann Reactions. T. Messerschmidt.—p. 150.
Attempts at Immunization against Tuberculosis by Turtle Tubercle Bacilli. A. Moeller.—p. 150.
*Paroxysmal Tachycardia During Childbirth. E. Muschallik.—p. 151.
*Tendon Transplantation in Radial Paralysis. K. E. Mayer.—p. 152.
Prosthetic Appliances for Contraction of Leg. F. Bähr.—p. 153.
Treatment of Trichophytosis and Sycosis Barbae. Wetterer.—p. 154.
Treatment of Flat-Foot. Heermann.—p. 154.
Technic of Intravenous Arsphenamin Treatment. H. Engleson.—p. 154.
Dermatologic Hints for General Practitioner. Joseph.—p. 155.

Tonus of the Smooth Muscle of Hollow Organs and Its Therapeutic Importance.—Pal, in his experimental study of the hollow organs, has come to regard tonus not as a condition but as a function which serves a very definite purpose. This function is to a certain extent opposed to the motor functioning power of the muscle. He finds that there are two distinct factors that characterize the condition of tension in the resting muscle. He terms these the tonic and the kinetic factors. The purpose of muscle tonus is to regulate kinetic processes. If necessary, this regulating function becomes a reparative function, as is seen in secondary hypertonia, but hypertonia may arise primarily as a disturbance of function from causes yet unknown. If the hypertonia assumes a reparative character, therapy is of course not indicated. Considering muscle tonus as a function gives rise to many new points of view, which are discussed with some detail.

Comparison of Sachs-Georgi and Wassermann Reactions.—On the basis of 1,122 serum tests, Messerschmidt reports that he found the Sachs-Georgi test of equal value with the Wassermann.

Paroxysmal Tachycardia During Childbirth.—Muschallik feels that he is justified in again calling attention to the ocurrence of paroxysmal tachycardia during labor by the fact that in several instances the attending physician has wrongly assumed that the high pulse was caused by internal hemorrhage, and has performed a useless laparotomy. In his case (a 23 year old primipara) the subjective condition of the patient was excellent, nor was the dyspnea present that usually accompanies a severe internal hemorrhage. A pulse of 140 and even 160 has been noted in some cases. The duration of the attack may be ten minutes or more, and it may recur after an interval of an hour or two.

Perthes' Tendon Transplantation in Radial Paralysis.—Mayer opposes the view that tendon transplantation to correct radial paralysis should be done as early as four or five months after the injury, provided no improvement has been noted during the interval. Mayer believes that such intervention is justified only if the nerve, after exposure, has been shown to be irreparably injured, or if, following attempted neurolysis, not four or five but from eighteen to twenty-four months have elapsed without any signs of a return of function. He argues that numbers of cases are encountered in which, for a much longer interval than six months, complete degeneration seemed to persist and there was not the slightest sign of nerve conduction, yet reexamination a year later revealed marked return of function.

March 4, 1920, **46**, No. 10

Spirochetes of the Buccal Cavity. E. Hoffmann.—p. 257.
Useful Staining Method for Spirochetes. E. Becker.—p. 259.
Tubercle Bacilli of Cold-Blooded Animals in Immunization Against Tuberculosis in Man. F. Klopstock.—p. 260.
To Make Best Use of Cineplastic Arm Stumps. Schlesinger.—p. 262.
Penetrating War Wounds of Esophagus and Larynx. Boerner.—p. 264.
*Case of Congenital Hernia of the Linea Alba. F. Sieber.—p. 266.
Case of Syphilitic Kyphosis. A. Woloshinsky.—p. 267.
Technic of Bacteriologic Examination of the Blood. Canon.—p. 268
Dermatologic Hints for General Practitioners. M. Joseph.—p. 268.

Case of Congenital Hernia of the Linea Alba.—Sieber states that with congenital hernia of the linea alba, conservative treatment with adhesive strips or truss cannot be expected to close up the sharp-edged gap between the fascia. The previous cases of Keiler and Klaussner, together with his own, prove, he thinks, that surgical intervention at once is well borne and brings about an entirely satisfactory result, with no injurious consequences. In Sieber's case the 2 months' old child had developed, during the first few weeks after birth, also an umbilical and a slight inguinal hernia. After the other two hernias were operated on the inguinal hernia did not reappear, so that the contemplated operation on this has been indefinitely postponed.

Monatsschrift für Kinderheilkunde, Berlin

June, 1920, **18**, No. 3

*Abnormally Large Amount of Feces in Young Children. G. Grimm.—p. 193.
*Growth and Nutrition of Children with Congenital Cardiac Anomalies. O. Weber.—p. 205.
Experience with Cubicle System in Heidelberg Children's Hospital. Hedwig Löwenstein.—p. 217.
A Case of Deafness in Infantile Scurvy. A. Seligmann.—p. 221.
Recent Studies on Fever and Heat Regulation. H. Mautner.—p. 225.

Significance of an Abnormal Amount of Feces in Young Children.—Grimm has been studying two cases of deranged nutrition in young children presenting the symptom of an abnormally large amount of feces, and here tabulates his findings in these and in three normal infants, the ages from

9 to 21 months. He finds that in normal children at the end of the first and at the beginning of the second year, if they are given a liberal mixed diet, the daily weight of the feces will vary from 43.7 to 70.9 gm. The bulk ranges from 78 to 87.5 c.c. and for each 100 gm. of food intake, from 5.5 to 8.5 gm. of feces were passed; for each kilogram of body weight, from 6.0 to 9.6 gm. of feces. Each 100 gm. of dry substance contained in the food yields from 6.4 to 7.9 gm. of dry feces. Of 100 gm. of ash in the food intake, from 27.1 to 41.1 gm. are passed in the feces, while 100 gm. of water in the daily food allowance correspond to from 5.2 to 9.1 gm. of water in the feces. In infants whose evacuations are unusually large, the daily food requirements are larger than in normal infants. In such children the weight of the daily feces ranges from 153.1 to 314.6 gm., while the volume varies from 160 to 370 c.c.; 100 gm. of food yield from 11.8 to 20.3 gm. of feces, which constitutes a remarkable variation from normal. The large stools are due to inadequate utilization of the food, and this finds its expression in the poorly nourished condition of these children. The result of his investigations shows that the voluminous stools are due to deranged intestinal digestion, a matter which has received little attention in the pathology of the intestinal tract in children. He hopes in later investigations to show the causes of this disturbance.

Growth and Nutrition of Children with Congenital Heart Defect.—After making a survey of sixty-two cases of congenital heart defect in children in the Universitäts-Kinderklinik, Berlin, Weber states that he was unable to discover any characteristic malnutrition or stunting of growth in the children with cardiac anomalies. It was evident, however, that children with congenital cyanosis and especially those with symptoms of congestion in various organs were more subject to deranged nutrition than other children with congenital cardiac disease. Children with dyspnea, especially in combination with cyanosis, likewise showed evidences of malnutrition. Hypotrophy was not found to be a constant accompaniment of congenital heart defects, and he could find no causal relation between the two conditions. Hypotrophy was nearly always associated with various other defects, so that it seemed necessary to look farther back for the destructive agency. However, in some cases no other damaging factor could be discovered other than the congenital heart defect.

Münchener medizinische Wochenschrift, Munich

Feb. 20, 1920, **67**, No. 8

*Intermittent Treatment with Antipyretics. H. Königer.—p. 205.
*Eye Disease Following Influenza. R. Hessberg.—p. 207.
Hospitalism in Foundlings' Homes. W. Kaupe.—p. 210.
*Prolapse of the Umbilical Cord. O. von Franqué.—p. 212.
Demonstration of Uric Acid in Precipitates. M. Weiss.—p. 212.
Filter Alarm; Safety Device in Roentgenotherapy. G. Holzknecht.—p. 213.
Auto-Observation of Recurrent War Hemorrhagic Nephritis. W. Gilow.—p. 213.
Utilization of Surplus Human Milk. F. Klose.—p. 214.
Elastic Fibers of the Cornea. R. Seefelder.—p. 214.
Toxicity of Rangoon Beans. Gabel and Krüger.—p. 214.

Intermittent Treatment with Antipyretics.—Königer says that our conception of antipyresis needs thorough revision. It is not true that antipyretic substances merely reduce the temperature and exert a sedative influence on the patient; in other words, their effect is not merely symptomatic. At least in tuberculosis, Königer claims to have proved, and he thinks it is likely true in other infections, that the reduction of the fever often has a profound effect on the progress of the disease. In the future all therapeutic use of antipyretic substances must take into consideration the after-effects of their administration.

Eye Disease Following Influenza Epidemic.—Hessberg reports, on the basis of special investigations, that a great many diseases of the eye were noted following the influenza epidemic of 1918-1919. Disease of the cornea was especially severe, although the prognosis was favorable. Affections of the uvea had a less favorable outcome, for the reason that the intoxication was evidently more severe. The frequent tendency to increased blood pressure in disease of the anterior eyeball was noticeable, doubtless due in part to a gorged condition of the vessels, and more especially the veins. Pathologic eye conditions were also often associated with meningeal and cerebral processes. Repeated lumbar puncture often gave early relief to jeopardized optic nerves.

Management of Prolapse of the Umbilical Cord.—Von Franqué opposes the view that reposition is the method of choice in dealing with prolapse of the cord, and advocates immediate version and extraction of the child. The mortality in a recent series of twenty-five cases was reduced to 16 per cent. when the latter method was used. The general mortality of the children in cases of prolapse of the cord in Munich from 1909 to 1918 was 62.5 per cent. In the case of a primipara of advanced years with no further prospect of pregnancy, he recommends cesarean section by the transperitoneal method to save the child.

June 18, 1920, **67**, No. 25

Epidemic (Lethargic) Encephalitis. F. Moritz.—p. 711.
*Therapeutic Effects of Pneumoperitoneum. C. Kaestle.—p. 714.
*Roentgen-Ray Treatment of Epilepsy. R. Lenk.—p. 715.
*Idiosyncrasy for Roentgen Rays. O. Strauss.—p. 717.
*Treatment of Plaut-Vincent Angina with Arsphenamin. Hirsch.—p. 718.
*Pathogenesis of Loose Bodies in Joints. H. Rieger.—p. 719.
Peculiar Exanthem in Diabetes in Child. G. Bihlmeyer.—p. 720.
*Infectiousness of Herpes Zoster. A. Bacmeister.—p. 721.
*Stereo-Auscultation. G. A. Roemer.—p. 722.
Technic of Artificial Pneumothorax and Pleural Puncture. A. Pongs.—p. 722.
An Apparatus for Hot-Air Douches. R. Dögler.—p. 723.

Therapeutic Effects of Pneumoperitoneum.—In using pneumoperitoneum for diagnostic purposes, Kaestle was impressed in three different instances with the marked clinical benefit that followed, which, as he is compelled to believe, was produced by the injected air. The favorable effects were noted in a case of suspected carcinoma of the liver or gallbladder, doubtless due to an overfilled gallbladder; in a case of atony of the colon, with enlargement of the liver and symptoms of gallstone colic, and also in one case of enlargement of the liver and gallbladder. In all three cases the air had been left in the abdomen, following the roentgenoscopy. Great caution is required in the selection of the patient and in carrying out the procedure. In view of the fact that the abdomen and not the peritoneum is filled with gas, "pneumoabdomen" appears to Kaestle to be a more accurate designation for the procedure, analogous to "pneumothorax."

Roentgen-Ray Treatment of Epilepsy.—Lenk concludes from his experience with five cases that, although temporary improvement was brought about in some cases, roentgen irradiation of the brain is not advisable in epilepsy. It has no permanent value and seemed at times even to aggravate the condition.

Idiosyncrasy for Roentgen Rays.—Strauss states that, strictly speaking, such a thing as an idiosyncrasy for roentgen rays does not exist. Lessened tolerance occurs only in rare instances, and when it does occur it is usually temporary. He describes five typical cases of roentgen-ray injury in his own experience in the last eight years, and emphasizes the wide range of tolerance in different regions and at different times in the same individual. The fact that at a given time a reaction may take place, and at another time, under apparently the same conditions, a reaction may not occur, makes it impossible for us in medicolegal proceedings to form, by means of subsequent irradiation, a definite judgment whether in a given case malpractice was committed or whether the injury was due to temporary lessened tolerance.

Treatment of Plaut-Vincent Angina with Arsphenamin.—Hirsch found arsphenamin, locally or by the vein, an efficacious remedy in the treatment of this disease.

Fat Embolism Responsible for Loose Bodies in Joints.—Rieger says that males are more subject to this condition than females as they are more exposed from the nature of their work to contusions, which are probably the main cause in the genesis of the fat embolism. The bone necrosis responsible for the loose bodies can take place only in bones whose marrow is so rich in fat cells that the vessels are in direct contact with the walls of the fat cells. The fat embolism can occur only at the joint end of the bone, since only here are the marrow arteries terminal arteries.

Infectiousness of Herpes Zoster.—Bacmeister reports two cases of this disease that occurred within two or three days after exposure through shaking hands with the same patient who had been released from a hospital during the height of the eruption. Evidently a specific virus was involved in this case.

Stereo-Auscultation.—Auscultation by means of two phonendoscopes Roemer finds very helpful in diagnosis. Both lungs or two parts of the same lung can be tested at the same time, which furnishes a differential auscultation. In examining the heart one phonendoscope may be placed over the apex and the other over the valves, by which pathologic changes are brought out more plainly. One tube of each phonendoscope is placed in the ear, and the other tube must be closed air-tight with the finger.

Wiener klinische Wochenschrift, Vienna

May 13, 1920, **33**, No. 20

*Indications for Prostatectomy. V. Blum.—p. 419.
Agglutination in Experimental Typhus. Weil and Felix.—p. 423.
Efficacy of Vaccination against Typhus. A. Galambos.—p. 424.
Pathologic Conditions in Skin of Animals. B. Lipschütz.—p. 426.
Pensions for War Disability. K. Meixner.—p. 428.
Practical Clinical Teaching. F. Hamburger.—p. 429.

Indications For and Against Prostatectomy.—Blum says that the indications for radical surgical treatment of hypertrophy of the prostate are derivable first from recognition of the fact that all other methods of treatment would be more dangerous and would not block the natural progress of the disease process nor stop cancerous degeneration of the hypertrophied gland. Ordinary treatment by catheter has a mortality of 8 to 10 per cent.; castration and vasectomy, a mortality of 27 per cent., and cystotomy, 33 per cent. As for roentgen and radium treatment, they have not as yet attained any permanent results. Prostatectomy, on the other hand, has a mortality of only 5 to 8 per cent., and from 92 to 95 per cent. of recoveries, a higher percentage than by any other method. Complete or partial retention of urine or severe subjective symptoms that seriously impair the general health of the patient are sufficient indications for prostatectomy. Contraindications are: general marasmus, especially the severe forms of urinary cachexia, and severe permanent disturbances of heart function; uremic and diabetic coma; cerebral and spinal paralysis; grave diseases of the internal organs, such as tuberculosis and carcinoma, and severe bilateral kidney disease with considerable uremia, also perivesical and periprostatic suppurations.

Zeitschrift für Tuberkulose, Berlin

June, 1920, **32**, No. 3

Pulmonary Tuberculosis in Wartime. O. Kieffer.—p. 129. Conc'n.
*Children of Tuberculous Parents. J. W. Langendörfer.—p. 150.
Diagnosis of Spontaneous Pneumothorax. F. Mock.—p. 160.
Spontaneous Pneumothorax from Rupture into Artificial Pneumothorax. H. Maendl.—p. 162.
Sanatorium Treatment. G. Liebe.—p. 165. Reply. F. Köhler.—p. 167.

Children in Tuberculous Families.—Langendörfer has been investigating the fate of 269 children in 50 families at Bonn in which one or both parents were tuberculous. Over 54 per cent. of the children have succumbed to tuberculosis; the danger from the tuberculous mother is much greater than from the father. The later born children are more endangered than the others, and from 1 to 5 and just before and after puberty are the most dangerous years.

Zentralblatt für Chirurgie, Leipzig

May 15, 1920, **47**, No. 20

False Aneurysm of Mammary Artery. V. Wieting.—p. 466.
*Exclusion of the Pylorus. W. Kotzenberg.—p. 468.
Are Recurrences More Frequent After Postoperative Roentgen Irradiation of Cancer of Breast? Tichy.—p. 470; Idem. Kohler.—p. 472.

Simple Method of Exclusion of the Pylorus.—Kotzenberg states that in spite of a gastro-enterostomy, food often continues to pass through the pylorus, which thus prevents the healing of the pyloric or duodenal ulcer. For this reason exclusion of the pylorus has been combined with gastro-enterostomy. Suturing or ligation of the pylorus with heterogenous or autoplastic material has not insured a lasting closure. Therefore the operation of choice has been of late Eiselsberg's radical transection of the pylorus, which is done in much the same manner as stomach resection. In view of the not inconsiderable danger associated with the Eiselsberg operation, Kotzenberg has devised a simpler but no less radical method which he has tried in six cases and feels that he can recommend for its effectiveness and its harmlessness. The method is described with an illustration. Clamps are applied each side of the pylorus, about 8 cm. apart. The anterior stomach wall is then incised across between them. The mucosa of the posterior wall opposite, and the mucosa alone, is slit, and a small cylinder is cut out of the mucosa on each side of the main incision. Then the proximal and the distal stumps of the mucosa are each drawn up with a tobacco-bag suture. The stump of the proximal mucosa is pushed down, and the lip of the incision in the anterior stomach wall is sutured to the musculature of the posterior stomach wall. Then the stump of the peripheral mucosa is buried in the same way by suturing over it the peripheral lip of the incision to the musculature of the posterior stomach wall. The serosa is then sutured together over the whole. He adds that the posterior wall of the stomach thus is left unmolested, and the stomach is left in its natural position, while the closure of the pylorus is absolute.

Zentralblatt für Gynäkologie, Leipzig

June 5, 1920, **44**, No. 23

*Injections of Woman's Own Milk to Stimulate Secretion. F. Lönne.—p. 593; Idem. C. Meyer.—p. 597.
Treatment of Grave Asphyxia Neonatorum. Thies.—p. 607.
Collargol by Vein for Gonorrhea in the Female. K. Romeick.—p. 611.
Etiology of Postoperative Parotitis. W. Schulze.—p. 613.

Injections of Patient's Own Milk to Stimulate Secretion.—Meyer reports the results of the injection of the woman's own milk in twenty women after childbirth. In two cases no effect was noted; in six cases the effect was weakly positive; twice it was impossible to decide whether the increased milk flow was due to the injections or to other causes, but in sixteen cases, or 61.5 per cent., in from twelve to thirty-six hours after the subcutaneous injection of from 1.5 to 3 c.c. of the woman's milk a distinct increase of the milk secretion was noted, but as a rule the increase lasted only a few days, when the flow fell off again. The effect in most cases followed so soon after the injection that doubts as to the causal connection seem unwarranted. Sometimes the patients were not informed as to the nature of the injections, and in many cases the increased amount of milk following the injection was more than double that of the preceding day. Lönne reports two cases among others in which the injections several weeks after childbirth seemed to afford the needed stimulus for the deficient secretion, the women thereafter having abundance of milk.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

June 12, 1920, **1**, No. 24

Pain and Temperature with Spinal Cord Disease. Klessens.—p. 2118.
Köhler's Bone Disease. Freia Coenen and H. J. J. Blauwkuip.—p. 2131.
*The So-Called Vagus Neuroses. H. Bolten.—p. 2138.

The So-Called Vagus Neuroses or Vagotonia.—Bolten seeks to demolish the theory of hypertonia of the vagus as the explanation of what have been labeled vagus neuroses. He declares that congenital hypotonia of the sympathetic is the real cause of the disturbances. The congenital neuropathic constitution and the neuroses are due to a substandard vegetative nervous system, and this inferiority is most pronounced in the sympathetic portion of this system. With these neuroses (gout, asthma, epilepsy, migraine, urticaria, mucous colitis, intermittent hydrops of joints) there is a constitutional disturbance of the fermentative purin metabolism from hypotonia of the sympathetic. Instead of excessive functioning of the vagus, the trouble is merely inadequate functioning of the sympathetic system.

Hygiea, Stockholm

July 16, 1920, **82**, No. 13

Mistaken Sex. H. Berg.—p. 417.
Injury of the Ureter with Pelvic Operations. W. Forssell.—p. 431.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, No. 11 — CHICAGO, ILLINOIS — SEPTEMBER 11, 1920

DISPOSITION OF THE URETER IN SURGICAL CONDITIONS OF THE BLADDER

WHEN THE URETERAL ORIFICES ARE INVOLVED*

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CLEVELAND

Undoubtedly the most difficult outstanding problem in genito-urinary surgery is the treatment of malignant tumors of the urinary bladder. As in all other cancerous conditions, the problem would be simplified if these cases were presented earlier; but, as is the case with malignant tumors not on the surface of the body, cancer of the bladder as a rule is not recognized until it is far advanced. The condition might be discovered sooner were it not for the failure of the profession at large to recognize the diagnostic importance of hematuria, which is never physiologic but always pathologic. This failure in too many cases allows the growth to progress to such a stage that the operation at best can be little more than palliative. Most tumors of the bladder bleed at some stage in their development, and in the majority of cases, bleeding is an early symptom. Therefore, if the possible significance of hematuria were recognized, the operative results in cases of bladder tumor would bear favorable comparison with early operations for cancer in any other part of the body.

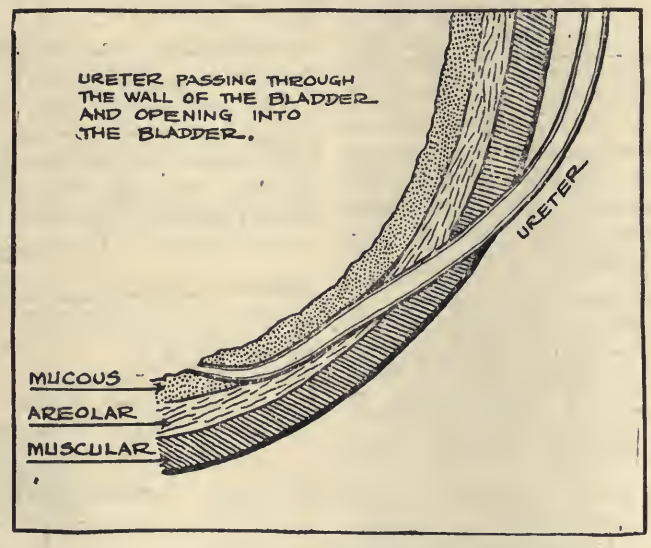


Fig. 1.—Course of ureter through the wall of the bladder.

As the symposium for today covers the various forms of treatment of malignant tumors of the bladder, I shall consider only the treatment in those cases in which the vesical end of the ureter is included in the growth. In this discussion a brief consideration of the structure and function of the ureter may be pertinent. The ureter's function is the transportation of urine from the kidney to the bladder, and the prevention of back pressure of urine. If the ureter can properly perform this function its course is of no special concern. The importance of maintaining an unobstructed route for the passage of urine from the kidney is obvious. To subserve this end the ureter has a mucous lining, liable to disturbance by infective forces, a second coat of muscular tissue to insure proper dilatation and contraction, and an outer fibrous connective tissue sheath. For its further protection and efficiency, the ureter lies well protected behind the peritoneum and runs within the bladder wall for a considerable distance (Fig. 1), the distention of the bladder acting as a valve by mechanically closing the ureter and preventing regurgitation.

As the excretion from the kidney is virtually continuous, without the presence of a reservoir—the bladder, the emptying of which is under voluntary control—there would be a constant dribbling of urine, a condition with which one must reckon when, for any cause, it becomes necessary to remove the bladder or to transplant the ureters to an anomalous position.

Several methods of transplantation of the ureters have been commonly employed. One of these is transplantation into the loins, some sort of retainer being used to catch the constant flow of urine. Another is transplantation into the large intestine, generally the rectum. But such methods are obviously not used for the transplantation of only one ureter.

A method frequently used when only one ureter is to be transplanted has been to divide the ureter behind the bladder and transplant it to a point beyond the area of the growth by simply puncturing the wall of the bladder and inserting the ureter, which is secured by two flaps. As a result of this procedure the ureter dilates very readily and usually becomes infected, the infection extending upward to the pelvis and calices of the kidney. In several cases I have been obliged to remove the kidney destroyed as a result of the infection and distention of the ureter after this type of transplantation.

In fact, to dissect out the ureter and then transplant it to another part of the bladder so that it will properly function is not by any means a simple procedure; moreover, such a procedure necessarily prolongs the operation considerably. As these cases, as a rule, are bad

* Chairman's address, read before the Section on Urology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

risks, such a prolongation of the operation in itself is detrimental. It is necessary, therefore, to plan a technic which will be free from the objections to the procedures described above, and which will keep the ureter under as nearly normal conditions as is possible, while at the same time it will not unduly lengthen or magnify the operation.

To this end the methods described below have been employed: the first is used in cases in which a portion

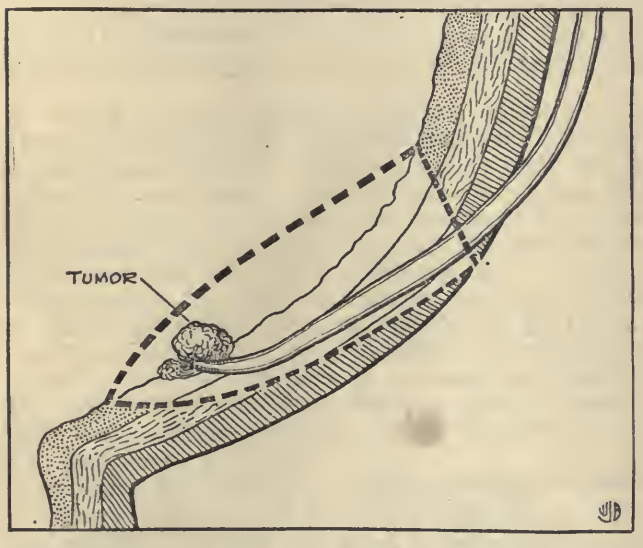


Fig. 2.—Excision of growth involving vesical end of ureter: line of incision.

of the bladder wall is involved, including one ureteral orifice; the second, in cases in which the greater part of the bladder is involved and when palliative measures seem the only possible end to be attained, though occasionally a complete cure is possible.

DISPOSITION OF THE URETERS IN CASES OF PARTIAL EXCISION OF THE BLADDER

In the first class of cases referred to above I have for some years employed a method which, as far as I can discover after a careful search of the literature, has not been reported by any surgeon, although it has undoubtedly been used.

When the tumor is situated at the vesical end of the ureter, an elliptic incision is made (Fig. 2), the dissection being made sufficiently wide and deep to insure the complete removal of the growth. As a rule, this dissection does not necessitate the resection of the ureter for more than from one-half to three-fourths inch. After the resection, the wound is closed by interrupted catgut sutures (Fig. 3); I generally use 000 chromic catgut. These sutures are adjusted without tension, so that they simply arrest hemorrhage. The ureter is not disturbed from its normal environment, and the urine which trickles down at regular intervals finds its way into the bladder between the sutures (Fig. 4). A mucous membrane soon forms, and a ureteral opening is reestablished, which generally is situated somewhat higher than the ureteral opening on the opposite side.

After this procedure had been employed several times it was a pleasure and a relief to note that there followed no renal colic and no evidence of ureteral obstruction, and later cystoscopic examination demonstrated that urine was being emitted from the ureters.

In order to confirm the clinical data I have performed a number of experiments on animals and have found that by resecting the vesical end of the ureter and making only a sufficient adjustment to arrest hemorrhage without occlusion of the ureteral orifice, a patent fistula is soon formed. If the wound separates, as it is likely to do if infection occurs, then there may be formed a shallow diverticulum with the ureteral orifice in the center.

This ureteral opening may be somewhat constricted, but in no case have I had evidence of a sufficient constriction to produce a hydronephrosis. On the other hand, if the cut edges are very closely approximated, the wound may unite and cause more or less of a constriction, as happened in one of the experimental cases in which a dilated ureter and hydronephrosis resulted.

By this method a tumor may be excised with a sufficiently wide margin to insure its complete removal and the ureter remain transplanted, as it were, in situ. This is a much simpler method than the transplantation of the ureter to some other part of the bladder. Moreover, it has the advantage of assuring the protection of the ureter by its normal covering and, when the bladder is distended, tends to prevent regurgitation. With the assurance that the flow of urine will not be obstructed, the operator can concentrate his attention more directly on the radical excision of the growth than is possible when the transplanatation of the ureter must be considered also.

DISPOSITION OF URETERS IN CASES OF TOTAL EXTIRPATION OF BLADDER

The general procedure in these cases has been discussed in a paper previously read before this section. It is referred to here merely to complete the discussion and to emphasize the importance of providing as nearly normal conditions as possible for the transplanted ureters. To this end I employ in the main the

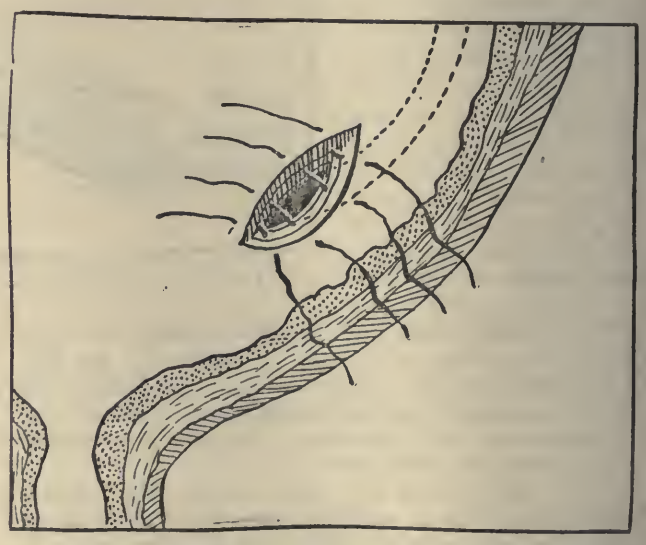


Fig. 3.—Closure of wound after excision of growth involving vesical end of ureter.

technic of Coffey, whereby the ureters are transplanted into some portion of the large intestine, preferably the sigmoid or the rectum as near the bladder as possible. To provide the ureter with a near approach to the normal protection of that portion which passes through the walls of the bladder, the intestine is split *to* but not through the mucous membrane, on which the ureter is laid lengthwise, the end being passed within the intestine. The walls of the

split intestine are then closed over the ureter. That is the way the ureter passes into the bladder, the way the common duct passes into the duodenum. It is nature's method of making a valve and, as Coffey described it, it is a "physiologic transplantation." When the bladder or the intestine is distended, the ureter is closed and regurgitation is prevented. The operation in this class of cases is performed in multiple stages—first, the transplantation of one ureter;

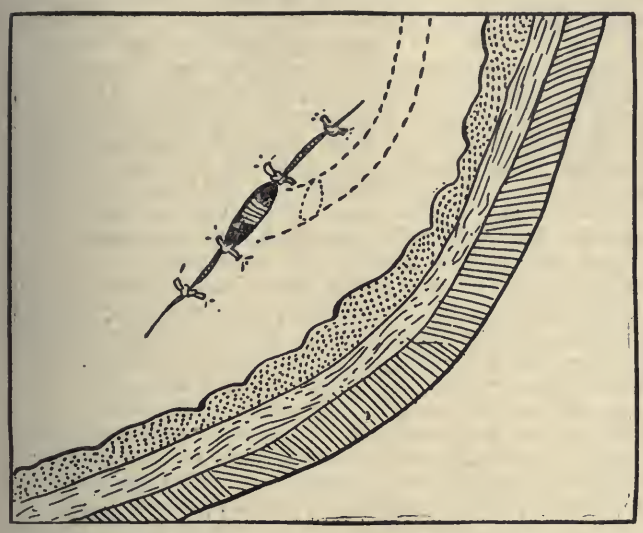


Fig. 4.—Schematic drawing of ureter in situ after excision of growth involving the vesical end.

then the transplantation of the second ureter after the patency and efficiency of the first transplantation is assured; and finally the extirpation of the bladder.

SUMMARY

In any surgical procedure, the more nearly natural conditions may be conserved the greater the probability of success. By the application of this principle in the transplantation of the ureters, the operation is simplified and the efficiency of the ureter conserved.

ACUTE INFECTIOUS MYOCLONUS MULTIPLEX AND EPIDEMIC MYOCLONUS MULTIPLEX

(EPIDEMIC ENCEPHALITIS)

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As acute infectious myoclonus multiplex I would direct attention to an unusual clinical type of acute infection of the nervous system which may appear both in sporadic and in epidemic form. The isolated or sporadic form is quite rare. Epidemic myoclonus multiplex, on the other hand, has been of frequent occurrence during the last winter and represents a special type of the epidemic encephalitis.

SYMPTOMATOLOGY

The onset of the disease is acute and is characterized by sharp shooting pains in the trunks and extremities, at first local but rapidly becoming generalized. They may reach an extreme degree of intensity. Spinal pains are sometimes present but are not nearly so intense as in the more peripheral areas.

The pains are soon followed by the pathognomonic muscle jerks, waves and twitchings (myoclonus and myokymia multiplex) that characterize the affection. The muscle contractions follow in the wake of the pain and make their appearance in those parts where the pains were first manifested. In some cases an interval of a week may elapse before the appearance of myoclonus and myokymia. The twitchings are bilateral and multiple, and may be generalized. A tendency to localization in certain regions of the body may occur, the muscles of the abdomen and lower extremities showing an especial vulnerability. The contractions are of quick clonic character, involving individual muscles or portions of muscles, but not synergic groups, so that the resulting locomotor effect is comparatively slight.

In many of the casees there is well marked delirium, which varies in duration and intensity with the severity of the infection. In milder types there may be only irritability, restlessness and insomnia, associated with anxiety and apprehension. The myoclonus-delirium presents the characteristics of a toxic delirium, and is characterized by hallucinations, illusions and transitory delusions. There are restlessness, insomnia, apprehension, disconnected thought and mental confusion. The symptoms are all more conspicuous at night, and the delirium content frequently takes on an occupation form. In the graver cases there is an attention disorder with symptoms of Korsakoff's syndrome. In the late stage there may be apathy and a tendency to stupor.

During the course of the disease there is moderate fever, acceleration of the pulse, and often hyperhidrosis. The degree of sweating seems to bear a relation to the activity of the muscular phenomena. There is no tenderness of the nerve trunks, but during the painful stage there is general sensitiveness to movement and surface impressions (hyperesthesia). The myotatic irritability of the affected muscles may be increased, and there is sometimes an exaggeration of the normal idiomuscular response (myoidema).

There is no paralysis or paresis of any muscle or group of muscles. The sensory disturbances are chiefly irritative in character, consisting of pain, hyperesthesia and occasional paresthesias in the distal parts of the extremities. There is no anesthesia in the usual sense, and only rarely a diminished sensibility to pain during the acute stage of the disease. There is no ataxia and no loss of the deep sensibility. The tendon reflexes are usually present and active. Occasionally, in the late stages the Achilles jerks and the knee jerks are diminished or not elicitable.

There are no other evidences of organic disease of the nervous system, and the clinical picture is characterized by myoclonus and myokymia multiplex, lancinating pains and delirium. The mode of onset and course of the disease are suggestive of an infectious process with limited, selective involvement of the central nervous system.

The relationship of the epidemic form of myoclonus multiplex to epidemic encephalitis is shown not only by its prevalence at the same time, but also by various combination forms (cranial nerve palsies and myoclonus) which have been encountered. And there is little doubt that all of these various types are related to the same etiologic factor; whether this be true of

the sporadic type of myoclonus multiplex is, I believe, still an open question.

PARAMYOCLONUS MULTIPLEX AND MYOKYMIA

The peculiar nature of the motor disorder which these cases present is well recognized in neurologic literature, and is described under such headings as paramyoclonus multiplex,[1] myokymia[2] and myoclonus fibrillaris multiplex.[3] They are all to be regarded as representing varying degrees of a fundamental type of motor disorder, referable to the lower motor neurons.

A variety of etiologic factors have been recognized. Among these may be mentioned shock, exhaustion, exposure to cold, diabetes, lead poisoning trauma and alcoholism. Myokymia has also been recorded as a late sequela of sciatica and poliomyelitis. Similar muscular phenomena have also been observed in the course of certain infectious diseases,[4] as diphtheria, malaria and acute articular rheumatism.

Paramyoclonus multiplex and myokymia are not to be confused with myoclonia of the cortical type. Cortical myoclonia is a motor disorder which affects synergic groups of muscles and produces considerable locomotor effect. It resembles much more in the character of movements produced, the chorea or tic convulsif, and is readily differentiated from myoclonus of the spinal type. This is characterized by involvement of individual muscles or portions of muscles which, as such, are not voluntary control.

Myoclonus multiplex, myokymia and muscle fibrillation are therefore referable to the spinal level of the central nervous system and are to be sharply distinguished from myoclonic manifestations of cerebral origin.

Pathology has thrown very little light on the localization and nature of these motor disorders. They are evidently irritative manifestations resulting from direct or reflex excitation of the peripheral motor neurons, the exact seat of which cannot be determined with any degree of certainty in the present state of our knowledge.

The nervous system of Friedreich's original case of paramyoclonus multiplex was subjected to careful pathologic study by Schultze[5] with quite negative results. Some years later I[6] had an opportunity of studying the nervous system of paramyoclonus multiplex (Friedreich's type) by modern histologic methods. No lesions of the nervous system were found that explained the peculiar motor phenomena of this disease. There was, however, some hypertrophy of the muscle fibers which was regarded as an effect and not a cause of the disease.

When one considers the frequency of meningeal, radicular, ganglionic and other forms of spinal and peripheral nerve irritation, in which there are no evidences of myoclonus or myokymia, it would appear hazardous at the present time to attempt a more definite localization of the disorder than as irritative manifestations referable to the spinal level of motility.

1. Friedreich: Paramyoclonus Multiplex, Virchows Arch. f. path. Anat. **86**: 421, 1881.
2. Schultze, F.: Beiträge zur Muskelpathologie (Myokymia), Ztschr. f. Nervenh. **6**: 65, 167, 1894.
3. Kny: Ueber ein dem Paramyoclonus multiplex (Friedreich) nahestehendes Krankheitsbild, Arch. f. Psychiat. **19**: 577, 1888.
4. Cited by Eichhorst: Spezielle Pathologie und Therapie **3**: 553, 1907.
5. Schultze: Ueber den Paramyoclonus multiplex (Friedreich), Neurol. Centralbl. **16**: 363, 1886.
6. Hunt, J. R.: A Contribution to the Pathology of Paramyoclonus Multiplex (Friedreich Type), J. Nerv. & Ment. Dis. **30**: 408, 1903.

Nine cases of infectious myoclonus multiplex have come under my observation during the last sixteen years, two sporadic cases, one in 1904, and another in 1914. The remainder were of the epidemic type and occurred during the recent epidemic of lethargic encephalitis.

REPORT OF CASES

THE SPORADIC TYPE

CASE 1.—*History.*—In 1904, while engaged in the pathologic study of a case of paramyoclonus multiplex, I saw in Bellevue Hospital, through the courtesy of Dr. C. L. Dana, this unusual case. It was that of a young man who had been admitted to the ward in delirium, and who presented generalized twitchings and quiverings of the skeletal muscles. These had been preceded by pain. The muscular contractions were similar to those described in cases of paramyoclonus multiplex and myokymia, and were characterized by clonic contractions, muscle waves and fibrillations, producing but slight locomotor effect and not involving synergic groups. They continued during the entire course of the disease, which terminated fatally about a month after admission.

Course.—During this period there was moderate fever, which rose in the later period of the disease. There were no evidences of organic disease of the nervous system other than the myoclonusmyokymia multiplex and the delirium. The reflexes were normal; there were no paralyses and, so far as could be determined, no anesthesias. The delirium was quite active at first, requiring restraint and later passing into stupor. No definite history of the mode of onset could be obtained, excepting that it was acute, and accompanied by pain. The symptoms appeared only shortly before admission, and careful clinical and laboratory examinations at the time failed to throw any light on the nature or origin of the delirium and the myoclonus.

Histologic Examination.—After death a necropsy was performed, and this failed to show any gross lesions of the visceral or nervous system, other than those secondary to an acute infection. The case caused considerable interest and comment at the time, but was finally disposed of as myokymia, occurring in the course of an obscure infection. Through the courtesy of Dr. Dana, the nervous system and some of the muscle tissue were placed at my disposal for microscopic study. Histologic examinations were made of portions of the cerebral cortex; of the brain stem, the spinal cord and peripheral nerves and muscles, and no lesions were found, other than the acute cellular changes characteristic of infection. It was especially noteworthy that the anterior horn cells were in a very good state of preservation; only an occasional cell showed chromatolysis and eccentric position of the nucleus. There were no hemorrhagic or inflammatory foci and no meningeal reaction. The peripheral nerves and muscles revealed no special evidences of disease, and no pathologic lesions were found which would explain the existence of the curious motor disturbance, which at the time (sixteen years ago) was regarded as a toxic, irritative manifestation of the lower motor neurons.

A number of years later, in 1914, I saw at the Neurological Institute with Dr. Pearce Bailey another case of similar nature. I am indebted to Dr. Bailey for the privilege of reporting this case.

CASE 2.—*History.*—A salesman, aged 37, married, and of Irish extraction, was admitted to the Neurological Institute, April 14, 1914, with generalized muscular twitchings, which were diagnosed as paramyoclonus multiplex. The affection began six weeks previously, with very severe pains in the back and legs, following a severe exposure in a snow storm. The pains were so severe that it was difficult for him to find relief in any position. They lasted several days, and then gradually subsided, leaving in their wake curious twitchings and spasmodic contractions of the muscles and a feeling of general weakness. At the time of onset the family physician reported a moderate elevation of temperature (about 100 F.), rapid pulse (120) and a tendency to delirium at night.

The man's previous history was negative, save for pneumonia at the age of 15, and typhoid fever at 22; venereal disease was denied. There was no history of trauma, mental or physical. The patient had been quite moderate in the use of tobacco and of alcohol. There was no history of any alcoholic excesses.

Examination.—On admission, there was a state of general muscular weakness, but no actual paralysis of any group of muscles. The gait and station were rendered slightly uncertain by the muscle jerks and quiverings, but there was no actual ataxia, either static or locomotor. There was a tremor of the hands and the fingers, and clonic contractions and quiverings of the muscles of the forearm. There was no ataxia of the upper extremities.

In both lower extremities, but especially in the muscles of the calf, there was a constant flow of fine and coarse muscular movements. These were wavelike in character, and were plainly visible, involving not only the finer fiber bundles (fibrillation) but also the larger groupings so that fascicular contractions were produced (myokymia); at times the whole muscle was involved in the contraction (myoclonus).

As a result of these movements the feet and legs were in a state of slight constant unrest, as the muscle twitchings were sufficiently forcible to flex and extend the toes, and produce other slight movements of the foot. While these movements were most pronounced in the calf muscles, they were nevertheless present in the muscles of the sole of the foot, and to a lesser degree in the quadriceps, the hamstring muscles and the glutei. The muscles of the back and shoulder girdle showed occasional rapid contractions beneath the skin. At times these contractions followed one another in rapid succession with as great an activity as in the lower extremities. Similar movements were also to be seen in the deltoids, and in slighter degree in the pectoral muscles. The muscles of the arm and hand were only slightly affected. In the recumbent posture the abdominal muscles were the seat of spasmodic and wavelike contractions, similar to those noted in the lower extremities.

The cranial nerves were normal. Articulation at times appeared to be slightly affected, although no definite signs of muscle twitching were visible in the face or tongue. The tendon reflexes were elicitable, and equal on both side. The knee jerks and Achilles jerks were normal, as were the triceps, biceps and supinator jerks of the upper extremities. The abdominal and cremasteric reflexes were present, but diminished. The plantar reflex was of the flexor type. There was no Babinski reflex. When the skin was stroked there was developed a distinct tendency to dermographia. There was also a marked hyperhidrosis, which continued during the entire course of the disease. All sensation, both general and special, was normal.

Ophthalmologic examination, by Dr. Ward Holden, was negative. The vision was 20/20 in each eye. Pupils were equal, and responded normally to light and accommodation. There were no fundus changes. The heart and lungs were normal.

April 16, blood count revealed: red cells 4,912,000; hemoglobin, 91 per cent.; white blood corpuscles, 19,200; differential count: neutrophils, 60 per cent.; small lymphocytes, 28 per cent.; transitionals, 1 per cent.; large lymphocytes, 10 per cent.; eosinophils, 1 per cent. The Wassermann test of the blood was negative.

April 21, the Wassermann test of the spinal fluid was negative; globulin content, negative; 6 cells per cubic millimeter; Fehling's reduction, positive; blood culture, negative.

April 14, the specific gravity of the urine was 1.026. It was acid. No albumin, sugar, excess of indican, casts or blood was noted.

Examination of the feces was negative.

Subsequent Course.—The patient remained in the hospital from April 14 to May 9, 1914. During this time there was no fever; the pulse was rapid, and ranged from 115 to 120. The systolic blood pressure curve ranged from 160 to 180. Respirations ranged from 20 to 30 to the minute.

During the entire period of observation in the hospital and up to the time of the patient's discharge, there was a distinct tendency to delirium. He was restless and nervous, continually getting out of bed, and showing evidences of apprehension at night. It was difficult to restrain him. At times he was noisy and would shout; he would hold imaginary conversations with people, talked to himself, and thought that people were in the room with him. During the day he was quieter and much more manageable, but at night the delirium would come on, and he would become restless, excited, see faces and imaginary people in the room, and would hold imaginary conversations during the greater part of the night. At such times he perspired very freely. One night he had a sense of pressure and of a heavy weight on his chest and thought that some one was throwing something down on him. During this period there was constant insomnia, and he was confused and talked irrationally. On other occasions he would become rather troublesome and threatening with the nurses so that restraint was necessary. Once he thought he had spikes in his head and tried to pull them out. In the morning these symptoms would usually clear up and he was much brighter. On another occasion he said he must have his clothes: that he was going to Chicago on the first express train to transact important business. He spoke of having some kind of a bug in his head, but could not think of the correct name of it. He said they would go around in circles, and stretched a piece of rubber until it snapped. He said he knew of a man in Chicago who had invented a machine for killing these bugs—that the bugs would put their heads in the hole of the trap, and immediately their heads would be burned off. This condition of nocturnal delirium and slight mental confusion continued during the entire period that he was in the hospital. He was a restless and rather troublesome patient and difficult to manage. He was discharged, May 24, slightly improved. The mental condition was better, and the muscular movements had diminished in frequency and intensity.

Subsequently his family physician reported that five months after his discharge he returned to work, having gained 40 pounds in weight, and has since enjoyed his usual health.

Reexamination, May 19, 1916, revealed fibrillary twitchings in the legs; otherwise the neurologic examination was negative. His mental condition was entirely normal, and for a year and a half he has held a position of manager and buyer for a large department store.

EPIDEMIC TYPE

CASE 3.—*History.*—In January of the present year I saw, in consultation with Dr. Martin Burke, a man, aged 50, married, the father of four children. He was a merchant and had led a rather sedentary life. In recent years he had put on considerable weight. There was no history of syphilis. Formerly he had been rather free in the use of alcohol, but of late years he had been quite moderate in this respect.

There was no history of trauma, mental or physical. The disease from which he suffered was of acute onset and was ushered in by excruciating pains in the extremities, beginning in the arms and gradually extending to the trunk and legs. These pains were sharp and shooting in character, requiring analgesics for their relief. They continued with uninterrupted severity for fully a week. On the third day, curious muscle jerks and twitchings made their appearance in the arms and legs, and later in the trunk and abdominal muscles. At first they were quite active in the upper extremities, so that finer voluntary movements were interfered with. On standing and walking, while there was no true ataxia, a slight disturbance of the harmony of movement was manifest, owing to the effect on the extremities of the constant muscle waves and twitchings. There was slight fever from the very beginning, which continued throughout the course of the affection, ranging from 100 to 102 F. The pulse was accelerated, and varied from 100 to 110 beats a minute. Even during the first week a tendency to nocturnal delirium was noted. The patient thought that strange persons were in the room, and became anxious and apprehensive; at other times, he imagined that he was in the country and wanted to get up and go out for the cows. At first the delirium was only at night, but subsequently evidences of mental confusion were present also during the day, with memory falsifications and hallucinations. He frequently talked as if he had been out of the house a short

time before, described what he had seen at the moving picture show, whom he met on the street, and the conversations that he had. Occasionally, he thought he was on the sea, and that his bedroom was a cabin on a ship. He was in a depressed mood much of the time. At other periods he was rather excited and talkative. Later the mental confusion took on the aspect of a mild form of Korsakoff's syndrome, which persisted up to the time of his death.

Examination.—Jan. 22, 1920, the patient was large and obese, with a heavy, prominent abdomen. The face was flushed and the eyes bright. He was quite responsive and answered correctly questions as to his symptoms and mode of onset. The gait and station showed no Romberg symptom and no ataxia, but yet were slightly altered by the incessant spontaneous muscle spasms and twitchings. The articulation also presented at times a very slight disturbance, which was to be ascribed to the occasional muscle waves in the musculature of the face and tongue. When the patient was stripped and in a recumbent posture, the muscles of the trunk, abdomen and legs were observed to be in a very active state of myoclonus and myokymia. This condition had been present in the upper extremities, but had subsided and was not present at this examination. An occasional fibrillary twitching or wave was to be noted in the facial musculature and was also present in the tongue muscle, which may account for the very slight dysarthric disturbance that was noted. Coarse muscle waves and fibrillary twitchings were present in all the muscles of the lower extremities, especially on the posterior aspect, in the glutei, hamstring, and calf muscles. At times these movements were so strong as to produce a slight but distinct locomotor effect of the extremity; but as a rule these sudden brief contractions of portions of the muscle mass were not strong or pronounced enough to produce movement, or changes in the posture of the extremity. Percussion of the muscles revealed an increased myotatic irritability and a marked accentuation of the idiomuscular response. The most unusual muscular phenomena, however, was to be noted in the abdomen. The prominent abdomen was tossed about in a most bizarre and unusual manner by coarse muscle waves and contractions. I have rarely observed a more striking symptom than that of the abdomen being rocked and contorted by these innumerable waves of muscle contractions. There was no paralysis of any muscle group, but a state of general muscular weakness was present. There was no singultus.

Sensation was normal, and there were no paresthesias, although numbness and tingling were present at the onset of the disease. The pupils were equal, and reacted promptly to light and accommodation. There was no nystagmus, and the fundus oculi was normal. The cranial nerves were normal.

All of the tendon reflexes of the upper extremities were elicitable and active (the supinator, biceps and triceps jerks). The knee jerks and Achilles jerks were also present and equal.

The plantar reflex was normal (no Babinski response). The abdominal reflexes were elicitable and were quite exaggerated. The heart was enlarged, and the heart sounds were rather feeble. There were no murmurs. The pulse rate was 100 beats to the minute. The systolic blood pressure was 170. The lungs were normal. The urine showed a trace of albumin and a few hyaline casts. There was no sugar. The phenolsulphonephthalein tests disclosed a renal functional activity of 60 per cent.

Subsequent Course.—Feb. 3, 1920, the patient's condition was decidedly worse. The temperature ranged from 102 to 103 F.; the pulse was more rapid, the breathing, hurried. The lungs were free from râles, and the heart sounds were weaker. The mental condition was worse. There was nocturnal delirium, with Korsakoff's syndrome. The patient imagined that he went out and had been to the movies earlier in the day; he talked as if he had met me a few hours before, and that he was going out again shortly. He related constantly imaginary events of this kind, with occasional hallucinations, and at times saw strange faces and imaginary people. In other respects he was fairly clear, knew those about him, and knew that he was in his own house; but there also was a tendency for him to become somewhat confused and disconnected in his ideas. The pains had ceased entirely and required no special medication. Muscle twitchings and contractions still persisted and were somewhat less active. The abdominal musculature appeared to be the storm center of the contractions at that time, and gave the patient the greatest discomfort. The hand placed over the calf muscles, however, revealed a sense of undulation which was scarcely visible to the naked eye and was evidenly dependent on deep seated muscle waves and twitchings that were not registered on the surface.

The abdominal reflexes were still quite active and showed a hyperexcitability of the reflex response. The knee jerks were difficult to elicit, and were diminished. The Achilles jerks were not obtained. The plantar reflexes were normal.

The patient continued in this condition, gradually growing worse, both mentally and physically. Fever ranged from 102 to 103 F. The delirium and myoclonus multiplex continued up to the last. The heart action gradually failed and the patient succumbed five days later, about four weeks from the time of the onset of the disease.

CASE 4.—*History.*—A man aged 38, a clerk, who came under my observation in January, 1920, whose previous history was negative, had been a resident of New York for some years. The onset of the disease was sudden, and was ushered in by very severe shooting pains in the feet and legs. These were most distressing in their severity, and continued for about four or five days. After this they diminished somewhat in the lower extremities, but appeared in the hands and arms. He stated that during the first few days the feet and legs were numb from the knees down, but this passed away with the pains and did not return. The pains were described as sharp and biting in character, both in the lower and in the upper extremities. The muscular twitchings were not observed until the sixth day of the disease, when they made their appearance in the lower extremities. They appeared only after the pains had diminished in intensity and were subsiding. Later the muscular twitchings extended to the muscles of the trunk and were especially severe in the region of the abdomen, the muscle walls of the abdomen being the seat of muscular waves and contractions which, although not painful, caused the patient considerable discomfort and uneasiness. The arms were also affected with the muscular twitchings, but in a lesser degree. From the first and during the first two weeks of the disease there was a moderate fever, the temperature not rising above 100 to 101 F. The pulse was somewhat exaggerated, and ranged from 85 to 100. At times during this period there was nocturnal delirium. This was not very severe, but it was stated that the patient would carry on imaginary conversations, would see strange faces, and menacing figures in the room, and was at times apprehensive, restless and excited, attempting to get out of bed and go out in the hall. During the day he was comparatively free from these exciting episodes, but was somewhat confused and at times was irrational and disconnected in his speech, relating imaginary happenings and adventures.

Examination.—There was a condition of generalized myoclonus multiplex, affecting the legs and muscles of the back and abdomen and the upper extremities. There was a slight tremor of the outstretched hands, and on standing and walking a very slight uncertainty was produced by muscular waves and twitchings. The twitchings varied in character and degree in different muscles. There were fibrillations, muscle waves, and even contractions of the entire muscles, although the fibrillary and wavelike movements predominated, and it was only occasionally that the entire muscle was observed in momentary contraction. There was but little motor effect produced on the extremities, and the muscle disturbance was of such character as to expend itself in partial muscular contraction without much locomotor effect. The contractile manifestations were generalized, and bore no especial relation to individual muscles or to their synergic activities. They were most marked in the muscles of the calf and posterior aspects of the thigh. If the hand was placed on the calf muscles or the abdominal wall, there was distinct sensation of wavelike movements and undulations, which was very characteristic. There was no paralysis of any muscles or muscle group,

although a state of general muscular weakness was complained of. The muscle and nerve trunks were sensitive during the first week of the disease, and then subsided with the pain, and after this there was no demonstrable tenderness of nerve trunks or muscle tissues. In the early period of the disease there was a marked tendency to sweating, which was still present, but in a lesser degree. On direct percussion of the muscles the myotatic irritation was found to be increased and the idiomuscular response was very pronounced, a large welt developing at the side of the percussion which gradually subsided.

The pupils were equal and responded to light and accommodation. The cranial nerves were normal. The fundus oculi was normal. No myokymic twitchings were noted in the face or tongue. The arm jerks were present (supinator, biceps and triceps), and were equal on the two sides. The knee jerks were present and equal. The Achilles jerks were not elicitable. The plantar reflexes were normal. The abdominal and cremasteric responses were present, with some exaggeration of the abdominal reflex. Pain sensibility of the leg, below the knee, was somewhat blunted; otherwise the sensibility, both superficial and deep, was normal. The heart, lungs and urine were negative.

CASE 5.—*History.*—A single man, aged 25, a conductor, suffered from sharp shooting pains in the back and legs which began suddenly. They appeared at first on one side, but a day or two later on the opposite side. These were very severe and caused acute suffering, especially at night. They gradually extended to the trunk and arms, and at the end of a week began to subside. The characteristic muscle twitchings were noted during the end of the first week in the legs, trunks, abdomen and arms in the order mentioned, and appeared to follow in the wake of the pains. The abdominal muscles were especially affected by the spasmodic and undulating, wavelike movements.

There was moderate fever and an acceleration of the pulse, with some tendency to excessive sweating. During the first week of the disease the patient was delirious at night, his thoughts wandered, and he saw strange faces and strange people in the room and talked disconnectedly. At these times he talked as if pursuing his ordinary occupation, calling out the names of his fellow workers and giving orders. These delirious manifestations subsided at the end of the second week and did not recur.

Examination.—The patient was well developed, and in good general health. The gait and station were normal, with no weakness or paralysis in the extremities or of any muscle group. He complained, however, of general muscular weakness and of being easily fatigued. There was no tenderness of the nerve trunks or of the muscles. The tendon reflexes of both upper and lower extremities were elicitable and were equal on the two sides. Percussion of the muscles revealed marked myotatic irritability and a well marked idiomuscular response. All qualities of sensation were normal. The cranial nerves were normal. The pupils reacted normally, and the fundi oculi were normal. The heart and lungs were negative. The urine was normal. The Wassermann test of the blood was normal.

CASES 6-9 (abstract of case reports).—In February and March, 1920, four cases of the epidemic type were seen, in consultation with Dr. Lewis A. Conner and Dr. William R. Williams, in the medical wards of the New York Hospital. These cases presented the same symptoms but in somewhat milder form than those which have just been described. All were in young adults, three of whom were men and one was a woman. The onset was acute, and accompanied by sharp shooting pains in the extremities and trunk which continued from four to five weeks. In all four the myoclonus and myokymia multiplex were limited to the muscles of the trunk and especially the abdominal musculature. It was also present in the muscles of the lumbodorsal region.

There was no well defined delirium in any of these cases. In all, however, there was present insomnia, great restlessness, apprehension and irritability. There was no tenderness of the nerve trunks and no anesthesias. There were no evidences of weakness or of paralysis in any cranial or spinal distribution.

The knee jerks were present, and the Achilles jerks were elicitable in all save one. In this group of cases the pains were more persistent and severe and the muscular jerks and twitchings milder than in those observed in the earlier period of the epidemic. Blood culture was taken in two cases and found negative. There was no leukocytosis. The spinal fluid showed no abnormalities in three cases; in one there was a slight increase of lymphocyte (30) cells. All the patients eventually recovered.

COMMENT [7]

The cases just described present a striking similarity in the clinical picture, varying only in degree and in severity. The special and distinguishing symptoms are the muscle waves and twitchings, and the shooting pains. Often there is dilirium. This was a marked feature of all the cases, except those appearing in the later period of the epidemic when a mild and comparatively localized type of myoclonus multiplex made its appearance.

The myoclonus and myokymia multiplex, however, are alone characteristic, as pain and delirium may occur in the course of other acute infections.

The disease begins abruptly, with shooting pains, which increase in intensity and rapidly become generalized. These may begin in either the upper or lower extremities. In the cases that I observed they were limited to the trunk and extremities and were not manifested in the sensory distribution of the cranial nerves. In all of the cases they were exceedingly sharp and caused acute suffering. Only rarely were paresthesias noted, with occasional blunting of pain sensibility. The muscle jerks and twitchings followed either immediately in the wake of the pains or more commonly after an interval of a few days. Usually they continued long after all pain had disappeared. All degrees of muscle contractions were present, namely, fibrillation (myoclonus multiplex fibrillaris) muscle wave (myokymia) and contractions of the whole body of the muscle (myoclonus). The surface of the body reflected a variety of muscle contraction with only slight, if any, locomotor effect on the extremities. When the myoclonus was of a more severe type, the gait and station and voluntary movements of the arms were slightly disturbed by the play and undulation of the muscles.

In the sporadic cases, the muscle waves and twitchings were generalized, and this was also true of the earlier cases of epidemic type which came under my observation. Later, when the epidemic was on the wane, a milder type was encountered, without active delirium, and muscle twitching was limited to the lower half of the trunk muscles. In this group of cases, pain was quite severe and very persistent. No other evidences of organic disease of the central nervous system were demonstrable. One of the most striking symptoms was the severity of the involvement of the muscles of the abdomen in all of the cases. This is rather significant, as I have not observed it in anything like the same degree in myoclonus and myokymia multiplex from other causes. Singultus was not observed in any case.

DIFFERENTIAL DIAGNOSIS

The nature of the disease becomes clear as soon as the characteristic muscle jerks and twitchings make their appearance. Before this it would be difficult to

7. Cases of the epidemic type have been observed by Boveri, P.: Brit. M. J. **1**: 570 (April 24) 1920. Pardee, I. H.: Arch. Neurol. & Psychiat. **4**: 24 (July) 1920, and later reports will no doubt show the comparative frequency of this clinical type. So far as I am aware, examples of the sporadic form have not been previously recorded.

exclude any acute disease beginning with sharp pains, and presenting the other evidences of a general infection.

Multiple neuritis with delirium may be excluded by the absence of motor or sensory paralysis and of tenderness.

Acute poliomyelitis may also be excluded by the absence of paralyses and consecutive muscular atrophy. Dubini's disease, an obscure affection of the nervous system, which is epidemic in certain parts of Italy, notably Lombardi, may also be excluded. This affection in its more acute form is characterized by headache and backache, and is followed by myoclonic contractions of cerebral origin; hence the term chorea electrica; also convulsive attacks resembling jacksonian epilepsy. Later there is paralysis of certain muscle groups which had been the seat of myoclonus, with wasting and changes in the electrical reaction. It is an obscure form of encephalomyelitis which may occur in acute and chronic forms. The sensorium is, as a rule, free. So far as I know, the disease has not been observed in this country.

The affection might present a marked resemblance to the infectious chorea with mental symptoms (chorea insaniens). The nature of the motor disorder is, however, quite different. In chorea, there are purposeless, incoordinate movements, with marked and characteristic motor effects in contrast to the muscle jerks and twitchings of the myoclonus-myokymia type, which are not under synergic control, and which are indicated by waves and undulations rather than by movements of the part. In both diseases, infectious chorea and infectious myoclonus, the mental disturbances are those of toxic delirium. In the more severe cases (chorea insaniens), the symptomatology is that of a grave toxic psychosis with chorea. A similar termination may occur in the more severe forms of infectious myoclonus and a myoclonus insaniens may result, in which a grave toxic psychosis is associated with the motor manifestations of myoclonus multiplex.

Epidemic encephalitis, or lethargic encephalitis, should be especially considered in this relation, as it has reached epidemic proportions at the present time and may occur in a variety of clinical forms; cerebral, spinal and neural. What has been described as epidemic myoclonus multiplex undoubtedly belongs to this group, and represents a special "myoclonus-myokymia type" of this affection, a point of view which is strengthened by the coexistence of undoubted cases of epidemic encephalitis with myoclonus and myokymia multiplex. The relation of the "sporadic type" to the epidemic form is, I believe, still an open question and cannot be settled until we know of the etiologic factors involved.

CONCLUSION

The acute infectious myoclonus multiplex may, therefore, be regarded as a definite clinical type of acute neural infection.

In its epidemic form, it is a part of the large clinical group that has been so prevalent during the last two years in this country and in Europe—the epidemic of lethargic encephalitis.

The relation of the sporadic to the epidemic type of infectious myoclonus multiplex is still problematic, although it would appear probable that they are of similar origin, and that the epidemic encephalitis has been appearing for a considerable time unrecognized, in certain sporadic forms. That the disorder is of infectious origin and referable to a micro-organism or its toxic product is made clear by the mode of onset, course and general symptomatology.

At to special etiologic considerations, it would appear likely that a special strain of the organism has acquired an affinity for certain tissues of the nervous system, and in this way the peculiar and very limited clinical reaction of infectious myoclonus multiplex has been produced. Other factors of a more theoretical nature may also be considered, as exhaustion or biologic inferiority of certain neural systems which render them more susceptible to the deleterious influences of disease.

To those who are interested in the theory of the elective localization of bacteria, the organisms or virus obtained from cases of this clinical type, with its peculiarly limited form of neural involvement, would offer especial advantages for experimental study.

46 West Fifty-Fifth Street.

ACUTE METHYL ALCOHOL POISONING*

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The increasing incidence of poisoning with wood alcohol has shown the necessity for an efficient method of treatment. A study of a series of cases in the medical wards of the Cincinnati General Hospital has led to a plan of treatment that promises to be of value in saving life and in preventing blindness, the most serious of the complications of the convalescent.

The methyl alcohol is taken either in the form of denatured ethyl alcohol, or as commercial wood alcohol, usually with the intention of taking a substitute for whisky. Cases of suicidal poisoning or accidental and occupational forms are also encountered. The symptoms vary with the amount taken, the type of the mixture and the length of time before treatment is begun.

SYMPTOMS AND PATHOLOGY

In the extreme cases the patients are brought in in a comatose condition, usually with cyanosis which sometimes is very intense. In a fatal case, in which the patient was admitted to the wards in a moribund condition, the color was a deep blue-black. The cyanosis is more marked over the upper part of the body—chest, arms and hands, neck and head—than over the lower part, although the feet may be blue and cold in severe cases.

Methyl alcohol appears to act as a respiratory poison, the rate of breathing in severe cases being reduced to six or fewer times per minute and quite shallow. In the mild cases the respiration rate may not be affected, and sometimes, especially if complicated by other substances, as ethyl alcohol, Jamaica ginger, lemon extract and other similar whisky substitutes, the rate may be more rapid, commonly 24. One case, complicated by strychnin poisoning and bronchopneumonia, developed a rate of 36. The breath usually has the odor of methyl alcohol, showing pulmonary excretion of the poison.

The temperature is subnormal at times, but usually reaches 99 some time during the first twenty-four

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hours, remaining normal after this in the uncomplicated cases.

During the acute stages the pulse is accelerated, reaching 100 and over (120). In a fatal case the heart continued to beat for several minutes after respiration had ceased. With improvement, there is a slowing of the pulse. The heart sounds are usually clear, but not very forceful.

A characteristic feature is dilatation of the pupils, which, however, may react somewhat to strong light. With return of full consciousness, the patients usually complain of blurring of vision, noted in from one to twelve hours. Often the ophthalmoscope fails to show any abnormal appearance, although serous exudates along the course of the blood vessels, hyperemia of the disk, with blurring of the edges, sometimes of the nasal side only, and finally optic atrophy, with contraction of the retinal vessels and peripheral limitation of the field of vision, are sometimes noted. The conjunctiva may be congested.

Headache is usually experienced, being quite constant on the following day, with sometimes a feeling of numbness in the head. At postmortem there is a marked edema and congestion of the brain and meninges, with increase in the cerebrospinal fluid. On spinal puncture, the fluid is clear and under increased pressure. There may be no increase in globulin or cell count. Vertigo is frequently present.

Nausea is usually present, vomiting, frequently. The vomitus, sometime after gastric lavage, may still have the odor of methyl alcohol. Pain, at times cramplike, may be present in the epigastrium, with tenderness, or in the lower part of the abdomen. During the toxic stage there may be incontinence of urine and feces. Postmortem there is some edema of the gastric mucosa, with increase in mucus, and numerous deep red areas of ecchymosis. The liver is brownish, and the cut section is lusterless and very friable, and easily crushed. The kidneys show injection of the surface and internal vessels, and there is some cloudy swelling. During life the urine may show a trace of albumin, with or without casts, and is usually acid to methyl red. Acetone bodies are usually absent. A volatile compound, which reduces Fehling's solution, may be present. Krol [1] found an increased ammonia output in dogs. There may be a preliminary period of anuria. The blood often is a deep chocolate color, such as is seen in conditions in which methemoglobin is formed, and is spectroscopically similar. Harrop and Benedict [2] report definite findings of acidosis in a case of methyl alcohol poisoning, with the bicarbonate content of the blood plasma equivalent to 36.4 per cent. by volume of carbon dioxid.

The mode of action of the toxic agent is still problematic. Wassermann and Keysser [3] considered the effect to be due to "toxic peptids" resulting from the action of the methyl alcohol on the proteins of the gastro-intestinal tract. Stadelmann [4] suggested that the slow oxidation of the alcohol resulted in accumulation, with resulting toxic action. Magnus-Levy [4] pointed out a possible similarity between the action of the poison and that of the toxins and ptomains, and suggested the possibility of methylization of compounds found in the body. Kobert [5] noted the selective poisonous action of the drug on different people, describing it as due to idiosyncrasy. Others consider the poisonous action to be due to the impurities, as furfurol and oxalic acid. The action of the pure and impure wood alcohol, however, does not seem to differ materially (Hunt,[6] Buller and Wood [7]), and the impurities themselves give other or less marked symptoms, in the amounts present (Baskerville [8]). Pohl [9] considered that the toxicity was caused by the formation of formic acid from incomplete oxidation of methyl alcohol. The resulting "acidosis" was considered by Krol [1] to be the cause of the syndrome.

The symptoms seem to group themselves into a paralysis or depression of the medulla and the cranial autonomic system, sometimes the sacral, with an additional selective action on the optic and possibly other nerves. Symptoms may be severe after the drinking of small amounts, or light even after large amounts have been taken, depending on the individual and his previous experiences, as well as the conditions under which the methyl alcohol was taken, as after heavy excesses with ethyl alcohol.

TREATMENT

Various treatments have been recommended. These consist of stimulants, as caffein, epinephrin, strychnin, digitalis, camphor, oxygen, pilocarpin and also potassium iodid. Gettler and St. George [10] suggest saline or sodium bicarbonate infusions and phlebotomy, with repeated gastric and rectal lavage. Fenton [11] reports a case of blindness in which the patient recovered after the instillation of ethylmorphin hydrochlorid (dionin) into the eyes. The patient was taking sodium bicarbonate freely by mouth. Harrop and Benedict [2] report the recovery of a patient following 5 per cent. solution of sodium bicarbonate intravenously.

The plan of treatment is based on alkalization and elimination. If the patient is not comatose, and is received within twelve hours after taking the wood alcohol, it is well to pass a stomach tube and wash out the contents with a 1 or 2 per cent. solution of sodium bicarbonate in warm water, as experience has shown that some of the alcohol is excreted into the stomach. Three or four ounces of a 50 per cent. solution of magnesium sulphate solution are then poured in through the tube and left in the stomach. Sometimes an hour or more after washing, the patient will vomit a considerable amount of food débris having a marked odor of methyl alcohol. The patient is put to bed, kept warm if his temperature is low, and is given 3 gm. of sodium bicarbonate, with about 250 c.c. of water every two hours, for about six doses, being awakened for his medication if asleep. Sometimes a whiff or two of aromatic spirits of ammonia will serve to awaken the patient enough to make him swallow. The dose of bicarbonate may be doubled without apparent ill effects.

1. Krol, J.: Ueber das Wesen der Methylalkoholvergiftung, Arch. f. exper. Path. u. Pharmakol. **72**: 450 (July 3) 1913.
2. Harrop, G. A., Jr., and Benedict, E. M.: Acute Methyl Alcohol Poisoning Associated with Acidosis, J. A. M. A. **74**: 25 (Jan. 3) 1920.
3. Wassermann, M., and Keysser, F.: Ueber Toxopeptide, Folia Serolog. **7**: 243, 1911.
4. Stadelmann and Magnus-Levy: Ueber die in der Weihnachtszeit vorgekommenen Massenvergiftungen in Berlin, Tr. Berlin med. Gesellsch., Oct. 1, 1912.
5. Kobert, R.: Kompendium der praktischen Toxikologie, Ed. 5, 1912, p. 219.
6. Hunt, Reid: The Toxicity of Methyl Alcohol, Bull. Johns Hopkins Hosp. **13**: 213 (Aug.-Sept.) 1902.
7. Wood, C. A., and Buller, Frank: Poisoning by Wood Alcohol, J. A. M. A. **43**: 972 (Oct. 1), 1058 (Oct. 8), 1117 (Oct. 15), 1213 (Oct. 22), 1289 (Oct. 29), 1904.
8. Baskerville, C.: Air Impurities: Dusts, Fumes and Gases, New York M. J. **96**: 1061, 1119, 1912.
9. Pohl, J.: Ueber die Oxydation des Methyl. und Aethylalkohols im Thierkörper, Arch. f. exper. Path. u. Pharmakol. **31**: 281, 1893.
10. Gettler, A. O., and St. George, A. V.: Wood Alcohol Poisoning, J. A. M. A. **70**: 145 (Jan. 19) 1918.
11. Fenton, R. A.: Use of Dionin in Wood Alcohol Blindness, Northwest Med. **19**: 22 (Jan.) 1920.

After this the patient is given 3 gm. of sodium bicarbonate with a glass of water, three times a day, one hour before meals, until the symptoms have disappeared. A safe guide as to the dose is to keep the fresh urine alkaline to methyl red. Fluids are forced, and a liquid diet is given until the acute symptoms are over. Then the diet may be as varied as the patient wishes.

If the patient is comatose, or if the cyanosis is very marked, with respiration much depressed, it is well not to wash out the stomach at first. In this case, or if medication by mouth is not retained, 1,000 c.c. of cerebral compression. After Fischer's solution there appears to be a dehydration of the nervous tissue, with increase in spinal fluid. The breathing usually improves rapidly, the mental state clears, and in from six to twelve hours the cyanosis has virtually disappeared. There is rapid improvement in the eye signs, the blurring of vision disappearing in from twelve to twenty-four hours, or sometimes a slightly longer period. The abdominal tenderness soon disappears.

It is well for the patient to remain in bed until the cyanosis has disappeared and the mental confusion has

TABLE 1.—EXAMPLES OF CASES TREATED BY ALKALIZATION

Case	Material Taken	Condition	Blurring of Vision	Treatment Begun (After Taking)	Treatment	Comment
E-4829	½ pint denatured alcohol (with methyl)	In coma; cyanotic; pupils dilated; blood deep chocolate color	+	4 to 10½ hours	1,000 c.c. Fischer's solution intravenously; later, gastric lavage; sodium bicarbonate, etc., by mouth	Improvement within 3 hours; after third day all symptoms had gone; recovered with no impairment of vision
E-4837	1 pint denatured alcohol (with methyl)	Semicomatose, cyanotic, "head felt numb"	+	Over 12 hours	Gastric lavage; magnesium sulphate; 900 c.c of Fischer's solution intravenously; later, sodium bicarbonate, etc., by mouth	Rapid recovery with no impairment of vision; discharged after 5 days
E-4908	½ pint denatured alcohol (with methyl)	Recovered consciousness on reaching hospital; slight cyanosis; pupils dilated, nausea, headache	+	About 4 hours	Gastric lavage; magnesium sulphate; sodium bicarbonate, etc., by mouth	No symptoms remained after second day; recovered with no impairment of vision
E-678	1 pint of whisky; 4 ounces of bay rum	Conscious, "going blind," face flushed; abdominal pain; conjunctiva congested	+ Within 1 hour	2 to 3 hours	Gastric lavage; magnesium sulphate; enema; sodium bicarbonate and citrate, 40 grains of each, every hour, with 8 ounces of water	Complete clearing up of vision in three days
E-4963	Lemon extract, 24 oz.; 3 or 4 drinks of supposed "whisky" (with methyl alcohol)	Cyanosis; vomiting; headache; vertigo; conscious	+	4 to 5 hours	Gastric lavage; magnesium sulphate; 1,000 c.c. Fischer's solution intravenously; spinal puncture; later sodium bicarbonate, etc., by mouth	After 12 hours, vision was "as clear as before" the attack; complicating syphilis, chronic alcoholism, aortic dilatation; discharged with no bad effects
E-5165	1 ounce of supposed "whisky" (with methyl alcohol)	Felt weak; dizzy; stuporous; pain in abdomen; vomiting; slight cyanosis	+ Congestion of nasal halves of both disks	8 hours	Gastric lavage; magnesium sulphate; colonic flushing; 800 c.c. Fischer's solution intravenously; later sodium citrate and bicarbonate by mouth	Vision clear by third day; discharged recovered

TABLE 2.—CASES NOT RECEIVING ALKALIZATION

Case	Material Taken	Condition	Blurring of Vision	Treatment Begun (After Taking)	Treatment	Comment
D-4440	8 ounces of "wood alcohol"	Dyspnea, cyanosis, cough and rusty sputum in last 8 hours; tremors	?	About 20 hours	Gastric lavage; magnesium sulphate; later, sodium bromid, scopolamin, tr. digitalis, caffein sodium benzoate; atropin sulphate (each when indicated)	Developed pneumonia and died
E-4804	4 or 5 (?) ounces of clear solution containing wood alcohol	As in Case E-4829, marked respiratory depression with cyanosis; pupils dilated; unconscious	?	Not known; probably within 4 hours	Caffein sodium benzoate; epinephrin	Respiratory paralysis; patient died within ½ hour after reaching ward

Fischer's [12] sodium carbonate (0.37 per cent.) sodium chlorid (1.4 per cent.) solution at 99 F. is given slowly intravenously. *In case of any doubt, it has been our custom to give the intravenous injection.* No ill effects have been noted. If there is time and there seems to be congestion of the venous circulation from embarrassment of the right side of the heart, it may be well to draw off from 100 to 300 c.c. of blood before giving the intravenous injection. Half may be given at one time, and the other half later. It has usually not been necessary to give a second intravenous injection on succeeding days. A spinal puncture may be made if there is much restlessness and if there are signs of cleared. The bowels should be kept open with magnesium sulphate. The average stay in the hospital was about five days, with treatment for two or three days. It is well to have the patient return at intervals to note whether or not there has been any permanent damage. All our patients have had hematropin or atropin sulphate dropped into their eyes for ophthalmoscopic examination.

The tables show some of the symptoms and effects of alkalization as opposed to the method of stimulation only. The toxic symptoms are produced by widely different amounts in different individuals. The blurring of vision varied from inability to count fingers held about a foot in front of the eyes to inability to read ordinary newspaper print, but with enough light

12. Fischer, M. H.: Oedema and Nephritis, New York, Ed. 2, 1915, p. 549.

perception to count fingers. These conditions had cleared up entirely at the time of discharge.

SUMMARY AND CONCLUSIONS

1. Wood alcohol appears to vary in its toxicity to different individuals.

2. The symptoms are those of depression of the medulla and the cranial autonomic system and at times the sacral. There is usually a marked and early effect on vision.

3. There is a rapid disappearance of the symptoms (unless the anatomic injury is beyond repair) with intensive alkali therapy.

4. Many of the toxic symptoms probably accompany the acidosis, which may be associated with the acid production (formic) and with methemoglobinemia.

MERCUROCHROME-220

A CLINICAL AND LABORATORY REPORT ON ITS USE IN OPHTHALMOLOGY *

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The preliminary report of experimental and clinical studies on mercurochrome-220 by Drs. Hugh H. Young and E. O. Swartz, the urologists, and Edwin C. White, Ph.D.,[1] the chemist, was of such unusual interest as to attract the attention even of the ophthalomologist.

The new synthetic compound is one of a large series produced in the laboratories of the Brady Urological Institute, in "the effort to obtain a really effective antiseptic for local use in the genito-urinary tract."

Chemically, the substance is a compound of fluorescein and mercury, the thought being to combine the penetrating quality of the dye with the germicidal quality of the metal, at the same time avoiding the irritating effect of the well known powerful mercury compounds in common use, such as the chlorid, iodid and cyanid salts.

The conclusions of these authors from their preliminary studies were that "1 per cent. solutions of mercurochrome-220 gave no evidence of irritating qualities when used in the conjunctival sac of rabbits." Microscopic examination of sections of the mucous membrane of the bladder and other parts of the genito-urinary tract which had been exposed for five minutes to a 1 per cent. solution of mercurochrome-220 in the living animal (rabbit) showed that the cytoplasm of the epithelial cells was stained, and the submucosa as well, though less uniformly; and in some places the dye penetrated even to the muscularis.

Tests of germicidal power were made in urine under careful precautions as to H-ion concentration, and were compared with similar tests of other well known antiseptics. In one minute 1:1,000 mercurochrome-220 kills *Staphylococcus aureus*, a result obtained with none of the other drugs even in one hour; 1:100 mercurochrome-220 kills *Staphylococcus aureus* almost instantaneously (not over ten seconds); 1:100 protargol failed to kill *Staphylococcus aureus* in one hour; 1:10 argyrol, however, killed in five minutes.

A series of cases of cystitis and pyelitis of long standing and refractory to other treatments were rapidly sterilized, so that the authors were able to say, "Now for the first time we feel that we have a method of quickly curing certain chronic infections of the bladder. . . . It has been demonstrated that the drug is of great value in the treatment of gonorrhoea." Also, "It has proved eminently satisfactory in the treatment of chancroids, and as a dressing for buboes after incision."

Only one test was reported of the activity of mercurochrome-200 in a serous fluid; 1:1,000 killed *Staphylococcus aureus* in hydrocele fluid in one hour. Comparative tests of other antiseptics in hydrocele fluid were not reported in this article.

It seemed to us that here was abundant evidence to warrant investigating mercurochrome-220 from the ophthalmic point of view. Without waiting to accumulate more complete data, as we should prefer to do, we present by special request the results of a few weeks' clinical observation and a number of laboratory tests.

In acute infections of the conjunctiva, a 1 per cent. or 2 per cent. solution of mercurochrome-220 was instilled from one to several drops at a time, from three to ten times a day. The secretion of mucus and pus was very rapidly diminished, often strikingly so. The same is true of many other drugs, however. It is our opinion that a more rapid reduction of discharge takes place under mercurochrome-220 than under zinc sulphate, boric acid, argyrol or mercuric chlorid, which are the drugs we most frequently employ.

It is particularly gratifying to see a conjunctivitis following an operation on the eyeball respond to mercurochrome-220. If on removing a dressing we find a notable amount of discharge, we use mercurochrome-220, 1 per cent., three times a day, and expect to find a marked improvement the following morning. The combined effect of the trauma of the operation and the bandage often sets up an increased discharge from the conjunctival sac; and this is more promptly and surely arrested by mercurochrome than by any other treatment we have tried.

In plastic operations in which skin grafts are used, it is not uncommon for an offensive odor to appear after a few days, showing the growth of saprophytic organisms; 1 per cent. mercurochrome-220 in small doses applied twice or three times a day will promptly stop the odor, not by its deodorizing but by its antiseptic action.

In ulcers, the drug shows by its staining quality that it penetrates the infiltrated zone.

Four cases of pneumococcus ulcer with hypopyon, in elderly patients, have been treated with mercurochrome-220:

CASE 1.—A farmer, aged 71, had been treated outside for traumatic ulcer of more than two weeks' duration. There were hypopyon, old iritic adhesions, and a large amount of pus in lacrimal sac. A smear showed the presence of pneumococcus. The ulcer had been treated with tincture of iodin, tetraiodophenolphthalein ointment, and other drugs. January 18, the lacrimal sac was opened freely through the anterior wall; it was irrigated, filled with mercurochrome, 2 per cent., lightly packed with iodoform gauze, and the

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* Read before the Section on Ophthalmology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Young, H. H.; White, E. C., and Swartz, E. O.: A New Germicide for Use in the Genito-Urinary Tract: "Mercurochrome-220," J. A. M. A. 73: 1483 (Nov. 15) 1919.

canaliculi were ligatured: the ulcer was freely cauterized with the actual cautery, but without paracentesis. Mercurochrome, 2 per cent., was used every two hours, and hot applications, tetraiodophenolphthalein ointment and atropin, three times a day. No infiltrated area appeared at any part of the margin of the ulcer after this treatment was begun. Recovery was uninterrupted except by a small keratocele.

CASE 2.—A man, aged 78, had been treated four weeks for a traumatic ulcer, which was steadily growing worse; there was history of lacrimal obstruction. January 27, the ulcer was cauterized with the actual cautery; 2 per cent. mercurochrome, atropin, tetraiodophenolphthalein powder and hot applications were used, each three times a day. This retarded the progress of the ulcer, but did not arrest it. February 7, it was cauterized again, and mercurochrome, 1 per cent., was used every two hours when the patient was awake. In spite of repeated cauterization and paracentesis, the ulcer steadily progressed, and the eye was enucleated, February 17.

CASE 3.—A laborer, aged 68, had a traumatic ulcer with hypopyon. There was no lacrimal obstruction. Tetraiodophenolphthalein ointment had been tried, also atropin, hot applications and a bandage. He was slowly growing worse. February 19, 95 per cent. phenol (carbolic acid) was used, followed by alcohol. February 23, the actual cautery was applied freely, with perforation; mercurochrome, 1 per cent., was used every hour during the day, and three times during the night. There was no recurrence of infiltration of the cornea after this treatment was begun. March 1, mercurochrome-220, 2 per cent., ointment was used every four hours. March 3, the patient was doing well.

CASE 4.—A patient between 50 and 60 years of age, not in good physical condition, had a pneumococcus ulcer, complicating pemphigus. The pemphigus had advanced to a stage at which about one half of the conjunctival sac had been obliterated, before the ulcer appeared. The pemphigus was in a state of arrest following treatment with arsenic. The ulcer began early in January; it was treated with tincture of iodin, the actual cautery, mercurochrome, 2 per cent., repeated applications of iodin, 95 per cent. phenol and alcohol, tetraiodophenolphthalein ointment, and ethylhydrocuprein (optochin); repeated paracentesis was done both by the knife and by the cautery. No satisfactory results were obtained until after a vaccine of Types I, II and III pneumococcus had been given in three doses: thereafter under mercurochrome, ethylhydrocuprein and atropin, the patient made a steady recovery.

Prompt use of the actual cautery, destroying all infiltrated tissue, with or without perforation according to circumstances (but perforating if in doubt), followed by mercurochrome, 2 per cent., every hour while the patient is awake and three times at night, the eye being kept bandaged between treatments, preferably with a Liebreich tie-bandage, and with hot applications several times a day, seems to offer the best local treatment. Mercurochrome is very much more penetrating than optochin, if one may judge from appearances.

We feared that mercurochrome, 1 or 2 per cent., might prove so detrimental to the tissue cells as to retard reparative activity, and therefore did not use it as freely as we might have done in the early cases. This fear seems not to have been well grounded, and we no longer hesitate to use mercurochrome freely. We expect to report some laboratory tests on this point.

CASES ILLUSTRATIVE OF CONJUNCTIVITIS

CASE 5.—M. S., with acute conjunctivitis and blepharitis yielding a gram-positive diplococcus, was treated from January 15 to January 20 with mercurochrome, 2 per cent., which treatment was followed by recovery.

CASE 6.—M. B., aged 7 months, was treated with mercurochrome, 1 per cent., for acute conjunctivitis from which the smear showed pneumococcus. Two days later, the child was much improved; smear still yielded a gram-positive diplococcus. The patient did not return.

CASE 7.—Baby Ross, born, January 17, before the arrival of the physician, had the eyes instilled with argyrol when he came. Next day there was considerable chemosis and purulent discharge from the left eye; there were many pus cells but no organisms; the culture was negative because contaminated. Mercurochrome, 1 per cent., was used every two hours. January 21, there was still chemosis. January 26, 27 and 28, smears were negative. January 29, the patient was discharged, with the eyes white, and no discharge or swelling.

CASE 8.—J. S., January 30, had acute conjunctivitis and dermatitis of the lid, of one week's duration. There was chemosis, marked swelling of the lids and a purulent discharge; a smear was negative. Mercurochrome, 2 per cent., was used every two hours, and White's ointment[1] at night. February 4, the patient was very much improved; mercurochrome, 2 per cent., was used every four hours. February 9, the patient was discharged, well.

GONORRHEAL OPHTHALMIA NEONATORUM

A majority of all cases of ophthalmia neonatorum occurring in Boston and vicinity are treated in the special ward of the Massachusetts Charitable Eye and Ear Infirmary. It is a striking commentary on the effectiveness of the agitation which has been carried on against this disease that it has so far diminished in frequency in this vicinity that we have not had sufficient material to carry on a study of the action of mercurochrome-220 in this disease within the few weeks at our disposal.

FORTY-TWO CASES OF OPHTHALMIA NEONATORUM FROM THE RECORDS OF THE MASSACHUSETTS CHARITABLE EYE AND EAR INFIRMARY SHOWING THE RESULTS OF DIFFERENT METHODS OF TREATMENT COMPARED ON THE BASIS OF DURATION OF STAY IN HOSPITAL

No. of Cases	Gonococcal Cases	Average Duration of Stay Weeks	Shortest No.	Shortest Weeks	Longest No.	Longest Weeks
153	Argyrol, 25 per cent.	4	10	2	6	12
15	Protargol, 20 per cent.	3½	1	1	3	6
10	Silver nucleinate	3½	1	2	1	8
178	All well treated cases except mercurochrome	3.9				
20	Zinc sulphate*	5	1	1	4	8 to 16
8	Dichloramin-T	7	1	1	4	7 to 12
22	Zinc and potassium iodid†	5				
Total 228	All except mercurochrome	4¼				
15	Mercurochrome-220, 2 per cent.	3⅕	1	1	4	4 to 9
	Nongonococcal Cases					
123	Argyrol, 25 per cent.	3	9	1	12	6 to 10
20	Protargol, 10 per cent.	3	7	1	4	13 to 16
10	Zinc sulphate*	4				
25	Zinc and potassium iodid†	2				
Total 178	All except mercurochrome	2.9				
6	Mercurochrome, 2 per cent.	2	1	1	1	3

* One-tenth per cent. dissolved in 2 per cent. solution of boric acid.
† Zinc sulphate, 0.16 per cent. potassium iodid, 11 per cent. in water.

The treatment has consisted in 10 per cent. mercurochrome for two applications, and after that 5 per cent. applied every two hours.

No case of corneal involvement occurred under this treatment; but we do not expect corneal involvement to occur under any modern treatment.

The accompanying table was made from 427 selected cases from the records of the Massachusetts Charitable Eye and Ear Infirmary. No cases were selected that were complicated by any diseases that might pro-

1. A petrolatum ointment of mercuric chlorid and sodium chlorid usually employed in a strength of from 1: 3,000 to 1: 5,000.

long the stay of the patient in the infirmary, such as otitis, bronchitis and eczema. Cases treated for a period longer than one week before the patient entered the infirmary were also discarded. The length of time a patient was under treatment was computed from the time the patient entered the hospital until the patient was clinically well and therefore free from discharge, and three consecutive negative smears were obtained. In practically all cases reported the patients received two-hourly treatments, that is, the different drugs were used in the same way by the same or similar personnel.

It appears from this table that we are justified in concluding, even though the number of cases is not large, that ophthalmia neonatorum is favorably influenced by suitable treatment. That it *does* make a difference what drug is used. That simply washing out the eyes with a bland, weak solution like 0.1 per cent. zinc sulphate is not as effective as using a real germicide. Thus, with twenty cases treated with zinc sulphate, the stay in the hospital was five weeks; with fifteen cases treated with mercurochrome, the stay was 3⅓ weeks.

What may fairly be expected of germicides in the conjunctival sac? We have drugs which will kill organisms promptly if brought in contact with them in suitable concentration for a long enough time. Thus, if a baby at birth has a copious infected vaginal discharge applied to the eyes, prompt washing of the baby's face and instillation of 2 per cent. silver nitrate will kill all the micro-organisms, so that no gonococci will grow in the conjunctival sac. If we delay a few hours before applying the germicide, the result is no longer sure. Some of the micro-organisms may by this time have penetrated to such places (that is, into ducts of glands or between cells into the subepithelial space) that the germicide cannot reach and kill them. After this has happened, our chief reliance must be on the patient's own defensive warfare on the organisms —the development of immunity. Witness the markedly greater resistance of babies to gonococcal conjunctivitis than adults show. Babies have been made more or less immune in utero by absorbing antibodies from the mother.

We believe that no drug will be discovered which will promptly sterilize the conjunctiva both superficially and in the protected recesses: we must look for prompter cure by obtaining greater and earlier immunity, probably through vaccines and serums.

The experience of the Indian operators and of others in the use in the conjunctival sac of mercuric chlorid, 1 : 2,000 or 1 : 3,000, is another excellent example of a germicide which effectually renders inert all the micro-organisms liable to occur in the conjunctival sac, provided it reaches them. As a matter of fact, there are usually a good many micro-organisms which have penetrated to such protected places that the germicide does not reach them, and after a few hours they will usually make their way into the conjunctival sac. But during the interval, while there are none free in the sac in an active condition, it is possible to perform an operation, such as cataract extraction, and allow time for the wound to become closed and protected from infection. Browning has pointed out that if one is taking cultures from the conjunctival sac for the purpose of determining before operation whether dangerous micro-organisms are present, he is liable to get misleading negative results if he takes his culture within a few hours after the application of a solution of mercuric chlorid.

One of us has used 2 per cent. mercurochrome applied freely (about five drops) in the conjunctival sac, from five to ten minutes before cataract and other operations for its antiseptic effect. It would seem to be well fitted for such use if its properties are what we believe them to be, namely, a nonirritating germicide which is effective even in the presence of serum, which does not require many minutes to manifest its germicidal activity (as is the case with many other antiseptics used for this purpose), and which will penetrate into the mucous membrane to an unusual degree.

In making a report of clinical observations, it is the personal judgment on which we must rely. It is not possible to portray the cases in such a way that the reader can form his own independent judgment of the action of the remedy; he must watch the cases from day to day himself. The conflict of views on the subject of the organic silver salts is a case in point. The consensus of clinical opinion favors the view that argyrol, for example, is a useful antiseptic to employ in the conjunctival sac. This statement will not pass unchallenged even today, and was most hotly discussed a few years ago. It is probable that there will be a conflict of opinion about mercurochrome-220, and the true decision can be reached only by the combined experience of a considerable number of clinicians.

LABORATORY TESTS

The original report of Dr. Young and his collaborators contained a good many data on the behavior of *Staphylococcus aureus* and other bacteria when acted on by mercurochrome-220 in urine. This medium was well chosen for the urologist. The ophthalmologist wishes to know how the antiseptic affects micro-organisms in the presence of serum, pus and mucus, and also in the presence of tears.

"The testing of substances for their antiseptic and germicidal power is fraught with innumerable pitfalls."

"The capacity of a disinfectant to kill micro-organisms is dependent to an extraordinary degree on the conditions under which it acts. The presence of proteins, etc., unsually causes a huge reduction in germicidal activity. In the presence of pus, in which many of the organisms are ingested in the bodies of dead leukocytes and hence are difficult of attack, the results are still less favorable. The relative mass of antiseptic and of substance being tested, the H-ion concentration, the temperature, and the number of micro-organisms are more or less important factors." [2]

We used mercurochrome-220 at first, but after mercurochrome-220 soluble was placed on the market, we used the soluble salt.

We made some tests in physiologic sodium chlorid solution and some in Ringer's solution as being similar to tears. We made other tests in hydrocele fluid to show the effect of serum on the germicidal power of the drugs being tested.

The most significant of our tests are the following:

1. With mercurochrome-220 in Ringer's solution, 0.1 per cent. resulted in no growth after six to ten minutes; 0.01 per cent resulted in no growth after thirty to sixty minutes. These results compare with 0.1 per cent. giving no growth in one minute, as reported by Drs. Young, White and Swartz, testing in urine.

Probably the explanation is to be found in differences in technic. Most of our tests were made in the following way:

2. Dakin and Dunham: Handbook of Antiseptics, p. 77.

A suspension of *Staphylococcus aureus* in the solution to be tested was first made, containing about 100,000,000 per cubic centimeter. A solution of the mercurochrome of double the strength to be tested was also prepared. Both were kept at 37.5 C. By adding 1 c.c. of the suspension to 1 c.c. of the mercurochrome-220 solution, double strength, a mixture was obtained of the proper mercurochrome strength. Cultures were taken from this with a large platinum loop at the suitable intervals. The loopful of the mixture was not transferred direct to the agar slant, since in so doing an appreciable quantity of the antiseptic would be carried over to the agar, and inhibit the growth of the culture. Instead, the loopful was added to 2 c.c. or more of sterile water, and well mixed. Then a freshly sterilized platinum loop was used to transfer a sample of this to the agar slant. Thus the antiseptic was so attenuated as to have no inhibitory effect that need be considered. A better way would be to use an antidote, as is done with silver nitrate or mercuric chlorid; but we knew no antidote for mercurochrome, and so used the method of high dilution.

2. Dr. Young found 0.1 per cent. mercurochrome in serum effective in killing *Staphylococcus aureus* in one hour. We found growth after one hour, and to produce no growth had to use 1 per cent. mercurochrome in serum acting one hour at 37.5 C. Two per cent. mercurochrome in serum at 37.5 C. killed in thirty minutes in all cases, but in some cases in six minutes, and again in fifteen minutes all but one colony. Five per cent. killed in all cases in ten minutes, in some in three minutes, and again in two minutes. It was interesting to note that when the loopful of mixture of serum and *Staphylococcus aureus* and mercurochrome was transferred directly to the agar and rubbed over the surface, avoiding the water of condensation, no growth would occur on the surface, except perhaps at the bottom where it was evident that the water of condensation had washed off the excess of mercurochrome, and so allowed the staphylococcus to grow. This shows the importance of adopting a technic that will eliminate this pitfall.

In some of our experiments we followed a more elaborate technic, designed by Dr. Burnett to show the percentage of organisms killed in each sample per unit of time. A suspension of *Staphylococcus aureaus* in distilled water was prepared by use of the centrifuge and suitable dilution which contained 100,000,000 organisms per cubic centimeter. This was determined by plating a millionth of a cubic centimeter (measured by diluting 1:1,000 and again 1:1,000 when 1 c.c. plated should show 100 colonies). This standardized suspension containing 100,000,000 organisms per cubic centimeter was made use of in the following way:

One-tenth c.c. was added to 9.9 of hydrocele fluid, giving 1,000,000 per cubic centimeter. One c.c. of this was added to 1 c.c. of mercurochrome solution of double the strength to be tested, giving 500,000 per cubic centimeter. At suitable intervals, 0.1 c.c. was mixed with 50 c.c. of water, to attenuate the mercurochrome, giving 1,000 per cubic centimeter. One-tenth c.c. of this was added to the melted agar and poured into a Petri dish, which should show on incubation approximately 100 colonies. Controls were made, using sterile water in place of mercurochrome, to determine how near to 100 colonies should be expected in each cubic centimeter. Naturally, the variations would be considerable. For example, three controls in one experiment showed 121, 119 and 124 colonies per cubic centimeter. This indicated that the original suspension was stronger than was intended, more than 100,000,000 per cubic centimeter, but that does not affect the resulting *rate of decrease.* In this particular experiment, 5 per cent. mercurochrome was being tested, and the colonies obtained were, after one-half minute, 1; one minute, 0; two minutes, 0, etc.

This method differs from that of Dakin and Dunham[2] in that they made no attempt to secure a suspension that would contain approximately the same number of organisms per cubic centimeter in every case. In other words, they did not attempt to standardize the concentration of the suspension of organisms used. Of course, the more elaborate the technic the more chances there are for contamination. On this account we did not employe this method in most of our tests.

We wish to say that we have tried to avoid the pitfall pointed out by Jackson when discussing the silver salts fifteen years ago, namely, "the lively expectation of important results which is a cause of such exaggerated estimates of the therapeutic value of new remedies."

ABSTRACT OF DISCUSSION

DR. J. HERBERT CLAIBORNE, New York: I have never found anything so good as nitrate of silver to destroy microbes, especially gonococci. I have been able to stop gonorrheal conjunctivitis in the adult within from twenty-four to thirty-six hours after infection.

DR. GEORGE S. DERBY, Boston: We occasionally have cases which clear up in a week but they are generally cases in which a full bacteriologic examination has not been carried out. A diagnosis of gonorrheal ophthalmia cannot be made by the smears alone; in order to rule out the other gram-negative intracellular organisms it is necessary that cultures be taken. *Micrococcus catarrhalis* grows easily on blood serum, while it is exceedingly hard to cultivate gonococci on anything but serum-agar plates. There is a question in my mind whether these cases which clear up so quickly, like those which Dr. Claiborne has reported, might not be cases in which the organism was *M. catarrhalis* or some other organism of that type, and not the gonococcus.

DR. HIRAM WOODS, Baltimore: I do not know how with the present state of prophylaxis for ophthalmia neonatorum and the very general adoption of the Credé method, any one man gets 500 cases of ophthalmia neonatorum. I have not seen fifty cases in the last six or eight years. The obstetricians of Baltimore use the Credé method systematically; the health authorities are insisting on its use.

DR. BENJAMIN F. TRAVIS, Chattanooga, Tenn.: I was very much impressed with Dr. Young's observations on the germicidal effect of mercurochrome on the gonococcus, and wondered if it might not kill the streptococcus just as easily. I experimented on few cases, using a 2.5 per cent. solution of the drug, and found that it is as effective against the streptococcus as against the gonococcus.

DR. WALTER B. LANCASTER, Boston: In regard to Dr. Derby's suggestion that we cannot make a diagnosis from the smears alone: If we make no positive diagnosis without a positive culture we shall be even more often led astray. It is very difficult to get the organism to grow, hence, a negative culture is not to be relied on. If all negative cultures (negative to repeated trials, I mean) were classed as nongonorrheal, there would be many errors in diagnosis. In the case of ophthalmia neonatorum a very valuable guide is the condition of the mother. If the mother is definitely infected, if we find the gonococcus in the child's eye by the smear, and if there is a copious purulent discharge and swollen lids, we can be reasonably sure that it is a gonorrheal ophthalmia, even

though the patient is well in a week. I admit, of course, that there is a possibility of error. In reply to Dr. Woods, my chief complaint was lack of enough cases of gonorrheal ophthalmia for a thorough trial of this remedy. There were only fifteen. We listed all we had in the last four months that were suitable cases. To secure the 500 cases we had to search the records as far back as six or eight years. Twenty years ago we should have had no trouble in getting twice as many cases in four months. I am delighted with what Dr. Travis told us. I want many of you to try mercurochrone and give us the clinical results. It is the clinical results, not the laboratory results that will eventually settle whether it is of value; but one man's clinical experience will by no means do that.

SYMPATHETIC OPHTHALMIA

REPORT OF FOUR CASES IN WHICH THE CONDITION WAS TREATED WITH LARGE DOSES OF SODIUM SALICYLATE *

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Fortunately, my experience in the treatment of sympathetic ophthalmia has been limited to four cases and to the later years of my practice. The essential point in the study of these cases relates to the value of sodium salicylate as a remedy.

The experience of Gifford [1] is largely responsible for the introduction of sodium salicylate in the treatment of this disease. In a subsequent article, Gifford [2] attempts to explain its action on the theory of local depletion caused by general capillary dilatation. It may be, however, that the well known theory of Elschnig,[3] supported by Knapp [4] and others, will lead to the establishment of a more rational basis on which the action of the remedy may be explained.

Elschnig holds that in order for sympathizing inflammation to develop, there must be an anaphylaxis and a preexisting general disease or an autointoxication. It may be that the salicylate in the tissues counteracts the effect of toxins or inhibits the production of toxins or other bodies which are responsible for the development of the type of uveitis which we designate as sympathizing. Gifford himself has proved that the drug cannot act in the body as a bactericide.

The first patient was under my care only in part.

CASE 1.—A. B., boy, aged 13 years, came, April 20, 1907. A paper wad had been shot into his right eye at close range from a 0.22 pistol, perforating the sclera near the ciliary region. The eye was so badly injured that enucleation was advised and the parents were warned of the danger to the other eye. Operation was declined, and the boy taken to his home some 80 miles away where a local physician undertook to save the eye. A month later inflammation appeared in the other eye. The boy was taken to Dr. F. C. Harrish in Chicago, who immediately enucleated the injured eye and placed the patient on atropin and large doses of sodium salicylate. At the time of the operation, the sympathizing (left) eye was "blind," but in two or three months useful vision was restored. The dosage of sodium salicylate was at first 150 grains a day for five days, with a rest of two days, when the dosage was repeated. This was kept up with lessened dosage and longer intervals between, until the end of the period.

The boy returned to me, Dec. 21, 1911, four years later, saying that for a few days there had been increasing dimness of vision. I found the eye red and inflamed and sensitive to light. There was ciliary injection. There were numerous permanent brownish spots in the substantia propria of the cornea, with a special massing horizontally across the pupil. In addition, there were fresh looking deposits on Descemet's membrane. The pupil was about 4 mm. in diameter and fixed. There was nearly total flat adhesion of the iris to the lens, and slight fresh exudate at the pupil margin. Atropin had no effect. The lens capsule was hazy at the pupil margin. The center of the lens was quite clear. The fundus reflex was seen, but no details. Vision was 20/100. Field was normal. There was normal intra-ocular tension. This was evidently a picture of old plastic sympathetic iridocyclitis with a relapse. Atropin and a calomel purge were ordered. The young man weighed now 180 pounds. Twenty grains of sodium salicylate were ordered every hour and a half till nine doses were taken. This was repeated every day for five days. The patient was kept in bed each day while taking the medicine for the first few days, but after that, as no marked depression occurred, he was merely ordered to keep his room. Free diaphoresis was produced each day. Three courses of this dosage of five days each with a two day interval were given; then the dosage was dropped to 100 grains a day for the same periods and with the same intervals between.

Gifford recommends 1 grain of the salicylate for each pound of body weight of the patient to be taken in the course of from ten to fourteen hours. This is the rule I have always followed. It is surprising how well this dosage is borne. After the first round of five days with this patient taking 180 grains a day, the local symptoms were ameliorated. The deposits on Descemet's membrane and in the pupil were lessened and vision had improved from 20/100 to 20/80, December 26. January 6, eleven days later, vision was 20/50. January 31, it was up to 20/30. All redness and photophobia had disappeared. The deposits on Descemet's membrane had melted away, but the opacities in the substantia propria and the adhesions of the iris remained, and are there to this day.

During the past eight years there have been three relapses of the kind described which have subsided under the same treatment. Excepting for these attacks, the eye is not painful. Vision remains around 20/30, and the patient makes a living running a confectionary store.

After the first attack it was found that the patient had a chronic suppurative inflammation of the left antrum—the same side as the eye. Cure of this by a large opening made into the antrum from the nose and irrigation did not, however, prevent the relapses. Each relapse has been lighter and with longer intervals between. At no time during my observation of this case has there been any variation in the tension of the eye. The field remains normal. There is no doubt in my mind that these attacks are relapses of iridocyclitis, although I know of no way to prove that they are due to the original exciting cause of the first attack. However, one prominent fact stands out: with the administration of very large doses of salicylate, the symptoms subside and remain absent for long periods of time.

CASE 2.—J. Y. B., man, aged 58, had absolute glaucoma of the left eye. The media were clear. The disk was deeply cupped. The tonometer reading was 50 mg. of mercury. Vision was 0. The right eye was apparently normal, vision 20/20. Dr. A. E. Prince of Springfield, Ill., who was in my city at the time, performed his operation of inserting his so-called mule shoe drain in the patient's blind eye, Oct. 2, 1916. This drain was removed two weeks later. At the time the drain was removed and subsequently, the eye was red and there was exudate in the anterior chamber. December 11, the eye was enucleated. At this time the right eye was normal. January 16, the patient returned. The remaining (right) eye was white and quiet, the pupil normal with vision 20/20, but fine opacities were made out on Descemet's membrane. June 22, five months later, deposits on Descemet's membrane were gone, but some pigment deposits were seen on the anterior capsule of the lens. Pupil, 3 mm., reacted to light.

* Read before the Section on Ophthalmology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Gifford: Tr. Sect. Ophth. A. M. A., 1899.
2. Gifford: Oph. Rec., December, 1902, p. 632.
3. Elschnig: Ophth. Rec., November, 1911.
4. Knapp, Arnold: The Autotoxic Factor in Sympathetic Ophthalmia, Tr. Sect. Ophth. A. M. A., 1919, p. 242.

The eye was white and quiet. Vision was 20/30. From this on there were increasing evidences of uveitis, and the vision steadily failed. July 21, vision was 20/40; August 22, 20/50; October 20, 20/200. The eye was noticed for the first time as being red. The pupil was largely filled by exudate, but dilated well to homatropin. Mydriatics had not been used until this time for fear of exciting hypertension; but twelve hours after the homatropin was instilled once, tension was still normal. Tension was 20 mg. of mercury by the tonometer, but November 3, the tonometer showed 50 mg. of mercury. This soon fell. In April, 1918, the eye was quite blind, with the pupil blocked with exudate and the tension of the eye minus.

I have introduced this case because, first, evidently at the beginning of the sympathizing symptoms many observers would have classed it as a case of sympathetic *serous* iridocyclitis, which runs a mild course and usually clears up, and which some authors assert never passes over into the malignant plastic form. These authors imply that reported cures apply only to the former type, while the latter are practically incurable. In this case, for six months after the first deposits were noted on Descemet's membrane there were no symptoms of plastic inflammation whatever. I think this case proves that a "serous" sympathetic uveitis can pass over into the plastic form, or at least that it should never be taken for granted that a case may terminate favorably, even if at first the symptoms seem to be of the mild type.

I also report this case principally because it was *not* treated with large doses of sodium salicylate. I have always felt that if it had been, the result might have been different. The treatment consisted principally of mercury and iodids and some small doses of salicylate. The patient came only at intervals, and could not be induced to enter a hospital. He lived remote from any physician to whom the treatment could have been entrusted.

CASE 3.—Mr. H., aged 22, a steam fitter, who came, April 23, 1918, had been close to a steam pipe that burst, April 19, the steam and a piece of the pipe injuring his left eye and eyelids extensively. There was an infected wound of the cornea which passed on to panophthalmitis. Evisceration of the purulent contents of the globe was performed, May 11. All the cornea and rim of the sclera with all the uvea were thoroughly removed, and the scleral cavity was wiped out with pure phenol (carbolic acid) neutralized by alcohol.

This was three weeks following the injury. On the 26th, or nearly a month after the evisceration, the patient returned complaining of dim vision and photophobia in the remaining eye. The eye was slightly congested. There were deposits on Descemet's membrane and the anterior capsule of the lens. The iris was retracted slightly at the base. Pupil, 4.5 mm., reacted slightly to light, but dilated fully to atropin. The fundus was normal. Vision had fallen from normal to 20/60, improved somewhat by minus lenses. There was impairment of accommodation. The eviscerated stump was promptly dissected out.

The patient weighed 140 pounds, so 140 grains of sodium salicylate were given daily. Seven doses of 20 grains each were given an hour and a half apart, and the patient was kept in bed. Improvement began in forty-eight hours. In a month the eye was normal with 20/20 vision, and so remains. Three rounds of five days each of the full doses were given. There was some depression, perspiration, and suffusion of the skin. No treatment for the depression except rest in bed was required, although stimulants were kept in readiness.

Although the books usually state that sympathy does not follow panophthalmitis, Würdemann[5] records a case and refers to three others which he found in the literature. I think there can be no doubt that this was another of these rare cases. In clinical behavior and appearance it was identical with the one preceding, as regards the early symptoms. The one passed over into the plastic form and blindness, the other did not. Was the bad result due to the lack of salicylates? Was the good result due to their use?

CASE 4.—James P., aged 4 years, brought to me, May 30, 1918, had been injured in the right eye, two months before, by a stick of wood. There was a depressed scar extending from the center of the pupil down and out through the cornea and into the sclera. The iris was adherent to the scar and to the lens. The pupil was closed. The eye was red and sensitive to touch, and soft. Vision was 0. The left eye had been involved one week, and was red with photophobia. The iris was muddy, with flat adhesions to the lens. The pupil, 4.5 mm., yielded but slightly to atropin at one point, upward. The vision equaled fingers at 3 feet.

The injured eye was removed at once. The patient, who weighed 40 pounds, was given 40 grains of sodium salicylate daily in the usual way. After the first two days he did not go to bed while taking the remedy. In two weeks the eye was white and quiet, and vision had improved. The process was apparently completely checked.

The treatment was kept up intermittently at the boy's home by his family physician. There has been no relapse. The flat adhesions of the iris remain, but there is a fairly clear pupil. Vision in March of this year was ascertained to be 20/30.

This was certainly a case of the severe plastic type of sympathetic inflammation. Its cure can hardly be accounted for in any other way, I think, than by the use of heroic doses of the salicylates. In all three of the cases in which the salicylate treatment of Gifford was used, the patients were benefited or cured. The one in which it was not used pursued the usual sad course, ending in blindness. I think this is the important lesson to be learned from a study of these four cases. I am surprised in reading the journals that so few oculists resort to this treatment, and trust that the knowledge of its value may soon become more generally acknowledged.

205 Halliwell Building.

5. Würdemann: Ophth. Rec., November, 1905, p. 528.

ABSTRACT OF DISCUSSION

DR. JAMES M. PATTON, Omaha: I have observed between twenty-five and thirty cases of sympathetic ophthalmia. If these had arisen in our own practice, it would indicate negligence in the management of traumatized eyes, but fully 90 per cent. came with the sympathetic condition well advanced. Twelve per cent. of the cases were secondary to some form of operative treatment. In all these cases, heavy salicylate medication formed the basis of treatment. There has been considerable speculation as to just how the salicylate operates in these cases. Since the publication of Gifford's clinical reports in 1899, a number of theories have been advanced by laboratory men. Fillippi, in 1900, found on administering sodium salicylate in cases of acute arthritis an increase of salicylic acid in the inflamed joints and concluded that the acid was released in the presence of local inflammations. Dennis, in 1915, found that the salicylate produced an increase of uric acid elimination and was of the opinion that it also produced an increase in the elimination of other toxic products. But we are most interested in the clinical findings, and experience shows that large doses of salicylate do produce beneficial results in these cases. As to the method of administration: although the rule of 1 grain per pound of body weight in twenty-four hours is usually sufficient, in some of the very severe cases, we have found it worth while to exceed that amount, prescribing the salicylate in brandy, or some other alcoholic of about the same strength, in the ratio of 1 ounce of salicylate to 4 ounces of brandy and then giving

2 drams of the solution (30 grains of salicylate) to the dose in half a glass of hot water. If brandy or whisky is not available, a sufficient amount of alcohol may be added to secure sufficient stimulation. If the patient becomes nauseated and unable to retain the salicylate by mouth, we frequently give it by rectum. A cleansing enema may be first administered, and then from 45 to 60 grains of salicylate in half a pint of warm water is placed in the lower bowel. The patient is urged to retain this as long as possible. The results in these cases have been very gratifying. Some men are very insistent on administering double the amount of sodium bicarbonate with the salicylate. We have not observed any special benefits from the use of the sodium, and as it is claimed by some that the sodium increases the elimination of the salicylate through the kidneys, it may even interfere with the result desired. Some progress has been made along the line of intravenous administration of salicylate. We have had no experience along this line. In addition to the employment of salicylate, we have, at times, used it with benefit in these cases to produce sweating, giving the patient 45 grains of salicylate in a glassful of hot water, after which he is packed in blankets with hot water bottles at each side and allowed to remain so for one hour. This procedure is especially useful in the latter stages of the disease and may be continued every second or third day for two or three weeks. Aside from the nausea produced by the salicylate we must also consider the reaction on the mental condition in administering large doses. This is true not only in the treatment of cases of sympathetic ophthalmia but in other forms of uveitis where this drug is indicated. In the rather rare cases where delirium has occurred, it has been our custom to discontinue the salicylate and give an equal amount of cinchophen (atophan). As a rule, mental symptoms disappear in a few days and we have never seen harmful after-effects. The objection has been raised that large doses of salicylate may produce an albuminuria. This has happened a few times in our experience but has always cleared up promptly. I have never heard of a permanent nephritis resulting from salicylate medication. I wish especially to emphasize employing large doses of salicylate at the earliest possible suspicion of this trouble, as the time element is of the utmost importance and much valuable sight may be lost while waiting to make a positive diagnosis. Of course, the salicylate must be combined with such other therapeutic measures as have been found helpful.

DR. JOHN A. DONOVAN, Butte, Mont.: Having given these large doses for many years, I have concluded that we get just as good an effect with 100 grains daily as with twice that amount. I seldom have patients take the salicylate more than three days. I have had very beneficial effects from the use of mercury. Therefore, when I have a well marked case, I immediately give a subconjunctival injection of 15 minims of 1:1,000 mercuric cyanid combined with morphin and acoin, and I also push mercuric chlorid internally. Begin with ½₂ grain, and increase to ¼ grain, three times a day; combine that with the salicylate. The salicylate is necessary to start with, but you can keep up the mercury. It is very beneficial.

DR. FREDERICK FRISCH, Atlantic City, N. J.: Salicylates should be given in all cases liable to be followed by sympathetic inflammation. We have enucleated fewer eyes in Atlantic City since we have made it a rule to give the salicylates in prophylactic doses immediately after the injury. However, on account of the infrequency of sympathetic inflammation, the value of salicylates or any other remedy can be estimated properly only after having been universally employed as a prophylactic, e. g., like quinin or antitoxins where malaria, diphtheria, tetanus, etc., are likely to occur, not waiting for symptoms to make their appearance.

DR. HUGH M. LOKEY, Atlanta, Ga.: There is one thing to be considered in giving the salicylates, and that is getting true salicylate, not the synthetic salicylate, which is a coal tar derivative. Salicylate made from oil of wintergreen (gaultheria) is very much less irritating when given by the stomach, and much less depressing. When the stomach does not tolerate salicylate, a very excellent way to give it is by the rectum. An enema of sodium bicarbonate is given, and this is expelled; then, give a 4 ounce solution of the salicylate, from 40 to 60 grains incorporated, with a long tipped rectal syringe, the patient lying on the abdomen. The sodium salicylate solution is injected slowly, the patient lying flat on the abdomen until it is absorbed. No irritating symptoms are produced.

DR. HERBERT MOULTON, Fort Smith, Ark.: Concerning Case 2 in my report, I received from Dr. T. M. Verhoeff of Boston, who examined the enucleated eye for me, a letter which seems to establish histologically the sympathogenic nature of the inflammation in the first eye. He stated that the eye shows injury to the lens, and cortical matter extruded into the operative wound. The iris is compressed against the cornea, while between the iris and lens there is a thick layer of exudate which is undergoing necrosis. The ciliary body is markedly infiltrated with chronic inflammatory cells and its surface is coated with a thick chronic inflammatory exudate. In this exudate there are a few small foci of epithelioid cells which are so merged with the general infiltration as to be inconspicuous. The choroid is normal. The histologic picture is practically identical with that seen in eyes in which the lens has been injured as the result of glaucoma operations. Dr. Verhoeff is convinced that the second eye in my case is affected with sympathetic uveitis, and that the small inconspicuous foci of epitheloid cells which he saw but regarded as part of the reaction toward the cortical matter, no doubt were really sympathogenic in nature. In other words, the marked reaction due to the cortical matter so masked the sympathogenic lesions that it was impossible to make a diagnosis of sympathetic uveitis until this had actually become clinically evident in the other eye.

APPENDICITIS CAUSED BY ENDAMEBA HISTOLYTICA

WITH POSTOPERATIVE AMEBIC ULCER PERFORATION OF CECUM *

E. P. HOGAN, A.M., M.D.
BIRMINGHAM, ALA.

The death of a patient following an appendectomy should certainly cause the surgeon who operated to exhaust every possible means to explain the cause of the death. The consensus is that there should be no mortality in simple appendectomies. Even in cases of peritonitis of appendical origin, in the hands of experienced operators apparently hopeless cases end in recovery. An uneventful recovery was expected in the case reported in this paper. The patient did well for five days following the operation, after which repeated intestinal hemorrhages developed, followed by peritonitis and finally by death on the seventh day. We were fortunate in securing a necropsy, which was held by Dr. George S. Graham, now of the City Hospital, Albany, N. Y., who was at that time professor of pathology of the Graduate School of Medicine of the University of Alabama. The clinical history and pathologic findings in this case show the insidious and destructive work of *Endameba histolytica*.

In a review of the literature, I find that very little information is given on amebic infections in which the appendix is involved.

Musgrave [1] has published an account of fifty fatal cases of intestinal amebiasis without diarrhea. The causes of death in these cases, as given by Musgrave, appear in the accompanying tabulation.

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Musgrave, W. E.: Intestinal Amebiasis Without Diarrhea, Philippine J. Sc. (B) 5: 229, 1910.

Lenz [2] reports one case of appendicitis in amebic dysentery. The appendix was removed, but as far as the report shows, was not examined to determine whether or not amebas were present. He states that "perhaps" amebas had lodged in the appendix.

Le Roy des Barres [3] reports three cases of appendicitis occurring in conjunction with, or following, amebic desentery. Operation was performed in two of these cases but no endamebas were found in the appendix in either case. He is of the opinion that in some cases the amebas penetrate the walls of the appendix and are instrumental in causing inflammation (although he cites no cases illustrating this). In other cases in which appendicitis is associated with amebic dysentery, he believes it to be due to bacterial infection resulting from ulceration of the cecum.

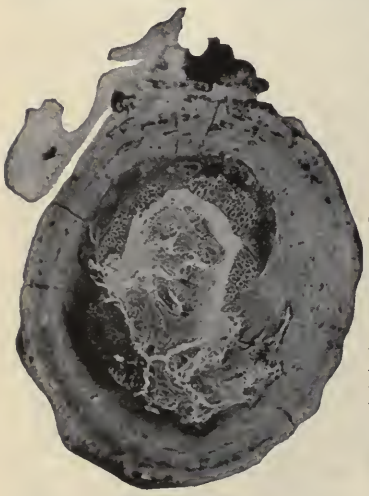


Fig. 1.—Cross-section of appendix, showing two ulcers extending into the submucosa.

Vives [4] states that true appendicitis may occur in acute dysentery, ulceration of the appendix giving rise to clinical symptoms of appendicitis. As a rule, however, the appendicitis is masked by the dysenteric phenomena or by the symptoms of general peritonitis due to perforation of the appendix. The condition is usually first revealed at the necropsy. In addition to true appendicitis, in cases of chronic relapsing dysentery there is a pseudo-appendicular syndrome characterized by clinical symptoms of appendicitis, but without anatomic lesions in the appendix. The condition is probably due to dysenteric lesions in the cecum, which are almost constant in fatal cases. Vives has found that appendicitis, both true and false, is more frequent in amebic dysentery than in bacillary dysentery or unclassified dysenteries.

The case that I report is unique in that it is complete, both from a clinical and a pathologic standpoint, fo ra diagnosis of appendicitis was made and the patient was operated on, and pathologic examination revealed a true inflammatory condition existing within the appendix, involving the mucous and submucous coats, in which *Endameba histolytica* could be demonstrated.

REPORT OF CASE

History.—A negro man, aged 33, who gave an unimportant history, who did not remember having had diarrhea, and whose residence for the last ten years had been the Birmingham district, Ala., three days previous to his entrance to the Hillman Hospital was taken suddenly ill with cramps, which continued severely for some time as a general intra-abdominal condition, and later localized in the right lower quadrant. During the attack there was much nausea and vomiting. On entrance he was fairly well nourished; his weight was 152 pounds. The temperature was 101, respiration 22 and pulse 90. There was tenderness over the whole abdomen, which was marked in the right iliac fossa, and pressure over McBurney's point caused intense pain. The leukocytic count was 22,000 and the urine showed a trace of albumin but no casts.

Operation and Result.—The patient was prepared for operation, and the appendix removed through a right rectus incision. The appendix on removal was 9 cm. in length, and its circumference at the base was 4 cm. There was considerable edema, but no marked inflammatory condition present. The patient did comparatively well for a period of five days following the operation. About noon of the fifth day, intestinal hemorrhage was noted by the appearance of blood in the stools. The possibility of typhoid was considered. It was impossible for the internists in consultation to discover any symptoms referable to this disease, and the Widal reaction was negative. An effort was made to control the intestinal hemorrhage by absolute rest, the administration of morphin and the discontinuance of all medication by mouth or rectum. Normal horse serum was given. Such measures proved useless, for the patient became rapidly worse, and succumbed on the seventh day after the operation

CAUSES OF DEATH IN FIFTY CASES OF INTESTINAL AMEBIASIS WITHOUT DIARRHEA

	Number
Peritonitis following perforation of the appendix	3
Liver abscess perforating pleura	1
Liver abscess perforating peritoneum	1
Liver abscess without perforation	2
Acute pericarditis	1
Pulmonary tuberculosis	8
Estivo-autumnal malaria	2
Ulcer perforation of large intestine	5
Beriberi	7
Lobar pneumonia	20

I was most anxious to know the real primary cause of death in this case, so that the responsibility for the mortality could be properly placed. The technic used had stood the test in all my previous cases. It occurred to me that the catgut purse string might possibly be at fault. I requested a necropsy, together with a careful pathologic study of the case. Such a condition as found on necropsy was not even suspected.

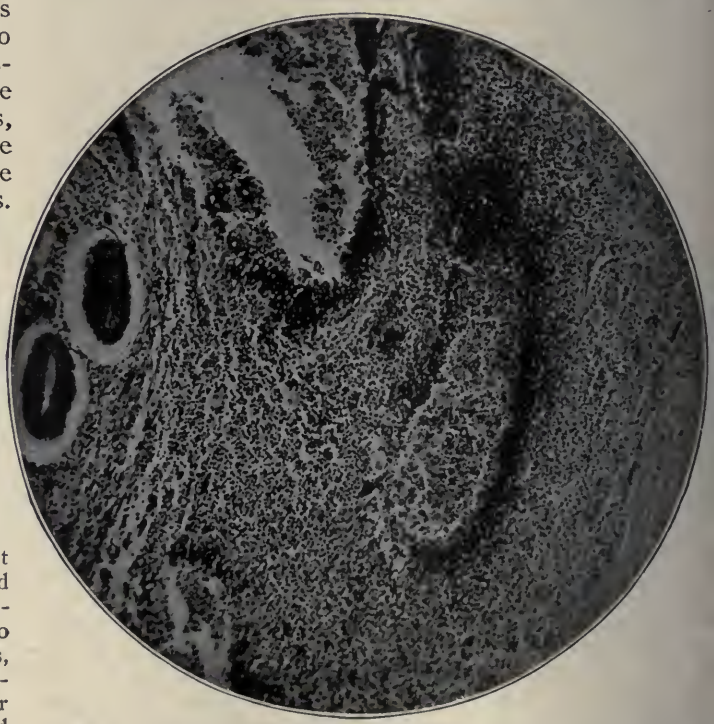


Fig. 2.—Base of an ulcer of the appendix, showing invasion nearly to the muscularis. Amebas are visible in the ulcer cavity and surrounding tissue.

2. Lenz, W.: Blind-darmentzündung und Dysenteria-amöben, Arch. f. Schiffs.- u. Tropen. Hyg. **14**: 952, 1910.
3. Le Roy des Barres: Appendicite et dysentéric amibienne, Bull. et mém. Soc. de chir. de Paris **38**: 268, 1912.
4. Vives, J.: Appendicitis et pseudo-appendicitis dysentériques, Thèse de Paris, 1918-1919, p. 267.

Necropsy.—This was performed by Dr. George S. Graham, Feb. 5, 1914, seven hours after death. The following are the important findings recorded by Dr. Graham:[5]

The body was that of a well-developed and well nourished negro man, 169 cm. long.

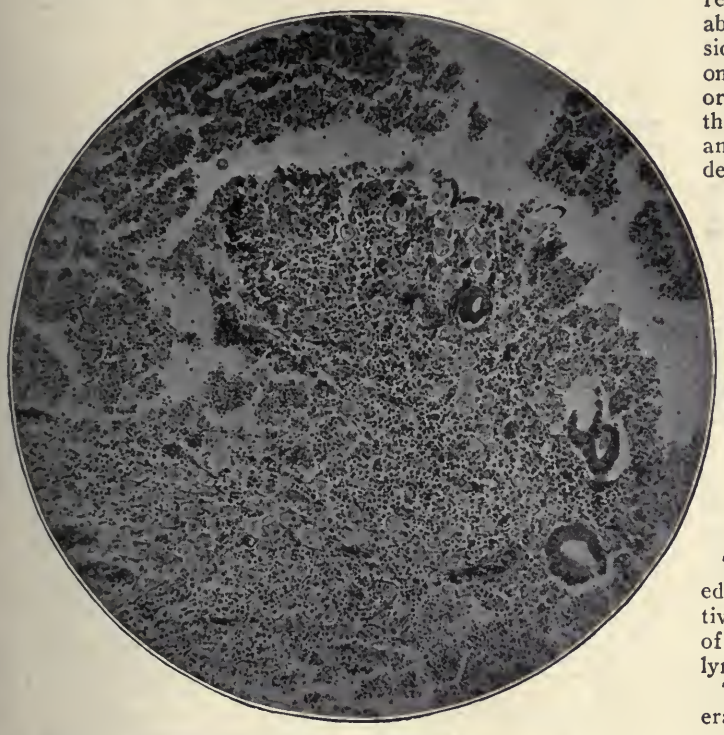


Fig. 3.—Fragment of mucosa of an appendical ulcer showing many amebas.

In the peritoneal cavity, the serosal vessels were congested, the surfaces dull or covered by a thin coating of yellowish fibrinopurulent exudate. The exudate was slight in amount but widely distributed. Beneath the surgical wound the intestinal coils were loosely adherent to each other and to the parietes. In the right iliac fossa there was an abscess that was partially walled off from the general peritoneal cavity. It contained pus and a small amount of fecal material. It appeared to center about an area of perforation in the wall of the cecum. On the surface of the cecum there was a recent appendectomy wound. It appeared to be clean, with normal repair in progress. The mesenteric lymph nodes were slightly enlarged, usually reddish, and occasionally hemorrhagic.

Both lungs were slightly boggy, but crepitant. The cut surfaces were moist and pinkish to dark red. Scattered minute areas of increased density could occasionally be made out. There was a well defined hypostatic congestion of the dependent portions of the lower lobes, with associated atelectasis. The bronchioles were filled with leukocytes, mingled with which, in some cases, were large numbers of bacilli. The peribronchial acini showed a variable amount of cellular exudate, and considerable fibrin was present in some areas. The alveoli, in general, showed considerable amounts of a serous coagulum and many free pigment-containing cells.

The liver weighed 2,080 gm. Between the upper surface of the right lobe and the under surface of the diaphragm there was an abscess cavity 5.5 cm. in diameter, containing a thick red stained puruloid material. The cavity extended downward into the liver substance to a depth of 4 cm. Here its wall was covered by a soft, yellowish, ragged layer of fibrin and necrotic tissue, and showed, on section, a surrounding zone of deeply congested liver substance averaging 1 cm. in width. Deep within the right lobe was a second abscess cavity of similar appearance, 4 by 5 cm. in diameter. In general, the cut surfaces of liver tissue were reddish brown, the markings slightly obscured. The gallbladder was filled with dark green bile. Its ducts were patent. Sections through the wall of an abscess showed an abrupt erosion of the liver tissue associated with a minimum of leukocytic reaction and a variable amount of fibrin formation. The abscess wall was irregular, with sharply cut outward extensions of the main cavity, apparently of recent origin, while on the other hand there were frequent peninsulas of more or less necrotic tissue projecting from the wall outward into the cavity. Here was an explanation for the ragged appearance presented by the wall in gross. The cavity contained degenerating cellular material and débris. Leukocytes were present in very moderate numbers. There were considerable numbers of amebas. Occasional forms showed two nuclei. They occurred particularly along the margins of the degenerating liver tissue, and occasionally could be found in the superficial levels of the more intact parenchyma, where they appeared to lie in the space between the endothelial wall of the sinusoids and the cells of the liver cords. The eroding process did not involve the tissues of the portal canal to more than a slight degree, but occasional amebas occurred in the tissue spaces and lymph vessels of the connective tissue of the portal canals forming portions of the wall of the abscess cavity. The liver tissue in the zone surrounding the cavity showed marked concentric flattening of the parenchymal tissues, with dilated and injected sinusoids and more or less extensive pressure atrophy of the liver cells.

The suprarenals were negative in gross. There was edema of the cortex and marked vacuolation and degenerative changes of the cortical cells of the middle or inner levels of the zona fasciculata. There were occasional foci of lymphocytic accumulation along the inner cortical margins.

The intestinal walls were relaxed. They presented a generalized fibrinopurulent exudate, and the surfaces of approximated coils were at times slightly adherent. The mucosa of the stomach and upper small intestine showed no unusual appearance, but the lymphoid nodules of the lower ileum stood out as distinct, slightly elevated bodies scattered in large numbers over the surface.

The appearance of the cecum was striking. It presented numerous ulcers from 0.5 to 3 cm. in diameter, with soft, necrotic, overhanging walls and a central cavity filled with a yellowish or, at times, black, gelatinous material. The marginal intact mucosa was often extensively undermined, and neighboring ulcer cavities appeared in some cases to be connected by fistulous tracts extending laterally in the deeper levels of the wall beneath bridges of intact mucosa. In some cases the undermined mucosa of the large ulcers

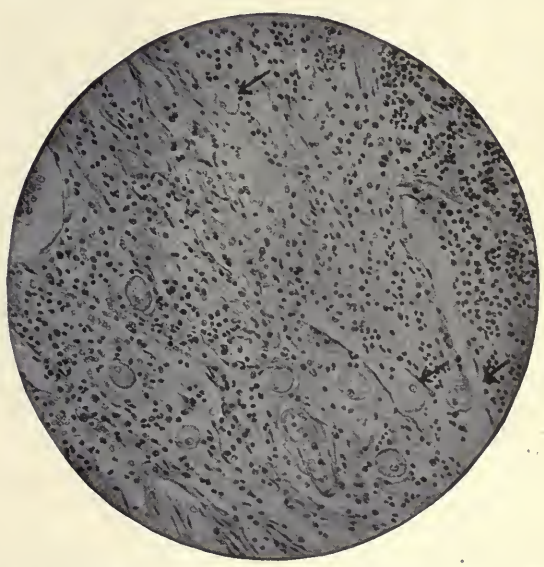


Fig. 4.—Drawing from an oil immersion view of Figure 2 showing amebas in lymphatics, indicated by arrows.

5. The complete necropsy report appears in the Transactions of the Section and in the author's reprints. Only the significant parts are given here.

hung as ragged masses from the ulcer margins, or the necrotic tissue of the ulcer cavity may have separated so as to form a polypoid mass adherent by a pedicle to the excavated walls. The ulcerative process had involved the intestinal structures to varying depths. In many cases the inner muscular coat was exposed, and occasionally it appeared to have been invaded, or even destroyed, so that the serosa formed the floor of the ulcer, at least in part. In an ulcer situated 4 cm. below the ileocecal valve there had been complete perforation of the bowel wall. This perforation communicated with the abscess already noted in the right iliac fossa.

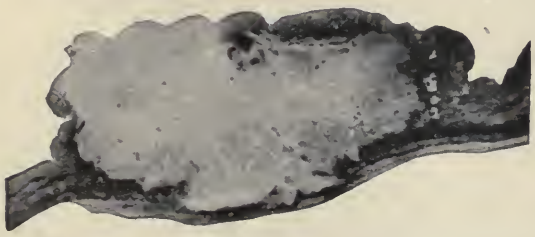


Fig. 5.—Section of entire cecal wall, with ulcer opening into lumen, and erosion completely through the muscularis.

Advanced ulcerative lesions of the type described were rather sharply limited to the cecum and the proximal colon. None were found beyond a distance of 9 cm. from the ileocecal valve, although occasional smaller superficial lesions occurred at intervals along the more distal surfaces. Here, also, there were frequent slightly elevated nodules, suggesting swollen solitary follicles with central umbilication or definite loss of superficial tissues.

Section through one of the numerous ulcers of the cecum revealed characteristic undermining of the mucosa, whose divided edges partially covered a cavity filled with faintly stained tissue débris. The cavity extended laterally in the submucosa, and toward the middle part of its floor showed progressive involvement of the outer coats. In some of the sections, the more central floor consisted only of the serosa. Considering the amount of tissue destruction and the resulting exposure of the subepithelial tissues to infection, there was a surprising lack of any leukocytic reaction commensurate with what would be expected in other ulcerative conditions. The amebas themselves appeared to excite no leukocytic response, and were found in numbers in tissues showing little or no evidence of inflammatory reaction. They occurred in the tissue spaces and frequently in the dilated lymph vessels. Only rarely could they be found in the smaller blood vessels. The marginal tissues of the abscess cavity often showed a considerable fibrin deposit. This was especially marked in the exposed serosa of the floor. Here, also, there was a considerable leukocytic infiltration, but it is noteworthy that the reacting cell was almost always the lymphocyte. Polymorphonuclear leukocytes were rare. In some sections the serous surfaces of the cecum showed a recent exudate of fibrin and leukocytes, and here the polymorphonuclear leukocytes became prominent. No amebas were found outside the serosa.

The appendix was markedly swollen, the cross section of the fixed and dehydrated specimen measuring 1.2 cm. in diameter. There was a ragged area of ulceration involving about one quarter of the inner circumference of the walls and extending downward irregularly through the submucosa to the inner margins of the circular muscular layer. There were numerous smaller ulcers with a varying degree of destruction of epithelium and underlying tissues. Here the tendency was toward the production of a narrow ulcer cavity extending deeply into the mucosa and upper submucosa. The lumen of the appendix was filled with leukocytes, red cells and cellular débris, mingled with which were considerable numbers of amebas. The amebas were found in greatest numbers, however, immediately on the margins of the ulcer cavities. They were present also, sometimes in abundance, in the glandular crypts adjacent to the active ulcers; immediately beneath intact stretches of epithelium; and in the connective and lymphadenoid tissues in the immediate neighborhood of ulcer cavities. They often contained englobed red blood cells. The amebas were usually free in tissue spaces, but in many cases they appeared within the lumens of dilated lymph vessels. They appeared to excite no reactive inflammatory changes. The ulcer margins usually showed marked fibrin deposits. In the deepest part of the two largest cavities there was active polymorphonuclear exudation into the cavity and throughout the underlying tissue, where the inflammatory process extended in a wide sector outward to involve the muscular coat. Here, the intravascular and perivascular spaces often showed abundant polymorphonuclear leukocytes. The blood vessels were everywhere dilated and engorged, and there was frequent interstitial hemorrhage. Small thrombi were frequent. The congestion and hemorrhage became especially marked at the mesenteric attachment and in the mesenteric tissue itself. The serosa showed in some areas well marked polymorphonuclear infiltration, and there was an exudate of fibrin and leukocytes on the peritoneal surface.

The lymph sinuses were dilated and contained numerous lymphocytes, occasional endothelial leukocytes and, at times, moderate numbers of red blood cells. The embedding fibrofatty tissue showed, in places, extensive hemorrhage with considerable fibrin deposit and active lymphocytic infiltration. The central portion of one node was hemorrhagic, and the stroma cells showed well marked degenerative changes. Clumps of bacteria were present toward the central part of the area, and there were numerous polymorphonuclear leukocytes, some of which were breaking up.

The anatomic dignosis was: amebic colitis with perforation of cecal ulcer; abscess of right iliac fossa and generalized acute peritonitis; amebic abscesses of liver; slight pulmonary congestion and edema, with possible early bronchopneumonia; chronic splenitis; old adhesive pleuritis, and recent appendectomy.

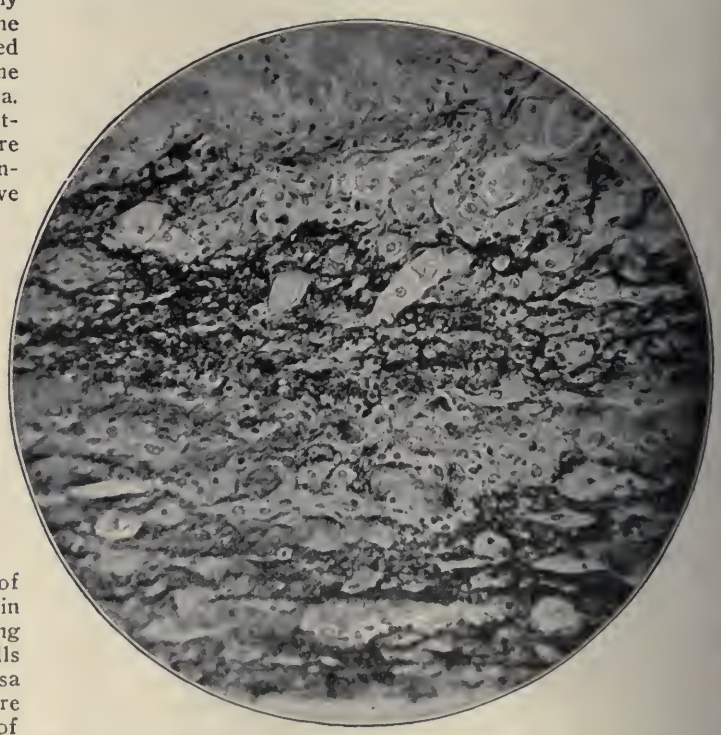


Fig. 6.—Highly magnified section of ulcer in the cecum, showing the peritoneal surface, ulcer cavity and intervening subserosa. Many amebas can be seen.

The following notes by Dr. Graham are full of interest:

Lungs: Rather careful search was made for amebas, but none were found. It is said that amebas may sometimes be found in the pulmonary blood vessels. If they travel to the liver in the portal veins (as commonly believed) it would seem possible that they could live in the blood stream

long enough to reach the lungs. Should they do so they might well excite an inflammatory process there, either as a result of tissue destruction followed by infection from secondary invasion, or they might carry bacteria along with them in their cell body and liberate them in the lungs. MacCallum suggests the latter possibility as explaining the secondary infection common in the liver abscess.

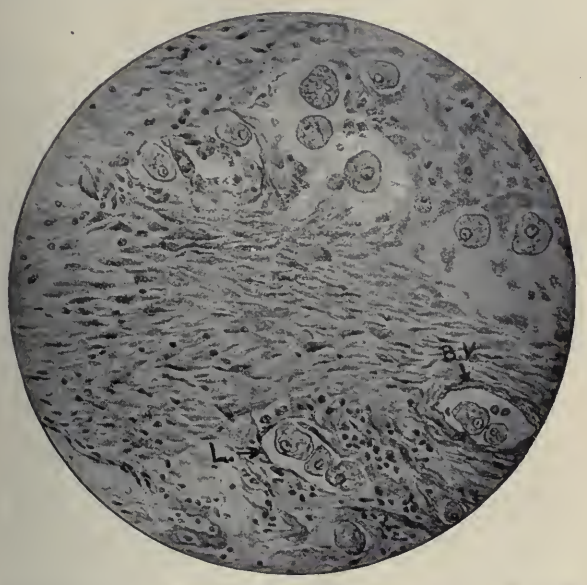


Fig. 7.—Drawing of oil immersion view of cecal ulcer, with amebas in a blood vessel (*B. V.*), and a lymphatic (*L.*).

Suprarenal: The zonal necrosis found in the suprarenal may be the result of the peritonitis, but it is of some interest in view of the belief of some French writers that there are definite clinical evidences of suprarenal insufficiency in amebic dysentery. The lesion suggests the type found not uncommonly in various infections of toxic conditions. The year after I was in Birmingham (1915) I wrote up a little report on some experimental work in which I had found the lesion in the guinea-pig after poisoning with chloroform and other toxic substances. In looking over a lot of human suprarenals at that time I found the lesions in various infections and other toxic conditions, especially diphtheria, lobar pneumonia and acute peritonitis.

Cecum: The points of special interest are: (1) the curious solvent action which the amebas seem to have on the tissues; (2) the lack of any adequate leukocytic defense on the part of the tissues against the amebas. The lymphocyte is the only cell that seems to ward off the attack, and this is only a half hearted attempt. Even when the deeper tissues are freely exposed to the intestinal contents there may be no evident inflammatory reaction such as would be expected, although there is a fibrin formation forming a sort of barrier, and in some places there is the usual polymorphonuclear activity. In the lesion of a mesenteric lymph node, where the latter cells are active, bacteria can be seen as the exciting cause.

I have tried to find amebas at a distance from the ulcerated surfaces either in tissue spaces or in the lymphatics or blood vessels, and have not been able to get them. It seems to me that they must die very quickly after they get away from the places where they have their normal environment, that is, in the intestinal contents or in the tissues so closely exposed that some of the intestinal material in solution may be supposed to be present. In one section I found a probable ameba in the serous coat, apparently at a considerable distance from the lesion, but it had a degenerating appearance. Of course, the amebas must be able to live for some time, occasionally, because they can reach the liver and set up abscesses there. If they go by the blood stream, it is possible that the successful ones are carried in a protecting envelop of other cellular material, as, for example, in a small bit of clot broken off from a thrombus. (This explanation was given by Bunting for the survival of amebas that he found in the lungs.) In view of the preference the organisms seem to have for lymph vessels in the intestinal lesions, it seems to me that they may reach the liver by the perivascular lymphatics, but I cannot prove this. However, in the liver they are not infrequent in lymph vessels of the portal canals (as stated in the description), and they may originally go from here out into the lobular tissues to start their abscess formation. The liver cells are engaged in working over the products of intestinal digestion, and the amebas may find in them the food material they are after and, in general, an environment somewhat approaching that in the vicinity of the intestinal epithelium. At the margin of the liver abscess, the amebas that have succeeded in gaining a foothold in the more intact liver tissue do not seem to be in the blood vessels (whose ends are freely opened up by the ulcerative process), but are located in the loose space sometimes considered as a lymph space between the liver cell and the endothelial wall of the capillary or sinusoid.

Appendix: The lesions here seem to depend on primary invasion by the amebas, because in the smaller ones amebas are always to be found in and about the area of tissue destruction. Even after considerable tissue destruction, there are signs that bacterial invasion has taken place, as shown by the intense polymorphonuclear reaction. It is the latter type of reaction that has produced the vascular changes and cellular changes found in the outer coats of the appendix and that has caused the fibrinopurulent exudate. The amebas are not found at any great distance from the epithelial surfaces or the edges of the ulcer cavities.

CONCLUSIONS

1. Intestinal amebiasis may exist without diarrheic and dysenteric history or symptoms.



Fig. 8.—Low magnification of liver abscess, showing amebas in the necrotic material of the cavity.

2. *Endameba histolytica* will at times invade the appendix and produce typical symptoms of appendicitis.

3. Every appendix removed should be examined and reported on by a competent pathologist, and in every case of appendicitis the cause of the appendicitis should be established, and other foci of infection should be sought and treated.

4. In case of death, necropsy should be secured. The value of the information obtained therefrom cannot be overestimated.

ABSTRACT OF DISCUSSION

DR. J. B. HAEBERLIN, Chicago: About two years ago I saw a case in which the leukocyte count was about 20,000,

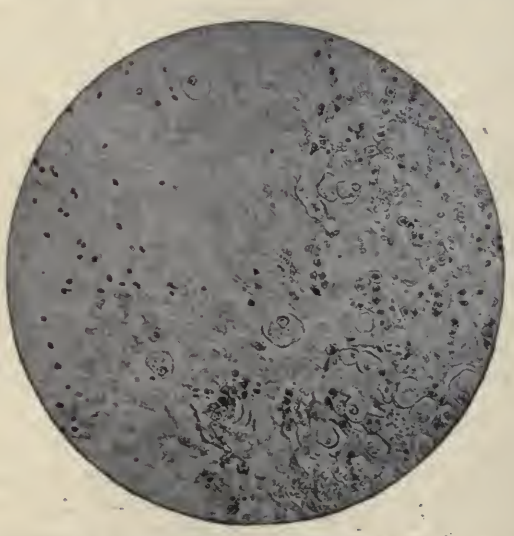


Fig. 9.—Drawing of oil immersion view of edge of liver abscess, showing amebas invading the liver tissue.

with a differential count which indicated a suppurative process, and an eosinophilia of 8 per cent. At the time of operation, the appendix was acutely inflamed and when cut open it was filled with little threadworms. Six or eight weeks ago I saw another case of acute appendicitis with a leukocytosis and eosinophilia, but there were no parasites in the appendix itself. The mother of the boy stated, however, that he passed lumbricoids once in a while.

MIXED TUMORS OF THE THROAT, MOUTH AND FACE*

G. R. NEW, M.D.
ROCHESTER, MINN.

The mixed tumors of the throat, mouth and face present a fairly typical clinical picture, but the grouping of the tumors from a pathologic point of view has been widely discussed. These tumors are most often seen in the parotid or submaxillary region, associated with the salivary gland, and on this account are usually called mixed tumors of the salivary glands. They may, however, occur in various parts of the throat, mouth and face, and it would seem that they are in no way related to the salivary glands.

I have reviewed the cases of mixed tumors of the head and neck seen at the Mayo Clinic from 1912 to 1918, sixty-eight in number, especially with reference to the various locations.

HISTORY AND CLINICAL FINDINGS

Patients with mixed tumors usually come for examination because of recent increase in the size of the tumor, which has been present for several years. Thirty-three, nearly half of the tumors in my series, had been present for more than five years before the patient came for examination. In one case there had been a tumor for forty years; in five cases, for more than thirty years, and in twenty-two cases, for more than ten years. The tumors were equally common in the two sexes, thirty-three males and thirty-five females being affected, and the different locations were also equally divided between the sexes.

The tabulation shows that these tumors are ten times more common in the parotid region than in the submaxillary region. In Judd's[1] report of the cases seen at the clinic previous to 1911, the same relation is shown; forty-one were tumors of the parotid and four of the submaxillary region. Wood,[2] in his study of fifty-nine tumors, found that twenty-six were in the parotid region, thirteen in the submaxillary region, fourteen in the palate and pharynx, four in the lip, two in the neck, and one in the cheek.

LOCATION OF TUMORS

Location	No.
Larynx	1
Pharynx	4
Palate	3
Upper lip	3
Sublingual region	1
Cheek	1
Submaxillary region	5
Parotid	50
Total	68

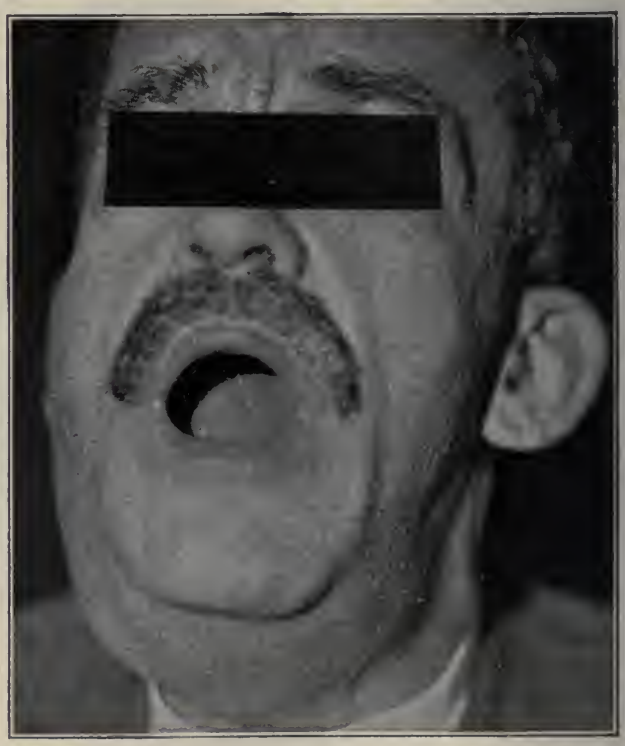


Fig. 1 (CASE 215586).—Mixed tumor of the right pharynx, submaxillary and submental regions, almost filling the pharynx and mouth, of ten years' duration. Tracheotomy performed one year before examination on account of laryngeal obstruction. Tumor removed by Dr. Judd. (Tissue seen in the mouth is tumor, not tongue.)

This type of tumor presents, clinically, a hard, nodular surface, with the feel of a malignant growth. Such

* From the Section on Laryngology, Oral and Plastic Surgery, Mayo Clinic.

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Judd, E. S.: Mixed Tumors of the Parotid Glands, J. Minn. M. A. and Northwestern Lancet **31**: 287-290, 1911.

2. Wood, F. C.: The Mixed Tumors of the Salivary Glands, Ann. Surg. **39**: 57-97, 207-239, 1904.

tumors in the pharynx are usually located laterally, or bulging the posterior pharyngeal wall and the palate. As they become larger they may fill the entire pharynx, causing dysphagia, and sometimes they



Fig. 2 (CASE 215586).—Specimen.

require a tracheotomy, as was performed in one of my cases. The patients, because of the slow growth of the tumors, accustom themselves to the gradual diminution of the air space and small space through which to swallow. It is remarkable that some patients are able to eat anything with the huge tumor filling the mouth and pharynx. In one of my cases the growth, which had originated in the hard palate, had extended upward and involved the entire antrum. When the tumors are situated on the hard palate they usually cause a depression in the bone similar to that produced by a dermoid; as they become larger they may perforate the bone. One of the tumors in my series and one reported by Sturgis [3] were on the soft palate, which is rather an unusual location. When in the parotid region they are freely movable at first, but after they increase in size they become fixed between the posterior margin of the ascending ramus of the jaw and the mastoid region; the facial nerve is sometimes paralyzed from the pressure by the tumor. In the one case that I have seen in which the larynx was involved, the entire subglottic region was thickened but not ulcerated. The laryngoscopic picture was similar to that seen in two of my cases of amyloid tumor of the larynx. The patient had been gradually having increased dyspnea for eight years. Microscopic examination of the tissue determined the diagnosis in this case. The patient did not stay in the clinic to have an operation. I found only one case, that of Wood, of mixed tumor of the lower lip; the upper lip is usually the one involved. As Martin [4] points out, they all occur laterally, like a harelip, and may be found from one-fourth inch in diameter to a much larger size (Fig. 9). The one tumor in the cheek was located about equidistantly between the angle of the mouth and the external auditory canal.

The glands are rarely involved in this group of cases previous to operative interference, and then they are not usually markedly malignant but metastasize in the upper cervical glands. Occasionally a mixed tumor becomes sarcomatous and is very malignant in type.

ETIOLOGY AND PATHOLOGY

The etiology of mixed tumors is obscure, but there are several theories regarding their possible source. Wood, in 1904, thoroughly reviewed their etiology. Volkmann [5] believes them to be endotheliomas arising from the endothelium of the blood vessels, and the lymphatics. Da Costa [6] also classifies this type of tumor as an endothelioma, and says that he has removed one such tumor from the tonsil, two from the nasopharynx, one from the superior maxilla, and two from the carotid body. He believes that it is not possible clinically to distinguish with certainty endothelioma from ordinary sarcoma. Other writers



Fig. 3 (CASE 215586).—Specimen on section, showing large cystic area.

believe that mixed tumors originate from the glandular structure of the salivary glands. Fraser,[7] in an article

3. Sturgis, M. G.: Mixed-Cell Tumors of the Soft Palate, Surg., Gynec. & Obst. **18**: 456-459, 1914.

4. Martin, A.: Remarks on Mixed Neoplasms of the Upper Lip, Internat. Clin. **4**: 273-285, 1918.

5. Volkmann, R.: Ueber endotheliale Geschwülste, zugleich ein Beitrag zu den Speicheldrüsen- und Gaumentumoren, Deutsch. Ztschr. f. Chir. **41**: 1-180, 1895.

6. Da Costa, J. C.: Modern Surgery, Ed. 8, Philadelphia, W. B. Saunders Company, 1919, p. 427.

7. Fraser, A.: Mixed Tumors of the Salivary Glands: A Study Based on the Experimental Production of Neoplasm in the Submaxillary Gland of the Dog, Surg., Gynec. & Obst. **27**: 19-39 (July) 1918.

on the experimental production of mixed tumors, concludes that mixed tumors arise from the ducts of adult glands, and that injury, such as localized or partial obstruction of the ducts, probably plays an important part in the production of these tumors. The fact that there is never any close connection either grossly or microscopically between the salivary glands and the tumors seems to discount the theory that they arise from the gland substance; they are always surrounded by a definite capsule and not connected with the gland. If trauma to the ducts, as suggested by Fraser, is causative of the condition, it seems that these tumors should be much more common in the submaxillary region than in the parotid region, since the submaxillary ducts are many more times affected by salivary calculi and acute and chronic inflammatory conditions than are the parotid gland and Stenson's duct. Those writers who uphold the embryonal theory believe that the tumors develop from abnormal inclusions of tissue during the embryonal period. Others believe that they develop from embryonic tissue during life; this theory has much to substantiate it. It would explain the presence of the tumors about the throat, mouth and neck. Grossly, they present a definite capsule, are rounded, smooth and lobulated. The slowly growing tumors are usually hard, while the rapidly growing ones are soft. Some are multiple. On section, they are granular in appearance with some cystic areas filled with serum. Microscopically, they present connective tissue and epithelium in the form of tubules. The majority of the tumors contain cartilage. Wilson and Willis[8] give the detail pathology of these tumors.



Fig. 4 (CASE 251596).—Mixed tumor of the right pharynx extending into the nasopharynx and palpable at the angle of the jaw; duration one year.



Fig. 5 (CASE 251596).—Postoperative drawing, showing incision.

DIAGNOSIS

The diagnosis of mixed tumors in some cases must be made microscopically; but in the pharynx, palate, and the submaxillary and parotid regions, a clinical diagnosis, found to be correct on microscopic section, is not difficult to make. The hard tumor, which feels malignant and has existed for several years, during which time it has been slowly enlarging without breaking down, is characteristic of these cases. The tumor is usually freely movable; often it is not noticed until it is 0.5 cm. by 1.0 cm., and the patient comes for examination when the growth begins to increase in size. If the growth is in the pharynx and palate, the condition must be distinguished from a nasopharyngeal fibroma that has filled the nasopharynx and bulges the palate. In the parotid and submaxillary regions, tuberculous and inflammatory glands may simulate a mixed tumor. In one case of our series a fibroneuroma was mistaken for a mixed tumor.

TREATMENT AND PROGNOSIS

The treatment of the mixed tumor is surgical. If the tumor is in the pharynx, it should be removed either through the mouth or through the submaxillary and submental regions, depending on the size and the location of the tumor. Of the four pharyngeal tumors for which the operation was performed, two were removed through the mouth and two through the submaxillary region. In operating through the mouth, the incision is made over the tumor, down to the capsule, and the tumor is shelled out by the use of the finger or of blunt dissecting scissors. The tumor in this location is sometimes firmly embedded and very difficult to enucleate, and at times it may be necessary to remove a part of it before the remainder can be shelled out. The two tumors that were removed through the



Fig. 6 (CASE 251596).—Specimen.

8. Wilson, L. B., and Willis, B. C.: The So-Called "Mixed" Tumors of the Salivary Glands, Am. J. M. Sc. **143**: 656-670, 1912.

submental and submaxillary region were enucleated without difficulty; a tracheotomy which had been performed on one of the patients before coming to the clinic on account of the obstruction simplified the operation. Palatal tumors may be enucleated under either local or general anesthesia If the tumor is fixed to the bone, a general anesthesia is preferred so that the bone may be cauterized with the soldering iron in order to prevent any recurrence. If the antrum is involved, the soldering iron should be carried up into the antrum thoroughly to cook the tumor. The lip tumors are removed under local anesthesia, and present no difficulty. Removal of the parotid tumors is sometimes problematic because of their close relation to the facial nerve. For some of these patients, particularly women, we have, therefore, used radium in an attempt to check the condition rather than risk injury to the facial nerve. Results in this group of cases show that there is very little, if any, change in these tumors under radium treatment. In all cases in which it is at all likely that the nerve may be injured, the patient should be warned before operation as to the possibility of facial paralysis. If a tumor is recurring, it is sometimes necessary to remove the parotid gland as well as the facial nerve and perform a block dissection of the neck. Mixed tumors are potentially malignant, and, when they recur after a complete primary removal, they may metastasize and should be treated accordingly.

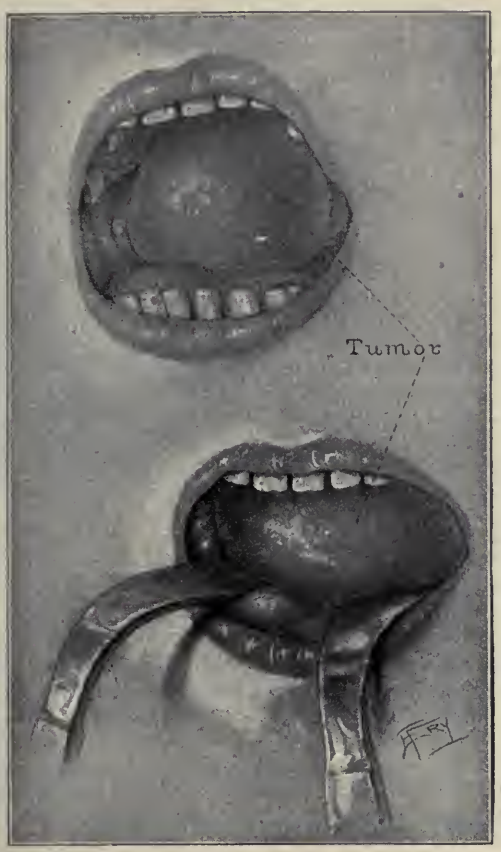


Fig. 7 (CASE 220167).—Mixed tumor of the left pharynx, almost completely filling the mouth; duration, seven years.

Questionnaires were sent to the sixty-eight patients in this series in order to ascertain their present condition; replies were received from forty-five. Thirty-four had had primary operation, and only one of these had a recurrence. This patient had a mixed tumor of the palate involving the antrum, which has been cauterized twice and is well now. Eleven of these tumors, two of the palate, two of the pharynx, and seven of the parotid, ruptured in the removal; the other eleven patients had had secondary operations in the clinic; and of these, one is dead, one has general metastasis, and one has broken down cervical glands; eight are well and have had no recurrence. Twenty-one of the group of thirty-four who had primary operations had parotid tumors removed, and none of these had had permanent facial paralysis following operation. Seven patients had temporary paralysis, ranging from two weeks to four months. Five of eighteen patients who, at the time of examination, had been operated on elsewhere had permanent facial paralysis.



Fig. 8 (CASE 240902).—Mixed tumor of the left hard and soft palate; duration, one year.

This type of tumor should not be classified as mixed tumor of the salivary glands until there is some evidence to show that it is related to these glands. The tumor may be present in various locations in the throat, mouth and face. It seems that a favorable prognosis in these cases depends on the complete removal of the tumor at the primary operation, as the percentage of recurrence following complete removal is very small.

ABSTRACT OF DISCUSSION

DR. LEE W. DEAN, Iowa City: I am surprised at the number of mixed tumors of the nose, throat and face that Dr. New reported. In my experience this type of tumor has been rather rare. The lesson to be derived from his experience is that we must not do a mutilating operation when we are dealing with a semimalignant tumor. I have seen cases in which half a mandible or a superior maxilla had been



Fig. 9 (CASE 222212).—Mixed tumor of the upper lip; duration, nineteen years.

removed with a diagnosis of a small, round cell sarcoma, and there has been no recurrence either local or systemic. I have been inclined to question the diagnosis of some in these cases. In treating tumors of the jaw we must be sure that we are not dealing with an adamantinoma, a giant cell sarcoma or other semimalignant tumor before we operate. I am very much interested in the statement which I have had confirmed by pathologists that these mixed tumors of the parotid gland do not develop from the gland tissue itself. The most interesting mixed tumor which I have had was one that developed from the posterior part of the vomer. It invaded the nasopharynx and extended into the mesopharynx. The Italian operation was performed; the hard and soft palate was split in the median line. The tumor was easily removed and the palate closed. It was a most excellent functional and cosmetic result.

Dr. Wendell C. Phillips, New York: What is the average length of time which has elapsed since these operations were performed? It is important to know whether this type of operation offers any great hope as to the ultimate and permanent recovery of these patients, and the length of time that has elapsed since the operation will be significant.

Dr. John F. Barnhill, Indianapolis: The outstanding point of Dr. New's paper is the ease with which he makes the diagnosis of mixed tumors before operation. These tumors are not uncommon. I have seen and operated on at least a dozen parotid gland tumors. I never felt I could with certainty know the pathology until the operation was done. To be sure, free movement of the tumor in the parotid tells something. If it is movable, it probably is a mixed tumor;



Fig. 10 (Case 258922).—Mixed tumor of the right submaxillary region; duration, thirty-four years.

whereas, if it is sessile, we probably are dealing with a genuine malignancy. Two of the cases in which I operated proved to be carcinomas. The whole parotid gland was removed, but I did not know that the whole gland was involved until after I entered it. It is wise in these cases to tell the patient frankly that if we find that the whole parotid gland is involved, wisdom would dictate that all should be removed, and that, should this be necessary, they must expect complete facial palsy. I do not believe it is possible to take out any considerable proportion of the parotid gland without facial palsy resulting. I have seen five or six cases involving the superior maxilla. They are more malignant than the mixed tumors, consequently I am anticipating ultimate death from recurrence. Those that proved to be mixed tumors in the parotid were easily shelled out and no facial palsy whatever resulted, although the patients had been warned beforehand that such a result might occur.

Dr. Thomas E. Carmody, Denver: I was interested in the report on the etiology of these cases, and the fact that these tumors do not show glandular involvement unless they have been tampered with, is important. I have made that observation myself. The ease with which he makes a diagnosis is important. Of course, a great many of these cases would be comparatively easy to diagnose, but the difficult cases are those in which the tumors are not so large. I have at the present time a case which involves the nasopharynx and the sphenoidal sinus. Some one had worked on it before and the glands were greatly involved, so that it was necessary to take out the superior cervical glands. I agree with Dr. Barnhill about taking out a tumor of the parotid where the whole gland is involved. One can take out a simple parotid tumor without injury to the facial nerve, but this cannot be done in cases of mixed tumor.



Fig. 11 (Case 251596). — Mixed tumor of the larynx; duration, twelve years.

Dr. Gordon B. New, Rochester, Minn.: I think Dr. Dean's point is well taken, that many mutilating operations are performed for tumors that are not malignant. In reporting the end-results of malignant tumors, care should be taken to state the exact nature of the tumor. We might call all of these tumors carcinoma, but they are a mixed tumor type of carcinoma in which the prognosis is much better than in the squamous cell type. We should know the length of time the tumor has existed, and the microscopic pathology. As to the length of time which has passed without recurrence of these tumors: This series extends over a period of eight years. All these cases cannot be diagnosed clinically, and for that reason fresh tissue sections should be made, if necessary, at the time of operation. The pharyngeal, parotid and submaxillary tumors can be diagnosed clinically in a large percentage of cases.

The Scientific Bases of Pathology.—Pathology is anatomic and physiologic; it deals with structure and function; in its purview the whole field of abnormalities is included. Without physics and chemistry the development of pathology would be practically impossible. To them the pathologist must resort when he would obtain conceptions and methods for the accurate measurement of living processes. To measure chemical or physical change in the organism is the first step toward a scientific interpretation of the living process. The student who would become trained in pathology must therefore have a complete knowledge of the elementary principles of physics and chemistry. These sciences serve as an introduction to the whole curriculum, and the courses in these subjects should familiarize the student with fundamental laws and principles on which the whole structure of experimental science is built. The subjects which are taken up in the preliminary period are the foundation for all the later work. It is hopeless to escape from empiricism in medical teaching and practice if we do not take the precaution of beginning the course by a study of physics and chemistry. In the demand for a clear and sufficient introduction to fundamental scientific ideas pathology merely emphasizes the claim which is made by all other branches of medicine.—J. L. Smith, *Lancet*, July 10, 1920.

EXPERIMENTAL IMPLANTATION OF FOREIGN TISSUE INTO THE LUMEN OF LARGE ARTERIES

JOHN P. JONES, M.D.
WAKEFIELD, R. I.

As we were interested by Herrick's[1] report of implanting musculofascial strips into the lumen of arteries without subsequent clotting, Captain Dozier, Captain Propst and I, while on the surgical service of Evacuation Hospital No. 36, A. E. F., France, made experiments to test the validity of Herrick's findings.

REPORT OF EXPERIMENTS

EXPERIMENT 1.—*Operation.*—March 12, 1919, a young female mongrel dog, weighing 11 kg., was anesthetized with morphin and ether. The abdomen was opened by a 7.5 cm. incision in the midline, the intestine pushed to the side, the right common iliac artery isolated, and its blood current arrested by two small clamps placed about 2 cm. apart. A fine silk suture was passed through the center of the artery by means of a small cutting needle, and by means of traction on this suture a small cataract knife was drawn through, making a slit about 3 mm. long through each side of the artery. The knife was withdrawn, and by means of the same suture a strip of muscle and fascia from the rectus abdominis, one-half the diameter of the lumen of the artery, was drawn through the slits, projecting on each side about 4 mm. A suture on each side was required to control a slight bleeding proximal to the insert. The clamps were removed, and the pulse below was of decidedly less volume than on the opposite side. The abdomen was closed in three layers. The animal made a rapid and uneventful recovery from the operation.

Necropsy.—June 2, the animal was anesthetized and the abdomen opened. The pulse was apparently of equal volume in each femoral. Except for some adhesions, the artery presented no external evidence of having been molested. One cm. of the artery was resected, and on being held to the light presented a perfectly smooth and regular lumen with a band about one-fourth its diameter crossing its center from side to side. On examination this band was found to be smooth and glistening, and apparently covered with endothelium. There were no clots adherant to it.

EXPERIMENT 2.—*Operation.*—March 18, 1919, a young male dog, weighing 6 kg., was anesthetized with ether and morphin, and the right common carotid was isolated, and a musculofascial strip, from the sternomastoid, one-half the diameter of the lumen of the artery, was passed transversely through the center of the vessel as described in Experiment 1. There was no bleeding after this insert had been pulled through. The pulse in the carotid above this was very weak. The wound was closed and the dog made an uneventful recovery.

Necropsy.—June 2, under ether anesthesia, the carotid was exposed and 1 cm. of it was removed. There was a small teat of tissue projecting from one side of the artery, the only indication of the operation on viewing it from the outside; but across its lumen passed a smooth, glistening band of tissue about one-fourth the diameter of the lumen of the artery.

EXPERIMENT 3.—*Operation.*—March 23, 1919, a young male dog, weighing 6 kg., was anesthetized with morphin and ether, and the right common carotid was isolated and clamped. Then two thirds of its circumference was removed for a distance of 1 cm. Into this space was sutured a piece of fascia and muscle 4 mm. thick, taken from the sternomastoid. After the clamps had been released there was a barely perceptible pulse above the operated area. The wound was closed in the usual manner.

Necropsy.—June 2, when the neck was opened through the old scar, it was found that the artery was replaced by a small fibrous cord for a distance of about 2 cm. There was no lumen to the cord. This was probably caused by suturing in the graft too closely, not leaving sufficient room for the blood current.

EXPERIMENT 4.—*Operation.*—April 8, 1919, the same animal used for Experiment 1 was anesthetized, and the right common carotid isolated in the usual manner. A musculofascial insert of approximately half the diameter of the lumen of the vessel was then placed as in the first two experiments.

Necropsy.—June 2, when the carotid was exposed, a few adhesions were found. One and five-tenths cm. of the vessel were removed. A very minute smooth, glistening cord passed transversely through the center of this section. It was hardly 1 mm. in diameter. There was no clotting about the insert.

EXPERIMENT 5.—*Operation.*—April 24, 1919, a female mongrel, weighing 12 kg., was anesthetized and an insert one-half the diameter of the lumen of the vessel was placed transversely in the left common iliac artery.

Necropsy.—June 3, the cord was found smooth and glistening, and about one-third the diameter of the artery lumen. It was apparently covered with endothelium, and there were no clots adherent to it.

EXPERIMENT 6.—*Operation.*—April 29, 1919, a female mongrel, weighing 11 kg., was anesthetized, and the right common carotid was exposed and one third of its circumference was removed for a distance of 7 mm. A piece of sternomastoid muscle and fascia 4 mm. thick was removed and sutured as a patch over the carotid defect, with the muscle surface turned inward.

Necropsy.—June 3, there were rather dense adhesions about the patch, but the artery was isolated with little difficulty. The pulse on this side was very good, but probably of a little less volume than on the opposite side. A section of the artery was removed and slit open. The patch was projecting into the lumen of the vessel for about 1 mm., flattening that side of the lumen to a slight extent. It was smooth, firm and glistening. No clots were present. The graft did not show any signs of beginning aneurysmal bulging, though the necropsy was performed thirty-five days after the graft was placed.

EXPERIMENTS 7 and 8 (May 1, 1919); 9 (May 2); 10 (May 4), and 11 (May 5).—These were all performed in the same manner, the common carotid artery being used. In every case we tried to make the musculofascial insert as nearly one-half the diameter of the lumen of the artery as possible. In none of the experiments was it necessary to take a stitch in the edges of the slit through which the insert was passed, in order to stop bleeding, as the insert fit tightly, and the elasticity of the vessel wall made it close firmly about it. The necropsies were all done June 3, 1919, and in every case there was a good pulse distal to the insert. No clots were present. All the inserts were smooth, glistening, fibrous bands of one-third to one-sixth the diameter of the artery lumen.

COMMENT

This report is incomplete in that no histologic examinations were made. Soon after making the necropsies we received orders to move, and the specimens were lost in moving. But I think the foregoing work substantiates Herrick's[1] findings and justifies two very important conclusions:

1. A foreign tissue can be placed in the lumen of an artery without immediate absorption and without the formation of a permanent clot.

2. Vessel walls can be sutured without necessarily having intima to intima approximation.

Further work on this interesting subject will show whether or not a temporary clot is usually formed and whether the insert is ultimately absorbed.

1. Herrick, F. C.: An Experimental Study of the Surgery of Large Arteries, J. A. M. A. **71**: 2120 (Dec. 28) 1918.

Clinical Notes, Suggestions, and New Instruments

A NEW KNOTTED HEAD BANDAGE, SECURE AND ECONOMICAL

ELMER D. TWYMAN, M.D., KANSAS CITY, MO.

The accompanying illustrations and text describe a head bandage that seems a little different, being perhaps more easy of application than some, economical of bandage material, and quite secure. I devised it some nine years ago during the treatment of a number of scalp injuries. It has been used continuously since that time by myself and my professional friends. I am not aware that it has been previously described. Publication at this time is urged by a former captain in the Medical Corps, who has been wearing it himself with satisfaction. He thinks it may be useful in military as well as in industrial practice.



Fig. 1.—Step 1 of knotted head bandage: A secure band around the base, knotted to its own free end; free end held by patient; gauze over wound.



Fig. 2.—Step 2: Roller passed over the head and the dressing, under the secure band on the opposite side, and knotted to its own slack; the doubled part divided and also held by the patient.



Fig. 3.—Step 3: Roller passed back and forth over the head, under the free end on each side.



Fig. 4.—Final step: Side view; complete covering of head, final knots tied at base on each side. The edges of the bandage have been blackened to show the turns.

The scalp wound having been treated and covered with gauze, the retaining bandage is thus applied:

1. A bandage is passed completely around the head, under the external occipital protuberance, above one ear and above the superciliary ridges, and is tied or knotted to itself just above the opposite ear, leaving the end 3 or 4 inches long. (The place of tying is varied according to the position of the wound to be covered; the secure band around the base is the essential.) The patient may hold the free end of the bandage as shown in Figure 1.

2. The roller is passed over the head and across the wound dressing to a point on the opposite side of the head, is grasped in the slack by forceps passed under the secure circular band,

and is drawn under the band and knotted, a free end being left which is also held by the patient (Fig. 2).

3. The roller is passed back and forth over the top of the head, on each side passing under the free end held in the patient's hand. The dressing is thus covered and held in place. Enough for this purpose, and no more, need be applied (Fig. 3).

4. The roller is tied to the free end on one side, passed around the base of the head to the other free end and knotted again, and again around to the starting point, making a second secure band at the base. The free ends and the roller are cut off.

The result as for a partial covering only is shown in Figure 3. A full head covering can also be made, as shown in Figure 4. The size of the second knot can be reduced by dividing the doubled part of the second free end immediately after tying (Fig. 2).

It is claimed that the least possible bandage holds the dressing in place, that great security is attained, that an ambulatory patient can properly assist in the application, and that in the event of disarrangement the bandage can be replaced like a cap, as it all depends on the base bands. As objections, it may be urged that the knots may be uncomfortable in the lying position, and that they are unsightly. Both these objections have some force if muslin bandage is used, but very little if gauze bandage is used.

416 Argyle Building.

A SIMPLE ARTIFICIAL PNEUMOTHORAX APPARATUS *

J. S. WOOLLEY, M.D., AND GEORGE SHERIDAN, LOOMIS, N. Y.

The apparatus herein described represents a type of pneumothorax "box" recently constructed at the Loomis Sanatorium as the result of several years of experimentation. It has proved so satisfactory that we think a short description of the apparatus would be worth while. In designing and constructing this "box" we have tried to include all the good features of other types of this instrument; hence it is largely a modification of one or more well-known forms.

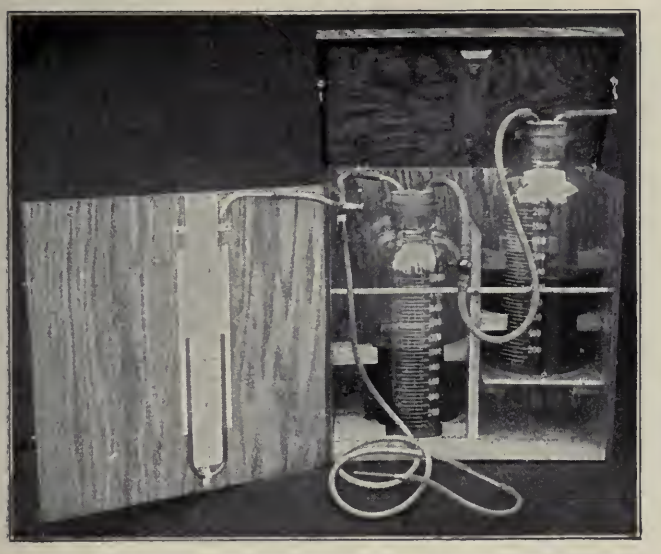


Fig. 1.—Artificial pneumothorax apparatus of box type.

The box, or container, is constructed of ¼ inch, double (both sides) oak veneer. This material is rigid and light in weight and will not warp when well varnished. It measures 13½ inches high, 7¼ inches deep and slightly over 13 inches wide. These are the outside dimensions. The floor and vertical partition are of ½ inch pine. The hinged lid is strengthened by lateral strips, which overlap the sides and front when closed, and is further braced centrally where the handle is attached. Side hooks firmly hold the lid when closed (Fig. 1).

The apparatus operates on the principle of the siphon, the right-hand bottle being elevated to hasten the delivery of gas or air, and lowered outside the case to create suction for filling (Fig. 2). This bottle is elevated by means of a

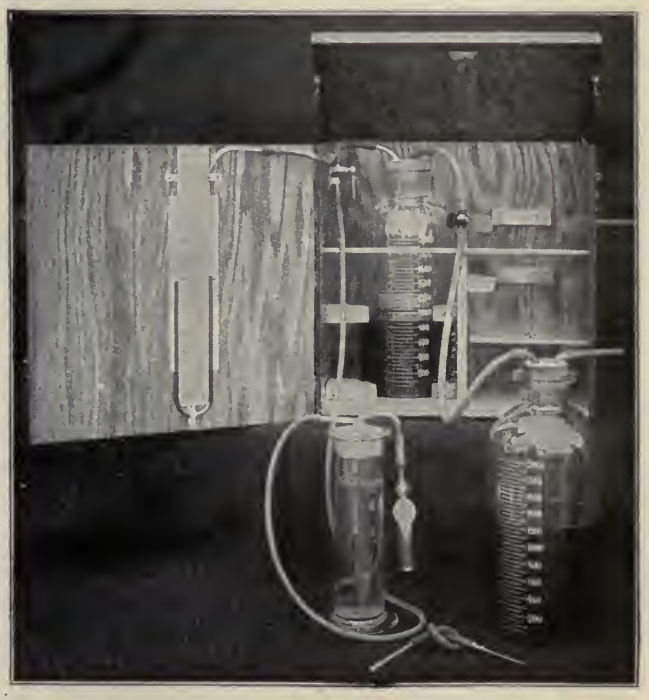


Fig. 2.—Apparatus in position for filling; lowering the right-hand bottle creates suction.

movable shelf (beaver-board) supported at different levels by cleats. The latter are curved so that they partially encircle the bottle and thus hold it in position. The left-hand bottle is held in a similar manner.

The bottles are 2-liter percolating jars, fitted with rubber stoppers and graduated in cubic centimeters. Each has two glass tubes (No. 4), a long one, reaching to the bottom of the bottle, and a short one, barely extending below the stopper. The rubber tubing connecting the bottles is slipped over the long tube of each. The fluid used is compound solution of cresol, 1 per cent., which may be colored with a small amount of alcoholic gentian violet or fuchsin. The color materially aids in reading the level of the fluid.

The stopcocks used are a hard-rubber one between the jars, and a two-way metal cock, mounted on the side, near the manometer. The latter is of the type used for bladder washing, and has a bore of approximately ⅛ inch. It is fastened to a shallow block by means of narrow straps of sheet white-metal. This substance is soft and easily cut with ordinary shears. An empty arsphenamin container supplied us with sufficient material for this purpose. In the butt of the stopcock, which is concealed in the block, is soldered a small pin so that the arm can be turned to only two positions, either "manometer" or "gas." When the former is on, the latter is off, and vice versa.

The manometer consists of No. 3 glass tubing and is mounted by soft metal strips, as illustrated. It is as large as the door will accommodate, and has a range of 14 cm. above and below the zero mark. This equals 28 cm. of water pressure. For ease in reading, the manometer scale is in centimeters. The true pressure is obtained by multiplying this reading by 2. The manometer fluid is also colored.

The rubber tubing used is 3/16 inch (lumen) between the jars and 5/32 inch elsewhere. A slip-joint connection for the needle and a glass window near the end of the tube complete the apparatus. The latter renders the end-piece of tubing easily detachable for sterilization. The "box," ready for use, weighs 15 pounds.

* From the Loomis Sanatorium, Babbitt Memorial Laboratory.

Figure 2 shows the position for filling when using air, which has now largely replaced nitrogen in this work. The delivery tube is now attached to the filter, the end-piece having been removed. The right-hand bottle must be lowered a sufficient distance so that the difference in level between the fluids in the two bottles is always greater than the height of the fluid in the air filter. Otherwise air will not bubble through the latter.

The filter consists of a glass cylinder (approximately 8 by 2 inches) fitted with a stopper and a long and short bent glass tube (Fig. 2). It is nearly filled with 1:500 mercuric chlorid solution. A small calcium chlorid tube, with the bulb loosely packed with cotton, is attached to the longer tube. When the right-hand bottle is lowered and the cocks are opened, negative pressure is created in the left-hand bottle, and this in turn causes air to be drawn through the filter. This air (gas), having passed through cotton and bubbled through the mercuric chlorid solution, is clean and presumably sterile, and is stored in the left-hand bottle until used. This method of "filling" has proved most satisfactory and can easily be done by the average nurse.

The advantages of this apparatus are its ease of operation, lightness in weight (portability) and low cost. The wide range of the manometer is of distinct value. Any carpenter can construct the box or container, and the assembling and fitting up of the parts ought to be well within the powers of the average laboratory technician.

ADAPTATION OF THE SINCLAIR SKATE TO THE THOMAS HIGH-BRIDGE SPLINT

R. M. YERGASON, M.D., HARTFORD, CONN.
Associate Orthopedic Surgeon, St. Francis' Hospital

In severe compound fractures of the lower extremity with extensive destruction of the soft parts, Sinclair's skate has often proved its usefulness as a means of attaching traction. Under the same conditions the high-bridge splint has been found to be most comfortable to the patient as well as neat, convenient and easily adjusted. In order to combine the advantages of the two, I have devised a simple apparatus by means of which the skate is suspended from the side bars of the splint, the combination of skate and hanger taking the place of a foot-piece. The skate was made of a size adapted to the patient. It carries a ¼ inch bolt 1 inch long, with a wing nut, by means of which connection is made with the support and also with the traction.



Fig. 1.—General arrangement of apparatus to allow the patient to move comfortably about the bed.

The support consists of a coupling bar of ⅝ inch strap iron with 9/32 inch holes at ½ inch intervals, so that adjustments in height may be obtained, and a suspension T which rests on the sidebars of the splint. This T is of ⅝ inch iron, the cross bar being 8 inches long and the stem 4 inches. The stem is riveted to the cross bar and is bent down 1 inch from the rivet so that it will turn and thus allow of pronation and supination positions. A hole 1 inch down on the stem allows it to be fastened to the coupling bar by a second ¼ inch bolt, the lower end of the coupling being attached to the skate. At each end of the cross bar is a cotter pin to prevent it slipping off from the side bars of the splint.



Fig. 2.—Manner in which skate support and tractor adapt themselves to marked external rotation, which was the position giving the most satisfactory alinement of bones in this particular case.



Fig. 3.—Adaptation of skate support and tractor to vertical position of the foot, which is the position of election in most fractures of the leg.

In order to prevent the cross bar riding up off the side bars of the splint, as it may do if the slings are drawn up tightly, a small lock, which does not appear in the illustrations, was devised. The lock is simply a small U-shaped piece of sheet iron, which encloses the side bar of the splint, the ends of the U being slotted so that the cross arm of the suspension T will pass through them. One of these locks may be used at each end of the cross arm, in which case the foot-piece becomes a rigid part of the splint.

A small traction T of ⅝ inch iron is attached to the bolt of the skate. In its vertical stem are several 9/32 inch holes so that it may be adjusted at a proper level to bring the transverse bar of this T on a plane with the malleoli. The transverse part is 5 inches long, with a hole near each end through which the picture wire of the traction is passed.

The illustrations show this apparatus in use with the high-bridge splint and the screw tractor. The skate was attached to the foot by means of short strips of gauze bandage pasted on with celluloid solution (Cunningham's adhesive). The

screw tractor that is employed has already been described.[1]

The case was one of compound, comminuted fracture of both bones of the right leg, in the lower third, which occurred, Feb. 26, 1920, a motor truck having passed over the leg. The accident twisted the leg so that the skin was completely stripped from the subjacent fat from 3 inches below the patella to a point below the malleoli. The fat also was completely loosened from the muscles over the same area, and was so shredded that all of it required removal. There was but one wound extending spirally from the upper third of the leg on the antero-internal aspect, downward, backward and outward to the outer side of the os calcis.

The patient was kept in the apparatus illustrated until April 15, when, good union being definitely established, a plaster cast was substituted. May 1, the wound was ready for skin grafts.

54 Church Street.

A CASE OF CONGENITAL OBSTRUCTION OF THE POSTERIOR URETHRA

MELVILLE SILVERBERG, M.D., SAN FRANCISCO

An Armenian boy, aged 8, whose birth had been normal, had, with the exception of some slight and inconsequential disturbance of feeding, enjoyed continuous good health up to the age of 2½ years. He had already ceased to wet the bed, when at that time he had an attack of measles which marked the beginning of his urinary troubles. Enuresis again developed and has continued ever since. Increasing frequency of urination was noticed during the day, but no observation in this regard could be made at night, the bed becoming wet soon after he retired. At the age of 6, urination for the first time began to be painful. The pain was confined to the beginning of the act, and was promptly relieved during its consummation. At 7 pus was first discovered in the urine.

The boy had developed normally both mentally and in the main physically, though it was quite evident that growth had been somewhat retarded. Beyond his urinary complaint he had no illness since the measles. His appetite was fair. His digestive tract seems to have always been in good condition. His family history proved to be irrelevant. There was nothing from this source to be connected with the condition preseneted.



Fig. 1.—Bladder and ureters distended with 20 per cent. argyrol. Note cap at bladder outlet.

The boy was undersized, though, with the exception of some pallor, of generally healthy appearance. The pupils were large, equal, and contracted to light. The tongue was clean, the lymph glands just palpable. A systolic murmur without



Fig. 2.—Large right pyonephrosis. Twenty per cent. argyrol permitted to gravitate from bladder to kidney.

demonstrable anatomic significance was present at the apex. The thoracic organs otherwise presented no evidence of abnormality. The reflexes were present and normal.

Extremely interesting features were disclosed on examination of the abdomen. It is to be regretted that no photograph was taken. As the boy stood, the abdomen was conspicuously protuberant and asymmetrical. The left loin was decidedly bulging, the right preserving its concavity. Below, in the hypogastric region, there was a prominent rounded swelling extending several inches on both sides of the midline. When the boy was placed on his back, the cause of the bulging in the left flank was found to be a uniform, soft, smooth mass dipping beneath the ribs in the left hypochondrium, while below it passed downward and inward until lost beneath the rectus about the umbilicus. Below; adjacent to it in the hypogastric region, there was a soft, yielding mass about 3 inches in diameter, rather definite, giving a tympanitic note on percussion and showing on its surface irregularities suggestive of the pattern of intestinal coils. Passing then directly across the midline from this lower mass there was a broad, shallow depression corresponding to the linea alba, and again on the right there was an elevation similar to that on the left, but smaller and less conspicuous. There was no tenderness anywhere except in the left lumbar region, especially when pressure was made at the costovertebral angle. Nothing could be palpated in the right flank.

The external genitalia showed no abnormality. The urine was very turbid and contained a heavy sediment of pus, some organisms (probably *B. coli*), no casts and no red cells.

Under ether anesthesia the bladder was readily catheterized without the slightest evidence of urethral obstruction. It contained 16 ounces of residual urine. Emptying the bladder caused the complete disappearance of the swelling in the hypogastric region. After irrigating three quarters of an hour, a cystoscope (18 F.) was easily passed, but the bladder contents became so rapidly clouded that it was

1. Yergason, R. M.: A Screw Tractor for Use with Thomas' Splint, J. A. M. A. **74**: 886 (March 27) 1920.

impossible to distinguish a single anatomic feature. Cystoscopy was therefore futile. Indigocarmin was injected intragluteally. In half an hour there was not a trace of the drug.

The examination thus far having disclosed but little of the actual condition, while still under anesthesia 4 ounces of 20 per cent. argyrol were injected into the bladder. The boy was then kept in the extreme Trendelenburg position three or four minutes, when pictures were taken of the pelvic and both renal regions. These disclosed, as shown by the accompany illustrations, a dilated bladder with smooth outline, a well demonstrated, tortuous hydro-ureter (Fig. 1), and advanced pyonephrosis (Fig. 2) on the right side. Unfortunately, the argyrol did not penetrate the left ureter as well as the right, resulting in only a faint shadow, but nevertheless showing the same condition as on the right. The left renal region showed no shadow. However, there was no doubt about pyonephrosis existing on this side, as the large tumor in the loin was almost as distinctly visible as it was palpable. At the bladder outlet there was a small button-like cap (Fig. 1) which may be considered the dilated posterior urethra. Is so, then by comparison with the illustrations accompanying the recent article by Young, Frontz and Baldwin,[1] the obstruction must be proximal to the colliculus.

Directly after the examination, the boy was taken back to his home in the country. All efforts to learn the subsequent course of events have been futile.

COMMENT

The case here described is apparently one of congenital membranous valve formation in the posterior urethra. The valve being cup-shaped with its concavity toward the bladder readily permits the passage of instruments without hindrance, but, on the other hand, obstructs the free flow of urine toward the exterior, thus causing those changes in the upper urinary tract which are well known to be associated with impediments to the stream.

1018 Head Building.

A METHOD OF OBTAINING DIRECT CULTURES FROM INTESTINAL ULCERS IN INFANTS AND YOUNG CHILDREN *

RALPH C. SPENCE, M.D., AND STAFFORD McLEAN, M.D., NEW YORK

A modified Yeoman proctoscope, 8 inches long and ½ inch in diameter, has been found satisfactory for obtaining direct cultures from intestinal ulcers in infants and young children



Fig. 1.—Posture of child during examination.

with dysentery. With the proctoscope is used a sterile glass tube 12 inches long and ¼ inch in diameter. In this tube there is placed a stiff wire 2 inches longer than the tube, on the distal end of which there is a small cotton swab.

The proctoscope is introduced and the ulcer located. The distal end of the glass tube is placed over the ulcer, and the cotton swab is gently brought in contact with the ulcer. The swab is then withdrawn into the glass container in order to prevent contamination, and the tube containing the swab withdrawn. Melted agar is inoculated from the cotton swab and poured into Petri dishes.



Fig. 2.—Complete outfit: *A*, proctoscope; *B*, glass tube, containing swab.

Even young infants show little or no signs of discomfort during a proctoscopic examination. It is a relatively simple procedure to secure a culture directly from an intestinal ulcer by this method.

Proctoscopic examination is of great value in differentiating ulcerative from nonulcerative types of colitis. It has been found at the Babies' Hospital that an earlier bacteriologic diagnosis can be made by direct culture from the lesions than by the customary stool cultures. Data are being obtained relating to various phases of bacillary dysentery which will be subsequently published.

The Babies' Hospital—135 East Fifty-Fifth Street.

1. Young, H. H.; Frontz, W. A., and Baldwin, J. C.: Congenital Obstruction of the Posterior Urethra, J. Urol. 3: 289 (Oct.) 1919.

* From the Babies' Hospital.

REPORT OF CASE OF MULTIPLE NEOPLASTIC TUMORS *

SANFORD WITHERS, M.D., AND L. J. OWEN, M.D., ST. LOUIS

There have been occasional reports of the coexistence of different types of neoplasms in the same patient, but we believe this condition to be of more frequent occurrence than is commonly supposed. It is our intention as time permits to record the number of cases that have been in this hospital. The present article is a report of the most interesting of these cases.

REPORT OF CASE

A white woman, aged 28, not married, born in England, of Jewish descent, previous to transferal from St. Louis City Hospital to Barnard Hospital had been in State Hospital No. 1, where she had had an operation for tumor of the breast. She was mentally deficient.

On admission to Barnard Hospital there was a tumor mass in the right side of the face which was diagnosed as sarcoma of the right antrum. There was a smaller nodule on the outer part of the superciliary ridge, which was apparently a carcinoma. The right orbit was involved in the sarcomatous growth. Both breasts contained multiple firm nodules, and both nipples were retracted.

* From the Barnard Skin and Cancer Hospital.

Microscopic study of the tissue removed at operation proved it to be giant cell sarcoma, containing many multinuclear giant cells, with a dense stroma of spindle shaped connective tissue cells. It had invaded the antrum. The tumor at the right superciliary ridge was a carcinoma of the basal cell type.

The patient was unable to withstand the operation for removal of the facial sarcoma, and died on the second day following operation.

At necropsy there were found present, other than the two mentioned above, five types of neoplastic tissues. Section of the breasts revealed bilateral multiple, intracanalicular adenofibromas. The left lobe of the thyroid gland was enlarged, and at microscopic study fetal adenoma was diagnosed. At the level of the suprasternal notch there was a multilocular cyst apparently not connected with the thyroid gland, and of doubtful origin. The lining of the cyst was a low cuboidal epithelium, and a few polymorphonuclear cells were seen in this tissue.

The ovaries were bilaterally cystic, nearly all ovarian tissue having been destroyed in the process. There were a large number of uterine myomas present, and microscopic study of this tissue revealed the usual structure of the fibromyomas.

The case is of interest as showing precocious senile changes in a person much below the age at which these changes are usually seen. There were simultaneously present seven types of neoplasms.

TWO CASES OF HYPERTROPHIC CIRRHOSIS OF THE LIVER IN THE SAME FAMILY

ARRIE BAMBERGER, B.S., M.D., CHICAGO
Associate in Surgery, University of Illinois College of Medicine

These two cases of hypertrophic cirrhosis of the liver occurred in two brothers. The children in question were born two years apart. No children were born in the interval, but there were three children previous to the older of the two, and five subsequent to the younger one.

Both the mother and the father are of German extraction. The mother's age at present is 44, and the father's 46 years. Both deny any symptoms of venereal disease at any time. The mother has had ten children, all healthy except these two. She denies any miscarriage. At one time the father was a steady drinker, but at no time could he be classified as a drunkard. The family history of both father and mother reveals no disease of the liver.

CASE 1.—The first boy I did not have under my observation; but the parents were informed that the diagnosis was hypertrophic cirrhosis of the liver, and the symptoms were similar to those of his brother, whom I had under observation. He began to show symptoms when he was 10 years old, and his symptoms as told me by the parents were enlarged abdomen, jaundice, and hemorrhage from the mucous surface during the terminal part of the disease. He died three years after the onset of the symptoms.

CASE 2.—*History.*—This patient I had under observation for about five months previous to his death. He was healthy up to the time he was 11 years old, when his abdomen started to enlarge and jaundice appeared. He came under my care when he was 16 years old because of the fact that operation was advised on account of a very hard mass that was in the epigastrium. Jan. 29, 1920, when I first saw the boy, he was undernourished and markedly jaundiced. The temperature was 98.2, and the pulse 80. A mass movable in respiration, very hard, with sharp borders, somewhat nodular surface, and not tender, extended from the right hypochondriac region over the median line to the region of the left hypochondriac region. No ascites was present. The spleen was enlarged and soft. There was no adenopathy, and no symptoms of congenital syphilis. The patient complained only at night of pain in the epigastrium. Laboratory findings revealed a mild secondary anemia, normal leukocyte count, and bile, albumin and casts in the urine. A blood Wassermann test was +.

Treatment and Course.—With a + Wassermann reaction and two children in the same family with similar conditions, I thought it wise to put the patient on antisyphilitic treatment. He was given daily inunctions of 30 grains of mercurial ointment, 60 grains of potassium iodid three times a day by mouth, and an intramuscular injection of one-fifth grain of mercuric chlorid twice a week. No arsphenamin was given because of the kidney condition. He began to gain in weight, and felt much improved in general within several weeks after he was on this treatment; and within five weeks, his weight had increased from 96 to 105 pounds. The jaundice became less, and the liver enlargement diminished slightly. June 9, he began to feel bad in general, and gradually grew worse until death occurred, June 18. His symptoms during the nine days were those of an acute endocarditis and lobar pneumonia, together with hemorrhages from the gums and mouth.

Postmortem Findings.—I performed a partial postmortem, that is, I was given permission to examine only the abdomen. In the abdomen there was no free fluid. The liver was found in virtually the same position as was outlined during life. It was somewhat nodular, greenish yellow on the surface and cut section, and quite firm. Its weight was 50 ounces. The gallbladder was dilated. There were no stones in the bile tract. The spleen was soft and much enlarged, weighing 26 ounces. The stomach and intestine were negative; there was no glandular enlargement. Dr. Carl Ireneus, who made a microscopic examination of the tissues, reported that the liver was one of hypertrophic cirrhosis, and the spleen showed only marked congestion.

Conclusions: The parents refused to have a Wassermann test made on their blood, but in spite of this rather indefinite evidence, I am inclined to believe that possibly syphilis was the cause of these two cases, as the patient improved under antisyphilitic treatment, but not to the extent of a complete recovery, because of the long duration of the disease before treatment was instituted. Another fact that points to the possibility of syphilitic origin is that two children born in succession should have the same condition, while all children born before and after were healthy, which could be explained on the basis of the parents having contracted syphilis just before the birth of the first of the affected children, transmitting it to the offspring until after the second of the affected children was born, when time had so attenuated the infection that subsequent children were not affected.

Another possible explanation of the etiology of these two cases may be the alcoholism of the father, who admits having drunk more during the three years previous to the birth of these children than either before or after that time.

4304 Grand Boulevard.

A MODIFICATION OF HARRISON'S TREATMENT FOR RINGWORM OF THE NAIL

ANDREW L. GLAZE, M.D., BIRMINGHAM, ALA.

Harrison advises scraping the nail, and then applying on lint for fifteen minutes one part of potassium iodid in eight parts of a 50 per cent. solution of potassium hydroxid. Afterward, mercuric chlorid, 1 per cent. in equal amounts of alcohol and water, is kept in contact for twenty-four hours.

In most cases it is difficult to scrape away the roughened nail, and the application on lint of the potassium preparation has certain disadvantages. By the method described below, the remedy is confined to the plate and matrix, and the horny tissue is easily removed.

If the finger-nails are to be treated, the patient grasps a towel-covered book so that the parts are supported in a horizontal plane. Petrolatum is generously banked about the nails in such fashion that each forms the bottom of a little lake. These are half filled with Harrison's potassium solution, and the softened plate is scraped through the fluid.

The after-treatment with mercuric chlorid sometimes causes severe dermatitis. In its place, I have used with safety, and relative satisfaction, a saturated solution in water of sodium thiosulphate (hyposulphite). It is applied on absorbent cotton, under a rubber finger-stall, six hours or longer. daily, for three days.

503 Empire Building.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, SEPTEMBER 11, 1920

THE EVOLUTION OF THE PROTEINS

Proteins, the most complex of organic substances, occur only in association with living matter. The evolution of life is synonymous with the evolution of proteins. What have been the steps by which these giant molecules have been evolved, and why are proteins so similar to one another, or, on the other hand, why is there more than one kind of protein? Have there been proteins simpler than those we now know, or essentially different, in the past history of life on this earth? Much consideration has been given in the past to the study of the evolution of anatomic structure. Now that we know something of the chemical structure of animal tissues, may we not begin to consider with profit the problem of how this chemical structure arose, with its remarkable similarity in all forms of life and its equally specific differences in different forms of cells even in the same species of plant or animal? An introduction to this phase of evolution has been presented in a thoughtful paper by E. L. Kennaway [1] of London.

The number of different amino-acids that enter into the formation of proteins is limited; but as there are about seventeen commonly found, the possibility for variation by various combinations and arrangements is virtually unlimited. Nevertheless, there is a remarkable and as yet unexplained variety of amino-acids; for while some are structurally very simple straight chains, such as glycin and alamin, others are benzene ring compounds, like tyrosin, and others have other types of ring structure, namely, pyrrol, indol or imidazol rings. Why should the proteins that have been evolved possess so great a variety of amino-acids, and why is it that none of the other related amino-acids except these seventeen are found in proteins or elsewhere in nature? How are we to account for the fact that proteins usually contain amino-acids that contain two, three, five or six carbon atoms, whereas four carbon amino-acids are not found? In the study of morphologic evolution it is customary to turn for light to simple forms in the scale of development, since the individual in its development recapitulates the development of the species. Kennaway applies the same principle when he compares the chemical structure of proteins from mammals, protozoa, yeasts, molds and bacteria; but it seems that the chemical structure of the unicellular organisms is not so much simpler than that of more complex forms as is their morphologic make-up. This, however, is to be expected, since the chemical structure of unicellular organisms is fully as complex as that of the individual cells of multicellular creatures, if not more so. In the yeast, the mold and the five bacteria that have thus far been analyzed, virtually all the known amino-acids of animal and plant proteins have been found, with the exception of the sulphur-containing cystin. Apparently, then, "the simplest organisms now existing do not contain a series of amino-acids any more primitive than that present in the higher organisms, except perhaps as regards the inclusion of cystin. One may suppose that the present apparently stereotyped series of utilizable amino-acids represents the stable outcome of a struggle long ago among simple organisms in which those which made a less suitable choice were beaten and have passed away, leaving no trace. We cannot know the biochemistry of the first organisms which appeared on the earth; the experiments and discarded compounds of that time are lost. The selection of amino-acids must have taken place at an immensely remote period, for the earliest records which we have of the forms of life on the earth do not show us organisms which have any appearance of noteworthy difference in chemical composition from those which exist at the present day. The doctrine of natural selection gives the impression that evolution proceeds throughout in a very gradual manner. But at the time when the amino-acids were first being produced and tested, organic evolution must have proceeded very distinctly per saltum as each new compound was synthesized; natural selection would then act slowly and surely upon the organisms which made one or another choice, and thus the present series of amino-acids was delimited."

Nor can we learn the history of protein evolution by studying the steps by which the proteins are synthesized at the present day. All the amino-acids of animal proteins are synthesized by plants and bacteria; for although some experimental work suggests the possibility of a slight capacity to synthesize amino-acids or proteins by animals, yet the results indicate even more strongly that this capacity is at the best very limited and of little or no significance as a usual source of proteins. Furthermore, no single amino-acid has ever been found in animals that is not present in plants. Bacteria and plants can synthesize proteins from extremely simple inorganic salts; but the intermediate steps cannot be followed, for the entire process is completed very rapidly and without demonstrable quantities of intermediates accumulating. Thus, a multiplying yeast cell growing on simple mediums

1. Kennaway, E. L.: Notes on the Evolution of Proteins, Chemical News **120**: 13, 1920.

produces an entire new cell from inorganic salts in a few hours, and bacteria accomplish this marvelous synthesis still more rapidly. In the time taken by a yeast cell to produce another by budding when growing on a medium such as Pasteur's, containing no nitrogen but that of ammonium tartrate, it must synthesize each one of the amino-acids given for yeast and combine them as a series of polypeptids until its proteins are produced, and all the while carry on many other chemical operations. Even when one takes into account the small size of molecules, it is wonderful that so many reactions can be kept apart within the compass of a yeast cell. "One may compare with the obvious growth of yeast the amount of experimental procedure required to bring to light the partial synthesis of a single amino-acid in a mammal and realize what has been lost in the course of evolution. Specialization is largely a process of loss of capacities; some zoological teaching has perhaps represented it too largely as a progressive development."

COMMENTS ON CANCER

There are various ways in which the understanding of a problem in almost any domain of science may be obscured to the average person. The knowledge involved may be so recondite, and the logical interpretation so subtle, that few are competent to master them. This has been said of the Einstein theory of relativity, which has been so often mentioned and so rarely understood. Again, a problem may involve the possible interaction of many factors, each of which may vary independently in influencing the result. An untrained student is liable to fix his attention on a single variable, thereby forgetting the perhaps equally potent contributory features that determine the phenomenon he is attempting to interpret. We suspect that the latter tendency has helped to introduce seemingly insuperable difficulties into the cancer problem, which has so often been approached along a "single track" road.

It would certainly be thought rash by many—indeed, it would be rash—at the present time to formulate a new theory of cancer. But so long as numerous laboratories are engaged in cancer research and several journals, published in different parts of the world, are devoted exclusively to the publication of results achieved in this field of study, physicians may well pause now and then to listen to a summary of what has been brought to light. It is in a spirit of such interest that we venture to refer to a recent review by Leo Loeb [1] of the Washington University School of Medicine at St. Louis. He points out that many factors may enter as causes of cancer, if the latter is looked on as an abnormality of growth, without direct reference to any further "theory." There can be little doubt that external stimulation of a mechanical and probably also a chemical nature may be significant in the origin of cancer. Clinical histories and experimental findings point to this possibility. Internal chemical stimulation is likewise something to be considered in the chapter on etiology, although the inclusion of internal secretion and hormones in the category of causes is still quite as full of vagueness as is much of the pure speculation on the malfunction of the ductless glands. Heredity can no longer be ruled out as it was only a few years ago. There is less doubt, today, of the existence of a hereditary factor in the origin of cancer in mice; and Loeb, who well recognizes the present almost universal opposition to the acceptance of comparable hereditary influences in human cancer, points out that intermarriage and other agencies may tend to obscure the truth. He reminds us of the well established fact that various conditions which predispose to cancer are hereditary, such as pigmented nevi; the same thing holds good in the case of other hereditary abnormalities. Taking into consideration all these facts, Loeb says, we may consider it probable that heredity is also a factor in the origin of human cancer, but that in the latter interbreeding and perhaps other factors have obscured this significance of heredity. Loeb concludes, further, that in all probability the character of hereditary factors is not different from other causes leading to cancer. They seem to consist in the presence or absence of chemical or mechanical growth stimuli which originate within the organism, and which, while in themselves often not able to produce cancer, do so if combined with other growth-promoting factors. We must include in this category conditions which make tissues receptive, sensitizing them to the action of mechanical or chemical growth stimuli.

The possible influence of disturbances of embryonal development whereby, for example, a changed environment may supply the stimulus which is needed in order to increase and prolong the proliferation and migratory energy of embryonal cells, has frequently been discussed. The unusual incidence of tumors with advancing age likewise is not unknown. It is not unlikely that contact of normal tissues with cancerous tissue may cause the transformation of the former into cancerous tissue. As for the much debated rôle of micro-organisms, Loeb regards it as possible that while in the majority of cancers often repeated stimulation of tissues leads to a long continued or even perpetual increase in the intensity of those metabolic processes which cause cell proliferation and cell movements, in certain sarcomas the same effect is produced through a constantly acting extraneous chemical growth stimulus, supplied by micro-organisms and not, as in the case of the majority of cancers, through the metabolism of the cancer cells themselves. As a

1. Loeb, Leo: Causes and Definition of Cancer, Am. J. M. Sc. **159**: 781 (June) 1920.

suggestive summary of a present-day view, we may quote Loeb's own words:

> All the factors which in various ways either by chemical or physical means increase the proliferative energy of cells may act as causes of cancer; these conditions are not different from those growth stimuli which lead to regenerative and what might be called correlative growth in normal tissues; added to these factors are in certain cases factors residing within the cells, which make these cells more responsive to outer growth stimuli, thus providing a sensitization which in other cases is furnished by sensitizing substances carried to the cells from other organs. In order to lead to the formation of cancer in many cases several of such factors must cooperate. Some of these factors are hereditarily transmitted in a certain graded quantity from generation to generation, while the other factors are variable and extraneous. All these factors have one characteristic in common: They all increase the growth energy of normal tissues either directly or indirectly, the latter by sensitizing the tissues to the action of growth stimuli.

TETANY FOLLOWING FORCED RESPIRATION IN MAN

In a recent issue of THE JOURNAL [1] the possible relationship of chemical factors to the genesis of certain types of tetany was discussed. This phenomenon occurs under so many circumstances that the possibility of a varied etiology must be reckoned with. In their fundamental studies on parathyroidectomy and the tetany which follows it, Wilson, Stearns, Thurlow and Janney [2] of the Johns Hopkins Medical School pointed out that just before the attacks a condition of "alkalosis" develops which is neutralized by the acid products generated by the tetanic contractions of the musculature.

Various investigators have observed in the past that spasms and muscular twitchings may follow voluntary overbreathing. Recently Grant and Goldman [3] of the Washington University Physiology Department at St. Louis have clearly demonstrated that forced respiration may cause symptoms of tetany to appear in the human subject. The indications are the carpopedal spasm, Chvostek's sign, Trousseau's sign, Erb's sign, and even convulsions. In these cases the underlying factor in the tetany is undoubtedly an alkalosis. The forced respiration, by washing out carbon dioxid from the lungs, reduces the content of this substance in the blood whereby the latter tends to become more alkaline than usual. This is shown by the altered hydrogen ion concentration, which shifts toward the alkaline side, although readjustment in the equilibrium quickly takes place through excretion of alkali, neutralization by acid products and diminished excretion of ammonia. Just as shivering produces heat when the temperature regulation of the body is threatened by cold, apparently the tetanic movements produce acid products which tend to compensate increased alkalinity of the blood until the kidneys can complete the readjustment.

Clinically, it is interesting to recall that cases of tetany have been reported to follow liberal therapeutic administration of sodium bicarbonate. The symptoms have also been described in connection with surgical operations in which overventilation has perhaps occurred in the course of the anesthesia. The danger of this respiratory overwork has been asserted by several anesthetists, notably Yandell Henderson and his collaborators, though the symptoms emphasized have been those of circulatory shock rather than tetany or spasm. Admitting the identity of the symptoms of tetany and those following forced breathing or unconscious overventilation of the lungs, the significance of the chemical factor, expressed in an alkalosis, can no longer be questioned. Whether the result is due merely to the upset of the acid base equilibrium in the body or whether the much discussed calcium deficiency is a contributory consequence cannot be profitably discussed at present.

1. Nervous Irritation and Tetany, Current Comment, J. A. M. A. **75**: 481 (Aug. 14) 1920.
2. Wilson, Stearns and Thurlow: J. Biol. Chem. **23**: 89, 1915. Wilson, Stearns and Janney: Ibid. **23**: 123, 1915.
3. Grant, S. B., and Goldman, A.: A Study of Forced Respiration: Experimental Production of Tetany, Am. J. Physiol. **52**: 209 (June) 1920.

THE SPLEEN IN YOUTH

It is not surprising that a large, conspicuous organ like the spleen should awaken many reflections regarding its probable function in the body. That the spleen is by no means indispensable is attested not only by the experimental evidences of splenectomy in animals but also by the records of surgical removal of the organ in man. Nevertheless, the mere fact that the individual can survive the extirpation of a tissue by no means demonstrates that it is useless. The possibility of a compensatory functioning or hypertrophy of other structures must be kept in mind. In the case of the spleen it must be frankly admitted that, with the possible exception of certain hematopoietic activities, investigations have thus far not been successful in relating the organ to any important physiologic performance that cannot be equally well undertaken in the absence of the splenic tissue.

Most of the scientific studies on the removal of the spleen have been conducted on adults. The experience with other familiar glands suggests that the value which any of them have for the organism may vary at different periods of development. The fact that the spleen of the young is heavier, in proportion to body weight, than the spleen of the adult has been taken as a suggestion that the organ may have a superior rôle in the adolescent period. An answer to the question thus raised has been furnished by Henn,[1] at the University of Chicago. Taking growth as the foremost index, he agrees with other investigators in the demonstration that animals from which the spleen has been removed develop in an apparently

1. Henn, S. C.: The Effect of Splenectomy upon Growth in the Young, Am. J. Physiol. **52**: 562 (July) 1920.

normal manner. As splenectomy thus has a negligible influence on growth, at least in the species heretofore investigated, there is no reason to assume that the spleen is essential to the life of the young.[2]

Several years ago it was reported by Karsner and Pearce [3] that the red blood corpuscles of adult animals that have been splenectomized are noticeably resistant to hypotonic salt solutions. Henn has found that this phenomenon occurs likewise in the case of the same species splenectomized at an early age. Histologic examination has led to the belief that the spleen is functionally related in some way to the blood. Henn's studies substantiate this by the evidence that in the young, too, after removal of the spleen there is an increase of Kupffer cells in the liver, and changes in lymph glands and bone marrow that indicate a compensatory function on the part of these tissues in supplying a missing factor in blood formation and destruction.

RELATION OF FEEDS AND DIET TO THE VITAMIN CONTENT OF MILK

So far as is known at present, the mammalian body does not exhibit the power of synthesizing those vitamins regarding which dependable information is available. Since, therefore, the higher organisms seem to be dependent on their food intake for an adequate supply of the recently recognized indispensable dietary ingredients, the make-up of the ration with respect to the latter acquires a new significance in practical nutrition. The so-called water-soluble vitamin, sometimes termed water-soluble B and held to be identical with the antineuritic vitamin which plays a dominant part in relation to beriberi, is comparatively stable toward ordinary processes of food conservation and culinary preparation. The same thing is probably true of the fat-soluble vitamin as it occurs in foods. On the other hand, the antiscorbutic properties of foods are in many instances greatly impaired by relatively slight manipulations involving heating and drying. Pasteurization of milk, which certainly cannot be rated as severe treatment, is known to deprive this product of its antiscorbutic potency.

If, as it is reasonable to conclude, lactating animals merely transmit in their milk the antiscorbutic vitamin which they are able to derive from the feeds, a consideration of the latter in relation to the physiologic value of milk is assuredly not out of place. The question at issue is whether the diet of the milk-producing animal may be a factor in the relative antiscorbutic potency of the milk produced. Hart, Steenbock and Ellis [4] of the University of Wisconsin have given a decisive answer, since they have found that summer pasture milk is much richer in this nutritive factor than dry feed milk or winter-produced milk, involving a ration of corn silage or even sugar mangels. This discovery emphasizes anew the uncertainty of depending on milk under all circumstances for an adequate supply of antiscorbutic vitamin.

Osborne and Mendel [5] have recently found little if any difference in the content of water-soluble (B) vitamin in milk produced, respectively, under winter feeding and summer pasture feeding conditions. Winter feeds are for the most part made up of dried products which have sacrificed most of their antiscorbutic power. But the Wisconsin investigators point out that the observations of Osborne and Mendel are not surprising in view of the fact that the vitamin with which the latter were concerned differs from the antiscorbutic factor in being relatively stable and therefore probably not destroyed during the drying and storage of farm winter crops. If the suspicion of Steenbock that the fat-soluble vitamin is generally associated or identical with certain yellow pigments of plant tissues proves to be well founded, we may expect that concentration of this vitamin in milk will also be related to its varying concentration in the diet.

Current Comment

THE STRUCTURE OF MUSCLES

From the standpoint of the location of protein, the muscular tissue is undoubtedly more important than any other structure in the body. It is not only rich in albuminous material but also endowed with a remarkable morphologic composition which adapts it to the function of contractility and performance of mechanical work. For this reason alone the behavior of the muscle tissue under unusual nutritive stringency becomes of great interest. It is generally taught that losses of muscle cells in toto by injury cannot be replaced by regeneration of the latter in the same way in which epithelium is restored. Whether, during the depletion of muscle tissue that evidently attends malnutrition and complete or even partial starvation, an actual disintegration and permanent loss of contractile structures occur has not been decisively demonstrated. Suggestive contributory evidence has been furnished by Moulton [6] of the University of Missouri, who has carefully studied the histologic as well as biochemical changes in the muscles of beef animals during underfeeding of varied degree. Despite large losses of protein, no evidence was found of a disintegration, structurally speaking, of the muscles. The possibilities for change in size or volume of the structures were shown to be stupendous; but since the very thin fibers still functioned as a muscle, Moulton argues that their "vital structure" must remain intact. A further deduction is that the muscles can store an enormous amount of material both intercellularly and intracellularly. Part of this deposit has long been recognized as fat

2. Compare Mann, F. C.: Endocrinology **3**: 303, 1917.
3. Karsner, H. T., and Pearce, R. M.: J. Exper. Med. **16**: 769, 1912.
4. Hart, E. B.; Steenbock, H., and Ellis, N. R.: Influence of Diet on the Antiscorbutic Potency of Milk, J. Biol. Chem. **42**: 383 (July) 1920.
5. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **41**: 549, 1920.
6. Moulton, C. R.: Biochemical Changes in the Flesh of Beef Animals During Underfeeding, J. Biol. Chem. **43**: 67 (Aug.) 1920.

and glycogen; it now seems likely that the muscles can act as a storehouse of protein also to an unexpected extent.

THE SIGNIFICANCE OF PHOSPHATE RETENTION

In the regulation of neutrality within the organism, a process essentially physicochemical in nature, the interaction of bases with acid, notably carbonic and phosphoric acids, and the amphoteric proteins is of paramount importance. Further readjustments may involve the excretion of the acids, carbonic acid being eliminated by the respiratory path and phosphoric acid through the renal functions. It is obvious that the failure of the latter might embarrass the organism by causing an undue retention of acid products, notably acid phosphate. The studies of the last few years in the chemistry of the blood have indicated clearly that much light may be thrown on the diagnosis and prognosis of kidney disease by investigation of possible retention of metabolic products which are usually excreted in the urine. It has also become apparent that equal significance is not to be attached to the behavior of the different catabolites in this respect.[1] Thus, uric acid accumulates with far less renal provocation than does creatinin, for example. The determination of the significance of phosphate retention has awaited further accumulation of data. To those already secured by Greenwald [2] and by Marriott and Howland,[3] the latest findings of Denis and Minot [4] of the Massachusetts General Hospital may now be added. The latter suggests the possible prognostic importance of the estimation of inorganic phosphates in the plasma of persons suffering from nephritis and allied disorders. More than half of the nephritic and cardiovascular cases examined in the hospital wards at random gave unmistakable evidence of retention. Fatal cases showed a rapid and progressive increase in plasma phosphate, increments of more than ten times the normal average values having been noted. In the nonfatal cases, however, only relatively slight increases seem to occur.

"HAIR FOOD"

Last week in discussing the hydrolized keratin substance prepared by Zuntz, THE JOURNAL expressed doubt of the proposal that this substance would prove to be a true stimulant to hair growth notwithstanding that Zuntz was a well known physiologist and that any suggestion which he made should be taken seriously. It may be remembered that Zuntz tried his substance first on himself and claimed that a daily dose of from one to one and a half grams caused an increased growth of hair. The substance was also used on sheep, and the observers claimed to have demonstrated that the diameter of the individual wool fibers increased one third. As might have been expected, the substance promptly became the subject of commercial exploitation in Austria and Germany under the name "Humagsolan." Fuhs [1] and his associates in the university clinic for dermatology and syphilology in Vienna decided to make a clinical test and used this proprietary preparation on seventeen patients, including two women and fifteen men. In general the effects seemed to be negative. Fuhs concludes that his experiments have not confirmed the results of Zuntz and his co-workers. It will be interesting to observe whether or not the negative results of Fuhs will cause the proprietary concern to discontinue the promotion of Humagsolan. Physicians who know the history of proprietary medicines will be rather dubious as to the possibility of such an occurrence.

FEE-SPLITTERS

There is little new to be said on the subject of fee-splitting, but in an editorial just published in the *Journal* of the Medical Association of Georgia, Dr. E. C. Thrash says some of the old things in a new way. He classifies fee-splitters into three types: innate crooks; impecunious young men who resent the fact that much work goes to older men who are their inferiors in ability, and men who do not fully comprehend the heinousness of the offense. Class 1 he considers unreclaimable; such men, he says, would even take an oath not to split fees and then continue the practice. Men in Class 2 reform when they become more prosperous, and Class 3 is made up chiefly of men who do not analyze the ethics of fee-splitting, considering only that they have performed service and are getting their due. The appeal is made to young men that they bear a little more sacrifice and have the satisfaction of looking back on a career wholly honorable. Class 3 is asked to recognize the value of honest service and to collect a fee for it openly. The man with a conscience needs no better guide.

1. For a recent review of the subject consult the series of papers by Myers, V. C.: Chemical Changes in the Blood in Disease, J. Lab. & Clin. Med. 5, 1920.
2. Greenwald, I.: J. Biol. Chem. 29: 21, 1915.
3. Marriott, W. McK., and Howland, J.: Phosphate Retention as a Factor in the Production of Acidosis in Nephritis, Arch. Int. Med. 18: 708 (Nov.) 1916.
4. Denis, W., and Minot, A. S.: A Study of Phosphate Retention from the Standpoint of Blood Analysis, Arch. Int. Med. 26: 99 (July) 1920.

1. Fuhs, Herbert: Concerning the Advantages of Zuntz' Hair Growing Substance "Humagsolan," Wien. klin. Wchnschr. 33: 707 (Aug. 5) 1920.

Ancient Beliefs and Infant Feeding.—Reporting on infant welfare work at Carlisle, Dr. Joseph Beard writes: "Old ideas in connection with infant feeding are difficult to eradicate, and I am convinced that more infants are killed annually by kindness in the form of overfeeding than by the want of adequate nourishment. Undoubtedly most of the diarrhea and many of the deaths due to wasting and convulsions originate primarily in ignorance with regard to the correct methods of infant feeding, yet in spite of the education given by schools for mothers, home talks by health visitors, professional advice and press propaganda, mothers persist in following improper methods of feeding. In no branch of preventive medicine is progress so seriously retarded by ancient beliefs as in connection with the rearing of babies. It is the experience of those concerned in infant welfare work that very often after carefully explaining to a young mother the correct method of infant feeding the grandmother or a neighbor makes the statement that she knows how to feed a baby, having fed so many, but in most instances she omits to relate how many babies have been sacrificed as a result of the method."—*Med. Officer*, Aug. 14, 1920.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Los Angeles County Society Picnic.—The Los Angeles County Medical Association holds its annual picnic at Sunland Park, September 11.

Nurses' Home Completed.—A new nurses' home for the Los Angeles County Hospital has just been completed at a cost of $250,000. The home is built on the cottage plan, the building being located within the hospital grounds but separated from the hospital building and away from the hospital atmosphere. The home comprises twelve cottages, half of the rooms of which are single and the other half double. There is a recreation building with reception rooms, office and quarters for the matron.

CONNECTICUT

Personal.—Mr. Friend Lee Mickle, bacteriologist of the bureau of laboratories of the state department of health, has been appointed director of laboratories for the bureau of health of Atlantic City.——Dr. Thomas Eben Reeks has resigned as acting superintendent of health of New Britian.——Dr. Joshua M. Slemons, professor of obstetrics and gynecology in Yale University School of Medicine, New Haven, has resigned and will be succeeded by Dr. Arthur H. Morse.

FLORIDA

Rat Slaughter at Key West.—As a result of the rat survey at Key West 2,181 rats have been caught and examined, and none have been found to be infected with bubonic plague.

Diagnostic Hospital Opened.—Dr. Marvin Smith's Sanitarium and Diagnostic Hospital has recently been completed and opened to the public. The building is three stories high with forty rooms and the cost of building and equipment amounts to $80,000. The staff of the hospital will include about twelve specialists.

GEORGIA

Personal.—Drs. Henry L. Levington and Lloyd B. Taylor were elected city physicians of Savannah, August 11.——Dr. Fannin S. Belcher has been reappointed colored city physician of Savannah.

Old Southern Mansion Changed into Hospital.—The old mansion built by Dr. Ambrose Baber in 1829 at Macon, one of the landmarks of Georgia's history, has been purchased with the idea of converting it into a hospital.

Battey Memorial.—The medical fraternity of Georgia, especially the physicians residing in or near Rome, have inaugurated a movement for the erection of a suitable memorial to the late Dr. Robert Battey, whose life was spent in Rome and whose activities centered around that section of Georgia.

ILLINOIS

Personal.—Dr. William K. Murray, Chicago, has been appointed chief medical officer of the health department of Canton, Ohio.

Chicago Medical Post Meeting.—The Chicago Medical Post of the American Legion will hold a luncheon at the Army and Navy Club, City Hall Square Building, Chicago, September 16, at noon, to discuss plans for the winter activities of the post.

Fellowship Club Meeting.—The Physicians' Fellowship Club held the opening meeting of the session of 1920-1921, September 3, at which former governor Charles S. Deneen spoke on "Why Physicians Should Aspire to Public Office," and Dr. Harry R. Hoffman on "Why the Coroner Should Be a Physician."

North Side Branch Field Outing.—The North Side Branch of the Chicago Medical Society will hold its field day outing, September 15, at St. Mary's Training School near Des Plaines. The automobile route from Chicago is by way of Milwaukee Avenue and the turning places will be designated by American flags.

Hospital and Health Center to Be Established.—On November 8, a drive will be inaugurated to raise a fund of a million dollars to enable the supporters of the Chicago Polyclinic and Hospital to erect a modern hospital and health center. At the health center the public will not only be taught how to keep well but there will be a dispensary or outpatient department, a diagnostic clinic, an outpatient obstetric section and a follow-up section. The old building of the Chicago Polyclinic has been in use for thirty-four years and has ministered to more than one million patients among the poor of Chicago. Its facilities are at present most inadequate. The new dispensary will be fully equipped for handling all sorts of ambulatory cases. Special consideration will be given to the care and reconstruction of men injured in industrial accidents. The new building will be as nearly noise-proof as possible. The group of buildings will include an outpatient and educational department, a completely equipped hospital, training school, a home for nurses and a social service department. In the hospital, there will be a number of small private rooms for use of patients at very moderate prices. The drive is under the direction of Mrs. Mary F. Kern, and teams composed of physicians, nurses and society women are being organized on a regimental basis.

INDIANA

State Society Meeting.—The annual meeting of the Indiana State Medical Society will be held in South Bend, September 22-24, under the presidency of Dr. Charles H. McCully, Logansport, the St. Joseph County Medical Society acting as host. Headquarters will be established at the Oliver Hotel and the sessions will be held in the auditorium of the Elks' Home.

Personal.—Dr. James J. Moorhead has been appointed surgeon in chief of St. Anthony's Hospital, Terre Haute.——Dr. Isham E. Cottingham, Evansville, while attending a family reunion at Poole, Ky., fractured his right leg while climbing a fence, August 28, and was obliged to drive his automobile 30 miles before he could obtain medical attention.——Dr. Bayard G. Kenney, Shelbyville, sustained painful injuries in a collision between his automobile and another motor car, near Shelbyville, August 21.

KENTUCKY

Physicians and Druggists Cited.—State Prohibition Director James H. Combs on August 16 cited thirty-seven physicians and seventeen druggists of Louisville to appear before him, September 6, to show cause why their permits to handle liquor should not be revoked.

Personal.—Dr. Frank Reynolds, Carlisle, has been elected full-time health officer for Mason County, succeeding Dr. John H. Rice, Hopkinsville, resigned.——Miss Mathilde S. Kuhlman, R.N., has been appointed director of the division of public health nursing of the state board of health.——Dr. Dunning S. Wilson, Louisville, has been appointed director of the medical department of the French Lick Springs Hotel, French Lick, Ind.

MAINE

New Officers.—At the annual meeting of the Somerset County Medical Association, held at Lakewood, August 5, Dr. Harry W. Smith, Norridgewock, was elected president, Dr. Charles A. Moulton, Hartland, vice president, and Dr. Clyde E. Richardson, Skowhegan, secretary-treasurer.

Tuberculosis Clinic Opens.—Physicians of Maine, thirty-six in number and representing practically every county in the state, enrolled for the tuberculosis clinic which opened at the Central Maine Sanitarium, Fairfield, August 3. The clinic will include intensive study for a week on all phases of tuberculosis diagnosis under the direction of a faculty of experts with a briefer study of malignant disease and venereal diseases. The clinic was begun under the auspices of the Maine Public Health Association in cooperation with the state department of health and the Maine Tuberculosis Sanatorium trustees.

MARYLAND

Health Talks at County Fair.—Dr. John S. Fulton, secretary of the state board of health, is at the head of a party of Baltimore public health experts who are in Salisbury, to establish a medical exhibit at the Salisbury Fair. The party is making use of an army truck and touring automobile loaned by the United States Government. An army tent will be set up at the fair and equipped with moving picture

machines and placards. Members of the party will lecture each day of the fair on general health topics.

Personal.—Dr. Harry J. Moss, who recently resigned as superintendent of the Hebrew Hospital, Baltimore, to become superintendent of the new Bronxville and East New York Hospital, was recently the guest of honor at a dinner given by the members of the house staff and visiting physicians of the institution, who presented him with a gold cigaret case. Dr. Moss will assume his new duties at once.——Mr. George E. Halpin, superintendent of the Lebanon Hospital, has been appointed head of the Hebrew Hospital to succeed Dr. Moss.——Dr. J. J. Krozer, Baltimore, the oldest living graduate of the University of Maryland, celebrated his ninety-third birthday, August 30.——Dr. J. P. Wade, superintendent of the Spring Grove State Hospital, is a patient at the Baltimore Eye, Ear, Nose and Throat Hospital, where he has been undergoing treatment for an infection of the eye.

Hospital Site Purchase Authorized.—The Nursery and Child's Hospital, Schroeder and Franklin streets, will be acquired by Baltimore City for the proposed municipal hospital if satisfactory to Dr. C. Hampson Jones, commissioner of health, and the hospital commission, named sometime ago by the mayor. Dr. Jones has had the nursery and hospital under serious consideration for several months and is said to believe that it is well suited to the purposes he has in mind. The late Dr. John D. Blake selected the property for a municipal hospital while he was commissioner of health, and the board of estimates in the Preston administration dedicated to its purchase the proceeds of the sale of Quarantine to the federal government for the U. S. Public Health Service, amounting to $176,000. Dr. Jones hopes to have the present board agree to this dedication, instead of turning the money into the general treasury, that it may be added to the $750,000 hospital loan the voters will be asked to ratify in November. It is estimated that the city will need $1,000,000 at least to buy property and equip a municipal hospital.

MASSACHUSETTS

Personal.—Dr. Albert V. Murphy has been appointed resident physician at Long Island Hospital, Boston Harbor, succeeding Dr. Albert S. Hyman, resigned.

Increase in Facilities for Care of War Veterans.—Because the public health hospitals of Boston are not large enough to care for the increased number of ex-service men applying for treatment, the federal government has appropriated $46,000 to provide additional accommodations. As soon as additions are completed the public health hospitals at Parker Hill and elsewhere will be returned to their owners for civilian work.

Lepers Return to Colony.—Two lepers from Penikese Island, who have been treated with chaulmoogra oil and in whose case it was expected that a complete cure would be effected, were returned to the colony, August 5, following report of the special medical commission appointed by the state department of health to the effect that, although both patients had shown unusual progress, bacteriologic tests still showed the presence of the bacillus of leprosy.

The Early Diagnosis of Tuberculosis.—The state department of public health, on August 24, announced a series of consultation clinics in early pulmonary tuberculosis to be conducted by the medical staff of the state sanatoriums at Rutland, North Reading, Lakeville and Westfield, at which an opportunity will be afforded the family physician to obtain, without fee, expert dagnosis in this type of pulmonary disease. These clinics begin this month and are to be held in Worcester, Lowell, Taunton and Pittsfield, on the first Wednesday of each month; in Gardner, Lawrence, Brockton and Springfield, on the second Wednesday; in Fitchburg, Haverhill, Fall River and Holyoke, on the third Wednesday, and at Clinton, Woburn, Plymouth and Adams on the fourth Wednesday of each month, from 2 to 5 p. m. Facilities for consultation are provided at each of the state sanatoriums on all days of the week except Saturdays, Sundays and holidays, between the hours of 2 and 5 p. m.

MICHIGAN

Antituberculosis Clinics.—Antituberculosis clinics under the charge of Drs. George H. Ramsey and Frank M. Rose of the state department of health were held at Tecumseh, September 2 and 3; at Blissfield, September 4 and 6; at Morenci, September 7 and 8, and at Hudson, September 9 and 10.

Baby Clinics.—Detroit has now twelve baby clinics, eight of which are maintained entirely by the health department, the other four being conducted by the cooperative efforts of social service workers and of the health department. Through its field nurses and clinics, the health department is in close touch with about 5,000 babies. During July a baby and preschool clinic was held with an attendance of 3,258, and a prenatal clinic with an attendance of 400.

State Health Department Takes Over Tuberculosis Clinics.—The Michigan Department of Health has taken over the direction of the state tuberculosis clinics formerly supervised by the state antituberculosis association. Under the direction of W. J. V. Deacon, director of communicable diseases, the department will conduct clinics throughout Michigan. The nature of the work will be twofold. Under Dr. George H. Ramsey, formerly in charge of the tuberculosis pavilion at the Herman Kiefer Hospital, Detroit, patients will be examined for tuberculosis, while under the direction of Dr. Frank L. Rose, Jackson, children will be examined, particularly to discover pretuberculosis defects.

MINNESOTA

Typhoid Fever.—The outbreak of typhoid fever in the downtown district of St. Paul has apparently reached its apex. During July and up to August 16, fifty-one cases of the disease had been reported. The health department is giving free antityphoid inoculations, and water analysis and thorough investigations are being made by the city health department.

New Medical Association.—The Redwood-Brown Medical Association has been organized at Sleepy Eye, with Dr. Charles C. Walker, Lamberton, as president. The organization will take the place of the old Brown-Redwood Medical Society which was denied recognition by the state organization because of its refusal to discipline one of its members who was disloyal.

Personal.—Dr. Leonard G. Rowntree, professor of medicine in the Medical School of the University of Minnesota, and Dr. Reginald Fitz, associate in medicine of the Massachusetts General Hospital, have joined the staff of the Mayo Foundation and the Mayo Clinic at Rochester. They will be associated in the further development of research in internal medicine and in the hospital care of medical cases.

Venereal Disease Laboratory.—The Minnesota State Board of Health, Division of Venereal Diseases, coordinated with the U. S. Public Health Service, is operating a venereal disease laboratory on the university campus, Minneapolis. Up to the present time, 541 of about 2,500 physicians of the state have made use of this laboratory. It is hoped by Dr. H. T. Irving, the director, that many others will take advantage of the facilities thus offered.

MISSOURI

Personal.—Dr. Joseph F. Bredek has been appointed assistant health officer and controller of tuberculosis for the city of St. Louis.

New Home for Training School.—Dr. Ellsworth H. Trowbridge, Kansas City, has purchased the residence owned by W. A. Pickering, for the use of the Trowbridge Training School for Backward Children.

New Manager for Kansas City Hospital.—Mr. Hugh Miller has retired as president of the hospital and health board of Kansas City to take up the position as manager of the Kansas City General Hospital, an office recently created by the mayor.

Women Offer Aid in Emergency.—Members of the Federation of Women's Clubs of St. Joseph have offered to go to the aid of the board of health and perform voluntary duty, sanitary inspection, etc., during the crisis in the financial affairs of the city of St. Joseph.

Resolutions Regarding Dr. Dandurant.—At a special meeting of the Buchanan County Medical Society, held at St. Joseph, August 9, resolutions were adopted regarding the death of Dr. Lewis J. Dandurant, August 1, expressing appreciation of the work of Dr. Dandurant, regret at his death, and sympathy for his family.

NEBRASKA

Progress on Hospital Building.—Construction work on the Brown County Hospital, Ainsworth, has proceeded far enough to assure the laying of the cornerstone, September 7.

Building Contract Awarded.—The state board of control has awarded the contract for the erection of a new building at the Nebraska Institution for Feeble Minded Youth at Beatrice.

Work to Be Resumed on Medical Building.—A rumor, said to be well founded, has been recently circulated in Omaha that work will be resumed on the new Medical Arts Building, the new plans contemplating no reduction in the size of the construction.

NEW YORK

New County Hospital.—A number of patients have already been received in the Newton Memorial Hospital at Casadaga Lake near Lily Dale. This is the new county tuberculosis hospital. The two buildings for incipient cases are not yet ready for occupancy.

Alleged Physicians Under Arrest.—The state police at Lebanon on August 17 arrested a man, who gave the name of Jacob C. Roth and who claimed to be a physician of Albany, on the charge of conspiracy, asserting that this man, with an accomplice, attempted to obtain $610 from Mr. and Mrs. P. C. Roberts, West Lebanon, guaranteeing a cure of rheumatism and eye trouble. The original bill rendered by these men was $810.

Outing of County Physicians.—The Orange County Medical Society held its annual outing at the Warwick Hospital, August 12. After tea had been served at the hospital, there was a meeting at the Oakland Theater at which Dr. Howard S. Jeck of the General Memorial Hospital of New York delivered an illustrated address on "The Use of Radium in the Treatment of Carcinoma of the Bladder," after which dinner was served at Greenwood Lake.

Sanitary Officers' Conference.—The nineteenth annual conference of sanitary officers of the state of New York and the second annual conference of public health nurses of the state of New York was held at Saratoga Springs, September 7 to 9, under the auspices of the New York Department of Health. The program included addresses by the governor of the state of New York, Dr. Milton J. Rosenau, Boston, and Florence Bullard, R.N., the subject of whose address was "With the Red Cross in France and America." Among the topics for discussion were "Coordination of Health and Social Agencies," by Dr. George T. Palmer, assistant director of the state department of health, Springfield, Ill.; "The Health Center Project," by Dr. Matthias Nicoll, Jr., acting commissioner of health, New York City; "Special Education for the Public Health Nurse," by Dr. Josephine S. Baker, director of the division of child hygiene of the New York City Department of Health, and "Problems of the Public Health Nurse in Small Communities," presented by Mary Carter Nelson and Mary Phillips Crandall, R.N.

New York City

Vessel from West Indies Brings Smallpox.—A suspected case of smallpox among the ninety passengers of the United Fruit liner *Carillo,* arriving in this port on September 2, caused the detention of all passengers at Hoffman's Island for vaccination.

Hospital Buys Nurses' Home.—The Knickerbocker Hospital, Convent Avenue and One Hundred and Thirtieth to One Hundred and Thirty-First streets, has purchased for a nurses' home the five-story apartment house on the adjoining property at 458 West One Hundred and Thirty-First Street.

City Takes Straus Milk Stations.—On September 1, Health Commissioner Royal S. Copeland formally accepted in behalf of the city the Nathan Straus milk stations and laboratory, which have been maintained by this philanthropist since 1892 and which he presented to the city on condition that it assume the responsibility of maintaining them.

Hospitals Reflect Failure to Enforce Volstead Act.—According to a report issued by Commissioner Coler of the department of public welfare, the city's two alcoholic wards at the Kings County and Bellevue hospitals have taken care of more than twice as many intoxicated persons during the month of August as during any since prohibition went into effect. It is said that the number treated at Bellevue during the month exceeded 200.

OKLAHOMA

Public Health Conference.—The third annual Oklahoma State Public Health Conference will be held in Oklahoma City, October 12 and 13. The conference is under the joint direction of the Oklahoma Tuberculosis Association and the state department of public health.

Personal.—Dr. Claude A. Thompson, examiner for the U. S. Public Health Service for the Muskogee district resigned, August 14.——Dr. Joseph Wade Bone, Sapulpa, has been elected president, and Dr. L. I. Smith, secretary-treasurer of the Creek County Medical Society.

OREGON

Health Association Organized.—Curry County is the first county in the state to organize a public health association. The association will take up the matter of the modern health crusade in the public schools and will assist in the sale of Christmas tuberculosis seals. Mrs. A. W. Cope, Langlois, has been elected president of the association.

Personal.—Dr. Richard Nunn, Portland, who has been serving in the British army as an eye, ear, nose and throat specialist since April, 1915, has returned to Portland.——Dr. Joseph M. Murphy, Portland, in charge of The Cedars, the venereal disease hospital of Portland, has resigned.——Dr. John G. Abele has been made acting health officer of Portland in the absence of Dr. George Parrish.

PENNSYLVANIA

Personal.—Dr. Robert P. Elmer, Wayne, retained the international archery championship at the annual tournament of the National Archery Association.

Schuylkill County Wins Banner.—Schuylkill County has won the banner in the fourth class of counties in the modern health crusade just conducted by the Pennsylvania Tuberculosis Society. During the year, 30,551 pupils were enrolled in the crusade in that county.

Sanatorium Unfit for Soldiers.—On investigation, the sanatorium at Markleton, Pa., was found to be in a very unhealthful and unfit condition for its inmates. The hospital has 150 patients, mostly tuberculous, and many of them suffering from wounds received while fighting in France. About thirty-two of the patients are confined to their beds. An appeal has been made to the Somerset County and state health authorities to help in removing the patients to another institution.

Compulsory Insurance.—Legislation concerning compulsory insurance was discussed at a meeting of physicians of Berks, Bucks, Chester, Delaware, Lehigh, Montgomery, Northampton and Philadelphia counties at Willow Grove, September 2. While no definite action has been planned, it is possible that some organization may be effected to try to counteract the legislative and other inroads which have been made into the medical profession. Frederick L. Hoffman was the principal speaker. A dinner followed the meeting.

Society Meetings.—The annual meeting of the Fourth Censorial District Medical Association was held at Mt. Gretna, August 19. Dr. George Kunkel was elected president; Dr. Harry Miller, vice president; Dr. Jesse Lanker, secretary, all of Harrisburg.——The Medical Society of Franklin County met at the Mount Alto Sanatorium, August 19, as the guests of Colonel Hazlett, the director of the institution.——Cambria County Medical Society held its annual meeting at Spangler, August 12, and elected the following officers: president; Dr. Harry M. Stewart, Johnstown; vice presidents, Drs. Edward Pardoe, Southfork, and Edwin C. Boyer, Johnstown, and secretary, Dr. F. G. Scharmann, Johnstown.

Philadelphia

Warn of Vacation Typhoid.—Despite warnings issued early in the summer, the municipal health authorities expect a prevalence of "vacation typhoid." Director of Public Health Furbush admonishes against spreading the disease. He points out that last year 23 per cent. of the typhoid fever cases in Philadelphia were traced to out-of-town infections.

Fight Asthma with Serum.—Inoculations of serums prepared from goose feathers, horse hair, dog hair, cat fur and other substances that produce asthma are used at the asthma clinic of Jefferson Hospital in the treatment of the disease. Goose feathers and cat fur are held responsible for asthma, according to the ideas of Dr. Chandler, originator of the method. Many who report to the clinic sleep on goose feather mattresses or wear fur coats in winter. The physicians therefore inoculate them with the serum and persuade them to give up the mattresses and fur coats as part of the cure.

SOUTH CAROLINA

Traveling Clinic.—The South Carolina Anti-Tuberculosis Association at its meeting, July 28, took up the tuberculosis seal campaign; it is to begin about December 1. Of the

$50,000 which it expects to raise, at least $14,000 will be used for the maintenance of a traveling clinic, including a doctor and nurse, which will cover each county in the state.

Society Entertains Medical Officers. — The Greenville County Medical Society gave a dinner to the doctors of the medical staff of the U. S. Public Health Service Hospital, Camp Sevier, July 29. Dr. James Leland Anderson, Greenville, officiated as toastmaster, and Major F. E. Dedman, Col. E. W. Cresley, and Dr. Edgar A. Hines, Seneca, secretary of the state medical association, made addresses.

Gain Scholarships.—Scholarships for the Medical College of South Carolina, Charleston, were awarded by Governor Cooper, August 12, as follows: First district, J. G. Murray, Charleston; second district, no application; third district, J. F. Garrett, Liberty; fourth district, Alfred G. Taylor III, Taylors; fifth district, W. M. Jones, York; sixth district, John McI. Willcox, Darlington, and seventh district, J. Frank Woods, New Brookland.

Personal.—Dr. Alexander M. Redfern, for twenty-seven years surgeon to Clemson College, has resigned and will retire from the active practice of medicine and devote his time to farming in North Carolina.——I. V. Hiscock, city bacteriologist of Columbia, has resigned, taking effect September 1.——Dr. Kivy Pearlstine, Charleston, who was seriously injured in an explosion, July 16, is reported to be improving slowly.——Dr Walter Boon, Bishopville, health officer to Lee County, has been appointed health officer to Cherokee County with headquarters at Gaffney.——Dr. Paul Knotts has been appointed health officer of Lee County.

TEXAS

Personal.—Lieut.-Col. Ralph S. Porter, M. C., U. S. Army, while motoring with his wife and son from Fort Leavenworth to his new station at Fort Sam Houston, Texas, met with a serious accident near Caddo, Okla., his car plunging over a railway embankment, a distance of about 30 feet. The son was not injured, Mrs. Porter sustained an extensive fracture of the pelvis, and Colonel Porter a fracture of the shoulder.

CANADA

New Medical Building.—A new medical building is being erected at the University of Alberta, Edmunton.

University News.—Sir William Meredith has been reelected chancellor of the University of Toronto. The election of medical representatives to the senate of the university resulted, as follows: Drs. Augusta Stowe-Gullen, Charles J. C. O. Hastings, Arthur C. Hendrick, Andrew S. Moorhead, all of Toronto.

Exonerated.—Drs. J. A. Prevost and Robert St. Jacques, Montreal, recently charged in the criminal courts with neglect in the case of a female patient in the Montreal General Hospital—in other words, an illegal operation—have been exonerated by a judge of a higher court who held that there was no proof against either doctor, and the case was dismissed.

Fraudulent Branch of Mayo Clinic.—A man by the name of Russell Rumas, with elaborate offices in Winnipeg, has been masquerading as a regular practitioner of medicine, and has been carrying on a branch of what he styled—the Dr. Gordon Mayo branch of the Mayo Brothers, Rochester. It is understood he has been convicted in the courts of fraud and for practicing medicine without a license.

Neuropsychiatric Association Organized.—The Ontario Neuro-Psychiatric Association has been organized with the following officers: president, Dr. Edward Ryan, Kingston; vice president, Dr. Harry Clare, Toronto; secretary-treasurer, Dr. C. Crawford, Whitby. The work of the association will extend to the study of defective children, social welfare work, care in the selection of immigrants, the problem relating to the feebleminded, psychoses and neuropsychoses.

Personal.—Dr. Ardrey W. Downs, formerly assistant professor of physiology at McGill University, Montreal, has accepted the chair of physiology in the University of Alberta, Edmunton.——Dr. E. Pearl Hopgood has been appointed second assistant woman physician of the Nova Scotia Hospital, Halifax.——Dr. Bryce McMurrich, Toronto, who recently returned from China, has been appointed medical superintendent of the Speedwell Hospital at Guelph, Ont. This has been a military hospital, and the tuberculosis patients are being removed to the Byron Sanatorium at London and other points.——Dr. A. Grant Fleming, Toronto, who a few months ago was made chief of the venereal department of the federal board of health, Ottawa, has been appointed by Dr. Charles J. C. O. Hastings, deputy medical health officer.——Dr. Douglas, D.P.H., has been appointed medical officer of health for the city of Halifax, N. S. With him will be associated Dr. Bruce Almon who has been acting medical officer of health.

GENERAL

Personal.—Dr. Rebecca Parrish, medical superintendent of the Mary Johnson Hospital for Women and Children, Manila, P. I., is at her home in Logansport, Ind., on leave.

Anesthetists to Meet.—The National Anesthesia Research Society will hold its first annual meeting in Pittsburgh, October 4 to 8, in conjunction with the Interstate Anesthetists Society, the Western Pennsylvania Odontological Society and the Medical Society of the State of Pennsylvania. Headquarters will be at the William Penn Hotel. At this meeting will be awarded prizes aggregating $200 for the best papers on original research on anesthesia presented before the society.

Bequests and Donations.—The following bequests and donations have recently been announced:

Boston Home for Incurables and Children's Hospital, Boston, each $5,000, by the will of Mrs. Henrietta M. Pierce, Dorchester, Boston.

Boston Floating Hospital, Massachusetts Homeopathic Hospital, and Boston Dispensary, each $5,000; Massachusetts Women's Hospital, Perkins Institute, Massachusetts School for the Blind, Infants' Hospital, Free Hospital for Women of Brookline, the Convalescent Home of the Children's Hospital, Talitha Cuna Home and Hospital, Boston Nursery for Blind Babies, Instructive Nursing Association and Collins Consumptive's Home, Dorchester, each $1,000, by the will of Charles L. Davis, Roxbury, Boston.

Seaside Home for Invalid Women, Atlantic City, N. J., $2,000; Pennsylvania, Episcopal and Children's hospitals, Philadelphia, each $5,000, by the will of Margarctta Hutchinson.

Chicago Old Peoples' Home and Visiting Nurses Association, each $5,000, by the will of Etta F. Bayley, Chicago.

Scottish Old Peoples' Home, Chicago, a donation of $1,000, by Dr. John A. McGill.

Touro Infirmary, New Orleans, to be used in the social service department of the infirmary for needy mothers and infants under the care of the maternity charity department, and for needy children under six years of age and in care of the social service department, a donation of $10,000, in memory of her daughter, Rose Bonart Beckman, who died a year ago, by Mrs. Hurtz Bonart.

Good Samaritan Hospital, Portland, Ore., a bequest of about $40,000 to maintain a free room for persons requiring care and unable to pay for the service, by the will of George Boschlin, Portland.

LATIN AMERICA

Election of Officers.—The Academia nacional de medicina of Rio de Janeiro recently reelected Dr. Miguel Couto president; Dr. Aloysio de Castro vice president; Dr. Garfield de Almeida and Belmiro Valverde first and second secretaries, and Dr. Olympio da Fonseca secretary general. At this annual meeting, resolutions were adopted expressing sorrow for the death of General Gorgas.

Yellow Fever Lessening. — Reports from Vera Cruz, August 24, indicate a decline in the number of cases of yellow fever in the city. The sanitary work that is being carried out on a large scale under the charge of Surgeon Carl Michel, U. S. Public Health Service, is yielding gratifying results.——Dr. Hideyo Noguchi, of the Rockefeller Foundation, has gone to Vera Cruz from Mexico City to aid in combating the epidemic.

Personal.—Prof. G. Aráoz Alfaro of Buenos Aires has been invited to deliver a series of lectures at the University of Paraguay, and has left for Asunción. — Dr. H. da Rocha Lima of the Institute for Tropical Diseases at Hamburg, is visiting his former home in Rio de Janeiro.——A reception was tendered Prof. F. Krause of Berlin during his recent stay in Rio de Janeiro.——Prof. Custodio Cabeça of Lisbon has also been visiting in Brazil.

FOREIGN

Cholera Epidemic in China. — Medical missionaries and students in the Union University Missionary School are aiding the Chinese authorities in fighting a serious epidemic of cholera in Chengtu, West China.

First Special Urologic Clinic in Belgium.—This new clinic was recently inaugurated at Liége, the efforts of Prof. A. Hogge to realize it having finally been crowned with success. He has been professor of urology there since 1912.

Medical Students in Sweden.—The *Svenska Läkartidningen* states that the three Swedish university medical schools had only thirty-three medical students in all in 1900, but in 1907 the total surpassed 107 and had increased to 187 in 1916. Only about 62 per cent. of the total take the final examinations.

Prices of Drugs Declining.—The *Deutsche medizinische Wochenschrift* cites a number of drugs, including the salicylates, salts of gold, silver, mercury and bromin, iodin and tannin, for which the price has been materially reduced. It comments that this remarkable phenomenon is due to the present world-wide *Kaufunlust.*

Protection for Workers in Compressed Air.—The German minister of labor has decreed that medical supervision of the health of all persons working in compressed air is compulsory. If the pressure is over 1.3 kg. per square centimeter, the physician must live near the place where the work is being done and be accessible at all times. With a pressure of 2.5 kg. the continuous presence of the physician at the place is imperative. Men under 20 and over 50 must be excluded from compressed air work.

Foreign Medical Journals in Germany.—The larger medical libraries in Germany have organized and established headquarters, the Auskunftsbüro Unter den Linden, 38, Berlin, where a record is to be kept of all the foreign medical journals received by the different libraries. They are urging private libraries to cooperate, so that information will be available of the different journals received at various points, where they can be consulted or arrangements can be made to loan special numbers, and duplication avoided. The Prussian state library which before the war had 3,000 foreign journals regularly on file has now only 250. The appeal is issued in the name of German science "hampered by the lack of knowledge of what is going on in scientific circles in other countries."

Artificial Pneumothorax Association.—The International Association of Pneumothorax Artificialis, the work of which was not carried on during the World War, has issued an invitation to all former members of the association to renew their subscriptions. All other physicians interested in artificial pneumothorax are requested to send their names and addresses to Prof. Umberto Carpi, Lugano, Switzerland, to become members of the association, and to subscribe to the *Pneumothorax Thérapeutique,* the subscription price of which is 5 francs. The purpose of the organization is to spread all practical and scientific knowledge concerning artificial pneumothorax. The subscription entitles the subscriber to receive the journal and also a complete list of the physicians practicing pneumothorax.

Training of Health Officers in Germany.—The *Deutsche medizinische Wochenschrift* states that the plan for training health officers will soon be realized. Social-hygiene academies have been organized at Breslau, Berlin and Düsseldorf, and four months' courses are to open with the winter term to train district and communal physicians, medical inspectors of schools and in medical prophylaxis work in general. The various branches of study include social hygiene on the basis of social economics, medical statistics and social pedagogics; social pathology; care of the healthy and care of the sick, embracing prevention and stamping out of epidemics; social legislation, insurance medicine and medical ethics. The instruction will be on the plan of graduate schools with the main stress on practical training. Physicians who wish to compete for positions as *kreisärzte* will find facilities for a course in bacteriology and hygiene; jurisprudence, and legal psychiatry. Certificates from these academies will entitle to precedence among applicants for positions as health officers, city physicians, medical inspectors of schools, etc.

Deaths in Other Countries

John **Hamilton Fullerton,** London, England, L.R.C.P., L.R.C.S. (Edin.), and L.F.P.S. (Glas.), 1906; for a time lecturer in the University of Glasgow, zoologist and superintendent of the Fishery Marine Laboratory, Royal Fishery Board, Scotland; died in June.——Dr. **E. Vidal** of Paris, founder of the *Archives de thérapeutique* not long before the war.——Dr. **Deformes,** a leading physician of Valparaiso, Chile, founder of the *Revista de medicina e higiene practicas* and author of numerous articles on hospital administration and public health matters in medical and lay journals, aged 54. ——Valparaiso has also lost recently two other hospital physicians, Dr. **Juan Pardo** and Dr. **R. Montt Saavedra,** who served in several public health offices.——Dr. **Cavasse** of Cannes and Paris, one of the leaders in the campaign against tuberculosis.——Dr. **E. Herrenschmidt** of Strasbourg, aged 86. ——Dr. **F. Guiard,** president of the Association française d'Urologie, aged 68.——Dr. **J. Curry Cabral,** professor of surgery at the University of Lisbon until reaching the age limit in 1905, member of the national board of public health, president for several terms of the Sociedade das sciencias medicas of Lisbon, aged 76.——Dr. **F. Guevara,** professor of surgery in the University of San Salvador and surgeon to the Hospital Rosales since 1883.——Dr. **J. Hector Jara,** a prominent physician of Mar del Plata, Argentina, aged 51. ——Dr. **L. Dreyer,** director of the orthopedic service of the surgical clinic at Breslau, aged 39.——Dr. **U. Vetsch,** director of the ophthalmologic service at St. Gallen, Switzerland.

Government Services

Army Field Medical School

Surgeon-General Ireland and Brig.-Gen. W. D. McCaw, president of the Army Medical School, have made an extensive inspection of the Field Medical School at Carlisle, Pa. This school was established several years ago for the purpose of giving medical officers and noncommissioned officers special training for field medical work. The faculty has recently been increased and many new courses have been added, including roentgen-ray instruction in the field.

Public Health Service Orders

Asst. Surg.-Gen. W. G. Stimpson, U. S. P. H. S., has been directed to proceed to different supervisors' offices of the district to inspect hospitals and other buildings suitable for hospital purposes for care and treatment of sick and disabled persons discharged from the military service.——Asst. Surg.-Gen. Joseph H. White, U. S. P. H. S., has been directed to proceed to Guatemala for the purpose of inspecting conditions relative to the prevalence of yellow fever, thence to proceed to Salvador and Nicaragua.

Examinations for Admission to the Army Medical Corps

The report of the examining board for admission to the Medical Corps of the Army will probably be complete within the next few weeks. About 1,700 physicians from every part of the country, all of whom served in the Army during the World War and desired to continue in the service, appeared for the written and oral examinations. The grades in most instances were surprisingly good, according to information given out by Surgeon-General Ireland. The commissions are expected to be announced before October 1 by the Secretary of War on the recommendation of the board of officers established under the Army Reorganization Act.

Inspection of Public Health Activities

Surg.-Gen. Hugh S. Cumming of the U. S. Public Health Service, left this week for a three weeks' tour of inspection of public health activities. Hospitals operated by the government at Chicago, Portland, San Francisco, Prescott, Ariz., Mobile, Ala., and other points are on his itinerary. He will also visit Fort McKenzie, near Sheridan, Wyo., where it has been proposed to locate a new hospital for wounded and disabled soldiers. Operations against the spread of plague at the Pacific port cities will also receive attention. While in the West he will attend the convention of the American Public Health Association to be held at San Francisco, September 13-17.

Campaign Against Plague

News that bubonic plague has been found in Paris led Surgeon-General Cumming of the U. S. Public Health Service to issue a warning to prepare all large ports of the country against possible infection of the black plague. It is felt among public health officials that its introduction into New York is not improbable, and every harbor in the country should be alive to the dangers of the situation. Thorough examination of all rats killed in fumigating ships and a system of trapping rats along the water front are recommended. In a recent statement the Surgeon-General said: "Under modern health conditions it is hardly to be expected that bubonic plague could ever reach the epidemic proportions by which the black death devastated Europe, yet it is an enemy to be feared. All buildings at harbor towns should be rat-proofed. All larger cities should begin the work of rat-proofing at once."

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 14, 1920.

Outbreak of Paratyphoid Fever Due to a Germ Carrier

An inquest has been held on the body of a Frenchman, aged 31, who died from acute enteritis, the result of food poisoning. The evidence disclosed that nine other persons living in the house were also affected. The medical officer of health expressed the opinion that the housewife, who was taken ill three days before the others, was a germ carrier and had communicated the disease to the others by infecting the juice of some liver while cooking. He had found *Bacillus coli* in the gravy. Dr. H. Schutze, bacteriologist at the Institute for Preventive Medicine, found the "mutton type of paratyphoid B" in the body of the deceased as well as in a sample of the gravy. He concluded that the food had been infected at some stage, apparently by the housewife. On the other hand, Dr. Braxton Hicks, pathologist at the Westminster Hospital, had not been able to find that the woman was a carrier of the organism in question, which he thought pointed to her having an attack from which she was recovering rather than being a true carrier. Her illness previous to that of the others seemed, however, to point to the fact that she infected the food.

Standard Artificial Limbs for Pensioners

For three years the ministry of pensions has been considering the standardization of the artificial leg supplied to pensioners with the object of facilitating repairs and replacement. A committee consisting of Mr. T. H. Openshaw, Mr. E. Muirhead Little and Mr. R. C. Elmslie (orthopedic surgeons), Mr. Michael Longridge (an engineer) and others have worked on the subject and made a report with the result that the specification of the standard limbs has now been approved by the advisory council to the ministry. In a few months all artificial legs of wood or leather supplied to pensioners will comply with the new specifications. The method has been to standardize the mechanism of the limb and the metal component parts, leaving the actual limb to be fitted to and assembled for the individual pensioner by the limb-maker. The latter point is of great importance, as the limb must be adapted to the individual needs of the man. Standardization is not to be allowed to interfere with progress. It is a standardization of those types of limbs that have been thoroughly and extensively tested, and of which about 35,000 have been issued. Further improvements will be made, and the types will be modified as these are tested and proved. The ministry has had in hand the problem of providing a lighter artificial leg made of duralumin or some similar metal instead of wood and leather, and one type of this light limb has now received the approval of the advisers. Light limbs have evident advantages for certain cases. The pattern now approved will, it is hoped, be capable of being made by an engineering firm so that only the actual fitting to the man need be carried out by a skilled limb-fitter.

A New Test for Physical Fitness

In a report to the department of scientific and industrial research, Haldane and Briggs have reported a remarkable discovery made while investigating apparatus for rescue work in mines. They found that while air enriched with oxygen produced a marked benefit for untrained workers, practical miners seemed to derive little or no benefit from it. Further investigation revealed the very striking fact that when ordinary air is breathed, the expired air of miners or other men in equally good physical training contains, during exertion, a much higher percentage of carbon dioxid and lower percentage of oxygen than that of men not in good training. In other words, less air is breathed by men in good training for a given consumption of oxygen or amount of work. How is this fact to be explained? Haldane and Briggs believe not only that oxygen does pass to the blood by simple diffusion through the walls of the air spaces in the lungs, but also that the cells forming these walls have a power, hitherto unknown, of "actively passing the oxygen on to the blood." Thus, the trained man differs from the untrained man in the fact that his alveolar cells have learned to pass on oxygen very quickly and in large amount when his blood is flowing rapidly during exertion. Consequently, he is really independent of the amount of oxygen in the air—he can trust his alveolar cells to work harder and give him what he requires. The untrained man is not so fortunate. His alveolar cells are not trained, and when his blood begins to flow rapidly, there is not time for enough air to diffuse through. But if the air is enriched by oxygen, and the "oxygen tension" thereby increased, he gets enough oxygen to meet his needs. Thus, the untrained man is more efficient as a worker when he breathes oxygen. The trained man is not more efficient. This view has led to the further discovery of a test for physical fitness—whether a man is benefited or not by oxygen, during exertion. This was applied during the war, and offers a new basis of standardization of functional efficiency.

The Prophylactic Treatment of Tetanus in the War

Statistics showing the great value of prophylactic treatment in the war, furnished by the War Office Committee on Tetanus, of which Sir David Bruce is chairman, have been given in previous letters to THE JOURNAL. He has now supplied what appears to be a final report. It deals only with cases of tetanus arising in England. Some 1,242,000 wounded were sent home, of whom 1,458 developed tetanus, a little more than 1 per thousand. In September, 1914 (the second month of the war), the rate was 9 per thousand; in October, 7, and in December, 1.4. In November, 1918, the rate was only 0.7 per thousand. This remarkable fall was due to the giving of antitetanic serum immediately after the wound had been sustained. The value of the treatment was also shown by the prolonging of the incubation period and consequent reduction of the severity of the disease. The average number of days elapsing between wounding and the onset of tetanus for each year was: 1914, 11.7; 1915, 27.3; 1916, 34.0; 1917, 48; 1918, 46.5. Thus, as inoculation became more thorough, the disease became less severe. Improvement is also shown by the increased percentages of the cases of local tetanus:

Type	1914	1918
General	98.9	83.5
Local	1.1	16.5

Summing up the effect of the treatment, Sir David Bruce says: "Among wounded men who have received at least one preventive dose, the death rate falls from the old preserum rate of 85 to 23 per cent."

A Canadian Physician's Praise of the London Surgeons

Dr. E. A. McCulloch of Toronto, who has been taking courses of the Fellowship of Medicine, has written a letter to the press, expressing his satisfaction in these terms: "Every branch of medicine seems to have its leading exponent in old England. It is, however, of the surgeons that I would particularly speak. In Canada and the United States we always considered that we had the finest surgeons in the world. Without disparaging our own men, I will freely admit that in the large hospitals of London I saw a better system of handling patients, operations more quickly performed and just as skilfully, and a personal modesty on the part of the operator which is not a conspicuous attribute of our own surgeons. It is devoutly to be hoped that the splendid recep-

tion these men have given us from across the pond will induce many more of us to come to London for our postgraduate work, and that, whereas formerly Vienna and Berlin were the lodestars of postgraduate students, London may be in future the medical Mecca of the world."

The Great Influenza Epidemic

A further report on the great influenza epidemic of 1918-1919, issued by the registrar-general, brings out several most interesting points. The deaths numbered 112,329, for males being 53,883 and for females 58,446. The males included 7,591 noncivilians, and, deducting these, the deaths of civilians corresponded to a mortality of 3,129 per million civilian population. No such mortality has ever before been recorded for any epidemic in this country since registration commenced, except in the case of the cholera epidemic of 1849, when the mortality from that cause rose to 3,033 per million population. None of the previous outbreaks of influenza can compare in mortality with that of 1918-1919. During the forty-six weeks from June 23 to May 10, the total deaths allocated to the disease were 151,446, including 140,989 of civilians, the corresponding civilian death rate for these forty-six weeks being at the annual rate of 4,774 per million population. The mortality attributed to influenza does not represent the whole of that caused by it. The entries under other headings, especially those of respiratory disease, were always bound to increase during an epidemic; and though that did not occur in 1918 to the same extent as in other recent outbreaks, allowance must be made for these increases in mortality, allocated to other causes, but really attributable to influenza, in endeavoring to measure the loss of life caused by the epidemic. An astonishing feature was the sudden change of age incidence. In earlier years, influenza was less important under 55 years and more so above that period. In 1918-1919, this position was suddenly reversed. Those under 35 died in appalling numbers; those over 55 seemed to be relatively safe. It may be doubted whether so sudden and so complete a change of incidence can be paralleled in the history of any other disease; yet all the weight of medical testimony goes to show that the influenza of 1918 was essentially the same as that of former years. Attempts have been made to explain the change as due to alteration in the circumstances of the population. Thus it has been suggested that aggregation of young women in munition works in 1918 may partly account for their specially heavy mortality. No simple explanation on these lines is possible. The alteration in age incidence accompanying the increased prevalence and fatality of the disease in 1918 seems to be more easily explained by a sudden change in the infecting organism than in the soil provided for its growth. We are thus left with the question, "What are the causes which from time to time endow a comparatively harmless malady with ferocious strength, enabling it to destroy its thousands of victims?" These causes may lie in the resisting power of the population; more probably they lie in the attacking power of the germ. If we could gain some idea of the principles at work it might be possible, in the future, to protect ourselves against another such calamity.

Hospitals on the Rates

The hospitals of this country, excepting those for infectious diseases and the infirmaries, are entirely supported by voluntary subscription. The passage of the insurance act, and the war have combined to make their position difficult. The classes who have mainly subscribed for the upkeep of hospitals find themselves heavily taxed for medical attendance on the classes who use the hospitals, and therefore have become less able as well as less willing to subscribe. On the other hand the high taxation and the high cost of living due to the war have also diminished the ability to subscribe. At the same time the cost of maintaining the hospitals has greatly increased. A bill to enable local authorities to contribute to the maintenance of hospitals has been introduced into Parliament by Dr. Addison, minister of health. Like many other things done by the present government, yielding to the stress of circumstances, it is probably the first step on a slippery slope, for the bill strikes at the root of the voluntary principle and will probably cause subscriptions to hospitals to dry up entirely.

BERLIN

(From Our Regular Correspondent)

Aug. 6, 1920.

"The Puberty Glands"

Under the flamboyant title of "Rejuvenation of the Aged," European daily papers, following the lead of Vienna journalists, have been printing sensational accounts of the results of Professor Steinach's experiments with the "puberty glands," just recorded in his book, "Verjüngung durch experimentelle Neubildung der alternden Pubertätsdrüse," published by Julius Springer, Berlin. Steinach's first experiments were made on old male rats, in four of which he was able to induce renewed proliferation in the so-called puberty glands with the result that these impotent animals became sexually potent and procreative. These results were successfully confirmed on two old men, aged 65 and 71, who, two months after operation, lost all characteristics of senility, such as rapid fatigability, dyspnea, vertigo and weakened mental faculties, especially failing memory, and became imbued with vitality and sexual vigor. Similar results, notably increased muscular power, were obtained in a prematurely senile working man, aged 40. Just how permanent these manifestations will be, and whether they can be repeated in other cases, remain to be seen. It is at least regrettable that the daily papers have raised false hopes among the laity by means absolutely discountenanced by Steinach. In the *Deutsche medizinische Wochenschrift*, July 22, 1920, Prof. R. Mühsam has contributed an article on the transplantation of the male gonad, based on his own operations in recent years. In the first case a man of 25 had been castrated for tuberculosis of the testes and had lost practically all secondary sex characters: his libido and potency entirely disappeared, the axillary and labial hair fell out, his voice became higher pitched, and a cushion of fat was formed over the neck and breast. About a year after castration, Mühsam successfully performed a gonad transplantation. Libido returned only about six months later and still persists, the voice became deeper, and the mustache and axillary hair started up anew. In March, 1919, the man married and at an examination one year later he was the picture of health. A second patient, a medical student aged 26, was referred by Dr. Magnus Hirschfeld for possible surgical amelioration of bisexual tendencies. A testis implantation was performed, and in the next four weeks his sexual inclination changed into a decided heterosexual attraction. In April, 1920, his condition was reported as normal. The third case also dealt with a medical student who up to the age of 27 had exclusively homosexual leanings. After excision of his right testis, the bisected undescended gonad of a healthy young man, aged 18, was implanted. Within five days he had heterosexual inclinations with normal erections. Mühsam was unable, however, to confirm Steinach's assertions regarding the anatomic findings in the gonads of homosexual men. In the last patient, whose brother was also an invert, an anatomic basis for the abnormal leanings should certainly have been discernible according to Steinach's postulate. An examination by Professor von Hansemann yielded negative findings; the same thing was true in the case of a confirmed invert, aged 55, in whose excised testis Professor Benda found absolutely normal relations, especially in respect to spermatogenesis and the interstitial cells.

Marriages

CLAUDE C. KEELER, Capt., M. C., U. S. Army, Camp C. D. Little, Nogales, Ariz., to Miss Isabelle Sherman, at Nogales, August 18.

AUSTIN LYNCH CORT, Wilson, Pa., to Miss Carolena Goldstrohm of Elizabeth, Pa., at Pittsburgh, August 26.

ROBERT S. G. WELCH, Lieut., M. C., U. S. Navy, Annapolis, Md., to Miss Sally Bond of Baltimore, August 21.

ELEAZAR ROBINSON BOWIE, New Orleans, to Mademoiselle Renée Gavinet of Limoges, France, recently

ANDREW VALLOIS FREDERICKS to Miss Annie Crawley, both of New Orleans, August 18.

Deaths

John Johnson Kyle ⊕ Los Angeles; Miami Medical College, Cincinnati, 1889; aged 51; professor of rhinology, laryngology and otology in Indiana University from 1900 to 1912; and in the College of Physicians and Surgeons, University of Southern California, since 1913; major and surgeon of the One Hundred and Sixtieth Indiana Volunteer Infantry; and acting brigade surgeon during the war with Spain, with service in Cuba; major, M. R. C., U. S. Army, and discharged Jan. 1, 1918; president of the American Academy of Ophthalmology and Oto-Laryngology in 1910 and 1911; a member of the Association of Military Surgeons of the United States; author of a Compend of Diseases of the Eye, Ear and Throat, and a Manual on Diseases of the Ear, Nose and Throat; died, August 29, from pneumonia.

Clement B. Spalding ⊕ Louisville, Ky.; Louisville (Ky) Medical College, 1904; aged 40; adjunct professor of surgery in Louisville Medical College; associate professor of surgery and anatomy, and assistant in clinical surgery in Louisville and Hospital Medical College; a member of the staff of St. Joseph's Infirmary; died at the Danville and Boyle County Hospital, Danville, Ky., August 30, while under an anesthetic, administered for an operation for appendicitis.

William Hodgson Ellis, Toronto, Ont.; University of Toronto, Ont., 1870; L.R.C.P. (Eng.), 1871; aged 74; formerly professor of toxicology and later dean of the faculty of applied science in his alma mater; a member of the Society of Public Analysts of Great Britain; twice president of the Canadian Institute; president of the local section of the Chemical and Industrial Society; died at Lake Joseph, Muskoka, Ont., August 23.

Robert Kincaid, Olympia, Wash.; Queen's University, Kingston, Ont., 1863; aged 88; a surgeon of U. S. Volunteers during the Civil War; formerly a member of the Canadian Parliament; for twenty-four years coroner of Peterboro County, Ont.; local surgeon for the Midland Railway; for fourteen years health officer of Olympia; died at the home of his son in Seattle, August 15.

G. Franklin Bell ⊕ Williamsport, Pa.; College of Physicians and Surgeons, Baltimore, 1885; aged 59; for two terms coroner of Lycoming County; for many years a member of the staff and chief surgeon of the Williamsport Hospital; was taken ill while preparing to operate, August 2, and died in the institution, August 9.

Radford H. Willingham, Sturgis, Ky.; Hospital College of Medicine, Louisville, Ky., 1897; aged 45; a member of the Kentucky State Medical Association; a specialist on diseases of the eye, ear, nose and throat; died, August 17.

William E. Stuckmeyer ⊕ Indianapolis; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1906; aged 38; died at the home of his sister in Indianapolis, August 22, from heart disease.

Joseph Homer Gelineau, Easthampton, Mass.; Baltimore University, 1906; aged 37; lieutenant, M. R. C., U. S. Army, with service overseas; was killed, August 18, in an automobile accident, at Northampton, Mass.

⊕ Indicates "Fellow" of the American Medical Association.

John P. Glenn, Franklin, Pa.; Jefferson Medical College, 1872; aged 82; a member of the Medical Society of the State of Pennsylvania; died at the home of his daughter in Franklin, July 17, from cerebral hemorrhage.

Byron Usher Steenberg, Albany, N. Y.; Albany (N. Y.) Medical College, 1870; aged 81; once president of the Albany County Medical Society, and a member of the faculty of his alma mater; died, August 22.

Jonathan Edward Openshaw, Salt Lake City; University of Pennsylvania, Philadelphia, 1918; aged 36; died in a hospital in Salt Lake City August 11, three days after an operation for acute appendicitis.

Matthias Y. Weber, Lower Providence, Pa.; University of Pennsylvania, Philadelphia, 1881; aged 62; a member of the Medical Society of the State of Pennsylvania; died, July 28, from acute gastritis

James Scroggs, Beaver, Pa.; Cincinnati College of Medicine and Surgery, 1872; aged 72; a member of the staff of Providence and Rochester general hospitals; died, August 28.

John Henry Reinfrank, Perrysburg, Ohio; University of Michigan, Ann Arbor, 1864; aged 80; founder of the Reinfrank Hospital, Perrysburg; died, August 16.

Eustorquio Calderon, San Francisco; University of Zurich, Switzerland, 1887; aged 59; died in the Franklin Hospital, San Francisco, August 25, from myocarditis.

Leonard S. Ordway, Denver; Homeopathic Medical College of the State of New York, New York City, 1864; aged 78; died in Ticonderoga, N. Y., August 7.

Benjamin F. Ward, Finona, Miss.; Atlanta (Ga.) Medical College, 1859; aged 87; surgeon in the Confederate service during the Civil War; died, August 26.

Sterling D. Shimer, Easton, Pa.; University of Pennsylvania, Philadelphia, 1895; aged 50; died at the home of his sister in Easton, August 23.

Robert Calvin Kibler, Atlanta, Ga.; Medical College of Ohio, Cincinnati, 1861; aged 83; a Confederate veteran; died, July 13, from dysentery.

Thomas A. Booker, Selma, Calif.; Vanderbilt University, Nashville, Tenn., 1898; aged 48; died, August 21, from nephritis.

Richard Dunn Kittoe, Chicago; Rush Medical College, 1902; died in Benton, Wis., August 21, from mitral insufficiency.

John G. Tidball, Columbus, Ohio; Western Reserve University, Cleveland, 1872; aged 86; died, August 16, from pneumonia.

John A. Sipe, Carthage, Ind.; Missouri Medical College, St. Louis, 1894; aged 48; died, August 20, from cerebral hemorrhage.

William de Forrest Voorhees, Auburn, N. Y.; New York Homeopathic Medical College, 1915; aged 27; died, August 28.

Albert E. Jenkins, Cleveland; University of Michigan, Ann Arbor, 1885; aged 57; died, June 22, from angina pectoris.

Napoleon B. Spratt, Amory, Miss.; Jefferson Medical College, 1868; died, about August 10, from malignant disease.

Robert January Huston, Kobe, Japan; University of Louisville, Ky., 1888; aged 54; died, July 9, from nephritis.

Aristides Smith Harrison ⊕ Enfield, N. C.; University of Maryland, Baltimore, 1888; aged 56; died, August 19.

Clement Joseph Cullen, Oak Park, Ill.; University of Illinois, Chicago, 1911; aged 36; died, September 5.

James Thomas Innes Halliday, Peterboro, Ont.; McGill University, Montreal, 1866; aged 77; died, July 4.

William Pinkney Roberts, Los Angeles; Hahnemann Medical College, Chicago, 1876; aged 84; died, June 5.

Charles Osler, Tuolumne, Calif.; University of California, San Francisco, 1878; aged 69; died, August 18.

Mason L. Weems ⊕ Brazoria, Texas; Tulane University, New Orleans, 1890; aged 59; died, August 15.

Joseph M. Beukers, Berkeley, Calif.; University of Leyden, Holland, 1890; aged 65; died, August 16.

James Hutton, Forest, Ont.; University of Victoria College, Cobourg, Ont., 1863; died, July 2.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

LYKO

An Alcoholic "Tonic" that "Opens Up Wonderful Visions"

In the latter months of last year the attention of THE JOURNAL was called to a heavy advertising campaign of the nostrum "Lyko," put out by the Lyko Medicine Company of Kansas City, Mo. Large display newspaper advertisements, from full page down, heralded this preparation as "The Great General Tonic" and offered a free sample bottle "to any one who asks for it." Among the inquiries that came into THE JOURNAL was one from a member of the medical corps at Fort Sam Houston, Texas, who wrote:

"It is requested that you tell us through your correspondence column, or by letter, the contents by analysis, of Lyko. It has been claimed that soldiers are using this as a beverage. The label on the bottle shows 23 per cent. alcohol. Can it be used in larger quantities than the dose shown on the bottle, and thus become a beverage?"

A few weeks later a county health officer in Tennessee wrote:

"I am sending you by express a bottle of Lyko, a preparation that is sold in this country, advertised as a great medicine, but used almost exclusively for drinking purposes. Will you please make an analysis and let me have your opinion?"

While Lyko was being advertised from the Pacific coast to Arkansas, Iowa and Texas, we did not find it on sale in Chicago—possibly because Chicago is not quite as arid as some of the other spots mentioned. We, therefore, asked the Tennessee physician to obtain some additional bottles of Lyko in order that the Association's chemical laboratory might analyze the stuff. The doctor was not able to send the extra bottles immediately because, as he wrote, "owing to the heavy sales of Lyko at this place the stores were out of the decoction at the time of your request." Finally, the stuff came and was turned over to the chemical laboratory.

While the analytical work was in progress an attempt was made to find out something about the Lyko Medicine Company. From what was learned it appears that the company was originally incorporated under the Missouri laws in February, 1918, with a nominal capital stock of $10,000. The incorporators were three individuals who it is claimed are, or were employees of the S. Hirsch Distilling Company, Kansas City, Mo. In December, 1919, the Lyko Medicine Company was reincorporated under the Delaware laws with an authorized capital stock of a million dollars, all common stock.

The names of the three incorporators of the new company are of little importance. They comprise (1) a Dover attorney who is in charge of the local office of a New York company that makes a business of organizing corporations and acting as their local registered agents, (2) the stenographer of this attorney and (3) a man who used to be a clerk but is at present acting as a state detective.

The officers of the Lyko Medicine Company under its new administration seem to be: Clarence A. Hirsch, President and Treasurer, Simon Hirsch, Vice-president, and A. H. Johnson, Secretary. According to the 1920 Kansas City telephone directory, the Lyko Medicine Company is located at 415 Delaware St., Kansas City, Mo., and its telephone number is Main 1830. The same directory gives a similar address and the same telephone number for the S. Hirsch Distilling Company.

What is Lyko? First, let the Lyko Medicine Company speak.

"The demand for a preparation of the character and nature of 'LYKO' is almost universal."

"It tends to stimulate the appetite, tone up the digestive organs and put them in condition to assimilate the nourishing properties of the food taken into the stomach."

"In addition to the unusual tonic value of 'LYKO,' it possesses splendid laxative qualities."

These claims, taken from a circular that comes in the trade package and subject to the restrictions of the National Food and Drugs Act, are comparatively conservative. The same circular professes to discuss "a few of the more important ingredients of which 'Lyko' is composed" and mentions caffein, kola, phenolphthalein and cascara sagrada. For some reason the circular does not discuss the most powerful ingredient in Lyko, alcohol, although the trade package, in accordance with the law, admits the presence of 23 per cent. of this drug.

The newspaper advertisements, not being subject to the penalties of the Food and Drugs Act, are more outspoken. For instance:

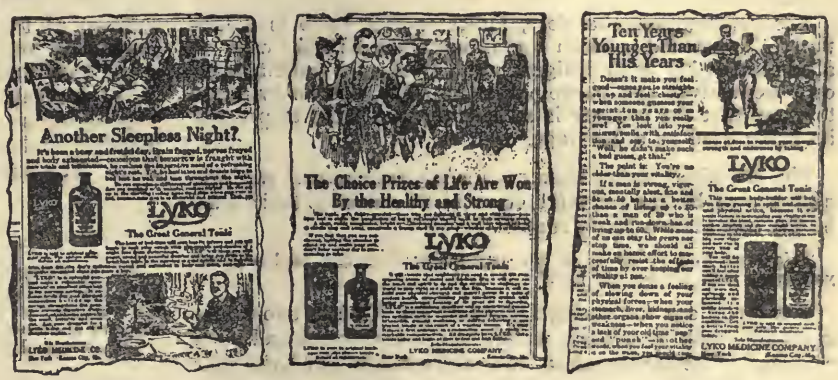
"Nothing will restore your strength, renew your health and revive your spirits like this master body builder."

"It reconstructs the decaying tissues . . ."

"This wonderful tonic will bring to you the physical vim and the mental keenness of perfect health—the capacity to do and to dare."

"It enriches the blood, restores worn-out tissues, soothes jangling and overwrought nerves, induces sound refreshing sleep, sharpens the appetite, tones up the digestion—in short, will put new life, new vigor and new vim in every fibre of your body."

"It relieves brain fag and physical exhaustion; builds up the nerves; strengthens the muscles; corrects digestive disorders and rehabilitates generally the weak, irritable and worn out."



Reproductions (reduced greatly) of some of the smaller Lyko advertisements.

Of course, if these claims were made in the trade package they would, undoubtedly, lay the Lyko Medicine Company open to prosecution by the federal authorities for misbranding. But they are not made on the trade package and lying in newspaper advertisements is still fairly safe. So much for what the manufacturers have to say about Lyko. Here is the report from the Chemical Laboratory of the American Medical Association:

CHEMISTS' REPORT

The specimen of Lyko examined was a dark red, turbid, almost odorless, liquid having a sweet taste and a neutral reaction to litmus. Ammonium salts, benzoates, citrates, bromids, iodids, heavy metals, salicylates and the purgative salts, such as magnesium sulphate and sodium phosphate, were absent as were also bitter drugs, such as gentian and columbo.

In the circular, which forms part of the trade package, the preparation is claimed to contain kola, cascara, caffein, phenolphthalein and "other ingredients" of "probable equal value." Possibly the "other ingredients" include the 23 per cent. of alcohol, the presence of which is admitted on the label.

Caffein, phenolphthalein, and extractives from an emodin-bearing (laxative) drug, probably debitterized cascara, each in small amounts, were present. Sucrose (cane sugar) was present. The presence of kola extractives was not demon-

strated although, as already stated, caffein, the chief medicinal constituent of kola was found. Glycyrrhiza (licorice) extractives were absent. No other medicinally active substance except alcohol was found.

Alcohol was determined, 22.17 per cent. by volume being found. This agrees substantially with the declaration on the label. The solids amounted to 10.1 gm. per 100 c.c., of which about 77 per cent. was sucrose (cane sugar). The determination of the caffein showed 0.1847 gm. of the dried alkaloid per 100 c.c. or about $^{85}/_{100}$ grain per fluid ounce.

After removal of the caffein the residual solution was acidified and shaken with ether. The ether extract amounted to 0.0724 gm. per 100 c.c., or about ⅓ grain per fluid ounce. Since the ether extract contains all of the phenolphthalein, as well as the emodin-like substances originally present in the mixture, it is apparent that the preparation is not very potently medicated. The relative proportions in which the phenolphthalein and cascara extractives are present is not very material since the total is so small.

That the chief active constituent in Lyko is alcohol is shown by the fact that a fluid ounce (one maximum recommended dose) of the preparation, after being dealcoholized, produced no effect after being swallowed by a healthy man. When three fluid ounces of the preparation (three doses) were dealcoholized and the residue taken, the effect was negative or possibly slightly laxative. A quantity of the dealcoholized material, equivalent to 5 fluid ounces (five doses) of the original preparation was taken at one dose; a laxative effect was observed but this was very moderate. Five ounces of Lyko are equivalent in alcoholic content to 2¼ ounces of whisky.

The examination, therefore, indicates that Lyko is essentially a sweetened solution containing about 22.2 per cent. of alcohol together with insignificant amounts of caffein, cascara extractives and phenolphthalein. There is no evidence to show that the product is sufficiently medicated to prevent its being used as a beverage.

The chemists' report makes plain the commercial shrewdness shown by the manufacturers in introducing their stuff by the free sample bottle route:

"We want you to try it at our expense because one trial will tell you more than all we can say."

The directions for taking Lyko call for "One to two tablespoonfuls, with or without water, before each meal and upon retiring." The person taking two tablespoonfuls of Lyko four times a day, in accordance with these directions, would be getting the daily alcohol equivalent of over two bottles of beer (3½ per cent. alcohol) or of nearly 2 ounces of whisky. No wonder:

"It opens up wonderful visions of the future to the down-cast, weary-laden souls depressed in spirit and body."

To all of which the attention of the Internal Revenue Department is respectfully directed.

Correspondence

NEEDS OF ROUMANIAN MEDICAL PROFESSION

To the Editor:—I wish to bring to attention the following extract from a letter of Professor Marinesco, a leading scientist and physician in Roumania.

. . . I believe that our American colleagues, whose country made such a noble contribution to victory, ought to take notice of the unhappy state of the Roumanian men of science which is due to the occupation of our country by the enemy. It is probably unknown that after the occupation we were in extreme distress, because all our instruments were then taken away or destroyed. A part of our libraries has been destroyed. Furthermore, since Roumania has no chemical industries, we do not possess the chemical reagents, etc., indispensable for scientific research. Allied European countries which would aid us, France, for instance, have been equally devastated.

Perhaps the United States, which has contributed so largely to the restoration of Europe, would make a grand gesture and help the investigators of our country by sending some instruments and a certain amount of reagents, so far as they are able to do so. They cannot be accepted gratuitously; but we believe that we shall be able to repay the debt later, when the unfavorable exchange no longer weighs so heavily upon our laboratory budgets.

Hoping that my prayer will find a favorable response among my American colleagues, we would like you to be our spokesman.

S. J. MELTZER, M.D.,
Rockefeller Institute, New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

"NATURE'S CREATION"

To the Editor:—Kindly let me know the analysis of a "patent medicine" that I have only recently heard of which is known as "The Nature's Creation Company's Discovery." It is manufactured in Columbus, Ohio, and the label is signed Mrs. J. M. Reynolds. This is a new one to me and is being introduced here by a woman, so that I thought it best to know the formula in order to be able to tell my patients what it is.

H. G. WILLSON, M.D., Gallup, N. M.

ANSWER.—"Nature's Creation" is one of the fake "consumption cures." It was originally put on the market as an "absolute cure" for syphilis. At that time the exploiter especially warned the public against using "mercury and potash" in the treatment of syphilis. When the stuff was analyzed by the Association's chemists it was found to be essentially a solution of potassium iodid in a weakly alcoholic medium containing vegetable extractives and flavoring matter and small quantities of inorganic salts. THE JOURNAL has published several articles on the "Nature's Creation" humbug. The matter is reprinted in the pamphlet "Consumption Cures" prepared and issued by THE JOURNAL'S Propaganda department. The cost of the pamphlet is 20 cents.

TREATMENT OF LEPROSY

To the Editor:—I have seen in THE JOURNAL (July 24, 1920, page 263), the results obtained with the ethyl esters from chaulmoogra oil in the treatment of leprosy, but I should like to know the mode of administration and also where this drug is on the market.

Please omit my name.

R. A. P., Mexico.

ANSWER.—Following is the dosage and method of administration used by A. L. Dean (*Journal of Cutaneous Diseases,* June, 1919): The initial dose was ⅒ c.c. intramuscularly, deep into the buttocks. The dose was increased ⅒ c.c. each week until ½ c.c. was given, it was then increased ½ c.c. at each treatment until the amount given caused too severe a local reaction at the site of injection. This point varied in different patients. So far as we know this product has not been placed on the market. It is distinctly in the experimental stage and should not be used in a routine way.

Factory Hygiene.—Factory hygiene was first officially recognized in England in the factory act of 1802. Since those days the scope of factory legislation has broadened and has come to include not only the control of hours of work, length of shift, night work and so forth, but also the maintenance of cleanliness and sanitation in general, the prevention of accidents and the ill effects to health arising from certain operations, processes and dangerous trades. Particular attention has been given to the condition of employment of women and children, but latterly it has been more clearly recognized that the male worker also needs protection from injurious effects which may arise from his ordinary occupation. The necessary conditions for health are twofold, first, favorable conditions for the body itself, namely, food, air, exercise, cleanliness, warmth and suitable alternation between rest and work, and secondly a satisfactory environment, including a sanitary factory, reasonable hours of labor, good housing accommodation, and avoidance of injury or poisoning from industrial processes. When these conditions are fulfilled we may expect to find industrial workers enjoying healthier and longer lives.—*J. State M.,* July, 1920.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, Oct. 5-6. Sec., Dr. Ancil Martin, Phoenix.

CALIFORNIA: Sacramento, Oct. 18-21. Sec., Dr. C. B. Pinkham, 529 Forum Bldg., Sacramento.

COLORADO: Denver, Oct. 5. Sec., Dr. David A. Strickler, Denver.

DISTRICT OF COLUMBIA: Washington, Oct. 12-15. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.

GEORGIA: Atlanta, Oct. 12-14. Sec., Dr. C. T. Nolan, Marietta.

IDAHO: Boise, Oct. 5. Commissioner, Hon. Robert O. Jones, Boise.

ILLINOIS: Chicago, Sept. 20-23. Director, Francis W. Shepardson, State House, Springfield.

IOWA: Des Moines, Sept. 15-17. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.

KANSAS: Topeka, Oct. 12-13. Sec., Dr. H. A. Dykes, Lebanon.

MASSACHUSETTS: Boston, Sept. 14-16. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.

MICHIGAN: Lansing, Oct. 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, Oct. 5-7. Sec., Dr. Thomas S. McDavitt, St. Paul.

MONTANA: Helena, Oct. 5. Sec., Dr. S. A. Cooney, Helena.

NEW JERSEY: Trenton, Oct. 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.

NEW MEXICO: Santa Fe, Oct. 11-12. Sec., Dr. R. E. McBride, Las Cruces.

NEW YORK: Albany, Buffalo, New York and Syracuse, Oct. 4-7. Assistant Prof. Examinations, Mr. Herbert J. Hamilton, Albany.

OKLAHOMA: Oklahoma City, Oct. 13-14. Sec., Dr. James M. Byrum, Shawnee.

PORTO RICO: San Juan, Oct. 5. Sec., Dr. M. Quevedo Baez, San Juan.

RHODE ISLAND: Providence, Oct. 7-8. Sec., Dr. Byron W. Richards, Providence.

WEST VIRGINIA: Charleston, Oct. 12. Sec., Dr. S. L. Jepson, Charleston.

WYOMING: Sheridan, Oct. 4-6. Sec., Dr. J. D. Shingle, Cheyenne.

California February Examination

Dr. Charles B. Pinkham, secretary, California State Board of Medical Examiners, reports the written and oral examination held at Los Angeles Feb. 16-19, 1920. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 41 candidates who took the physician's and surgeon's examination, 27, including 8 osteopaths, passed and 14, including 8 osteopaths, failed. Of the 44 candidates who took the reciprocity practical, oral and written examination, 26 passed and 18 failed. One hundred and three candidates, including 4 osteopaths, were licensed through reciprocity. Four candidates were licensed on army credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Phys. and Surg. Los Angeles		(1919) 83.4, 87, 91.5,	93.1
College of Physicians and Surgeons, San Francisco		(1919)	79.7
Leland Stanford Junior University		(1918) 90.3, (1919)	75
University of Colorado		(1919)	79.5
University of Illinois		(1920)	89.1
Johns Hopkins University		(1919)	82.9
University of Maryland		(1919)	96.1
University of Minnesota Medical School		(1919)	90
Washington University Medical Department		(1917)	88.4
University of Nebraska College of Medicine		(1918)	85.2
New York Homeo. Med. Coll. and Flower Hosp.		(1917)	89.5
Okayama Special Medical School. Japan		(1900) 75, (1906)	75
National School of Medicine, Mexico		(1907)	78
University of San Salvador		(1907)	82
	FAILED		
College of Phys. and Surgs., Los Angeles		(1917) 72.1, (1918)	71.4
College of Physicians and Surgeons, San Francisco		(1918)	71.2
Medical College of Nagoya		(1907)	58.5
Tokyo Charity Hosp. Spec. Med. School		(1914) 60.9, (1916)	67.5

RECIPROCITY PRACTICAL AND ORAL EXAMINATION

College	PASSED	Year Grad.	Reciprocity with
Bennett Coll. of Eclectic Med. and Surg.		(1897)	Minnesota
Hahnemann Med. Coll. and Hosp., Chicago		(1899)	Illinois
Rush Med. College (1891) Michigan, (1896) Missouri.		(1897)	Minnesota
College of Physicians and Surgeons, Keokuk		(1877)	Illinois
Drake University		(1896)	Kansas
Tufts College Medical School		(1901), (1905)	Mass.
Detroit College of Medicine		(1891) Illinois, (1904)	Michigan
University of Michigan Medical School		(1887)	Minnesota
University of Minnesota Medical School		(1898)	Minnesota
Central Medical College of St. Joseph		(1900)	Kansas
St. Louis College of Physicians and Surgeons		(1897)	Iowa
University of Missouri		(1904)	Missouri
Long Island College Hospital		(1893)	New York
Ohio Medical University		(1895)	Ohio
Western Reserve University		(1893)	Ohio
Jefferson Medical College		(1890) Neb., (1893) Mo., (1897)	Ohio
Memphis Hospital Medical College		(1900)	Oklahoma
McGill University		(1895) Oregon, (1896)	N. Dakota
Victoria University		(1886)	Illinois
	FAILED		
Denver and Gross College of Medicine		(1906)	
College of Physicians and Surgeons, Chicago		(1891), (1898)	
Rush Medical College		(1896)	
Drake University		(1891)	
State University of Iowa Coll. of Homeo. Med.		(1885)	
Hospital College of Medicine, Louisville		(1876), (1892)	
University of Michigan Medical School		(1876)	
University of Minnesota Medical School		(1895)	
Beaumont Hospital Medical College		(1900)	
Homeopathic Medical College of Missouri		(1902)	
Missouri Medical College		(1895)	
University of Buffalo		(1901)	
Cincinnati College of Medicine and Surgery		(1879)	
University of Oregon		(1896)	
University of Nashville		(1897), (1901)	

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Los Angeles		(1916)	Nevada
Geo. Washington Univ.		(1906) Utah, (1907) S. Dak., 1916)	Dist. Colum.
Howard University		(1906)	Dist. Colum.
Georgia Coll. of Eclectic Med. and Surg.		(1912)	Georgia
Bennett Coll. of Eclectic Med. and Surg.		(1902)	Illinois, Minnesota
Chicago College of Medicine and Surgery		(1911), (1917)	Illinois
College of Physicians and Surgeons, Chicago		(1902), (1906), (1909, 3), (1912)	Illinois
Hahnemann Med. Coll. and Hosp., Chicago		(1900)	Iowa
Illinois Medical College		(1901)	Oregon
National Medical University		(1909)	Illinois
Northwestern University, (1904) Arizona, Illinois, (1906) Washington, (1908) Illinois, (1909) Utah, Illinois, (1911) Illinois		(1917)	Illinois, Missouri
Rush Medical College (1897), (1904) Illinois, (1906) South Dakota		(1915, 3), (1916)	Illinois
Medical College of Indiana		(1902)	Kansas
Drake University College of Medicine		(1910)	Iowa
Keokuk Medical College		(1903)	Iowa
State University of Iowa Coll. of Med.		(1904)	Iowa
University of Kansas		(1908)	Kansas
Kentucky School of Medicine		(1906)	Illinois
Louisville Medical College		(1905)	Arkansas
University of Louisville		(1909) Minnesota, (1912)	Illinois
Medical School of Maine		(1914)	Hawaii
Baltimore Medical College		(1904)	New Hamp.
Johns Hopkins University, (1910) Maryland, (1912) Wisconsin, (1914) Maryland		(1915) Maryland,	Minnesota
Harvard University		(1905)	Maine
Tufts College Medical School. (1912) Nevada, (1915) Massachusetts, Rhode Island		(1917)	Mass.
Michigan College of Medicine and Surgery		(1892)	Michigan
University of Michigan Med. School, (1890) Oregon, (1901) Ohio. (1909) Oklahoma		(1912)	Oregon
Hamline University		(1907)	Minnesota
Barnes Medical College		(1901) Minnesota, (1910)	Illinois
Ensworth Medical College		(1905)	Kansas
Kansas City Hahnemann Medical College		(1912)	Kansas
National University of Arts and Sciences		(1917)	Missouri
St. Louis College of Phys. and Surgs.		(1918)	Missouri
John A. Creighton Medical College		(1905) Iowa, (1910)	Montana
University of Nebraska Coll. of Med.		(1905), (1906), (1908)	Nebraska
Columbia University		(1902) New York, (1914)	Connecticut
Cornell University		(1913)	New York
Long Island College Hospital		(1913)	New York
New York Med. Coll. and Hosp. for Women		(1905)	New York
University of Buffalo		(1913)	New York
University of Bellevue Hosp. Med. Coll.		(1910)	New York
Eclectic Medical College, Cincinnati		(1918)	Ohio
University of Cincinnati		(1914)	Ohio
Toledo Medical College		(1904)	Ohio
Jefferson Medical College		(1911) Virginia, (1917)	Penna.
Medico-Chirurgical Coll. of Phila.		(1905) Penna., (1907)	New Jersey
University of Pennsylvania, (1905) Pennsylvania, Washington		(1907), (1910), (1917)	Penna.
Woman's Medical College of Pennsylvania		(1908)	New York
University of Nashville		(1905)	Louisiana
Fort Worth School of Medicine		(1900)	Texas
Marquette University		(1913)	Washington
Milwaukee Medical College		(1904)	Wisconsin
University of Vienna, Austria		(1897)	Montana
Kyushu Imperial University, Japan		(1909)	Washington

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
George Washington University		(1899)	U. S. Army
Rush Medical College		(1916)	U. S. Army
Tulane University		(1905)	U. S. Army
University of Pennsylvania		(1897)	U. S. Army

Alabama July Examination

Dr. S. W. Welch, chairman, Alabama State Board of Medical Examiners, reports the written examination held at Montgomery, July 12-15, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 28 candidates examined, 27 passed and 1 failed. Five candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Birmingham Medical College		(1915)	84.4
University of Alabama		(1916) 89.7, (1920) 80.5, 87.7, 87.8, 88.4, 89.2, 90.3, 90.8, 91.5, 92.3.	
Howard University		(1919)	82.2
Emory University		(1920)	85.6

Tulane University.....(1918) 89.4, (1920) 84.5, 87.4, 88.7, 89.2, 89.3, 89.7.
Harvard University .....(1920) 88.4
Jefferson Medical College.....(1919) 93.3
Meharry Medical College.....(1920) 78.7
Memphis Hospital Medical College.....(1913) 76.9
University of the South.....(1907) 75.1
Medical College of Virgina.....(1920) 87.7
University of Toronto.....(1919) 91.1

FAILED

Meharry Medical College.....(1920) 72

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Emory University		(1919)	Virginia
Rush Medical College		(1903)	Iowa
University of Pennsylvania		(1917)	Penna.
Meharry Medical College		(1917)	Kentucky, Tennessee

Georgia June Examination

Dr. C. T. Nolan, secretary of the Georgia State Board of Medical Examiners, reports the written examination held at Augusta, June 1-3, 1920, and at Atlanta, June 9-11, 1920. Each examination covered 10 subjects and included 100 questions. An average of 80 per cent. was required to pass. The 15 candidates examined in the Augusta examination passed. Of the 52 candidates examined in the Atlanta examination, 46 passed and 6 failed. Thirty-two candidates were licensed by reciprocity. The following colleges were represented:

AUGUSTA EXAMINATION

College	PASSED	Year Grad.	Per Cent.
University of Georgia	(1920) 86.9, 87, 87, 87.2, 87.5, 87.6, 87.6, 88.1, 88.1, 88.3, 88.4, 88.7, 89.1, 90.6, 92.5.		

ATLANTA EXAMINATION

College	PASSED	Year Grad.	Per Cent.
Emory University	(1920) 82.6, 82.6, 82.9, 83.3, 83.5, 84.1, 84.2, 84.5, 84.9, 85.1, 85.2, 85.6, 86.2, 86.2, 86.8, 87.4, 87.8, 87.8, 88.3, 89.5, 89.7, 90.9, 91.1, 91.5, 91.7, 92, 92, 95.8.		
Harvard University		(1920)	88
North Carolina Medical College		(1917)	85.7
New York Med. Coll. and Hosp. for Women		(1911)	85.1
Columbia University		(1918)	82.5
Eclectic Medical College, Cincinnati		(1920)	88.6
Jefferson Medical College		(1920)	95.2, 86.3
Meharry Medical College	(1917) 82, (1919) 82.8, (1920) 80.1, 80.2, 80.3, 81, 83.7, 84.1, 84.3, 86.3.		
Vanderbilt University		(1915)	86.6

FAILED

Southern Coll. of Med. and Surgery, Atlanta		(1913)	66.8
Meharry Medical College	(1914) 73.3,	(1920)	76.5, 77.3
Memphis Hospital Medical College		(1913)	74.2
University of Nashville		(1900)	64.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Alabama		(1912) (1919)	Alabama
Birmingham Medical College		(1913)	Alabama
Atlanta Medical College		(1891, 2)	Alabama
Northwestern Univ. Med. School		(1905) Iowa, (1911)	Maryland
Tulane University		(1909)	Alabama
College of Physicians and Surgeons, Baltimore		(1915)	W. Virginia
Johns Hopkins University		(1913) Maryland, (1918) Virginia, 1918)	Maryland
Maryland Medical College		(1909)	Maine
University of Buffalo		(1911)	New York
Columbia University		(1914)	Mississippi.
Miami Medical College		(1906)	Minnesota
Jefferson Medical College		(1917)	Alabama
University of Pennsylvania		(1913)	N. Carolina
Chattanooga Medical College		(1903)	Alabama
Meharry Medical College		(1918, 2) Tennessee, (1919, 3)	Tennessee
University of Tennessee		(1915) (1917)	Tennessee
Vanderbilt University		(1913) Mississippi, (1916, 2)	Tennessee
Baylor University		(1919)	Tennessee
University of Texas		(1919)	Texas
Medical College of Virginia		(1914)	Virginia

Arizona July Examination

Dr. Ancil Martin, secretary, Arizona State Board of Medical Examiners, reports the written examination held at Phoenix, July 6-7, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 8 candidates examined, 7 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Chicago		(1912)	79.8
State University of Iowa College of Medicine		(1905)	76.9
Hospital College of Medicine, Louisville		(1906)	79.4
Tulane University		(1901)	78.5
Washington University		(1918)	83.3
Columbia University		(1918)	83.1
University of Tennessee		(1919)	79.4

FAILED

St. Louis College of Physicians and Surgeons		(1920)	66.8

Book Notices

THE PATHOLOGY OF INFLUENZA. By M. C. Winternitz, Isabel M. Wason and Frank P. McNamara. From the Brady Laboratory of Pathology and Bacteriology, Yale University School of Medicine and the New Haven Hospital. Cloth. Price, $15. Pp. 61, with illustrations. New Haven: Yale University Press, 1920.

This is the most elaborate and careful study of the changes produced in the tissues in influenza that has yet appeared, and constitutes an important contribution to the literature. The bacteriologic studies recorded give about the same results as obtained elsewhere in showing the presence of the usual "mouth organisms" that have gained access to the lung because it has already been injured by the special infectious agent. No relations could be demonstrated between the type of bacteria found in the lungs and the character of the associated pneumonic process. It is concluded that the lesions in the respiratory tract in epidemic influenza are peculiar to this disease, being characterized by an acute tracheobronchitis, associated with diffuse involvement of the pulmonary parenchyma, hyalization of the epithelium of the air passages and necrosis of the alveolar walls, dilatation of the terminal bronchioles, with necrotizing and organizing bronchiolitis, and, of course, various types of pneumonic exudates. Particular attention is directed to the extent and importance of the sequelae, such as obliterating bronchiolitis and bronchiolectasis and the very marked tendency to extensive proliferation of the alveolar and bronchiolar epithelium. The latter feature is so striking as to suggest the possibility that neoplasms may be expected to result as a sequel of influenza. The authors believe that the trachea and larger bronchi are demonstrated by the pathology of influenza and pulmonary gassing to play an important part in protecting the lung from infection. Both influenza and the war gases injure the upper respiratory tract so that the pulmonary parenchyma becomes vulnerable to bacteria from the mouth, and pneumonia results. The work is magnificently illustrated, and is a companion to the monograph on the pathologic effects of war gases issued from the Yale Medical School. It is to be regretted that for the purposes of publishing large plates showing gross specimens, it has been found necessary to make the book of a size that does not file well, and of a cost that greatly limits its circulation.

ERGEBNISSE DER GESAMTEN MEDIZIN. Unter Mitwirkung hervorragender Fachgelehrter herausgegeben von Prof. Th. Brugsch, Oberarzt der II. med. Klinik der Königlichen Charité in Berlin. Volume 1. Paper. Price, 240 marks. Pp. 657, with 174 illustrations. Berlin: Urban & Schwarzenberg, 1920.

This is the initial volume of a new medical serial to be edited by Brugsch. The intention is to publish one volume yearly, the contributors being specialists or research workers. It is intended primarily for the busy practitioner who is unable to keep up with the ever-growing large number of articles appearing in the various journals. This serial will present in the form of short and complete articles the various new phases of medicine with which the practitioner should be acquainted. The contributors to the first number are well known as leaders in their respective subjects. Paul Cohnheim writes on chronic gastritis, Frangenheim on carcinoma of the stomach, O. Naegeli on the leukemias, Boas on diseases of the bowel, Ludwig Meyer on infant feeding, Jochmann on serum therapy. There are articles on hypnotics, sedatives and heart tonics, the roentgen-ray treatment of tuberculosis, typhus fever, hemolytic jaundice and many others. There are numerous illustrations and several colored prints. The articles are complete, and the book as a whole makes a valuable reference volume.

THE LUNCH HOUR AT SCHOOL. By Katharine A. Fisher. Paper. Price, 5 cents. Pp. 62. Washington: Government Printing Office, 1920.

Special investigations in our large cities have revealed that the feeding of children at home is frequently deficient and that the luncheons taken at the noon hour in school are still more often far from nutritious and digestible. As a result of educational work, teachers are beginning to regard the school

lunch as a health project which should have an important place in school life. To satisfy the demand for brief and authoritative work on the subject, the Department of the Interior has just issued a bulletin on "The Lunch Hour at School." It is addressed especially to superintendents of schools and to schoolteachers, with a view to arousing interest and to stimulating provision of school lunches by the school organization itself. The best results are accomplished by taking the provision of food away from commercially interested concessionaires. Instructions are given as to how the interest of the community may be aroused and the parents of the children organized to aid the project. Lists of standard equipment are given and suitable menus outlined for institutions of various sizes according to the number of pupils who are to be fed at any one time. The labor problem receives special attention, and the use of students as aids is suggested. The pamphlet concludes by giving a list of selected references.

MODERN DENTISTRY. By Joseph Head, M.D., D.D.S., Dentist to the Jefferson Hospital, Philadelphia. Second edition. Cloth. Price, $6 net. Pp. 382, with 315 illustrations. Philadelphia: W. B. Saunders Company, 1920.

Modern dentistry, as presented by Dr. Head, deals with the subject as a branch of preventive medicine. He first discusses the etiology of mouth infection and then takes up in a special chapter its prevention. He attaches greater importance to the method of cleansing the teeth than to the medicament used as an accessory. Tooth brushes and floss silk are illustrated, and their correct use shown by proper diagrams. The third chapter takes up the subject of tooth enamel and saliva, with a section on dentifrices and mouth washes. The treatment of mouth infection is given careful consideration, and a special chapter deals with the use of vaccines, the final conclusion being that no single drug or vaccine can eliminate mouth infection when it is once entrenched. Vaccines have, however, been of apparent assistance in some cases. The remainder of the book it concerned with root canals and fillings; there are special chapters on children's teeth, on crowns, the replacing of lost teeth, uses of cement and the use of the roentgen ray. The book is conservative. It is well printed throughout. It will give the physician a good understanding of the elements of dentistry so that he may better cooperate with the dentist in necessary procedures.

Miscellany

DISCOVERY THAT THE SNAIL IS THE INTERMEDIATE HOST OF BILHARZIA

Dr. R. T. Leiper, helminthologist of the London School of Tropical Medicine, has made the important discovery that the snail is the intermediate host of *Bilharzia*. In Egypt bilharziasis is widespread and severe. Grave apprehension was therefore felt by the military authorities when, during the war, large bodies of troops were sent to Egypt. A special commission under the control of Dr. Leiper was therefore sent out to investigate the etiology of the disease. It was suspected that the worm entered its human host during bathing by puncturing the skin of the legs; but there was no knowledge as to how the worm got into the water in the first instance, though the suggestion had been made that possibly some water snail might play a part as an intermediate host. Dr. Leiper set to work near Cairo to collect and specifically determine all the fresh water mollusks, to dissect large numbers of all species found for the larvae of worms, to ascertain which, if any, species of mollusk showed attraction for *Bilharzia*, and to ascertain experimentally whether infection took place through the skin or by the mouth, or both ways. A great number of small native boys were hired to go and search the pools and canals for snails and shell fish and to bring these to the laboratory. A vast number of forms were thus obtained, and work was begun at once. Many examinations were carried out with only negative results, when at last *Bilharzia* was found in one of the mollusks. It soon became evident that numbers of this type of snail found at spots daily frequented, such as the praying ground and the embankment crossing, in front of the cafés, and at the bend of the canal where washing was carried on, were infected with *Bilharzia*. The same type of snail was common at other parts of the canal, but was not infected in these situations. Evidently, therefore, infection came from men to the snails. The next thing was to find out whether the snails could reinfect men. Dr. Leiper had by this time made the astuate observation that there were very few rats and mice in the neighborhood of the infected canals and pools. As he was anxious, if possible, to find an animal which could be experimentally infected with the disease, he set a rat-catcher to work to catch rats in these areas. But the rat-catcher reported that there were no rats nor mice to be caught. This seemed good enough evidence that these animals were susceptible to the disease, and so did not frequent the areas where it flourished. Rats were accordingly obtained from another region and exposed to infection, and one of these animals contracted the disease. Later it was found that, in addition to tame rats and mice, the desert rat from the pyramids and a species of monkey could be infected. Further experiments showed that either bathing in the water or drinking it was dangerous in the highest degree. The eggs of the worm on leaving the human host entered the bodies of the snails and underwent development in the snail. Not till six weeks later did they begin to leave the snail as small free-swimming animalcules known as cercaria. These have a spike on their bodies with which they pierce the skin of their human host and so enter his blood. But now came the question. How could the excellent and well-filtered water supply of Cairo contain these animalcules? Dr. Leiper discovered that in addition to the series of pipes supplying Cairo with filtered water there is a second system, carrying to the numerous gardens of Cairo unfiltered water drawn direct from the Nile in the neighborhood of the Kasr Nil bridge, a spot where in recent years numbers of European troops have, while bathing, become infected shortly after their arrival in Egypt. The children even of better class Egyptians are allowed to run about in the privacy of their own courtyards in a state of seminudity during the summer months, and are thus continually exposed to the risk of infection from the hose used in the garden or stable. The lower classes probably derive their infection from the same source, although under different circumstances. To them water is a dear commodity in Cairo. There is no free supply. In the poorer quarters, water is hawked about in large skins, and there is the standing inducement to the middleman to increase his margin of profit by arranging to draw his stock, possibly surreptitiously, through a friendly gardener from the unfiltered supply, for which the water companies make a lower charge. The problem of prevention is therefore to be solved by killing all the snails. To do this it is necessary to drain the pools or canals in which they live. Whether this is possible remains to be seen.

STANDARDS OF VISION FOR MOTOR DRIVERS

The Council of the British Ophthalmologists, impressed by the growing number of accidents from motor traffic, instituted an inquiry as to how far these might be due to defective vision of drivers. At present the only qualification for obtaining a license to drive a motor vehicle, other than a public conveyance, is that the applicant must be 17 years of age. The committee of inquiry has issued its report. The visual defects from which accidents may arise are thus classified: 1. Blindness in or loss of one eye. This limits the field of vision, and objects cannot be seen stereoscopically. But compensatory adjustments occur, as is well known, and one-eyed drivers are positive in believing themselves fully competent to drive with safety, though they must admit that a foreign body in the sound eye might disable them. 2. Conditions necessitating the habitual use of spectacles.

Obscuration of spectacles from without by mist, rain, dust or mud can to some extent be guarded against by adaptable screens. The restriction of the field of vision by ordinary spectacles does not seem to be a source of danger. It would in any case be much less than that due to the use of goggles. 3. Defective acuity of vision, both with and without spectacles. The standard of central acuity laid down for army chauffeurs was, without glasses, in one eye 6/18 and in the other 6/60, no distinction being made as to which eye should have the better vision. This standard should not be taken in civil life, in which there is an ample supply of drivers. 4. Restricted fields of vision and night blindness. For the quick perception of oncoming traffic or of objects approaching from either side, a full field of vision is the most important factor, rather than acute form sense in the center of the field, such as is tested by Snellen's types. 5. Diplopia.

A scheme of vision testing for licenses is put forward. Although desirable, it is held impracticable to subject to satisfactory sight test every applicant for a license. These recommendations are made: 1. Before a license is granted, the applicant should be required to show his ability to steer round corners and avoid obstacles. 2. Before renewal of the license, the applicant should be required to sign a statement that since the license was granted he has not suffered from any physical disability likely to interfere with his driving capacity. 3. If a licensed driver, who suffers from a visual defect, meets with an accident attributable to that defect, he should be liable to lose his license or have it endorsed. 4. Special sight tests for drivers should be instituted and granted by ophthalmic surgeons appointed for the purpose. These certificates should be of three grades: Grade A, certifying the holder's visual capacity to drive any kind of motor vehicle; Grade B, certifying the holder's visual capacity to drive any kind of vehicle other than a motor bus or tram car, and Grade C, certifying the holder's visual capacity to drive a motor tram car. For Grade A, every applicant, in addition to manifesting ability to steer a motor car satisfactorily in daylight, should be required in a trial trip at night to show himself capable of driving in dim light and under varying degrees of illumination. In examination by an ophthalmic surgeon he should show: (*a*) visual acuity of 6/9 in one eye and 6/24 in the other, without glasses; (*b*) a full vision in each eye; (*c*) no manifest squint, and (*d*) no double vision. For the Grade B certificate, every applicant, in addition to ability to steer a car satisfactorily in daylight, should be able to drive in dim light and under varying degrees of illumination. He should show (*a*) visual acuity of 6/9 in one eye and 6/24 in the other with glasses if necessary; (*b*) a full field of vision in each eye, and (*c*) no double vision. For the Grade C certificate the applicant should be capable of driving a motor tram car by day and by night under varying degrees of illumination. He should reach the same visual standards as for the Grade A certificate.

SMALLPOX IN FRANCE DURING THE WAR

Although epidemics of smallpox have generally been the regular accompaniments of wars, this was not the case in France during the war of 1914-1918. Throughout the period of hostilities, the intensive activity of the official vaccination services, the incessant appeal made to the public through the press, and the enforced prescriptions of the Conseil d'hygiène publique et de salubrité du departement de la Seine made it possible to avoid any widespread epidemic of smallpox in Paris. The incidence of the disease in Paris during the five years was as follows: In 1914 there were twelve cases of smallpox and one case of varioloid, of which nine cases of smallpox and the case of varioloid were before the war. In 1915 there was only one case of smallpox, but there were three cases of varioloid. In 1916 there was only one case of smallpox, that of an Arab who came from Algeria while the eruption was in full progress. In 1917 there were six cases of smallpox. In 1918, as the result of an imported case from Morocco and of several cases brought in from Algeria, forty-six cases developed in different parts of Paris without producing a general epidemic. Twenty-six deaths resulted from these cases.

In the matter of vaccinations, Dr. Guilhaud, chief of the vaccination service, has issued a report showing the number of inoculations carried out in Paris during the war: in 1914, 614,987; in 1915, 228,570; in 1916, 158,931; in 1917, 172,298, and in 1918, 209,725, which makes a total of 1,304,511 inoculations from Jan. 1, 1914, to Dec. 31, 1918.

While it is not denied that the law of 1902, whereby compulsory vaccination in three stages was established, exerted a beneficent influence on public health in general, it is suggested that the number of persons vaccinated during the course of hostilities was much greater than the number who were legally subject to vaccination according to the compulsory vaccination law. The main weakness of the law as enacted is that it leaves to the mercy of smallpox infection all persons over 21 years old. It is a well known fact that the real spreaders of contagion are recruited from among persons over 21 years old, on account of the long period from 21 to extreme old age during which they are free from any obligations with respect to vaccination. In order to combat this weakness of the law, the Conseil d'hygiène et de salubrité du département de la Seine issued an urgent appeal that all persons of whatsoever age who had not been successfully vaccinated for five years should voluntarily allow themselves to be vaccinated again.

It is also equally certain that the second legal stage of vaccination, namely, during the eleventh year of age, is too far removed from the first stage. Many children between the ages of 6 and 10 lose the immunity conferred by the first positive vaccination. Statistics confirm these facts. During the course of various series of vaccinations carried out in the primary schools, medical inspectors have found that among children around 6 years of age a percentage of takes equal to 36.68 per cent. of the total number vaccinated may at times be secured. This result shows that children ought to be revaccinated on entering school, namely, at 6 years of age, and again before finishing the earlier grades, that is, at about 13 years of age. This matter was made the subject of a circular issued by the prefect of the department of the Seine, under date of Nov. 3, 1914, and has since been carried out, in a general way at least, by the medical inspectors of schools.

The scarification method of performing vaccination, which is becoming more and more general in France, seems to explain in part the increase in the percentage of takes recorded there. Out of 60,840 revaccinations performed during 1915 in the primary schools, the medical inspectors secured 25,842 takes, or approximately 42 per cent.

It may be noted that almost all epidemics of smallpox occurring in France in recent years have begun with cases imported from abroad. This observation points to the necessity of greater vigilance in matters of vaccination in ports of embarkation and debarkation, which raises the very important question of compulsory vaccination of foreigners entering the country.

The repetition of epidemics and their possible spread are chargeable to the resistance or, perhaps it may be said, the indifference of the public to vaccination, as was pointed out to the Academy of Medicine by the lamented Dr. Wurtz. The law is inadequate to bring about complete prophylaxis, and even as regards those who are legally subject to vaccination, the law is seldom enforced, owing to the state of public opinion in the matter. Only by persuasion and education in matters of hygiene can public indifference be overcome. It would seem that the teachers in the public schools ought to be especially fitted to give the necessary instruction on the subject. Dr. Guilhaud suggests that a practical way to accomplish the desired result might be to accept a recent certificate of vaccination as a card of identification for general purposes. This would give additional value to a certificate of vaccination, would tend to increase the number of inoculations, and might reduce the number of those who refuse obedience to the law and thus make epidemics less frequent and less widespread.

Medicolegal

Restricting to Physicians the Giving of Certificates of Birth and Death

(Keiningham v. Blake (Md.), 109 Atl. R. 65)

The Court of Appeals of Maryland, in affirming an order dismissing a petition for a writ of mandamus to compel respondent Blake, local registrar of vital statistics, to register the petitioner as a physician entitled to file certificates of birth and death, holds constitutional the provision of the Maryland statute relating to osteopathy that nothing therein contained shall authorize any state or municipal officer "to accept from any osteopathic practitioner any birth or death certificate." The court says that the argument on behalf of the petitioner was largely directed to the support of the contention that osteopaths were physicians and as such were entitled to register with the local registrar of vital statistics, and to furnish him certificates of birth and death, under statutory provisions by which "physicians" are charged with such duties. But the express terms of the statute disposed of that contention. The vital question in the case was whether the prohibition against the acceptance of birth or death certificates from licensed osteopaths was a violation of any of their constitutional rights.

The enactment in question forms part of the code article entitled "Health," and its relation to that subject is obvious. It is therefore within the scope of the police power of the state, and should be sustained as an exercise of that power unless the discrimination it makes can be held to be plainly arbitrary and without any perceptible relation to the objects sought to be accomplished. All reasonable presumptions must be made in favor of the validity of the provision. The judgment of the legislature that such a regulation is proper and desirable should be respected and enforced by the courts if there is any rational theory on which it can be supported.

The separate classification, for licensing purposes, of practitioners of medicine and surgery and those practicing by manipulation only, cannot be held to be unreasonable The methods of treatment, and the prescribed qualifications, differ in important particulars for the two classes of practitioners, and the differences by which they are actually distinguished suggest an adequate reason for their separate classification by statute.

The certificates of birth and death to which the statute involved in this case refers are required to contain such "items of information as the state registrar of vital statistics shall deem important or necessary," in addition to such facts as the date and place of a birth or a death, the name, sex and color of a child reported born, the name, age, color, occupation, condition and birthplace of a person reported to have died, the cause of death, duration of illness, and the name and address of the attending physician. It was the evident theory of the legislature that some of the information which the law directed, or the state registrar of vital statistics might deem necessary, to be included in the birth or death certificates, could be furnished more satisfactorily by a physician having the qualifications demanded by the statute of practitioners of medicine and surgery than by those who were licensed to practice osteopathy exclusively. As to the real necessity for making such a distinction, this court has no right to decide. The only inquiry this court is authorized to make is whether the action of the legislature in restricting the means and agencies by which vital statistics are to be obtained is clearly unreasonable.

In the opinion of the court, the discrimination which it is considering in the present case is not so clearly arbitrary as to justify the court in declaring it void. It relates solely to the collection of vital statistics. The legislature has the undoubted right to determine as to the methods to be employed in obtaining such information for the use of the public. Its designation of certain agencies for that purpose, in the statute under consideration, is not such an obvious abuse of its discretion as to authorize the court to substitute its own for the legislative judgment and to refuse to recognize the provision as a valid enactment.

Liability of Sanatorium or Private Hospital

(Meridian Sanatorium v. Scruggs (Miss.), 83 So. R. 532)

The Supreme Court of Mississippi, in affirming a judgment in favor of Mrs. Scruggs, the plaintiff, for damages alleged to have been sustained in having her right foot and ankle seriously burned by a hot water bottle or bag after an operation had been performed on her, says that the defendant contended that the injury to the plaintiff's foot was caused from shoes, and that her foot was blistered when she reached the hospital; that her system was infected with septic poison, caused from the accumulated pus in her fallopian tubes, which existed at the time of the operation; that such pus was absorbed into the system, poisoning her body; that such sores were likely to result from such poison, and in the opinion of the medical witnesses the injury was caused from such condition. The medical witnesses also testified that a burn would not be infected as this place was infected, unless it was inoculated from external causes or application. But the court thinks that the evidence was ample to support a verdict; and it holds that a hospital conducted for private gain is liable in damages to patients for injuries resulting from negligence of the nurses and employees. A patient is generally admitted to a hospital conducted for private gain under either an expressed or an implied obligation that he receive such reasonable care and attention as his mental and physical condition, if known, my require.

Using Unfit Ether—Rules of Liability and Evidence

(Moehlenbrock v. Parke Davis & Co. et al. (Minn.), 176 N. W. R. 169)

The Supreme Court of Minnesota, in this action brought against the manufacturer of certain ether and two surgeons, Dr. John B. Rosenwald and a Dr. Andrews, who used it, affirms an order denying the surgeons a new trial after a verdict was rendered against all of the defendants, in which a young man in good general health submitted to an operation by the surgeons, for the removal of his tonsils, and he never recovered from the administration of the ether, but died as a result in a few hours. That there was fault somewhere, the court says, was clear. On a former appeal taken by the manufacturer, this court held (141 Minn. 154; 169 N. W. 541) that there was evidence to sustain a finding that the ether was unfit for use, that its use was dangerous to life, that the manufacturer was negligent in putting it on sale, and that its use was a proximate cause of the patient's death. One of the defendant surgeons testified that during the operation the patient came out rather quickly from the ether, so he administered a little bit more, but noticed that it was hard fully to relax the patient, who seemed to resist every time an attempt was made to remove the tonsils, and the witness did not like to push the anesthetic because when he did push it a little the patient became cyanotic. The other surgeon said the trouble was of such a nature that if the operation had not been partly completed and it had been a long operation he would not have finished it; would not, if it would have taken half or three quarters of an hour. But there was evidence that the administration of ether extended over three quarters of an hour. Moreover, it was alleged that there was want of proper care after the operation in that, very soon after it, cyanosis appeared and the patient was in a very critical condition until about noon, when he died, and that the defendant surgeons neglected to give him the constant care which the critical nature of his case required. The court holds that the evidence in the case was sufficient to sustain a finding that the surgeons were negligent in administering to a patient ether that was unfit for use, and in their care after the ether was administered.

The skill and diligence which the law requires of a physician or surgeon is such as is usually exercised by others of the same school. He is not necessarily liable for malpractice because of a bad result. He must often act promptly, on his best judgment, and he is not liable for injuries arising, without negligence from honest errors of judgment. But this is an exception to general rules of negligence and the exception is not absolute. Every act of his is in a sense an exercise of judgment and usually of honest judgment. Yet it may be negligent. He might be honest in his judgment that he could

leave certain details to an assistant and yet be liable for negligence in doing so. He is liable if his mistake of judgment is so gross as to constitute negligence. He is bound to observe plain physical laws; or he may be liable when his wrong concerns physical facts and is governed by ordinary principles of intelligence. If a surgeon persists in the use of an anesthetic after warning which would impel one of reasonable prudence to desist, he should be held to answer for the consequences.

The defendant surgeons insisted that since no expert witness testified that they did or omitted to do anything contrary to good surgery and practice, it was the duty of the court to direct a verdict in their favor. But the supreme court does not concur in this contention. From the testimony of the defendant surgeons, and from common knowledge of physical facts and laws, the jury might infer that if they had desisted from the use of the ether at the first sign of danger, the patient's life might have been spared, and that reasonable prudence required them to do so. It is only in cases wherein the evidence and the facts to be deduced therefrom are undisputed, and the case concerns a matter of science or specialized art, or other matters of which a layman can have no knowledge, that the opinion of experts is conclusive. This was not such a case. For similar reasons the testimony of a physician exonerating the defendant surgeons was not conclusive.

Nor was it error to receive the testimony of a physician as to the effect of the use of ether from the same container on the following day. That testimony tended to show the character of the ether.

Aiding in Violations of Harrison Narcotic Law

(Doremus v. United States (U. S.), 262 Fed. R. 849)

The United States Circuit Court of Appeals, Fifth Circuit, in affirming a judgment of conviction of defendant Doremus, says that he was a physician who was duly registered as such with the collector of internal revenue and had paid the tax. He was charged with having unlawfully and wilfully aided and abetted certain named druggists in making illegal sales of morphin and cocain, by giving the persons to whom the sales were alleged to have been made prescriptions, which were by them presented to the druggists and filled by the druggists. The filling of the prescriptions was alleged to constitute the illegal sales, which the defendant was charged with having aided and abetted. The persons to whom the prescriptions were issued were at liberty to have them filled by any druggist selected by them. There was no preconcert between the physician and druggists charged. It was charged that the defendant contemplated that his prescriptions would be filled by druggists who knew that they were issued to gratify the appetite of addicts for the drugs, and not for the alleviation of suffering or the cure of disease. The illegality in the sale was charged to have consisted in the fact that the sale was made neither to one who had or was entitled to have an order blank, nor was it made on the prescription of a physician within the meaning of exception (*b*) of Section 2 of the Harrison act, which exception is: "To the sale, dispensing or distribution of the aforesaid drugs by a dealer to a consumer under and in pursuance of a written prescription issued by a physician . . . registered under this act." The indictment was questioned on the idea that it alleged that the drugs were furnished by the druggists on written prescriptions of the defendant, a registered physician, who had paid the tax, and hence that they were within the terms of the exception, and that, as no crime was committed by the druggist, no aiding and abetting could be charged against the physician. The indictment also charged in effect that the prescriptions were issued by the physician with the purpose of gratifying the appetite of the addict, and with no intent to cure disease or alleviate suffering, and that this was known to the druggist when he filled the prescription. The question was presented whether a prescription issued under such circumstances is covered by the exception. The court holds that it is not; and that if a prescription issued under such circumstances is not a prescription protected by exception (*b*) of Section 2 of the act, then the druggist who fills it, knowing the purpose and circumstances under which it was issued, makes a sale in violation of the law; i. e., one not on an order blank, and not in pursuance of a prescription. The physician who issues the prescription for the purpose mentioned, knowing it is to be filled by a druggist who knows of its illegality, aids and abets the druggist in violating Section 2 of the act by the making of an illegal sale.

The druggists were under no affirmative duty to make inquiry. Knowledge was essential to guilt on their part. It might be shown by direct proof or inferred from circumstances. But, if it was established in neither way, guilt would not exist. A negative failure to inquire would not take the place of knowledge. The court thinks that from the facts proved reasonable men could have drawn but the one inference, namely, that two druggists must have known when they filled the defendant's prescriptions that they were not given to treat disease or to alleviate suffering, but to gratify the appetites of the persons to whom they were given. The court was led to this conclusion from the undisputed facts that the defendant issued prescriptions only for narcotics; that many of the alleged patients were described in his prescriptions as addicts, and had the physical appearance of such; that the prescriptions were issued to the same persons repeatedly and over long periods of time and without diminution in the quantity prescribed, indicating that no cure by reduction was intended by the defendant. It is inconceivable that a pharmacist would be ignorant of the character of the prescriptions in view of the course of business established by the evidence. The druggists concerned conducted their business in person. If the proper inference to be drawn from circumstances established by undisputed testimony was one on which the minds of reasonable men could not differ, an infirmity in the court's definition of knowledge could not have been harmful to the defendant.

Color Blindness Not Total and Permanent Blindness

(Fallin v. Locomotive Engineers' Mut. Life & Accident Ins. Assn. (Ga.), 102 S. E. R. 177)

The Court of Appeals of Georgia, Division No. 2, in affirming a judgment in favor of the defendant, was governed by the terms of a certificate or policy of insurance issued by the defendant. This provided that "any member of this association . . . sustaining the total or permanent loss of sight in one or both eyes shall receive the full amount of his insurance. . . . This association will not recognize a claim for the insurance of any certificate holder for impaired eyesight, but for total and permanent blindness only in one or both eyes." The plaintiff brought this action seeking to recover for total and permanent blindness, alleging that he had become color blind in both eyes. But the court holds that there was no error in sustaining a general demurrer and dismissing the case, as under the terms of the policy or certificate the defendant association was not liable, as color blindness did not amount to total and permanent blindness within the meaning of the policy or certificate.

Society Proceedings

COMING MEETINGS

Am. Acad. of Ophthal. and Otolaryng., Kansas City, Mo., Oct. 14-16.
Amer. Assn. of Electro-Therapy & Radiology, Atlantic City, Sept. 14-17.
Amer. Assn. of Obstetricians and Gynecologists, Atlantic City, Sept. 20-22
American Association of Railway Surgeons, Chicago, Oct. 6-8.
American Child Hygiene Association, St. Louis, Mo., Oct. 11-13.
American Public Health Association, San Francisco, Sept. 13-17.
American Roentgen Ray Society, Minneapolis, Sept. 14-17.
Delaware State Medical Society, Wilmington, Oct. 11-12.
Indiana State Medical Association, South Bend, Sept. 23-25.
Kentucky State Medical Association, Lexington, Sept. 27-30.
Minnesota State Medical Association, St. Paul, Sept. 29-30.
Mississippi Valley Medical Association, Chicago, Oct. 26-28.
New England Surgical Society, Providence, R. I., Oct. 6-7.
New Mexico Medical Society, Roswell, Oct. 15-16.
Pennsylvania, Medical Society of the State of, Pittsburgh, Oct. 4-7.
Vermont State Medical Society, Rutland, Oct. 7-8.
Virginia, Medical Society of, Petersburg, Oct. 26-29.
Washington State Medical Association, Tacoma, Sept. 16-17.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

July 15, 1920, **27**, No. 3

Heart Musculature of Atria. J. W. Papez, Atlanta, Ga.—p. 255.
Studies on Red Bone Marrow. H. E. Jordan, Charlottesville, Va.—p. 287.
Finer Ramifications of Human Lung. C. Ogawa, Kyoto, Japan.—p. 315.
Histology of Respiratory Spaces of Vertebrate Lungs. C. Ogawa, Kyoto, Japan.—p. 333.

American Journal of Diseases of Children, Chicago

August, 1920, **20**, No. 2

*Duct Sign in Mumps. D. M. Cowie, Ann Arbor, Mich.—p. 75.
*Acute Cerebrocerebellar Ataxia. J. P. C. Griffith, Philadelphia.—p. 82.
*Effect of Diphtheria on Heart. H. McCulloch, St. Louis.—p. 87.
*New Method of Diagnosis of Peritonitis in Infancy and Childhood. Bernard Denzer, New York.—p. 111.
Twenty-Four Hour Schedule for School Boys. R. M. Smith, Boston.—p. 113.
Pneumonia in Infancy and Childhood During Recent Epidemics. H. Heiman, New York.—p. 117.
Case of Purpura with Symmetrical Gangrene of Fingers. M. Michael, Chicago.—p. 124.
Elephantiasis Congenita Angiomatosa (Unna). M. K. Miller and K. M. Nelson, Chicago.—p. 127.
Syphilis in Infancy and Childhood. P. C. Jeans, St. Louis.—p. 132.

Duct Sign in Mumps.—It has been noted by Cowie that in a case of mumps, if the buccal mucous membrane is well separated from the teeth with a spoon handle and viewed in a good light, the orifice of Steno's duct on the affected side or sides will present a reddened spot measuring from 1 to 2 mm. in diameter. The duct will usually be found to project beyond the surface of the mucous membrane from 1 to 3 mm. In other words, the duct becomes teatulated. The duct is edematous and is usually pale, as a whole, thus accentuating the red central spot which, at times, gives the appearance of a minute ring because of the central opening which may appear darker. In some cases the greater part of the teating is slightly injected. Minute hemorrhagic points may be seen scattered over an area surrounding the duct as great as 2 cm. in diameter. The orifice of the duct is tumefied and from it, at times, may be seen to exude a limpid fluid. The involvement of the duct is a progressive and retrogressive change. The spot usually appears first and is followed by teatulation with retrogression in the reverse order. Whether the duct sign is pathognomonic of specific parotitis or is present in other acute inflammatory conditions of the parotid gland has not been determined. The duct sign should be regarded simply as corroborative evidence of parotid gland involvement.

Cerebrocerebellar Ataxia.—Four cases are reported by Griffith to emphasize that there is a condition not common, but still certainly more frequent than ordinarily supposed, in which an acute hemorrhagic encephalitis involves the cerebellum, and which could be designated "acute cerebellar encephalitis." With this are always combined symptoms indicating an involvement of the large brain as well, and the title "cerebrocerebellar encephalitis," or "cerebrocerebello-bulbar encephalitis," is consequently to be preferred. The degree to which the process involves one or another part of the brain varies with the case; in some instances the cerebellar lesions predominating, in others the cerebral; but in all in the category of cerebellar encephalitis there is, as stated, a combination of the symptoms affecting both regions. In very many more instances the cerebellum escapes entirely, so far as symptoms indicate; but to these no reference is made here. The cause of this cerebrocerebellar encephalitis varies decidedly. In the majority of the cases previously reported in medical literature, some infectious disease had preceded the attack. This was true of two of Griffith's cases, but no such connection could be discovered in the other two. Unconsciousness, ataxia, affection of speech, disturbance of mentality, nystagmus, "loss of power," and active tendon reflexes are the symptoms seen most often. Vertigo is conspicuous by its absence. The prognosis, as far as life is concerned, is good. Of the seventeen cases collected from medical literature in my earlier report, complete recovery is known to have taken place in a considerable number, and it is probable that this was true of a number more. So far as statistics go, it appears that the disease leaves no traces in the majority of instances.

Effect of Diphtheria on Heart.—Nineteen cases of diphtheria from a group of eighty studied by McCulloch showed evidence of cardiac disturbance. The morality rate was 100 per cent. Patients whose heart muscle alone is involved depend for their recovery largely on the ability to preserve a cardiac reserve sufficient for their needs. The moment this reserve is used up, cardiac failure results. In these cases evidence was obtained that severe functional changes occur, causing disturbances in the cardiac mechanism. McCulloch says that the occurrence of myocarditis following diphtheria is largely beyond control; although the outcome is determined at least in some cases, by the protection the heart receives during the course of the disease and during convalescence. Myocarditis due to diphtheria has a definite position among those factors that lead to chronic heart disease later in life.

Diagnosing Peritonitis by Puncture. — The procedure employed by Denzer is as follows: the skin of the abdomen is swabbed with iodin and the usual precautions are taken to determine bladder distention. A steel needle, about number 17 gage, is used to puncture the skin in the midline about one-half inch below the umbilicus. The glass needle is inserted through this opening and then, held almost perpendicular to the surface of the skin, it is firmly pushed inward until the sudden release of pressure indicates that the needle has entered the peritoneal cavity. By making the pressure parallel to the long axis of the needle the likelihood of breaking the needle is decreased. In two cases of ascites, before a clinical diagnosis of excessive fluid could be established, puncture demonstrated the presence of fluid. In one case 0.5 c.c. was obtained. In the only case of peritonitis in which this procedure was tried, purulent fluid was obtained. The amount was ample for culture; smears showed great numbers of gram-positive cocci in chains. This experience, brief as it is, Denzer believes, establishes abdominal puncture with a capillary tube as a possible method for the diagnosis of intra-abdominal exudates.

American Journal of Insanity, Baltimore

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Intelligence and Psychosis. F. L. Wells and C. M. Kelley, Waverly, Mass.—p. 17.
Outpatient Psychiatry. A. Myerson, New York.—p. 47.
Emotional Exaltation as a Remedy for Obsessional Palsy. A Study of Barrett-Browning Courtship. J. C. Kiernan, Chicago.—p. 75.
Certain Anomaly of Gyration in Brains of Insane. L. G. Lowrey, Danvers, Mass.—p. 87.
Some Mechanisms of Paraphrenia. M. K. Isham, New York.—p. 91.
Reeducation of Demented Patients. W. A. Bryan, Danvers, Mass.—p. 99.
Case with Symptoms of Dercum's Disease and Hysterical Manifestations. S. N. Clark, Chicago.—p. 113.

American Journal of Medical Sciences, Philadelphia

August, 1920, **160**, No. 2

*Major Trigeminal Neuralgias and Their Surgical Treatment Based on Experiences with 332 Gasserian Operations. H. Cushing, Boston.—p. 157.
Number of Roentgenograms and Roentgen-Ray Burns. W. D. Witherbee, New York.—p. 184.
*Comparative Studies of Toxicity of Arsphenamin and Neoarsphenamin. J. F. Schamberg, J. A. Kolmer, G. W. Raiziss. Philadelphia.—p. 188.
*Appendicostomy and Cecostomy for Intestinal Stasis in Epilepsy and Neurasthenia. F. W. White, Boston.—p. 199.
Neuroblastoma Sympathicum: Report of Case. P. C. Gunby, Rochester, Minn.—p. 207.
*Influenza in Tuberculous. M. Fishberg and E. P. Boas, New York.—p. 214.
*Chemical Study of Blood Changes Following Roentgen-Ray Treatment of Leukemia. C. L. Martin and W. Denis, Boston.—p. 223.
Chronic Lung Disease Following Influenza Pandemic of 1918-1919. M. J. Radin, New York.—p. 233.
Pneumonia at a Base Hospital, 1918-1919. H. J. John, Fort Sam Houston, Tex.—p. 244.
*Relation of Housing to Pulmonary Tuberculosis. Report on 18,891 Cases. F. F. D. Reckord, Harrisburg, Pa.—p. 259.

Trigeminal Neuralgia.—Five types of facial neuralgia capable of being mistaken for trigeminal neuralgia are described by Cushing; those ascribed to the sphenopalatine ganglion, those secondary to zoster, those attributed to the geniculate ganglion, those accompanying certain cases of convulsive tic, and, lastly, those due to an involvement of the trigeminus by tumors. Minor trigeminal neuralgias are distinguished from major trigeminal neuralgias, for which in Cushing's opinion the Gasserian operation is unquestionably the proper therapeutic procedure. In the case of the five types of pseudotrigeminal neuralgia there is every reason to refrain, if possible, from a trigeminal neurectomy.

Comparative Toxicity of Arsphenamin and Neo-Arsphenamin.—The results of toxicity tests conducted by intravenous injection of rats with arsphenamin and neo-arsphenamin are detailed by Schamberg and others. The highest tolerated doses of arsphenamin and neo-arsphenamin administered by intravenous injection to healthy rats are about 0.105 and 0.254 gm. per kilogram of body weight, respectively; neoarsphenamin is therefore about 2.4 times less toxic than arsphenamin. Calculated on the basis of 70 kg. as the body weight of an average person, the highest tolerated dose of arsphenamin may be placed 7.35 gm. and of neo-arsphenamin at 17.5 gm., providing the tissues of persons are approximately of the same susceptibility; comparative tests among rabbits, rats and mice in which the same amounts of drugs were given per gram of body weight indicate, however, that the larger and heavier animals are more susceptible and very probably human subjects cannot tolerate these substances in doses proportionate to body weight as established in animals. By subcutaneous injection in mice neo-arsphenamin was found to be half as toxic as arsphenamin but when administered subcutaneously to rats, neo-arsphenamin was found twice as toxic as arsphenamin. Insofar as the toxicity of arsphenamin and neo-arsphenamin may be determined by intravenous injection of solutions in rats, the single dose of arsphenamin commonly administered (0.6 gm.) may be said to be about twelve times less than the highest tolerated dose and the highest single dose of neo-arsphenamin commonly injected (0.9 gm.) is about nineteen times less; from the standpoint of margin of safety larger amounts of neo-arsphenamin may be given and maintain the same ratio between dosis therapeutica and dosis tolerata, as apparently exists with arsphenamin.

Appendicostomy in Epilepsy.—In the case of two patients with neurasthenic symptoms and two with epilepsy—who had a considerable degree of intestinal stasis, appendicostomy or cecostomy was done with subsequent washing out of the large intestine for a period of six to twenty-six months. The operation was done on the theory that delay in the passage of the contents of the colon and possible absorption of toxic material was responsible for some or all of these symptoms, and that the patient would be relieved by keeping the bowel well cleaned out. The patients were glad that the operation was done; one neurasthenic patient was definitely and permanently improved and one was not. In both epileptic cases the immediate results were fair or good (two to eight months without attacks). The late results were unsatisfactory. White has hesitated to advise operation in later similar cases in both groups.

Influenza in Tuberculosis.—The observations made by Fishberg and Boas do not indicate that the anergic state brought about by influenza had any influence on the incidence, course and termination of this disease in the tuberculous.

Blood Changes in Leukemia Following Roentgenotherapy.—Results are reported by Martin and Denis on four cases of myelogenous leukemia in which the chemical occurring in certain of the nonprotein constituents of the blood during roentgen-ray treatment have been followed. In the more severe cases the nonprotein nitrogen was extremely high; after treatment a gradual but steady fall was noted. In view of the fact that the creatinin values are invariably normal and that in our most severe case urea accounted for only 20 per cent. of the nonprotein nitrogen fraction (instead of the usual 50 per cent.), the suggestion is made that in leukemia there is present, possibly as a constituent of the white cells, some nitrogenous constituent not accounted for in the present scheme of microblood analysis. The uric acid content of the blood was much increased, but a large diminution in the number of white cells which occurred as a result of treatment no appreciable decrease in this constituent.

Housing and Tuberculosis—Answering the question: What methods shall be used to improve the home conditions and occupational environment of our people? Reckord points out that if the children are to be the sanitarians of the future, there must be systematic health instruction in the public schools More publicity is needed, so as to place the needs of a town or city before the general public, who may be ignorant of existing conditions Greater effort should be made in connection with the establishment of fresh-air schools, and rounding up in the communities and rural districts the children, who are pretuberculous or in the active process of the disease and in providing treatment for them. It is important and necessary that employers be kept reminded as to their duty to their employees. The establishing of health centers in each city and in representative towns of the rural districts, which shall be the centers of all activities pertaining to the uplift of the community. It is important to constantly keep before the public, sick or well, the value of sunlight. Every sanitary housing plan which does not take into account the sanitation or personal hygiene of its occupants must fail. It is the duty of every physician to influence public opinion, that the evils incident to bad housing, occupational environment and sanitation may be improved, so that the children, the hope of the future, may be given a chance.

American Journal of Ophthalmology, Chicago

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Early Surgical Treatment of Burns of Conjunctiva. R. Denig, New York.—p. 256.
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Practical Considerations in Connection with Insufficiency of Convergence of Visual Axes. J. M. Banister, Omaha.—p. 269.
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Proper Time for Operation on Congenital Cataract. M. H. Post, St. Louis.—p. 277.
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Annals of Surgery, Philadelphia

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Goiter. M. F. Porter, Ft. Wayne, Ind.—p. 129.
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Special Consideration of Toxic Adenoma in Relation to Exophthalmic Goiter. G. W. Crile, Cleveland.—p. 141.
*Results of Operation for Adenoma with Hyperthyroidism and Exophthalmic Goiter. E. S. Judd, Rochester, Minn.—p. 145.
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*"Tourniquet Operation" in Toxic and Other Goiters. L. Freeman, Denver,—p. 161.
Relationship Between Ranula and Branchiogenetic Cysts. J. E. Thompson, Galveston, Tex.—p. 164.
*Late Results after Radical Operation for Cancer of Breast. W. Meyer, New York.—p. 177.
Requirements of Technic in Operations for Cancer of Breast. J. N. Jackson, Kansas City, Mo.—p. 181.
*Traumatic Fat Necrosis of Female Breast and Its Differentiation from Carcinoma. B. J. Lee and F. Adair, New York.—p. 188.
Case of Hyperplastic Tuberculosis of Small Intestine. J. Ransohoff, Cincinnati.—p. 196.
Acute Intestinal Obstruction, Cause of Continued High Mortality; How This May be Reduced. J. E. Summers, Omaha.—p. 201.
Causes of Death by Acute Appendicitis After Operation. A. MacLaren, St. Paul.—p. 207.
*Operation for Cure of Large Ventral Hernia. C. L. Gibson, New York.—p. 214.
Case of Cancer of Ovary Invading Sigmoid Flexure. P. E. Truesdale, Fall River, Mass.—p. 218.
Radical Treatment of Roentgen-Ray Burns. J. S. Davis, Baltimore.—p. 224.
Etiology, Pathology and Clinical Features of Benign Exostoses. E. Eliot, New York.—p. 228.
*Sarcoma of Clavicle; End-Results Following Total Excision. W. B Coley, New York.—p. 231.

Thyroidectomy as a Curative Procedure.—Judd claims that thyroidectomy will cure more than 65 per cent. of patients with the more severe types of thyroidism. If the patients could be treated earlier and with a better understanding of the plan of treatment, in all probability this percentage would be increased considerably. More than 80 per cent. of patients with adenoma with hyperthyroidism can be relieved of their toxic symptoms and a cure obtained by thyroidectomy. A higher percentage of cures would undoubtedly be obtained if the patients were all operated on before there is any evidence of edema or terminal degeneration.

Tourniquet Operation for Goiter.—Freeman's operation has for its object the placing of a tourniquet around the base of each lobe, before partial excision, so as to control hemorrhage by compression of all the vessels without injury to the nerves or parathyroids. This is done by means of two wires, one on either side of the base of the lobe, held in place by elastic bands passing through the glandular substance.

Results of Operation for Breast Cancer.—Meyer has operated for breast cancer on five patients who are alive and well from twelve to twenty-five and one-half years after operation.

Traumatic Fat Necrosis of Mammae.—Traumatic fat necrosis of the female breast clinically, resembles carcinoma of the breast more than any other tumor. A distinct history of trauma to the breast and a well-circumscribed, firm mass, showing rapid increase in size, unassociated with pain and without axillary nodes that are firm, suggest the possibility of fat necrosis. Local removal of such a mass is justifiable if a proper gross diagnosis can be made in the operating room. Should the gross examination reveal carcinoma, complete amputation may then be performed. The diagnosis of traumatic fat necrosis of the breast by gross examination is possible. The gross features of this lesion should, therefore, be clearly understood by every surgeon. Lee and Adair believe that further lines of research, along chemical as well as along morphological lines, may throw additional light on the real nature of this process.

Operation for Ventral Hernia.—The main principle of Gibson's operation first described in 1916 is to close the gap chiefly by approximating the freshened edges of the sheath of the rectus, tension being relieved by releasing incisions parallel to the line of suture an either side. This procedure is exactly similar to the operation for closure of cleft palate, according to Langenbeck, by double pedunculated flaps.

Sarcoma of Clavicle.—Malignant tumors of the clavicle are comparatively rare, only sixteen cases having occurred in about 275 cases of sarcoma of the long bones observed by Coley. The greatest number belong to the sarcoma group, the few cases of carcinoma being metastatic developments from some recognized or unrecognized primary focus. Sarcoma of the clavicle in the great majority of cases is associated with recent, antecedent, local trauma, either in the form of a direct blow or severe muscular strain. A clinical history of pain and localized swelling of the clavicle usually following recent injury, with rapid increase in size, supplemented by a fairly characteristic roentgen-ray picture, will usually make an early diagnosis comparatively easy without the necessity of an exploratory operation. Local removal of the tumor or even a limited, partial resection should be avoided. The treatment of choice, while the tumor is in an operable stage, should be total excision of the clavicle as soon as the diagnosis is made and as soon as possible after operation, a course of systemic treatment with the mixed toxins of erysipelas and bacillus prodigiosus should be begun and continued for a period of at least six months. When possible this should be supplemented with local or regional treatment with radium or roentgen ray.

Archives of Internal Medicine, Chicago

Aug. 15, 1920, **26**, No. 2

Body Weight in Two Hundred and Twenty-Nine Adults. H. Gray, Boston, and J. F. Mayall, Oxford, Mass.—p. 133.
*Bundle Branch Block and Arborization Block. F. N. Wilson and G. R. Herrmann, St. Louis.—p. 153.
*Case Exhibiting Slow Auriculoventricular Rhythm and Paroxysmal Tachycardia with Unusual Ability to Interrupt the Fast Rate. M. H. Fussell and C. C. Wolferth, Philadelphia.—p. 192.
*Experimental Observations on Atypical Q R S Waves of Electrocardiogram of Dog. F. M. Smith, Chicago.—p. 205.
*Gastric Polyposis (Papillomatosis); Report of Case with Operation and Presumable Cure. E. S. DuBray, San Francisco.—p. 221.
*Clinical and Electrocardiographic Observations on Inversion and Other Anomalies of P Wave. W. W. Hamburger, Chicago.—p. 232.
*Electrocardiographic Sign of Coronary Artery Obstruction. H. E. B. Pardee, New York.—p. 244.

Changes Produced by Complete Bundle Branch Block.—That complete bundle branch block produces characteristic changes in the form of the ventricular complex both in animals and in man is the claim made by Wilson and Herrmann. Delayed conduction of the impulse through the branches of the His bundle (incomplete bundle branch block) produces ventricular complexes which are transitional in form between the normal ventricular complex and complexes characteristic of complete bundle branch block. The T deflection is produced by the deactivation of the ventricular muscle. In Lead II of the dog the upstroke of T in right bundle branch block is mainly a left ventricular effect; the downstroke of T in left bundle branch block is mainly a right ventricular effect. There is little experimental evidence to indicate that lesions of the subdivisions of the branches of the His bundle or their arborizations produce those changes in the form of the ventricular complex usually attributed to arborization block. Until such evidence is brought forward the diagnosis of arborization block rests on an insecure foundation.

Paroxysmal Tachycardia of Auricular Origin.—A case is reported by Fussell and Wolferth with a history of attacks of paroxysmal tachycardia occurring over a period of more than forty years; an ability to interrupt the fast rate with temporary cessation of cardiac activity; periods of slow rhythm with interspersed short runs of about the normal rate; abundant clinical evidences of myocardial disease and decompensation. The electrocardiographic tracings showed left ventricular preponderance, depressed conductivity, periods of sinus rhythm alternating with auriculoventricular rhythm, and paroxsmal auricular tachycardia. Observations were made in respect of the alternations of the pacemaker between the sinus and auriculoventricular nodes, variations in rate, relations of auricular systole to ventricular systole. The significance of these phenomena is discussed. The parovysmal tachycardia was determined as auricular in origin by analysis of curves of offset and onset. The method by which the patient obtained interruption of the tachycardia is described, and an attempt made to evaluate the factors responsible for the behavior of the heart during the period of interruption.

Atypical Q R S Waves.—The experiments reported on by Smith would seem to indicate that there are at least two factors necessary for the production of the abnormal electrocardiogram under consideration, lesions of the conduction system and cardiac fatigue.

Polyp of Stomach.—A case of gastric polyposis of the papillomatous type is reported by Du Bray in which the clinical and roentgen-ray diagnosis was carcinoma of the stomach. Exploratory laparotomy revealed a broad based benign tumor situated in the greater curvature of the stomach; this tumor was excised and following this the patient has had an uneventful convalescence and six months later has had no recurrence of his former symptoms.

Inversion of P Wave.—Eighteen cases of inversion of the P wave (migration of the pacemaker) are reported by Hamburger; twelve cases with normal rhythm, six cases with arrhythmia (auricular extrasystoles). Inversion of P wave is most frequent in Lead III; five cases showed inversion in Leads II and III; one case in Leads I, II and III; five cases showed a diphasic P; four cases showed a bifurcated P. Analysis of these cases shows that the majority of the patients suffer with varying degrees of myocardial insufficiency and have associated acute or chronic infectious processes. In addition, evidence of vagal influence if frequent, as shown by disturbances in respiration, effect of atropin, occurrence in vagotonic persons, etc. Hamburger suggests that inversion of P wave with auricular extra systoles should probably be interpreted as evidence of auricular pathology; without extra systoles, is probably due to variations in vagus control, and

that electrocardiographic study of cases showing inverted P, or of cases occurring in suspect vagotonic individuals should include the effect of (*a*) deep breathing, (*b*) change of posture, (*c*) atropin and (*d*) the effort test.

Electrocardiograph Sign of Coronary Artery Obstruction.—A case of obstruction of a branch of coronary artery is reported by Pardee in which he detected an electrocardiographic sign which he believes is characteristic of this condition and is readily recognizable in the human electrocardiogram. The characteristic changes appearing a day or two after the obstruction were as follows: The Q R S group is usually notched in at least two leads, and usually shows left ventricular predominance. The T wave does not start from the zero level of the record in either Lead I or Lead III though, perhaps, from a level not far removed from it, and in this lead quickly turns away from its starting point in a sharp curve, without the short straight stretch which is so evident in normal records preceding the peak of the T wave. The T wave is usually of larger size than customary and accordingly shows a somewhat sharper peak. The T wave is usually turned downward in Lead II in one other lead. Not all of these changes are to be found in every record, but enough of them are present to give it a characteristic appearance. It is concluded that this electrocardiographic sign indicates the presence of a rather large area of muscle degeneration, and when it is obtained from a patient who gives a history of precordial pain coming either in attacks or on exertion, that it will complete the diagnosis of obstruction of a branch of a coronary artery. It is suggested that this sign results only from a lesion within the area supplied by the left coronary artery, and that one within the area of the right coronary artery would cause changes so that the record would more or less closely resemble that which follows a lesion of the right branch of the auriculoventricular bundle.

Boston Medical and Surgical Journal

Aug. 26, 1920, **183**, No. 9

*Phenolsulphonephthalein Test and Nonprotein Nitrogen of Blood in Chronic Nephritis. R. Fitz, Boston.—p. 247.
*Chronic Intestinal Indigestion in Children Over One Year Old.—P. Sylvester, Boston.—p. 254.
Case of Dislocation of Carpal Scaphoid. W. P. Coues, Boston.—p. 260.
Uncomplicated Fracture of Zygomatic Arch; Report of Two Cases. F. W. O'Brien, Boston.—p. 262.
Tooth Brush as Cause of Repeated Infections of Mouth. C. M. Cobb, Lynn, Mass.—p. 263.
Practical Mouth Hygiene. A. C. Jacobson, Brooklyn.—p. 264.

Chronic Nephritis.—Chronic nephritis was found in ninety necropsies performed during a period of five years in the Massachusetts General Hospital. All but seven of these cases Fitz says pathologically were of chronic glomerulonephritis or of arteriosclerotic nephritis. The remaining were cases of a mixture of these two types of nephritis or were of various atypical and obscure forms which are so rare as to be negligible. The essential lesions in the two common types of disease were found in the glomeruli or in the smaller renal vessels. Both types showed such characteristic gross and microscopic appearances that an anatomical distinction was made in all cases, except the few in which one of these types of nephritis was superimposed on the other. The records of fifteen cases of chronic glomerulonephritis and of twenty-six cases of arteriosclerotic nephritis which had been studied during life by one or more phenolsulphonephthalein tests and blood nitrogen determinations were selected from this material by Fitz for closer analysis. The records of these cases did not suggest any definite relationship between the type of nephritis found at autopsy and the results of these two tests for kidney function made during life nor did they show any close relationship between the amount of gross anatomical destruction of the kidney and the apparent degree of impairment of renal function. The findings in these cases are presented in full.

Chronic Intestinal Indigestion in Children.—Inasmuch as clinical experience and opinions crystallized from the study of many cases of chronic intestinal indigestion have shown that seldom is more than one component of the food primarily at fault, Sylvester considers each component separately, and speaks of "fat indigestion," "carbohydrate indigestion," and "protein indigestion." Treatment is said to consist in finding and giving the largest amounts of the most digestible foods which can be tolerated by the patient. This means a careful study of the energy, and growth-needs of the child, correlated with frequent examinations of the stools to prevent giving excess, and in bringing into play all the factors of treatment used in the previously described types of indigestion. Sylvester states that there is nothing more fascinating than to watch starch fade to sugar, and meat disappear, under the action of these digestants in a test tube. There is nothing more disappointing than to see the same old food particles appear in the stools, and the same old symptoms continue after giving children ounces of these digesting substances, even though they are chemically treated so as to be protected from the stomach juices. There is no such high road to success. Each case must be individualized.

Canadian Medical Association Journal, Toronto

August, 1920, **10**, No. 8

*Study of Epidemic Encephalitis Based on Seventeen Cases with Two Necropsies. C. K. Russel, Vancouver, B. C.—p. 696.
Recent Advances in Tendon Transplantation and Bone Grafting. W. G. Turner, Montreal.—p. 705.
*Colostomy; Simple and Inexpensive Contrivance to Maintain Perfect Cleanliness. A. MacKinnon, Guelph, Ont.—p. 710.
Functioning of Heart in Cardiac Disease. J. A. Oille, Toronto.—p. 712.
Kala Azar. P. C. Leslie, Changteho, China.—p. 724.
Anti-Tuberculosis Campaign: Rôle of Government and of Private Effort. E. Grenier, Montreal.
Shock. J. W. Richardson, Calgary, Alberta.—p. 733.
Physical Examination of Chest. D. A. Craig, London, Ont.—p. 737.
Water Supplies in Quebec. T. J. Lafreniere, Montreal.—p. 743.
Taking and Examination of Throat Cultures. A. H. MacCordick.—p. 747.
Bichlorid of Mercury Poisoning by Vaginal Application. E. V. Frederick, Peterborough, Ont.—p. 751.

Cause of Somnolence in Epidemic Encephalitis.—Russel suggests that the somnolence so characteristic of this disease depends entirely on the site of the lesion in the posterior part of the pons near the aqueduct of Sylvius, or, in other words, where the flow of the cerebral fluid from its origin in the cerebral hemisphere to the spinal canal could easily be interfered with by a small amount of swelling closing off the canal of the aqueduct, for instance, or, in the extreme lower end of the fourth ventricle, blocking of the foramen of Magendie with a relative damming back of the fluid and the formation of an acute hydrocephalus.

Colostomy: Modified Technic.—Maydl's operation, in which a glass or hard rubber rod is thrust through a slit in the mysentery to maintain the bowel well out of the wound is the one selected by MacKinnon. The bowel should be divided freely, transversely down to the posterior wall, but no bowel should be trimmed away. There will then be quite a mass of bowel external to the wall of the body. This mass will be smaller around the margins of the healed incision, presenting a neck. Over this neck is fitted a receptacle for gas or feces, liquid or solid, so that the patient can be kept absolutely clean. It is made of thin rubber, almost as thin as toy balloons. The neck of the balloon is made to hug the neck of the bowel closely enough that no leakage will occur around it. The bowel contents are discharged into the receptacle without touching the surface of the skin. A gauze pad above and below and a suitable bandage complete the necessary equipment.

Medical Record, New York

Aug. 21, 1920, **98**, No. 8

Motility. E. H. P. Ward, White Plains, N. Y.—p. 295.
Defense Mechanisms. H. Laveson, New York.—p. 302.
Industrial Injuries and First Aid. A. C. Burnham, New York.—p. 307.
*Immunity to Tuberculosis Among Workers in Sulphur Dioxid. F. Tweddell, Great Neck, N. Y.—p. 310.
Diagnosis of Cancer of Rectum. C. J. Drueck, Chicago.—p. 312.
Quinin in Treatment of Hemoptysis. J. E. Strobel, Hartford, Conn.—p. 313.

Does Sulphur Dioxid Produce Immunity to Tuberculosis?—Of thirty-eight manufacturers of sulphur dioxid and sulphuric acid, who answered a circular sent out by Tweddell, thirty-one never had a case of tuberculosis among their men. Nine companies omitted to mention the number of men employed, but gave data in regard to tuberculosis. The remaining twenty-nine companies employed 11,085 men, of whom 7,707

men were habitually exposed to sulphur dioxid or sulphuric acid, and 3,378 men were not constantly exposed. Only twenty-two cases of tuberculosis were noted during the entire period of existence of all these thirty-eight concerns. Omitting seven men who were tuberculous before employment, two suspected cases, and five cases following epidemic influenza, only eight cases remained to be accounted for. Tweddell is of the opinion that sulphur dioxid is instrumental in producing an immunity to tuberculosis.

Aug. 28, 1920, **98**, No. 9

Descriptive Psychology and Medicine. C. L. Dana, New York.—p. 337.
Parallel Between Dreams and Psychoses. G. P. Boulden, Dongan Hills, Staten Island, N. Y.—p. 341.
Practical Methods of Heart Study and Their Relative Values. W. D. Alsever, Syracuse, N. Y.—p. 345.
Duodenal Ulcer. Its Early Diagnosis and Treatment. N. H. Hornstine, Philadelphia.—p. 348.
Biddy and Coal Bin. A Case of Polyglandular Disease. R. L. Pitfield, Philadelphia.—p. 351.
Errors in Diagnosis of Contagious Diseases. A. I. Blau, New York. —p. 352.
Treatment of Cancer. R. Bell, London.—p. 354.
Roentgen Ray Treatment of Universal Psoriasis. J. Remer and W. D. Witherbee, New York.—p. 355.

Mental Hygiene, Albany, N. Y.

July, 1920, **4**, No. 3

Minimum of Medical Insight Required by Social Workers with Delinquents. C. M. Campbell, Baltimore.—p. 513.
Individual Variations in Mental Equipment. A. F. Bronner, Boston. —p. 521.
Problems of Social Case Work with Children. J. Taft, Philadelphia. —p. 537.
Modern Specialist in Unrest: Place for Psychiatrist in Industry. E. E. Southard, Boston.—p. 550.
Mental Deficiency in United States as Determined by Examination of Recruits. P. Bailey and Roy Haber, Washington, D. C.—p. 564.
Clinics for Mental Defectives in State of New York. W. C. Sandy, New York.—p. 592.
After-Care for Narcotic-Drug Addict. S. Graham-Mulhall, New York. —p. 605.
Disciplinary Measures in Management of Psychopathic Delinquent Woman. J. D. Hodder, Farmingham, Mass.—p. 611.
State Institutions for Feebleminded. V. V. Anderson.—p. 626.
State Hospital and Parole System. E. S. Elwood, New York.—p. 647.
Influence of War upon Concepts of Mental Diseases and Neuroses. S. I. Schwab, St. Louis.—p. 654.
Relation of General Practitioner to Neurotic Patient. A. Polon, New York.—p. 670.

New York Medical Journal

Aug. 28, 1920, **112**, No. 9.

*Use of Benzyl Benzoate in Some Circulatory Conditions: D. I. Macht, Baltimore.—p. 269.
New Therapy in Light of New Physiology. J. J. McNulty, New York. —p. 271.
Early Signs of Tabes. B. P. Thom, New York.—p. 273.
*Administration of Arsphenamin by Rectum in Form of Enteroclysis. V. W. M. Wright, Philadelphia.—p. 275.
Seven Generations of Physicians. G. S. Bangert, East Orange, N. J. —p. 277.
Schick Test, Its Control, and Active Immunization Against Diphtheria. A. I. Blau, New York.—p. 279.
Nephritis. H. I. Goldstein, Camden, N. J.—p. 283.

Benzyl Benzoate in Hypertension.—Benzyl benzoate has been shown to be a powerful vasodilator, without being depressant to the heart when administered by mouth in small doses. Owing to this property Macht found it to be effective in the treatment of hypertension and angina pectoris. The best method of administering the drug in such cases is in alcoholic solution, which admits of rapid absorption and a control of the dose. A 20 per cent. alcoholic solution of benzyl benzoate was administered by mouth, either in cold water or milk. The ordinary dose was found to be 20 or 30 drops of such a solution, taken three or four times a day. After administering to a patient full doses of benzyl benzoate and obtaining a desirable therapeutic effect, the reduced pressure could be maintained by keeping a patient on very small doses of the drug, sometimes no more than 5 minims of the 20 per cent. solution. The effect of benzyl benzoate on the blood pressure was demonstrable even in such cases in which nitrites failed to produce a vasodilatation.

Arsphenamin Administered by Rectum.—It is thought by Wright that by this method the solution is picked up by the blood vessels and lymphatics of the rectum and sigmoid and the greater proportion of the solution conveyed directly to the liver whence it is meted out, and that much more arsphenamin enters the liver and is stored there by this method than by the intravenous method. The details of the technic are described fully.

Philippine Journal of Science, Manila

March, 1920, **16**, No. 3

Philippine Amphibia. E. H. Taylor.—p. 213.

Southern Medical Journal, Birmingham, Ala.

August, 1920, **13**, No. 8

*Bright's Disease with Special Reference to Treatment. H. A. Christian, Boston.—p. 545.
*Signs and Symptoms of Hypopituitarism. S. R. Roberts, Atlanta, Ga. —p. 549.
Treatment of Visceroptosis. F. W. Wilkerson, Montgomery, Ala.—p. 553.
*Comparative Study of Gastric Motility as Determined by Ordinary Test Meal and Six-Hour Barium Retention. H. G. Beck and J. Evans, Baltimore.—p. 559.
Present Limitations of Roentgen Ray in Diagnosis of Gastro-Intestinal Diseases. G. M. Niles, Atlanta, Ga.—p. 564.
Intestinal Protozoa: Diagnosis and Treatment. S. K. Simon, New Orleans.—p. 569.
Tuberculosis Infection and Tuberculosis. B. L. Taliaferro, Catawba Sanatorium, Va.—p. 574.
Malaria Problem of Rice Field of United States. J. C. Geiger and W. C. Purdy, Washington, D. C.—p. 577.
Ununited Fractures of Neck of Femur. W. Campbell, Memphis, Tenn. —p. 585.
Aneurysms. E. B. Anderson, Chattanooga, Tenn.—p. 589.
Ovarian Function Following Hysterectomy. E. H. Richardson, Baltimore.—p. 595.
Diverticulum of Posterior Urethra. G. T. Tyler, Greenville, S. C.— p. 599.
Common Skin Lesions Rarely Recognized. C. A. Simpson, Washington, D. C.—p. 601.
Relation of Fifth Cranial Nerve to Auditory-Vestibular Disease. E. R. Carpenter, Dallas, Tex.—p. 605.
Medical Teacher. K. M. Lynch, Charleston, S. C.—p. 607.

Treatment of Chronic Nephritis.—Much of the management of the chronic nephritis hinges on the theory of physiologic rest for the injured or overworked kidney. To bring about physiologic rest Christian selects a diet poor in protein as contrasted to the average normal diet and poor in sodium chlorid. Protein calories are replaced by carbohydrate and to a less extent by fats. Fluid intake is set at a level of about 1,500 c.c. per twenty-four hours. The exact degree of reduction in protein, salt and fluid should vary with the degree of the nephritic process. Catharsis to give free, not loose, movements are needed for the average nephritic. Diuretics seem to have little place in the treatment. Hypertension requires no particular therapeusus other than the diet, baths, catharsis, etc., already described. Edema in certain types of nephritis is very annoying. Reduction in fluid intake and restriction of protein and especially of salt in the diet is indicated. The high protein diet advised by Epstein for edematous nephritics, in Christian's experience, has not given good results. Similarly the alkaline treatment of Fischer has been disappointing. Continued catharsis sometimes helps. When edema is marked, mechanical removal gives prompt, but, as a rule, only temporary relief. With a normal heart and edema from renal insufficiency, Christian has never seen diuresis from digitalis, and rarely from diuretic drugs.

Symptoms of Hypopituitarism.—Undergrowth, dwarfism, dysgenitalism, feminine hirsuties, feminine type skeleton, lack of secondary sexual characteristics, genital atrophy and impotence, headaches, languor, weakness, Roberts says, may appear in varying degrees in different cases at different periods. The classic signs and symptoms of hypopituitarism are subnormal temperature, dry skin, adiposity, low blood pressure, slow pulse, constipation, amenorrhea, drowsiness, inactivity. Lack of attention, impairment of memory, actual dulness, mild psychoses to actual convulsive seizures with epileptic attacks may occur. The cause may be glandular deficiency of one or both lobes, a pituitary tumor with damage of the gland, a neighborhood tumor or hydrocephalus with pituitary pressure. The symptoms of intracranial tumor may be more prominent than those of pituitary deficiency. Infantilism, dysgenitalism, obesity, symptoms of intracranial tumor, warrant pituitary study.

Diagnosis of Gastric Motility.—According to Beck and Evans there is very little evidence to show that the secretory function has any influence on the motor function in pathologic conditions affecting the stomach and duodenum.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

July, 1920, No. 240

Effective Resistance of Human Body to High-Frequency Currents. C. M. Dowse and C. E. Iredell.—p. 33.
Use of Radium in Malignant Disease. T. H. Kellock.—p. 46.
Case of Broncho-Esophageal Fistula. W. Mitchell.—p. 49.

British Journal of Children's Diseases, London

April-June, 1920, **17**, Nos. 196-198

Stigmata of Predisposition to Bone and Joint Tubercle. W. C. Rivers.—p. 59.
Traumatic Stricture of Urethra in Children and Young Subjects; Immediate Treatment of Ruptured Urethra. A. R. Thompson.—p. 70.
Two Cases of Unilateral Macrosomia and Congenital Overgrowth of Right Leg. J. Black-Milne.—p. 79.
Unilateral Dwarfism of Limbs Connected with Congenital Multiple Chondroma. F. P. Weber.—p. 85.

British Journal of Experimental Pathology, London

June, 1920, **1**, No. 3

*Antigenic Properties of Bacillus Psittacosis. H. M. Perry.—p. 131.
*Method for Estimation of Urea by Soy Bean. E. L. Kennaway.—p. 135.
*Value of Vital Red Method as Clinical Means for Estimation of Volume of Blood. D. T. Harris.—p. 142.
*Etiology of Influenza. P. Fildes and J. McIntosh.—p. 159.

Bacillus Psittacosis.—A strain of *B. psittacosis* was isolated by Perry from an infective disease in parrots. This strain was shown to have identical serologic relationships to *B. aertrycke* ("mutton" type) and to the original culture of *B. psittacosis* made by Nocard in 1893.

Estimation of Urea by Soy Bean.—A technic for the estimation of urea by soy bean is described by Kennaway by which amounts of 1 mg. can be estimated with an accuracy of 97 per cent. The ammonia produced is not removed by an air-current and is titrated by means of a comparator. In the case of serum an alcoholic preparation is used without evaporation.

Determination of Blood Volume.—A control method is described by Harris for the determination of the blood volume in animals which depends on removing the maximum of hemoglobin compatible with life while keeping the blood volume constant by the simultaneous injection of gum-saline solution at the same rate.

Etiology of Influenza.—The evidence for and against the suggestion that influenza is due to filter passers is reviewed by Fildes and McIntosh. The conclusion is unfavorable to filter passers on the grounds that few of the necessary criteria are fulfilled. The incidence of the influenza bacillus in influenza and other conditions, and its pathogenic action on man and animals is discussed. The review is favorable to *B. influenzae* as the cause of influenza.

British Medical Journal, London

August 14, 1920, No. 3111

Obstetric and Gynecologic Education. H. Briggs.—p. 229.
Problems of Filariasis. J. W. W. Stephens and W. Yorke.—p. 231.
Filaria Bancrofti in Production of Elephantiasis and Kindred Diseases. G. C. Low.—p. 233.
*Treatment of Human Trypanosomiasis and Kala-Azar by Acetyl-P-Aminophenyl Stibiate of Sodium. P. Manson-Bahr.—p. 235.
*Dietetic Deficiency and Endocrine Activity with Special Reference to Deficiency Edemas. R. McCarrison.—p. 236.
Treatment of Denervated Muscle; "Disuse" Theory. J. N. Langley.—p. 239.
Rupture of Vein of Dermoid Cyst. J. O. Beven.—p. 243.
Ligature of First Part of Right Subclavian Artery for Traumatic Aneurysm of Second and Third Parts. D. W. Hume.—p. 243.

Treatment of Trypanosomiasis and Kala-Azar by Stibiate of Sodium Compound.—Bahr has treated two cases, apparently with success, with this drug, and the results have been so striking that in his opinion this early publication is justified. He began with 0.1 gm. working up to 0.3 gm. Injections were given as far as possible on alternate days. Improvement has been progressive, no untoward symptoms following injection have been noted.

Edema and Enlarged Suprarenals.—McCarrison found that edema is invariably associated with massive enlargement of the suprarenal glands in pigeons fed on autoclaved rice. But massive enlargement of the suprarenals is not invariably associated with edema. This association bears some intimate relationship to the epinephrin content of the enlarged organs: when the content is high edema occurs in 86 per cent. of cases, when the content is low edema does not occur. Fresh butter contains some substance which tends to protect against edema. This substance was not present in a cocoanut oil. The hypothetical "anti-edema" substance in butter has a pronounced influence over the suprarenals. It appears to exert its protective action against edema by maintaining their epinephrin content at a low level. Butter varies in its capacity to protect against edema. This variation is dependent on the quality of the cow's food: butter is richer in "anti-edema" substance when the cows are fed on green fodder than when they are fed on dry fodder.

Dublin Journal of Medical Science

August, 1920, **4**, No. 6

Clinical Symptoms of Appendicitis Compared with Lesions Found at Operation. C. B. Maunsell.—p. 265.
Case of Solitary Cyst of Kidney. A. A. McConnell.—p. 270.
Acute Pneumococcal Lobar Pneumonia. H. F. Moore.—p. 274.

Edinburgh Medical Journal

August, 1920, **25**, No. 2

Functional Mental Illnesses. R. G. Rows.—p. 76.
Influenzal Pneumonia; Its Treatment. K. Petren.—p. 92.
Resection of Colon by Paul's Three-Stage Method. W. Q. Wood.—p. 106.
Artificial Pneumothorax in Pulmonary Tuberculosis. J. Crockett.—p. 113.
Intraocular Pressure. E. H. Cameron.—p. 130.

Lancet, London

August 14, 1920, **2**, No. 7

*Croonian Lectures on Psychology of Special Senses and Their Functional Disorders. A. F. Hurst.—p. 333.
*Causal Organism of Influenza. J. W. Edington.—p. 340.
Treatment of Chronic Otorrhea by Zinc Ionization. A. R. Friel.—p. 345.
*Treatment of Gonorrhea with Detoxicated Vaccine. W. V. Corbett and T. E. Osmond.—p. 346.
Herpes and Chickenpox. C. B. Ker.—p. 347.
Analysis of a Fugue. R. L. Gamlen.—p. 350.
*Case of Myoclonic Form of Acute Epidemic Encephalitis. D. McAlpine.—p. 353.
*New Method in Rhinoplasty. G. Chubb.—p. 354.

Hysterical Fits and Epilepsy.—Hurst believes that hysterical fits are much more common than is generally supposed, and that many such cases are diagnosed as epilepsy and treated for years with bromids. It has been said that a definite aura is uncommon in hysteria, but common before true epileptic fits. This is incorrect Hurst claims. Some kind of warning invariably precedes an hysterical attack. It is indeed this "warning," which acts as the suggestion, which is the exciting cause of each fit. A symptom which has once produced an attack will be likely to produce another whenever it recurs, because it subconsciously reminds the patient of his earlier attack and thus suggests that another will occur.

Bacillus of Influenza Cause of Influenza.—The results of his investigations have convinced Edington that *B. influenzae* (Pfeiffer) was an infecting agent in all the Dover, Canterbury and Schorncliffe cases studied; that it was likely to have been the primary infecting agent, seeing that specific agglutinins and complement fixing bodies were demonstrated in the blood of some cases as early as the third day of the illness. The cultural results, as well as a consideration of the fluctuations of the carrier rate, also favor the statement that *B. influenzae* (Pfeiffer) was the causal organism. In the Hythe cases *B. influenzae* (Pfeiffer) does not seem to have been the causal agent, as has been shown both culturally and serologically. Edington hesitates to accept the gram-negative diplococcus, isolated in all the cases, as the causal agent until the cultural results were supported by some immunity test. The whole work tends to point to the fact that clinical influenza may be due to more than one variety of infecting organism.

Detoxicated Vaccines in Gonorrhea.—The average duration of the disease in test cases studied by Corbett and Osmond was 38.5 days as compared with 48.4 days of controls—a decrease of nearly 10 days per case.

Myoclonic Form of Epidemic Encephalitis.—In McAlpine's case there were inequality of the pupils and the absence of marked dilatation; absence of vomiting, difficulty in urination, disturbance in speech, leukocytosis, and sweating; presence of general hypotonia; trophic changes in the feet and hands. On examining the abdomen in the recumbent position sudden shocklike contractions were seen involving the lower segments, chiefly the left, causing the umbilicus to be pulled downward. The tone of the abdominal muscles was slightly increased. Reflexes were present in lower segments, but absent in the upper. A fine irregular tremor was present in both legs on voluntary movement. The same shocklike contractions were present in certain muscle groups in the legs—especially frequent are those in the peroneal group of the right leg and in the posterior group of the left leg. The contractions were much shorter in duration though just as powerful as those in the abdomen.

Rhinoplasty.—The case described by Chubb was a gunshot injury. The tip of the nose, the anterior part of the septum, and the whole of the columella had disappeared. The nasal bones were, however, intact, and the greater part of both alae were present, lying flat on the face. A transverse tubed pedicle from the left side of the chest, immediately below the breast and a piece of cartilage taken from the junction of the sixth and seventh ribs, shaped to correspond to a plasticine reconstruction of the patient's nose and inserted beneath the skin at one end of the pedicle, were used in the restoration of the nose.

Archives des Maladies du Cœur, etc., Paris

June, 1920, **13**, No. 6

*General or Local Arterial Hypertension. V. Cordier.—p. 241.
False Slow Pulse. M. Parvu.—p. 250.
*Signs of Degeneration and Regeneration of the Blood. J. Rieux.—p. 254.

Acrocyanosis.—Cordier has coined this term to express the localized arterial hypertension sometimes encountered in hands and feet. The acrocyanosis occurs spasmodically, but there is no livid appearance or trophic disturbance. In his twenty-three cases both hands were affected in the majority, but in four cases a single hand, and in one each the foot and hand on the same side or merely the nose and ears. A milk-vegetable diet seemed to be more effectual in arresting the tendency than local or other measures, as the primary cause seems to be some toxic action on the vasomotor centers. He adds, "This acrocyanosis marks the first phase of the evolution of the phenomena which we will be encountering in the next ten years. The generation that ten years from now will be 40 and 50 years old will present pathologic conditions in heart and kidneys for which we can retrospectively incriminate the intoxications, commotions, fatigues and latent infections of the campaign just ended."

Signs of Degeneration and of Regeneration of the Blood.—Rieux gives the "genealogic tree of the blood corpuscles," and explains how to differentiate between the signs which indicate degeneration and those which point to recuperation of the blood-forming apparatus. The latter group includes the normo-megaloblastic reaction, numerous relics of nuclei, and large numbers of basophil granular erythrocytes. These findings demonstrate that the bone marrow is still capable of producing blood corpuscles, and this task may be aided by appropriate treatment. Otherwise there is not much hope from any measures.

Bulletin de l'Académie de Médecine, Paris

July 27, 1920, **84**, No. 29

*Bacillary Diathesis and Histologic Bacillosis. M. Lenoble.—p. 65.
*Lumbar Puncture in Carbon Monoxid Poisoning. Legry and J. Lermoyez.—p. 67.

The Other Organs with Pulmonary Tuberculosis.—Lenoble inoculated guinea-pigs with tissue from the kidneys, liver, spleen and other organs from persons who had pulmonary tuberculosis in an apparently mild form. The results were positive in fifty-seven of the seventy-three tests, confirming the frequent impregnation of remote organs with the bacilli, and of specific phlebitis. This bacillary diathesis, as he calls it, explains the sudden death without an acute terminal syndrome in certain cases of pulmonary tuberculosis.

Lumbar Puncture in Carbon Monoxid Poisoning.—Legry and Lermoyez found almost pure blood in the puncture fluid, and polynucleosis which yielded to lymphocytosis. The man's wife and daughter showed only mild symptoms from the same exposure to the gas. The meninges in his case were evidently less resistant, as he had had epidemic meningitis and had been twice exposed to aerial concussion with unconsciousness each time. This and some other cases of carbon monoxid poisoning suggest the advisability of examining the lumbar puncture fluid for carbon monoxid in dubious cases. Any extravasated blood here is protected against oxygenation and may retrospectively sustain the diagnosis.

Bulletin Médical, Paris

July 24, 1920, **34**, No. 37

*Entero-Antigens in General Practice. J. Danysz.—p. 657.
Carbon Tetrachlorid in Surgery and Dermatology. E. Desesquelle.—p. 658.

Entero-Antigens in Medical Practice.—Danysz here brings down to date his account of his successful treatment of afebrile chronic diseases by means of cultures of nonpathogenic micro-organisms isolated from the intestinal flora and sterilized, with heat, ether or other method. The preparation that has proved most effectual contains two strains of colon bacilli and one each of the proteus, enterococcus, streptococcus and staphylococcus, but these proportions and the amounts differ when used for psoriasis, enteritis or asthma, etc. They are given by subcutaneous injection or by the mouth, and in his several thousands of injections he has never witnessed any dangerous reaction. We know now, he says, that antigens are capable of producing in the organism any of the pathologic manifestations which characterize all the known chronic affections. Also that the cell reactions induced by all the antigens (except the toxins proper) are all of the same nature. Consequently it follows that any and every chronic affection may have for its cause some anaphylactic condition of the organism. This being the case, there is a possibility that any chronic affection may be successfully treated by the so-called anti-anaphylaxis methods, that is, by antigens. Of all the nonspecific antigens used to date in the preventive or curative treatment of anaphylaxis (proteins, peptone, milk, autogenous and heterogenous serums, etc.) the antigens prepared with cultures of micro-organisms from the intestinal flora, the so-called entero-antigens, have displayed the greatest curative efficacy.

Bulletins de la Société Médicale des Hôpitaux, Paris

June 25, 1920, **44**, No. 23

*Blood Pressure in Hemiplegia. C. Mirallié.—p. 889.
*Slow Malignant Endocarditis. P. Lereboullet and J. Mouzon.—p. 894;
*Idem. C. Achard and J. Rouillard.—p. 910.
*Obliteration of Aorta. C. Achard, A. Leblanc and J. Rouillard.—p. 903.
Necropsy in Case of Congenital, Familial Ophthalmoplegia. O. Crouzon and others.—p. 915.
*Serotherapy of Gangrene of Lung. F. Rathery and F. Bordet.—p. 916.
*The Bladder Factor in Uremia. H. Dufour and Debray.—p. 920.
Lethargic Encephalitis. F. Widal and others.—pp. 922; 929.
Gaps in Stomach Shadow Independent of Ulcer or Cancer. F. Ramond and J. Serrand.—p. 926.
*Ureosecretory Index in Children. Apert and others.—p. 933.
Maximal Concentration of Urea in Two Children with Orthostatic Albuminuria. Apert and P. Vallery-Radot.—p. 937.
*Autohemotherapy in Angioneurotic Edema. E. Schulmann.—p. 939.
Spirochetal Jaundice in Egypt. A. Valassopoulo.—p. 942.
*Typhus. Glatard.—pp. 944; 948.

Blood Pressure in Hemiplegia.—Mirallié has been recording the blood pressure on both sides in sixteen women and four men with hemiplegia for from seven months to thirty years. The maximal pressure was lower on the paralyzed side, but the minimal was alike on both sides. The edema on the paralyzed side is explained by a latent or imminent edema developing in a region of lesser resistance. The primary cause is to be sought in the heart or kidneys.

Meningitic Form of Slow Endocarditis.—Lereboullet and Mouzon reproduce the necropsy findings in the case reported. During a recurring attack of febrile rheumatism, signs of general infection developed, with symptoms suggesting meningitis, fatal in less than five months. The meningeal symptoms had been misleading, suggesting syphilitic meningitis or acute tuberculosis, but necropsy revealed the slow malignant endocarditis as responsible for the meningeal reaction, showing vegetations in the heart of long standing.

Slow Malignant Endocarditis.—Achard and Rouillard report a typical case and another with certain unusual features. In this the first symptoms had been those from an infarct in the lung with pleural effusion, but they soon subsided. This occurred abou a month after delivery of a healthy child. Six weeks after apparent recovery, symptoms of general infection developed, and the woman died in less than five months. A staphylococcus was cultivated from the blood on two occasions; two other attempts gave negative findings, but this is not surprising as the special streptococcus of slow malignant endocarditis is difficult to find and to cultivate.

Obliteration of the Aorta.—Achard reports three cases of obliteration of the thoracic or abdominal aorta from embolism or thrombosis. The gravity of the prognosis with obliteration of the aorta commands operative intervention at once, but these cases were seen too late for operative relief.

Recovery Under Serotherapy of Gangrene of Lung.—Rathery and Bordet injected a polyvalent antigangrene serum in a man of 61 with a gangrenous process in the left lung, utilizing the intratracheal, intravenous and intramuscular routes, supplemented with antistreptococcus serotherapy. When the gangrenous process had entered the subacute phase, the intratracheal medication could be pushed; before that it had induced dyspnea.

Uremia from Retention in Bladder.—The outlook in cases of uremia from mere retention of urine in the bladder is naturally favorable if the bladder functioning can be restored. In the case of sclerosis in patches reported, the nitrogen content of the blood was 4 per cent. but as the urine was drawn twice a day, this dropped to 2 per cent. in a week. One day when the urine had not been drawn for twenty-five hours, the uremia rose the next day to 3 per cent. In tabes, hysteria and other affections accompanied with retention in the bladder, a kidney lesion need not necessarily be assumed on account of the discovery of uremia.

Ureosecretory Index in Children.—Apert and his co-workers report experiences which testify that the Ambard constant is applicable to children, as well as to adults, if the weight is taken into account. It shows that the essential characteristics of the kidney are the same in children and in adults. Their average from fifty child cadavers is tabulated for each year of age. The Ambard formula should be corrected by multiplying by 1.29 for a child from 1 month to 10 years old. The ratio between the total weight and the weight of both kidneys averages 9.45 instead of the 5.60 of the adult. Hence the $\frac{70}{P}$ of the adult should be $\frac{70}{P} \times \frac{5.60}{9.45}$ which equals $\frac{70}{P} \times 0.60$, and $\frac{\sqrt{70}}{\sqrt{42}} = 1.29$.

Autohemotherapy of Angioneurotic Edema.—Schulmann relates that discovery of a transient phase of hemolysis, the *crise hémoclasique*, in a number of cases of Quincke's disease has confirmed its analogy with other affections in which anaphylaxis is a factor, and treatment on this assumption is proving successful. He applies it in the form of autohemotherapy, drawing 2 c.c. of blood into a syringe from a vein at the bend of the elbow, and he reinjects the blood into the neighboring subcutaneous tissue, merely drawing the needle out of the vein and pointing the tip in another direction in the tissues of the arm. He has made hundreds of these injections and never had a mishap, but the desensitization may take up to two months, although there is relief almost from the first. Three typical cases are described; one woman of 31 had been subject to attacks of angioneurotic edema since before puberty, returning at different points and lately becoming more frequent and lasting for three or four days. She was given three injections a week and by the end of the third month the tendency seemed to have been arrested. She returns every three or four months to have a few injections of the kind made. In another case the attacks had been recurring every two or three days during the six months following a childbirth, and they were accompanied with headache and urticaria. There has been no recurrence during the year since the course of thirty-five injections.

Typhus.—Glatard has been through a recent epidemic of typhus at Oran. The death rate was 22 per cent. in his 206 cases. He emphasizes that congestion of the conjunctivae is a constant and very early symptom of the disease. The eruption was rarely petechial, and could not be blanched by pressure. The disease seems to strike the myocardium and the nervous system above all, which explains the collapse and the meningeal reactions even into convalescence. He gave hexamethylenamin by the vein in 114 cases, a total of 333 injections, and the mortality in this group was only 14 per cent. instead of the 29 per cent. in those not given this treatment. It accelerates defervescence and increases the diuresis, but it is futile to give it after defervescence. The weakness of the heart at this stage is best combated with camphor, strychnin or sodium nucleinate.

Journal de Chirurgie, Paris

1920, **16**, No. 3

*Arteriovenous Anastomosis for Gangrene. M. Roussiel.—p. 257.
*Torsion Arthrodesis for Drop-Foot, etc. R. Toupet.—p. 268.
Hydatid Cysts in Brain. P. Lombard.—p. 278.

Arteriovenous Anastomosis for Gangrene.—Roussiel has sutured the artery to the vein in three cases and has compiled a total of sixty from the literature. In the fifty-two cases in which the gangrene was fully established, the outcome was favorable in only a very few instances, but in the eleven cases with only incipient gangrene, the operation was a complete success in five, that is, in nearly 50 per cent. He urges practitioners to call in the surgeon on menace of gangrene, without waiting until it is firmly established, and describes the technic with illustrations, summarizing the cases with favorable outcome. The operation should not be attempted in the aged, nor with infection of the necrosed tissues, nor with thrombosis in both femoral artery and vein and in the internal saphenous vein.

Arthrodesis for Drop-Foot.—Toupet gives the minute details of his method of driving an autogenous bone peg slanting through the astragalus down into the tuberosity of the fifth metatarsal bone, which serves as a kind of abutment. The tunnel bored for the peg starts a little inside the median line in the astragalus.

Lyon Médical

July 25, 1920, **129**, No. 14

Automatism of the Heart. J. Mollard.—p. 605.

Presse Médicale, Paris

Aug. 4, 1920, **28**, No. 54

Comparative Merits of Arsphenamin and Mercury. R. Sabouraud.—p. 533.
Chronic Intestinal Stasis. A. Hadgès.—p. 534.

Revue de Chirurgie, Paris

1920, **39**, No. 4

*Wounds of the Heart with Tardy Symptoms. P. Mocquot and H. Costantini.—p. 257.
*Intravenous Injections of Blood, Plasma or Gum Solution. M. Barthélemy.—p. 271.
Primary Sarcoma of Rectum. N. C. Lapeyre.—p. 281. Cont'n.
*Traumatic Drop in Blood Pressure. E. Quénu.—p. 304.

Wounds of the Heart.—Mocquot and Costantini refer in particular to a secondary hemopericardium which does not become apparent until some time after the injury of the heart. They describe eleven cases, and specify that it is always the region of the ventricles which is the seat of the wound in these cases, the walls being so thick that the clot may plug the hole and heal spontaneously. If the clot becomes dislodged, hemorrhage occurs after a shorter or longer symptomless period.

Transfusion of Blood, Serum or Gum Solution.—Barthélemy summarizes the results of his experimental and clinical experience in the statement that transfusion of whole blood may be required when the corpuscles are suffering, and also in infectious diseases, but transfusion of the serum alone seems better adapted for certain infectious conditions when the shock therefrom is liable to prove of advantage. But intravenous injection of a gum-saline solution is directly indicated in all cases in which the blood pressure has to be raised and sustained, as also in all cases of acute anemia and traumatic shock. He says that to prepare the gum saline, commercial gum acacia is preferable as it contains small amounts of calcium and potassium. By weight, 60 gm. are melted in the water bath in a 9 per thousand solution of sodium chlorid and enough of the latter added to make 1 liter, and the whole is sterilized in the incubator. This fluid does not modify the blood corpuscles, nor induce any reaction to alien albumin as it does not contain any protein, and it has the enormous advantage that it can always be prepared in advance. His dogs exsanguinated until they had lost from 60 to 72 per cent. of their blood, were recalled to life by injection of this fluid by the vein, although artificial respiration had to be kept up for from ten to twenty minutes before the heart began to beat again. It had a similar effect in a man with acute anemia from wounds in both femoral arteries. He was kept alive with ordinary solution of sodium chlorid while the gum solution was being prepared.

Traumatic Drop in Blood Pressure.—Quénu enumerates the dire results liable to be entailed by the lowering of the blood pressure, inducing secondary disturbances to aggravate the condition still further, adding that the various measures that have been applied act on the symptoms but often do not attack the cause promptly enough, the sources of the toxic action. The factor, intoxication, predominates over all the others, and unless this can be suppressed, transfusion and gum solution, etc., are powerless.

Revue Neurologique, Paris

March, 1920, **27**, No. 3

*Sympathetic Disturbances in Arms with Low Spinal Cord Disease. J. A. Barré and R. Schrapf.—p. 225.
*Palm-Chin Reflex. G. Marinesco and A. Radovici.—p. 237.
Isolated Neuritis of Motor Branch of Trigeminal. K. H. Krabbe.—p. 241.
*Rare Localization of Tetany in Adult. V. Cordier and A. Gonnet.—p. 244.
Simulation of Insanity Revealed by Photographs. E. Gelma.—p. 251.

Nervous Disturbances in Arms with Low Spinal Cord Lesions.—Barré warns that sensory, motor and vasomotor symptoms in the arms frequently accompany injury of the middle or inferior portions of the cord, and explains the mechanism.

The Palm-Chin Reflex.—Marinesco and Radovici describe what they call a new skin reflex, a slow and lasting contraction of the muscles of the chin on the side on which irritation is applied to the palm with a pin, or simply stroking the thenar region.

Tetany in One Leg.—Cordier and Gonnet present arguments to prove the correctness of their diagnosis of tetany in the case described in a man of 67. The transient attacks of painful contraction in the left leg had recurred at times during five years. Before this there had been similar attacks in the fingers.

Schweizerische medizinische Wochenschrift, Basel

May 20, 1920, **50**, No. 21

*Adaptation of Free Flagellate to Parasitism. B. Galli-Valerio.—p. 401.
*Trauma of Lower End of Femur. R. Schweizer.—p. 402.

Cycle of Evolution of the Herpetomonas Pyrrhocoris.—Galli-Valerio relates that he has traced the cycle of development and transformation of a flagellate from a plant in and through a certain insect. He found that the bacteria from insects seemed to be more pathogenic for cold-blooded vertebrates than for the warm blooded, and adds that Metalnikoff has recently reported that the caterpillars of *Galleria melonella* are extremely resistant to the most dangerous pathogenic bacteria from the higher animals, while they are susceptible to saprophytes.

Injury of the Lower End of the Femur.—Schweizer refers to the small roentgen shadows often seen in the lower end of the femur after injury of the knee, and explains how they may be traced to a number of conditions, but none serious. Under brief repose, moist heat, massage, superheated air, and exercise, normal conditions are usually soon restored.

June 3, 1920, **50**, No. 23

Appendicitis, Season and Weather. J. Dubs.—p. 441.
Lethargic Encephalitis. T. Tobler.—p. 446. Conc'n in No. 24.
Hops in Therapeutics. F. Krapf.—p. 453.

July 15, 1920, **50**, No. 29

Illumination for Ophthalmologic Examination. A. Vogt.—p. 613.
*Placenta Praevia. A. Wächter.—p. 618.
*Venereal Patients' Disregard of Directions. G. Peter.—p. 623.

Placenta Praevia.—Wächter states that at the Zurich maternity there was one case of placenta praevia to 107 childbirths 1888-1907; since then 1 to 125, and during the war years, 1 to 238, a total of 300 cases. The maternal mortality has dropped from 7.6 per cent. to 3 while the mortality of the children was 74.8 per cent. He analyzes the outcome with the fourteen different measures applied in different cases.

Venereal Disease.—Peter has been following up 1,000 patients who had been under treatment for venereal disease at the free dispensaries, and draws a gloomy picture of the heedlessness and lack of perseverance of the overwhelming majority, and their careless spreading of infection and disregard of all warnings and admonitions as to the danger for themselves and for others.

Annali d'Igiene, Rome

January, 1920, **30**, No. 1

*Mutation of Bacilli. F. Sanfelice.—p. 1.
*Serologic Research on Meningococci and Gonococci. P. Calderola.—p. 7. Conc'n in No. 2, p. 108.
Amebic Dysentery. C. Vallardi.—p. 18. Conc'n in No. 2, p. 128.
*Research on Phagocytosis. J. Irala.—p. 28.
Lead in Drinking Waters. A. Scala.—p. 35.
Epidemic Encephalitis. G. Sampietro.—p. 45.

Mutations in Acid-Resisting Bacilli in Passages Through Animals.—Sanfelice's experimental research was with an acid-resisting bacillus cultivated from cases of glanders in man and horses. By passage through laboratory animals, he found that the bacilli adapted themselves to parasitic existence and could not be cultivated thereafter except at body temperature, while they finally assumed the shape and culture characteristics of tubercle bacilli. It is too early yet to learn whether these mutations are transient or will prove stable.

Serologic Research on Meningococci, Parameningococci and Gonococci.—Calderola concludes from his extensive experiments that agglutination can be relied on to distinguish the strain of meningococci responsible for an epidemic, and that the special antiserum for this strain is imperative in treatment, as antiserums for other strains are much less potent. A polyvalent antiserum should be used only until it is possible to obtain the specific antiserum for the strain causing the special epidemic.

Research on Phagocytosis.—Irala experimented with the staphylococcus, and reports that the ultraviolet rays promote the phagocytic action of the leukocytes at first, but with prolonged exposure phagocytosis is arrested, as the leukocytes are damaged. Calcium chlorid seems to promote phagocytosis if the bacteria are dead, but checks it if they are alive. Solutions of lactic acid in strengths of from 0.05 to 0.5 per cent. also check phagocytosis; this may be one of the factors in reducing the resisting powers during fatigue. Infection may develop from inoculation of animals with certain bacteria, harmless for the controls, if a little calcium chlorid is injected with the bacteria, as this inhibits phagocytosis of living bacteria. As the ultraviolet rays in small amounts promote phagocytosis, and at the same time modify bacteria, the latter thus fall an easier prey to the phagocytes.

Policlinico, Rome

July 12, 1920, **27**, No. 28

Determination of Blood Groups. G. Egidi.—p. 723.
Early Diagnosis of Tuberculosis. M. Borgogno.—p. 726.
Dysenteric Liver Abscess. A. Sala.—p. 729.
Iodin in Abortive Treatment of Paronychia. M. Gioseffi.—p. 730.

July 19, 1920, **27**, No. 29

*Subcutaneous Tests of Organ Extracts, etc. M. Ascoli and A. Fagiuoli.—p. 755.
*Antihemolysins in Urine. L. Condorelli.—p. 757.
Torsion of Greater Omentum. R. Cinaglia.—p. 758.
*Hemorrhagic Nephritis and Alcohol Intoxication. B. Masci.—p. 761.

July, 1920, **27**, Medical Section No. 7

Recent Progress in Malaria. T. Pontano.—p. 225. Conc'n.
Pernicious Malaria. C. L. Rusca.—p. 256.

Subcutaneous Injection of Organ Extracts, etc.—Ascoli and Fagiuoli report that injection of an organ extract under the epidermis induces more of a local reaction than a similar injection of water, but the effect seems to be the same with thyroid, ovary and other extracts. The effect differs however when one of these extracts is added to a solution of epinephrin. It reenforces the epinephrin so that one fifth elicits the same reaction as the full dose without the thyroid. Other organ extracts, with the exception of pituitary, inhibit instead of reenforcing the action of the epinephrin. They describe further research with various drugs, etc., showing that they can be grouped by the edematous reaction to subepidermic or subcutaneous injection, especially the alkaloids, pilocarpin, etc. This response seems to differ characteristically in asthma and certain other pathologic conditions.

Hemolysins in the Urine.—Condorelli's research has failed to confirm Amati's statements in regard to the ureohemolytic index, that is, the proportion of distilled water that has to be added to certain urines before hemolysis occurs.

Hemorrhagic Nephritis.—Masci reports, as he says, *horresco referens*, the cure of hemorrhagic nephritis, in a man of 42, rebellious for over four months to prolonged classic medical treatment. Then the man gave up hope and turned to liquor, drinking 2½ liters of white wine in three hours. The reaction was intense, with cyanosis, suffocation, cold sweats, profuse hematemesis, and anuria for twenty-four hours. The prostration next day was extreme, with hematuria, but in ten days the urine was normal, and there have been no symptoms since, the man resuming his military service at once.

Tumori, Rome

1919, **7**, No. 1

*Peritoneal Transmission of Mouse Cancer. G. Grosso.—p. 1.
*Deep Lipoma in the Thigh. A. Borzini.—p. 28.
Resection of Stomach for Cancer. G. Perez.—p. 43. Cont'n.

Transmission of Mouse Cancers.—Grosso's report of his extensive research on mouse cancers is accompanied with six large plates, showing the results of his attempts to induce metastasis by intravenous injection or other means. His aim was to induce production of metastasic tumors in other organs, without direct injury of these organs, after intraperitoneal inoculation of the mouse with the cancer cells. The positive results of his research may be summarized in the statements that it is possible to induce conditions so that scraps from a subcutaneous adenocarcinoma will develop in the peritoneum and may become very malignant and invade the pancreas, omentum, kidneys, liver, spleen, stomach, intestines or testicles. The tumor thus adapted to the peritoneum loses almost entirely its power of developing in the subcutaneous tissue, and only gradually reacquires it.

Deep Lipoma of the Thigh.—Borzini discusses treatment of primary tumors of the vessel sheaths in general, in connection with a personal case illustrated.

Revista Española de Obstet. y Ginecología, Madrid

March, 1920, **5**, No. 51

*Cancer of the Vulva. R. Becerro de Bengoa.—p. 97.
*Delivery of After-Coming Head. V. de Andrés Bueno.—p. 104.

Cancer of the Vulva.—Becerro's experience confirms the lack of benefit and even disastrous results from radiotherapy applied to vulvar cancer. Operative treatment has to be extremely extensive, following the lymphatics into the inguinal and femoral region, but it is not difficult nor dangerous, comparatively speaking. When the urethra is involved in the cancer, he treats this part of it with radium, as radiotherapy of the urethra has given good results, especially in the hands of Berven of Stockholm, while the incontinence that is left, after the lower end of the urethra has been resected, is more distressing, he says, than the natural progress of the lesion. The outcome has been very good in his three cases of cancer in the posterior region of the vulva; it extended into the vagina and was easily excised. The labia are the most frequent sites of the malignant disease, and the patients are comparatively young women. Epitheliomas in the posterior vulva are often secondary to malignant disease of the vagina, but tumors of this class are comparatively benign. There has been no recurrence in the four cases of the kind in which he operated six, five, three and two years ago. He describes the technic for vulvar operations, but without illustrations.

To Promote Delivery of After-Coming Head.—De Andrés gives six illustrations to show the technic he has applied in three cases, with gratifying results. The principle of the method is to exert traction on the lower jaw with the index and middle fingers introduced in the mouth, supporting the body of the child by the feet with the other hand. With this traction the occipitofrontal diameter is twisted around to correspond to the widest diameter of the pelvis. This allows the head to pass the superior strait, and this is accomplished still more readily if the head is slightly tilted. No traction on feet or shoulders or other manipulation is required with this maneuver, and if the pelvis and head are within normal size, extraction is easy and rapid. There is no need to change gloves, or sterilize the hands anew, as would be necessary if the hand had been applied to press on the abdominal wall, so that if there is excessive hemorrhage no time need be lost.

Semana Médica, Buenos Aires

May 6, 1920, **27**, No. 19

*Lethargic Encephalitis in a Syphilitic. E. Jeanselme.—p. 609.
*Tests for Tuberculosis. J. P. Garrahan.—p. 612.
Chemotherapy of Tuberculosis. C. Citrino.—p. 616.
Localization of Bleeding Point with Hemoptysis. J. F. Mieres.—p. 621.
The Physician of Tomorrow. M. Helman.—p. 621.
Sexual Chastity. L. Bard.—p. 622.
Treatment of Septicemias. A. Salvat y Navarro.—p. 625.
Differential Diagnosis of Apparent Death. J. Canseco.—p. 632.

May 27, 1920, **27**, No. 22

Tuberculin in Treatment of Ocular Lesions. S. Sánchez Gardel.—p. 707.
Anilids and Phenolanalids. J. A. Sánchez.—p. 712.
Case of Multiple Osteomas and Sarcomatous Epulis in Woman. A. Gutiérrez.—p. 715.
Injection of Mercury Cyanid. G. P. Goñalons.—p. 718.
Attenuated Criminal Responsibility. G. Bergmann.—p. 721.

Lethargic Encephalitis in a Syphilitic.—Jeanselme describes a case to show the close resemblance between the clinical picture of neurosyphilis and of lethargic encephalitis. In this case merely the fact that the patient was sleeping when Jeanselme made his rounds in the morning disclosed that the assumed cerebral syphilis was an attack of epidemic encephalitis in an old syphilitic.

Palpable Glands in Infants.—Hochsinger's sign of tuberculosis, that is, palpable glands in the side of the thorax, was found in all the infants examined by Garrahan, but only in eleven of the thirty-three was the tuberculin test positive. He regards it as instructive only when found on one side, and when inherited syphilis and the diatheses can be excluded. He reports negative results with Wildbolz' intradermal urine test for tuberculosis. (Mentioned in The Journal, Aug. 9, 1919, p. 456.)

Siglo Médico, Madrid

May 29, 1920, **67**, No. 3468

Herpes Zoster of Ear and Neck, with Peripheral Facial Paralysis. Mesonero Romanos.—p. 401.
*Serotherapy Accidents. F. Haro.—p. 405.

June 5, 1920, **67**, No. 3469.

*Hyperthyroidism and the Bloch Syndrome. C. Juarros.—p. 417.
The Clinic and the Laboratory. P. Luengo.—p. 418. Begun in No. 3468, p. 403.

Serotherapy Accidents.—On the basis of the fatal case recently reported by McCallum in which a child of 9 died after a preventive dose of diphtheria antitoxin, Haro warns that when there is anything to suggest vagotonia, a preliminary injection of epinephrin, pituitary, or other substance tending to depress the irritability of the vagi, should always precede the preventive or therapeutic dose of an antiserum or antitoxin.

The Bloch Syndrome.—Juarros describes a typical case of the clinical picture described by Bloch which affects mainly young widows and others whose sexual life has been suddenly transformed. He was impressed with the evidences of hyperthyroidism, and under treatment for this, normal conditions were promptly restored. Marañon has recently reported a case of the same aspect but with ovarian insufficiency predominating. This patient was unmarried and 39.

Beiträge zur klinischen Chirurgie, Tübingen

1920, **120**, No. 1

*Traumatic Segmental Vascular Spasm. H. Küttner and M. Baruch.—p. 1.
*Chronic Epididymitis. J. Dorn.—p. 25.
*Spastic Ileus. A. Sohn.—p. 45.
*Resection of Stomach for Cancer. W. Möller.—p. 65.
Traumatic Diaphragmatic Hernia. O. Orth.—p. 89.
Abdominal Wounds. H. Biesenberger.—p. 107.
Surgical Sequels of Influenza. F. Balhorn.—p. 141.
*Reconstruction of Esophagus. G. Axhausen.—p. 163.
*Correction of Deep Stenosis with Cold Cautery. M. Hofmann.—p. 196.
Polypous Sarcoma of Esophagus. M. Hofmann.—p. 201.
*Arteriovenous Anastomosis for Gangrene. H. Schloffer.—p. 215.
Patellar Tumors. Fr. Kaiser.—p. 239.

Traumatic Vascular Cramp.—Küttner and Baruch state that contraction of a segment of an artery after an injury usually calls for operation as the diagnosis is so uncertain, but it is transient and harmless otherwise. They encountered eight cases during the war, and warn against resecting an artery simply because it is not pulsating. The spasm may yield to a hot air douche or massage or hot water, or to atropin which paralyzes smooth muscle. The atropin might be injected into the artery above or be applied locally.

Epididymitis.—Dorn describes two acute, and eight chronic cases of epididymitis of nontuberculous origin. Staphylococci alone were found in the urine in two of the cases. The loss in weight and night sweats had suggested tuberculosis. The treatment need not be so radical as with tuberculosis.

Spastic Ileus.—Sohn reviews his experience with thirty cases of reflex or neurogenous spasm of the bowel confirmed by an operation. In one of his cases the spasm persisted for four weeks. There may be coincident paralysis of the segment above the contraction. Symptoms of hysteria or other nervous affection should be considered in the diagnosis, but an exploratory laparotomy is often advisable, if opium, atropin, morphin and lavage of the stomach fail to relieve.

Resection of Cancerous Stomach.—Möller reports survival for over five years of 10 per cent. of the 147 patients with gastric cancer given radical treatment at Lund since 1898. Omitting the cases in which death occurred from intercurrent disease after a free three year interval, the survival rate is 27.7 per cent. Of the total 501 operative cases the operative mortality was 21.1 per cent. The operative mortality after exploratory laparotomy alone was 16.8 per cent. in 125 cases, and after 220 gastro-enterostomies, 16.6 per cent.

Antethoracal Esophagus.—Axhausen reports four cases of irreparable stenosis of the esophagus from caustic action in which he tunneled a new esophagus under the skin of the chest. The technic and ultimate outcome are illustrated. The new esophagus answered its purpose perfectly in 59 per cent. of the cases, one man living in perfect health and comfort during the five years to date. The experiences are instructive in a number of points as Axhausen describes. The emaciation of the patient is no criterion as to the resisting power. One of his patients was a boy of 8 with a large thymus, and he succumbed to the effect of chloroform at the tenth sitting. Ether had been used in the preceding operations, and success seemed assumed.

Excision of Esophagus Stricture with Cold Cautery.—Hofmann introduced the de Forest cautery through the mouth and easily cut off the projecting shelf low in the esophagus.

Arteriovenous Anastomosis for Gangrene.—Schloffer declares that the numerous failures with Wieting's operation are due to its application to cases not suited for it. He describes the successful outcome for six years to date in a man of 30 with arteriosclerotic gangrene of both legs. His heart was sound, and there has been no tendency to edema at any time.

Deutsche medizinische Wochenschrift, Berlin

Feb. 19, 1920, **46**, No. 8

*Effect of Calcium on the Circulation. F. Kraus.—p. 201.
Pathology and Pathologic Anatomy of Gout. F. Munk.—p. 204.
Silver Arsphenamin and Sulphoxylate in the Treatment of General Paresis. F. Sioli.—p. 205.
*Treatment of Circumscribed Serous Meningitis. E. Schenk.—p. 209.
*Autovaccines in Treatment of Chronic Glanders. K. Zieler.—p. 209.
Temporary Blindness with Paralysis of Eye Muscles Following Carbon Monoxid Poisoning. G. Abelsdorff.—p. 210.
Treatment of Hay Fever. Heermann.—p. 211.
Laundering of Bed Linen as Cause of Itching. F. Bähr.—p. 211.
Suspensory with Double Girdle. L. Zippert.—p. 211.
Dermatologic Hints for General Practitioner. M. Joseph.—p. 212.

Action of Calcium on the Circulation.—Kraus reports research on guinea-pigs and rabbits which confirmed with the whole animal what others have determined with single organs in respect to the influence on the circulation of various combinations of electrolytes. He reproduces electrocardiograms under the influence of calcium by the vein, alone or with other drugs. Among the practical points suggested by his research is that "children's tetany" or spasmophilia is not restricted to children but probably occurs also in adults. Also that what we have been calling vagotonia is probably a disturbance in the normal combinations of electrolytes.

Successful Treatment of Circumscribed Serous Meningitis.—Schenk describes an operation on a man of 31 for an old shrapnel injury of the cervical spinal cord. To relieve the extreme pain in the left arm, which required increasing doses of morphin, laminectomy, with removal of the vertebral arches of C III-C VI, was done under local anesthesia by Braun's technic. Owing to injection of a novocain-epinephrin solution into the soft parts, hemorrhage was slight and could be easily controlled by compression. The dura, which presented, was highly inflamed and without pulsation. On being opened by a longitudinal incision with scissors, 30 c.c. of cerebrospinal fluid escaped under high pressure, the removal of the pressure causing the cord to begin to pulsate at once. The cord was covered with deposits and with inflamed and gorged blood vessels and patches and strands of pseudomembranes. All the adhesions and membranes—which were found extremely tough—were divided and removed. Probing the intradural sac upward and downward revealed no further adhesions, and the dura was closed by fine continuous silk sutures. Deep catgut button sutures united the musculature. The operation was well borne, and the patient began to improve at once. The following day the painful spasms in the left arm had almost disappeared. Whereas before the operation the arm could scarcely be touched without causing great pain, it could now be moved, and massage was begun. Later the sensory and motor phenomena from irritation retrogressed quite perceptibly. However, the injury of the motor nerves proved to be irreparable, so that full use of the left arm could not be regained. But the right arm could now be given intensive treatment and was soon sufficiently restored to be used considerably for most purposes and to a limited extent for writing.

Autovaccines in Treatment of Chronic Glanders.—Zieler recalls that chronic glanders of the mucosa in man is usually regarded as an absolutely fatal disease. His case, previously published, is the first case in which a cure was effected by autogenous vaccines. There had been no relapse up to three months when the patient was last seen. Chronic glanders confined to the epidermis often heals without treatment. The danger from contagion seems to be very slight, which accounts for the difficulty in successful inoculation of guinea-pigs.

May 13, 1920, **46**, No. 20

Appendicitis in Relation to Female Genital Organs. R. Jolly.—p. 537.
*Silver Arsphenamin and Treatment of Syphilis. F. Bering.—p. 538.
Mushroom Poisoning. G. Treupel and E. Rehorn.—p. 540. Begun in No. 19, p. 509.
*Roentgen-Ray Treatment of Surgical Tuberculosis. K. Stromeyer.—p. 542. Begun in No. 19, p. 514.
*Chondromatosis of Joint Capsule. F. Lotsch.—p. 544.
Urethral Calculi. G. Neugebauer.—p. 546.
Securing of Continence with Artificial Anus. Kurtzahn.—p. 546.
Rhinologic Hints for General Practitioner. G. Finder.—p. 547.
Pathologic Anatomy of Dysentery. H. Beitzke.—p. 548.

June 10, 1920, **46**, No. 24

Exotic Diseases and Mistakes in Diagnosis. P. Mühlens.—p. 649. Conc'n.

Friedmann Turtle Bacillus as Antigen. H. Selter.—p. 650.
Friedmann Treatment of Pulmonary Tuberculosis. A. Bacmeister.—p. 653.
Influenzal and Lethargic Encephalitis. C. Klieneberger.—p. 654.
Modification of Kjeldahl Test for Nitrogen. H. Citron.—p. 655.
Cascade Type of Hourglass Stomach. J. Schütze.—p. 656.
Dextrocardia with Supernumerary Vertebrae and Ribs. O. Schüssler.—p. 658.
Treatment of Neuralgia with Injection of Anesthetic under High Pressure. A. Poniemunski.—p. 658.
Treatment of Hemolytic Icterus with Collargol. A. Kirch.—p. 660.
Technic of Intravenous Arsphenamin Injections. E. Pilz.—p. 660.
Rhinolaryngologic Hints for General Practitioner. Finder.—p. 660.

Silver Arsphenamin and the Treatment of Syphilitics.—Bering is convinced that the toxic effects of silver arsphenamin are not increased by the simultaneous administration of mercury. He places silver arsphenamin on a par with arsphenamin, and thinks that the smaller dosage and the smaller arsenic content are to be favorably considered. Of 23 cases of secondary syphilis in which treatment with silver arsphenamin, exclusively, was carried out, 12 gave a negative Wassermann reaction for several months in succession, but in 11 cases the Wassermann reaction was still positive after six to ten weeks. Of 92 cases in which the combined treatment (mercury and silver arsphenamin) was given, 82 (94.6 per cent.) were negative for eleven months, while only 5 were still positive after three to four months.

Roentgen-Ray Treatment of Surgical Tuberculosis.—Stromeyer states that in young subjects roentgen-ray treatment offers excellent chances of success and usually gives much better results than surgical treatment. In older patients the prognosis is not quite so favorable, but this treatment should be tried, unless there are contraindications. In all cases in which operation is performed, unless a recurrence is out of the question, roentgen-ray treatment should still be given for prophylactic reasons.

Chondromatosis of the Articular Capsule.—In addition to fifteen cases gathered from the literature, Lotsch reports his own two cases of this rare joint disease, the first observations on which were published by Reichel in 1900. In Lotsch's first case a woman of 35 had had, for four years previous to her admission, a certain tenseness and slightly painful sensations in the left knee joint. A year after the first appearance of these symptoms, she could palpate a number of movable granules in the knee joint, which however caused her no inconvenience. A sudden fixation of the joint in a flexed position was the reason of her admission to the hospital. The roentgenogram showed numerous small shadows not sharply outlined. By means of arthrotomy a handful of small pieces of cartilage ranging in size from that of a grain of rice to that of a bean were removed, and the remaining small bits were washed out with sodium chlorid solution. The wound after primary suturing healed promptly. The evacuated bodies proved, on histologic examination, to be hyaline cartilage.

Münchener medizinische Wochenschrift, Munich

March 5, 1920, **67**, No. 10

*Sinking Velocity of Blood Corpuscles. F. Plaut.—p. 279.
Suggestions for Sensibility Tests. Sievers.—p. 282.
Roentgen-Ray Dosage and Effects in Twelve Different Internal Diseases. Klewitz.—p. 285.
Treatment of Syphilis with Arsphenamin Without Mercury. Nolten.—p. 287.
Kyphoscoliosis Following Tetanus. P. Spiess.—p. 288.
Dermatitis Caused by Imitation-Leather Sweatbands. Bettmann.—p. 291.
*Papulous Urticaria in Children (Strophulus). J. Schütz.—p. 291.
An Improved Type of Sterilizing Pipet. F. Mezger.—p. 292.
Value of Gymnastic Exercise for Convalescents. W. Smitt.—p. 292.
Diagnosis of Bronchopneumonia in Children. R. Drachter.—p. 293.

Characteristic Rate of Sedimentation of Blood Corpuscles in Citrated Blood in Nervous and Mental Disease.—Plaut has examined 220 cases of nervous and mental disease, including 48 cases of general paresis, 45 of dementia praecox, 34 of psychopathia or hysteria, and 24 of melancholia, in order to discover the relative rate of sedimentation of red corpuscles. He finds that in males the majority of cases of paralysis, syphilis and arteriosclerosis, on the one hand, differ from the majority of cases of psychopathia, melancholia, dementia praecox and epilepsy as regards the shorter period in which sedimentation of erythrocytes in citrated blood plasma takes place. It usually takes in paresis only one sixth of the time required in dementia praecox. Agglutination of the corpuscles is probably a factor in the acceleration of the sedimentation. As a rule, the differences in the degree of agglutination appear distinctly only under the influence of the citration and the concentration of the sodium chlorid solution. The phenomenon of acceleration of sedimentation is considered a pathologic sign, the definite significance of which has not as yet been determined. Sedimentation in women is more rapid than in men. Paresis in women shows a characteristic acceleration as compared with other diseases, but the rate here is less stable and is subject to physiologic influences, possibly menstruation among others. In pregnancy, sedimentation becomes even more rapid, which fact has diagnostic value.

Symptomatology and Etiology of Papulous Urticaria in Children.—Schütz has observed, during his long practice, that frequently strophulus and oxyuriasis occur together, or, if not simultaneously, that numerous strophulus patients have been treated at some other time, either later or earlier, for oxyuriasis. He has also noted that oxyuriasis and strophulus are most prevalent at the same age, and both show the same seasonal incidence. It was also found that therapy directed against oxyurids was also effective in relieving itching in strophulus patients. He points out that in early youth the hydrochloric acid content of the stomach is very slight, which furnishes a plausible explanation for the fact that both conditions are confined mainly to the young, since a strong hydrochloric acid solution may be expected to prevent an infection with oxyurids by mouth. Farinaceous food will usually favor the development of oxyurids. The low meat diet and the increased amount of farinaceous food during the war would explain the present greater prevalence of the two conditions.

Therapeutische Halbmonatshefte, Berlin

March 15, 1920, **34**, No. 6

*Treatment of Gangrene of Lung. W. Stepp.—p. 161.
*Treatment of Sprains. R. Wohlauer.—p. 164.
Internal Treatment of Gallstone Colic. E. Müller.—p. 169.
Gonorrheal Vulvovaginitis in Little Girls. H. Eyth.—p. 176.

Treatment of Gangrene of the Lung with Neo-Arsphenamin.—Stepp reviews the literature on gangrene of lung and finds that before operative treatment was introduced in 1901 the mortality under medical treatment was very high, possibly from 75 to 80 per cent. Under operative treatment the mortality has been reduced to 32.3 per cent. or, deducting the far advanced, hopeless cases, to 26.8 per cent. He has recently found neo-arsphenamin a very useful remedy in this disease. Acute cases, in which the gangrene was not preceded by pulmonary disease of long standing, seem to be best adapted to such treatment. The dosage varies from 0.3 to 0.6 gm. If the pus is not coughed up or if empyema is a complication, these conditions may possibly be regarded as contraindications to neo-arsphenamin treatment. More detailed knowledge of the indications and of the treatment in general will have to be gained by more extended experience. The gangrene followed pneumonia in one of the three cases reported; spirilla were found in the sputum in one case. In one man of 40 the sputum dropped from 225 c.c. to 0 in three days, the sixth day after the injection by the vein of 0.6 gm. neo-arsphenamin.

Treatment of Sprains.—Wohlauer analyzes a series of 300 sprains of ankle, knee, shoulder, spine, etc., treated during 1918 and 1919 in the surgical service at the Charité, Berlin. Since the advent of roentgenoscopy more accurate diagnosis and more enlightened treatment have become possible The principal differences of opinion have of late centered around the question of immobilization of the joint. Wohlauer has usually found massage and hot air treatment and active and passive mobilization sufficient to combat the results of hemorrhage, laceration of the tissues and stiffness. He thinks that massage at the outset should always be performed by the physician himself, as he can best judge as to the kind, duration and intensity of the massage needed. Later on the massage may be intrusted to masseurs or sometimes to the more intelligent patients. Active hyperemia from heated air aids materially in bringing about rapid resorption of the extravasated

blood unless the amount is too large. The application of active and passive mobilization requires much tact and judgment. The comfort of the patient must always be carefully considered, but it cannot be expected that such treatment will be absolutely painless. Here also the attending physician should not intrust the work to the personnel; at least, not during the early stages. Mobilization at the outset should be mild and conservative, so as to awaken the confidence of the patient. No severe pain should be caused, and after every sitting the patient should have a certain feeling of comfort in the joint, as also following massage and the hot air treatment. In seventeen of the 300 cases the shoulder was left stiff, and in three cases each, the elbow and knee. Against this complication the same triad may be successfully used. In a few cases it may be necessary to break up the scars and adhesions under narcosis, in which event all tendency to bruskness should be avoided. The severe complications of sprains—extensive laceration of the ligaments, capsule incarceration and displacement of the meniscus—require operative exposure, excision of the incarcerated portions and suturing of lacerations. The separation of bony parts is treated like a fracture.

Wiener klinische Wochenschrift, Vienna

June 10, 1920, **33**, No. 24

A Possible Oligodynamic Action at a Distance. W. Spät.—p. 509.
*Blocking of the Splanchnic Nerves. E. Paul.—p. 511.
*Chronic Stenosis of Larynx and Trachea. G. Hofer.—p. 515. Conc'n. Social Hygiene. L. Teleky.—p. 519; Comment, R. Grassberger.—p. 520.

Blocking of the Splanchnic Nerves.—Paul states that by blocking the splanchnic nerves by Kappis' technic intra-abdominal operations can be carried out without pain. The secondary effects are paleness of the face and marked acceleration of the pulse. Often nausea lasted some time, and occasionally the short duration of the anesthesia hampered the operator. It is possible, through excessive novocain resorption, for severe collapse to occur. In the case of debilitated persons, the operator should be especially careful to give as little of the anesthetic as possible and to use as weak a solution as will be efficacious. Paul has never observed any permanent injury from blocking the splanchnic nerves, but the conditions are such that great caution should be taken. In his twenty-five cases there was one severe collapse.

Operative Treatment of Chronic Stenosis of Larynx and Trachea.—Hofer cites several case reports and reaches the conclusion that chronic stenoses of the larynx and the trachea, especially those of traumatic origin, are, as a general rule, amenable to operative treatment. Extensive damage to the cartilaginous structure of the trachea may set limits to operative intervention. Where the limits lie must be learned by experience.

Zentralblatt für Chirurgie, Leipzig

June 5, 1920, **47**, No. 23

Brace for Treatment of Fractured Clavicle. S. Wideröe.—p. 562.
Operative Treatment of Carcinoma of the Lip. W. Peters.—p. 564.
*Parathyroid Implants in Postoperative Tetany. H. Jaeger.—p. 565.
*Effect of Ring of Local Anesthesia on Inflammatory Processes. E. Wehner.—p. 569.
After-Treatment in Suprapubic Prostatectomy. H. Schaedel.—p. 571.

Transplantation of Parathyroid Glands in Postoperative Tetany.—Jaeger reports two cases of postoperative tetany treated by transplantation of parathyroid glands from cadavers of new-born infants who had just died from asphyxia. In the first case transient relief was afforded by the operation, but the attacks returned after five days and death resulted the fifteenth day. In the second case the patient showed marked improvement the day following the operation, and for several days thereafter she felt better, but the symptoms reappeared soon. Better results were obtained with calcium lactate. He adds that it might be advisable when haste is necessary to combine parathyroid transplantation with calcium lactate, pushing the dose to 30 gm. a day by mouth and vein. He has realized very satisfactory results, in both postoperative and genuine tetany, with calcium lactate, a teaspoonful daily, fasting, the first week, then two, and then three teaspoonfuls the third week, and then reducing in the same way.

Ring of Local Anesthesia to Check Inflammatory Processes.—Wehner sought by anesthetization of the surrounding healthy skin to prevent further progress of the inflammation in erythematous erysipelas. For this purpose he used a novocain-epinephrin solution (1 per cent. novocain; 0.0004 per cent. epinephrin). The epinephrin was added with the view of prolonging the anesthesia. By this intracutaneous injection of the anesthetic solution he produced a continuous wall of wheals at the junction of the healthy and the inflamed skin. For control purposes a gap was left untreated in the wall. While he does not regard his experience as extensive enough to be conclusive, he nevertheless was convinced that in acute, serous inflammation of the skin, such as occurs in erythematous erysipelas, the inflammatory process may be checked by walling it in with a single application of local anesthesia. He cites some recent confirmatory evidence with war wounds, and Spiess' work in this line in 1906.

Zentralblatt für Gynäkologie, Leipzig

May 22, 1920, **44**, No. 21

Biologic Consideration of the Dosage in Combined Roentgen and Radium Treatment. L. Seitz and H. Wintz.—p. 529.
Spontaneous Rupture of Umbilical Vein. K. Kautsky.—p. 537.
*Paralysis of Oculomotor Nerve in Pregnancy. F. Bierende.—p. 539.

Paralysis of the Oculomotor Nerve in Pregnancy.—Bierende states that motor disturbances in otherwise normal eyes are among the rarer complications of pregnancy. He reports a case in a secundipara of 34 admitted to the hospital in a comatose condition due to eclampsia. The left eyelid drooped to the extent that the left eye was entirely closed, while the right eye was normal. There was complete paralysis of the left levator palpebrae superioris. The other eye muscles were not affected. A similar left ptosis had occurred during the first pregnancy, eight years previously. At that time there was no eclampsia. The paralysis had gradually retrogressed without treatment, and in three months after childbirth had cleared up entirely. Vision was not impaired during the state of paralysis. Also in the second pregnancy the ptosis had abated without treatment during the first few weeks following confinement. During both pregnancies severe headaches and vomiting had occurred throughout. Bierende regards both cases as due to a pregnancy toxicosis, of which the severe headaches and the vomiting were expressions. There were no signs of hysteria and there was no tendency to epilepsy.

June 19, 1920, **44**, No. 25

*Placentation in Extra-Uterine Pregnancies. F. Lichtenstein.—p. 657.
Lethargic Encephalitis. W. Benthin.—p. 673.
Pregnancy in Relation to Influenza. E. Martin.—p. 678.

Importance of Site of Placenta in Extra-Uterine Pregnancy.—Lichtenstein reports two cases of his own and analyzes the statistics of 223 extra-uterine pregnancies with a view to showing that in tubal and ovarian pregnancies the site of the placenta is of paramount significance. To designate different segments of the fallopian tube he uses the terms "acrotropic," "basiotropic," "centrotropic" and "equatoriotropic." He considers the body of the tube as the physiologic and anatomic base, although it lies higher in the human body than the tip, just as the fundus or base of the uterus and the base of the heart are higher than the cervix and apex, respectively. He finds that if the placenta is attached to the base, or the basiotropic segment, of the tube, the chances that the fetus will be carried to term, or at least past the fifth month, are vastly greater than if the placenta is attached to the apical portion, the acrotropic segment. He expresses the hope that in the future in all case reports of extra-uterine pregnancy the exact site of the placenta may be stated when possible.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

May 22, 1920, **1**, No. 21

*Placenta Praevia. K. de Snoo.—p. 1800.
Fibrillation and Flutter of the Heart. S. de Boer.—p. 1818.
Maclean's Method for Determining the Sugar Content of the Blood. R. Bahlmann.—p. 1829.

To Reduce the Mortality from Placenta Praevia.—De Snoo warns that with central placenta praevia there is often a kind of spur formation closing the entrance into the cervix from

above and thus impeding delivery. The cervix may be fully dilated below but this spur of mucosa and muscle has to be cut away before the fetus can be expelled. He recalls that the muscles in the cervix do not share in labor contractions; they are passive, and hence if there is hemorrhage from some erosion in the cervix, ergot and pituitary extract have no action on the muscles in this region and the bleeding keeps up unmodified. Even with cesarean section, bleeding at this point is not arrested by evacuation of the uterus above. He cuts away the spur impeding delivery, and runs a suture thread around the erosion or bleeding vessel, drawing up the thread and tying it. This is easily done when the erosion is on the posterior wall of the cervix, as has been the rule in his cases of the kind among his 137 cases of placenta praevia in the last five years.

He analyzes this material from various standpoints, calling attention in particular to the danger of infection of an erosion in the cervix. This is especially liable to occur when the external os is gaping, even in women who have not been internally examined. This is a further and extremely important argument against cesarean section: the women are already infected from some erosion in the cervix. The interval between the first signs of the bleeding erosion and the termination of the childbirth is a further important factor in the outcome. There was no morbidity among the 14 women who were delivered the same day that the hemorrhage appeared, that is, before any possible infection of the erosion had had a chance to spread. Only 2 had a febrile puerperium among the 42 delivered within three days, while 19 had grave purperal fever—fatal in 6—among the 86 not delivered till after a longer interval.

The children were delivered in good condition in 54.5 per cent. Over 93 per cent. were living of the children with spontaneous delivery, but only 59.1 per cent. after metreurysis and 47.6 per cent. after Braxton Hicks version. If metreurysis can follow at once after the first hemorrhage, before there has been a chance for infection to occur and to spread, the outcome for the children will be incomparably better. In conclusion, he warns impressively against internal examination when there is reason to suspect placenta praevia. He does not approve of boring through the placenta; it is better to detach the placenta, especially from the spur. If this starts hemorrhage, it can be arrested with the metreurynter. The placenta is more readily detached immediately after the metreurynter has been expelled than by waiting till after the child has been born, as the lower segment of the uterus then is relaxed. It takes very little time, so that the whole placenta can thus be separated, the membranes ruptured and the child extracted before it feels the lack of oxygen. If hemorrhage continues, he draws up the bleeding vessel with a suture thread or sutures any laceration or tampons.

Finska Läkaresällskapets Handlingar, Helsingfors

May-June, 1920, **62**, No. 5-6

*Influences Affecting Muscular Energy. D. Rancken.—p. 281.
*Bone Transplantation. R. Faltin.—p. 299.
*Diphtheria Infection of Wounds. Dora v. Wendt and G. Wallgren.—p. 307
Present Status of Knowledge of Puberty Process. A. de la Chapelle.—p. 316.

Influences Affecting Muscular Energy.—Rancken has been applying an instrument to measure and record the muscular energy. He reproduces a number of the curves obtained with this hand dynamograph in various subjects under varying conditions, and declares that the findings have raised a host of new questions of great theoretical interest and practical importance in regard to the response of the muscles to various influences.

Bone Transplantation—The fibula of a boy of 13 was resected for osteochondroma, and the gap of 8.5 cm. closed with an insert taken from the tibia of the other leg. Roentgen-ray examination six years later shows complete substitution of the transplant with solid new bone tissue. In thirty other cases of bone transplantation (war wounds) the primary results grew constantly better with wider experience. Even when there is suppuration, all hope need not be given up of the success of the transplantation.

Wound Diphtheria.—In one of the two cases reported, there were symptoms of severe toxic action from the wound diphtheria. Under neutral solution of chlorinated soda the wounds cleared up and promptly healed.

Svenska Läkaresällskapets Handlingar, Stockholm

June 30, 1920, **46**, No. 2

*Pathology of Icterohemorrhagic Spirochetosis. L. Pick.—p. 41.
Social-Anthropologic Research in Sweden. H. Lundborg.—p. 65.

Icterohemorrhagic Spirochetosis.—Pick discusses the etiology and the pathologic anatomy of Weil's disease and recent literature on the subject. Recent experiences have shown that this disease may lay the foundation for cirrhosis of the liver. He states that it has been impossible to detect with the microscope the spirochetes in the patient's blood, and attempts to inoculate guinea-pigs with organs from patients have also failed. Microscopic examination of the kidney tubuli is more likely to be successful, but even this may fail. This renders the more remarkable the swarming of the spirochetes in the blood, urine and organs of guinea-pigs inoculated intraperitoneally with 2 or 3 c.c. of defibrinated venous blood from the patient. The animal by the fourth to sixth day presents the clinical picture of the disease, and the pathologic findings are nearly identical with those in man. The necropsy differential diagnosis in human cases is facilitated by the microscopic destruction of erythrocytes in the meshes of the reticulum in the spleen and elsewhere in what he calls the "reticulo-endothelial apparatus of metabolism." This erythrorrhexis is extremely characteristic, and explains the anemia.

Ugeskrift for Læger, Copenhagen

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*Brain Tumors. A. V. Neel.—p. 867.
*Metabolism and Internal Secretion. N. R. Christoffersen.—p. 879. Begun in No. 27, p. 838.
Fatal Poisonings with Poppy Juice. I. Osiier.—p. 885.
Antipyrin Eruption. H. Boas.—p. 886.

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Lethargic Encephalitis. V. Scheel and others.—pp. 913; 924; 928; 929.

Brain Tumors.—Neel's five cases of brain tumors sustain his assertion that a previously healthy person does not suddenly develop "neurasthenia" or "hysteria" without some cause. One woman was long treated for "nervousness" until the abnormal aspect of the white corpuscles was noted. Her vague symptoms proved to be the premonitory signs of extensive metastasis in the bones from a mammary cancer which had been removed several years before. In two of his cases muscular spasms had preceded by almost six years other symptoms of the brain tumor. In conclusion he emphasizes the striking remissions liable in the clinical course of a brain tumor, and the importance of the state of mind. The roentgen rays may act by suggestion alone in some cases, but the benefit even from this may be far-reaching.

The Metabolism and the Internal Secretions.—Christoffersen tabulates the metabolic findings in three cases of extreme thyroid deficiency. They show that the elimination of sodium chlorid proceeds normally with thyroid deficiency, and even plus pituitary deficiency, if the suprarenals are intact. The elimination can be augmented by pituitary treatment but not by thyroid treatment. These and other data cited suggest that the suprarenals first, and next the pituitary, control the elimination of sodium chlorid (aside from heart and kidney disease). One of the patients studied was a dwarf, 45 years old. He had been of normal size at birth, but had at once developed gonococcus ophthalmia. The findings suggest deficient functioning of several of the endocrine glands, interfering with ossification and growth in general. The hip joints showed anomalies like those of the Calvé-Perthes disease, but the same findings were observed in other joints. Thyroid treatment was pushed, and the man of 45 showed marked improvement and grew 5 cm. taller, the roentgen rays demonstrating improvement in the structure and shape of the bones, hair and teeth, but the treatment had to be suspended on account of the great loss in weight. Biedl and Falta have also reported benefit from thyroid treatment in myxedema of twenty-five years' standing.

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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, No. 12 CHICAGO, ILLINOIS SEPTEMBER 18, 1920

OCCULTISM AND INSANITY*

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The times are out of joint. The world is not crushed or dismembered or otherwise in hopeless condition, and recovery from its injuries may be anticipated with the cheerful assurance that it will in time and in accordance with the laws of evolution be a better place to live in than ever. But it suffers from disarticulations resulting from the World War, and the interference with functioning is painful. Convalescence is even now established, and, though there are occasional symptoms of recrudescence, the ultimate prognosis is excellent.

One of the more troublesome symptoms of an as yet incomplete recovery is the still rising tidal wave of occultism and mysticism, the "psychic wave" of the lay press that appears to be approaching its apogee and will soon recede from the ken of the multitude—a wave that has caused and will leave behind it many intellectual wrecks.

History abounds with examples of similar waves, one of which without intended irreverence may be here recited. Eight hundred years B. C. the prophet Joel, who was apparently a psychiatrist of no mean ability, predicted "your sons and your daughters shall prophesy, your old men shall dream dreams, your young men shall see visions" (Joel II, 28). Eight centuries later, in 33 A. D., when at Pentecost the apostles were gathered together, "There appeared upon them cloven tongues like as of fire, and it sat on each of them," and "they began to speak with other tongues as the Spirit gave them utterance." Out of the babel of voices, many of the multitude which gathered to witness the strange spectacle recognized each his own language, "and they were all amazed and were in doubt, saying one to another, What meaneth this?" There were skeptics present even as unto the present time and the retort courteous was not lacking, for it is written: "Others mocking said, These men are full of new wine." There was also present some one to supply a metaphysical interpretation, for "Peter standing up among them" said, "These men are not drunken as ye suppose, seeing it is but the third hour of the day. . . . But this is that which was spoken by the prophet Joel," and he repeated the prophecy (Acts II). On the record of this gathering the so-called Pentecostal faith, Apostolic faith, Tongues of Fire, and various modifications have been founded. Any one attending a large meeting of these cultists cannot fail to observe among the devotees manifestations of hysteria, manic-depressive insanity, and other mental disorders.

For several years, mankind has been subjected to stresses unparalleled in the annals of history. The emotions and passions have been played on by mighty destructive forces set free by the Madman of Europe. Hatred, anger, fear, cupidity, jealousy, grief, love, courage, devotion, heroism, consecutively or alternately have been roused beyond the limits of the previously imaginable. Millions have died leaving more millions to mourn their loss. To many, support of poignant distress comes through faith in a Supreme Being and belief in a future life. Others, unable to endure the loss of loved ones and the delay in meeting them in the hereafter, seek communication with the departed and have evolved or found means which to them seem sufficient. Metaphysics, occultism, mysticism, telepathy, clairvoyance, mind reading, crystal gazing, fortune telling and miracle healing flourish. The ouija board, after a third of a century relegation to the attic, has returned to the living room, a monument to the longing and grief, credulity and stupidity of mankind. Scientists, pseudoscientists, amateur investigators, paranoiacs, charlatans, and quacks of every kind are busy, each in his own way trying to solve the mystery of a future life and of spirit communication or to take advantage, for mercenary or other reasons, of those who are honestly engaged in the sisyphean task. Multitudes have unmoored their barks and venture to ride the psychic wave. Some will escape harm, while others less fortunate or less capable will be grievously injured by their experiences.

The preceding is apropos of the fact that in every psychopathic clinic, in every court through which the insane pass, in every private office wherein they are served, are many commitments directly traceable to the practice in one form or another of black art. No one of experience will contend that spiritualism and clairvoyance cause insanity; but that they excite latent tendencies thereto and break down the frail barriers that exist in many minds between soundness and unsoundness is as plain as the results of the inevitable problem in multiplication.

No one can compute the total number of those who have succumbed, but that it is considerable will not be denied. Relatives of patients frequently are cognizant of the apparent cause of the mental collapse, and tell the examiners that the first noticeable symptoms of psychosis began with a visit to some spiritualist or to a theater in which some prestidigitator, telepathist and crystal gazer held forth. Alexander the magician boasts in his introductory lecture that his income is several times that of the President of the United States. He might with justice add that he leaves

* Read before the Canadian Medical Association, Vancouver, B. C., June 24, 1920.

behind him a host of victims for whom the state must care. He is an economic and social menace whom society with profit might suppress.

THE MENTALLY DEFECTIVE

In every community of size there are many who tread the narrow and devious borderland that exists between sanity and insanity. Roughly, three in every thousand of the population in the United States are confined in some institution, public or private, for the insane. In 1910, at the time of the last census, in New York State the number was one in 321; in Oregon at the same time, one in 354. In some other states the number was considerably less, though it is probable that this was, and, since similar conditions remain, is, the result of a lower standard; which means that in certain communities demented and feebleminded persons are tolerated at large who in more advanced communities would not be so tolerated. There are many communities in which an alienist could recruit the personnel of an asylum of goodly size without exhausting the possibilities or stretching present scientific or socio-economic standards.

For every person confined in an institution for the insane, one or more candidates are at large ready to discard inhibitions and yield to impulses that will sway them into the realm of recognized insanity. To these may be added a still greater number of persons who, though not definitely destined to mental breakdown, are yet possessed of constitutions which lack strength and endurance, who get on well enough as long as they are protected from stress and strain and are not taken out of the ordinary routine of life. The operations of draft and advisory boards revealed large numbers of mentally defective youths, often in unexpected places. Some were screened out, but many passed through the sieve, to break with the first unusual experience in camp. Some, less susceptible, got overseas, to break under the greater strains of the battlefield. The prototypes of all these are with us always, protected in one sense or another by society, kept within bounds that mark the limits of safety. They are potential victims of insanity which may assume almost any form.

But adolescence does not furnish all the recruits for the psychopathic hospital. Every age furnishes its quota, with an increase at the climacteric and another marking senescence. Modifications of phenomena are materially influenced by age and the curious stresses of social and economic life which vary so greatly with the time of life.

REFUGE IN THE OCCULT

Among the symptoms of incipient insanity are discomforts, paresthesias, unexplainable phenomena within and without the body, the results of physiologic or pathologic commotions too often not definitely understood even by physicians. The conception of the nervous system as a complicated electrical apparatus may give some clue to the origin of such somesthetic disturbances. Faulty innervations and insulations may cause nerve currents to go astray and register on centers for which they are not intended, creating disorderly results. Victims try to analyze these sensations and, failing to determine their origin in physiologic activities, seek explanation in environment, and finding none, look for it in some mysterious force or agency, the more mysterious the better. Every decade adds some new force on which to draw. Religion and religious persecution, spirits, secret societies, spies, electricity, detectives, dictaphones from time to time rule the stage and occupy the spotlight. Quite normal sounds, sights, odors and tastes are misinterpreted and ascribed to mysterious origins. Voices from unknown sources torture or less often pleasantly assail listening ears. Poisonous substances get into the food or air to work upon the respiratory passages. Smiles of friends or strangers become malevolent grimaces, and on every side normal conduct is misinterpreted and misconstrued. The interpretation placed on these phenomena varies with the age, environment, social status and education of the afflicted individual. So far as occultism is concerned, oddly enough, young men and women seldom attempt to explain mental disturbances as due to spirits, or appeal to spiritualists for help in their afflictions. Many, however, have sought the ouija board with disastrous results.

Older persons suffer from stresses incident to economic and social problems. They are fortified in part by the fact that they are in the prime of life and passing through the period when they are best able to withstand shocks and disasters, the constitutionally and mentally inferior having been weeded out by the processes of time. They bear their burdens better than such burdens are borne at any other age, but, conversely, their burdens are often heavier than at any other age. With the midforties comes the climacteric in women and a few years later a process closely resembling it occurs in men. At this time, when physical and mental strains are at their peak and resisting power is diminished by the beginning of involution, mental disorders are proportionately more frequent than at any other period, unless it be the period of adolescence. Peculiar characteristics often attach to such disorders at this time. One of the commonest has to do with misfortune to the children, who now are themselves passing through the strains of adolescence. Grief and disappointment are common emotional phenomena from which relief may be obtained by visitations to the church, to the physician or to the divorce court. Not least among the agencies which such distressed persons seek are the spiritualists and clairvoyants in the hope that some message may come from the dead or those who have strayed away. As a consequence mild, vague, depressive delusions and hallucinations, through appeals to the mysterious, become firmly fixed, paresthesias are accredited to supernatural forces, and the patient is on the way to a psychopathic hospital.

Now comes the beginning of physically degenerative changes. The "lean and slippered pantaloon" is oft the habiliment of a body surmounted by the arteriosclerotic brain and the atrophic cortex. Memory is confused, the power of attention and the ability to register impressions gradually lessen. Percepts assume the characteristics of the fadeaway in a cinematograph, slight speech difficulties develop, associative processes are blunted, momentary attacks of disorientation and aphasia manifest themselves. Griefs that in younger life would have been successfully withstood become unbearable. Stored up memories are projected into consciousness. The fluttering of an ear drum and the development of tinnitus assume the characteristics of spirit voices. Auditory and other hallucinations and illusions, which may have been present but controlled for many years, now gain control as the changes of senile dementia slowly and insidiously develop. When

these processes affect obscure, unimportant persons, and develop characteristically, they are well understood and excite no special comment. But when they are atypical, when perhaps only a few symptoms develop, such is not the case. Coincidently the brain may seem to function well in other matters, causing a false valuation to be placed on the aberrent phenomena. A great scientist, a great writer may be the victim. Needless to state, such a one is not satisfied to accept unquestioned the phenomena which, arising from his subliminal consciousness are not explainable through previous experience or teaching. He investigates, but being no longer able to register impressions with the receptivity of youth, is easily deceived and becomes a willing prey for charlatans. Conviction follows experiences that could not have deceived him in younger life, and a spiritualist emerges from the beginning intellectual wreck.

If he possesses ability as a teacher and leader, he is certain of a following. Other persons, senile or presenile or whose minds are troubled and who cannot explain the curious phenomena that beset them, accept the teachings of such presumably intellectual instructors. Every generation has its quota of false prophets who have hosts of panacea-seeking followers. The number of leaders and victims is multiplied by crises in the history of the world or the nation. The present furnishes more than any past age for the reason that the present is more full of grief-stricken people than any other time in the world's history has been, more doubt and anxiety exist in regard to the future life than in any past age, there are more complexities and confusions even in orderly lives and, most important, there are more means of spreading information, false as well as true, than the world has previously witnessed.

Spiritualism appeals to the middle aged and aged more than any other form of occultism. Its practitioners supply the pabulum which sick minds most desire. Wishes are fulfilled, longings gratified, hopes encouraged; and those who lack the fortitude to endure distress without assistance find in it promises as alluring as are the promises of the pot of gold at the end of the rainbow to the confirmed investor in oil wells and mining stocks. Their satisfaction is similar to that of the child who finds surcease from the pains of physical discipline in the saccharin properties of an all-day sucker.

The ouija board interests and presents a special appeal to people of every age. It is inexpensive, it requires no such elaborate settings as surround the spiritualists, and it lends itself to the will and desires of the individual. It may be induced to give messages responsive to the imaginings or yearning of its victims. It supplies in a way the wish fulfilment of the Freudians. It is not a new device. In the eighties it was commonly in evidence, but its use was discouraged, more especially by the Roman Catholic Church, and it gradually disappeared except from a few households. As this is being written,[1] the department stores are unable to supply the demand for it, and newspaper accounts of ouijamania daily appear. Whole families are reported to have been adjudged insane from its use, though it is doubtful whether such patients are really more than hysterical. It appeals to the weak, easily led and mentally subnormal. Sound minds cannot use it, unsound ones should not be permitted to do so. Its victims are numerous, but most of them will recover after a brief sojourn in an institution for the mentally disordered.

Of the lesser manifestations of the psychically troubled world, none shine more resplendently than the miracle healers who believe that God has given them special healing powers and that they are able to heal as Christ healed by the laying on of hands. It is curious that their pretensions have been supported by clergymen of influence, who appear not to realize that they themselves possess healing powers and that such healing is not uncommon in every consulting room of priest or physician, with the great difference that neither priest nor physician acribes to occult forces results which are due to well understood mental processes. The moment "cures" are ascribed to mysterious agencies, they may be classed with the cures of the witch doctor. It is small matter that the latter achieves his results mainly through fear. In either case the results are products of incantations, and present day miracle healing is but a twentieth century adaptation of healing methods that have for centuries flourished among savage and barbaric races. The person who believes that such processes cure disease will subscribe under proper circumstances to the belief in the reverse processes that disease can be caused by evil spirits. There are two classes of these healers—the sincere healer and the faker. The former are mainly rudimentary or undeveloped paranoiacs who, if not destroyed by intercurrent disease, will eventually become prophets or Messiahs. Not infrequently victims of paranoid dementia praecox develop such beliefs, but they endure for only a short time, as the disease is more rapid than is the course of the paranoiac or paranoid cases. Every student of psychopathology can recall a number of persons, many of whom founded religious cults and passed through similar processes often lasting many years, to succumb as dements.

Nothing here said is designed to detract from belief in a future life. Such belief is solacing, has noble and inspiring possibilities, and there is no proof that it is not based on truth.

> Still seems it strange that thou shouldst live forever.
> Is it less strange that thou shouldst live at all?
> *This* is a miracle and *that* no more.

No sane person denies the benefits of healthy religious inspiration, nor that courage, cheerfulness, willingness to see the bright side of life are helpful, and the reverse harmful. He is quite as much in error who denies the existence of the unpleasant and painful as is he who manfactures disorder through his imagination. Recourse to the supernatural works both ways from the truth, and is practiced by both types of mind. No one has proved that he has communicated with those who have gone before. Conversely, the vast preponderance of evidence indicates that fraud or psychosis is responsible for such evidence of communication as we have.

> I can call spirits from the vasty deep;
> Why, so can I: or so can any man.
> But will they come when you do call for them?

HOW WE CAN HELP

It would be useless to discuss occultism and its baneful influences without appending some constructive thought. To quote again, "Men and brethren, what shall we do?" How can we help? Primarily by recognizing not only the dangers but the self limitations of occultism, realizing that mind or consciousness is essen-

1. March, 1920.

tially sound and that the tendency toward health is quite as much a part of nature's scheme of mind as of body. Indeed, that mind, whether it be a product of brain activity or uses the brain as an organ on which to play, is harmonious or otherwise according to the perfection of its instrument. Mayhap there are even psychic opsonins and leukocytes to fight and win the victory. Whatever the weapons, it is certain that the wave will recede as all similar waves have receded. It will destroy few who are naturally sound in mind, and those whom it engulfs are almost certain to be predisposed to some form of psychopathy. Those who hear spirit voices are victims either of fraud or of auditory hallucinations, which is but a step toward insanity. Some who suffer from hallucinations control them and remain at liberty unsuspected often for many years. Others have to be cared for to prevent them from doing harm to themselves or to the community in which they live. The latter are insane in the lay sense of the term. But there is no more difference between the two types than there is betwen the victims of tuberculosis who have but few bacilli and those who suffer from galloping phthisis. The former, neglected, soon become the latter.

The manifestations of those who pursue or who are pursued by miracle healers are less serious. Many sound persons, lacking knowledge, receive ministrations from such persons and derive benefit from the religious uplift; but, in the main, those who get the most are psychoneurotic. Miracle healers, indeed, send few to the asylums. From a medical standpoint their principal danger lies in that those who believe that any individual is gifted with supernatural powers are not unlikely to neglect organic or infectious disorders until too late. Another result of the visitation of such healers is that they retard the development of rational religion and make more skeptics than can be offset by the benefits to the limited few who believe in their teachings.

There are many families, one or more members of which are psychoneurotic; and when such members exhibit symptoms, others in the family should be instructed to keep the disordered persons away from the mysterious. The physician's duty here is plain. He can educate, calling attention to the dangers that exist in the investigation of the occult, whatever be its nature. He should remember that those who are predisposed to psychoses can often be helped by kindly counsel, by the removal of exciting causes of disorder, by rest, by suitable medication, and by improved hygiene. A dose of calomel, a properly selected sedative, a vacation, a half hour's kindly conversation separately or in combination will do more than all the spiritualism, all the ouija boards, all the miracle healers in existence.

At the present time there is special need of sane thinking and sane instruction along these lines. The world needs all it can get of the rational. Ridicule of fanatics, no matter what form fanaticism takes, accomplishes little. Sarcasm and heedless wit are reactionary. Victims of spiritualism and the ouija board need none of these. Instead, they are entitled to sympathy and kindly counsel and understanding. The pathologies of the mind are quite as responsive to medical aid as are those of the body. And the reward of him who understands and properly uses his armamentarium against them is equally gratifying.

The wave is but one of the manifestations of troubled thought which is so prevalent in other directions. Let us do what we can to lessen the number of wrecks which it is destined to cause. Let us neither magnify nor minimize its dangers, but rationally do our share to minimize its results.

FREQUENT CAUSES AND THE TREATMENT OF PERENNIAL HAY-FEVER *

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During the last five years, while I was studying bronchial asthma, many patients who complained of having hay-fever throughout or at any time of the year presented themselves for study and treatment. All of the patients that are presented in this paper were either examined while under observation or had recently been examined by competent nose and throat specialists in order to exclude pathologic conditions, growths and the like that might be the cause of symptoms. On some of the patients, repeated nasal operations had been performed; with others, no cause for operation had been found, but much local treatment had been given. Therefore it may be stated that most if not all of these patients had symptoms that were not benefited by the usual treatment employed by rhinologists. As will be shown in this paper, the cause of the symptoms in such cases may often be determined by cutaneous skin tests, and relief may often be obtained by consentient treatment.

Although it has been well known for years that certain persons have hay-fever from exposure to animals, only recently has the real causative agent been recognized and appropriate treatment instituted. For these reasons it seems worth while to give a few protocols illustrative of these cases. Likewise, since the ingestion of foods and the presence of bacteria in the nasal cavities, exclusive of a definite infectious process, have only recently been recognized as a possible cause of perennial hay-fever, a few protocols illustrating these cases will be presented. The association of hay-fever symptoms throughout the year with true pollen or seasonal hay-fever and with olfactory irritants will be discussed. Finally, attention will be called to a group of cases in which there were eye symptoms alone as a result of eating certain foods.

With those patients who have perennial hay-fever due to animal emanations, foods and pollens it is usually the protein in these substances that causes the symptoms; in the case of the bacteria it may be the protein or it may be the infectious element. In testing with the animal emanations or epidermal proteins, the protein and the peptone should be used separately; with the cereal grains, the globulin fraction of the protein is most important; with other foods and with pollens and bacteria the whole protein seems to suffice. Before treatment may be given to those who are sensitive to a protein, cutaneous skin tests should be made with different dilutions of the offending protein, and treatment should be started with the strongest solution that fails to give even the slightest degree of reaction.

Described briefly, the cutaneous skin test consists of inoculating a series of small cuts or scratches on the flexor surface of the forearm with the different proteins to be tested. A positive reaction consists of a

* From the medical clinic of the Peter Bent Brigham Hospital.

definite wheal, with or without an area of erythema, and the protein giving such a reaction is usually the cause of the symptoms and should always be considered as the cause until proved otherwise.

PERENNIAL HAY-FEVER CAUSED BY HORSES

I have successfully treated twenty patients who had hay-fever caused by emanations from horses. Many of the patients knew that exposure to horses caused their symptoms, and they desired to be treated so that they could be around them. Others were not aware of the cause of their symptoms until the cutaneous tests were made. Protocols of ten cases will be given in more or less detail. Protocols of the other ten cases will not be given because they closely resemble those being presented, and they furnish nothing of additional interest. Two of the cases not presented are worthy of mention in that the patients were officers during the recent war, and as such they were required to use horses, which caused them to have violent hay-fever. After several inoculations, however, with the offending protein these patients were able to be around horses ad libitum without any symptoms.

CASE 1.—L. K. B., a man, aged 31, had had hay-fever caused by horses all his life. The attacks lasted three or four days at a time, and they occurred throughout the year. He was a cashier in a country bank, and whenever, as very frequently it happened in the winter, a person who had been driving a horse shook or brushed his fur coat in the presence of the patient, an attack of sneezing, itching of the eyes and running of the eyes and nose was precipitated by the horsehair and dandruff dislodged by the shaking of the fur coat. The patient also sneezed every morning on arising.

Cutaneous tests were negative with the proteins of the common foods, pollens and feathers, but were positive with the hair of the cat, dog and horse. The patient was most sensitive to the protein of horsehair and dandruff; a dilution of 1:100,000 gave a positive reaction.

The patient was treated once a week with a 1:1,000,000 solution of horse epidermal protein in gradual increasing amounts; the first dose was 0.1 c.c., and this was increased 0.05 c.c. each succeeding week until 0.8 c.c. was given at one time. During this series of treatments the patient became free from his customary morning sneezing, and the shaking of fur coats laden with horsehair and dandruff no longer caused symptoms; he was still, however, unable to ride behind a horse without having his usual symptoms. Treatment was continued with a stronger solution of the protein of horsehair and dandruff, namely, 1:100,000, in the same dosage as outlined above, and before treatment with this solution was completed the patient was able to ride behind horses without symptoms.

CASE 2.—C. M., a woman, aged 18, for the last four years had been subject to attacks of sneezing, itching of the eyes and running of the eyes and nose and difficulty in breathing through the nose when near horses; these attacks would continue for two or three hours following exposure. She had frequently been awakened by such attacks in the summer time when a horse had passed by the open window of her sleeping room. During one summer which was spent on an island where there were no animals she was free from symptoms, but on returning to the city in the fall she had an attack which lasted two weeks. She was subject to frequent head colds.

Cutaneous tests were negative with the protein of the common foods, pollens and animal emanations, with the exception that the protein of horsehair and dandruff was positive in a dilution of 1:1,000.

The patient was given a series of five treatments at weekly intervals with horsehair dandruff protein in a dilution of 1:10,000, beginning with 0.2 c.c. and increasing the dose 0.1 c.c. each succeeding week. Following these treatments she was able to ride horseback without symptoms and had very little trouble when riding behind a horse. The patient was then given a series of twelve treatments with the horse epidermal protein in a 1:1,000 dilution; the first dose was 0.1 c.c., the maximum or last dose was 0.8 c.c., and the increase each time was 0.05 c.c. The larger number of doses in this series was made necessary because several times the patient had a very sore arm following some of the increased amounts, thus necessitating a repetition of the preceding dose before an increase was deemed advisable. During this series of treatments the patient was able to ride behind horses without any symptoms at all, and she had been free from her usual frequent head colds during the last winter. Treatment was then given with a 1:100 dilution of the horse epidermal protein for eight weeks according to the same schedule as outlined above for the 1:1,000 dilution. By this time the cutaneous tests were negative with the 1:100 solution, and the concentrated powder of the hair and dandruff protein gave only a very doubtful reaction, which consisted of a small area of erythema but no wheal. After this the patient was lost sight of for more than two years, when a letter was received from her stating that she was still free from symptoms and was able to be about horses as much as she desired.

CASE 3.—W. G. T., a man, aged 29, had had hay-fever symptoms since childhood when he was near horses and when he went into a horse stable; exposure to cold air also provoked hay-fever symptoms. In addition, he had had continuous hay-fever from the latter part of August to October during the last summer, but never previously.

Cutaneous tests were positive with the protein of ragweed and goldenrod pollens and with the proteins of horsehair and dandruff in a dilution of 1:1,000.

Treatment was given with a series of inoculations of the 1:10,000 dilution of the epidermal horse protein and then with a series of the 1:1,000 dilution as already indicated in Case 2. The patient no longer had symptoms from exposure to horses, nor did exposure to cold air provoke symptoms. The following spring he was successfully inoculated against ragweed pollen hay-fever.

CASE 4.—M. W. J., a woman, aged 23, had had hives and sneezing and running of the eyes and nose since infancy when near horses. The hay-fever symptoms occurred at all times of the year and were also caused by dust.

Cutaneous tests were negative with the proteins of foods, pollens, cathair and feathers. Doghair protein gave a positive reaction in a dilution of 1:100, and both proteins of horsehair and dandruff were positive in a dilution of 1:100,000.

The patient was given six treatments at weekly intervals with a 1:1,000,000 dilution of horse epidermal protein; the first dose was 0.2 c.c., and this was gradually increased each week until the sixth dose was 0.6 c.c. Following this series of treatments, the patient experienced much less trouble when around horses. Treatment was continued for nine weeks with a 1:100,000 dilution of the protein, and then for nine weeks with a 1:10,000 dilution of the protein; with each dilution the first dose was 0.2 c.c., and each succeeding week the amount was increased 0.05 c.c. By this time the patient had no symptoms whatsoever from horses, and even dust no longer caused symptoms. Seven months have now elapsed since the last series of inoculations, and the patient is still free from symptoms.

CASE 5.—C. S., a girl, aged 10, had had hay-fever when near horses for eight years. She now desired to own and take care of a pony.

Cutaneous tests were positive with the pollens of timothy grass and ragweed, and with both horse epidermal proteins in a dilution of 1:10,000.

Treatment was given with a 1:100,000 dilution of horsehair and dandruff protein six times at weekly intervals; the doses given were 0.1, 0.2, 0.3, 0.5, 0.7 and 0.9 c.c. She was then given 0.2, 0.3 and 0.4 c.c. of a 1:10,000 dilution. Following this treatment she was able to ride behind horses with no sneezing or running of the eyes and nose, although her eyes would itch and get red. Two more treatments were given with this dilution; then a 1:1,000 dilution of the proteins was given for seven weeks, and finally five treatments with a 1:100 solution were given. By this time cutaneous tests

were negative with the epidermal peptone and only slightly positive with the epidermal protein. Treatment was then begun with the pollens. All of this treatment was given during the winter of 1917. It has now been three years since treatment was discontinued, and the patient has had no symptoms, although she has owned and taken all the care of a pony and has been around horses freely.

Case 6.—P. H., a girl, aged 8, had had sneezing, running of the eyes and nose and itching of the eyes for several years when riding behind horses. She had had asthmatic attacks since infancy. She had to ride behind a horse to and from school.

Cutaneous tests were positive, along with other proteins, with horse epidermal proteins in a 1:10,000 dilution.

Treatment was given with a 1:100,000 dilution of both horse epidermal proteins until she was able to ride behind horses; altogether, ten treatments were given. After this, horse epidermal protein treatment was discontinued because, since she was now able to ride behind horses to and from school, it was considered best to treat the asthmatic condition, which was due to other proteins.

Case 7.—H. B., a man, aged 40, declared that he was so sensitive to horses that he would have hay-fever, followed in a few minutes by asthma, whenever he went on a congested street where there were horses, or whenever he even went into a harness-repairing shop.

Cutaneous tests were positive with the horsehair and dandruff proteins; the peptone was positive in a 1:10,000 dilution, and the protein was positive in a 1:1,000,000 dilution.

Treatment was given nine times with a 1:10,000,000 dilution of the horsehair and dandruff protein at weekly intervals in these doses: 0.1, 0.15, 0.2, 0.25, 0.3, 0.4, 0.5, 0.6 and 0.7 c.c. The patient was now able to go into a harness-repair shop and to go near horses without symptoms. A similar series of treatments was then given with a 1:1,000,000 dilution of the protein, following which circumstances caused an interruption of treatment.

Case 8.—E. G., a girl, aged 13, had had sneezing and running of the eyes and nose and itching of the eyes for the last year when riding behind horses and when on horseback. She desired treatment that she might ride horseback. She also had hay-fever in August and September.

Cutaneous tests were positive with ragweed pollen and with the horse epidermal proteins in a dilution of 1:1,000.

Treatment was begun with 0.2 c.c. of a 1:10,000 dilution of both horse epidermal proteins. Three days later the patient rode horseback with others in an enclosed ring which was very dusty, with no nasal or eye symptoms. Treatment has continued with equal success.

Case 9.—M. G., a woman, aged, 21, had had hay-fever for ten years; she had a cold in the head all the time; her eyes and nose ran and she sneezed all through the year, and these symptoms were worse when she was riding behind a horse.

Cutaneous tests were positive only with the proteins of horsehair and dandruff, and with these in a 1:100 dilution.

She was treated nine times with a 1:1,000 dilution of the proteins and five times with a 1:100 dilution. Following this treatment she had no symptoms when riding behind horses, and in general she had much less trouble; still, she was not free from symptoms when not near horses. An examination of her nose revealed polyps, hypertrophied middle turbinates, and a very large spur on the septum. Removal of the polyps and spur relieved her symptoms of hay-fever entirely. Therefore, although treatment with the epidermal proteins relieved the hay-fever, which was caused by horsehair and dandruff, it was necessary to remove the polyps and the spur before complete relief was obtained.

Case 10.—J. C. W., a woman, aged 44, had had hay-fever throughout the year for many years; her symptoms consisted of sneezing and running of the nose and at times stuffing up of the nose for two or three days at a time on an average of once a week.

Cutaneous tests were positive with the proteins of horsehair and dandruff in a 1:10,000 dilution, but were negative with food, pollen and other animal hair proteins.

Treatment was given as outlined in previous cases with a 1:100,000 dilution of the horse epidermal proteins, and then a few treatments were given with a 1:10,000 dilution, until the patient became free from symptoms. The patient then discontinued treatment for several months until slight symptoms returned; then more treatment was taken for a short time, and again freedom from symptoms resulted. After this the patient went three months without treatment, when slight symptoms again returned, and more treatment was taken, with the usual relief.

The horse protein hay-fever protocols illustrate several points which may well be emphasized. In Cases 1, 2, 5 and 6 the treatment is given in detail in order to show that treatment should be begun with the strongest solution of the protein that fails to give any reaction by the cutaneous test. Each week the amount of the inoculation is slowly and gradually increased until 0.8 c.c. is given as the last or maximum dose before the next stronger solution is given. In Case 2, several doses had to be repeated because some of the amounts caused a sore arm, whereas all of the other patients took the usual schedule of dosage without ill effects. Case 5 illustrates the fact that, if sufficient treatment is given to render the cutaneous test negative with the concentrated powder of the protein, complete and permanent desensitization results, since three years have elapsed since the last treatment with no return of symptoms, even though the patient is constantly exposed to horses. Case 2 probably illustrates this point, since more than two years have elapsed with equally good results. Case 3 shows that only a very few treatments are required to enable a horse-sensitive patient to ride horseback, and Case 6 shows that a few more additional treatments are required to permit the patient to ride behind a horse. Cases 3 and 4 show that it does not require many treatments to protect a patient from ordinary exposure to horses. Case 10 shows that although a few treatments will protect a patient for a few months, such protection is not lasting, and more treatment is required after a time. In other words, these protocols show that the longer the course of treatments, the longer and the more complete is the protection, and that sufficient treatment will probably protect indefinitely.

Cases 1 and 7 illustrate the extreme sensitiveness of some persons to horsehair and dandruff proteins, as demonstrated both by their history and by their cutaneous tests. Sufficient horsehair and dandruff protein is carried in the air in congested parts of a city to cause symptoms in patients that are so extremely sensitive to these proteins. The treatment of such patients has to be started with a very dilute solution of the protein, and great care must be exercised in order to avoid an overdose. In spite of these facts, if the cutaneous tests are carefully made, no ill effects result from proper treatment, and satisfactory results are obtained.

PERENNIAL HAY-FEVER CAUSED BY CATS

Cats probably do not cause hay-fever so frequently as do horses, since I have observed only six cases. Four of these patients were willing to dispense with their cats, and after doing so were free from symptoms. Two patients, however, preferred treatment to dispensing with their pet; protocols of these two cases follow.

Case 11.—W. D., a boy, aged 12, once every month had had attacks of sneezing and running of the nose and eyes, followed by wheezing, shortness of breath and cough since 18 months of age.

Cutaneous tests were positive with the epidermal proteins of the horse, dog and cat, but the patient was most sensitive to the proteins of cat hair; cat hair peptone gave a positive reaction in a 1:10,000 dilution.

Ten treatments were given at weekly intervals with cat hair peptone in a 1:100,000 dilution as follows: 0.1, 0.15, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8 and 0.9 c.c. Following this a similar series of treatments was given with a 1:10,000 dilution. The patient became free from symptoms during the first series of treatments, and he has remained free, although it has been a year since the last treatment was given, and a year and a half since the last attack.

CASE 12.—F. R. J., a woman, aged 23, had had hay-fever throughout the year for fifteen years, and for the last nine years she had known that cats caused her to sneeze, and made her eyes and nose run.

Cutaneous tests were positive with the cat hair protein. She was, however, more sensitive to the peptone. A 1:100,000 dilution gave a positive test.

Six weekly treatments were given with cat hair peptone in a dilution of 1:1,000,000. After this a 1:100,000 dilution was given as follows: 0.1, 0.15, 0.2, 0.25, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8 and 0.9 c.c. During this series of treatments the patient noted slight hay-fever symptoms when she petted a cat. A similar series of treatments was given with a 1:10,000 dilution of the peptone. During this series of treatments she noted that she could fondle cats without any symptoms, and that she had no symptoms when not near cats, as used to be the case. Cutaneous tests were now positive with a 1:1,000 dilution of the peptone, whereas previous to treatment a 1:100,000 dilution gave a positive test.

Naturally, it is easier to avoid cats than horses, and it is preferable to dispense with the offending cat than to take treatment. The protocols show, however, that if it is necessary to desensitize against cat hair, the treatment for cat hay-fever is no different from that for horse hay-fever, and that the results obtained are equally as satisfactory.

PERENNIAL HAY-FEVER CAUSED BY FEATHERS

In testing patients for sensitization to feathers, the protein and the peptone of both chicken and goose feathers should be used. The patient comes in contact with feathers chiefly through the use of feather pillows, which may contain either or both kinds of feathers. Only two protocols will be given: one illustrating feather pillows and the other illustrating a parrot as well as feather pillows as the cause of symptoms.

CASE 13.—S. G., a man, aged 30, had had hay-fever for the last two years, with only one or two days' freedom at any one time. His eyes itched and watered, his nose ran and he sneezed. He also had frequent head colds.

Cutaneous skin tests were positive with poth proteins of chicken feathers, but negative with all other proteins.

Since discontinuing the use of feather pillows for the last six months he has been free from symptoms.

CASE 14.—R. H., a boy, aged 17, had had sneezing, running of the eyes and nose, and frequent attacks of bronchitis for the last three years, and during the last six months he had had considerable asthma. His nose had been operated on several times without benefit.

Cutaneous tests were positive with the proteins of chicken feathers alone.

On discontinuing the use of feather pillows, his symptoms were greatly improved but not relieved. The patient then mentioned that there was a parrot at his home, and he asked whether this could not cause symptoms. The parrot was then disposed of, and since then he has been entirely free from symptoms.

Although feather pillows and parrots may not frequently be the cause of hay-fever symptoms, it is desirable to test with feather proteins and to inquire in regard to the presence of feathered animals at the patient's home. There is no question that feather dust penetrates the coverings of pillows, and for this reason patients who are sensitive to feathers should use a floss pillow.

PERENNIAL HAY-FEVER CAUSED BY OTHER ANIMALS

Although I have not had cases of hay-fever caused by dogs or by the wearing of furs, such instances probably do occur. Hay-fever among laboratory workers who are around rabbits and guinea-pigs is not rare. I have tested four laboratory workers who had hay-fever; two were sensitive to rabbit hair and two to guinea-pig hair. All four patients were previously exposed to these animals the greater part of each day; but, since avoiding these animals, they have been free from symptoms. For the last two years these patients have had to handle these animals only occasionally, and only when handling the animals do they have symptoms. Inquiry should always be made as to whether there are any pet animals in the patient's home.

PERENNIAL HAY-FEVER CAUSED BY FOODS

It is not uncommon for bakers to have hay-fever symptoms from the inhalation of the cereal grain flours, and it is not rare among housewives. Therefore the cereal grains should always be tested. Foods that are eaten sometimes cause hay-fever symptoms, but such instances are not so common as are those caused by the inhalation of the proteins. Protocols illustrating interesting cases of hay-fever caused by the inhalation and ingestion of food proteins follow.

CASE 15.—M. T., a woman, aged 40, had had nasal trouble all of her life; her symptoms consisted of stoppage and plugging of the nose, thick secretion from the nose, running of the nose, and sneezing. For the last few months these symptoms had become so aggravated that they resembled a perpetual head cold, and consequently no one would employ her in a household.

Cutaneous tests were positive with chicken and goose feather protein and with oat and wheat globulin; all other proteins were negative.

Omission of feather pillows alone relieved her considerably, and omission of oat and wheat from her diet completely relieved her symptoms.

CASE 16.—G. C. P., a woman, aged 48, had had sneezing, running of the nose and some itching and watering of the eyes for the last year. During this time she had craved and had eaten raw carrots in quantities.

Cutaneous tests were positive with the protein of raw carrots, but they were negative with cooked carrots and with proteins of all other foods, as well as with those of animal emanations and pollens.

Since she has discontinued eating raw carrots, she has been free from symptoms.

CASE 17.—S. B., a woman, aged 55, had had hay-fever for the last four years; during the winter it was paroxysmal, but during the summer it was constant. After a positive cutaneous test had been obtained, the patient volunteered the information that during the summer she was a baker in a hotel, but during the winter her occupation was housework which required her to bake less frequently; therefore her hay-fever symptoms coincided with her baking.

Cutaneous tests were positive with wheat globulin only.

CASE 18.—G. P. W., a woman, aged 30, had swelling of the eyes, sneezing and running of the nose when she prepared or ate raw celery. She also had hay-fever caused by ragweed pollen.

Cutaneous tests were positive with the protein of celery and ragweed pollen.

CASE 19.—A. W., a woman, aged 52, had had sneezing, running of the nose and eyes, and dulness in her head for seventeen years until she recently learned that these symptoms

were caused by eating certain foods, namely, pork, onions, oatmeal and some forms of pastry. Sifting rye flour caused hay-fever, but she had no symptoms from eating it.

Cutaneous tests were positive with the following proteins and none others: barley, oat, wheat, onion, pork and cantaloup.

Since avoiding these foods she has been free from symptoms.

CASE 20.—H. M., a woman, aged 37, had had hay-fever or a cold for six years whenever she mixed and baked bread. She had no trouble from eating pastry.

Cutaneous tests were positive with the cereal proteins, namely, rye, rice, barley, corn and wheat. All of the six individual proteins of wheat gave positive reactions.

Omission of cereals from her diet was not sufficient to permit her to bake without symptoms, nor did subcutaneous inoculation with the individual wheat proteins or with the protein of the whole wheat render her immune, although following this treatment she could bake a little with comparative diminution of her symptoms. However, relief was not sufficient to warrant further treatment, since it was not essential that she continue baking.

CASE 21.—W. R. M., a man, aged 47, had had attacks of sneezing and running of the eyes and nose for many years whenever he was exposed to flour dust.

Cutaneous tests were positive with wheat globulin, but were negative with all other proteins.

Several of the cases in the foregoing protocols are worthy of special attention. Case 21 presented symptoms of vasomotor rhinitis for years, and not until cutaneous tests were made was the actual cause determined. In Case 19, symptoms were also due to the ingestion of commonly eaten foods; but the patient was aware of the cause, and cutaneous tests verified the cause. In Case 16 and 18 there were symptoms only after the eating of less common foods. In Case 17 the cutaneous tests determined the cause of symptoms. In Case 20 an attempt was made to desensitize the patient by subcutaneous inoculation so that she might inhale wheat flour without symptoms; this treatment was a failure. In all food sensitization cases it seems advisable to omit the offending protein, and usually this is not difficult to do. Case 21 illustrates a condition which is frequently present in bakers and is not rare among housewives.

PERENNIAL HAY-FEVER CAUSED BY POLLENS

It is not uncommon for seasonal pollen hay-fever patients to have paroxysms of hay-fever and frequent head colds of two or three days' duration throughout the year. The exciting causes of the attack out of pollen season are exposure to dust, sudden changes in the temperature, frosty air, drafts, irritating odors and the like. Following successful treatment for the seasonal pollen hay-fever, these patients usually remain free from symptoms during the ensuing year. It would seem that exposure and sensitization to the pollens had in some way rendered the patients' mucous membranes susceptible to or sensitive to the secondary or minor causes. Therefore pollens may be a cause of hay-fever outside the pollen season, and such patients may be relieved of perennial hay-fever by successful pollen treatment.

PERENNIAL HAY-FEVER CAUSED BY UNUSUAL PROTEINS

Goodale [1] has observed several cases of hay-fever caused by the inhalation of orris root face powder; these patients gave positive cutaneous tests with both the powder and the crude orris root. I have observed one patient who was sensitive to rice, and the use of face powder containing rice flour caused symptoms. The following protocol of a case that I studied illustrates the fact that perennial hay-fever may be due to the inhalation of any kind of organic substance.

CASE 22.—T. G., a man, aged 34, a jewel polisher, had had sneezing, running of the nose, and a stuffy feeling in his head for five years. The symptoms occurred while he was at work, but he was free after leaving his work and whenever he took a vacation from his work. While at work the patient was exposed to considerable boxwood dust, which is very fine and floats in the air.

The patient gave positive cutaneous tests with the protein obtained from the boxwood dust in a dilution of 1:30,000.

After several inoculations with a 1:40,000 dilution of the boxwood protein the patient became free from symptoms while at work. Treatment was continued until the patient was taking a 1:1,000 dilution of the protein, and he continued to be free from symptoms.

PERENNIAL HAY-FEVER CAUSED BY BACTERIA

Twenty patients who had hay-fever symptoms throughout the year caused by bacteria have been studied. Bacteria were considered to be the cause of symptoms for these reasons: The patients were not sensitive to any of the usual proteins to which they were exposed, namely, those of the common foods, animal emanations and pollens. Either repeated examination of the nose and sinuses had revealed no abnormalities, or repeated operations had previously removed and corrected all abnormalities. Finally, many of these patients were either greatly benefited or relieved by autogenous vaccines made from the nasal secretion. This type of case differs from those already discussed in this paper in that none of the patients were sensitive to any protein, and eye symptoms were not present. As already noted, all of the previous groups of patients had, in addition to nasal symptoms, itching and running of the eyes, whereas this bacterial group had little or no eye trouble. Therefore the presence of pronounced eye symptoms indicates probable sensitization to some protein, and absence of eye symptoms indicates the improbability of sensitization to a protein as a cause. It would seem that this group of so-called bacterial cases should more properly be called vasomotor rhinitis rather than hay-fever, in that they differ as already noted from the sensitization cases.

Of the twenty bacterial cases that I studied, ten were treated by autogenous nasal vaccines with great benefit or relief; five patients who were similarly treated were not benefited at all, and the remaining five were not treated by vaccines but were treated locally by rhinologists without any benefit; the latter five cases serve as controls for those treated with vaccines. It is not my intention to infer that rhinologists, by means of local and operative treatment, fail to benefit or even cure similar cases, because it is well know that the rhinologist does not often fail in such cases. What I do, however, wish to infer is that after all other treatment has failed, autogenous vaccine treatment may result in considerable benefit or even relief; at least vaccine treatment is worthy of a trial as a last resort. Protocols of the ten cases in which treatment with autogenous vaccine gave benefit follow.

CASE 23.—S. F. S., a woman, aged 27, had had attacks of "hay-fever" for five years. The attacks consisted of sneezing and running of the nose for fifteen minutes every morning on arising and every evening on retiring.

1. Goodale, J. L.: Boston M. & S. J. 175: 181 (Aug. 10) 1916.

Cutaneous tests were negative with proteins of foods, pollens and animal emanations.

Treatment was given at weekly intervals with an autogenous vaccine made from the patient's nasal secretion; the vaccine consisted of hemolytic streptococci. The first inoculation was 300 million, and each succeeding week the amount was increased 100 million.

The patient began to improve after the first treatment, and has continued to improve until she became free from symptoms following the seventh treatment.

CASE 24.—D. A. H., a woman, aged 18, had had "hay-fever" for several years; she had a head cold most of the time, she sneezed and her nose was irritated and ran.

Cutaneous tests were negative with all of the common proteins.

As in the former case, treatment was given with an autogenous nasal vaccine consisting of a hemolytic streptococcus.

She became free from symptoms and remained free for five months until the cold winter weather set in, when she began to sneeze considerably, although she had no irritation or running of the nose.

CASE 25.—F. W. H., a woman, aged 49, had had hay-fever all through the year for twenty years, but lately she had been worse during the summer. Her eyes itched, her nose ran, she sneezed and her ears itched; these symptoms continued for two or three days at a time with a few days' interval between the attacks.

Cutaneous tests with all the common proteins were negative.

After five treatments, as in the preceding cases, with an autogenous vaccine made from her nasal secretion, she became free from symptoms and remained free without treatment for eight months. The vaccine consisted of *Streptococcus viridans.* The patient then had a return of the former symptoms, but again she was relieved by similar treatment.

CASE 26.—W. D. R., a woman, aged 34, had had hay-fever throughout the year for three years; her eyes ached but did not water, her nose ran, and she sneezed every morning. Dust irritated her nose, and night air irritated so much that her sleep was disturbed.

Cutaneous tests were negative with all proteins.

She was given twelve treatments as in the preceding cases with an autogenous hemolytic streptococcus vaccine made from her nasal secretion. She became very much freer from symptoms, and her nights were entirely free.

CASE 27.—I. F., a boy, aged, 18, had had "hay-fever" for five years, winter and summer. Each attack might last one day or one week, and consisted of sneezing, running of the nose and eyes, and swelling of the eyes. He had frequent colds in his head and nose.

Cutaneous tests were negative with all proteins.

A culture from the nasal secretion inoculated in dextrose bouillon and on dextrose agar consisted of a pure growth of *Staphylococcus pyogenes-albus.* An autogenous vaccine made from this organism was given at weekly intervals for six weeks; the first dose was 500 million, and this was increased each week by 250 million. The patient became practically free from symptoms and had continued free for eight months when last heard from.

CASE 28.—M. F., a girl, aged 14, had had colds in her head like "hay-fever" all the year for as long as she could remember, with the exception that she was free for a period of three or four years following the removal of adenoids.

Cutaneous tests with proteins were negative.

Her nasal secretion planted on dextrose agar grew practically a pure culture of *Staphyloccoccus pyogenes-albus.* At weekly intervals she was given twelve treatments with an autogenous vaccine of this organism in gradually increasing amounts; the first dose was 500 millions, and this was increased each week by 250 million. During this treatment the patient became free from symptoms and still was free when last heard from a year after treatment was discontinued.

CASE 29.—O. O., a man, aged 36, had had "hay-fever" for fifteen years; it developed gradually and occurred at all times of the year. The attacks consisted of sneezing, running of the nose, swelling of the nasal mucous membrane and swelling and itching of the eyes. The attacks continued for two or three hours. He also had frequent head colds.

Cutaneous tests were negative with proteins; intradermal tests were somewhat positive with *Staphylococcus pyogenes-albus,* but negative with other bacteria.

Following a series of eight treatments as in the previous case with a vaccine of *Staphylococcus pyogenes-albus,* the attacks became much less violent, and the sneezing and nasal secretion were greatly diminished. A year later the attacks became violent again and the patient requested more treatment. *Staphyloccoccus pyogenes-albus* vaccine was again given with equally good results.

CASE 30.—H. C., a woman, aged 21, had had almost continuous head colds for three years; her eyes smarted, she sneezed, and she had a water and sometimes bloody secretion from the nose. Cutaneous tests were negative with all proteins.

Treatment was given a few times with a stock vaccine consisting of *Staphylococcus pyogenes-aureus,* with no benefit. Twelve treatments were then given with an autogenous vaccine of a gram-negative bacillus isolated from the nasal secretion. During treatment with this organism the patient gradually became free from symptoms and remained free for a year after the vaccine was discontinued. She has not been heard from since.

CASE 31.—A. H. L., a woman, aged 38, had had "hay-fever" the year round for many years. She sneezed, her nose filled up, and it felt as if it were stuffed with cotton and then it ran mucus virtually every morning. For the last six years she had not had the sense of smell or taste, and her ears felt as if they were filled up.

Cutaneous tests were negative with all proteins.

An autogenous vaccine consisting of a hemolytic streptococcus was made from the thick secretion from the the nose and nasopharynx and sent to her physician, a nose and throat specialist, who carried out the treatment and later reported that the patient was greatly relieved of symptoms.

CASE 32.—W. C. H., a man, aged 32, had had a watery secretion from the nose and sneezing continuously for a year.

Cutaneous tests were negative with all proteins.

An autogenous vaccine consisting of a hemolytic streptococcus and *Staphylococcus pyogenes-aureus* was made from the patient's nasal secretion. This vaccine was administered by the patient's physician, a nose and throat specialist, who later reported that the patient became free from symptoms.

These cases illustrate the points already mentioned in connection with the bacterial cases. It is noted that in Cases 25 and 29 relapses occurred several months after treatment was stopped, but on resumption of previous treatment both patients again became free from symptoms. In Case 30 the patient was not benefited by a stock vaccine consisting of *Staphylococcus pyogenes-aureus,* but was relieved by an autogenous nasal vaccine consisting of a gram-negative bacillus.

OLFACTORY VASOMOTOR RHINITIS, OR PSEUDO-HAY-FEVER

Goodale [1] has called attention to the fact that during pollen seasons certain individuals who are sensitive to and have hay-fever from pollens also have vasomotor symptoms ranging from sneezing to asthmatic attacks due to the fragrance of certain heavily scented flowers that have no pollen or to which pollen the individual is not sensitive. He considers that the symptoms are reflex and that the path of transmission is along the olfactory nerve. The flowers most commonly responsible are lilies, hyacinths, sweet peas and peonies.

It is not infrequent to encounter certain individuals who have symptoms from similar causes at any time of the year. The causes of symptoms may be classified as mechanical, chemical, odorific and thermal. Among the mechanical causes any kind of dust is the most

frequent cause, more especially sweeping dust and hay dust; fine powder, such as talcum and the like, is also a frequent cause. Among the chemical irritants, soap powder, lye and ammoniacal fumes are very frequent causes. Among the odorific irritants, heavily scented perfumes, face powders, musty air and stable odors are frequent causes. Thermal irritants concern sudden changes of temperature, as in going from warm air to extreme cold, from moist air to very dry air, and exposure to drafts; a very frequent history is that of a paroxysm of sneezing with or without running of the nose on retiring and on arising. The mechanism seems to be a reflex due to the sudden exposure of the warm and protected skin of the body to cold air, as in getting out of bed and in undressing, during which acts the warm body surface is suddenly and momentarily exposed to cool air; in other words, there is a mild chilling of the body surface. The same mechanism holds for many who take cold easily. Some of these patients are sensitive to some type of protein which may have rendered their nasal mucous membranes sensitive to these irritants; others are not sensitive to proteins. Appropriate protein treatment for those who are sensitive usually relieves these symptoms, no matter what the irritant may be, and occasionally autogenous nasal vaccines will benefit or relieve the nonsensitive individual. Again it may be well to call attention to the fact that I am dealing with nasal conditions other than those due to abnormalities, growths and the like, which may cause similar symptoms. I am considering only those cases in which no abnormalities other than a possibly congested mucous membrane could be demonstrated or those whose apparent abnormalities had been corected.

CONJUNCTIVITIS DUE TO FOOD PROTEINS

Conlon[2] reports three cases of conjunctivitis unaccompained by any other manifestations that were caused by eating certain foods, and the patients gave positive cutaneous tests with the respective protein. One protocol follows.

A. B. R., a man, aged 56, merchant, for the last four or five years had been unable to read for more than five minutes at a time without, as he expressed it, a feeling of sand in his eyes; the lids felt constantly as they do when one is very sleepy. He had rather frequent, sudden attacks of lacrimation, which came on without any known cause and stopped as suddenly as they started. He said that he had had a perfectly miserable time of it for the last couple of years, with virtually constant eye discomfort; so he became an "early to bed and late to rise" sort of fellow, as the only time he was at all comfortable was when his eyes were closed. His glasses had been changed a number of times, tinted lenses had been ordered and worn, and drops of various kinds and colors had been prescribed and used without any benefit whatsoever. The eyelids were slightly swollen and congested, and there was a general enlargement of the conjunctival blood vessels which was more marked on the bulbar conjunctiva. Nothing was found in the nose or throat. The general condition was good. He had no bad habits, did not smoke or drink, and no change was found necessary in his glasses.

On a recent skin test with more than thirty proteins, this patient reacted to egg alone.

The elimination of eggs from his diet was shortly followed by a total disappearance of his annoying symptoms. For the last two years he has been able to use his eyes as he wished, and he reports that life is once more worth living. One control test (eating egg) was followed by a return of his symptoms.

2. Conlon, F. A.: Am. J. Ophth. 2: 486 (July) 1919.

Conlon makes the following comments on this group of cases:

The skin test should be made at the time the patient is suffering from the conjunctivitis, as in some people the anaphylactic reaction disappears after the patient abstains from the offending food any length of time, to reappear again on eating it.

In the absence of uncorrected ametropia, all recurring low grade inflammation of the conjunctiva which the patient calls "frequent attacks of red eyes" should be considered as possibly due to food anaphylaxis. This is especially true when the attacks appear the same months year after year. After obtaining a positive skin test, the proof as to this food's being the cause of the conjunctivitis is readily obtained by the patient.

Conlon also believes that the study of food protein anaphylaxis and bacterial protein anaphylaxis will explain the etiology of a number of eye diseases, especially keratitis and low grade inflammations of the uveal tract, and will open up vast and fruitful fields for investigation.

CONCLUSIONS

Perennial hay-fever is frequently caused by animal emanations, and cutaneous tests should be made with the common animal epidermal proteins.

Those patients whose hay-fever is caused by exposure to horses may be successfully treated by repeated inoculation in gradually increasing amounts of the particular epidermal protein to which they are most sensitive.

Those patients who are sensitive to cat hair protein may be treated similarly with equal success. Dispensing with the cat, however, is easier of accomplishment and is usually beneficial.

With those who are sensitive to the epidermal proteins of other animals (pets), it is preferable to avoid that particular animal. Sensitization to feather protein from feather pillows is frequent, and the substitution of floss pillows is desirable.

Perennial hay-fever is frequently caused by the ingestion of foods and by the inhalation of the cereal grain flours. Cutaneous tests often reveal such a cause, and omission of the protein is the desirable mode of treatment.

Patients who have seasonal pollen hay-fever frequently have paroxysmal symptoms throughout the year. Satisfactory preseasonal treatment with the particular pollen that causes the seasonal hay-fever frequently relieves the perennial symptoms.

Recurring head colds are frequently coincident with the foregoing sensitizations, and relief from these head colds usually follows proper treatment, as already outlined. This type of head cold is probably not due to an infection but rather a result of sensitization which renders the nasal mucous membrane easily irritable.

Nonsensitive patients with perennial hay-fever or vasomotor rhinitis, provided there are no demonstrable abnormalities, growths and the like in the nasal cavities or sinuses, are sometimes benefited or relieved by autogenous vaccines made from the nasal secretion. The same statement also holds true for those patients who are subject to frequent head colds.

Olfactory vasomotor rhinitis, or pseudo-hay-fever, caused by mechanical, thermal, chemical and odorific irritants, is not uncommon and should be recognized.

The ingestion of foods may cause symptoms referable to the eyes alone. Therefore, although protein

sensitization should not be considered as a "cure all" or a cause of all obscure conditions, the cutaneous test for protein sensitization deserves a place among diagnostic tests; and when properly performed and interpreted, it is a very useful test.

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GLOMERULONEPHRITIS AS A COMPLICATION OF SUBACUTE STREPTOCOCCUS ENDOCARDITIS *

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This paper is designed to invite attention to the frequency of diffuse glomerulonephritis (acute glomerulonephritis and its sequel, chronic diffuse nephritis), as a complication of subacute bacterial endocarditis due to the anhemolytic streptococcus, the so-called *Streptococcus viridans*.

In previous publications [1] it was shown that microscopic study of the kidneys of individuals dying of subacute streptococcus endocarditis reveals, with few exceptions, a typical lesion in the glomeruli. This lesion, which was first described by Loehlein [2] and subsequently studied by one of us and proved to be due to minute bacterial emboli, can be differentiated histologically from the glomerular lesions of glomerulonephritis in accordance with criteria given in the papers mentioned.

In the course of a more recent microscopic study of the kidneys in seventy-seven cases of subacute streptococcus endocarditis, it was found that in nine cases these typical glomerular lesions were obscured by a diffuse, practically universal glomerulotubular damage. In six other cases of subacute bacterial endocarditis due to *B. influenzae*, no such complication was encountered. In all of the nine cases, death had occurred as a result of uremia, and on necropsy, the pathologic changes found in the kidneys could be classified into two types:

1. *Acute Glomerulonephritis.*—In two of the cases, the renal lesions were typical of an acute glomerulonephritis. The pathologic picture was identical with that seen after scarlet fever or streptococcus angina. Every glomerulus showed (1) swelling of the endothelium of the glomerular capillaries so that the loops were completely obstructed and bloodless; (2) disintegration of some of the loops, and (3) active proliferation of the epithelium of Bowman's capsule so that in many of the glomeruli the capsule was occupied by a crescent of swollen and proliferated cells. Both patients had died in the bacterial stage of their endocarditis, the anhemolytic streptococcus (*Streptococcus viridans*) being recovered from the blood in cultures during life and from the vegetations after death. In both instances, death had been preceded by such symptoms as vomiting, headache, hematuria and finally anuria and progressive stupor. Death in one of the cases occurred in uremic coma, in the other after general convulsions.

No bacterial emboli were demonstrable in the glomerular lesions.

2. *Chronic Diffuse Nephritis.*—In seven cases, the kidneys presented the gross appearance of the secondary contracted kidney and microscopically showed the typical picture of the end-stage of a chronic diffuse nephritis. Practically every glomerulus showed not only adhesions to Bowman's capsule, but also that peculiar hyaline thickening of the loops so characteristic of an antecedent acute glomerulonephritis.[3] The tubules were in varying stages of degeneration and atrophy and the interstitium showed an irregular but very marked diffuse increase in connective tissue.

In all seven cases, blood cultures during life were negative, and with one exception the massive vegetations were found to be free of bacteria and for the most part organized. In the one exception, a few clumps of streptococci were still present in one place, but otherwise the vegetations had become completely free of bacteria and almost totally organized. The endocardial lesions were typical of those described by Libman [4] as characteristic of the later, bacteria-free stage of the endocarditis.

The clinical picture of subacute bacterial endocarditis in these cases had become complicated or obscured by the onset of nephritic edema and other nephritic symptoms. In the absence of positive blood cultures, the diagnosis of the type of endocarditis was therefore rendered difficult or impossible except when characteristic symptoms, such as a mycotic aneurysm of a superficial artery, or other embolic features gave a clue to the essential underlying condition. Death in every instance but one occurred after the development of general anasarca and a typical wet uremia. One patient died in uremia without previously developing a general anasarca.

SUMMARY

Altogther, in this series of seventy-seven cases of subacute streptococcus endocarditis, nine patients, or about 11.5 per cent., died in uremia due to an intercurrent acute glomerulonephritis or its sequel, chronic diffuse nephritis. This is a remarkably large percentage; in fact, true glomerulonephritis apparently complicates subacute streptococcus endocarditis more frequently than any other disease, with the possible exception of scarlet fever.

The three diseases that are distinguished from all others by the frequency with which they are complicated by an acute hemorrhagic glomerulonephritis are scarlet fever, acute and chronic streptococcus angina, and subacute streptococcus endocarditis. The question therefore suggests itself as to the responsibility of the streptococcus for the frequency of this complication. Unfortunately, we feel that the streptococcus cannot as yet be impeached as the immediate cause of the glomerulonephritis in these cases, any more than the streptococcus of scarlet fever angina can be held responsible for the glomerulonephritis that frequently complicates that disease. This opinion is in part based on the fact that we have been unable to find streptococci in the glomeruli in the acute cases.

But the streptococcus apparently plays some rôle in the process, for the complicating acute glomerulonephritis has thus far occurred only in the bacterial stage of the endocarditis—when streptococci are still in the circulating blood. This is the stage, however,

* From the Pathological Laboratory of the Mount Sinai Hospital.
* Work done during the tenure of the George Blumenthal, Jr., fellowship in pathology.

1. Baehr, George: J. Exper. Med. **15**: 330, 1912; Am. J. M. Sc. **144**: 327, 1912.

2. Loehlein: Med. Klin. **6**: 375, 1910.

3. Loehlein: Ueber die entzuendlichen Veraenderungen der Glomeruli der menschlichen Nieren und ihre Bedeutung fuer die Nephritis, Leipzig, 1907.

4. Libman: Am. J. M. Sc. **146**: 625, 1913.

during which the embolic glomerular lesions are also being produced. One explanation that therefore suggests itself is that the fresh embolic lesions themselves render the glomeruli more susceptible to the engrafting of an intercurrent acute glomerulonephritis. This seems to us less likely than the previous hypothesis—that the streptococci are concerned in some more direct manner in the production of the diffuse glomerular damage.

If this acute glomerulonephritis, which is apparently initiated only during the bacterial stage of the endocarditis, fails to cause the patient's death, the renal process then progresses to the formation of a chronic diffuse nephritis. From this the patient may eventually die, even if his bacterial endocarditis runs a favorable course, becomes bacteria-free, and progresses toward healing.

987 Madison Avenue.

MINIMUM STANDARDS OF ORGANIZATION FOR MUNICIPAL HEALTH DEPARTMENTS *

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Preventive medicine is not an exact science. Epidemiology has yet to teach us many things with regard to the occurrence, prevalence and spread of many of our commonest diseases, to combat which we are compelled to use methods based on mere hypothesis. For instance, comparatively little is known of the epidemiology of those communicable diseases which are supposed to be spread through discharges from the mouth and nose, such as measles, scarlet fever, influenza, smallpox, chickenpox and mumps. Modern thought teaches us that they are personal contact diseases, i. e., diseases spread directly from person to person through ordinary every day social and business intercourse. If this is true, obviously it is a condition difficult or impossible to remedy.

On the other hand, epidemiology has taught us much relative to the control of those diseases spread through discharges from the intestine and those disseminated by insects. Here, again, as in the so-called diseases of the "respiratory type," the patient or carrier is primarily at fault, yet it is possible by proper attention to the environment to control them successfully. Malaria cannot spread in the absence of *Anopheles* mosquitoes. Typhoid fever can be controlled by proper disposal of human excreta, purification of water supplies, etc. In these diseases it is perfectly feasible for health authorities to erect artificial barriers which will reduce the dangers of personal contact to a negligible quantity.

With all preventable diseases, no matter what may be their cause, it is necessary for health officials to keep in personal touch with the people. The mere exercise of police powers will not control disease. The people need advice and education. The masses are at least one generation behind the modern health officer, so far as their knowledge of preventive medicine is concerned, and the health officer himself is even farther away from a complete knowledge of the subject. He therefore must be an investigator always striving after new truths.

The days of the part-time, unskilled health officer and the old-time sanitary inspector are numbered. It is now realized that health officials must be thoroughly familiar with their work both in theory and in practice. With increasing knowledge among the people, popular opinion is delegating more and more authority to the health department and increasing its duties manyfold. In order that these duties may be performed satisfactorily and that good results may accrue, the employment of full-time, trained men is imperative.

The purpose of a health department is conservation of health and prolongation of life. It may therefore be considered as a department of preventive medicine.

Its functions and duties are essentially the same in practically all cities regardless of their size. Differences in the amount of work to be performed are absolute and not relative, and this alone should determine the size of a health department. A small city may have an efficient health department, and yet its organization may be very simple. Complexity of organization increases with the size of the community, although the principles underlying public health work remain the same. As a city increases in size, details of administration make it necessary to depend more and more on subordinate officials; but every activity of the large health department should have its counterpart in the smaller organization, although in the latter, one official may be performing the duties which in a larger department would be distributed among many in several different divisions.

The preventable diseases may be classed as those due to: (1) animal and vegetable parasites; (2) conditions in the environment; (3) occupational influences: (4) faulty diet; (5) faulty habits, and (6) heredity.

One or many of these causes may act throughout or at different periods of man's life which, for purposes of the health officer, may be divided into seven periods: (1) the period previous to conception; (2) the intrauterine period; (3) the period of birth; (4) the preschool period; (5) the school period; (6) the productive and reproductive period, and (7) the period of old age.

These two classifications suggest the various functions and duties of a health department. The items in the group are intimately correlated, and no health department can be considered complete unless cognizance is taken of all. Whether or not there is an actual subdivision of the department according to duties performed, the work naturally falls under these eight headings: executive and administrative; vital statistics; communicable diseases; child hygiene; food inspection; sanitation; industrial hygiene, and last but not least, education.

The smallest health department which nevertheless contains all of the elements essential to public health work may be regarded as consisting of one physician with the qualifications of a health officer, one public health nurse and one clerk, all full-time employees. A larger department may be considered as a development from this nucleus resulting in a multiplication of personnel, specialization along certain lines, and logical distribution among bureaus calculated to cooperate with one another without unnecessary reduplication of effort or waste of time and money.

Thus, the full-time health officer who was performing the duties of epidemiologist, educator, dispensary

* Read before the Section on Preventive Medicine and Public Health at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

physician, bacteriologist and inspector in a very small community would be relieved of many duties by the addition of epidemiologists, bacteriologists, inspectors, and others, in the process of developing a larger department. With economic conditions as they are today, it is not possible to state positively the amount required to defray the expenses of a health department; but it is suggested that the appropriation necessary to maintain a minimum health organization varies from 50 cents to $1 per capita per annum. It is thought that in a city of 10,000 population, 75 cents per capita would be sufficient to maintain the minimum organization consisting of the nucleus mentioned above (Table 1).

TABLE 1.—EXPENSE OF MINIMUM ORGANIZATION

One health officer	$3,000
One public health nurse	1,200
One clerk	1,000
Salaries	$5,200
Maintenance	$2,300
Total	$7,500
All full. time.	

Maintenance includes office and laboratory expenses, printing, expenses of an inexpensive automobile, etc. The health officer must perform the duties of bacteriologist, epidemiologist, school, milk and food inspector, etc.

In a city of 25,000 population, 75 cents would hardly cover the expense, as a city of that size should have a small isolation hospital (Table 2).

TABLE 2.—EXPENSES IN A CITY OF TWENTY-FIVE THOUSAND

One health officer	$3,500
One epidemiologist	2,500
Three public health nurses at $1,200	3,600
One milk inspector	1,500
One sanitary inspector	1,200
One statistical clerk	1,200
One stenographer	1,000
Salaries	$14,500
Maintenance	$4,250
Total	$18,750
All full time.	

In this organization the epidemiologist performs the duties of a bacteriologist, and he divides the duties of school inspector and dispensary physician with the health officer.

It will be noted that no provision is made for the collection of garbage and other city wastes, street cleaning, etc. These activities can well be omitted in considering a health department, as they quite properly belong to a separate department of the city government.

ABSTRACT OF DISCUSSION

DR. G. C. CHANDLER, Shreveport, La.: The protection of the public against preventable disease depends on the cooperation of the people, and the way to get that cooperation in a democratic country is to educate them simply on essentials. Do not harrass them by any unnecessary interference with their customary life. The sheet anchor of protection against diseases entering through the respiratory tract is ventilation. Educate the people to build sleeping porches, and to sleep in the open air, or with their windows wide open, winter and summer, and you will have solved to a great extent the question of prevention of diseases, such as smallpox, measles and similar diseases. Tell them about the accumulation of disease germs in closed rooms, and they will throw the windows open, thus reduce morbidity. If you want to protect the public from diarrhea or dysentery or typhoid fever, the best way to afford this protection is to see that the source of the water supply is the safest that can be obtained, and then use in addition to that the artificial method of destroying germs that get into the milk. That is the way to afford protection against diseases of the digestive tract which may enter through milk. You can give protection against diseases caused by inoculation, as by mosquitoes, by draining ponds, and where it is not possible to drain off the water, if it is stagnant, cover the surface with oil. And screen the houses!

DR. WALTER H. BROWN, Washington, D. C.: Dr. Fox has made probably the best study of municipal organizations in this country, and those of us who have watched the growth of this movement have had a great deal for which to be thankful to him. I do not think that there is any doubt as to what should be done. One of the large problems that is facing us is to get trained officials. In order to get the type of young men that we need it is necessary that they be given sufficient salaries, proper status, and a secure tenure of office. In Kentucky they are proposing to carry out a certain program, and they need men to do the work which they are proposing to do. When I left a municipal position not more than four weeks ago the state from which I came wanted four trained health officers, full-time men, with salaries ranging from $2,500 to $6,000 a year. If we look over the field in search of men, we are struck with the lack of available material. There is a great shortage of trained men. We can go into the public health schools all over the country, and we find hopelessly small groups of the type of men we need being fitted for this kind of work. If we are not careful, we will develop a one-sided program. We should have in mind that there is a great necessity to do something to attract to public health work people who are able and fitted to carry out the type of administration that Dr. Fox has so admirably presented to us.

DR. A. T. MCCORMACK, Louisville, Ky.: Every member of the profession who loves this work will be grateful to Dr. Fox for presenting in concrete form a definite minimum for the organization of a city health department. The responsibility is up to us, the medical profession to attract to this field, and then train, the personnel that is absolutely essential if we are going to accomplish anything in this work. The most serious matter that confronts those of us who are administering health departments is to secure that trained personnel that can do the work when we have the appropriation with which to carry on a definite program of work. Our difficulty does not consist in going before legislatures and budget commissions and the people themselves to convince them of the necessity for health work, but our difficulty is to secure trained personnel to carry on the work. The state board of health of Kentucky recently accepted an invitation from the University of Louisville to remove its organization and offices to Louisville, and attempt to develop a practical school of public health, where health nurses and health officers will receive training. We are not going to try to develop scientific teachers of public health, or to develop experts who will know one of the great lines of activity in which we are all interested, but we are going to develop the man who can do what Dr. Fox requires to be done, and what has to be done, for the people will become dissatisfied with less.

The faculty of our school will be composed practically entirely of health officials, people who have been actively confronted with the problems they are attempting to teach these young men and women how to solve. Half of the period of training will be devoted to laboratory work, in the human laboratory furnished by the men, women and children in the jurisdiction of the health department of the city of Louisville, the county of Jefferson, and adjacent territory where we are organizing health departments to carry on the work with these pupils under the supervision of trained field men. We have had forty-two students in our school during its first year. We expect to have twice that many at the opening of the school in the fall. No pupil will be admitted who is not approved for admission by the health department of the state from which he comes. No one will be admitted who is not a graduated physician. On the public health nursing side, no nurse will be admitted who is not a registered nurse

in the state from which she comes, and who is not approved by the health department of that state. Our object is to train actual health officers.

Dr. Carroll Fox, Washington, D. C.: My opinion is that all the health officers in the United States, by combining their efforts and concentrating them, can have little or no effect in the control of many of the diseases of the respiratory type. And my reason for saying that is because we know so little about their epidemiology. Influenza is a very good example. With that we can do absolutely nothing. Nobody knows what to do. There is only one way to control such diseases, and that is by rendering an individual immune. If it were possible to put off an epidemic of measles, we will say, what would result? We would merely be building up a nonimmune population, and when the epidemic did come the number attacked would be greater than ever. In other words, there is no artificial barrier which can be built up by man unless he is capable of rendering an individual immune to the disease, and we do not know how to do it, except in very few instances, like smallpox. Nobody knows how these diseases spread. We say that it is transference of nose and mouth secretions. Nobody has proved that. In fact, the attempt to prove it in the case of influenza was an absolute failure. Even with our knowledge of the cause of diphtheria and the use of the toxin-antitoxin treatment, we have had very little influence on the incidence of the disease. At the present time we can save more lives after people get sick, but as to preventing it, I think we have not been very successful. When one can erect an artificial barrier, as in the case of malaria, it is different. Destroy anopheles mosquitoes and you will have no more malaria. Drain a pond and you will get rid of the cause of malaria. If we were to develop and expand that proposition, if we could get enough money to do it, we should have no more malaria. That is positive. The school which Dr. McCormack of Kentucky speaks of is splendid. That is the best way to organize a school of public health. That is the way you are going to accomplish something. Everything is practical in connection with it, and it is absolutely necessary, in order to succeed, to have some practical experience. Theory does not go very far. It is practical experience that a man needs in this work, and then he will know his limitations; he will know what he can do and what he cannot do.

CERTAIN EPIDEMIC MICRO-ORGANISMS OF THE RESPIRATORY TRACT*

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In view of the fact that in respiratory epidemics the problem often arises as to whether or not many of our common organisms play a primary or a secondary rôle, this brief statement concerning certain epidemic strains of bacteria is made.

In the normal throat are several varieties of bacteria prone to become dangerous under certain conditions by either causing or complicating epidemic infections. These bacteria have been called opportunists. The most important are streptococci, pneumococci, Pfeiffer's bacilli (hemophils), staphylococci, meningococci, diphtheria and diphtheroids. Possibly the viruses, natural or modified, of measles, scarlet fever, anterior poliomyelitis and lethargic encephalitis might also be here included, but our knowledge of them in the normal respiratory passages is too meager and uncertain for discussion here.

In the streptococcus group are certain strains constantly found in the tonsils or throat, and ordinarily doing no harm there. At times, however, they take advantage of conditions in the host and invade the tissues, causing local or general infection (secondary infection). Ordinarily such infections are not contagious, even though they are highly virulent and fatal to the individual. The altered conditions making infection possible appear to be chiefly and primarily in the host.

At other times, streptococci may behave in another way. Not only do they occasionally become virulent for individuals, but the infection becomes highly contagious or epidemic. Whether the contagiousness is always necessarily dependent on the virulence is open to doubt. It may depend on some other property, such as the ability of the organism to implant itself on the respiratory mucosa, or on the manner of implantation. It has been shown that bacteria vary in their ability to gain a foothold on mucous membranes.

Examples of the appearance of such epidemic strains of hemolytic streptococci are given here. Many epidemics of sore throat caused by streptococci distributed through milk are now on record. These epidemics are very definite, and the cases are confined largely to those drinking milk. They spread little by contact or in ways other than through the contaminated milk. Therefore, the epidemics are local and restricted to very definite regions, and promptly subside when the contaminated milk is withdrawn. They are all caused by hemolyzing streptococci. The evidence in many epidemics indicates that the streptococci come from the udders of cows infected with strains virulent for the human being. In some of the epidemics the cocci may have entered the milk from a human carrier.

Now, studies made on these streptococci show that they have certain properties that differentiate them from other strains of hemolytic streptococci. They tend to arrange themselves in pairs even in the chain, are somewhat lanceolate, are encapsulated, grow moist and slimy on enriched mediums, form a clear and complete though narrow zone of hemolysis on blood agar, and may cause some green discoloration of the mediums. They are insoluble in bile and do not ferment inulin. For animals they are more virulent, on the whole, than most streptococci, but the lesions in general are the same. All the foregoing properties may vary somewhat, and when the strains are grown on artificial mediums for a time the properties become more like ordinary streptococci. Moreover, specific serum tests made by a number of observers on these strains show that from a given outbreak the organisms have common agglutinating properties by which they may be distinguished from other hemolytic streptococci. Here, then, are definite virulent and epidemic strains of streptococci distinguishable from other related strains and responsible for primary infections in normal persons. The term *Streptococcus epidemicus* has been applied to them by some workers.

Closely related to these milk epidemics are the streptococcus epidemics that appeared in military camps secondary to measles in the contagious wards of the camp hospitals. Here the streptococci appeared first as virulent secondary invaders in measles and quickly spread, involving a large percentage of those sick. Apparently so virulent and aggressive did these cocci ultimately become that they were able to attack normal persons, causing pneumonia, empyema, etc. Keegan [1]

* From the Department of Pathology and Bacteriology, University of Illinois College of Medicine.
* Read before the Section on Pathology and Physiology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Keegan, J. J.: A Hospital Epidemic of Streptococcic Sore Throat with Surgical Complications, J. A. M. A. 72: 1434 (May 17) 1919.

described an epidemic of streptococcus throat infections beginning in the throat ward at the Chelsea Hospital and spreading through several surgical wards, causing wound infections generally in the patients attacked. These streptococci had properties similar to the milk epidemic strains described above.

Streptococcus sore throat outbreaks, especially in the winter months, are fairly common, often attacking several members of a family or making rapid headway in an institution. Such outbreaks assume more or less epidemic proportions, and many become quite general in a community or a considerable section of country. They are not as clear cut as are the milk epidemics, and the cases are more scattered. Their epidemiology is not well known, but apparently the infection is spread by contact, being influenced, probably, by atmospheric or other undetermined factors. While it appears that streptococci are the primary cause of at least some of these outbreaks, it is probably true that in many of them this organism merely plays a secondary rôle, the infection being due to some unknown virus. More knowledge is greatly needed on the etiology of these common throat infections, and little or no study has been made with reference to special characteristics of individual or epidemic strains.

In pneumococcus infections, to some extent, at least, the same general rules seem to apply. Many of them are caused by a variety of strains which occur commonly in the mouth (Group IV). But at times certain strains (Type I, Type II, etc.) appear to acquire epidemic properties, and then the pneumococcus outbreak occurs on a more or less extensive scale. Other factors no doubt enter here to complicate the epidemiology. In epidemics of pneumonia, several strains or types of the pneumococcus are encountered even in the earlier stages of the outbreaks. We are led, therefore, to the assumption that environment and conditions surrounding the host are the important determining factors in the spread of the epidemic. Either this must be true or we must postulate that rapid changes occur in a given epidemic strain, resulting in the development of the several different types found in the epidemics. Possibly both assumptions are true in varying degrees at different times and under different conditions. Usually pneumococcus epidemics are less clearly defined than streptococcus milk epidemics, probably because of the difficulty pneumococci have in getting into lung tissue, their seat of predilection, as compared with infections of the throat by streptococci.

In this connection, studies of the epidemic of influenza are suggestive. Both in the 1889-1890 epidemic and in the 1918 epidemic, nearly every one who worked with the disease described the diplostreptococcus. There is little doubt that all were dealing with the same organism. This is what has been called the Mather's coccus and has been especially emphasized by Rosenow, Tunnicliff and many others. It was commonly found in the blood, sputum, lung exudates, pleural cavities, etc. According to most workers, this organism forms large, moist, watery, green colonies, is encapsulated, and even approaches the *Pneumococcus mucosus* type; they are very virulent for certain animals. Some of their properties, however, are variable; for example, inulin fermentation, bile solubility and specific agglutination. Though found widely both here and in Europe, still it would seem that in certain localities and especially where the epidemic was most fatal, these cocci appeared more commonly and seem to be responsible for many deaths. It may therefore be possible that these diplococci at certain times and places take on highly virulent properties in a way quite comparable to the strains of hemolyzing streptococci mentioned above. The fact that hemolytic streptococci so commonly complicate measles and scarlet fever and the diplostreptococci influenza, probably depends on the part of the respiratory tract primarily attacked—the throat by the measles and scarlet fever virus, the tracheobronchial apparatus by the influenza virus.

It would appear, then, that this coccus, which at present we might hesitate to call either a streptococcus or a pneumococcus, is an organism prone to cause serious infections in the respiratory tract. There is no clear evidence that it is ever a primary invader, but as with hemolytic streptococci, at times it may acquire aggressive properties enabling it to implant itself on a normal respiratory tract by contact or in some other way. As noted above, it has certain properties which, according to some workers, give to it quite definite distinguishing characteristics.

Hemophils (Pfeiffer's bacilli) have a distribution quite like the streptococci. They are widely found in normal and diseased throats, and at times are very virulent for man. The evidence indicates that they rarely, if ever, acquire epidemic properties. Perhaps the nearest approach to this is the occurrence of outbreaks of so-called influenza meningitis. In 1910, in Chicago, in a little more than a year, I encountered seven cases; since then, apparently, they have been rare, one case a year or thereabouts being reported. In New York, too, about that time, these cases were common, but have been far rarer since. Cohen [2] encountered it in Paris about the same time (1909) and called attention to the high virulence of the strain for rabbits. He noted a specific agglutination for these strains by immune rabbit serum, and therefore considered them in a group by themselves and distinct from the Pfeiffer organism. These outbreaks all occurred when ordinary influenza was not prevalent.

Observations by many observers indicate that while the bacilli of this group (hemophils) have many characteristics in common, still in their agglutination and other reactions they may vary decidedly. In my own work, several years ago,[3] I found that immune rabbit serum agglutinated the homologous strains to 1:800 or 1:1,000, whereas all other strains from the same disease or from other disease agglutinated 1:200 or thereabouts. At that time I was inclined to interpret the results on the basis that the homologous strain was agglutinated in higher dilutions than the heterologous strain, a phenomenon known in other well defined varieties of bacteria. However, the interpretation may be made that the individual strains vary and comprise a heterogeneous group, which is quite in accord with the results of Park and Williams [4] and of other observers working with strains of Pfeiffer's bacilli from the recent influenza epidemics. Small and Dickson [5] found that ten strains fell into four groups, and Fleming, Huntoon, Jordan and others, on the basis of specific and cultural reactions, have obtained evidence that the group is a heterogeneous one. I have else-

2. Cohen: Ann. de l'Inst. Pasteur **23**: 273, 1909.
3. Davis, D. J.: Bacteriology of the Respiratory Tract, J. A. M. A. **48**: 1563 (May 11) 1907.
4. Park, W. H.: Bacteriology of Recent Pandemic of Influenza and Complicating Infections, J. A. M. A. **73**: 318 (Aug. 2) 1919.
5. Small, J. C., and Dickson, G. K.: Grouping of Bacillus Influenzae by Specific Agglutination, J. Infect. Dis. **26**: 230 (March) 1920

where [6] discussed this question, calling especial attention to the several varieties of hemoglobinophilic bacteria. In all probability, as this group is further studied, it will be further differentiated in accordance with general principles of bacterial variation.

An analysis of the evidence thus far available from studies of the recent influenza epidemic does not indicate that a single epidemic strain of *B. influenzae* appeared in the influenza patients. This fact has been interpreted by Park and others to mean that this organism was not the etiologic agent, for the reason that it is difficult to think of an explosive epidemic like influenza as having been caused in a given locality by more than one strain of Pfeiffer's bacillus.

Staphylococci rarely, if ever, cause epidemics of any magnitude. Small localized outbreaks of furuncles, impetigo contagiosa, etc., may be mentioned, but there appears no clear evidence that staphylococci ever cause respiratory epidemics. As secondary invaders they may play a rôle, but in this regard they appear to be of decidedly less importance than the streptococci or pneumococci. Little or nothing has been done in identifying strains having individual or epidemic properties.

The meningococcus is found commonly in the normal throat, and is prone to cause epidemics either localized or widespread. The epidemics are quite definite and sharp, though not a large percentage of persons exposed are attacked. Organisms found in such outbreaks usually belong to two or more groups so far as their agglutinating properties are concerned. It is generally conceded that meningitis is a disease dependent in large measure on factors other than the mere presence of the organism in the respiratory tract. It would appear that the various strains or groups are normally fairly widely distributed, and under suitable conditions the several groups are enabled to invade their hosts and cause the disease. Another possibility is that one given strain may readily and rapidly alter its characteristics in passing from person to person, so that even in a given outbreak members of different groups may appear.

Diphtheria bacilli are present in throats of a certain percentage of normal persons. They cause sporadic cases and under certain conditions and especially during certain seasons may give rise to serious outbreaks or epidemics. Recent work [7] tends to show that there are at least two groups of diphtheria bacilli differing in their agglutinating properties. They differ also, but to a less degree, in the character of the toxin produced, a point of importance, if verified, in the production of the specific serum. The relation of the groups to each other is not known; and whether or not outbreaks of diphtheria may be due to a specific strain or to several strains belonging to different groups still remains to be worked out.

Other organisms found at times in the respiratory tract are *B. fusiformis,* which may be responsible for very definite outbreaks; but little or nothing is known concerning the characteristics of the epidemic strains. The terrible outbreaks of plague pneumonia are clear-cut epidemics spread by direct contact and, so far as available data indicate, are due to a strain of *B. pestis* of high virulence. Various strains of plague bacilli even from remote regions show little or no difference in their agglutination reactions. They may vary markedly, however, in their virulence for animals.

From an analysis of epidemics and outbreaks caused by bacteria, such as I have considered above, it appears that there is found no example comparable in extent and in epidemiology to the influenza epidemic. This might be interpreted as an argument against the view that this epidemic was caused by strains of any of the ordinary bacteria of the respiratory tract.

A number of points arise here for discussion, one being the value of specific serum tests for identification; in particular, agglutination tests in revealing relationships of strains of bacteria. Considerable data [8] now exist pointing to the ease with which agglutination and other properties may be made to vary under experimental conditions. It is quite reasonable to assume that under the more complex conditions of natural infection, specific properties of bacteria vary even more rapidly than under experimental conditions. Differences in the agglutination titer as manifested by different strains may mean simply that the organisms have been perhaps transferred a number of times or grown in different mediums. The assumption would appear reasonable that in a sharp, sudden epidemic, differences between individual strains of organisms responsible for the epidemic would be slight or nil; whereas, in more diffuse and less explosive outbreaks, wider differences in the organisms, especially in their finer and more delicate properties, might be expected to appear. Greater differences would be anticipated in organisms obtained from widely separated localities. This may be a partial explanation of the higher incidence of typhoid fever in our soldiers when in France than when in this country.

The relation between capsule development and virulence is a question of interest here also. No doubt a strict parallelism between these characters does not exist, for many bacteria have an abundant capsular substance and are entirely without virulence. However, there is evidence that capsular material may vary in composition; the profuse mucinous envelop about some saprophytes my be a very different substance and have a different function from the capsule seen about certain pathogens like the pneumococcus. At any rate, in the streptopneumococcus group, and apparently in other groups, the more virulent and aggressive the organism the more apparent is the capsule; and, vice versa, after cultivation on artificial mediums the capsule tends to disappear. This was especially noticeable with the milk epidemic strains of hemolytic streptococci.

In concluding this brief statement of a subject which deserves a far more detailed analysis, I will emphasize the fact that just as there are opportunists about the body ready to invade the individual, so there are opportunists at times able not only to invade the individual but also to originate an epidemic. We have, then, individual opportunists and epidemic opportunists, the latter differing from the former not so much in virulence, perhaps, as in their aggressive power and ability to gain a foothold under adverse conditions on the mucous membranes or in the tissues of the body. Some of the distinguishing characteristics of the latter are a moist, slimy, watery growth, formation of a capsule or a capsule-like substance, and specific agglutination reactions.

6. Davis, D. J.: Infections with .Hemoglobinophilic Bacteria, J. A. M. A. **64**: 1814 (May 29) 1915.
7. Havens, L. C.: J. Infect. Dis. **26**: 388 (May) 1920.
8. Dawson, A. I.: J. Bacteriol. **4**: 133 (March) 1919. Rosenow: J. Infect. Dis. **14**: 1, 1914. Jordan: Ibid. **26**: 427 (May) 1920.

ACUTE CARDIAC UPSETS, OCCURRING DURING OR FOLLOWING SURGICAL OPERATIONS

THEIR MECHANISM AND MANAGEMENT *

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"Acute dilatation of the heart" has long been a medical wastebasket for circulatory upsets occurring suddenly both in patients known to have had heart disease and in those who previously have not suffered from cardiac disorders. Particularly has this term been applied by surgeons and clinicians to patients who manifested sudden or alarming circulatory failure or collapse during or following operations. The exact nature of many of these upsets has remained obscure, and in fact reliable evidence of actual dilatation of the heart has been wanting. Perhaps this is partly due to the fact that under the circumstances these patients are in a precarious condition, not permitting of roentgen-ray examination or other troublesome study. Frequently they may still be under an anesthetic when the upset occurs, or only just recovering from a serious surgical operation; or perhaps the postoperative care may prevent them from being moved from one part of a hospital to another, which makes it impossible to collect the necessary data to determine exactly the disturbances that are taking place. In a word, just as "death from acute indigestion" has been used in cases in which death was probably due to sudden coronary obstruction or thrombosis or angina pectoris, so acute dilatation of the heart has been applied to conditions that are more clearly understood and recognized only when careful observations are made.

An opportunity presented itself during the last few years to observe nine surgical cases in which there had been some sort of circulatory upset or collapse during or following operations. Surgical shock is not considered in this study. The conditions were diagnosed by the surgeons as acute dilatation of the heart in some cases, and might very well have been similarly diagnosed in others had not the real nature of the disorder been discovered. Attention in this study was particularly paid to the mechanism of the heart beat, and in each instance this was found to be abnormal. Of the nine patients three had paroxysms of auricular tachycardia, four suddenly went into auricular fibrillation, and the other two had paroxysmal auricular flutter. These conditions are well recognized and described in the more recent works on cardiac disorders. The striking fact is that every patient had a high grade of auricular disturbance, and in all but two the condition was transient in nature, the normal rhythm subsequently being resumed. It was possible to obtain graphic proof of the abnormal mechanism by taking electrocardiograms of six of the patients, and the clinical course of the other three left no doubt as to the real nature of the disturbance.

In estimating whether the heart increased in size during these attacks, the only reliable evidence would have been orthodiagrams, for it is quite clearly recognized that percussion and palpation are much disputed methods of determining small differences in the size of the heart. Unfortunately roentgenograms of the heart were not obtained in these cases, because the interest of the patient demanded that the attack be stopped if possible (as was done in three cases), and some of the others were too sick to be moved. However, roentgenographic studies of similar paroxysmal rapid heart action were made of other cases in the medical wards during and after attacks, which failed except in very isolated instances to show any marked change in the transverse diameter of the heart. The latter medical patients in whom roentgen-ray studies were obtained were suffering from cardiac disease, and one would have expected to find evidence of dilatation in them during attacks of tachycardia even more pronounced than in surgical patients suffering from no cardiac symptoms.

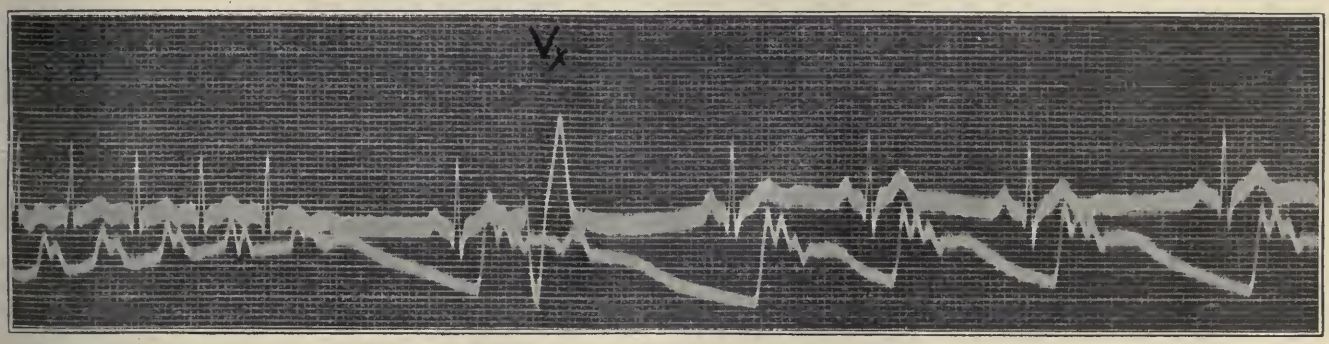


Fig. 1 (Case 1).—Upper tracing, electrocardiograms; lower tracing, brachiogram. The first five regular and rapid beats show the end of the attack of auricular tachycardia. The transition was produced by right vagal pressure. The normal rhythm is restored after a long pause. An extraventricular beat (*Vx*) interrupts the rhythm in one place.

It is to be noted that there were three types of disturbances: auricular tachycardia, auricular flutter, and auricular fibrillation. A proper differential diagnosis of the three conditions is important, because on it will depend an intelligent and efficient management of the attack. As an illustration, one of the patients went into serious collapse while under ether anesthesia, and it seemed for some minutes that her life was in danger. The heart suddenly jumped to 216, and the breathing stopped. Artificial respiration was given, and fortunately the type of upset was paroxysmal auricular tachycardia, which generally can be arrested by vagal stimulation, either by direct pressure over the carotid arteries, or by ocular pressure. In this instance, pressing rather vigorously on the left

* Read before the American Society for Clinical Investigation, Atlantic City, N. J., May 3, 1920.

* From the Medical Clinic of the Peter Bent Brigham Hospital, and the Department of Medicine, Medical School of Harvard University.

carotid artery caused a sudden cessation of the attack; the pulse dropped to 104, and the normal pink color replaced the former cyanosis. In the other two types of disorder, this quick and dramatic result is impossible and cannot be hoped for. We are then dependent on proper digitalis therapy, as the cases cited below will illustrate.

These upsets may occur at any time during the administration of anesthesia: before the actual operation has begun, during the operation, or while the patient is still unconscious, but after the operation is completed. All three of the cases of auricular tachycardia occurred while the patient was still unconscious. The other six patients had their upsets following operation at varying times, from twenty-four hours to nine days after operation. The attacks lasted from several minutes to several days in seven cases, and in two the abnormal rhythm remained permanent as long as our observations were made. At times the clinical condition of the patient became alarming during the attack, while others were not much disturbed. What effect on the circulation would have resulted if the conditions were left untreated it is difficult to say. Very likely some of the attacks would have ended in the normal course of events, because similar paroxysms come and go in nonsurgical patients without great disturbances. Nevertheless, it is almost needless to emphasize that prompt attention should be given when the patient is already embarrassed by a surgical condition.

From the study of these nine patients it is impossible to predict what type of case is likely to have a cardiac upset during or following operation. In none did syphilis seem to be an etiologic factor. Ether was used as an anesthetic in seven of the cases, and procain as a local anesthetic in the other two. One of the ether patients, on whom the operation was delayed because of an attack of auricular tachycardia, was subsequently operated on under gas and oxygen without any mishap. Eight were given a preoperative hypodermic injection of morphin sulphate, 0.01 to 0.02 gm., and seven in addition received 0.5 mg. of atropin sulphate. No definite history of similar previous attacks of rapid heart action could be obtained in any of them, although two had complained of palpitation and three had been bothered by slight dyspnea on exertion. In two cases there was a past history of rheumatic fever. Clinical examination of the heart revealed that one patient had outspoken signs of mitral stenosis and five others had slight cardiac hypertrophy without disease of the valves. Eight of the patients were over 45 years of age, and the other was a boy of 17 who gave no evidence of any organic disease whatever except a fractured clavicle, for which an operation was performed. He had never had heart attacks before, but continued to have them even after leaving the hospital. In a word, there does not seem to be any constant etiologic factor. In what way the surgical procedure can be blamed for precipitating the attacks, or how they may be avoided, it is difficult to state. Very likely some of the patients would have had similar heart upsets at a more distant time, even if no operations were performed.

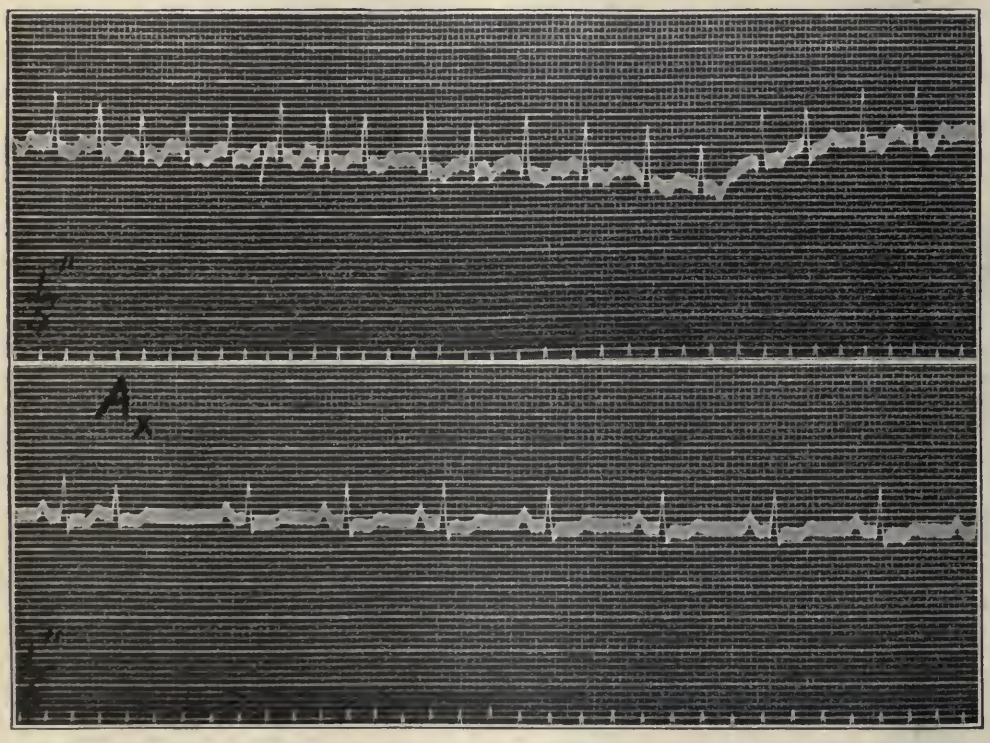


Fig. 2 (Case 6).—Upper tracing, taken January 23, with rate of 157, shows that auricular fibrillation had set in. Lower tracing, taken February 5, shows that the normal rhythm had been restored. Rate is 85. One premature auricular beat (*Ax*) is seen.

In the treatment of the attacks, the important step is to distinguish paroxysmal auricular tachycardia from the other two conditions. In the former, repeated attempts to stop the attack should be made, first by pressure over the left or right carotid artery, and if these fail, by ocular pressure. In the three cases of the sort in this series, the attacks were terminated by these means. The exact diagnosis of the abnormal mechanism may be difficult without special graphic methods. Confusions would be likely to arise between auricular flutter with a regular ventricular rate, as in Case 8, and auricular tachycardia. The absolute arrhythmia of auricular fibrillation practically rules out any other condition. It might be helpful to note at this point that vagal pressure never stops an attack of flutter, although the ventricular rate is slowed temporarily (Fig. 3). On the other hand, the rate of auricular tachycardia is rarely affected unless the attack is completely arrested. It follows, therefore, that if an abnormal regular rapid heart rate slows temporarily during vagal stimulation, the mechanism is not due to auricular tachycardia, but rather to flutter. In deciding whether a rapid regular rate is a normal acceleration or an abnormal tachycardia, it will be of considerable assistance to make an accurate determination of the apex rate, counting a full minute

and repeating this observation in five or ten minutes.[1] If it is an abnormal tachycardia, the rate may not vary even one beat, or at the most not more than two beats, while in normal acceleration greater variations are found. An abnormal regular rate in the vicinity of 200 cannot be any other condition than auricular tachycardia, for if it were flutter the auricular rate would have to be some multiple of 200 or at least 400 (since there is practically always some degree of auriculoventricular block with flutter), which is beyond the limits of this condition. Should the attack be one of auricular fibrillation or flutter, digitalis in some form is the one drug at our disposal. It may not be necessary to use it if the clinical condition of the patient is satisfactory, for the attacks may be transient. The amounts and rapidity of administration would depend on the emergency of the situation. Although none of these patients received large single doses of digitalis by the Eggleston method,[2] one would expect that such a procedure or intravenous use of strophanthin might find a proper place under these circumstances.

SUMMARY

A condition usually called acute dilatation of the heart has been observed in nine cases during or following surgical operations. Each patient was found to have an abnormal auricular mechanism; three had paroxysmal auricular tachycardia, four had paroxysmal auricular fibrillation, and two had paroxysmal auricular flutter. In all but two cases the condition was transient.

There is satisfactory roentgenographic evidence, by studying similar upsets in nonsurgical patients, that the heart does not generally dilate during these attacks.

It is urged that well-defined terms which actually describe the abnormal mechanism be employed when possible, rather than the vague name "acute dilatation of the heart."

Direct vagal pressure or ocular pressure proved successful in arresting all three of the cases of paroxysmal auricular tachycardia. Proper digitalis therapy controlled the course of the cases of paroxysmal auricular flutter and paroxysmal auricular fibrillation.

1. Very accurate counts of rapid regular apex rates can be made at least up to 250 per minute. Three medical men varied from 248 to 250 in a case proved by electrocardiograms to have a rate of 250. Tapping a table with a pencil synchronously with the heart sounds helps to count the very rapid rates.

2. Eggleston, Cary: Digitalis Dosage, Arch. Int. Med. **16**: 1 (July) 1915.

REPORT OF CASES

CASE 1 (S. 2140).—A student, aged 17, had a negative past history except for an occasional attack of tonsillitis. He had no symptoms or signs of structural heart disease. While still under ether during an operation for wiring a fractured clavicle, the heart rate suddenly jumped from 100 to 150.

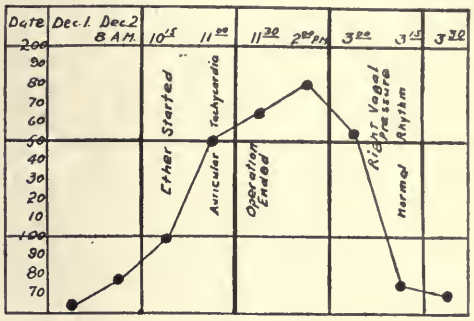


Fig. 4.—Apex rate, Case 1

The patient seemed to be in fair condition, and so the operation was finished. The heart rate remained around 160 (Fig. 4), and while still under ether he was taken to the electrocardiograph room. Here tracings were obtained which proved that the condition was one of paroxysmal auricular tachycardia. Right vagal pressure was applied and the attack was ended. The normal rhythm was restored after the customary postparoxysmal pause. Figure 1 shows the transition from the tachycardia to the normal rhyhm. He had a normal surgical convalescence, but had frequent attacks of tachycardia thereafter, lasting from a few minutes to several hours. There was no past history of ever having had such attacks before the operation, and no evidence of heart disease could be discovered. He was but very little embarrassed during the attacks, and learned to stop them by holding a deep breath.

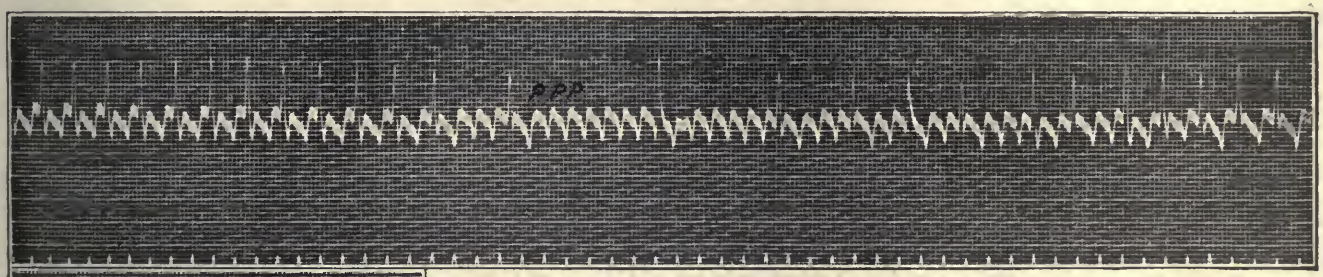


Fig. 3 (Case 8).—Upper tracing, taken January 13, shows the condition of auricular flutter auricular rate, 356; ventricular, 178. The signal marks the duration of left vagal pressure, which inhibits the ventricle, thus bringing out clearly the rapid, regular auricular rate (*p p p*). At the end of the tracing, the rapid ventricular rate is resumed. The lower electrocardiogram, taken January 14, shows a normal slow rate.

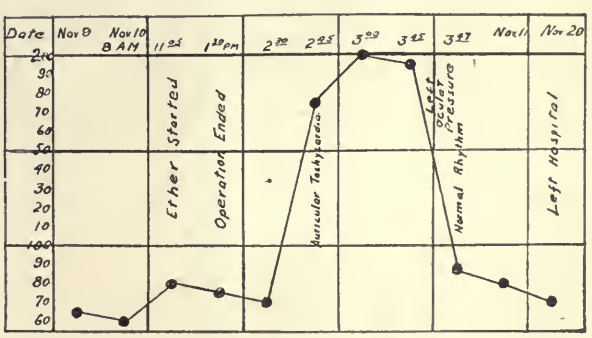


Fig. 5.—Apex rate, Case 2.

CASE 2 (S. 2028).—An engineer, aged 46, who had a history of gonococcal infection and some sort of chancre at the age of 16, came in to be operated on for recurring carcinoma of the glands of the neck. The Wassermann reaction of the

blood was negative. He had had slight dyspnea on exertion for one year, but no palpitation. The heart was slightly enlarged to percussion. The blood pressure was 135 systolic, and 85 diastolic; the urine showed an occasional cast. After the operation for dissection of the glands of the neck was over, but while the patient was still under the influence of ether, the heart rate suddenly rose from 70 to 170 (Fig. 5). The condition did not seem to be particularly alarming, and the patient was taken to the electrocardiograph room. Here the tracings showed that the upset was due to paroxysmal auricular tachycardia. Repeated attempts to stop the attack by pressure on the left and right vagus nerves failed. Left ocular pressure, however, promptly brought the attack to an end, and the rate suddenly fell from 195 to 88. The patient had no more attacks and made a satisfactory surgical recovery. He died three years later of carcinoma of the pharynx.

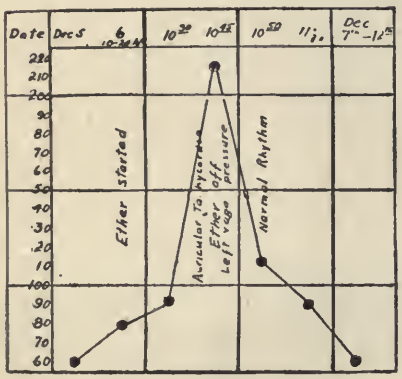


Fig. 6.—Apex rate, Case 3.

CASE 3 (S. 11598).—A housewife, aged 46, had rheumatic fever at the age of 8 and chorea for about two years, from 10 to 12. For the preceding two years she had noticed some dyspnea on climbing stairs, and occasionally had palpitation, but no definite history of attacks of tachycardia could be obtained. She recently had several attacks of gallstone colic. The diagnosis of gallstones was made, and the heart showed signs of well compensated mitral stenosis with slight cardiac hypertrophy. The patient was etherized, and while the abdomen was being prepared, but before the operation was started, breathing suddenly stopped, she became cyanotic, and the heart rate was found to be 216 and regular (Fig. 6). Artificial respiration was started, and after several minutes attempts were made to stop the auricular tachycardia by vagal pressure. There was no opportunity to confirm the diagnosis by electrocardiograms, but the perfectly regular apex rate of 216 and the ultimate result rule out any other condition. After several attempts at both right and left vagal pressure had been made, pressure on the left carotid suddenly restored the heart to the normal rhythm. The rate fell from 216 to 112 in one beat. The patient was subsequently operated on, with gas and oxygen as an anesthetic, and a gallbladder con-

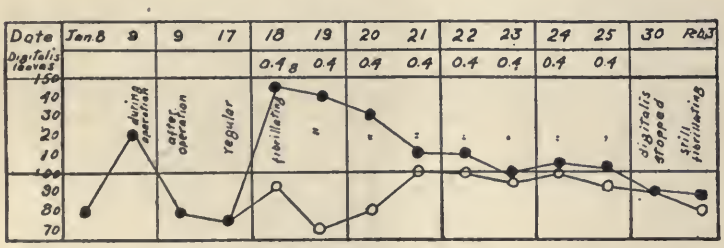


Fig. 7.—Apex and radial rates, Case 4. In this and the following three charts, the apex rate is indicated by the solid dots, and the radial rate by the hollow dots.

taining stones was removed. She had no subsequent attacks of tachycardia, and left the hospital in excellent condition.

CASE 4 (S. 11788).—A man, aged 65, came into the hospital to be operated on for an inguinal hernia. He never had had chorea or rheumatic fever, but had two attacks of acute tonsillitis many years before. He had had occasional flutterings of his heart after smoking too much, but otherwise there had been no symptoms referable to the circulation. Six weeks before admission to the hospital, while lifting some heavy loads, he ruptured himself and came in because he did not want to wear a truss. Physical examination was negative except for somewhat distant heart sounds. He had a typical right inguinal hernia. The systolic blood pressure was 156 and the diastolic 82. The heart rate was about 80 before operation and rose as high as 120 during the operation. It always remained regular, however. Procain was used locally, and no general anesthetic was needed. The pulse remained around 80 for eight days. The ninth day following the operation, although the convalescence seemed to be progressing favorably, the heart suddenly became irregular; the apex rate was found to be 144 and the radial 92. The absolute arrhythmia and the pulse deficit pointed to the diagnosis of auricular fibrillation. No electrocardiograms were obtained. He was given 0.4 gm. of digitalis leaves daily, and the apex and radial counts gradually approached each other (Fig. 7). When the patient was discharged from the hospital the heart was still in auricular fibrillation, but the rate was not rapid and there was no decompensation. At no time was he disturbed symptomatically by the attack of rapid heart action.

CASE 5 (S. 11108).—A woman, aged 49, entered the hospital for repair of a postoperative ventral hernia. There had been no history of acute rheumatic fever or chorea. She had been slightly short of breath on exertion for the previous few years, and had occasional precordial pain radiating down the left arm. Her main difficulties were constipation, indigestion, and abdominal pain associated with the ventral hernia. Examination of the heart revealed slight enlargement; the heart sounds were regular but distant, and a soft systolic murmur could be heard all over the precordium. The patient stood the operation very well, and no particular difficulty

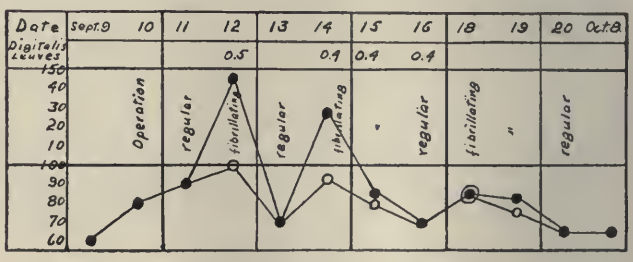


Fig. 8.—Apex and radial rates, Case 5.

occurred. Ether was used as the anesthetic. Two days later, however the heart suddenly became absolutely irregular and rapid. The apex rate was 145 and the radial, 100. The diagnosis of auricular fibrillation was made, although no electrocardiograms were taken. Clinically, she did not look very well, the respirations were 35 to the minute and her color was poor. She was given 0.5 gm. of digitalis leaves in one dose, and the following day the heart was slow and regular. The next day she had another attack of transient auricular fibrillation, the apex rate being 127 and the radial, 92. This attack did not upset her symptomatically so much as the first. It was thought that she might continue to have further attacks, and so she was given 0.4 gm. of digitalis daily for several days with the hope that if other attacks occurred the apex rate would not accelerate. Four days later (Fig. 8) a third attack was observed, although the patient was absolutely unaware of it. The rhythm became completely irregular, but the apex rate was only 85 and there was no pulse deficit. The heart was already prepared for the attack by the digitalis. The patient was finally discharged in good health with a regular, slow heart rate.

CASE 6 (S. 11721).—A man, aged 58, came into the hospital for gradual failure of vision. He had a negative history so far as the circulation was concerned, and examination of the heart was essentially negative. The diagnosis of brain tumor was made, and a right subtemporal decompression was performed. Three weeks later a right parietal bone flap operation was performed. No tumor was found, but there was a right internal hydrocephalus. There was no particularly abnormal reaction of the pulse during either of the two

operations, and both were performed under ether. The third day after the second operation, the pulse became absolutely irregular in force and rhythm, the apex rate being over 150, and the radial about 80. Electrocardiograms disclosed auricular fibrillation (Fig. 2). The patient became delirious and developed Cheyne-Stokes breathing. He was given 0.4 gm. of digitalis leaves daily for six days. The pulse deficit entirely disappeared, and the apex rate fell from 155 to 90. On the seventh day the heart became regular and remained so. The patient later died of a brain tumor, found at necropsy.

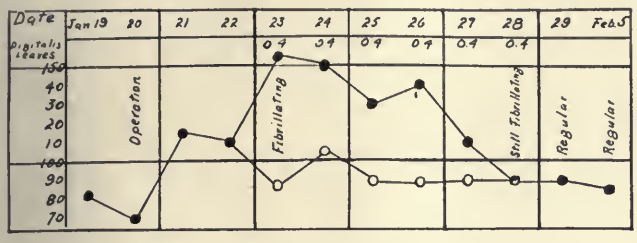


Fig. 9.—Apex and radial rates. Case 6.

CASE 7 (S. 2228).—A woman, aged 46, entered the hospital complaining of a choking sensation in her throat and palpitation of the heart. Physical examination revealed that she was suffering from hyperthyroidism with marked exophthalmos and tachycardia. The heart was somewhat enlarged, but the action was regular. An operation under ether was performed, at which the superior and middle cervical sympathetic ganglions on both sides were removed. The condition of the patient was excellent throughout the operation, the pulse ranging between 90 and 110. About forty-eight hours after the operation the heart rate, which had been regular and 110, suddenly jumped to over 200, while the pulse rate remained around 100 (Fig. 10). There was absolute irregularity in

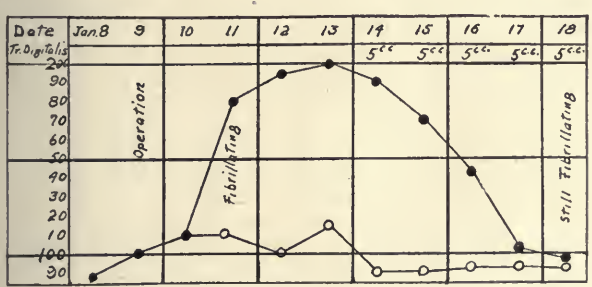


Fig. 10.—Apex and radial rates, Case 7.

force and rhythm. Electrocardiograms revealed the condition to be auricular fibrillation. Digitalis was not given for three days to see whether the attack would prove to be transient. On the fourth day, when the apex rate was still in the vicinity of 200 with a marked pulse deficit, tincture of digitalis, 1 c.c. every four hours, was begun. In seventy-two hours there was virtually no pulse deficit, and the apex rate had fallen to 102. The patient remained under observation for one month, but the normal rhythm of the heart did not return. She died at home a few months later of hyperthyroidism, with symptoms of increasing cardiac failure.

CASE 8 (S. 2294).—A janitor, aged 55, complained of inability to swallow solid food. Both his mother and father had died of cancer of the stomach. His marital history was negative. Following acute rheumatic fever twenty years before, he had pneumonia and pericarditis. For some years, until six months before, he had frequent and distressing attacks of palpitation. For the last two years he had had increasing difficulty in swallowing food, and when seen he could take only liquids. The diagnosis of carcinoma of the esophagus was made and a gastrostomy was advised. Examination of the heart disclosed definite enlargement but no significant murmurs. The blood pressure was normal and the Wassermann reaction was negative. There was no particular difficulty with the surgical operation, performed under procain as a local anesthetic. The patient gained weight on artificial feeding through the gastrostomy, but on the sixth day after the operation the heart rate suddenly rose to 180. The rhythm was perfectly regular, and electrocardiograms revealed that the condition was auricular flutter, with an auricular rate of 356 and a ventricular rate of 178 (Fig. 3). This attack lasted about twenty-four hours, and then a normal slow rate of 88 returned. Pressure on the vagus nerves had no influence on the attack, for although the ventricular contractions could be readily inhibited, the auricles were unaffected; and as soon as the vagal pressure was released, the original rapid rate was resumed (Fig. 3). Nine days after the attack of paroxysmal flutter, the patient had an attack of transient auricular fibrillation lasting twenty-four hours. During this attack the apex rate was about 170, but absolutely irregular (Fig. 11). During neither paroxysm of rapid heart action did the clinical condition become alarming; and because it was thought that the attacks would be transient, no digitalis was given. He died a short while later, and at necropsy carcinoma of the esophagus, general peritonitis and an adherent pericardium were found.

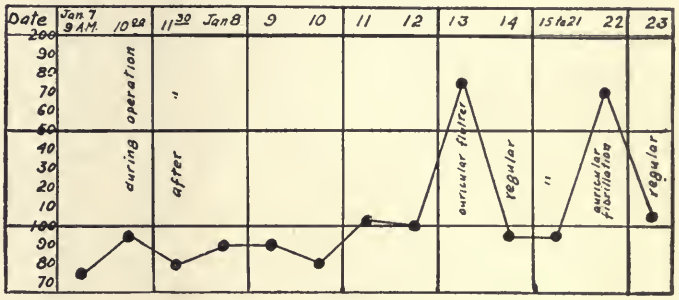


Fig. 11.—Apex rate, Case 8.

CASE 9 (S. 3679).—A housewife, aged 52, complained of sudden severe transitory pains in the right side of her face. The family and marital history was unimportant. She had never had any acute illness and never suffered from cardiac symptoms. Physical examination revealed a slightly enlarged heart, which was otherwise negative. The systolic blood pressure was 254, and the diastolic 150. The urine and blood examination was normal, and the Wassermann reaction was negative. The diagnosis of trigeminal neuralgia was made, and an operation for the avulsion of the sensory root of the fifth cranial nerve on the right side was performed under ether. Before operation the pulse was always between 50 and 60, and during the operation it was generally under 70. Thirty hours after operation the heart rate suddenly jumped to 140. The attack lasted about thirty-six hours, whereupon the rate promptly fell to 62. Two days later there was a similar attack, the heart rate rose to 150, and the patient seemed clinically to be in a poor condition. Electrocardiograms were taken and showed that the attack was one of auricular flutter, with an auricular rate of 304 and a ventricular rate of 152. During the next twenty-four hours she was given 0.5 gm. of digitalis leaves, and the rhythm changed from auricular flutter to auricular fibrillation, with an apex rate of 90 (Fig. 12). Digitalis was omitted, and the following day the heart was slow—60 to the minute and regular except for an occasional premature auricular beat. Thereafter the patient made an uneventful recovery and was discharged in good condition.

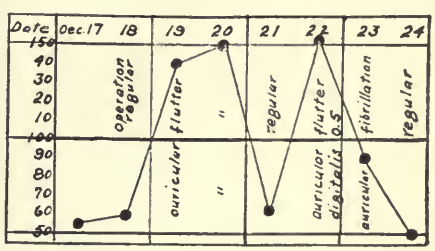


Fig. 12.—Apex rate, Case 9.

21 Bay State Road.

THE PRESENT STATUS OF NEUROTOLOGY FROM THE BORDERLINE STANDPOINT*

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In presenting this subject for consideration, I intend not to bring anything particularly new before this body so much as to present certain memoranda representing deliberate and disinterested judgment of investigations and discussions. I trust they may constitute more than a mere exchange of views and opinions, and be a statement of principles and a recapitulation of the chief features on which agreement has been reached. There should be thus afforded a summary review of those points of agreement of the various investigators, and the memoranda should remain as they were intended to be—the bases of future reference representing the combined opinion of these investigators.

The necessary development of specialism has produced such a wide separation of existing medical knowledge that there often remains little common ground for discussion. This is especially true and unfortunate in classes of cases necessitating the intimate cooperation of several specialists. There is probably no class which illustrates this condition more strikingly than the borderline cases with which neurotology is called on to deal. It is to be hoped that neurotology can succeed in establishing a closer cooperation and harmony in this class of cases, dealing especially with intracranial diagnosis, many of which become sooner or later neurosurgical in character.

Many of the chief complaints of the patient, such as impaired hearing, tinnitus, headache and vertigo, which lead him to consult the otologist, are not always indicative of primary ear lesions. These are often the presenting symptoms, and because of their annoying character they obscure other manifestations of existing nervous disease which are either ignored or not given proper evaluation by the patient. The otologist, therefore, is consulted instead of the neurologist, and because of this overlapping in their fields of work there should be a reciprocal relation between them. The otologist should know enough neurology to consult and ask assistance of the neurologist in complicated and puzzling internal ear cases, and the neurologist should be as ready to seek aid of the otologist in the diagnosis of intracranial lesions, for which the latter is especially trained. Neurologic and other special examinations in such borderline cases often disclose diagnostic and prognostic facts of great value. What has been said of neurology applies equally well in the fields of internal medicine, surgery, gynecology, syphilology and ophthalmology, in their borderline relation to otology. To gain a better appreciation of the present status of these neurotologic tests, a short historical summary of their evolution would be in order.

EVOLUTION OF NEUROTOLOGIC TESTS

In 1907, when Bárány published his book, "Physiologie und Pathologie des Bogengangapparats beim Menschen," he apparently had no idea of the relation between the vestibular apparatus and the cerebellum. In his plan of the mechanism involved in the production of nystagmus and disturbances of equilibrium, the cerebellum had no place. Following perusal of the works of Marburg and Bing, Bárány recalled the analogy between the staggering and spontaneous nystagmus in diseases of the cerebellum and those of the vestibular nerve. Later, Cajal's book "Histologie du système nerveux de l'homme et des vertébrés" (Edition française, 1911), impressed him with the fact that every root fiber of the vestibular nerve ends in the cortex of the cerebellum, and on the way to the cortex of the vermis gives off collaterals to the cerebellar hemispheres. Bolk's book, "Das Cerebellum der Säugetiere," 1906, convinced him that the cerebellar hemispheres control the innervation of the extremities of the same side.

The works of Nothnagel, Pineles and Mann next came to his attention. Nothnagel, as early as 1876, had declared that disturbance of equilibrium arose only in disease of the cerebellar vermis. Pineles and Mann emphasized the hemiparesis of the same side occurring in cerebellar affections. Bárány then recalled that ataxia of the arm of the same side was of regular occurrence in cerebellar abscesses and cerebellopontile angle tumors. Through Docent Sachs he was permitted to experiment with the Graefe touch test during vestibular stimulation. In this test the patient with an eye muscle palsy fixes an object and then with closed eyes attempts to touch it again. The patient "overshoots the mark" if paralysis is present. The thought came to Bárány: "How will a normal person react with an induced vestibular nystagmus?" Experimentation developed the fact that a normal person with horizontal nystagmus to the right past points to the left, and vice versa.

Another question now arose in the mind of Bárány: If in disease of the vermis spontaneous falling occurs, spontaneous past pointing should occur in disease of the cerebellar hemispheres; and if in disease of the vermis normal falling does not occur, so should the normal past pointing reaction fail to occur in disease of the cerebellum. Thus was developed the "pointing reaction" of Bárány, as well as the relation of the vestibular apparatus to the cerebellum.

It may be thus readily seen that when we examine the vestibular apparatus we test not only the ears but also a large part of the central nervous system. We can determine the functional intactness of the end-organ, the eighth nerve, the various afferent paths, and the intracranial structures through which they pass; the cerebral cortical centers and their transcortical association tracts; the efferent cerebral paths and the nuclei through which they pass; the cerebellar nuclei and correlation paths to and from cerebellar cortical centers, and various portions of the pons and medulla.

DIAGNOSTIC AIDS DERIVED FROM THESE TESTS

After such a consideration, the wide possibilities of neurotology become apparent, and the application of these newer vestibular apparatus tests gives results which are often of great value to other branches of medicine in determining diagnosis and proper treatment. Space and time forbid going into great detail, but I shall enumerate a few of the diagnostic aids to be derived from these newer ear tests.

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

To the fields of internal medicine and gynecology they have given us a method of recognizing vertigo which has been a stumbling block for years. Vertigo is essentially an ear study, and while these tests do not reveal everything connected with this symptom, they at least furnish a good working basis, thus enabling us in the majority of cases to make a diagnosis and institute intelligent treatment. When a patient complains of vertigo—and by that term I mean a sensation of motion which is contrary to fact—the physician should give the vestibular apparatus the first consideration, and analysis from this standpoint will usually lead to gratifying results in diagnosis.

To the neurologist great aid can often be given in differentiating between labyrinthine and intracranial lesions and assisting in intracranial localization. These ear tests are not supposed to make the diagnosis for the neurologist—though they occasionally do so—but they often afford data of great suggestive and confirmative value in arriving at a correct diagnosis.

To the surgeon they play the rôle of bringing order out of chaos in intracranial localization; they will often determine whether or not a given case is operable, and, if so, where operation should be done; and no skull should be opened until the patient has had a thorough examination of his ear mechanism supplementing other known methods of diagnostic value.

To the syphilologist they offer additional data in the early diagnosis of syphilis and in the determination of early involvement of the central nervous system; they assist in the recognition of neural recurrences, help in checking therapeutic activity and efficiency, and, in some cases, assist in determining whether or not the patient is cured. In selected cases they often go beyond the blood and spinal fluid examinations.

In the study of eye palsies they offer material assistance to the ophthalmologist, and are of great value in analysis of the cause of spontaneous nystagmus and in the determination of the degree of paresis or paralysis of the eye muscles and eye movements.

The otologist not only offers a wide range of usefulness to other branches of medicine with these tests, but he employs them as a routine in his own work in determining whether he shall or shall not operate on a labyrinth, and whether he is dealing with a labyrinth, eighth nerve, or intracranial lesion.

All innovations in medicine have been subject to the gauntlet of carping criticism, and the Bárány tests offer no exception; in fact, they seem to have received more than their share. Perhaps it was another case of "toying with the Delilah of the Press." These tests at the outbreak of the World War were given undue and unwarranted publicity owing to the popularity of aviation among the young men of the country. Certain critics rushed into print without having carefully analyzed the form used in examination of candidates for aviation, claiming that undue prominence was being accorded the ear tests. These discussions were soon quieted by the cold blanket of facts, but the prejudice which they aroused seems to linger still, and has given rise to an antagonistic attitude.

When the ears are stimulated, an extensive portion of the nervous system becomes involved, and this in turn affects a large part of the voluntary body musculature. Because of this a proper technic of examination and interpretation of responses becomes of the greatest importance. I shall take it for granted that a knowledge of the standard technic for the examination of the vestibular apparatus is familiar to the members of this section. Interpretation of responses obtained by a standard technic is not so readily understood, largely because of our ignorance of the histologic anatomy of the central nervous system. Postulates in medicine are the result of imagination plus clinical experience, developed in the light of existing knowledge. They are only to be considered as tentative and subject to change as progress occurs, or to confirmation by anatomic, physiologic and pathologic evidence.

Bárány's original report on after-turning horizontal nystagmus showed wide discrepancies (from zero to 120 seconds), making its interpretation difficult to the average otologist. Mackenzie, whose investigations extended over a period of eight years (1906-1914), reported findings in after-turning horizontal nystagmus in normals in which the average duration was placed at twenty-four seconds and was found to be consistently near that figure. Jones and Fisher and their co-workers corroborated these findings with a variation of two seconds, their figure being twenty-six seconds. The work of these investigators placed the figure for the duration of after-turning horizontal nystagmus on a practical working basis. Further work of Jones and Fisher led them to believe that the tracts from the horizontal and vertical semicircular canals undergo a central differentiation. Using this discovery as a working basis has resulted in clinical diagnoses which have checked in a surprisingly accurate way with pathologic findings.

Cajal's work, in which he demonstrated histologically that the fibers from the vestibular portion of the eighth nerve enter Deiters' nucleus and thence proceed to the cerebellum through the inferior cerebellar peduncle, has been accepted. According to the views of Jones and Fisher, these are the fibers from the horizontal canal, and they claim further that the vertical canals' fibers shunt Deiters' nucleus, passing to the inside, and ascend into the pons, and in some undetermined center undergo branching which they describe as a Y, the vertigo fibers entering the cerebellum through the middle cerebellar peduncle; whereas the nystagmus fibers enter the posterior longitudinal bundle and are thence carried to the nuclei of the third and fourth cranial nerves. They also describe a Y in the branching of the horizontal canal fibers, one branch of the Y carrying the vertigo fibers through the inferior cerebellar peduncle to the cerebellum—these being the fibers demonstrated histologically by Cajal—and the other carrying the nystagmus fibers which enter the posterior longitudinal bundle and thence proceed to the nuclei of the third and sixth cranial nerves. The vertigo fibers from the vertical and horizontal canals meet in the nuclei of the cerebellum—i. e., fastigii, emboliformis and globosus—and proceed together, decussating in the crura cerebri to the first and second temporal convolutions of the opposite side, which have been postulated by Mills as the "vertigo center."

From this postulation certain syndromes have been developed which, in association with the proportionate or disproportionate impairment of responses, assist us materially in differential diagnosis. As these are familiar to you, their recital will be unnecessary. Any definite deviation from the normal is usually to be considered on a pathologic basis until proved otherwise, and an attempt should always be made to check

the findings on a single lesion basis. The wide application of these newer ear tests can probably be best shown from a group of case reports.

REPORT OF CASES

Case 1.—George J., aged 2½ years, referred to me by Dr. Harry Carey, March 1, 1917, one of three children, whose father and mother are living and in good health, developed normally until about a year before I saw him, when he gradually became unable to walk. He had been worse recently; he could not sit up and could barely move his legs, but had better use of his arms. The child, according to the statement of his parents, moaned and picked his nose for hours at a time. He had had frequent vomiting attacks, and because of these was treated for "stomach trouble." The tongue was frequently protruded from the mouth. A continuous, spontaneous horizontal and rotary nystagmus of wide excursions was present, when looking to either side and straight ahead. Examination of the eye was difficult because of this spontaneous nystagmus. There appeared to be no paralysis of the extraocular muscles. The pupils were unequal but not dilated. The right eye presented a few anterior synechiae; the cornea was hazy and gave the appearance of early corneal ulceration and rupture. The left pupil reacted to direct and consensual light. Examination of the left fundus was difficult, but there was no evidence of choked disk or macular area degeneration. The corneas were sensitive to touch. The seventh and auditory portion of the eighth nerves appeared to be intact. No reflexes could be obtained from the arms, legs or abdomen. No evidence of rachitis could be elicited; the child had the facies of a cretin; both membrana tympani were intact.



Fig. 1 (Case 3).—Hardened brain with section removed for microscopic examination from what proved to be a glioma.

The child was held in the arms of the father and both turned in the chair. The eyes could be pulled in any direction desired by the turning reaction, but the induced nystagmus was of only from five to ten seconds' duration, when it would again revert to the wild spontaneous type. At times there was a tendency to conjugate deviation after turning and douching. Douching both ears produced the normal type of nystagmus from all canals, but it was likewise subnormal. Past pointing or falling reactions could not be elicited. The Wassermann reaction was +.

The irritation in this case appeared to be supranuclear as stimuli went through the lower paths. Antisyphilitic treatment was instituted and the child made an apparently complete recovery within a few months. A report in October, 1917, stated that the child was in good health and was normal in all respects except that he stuttered occasionally. From the examination of the vestibular apparatus in this case I was able to give a favorable prognosis.

Case 2.—Mr. F. S. R., aged 51, referred to me by Dr. Claude G. Hoffman, with the history that for the past two years the patient had suffered frequently from vertigo and a tendency to stagger to the right, had experienced two severe attacks, one in January, 1916, and the other in June, 1917. Vertigo was of such severity that he had to support himself to prevent falling. The patient admitted syphilitic infection, but examinations of both blood and spinal fluid were Wassermann negative. He was referred to me for vestibular examination in the hope that this would clarify the diagnosis. Neurologic examination was negative. The right eye was blind as a result of "eclipse gazing." The right pupil was contracted and did not react to light. A large central opacity was present in the lens. The disk head was atrophic and the vessels were small. The left pupil measured 4 mm. and reacted to light and accommodation. The left fundus was negative, except for the presence of early arteriovenous compression. Examination of the hearing in both ears was negative, except for slight middle ear deafness and shortened bone conduction.

Examination of the vestibular apparatus gave very confusing and contradictory results. There was a tendency to spontaneous nystagmus upward with a slight spontaneous past pointing of the left arm to the left, and this arm could not be made to past point to the right either by douching or by turning. Turning to the right produced a large horizontal nystagmus to the left of thirty-four seconds' duration with a tendency to conjugate deviation, with subnormal vertigo and no past pointing of the left arm. Turning to the left produced a large horizontal nystagmus to the right of twenty seconds' duration, with a tendency to conjugate deviation, a subnormal vertigo, and an exaggerated past pointing to the left of both arms. The falling reactions after turning were normal.

Douching the right ear with water at 68 F. produced a rotary nystagmus to the left, with a tendency to conjugate deviation, which appeared after thirty-five seconds. No vertigo nor past pointing could be elicited with the head 30 degrees forward, 60 degrees backward or 120 degrees forward. With the head 60 degrees backward there was also a tendency to conjugate deviation. The patient fell to the right regardless of the position of the head. Douching of the left ear produced practically the same result after thirty-nine seconds. Water at 112 F. reversed the nystagmus, but had no effect in

reversing the other responses. The patient's falling reactions after douching the left ear were normal.

The galvanic tests were: Right ear, cathode 6 ma. produced rotary nystagmus to right; anode 5 ma. produced rotary nystagmus to left. Left ear, cathode 7 ma. produced rotary nystagmus to the left; anode 5.5 ma. rotary nystagmus to the right.

The tests were suggestive of a low grade basilar meningitis, and such a report was rendered. Swift-Ellis intraspinal treatment was instituted, and later the spinal fluid and blood were Wassermann positive; a cell count of forty-five was present with markedly increased globulin. The Wassermann tests were all made by the same laboratory. In this case the vestibular tests appeared to go beyond the blood and spinal fluid Wassermann, and the Swift-Ellis method apparently produced a provocative result.

CASE 3.—Mr. J. L., aged 40, Hebrew, designer, was referred to me by Dr. Claude G. Hoffman, Jan. 27, 1919, for examination of his vestibular apparatus. His father, mother and two sisters were well. He had the usual diseases of childhood; six years before, he had pneumonia followed by empyema of the right chest, necessitating a rather extensive operation, from which he made a good recovery.

About four years before, he began to have headache and vertigo. He had some tonsillar symptoms at that time; the tonsils were removed without relieving the headache and vertigo. Three years before, a ++++ Wassermann of the blood was obtained. He received ten intravenous injections of what he supposed was arsphenamin. In January, 1919, two blood and spinal fluid Wassermann tests were flat negative with three antigens. Antisyphilitic treatment was given, with no clinical result. The preceding summer he had a very severe attack of vertigo associated with nausea, vomiting and headache, parietal and occipital. Since then vertigo and headache had been more or less continuous. Neurologic examination was negative.

Hearing tests disclosed a slight middle ear deafness with a shortened bone conduction. Rinne's test was positive; Weber's in the head. The patient had spontaneous nystagmus to the right of the second degree and also to the left, more marked, of the second degree. Spontaneous vertical nystagmus was also present. No spontaneous past pointing was elicited. In being tested for the pelvic girdle reactions the patient fell to the right, or left, or forward, but not backward. On turning to the right a horizontal nystagmus to the left of twenty seconds' duration and good amplitude was elicited. Past pointing was present but subnormal; vertigo also was subnormal, of ten seconds' duration. On turning to the left a horizontal nystagmus to the right of thirty seconds' duration and good amplitude was obtained. Past pointing and vertigo were present but subnormal. Falling reactions were normal. The patient was much disturbed by the turning, suffering from nausea and severe vomiting. He was told to return the next day for ear douching, but failed to appear.

Feb. 18, 1919, I was called to see the patient at his home by Dr. William A. Jenkins. At that time the spontaneous vertical and horizontal nystagmus of the second degree to each side was still present. There was slight choking of both disks, the right being more involved than the left. The patient had been in bed for three weeks. Neurologic examination was negative except for a slight dysarthria. He also complained of photophobia and a sound of falling water in both ears, of the same degree on each side. Fields taken at this time were negative. Vision was normal, as was the tension of both eyes; decompression was advised.

I did not see the patient again until December 12, when I was asked to examine him by Drs. B. F. Zimmerman and H. S. Eggers. The spontaneous vertical and horizontal nystagmus of the second degree to each side was still present. Turning to the right produced a horizontal nystagmus to the left of large amplitude and twenty-five seconds' duration. Vertigo and past pointing were subnormal. On turning to the left, horizontal nystagmus to the right of large amplitude and twenty-seven seconds' duration was obtained. Past pointing was exaggerated and prolonged with both arms; falling was normal.

On douching the right ear with water at 68 F., the head being 30 degrees forward, a rotary nystagmus to the left



Fig. 2 (Case 3).—Horizontal section through hardened brain showing area and extent of tumor involvement.

was obtained in one minute and twenty seconds. The right arm past pointed once to the right, but the left arm failed to past point. When the head was thrown 120 degrees backward, a large horizontal nystagmus to the left occurred, with subnormal past pointing of the right arm, but none with the left arm. On douching the left ear with water at 68 F., the head being 30 degrees forward, a rotary nystagmus to the right was obtained after three minutes. The right arm showed subnormal past pointing, the left arm no past pointing. With the head thrown backward 120 degrees, a large horizontal nystagmus to the right was elicited with subnormal past pointing of the right arm but none with the left. Both disks were still choked with beginning atrophy.

The only localizing signs of value were obtained from the Bárány tests, and suggested a posterior left fossa lesion. I

advised approach to the brain posteriorly on the left. The other consultants disagreed with my findings, so a temporal decompression on the right was performed, December 13. When the skull was opened the dura was bulging, but pulsated under the finger. The brain bulged when the dura was incised. The wound could not be closed until ventricular puncture through Keen's point was made. The ventricular fluid spurted about 8 inches from the needle. Phenolsulphonephthalein injected into the ventricles had not appeared in the spinal fluid from lumbar puncture after twenty minutes. The patient continued to eliminate the drug by urine for forty-eight hours afterward. Functional test of the kidney was negative. The decompression did not affect the spontaneous nystagmus or the choked disks, but did relieve the headache.

The patient died, March 16, 1920. Necropsy by Dr. Stuart Graves disclosed a brain tumor of the left cerebellopontile angle, invading the left cerebellum, which from its unencapsulated, soft, vascular condition appeared to be a glioma. No marked external evidence of internal hydrocephalus was present. No evidence of basilar or cortical meningitis was disclosed. The most interesting features were the spontaneous vertical nystagmus and the blocking of both vertical canal fibers in the brain stem, with the absent past pointing of the left arm by douching. The unusual feature was no disturbance of hearing in the left ear with the extent of the tumor involvement.

COMMENT

The reliability and accuracy of nystagmus as a test has been subjected to question, because of the effect of repeated rotation on this reflex, some investigators claiming that its gradual reduction was such as to vitiate its value in practice. The results attained by various types of research have been so contradictory that, for the present, judgment would best be suspended. I have had the good fortune to subject several professionals to the turning reaction, and my results have shown that the work done by these persons, consisting of revolutions much more rapid than could be produced by the turning chair, have had no effect in reducing the duration of normal nystagmus, although a marked reduction occurred in vertigo and its objective responses—falling and past pointing.

The effects of intracranial pressure constitute a great stumbling block in differential diagnosis in all methods of intracranial localization, and the Bárány tests offer no exception to this rule, as witness the Bárány positive results in internal hydrocephalus. This criticism, therefore, cannot be directed to the Bárány tests alone. One must ever be mindful of the fact that pressure can "spill the beans" in any method of intracranial localization. In an unpublished paper by Lillie of the Mayo Clinic, which was read before the Minnesota Academy of Ophthalmology and Oto-Laryngology, a report was made of the value of the Bárány tests in neurologic diagnosis in 100 consecutive nonselected cases. The Bárány findings, per se, in certain intracranial lesions were of more significance in localization than the eye findings.

The neurotologist of the future should not only be able to give data of confirmative and suggestive value, but should in addition be in position to suggest proper medical or surgical therapy. He should avoid the attitude of the medical neurologist who makes a diagnosis and then stops or depends on some obsolete therapeutic method and waits until the time for giving proper aid has passed. I recently heard a criticism of such work in which the examiner attempted to draw too fine a diagnosis, his enthusiasm and his knowledge of neurology becoming so scrambled that theory swept him from the moorings of reason. When asked what was to be done for the patient he retorted: "That is not for me to say—I only make the diagnosis!"

The otologist should have a working knowledge of the intracranial neurology of the eighth nerve, just as the ophthalmologist knows the optic nerve and its intracranial pathway, and with this training he is better qualified to make neurotologic examinations, just as the ophthalmologist is better qualified to make perimetric and fundus examinations.

The various fields aforementioned will be skeptical of neurotologic assistance in diagnosis, just as they were of the value of choked disk until shown by the ophthalmologist. Permit me to offer a word of caution: do not expect too much of neurotology, and always remember that we are dealing with one-half of one of the twelve cranial nerves. "Grief percentage" will be high as in all pioneer work, but comparison of the results of Cushing in the gradual lowering of mortality during the past decade is worthy of consideration and emulation. Prevention of unnecessary operations, the determination of whether a case is operable or inoperable, and the best route of surgical approach comprise the goal to be attained.

CONCLUSION

I desire to make a plea for a wider use and application of the vestibular tests, with closer cooperation to determine their ultimate value in our armamentarium, and a suggestion that the rhinologist, otologist, neurologist, ophthalmologist and surgeon take a more active interest in the nervous system in its entirety, rather than in that part pertaining to their respective specialties. It is to the attainment of such an ideal that I would commend your efforts and cooperation.

Suite 500, Francis Building.

ABSTRACT OF DISCUSSION

Dr. Harold L. Lillie, Rochester, Minn.: These ear tests are very helpful. Our neurologists are cooperating well with us in this work and feel that we have added something to their armamentarium which is frequently helpful. The findings and results are all objective, whereas the neurologic findings are essentially subjective. The neurotologic findings are frequently of definite localizing significance. There are several cleancut symptom complexes which may be ascertained from ear tests. Any expression decrying the value of these tests is based on insufficient knowledge and experience with them. One hears the objection that the tests are difficult and the result of the interpretation indefinite. That is true, but that is true of neurologic diagnosis in general. Exploratory operations are frequently made by general surgeons on suspicion. Only by careful reports on carefully studied cases will we be able to arrive at any definite information in this respect. In occipital lobe lesions there are seldom any objective findings from the ear test, whereas in the posterior fossa or the brain stem, the effect is on the ear tract directly, early, and indirectly, either early or late. The early pressure apparently gives a hyperactivity of responses from the anterior or supratentorial fossa lesion. It is my opinion that those ear tests will have a wider application of usefulness as our experience grows.

Dr. George W. Mackenzie, Philadelphia: Prior to Bárány's time quite a few patients with labyrinth suppuration had been operated on after the radical mastoid method, leaving the labyrinth untouched. Naturally fatalities followed. Later on as Bárány's technic was improved, he was better able to make accurate diagnoses of labyrinth suppuration, and to operate more successfully. For a few years Bárány's indications for operation on the labyrinth were quite uncertain, especially regarding the duration of after-turning nystagmus. After-turning he found in normal individuals,

cases without any reaction whatever, in other normal individuals an after-turning nystagmus of 120 seconds. Furthermore, he found patients now and then after long turning with what he termed "nach nach nystagmus" which has never been corroborated. The explanation of these discrepancies in normal individuals was entirely the result of faulty technic. I wish to plead for careful technic. For instance, while making the caloric test we frequently have the patient incline the head laterally at an angle of 45 degrees to the perpendicular away from the side being tested. In this position the patient tends to manifest a horizontal nystagmus to the same side of very wide excursions. Later on, but during the same test, a rotary nystagmus to the other side occurs of short excursions. There is an anatomic reason why the horizontal nystagmus should be of wider excursion than the rotatory, namely, in the construction of the eye muscles. Normally, one can sweep the eye horizontally over an arc of 90 degrees. In the case of rotatory nystagmus, which is produced by the operation of the oblique muscles, the mobility is considerably more limited. When the test for horizontal nystagmus is made, as is frequently done, it is rather difficult to determine the difference between rotatory nystagmus to the opposite side with a short excursion, and the horizontal nystagmus for the reason that both forms (horizontal and rotatory) occur in the same direction when it is difficult to determine the moment when the nystagmus changes its character from rotatory to horizontal or vice versa. On the other hand, if the test for the horizontal nystagmus is made with the head inclined to the opposite shoulder, the nystagmus is to the side being tested; therefore it becomes less difficult to determine just when the rotatory nystagmus to the opposite side changes to horizontal nystagmus to the same side and vice versa.

DR. LEE W. DEAN, Iowa City: The expression is often used that vestibular tests are an aid in diagnosis. Occasionally the result of the vestibular test makes the diagnosis. I have examined hundreds of neurologic cases, employing the Bárány technic, and in nearly all the cases the results have been unsatisfactory so far as the localization of the lesion is concerned. However, every now and then much information is secured from this examination. In one case I based the diagnosis solely on the history and the Bárány test. In another case a general surgeon and a neurologist made a diagnosis of brain abscess which they were unable to locate. I made a diagnosis of abscess somewhere between the cerebral cortex and the ocular nuclei. The surgeon operated and drained a frontal abscess.

DR. JULIUS GRINKER, Chicago: Team work is helping us considerably in diagnosis. That is well illustrated in cerebellar lesions and lesions in the temporal lobe, as well as in cranial nerve disease. Cerebellar abscess can be better diagnosed with the aid of some of the newer tests, but, on the other hand, the otologist will make mistakes in cases of pure neurologic lesions unless he knows something about the symptomatology of nervous diseases. The neurologist should, for a time at least, go into an otologic, ophthalmologic and rhinologic clinic. On the other hand, the ophthalmologist and otolaryngologist would profit by a visit to the neurologic clinic.

DR. JOSEPH D. HEITGER, Louisville, Ky.: It is no wonder that some tests cannot be interpreted properly, because the technic is wrong. Therefore you cannot have correct interpretation. And in interpretation we must keep in mind the visual course of the tracts. In making these tests the neurotologist must not claim too much. We are dealing with only one-half of one of the twelve cranial nerves. If you can give suggestive information or confirmatory findings, you will have done your share in a diagnostic way. Do not let your failures discourage you, and do not become too elated over your successes. These examinations should be made by the otologist just as the examination of the fundus by the perimeter should be made by the ophthalmologist. I want to make a plea for wider use and application of these tests, and that the rhinologist, the otologist, the ophthalmologist, the neurologist, the internist and the surgeon make a study of the nervous system as a whole rather than that particular part pertaining to their individual specialties.

OPTIC NEURITIS, ASSOCIATED WITH DISEASE OF THE NASAL SINUSES

REPORT OF TWO CASES *

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MEMPHIS, TENN.

This report of two similar cases of eye disease is made to call attention again to the intimate relation which exists between diseases of the eye and disease of adjoining structures, and to encourage a search for a definite cause for ocular disease of certain types. It is not feasible to review the voluminous literature of the subject except in a general way, and while the number of reported cases in which this connection exists is large, there is still need for the report of each additional well defined case, in order to establish as firmly as possible these comparatively new facts, that the management of these cases may be placed on the most rational instead of an empiric basis.

The dependence of ocular disease on nasal disease has been long recognized. The relation between conjunctival and lacrimal disease and inflammatory affections of the nasal mucous membrane is often

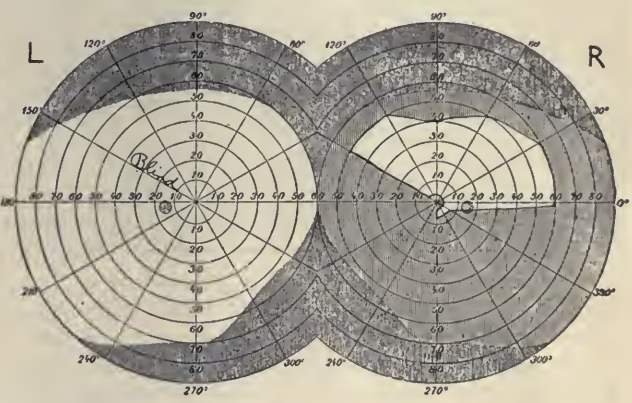


Fig. 1 (Case 1).—Fields of vision at first examination.

observed, while more recently the connection between deeper seated and more serious ocular disease and diseases of the nasal sinuses has been established.

Ocular disease appears to arise from nasal disease in one of two ways: either by absorption of toxins from a focus of suppuration, just as a focus of suppuration elsewhere in the body may act, or by contact between the pathologic process in the nose and some ocular structure. As an instance of the former type, inflammatory affections of the uveal tract are seen, apparently dependent on nasal suppuration or ulceration. The other type is represented by inflammation of the optic nerve from contact with inflammatory processes in the posterior nasal sinuses, as occurred in the following case:

CASE 1.—Mrs. T. A., aged 35, was referred to me, Dec. 27, 1919, by Dr. Shelby Spencer of Shannon, Miss., with a history of a cold which began in her chest, about the middle of November. She was not sick enough to consult a physician until December 12, when she saw Dr. Spencer for a pain in the left cheek of two or three days' duration. A couple of days later a yellow discharge began to come from the left nostril, and this has persisted. December 23, she noticed on waking that the vision was very much blurred. This was worse the

* Read before the Section on Ophthalmology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

next day, and still worse on the 25th, when atropin was instilled, and by evening the vision was entirely gone in the left eye and very poor in the right. There was no further change till I saw her, December 27.



Fig. 2 (Case 1).—Anteroposterior roentgenogram of the head, showing clouding of the frontal sinus, ethmoids and antrum, on the left side, especially.

The vision of the right eye was 10/200; the pupil was dilated and fixed, probably from atropin. There was marked papilledema, with swelling of 3 D., and a few small hemorrhages at the edge of the disk. The rest of the fundus was normal. The field is shown in Figure 1. The left eye was blind; otherwise the findings were the same as in the right eye. The nose showed some pus coming from under the left middle turbinate. The right nostril was clean. Transillumination, left antrum and frontal dark, right clear. A roentgen-ray examination was made by Dr. L. H. Chapman, who reported: "Left frontal, ethmoids and antrum filled with granulations or pus. Right frontal, ethmoids and antrum show cloudy, but not filled. Sphenoid also cloudy." These changes are shown in Figures 2 and 3. A neurologic examination was made by Dr. W. G. Somerville, who reported as follows: "The neurologic examination of Mrs. A. is negative, except as to what you have already found, viz., the optic neuritis. I do not know whether it could occur, but it seems possible that the neuritis is due to, or secondary to, the inflammation of the antrum. It might be well to have another examination of the urine made. A Wassermann examination I do not think necessary." The patient was subjected to a thorough physical examination by Dr. O. S. McCown, with negative results. The Wassermann test was negative. There were 16,400 leukocytes, of which 76 per cent. were polymorphonuclears, 18 per cent. small lymphocytes, and 6 per cent. large lymphocytes. The urine, at first examination, showed a trace of albumin and indican; specific gravity, 1.030. A second examination detected no albumin, no sugar and no casts, but a few pus cells.

Puncture of the left antrum produced a tablespoonful of pus. December 30, Dr. John Shea operated on the sinuses. On each side the anterior half of the middle turbinate was removed, the ethmoid cells broken down, and working backward, the posterior ethmoids and sphenoids were opened. The ethmoid cells were soft and contained pus. The sphenoids contained pus which was free from odor. The left antrum was opened freely into the nose near the floor. The pus from the nose showed staphylococci and streptococci, the latter predominating. The extensive opening of all the sinuses was justified by the serious nature of the visual disturbance, which we attributed to the condition of the sinuses.

January 1, two days after the operation, the patient could count fingers with the previously blind eye. This improvement continued, and on the sixth day she saw some rabbits on the roof of a laboratory building next door to the hospital. January 8. she was tested, and saw 20/30 with each eye, with fields as shown in Figure 4. The eye grounds showed the same changes as at first except that the swelling was less, being now about 1 D. January 26, vicion 20/20, and J. 1 in each eye, the pupils normal and active, and the fields as shown in Figure 5. The contraction of the color fields will be noted, as well as the interlacing of the colors. The nerves were no longer swollen, but both were pale and the outlines were blurred. The nose showed some crusts, but no pus, and the sinuses all were clear to transillumination. February 23, the nerves showed a moderate degree of postneuritic atrophy. Vision is 20/20 and 20/20 minus 2 and J. 1 in each eye. Fields about the same as shown in Figure 5.

A second case was as unconvincing as it was unsatisfactory:

Case 2.—Mrs. E. F., aged 31, was referred to me by Dr. Harry Wolff, Oct. 21, 1919, for impairment of vision. She had had a severe attack of typhoid in 1913, and three or four



Fig. 3 (Case 1).—Lateral roentgenogram of the head, showing the sphenoids apparently but slightly affected.

years before the present trouble she was thrown from an automobile, striking the left side of the forehead, and receiving a scalp wound. She was unconscious about thirty minutes. Since that time she has occasionally lost control of the blad-

der, and also has pain over the eyes at times. For two or three months, she has had occasional vertigo, and for about four weeks a headache all over the head. For two weeks she had been free from headache, but the vision of the right eye had been very bad for that length of time. The vision of the right eye was perception of light. The field is shown in Figure 6. The nerve head was swollen 2 D. and was light in color. There was no ocular paralysis. The vision of the left eye was normal, with correction; the field, as shown. Otherwise the eye appeared to be normal. The pupils were equal and normal.

Transillumination of the nasal sinuses showed them all to be clear, but the frontals seemed very small. The outer aspect of the right middle turbinate was very edematous. Roentgen-ray examination by Dr. L. H. Chapman revealed: "right suborbital ethmoids cloudy, right frontal very small; antrums show thick membranes but no pus." The neurologic report by Dr. W. G. Somerville, besides noting the condition of the eyes, was: "A slight diminution of the sense of smell in the left nostril; no other cranial nerve paralysis. No sensory changes, but the patient complains of tingling and numbness in the hands and feet. There is no paralysis of the face, but the right hand is weaker than the left, the dynamometer giving, right 20 kg.; left 27. The right lower extremity is slightly weaker than the left. The tendon reflexes are present and brisk, no noticeable difference between the two sides. There is a doubtful Babinski of the

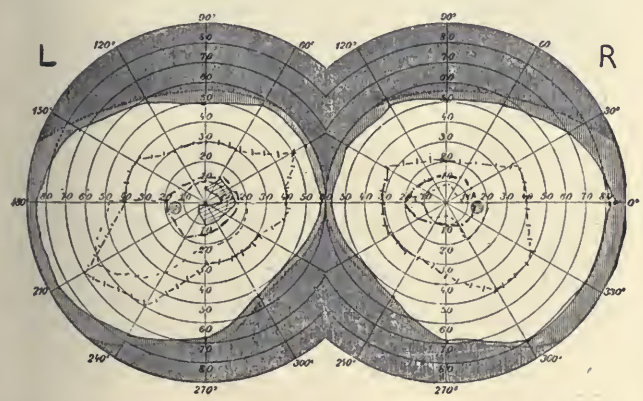


Fig. 4 (Case 1).—Fields of vision ten days after operation: solid line, white; dashes and verticals, blue; broken line, red; dots and dashes, green.

right side. The symptom of a slight paresis of the right side, with an optic neuritis, are indicative of a cerebral lesion of the left side of the brain, notwithstanding that the optic neuritis is much more severe on the right. Just what connection there is with the old injury it is impossible to say." He advised iodids and watching. The Bárány tests disclosed delayed vestibular reaction, suggestive of a functional disturbance, probably of toxic origin.

The general physical examination and the Wassermann test were negative. The patient was seen by Dr. P. M. Farrington with reference to some work on her nose, but he was not convinced that it would help matters, and delayed doing anything until December 8, when he removed a part of the right middle turbinate, and curetted the anterior ethmoid cells and entered the frontal sinus on that side. Pus was found in both the ethmoids and frontal.

There has been no change in the vision, but the swelling has almost disappeared from the right nerve head. Both nerves are quite pale, but the left field is better than when first taken, in that the large relative scotoma has disappeared, a small absolute scotoma persisting below and another one having appeared down and in. The field in the right eye is unchanged. There are no new symptoms otherwise.

There was in this case no evidence of sphenoid or posterior ethmoid disease, no discharge and no changes demonstrable by the roentgen ray; and while some anterior sinus disease existed, it is doubtful whether it had anything to do with the condition of the optic nerve unless by the action of absorbed toxins. Possibly the inflammation had lasted too long to be influenced by the removal of the cause. The case is reported as of interest in connection with the first one.

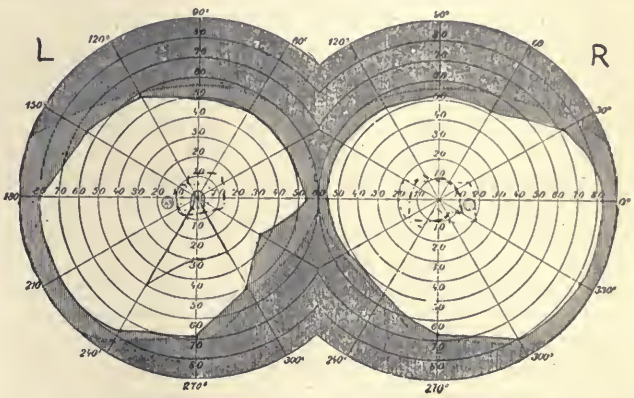


Fig. 5 (Case 1).—Fields of vision four weeks after operation: solid line white; broken line, red; line of of dots and dashes, green.

The close relation which exists between the optic nerve and the sphenoid sinus is well known. In a study of this relation in 100 skulls, Francis and Gibson [1] were struck with the thinness of the partition between the two, and noted that "one third of optic nerves and commissures are shielded from the sphenoidal sinus by a thin paper-like bony wall measuring a quarter of a millimeter [1/100 inch] or less in thickness." Without figures at hand to substantiate it or to give an estimate of its frequency, we know that specimens are seen in which an actual dehiscence exists, and in such cases the likelihood of a sphenoidal or posterior ethmoidal suppuration affecting the nerve is very great. The nerve under these circumstances may show a retrobulbar neuritis, manifested only by a disturbance of vision and a central scotoma, or less often, an optic neuritis with visible changes in the nerve head. Even a papilledema may result, as in the first case. The visual defect varies greatly, from an enlargement of the blind spot, only to be detected by careful perimetric examination, to loss of light perception, as in the case

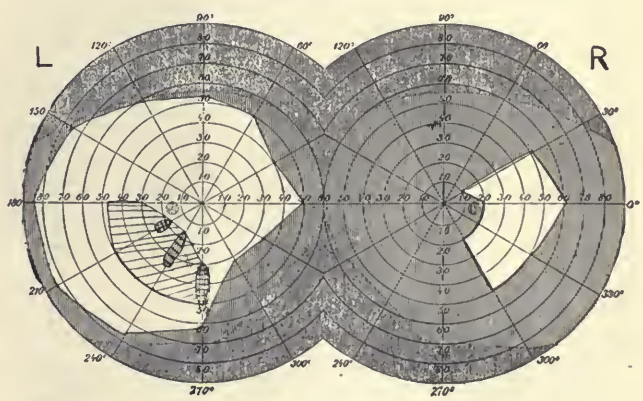


Fig. 6 (Case 2).—Fields of vision at first examination; subsequent examinations detected very little change.

mentioned. Changes in the color field, especially color scotoma, are seen in these organic cases, and the perimetric changes may be of great assistance in separating the organic from the different types of psychic blind-

1. Francis and Gibson: Tr. Am. Acad. Ophth. and Oto.-Laryng., 1908 and 1910.

ness. It would hardly be proper to say that the differentiation can be made by this means alone, since the manifestations of psychic blindness are varied and not characteristic.

The ocular lesion in disturbance from posterior ethmoidal and sphenoidal disease is practically always of the optic nerve, which is certainly not often the case in affections of the anterior sinuses. Posey has reported a case in which an optic neuritis appeared to be dependent on a frontal sinus infection; but the study of such cases with the improved roentgenographic technic might lead to different conclusions.

Looked at from the rhinologist's point of view, these cases are rare. Judging from an extensive experience with diseases of the nose, the number of affections of the eye in a given number of cases of nose and sinus disease of any character is very small. It is the eye surgeon, therefore, who will meet them, since the disturbance of vision is the prominent factor when the optic nerve is involved, and the optic nerve disease, therefore, need not be dreaded as a frequent complication of nasal sinus disease.

Striking features of the condition under consideration are the sudden onset of the visual disturbance, and its equally sudden improvement when the nasal



Fig. 7 (Case 2).—Anteroposterior roentgenogram showing clouding of the suborbital ethmoids, especially on the right side.

condition is relieved. This was marked in my first case. In a case reported by Place,[2] vision improved, following irrigation of the sinuses, from 2/200 and 3/200, to 15/50 and 15/200 in two days. In Dawson's [3] case, the vision began to improve in two days following a submucous resection and curettement of the ethmoids, and in four days had risen from perception of light to normal.

The care necessary to arrive at a diagnosis of disease of the posterior nasal sinuses is well known, but



Fig. 8 (Case 2).—Lateral roentgenogram, showing the sphenoid sinus, which is apparently clear.

is a matter which mainly concerns the rhinologist. Nevertheless, we should bear this difficulty in mind and request repeated examinations, if necessary. The development of a good technic for the roentgenographic investigation of these sinuses has put the question of their diagnosis on a much more satisfactory basis, and such tragic experiences as that related by the late Wendell Reber [4] are not likely to be repeated. He saw a woman with unilateral optic neuritis in whom several examinations of the nose were made with negative results. In spite of his importunities, the rhinologist was not willing to operate, and the patient developed a brain abscess and died, the necropsy disclosing that it had its origin in the nasal sinuses. Several similar cases have been reported, the literature being, as stated, quite voluminous.

2. Place: Long Island M. J., March, 1918.
3. Dawson: J. Laryngol., June, 1918.

4. Reber, Wendell: Tr. Am. Acad. Ophth. and Oto.-Laryng., 1910.

Sickness and Poverty.—So much of destitution is due to sickness that the separation of the two problems is inconsistent with success. "One third of all the paupers are sick, one third children, and one quarter either widows encumbered by young families, or certified lunatics." There are economic causes of poverty apart from sickness, but it is essential to remember that every disease which is controlled frees the community not only from a measurable amount of sickness, but from the amount of poverty implied by this sickness.—Arthur Newsholme, *Commonhealth*, November-December, 1919.

OPTIC NERVE DISTURBANCES IN DISEASES OF THE POSTERIOR NASAL SINUSES *

JAMES BORDLEY, JR., M.D.
BALTIMORE

Probably one of the discoveries of the most far reaching value to ophthalmology was that of the blind spot by Mariotte in 1668. Even his assumption that it proved the choroid to be the light sensitive element of the eye cannot detract from its importance.

The significance of this discovery is amply demonstrated by the anatomic studies, theories and clinical observation which it stimulated. Of greatest importance, so far as this communication is concerned, is the fact that it ultimately resulted in the location within the body of the optic nerve, not only of the peripapillar, but of the papillomacular bundle of nerve fibers.

There has been from time to time since 1668 much discussion as to the reason for the blind spot, and it remained for Donders in 1852 to demonstrate beyond dispute that it corresponds to the entrance into the globe of the optic nerve. In 1859, Cassius found that certain pathologic conditions alter the shape of the blind spot by enlarging it. As a corollary it became essential that the course of the fibers that supply the retina immediately around the optic disk should be traced in their course through the optic nerve. Fuchs demonstrated that these fibers are the most peripheral of all the fibers in the optic nerve. He proved that they were in the vascular portion of the nerve, and assumed that they were in the intracanalicular portion.

Leber, in 1869, published a report of his first case of toxic amblyopia with central scotoma. He declared the fibers from the macula pass through the nerve directly under the vaginal sheath. In 1874 he brought forward additional cases and then asserted that the papillomacular bundle and the peripapillar fibers are both peripherally located. Samuelson, in 1882, was fortunate enough to get two eyes with central scotomas from toxic amblyopia. Serial sections of the nerves enabled him to demonstrate the course of the fibers through the full extent of the nerve. In the vascular portion the papillomacular bundle is V shaped, occupying at its base about one third of the periphery, the apex of the figure reaching to the center of the nerve; in the avascular portion, the shape of the bundle becomes round, receding from the periphery and exact center; in the intracanalicular portion it becomes crescentic, lying immediately in contact with the vein of Vossius.

The position of the papillomacular and the peripapillar fibers in the optic nerve has led to countless theories as to the cause of scotomas associated with disease of the nasal accessory sinuses. Before proceeding to a brief discussion of these theories, I want to call to mind some other essential anatomic considerations in dealing with the nasal sinus disease with optic nerve involvement.

First, the lateral and inferior walls of the orbit in the neighborhood of the accessory sinuses are, as a rule, very thin and are covered by periosteum which is closely attached and which is frequently penetrated by numerous diploic veins which arise in the sinus walls and empty into the orbital veins. As the periosteal covering of the orbit passes into the optic canal, it becomes so interwoven with the dural sheath of the nerve as to be microscopically inseparable from it. The walls of the optic canal frequently separate the nerve either from the sphenoidal sinus, the most posterior of the ethmoidal cells, or from both, as has been so beautifully demonstrated by the published studies of Loeb and Onodi.

Second, in considering the involvement of the optic nerve in sinus disease, it is also well to bear in mind the circulation in both the orbit and the sinuses. The orbit in the main derives its supply from the ophthalmic artery, and its veins empty into the ophthalmic vein. The vascular portion of nerve is directly supplied and drained by the arteries and venae centrales retinae. The central artery and vein send off small branches which supply to the avascular portion, the posterior central artery and vein. The intracanalicular portion



Fig. 1 (Case 1).—Double sphenoid with perforation of posterior wall.

derives its supply from the small muscular branches of the ophthalmic artery, and is drained by the vein of Vossius, which empties into the cavernous sinus. This vein has numerous branches from the periosteum of the posterior portion of the orbit and from the periosteum lining and sphenoidal and posterior ethmoidal sinuses. The portion of the intracanalicular nerve occupied by the papillomacular fibers is elaborately supplied with capillaries; the more peripheral portion by small arteroids. The blood and lymph circulations of the orbit and sinuses are intimately interwoven.

The various theories which have been enunciated to prove the causal relationship between sinus disease and optic nerve disturbances are based almost entirely on these anatomic considerations.

While it is very generally accepted that nasal sinus disease is the exciting cause in the vast proportion of cases of orbital inflammation, optic nerve involvement in sinus disease, however, is not dependent on orbital cellulitis, nor are the pictures usually found in involvement of the optic nerve in orbital cellulitis and accessory sinus disease analogous. These facts were confused in

* Read before the Section on Ophthalmology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

the minds of the early writers and led to the production of theories of wide divergence. We now realize that in the majority of instances the portion of the nerve originally involved is not that in the orbit, but that



Fig. 2 (Case 4).—Perforation of orbital wall.

portion which is held within the confines of the rigid optic canal.

Among the important contributors to our understanding of this subject are Van der Hoeve, Fuchs, Mendel, Birch-Hirschfeld, Uffenorde, Onodi, Loeb and Gradle. All of these authors agree on only one point: that the primary site of trouble is to be found in the intracanalicular portion of the nerve. Some of them believe that edema of the optic nerve canal, with resulting venous stasis, is the basic cause; others point to the enlargement of the blind spot as evidence of mechanical pressure and consequent interference of function; still others believe that the direct transmission of toxins from the sinuses into and around the vein of Vossius and the capillaries supplying the central bundle is the exciting cause.

After many months of careful study of these various suggestions and a fairly large clinical experience, I am not prepared to accept any one theory as the sole cause. Cases have been seen in which the rapidity of recovery could lead to no conclusion other than that of mechanical pressure; other cases seemed to come clearly within the definition of toxic amblyopia; and still others were anatomically proved to have their origin in trouble arising posterior to the optic foramen.

SYMPTOMS OF OPTIC NERVE INVOLVEMENT

A short discussion of the symptoms of optic nerve involvement cannot be out of place. First, the fields of vision. Enlargement of the blind spot has been said by some authors to be a constant symptom of disease of the sphenoid and posterior ethmoid cells. To this I cannot subscribe. I have carefully measured the visual fields in 102 patients with disease of the posterior ethmoid and sphenoid, and in only 31 per cent. was the blind spot found enlarged. This statement should be qualified, because in this series of cases there were eleven with central scotomas, in four of which the scotomas were sufficiently extensive to cover the blind spot. Some of my cases, watched from the very inception of the disease until its subsidence, never developed enlargement of the blind spot, although quite a group were subjected to repeated daily examinations. Acute sinusitis was found to be much more frequently the cause of enlargement of the blind spot than the chronic or subacute types. No relationship was found between necrosis of the walls and enlargement of the blind spot, but a definite relationship between the latter and violent swelling of the lining of the cells and posterior portion of the nasal cavity. Indeed, enlargement of the blind spot was found in acute nasal infections without manifest involvement of either the ethmoidal or the sphenoidal cells. I recall one patient with an intraturbinate abscess with marked spindle enlargement. If Fuchs' suggestion that the peripapillar fibers are peripherally located in the intracanalicular portion of the nerve is correct, and if it is equally true that pressure from edema in the optic canal will always cause disturbance in their function, it must then follow that edema in the canal is not a sine qua non of sphenoidal or ethmoidal disease. I found that four of my eleven patients with central scotoma had no enlargement of the blind spot, and in twelve with peripheral contraction, there was no involvement of the peripapillary fibers.

This brings us to the most important of the visual field changes: central scotomas. The most vulnerable part of the optic nerve is the papillomacular bundle; in the optic canal it lies in close proximity to the vein of Vossius, which receives branches from the periosteum of the orbit and sinuses; it is that portion of the nerve



Fig. 3 (Case 4).—Perforation at site of extradural abscess.

with the greatest capillary circulation; the optic canal is of rigid bony structure, which allows little expansion of the soft structures within its confines.

We have, therefore, several factors to consider in the production of a central scotoma. Birch-Hirschfeld and

others regard the formation of the central scotoma as a manifestation of toxemia, resulting from venous stasis in the optic canal; Hajek and others attribute it to compression of the optic nerve within the canal, or perineuritis; while Gradle and others look on it as a manifestation of disease extension through the intimately related soft tissues of the sinuses, orbit and optic canal.

In my series of eleven cases, as was stated above, four showed scotomas of sufficient dimensions to extend beyond the blind spot. These scotomas were absolute when the patients were first seen. The other seven cases varied from a loss of perception for red to absolute scotoma. They were all progressive up to the time of operation, and in eight the scotoma disappeared after operation without leaving evidence of damage. The time elapsing between operation and recovery varied from twenty-four hours to twenty-six days. The average was fifteen days. The elapsed time between the operation and the disappearance of the scotoma bore no definite relation to the severity of the sinusitis, but it did bear a very certain relationship to the profundity of the optic nerve disturbance. The most prompt responses were in the patients with greatest changes, in whom those changes developed with great rapidity. In other words, if the attack on the nerve was of great violence, its relief by immediate operative interference was, as a rule, most prompt. In four of these cases no pus was found in the sinuses, but there were other definite evidences of inflammation. Viewed from the perimetric findings, these cases differed in no detail from the others. In one case there was no visible evidence of disease, but opening the sinuses brought prompt relief. In all of these cases, with two exceptions, there were two quite definite periods following operation: what we term the primary stage of return of function, and the secondary stage of complete resumption of function. In other words, within twenty-four hours in nine cases, there was either a diminution in the size of the scotoma or an increase in central acuity varying with the size and character of the field change. Following this there was a period, variable as to time, during which there was no observable change. This was followed by a gradual but steady return to normal. This inclined me to believe that in most cases I was dealing with a dual cause—mechanical pressure and toxemia of the papillomacular bundle, either from stasis or extension.

In 27 per cent. of the series of 102 cases, there was peripheral contraction of the field of vision. I am extremely doubtful as to the value of this as a symptom. There was certainly no constancy in the change. In most of our cases in which there was no other field change, there was an element of nervousness, fatigue or pain, which might readily have accounted for the contraction. Contractions of the visual field in acute diseases have so frequently been noted that we were quite willing in our cases to ascribe to it no importance.

The ophthalmoscopic picture varied from a normal nerve head to profound choked disk. In eight or nine cases the variation was within normal limits; four patients had clearly defined choked disks; the balance varied from a mild venous engorgement to the typical picture seen in toxic amblyopia. I feel that the ophthalmoscopic picture is only of suggestive value.

REPORT OF CASES

It has been my fortune to see some rather unusual cases of optic nerve involvement. These cases may prove of interest in that I am able to report not only the original condition but also, in several, the postmortem findings.

CASE 1.—A man, aged 56, was stricken with violent trifacial neuralgia and dimness of vision in the left eye. He was seen within an hour of the onset of his trouble, and gave a history of an attack of "the grip" one week previously. On examination, a relative central scotoma associated with choking of the disk of the left eye was found. He neither smoked nor drank, and had enjoyed excellent health; three years previously all of his teeth had been extracted; he had no prostatic enlargement. Only a few days before, he had undergone a complete physical examination by a competent internist who reported him "normal." Ten days before his attack, he contracted a nasal cold. This had run a usual course and subsided. I placed him in a hospital where he was subjected to a searching investigation. Roentgenograms revealed a slight clouding of the right sphenoidal sinus. He was operated on, the sinus opened and nothing found. Forty-eight hours after the operation, the patient suddenly became totally blind in and had complete ophthalmoplegia of the left eye. During all this period, he had suffered much from an intense neuralgia. The posterior ethmoidal cells of the left side were opened and nothing found; the right ethmoidal and sphenoidal cells were opened at the same time and with the same result. At the end of the seventh day the eye became slightly proptosed. As there might have been either an abscess or a tumor in the orbit, a Krönlein operation was performed. The only thing found was an optic nerve fully twice the normal size and extremely tortuous. The sheath was slit in the long diameter of the nerve, and an astonishing amount of fluid was evacuated. The operation relieved neither the pain, muscular paralysis nor blindness. Some three weeks subsequent to this procedure, the patient developed signs of meningitis, and died twelve days later. The postmortem revealed a double sphenoidal sinus on the left side, the extra sinus lying immediately back of the one which had been opened. In this cell there was pus, but none in the more anterior one. There was an erosion through the posterior wall leading to the central cranial fossa (Fig. 1). From that point there was a basilar meningitis which involved all of the vessels and nerves passing through the sphenoidal fissure and optic foramen. This meningitis was walled off, and within its confines there was a quantity of fluid under tension. It was, of course, easy to account for all of the symptoms after the postmortem.

CASE 2.—A woman, aged 32, who was admitted to the Church Home Hospital on the service of Dr. Thomas Futcher, for several days had been suffering from "influenza." On the day of admission, without premonitory symptoms, she suddenly lapsed into unconsciousness. At Dr. Futcher's request, her nasal sinuses were examined and a double acute sphenoiditis was discovered. She was operated on without anesthesia, and the sinuses were found full of pus. Within twenty-four hours she had regained consciousness, but was totally blind, the pupils moderately dilated and not responsive to light. This condition continued for four days, when she found she could see objects in the periphery of both fields. Day by day, the field of vision gained from the periphery to the center, until at the expiration of thirteen days after the operation she again had good central acuity of vision. During the whole period, and for two weeks longer, she had choking of both disks. To assume that these symptoms were the result of edema in the optic canal or toxic edema of the nerve would require a vigorous imagination. It seems much more probable that she had a profound intracranial circulatory disturbance resulting from the inflamed sinuses.

CASE 3.—Case 3 was in some respects quite similar: A man, aged 47, admitted to the South Baltimore Eye and Ear Hospital after an attack of "grip" was quite blind in both eyes and had paralysis of both external recti. He was morose and very irritable; he was not a user of alcohol, and used tobacco only moderately. Physical examination revealed nothing, except ocular palsies and double choked disks. His nasal mucosa was normal in appearance, but there were shadowy areas in the posterior ethmoidal and sphenoidal regions under roentgen-ray examinations. The Wassermann test was nega-

tive. There was no apical disturbance of the teeth. An intranasal operation was decided on. A quantity of pus was found in both posterior ethmoids and sphenoids. He made a prompt recovery so far as the sight of his right eye and the muscular paralysis were concerned, but the sight of the left eye was never recovered. The most striking postoperative change of all was in his mental attitude. From a noisy, irritable, vulgar fellow, he almost immediately became one of the most tractable of patients, anxious and willing to cooperate. It is very hard to account for all of his symptoms on the assumption that he simply had edema, or toxemia of the optic nerve. He undoubtedly suffered from some profound intracranial disturbance.

CASE 4.—A boy, aged 13 years, admitted to the hospital complaining of loss of vision in the right eye, a divergent squint and intense headache, had a central scotoma in the right field, reaching almost to the blind spot; entire loss of power of the right internal rectus, and a very hazy disk. Two days later the scotoma had extended so that it included almost the whole of the field. In six days, he was blind in spite of the fact that a quantity of pus had been evacuated from both the lower posterior ethmoidal and sphenoidal cells of the right side, his condition making further exploration very hazardous. On the fifteenth day after his admission he developed a temperature and a choked disk in both eyes. This led to an immediate intracranial operation, which revealed nothing. Postmortem disclosed necrosis of the orbital wall overlying the anterior ethmoidal cells; at the lower margin of the opening there was a penetrating vein of moderate size (Fig. 2). The inflamed area in the orbit was walled off, and enmeshed in the cellulitis was the internal rectus. The inflammation had traveled upward along another vein and entered the anterior cranial fossa just to the side of the cribriform plate (Fig. 3). There was a fairly large extradural abscess.

CASE 5.—A man, aged 26, came for consultation, complaining of failing vision in the left eye, following a nasal cold. He had no ophthalmoscopic evidences of trouble, but a relative central scotoma, and an enlargement of the blind spot in the left field. He neither smoked nor drank, and was to all appearances in perfect health. Intranasal examination revealed nothing until suction was applied, when a minute quantity of pus was observed on the upper surface of the left middle turbinate bone. An immediate operation was suggested, which he declined to accept without first consulting his family. Hardly two hours elapsed before he phoned that his vision "had returned." Under urgent solicitation, he returned and his observations were confirmed. He was seen again in two weeks, and the vision and field were found quite normal. After the lapse of two years, he returned complaining of failing vision following as before a head cold. At that visit, he had a central blind area extending to and including the blind spot of the left eye, but unassociated with any abnormality in the fundus; the right eye was normal. Suction was applied as previously; but as we found, after its repetition on two successive days, neither pus nor a betterment of vision, an operation was urged and performed without delay. The sphenoidal sinus on the left side was found entirely blocked and full of pus. In twelve days subsequent to the operation, the vision and field were normal. In the first attack, at least, it seems most probable that compression of the nerve from edema in the optic canal was the most probable cause for the visual picture, while pressure plus toxemia accounted for the last attack.

COMMENT

The conclusion of this report leads us to the reason for its presentation. It has been my fortune to see a fair number of optic nerve lesions, produced by quite evident sinus disease, and it has also fallen to my lot to meet more than a few which could be determined only by close and repeated observations. There is, I believe, a too frequent study of intranasal disease by physicians who judge the probability of ocular complication by the extent of disease found; there are others who apparently conclude that, without visible evidence in the nose, it is fair to assume that no sinus disease exists. Often neither of these assumptions is correct, and they may lead to very serious consequences. When a general surgeon stands between doubt and certainty as to intra-abdominal disease, he generally plays safe by "looking" into the peritoneal cavity. Assuming that the operator is qualified, and assuming also that all other probable causes have been eliminated and that every means of diagnosis has been resorted to, I will suggest that when you are face to face with a serious optic nerve disturbance, the part of conservatism and good judgment requires an operative exploration of the ethmoidal and sphenoidal cells. I feel quite confident that visual disturbances are frequently the first suggestions of serious sinus disease, which may eventually lead to blindness or to death. It is only fair, then, to heed the warning and eradicate the disease before it has impaired function or destroyed life.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. ELLETT AND BORDLEY

DR. GEORGE DE SCHWEINITZ, Philadelphia: The scotomas which Nettleship termed chiasmal amblyopia seem to be associated with disease of the sphenoid, rather than with posterior ethmoiditis. The scotomas may be typically hemianopic, as they often are in pituitary gland disease. Such scotomas may be produced by disease of the sphenoid, but not necessarily so. And if found, it is not necessarily the sphenoid which is involved. Ring scotomas, sometimes of temporary duration, and not later assuming a different shape, and sometimes gradually involving the whole central area, indicate an original involvement of the peripapillary bundle, and later of the central fibers. The paracentral scotoma may assume a crescentric shape and is not continuous with the blind spot. Such scotomas may be the first manifestation of a zonular defect, or the remnant of a circular scotoma which has disappeared in part, depending on the period in the cycle of development or subsidence at which they are examined. We may conclude that central and paracentral scotomas may, and often do, interpret sinus disease, especially of the ethmoid or sphenoid, but such scotomas have no localizing value, that is, their form and position do not definitely indicate which sinus should be accused, except, possibly, that hemianopic scotomas are suggestive of disease of the sphenoid sinus. Acute retrobulbar neuritis may be an ocular manifestation of sinus disease, and relief and cure are prompt if an early elimination of the sinus affection is possible. Chronic retrobulbar neuritis may indicate the future onset of disseminated sclerosis. Facial palsy *ex frigore* is probably an infection, favored by the action of cold in reducing the resistance of the facial nerve; if the fluid exudate in the fallopian canal persists long enough, parenchymatous neuritis develops. If the pressure on the optic canal and venous stasis should last long enough, it is fair to assume that swelling and proliferation of the glia cells and destruction of the nerve fibers would develop. In focal infections bacteria find favorable opportunities for growth, multiplication and entrance into the lymphatic stream by being carried in by migratory leukocytes acting as phagocytes. Having gained access to the blood stream, they may be able to resist the bactericidal action of the blood by reason of reduction in the resistance of the blood due to the primary infection, and subsequently locate in the uveal tract or in a joint, either because of special affinity for these parts or because the resistance of these parts is reduced. Is it not permissible to include the optic nerve in this category?

DR. LEE M. FRANCIS, Buffalo: The intimate relationship between disease of the accessory air passages and optic nerve disease cannot be too strongly or frequently emphasized. From an anatomic standpoint, factors other than circulatory changes and thin walls separating sinus and nerve are to be considered, such as dehiscence and diverticuli. In 9 per cent. of the 100 specimens examined and reported on by Dr. Gibson and me, diverticuli were found, some of such size and so placed as to admit of some difficulty in

attack and drainage. Except for roentgenograms, a study of the visual fields is the most valuable aid in differential diagnosis. An enlarged blind spot, along with central scotoma, should throw strong suspicion on the sphenoids. In the absence of any other definite cause of optic neuritis, I believe an exploratory operation on the sinus is justifiable.

DR. WILLIAM C. POSEY, Philadelphia: The involvement of the optic nerve as a consequence of ethmoidal or sphenoidal sinusitis, may vary in degree from a simple edema to an active retrobulbar inflammation. While this latter inflammation is rare, even in cases of marked sinusitis, edematous infiltration is common, although the change wrought in the nerve is slight, and the symptoms which it excites are not striking, therefore it must be searched for with some care. As a rule, the patient complains of some dimness of vision in one eye, at times of vertigo, headache and other head symptoms. When the ophthalmoscope is employed, the unaffected eye is usually found to be normal, while in the fellow eye a slight veiling of the edges of the nerve is seen, with a dilatation of the retinal veins and a choking of the lymphatics around the central vessels. If the sinusitis is unchecked and the retention of the contents of the cavity occurs, the nerve becomes more involved and the familiar signs of a retrobulbar inflammation of the nerve appear.

In cases of even slight involvement of the optic nerve, the patient is usually conscious of a dimness in the affected eye, although if vision be tested in the ordinary manner it will be found normal for form. If the light on the chart is reduced, however, or if Bjerrum's test card is employed, the difference in vision between the two eyes will be manifest, and it will be ascertained that the dimness in the affected eye was occasioned by a diminution in the light sense, as a consequence of the edematous infiltration of the highly organized bundle of fibers which supply the macular region. I have not found enlargement of the blind spot in sinus disease as constant a symptom as some would have us believe. Edema of the lids is frequently encountered even in beginning cases of sinusitis usually most marked in the upper lid, and particularly on the nasal side. This edema is to be distinguished from the inflammatory swelling and thickness of the lid which results from cellulitis. It is entirely noninflammatory in origin as well as in appearance. The swelling is usually most marked in the morning and disappears during the day, but it is also apt to be brought on by bending the head forward. Inflammation of the frontal sinus appears to give rise to intracranial lesion the most frequently, the infection usually occurring as a consequence of perforation of its posterior wall with consecutive abscesses in the frontal lobe. The infection in ethmoiditis, which occurs through the lamina cribrosa, is rapid, and gives rise to general meningitis or frontal abscess. Meningitis and thrombosis of the cavernous sinus may be set up by sphenoiditis.

DR. HARRY S. GRADLE, Chicago: I agree with Dr. Bordley that pressure is one of the main factors in the production of retrobulbar neuritis from sinus disease. There are three types of pressure in the intracanicular portion of the nerve; pressure on the periphery of the nerve which causes enlargement of the blind spot; a pressure involving the entire cross-section of the nerve, causing complete blindness; pressure along the central vein of Vossius, causing central and paracentral scotomas. Dr. Bordley says that about 30 per cent. of cases of ethmoid and sphenoid disease show optic nerve involvement. If there is anterior drainage from the ethmoid and sphenoid, it is not likely that the disease will extend into the orbital space; it is when there is no nasal drainage that we find optic nerve involvement. The average instrument in use for examination of the blind spot will not give an adequate idea of the enlargement of the spot or of the presence of a central scotoma because it is used at too short a distance from the eye, consequently the blind spot is not projected far enough and is too small to be measured accurately. At least 60 cm. should be between the eye and the screen on which the scotoma or blind spot is to be projected. Furthermore, we may examine the blind spot or scotoma by bringing the test object in from the periphery until the blind spot is reached, or we may start in the center of the blind spot and bring the test object outward until the seeing areas are reached. This will cause a marked difference in the size of the scotoma as it is projected. There is a retinal drag, and if the test object is brought from the periphery toward the blind spot, the blind spot will be considerably smaller (from one to three degrees) than if the test object is brought from the center of the blind spot toward the periphery.

DR. S. G. HIGGINS, Milwaukee: The operation is not comparable to opening a pus sac following enucleation of an eye, or to an operation on the appendix or tonsils. After the operation, the patient should be seen frequently, should be under your care and be treated for days or weeks to get the proper healing of the nasal membrane. In a case in which I found the nose negative, but the first stage of choked disk developing, a venesection was done, iodids were given and active sweats were induced. After two weeks the condition began to clear up. Had I operated I might have been able to contribute another case to those reported today.

DR. HIRAM WOODS, Baltimore: A young man, 23 years of age, who previously had had good health, except for headache, enlisted in the navy and was subject to a good deal of exposure in his daily work. One morning he found his sight defective. When I saw him two or three weeks later he had about $^{20}/_{100}$ vision. I could find no cause and he was subjected to thorough clinical examination. Dr. Crowe examined the sinuses and gave a negative report; but believing the case serious, explored the sinuses and confirmed his former report. I had found a paracentral scotoma. The young man was discharged from the service and went back to his ordinary life. About three months later he returned with the scotoma much smaller and vision $^{20}/_{30}$. What did that exploratory operation have to do with his improvement? I do not know, nor do I know what other cause there could have been except this. This case may fall into the class Dr. Bordley mentioned: a delayed recovery, or in the class alluded to by Dr. de Schweinitz—the people who catch cold with subsequent swelling which produces retrobulbar neuritis.

DR. HAROLD BAILEY, Springfield, Mo.: I think that one reason why these patients consult the nose man so infrequently is the fact that when a patient has failing vision he consults the optician. Some noses are very easy to examine and the first examination will reveal the presence of sinus infection. On the other hand, other noses are very hard to examine, and in some noses it is impossible to detect whether there is sinus infection or not. Again, in some cases repeated examinations must be made before evidence is found on which to base a diagnosis. Transillumination is a very valuable aid in diagnosing sinus infection. Roentgenograms are a help, but they are not infallible. If we cannot depend on the roentgenograms to show bony partitions between the sinuses, obviously we cannot depend on them to show slight infection within the sinus itself. Infection of the sinus need not necessarily be present to cause this eye condition. A mucocele in the posterior ethmoidal cell may produce the same amount of pressure and pain. Or a cyst may be found in a cell. Dr. de Schweinitz spoke of the justifiability of exploring the sinuses in cases in which no sinus disease is found. The only way one can make a thorough and complete exploration of all of these cells is to clean out every one. In the case which Dr. Ellett mentioned removing part of the turbinate, if I had done that operation I would have always had the feeling that some fragment of an ethmoid or sphenoid cell had been overlooked, unless I had cleaned out all the cells.

DR. H. B. LEMERE. Omaha: Dr. Ellett demonstrated that antrum disease can be responsible for eye conditions. Heretofore, we have been rather prone to look to the ethmoid and sphenoid in connection with eye conditions. Dr. Bordley makes the point that all these cases are not pus cases, that many are so-called hyperplastic cases. Latent antrum trouble is very important in any inflammatory eye condition and should be taken into consideration. The antrum is the largest accessory nasal cavity and from the position of its ostium is more liable to poor drainage and chronic infection than the frontal, the sphenoid or the ethmoid. I have observed iritis, keratitis and third nerve palsy associated with a chronic

disease of the mucous membrane of the antrum often implicating its bony walls. This chronic infection is often accompanied by pus retention unless stirred up by a superimposed acute infection. The symptoms of this latent antrum disease are a reddened streak on the posterior pharynx showing infection descending from the posterior nares, a swollen anterior extremity of the middle turbinate often covered by a dried scab; often a glairy, transparent, sticky secretion from the nose of a peculiar, disagreeable odor.

Dr. Herbert Moulton, Fort Smith, Ark.: About fifteen years ago I saw a young man, about 20 years of age, who had been suffering for four or five days with intense headache on the right side, extending into the occiput and vertex. During this time vision in the right eye had been failing, and when I saw him he had not even light perception. Ophthalmic examination did not show any lesion whatever in the fundus, and such examination of the nose as we could make at his home revealed nothing of interest in his nose. That night there was a spontaneous discharge of pus from his right nostril which relieved his headache very much, and during the next week or ten days his vision gradually was restored to normal, and remained so. Undoubtedly it was a case in which there was pus in one of the posterior cells of the ethmoid or sphenoid producing pressure on the canicular portion of the optic nerve.

Dr. Nelson M. Black, Milwaukee: An additional symptom which occurs early in the case of eye involvement in sinus disease is the apparent if not actual loss of accommodative power which occurs often before the perimeter has shown a scotoma and before there has been any noticeable loss of vision. The unaffected eye has its normal accommodative power and print can be read at 35 cm., while with the affected eye the test object has to be carried to a greater distance before the print is sharp and clear.

RESULTS OF TESTS IN HAY-FEVER AND ASTHMA *

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NEW YORK

During the fiscal year 1919-1920 ending July 15, thirty-two patients were tested for skin sensitiveness in the hay-fever and asthma clinic to determine whether their symptoms were due to anaphylaxis from epidermal, bacterial or food proteins. During this period also forty-eight patients were tested with pollens to determine whether their symptoms were due to sensitiveness to these vegetable bodies.

There were 2,105 skin tests performed on the thirty-two aforementioned patients, and the average number of tests per patient was a little over sixty-five. In the epidermal group, twelve were found positive and 220 negative. In the bacterial group three were found positive and 119 negative. In the food group, forty-eight were found positive and 1,482 negative. In the epidermal group there were two positive to chicken feathers, three to dog hair, two to goose feathers, two to horse dander, two to horse dandruff and one to sheep wool. In the bacterial group there was one to *Bacillus coli-communis,* one to *Streptococcus hemolyticus,* and one to *Staphylococcus albus.* In the food group there was one positive to beef, one to bluefish, one to casein, one to chicken, one to haddock, one to lobster, one to lactalbumin, one to perch, one to pike, one to turkey, one to almond, two to barley, one to bean, one to Brazil nut, one to buckwheat, one to cabbage, one to cauliflower, one to oat, one to coffee, one to corn, two to lentil, one to lettuce, one to lima bean, two to mustard, one to peanut, one to pecan, two to potato, two to sweet potato, two to parsnip, one to raspberry, one to rice, one to rye, one to spinach, three to tomato, three to wheat, two to wheat glutenin and one to wheat proteose. Among all of these tests many doubtful reactions occur, which for the purpose of accurate statistics are considered here negative. However, some of these doubtful reactions have a very decided significance, as will be shown later in the report.

In the pollen group, two were found positive to tag alder, two to oat, four to goldenrod, fourteen to ragweed, four to red top, two to plantain, three to timothy, six to yellow daisy, three to sheep sorrel, four to rye, and four to orchard grass.

There were nine cases tested with proteins that gave no positive reaction. Of these there were five in which there were infected ethmoids, and two that showed evidences of pyorrhea alveolaris. These cases, no doubt, may be placed in the category of asthmatic bronchitis with definite pathologic changes in the bronchi and peribronchial tissues.

There were nine cases of multiple sensitiveness to food proteins, six cases of multiple sensitiveness to pollens, and two cases of multiple sensitiveness to epidermal proteins; one case of combined epidermal and bacterial sensitiveness, six of epidermal and food, two of epidermal and pollens, two of bacterial and food, one of food and pollen, one of epidermal, bacterial and food, and one of epidermal, food proteins and pollens.

The sputum was examined bacteriologically in seventeen cases; pneumococcus Type IV was found once; *Micrococcus catarrhalis,* twice; *Staphylococcus albus,* nine times; *Staphylococcus aureus,* three times; *Bacillus diphtheroideus* (hoffmani), once; influenza bacillus, five times; *Bacillus mucosus-capsulatus,* twice; *Streptococcus viridans,* three times, and *Streptococcus nonhemolyticus,* once.

Cultures from the teeth were made in seven cases; *Streptococcus viridans* was found three times; *Streptococcus nonhemolyticus,* once; *Streptococcus hemolyticus,* once; *Staphylococcus albus* and *Staphylococcus aureus,* once. Cultures were made from the tonsil in one case; *Staphylococcus aureus* and *Streptococcus nonhemolyticus* were recovered. Cultures of the stool were taken nineteen times; *Bacillus coli-communis* was found in all; pneumococcus Type IV, once; *Staphylococcus albus,* three times; *Bacillus diphtheroideus* (hoffmani), once; the paratyphoid A bacillus, once; gram-positive unidentified coccus, once; *Bacillus fecalis,* once; *Streptococcus nonhemolyticus,* twice.

Heavy suspensions of organisms isolated in all these cultures were used for testing patients for autogenous skin sensitiveness to the organisms, and the results were: *Streptococcus nonhemolyticus,* eight negative and two positive; *Streptococcus hemolyticus,* one negative; *Streptococcus viridans,* four negative, two positive; *Micrococcus tetragenus,* one negative; *Staphylococcus albus,* two negative, one doubtful, five positive; *Staphylococcus aureus,* three negative, one positive; *Bacillus coli-communis,* sixteen negative, one doubtful, one positive; paratyphoid A bacillus, one negative; *Bacillus diphtheroideus* (hoffmani), one negative; *Bacillus mucosus-capsulatus,* one negative, one doubtful.

Doubtful reactions were disregarded if they occurred from some unimportant substance. If from an impor-

* Report of the Hay-Fever and Asthma Clinic, Department of Laryngology, University and Bellevue Medical College, July, 1919-July, 1920.

tant substance, they were usually repeated; and if the reaction persisted, the substance was excluded from the diet, if it was a food. If it occurred from an epidermal protein, it was not considered except when it was elicited by chicken or goose feathers. In the latter instance, sleeping in a feather bed or on feather pillows was interdicted. If the reaction persistently recurred from a bacterial protein, a vaccine was given and infected areas looked for and eradicated if possible. Doubtful reactions from pollens were disregarded.

The importance of doubtful reactions is illustrated by this brief history of a case: A patient who smoked and chewed tobacco complained of persistent sneezing. He was found doubtfully sensitive to tobacco. After he stopped using tobacco, his annoying symptom ceased.

Twelve patients were treated with autogenous vaccines.

Of twenty-two patients, nine were found to have deviated septums; two had pyorrhea alveolaris; six, double chronic ethmoiditis; one, pus in the left antrum; two, follicular pharyngitis and hypertrophied tonsils. Most of the patients that had nasal or throat diseases were operated on. In addition, each of two patients suffering with asthmatic bronchitis were examined bronchoscopically several times.

Five patients who had definite infections of their ethmoid tracts were found sensitive to some food protein or bacteria, or a combination of both.

It is very difficult to give exact data relative to the result of treatment in clinic patients, because of the irregularity of their attendance and their frequent change of address. However, we definitely know that of thirty-one patients suffering with bronchial asthma, examined and treated, fifteen were definitely improved, most of them having no symptoms. The sixteen remaining patients we are considering not improved, although a few of them show definite signs of getting well; but because of the fact that they still have symptoms, we are placing them in this category.

814 West End Avenue.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

SODIUM ARSPHENAMINE.—Sodium Arsenphenolamine. The sodium salt of 3-diamino-4-dihydroxy-1-arsenobenzene, $NaO.NH_2C_6H_3As:As.C_6H_3NH_2ONa$, with a stabilizing medium. The arsenic content of 3 parts sodium arsphenamine is equivalent to 2 parts of arsphenamine.

Actions and Uses.—Sodium arsphenamine has the same actions and uses as those of arsphenamine; its advantage over arsphenamine is that it does not require addition of alkali before use.

Dosage.—From 0.45 Gm. to 0.9 Gm. for adults. As 3 parts sodium arsphenamine is equivalent to 2 parts arsphenamine, the amount of drug to be administered should be 50 per cent. more than arsphenamine under the same conditions. In preparing the solution for injection, the sodium arsphenamine must be dissolved immediately after opening the ampule and avoiding anything but gently shaking in effecting solution. The quantity of sterile distilled water used for solution should be in the proportion of 20 Cc. for each 0.1 Gm. of the drug. Heating must be avoided in the preparation of the solution; any difficultly soluble preparation should not be employed. *The solution must be administered promptly.* See description under arsphenamine, N. & N. R., 1920, p. 38.

Sodium arsphenamine is a bright yellow powder, very unstable in air; when properly dried it is free from lumps. It is readily soluble in water, yielding an orange-yellow solution; the solution has an alkaline reaction (*distinction from arsphenamine*).

The addition of dilute sodium hydroxide test solution to 3 Cc. of an aqueous solution of sodium arsphenamine (1 to 500) produces no precipitate (*distinction from arsphenamine*). On the addition of 1 Cc. of sodium carbonate test solution to 1 Cc. of sodium arsphenamine solution (1 to 20) no precipitate is formed (*distinction from arsphenamine*). The addition of 1 Cc. of saturated sodium bicarbonate solution to 1 Cc. of sodium arsphenamine solution produces a precipitate.

One Cc. of an aqueous solution of sodium arsphenamine solution (1 to 20) when made acid (to phenolphthalein) with dilute hydrochloric acid yields a precipitate (*distinction from arsphenamine*). This precipitate dissolves on the very careful addition of more acid; on heating no irritating odor of sulphur dioxid should be detected (*distinction from neoarsphenamine*). [However, an excess of hydrochloric acid, or the concentrated acid yields a precipitate.] The careful addition of 3 Cc. of acetic acid test solution to 3 Cc. of sodium arsphenamine solution (1-20) produces a precipitate (*distinction from arsphenamine*). When 3 Cc. of sodium arsphenamine solution (1 to 20) is heated with a few crystals of potassium permanganate (without addition of alkali; *distinction from arsphenamine*), the permanganate is reduced and ammonia is evolved which may be tested for by placing a moistened piece of red litmus paper in the vapors; the litmus paper will turn blue. The addition of 1 Cc. of trinitrophenol (picric acid) test solution to 1 Cc. of sodium arsphenamine solution (1-500) produces a yellow precipitate (*distinction from neoarsphenamine*). The addition of 1 drop of ferric chlorid test solution to 1 Cc. of sodium arsphenamine solution (1 to 500) produces a brownish-violet color, which changes gradually to red, the liquid finally becoming turbid; if a more concentrated solution of sodium arsphenamine (i. e., 1 to 20) is employed, an immediate precipitate is formed. The careful addition, drop by drop, of bromine water to 1 Cc. of sodium arsphenamine solution produces a red solution the color of which is discharged by an excess of the reagent. To 1 Cc. of sodium arsphenamine solution (1 to 500) is added 1 Cc. of dilute nitric acid and 1 Cc. of silver nitrate test solution; a dark yellow precipitate is formed which becomes black; the black precipitate is dissolved by warming with an equal volume of concentrated nitric acid, generally leaving a white precipitate (any precipitate which may remain is due probably to the use of sodium chlorid with which the pure sodium arsphenamine is mixed). The addition of 1 Cc. of concentrated nitric acid drop by drop to 1 Cc. of sodium arsphenamine (1-500) forms a momentary precipitate which quickly dissolves, forming a red solution; when a more concentrated solution of sodium arsphenamine (1-20) is used, the addition of the nitric acid first causes a yellowish-white precipitate which dissolves in an excess of the acid yielding a dark red solution. The arsenic content of sodium arsphenamine may be estimated according to the Lehman method in the Public Health Reports 33; 1003 (June 21) 1918. The total arsenic content of the drug shall not be below 19 per cent. or above 21 per cent.

To determine the toxicity, select not less than five healthy albino rats weighing between 100-150 grams (pregnant animals shall not be used), prepare a 2 per cent. solution and inject the solution into the saphenous vein of each rat at the rate of not more than 0.5 Cc. per minute. The rats shall not be anesthetized for the injection. At least 60 per cent. of the series of animals injected with the maximum tolerated dose should survive forty-eight hours from the time of injection; the maximum tolerated dose shall not be below 0.18 Gm. per kilo body weight.

Sodium Diarsenol.—A brand of sodium arsphenamine.

Manufactured by the Diarsenol Laboratories, Inc., Buffalo, N. Y., under patents Nos. 1059983 and 1078135 by license of The Chemical Foundation, Inc. Also licensed for interstate sale by the U. S. Treasury Department under the "act to regulate the sale of viruses, serums, toxins and analagous products" as conforming to the regulations for the control, sale and manufacture of sodium arsphenamine; issued March 20, 1920.

Sodium Diarsenol 0.15 Gm. Ampules.—Each hermetically sealed ampule contains sodium diarsenol 0.15 Gm.

Sodium Diarsenol 0.3 Gm. Ampules.—Each hermetically sealed ampule contains sodium diarsenol 0.3 Gm.

Sodium Diarsenol 0.45 Gm. Ampules.—Each hermetically sealed ampule contains sodium diarsenol 0.45 Gm.

Sodium Diarsenol 0.6 Gm. Ampules.—Each hermetically sealed ampule contains sodium diarsenol 0.6 Gm.

Sodium Diarsenol 0.75 Gm. Ampules.—Each hermetically sealed ampule contains sodium diarsenol 0.75 Gm.

Sodium Diarsenol 0.9 Gm. Ampules.—Each hermetically sealed ampule contains sodium diarsenol 0.9 Gm.

DESICCATED CORPUS LUTEUM-ARMOUR (See New and Nonofficial Remedies, 1920, p. 203).

The following dosage form has been accepted:

Corpus Luteum Tablets-Armour 5 grains.—Each tablet contains desiccated corpus luteum-Armour 5 grains.

Ivy and Sumac Poisoning.—One of the surest and best methods of individual prophylaxis is the use of soap and hot water. It has been found that Rhus poison after being deposited on the skin requires a certain time for penetration, and if this penetration can be prevented, irritation and the resulting eruption will not occur. Hot water and soap act mechanically, and if used judiciously constitute by far not only the most serviceable preventive but also one of the best curative agents available. No specific treatment for Rhus poisoning is yet available.—*Pub. Health Rep.* **35**:453 (Feb. 27) 1920.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Five dollars per annum in advance

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SATURDAY, SEPTEMBER 18, 1920

CAN THE BODY SYNTHESIZE CHOLESTEROL?

It is not many decades since physiologists taught as the striking distinction between plants and animals that the former were preeminently synthetic organisms, whereas the latter were merely analytic or destructive in their chemical processes. The progress of biochemistry has demonstrated, however, that no such hard-and-fast distinctions hold in the domain of biology. All types of organisms seem to have in some degree the capacity both to build up new products and to make use of ready-made materials furnished to them. Nevertheless, there are important instances in which the ability of the animal structures to produce de novo some of their essential components seems to be wanting, so that they are dependent on extraneous sources of supply. This is well illustrated in the case of certain amino-acids, such as tryptophan, lysin and cystin. They are indispensable building stones or nutrient units in the structure of the animal, yet they cannot be synthesized by the latter.

Cholesterol is likewise a never-failing constituent of animal cells. Its universal presence there has led to the unwarranted conclusion that it must be manufactured in the tissues. There is no longer any doubt that cholesterol can be and actually is absorbed when it is present in sufficient quantity in the food. Plants contain sterols which are closely related chemically to cholesterol. It is therefore not impossible for the latter, which is present as a structural constituent of animal tissues, to be derived altogether from cholesterol and phytosterols, as the plant sterols are designated, contained in the food. In favor of this, the complex chemical character of cholesterol and the evidence that it is conserved to some extent within the organism by being reutilized after excretion in the bile have been adduced.

Cholesterol is present not merely in the bile, but also in the blood plasma and corpuscles. Furthermore, it exists in combination with fatty acids to form a sort of cholesterol (rather than glycerol) fats. The latter occur in the blood, and appear in increased concentration in certain pathologic tissue fluids. They also are present in the sebum, the secretion of the sebaceous glands, where they help to lubricate the skin and hairs and thereby serve a protective purpose in the animal economy. These significant facts are perhaps sufficient to warrant careful consideration of the origin of cholesterol and its compounds in the body.

Interesting evidence has lately been furnished by Gamble and Blackfan.[1] It may be assumed that if synthesis of body constituents occurs, it should appear in the case of growing organisms like infants. Hence the relation of the preformed cholesterol in the food to the total metabolism of this compound was studied by comparing carefully the intake and excretion of cholesterol. It was assumed by Gamble and Blackfan that the finding of a regularly positive balance in favor of cholesterol intake in the case of normal infants who were gaining in weight on usual diets could be taken as evidence that the cholesterol of the tissues is probably altogether derived from the preformed cholesterol in the food, whereas a regularly negative balance under the same conditions would quite definitely indicate a synthesis of cholesterol within the organism. The trials on the infants gave concordant answers. In all of them a much larger excretion than intake was found, the quantity of cholesterol in the stools being from two to three times that which was furnished by the diet. Gamble and Blackfan remark that if cholesterol metabolism is entirely dependent on an intake of preformed cholesterol in the food, it is very difficult to understand how the infants whom they studied managed to gain in weight and present no symptoms of disturbed nutritional processes while exhibiting a large negative cholesterol balance. A skeptical critic might reply that the periods of observation, three days, were rather short to permit a final conclusion, especially if the young have liberal stores of the lipoid in their bodies. However, the Baltimore investigators have not hesitated to interpret the results as indicative of a synthesis of cholesterol within the growing organism.

KIDNEY PATHOLOGY AND RENAL FUNCTION

The last few years have been decidedly fruitful in the production of new methods for the study of renal function. To the long practiced examination of the urine for abnormal constituents associated with kidney disorder there have been added the so-called functional tests and, more recently, the careful chemical analysis of the blood for evidence of retained catabolites. The time has arrived when it seems profitable to correlate observations made by the newer technic with the findings of the pathologic histologist and the clinician observing symptoms at the bedside.

The existence of two distinctly different morphologic structures—the glomerulus and the tubular epithelium—in the kidney has long furnished a problem for both the physiologist and the pathologist. Precisely what

1. Gamble, J. L., and Blackfan, K. D. Evidence Indicating a Synthesis of Cholesterol by Infants, J. Biol. Chem. 42: 401 (July) 1920.

is the special function of each part of the renal mechanism, and which is concerned primarily in certain types of kidney disorder? It has required a correlation of anatomic and functional investigations to promote progress in the solution of such questions. The outcome of the exceptionally extensive studies in this field by MacNider [1] tends to minimize the importance of the glomerulus as a functional unit and to emphasize the relative importance of the tubular epithelium. They show that, in cases in which chronic injury to the kidney has consisted in a glomerulonephropathy with histologically well preserved tubular epithelium, the elimination of phenolsulphonephthalein, used as an index of functional capacity, may be only slightly reduced, and there may be no retention of blood urea and creatinin. MacNider has ascertained, on the other hand, that when an acute tubular injury is superimposed on the chronic glomerular defect, the outcome is quite different. A rapid reduction in the elimination of phenolsulphonephthalein and a retention of catabolites in the blood is then likely to occur. It is under these conditions that animals in which the desired lesions can now be specifically produced become acutely anuric and die in convulsions or in a coma which may not be preceded by convulsions.

Acute tubular injury, such as can be produced experimentally by certain drugs like salts of uranium or mercury, may be followed by a recovery from the immediate difficulty with the subsequent development of a chronic nephropathy. During this change there is a regeneration of tubular epithelium of a flattened and less specialized type, and chronic obliterative and sclerotic changes in the glomeruli. With the institution of these, the elimination of phenolsulphonephthalein in functional tests improves, and the undesirable retention of urea and creatinin in the blood decreases.

Such facts as these, acquired by specially designed experiments on animals, have fostered the inference that the tubular epithelium is of greater significance in maintaining a normal acid-base equilibrium of the blood, and is more concerned with the elimination of phenolsulphonephthalein, urea and creatinin than is the vascular mechanism of the kidney. In the naturally acquired nephropathies, both in animals and in man, the more common type of injury is one in which the glomerulus is damaged out of proportion to the degree of tubular injury.[2] The functional response of the kidney in this condition is characterized by a low phenolsulphonephthalein output and by the excretion of small amounts of protein. Casts are usually present, but retention of catabolites in the blood does not occur. Therefore—and this is of diagnostic significance—the pigment excretion test is of greater value in chronic vascular injury of the kidney than are the retention tests; in fact, the injury of the kidney, as indicated by the capacity to eliminate phenolsulphonephthalein, must be of severe type before kidney function becomes sufficiently impaired to indicate the injury by a retention of urea and creatinin.

It is worthy of note by those who are accustomed to rely on old-time urinary diagnostic tests that, according to MacNider's accurate estimates, the amount of protein in the urine is no index of the severity of the pathologic condition of the kidney or the degree of functional disturbance. He states that the quantitative output of protein may show a progressive decrease, easily mistaken for recovery, while at the same time the capacity for elimination of phenolsulphonephthalein is rapidly decreasing, and both urea and creatinin are showing a retention in the blood.

1. MacNider, W. deB. A Study of Renal Function and the Associated Disturbance in the Acid-Base Equilibrium of the Blood in Certain Experimental and Naturally Acquired Nephropathies, Arch. Int. Med. **26**: 1 (July) 1920. The earlier papers of the author are cited in this article.

2. Stengel, Alfred; Austin, J. H., and Jonas, Leon: A Comparison of the Functional and Anatomic Findings in a Series of Cases of Renal Disease, Arch. Int. Med. **21**: 313 (March) 1918.

CLINICAL CALORIMETRY AS AN AID TO THERAPY

The value which clinical calorimetry, now brought within the range of ordinary hospital laboratory technic, is likely to gain in the study and practice of medicine in the immediate future has been referred to on several occasions in THE JOURNAL. To physiology the accurate estimation of metabolic changes—of the chemical transformations going on within the organism—has contributed the demonstration of the uniformity of these reactions under conditions of health. If the influence of food and muscular activity in the form of exercise is excluded, as is true when the body is at rest during a period long after a meal, the "basal" metabolism, or metabolic rate, will be found to exhibit a constancy for the individual and, in different persons, to be proportional to certain body units, of which the most commonly recognized is perhaps the surface area, which can be computed with a fair degree of accuracy from easily obtainable data.

To pathology, clinical calorimetry has shown the interrelation between certain diseases and the basal metabolic rate. Nowhere has this been more forcibly exhibited than in the disturbances of the thyroid function. Such facts as are at present ascertained give credence to the long entertained belief that the thyroid is, in truth, the chief "regulator of metabolism." What are clinically designated as states of hyperthyroidism and hypothyroidism are readily distinguished by the respective acceleration or depression of metabolism; and in the borderline cases the estimation of the basal metabolism of the patients has already furnished helpful diagnostic indications.

The progress in this field of research has now reached the stage at which therapy also may be expected to reap directly some of the advantages of

the scientific method. Snell, Ford and Rowntree [1] of the University of Minnesota Medical School, who are among the growing number of "specialists" in clinical calorimetry in this county, have recently indicated anew what such work means in evaluating the effects of drugs in disease. The uncertainty that attends the observation of superficial signs or such impressions as are designated "well-being" is dispelled when accurate measurement can be cited to illumine a debatable situation. The basal metabolic rate furnishes "an accurate index to the results of medical and surgical treatment" in many instances which the growing literature of the subject demonstrates. And, as Janney remarked at the New Orleans session of the American Medical Association, there is no more interesting proof of the value of pure research as applied to clinical medicine than the development of respiratory apparatus used in the estimation of basal metabolism.

CEREBRAL HEMORRHAGE IN THE NEW-BORN

The fallacy of post hoc ergo propter hoc has more than once led to fallacious conclusions in medical science. From recent observations this seems to have been the case in determining the etiologic factor in many instances of infantile cerebral hemorrhage. In the new-born, meningeal bleeding is surprisingly common. According to necropsy observations made at the New-Born Clinic of the University of Minnesota, more than half of the cases thus examined showed cerebral hemorrhage. As it has long been realized that this phenomenon in life may be the specific cause of such unfortunate symptoms as mental deficiency and spastic states,[2] the attempt to place the primary responsibility for this on obstetric technic is a serious matter.

At the New Orleans session of the American Medical Association, Rodda,[3] of Minneapolis, pointed out that cerebral hemorrhage may follow normal labors when least expected. What has not been realized sufficiently in the past is the extent of hemorrhagic disease in the new-born represented by delayed coagulation time and prolonged bleeding time of the blood. Rodda's investigations show that with his method [4] the blood at birth normally exhibits a coagulation time ranging from five to seven minutes; the average bleeding time, with Duke's method, is three and one-half minutes, with a normal range of from two to five minutes. Significantly, the prolongation during the first five days of life coincides with the incidence of hemorrhagic diseases and cerebral hemorrhage. Mild trauma is likely to induce the latter under such conditions, while severe injury easily brings about the massive hemorrhages that result in early death.

With the underlying facts thus established, a rational therapy can be sought. Babies who bleed without birth injury can be benefited enormously by subcutaneous injections of whole blood. In severe cases in which cerebral complications are involved, recourse should be had to surgical procedures, following the lead of Cushing,[5] who showed in 1905 that craniotomy can prevent the appearance of cerebral degeneration through removal of the clot. Early surgery must, in fact, be controlled by measurements of the coagulation time of the blood, and fresh blood must be used therapeutically, if indicated, before operative procedures are instituted. Rodda's advice is that the condition of the blood—coagulation time and bleeding time—should be determined in every new-born baby presenting unusual symptoms, pointing to cerebral trouble.

1. Snell, A. M.; Ford, Frances, and Rowntree, L. G.: Studies in Basal Metabolism, J. A. M. A. **75**: 515 (Aug. 21) 1920.
2. McNutt, L. J.: Double Infantile Spastic Hemiplegia, with the Report of a Case, Am. J. M. Sc. **89**: 58 (Jan.) 1885; Intracranial Hemorrhage in Children, New York M. J. **41**: 104, 1885.
3. Rodda, F. C.: The Coagulation Time of Blood in the New-Born, with Especial Reference to Cerebral Hemorrhage, J. A. M. A. **75**: 452 (Aug. 14) 1920.
4. Rodda, F. C.: Studies with a New Method for Determining the Coagulation Time of the Blood in the New-Born, Am. J. Dis. Child. **19**: 269 (April) 1920.
5. Cushing, Harvey: Concerning Surgical Intervention for the Intracranial Hemorrhages of the New-Born, Am. J. M. Sc. **130**: 568, 1905.

Current Comment

COMMERCIAL FOODS FOR DIABETICS

Seven years ago the Connecticut Agricultural Experiment Station, which has long been active in the food inspection work of this country, published a widely circulated report on the commercial diabetic food products available at that time.[6] This publication gave striking testimony as to the misleading character of many of the products being advertised and sold for the special use of diabetic patients. As most emphasis a decade or more ago was being placed on the reduction of the carbohydrate content of the diet of such persons, the Connecticut bulletin stressed this feature of the commercially recommended foods. The same laboratory has recently prepared a new report on diabetic foods.[7] More than 600 analyses are included in the compilation, some of them representing products only recently marketed, and likewise such preparations as washed bran, thrice-cooked and washed vegetables, artificial and modified milks, and other "novelties" of present-day diabetic dietary and cookery. The elaborate lists of analyses include not only the content of carbohydrates but also that of protein and fat, in view of the recognized necessity of taking into account all of the nutrients in any proper formulation of a regimen for the diabetic patient. There is no satisfactory definition of what a diabetic food is, nor is there any universal diabetic food. The value of accurate information regarding the make-up of such products as may find a special application in dietotherapy lies in the fact that it enables the clinician and the patient to proceed intelligently in the direction of diet planning with a view to tolerance of all the

6. Street, J. P., and Meudel, L. B.: Conn. Agr. Exp. Sta. Report, Part I, Sec. 1, 1913.
7. Bailey, E. M.: Report of the Connecticut Agricultural Experiment Station, New Haven, Conn., on Food Products and Drugs, 1919, Part II, Diabetic Foods, Being Bulletin 220. The bulletin is mailed free to those who apply for it, as far as the edition permits.

nutrients. A federal regulation definition [8] states that "a diabetic food contains not more than one-half as much glycogenic carbohydrates as the normal food of the same class. Any statement on the label which gives the impression that any single food in unlimited quantity is suitable for the diabetic patient is false and misleading. If reliable information regarding the essential nutrients, fat, protein and carbohydrates were available, physicians could save themselves much "blind experiment" in efforts to ascertain a patient's tolerance. Among the items of interest in the Connecticut report are the studies of bran, which is being widely used at present to give bulk to the food residues in the alimentary tract. It appears that common, unwashed bran frequently contains no more than half as much starch as some of the advertised brands of "health" bran. Ordinary bran can readily be washed so that its content of starch is reduced to only 2 per cent. Further comment is unnecessary.

FAITH—AND WORKS

The best test of true faith is absolute confidence in one's belief. Apropos of this is the testimony given by Sir David Bruce at an annual meeting of the British Research Defense Society in 1910:

> When Sir David proved that the sleeping sickness, which had killed off 200,000 out of a population of 300,000, was due to the bite of the tsetse fly, and that the disease could easily be stopped by temporarily withdrawing the natives from the lake shore where the flies live, he called the Uganda chiefs together and asked for their help. They refused to believe the evidence and said the fly was harmless. I then said to Sir Apolo Kagwa, the Prime Minister, that if he did not believe that the fly carried sleeping sickness, he should go and sit among them under the shade of the trees on the lake shore in order to show every one the faith he had in the innocence of the fly. He answered: "God forbid."

The primitive savage was, however, willing to be shown—in fact, so willing that a few years later Sir David Bruce was able to say that not a single new case of sleeping sickness had been contracted in Uganda. The natives had learned to protect themselves against the tsetse fly. Faith, it is true, has healing powers, but the intelligent man is willing to concede the beneficial qualities of scientific work.

IMMUNITY FOLLOWING INFLUENZA

One of the debated points in connection with influenza concerns the duration of immunity following an attack. Some have claimed that influenza produces no immunity, others that it produces an immunity which is of brief duration, and still others that it confers a resistance to the disease which lasts over several years. Shortly after the 1920 epidemic subsided, the Surgeon-General's Office requested army surgeons to investigate the data available in army hospitals bearing on this point. The consolidated reports just published in the *Medico-Military Review*, issued by the Surgeon-General's Office, represent the conclusions in regard to 22,505 soldiers who were exposed to influenza during the 1920 epidemic and including 5,411 soldiers who had influenza during 1920. Of the 22,505 soldiers exposed, 3,397 had had influenza in 1918. Of these, 718 had a second attack of influenza in 1920. Thus, 24 per cent. of all who were exposed had influenza during 1920, and of those who had influenza, in 21 per cent. the attack was a recurrence. This approximate equality in percentage leads to the conclusion that if any immunity at all is conferred, the immunity is of only slight duration.

8. U. S. Dept. Agr. Food Inspection Decision 160.

R. O. T. C. UNITS IN MEDICAL SCHOOLS

The War Department has recently been authorized [1] to make much more satisfactory arrangements with medical schools by which medical corps units of the reserve officers' training corps may be instituted.[2] It is planned to establish units at ten Class A medical schools having an enrolment sufficient to make possible the voluntary enrolment of fifty male students in the unit at the beginning of their freshman year. Each school is to be provided with a regular army medical officer who will be known as professor of military science and tactics. The course consists of ninety hours a year of theoretical instruction in the lines particularly essential for medical officers. At the end of the freshman year the student has the opportunity of attending a six weeks' summer camp where outdoor drills and recreation are combined with lectures and instruction covering the duties of medical officers in the field. At the end of the sophomore year, the professor of military science, in cooperation with the head of the medical school, will select from among the military students those who are eligible to continue the course during the last two years. These advanced students will receive $16 a month throughout the junior and senior years and $30 a month and traveling expenses, board, quarters and medical care while they are in attendance at the six weeks' summer camp course following the junior year. Students who satisfactorily complete the course become eligible for commissions in the medical officers' reserve corps. Under these improved arrangements, this course provides a training for medical officers which should be attractive to a large number of medical students and, at the same time, should insure for the future a generous supply of well-trained medical officers.

1. This authority is granted by the Army Reorganization Act of June 4, 1920, modifying the National Defense Act of 1916.
2. See more detailed statement on page 824.

Function and Structure in Disease.—The margin of function and structure which each organ provides beyond that which is demanded by the bare necessity of bodily activity provides the field within which disease works. When this margin is cut down a point is reached at which the liver or the kidney or the lung or some other organ becomes inadequate. To interpret the functional value of diseased organs requires constant reference to the structural and functional development of the body. Pathologic problems are, in a sense, highly specialized, but again we can escape from empiricism in dealing with them only when we give them shape by relating them to general biology and the general study of the development and organization of the body, and of the origin and correlation of the various organs of which the body is composed. Pathology will be strengthened and simplified in its teaching if the biologist who gave the students their introduction to the general science also continues the teaching in relation to fundamental problems of pathology.—J. L. Smith, *Lancet*, July 10, 1920.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

Unlicensed Practitioner Fined.—A report states that Augustine Levanzin of Los Angeles was recently found guilty of practicing medicine without a license, fined $500 and given a suspended sentence of eighty days.

Foreign Language Examinations Discontinued.—It is reported that because of trickery and deception alleged to have been practiced by certain foreign applicants for medical certificates, the State Board of Medical Examiners has decided to discontinue all foreign language examinations.

DISTRICT OF COLUMBIA

Hospital Film Released.—Activities at the Walter Reed Hospital, Washington, will shortly be shown in moving pictures through the efforts of the bureau of the Potomac division, American Red Cross. The film was taken in cooperation with Surg.-Gen. Merritte W. Ireland and shows the work at the hospital for the wounded soldiers from a physical, educational and recreational standpoint. Other films are to be released in the future.

ILLINOIS

County Sanatorium Being Built.—The Tazewell County Tuberculosis Sanitarium, 1 mile east of Mackinaw, is under construction.

Clinic at Mount Carmel.—A tuberculosis clinic was conducted at Red Cross Headquarters in Mount Carmel, August 27, by Dr. Russell E. Adkins, Springfield, director of surveys in Illinois. The clinic followed a tuberculosis survey which had just been completed in Wabash County by Miss Knevels.

Antialcohol Delegation Named.—The governor has named the following physicians to represent Illinois at the Fifteenth International Congress Against Alcohol: Drs. Frank B. Norbury, Springfield; George A. Zeller, Alton; George W. Mitchell, Peoria; William F. Grinstead, Cairo; Ralph T. Hinton, Elgin; Rachelle S. Yarros, Charles F. Read, Herman M. Adler and H. Louis Singer, Chicago; Miss Amelia Sears, Chicago; Miss Jane Addams, Chicago, and Prof. Henry B. Ward, University of Illinois, Urbana.

Chicago

New Schools for Crippled Children.—Two new schools for crippled children, one at Lincoln and Belmont avenues, and one at Colorado and South Tripp avenues, were opened, September 13.

Personal.—Dr. Kellogg Speed has returned from France.——Dr. Peter C. Schenkelberger has returned after a six months' tour in Italy.——Dr. Harry Rand of the Iroquois Hospital staff was attacked, September 7, by a delirious typhoid patient, who attempted to shoot the physician. Fortunately, the cartridge failed to explode.

INDIANA

Florence Crittenton Home to Be Improved.—Immediate improvements are contemplated for the Florence Crittenton Home at Indianapolis, and the work will be pushed as rapidly as funds will warrant.

Research Society Elects Officers.—The Clinical Research Society of Indianapolis held its first annual meeting, September 3, and elected Dr. Murray N. Hadley, president; Dr. Charles E. Ferguson, vice president, and Dr. Homer G. Hamer, secretary.

Hospital Items.—The Wayne County Council has accepted an offer of $50,000 in liberty bonds to make improvements at the county tuberculosis society hospital.——Benton, Tippecanoe, Warren and White counties expect to hold a joint session in order to arrange for the establishment of a joint hospital for the four counties, to cost $250,000.

Sanatorium Not Insane Hospital.—The board of managers of the Marion Hospital announces that the institution is not to be used as an institution for the insane, but is to be a sanatorium provided with the best equipment and under the direction of the most competent nervous and mental specialists in the country, where men from the late war may receive treatment necessary to restore them to health and the possibility of a useful life.

Personal.—Dr. Frank L. Truitt, Indianapolis, is recovering from an appendectomy, recently performed.——Col. LaRue D. Carter and Lieut.-Col. Thomas B. Victor Keene, Indianapolis, have been placed in charge of the medical arrangements for the National Encampment of the Grand Army of the Republic to be held in Indianapolis the week of September 22.

IOWA

Government Leases State Institution.—The former state home for inebriates, Knoxville, has been leased by the United States government and will be remodeled and equipped as a hospital to accommodate former service men in the Middle West.

Personal.—Dr. Sara E. Foulks, Davenport, who has been engaged in postwar work in Albania for more than a year, has returned home.——Dr. Howard D. Fallows, New Hampton, has been placed in charge of the eye, ear, nose and throat department of the Park Hospital Clinic, Mason City.——A. E. Kepford has been appointed superintendent of the new state juvenile home, Toledo.

LOUISIANA

Personal.—Dr. Irving Hardesty, professor of anatomy in Tulane University, has been granted a leave of absence, which he will spend at the University of California.——Dr. James A. Tucker, Baton Rouge, has been named physician for the Louisiana State University, succeeding Dr. Charles McVea, deceased.——Dr. J. W. McGehee, Garyville, has been appointed to succeed Dr. Tucker, as attending physician to the state school for the deaf.

MAINE

Hotel Inspection.—The medical inspector of the state department of health has completed an inspection tour of the hotels along the coast of Maine from Kittery Point to Bar Harbor, during which 150 hotels were inspected and seventy certificates issued, each of which gives the hotel holding it a clean bill of health. Generally speaking, the summer hotels were found to be in good condition and adequately equipped for the accommodation of summer guests.

Tuberculosis Clinic.—The tuberculosis clinic for physicians which was recently held at the Central Maine Sanatorium, Fairfield, demonstrated a new and hitherto untried use for a sanatorium as an educational institution. No hospital or medical school has the facilities for the study of tuberculosis that the sanatorium possesses. It also brings physicians together from all parts of the state, interests them scientifically in new ideas, and discussion of their own experiences sends them home unified and better prepared to attack the tuberculosis problem as they meet it in their own practice.

MARYLAND

Personal.—Dr. Charles MacFie Campbell, assistant director of the Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital, has severed his connection with the clinic to become professor of psychiatry at Harvard Medical School and director of the Boston Psychopathic Hospital. Dr. Campbell will assume his new duties, October 1.

Dental Clinic at Hebrew Hospital.—After a two years' agitation of the subject by physicians in charge of the Hebrew Hospital, Baltimore, a dental clinic has been established there and will be opened officially within a few days. The new clinic was made possible by a gift of $10,000 from Dr. Harry Adler, as a memorial to his parents. Dr. William Allen Etheridge will be in charge of the clinic, which will be used exclusively for diagnostic work among patients of the hospital and dispensary.

Appropriation for Pay of Colored Physicians and Nurses.—An appropriation of $1,900 to pay the salaries this year of four colored nurses and two colored physicians in the school inspection division of the Baltimore City Health Department has been made by the board of estimates from its contingent fund. The nurses and physicians who look after children in colored schools have been serving without pay since their appointment several months ago. The salaries of the nurses are for the period from September 1 to January 1, and those of the physicians from October 1 to January 1.

University of Maryland School Campaign Plans Drafted.—The $350,000 campaign for funds to carry out the extension

program of the University of Maryland Medical College was launched formally at a recent meeting of the regents and directors of the school. The meeting was held in the office of Dr. James M. H. Rowland, dean of the medical school. Plans for the drive, which will open October 2 and continue until October 12, were outlined at the session, over which Dr. Rowland presided. The building program calls for the erection of a maternity hospital and a nurses' home and training school.

Marine Hospital to Be Used as a Municipal Hospital.—The municipal hospital commission at a recent meeting in the office of Health Commissioner C. Hampson Jones recommended the acceptance of the offer made by the U. S. Public Health Service of the Marine Hospital on Remington Avenue for use as a city hospital at a nominal rent of $1 a year. The action of the commission will be laid before Mayor Broening. The hospital will be turned over to the city immediately after the signing of the lease. The wards are ready for the reception of patients. It is not believed that Baltimore City will expend any large sum of money in new equipment and improvements, unless the $750,000 hospital loan should be turned down by the voters in November. It will not become a permanent municipal hospital, and the understanding is that the government will reserve the right to take it back in the event it is needed. The hospital loan was discussed by the commission and a report and recommendation as to the features of the campaign for its approval will be made to the Baltimore City Medical Society.

MASSACHUSETTS

Given Military Funeral Honors.—The body of Capt. William W. Walcott, M. C., U. S. Army, Natick, who was attached to the One Hundred and First Engineers, and died in Paris, March 19, 1919, was returned to America and was interred with military honors in Delpark Cemetery, Natick, August 16.

Personal.—Dr. Albert S. Hyman, resident physician at the Long Island Hospital, has resigned to become superintendent of the Mount Sinai Hospital, Philadelphia, and has been succeeded by Dr. Albert B. Murphy, Boston.——Major Richard A. Strong, chief medical director of the League of Red Cross Societies, Boston, has been elected an honorary member of the Serbian Medical Society.

NEW YORK

Addition to Sanatorium.—The board of managers of the Suffolk Sanitarium, Riverhead, has awarded the contract for an addition, to cost $65,300.

Personal.—Dr. Daniel E. Pugh, Utica, has been constituted by the order of the county court, examiner of mental defects. ——Dr. Nathan E. Beardsley, Dunkirk, was the guest of honor, August 25, at a farewell dinner given by the members of the Dunkirk and Fredonia Medical Society. Dr. George E. Blackham, on behalf of Dr. Beardsley's colleagues, presented him with a wrist watch.

New Hospital for Nervous and Mental Cases.—Arrangements have been completed for the opening of Valhalla Neurological Hospital for the exclusive study and treatment of brain diseases. The new hospital is a philanthropic project started by King Solomon Hospital Association as a preventive against insanity. It will open on October 1. The applications of 100 free patients have been accepted. They will come from several state and private institutions in New York and Connecticut.

New York City

New Neurologic Hospital.—Arrangements have been made for the opening of a neurologic hospital at Valhalla, Westchester County. The institution will be known as the Valhalla Neurological Hospital, and will coordinate under one roof surgical, medical and mental treatment of nervous and mental diseases. A drive has been started to raise $500,000 for maintenance.

OHIO

Personal.—Dr. Austin C. Brant has been reelected first vice president of the Dueber Watch Case Manufacturing Company, Canton.——Dr. Walter A. Wilson, Cincinnati, has been appointed superintendent of the Central State Hospital, Lakeland, Ky.——Dr. F. C. Anderson, formerly assistant superintendent of the Ohio State Sanatorium, Mt. Vernon, was appointed superintendent of the institution August 30.——Dr. Charles R. Longsworth, Columbus, recently underwent operation at Grant Hospital for appendicitis and is reported to be convalescent.——Dr. Joseph O. Ransohoff, Cincinnati, who has been seriously ill at his summer home at Beverly Hills, Mass., is reported to be out of danger.

Course in Sex Education.—The University of Cincinnati has issued a special announcement of a new course dealing with sex education. The course will consist of lectures, assigned readings, discussions, reports, demonstrations and exhibits. In the first semester, the topics to be treated will be: aims and general significance; the need; present status; function of the home and other social institutions; biologic and physiologic background; reproduction, a life activity; elementary human embryology; physiology and hygiene of human reproduction; psychology of sex education; essential facts of bacteriology and preventive medicine; venereal diseases and their sociologic significance. In the second semester these topics will be studied: place of sex education in biology, general science, physiology and hygiene, home nursing, physical education, literature, sociology, psychology, appreciation of art and agriculture; the school's responsibility outside the classroom; activities of the federal government, with special reference to the material prepared by the U. S. Public Health Service and the Interdepartmental Social Hygiene Board; the educational work accomplished by the American Social Hygiene Association, the Cincinnati Social Hygiene Society and other similar agencies; activities of state and city departments of health and education in the field of social hygiene; significant contributions of individual educators. The courses will be given by Mr. E. F. Van Buskirk, executive secretary and educational director of the Cincinnati Social Hygiene Society.

OKLAHOMA

Hospital Cornerstone Laid.—The laying of the cornerstone of the tuberculosis sanatorium for colored people took place at Boley on September 9. Dr. A. R. Lewis, state health commissioner, assisted in the exercises. The institution was established by the 1919 legislature, and $50,000 was appropriated for buildings and equipment.

PENNSYLVANIA

Outing for Physicians.—Physicians of the counties of Bucks, Berks, Chester, Delaware, Lehigh, Montgomery, Northampton and Philadelphia, joined in an outing at Willow Grove Park, September 2. The outing was a get-together meeting of the profession of that section of the state.

Journal Changes Address.—By direction of the board of directors of the Medical Society of the State of Pennsylvania, the journal of the society is to be printed in Harrisburg, beginning with the August issue. Dr. Frederick L. Van Sickle, executive secretary and editor, has opened an office at 212 North Third Street, Harrisburg.

Hospital to Be Erected.—The Robert H. Crozer Hospital, to be erected on the grounds of the Chester Hospital and deeded to that institution for ninety-nine years, will end a long series of conferences between the executors of the Crozer will and the managers of the Chester Hospital regarding a bequest by Mr. Crozer of $200,000 for the erection of a hospital in Upland or Chester, which bequest now amounts to $240,000.

Law Breakers Fined.—M. D. Greenfield, Charleroi, who is said to have been convicted of practicing drugless therapy without a certificate, appeared before the court August 23, and was sentenced to pay a fine of $25 and costs. It is said that Greenfield is a graduate of a chiropractic institution. ——For violating the quarantine law, Lewis McClain of Liberty Township, Adams County, was fined $50 and costs, August 21. The defendant took his son to a picnic when he was just recovering from diphtheria and a week before quarantine was lifted.

Personal.—Dr. David I. Miller, Harrisburg, has been appointed medical director for Dauphin County and head of the local tuberculosis clinic, succeeding Dr. Clarence R. Phillips, resigned.——Dr. J. Moore Campbell, Harrisburg, has been appointed acting chief medical director, succeeding Dr. Howard L. Hull, Camp Hill, resigned.——Dr. Israel Cleaver, Reading, has been chosen head of the Berks County Health Council.——Dr. Larry D. Sargent has been appointed chief of the state tuberculosis clinic at Washington.——Dr. D. C. Hollister has been appointed supervising dental hygienist of the state department of health and will have charge of the traveling dental clinics to be established in Pennsylvania under the auspices of the state government and the American Red Cross.——Dr. Jerome B. Rogers has been made super-

intendent and surgeon-in-chief of the Pottsville Hospital. Drs. Joseph L. Warne, Hamilton C. Wallace and Merchant C. Householder were elected surgeons; James B. Heller, John J. Moore and J. T. Moore, assistants; James S. Carpenter, physician, and George S. Corson and Percy R. Meikrantz, specialists.

Philadelphia

Personal.—Dr. Leman D. Cruice has been appointed physician in charge of the infirmary, correction farm and girl's home, Warrensville, Ohio, succeeding Dr. John McCleary, resigned to study tropical diseases in India.

TENNESSEE

City Hospital Makes Improvements.—The Knoxville General Hospital is to add the treatment of United States soldiers to its work; and for this purpose a new ward with accommodations for sixty patients is being completed at the institution. Soldiers who are taken ill in Knoxville or vicinity will be sent to the hospital and treated by the government staff of physicians. A large ward for the treatment of women patients is also nearly completed.

TEXAS

U. S. Hospital at Corpus Christi to Be Repaired.—The U. S. Public Health Hospital, formerly the Beach Hospital, damaged in the storm of last September, will be repaired at once.

New State Health Officer.—Dr. Oscar Davis, Anderson, has been appointed state health officer of Texas, succeeding Dr. Charles W. Goddard, resigned, to accept the position as chief of the medical staff of the University of Texas, Galveston.

Society Rejects Hospital Proposition.—The Denton County Medical Society has rejected the proposition presented by a promoting company to organize a hospital stock company for the purpose of building a hospital at Denton. It is understood that the medical society is unanimous in its desire to have a hospital and that it was only the form of the proposition which they rejected.

Bubonic Plague.—The fifth death from bubonic plague occurred at Beaumont, August 12. The cases thus far reported in Beaumont number twelve.——The first death in Houston from bubonic plague occurred in a local hospital, August 19.——The twelfth case and ninth death from bubonic plague in Galveston was reported, September 8. The patient was a woman, 79 years of age.

New Baptist Institution.—Construction work has been begun on the new building of the Baptist Memorial Sanatorium at Dallas. The building will have accommodations for 150 patients in addition to laboratory and operating rooms. A dispensary to take care of 300 or 400 patients daily will be erected as a part of the hospital. The estimated cost of the building is $800,000.

WISCONSIN

Personal.—Dr. Glenford L. Bellis, Wauwatosa, has resigned to accept the superintendency of the National Home for Disabled Volunteer Soldiers, Johnson City, Tenn.——Dr. Neil Andrews, Jr., Oshkosh, has returned after a trip to England and France.

Plans for Joint Sanatorium.—Plans are being made by the county boards of Dodge, Fond du Lac and Washington counties for a joint tuberculosis sanatorium which is to be erected in five units and will cost between $350,000 and $400,000. The sanatorium itself will accommodate 100 patients, and there will also be a residence for the physicians in charge, a nurses' home, a house for employees and a central heating plant. The buildings will be constructed of concrete, brick and steel.

CANADA

Personal.—Dr. Francis G. Wallbridge, Belleville, Ont., has been appointed medical officer of the Argyle Light Infantry. ——Sir Kenneth Goadby, London, England, is in Toronto, the guest of Dr. Andrew J. McDonagh.

Staff Additions.—Queen's Medical College, Kingston, Ont., announces the following additions to its staff: Lorimer J. Austin, London, England, professor of clinical surgery; Dr. James Miller, Edinburgh University, professor of pathology.

French-Speaking Physicians at Quebec.—More than 400 French-speaking physicians of North America are gathering in convention in the city of Quebec, at Laval University. For ten years, largely on account of the World War, the association has been unable to meet in annual conference.

Physician for Korea.—Dr. O. R. Avison, president of Chosen Christian College and Severance Medical College, Seoul, Korea, is visiting Toronto where a quarter of a century ago he practiced medicine. His object is to secure twenty physicians and twenty nurses for hospital work, and for training native physicians and nurses in Korea.

Massachusetts-Halifax Health Commission.—Appointments to this commission are, as follows: Dr. Gordon Wiswell, in charge of Health Center No. 1 in the Old Admiralty House; Dr. Hugh W. Schwartz, physician in charge of nose and throat work, and Dr. M. J. Carney, in charge of one of the tuberculosis clinics. The consulting staff to cooperate with the executive officer, Dr. Royer, is composed of Col. John Stewart, Drs. Frank Woodbury, Arthur Birt, George M. Campbell, Samuel J. McLennan and R. Evatt Mathers.

A Clinic for the Well.—A medical clinic is being established at London, Ont., for those citizens and others who are well. This announcement was published on September 10, by Dr. H. W. Hill. It will be the first of its kind on this continent. He proposes to have well people come to the clinic for examination so that they may learn whether they are suffering from incipient disease, so as to secure treatment before it is too late. A moderate fee is to be charged for such examinations.

GENERAL

Millions for Red Cross.—Appropriations of $48,200,000 have been made for the American Red Cross relief program during the fiscal year, ended July 1, 1921. This total is $21,000,000 less than that appropriated last year.

Southern Physicians to Meet in Louisville.—The fourteenth annual meeting of the Southern Medical Association will be held in Louisville, Ky., November 15 to 18, with headquarters at the Hotel Seelbach under the presidency of Dr. Edward H. Cary, Dallas, Texas.

Colored Physicians Hold Meeting.—At the annual meeting of the National Medical Association of Negro Physicians, Surgeons, Dentists and Pharmacists, held in Atlanta, August 25 to 27, under the presidency of John P. Turner, Atlanta, Ga., Louisville, Ky., was selected as the next place of meeting, and Dr. Henry M. Green, Knoxville, Tenn., was elected president.

Red Cross Magazine to Suspend.—The executive committee of the American Red Cross has decided to discontinue the *Red Cross Magazine* with the October issue, on account of the increased cost of publication and especially of paper. The publishers stand ready to refund to those subscribers who will not receive the full number of issues to which they are entitled, the pro rata amount of their subscription.

Eighty-Ninth Division Surgeons to Meet.—The first annual meeting of the Eighty-Ninth Division Medical Association will be held in Kansas City, Mo., October 4, with headquarters at the Muehlbach Hotel, under the chairmanship of Dr. Reginald H. Meade, Kansas City. During the forenoon clinics will be held, and in the afternoon there will be a business meeting, and a banquet and entertainment in the evening.

To Improve Efficiency in Prohibition Director's Office.—The federal prohibition director at Chicago announces under date of September 1 that in order to prevent delay in the issuing of permits under Form 1410 undue privileges will not be given one firm over another, and that no forms will be certified beginning September 7, save those that reach the office of the director through the regular course of the United States mail. This rule has been made in order to prevent the delays due to unnecessary conversation and discussions when forms are presented for counter certification.

Cumberland Physicians Hold Meeting.—The seventeenth annual meeting of the Cumberland Valley Medical Association was held in Carlisle, Pa., September 2, under the presidency of Dr. David W. Van Camp, Plainfield, Pa. The following officers were elected: president, Dr. James B. Amberson, Waynesboro, Pa.; vice presidents, Drs. Samuel E. Mowery, Mechanicsburg, Pa., William D. Campbell, Hagerstown, Md., and Thomas H. Gilland, Greencastle, Pa.; secretary, Dr. John J. Coffman, Scotland, Pa. (reelected), and treasurer, Dr. John K. Gordon, Chambersburg, Pa.

Graduate Course in Public Health at Yale.—A graduate course in public health is being given by Yale University School of Medicine, which was first established in 1917. A one-year course leads to the certificate in public health (C.P.H.); and to medical graduates, only, a two-year course leads to the degree of Doctor of Public Health (Dr.P.H.).

These are required in both cases. The fees are $200 per year. The course extends from October to June. During 1919-1920, there were twenty instructors. Eight students were enrolled in June, 1920, and two certificates and two degrees were granted.

Tuberculosis Conferences.—The Southern Tuberculosis Conference will be held in Jacksonville, Fla., October 11 to 13. The Sunday before the meeting will be tuberculosis Sunday in the churches in which many of the delegates will speak on some phases of the general subject of tuberculosis.——North Atlantic Tuberculosis Conference will be held in Richmond, Va., October 7 and 8, with headquarters at the Jefferson Hotel. Capt. W. W. Baker, Chesterfield, Pa., will preside, and Dr. Roy K. Flannagan will be secretary. This meeting is held under the direction of the National Tuberculosis Association.

Safety Congress Meeting.—The ninth annual safety congress of the National Safety Council will be held in the Auditorium, Milwaukee, September 27 to October 1, under the presidency of C. R. Richards. The week from September 26 to October 2 is to be known as "No Accident Week" in Milwaukee. On the morning of the first day the annual meeting of members will be held, the afternoon session will be a public mass meeting, and moving pictures on safety will be exhibited. On the second morning there will be a general round-table discussion and meetings of the various sections. These section meetings will continue throughout the next three days.

Protection of Illegitimate Children.—Children born out of wedlock may receive protection of uniform laws. The National Conference of Commissioners on Uniform State Laws at its annual meeting held in St. Louis, August 19, adopted a resolution to include this subject in its program. At the present time, Minnesota affords a greater amount of protection to children born out of wedlock than does any other state. In most of the states, legislation for the protection of children of illegitimate birth is archaic. Following regional conferences held last February in Chicago and New York to consider standards which should govern legislation, a committee representing both conferences was appointed by the Children's Bureau of the United States Department of Labor to draft a memorandum embodying the principles agreed on in the resolution of the two conferences and to act in an advisory capacity to the bureau on this subject. A syllabus of propositions to serve as a basis for a program for illegitimacy legislation was drafted by Prof. Ernest Freund of Chicago and approved with certain amendments by the committee. This syllabus is included in a publication of the bureau now in press.

LATIN AMERICA

Casts Presented to Montevideo Medical School.—The *Anales de la Facultad de Medicina* of Montevideo relates that the Rio de Janeiro medical faculty have recently presented the Montevideo faculty with another set of handsome wax models, to supplement their previous gifts in this line. They were brought by Dr. Roquette Pinto, on his way to assume the chair of physiology in the Paraguay medical school.

Personal.—Prof. Isquieto Pérez, professor of therapeutics at Guayaquil, is on a scientific mission to study hospitals and medical schools in Rio de Janeiro.——Prof. A. de Castro of Rio has been elected to membership in the Société de neurologie of Paris.——Dr. Oswaldo Portugal of the S. Paulo medical school has been sent by the governor of the state to study the therapeutic application of radium in Paris, London and Berlin.——Dr. O. de Souza is likewise on a mission to Europe, as the delegate of the Rio medical faculty.——Prof. L. Ciampi, an Italian psychiatrist, has been called to Argentina to the training school for mentally backward children at Buenos Aires.——Dr. E. R. de Aragón of Havana is on a visit to the United States to study recent progress in surgery. He is the founder of the *Revista de Ginecología y Ostetricia.*—— Dr. Paz Soldán, founder of the *Reforma Médica* of Lima, Peru, was entrusted with the drawing up of the sanitary code for the country, and his work has been accepted by the government as representing real progress. ——Dr. Jaime H. Oliver having reached the age limit of retirement from the chair of surgical pathology at the Montevideo medical school has been appointed honorary professor. ——Dr. J. Reenstierna of Stockholm, whose work on the combined serotherapy of gonorrhea was recently reviewed on page 578, is visiting in Rio.——Dr. H. J. Rosello, as exchange professor from Montevideo, has been lecturing in Buenos Aires.

FOREIGN

Personal.—Dr. J. T. Wilson has been elected dean of the faculty of medicine of the University of Sydney, Australia, succeeding the late Sir Thomas Anderson Stuart.

New Greek Medical Journal.—Dr. Pietri, director of the French Hospital at Athens, has founded a new journal, the *Iatrikos Typos,* to be the official organ of the hospital and of the Pasteur Institute.

Gift to Medical School.—The family of the late Sir John Darling of Adelaide, South Australia, has contributed the sum of $75,000 toward the cost of erecting a new building for the Medical School of the University of Adelaide to accommodate the departments of physiology, biology, chemistry, and histology and the medical library.

The Redard Prize.—Dr. P. Redard, a prominent orthopedic surgeon in France, who died not long ago, bequeathed to the Académie de médecine securities yielding an income of 1,000 francs which is to be awarded as a 5,000 franc prize every fifth year for the best work on orthopedic surgery. Competition is open to physicians of all countries and to interns in Paris hospitals.

New Research Laboratories Opened.—The new laboratories for research on the origin and treatment of tropical diseases, named after Sir Alfred Jones, Liverpool, were opened in Liverpool, July 24. Sir Alfred Jones took a great interest in the investigation of tropical diseases in Liverpool and made provision in his will for the erection of a laboratory and buildings in which the work may continue to be carried on with moré ample facilities.

The Paolucci Fellowship.—The latest among the numerous tributes rendered to Dr. R. Paolucci for his daring exploit in planting a mine under the Austrian flag-ship in Pola harbor during the war, is the foundation of a Paolucci fellowship at the large school for orphans of physicians, located at Perugia. The subscriptions for this were from the medical societies of Italy, the *Ordini dei medici.* The *Policlinico* published the names of the individual subscribers, listing a number as "Lire 5, Illegible."

Kingsley Medal to Grassi.—The *Annali d'igiene* relates that the School of Tropical Medicine at Liverpool has conferred the Mary Kingsley medal on Prof. G. B. Grassi, the malariologist of Rome, for his research on the transmission of malaria by mosquitoes and the development of the hematozoa in the mosquito body. He is professor of comparative anatomy at the University of Rome and his earliest works date from the eighties. His work on the exclusive transmission of malaria by mosquitoes was published in 1900.

Congress of Hospital Physicians and Surgeons.—The physicians and surgeons connected with the hospitals of France have organized and arranged a general meeting at Paris, October 4 and 5, in connection with the national surgical congress. Three main topics are to be discussed, namely, how to keep the hospital service free for those unable to pay, and how to insure proper payment for those able to pay and those whose expenses are paid by outside organizations. Also ways and means for insurance against professional diseases and accidents of hospital origin.

Monument to Lombroso.—A committee was organized in 1910 to collect funds for a monument to Lombroso. The committee had concluded its task when the war broke out and the execution of the monument was deferred. The matter has been taken up again and it has been found that the funds collected are inadequate for the purpose now. So the committee appeals for more donations. They can be sent to Prof. Enrico Ferri at Rome or to the Director of the *Archivio di Antropologia criminale, Psichiatria e Medicina legale,* Care Editori Fratelli Bocca at Turin. The sculptor is at work on the monument which will be unveiled at Verona in the spring of 1921.

Deaths in Other Countries

Dr. **S. Eperon,** professor of ophthalmology at the University of Lausanne.——Dr. **F. Best,** privat-docent for experimental pathology at the University of Rostock.——Dr. **González Pellicer,** surgeon to the Spanish Hospital at Buenos Aires, aged 52.——Dr. **E. de Aragón y Muñoz,** a gynecologist and practitioner of Havana.——Dr. **M. A. Fernández Ibarra,** a Cuban physician long resident in New York, and author of numerous works on the history of medicine, etc.——Dr. **N. Saitone** of Las Piedras, Uruguay.——Dr. **V. A. Costa,** a Brazilian clinician residing in Lisbon.——Dr. **D. X. de Carvalho** of S. Luiz do Maranhão, Brazil.

Government Services

Appointment of Medical Officers

The War Department announces the appointment of the following emergency officers in the Medical Corps of the Regular Army; this is a partial list of the medical men who have qualified in the July, 1920, examinations for commissions in the Medical Corps; the names of other successful candidates will be printed in THE JOURNAL from time to time:

LIEUTENANT-COLONEL

Fielding H. Garrison, Army Medical Museum, Washington, D. C.

MAJORS

J. W. Bauman, Camp Dix, N. J.
C. A. Betts, Camp Grant, Ill.
J. C. Bowman, Camp Lee, Va.
Casper R. Byars, Fort Bliss, Tex.
A. M. Caccini, Mitchel Field, N. Y.
D. W. Cairns, Governors Island, N. Y.
D. R. Chase, Langley Field, Va.
J. F. Coupal, Army Medical Museum, Washington, D. C.
C. H. Dewey, Ft. Sam Houston, Tex.
C. E. Drake, Douglas, Ariz.
J. F. Duckworth, Ft. Crook, Neb.
Z. L. Henry, Nogales, Ariz.
C. L. Hoy, Camp Dodge, Ia.
A. D. Jackson, Camp Funston, Kan.
W. A. Murphy, Staten Island, N. Y.
R. K. Ogilivie, Denver, Colo.
J. F. Presnell, Staten Island, N. Y.
F. T. Robeson, Walter Reed Hospital, D. C.
W. S. Sharpe, Ft. Des Moines, Ia.
S. M. Strong, Long Island, N. Y.
J. W. Watts, Hot Springs, Ark.
W. E. Wilmerding, Camp Dodge, Ia.
F. E. Winter, Staten Island, N. Y.

CAPTAINS

J. P. Beeson, Ft. Sheridan, Ill.
J. H. Blackwell, Camp Pike, Ark.
S. E. Brown, San Antonio, Tex.
C. T. Buckner, Ft. Sill, Okla.
T. M. Chaney, Madison Barracks, N. Y.
H. S. Cole, Camp Upton, N. Y.
M. C. Crow, Camp Dodge, Ia.
M. B. Dunning, Ft. Sheridan, Ill.
J. C. Dye, Camp Dodge, Ia.
S. Q. Elmore, Ft. Clark, Tex.
J. H. Evans, Staten Island, N. Y.
H. H. Fisher, Camp Dix, N. J.
A. M. Freels, Denison, Tex.
J. S. Gibson, Ft. Logan, Colo.
V. A. Harl, Camp Pike, Ark.
L. S. Harvey, Russell, Wyo.
J. E. Hewitt, Nogales, Ariz.
A. A. Hobbs, Ft. Leavenworth, Kan.
F. W. Hunter, Governors Island, N. Y.
H. W. Kennard, Aberdeen, Md.
W. B. Kenworthy, Camp Dix, N. J.
E. W. Kleinman, Camp Grant, Ill.
F. W. Lane, Cambridge, Ohio
L. A. Lavanture, Russell, Wyo.
A. A. McDaniel, Ft. Sam Houston, Tex.
P. J. McKenzie, Denver, Colo.
W. F. McLaughlin, Gen. Hosp. No. 41, Fox Hill, N. Y.
H. W. Mahon, Camp Dix, N. J.
L. G. Martin, Camp Gordon, Ga.
K. P. Mason, Camp Pike, Ark.
J. A. Matson, Denver, Colo.
L. A. Milne, Ft. Sill, Okla.
F. J. Moffatt, Camp Sherman, Ohio
C. D. Oakman, New Haven, Conn.
S. F. O'Day, Camp Upton, N. Y.
M. C. Pentz, Camp Sherman, Ohio
J. B. Powers, Garden City, Long Island, N. Y.
G. R. Randall, Ft. Sheridan, Ill.
T. H. Reagen, Camp Pike, Ark.
F. J. Rice, Camp Pike, Ark.
D. B. Roach, Jefferson Barracks, Mo.
H. E. Ruff, Camp Pike, Ark.
E. F. Shaffer, Camp Pike, Ark.
J. R. Shelton, Camp Funston, Kan.
L. D. Soper, Staten Island, N. Y.
C. B. Spruit, Camp Deven, Mass.
E. J. Strickler, Camp Pike, Ark.
E. M. P. Sward, Ft. Sam Houston, Tex.
M. H. Tindall, Ft. Bliss, Tex.
F. C. Venn, New York, N. Y.
E. H. Welcome, Camp Dodge, Ia.
G. D. Wells, Camp Pike, Ark.
G. B. West, Camp Pike, Ark.
Joseph H. Whiteley, Denver, Colo.
D. B. Williams, Denver, Colo.
J. M. Willis, Denver, Colo.
J. D. Woodworth, Hoboken, N. J.
Lucius F. Wright, Denver, Colo.

FIRST LIEUTENANTS

L. E. Beringer, Camp Custer, Mich.
M. C. Berry, Camp Pike, Ark.
P. C. Christian, Fort Bliss, Texas.
C. F. Davis, Ft. Sheridan, Ill.
E. M. Dings, Camp Dix, N. J.
B. Dodson, Camp Dix, N. J.
A. W. Drew, Ft. Sheridan, Ill.
L. I. Evans, McCook Field, Ohio.
J. J. Figueras, San Juan, P. R.
C. V. Hart, Plattsburg Barracks, N. Y.
L. C. Howe, Ft. Sheridan, Ill.
A. P. Kelly, Camp A. A. Humphreys, Va.
A. T. King, Governors Island, N. Y.
G. E. Lindow, Ft. Leavenworth, Kan.
R. Malcolm, Ft. Sheridan, Ill.
H. R. Melton, Ft. Sheridan, Ill.
W. H. Merriam, Ft. Leavenworth, Kan.
W. J. Joehe, Fort Niagagra, N. Y.
R. L. Peyton, Jefferson Barracks, Mo.
D. L. Robeson, Camp Custer, Mich.
N. Rosenberg, Camp Upton, N. Y.
O. F. Schiffli, Camp Grant, Ill.
C. Surren, Chicago.
F. W. Wiehe, Jefferson Barracks, Mo.

Reserve Officers' Training Corps Units in Medical Schools

The Army Reorganization Act of June 4, 1920, provides satisfactory conditions for the establishment of medical corps units of the Reserve Officers' Training Corps in medical schools. The medical corps units are to be established in ten Class A medical schools with a sufficient enrolment to meet the requirements of the present law, which stipulates that fifty physically fit male students shall enroll for the course immediately on entering their freshman year. To each of these medical schools a medical officer of the Army will be assigned as professor of military science and tactics. The course will consist of:

1. Theoretic instruction, covering ninety hours per annum, or a total of 360 hours, consisting of lectures and textbook studies in hygiene, sanitation and first aid, customs of the service, including history of the regular army, organization, military law, equipment of the soldier, etc.

2. Practical drill and field duties for six weeks, to be given at summer camps following the freshman year. Attendance at this course is voluntary. The student will live under field conditions, and will receive instruction in discipline, character and military bearing, the hygiene and preparation of food and the care of military camps, including the disposal of waste, detection and destruction of mosquitoes and flies, etc.

3. An advance practical course of six weeks in drill and field duties following the junior year based on the training previously obtained.

A detailed statement in regard to the courses of instruction and other essentials has been sent to the officers of all Class A medical schools.

Preparations for Respiratory Disease Control

The Surgeon-General of the Army is making preparations for the control of the diseases transmitted by discharges of the respiratory tract and the reduction of their mortality during the coming winter among American troops. Experiments carried on at the Army Medical School on animals indicate that the pneumococcus vaccine produces a considerable degree of protection for a short duration of two months. It is recommended to the Medical Corps, therefore, that this vaccine, which is given in three doses like the triple typhoid vaccine, be administered in the Army during the month of December. The pneumococcus vaccine is administered only on a voluntary basis to groups of soldiers who are willing to allow themselves to be vaccinated and observed as to the benefits arising from its use.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list L. signifies lieutenant; C., captain; M., major; L. C., lieutenant colonel, and Col., colonel.

ALABAMA

Emelle—Boyd, A. F. J. (C.)
Ensley—Fonville, W. D. (M.)

CALIFORNIA

Los Angeles—Rene, J. A. (C.)
San Diego—Carter, R. S. (C.)
San Francisco—Haas, S. L. (C.)

FLORIDA

Nichols—Jobson, A. M. C. (C).
Tampa—MacRae, J. D. (M.)

GEORGIA

Auburn—Coffee, H. D. (L.)
August—McGarity, J. A. (L.)

ILLINOIS

Chicago—Challenger, C. J. (L.)
Lipshulch, G. U. (C.)
Malone, L. V. (L.)
Reed, T. (C.)
Sigworth, D. C. (L.)
Concord—Magill, A. O. (L.)
Hubbard Woods—Farmer, F. C. (L.)
Prophetstown—Winsett, C. V. (L.)

INDIANA

Fort Wayne—Carey, W. W. (C.)
Hammond—Greenleaf, G. F. (C.)
Indianapolis—Hutchins, F. F. (L. C.)
Kennard—Vandament, W. T. (L.)
Michigantown — Compton, C. B. (L.)

IOWA

Dubuque—White, E. H. (L.)
Onawa—Talboy, J. H. (C.)

KANSAS

Belle Plaine—Baker, R. E. (M.)
Winfield—Cave, F. G. (C.)

LOUISIANA

Bedford—Laughon, W. I. (L.)
New Orleans—Preis, E. B. (L.)

MASSACHUSETTS

Myricks—Randall, J. A. (L.)
Pittsfield—Stewart, H. M. (L.)

MICHIGAN

Ann Arbor—Langford, T. (M.)
Highland Park—Suggs, F. (M.)
Kalamazoo—Berry, J. F. (C.)
Richland—Kenzie, W. N. (M.)

MINNESOTA

Minneapolis—Carhart, W. G. (M.)

MISSISSIPPI

Meridian—Keen, O. F. (C.)

MISSOURI

Grand City—Tilton, W. B. (L.)

NEW JERSEY

Atlantic City—Corson, F. R. (M.)
Belleville—Elmore, W. T. (C.)
New Brunswick — Condon, W. J. (C.)

NEW MEXICO

Lakewood—Furay, E. S. (L.)

NEW YORK

Brooklyn—Krupp, D. D. (L.)
Pacini, A. J. (L.)
Buffalo—Fowler, R. G. (L.)
Hinds, R. W. (M.)
Lucas, W. C. (C.)
Kennedy—Batt, G. W. (C.)
New York—Hirsh, A. B. (C.)
Olcott, C. T. (C.)
Saratoga Springs — Brown, G. B. (M.)

NORTH DAKOTA

Grand Forks—Kittelson, O. (L.)

OHIO

Cincinnati—Kennedy, J. T. (L.)
Malvern—Rhiel, J. A. (M.)

OKLAHOMA

Fletcher—Ashley, J. (L.)

PENNSYLVANIA

Philadelphia—Myers, D. A. (L.)

SOUTH CAROLINA

Mauldin—Blakey, D. R. (C.)

TENNESSEE

Memphis—Mann, H. B. (L.)

TEXAS

Carlshad—Gowen, C. R. (L.)
El Paso—McKnight, J. L. (L.)
Lockhart—Hewlett, L. L. (C.)
Malone—Roberts, L. C. (L.)
Palestine—Martin, C. P. (M.)
Pearsall—Brown, J. W. (L.)

VERMONT

Groton—Tillotson, H. L. (L.)

VIRGINIA

Vienna—Coumbe, A. G. (M.)

WISCONSIN

Chetek—Malcolm, J. J. (L.)
Wauwatosa — Gatterdam, E. A.

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CONNECTICUT
Middletown—Sweet, A. N.

ILLINOIS
Ladd—Moffett, R. A.

MASSACHUSETTS
Waltham—Ireland, A. G.

MISSOURI
Kansas City—Davis, J. J.

PENNSYLVANIA
Philadelphia—Hughes, F. L.

VIRGINIA
Norfolk—Sangmeister, H. J.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 21, 1920.

The Proprietary Medicines Bill

An important debate on the Proprietary Medicines Bill (described last week) took place in the House of Lords, where the bill passed through the committee stage. Lord Bledisloe expressed the hope that no attempt would be made to whittle down the important provisions of the measure. Never had such a tissue of fraud and falsehood been disclosed as was disclosed before the Select Committee of the House of Commons in regard to some of these proprietary preparations. Through advertisements in the press, deception was practiced on credulous and ignorant people. In no civilized country in the world was less protection afforded than in the United Kingdom against the class of medicine with which this bill dealt.

Lord Emmott moved to leave out the provision that the ingredients and composition of a proprietary medicine should be set forth on the proposed register of medicines and appliances. Such a provision might lead to the disclosure of the ingredients to a rival manufacturer. He moved to substitute instead a statutory declaration furnished to the register that the patent medicine was compounded of the ingredients mentioned in the declaration. In the opinion of the manufacturers of these medicines, some members of the medical profession were "out" to destroy their trade, with the incidental effect of increasing their own earnings. He, however, was not concerned with that quarrel. His desire was to see justice done to the public.

Replying for the government, Viscount Astor (parliamentary secretary to the Ministry of Health) resisted the amendment. It was vitally necessary that the ministry of health should know what "patent medicines" contained. He had too high an opinion of the civil service to believe that officials would give away the secrets. As for the suggestion that physicians would benefit from disclosures, the evidence given before the Select Committee showed that the profession stood to gain from the public's buying a large number of these "remedies," because afterward they would require more attention.

Lord Dawson of Penn (physician to the London Hospital) said that remedies were not to be judged suitable or unsuitable according to whether or not they were poisons. Many remedies which made for good in proper hands made for harm in unskilful hands. The practice that had arisen of adding to the scheduled poisons in the poisons act was wholly undesirable. That schedule contained many drugs, unfortunately, which were not poisons at all, and it produced an undesirable prejudice in the public mind to overstate the number of poisons. The fact was that knowledge tended to make the composition of drugs more and more precise, and thus their action became more accurately known and powerful for good and for evil—for good in the hands of people who knew, and for evil in the hands of those who did not. That was one reason why a wide discretion must be allowed to a government department. On the one hand, no injustice must be done to remedies which were either harmless or (as many of them were) useful; and, on the other hand, the public must be protected against remedies that were potentially evil. A "patent medicine" was not necessarily harmful per se, but it might have the effect of masking the early symptoms of serious and grave diseases, and thus the true investigation of the case was delayed until it was too late to do anything. He suggested, therefore, one criterion: whether a particular combination of drugs did by having this effect do such harm to the public as to require that the public should be protected. He did not wish to give needless examples, but malignant disease at once came to mind. It was quite easy to assuage the symptoms for six months and thus delay scientific diagnosis and treatment. Then, too, there were drugs exceedingly efficacious if properly handled, but dangerous in the hands of inexperienced people. Let them notice, for example, the group of anilin drugs, which was being extended every year. They were extraordinarily dangerous in the hands of people who did not know how to use them. Many of the simple headache powders in the hands of skilful persons were most efficacious; it was common to see people in collapse who used them without knowledge. So with the remedies for sleeplessness. He was not against proprietary medicines as such. It was only the public interest that should be the criterion to Parliament and to the profession to which he belonged.

Proposed Reform of Death Certification

A deputation from the British Medical Association and the Medical Parliamentary Committee was received by the minister of health and the home secretary. They expressed dissatisfaction with the present form of death certificate, which made it possible for a physician to certify death when he had no actual evidence that death had occurred. It was objectionable also that the certificate should be handed to the relatives of the deceased. The relatives were thereby informed of medical details which it was not necessary for them to know, and at times very inadvisable. This led to the employment of euphemisms by the certifier, thus diminishing the value of the statistical returns. The deputation suggested a dual certificate, one part stating the fact of death as given to the relatives, and the other, the cause of death, to be handed only to the proper authorities. To some extent this practice prevails in Ireland and also in Scotland, but there neither document is confidential. The only people who object to the suggested procedure are the insurance companies. Reform was also needed with regard to the registrar, the official whose certificate of registration is an authority for burial. This official was entitled, on information only, to give a certificate permitting burial. He could take a statement from any bonesetter, herbalist or other unqualified person, or, if he liked, he could accept the statement of relatives; and these wide discretions meant very unsatisfactory protection against crime or negligence.

The need for reform in the office of coroner was then brought forward. Originally, in cases of death, the coroner was not concerned with ascertaining whether there had been foul play; he had simply to discover whether the deceased person committed suicide. The work of coroners had now widened into the investigation of the cause of death, but in the absence of general direction their practice is widely different. Some coroners investigate publicly in great detail cases of death following accidents; others content themselves with private inquiries. The latter practice is parallel with that of the procurator-fiscal of Scotland. It was not clear whether the coroner was simply an officer of law, and belonged to the department of the home secretary, as he did technically, or whether he was an officer of public health and came under the Ministry of Health. If he were simply a

legal official, medical assessors would be necessary, to whom all documents and evidence must be referred. On the other hand, if it were recognized, as the deputation maintained, that his real business was a scientific investigation, the coroner became a most valuable official for inquiring into the cause of death, and passing on his information, if necessary, to the officers of the law. But the present procedure was a medieval anachronism. The coroner's court was public and full of sensations; his jury was uninstructed in matters of medicine; its verdict was of little value, the law officers frequently acting independently of it, and the verdict was sometimes accompanied by riders which were unreasonable or offensive to the medical profession.

Replying to the deputation, the home secretary suggested that it was not right to generalize with regard to coroners' courts from one or two exceptional instances. The coroner's inquest was occasionally very valuable, though he agreed that it might be capable of improvement.

Further medical grievances were then brought forward by the deputation. Physicians objected to the requirement to sign death certificates without payment. Also when a coroner wrote to a physician asking for information he should be entitled to offer a fee, especially as the information might obviate the need for an inquest. Resident medical officers in institutions who were called to give evidence at an inquest on a person dying in the institution should be paid. (This is a curious anomaly in the law. Every physician, except the officers in question, is paid a fee of $5 for giving evidence.) Finally, a fee of $5 for a postmortem examination was inadequate. The home secretary said in reply that he appreciated what had been put before him by the deputation.

PARIS

(From Our Regular Correspondent)

Aug. 27, 1920.

Congress of Physiology

At the International Congress of Physiology, recently held in Paris, Charles Richet, president of the congress, delivered an interesting address on the work which might fittingly be done in the domain of physiology.

Richet believes that scientists should never be preoccupied by considerations of immediate practical utility. They should strive for the knowledge of things rather than for the contrivance of a useful invention. Knowledge is of prime importance; utility will develop later, often by indirect means. It was thus that anaphylaxis, which today admittedly plays an important rôle in medicine and therapeutics, was born of disinterested research. When in collaboration with Portier, Richet made his first experiments with anaphylaxis on the yacht of Prince Albert of Monaco, he used birds and toxins derived from certain coelenterates of tropical seas in his tests; in other words, Richet and Portier were at the time very far from all application to medicine.

But even if scientific research should not aim at an immediate practical purpose, it is none the less warranted to choose among numerous subjects which present themselves for physiologic study those which by their very magnitude tend to influence allied sciences, such as sociology, medicine or hygiene. Now there are at the moment three questions which especially deserve to tempt the curiosity of the physiologist, namely, vitamins and nutrition, the physiology of the brain, and heredity.

So far as the question of vitamins and nutrition is concerned, Richet thinks that the physiologists of all countries, particularly of the United States, with good judgment are devoting their attention to this important subject of physiology, so closely related to sociology. The whole physiology of nutrition, including matter which has been taught for barely ten years, is subject to review. The experience of the World War has shown that our conceptions regarding the minimum nutritional requirements have been wrong. The fats play a hitherto unsuspected rôle in human nutrition, and the same holds true for the vitamins. Is not the cooking to which we subject almost all our foods an antiphysiologic procedure, contrary to wholesome nutrition? In the whole of nature, men are the only living beings who have to cook, and consequently perhaps, to deteriorate their foods. Would it not be opportune to revert at least partly to the fare of our remote ancestors, the men of the paleolithic or neolithic age?

Conjunctivitis Among Moving Picture Actors

Dr. Chappé of Paris recently called attention to the great frequency of a special variety of conjunctivitis among actors who pose for moving pictures. Places which are specially arranged for taking interior views are generally large rooms glazed like a conservatory. This permits work to be done by daylight, reenforced by an intense artificial light produced by a series of arc lamps constructed with special carbons which emit many actinic rays. These lamps are placed on movable carriages in groups of eight or ten lamps. As these carriages are placed to face the room where the moving picture scene is to be played, the actor is unfortunately forced to fix one or another group of lights. While each scene effectively registered does not last more than a few minutes, there are repeated and long trials and it is not rare for the same artist to occupy the stage, facing the lamps, for an hour or even for several consecutive hours. The morbid symptoms begin to manifest themselves after three or four hours by a sensation as of burning or of a foreign body. These pains soon become unbearable and are accompanied by lacrimation and intense photophobia; the bulbar conjunctiva is injected, the pupil contracted, and a more or less marked edema of the eyelids is observed. These phenomena always perturb the patient, especially if he is not a professional moving picture actor. After one or two days the discomfort lessens and soon disappears entirely. But besides these benign cases in which everything returns to normal after three or four days, there are also more severe cases.

From the point of view of prophylaxis, there should be reason for a study of special lamps and special arrangements; but this leads to a clash with the commercial side of the enterprise, owing to the cost of installing such special apparatus. This being so, the actors should undertake some sort of individual prophylaxis by protecting the eyes with glasses during the preliminary work and rehearsals, which last an incomparably longer time than the actual taking of the effective picture.

For treatment it will be found well to employ frequent lotions of sodium borate together with a collyrium of cocain and epinephrin. The same measures may likewise be used as prophylactics. Thus, in an establishment where on advice of Dr. Chappé the borated lotions and cocain and epinephrin instillations were systematically employed for several months, no further serious difficulties occurred.

Urologic Association Meeting

At the twentieth meeting of the Association française d'urologie, to be held in Paris, Oct. 6-9, 1920, the principal subject for discussion will be on the remote results of various operations for hypertrophy of the prostate, to be introduced by Professor Pousson of Bordeaux.

Death of Morat

Dr. J.-Pierre Morat, formerly professor of physiology at the Lyons medical faculty, has just died at the age of 75, in the village of Saint-Sorlin, near Mâcon, where he had lived since his retirement. Born in 1845, Morat began his medical studies at Lyons, but received his M.D. at Paris in 1873.

Having studied under Claude Bernard, he taught physiology at Lille from 1876 to 1882 and later at Lyons, where he attained the chair of physiology in 1884. In collaboration with Doyon of Lyons, he published in several volumes an important "Traité de physiologie." He was especially interested in the study of the nervous system and did some notable work on the sympathetic system. Professor Morat was a corresponding member of the Académie des sciences.

Personal

Dr. Vaquez, professor of internal medicine at the Paris medical faculty, has been appointed professor of clinical medicine to succeed Prof. Albert Robin, who has been placed on the retired list.

Statistics of Antirabic Inoculations

Dr. Viala, prosector of the antirabic service of the Pasteur Institute, has published the statistics of antirabic inoculations made at the Pasteur Institute during the year 1919. Of 1,815 persons subjected to the treatment, five, or roughly 0.27 per cent., have died of hydrophobia; in reality, this proportion should be reduced to 0.16 per cent., for one of the patients developed hydrophobia in the course of treatment, and another died of the disease in less than fifteen days after the termination of the protective inoculations. Since the introduction of antirabic vaccination (1886) hydrophobia was on a steady decrease until the eve of the war, at the outbreak of which a considerable recrudescence of the disease has been noted.

BERLIN

(From Our Regular Correspondent)

Aug. 20, 1920.

The Campaign Against Quackery

During the war the medical profession succeeded in obtaining from the military commanders in the various zones the issuance of orders by which the activities of quacks were almost suppressed, especially by limitation of their advertising. With the discontinuance of most of the war regulations these orders unfortunately were revoked, and quackery has quickly resorted to its former methods. Latterly the governments of individual states (Würtemberg) have promulgated regulations which counteract at least the most insolent abuses of the quacks. These regulations specify that all persons, other than registered physicians, who desire to practice the healing art as a profession shall furnish to the district medical officer information regarding this fact, together with certain personal data. Such persons are obliged to keep books wherein shall be entered pertinent facts regarding patients under treatment, the case history, the diagnosis, the treatment, and the date of the professional visit.

Of greater importance is the stipulation prohibiting public advertising so far as it makes vainglorious promises or is designed to deceive the public in respect to the education, ability or success of the healers. Announcements of methods or procedures for the prevention, mitigation or cure of disease are absolutely prohibited if they contain any misleading puffs or if the advertised methods are likely to cause injury to health. Unfortunately, it is not to be expected that these regulations will attain any considerable results. On the one hand, the control by public authorities over the quacks and their advertising is too lax, and, on the other hand, the quacks are shrewd enough to find ways of evading the regulations. There is little hope that quackery will be restrained by national legislation, for the passage of a national quackery act, which the government submitted to the lower house almost ten years ago, was blocked by the opposition of the social democratic party, whose influence is now much greater than in those days.

Women Physicians

Reference has repeatedly been made in these letters to the fact that the number of women students and women physicians shows an annual increase in Germany. There are at present approximately 8,000 women at German universities, twice the number registered five years ago and almost four times the number entered in 1910. Of these, more than 2,000 are medical students. In this relation it may be of interest to test the demand of gynecologic patients for women physicians.

Dr. W. Feilchenfeld contributed a notable article on this subject in a recent number of the *Deutsche medizinische Wochenschrift*. In order to obtain a basis for deciding the question, he compiled statistics of the number of members of the Charlottenburg krankenkasse who were attended by women physicians. In 1910 of approximately 52,000 cases of illness, only 136 were treated by women practitioners; for 1915 the figures were 72,000 and 929, and for 1917, 82,000 and 1,134, respectively. In 1910 only one woman physician was in the employ of the kasse, in 1912 there were three, and later, four. As the members are free to choose any of the kassen physicians, and as the women members outnumber the men more than three to one (46,000: 14,000 in 1918) it must be concluded that the demand for women physicians is very small. A study of the figures for Greater Berlin gives a similar result. In 1910 approximately 617,000 cases were treated by 867 kassen physicians, three of whom were women; of these only 1,700 cases were under treatment by the women physicians. Of 800,000 cases treated by 1,001 physicians in 1918, 8,400 were attended by eleven women physicians. Despite the fact that in Greater Berlin, as in Charlottenburg, women constitute 70 per cent. or more of the kassen membership, and despite the absence on military duty of many of the male physicians at a time when women from all classes of society joined the kassen; women physicians were consulted by only 1 per cent. of the patients.

Personal

Dr. Weber, municipal health officer of Berlin, has been appointed president of the Saxony department of health in Dresden. Dr. Weber organized the International Exposition of Hygiene in 1911, the success of which was undoubtedly largely responsible for his selection to the new post. He will probably accept the appointment, more especially since the position in Berlin, which he has occupied for six years, has not been very successful. The difficulties of the municipal health officer may even increase in the near future, owing to the political complexion of the municipal bodies and to the annexation of the suburban towns by Greater Berlin, embracing a population of more than 4,000,000.

BUENOS AIRES

(From Our Regular Correspondent)

Aug. 15, 1920.

The Governing Boards of the Universities

The conflict set up in the University of La Plata by the strike of the students is just coming to an end. By a decree, the legality of which has been disputed, the national government has applied the system already enforced in Cordoba and Buenos Aires. Under this plan the students and the professors and assistants in equal numbers elect the administrative heads of the faculties. In the elections just held the University Federation, which managed the strike, triumphed by an overwhelming majority, and all disorders thus came to an end automatically.

The elections of the medical faculty of Buenos Aires were held yesterday for the purpose of designating six councilors and two members of the administrative board of the university. The absence of professors was extremely conspicuous,

inasmuch as only twenty-five out of a total of 110 were in attendance. In this manner the fifty-eight student delegates elected their entire list. It is doubtful whether this silent holding off on the part of the professors is an effective and proper protest against an electoral system which they consider prejudicial.

Exchange Professors

Dr. S. Recasens, dean of the Madrid medical faculty, has arrived in this country, and Professor Krause, a prominent surgeon of Berlin, is expected within a few days. In conformity with an exchange agreement between the faculties of Buenos Aires and Montevideo, Drs. Arrizabalaga, Mérola, and Rosello have given a course of lectures in Buenos Aires, and Drs. Bosch Arana, Elizalde, Houssay and Agote have gone to the neighboring country. Prof. Aráoz Alfaro of Buenos Aires has been invited by the government of Paraguay to deliver some lectures in that country.

Influenza in San Luis

Another epidemic of influenza, which originated in a limited area of the province of San Luis, attained wide diffusion and great intensity. In the first days of the epidemic some alarm was occasioned by the announcement that it was an epidemic of bubonic plague, so that the national department of hygiene sent a special commission under direction of Dr. Izasmendi for the purpose of combating the epidemic Very shortly, the true nature of the disease was proved and it declined rapidly.

Hygienic Station at San Luis

Construction work on a new hygienic station in San Luis city has just been begun by the interim president of the national department of health. As in analogous cases the institution will be administered by the national government.

Surgeon's Fees

It is a traditional custom in this country that after a surgical operation the surgeon presents a bill in which the fees of his medical colleagues are included. This practice is deeply rooted, is understood throughout the world and has never given rise to any moral or ethical improprieties.

On the invitation of the American College of Surgeons the surgeons of Buenos Aires have called several meetings of the Sociedad de Cirujia. A considerable element of good surgeons considered it better to separate the physician's fees from those of the surgeon, judging the matter from the point of view of principle alone, although it is not pointed out that any improprieties have resulted to date under the present system. Nevertheless, it is probable that this deep-rooted custom is going to be continued, as it is adopted by the majority.

Marriages

HAZEL PETRIE MOSBY, Lieut., M. C., U. S. Army, to Miss Selma P. Hoppe, both of Rockford, Ill., September 7.

EDWARD CARY RUSHMORE, Tuxedo Park, N. Y., to Miss Olive Louise Williams of Cobourg, Ont., August 15.

HERBERT SLEDGEFIELD THOMSON to Miss Bettie Bradford Wilkinson, both of Berkeley, Calif., September 15.

RUSSELL CLIFTON PARR to Miss Florence Adele Hedlund, both of Spokane, Wash., September 16.

JOHN WALKER MOORE, Louisville, Ky., to Miss Anna Stockett Kent of Wyncote, Pa., August 19.

ALBERTO H. STOCKBRIDGE, Lynn, Mass., to Miss Lillian A. Parker of Pownal, Me., recently.

ARTHUR GUSTAV HEININGER to Miss Pauline Travers, both of Gardner, Mass., August 24.

RANDOLPH WEST to Miss Emily Hutchinson Lee, both of New York City, September 2.

WALTER C. HARRIS, Worcester, Mass., to Miss Sadie Ryder of Clinton, Mass., August 25.

Deaths

George Gillett Thomas, Wilmington, N. C.; University of Maryland, Baltimore, 1871; aged 77; a member and once president of the Medical Society of the State of North Carolina; for many years superintendent and chief surgeon of the relief department of the Atlantic Coast Line; at one time president of the state board of health, and a member of the state board of medical examiners; died, about September 7.

George W. Clay, Malta, Mont.; Western University, London, Ont., 1899; aged 47; for two terms a member of the state senate, and renominated unopposed at the recent primary; who was responsible for the new building which now houses the state board of health, and introduced and put through most of the bills dealing with public health; died, September 3.

Benjamin Franklin Wilson, Anjouan, East Africa, formerly of New Bedford, Mass.; College of Physicians and Surgeons in the City of New York, 1861; aged 82; a surgeon of the U. S. Volunteers during the Civil War; who left New Bedford in 1865 on a whaling voyage, and settled on the Comoro Islands off the east coast of Africa; died, April 19, from laryngitis.

George Wesley McIntyre ⊕ St. Peter, Minn.; Minnesota Hospital College, Minneapolis, 1883; University of the City of New York, 1891; aged 66; assistant physician to the Minnesota State Hospital, St. Peter, from 1883 to 1885, and 1889 to 1893; a member of the lunacy commission of Minnesota from 1898 to 1899; died, July 11, from valvular heart disease.

William Olin Forbes, Hot Springs, Ark.; Hahnemann Medical College, Chicago, 1896; aged 50; a member of the Arkansas Medical Society; formerly president of the federal medical board of the Hot Springs Reservation, and a member of the Illinois State Board of Health; died in Lincoln, Neb., August 26.

Charles Holt Thomas, Cambridge, Mass.; Boston University School of Medicine, 1888; aged 70; a member of the Massachusetts Medical Society; professor of clinical medicine in his alma mater; visiting physician to the Massachusetts Homeopathic Hospital; died, September 4, from heart disease.

Frederick Clark Bradner ⊕ Englewood, N. J.; Columbia University College of Physicians and Surgeons, New York City, 1899; aged 47; chief surgeon of the Englewood Hospital; died in the Presbyterian Hospital, New York City, August 31, after an operation for the removal of gallstones.

Henry John Hinkel, Mt. Pleasant, Iowa; Baltimore University School of Medicine, 1896; College of Physicians and Surgeons, Baltimore 1900; aged 50; a member of the staff of the Mt. Pleasant State Hospital; died in the State University Hospital, Iowa City, August 22, from spinal meningitis.

Theodore Bert Torjuson ⊕ Lovell, Wyo.; John A. Creighton Medical College, Omaha, 1909; aged 37; lieutenant, M. C., U. S. Army, and discharged Dec. 29, 1918; chief surgeon of the Lovell Hospital, and president of the Northwestern Medical Society of Wyoming; died, August 20.

Allen Richard Anderson, Ontario, Ore.; University of Minnesota, Minneapolis, 1917; aged 30; lieutenant, M. C., U. S. Army, and discharged Aug. 22, 1919; died in the Holy Rosary Hospital, Ontario, August 24, from pneumonia.

Howard John McDermid, Winnipeg, Manit.; Manitoba Medical College, Winnipeg, 1908; aged 35; superintendent of the Provincial Deaf and Dumb Institute, Winnipeg; was drowned, August 6, while swimming at Minaki.

Harry Deacon Wilson, Freeport, Ill.; Hahnemann Medical College, Philadelphia, 1897; aged 59; a member of the Illinois State Medical Society; while making a professional call, August 23, died suddenly from heart disease.

James W. Albert, Childress, Texas; Southern Medical College, Atlanta, Ga., 1883; aged 68; health officer of Childress; local surgeon of the Fort Worth and Denver Railroad; died, August 17, from nephritis.

George LeForest Miller, Omaha; College of Physicians and Surgeons in the City of New York, 1852; aged 89; founder and for more than twenty years editor of the Omaha *Herald;* died, August 28.

⊕ Indicates "Fellow" of the American Medical Association.

Robert B. Cullers, Bentonville, Va.; College of Physicians and Surgeons, Baltimore, 1893; aged 56; a member of the Medical Society of Virginia; died, August 28, from arteriosclerosis.

Arad Keith Caldwell, Waynesburg, Ky.; University of Louisville, Ky., 1887; aged 52; a member of the Kentucky State Medical Association; died, July 11, from valvular heart disease.

Robert N. Younger, Snow Creek, Va.; Maryland Medical College, Baltimore, 1904; aged 40; a member of the Medical Society of Virginia; died, August 5, from cerebral hemorrhage.

John P. Bahrenburg, Nashville, Ill.; Homeopathic Medical College of Missouri, 1879; aged 89; died at the home of his daughter in Marissa, Ill., August 18, from senile debility.

Alvin Orpheus Ervin, New Holland, Ohio; Starling Medical College, Columbus, Ohio, 1900; aged 48; a member of the Ohio State Medical Association; died, about August 21.

LeRoy S. Woods, Rawson, Ohio; College of Physicians and Surgeons, Baltimore, 1887; aged 64; a member of the Ohio State Medical Association; died, about August 23.

Arthur Matthew Rodermund ⊕ Athens, Wis.; College of Physicians and Surgeons, Chicago, 1907; aged 38; died at the home of his mother in Madison, Wis., August 24.

Julius H. Peterman, Ardmore, Okla.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1894; aged 80; died, May 31, from injuries received in a fall.

Samuel Harvard Irwin ⊕ Grank Forks, N. D.; Trinity Medical College, Toronto, Ont., 1886; aged 60; died in a hospital in Grand Forks, about August 21.

Edgar Pleas, Collinsville, Okla.; University of Arkansas, Little Rock, 1893; aged 58; a member of the Oklahoma State Medical Association; died, August 14.

Julius Barton Threat, Pavo, Ga.; University of Georgia, Augusta, 1887; aged 61; a member of the Medical Association of Georgia; died, August 29.

James Henry Drum, Liverpool, N. Y.; Syracuse (N. Y.) University, 1891; aged 51; died in the Hospital of the Good Shepherd, Syracuse, August 28.

Frederick Lyons Appel ⊕ Muscatine, Iowa; State University of Iowa, Iowa City, 1908; aged 38; died, August 24, from chronic interstitial nephritis.

William Patrick Dunlany, Oak Park, Ill.; Cleveland College of Physicians and Surgeons, 1897; aged 48; died, August 25, from arteriosclerosis.

George S. Ellis ⊕ Sherman, Texas; Jefferson Medical College, 1875; age 63; d ied in Fayetteville, Ark., September 2, from acute gastritis.

Jarret C. Windham, Mt. Olive, Miss. (license, Mississippi State Board of Health); aged 56; died in June from a gunshot wound.

Lee Matthew Ryan ⊕ Banning, Calif.; Rush Medical College, 1907; aged 36; died in Glendale, Calif., August 19, from tuberculosis.

John Eichmann, Brenham, Texas; University of Leipzig, Germany, 1893; aged 58; died, July 15, from diabetic gangrene.

James Aiken, Berwyn, Pa.; University of Pennsylvania, Philadelphia, 1868; aged 71; died, June 11, from arteriosclerosis.

Harry J. Helfrich, Crawfordsville, Ind.; University of Louisville, Ky., 1896; aged 45; died recently in Mt. Pleasant, Calif.

Robert Hugh Hamill ⊕ Summit N. J.;, University of Pennsylvania, Philadelphia, 1878; aged 64; died, September 5.

Jacob H. C. King, Greenwood, Ark.; University of Arkansas, Little Rock, 1899; aged 60; died, about August 23.

Charles H. Mahar, Spiro, Okla.; Fort Worth (Texas) School of Medicine, 1897; aged 64; died, August 2.

Daniel Yoder, Catasauqua, Pa.; Pennsylvania Medical College, Philadelphia, 1858; aged 86; died, August 24.

Hardy J. Lasseter, Luthersville, Ga.; Louisville (Ky.) Medical College, 1874; aged 72; died, August 26.

Eugene W. Ayres, Hannibal, Mo.; St. Louis Medical College, 1861; aged 83; died, August 30.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

"PATENTS" AND PRESIDENTS

Nostrum Advertising in the Papers of the Presidential Candidates

"A careful reading of the Marion *Star* and the Dayton *News* convinces us that the owners of these papers are devoting more time to politics than to censoring the 'patent medicine' advertisements that appear in both papers."

The above is a quip of Franklin P. Adams ("F. P. A.") in the New York *Tribune's* "Conning Tower." It carried with it a suggestion. Recent copies (August, 1920) of the Dayton *News* and of the Marion *Star* were purchased, and this is what was found. The *Star* advertised:

Pinkham's Vegetable Compound	Peptona
Mayr's Wonderful Remedy	Mother's Friend
Dreco	Nerv-Worth
Hall's Catarrh Medicine	Lower's Prescription
Kimoids	Redex
Thedford's Black Draught	Haarlem Oil

Incidentally, the classified advertisements contained notices of a trance medium, a "Psychic Palmist" ("Her prophecies are true"), a matrimonial bureau, and that of a lady who would foretell your future. We feel sure that the owner of the *Star* does not really believe the statement made in his paper to the effect that the Pinkham nostrum (15 per cent. alcohol) "contains no narcotics or harmful drugs" and "is a safe medium for women." Nor can he believe that Mayr's Wonderful Remedy will remove the cause of appendicitis, or that Dreco will "give strength to weak kidneys" and "restore tired nerves." Certainly he does not actually suppose that the mixture of oil and soap sold as Mother's Friend for Expectant Mothers will really produce a "speedy recovery in childbirth." We are sure, too, that he has never stopped to consider that the statement in his paper that "Hall's Catarrh Medicine will cure catarrh" could not be made on the trade package which is subject to a federal law which prohibits false and fraudulent claims.

And what about the Dayton *News?* Here we found:

Nuxated Iron	Hem-Roid
Adler-i-ka	Mrs. Summers' Pile Suppositories
Capudine	Warner's Safe Kidney Remedy
Beecham's Pills	Dr. Carey's Marshroot
Glass' Consumption Cure	Pepgen
Pyramid Pile Treatment	Marmola
Haarlem Oil	Eno's Fruit Salt
Pinkham's Vegetable Compound	Dr. Burkhart's Vegetable Compound
Glando Tonic	

There were a few others and also an advertisement of a gentleman who claimed to be "The Specialist in Pelvic, Nervous, Blood and Skin Diseases" and who offered to apply his "patent" in "Strictures Gleet and Weakness." Of course, the owner of the *News* is not so lacking in modern medical knowledge as to believe that "Dr. Glass has positive proof that he is able to cure tuberculosis" by means of a nostrum that he offers for sale through the *News.* He does not really think that kidney disease is a sufficiently simple ailment to warrant self-treatment. It is inconceivable that he would approve the claim that "If you are overfat, opposed to physical exertion, fond of the table and its good things and still want to reduce your excess flesh" you can do so by taking Marmola Tablets. Obviously he does not think that Adler-i-ka prevents appendicitis and that Glando Tonic is "the only remedy of its kind on the market" and will "renew glandular activity." Nor, do we believe, does he give any weight to the "Thrilling Experiences" detailed in two columns of alleged testimonials for Pepgen, even though they do "all come from people in Dayton."

Evidently "F. P. A." hit the nail on the head. The owners of the Marion *Star* and the Dayton *News* have undoubtedly in

their engrossment in politics allowed certain advertisements to creep in their papers that they will be the first to condemn when their attention is called to them. As candidates for the highest office in the land carrying with it the implied duty of enforcing all federal laws—such, for instance, as the national Food and Drugs Act—these two newspaper publishers would, we are sure, be the last to approve of advertising that is not only a menace to health but a fraud on the public.

MORE MISBRANDED NOSTRUMS

Balsamo Carminativo del Dr. Jayne, etc.—The trustees of the estate of Dr. David Jayne, doing business under the name of "Dr. D. Jayne & Son," shipped in July and October, 1917, articles labeled in part "Balsamo Carminativo del Dr. Jayne," "Expectorante de Jayne," "Pildoras Sanativas del Dr. Jayne," "Alterativo del Dr. Jayne" and "Linimento ó Contra-Irritante de Jayne" which were misbranded. When analyzed by the federal chemists the Balsamo Carminativo was found to consist essentially of opium, a laxative plant drug (probably rhubarb), carbonates, ammonium and potassium salts, aromatics, sugar, alcohol and water. The Expectorante was found to consist essentially of opium, an antimony salt, sugar, alcohol, and water flavored with oil of anise and methyl salicylate. The Pildoras Sanativas were reported to consist essentially of aloes, gamboge, and a mercury salt while the Alterativo was reported to be essentially sarsaparilla, sassafras, licorice, potassium iodid, sugar, alcohol and water. The Linimento ó Contra-Irritante was found to consist essentially of oils of turpentine, sassafras and capsicum and soap, alcohol and water.

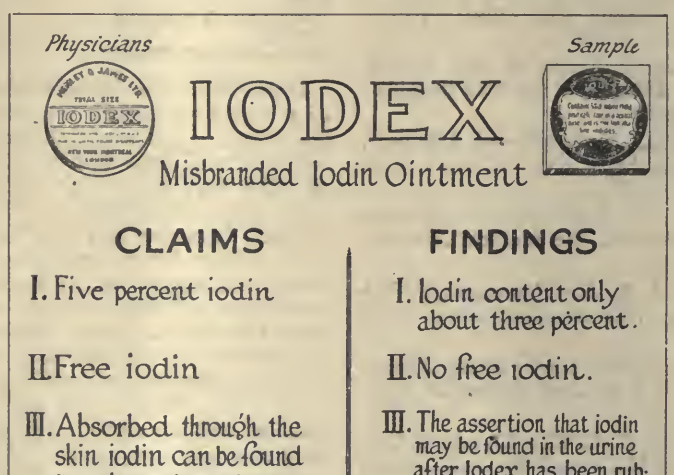
The Balsamo Carminativo del Dr. Jayne was declared misbranded because it was falsely and fraudulently represented as a treatment and cure for dysentery, cholera morbus, hysteria, melancholy, all diseases of the stomach and nerves, seasickness, etc. Furthermore, while it contained alcohol and opium, the label failed to bear a statement of the quantity or proportion of these drugs, and furthermore, bore statements that represented that the article could be administered with safety to children.

The Expectorante de Jayne was falsely and frauduently represented as a treatment and cure for consumption, asthma, whooping cough, spitting of blood, croup, acute rheumatism and all diseases of the pulmonary organs. It, too, contained alcohol and opium but failed to have any declaration of the quantity or proportion of these drugs.

The Pildoras Sanativas were falsely and fraudulently represented as a treatment and cure for liver trouble, dyspepsia, diseases of women, gout, skin diseases, etc.

The Alterativo was falsely and fraudulently represented as a treatment and cure for cancer, scrofula, goiter, rheumatism, gout, pimples, dropsy and many other conditions. It was also further misbranded because it failed to declare the quantity or proportion of alcohol it contained.

The Linimento was falsely and fraudulently represented as a treatment and cure for sore throat, paralysis, rheumatism, tic douloureux, tumors, ringworm, etc. In December, 1919, the defendants entered pleas of *nolo contendere* and were fined $200.—[*Notice of Judgment No. 7252; issued Aug. 16, 1920.*]



This is a greatly reduced reproduction of one of the numerous educational posters shown at the New Orleans session in the exhibit of the Chemical Laboratory of the American Medical Association. The amount of *combined* iodin (in which form it is therapeutically valueless as an iodin salve) in "Iodex" was found to be 2.36, 3.20 and 3.24 per cent. as determined by three different analyses. *Free* iodin was not present in appreciable amounts. If an ointment containing *free* iodin is wanted, prescribe *Ung. Iodi, U. S. P.*

Kalwaryjskie Wino Lecznicze.—This product was shipped in July, 1918, from New York to New Jersey by David Wroblewski, who did business as D. Wroblewski & Co., New York City. The federal chemists reported that the stuff consisted essentially of emodin (apparently from cascara sagrada), a slight amount of tannin, cinchona alkaloids, sugars, water and 14.6 per cent. of alcohol. The stuff was falsely and fraudulently labeled as a treatment and cure for all stomach disorders, all weaknesses and exhaustion caused by protracted illness, constipation, indigestion, sick headache, malnutrition, etc. Furthermore, the wrapper failed to bear a statement of the quantity or proportion of alcohol the stuff contained. In November, 1919, Wroblewski pleaded guilty and was fined $200.—[*Notice of Judgment No. 7375; issued Aug. 31, 1920.*]

Correspondence

"EXPERIENCES WITH LUMINAL IN EPILEPSY"

To the Editor:—The paper by Dr. Julius Grinker (The Journal, Aug. 28, 1920, p. 588) on luminal in epilepsy, and the accompanying discussion, move me to express certain opinions relative to convulsions generally.

While Dr. Grinker admits that epilepsy is a symptom of many diseases and not a disease entity, he states that he does not refer in his paper to convulsions of toxic origin, but only to "genuine or idiopathic epilepsy." But what is "genuine or idiopathic epilepsy?" We are not told, and if one were to ask a hundred practitioners probably as many definitions would be received. Therefore, I beg to define the word "idiopathic" as a cloak for ignorance which we all share. Presumably this convenient word embraces those conditions for which we are unable to find a pathologic basis. I myself believe, without any better proof than that furnished by a process of elimination, that the few cases that are hopelessly beyond analysis are due to an hereditary instability of the vasomotor center in the medulla and subject to slight influences, in the same manner as Raynaud's disease.

The majority of cases that come under observation are due to: (1) syphilis; (2) all grades of chronic acquired hydrocephalus, external or internal, resulting from posterior basic or vertical meningitis as a sequel of the acute exanthems, gonorrhea, typhoid, diphtheria, tonsillitis or poliencephalitis. Cases are frequent in which these factors are causal beyond a shadow of doubt; (3) purely psychic causes in which there is a discharge of energy direct from the affective sphere into the motor centers without any regulating intervention of the noetic consciousness; when this energy is discharged by driblets in this manner, the appearance is that of "tic"; (4) gross lesions of the brain, such as tumor; (5) toxic cases and pernicious anemia, and (6) disorders of the ductless and genital glands. Of Causes 1 to 5 I have had abundant experience; of 6, my information is chiefly retail.

In this state the hydrocephalic cases appear to be relatively frequent, and this fact I have confirmed by operations and resultant cures. Hence, if, as is asserted, large groups of epileptics can be classified according to their essential lesion, it becomes at once a matter of importance to know the exact pharmacologic action of any particular drug used. No mention has been made of the physiologic action of luminal.

With regard to the bromids, I unhesitatingly affirm that a search of the Pharmacopeia from cover to cover could not reveal a more undesirable drug for use and for this reason: An epileptic convulsion is a reaction on the part of Nature to combat a dangerous condition within the cranium. That deleterious condition has been abundantly shown to be a cerebral anemia. No matter what the lesion—whether positive pressure from tumor or hydrocephalus or negative pressure from loss of spinal fluid or the presence of a toxin—there is a spasm of the cerebral vessels, and the convulsion continues until the blood pressure is sufficiently raised to overcome that spasm. This rise of blood pressure is essential because there is no mechanism of direct sympathy between the cortex and the vasomotor center. Hence the convulsion does good work and prevents starvation of the cortex. Surely, then, it is scarcely scientific to treat the convulsion unless it has become merely a bad habit after abatement of the original cause. I have never seen such a habit after removal of the original cause, and when convulsions do persist for a while it is an effort to restore the circulation to the parts impoverished by the lesion; and it is surprisingly successful, as evidenced by paralyses and speech defects improving by leaps after each postoperative convulsion. Hence I am unable to see how bromid treatment can fail to hasten dementia and paralysis as fast as it dopes out the beneficent convulsion.

With regard to luminal, Dr. Grinker brings forward much empiric evidence as to its comparative harmlessness and efficacy, but in relation to the views given above it is desirable to know, first, whether it is a dilator of the cerebral vessels, and, secondly, whether it has any effect on the cerebrospinal fluid. From its effect on the petit mal attacks I suspect that it is a vasodilator. A few whiffs of chloroform will often arrest convulsions, by reason of its being a cerebral vasodilator and a narcotic combined. It would appear that luminal will prove itself a valuable drug in mild intractable cases and others that cannot be "run to earth"; and while offering a prayer that it may completely replace the degenerating bromids, it is to be hoped that its empiric success will not detract from a universal effort to diagnose the essential lesion in every case of epilepsy. I have known of only one case in which luminal was used and that with temporary benefit, followed by a relapse to twenty convulsions per night. I later found at operation a sticky basal arachnoid, removal of which effected a complete cure.

CECIL E. REYNOLDS, M.D., Los Angeles.

LOCAL ANESTHESIA BY QUININ SALTS, AND THE COMMITTEE REPORT

To the Editor:—The report of the committee of the Section on Laryngology, Otology and Rhinology on local anesthetics (THE JOURNAL, July 31, p. 315) states that quinin-urea hydrochlorid, so far as nose and throat operations are concerned, has practically gone into "innocuous desuetude." As I first reported cases of adenectomy and tonsillectomy performed under quinin anesthesia, may I be allowed to make the following statement:

My paper was published in THE JOURNAL, Aug. 8, 1908, p. 496. During the ensuing twelve years I have injected tonsils and adenoids with no other drug. During the earlier years I was sometimes annoyed by edema and a slight amount of sloughing. I was using 3 grains of quinin hydrochlorid in 2 drams of water. Since reducing the strength of my solution to 1½ grains to 2 drams I have had no reason to complain of my results. My technic is as follows: Half an hour before operation the patient is given from 4 to 8 drops of a 0.1 per cent. solution of scopolamin under the tongue. One half of a 3 grain powder of quinin hydrochlorid is freshly boiled in a spoon with sufficient water (distilled) to fill my 2 dram syringe. The tonsil to be removed, with its pillars, is thoroughly massaged with a stiff applicator wound with a very small amount of cotton with a minimum amount of 20 per cent. cocain kept sterile by 1 per cent. phenol. This is repeated three times at two or three minute intervals, after which the quinin solution containing 2 or 3 minims of epinephrin solution is introduced with a short, straight needle deeply into the supratonsillar and infratonsillar regions as well as through the pillars. After from ten to fifteen minutes the anesthesia is generally entirely satisfactory to both patient and surgeon. The complete absence of toxic symptoms would seem to make this as satisfactory a method as any that has been devised, and I believe is entitled to a better fate than "innocuous desuetude."

EDWARD J. BROWN, M.D., Minneapolis.

"INOCULATION AGAINST HAY-FEVER"

To the Editor:—In THE JOURNAL, Sept. 4, 1920, Dr. Will Walter relates his experience with the injection of antigen for the treatment of hay-fever. He relates the case of a patient who went into severe anaphylactic shock five minutes after an injection of ragweed pollen extract given on the fifth day of the expected attack. Considering this case as a warning, he advises against preseasonal inoculations, particularly of large doses at the time when the patient has to face the mass attack of the causative pollens.

In attempting desensitization, we must always start with small doses because in man we cannot determine the fatal dose and, therefore, must begin with a fraction of it. It has been proved by the experiments of Weil that small amounts injected repeatedly will desensitize against small amounts, whereas the injection of large amounts of proteins will desensitize against large amounts. Therefore, the method of gradually increasing the dose is theoretically correct, and the patient must be rendered refractory to large doses about the time of the expected attack.

I also have observed more or less severe reactions when I reached larger doses, particularly about the time when the attack was expected. The patients were inclined at first to doubt the effects of desensitization, but had to admit that the attacks were only transitory and much milder than those experienced during former seasons when they had not undergone treatment. Encouraged by this admission, I have adopted a plan of supportive epinephrin treatment to protect the patients from severe reactions or anaphylactic shock. Besides the well known antianaphylactic effect of this hormone, Meltzer and Auer have shown that it also delays absorption. The mucous membrane treated with epinephrin will therefore oppose to a certain extent, the mass absorption of the foreign protein at the time of the expected attack.

My plan of treatment consists in using epinephrin instillations into the nasal cavities from the beginning of the desensitization treatment. I prescribe a solution of epinephrin chlorid, 1:1,000, diluted with distilled water to 1:4,000. Two drops of this are instilled into each nostril three times daily with a medicine dropper. At the same time that I reach the last three or four pollen injections (say the eleventh or twelfth), I double the previous dose and continue the same dose for the last three or four injections, taking

care to give at the same time intramuscularly 2 or 3 minims of epinephrin. The results of this plan of treatment have been very gratifying in my experience.

ADOLF GARNET, M.D., New York.
Instructor in Medicine, Columbia University.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, Oct. 5-6. Sec., Dr. Ancil Martin, Phoenix.
CALIFORNIA: Sacramento, Oct. 18-21. Sec., Dr. C. B. Pinkham, 529 Forum Bldg., Sacramento.
COLORADO: Denver, Oct. 5. Sec., Dr. David A. Strickler, Denver.
DISTRICT OF COLUMBIA: Washington, Oct. 12-15. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.
FLORIDA: Jacksonville, Nov. 4. Sec., Homeo. Board, Dr. Geo. A. Davis, Sec., East Port.
GEORGIA: Atlanta, Oct. 12-14. Sec., Dr. C. T. Nolan, Marietta.
IDAHO: Boise, Oct. 5. Commissioner, Hon. Robert O. Jones, Boise.
ILLINOIS: Chicago, Sept. 20-23. Director, Francis W. Shepardson, State House, Springfield.
KANSAS: Topeka, Oct. 12-13. Sec., Dr. H. A. Dykes, Lebanon.
LOUISIANA: New Orleans, Nov. 2. Sec., Homeo. Board, Dr. F. H. Hardenstein, 702 Macheca Bldg., New Orleans.
MICHIGAN: Lansing, Oct. 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.
MINNESOTA: Minneapolis, Oct. 5-7. Sec., Dr. Thomas S. McDavitt, St. Paul.
MISSOURI: Kansas City, Oct. 6-8. Sec., Dr. Geo. H. Jones, State House, Jefferson City.
MONTANA: Helena, Oct. 5. Sec., Dr. S. A. Cooney, Helena.
NEVADA: Carson City, Nov. 1. Sec., Dr. Simeon L. Lee, Carson City.
NEW JERSEY: Trenton, Oct. 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.
NEW MEXICO: Santa Fe, Oct. 11-12. Sec., Dr. R. E. McBride, Las Cruces.
NEW YORK: Albany, Buffalo, New York and Syracuse, Oct. 4-7. Assistant Prof. Examinations, Mr. Herbert J. Hamilton, Albany.
OKLAHOMA: Oklahoma City, Oct. 13-14. Sec., Dr. James M. Byrum, Shawnee.
PORTO RICO: San Juan, Oct. 5. Sec., Dr. M. Quevedo Baez, San Juan.
RHODE ISLAND: Providence, Oct. 7-8. Sec., Dr. Byron W. Richards, Providence.
WEST VIRGINIA: Charleston, Oct. 12. Sec., Dr. S. L. Jepson, Charleston.
WYOMING: Sheridan, Oct. 4-6. Sec., Dr. J. D. Shingle, Cheyenne.

New Mexico January Examination

Dr. R. E. McBride, secretary, New Mexico State Board of Medical Examiners, reports that 12 candidates were licensed on diploma at the meeting held at Santa Fe, Jan. 12, 1920. The following colleges were represented:

College	LICENSED ON DIPLOMA	Year Grad.
Chicago College of Medicine and Surgery	(1912),	(1915)
College of Physicians and Surgeons, Keokuk		(1876)
Kansas Medical College		(1900)
University of Louisville		(1911)
Baltimore Medical College		(1904)
University of Buffalo		(1918, 2)
Memphis Hospital Medical College		(1912)
Vanderbilt University		(1906)
Baylor University		(1916)
Milwaukee Medical College		(1906)

Virginia June Examination

Dr. J. W. Preston, secretary, Virginia State Board of Medical Examiners, reports the written examination held at Richmond, June 22-25, 1920. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 49 candidates examined, 46, including 1 osteopath, passed and 3 failed. Seventeen candidates, including 2 osteopaths, were licensed by reciprocity. Six candidates were licensed on Navy credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Los Angeles		(1914)	81
George Washington University	(1919) 91,	(1920)	89
Hahnemann Medical College and Hospital, Chicago		(1919)	89
Johns Hopkins University	(1917) 83,	(1920)	86, 86
North Carolina Medical College		(1919)	75
Hahnemann Med. College and Hospital, Philadelphia		(1920)	89, 90
Jefferson Medical College		(1919)	88
University of Pennsylvania	(1919) 90,	(1920)	86, 92, 92
Medical College of Virginia	(1917) 91, (1918) 75,	(1920)	80, 81, 83, 83, 86, 86, 87, 87, 87, 87, 89, 90, 91, 92, 93, 94, 96
University of Virginia	(1914) 91,	(1920)	86, 87, 88, 88, 89, 90, 91, 92, 92
University of London		(1908)	81

FAILED

Lincoln Medical College		(1911)	73
Medical College of Virginia		(1918)	66, 70

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
George Washington University		(1902)	Penna.
Howard University		(1913)	Dist. Colum.
Bennett Medical College		(1914)	W. Virginia
Louisville and Hospital Medical College		(1908)	W. Virginia
Baltimore Medical College	(1905) Maryland,	(1908)	W. Virginia
University of Maryland		(1914)	Maryland
Albany Medical College		(1913)	New York
Columbia University		(1898)	New York
North Carolina Medical College		(1914)	N. Carolina
Ohio State University College of Medicine		(1917)	Ohio
Jefferson Medical College		(1916)	N. Carolina
Woman's Medical College of Pennsylvania		(1896)	Mass.
Medical College of Virginia		(1908), (1910)	N. Carolina

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Harvard University		(1896)	U. S. Navy
Tufts College Medical School		(1917)	U. S. Navy
Temple University		(1916)	U. S. Navy
Medical College of Virginia		(1917, 2)	U. S. Navy
University of Virginia		(1918)	U. S. Navy

Book Notices

INFECTIOUS DISEASES. A Practical Textbook. By Claude Buchanan Ker, M.D., F.R.C.P., Medical Superintendent, City Hospital, Edinburgh. Second edition. Cloth. Price, $17. Pp. 627, with illustrations. New York: Oxford University Press, 1920.

Dr. Ker's discussion of infectious diseases is based on his observations and bedside experiences in a large infectious disease practice in the City Hospital in Edinburgh, of which he is medical superintendent. The book presents a well-written account of all the common infectious diseases, under the headings etiology, pathology, symptoms, diagnosis, prevention and treatment. The discussions are quite up to date, with the exception that the author appears to have somewhat too great a bias in favor of small doses of alcohol in the treatment of the early stages of these diseases. This may be taken as evidence that in Scotland old ideas as to the value of alcohol as a medicine still prevail. The records of at least one American infectious disease hospital are available in which no alcohol whatever is used and in which the mortality statistics compare more than favorably with those of the Edinburgh and other hospitals in which alcohol is used as a routine. Dr. Ker has kept up with the literature of his subject. While he has not been able to make actual personal trials of all the new methods of diagnosis, prevention and treatment which have come to his attention, he has selected for discussion only those which appear reasonable. In this book more than in any other English volume that has come to the reviewer's attention, American investigators receive full credit for their work. The book is well printed and excellently illustrated. On the whole, it is one of the best available books on the general subject of infectious diseases.

HERMAN'S DIFFICULT LABOUR. A Guide for Students and Practitioners. Sixth Edition Revised and Enlarged by Carlton Oldfield, M.D., F.R.C.S., Lecturer on Gynaecology, University of Leeds. Cloth. Price, $4.25. Pp. 573, with 198 illustrations. New York: William Wood and Company, 1920.

The present, the sixth, edition of this work has been revised, and many new illustrations have been added. It is well written and as a whole gives good advice in handling difficult labor cases to those who deliver women in homes. In several instances, however, the advice given does not conform to American practice. The use of ergot is recommended in several places before delivery of the placenta to prevent postpartum hemorrhage. This advice, in view of the use of pituitary extract, is to be regretted. The author does not give enough attention to tears of the vagina. He states that unless there is a great deal of bleeding, the rent does not need to be stitched. He recommends the use of vaginal douches, and allows the tears to heal by granulation. The present American teaching advises either immediate repair or repair within the first few days after delivery. He also passes over injuries to the levator ani muscles and pelvic fascia in a superficial manner. He does, however, recommend

that a lacerated perineum be sewed up without delay. It would seem that if stitches are to be used in one part of the genital tract, they are equally as important in another portion. The use of antiseptic douches, including surgical solution of chlorinated soda (Dakin's solution) and Carrel tubes, is recommended. Antiseptic douches of various types have been recommended from time to time in the past, but today most obstetricians have discarded them as dangerous. Infection in the uterine cavity cannot be compared to infection seen in gunshot wounds, etc. In the latter type of wound one is able to place the tubes in the various layers, whereas in uterine infection the bacteria are beyond the endometrium in the muscle fibers, where tubes cannot be placed. Thus, Dakin's solution cannot penetrate deeply enough. Under these circumstances, it hardly seems plausible that irrigating the uterus could be of much value. In fact, it has proved fatal in many cases. The treatment of inversion of the uterus is not well written. Nothing is said regarding operative treatment. The treatment of eclampsia and labor in a flat pelvis is excellently written. In fact, the advice throughout the book in general is well taken. The illustrations are well done and to the point. The book is one that the general practitioner can use frequently.

LECTURES TO STUDENTS ON DIPHTHERIA, MEASLES, SCARLATINA. By Frank V. G. Scholes, M.D., B.S., D.P.H., Medical Superintendent, Infectious Diseases Hospital, Fairfield, Melbourne. Cloth. Price, 9 shillings & sixpence. Pp. 236. Melbourne: Modern Printing Company Pty. Ltd., 1920.

The author's preface states that this book "is meant only to represent in the briefest possible way the main points in pathology, and a rational and practical attitude in respect to diagnosis, prognosis and treatment." It is the result of a slight amplification of a limited number of lectures, and is intended to be used in conjunction with ward work by senior students. The book is not to be compared with the usual "outline" or "quiz compend." It is the personal product of one whose thorough grasp of the subject from extensive experience with cases is evident on every page. We are not familiar with any other small work that presents the subjects in such a lucid, systematic form. The book will serve as a great aid to others who are teaching students. It can be recommended without reserve to students, and would prove a valuable addition to the library of every practitioner.

NORMAL HISTOLOGY WITH SPECIAL REFERENCE TO THE STRUCTURE OF THE HUMAN BODY. By George A. Piersol, M.D., Sc.D., Professor of Anatomy in the University of Pennsylvania. Twelfth edition. Cloth. Price, $4.50. Pp. 418, with 438 illustrations. Philadelphia: J. B. Lippincott Company, 1920.

Piersol's work on normal histology has become a standard, and by issuing frequent editions it is kept up to date. There are numerous excellent illustrations, most of them pen and ink drawings; there are no photomicrographs, although these are of greater accuracy. Perhaps this is just as well, since the medical student and practitioner seldom have a photomicroscope available and will themselves be called on to make pencil reproductions of what they see.

LOCAS DE LA COLONIA. Por H. Valdizán. Paper. Pp. 130. Lima: Sanmarti y Ca., 1919.

The author, who is professor of nervous and mental diseases of the School of Medicine of Lima, has made a study of insanity in the colonial epoch of Peruvian history, using for this purpose biographic data from different sources, and especially the old chroniclers. His collection of types is rather extensive, and many of the cases mentioned are interesting. The book forms an important contribution to the history of neuroses in Peru.

AL PIE DE LA CUNA. Por el Dr. Néstor Morales Villazón. Second edition. Paper. Pp. 254. La Paz: Gonzalez y Medina, 1919.

This is the second edition of Dr. Morales' work on infant welfare, intended as advice to prospective mothers. The book was originally published as a newspaper serial and is written in popular style, suitable to his audience. While nothing new is to be expected in a book of this character, Morales' presentation of the subject and the timeliness of his remarks are to be commended.

Medicolegal

Getting Employment on Another's Physical Examination

(Stafford v. Baltimore & O. R. Co. (U. S.), 262 Fed. R. 807)

The United States District Court, for the Nothern District of West Virginia, says that a special plea interposed by the defendant to this action, brought to recover damages for personal injuries, presented such an extraordinary statement of facts as to render the legal questions involved in the plaintiff's motion to strike it out extremely perplexing. The plea, in brief, stated that the defendant had certain established rules governing employment by it of men in the capacity of brakemen. They had to be within a certain age. They had to appear before its medical examiner and undergo a physical examination, which would show them to be of such physique and in such condition of health as to fit them, in the judgment of such examiner and the employing officers of the company, properly to perform the important and dangerous duties of brakemen in its service. No one could secure this service without coming within the rules laid down for such physical examination. That the plaintiff, knowing these rules, being over the required age and physically unable to pass the required medical examination, secured another man within the required age and physically fit to assume the plaintiff's name and be examined, and under the plaintiff's name to secure such certificate or report from the medical examiner, which enabled the plaintiff to secure the employment of brakeman, in which employment, so fraudulently obtained, he was injured. All of the authorities that the court could find were more or less irrelevant, making the question presented one of first impression, that of a man over age, and charged to be physically incompetent under the rules of the company, securing by the fraudulent personation by another a service of danger and responsibility, and, notwithstanding his fraud and deceit, seeking to hold the defrauded company responsible for an injury sustained by him in a place where he had no legal or other right to be. Had he not committed the fraud on the company, he would not have been injured. The force of the resoning to the effect that he could secure no benefit by reason of his fraud was stronger against his claim than it was where there was misrepresentation, of his age by a minor, for whose protection the law specially provides. The force of the moral side of the question bore strongly, too, in the same direction. Railroad brakemen fill a very responsible place in railroad operation. Not only the corporation, but the public also, is vitally interested in his physical and other ability to protect both lives and property from destruction. It seems clear to the court that, whatever principle might be applied, it could not be here relied on to the extent of rejecting the defendant's plea offhand, and forbidding the matters set up in it, if proved, from becoming pertinent to the issues to be determined on the trial. Wherefore, the motion to strike out the plea was denied. Subsequently, on motion of the plaintiff, and at his costs, this case was dismissed.

Insufficient Proof as to Cause of Death from Anthrax

(Eldridge v. Endicott, Johnson & Co. et al. (N. Y.), 126 N. E. R. 254)

The Court of Appeals of New York reverses an order of the appellate division of the supreme court, which affirmed an award of the state industrial commission for the death of one Eldridge, an employee at a tannery, who died of anthrax, because of insufficient evidence as to when and how the disease was contracted. The court says that Eldridge's work was counting hides as they were unloaded at the freight cars. The hides were called Ceara hides from Southern Mexico and South American countries. On the 16th of the month, his neck was slightly cut with a razor, while he was being shaved at a public barber shop. A pimple appeared after the cut had healed over. His wife pricked this with a needle and applied a poultice of sugar and soap, and covered it with a cloth which went around his neck. At that time the neck was not swollen. That was on the 17th of the month. He went to work, and when he returned at night his neck was swollen, and three days thereafter he died of anthrax. Some of the

other employees noticed that his neck was swollen while he was at work. Solely on this evidence the state industrial commission found that the reasonable inference was that he contracted anthrax in the course of his employment. No evidence was given as to the nature of anthrax, whether hides such as those in question have anthrax bacteria and whether and in what way it may be tranmitted to men. But the commission presumed that, because Eldridge had a cut or a pimple, worked in a tannery about hides, and died of anthrax, he must have received the injury in the course of his employment. But this court does not think that this was a case in which the commission was justified in taking judicial notice or in presuming that hides such as those in question usually or frequently contain anthrax germs, and that a person working about them with an open wound is likely to receive the germ and die of anthrax. In the absence of all proof on the subject, the commission was not justified in presuming that the hides in question had anthrax, and that the germ could pass to a person working about them; in other words, the commission could not take judicial notice of the nature of these skins or their susceptibility to anthrax or to the method or likelihood of inoculation by an employee. Some evidence should have been given on these matters to justify the assumption and finding made. If this employee had been inoculated through the cut in his neck with anthrax germs from the hides, and the cut had been received a few days before at the barber shop while he was being shaved, a question might arise as to whether the inoculation was an accidental personal injury arising out of his employment; but the court does not reach this question, and will not attempt to decide it, as the facts of the case are not substantiated by any evidence, and the matter must be sent back to the commission for a rehearing.

Treatment of Shattered Elbow—Advising Seeing Physician from War Zone.

(Scherer v. Eidenmuller (Calif.), 187 Pac. R. 445)

The District Court of Appeal of California, First District, Division 2, in reversing a judgment for $2,000 damages that was rendered against the defendant for alleged improper treatment of a gunshot wound which the plaintiff received in his right elbow, April 24, says that the bullet passed through the joint, shattering the bones. The plaintiff was treated at an emergency hospital, where the wound was bandaged, after which he returned to his home. That evening, on account of the pain's having become very severe, he summoned the defendant, who administered a hypodermic to ease the pain. The next morning the defendant directed the plaintiff to go to a hospital for treatment, and while he was at the hospital the defendant examined the wound, had roentgenograms taken, and bandaged the arm again. The arm was badly swollen and inflamed, and it was decided that an operation was not advisable until that condition was relieved. May 11, the swelling and inflammation having subsided somewhat, an operation was performed by the defendant, assisted by another physician, and the arm was placed in a plaster cast, through which an opening was made to allow access to the wound for cleansing and treatment. Later the cast was removed and the arm placed in splints. The arm showed signs of infection and discharged pus from the date of the operation until August 11, when, the wound having failed to heal, roentgenograms were again taken, and the defendant advised that another operation would be necessary. The defendant also stated that he would take the plaintiff to another physician, who had just returned from the war zone and who had had considerable experience with injuries of this character. The plaintiff and the defendant together consulted that other physician, who also advised another operation. The plaintiff thereupon discontinued his visits to the defendant's office and consulted other physicians, who performed a second operation, after which the wound healed rapidly, but the elbow remained stiffened.

The defendant attacked the verdict as unsustained by the evidence, which raised a question of law as to the construction of the evidence under the rule that what is or is not proper practice in examination and treatment by a physician and surgeon or the usual practice and treatment is a question for experts and can be established only by their testimony. The plaintiff contended that the defendant was negligent in not taking roentgenograms after the operation and before August 21, for it was contended that if they had been taken they would have shown a condition calling for a second operation, and it was argued inferentially that an earlier second operation would have prevented the arm's becoming stiff. The only expert testimony offered by the plaintiff for the purpose of establishing the negligence of the defendant was that of a physician from whose entire testimony it clearly appeared that whether or not it would be desirable to take roentgenograms at frequent intervals would depend on the individual case and the personal knowledge of the internal situation; and that it would have been unwise to operate during the time that the wound showed signs of infection. The court thinks that the testimony on which the plaintiff must rest to establish negligence in the treatment received by him fell far short of the proof required.

The plaintiff argued that because the defendant stated to him about August 20 that he would take him for the second operation to the physician who had just returned from the war zone, who had had more experience with such cases, while the defendant had not had a case like this one before, this amounted to an admission of incompetence and unskilfulness on the part of the defendant. But this court does not think that these statements were susceptible of any such construction. The fact that the other physician was admitted to be more experienced and skilled along this particular line did not imply that the defendant did not possess that reasonable degree of learning and skill possessed by others of his profession in his locality. Surely it will not be contended that the measure of ordinary skill is the amount of skill and experience acquired by physicians who have been working for some time in the war zone and handling a constant succession of difficult and unusual cases.

The fact that a patient does not make a complete recovery raises no presumption of the absence of proper skill and attention on the part of the attending physician.

Necropsy Without Notice to Insurance Company

(O'Brion. v. Columbian Nat. Life Ins. Co. (Me.), 109 Atl. R. 379)

The Supreme Judicial Court of Maine holds that the necropsy contemplated by a provision of an accident insurance policy giving any medical adviser of the company the right and opportunity to be present if any necropsy is made, "timely notice of which must be given to the company," is an unofficial one—one made at the instigation of the beneficiary —and then it is only fair, as prescribed, that seasonable notice thereof be given to the company. But no notice is required, and the provision is not violated, when an official necropsy is made by an officer of the state in behalf of the state and under the restrictions provided by statute, when only such persons can be present as the medical examiner under the statute shall see fit to admit, the beneficiary under the policy and the insurance company being entire strangers to that proceeding, and not entitled to claim any rights therein.

Society Proceedings

COMING MEETINGS

Am. Acad. of Ophthal. and Otolaryng., Kansas City, Mo., Oct. 14-16.
Amer. Assn. of Obstetricians and Gynecologists, Atlantic City, Sept. 20-22.
American Association of Railway Surgeons, Chicago, Oct. 6-8.
American Child Hygiene Association, St. Louis, Mo., Oct. 11-13.
American Hospital Association, Montreal, Quebec, Oct. 4-8.
Delaware State Medical Society, Wilmington, Oct. 11-12.
Indiana State Medical Association, South Bend, Sept. 23-25.
Kentucky State Medical Association, Lexington, Sept. 27-30.
Minnesota State Medical Association, St. Paul, Sept. 29-30.
Mississippi Valley Medical Association, Chicago, Oct. 26-28.
New England Surgical Society, Providence, R. I., Oct. 6-7.
New Mexico Medical Society, Roswell, Oct. 15-16.
Pennsylvania, Medical Society of the State of, Pittsburgh, Oct. 4-7.
Tri-State District Medical Society, Waterloo, Iowa, Oct. 4-7.
Vermont State Medical Society, Rutland, Oct. 7-8.
Virginia, Medical Society of, Petersburg, Oct. 26-29.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

May, 1920, **3**, No. 5

Fundus of Eye After Death. H. V. Wurdemann, Seattle, Wash.—p. 321.
Ocular Lesions Caused by Asphyxiating Gases. M. Danis, Brussels, Belgium.—p. 323.
Removal of Steel from Eye from Industrial Standpoint. C. A. Clapp, Baltimore.—p. 325.
Fungus Concretion in Lacrimal Canaliculus (Streptothricosis, Actinomycosis). C. S. G. Nagel, San Francisco.—p. 327.
Carcinoma of Orbit Probably Originating in Lacrimal Gland. C. N. Howard, Warsaw, Ind.—p. 332.
Lantern and Apparatus for Testing Light Sense and for Determining Acuity at Low Illuminations. C. E. Ferree and G. Rand, Bryn Mawr, Pa. p. 335.
Injection of Oily Solution of Iodin for Glaucoma. R. Kerry, Montreal.—p. 341.
Organization and Activities of Ophthalmic Service in American Army of Occupation. R. A. Fenton, Portland, Ore.—p. 343.
Interrelation Between Eye, Ear, Nose and Throat with Presentation of Cases. J. C. Beck and E. Deutsch, Chicago.—p. 349.

American Journal of Physiology, Baltimore

August, 1920, **53**, No. 1

*Transfusion Experiment with Red Blood Corpuscles. H. Kambe and E. Komiya, Tokyo.—p. 1.
*Regeneration of Vagus Nerve. F. T. Rogers, Chicago.—p. 15.
Effect of Various Substances on Coagulation of Citrated Plasma. B. Karpman, Minn.—p. 25.
*Influence of Pituitary Extracts on Absorption of Water from Small Intestine. M. H. Rees, Vermilion, S. D.—p. 43.
*Specific Influence of Accelerator Nerves on Duration of Ventricular Systole. C. J. Wiggers and L. N. Katz, Cleveland.—p. 49.
*Influence of Sugars and Candies on Gastric Secretion. R. J. Miller, O. Bergeim, M. E. Rehfuss and P. B. Hawk, Philadelphia.—p. 65.
*Further Evidence on Functional Correlation of Hypophysis and Thyroid. J. A. Larson, Berkeley, Calif.—p. 89.
*Influence of an Alcoholic Extract of Thyroid Gland on Polyneuritic Pigeons and Metamorphosis of Tadpoles. E. C. Seaman, New York.—p. 101.
*Alkali Reserve in Experimental Surgical Shock. B. Raymund, Chicago.—p. 109.
Physico-Chemical Studies on Bioluminescence. III. Production of Light by Luciola Vitticollis is an Oxidation. S. Kanda.—p. 137.

Viability of Transfused Erythrocytes.—Kambe and Komiya claim that transfused red cells even preserved in ice for a long time, not to mention fresh blood, are capable of functioning if transfused into the animal body of the same species. Erythrocytes preserved as defibrinated blood maintain their normal vitality for twenty days, in the mixtures of isotonic sodium citrate and isotonic dextrose, even for thirty days and more; thus they may be used to replace the blood lost. A sudden anemia occasionally develops a few days after transfusion. There is a possibility that this is due to the isolysin, even though it occurred only in isolated cases. We are, however, unable to draw a sure conclusion from the present work, but will pursue further our studies which may throw some light on this point.

Regeneration of Sectioned Vagus.—One vagus nerve was sectioned by Rogers and the ends approximated so as to allow regeneration to occur in a series of dogs and cats. The regenerating fibers were stimulated electrically at time intervals varying from one to sixteen months after cutting. These tests made with the animals under ether anesthesia gave no evidence of the regeneration of either cardiac inhibitory or gastric motor fibers. In one dog twenty months after one vagus was sectioned, this nerve was stimulated with the dog in a comatose condition but no ether anesthesia. Distinct cardiac inhibition followed. In two dogs, section of the remaining normal vagus, sixteen and twenty months after previously sectioning and suturing the other, led to death in sixteen and thirty-four days, respectively. Apparently death was due to starvation resulting from difficulty in swallowing and frequent vomiting. During the period of life following section of the second vagus, the following facts were noted: 1. An immediate marked increase in pulse rate followed section of the second vagus. This slowly declined and after eleven to fourteen days the rate was that of a normal animal. At this stage atropin caused a great increase in the rate of the heart beat. These effects occurred in a dog in which the regenerating nerve was not functional for subsequent division of the nerve caused no change in the heart rate. 2. With only the regenerating nerve intact, but with no evidence of it being functional, atropin reduced the gastric motility. 3. The rate of breathing with only the regenerating nerve intact was the same as it was with one vagus intact. Cutting the regenerating nerve led to the classic picture of slow labored breathing. Stimulation of the regenerating nerve above and below the scar caused the normal respiratory inhibition and pressor effects on the blood pressure. Regeneration of the vagus fibers necessary to maintain the normal respiratory rhythm had therefore occurred. Whether these were motor to the larynx or afferent from the lungs was not determined. After bilateral vagotomy, some compensatory process is set up whereby the pulse rate is brought back to normal in spite of the absence of the vagi.

Pituitary Extract and Intestinal Absorption.—Rees' investigation lead him to the conclusion that subcutaneous injections of pituitary extract bring about a delay in the absorption of water from the small intestine. This delay does not seem to be sufficient, in most cases, to account entirely for the delay in the excretion of water from the kidneys which has been found to result from these injections. Rees suggests the possibility that the subcutaneous injection of pituitary extract may cause some vasoconstriction of the intestinal vessels. This cannot be pronounced or very extensive since it has been repeatedly shown and was verified that subcutaneous injections of pituitary extracts do not cause a variation in the general blood pressure.

Accelerator Nerves and Ventricular Systole.—Although it had been shown by previous investigators that stimulation of the accelerator nerves causes a marked reduction in the duration of systole, it had not been demonstrated that this reduction was greater than could be accounted for on Henderson's law of "uniformity of behavior," and consequently no clear demonstration existed of any specific effect on the ventricular musculature. By determining the duration of systole as well as the cycle length in a slow vagal beat, Wiggers and Katz found it possible to construct a probable volume curve for each animal and from it to derive a plot of the theoretical relation that should exist between cycle and systole lengths at any heart rate if the heart, during changing nervous action, beats according to a uniform law. The conclusions are reached that the accelerator nerves have a specific effect on the ventricular musculature which operates to reduce the contraction period; and that, in view of these observations, the hypothesis that under normal conditions the ventricle operates according to a uniform mechanical law, should be subjected to further investigation.

Effect of Sugar on Gastric Secretion.—The authors found that large amounts (100 gm.) of cane sugar or glucose in concentrated solution markedly depressed gastric secretion and delayed evacuation of the stomach. Small amounts (10 gm.) of cane sugar or glucose did not appreciably inhibit either gastric secretion or evacuation. Candies depress secretion and delay evacuation in proportion to their sugar content and the amounts of them ingested. This tendency is influenced, however, by flavoring substances, and particularly by added food ingredients such as milk, eggs or chocolate, which stimulate gastric secretion. Candies should be eaten not before but after meals. Hard candies which must be sucked are preferable to cream candies for children because of the smaller quantity of less concentrated sugar solution derived from them. Soft candies such as bonbons, soft creamy wafers and the interiors of chocolate creams when given in 100 gm. portions exerted the same depressing action on gastric secretion and evacuation as concentrated sugar solutions. Peppermint oil used as a flavoring agent delayed evacuation while a strawberry fruit flavor appeared to accelerate it. Chocolate appeared to stimulate gastric secretion. Stale chocolates remained in the stomach relatively long. Chewing caramels gave rise to a more voluminous gastric secretion than cream candies, but evacuation times were about the same. Salt water taffy gave rise to less secretion, while gum drops left the stomach rapidly with little acid production. Plain marshmallows remained in the stomach rather long, but after being

toasted these confections left the stomach rapidly and gave rise to high intragastric acidities. Licorice gave rise to a fairly abundant secretion and remained in the stomach for nearly three hours. Sugared or buttered popcorn developed a moderate acidity and left the stomach rather quickly. The addition of honey to bread did not delay evacuation, although acid production was somewhat depressed.

Effect of Pituitary on Thyroidectomized Animals.—Larson's experiments showed that the effect of administration of anterior lobe of the pituitary to thyroidectomized rats tends to prolong life and to accelerate growth. This confirms the results reported in a previous paper. Pituitary feeding also noticeably increases the rate of growth in normal rats. Anterior lobe seems to exert more influence on the growth of the normal males than that of the normal females.

Vitamins in Thyroid.—It was found by Seaman that the thyroid gland, as well as other tissues of the body, contains water-soluble vitamins, the property being demonstrated by the curative action on polyneuritic pigeons.

Alkali Reserve in Surgical Shock.—Four general types of shock were made out by Raymund ranging from the more severe characterized by sudden onset and death, to that in which few or none of the cardinal signs of shock were observed. The average normal alkali reserve of the venous plasma in the dog was found to be 43.4 volumes per cent., sixty-eight determinations. The values ranged from 32.4 volumes per cent. to 59.5. In dogs under ether anesthesia the mean value fell to 33.9 volumes per cent. As anesthesia was protracted the mean alkali reserve fell to 28.0 volumes per cent. (forty-five minutes to two hours) and finally to 26.1 volumes per cent. (two to four hours). As etherization was continued beyond this point the mean fall in alkali reserve per unit of time was seen to decrease. When shock ensued suddenly the fall in the alkali reserve of the plasma was relatively insignificant. When shock was late in appearing the plasma might show a high alkali reserve for some time after the animal had become practically moribund. There was apparently no correlation between the type of shock and the degree of alkali depletion. The condition of the animal could not be gaged by its alkali reserve. In several experiments it was found that the alkali reserve of the plasma and of the whole blood fell no lower in profound shock than in aseptic ether controls performed on the same dogs a week previous to the experiment, and from which they recovered rapidly and completely. If there is a critical level of alkali reserve it was not discovered. Intravenous injections of fourth-normal hydrochloric acid and of isotonic acid phosphate solutions did not produce shock or anything resembling this condition in either dogs or cats.

American Journal of Roentgenology, New York

July, 1920, 7, No. 7

Use of Buried Emanation in Treatment of Malignant Tumors. H. H. Janeway, New Yor.—p. 325.
A Traveling Foreign Body. E. C. Koenig, Buffalo.—p. 327.
Treatment of Recurrences and Metastases from Carcinoma of Breast by Radium and Roentgen Rays. G. E. Pfahler, Philadelphia.—p. 328.
Congenital (Hereditary) Absence of Middle Joint of Little Finger. T. C. Bonney, Aberdeen, S. D.—p. 336.
Treatment of Angiomas with Radium. W. S. Newcomet, Philadelphia.—p. 337.
Useful Attachment to a Bowen Developing Tank. A. J. Quimby, New York.—p. 345.
Osteochondral Trophopathy of Hip-Joint. Leggs' Disease. Report of Four Cases. W. E. Reiley, Clearfield, Pa.—p. 347.
Fractures of Bones of Face. C. F. Bowen, Columbus, Ohio.—p. 350.
Teleroentgenography of Sella Turcica. C. H. Jewett, Clifton Springs, N. Y.—p. 352.
*Unusual Gastric Polyp. H. E. Ruggles, San Francisco.—p. 356.
Word to Roentgen Therapeutist. C. A. Simpson, Washington, D. C.—p. 357.

Polyp of Stomach.—In Ruggles' case the striking feature was an unusual resemblance to carcinoma both clinically and roentgenologically. A man, aged 48, complained of fulness, gas, pressure in the upper epigastrium, belching, and constipation for the past eight months. There was never any severe pain. The sense of pressure was worse before meals and disappeared for an hour after eating, and he never vomited in spite of efforts to do so. He lost 30 pounds in weight during this time. Physical examination was negative. Gastric analysis showed a low acidity. Blood was constantly present in the stomach contents and stools. There was a slight secondary anemia. The roentgen-ray examination showed a defect along the great curvature, with a break in the gastric wall involving a quarter of its extent, giving the appearance of a somewhat lobulated mass. It was constant in all positions. Peristaltic waves did not pass through this area. There was no gastric residue at six hours, or other evidence of pathology in the gastro-intestinal tract. Operation showed a mass in the middle third of the stomach which proved to be a typical papilloma.

American Review of Tuberculosis, Baltimore

August, 1920, 4, No. 6

*Classification of Pulmonary Tuberculosis Based on Symptoms and Physical and Roentgen-Ray Findings. F. H. Heise and H. L. Sampson, Trudeau, N. Y.—p. 417.
*Classification of Pulmonary Tuberculosis as Modified by Stereoscopic Roentgenograms. B. H. Waters and J. B. Amberson, Jr., Loomis, N. Y.—p. 424.
*Intestinal Tuberculosis. R. C. Paterson, Saranac Lake, N. Y.—p. 433.
*Occurrence of Intestinal Tuberculosis in Patients with Pulmonary Tuberculosis at Trudeau Sanatorium. L. Brown, H. L. Sampson and F. H. Heise, Trudeau, N. Y.—p. 451.
Functional Cardiovascular Disturbances in Tuberculosis. E. P. Boas, New York.—p. 455.
*Studies on Inhibitory Action of Sodium Cinnamate in Tuberculosis. H. J. Corper, H. Gauss and W. A. Gekler, Denver.—p. 464.
Case of Pulmonary Tuberculosis with Onset in Lower and Spread to Upper Lobe. I. S. Kahn, San Antonio, Texas.—p. 474.
Spontaneous Pneumothorax Following Artificial Pneumothorax. I. S. Kahn, San Antonio, Texas.—p. 477.

Value of Roentgenograms in Classification of Tuberculosis.—The authors suggest that the classification of tuberculosis based primarily on the extent of pulmonary disease, should rest not only on the notoriously uncertain physical signs, but also on the extent of disease as shown by roentgenograms. The plan is outlined.

Stereoroentgenograms in Classification of Tuberculosis.—Waters and Amberson are convinced that stereoroentgenograms are indispensable in determining accurately the anatomic distribution and pathologic character of the more advanced pulmonary lesions of tuberculosis, and that frequently enough, to be of the greatest value not only in guiding the management of patients but also in determining the formal classification of cases, the stereoroentgenogram clearly pictures conditions which physical examination entirely fails to indicate or very imperfectly discloses.

Intestinal Tuberculosis.—Hypermotility, ileac stasis and filling defects make up what Paterson considers a triad of appearances which are indicative of ulceration of the cecum and ascending colon. There is usually a combination of these but any one alone is suggestive. Intestinal tuberculosis may and does occur as a complication in all stages of pulmonary tuberculosis, incipient as well as advanced. Early diagnosis is possible in many cases and has been particularly aided by roentgen-ray examinations. Spontaneous recovery has been known to occur in a few cases. Surgery offers the greatest hope in treatment but the cases for operation must be selected carefully. The condition of the lungs is as important as the condition of the intestines in deciding for or against operation and in prognosis. There is as yet no means of accurately estimating the extent of intestinal disease, and for this reason operation must always be more or less exploratory.

Intestinal Tuberculosis with Pulmonary Tuberculosis.—In a series of eighty-nine consecutive routine examinations tuberculous colitis was diagnosed as positive in four and as doubtfully positive in two cases. Thirteen per cent. of the patients at the Trudeau Sanatorium are discharged unimproved. The use of carmin was found to be no help in determining the presence of hypermotility in tuberculous colitis.

Sodium Cinnamate in Tuberculosis.—Corper and others determined that repurified sodium cinnamate, in concentrations up to 2 per cent. has no tuberculocidal action within three days, but is distinctly inhibitory to human tubercle bacilli in 5 per cent. glycerin agar in a concentration of 0.05 per cent., while in rabbit blood medium, both fresh and inspissated, it is inhibitory only in a concentration of about 0.2 per cent. By continuous intravenous injection of a 2.5 per cent. solution of pure sodium cinnamate a concentration of

from 0.08 to 0.16 per cent. of the blood can be maintained for a period of eighty-three hours in the rabbit. On account of its hemolytic action when administered over a prolonged period of time (exceeding three days) sodium cinnamate cannot be used as an inhibitory agent in tuberculosis.

Annals of Otology, Rhinology and Laryngology, St. Louis

March, 1920, **29**, No. 1

Walling off Subarachnoid Spaces; Application to Treatment of Cerebral and Cerebellar Abscess of Otitic Origin, and, in General, to Surgery of Brain. F. Lemaitre, Paris.—p. 1.
Leukoplakia Laryngis. N. H. Pierce, Chicago.—p. 33.
Hemophiliac Type Hemorrhage; Treatment by Transfusion. A. A. Hayden, Chicago.—p. 37.
Otolaryngologic Features of the Influenza Epidemic at Camp Hancock, Georgia, September-December, 1918. G. Fetterolf, Philadelphia, and W. J. Rideout, Freeport, Ill.—p. 44.
Extradural Irritation and Abscess. R. H. Good, Chicago.—p. 54.
Etiology of Peritonsillar Abscess: Dental Origin. N. Schoolman, Chicago.—p. 59.
Recurrent Calculus of Tonsil; Report of Case. H. L. Swain, New Haven, Conn.—p. 73.
Syphilis Among Negroes of Africa and Its Manifestations in Otorhino-Laryngology. J. N. Roy, Montreal.—p. 79.
Diagnosis and Treatment of Latent Antrum Disease. H. B. Lemere, Omaha.—p. 88.

California State Journal of Medicine, San Francisco

August, 1920, **18**, No. 8

What are You Doing to Defeat Antihealth and Antimedical Legislation? W. C. Alvarez, San Francisco.—p. 290.
*Infant Mortality in San Francisco in 1919. H. Lezynsky and A. Brown, San Francisco.—p. 296.
Treatment of Industrial Disabilities Involving Spinal Column. H. L. Langnecker, San Francisco.—p. 301.
Delayed Ulnar Palsy Following Elbow Injury. W. F. Schaller, San Francisco.—p. 302.
*Treatment of Chronic Amebic Dysentery Cyst Carrier. C. L. McVey, Oakland.—p. 305.
Shortage of Trained Nurses. W. F. McNutt, Sr., Byron.—p. 307.

Reduction of Infant Mortality.—The study made by Lezynsky and Brown shows clearly where the stress must be placed to reduce infant mortality. In view of the fact that syphilis is the contributing or actual cause of many stillborn and premature and debilitated infants, and in view of the fact that the government is asked to spend millions and the state thousands, and at twenty-four centers in California municipal, state subsidized clinics are seeking to control the ravages of syphilis, the authors suggest that the birth certificates be studied and at least that parents should be educated to understand the causal relation between death of the unborn or newborn and parental syphilis. With the state offering free Wassermann tests and larger cities doing the same, there is no financial obstacle to this study. Infant hygiene has taught the value of maternal feeding, clean milk, etc.—but do we teach either enough? A mortality rate of 28 per cent. from gastro-intestinal diseases between 2 and 12 months against none in which bottle babies have been carefully supervised, shows we are not doing enough even on the line. The Children's Health Center of the Association of Collegiate Alumnae has never lost a gastro-intestinal case in all its foundling babies. Again, injuries at birth causing 9 per cent. of 354 stillbirths and 7 per cent. of 219 children dying under 2 weeks of age with 50 per cent. of each group reported as being confined in hospitals, makes a medical mind stop and question. With all the help and convenience and technic controlling the risk of sepsis, are we tending to make surgical interference safer for the mother perhaps, but a jeopardy for the child because more readily undertaken by the obstetrician?

Treatment of Dysentery Carriers.—Emetin hydrochlorid. 1 grain, was administered by McVey hypodermically each morning for six days, and bismuth emetin iodid, 3 grains, was given by mouth at bedtime for twelve days, to thirty-five student carriers. Of this number, ten had a relapse following the first course, four relapsed following the second course; eleven were cured after thirty days' observation, five after sixty days, one after ninety days and four after 120 days.

Bulletin of Johns Hopkins Hospital, Baltimore

August, 1920, **31**, No. 354

*Capillary Poisons and Shock. H. H. Dale, London.—p. 257.
Cardiovascular Reaction to Epinephrin Sensitiveness in Patients with Hypertension. P. W. Clough, Baltimore.—p. 266.
*Clinical Study of Thirty-Nine Cases of Combined Thoracic and Abdominal Wounds. G. J. Heuer, Baltimore.—p. 273.
Natural History of Typhoid Fever in Baltimore, 1851-1919. W. T. Howard, Jr., Baltimore.—p. 276.
Study of Invalid Reaction. E. L. Richards, Baltimore.—p. 286.

Capillary Poisons and Shock.—Whatever further chemical investigation may reveal as to the nature of such substances and their relation to histamin, Dale thinks there can be little doubt that the conception of the capillaries as an actively contractile part of the vascular system, having an intrinsic tone which can be modified either by nervous or chemical influences, is destined in the future to play a part of increasing importance in conceptions of the mechanism by which the blood supply to the tissues is regulated under normal physiologic conditions and of the disturbances by which it is rendered pathologically inadequate.

Mortality of Wounds of Solid and Hollow Abdominal Viscera.—Analyzing the results from the standpoint of known injuries to solid and hollow abdominal viscera, Heuer found that the mortality, when solid abdominal viscera alone are injured, is 40 per cent.; when hollow abdominal viscera are injured, it is 86 per cent.

Colorado Medicine, Denver

August, 1920, **17**, No. 8

*Management of Septic Joints after Method of Willems. C. A. Powers Denver.—p. 204.
Annual Registration of Physicians. D. A. Strickler, Denver.—p. 210.
Fracture of Tibial Spine. S. F. Jones, Denver.—p. 217.
Medical Aids to Surgical Cures. W. M. Dake, Denver.—p. 222.

Willem's Treatment of Septic Joints.—Powers endorses the Willems' method of treatment of septic knee and elbow joints.

Indiana State Medical Association Journal, Ft. Wayne

Aug. 15, 1920, **13**, No. 8

Twilight Sleep. A. R. Barnes, Indianapolis.—p. 259.
The Physician; His Recreations and Vacations. F. B. Wayne, Indianapolis.—p. 263.
Treatment of Syphilis as Practiced in United States Public Health Service Clinics of Indiana. F. W. Cregor, Indianapolis.—p. 266.
Effect of Postoperative Rest on Coordination in Potential Tabetics. S. R. Edwards, Indianapolis.—p. 271.

Journal of Experimental Medicine, Baltimore

Aug. 1, 1920, **32**, No. 2

Method for Fixing Films of Human Blood Cells During Ameboid Movement of Leukocytes and Thrombocytes. M. A. Van Herwerden, Utrecht, Holland.—p. 135.
*Segmenting Tertian Malarial Parasites on Red Corpuscles Showing Little or No Loss of Hemoglobin Substance, Evidence of Migration. M. R. Lawson, New London, Conn.—p. 139.
Blackhead in Chickens and Its Experimental Production by Feeding Embryonated Eggs of Heterakis Papillosa. T. Smith and H. W. Graybill, Princeton, N. J.—p. 143.
*Early Changes Following Injection of Tubercle Bacilli into Metaphysis of Long Bones of Animals. J. Oliver, San Francisco.—p. 153.
*Importance of Blood Groups in Complement Fixation Reactions. W. C. Williams, Washington, D. C.—p. 159.
*Experiments on Production of Specific Antiserums for Infections of Unknown Cause. G. W. Wilson and J. Oliver, San Francisco.—p. 183.
*Effect of Intrabronchial Insufflation of Acid. M. C. Winternitz, G. H. Smith and F. P. McNamara, New Haven, Conn.—p. 199.
*Epithelial Proliferation Following Intrabronchial Insufflation of Acid M. C. Winternitz, G. H. Smith and F. P. McNamara, New Haven, Conn.—p. 205.
*Production of Pulmonary Infarcts by Insufflation of Acid. M. C. Winternitz, G. H. Smith and F. P. McNamara, New Haven, Conn.—p. 211.
Study of Bacillus Pyogenes. J. H. Brown and M. L. Orcutt, Princeton, N. J.—p. 219.
Biliary Factor in Liver Lesions. P. Rous and L. D. Larimore, New York.—p. 249.

Destruction of Erythrocytes by Malaria Parasites.—Lawson's researches have shown that malarial parasites destroy more than one red corpuscle, migrating to another as soon as one is destroyed. Pigmented segmenting parasites attached to red corpuscles whose hemoglobin is intact or nearly so are prima facie evidence of migration. The young parasites resulting from the segmenting bodies attached to healthy red corpuscles usually attach themselves independently to the infected corpuscle and remain there until the corpuscle is destroyed.

Effect of Tubercle Bacilli on Bone Metaphysis.—In Oliver's work rabbits were given 20 c.c. of a 1 per cent. solution of

trypan blue intravenously, and two days later, a trephine opening was made in the metaphysis of the tibia and from one to two drops of a physiologic sodium chlorid solution emulsion of bovine tubercle bacilli were injected into the marrow. Similar experiments were made with guinea-pigs and tubercle bacilli of the human type. After from three to nine days, the animals were killed and portions of the bone removed and fixed in 10 per cent. liquor formaldehydi. The earliest changes were observed three days following the operation. No lesion could be seen in the gross, and but little change was observed in sections with a low magnification. With a higher magnification it was seen that a large number of the leukocytes showed evidences of nuclear degeneration, while the reticulo-endothelial cells contained two or more nuclei, and instead of being stellate in shape as normally, were now rounded and lay free in the sinuses of the marrow. Another appearance noted in these cells was the presence of clear areas free from dye granules which showed no coloration with the counterstain. These were interpreted as vacuoles, and in sections stained for tubercle bacilli it was possible to demonstrate in them one or more acid-fast bacilli. With an increase in the number of bacilli in the cell there was a corresponding decrease in the number of dye granules.

Blood Groups and Complement Fixation.—The presence of a natural antihuman hemolysin, active only against Group I and Group II cells, was demonstrated by Williams in more than fifty guinea-pigs, obtained from different sections of the surrounding country. It was shown that, in a majority of the serums tested, this hemolysin would be a contributing factor to an excess of amboceptor in the reaction, in the quantities of complement used in an antihuman complement fixation reaction. The hemolysin is specific, in as far as it can be absorbed with either Group I or Group II cells, but cannot be absorbed with Group III or Group IV cells. In endeavoring to determine the effect of the isohemolysins in human serum various degrees of hemolysis were obtained with all but two serums against cell suspensions from Groups I, II and III, but no hemolysis was obtained with any serum against a Group IV cell suspension. The importance of the human isohemolysins and the natural antihuman hemolysin in complement was demonstrated by performing complement fixation tests on twenty-six human serums cell suspensions of all four human groups for each serum tested being used. A marked variation in the reaction occurred with a large percentage of the serums tested. That the isohemolysins, alone, in human serum are of importance in the reaction was shown by running complement fixation tests on seventeen human serums with the four group cell suspensions and complement from which the natural antihuman hemolysin had been absorbed. Results showed a much weaker reaction, in a large number of the serums, with Group I, Group II and Group III cells than with Group IV cells. Experiments to determine a relation between the human blood groups and natural antisheep hemolysin present in human serum gave negative results. Tests were made for natural antisheep hemolysin in guinea-pig serum. The serum from sixteen different guinea-pigs was tested against a total of twenty-one sheep cell suspensions. A natural antisheep hemolysin was present in all the guinea-pigs tested against one of the sheep cell suspensions. The same guinea-pigs tested against the other sheep cell suspensions failed to show any hemolysis.

Specific Antiserums for Obscure Infections.—Wilson and Oliver agree with Pearce that a serum highly injurious to the kidney of dogs can be produced by the immunization of rabbits with washed renal tissue of the dog. The histologic findings are striking and characteristic, the most noteworthy being a glomerular lesion of special type. The renal changes noted by the authors differed much from those Pearce described.

Experimental Lung Pathology Caused by Gases.—Intrabronchial insufflation of weak solutions of hydrochloric acid, from 0.1 to 0.25 per cent. in rabbits caused an inflammatory process which resembles that encountered in influenza and after the inhalation of toxic gases. There are intense edema and congestion of the lung with hemorrhage, dilatation of the alveolar ducts and bronchioles, hyaline necrosis of the epithelium of these structures, and lobular, pseudolobular, and even lobar types of consolidation, which are more frequently serofibrinous but may be hemorrhagic or even purulent.

Repair of Experimental Lung Lesions.—The damage caused by the introduction of acid into the pulmonary parenchyma is repaired rapidly. The depth of the necrosis determines which elements will participate in the repair. If epithelium alone is injured, epithelium alone takes part in the repair. When the damage involves the deeper tissue, organization by granulation competes with and impedes the development of the epithelium. An overproduction of the epithelium occurs and may form bronchiolar polypi or extend into the peribronchial tissue.

Experimental Lung Infarcts.—Intrabronchial insufflation of acid causes immediate necrosis of the walls of many alveoli. Thrombosis of the alveolar vessels is an associated phenomenon. When a large number of vessels becomes affected, a clot propagates rapidly into the larger supplying vessels. The resulting lesion is indistinguishable from a hemorrhagic infarct. The infarct-like areas so frequently encountered in influenzal pneumonia, it is not unlikely, have their origin in a similar process. Infarction depends not only on thrombosis or embolism of the large vessels, but may be initiated by extensive damage to the capillary bed. By this process infarcts may form in organs which are normally protected by collateral circulation.

Journal of Orthopaedic Surgery, Lincoln, Nebr.

August, 1920, **2**, No. 8

Injuries to Sesamoid Bones of Great Toe. A. H. Freiberg, Cincinnati. —p. 453.
Jones Operation for Ankylosis of Subdeltoid Bursitis. W. Blanchard, Chicago.—p. 466.
Osteomyelitis. F. C. Kidner.—p. 470.
Nerve Lesions Following Common Types of Back Strain and Their Relation to Prognosis of Disability. H. W. Wright, San Francisco. —p. 477.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

July, 1920, **15**, No. 5

*Action of Chloral on Pupil. E. G. Hyatt, H. McGuigan and F. A. Rettig, Chicago.—p. 415.
*Effect of High Temperature on Action and Toxicity of Digitalis. A. D. Hirschfelder, J. Bicek, F. J. Kucera and W. Hanson, Minneapolis.—p. 427.
*Continuous Blood Pressure Tracings in Man: An Apparatus. A. C. Kolis, St. Louis.—p. 433.
*Indirect Method for Determination of Blood Pressure in Unanesthetized Dog. A. C. Kolis, St. Louis.—p. 443.
Quantitative Studies in Chemotherapy. I. Trypanocidal Action of Antimony Compounds. C. Voegtlin and H. W. Smith, Washington, D. C.—p. 453.
Quantitative Studies in Chemotherapy. II. Trypanocidal Action of Arsenic Compounds. C. Voegtlin and H. W. Smith, Washington, D. C.—p. 475.

Action of Chloral on Pupil.—It was found by Hyatt and his associates that large doses of chloral may produce a pin point pupil. No part of the mechanism of the eye peripheral to the ciliary ganglion is directly acted on by the chloral and neither the ciliary or sympathetic ganglions are involved. The action is, therefore, central and due to removal of inhibitory influences which are normally active. Strychnin, caffein, atropin and other centrally acting drugs are antagonistic to the action of chloral.

Action and Toxicity of Digitalis.—The results of these experiments show that although the heart muscle in these cases was free from injury due to the prolonged fever or toxemia, the factor of high temperature alone was sufficient to render it much more susceptible to the effects of digitalis than is the normal heart muscle.

Continuous Blood Pressure Tracings in Man.—An apparatus is described by Kolis with which continuous blood pressure records can be obtained in man. It is comparatively simple in design, necessitating only an electromagnetic valve in addition to ordinary laboratory equipment. Typical tracings obtained with the apparatus are shown and its application to various problems is indicated.

Indirect Determination of Blood Pressure.—The apparatus used by Kolis is a sphygmomanometer equipped with a special type of cuff which permits of compression of the artery

without distortion of the leg, and a new type of sphygmograph of sufficient delicacy to record the pulsations from an artery as small as the femoral artery of the dog.

Kansas Medical Society Journal, Topeka

August, 1920, **20**, No. 8

Obstetric Experiences of Country Physician. O. E. Stevenson Labette.—p. 217.
Tonsillectomies. L. B. Sparata, Kansas City, Kan.—p. 221.
Findings Revealed by Systematic Medical Examination of Parochial School Children in Kansas City, Kan. L. B. Gloyne, Kansas City, Kan.—p. 223.
What Can Be Done for the Paralyzed? With Frænkel Exercises. K. A. Menninger, Topeka.—p. 226.

Nebraska State Medical Journal, Norfolk

August, 1920, **5**, No. 8

Mastoidectomy in Presence of Erysipelas. R. P. Stoops, Camp Pike, Ark.—p. 217.
Responsibility of Oculist to Adult Blind. J. M. Patton, Omaha.—p. 218.
*Experimental Work with Sodium Cacodylate on Athreptic Infants. F. Clarke and A. Dow, Omaha.—p. 222.
Abdominal Surgery Under Nitrous Oxid and Oxygen. W. H. Pruner, Omaha.—p. 224.
Technic for Administration of Nitrous Oxid and Oxygen in Major Surgery. B. H. Harms, Omaha.—p. 228.

Use of Sodium Cacodylate in Athreptic Infants.—From ¼ grain to 1 grain of sodium cacodylate was injected intramuscularly by Clarke and Dow into six infants aged from 6 to 15 months and the effect noted. The percentage of hemoglobin in the blood was uniformly increased. No toxic influence was noted. The infants all showed a substantial gain in weight.

New York State Journal of Medicine

August, 1920, **20**, No. 8

*Dietetic Treatment of Diseases of Upper Gastro-Intestinal Tract. A. F. Chace, New York.—p. 239.
Pharmacology of Drugs Used in Disease of Upper Gastro-Intestinal Tract. W. A. Bastedo, New York.—p. 243.
Practical Chemical Laboratory Examinations in Gastro-Intestinal Diseases. H. F. Shattuck and J. A. Killian, New York.—p. 250.
Significance of Syphilis in Prenatal Care and in Causation of Fetal Death. J. W. Williams, Baltimore.—p. 252.
*Necrotic Fibroids Complicating Pregnancy and Puerperium. G. W. Kosmak, New York.—p. 259.
Serum Sickness and Sudden Death Following Hypodermic Administration of Antitoxin. W. W. Root, Slaterville Springs, N. Y.—p. 264.

Diet in Gastro-Intestinal Disease.—In outlining the dietary treatment of diseases of the upper digestive tract, Chase says that the particular disordered physiology and pathology which is present should be constantly in mind; that is to say, a physician should consider first the effect of any given foodstuff on the secretory function of the stomach—whether it would increase or diminish the acidity; second, the effect of any given foodstuff on the motility of the stomach—whether it would increase or diminish the motility; and third, the effect of any given foodstuff on any pathologic lesion of the stomach. The diets prescribed should be so arranged as to adequately supply the caloric needs of the body and contain the essential food elements. A patient weighing 150 pounds, confined to bed, will require 2,000 calories daily to maintain his weight. All diets should be varied, the patient not knowing of what his next meal is going to consist, and above all, that the food should be made palatable.

Necrotic Fibroids Complicating Pregnancy.—It is emphasized by Kosmak that patients with myomatous tumors of the uterus associated with pregnancy must be watched carefully for evidences of local necrosis during the entire period of pregnancy and the puerperium, as the breaking down of the tumor may occur at any time during the period noted. If necrosis is present in such cases the possibility of operation must be considered. Exploratory laparotomy under deep anesthesia with enucleation of the growth and careful suture of the uterine wall can be carried out without extensive hemorrhage, producing abortion or premature delivery, if the patient is kept well narcotized after operation. Although recommended by various authors. Polak says hysterectomy need not always be done. Even if abortion follows operation, the uterus will be left for possible future pregnancies. Uterine myomas undergoing degeneration during the puerperium, as shown by local pain and tenderness, elevation of temperature, continuous red lochia and possible signs of peritonitis, should likewise be considered for exploratory operation, in the hope that the tumor may be enucleated before perforation of its capsule takes place. In the case of pedunculated growths, this procedure must likewise be followed. With multiple fibroids, hysterectomy must often be considered.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

July, 1920, **43**, Part 2

*Aphasia and Kindred Disorders of Speech. H. Head.—p. 87.
*Congenital Familial Spinal Muscular Atrophies and Their Relation to Amyotonia Congenita. K. H. Krabbe.—p. 166.

Aphasia.—The results set forth by Head are based mainly on the investigation of young men suffering from gunshot wounds in various portions of the head. Certain new serial methods of examination have been adopted; these make it possible to utilize the inconstant answers, characteristic of all cortical lesions, which are so confusing unless the examination is made in a systematic manner.

Amyotonia Congenita and Familial Spinal Muscular Atrophies.—Krabbe points out that amyotonia congenita, according to the original descriptions, seems to be a rather benign and not an hereditary disease, and does not seem to leave any defects in adults. In eight of the eleven cases which have come to necropsy, there have been severe atrophies of the anterior horn cells and muscles. In two of Krabbe's cases of hereditary congenital muscular atrophy corresponding changes were seen. These changes resemble, on the whole, the changes in Werdnig-Hoffmann's progressive muscular atrophy. In six cases reported by Krabbe, the disease clinically resembled closely amyotonia congenita, and only later information showed that it was a familial disease.

British Medical Journal, London

Aug. 21, 1920, **2**, No. 8

*Puerperal Sepsis; Prevention and Treatment. Victor Bonney.—p. 263.
*Surgical Treatment of Puerperal Sepsis. B. Whitehouse.—p. 267.
*Intravenous Protein Therapy in Puerperal Septicemia. A. E. Gow.—p. 268.
Serums and Vaccines in Treatment of Puerperal Infection. H. L. Murray.—p. 269.
*Diastase Content of Urine in Toxemias of Pregnancy. R. L. McKenzie Wallis.—p. 273.
Diagnosis of Spinal Meningeal Tumor and Its Practical Importance. R. T. Williamson.—p. 275.
Occurrence of Urticaria After Specific Fevers. E. Ward.—p. 279.
Skin Apposition Without Superficial Sutures. F. Hathaway.—p. 280.

Puerperal Sepsis.—Puerperal sepsis is a variety of wound infection in the treatment of which Bonney says both operative measures and the direct application of antiseptics have a very limited scope, and efforts to find some other way of efficiently attacking the organisms have been only very partially if at all successful up to now. The conclusion Bonney reaches, therefore, is that as matters stand today, prevention is to be more relied on than cure.

Flavine Intravenously in Puerperal Sepsis.—The possibilities of intravenous medication in those cases of puerperal sepsis where organisms have reached the blood stream—in other words, puerperal septicemia and pyemia are discussed by Whitehouse. For the past twelve months Whitehouse has been employing as a routine a solution of flavine 1 in 1,000 in physiologic sodium chlorid solution intravenously, in cases of puerperal septicemia and pyemia. He administers it in doses from 10 to 15 c.c. intravenously into the median basilic vein, employing the same technic as for arsenical preparations in the treatment of syphilis. As a rule, one injection is given per day, but in severe infections two injections are administered, one in the morning and one in the evening. So far Whitehouse has been greatly pleased with the results and recovery took place on each occasion.

Intravenous Protein Therapy in Puerperal Sepsis.—Ten grams of Witte's peptone, about 5 c.c. of hot freshly distilled

water and the volume made up to 100 c.c. is the solution used by Gow. The first dose which may be given intravenously to a septicemic adult is from 8 to 10 c.c. The quantity is increased by 2 c.c. every other day or so until 16, 18 or 20 c.c. are given at a time. The injection must be made slowly and for that reason Gow employs Nolf's technic using a record syringe and a very fine bore needle—with a No. 28 it is impossible to introduce the solution too quickly. In cases of puerperal septicemia the injection of peptone tends to cause an immediate and rapid fall in blood pressure, a rise in the pulse frequency, and if the patient has a leukocytosis, it rapidly induces a high degree of peripheral leukopenia—all these phenomena being of very short duration. Of these changes, the easiest to record as a guide is the pulse frequency, and while the injection is in progress the nurse keeps count of the radial pulse calling out the number each quarter of a minute. Though he is convinced that peptone is a very valuable adjunct to sensitized vaccine, Gow makes no extravagant claim that it always brings a septicemia to an end, and he cautions any who may look for a dramatic and sustained fall of temperature after its use that most times they will be disappointed.

Blood Diastase in Pregnancy.—The results of his examinations have shown, Wallis states, that in normal pregnancy albumin and casts are absent, and the diastaste content lies within the normal limits, 10 to 33.3 units. The blood analysis shows a normal value for urea—namely 0.02 to 0.05 gm. per cent. The blood sugar is also normal but in cases of glycosuria in pregnancy this is slightly raised. The urea concentration test shows the usual values of 2 per cent. of urea or more. The chief point elicited is the fact that the normal pregnant woman is in a state of unstable equilibrium as regards carbohydrate metabolism, and the least disturbance evokes the production of acetone bodies, and their appearance in the urine as such. In the toxemias of pregnancy the chief feature noted is the very high diastase content of the urine. Apart from diseases of the pancreas this is the only condition where such high values have been found for diastase in the urine. There is no abnormality to be found in the blood in these cases, the urea and sugar content being normal. In contrast to the true toxemias of pregnancy, it is of interest to note that in the much more common neurotic vomiting of pregnancy the urine shows a normal diastase content. Many of these patients are suffering from a chronic parenchymatous nephritis ranging from a mild to a more severe form. The urine shows albumin with very little globulin, casts are generally present, and the diastase content is usually below the normal 10 units. The blood analysis is also of value as the urea content is generally on the high side of normal and in the more severe cases markedly raised. A urea content of over 0.1 gm. per cent. should be regarded as unfavorable and such cases are liable to develop uremia with a fatal termination. The urea concentration test is of value in the mild cases giving one a ready means of assessing the degree of mechanical damage to the kidney.

Bulletin Naval Medical Association of Japan, Tokyo

June, 1920, No. 29

*Effect of Experimental Extirpation of Thyroid Body. M. Ishihara.—p. 1.
A Dwarf Caused by Abnormal Growth of Bones, Chondrodystrophia Foetalis. E. Saigusa.—p. 2.

Effect of Extirpation of Thyroid.—Excision of the thyroid of young rabbits was followed by the enlargement of the thymus gland, Ishihara suggests probably due to a recompensing action existing between these two organs. Metabolism was never interefered with by this extirpation. The degenerated corpuscles of Hassall were seen more frequently in the thymus gland of normal rabbits than in that of the rabbits operated on. The operation was not necessarily followed by enlargement of the pituitary body.

Japan Medical World, Tokyo

July, 1920, **10**, No. 30

Vital Fixation of Auricular Organs and Staining of Nerves. F. Tanaka and C. Yoshida.
Experimental Treatment of Tuberculosis with Taulin and Metallic Compound of Tauline. S. Takeoka.

Journal of State Medicine, London

August, 1920, **28**, No. 8

After-the-War Labor Conditions and Factory Personnel. T. Oliver.—p. 229.
Economic Aspect of Miners Nystagmus. T. L. Llewellyn.—p. 236.

Lancet, London

Aug. 21, 1900, **2**, No. 8

Ambulatory Treatment of Fracture of the Limbs; Tuberculous and Arthritic Disease of Joints. C. A. Hoefftcke.—p. 382.
Body and Mind. F. W. Mott.—p. 383.
Some Aspects of Functional Nervous Disease. E. D. Macnamara.—p. 387.
*Diagnosis of Active Pulmonary Tuberculosis. J. B. McDougall.—p. 390.
*Bilharzia Treated with Tartar Emetic. F. G. Cawston.—p. 392.
*Blood and Urine in Pancreatic Disease. P. J. Cammidge, J. A. Cairns Forsyth and H. A. H. Howard.—p. 393.
Antidiuretic Effect of Pituitary Extract in Diabetes Insipidus. M. Davidson.—p. 401.

Leukocyte Count in Determining Activity of Tuberculosis.—With a view to establishing an objective proof of latent activity in the "borderland" type of case McDougall carried out a large number of blood examinations. He found this helpful in guiding to a definite conclusion, one way or another, as to the suitability of a particular case for treatment by graduated rest and exercise. From an analysis of sixty-seven cases in which 150 differential counts of the white cells, together with Arneth counts were made, and of thirty cases in which 250 total counts were estimated, it was evident that if consecutive daily leukocyte counts are made a variation in total numbers of white cells is found in all active cases of pulmonary tuberculosis—a variation in excess of that occurring normally in health. Physical signs in the chest may give little or no help in determining the activity of a lesion. For instance, a cavity in the lung may be followed by pathologic "repair" and clinical quiescence, and in such a case the total leukocyte count may be small, and the Arneth count but slightly altered. Conversely, there may be a definite "leukocyte swing" and a marked "deviation to the left" in cases showing no other objective sign of active disease. The total leukocyte count bears a definite relationship to the acuteness of the lesion in the chest, and the acuteness of the lesion has, in turn, a more or less intimate connection with the presence of organisms other than the tubercle bacillus. The Arneth "deviation to the left" is established in all cases of active disease. The more severe the infection the greater is the deviation to the left. An approximation of the quantitative and qualitative blood picture to the normal is a favorable sign and indicates quiescence.

Tartar Emetic in Bilharziasis.—Cawston's study of a number of bilharzia patients who have undergone a course of treatment by intravenous injections of tartar emetic would appear to show that the best results are obtained when the injections are given on alternate days for most of the time, and the treatment is continued for a complete month. Cawston commences with a quarter grain, and in only one case of idiosyncrasy has he noticed any severe effect from this initial dose. If the solution is absolutely fresh and the injections are given regularly, a total of from 12 to 15 grains would seem to be sufficient to effect a permanent cure in the majority of cases.

Blood and Urine in Disease of Pancreas.—The animal experiments described by Cammidge and others confirm the conclusions arrived at on clinical grounds. In addition they show that the rise in the difference value of the blood resulting from interference with the functions of the pancreas insufficient to produce frank hyperglycemia and glycosuria diminishes as the volume of the gland is further reduced and the percentage of sugar in the blood and the excretion of sugar in the urine rise. The hydrolyzable substance in the blood on which the difference value depends appears to be derived chiefly from the glycogen stores of the liver, and is an intermediate soluble product (dextrin) formed in the conversion of glycogen to sugar. The liver contains an amylolytic ferment which passes into the blood and urine, and it is as a result of its activity that the glycogen of the liver is broken down. The pancreas exerts a restraining influence on the glycolytic ferment of the liver, probably through its internal secretion. Normally, the balance between

the glycolytic ferment of the liver and the internal secretion of the pancreas is maintained in such a way as to keep the percentage of sugar and the difference value of the blood, within well defined limits; when this balance is interfered with abnormal relations result. A relative increase in the pancreatic secretion causes a fall in the percentage of sugar and in the difference value of the blood. A relative diminution in the secretion of the pancreas, with consequent greater liberty of action on the part of the glycolytic ferment of the liver, gives rise in the early stages to an increased formation of the intermediate products of glycogen degradation without any change in the sugar, and in the later stages to an increasing sugar production with a proportional diminution in the intermediate products. The appearance in the blood and urine of intermediate products of carbohydrate metabolism as shown by the difference value of the blood and the iodin coefficient of the urine, indicates a prediabetic condition which, if allowed to progress unchecked, will be followed by hyperglycemia and glycosuria. Incidentally it has been shown that a considerable proportion of a well boiled starch is absorbed into the portal circulation in the form of dextrins and maltose, whereas an uncooked starch enters the portal blood chiefly as dextrose.

Medical Journal of Australia, Sidney

July 10, 1920, **2**, No. 2

Intravenous Injections in the Treatment of Hemorrhage and Shock. A. H. à Court.—p. 25.
Injuries of the Spinal Cord. A. Newton.—p. 30.

July 17, 1920, **2**, No. 3

*Intravenous Injections in Treatment of Hemorrhage and Shock. A. H. à Court.—p. 49.

Transfusion in Shock.—In primary traumatic shock of the most extreme severity and in patients apparently moribund Court has been led by numerous observations to conclude that it is advisable to employ general methods of resuscitation and await, if possible, some evidence of returning animation before commencing transfusion. Otherwise transfusion may be performed in cases where the organism has been damaged beyond hope of recovery and discredit brought on a most valuable therapeutic measure undeservedly.

Bulletins de la Société Médicale des Hôpitaux, Paris

June 4, 1920, **44**, No. 20

*Epidemic Encephalitis. Lesné and others.—pp. 765; 769; 784.
Posttraumatic Osteomas in Muscles. Rathery and Bordet.—p. 772.
*Epinephrin in Vomiting of Pregnancy. Rathery and Bordet.—p. 778.
Congenital Paroxysmal Cyanosis. Variot and Lantuéjoul.—p. 786.

Choreic Form of Epidemic Encephalitis.—Lesné and Langle join Armand-Delille and others who have been emphasizing recently the connection between true chorea and epidemic encephalitis. They report a case of what seemed to be true chorea in a girl of 8 who had had a similar attack three years before. There was no tendency to somnolency or ptosis, but the salivary glands became enlarged and 0.058 and 0.06 per cent. of glucose were found in the lumbar spinal fluid—both characteristic of epidemic encephalitis. This case raised the question of recurrences of encephalitis, and in the discussion that followed, Sicard mentioned that prolonged forms of the epidemic encephalitis are relatively frequent. The persisting symptom or sequel seems to be tenacious, with no tendency to paroxysmal recurrence. In one case the algia in neck and arm has persisted unmodified by all treatment during seven months to date. Eschbach cited a number of cases of apparently true chorea with the somnolency, ptosis and other symptoms of epidemic encephalitis. Briaud and Rouquier reported a case in which, besides the chorea, myoclonia, delirium, hallucinations and high sugar content of the spinal fluid, there were symptoms of diabetes insipidus.

Epinephrin in Uncontrollable Vomiting of Pregnancy.—Rathery and Bordet report a case of serious consequences from incessant vomiting for two months early in pregnancy. Then 250 c.c. of physiologic sodium chlorid solution with 10 drops of epinephrin (1:1,000) were injected subcutaneously, and repeated the next day. The vomiting was arrested at once. The epinephrin was kept up for a week, to a total of 2.5 mg. subcutaneously plus 10 mg. by the mouth. A 40 per cent. solution of glucose was given by the rectum. This experience was duplicated in a second case, the symptoms from autointoxication rapidly subsiding, while the blood pressure was not affected.

Encéphale, Paris

June 10, 1920, **15**, No. 6

*Visceral Innervation During Morbid Depression. J. Euzière and J. Margarot.—p. 361. Begun in No. 5, p. 349.
Tuberculous Meningo-Encephalitis of Base Simulating Lethargic Encephalitis. A. Prince.—p. 384.
*Volitional Associated Movements. Noïca (Bucharest).—p. 390.
Hallucination Delirium. P. Quercy.—p. 398.

Autonomic Nervous System in Periods of Anxious Depression.—Euzière and Margarot refer to a morbid condition of apprehension and anxiety recurring at irregular intervals. These "états anxieux" are distinguished by extreme irritability of the sympathetic nervous system, and when they are associated with mental disease, this preponderance of the sympathetic system may be continuous. Their tests of sixty patients of the different types confirm, they say, that this hypertonia of the sympathetic system is unmistakably a constant physiologic substratum of the physical element of anxiety, namely, the anguish, and that the different degrees of the anguish (*angoisse*) parallel the intensity of the sympathicotonia.

Associated Movements.—Noïca explains that dissociated movements require an expenditure of force much greater than the associated. Infants with undeveloped pyramidal tracts and adults with disease of these tracts economize force by associated rather than dissociated movements.

Paris Médical

July 17, 1920, **10**, No. 29

*Sugar Versus Salt Solutions for Infusion. A. Richaud.—p. 53.
*Hypertonic Sugar Solution in Nephritis. Rathery and Boucheron.—p. 56.
*Blood Pressure with Intermittent Claudication. J. Heitz.—p. 60.

Sugar Versus Saline Infusion.—Richaud discusses what we know of the general effects of large injections of sodium chlorid solution and of the diuretic action of sugar, and means to increase or reduce it. Each sugar has its special diuretic action which seems to vary inversely to its molecular weight. Sugar solutions are much less toxic than salines, and up to 1,300 c.c. of an isotonic solution of glucose, saccharose or lactose can be injected by the vein. About 47 gm. of glucose or 92.5 gm. of saccharose to the liter is the usual proportion unless the aim is to induce diuresis, in which case 200 or 250 gm. of saccharose to the liter are used. This induces actual dehydration by the profuse diuresis which follows. This explains the extreme thirst and the damage which may result unless the patient is given plenty of fluid to drink. Besides this diuretic action, the sugar tones up the heart and has an antitoxic action. Hence Fleig advises it to promote recovery from an anesthetic.

Sugar Solution in Nephritis.—Rathery and Boucheron warn against hypertonic sugar solution in nephritis with uremia, reporting three cases in which injection by the vein of 250 c.c. of a hypertonic solution of glucose actually reduced the diuresis; the output of urine and of urea, and the total nitrogen content declined, while the uremia became intensified.

Local Blood Pressure with Intermittent Claudication.—Heitz has found that the oscillometer tracings show the particular features of each case in intermittent claudication, and the remissions under treatment with general hygiene, courses of mineral waters, etc., and serve as a guide in treatment and to ward off exacerbations.

July 31, 1920, **10**, No. 31

*Irregular Arrhythmias. R. Lutembacher.—p. 85.
*The Herxheimer Reaction in Syphilis. G. Milian.—p. 91.

Irregular Arrhythmias.—Lutembacher explains that what used to be called perpetual arrhythmia often varies and may be traced to different causes, each calling for different treatment. It may be the result of uncomplicated heart block, or of extrasystoles or auricular flutter. The term "total arrhythmia" should be reserved for the complicated forms of com-

plete arrhythmia, as in this all the properties of the heart are altered.

Drug Activation of Latent Streptococci.—Milian calls attention to a case of what he calls therapeutic microbian biotropism, an erysipelatous dermitis of the breast, with streptococci, developing and flaring up after each injection of arsphenamin until a polyvalent antiserum was injected. This seemed to arrest the biotropism. The Herxheimer reaction was intense each time in the extensive syphilitic lesions in the young woman. The intensity of the visible reaction suggests that analogous reactions occurring in internal organs might readily explain certain phenomena in the course of treatment of syphilis. They teach the importance of pushing the treatment rather than suspending it in such cases, he adds.

Presse Médicale, Paris

July 31, 1920, **28**, No. 53

*The Pilomotor Reflex. A. Thomas.—p. 521.
*Quinin in Auricular Fibrillation and Tachysystole. P. Schrumpf.—p. 524.
*Injections of Ether in Whooping Cough. L. Cheinisse.—p. 526.

Goose-Flesh Reflex.—Thomas discusses what he calls the *récussivité sympathique*, and the diagnostic import of the variations in the pilomotor reflex in particular.

Quinin in Auricular Fibrillation and Tachysystole.—Schrumpf admits that quinin cannot be relied on to cure auricular fibrillation and tachysystole when once fully established; but given during a brief, transient attack it seems to have a curative action. With large doses of digitalis, the action of both is enhanced. This combination is especially advantageous in the prefibrillation stage, warding off or at least retarding the onset of the fibrillation.

Ether in Whooping Cough.—Cheinisse summarizes the experiences that have been published to date with intramuscular injection of 2 c.c. of ether. They are almost exclusively favorable. The injections are made in the buttocks, and it is a question whether the ether acts by attenuating the tendency to spasms or by direct disinfection of the tissues. Audrain never had occasion to give more than three of the injections in his cases.

Revue Médicale de la Suisse Romande, Geneva

July, 1920, **40**, No. 7

*Tests of Kidney Function. C. Pettavel.—p. 397.
Treatment of Multiple Fractures of Both Legs. C. Perret.—p. 415.
Disordered Heart Action in Soldiers. I. E. Thomas.—p. 422.
*Diverticuli of Large Intestine. G. Patry.—p. 443.
*Helminths and Appendicitis. Chassot.—p. 449.
Peritoneal Menstruation. Chassot.—p. 453.
*Ether by the Rectum. R. Martin.—p. 456.

Examination of Renal Function.—Pettavel reviews the various methods in vogue for estimating the functional capacity of the kidneys, saying that all agree in the importance of the output of urea, but that opinions differ as to whether the concentration alone or the actual output is most significant. Some specialists rely on the phlorizin glycosuria test, while others say it represents abnormal functioning of the kidneys and throws no light on natural conditions. Comparison of the findings with different tests gives the surgeon ample confidence for his work.

Diverticulitis.—Patry remarks that diverticuli of the large intestine are often overlooked at necropsy as they are small and concealed by adipose tissue. Intra-intestinal pressure is probably a factor in their development and enlargement. Feces arrested in them sets up irritation, with resulting adhesive peritonitis and fistula, the whole suggesting cancer in the lower left abdomen, especially in men of about 40 with chronic constipation. The sigmoid flexure should always be examined at gynecologic operations, as the intestinal lesion may be silent although the primary source of the pelvic disease. Roux has reported a case which simulated appendicitis on the left side, particularly on account of existing situs inversus. Other Swiss writers have published a few cases, and the first description of the clinical picture was published by Mayor in the *Revue* in 1893, but as his patients all recovered without an operation, he did not trace the clinical picture to its source but described it as perisigmoiditis.

Helminths and Appendicitis.—Nine pin-worms were found in the healthy appendix, removed on account of symptoms of grave acute appendicitis in a girl of 17. Chassot's review of the literature shows, he says, that helminths are not found in the diseased appendix—only when normal conditions prevail—but they may induce symptoms resembling those of an acute inflammatory process. Riff found oxyurids in 30 per cent. of 152 cases of supposed appendicitis, and in 75 per cent. of 63 cases in children. In 15 per cent. of Sagredo's 41 cases there was actual appendicitis in addition to the presence of the oxyuris. It is important, however, to realize that the pin-worms may be responsible for what seems to be appendicitis. Two children in the family of the case first mentioned developed similar, but milder, symptoms not long after, and Chassot felt justified in restricting his intervention to measures against the helminthiasis, and this brought a speedy cure.

Ether by the Rectum.—Martin states that the anesthesia lasted two hours in two cases he reports, and it proved very satisfactory, but transient rectitis followed in both, and one woman of 30 stopped breathing one minute after she had been changed to the Trendelenburg position and the operation was about to begin. Artificial respiration had to be kept up for over three and a half hours before she was breathing spontaneously again. The heart action kept good throughout; 75 c.c. of ether and 25 c.c. of oil had been given by the rectum. Wiart has compiled a list of 2,500 cases in which ether was given by the rectum, and there were eight fatalities and eight serious mishaps that barely escaped a fatal termination.

Revue Neurologique, Paris

April, 1920, **27**, No. 4

*The Function of the Vestibule. P. Cantaloube.—p. 305.
*Permeability of the Choroid Plexus. A. Barbé.—p. 314.
*Tabetic Ataxia. Noïca.—p. 320.
Tonus and Motor Function in Oculomotor Derangement. A. Litvak.—p. 331.
Recurring Dislocation of Jaw from Bullet Close to Angle. P. Courbon.—p. 337.
*Spontaneous Coagulation of Spinal Fluid. Lantuéjoul.—p. 339.

Mechanism of Function of Vestibule.—Cantaloube theorizes that the two faces of the crista acustica of the ampulla of the different semicircular canals posses antagonistic functions, and presents anatomic and physiologic data to confirm this view. Among his arguments are some drawn from observation of nystagmus and of the movements of the head with inverse rotation of the eyes. He remarks in conclusion that underlying all the complexity of the vestibular apparatus we find the same simple law that regulates vision, as Grasset has conceived and developed it.

Permeability of the Choroid Plexus.—Barbé has been experimenting with the choroid plexus from cadavers, and found that it was most permeable for human blood serum. The permeability was less in the aged and in those with organic nervous disease, especially epilepsy. General paresis seemed to be an exception to this rule, increasing the permeability.

Tabetic Ataxia.—Noïca discusses tabetic pseudo-athetosis, the bilateral combined flexion of thigh and trunk in tabetics, and the associated muscular spasm during exertion.

Coagulation of Spinal Fluid.—Lantuéjoul reviews the literature on spontaneous and massive coagulation of the lumbar spinal fluid. Of the 38 cases he has compiled, there was meningitis in 5 and paraplegia in 28. Spinal fluid drawn by puncture at different levels was normal at the higher levels. Of the total 38 persons, 14 have died, and only 5 can be considered cured. Massive coagulation of spinal puncture fluid must therefore be considered a sign indicating a grave prognosis. Xanthochromia was pronounced in all but one case. The coagulation is due to an often enormous increase in the albumin content and to the presence of an abnormal constituent, namely, fibrin. Necropsy in 11 of the cases showed that the lower portion of the subarachnoid space was shut off either by the meninges growing together or by compression. The repeated lumbar punctures gave great relief. Froin was the first to call attention to this massive coagulation of the spinal fluid.

Schweizer Archiv f. Neurol. und Psychiatrie, Zurich

1920, **6**, No. 2

*Uremia. P. v. Monakow.—p. 183.
Comparative Anatomy of Optic Nerve. M. Minkowski.—p. 201. Cont'd.
Pathogenesis of Reflex Nervous Disturbances. H. Brunschweiler.—p. 253.
Epidemiology of Lethargic Encephalitis. C. Economo.—p. 276.
Psychology of Traumatic Neuroses. H. Meier-Müller.—p. 295. Cont'd.
The Individual Character and the Type of Insanity. W. Boven.—p. 317.

Uremia.—Von Monakow recalls that there are no characteristic signs of the uremic nature of a hemiplegia or other clinical picture except the knowledge of existing kidney disease. He protests against the assumption that the residual nitrogen is a reliable index of kidney functioning, and also that edema of the brain alone is able to induce convulsions. For this, some toxic factor is indispensable. With mechanical retention of urine, cerebral focal symptoms are rare, and when they occur they are variable and fleeting. With chronic nephritis, uremic coma is liable to develop suddenly without any apparent special factors at the moment to bring it on. These and other data cited suggest that something beyond the mere retention of the elements of urine is responsible for uremic coma, some factor independent of the kidneys. This factor, he thinks, is the sudden yielding of the choroid plexus to allow passage of injurious substances. As long as the choroid plexus is normal, it serves as a protecting membrane to ward off toxic fluid from the brain. When it becomes abnormally permeable, the brain is flooded with the noxious elements circulating in the blood stream. He gives photomicrograms from two cases, showing the pronounced fibrous and other changes in the choroid plexus found after death in uremic coma.

Annali d'Igiene, Rome

February, 1920, **30**, No. 2

Microscopy of Epidemic Encephalitis. G. Volpino and P. Desderi.—p. 81.
Stamping Out Variola at Milan. G. B. Uffreduzzi.—p. 85.
*Action of Alcohol on the Organism. V. Ducceschi.—p. 91.

Action of Alcohol on Blood of Dogs.—Ducceschi reports that the cholesterin and fatty acids in the blood of dogs showed a marked increase under the influence of alcohol, while the total fat in the liver increased by 300 per cent.

Pediatria, Naples

Aug. 1, 1920, **28**, No. 15

*Vaccine Treatment of Typhoid in Children. R. Kharina-Marinucci.—p. 689; Idem. F. Luna.—p. 706.
Leishmaniasis in Naples Children. N. Javarone.—p. 716.

Vaccine Treatment of Typhoid in Children.—Kharina Marinucci gives the details of eighty cases of typhoid or paratyphoid in children given treatment with vaccine. There were only three deaths and these occurred at once, before the vaccine had had time to display its action. In all the other cases the beneficial effect from the vaccine was beyond question. A single injection sometimes brought defervescence, but as a rule from three to five injections were required, given on alternate days. The vaccine did not seem to influence intestinal hemorrhage except by improving the general health, but her conclusion on the whole is that it is the best means for specific treatment of typhoid, either by the vein or intramuscular injection. Luna's four years of experience with it in a total of 175 children with typhoid shows that improvement followed it in all, and recovery occurred in ten days on an average, the range being from two to thirty-seven days, even including all the complications. Everything observed testifies, she reiterates, to a true and specific immunizing reaction, such as it is impossible to obtain with a heterologous protein. The reaction is most rapid and pronounced by the vein, and is least with subcutaneous injection. The average series was five injections by this route (total 75 c.c. vaccine); four with intramuscular injection (5.15 c.c.) and three by the vein (1.1 c.c.). The vaccines used (Di Cristina or Caronia) are less toxic than those made by other methods, while the curative action is more pronounced. The vaccines are the inactivated products of lysis of the bacteria. The technic for preparing them is described.

Policlinico, Rome

July 26, 1920, **27**, No. 30

*Auscultation as Guide in Artificial Pneumothorax. L. Borelli.—p. 787.
*Hypochlorite Salve. G. Baggio.—p. 790.
Substitute for Giemsa Stain. B. Polettini.—p. 791.
Recent Progress in Venereal Diseases. Rusca.—p. 793.

Auscultation of the Mouth as Guide for Artificial Pneumothorax.—Borelli's experience has demonstrated that by listening to the oral râles the physician may be able to detect the first signs that the induced pneumothorax is waning.

Useful Salve.—Baggio has found extremely useful to protect the skin around a suppurating lesion, promote healing and keep gauze from sticking, a white salve made with 1 part of sodium hypochlorite; 1.5 parts of boric acid; 0.5 parts of camphor; 2 parts each of zinc oxid and hydrous wool fat and 3 parts of petrolatum.

Riforma Medica, Naples

June 26, 1920, **36**, No. 26

*Improved Sphygmomanometer. G. Galeotti.—p. 581.
Modification of Sexual Impulses in the Wounded. V. Desogus.—p. 583.
*Radium Treatment of Cancer of Mouth and Throat. M. Spinelli.—p. 585.
Homosexuality and Hermaphroditism. M. Carrara.—p. 588.
The Outlook for Surgery of Vessels. E. Aievoli.—p. 589.

Improved Sphygmomanometer.—With the simple instrument of which Galeotti gives an illustrated description, it is possible to record on the same chart the minimal and the maximal blood pressure, which aids materially in estimation of the blood pressure. It is constructed on the same principle as the Pachon oscillometer, which, he says, is outranking all others at present, but it has the advantage over the Pachon that it is not necessary to interrupt the tracing to record the range of the oscillations. He adds that the Pachon may yield an error of 47 per cent. in the maximal pressure reading, but never more than 5 per cent. in the minimal. These figures were obtained by Déhon and Heitz on comparing the Pachon findings with the actual blood pressure at amputations, ascertained by inserting a manometer in the central stump of the severed artery.

Radium Treatment of Cancer of Mouth and Pharynx.—Spinelli remarks that, to judge from his personal experience, there are no cancers in this region which are not amenable to radium treatment. He describes with favorable comment a frame for holding the radium tube in the mouth.

Tumori, Rome

April 25, 1920, **7**, No. 2

*Cultivation of Cancer in Vitro. E. Veratti.—p. 81.
*Cystic Adenoid Epithelioma. L. Martinotti.—p. 92.
Hemangioma of Abdominal Wall. G. Angioni.—p. 121.
Osteoblastic Cavernoma of Cerebral Pia Mater. E. de Benedetti.—p. 141.

Cultivation of Cancer in Vitro.—Veratti gives plates showing the findings with cultivation outside of the body of mammary cancer cells from a dog.

Cystic Adenoid Epithelioma.—In Martinotti's case almost the entire face of the woman of 44 was covered with the small cystic adenoid epitheliomas. The multiple symmetrical lesions had begun to develop about twenty years before. The literature on this form of dermatosis is reviewed.

Anales de la Facultad de Medicina, Montevideo

November, 1919, **4**, No. 11

Chemical and Physical Symptomatology of the Liver. A. Chauffard.—p. 715.
Pathology and Treatment of Dyspepsia. Robin.—p. 726.
Surgery of the Stomach. V. Pauchet.—p. 742.
Abdominal Hysterectomy. J. L. Faure.—p. 747.
Some Current Urologic Operations. F. Legueu.—p. 754.
Repair of Vesicovaginal Fistula,etc. Marion.—p. 765.
Surgery of the Limbs. A. Mouchet.—p. 773.
Physiotherapy Service at Val-de-Grâce. P. Kouindjy.—p. 782.
Ventilation in Contagious Wards. J. Renault.—p. 786.

French Medicine and Surgery.—This issue of the *Anales* is devoted to nine lectures delivered at Paris in 1918 by eminent French internists and surgeons in honor of the Uruguayan physicians and surgeons who at that time were lending their services to France.

Archivos Españoles de Pediatría, Madrid

May, 1920, **4**, No. 5

Clinical Picture of Hydatid Cyst in Liver in Children. E. Nogueras Coronas.—p. 257.
*Pneumococcus Tonsillitis. A. Aurelio Ramos.—p. 273.

Pneumococcus Tonsillitis.—Ramos is convinced that this pathologic condition is more frequent than generally recognized. He relates some typical examples; in some the infection finally involved the bronchi and lungs. In one child of 2 the tonsillitis persisted with fever and great enlargement of glands for ten days, and then slowly retrogressed. There was a milky exudate on the tonsils tending to confluence. One woman of 44 developed a tender spot in the right thyrohyoid space, and the laryngoscope revealed a white exudate over the right arytenoid, and the microscope disclosed the pneumococcus. At the same time a carotid gland on the right side swelled and grew very painful. Mercury and iodid had no influence on the evolution of the membranous process. It began to retrogress the tenth day and recovery was complete a week later. The false membrane is whiter than the diphtheric but otherwise resembles it. Ramos used antipneumococcus serum but the benefit seemed to be transient. Moist heat and rest relieve, with the other measures useful in infectious sore throat. The patients seldom apply for medical aid until surprised by the long persistence of their sore throat; it lasts up to fourteen days at least. If there are no complications, the infection seems to subside harmlessly.

Brazil-Medico, Rio de Janeiro

June 5, 1920, **34**, No. 23

Botulinus Poisoning or Lethargic Encephalitis? C. de Rezende.—p. 351.

Revista de la Asoc. Médica Argentina, Buenos Aires

December, 1919, **31**, No. 182

Pathogenesis of Diabetes. A. Pi y Suñer.—p. 645. Conc'n.
*Lymphogranulomatosis. F. Arrillaga.—p. 664. Conc'n.
*Incontinence of the Pylorus. C. Bonorino Udaondo and others.—p. 714.
Tardy Hereditary Syphilis in Relation to Surgery. D. del Valle, Jr., and R. Donovan.—p. 724.
Hemangio-Endothelioma in Mediastinum with Metastases. N. Romano, F. N. Ruiz and C. P. Waldrop.—p. 748.

Lymphogranulomatosis.—Arrillaga's detailed report of eleven cases is accompanied by colored plates and photomicrographs besides illustrations in the text. Both sexes, and ages from 17 to 45 are represented. The duration of the disease was from one month to eight years in his cases. In one man of 41 the disease proved fatal in four months, during which there was constant and high fever, with leukopeny down to 1,400 whites.

Incontinent Pylorus.—In the case described, the man of 36 had evidently a duodenal ulcer and also acquired syphilis. Improvement was realized under specific treatment, but the pains in the stomach and the occult blood in the stools persisted. Roentgenoscopy showed the pylorus open like a simple tube, the stomach emptying itself at once at every examination with the contrast meal. The man was relieved of all subjective disturbances by a course of medical treatment for the ulcer, and refused an operation to correct the incontinence of the pylorus as he did not feel incommoded thereby.

Revista del Instituto Bacteriológico, Buenos Aires

January, 1920, **2**, No. 4

*Normal Beef Serum in Treatment of Anthrax. R. Kraus and J. Bonorino Cuenca.—p. 1.

Normal Beef Serum in Treatment of Anthrax.—The 277 pages of this monograph relate in detail the experiences with normal beef serum in treatment of 380 cases of anthrax under the auspices of the institute, which is part of the public health service. Other cases from other hospitals bring the total to 415, with a total mortality of 4.3 per cent. Omitting the cases of intestinal localization of the anthrax, which are always fatal, the mortality of the 380 series was 3.4 per cent., but including these, it was 6.2 per cent. In the last 180 cases the mortality was 11.6 per cent., or 3.4 per cent., omitting the intestinal cases. Six of the patients with septicemia recovered. Normal beef serum should not be relied on in cases of intestinal anthrax, but it is difficult to differentiate this. The authors say that no symptoms from the digestive tract were apparent in their cases until a day or two before death. The normal serum method was mentioned editorially in THE JOURNAL, Sept. 29, 1917, p. 1085.

Revista Médica del Uruguay, Montevideo

June, 1920, **23**, No. 6

Treatment of Hydatid Cysts of the Liver. G. Arrizabalaga.—p. 243.
Diphtheria and Diphtheria Antitoxin in Uruguay. L. Morquio.—p. 260.
*Interstitial and Angular Pregnancy. A. Turenne.—p. 290.

Angular and Interstitial Pregnancy.—Turenne comments on the unreliability of signs of pregnancy in abnormal cases, especially when the ovum is embedded in the intramural portion of the tube or in the angle of the uterus. Rupture is inevitable with the former, the so-called interstitial pregnancy, and the extravasated blood around the ovum makes the tumor very hard, while an ovum in the angle keeps soft. In two cases described, the angular pregnancy was mistaken for an ovarian tumor, and the laparotomy showed a groove between the two halves of the uterus, the chief cause of the blunder. In a third case, the pains and palpation findings suggested pregnancy with myoma, and sudden exacerbation of the pains and symptoms of slight peritoneal irritation, indicating necrobiosis of the myoma, called for laparotomy. In all three cases the pregnancy proceeded unmodified. With interstitial pregnancy, the shape of the uterus grows constantly more abnormal while with an apical pregnancy the abnormal shape at first usually grows more regular. But the reverse was the case in his three experiences. Retention of the placenta, especially with abortion at the third or fourth month, is particularly liable with angular pregnancy. In conclusion he warns to suspect interstitial pregnancy and be prepared for rupture whenever the abnormal shape of the uterus attracts attention.

Semana Médica, Buenos Aires

June 10, 1920, **27**, No. 24

*Anatomy and Physiology of Lower Segment of Uterus During Pregnancy. E. A. Boero.—p. 771.
Case of Cephalic Tetanus. N. D. Rosso.—p. 793.
Radium Treatment of Cancer of Uterine Cervix. J. Iribarne.—p. 795.

The Lower Segment of the Uterus.—Boero's extensive article describes with nine illustrations conditions in Bandl's ring and vicinity during pregnancy and parturition, and discusses the causes of dystocia in general.

Deutsche medizinische Wochenschrift, Berlin

March 11, 1920, **46**, No. 11

Surgical Treatment of Nephritis in War and Peace. H. Kümmell.—p. 281. Cont'd.
The Present Influenza Epidemic. U. Friedemann.—p. 283.
Relation of Gastric Carcinoma to Gastric Ulcer. Konjetzny.—p. 285.
The Friedmann Tuberculosis Treatment. J. Weicksel.—p. 287.
Bacteriologic Findings in Lethargic Encephalitis. W. Loewenthal.—p. 289.
Significance of Fat in Nutrition of Children. A. Orgler.—p. 290.
Fat as Disturbing Factor in Infant Feeding. Kleinschmidt.—p. 292.
Hutchinson's Teeth. H. Davidsohn.—p. 295.
Traumatic Meningocele in Adult. C. Esser.—p. 296.
*Culture Medium for Diphtheria Bacilli. K. Klein.—p. 297.
Roentgen-Ray Treatment of Hypertrichosis. F. M. Meyer.—p. 297.
*Report of the Cologne Arsphenamin Commission. Meirowsky.—p. 299.
Dermatologic Hints for General Practitioners. M. Joseph.—p. 299.

Culture Medium for Diphtheria Bacilli.—While admitting that the Löffler serum furnishes a good nutrient medium for diphtheria cultures, Klein states that it has certain disadvantages: absolute sterilization is not possible; it is not clearly transparent; it is not mobile, and it is liquefied by certain germs. He has therefore prepared a medium which is being used in the Cologne Hygienic Institute and gives good satisfaction. Nine parts of blood serum and 1 part of a 15 per cent. solution of sodium hydroxid are kept at a temperature of 37 C. for forty-eight hours. The mixture is then neutralized with hydrochloric acid, mixed with 4 parts of nutrient agar and heated for half an hour at 105 C. Klein claims for his nutrient medium that it is sterilizable, transparent, stable, can be poured and requires very little blood serum.

Report of the Cologne Arsphenamin Commission.—Meirowsky states that the commission appointed to investigate arsphenamin accidents finds that the dosage plays a decided part in the occurrence of fatalities following its administra-

tion. As regards neo-arsphenamin, it was found that if a dosage of 0.6 gm. was never exceeded, the danger of a fatality was only 1:162,800, whereas in the case of hospitals and physicians that were in the habit of going beyond this dose (0.6 gm.) the danger was fifty-four times as great, namely: 1:3,000. Overdosage is one of the main causes also of cases of encephalitis and dermatitis. In all cases of dermatitis and in six out of ten cases of encephalitis overdosage could be shown to have been responsible. There seemed to be no special sex incidence. Almost half of the deaths occurred following either the second or third injection. However, the commission confirmed the frequently noted observation that a timid administration of the remedy or courses of treatment extending over too short a time favored the reappearance of nerve symptoms. A report on the untoward effects of silver arsphenamin is to follow.

Monatsschrift für Geb. und Gynäkologie, Berlin

July, 1920, **52**, No. 1

*Import of Twisting of Umbilical Cord. A. Hochenbichler.—p. 1.
*Induced Premature Delivery. R. Grote.—p. 28.
*Reflex Isolated Paralysis of Colon. Quante.—p. 42.

Twisting of Cord as Sign of Separation of Placenta.—Hochenbichler has been making a special study of the behavior of the umbilical cord in 108 maternity cases. At the first contractions of the uterus in the third stage of labor, as the wall contracts under the placenta, blood is forced into the placenta and down into the cord, the distention from this in the spiral vessels of the cord causing it to writhe. This "pressure twisting" indicates that the placenta is still adherent. The first contraction after delivery is generally so vigorous that the wall contracting under the placenta usually pries it off, so that the most favorable moment for the separation of the placenta is thus the first four or five minutes of the after-birth stage. When the placenta is loose and starts on its passage out, it twists on its axis, and the cord twists to a certain extent with it. The placenta may turn at once to 180 degrees, and the effect of this on the cord is a reliable sign of progressing expulsion. He theorizes to explain the mechanism of the twisting of the placenta. In his 108 cases, the placenta was cast off within the first four minutes in 78.7 per cent. and no twisting of the cord from distention with blood was manifest. The twisting of the cord from twisting of the placenta can occur only with a detached placenta, and the cord usually slides down a little lower at the same time.

Premature Delivery with Contracted Pelvis.—Grote declares that not the duration of the pregnancy but the relative size of the fetus and the true diameter should form the criterion as to the date for inducing premature delivery with a true diameter of from 7.5 to 8 cm. or more. He measures the true diameter with the Zangemeister gage, and determines the size of the fetus by palpation. The moment for intervention is shown by a chart curve reproduced. The premature delivery is induced with the dilatable bag, and in the twenty-two cases of the kind, among the 1880 deliveries at the Marburg maternity in four recent years, the children were all delivered alive with the exception of one macerated fetus. In the forty-two previous childbirths of the same mothers, 20 per cent. of the children spontaneously delivered had died, and 50 per cent of those requiring instrumental extraction. The details of the twenty-two cases are tabulated, including the effect at each application of the metreurynter. A true diameter of 7.5 cm. is regarded as the limit below which this system of management cannot be applied.

Isolated Paresis of the Colon of Inflammatory-Reflex Origin.—Quante describes the necropsy findings in a case of this kind following an attempt at criminal abortion.

Münchener medizinische Wochenschrift, Munich

May 14, 1920, **67**, No. 20

*Vaccines in Influenzal Pneumonia. Baerthlein and Thoma.—p. 563.
The "Language" of Bees. K. von Frisch.—p. 566.
*Indications for Roentgenotherapy in Carcinoma. C. Müller.—p. 569.
*Strophanthin with Digitalis Treatment. Mory.—p. 570.
Increase of Morphin Addictions. E. Kahn.—p. 571.
*Turpentine in Inflammatory and Suppurative Processes. M. Mayer.—p. 572.
Liver Fever with Congenital Syphilis. A. Baer.—p. 572.

Bacteriotherapy in Influenzal Pneumonia.—Baerthlein and Thoma found intramuscular injections of autogenous vaccines efficacious in influenzal pneumonia.

Indications for Roentgenotherapy in Carcinoma.—Müller states that, contrary to the usual opinion, the variation in susceptibility to roentgen-ray treatment of carcinoma from patient to patient is not great. Taking the erythema skin dose at 100 per cent. as the standard, the range will lie between 90 and 110 per cent., which is not a wider variation than is found in the effect of roentgen irradiation of the normal skin in different patients. He thinks that in roentgenotherapy the main question—regardless of whether a tumor is operable or inoperable—is whether it is possible for the full carcinoma dose to be absorbed by the tumor and the endangered surroundings. If this is possible, then roentgenotherapy is justifiable in both operable and inoperable cases. If this is not possible, roentgenotherapy should not be considered either in operable or inoperable cases, in view of the danger of exciting a tumor to increased activity.

Intravenous Injections of Strophanthin in Relation to Digitalis Treatment.—Mory claims to have shown that strophanthin if given in carefully adjusted doses, beginning with only 0.25 or 0.5 gm., and injected slowly into the vein, a drop at a time. can be given with perfect safety along with digitalis. Before heeding these precautions, there had been three fatalities at the clinic, in the course of years, for which strophanthin seemed to be responsible. It often seems to supplement an otherwise inadequate effect from the digitalis. By means of strophanthin a crisis can sometimes be passed, and the ground gained by the strophanthin can then be held by continued doses of digitalis.

Oil of Turpentine in Inflammatory and Suppurative Processes.—On the basis of theoretic considerations and many years' experience in an extensive country practice, Mayer recommends the use of oil of turpentine internally in certain suppurative and inflammatory conditions; especially in empyema following resection, and in appendicitis when first-class surgical assistance is not available, and the patient's condition will not permit of his being removed to a hospital.

Therapeutische Halbmonatshefte, Berlin

April 1, 1920, **34**, No. 7

*Progress in Treatment of Gonorrhea. O. Schwarz.—p. 193.
*Treatment of Toxicosis of Pregnancy. R. Freund.—p. 196.
Treatment of Epilepsy with Phenylethylbarbituric Acid. H. Kress.—p. 200.
*Recognition and Treatment of Melanosarcomas. G. Axhausen.—p. 203.
Drug Calciuria in Infant. Klotz.—p. 206.

Progress in Treatment of Gonorrhea.—Schwarz discusses the value of Weiss' method of treating gonorrhea by high temperatures. Gonococci are killed by a temperature of 107.6 F. and their growth is retarded by a temperature of from 102 to 104 F. The patients sit in a deep tub bath the temperature of which is gradually increased. In extreme cases a blood temperature of 109.4 is thus attained; but even when such high temperatures are not reached, it is claimed that a prompt cure of gonorrhea was effected by one or two baths. The treatment is well borne by carefully selected patients. Scholtz and Dunker, combining the Weiss method with injections and partial baths instead of full baths, have secured favorable results. Others have reported untoward incidents in connection with the treatment, especially in dealing with children. As for biologic methods, Schwarz finds that commercial gonococcus vaccines give good results, and says that autogenous vaccines are not as expeditious and are scarcely more efficacious than the polyvalent vaccines. Provocative tests are a valuable means of lending greater certainty to a doubtful diagnosis.

Treatment of Toxicosis of Pregnancy.—In cases of mild toxicosis (more especially hyperemesis, dermatoses, neuralgias) Freund recommends subcutaneous injections of from 180 to 200 c.c. of Ringer's solution at body temperature. In recurrences he advocates the repetition of the dose, or intravenous injection of from 20 to 30 c.c. of normal horse or human serum. In the severe types of toxicosis, especially eclampsia,

immediate extraction of the child is indicated at term if this can be brought about by mild measures, but in other cases, with inadequate dilatation of the cervix, bloodletting plus the Stroganoff prophylactic method of treatment should be carried out, and this method of management should be repeated at need to tide the patient along until the child is born, unless special exigencies of the case demand operative interference.

Recognition and Treatment of Melanosarcomas.—Axhausen reports three cases, with recovery, to show that melanosarcomas are often overlooked until they have reached an advanced stage, and urges, therefore, that we should pay more attention to pigmented nevi when making general examinations. If a prominent pigmented tumor differs from ordinary pigmented nevi in hardness, in its smooth surface, and its tendency to a bluish black color, it should be extirpated.

Wiener klinische Wochenschrift, Vienna

Aug. 5, 1920, **33**, No. 32

Otosclerosis in Relation to Tetany. H. Frey and K. Orzechowski.—p. 697. Cont'd.
Case of Peripheral Pressure Neuritis with Tetany. Beth.—p. 701.
Knee Joint Injuries in War. A. Brenner.—p. 703.
Anaerobic Infection Following Gunshot Injury of Lung. L. Schönbauer.—p. 706.
*Effect of Zuntz' Hair Stimulant. H. Fuhs.—p. 707.

Zuntz' Hair Stimulant.—See Current Comment, Sept. 11, 1920, p. 748.

Zeitschrift für Tuberkulose, Berlin

July, 1920, **32**, No. 4

*Danger from Bovine Tuberculosis. F. Schaeffer.—p. 193.
Prevalence of Tuberculosis in Cattle. W. Seifert.—p. 206.
Epidemiology of Tuberculosis. H. von Hayek.—p. 219.

Bovine Tuberculosis.—Schaeffer presents evidence that there has been no proportional increase in the numbers of cases of bovine tuberculosis in man during the war. Questionnaires sent to veterinarians have failed to show any increase in the number of cases of tuberculosis in cattle in Germany.

Zentralblatt für Gewerbehygiene, etc., Berlin

January, 1920, **8**, No. 1. Only medical articles listed

*Work, Fatigue and Accidents. E. Guth.—p. 1.
Protection of Workmen against Refrigerating and Lubricating Substances. H. F. Ziegler.—p. 11.
*Laying Dust in Transvaal Mines. Junghans.—p. 14.
Ropemakers' Cough. E. Ebstein.—p. 20.

Work, Fatigue and Accidents.—Guth points out the relations between fatigue in work and accidents, and proves statistically that accidents occur more frequently in the last working hours, being also of a more serious nature. Considering this increase in accidents, and the decrease in work done during the last working hours, he concludes that not only workmen, but also the employers have interest in reducing the number of working hours.

Removal of Dust in Transvaal Mines.—Junghaus states that the removal of dust and gases and the ventilation in mines should be considered as a whole. Water is the best factor to be used; it prevents dust, removes gases and cools the air. The spray should be extremely fine and under high pressure. In the Transvaal mines where the dust used to be tremendous and tuberculosis spreading fast, this system of water spraying to lay the dust has met with remarkable success, the death toll due to tuberculosis having fallen to one fifth.

Zentralblatt für Gynäkologie, Leipzig

June 26, 1920, **44**, No. 26

Intravenous Injections to Induce Twilight Sleep. C. Eisenberg.—p. 688.
Simplified Technic for Scopolamin Twilight Sleep. P. W. Siegel.—p. 693.
*Indications for Ventrifixation of Uterus. Ekstein.—p. 706.

Indications for Ventrifixation of the Uterus.—Ekstein discusses ventrifixation of the uterus as a palliative operation following unilateral adnexa operations for any cause. Unilateral extirpation of the adnexa, with the unavoidable peritonization of the stump, leads in the majority of cases to displacement of the uterus; the ligaments are shortened, and this entails usually retroversion or lateroversion. In view of the likelihood of displacement occurring after unilateral adnexa operations, Ekstein, for more than twenty-five years, has always supplemented them with ventrifixation, and has found that this method gives uniformly good results. He describes his technic in detail.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

July 31, 1920, **2**, No. 5

*Tumors in Cerebellopontile Angle. L. Muskens.—p. 380.
Pseudosenile Cachexia in Syphilitics. J. Roorda Smit.—p. 394.
Accommodation by Shifting the Spectacles. G. J. Schoute.—p. 403.
Lead Poisoning. H. A. Lubbers.—p. 409.

Cerebellopontile Tumors.—Muskens describes with illustrations a case in which a gliosarcoma as large as a goose egg in the cerebellopontile region was relieved by Cushing's technic, with the result that the impending blindness was warded off, and the woman of 27 had two months of relief. The first symptoms had been unilateral disturbance in hearing three years before; six months later vomiting, and after another year disturbance in gait. In a second case all the symptoms subsided during a course of roentgen-ray treatment, but Muskens warns that spontaneous remission with these tumors is not uncommon. However, the subsidence of the deafness, choked disk, atrophy of muscles and neuralgia in the face is certainly gratifying, but time alone will tell whether it is permanent. Agonizing trigeminal neuralgia had been the predominant symptom in one young man, but the incipient choked disk finally discovered (July, 1919), gave the clue to the tumor, and a scrap excised from an enlarged gland in the neck showed scanty karyokinesis. Three series of exposures were given, first by the nose, cheek, masseter and temple, with very hard rays, to the erythema dose, 30 H units; 190.000 voltage; filter, 0.5 mm. zinc. The second series, a month later, from the right and left sides of the neck; 20 H units. This was repeated a month later and, finally, after a two month interval, exposures exclusively on the left side of the neck where there had been some enlarged glands. The success surpassed the highest anticipations. Muskens reviews the history and literature on cerebellopontile tumors, saying of them, "In the last ten or fifteen years a silent drama has been acted before our eyes, or rather a deadly earnest game, where the stake is human lives and the counters are lost reputations of neurologists and surgeons."

Norsk Magazin for Lægevidenskaben, Christiania

August, 1920, **81**, No. 8

*Otogenous Pyemia, Sinus Phlebitis and Sinus Thrombosis. F. Leegaard.—p. 745.
*Vincent's Angina. J. Voss.—p. 778.
Carrel-Dakin Treatment of Suppurating Lesions. N. A. Nicolaysen.—p. 786.
*Habitual Volvulus of Sigmoid Flexure. G. Schaanning.—p. 804.

Otogenous Pyemia.—Leegaard analyzes about twenty cases of otogenous pyemia with sinus phlebitis or sinus thrombosis. A metastatic abscess can develop in a muscle without any subjective symptoms. The patient should be palpated from head to foot every day to discover any lesion of the kind developing insidiously deep in a muscle. He advocates partial resection of the mastoid in every case of acute otitis in which the fever keeps up for a week after the drum membrane has been properly opened, even if there are no other symptoms. The only regret may be that the intervention had not been earlier.

Vincent's Angina.—Voss has recently had fifteen men and one woman in his service with Vincent's angina, and found that arsphenamin has an absolutely specific action. He applied it to the ulcerations twice a day in a 2 per cent. glycerin solution, and healing was complete in from two to six days.

Habitual Volvulus of Sigmoid Flexure with Megacolon.—In Schaanning's two cases there had been symptoms for some time suggesting intermittent partial obstruction, and finally fatal ileus. Necropsy explained this by a very long and large loop with a tendency to volvulus, which had evidently recurred and corrected itself from time to time.

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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, NO. 13 CHICAGO, ILLINOIS SEPTEMBER 25, 1920

THE MALARIA AWAKENING OF THE SOUTH *

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The average practicing physician or public health official is not generally supposed to be a man of affairs, dealing in stocks and bonds, conversant with market quotations and the various phases of modern business; nor is he closely identified with the agricultural development of the country in its larger aspects. The proper selection and rotation of crops and the relative values of improved breeds of domestic animals as determined by experience and the latest live stock standards are the study of the progressive farmer. The time and the thought of the physician and the health officer are occupied in protecting and conserving the health of those who are laying the foundations and building the superstructure of our economic wealth, and thus, while contributing indirectly in no small measure to the success of modern business and farming projects, they are not an integral part of either group of these workers. For this reason it may be that some of us have not fully realized the enormous agricultural and business growth that is taking place in the South at the present time. If so, reference to the crop reports for the Southern states, to increased land values and tax assessments, and to new business enterprises incorporated will bring speedy conviction as to the reality of this flood of business prosperity which has spread over the South from Virginia to Texas, and which can be permanently checked by only one thing—malaria.

What influence will this new development of Southern land and industries have on the old, old problem of malaria? Will it help in the ultimate solution of the problem or tend merely to enlarge and complicate it?

What relation will malaria bear to the continued growth of these industries on which the future prosperity of the South depends?

Lands have been cleared before and industries started, only to stagnate or suffer abandonment, after a hopeless struggle, to the malaria-carrying mosquito. It is hardly conceivable, however, that in this instance history can repeat itself on so large a scale. We who are interested in preventive medicine have learned something, and the business interests, studying every factor that enters into the cost of production, have learned much more. We have learned in a general way how to protect individuals and communities against malaria infections, while progressive business men have figured out exactly, in dollars and cents, the cost of this disease in impaired efficiency and decreased production among their employees.

Asst. Surg.-Gen. H. R. Carter has expressed the opinion that actual malaria control demonstrations and the education of the children in the public schools are the only educational measures now being employed which are of general practical value in impressing on the individual or community the importance of malaria control as a health measure. This opinion is probably correct. Individuals and groups are notoriously slow in applying to themselves the knowledge that has been gained of preventive medicine. But industrial organizations and business concerns, looking at the subject from an entirely different angle, have been quick to see the importance of protecting the health of their employees as a business proposition solely.

They have been told that malaria, through sickness and decreased efficiency, causes a greater economic loss to the malarious sections of the South than all the other preventable diseases combined—approximately a billion dollars a year—and from study of their own payrolls and cost sheets, they have been convinced of the truth of this appalling statement. Now all they ask is, "What shall we do to prevent this constant drain on our labor efficiency, and what will it cost permanently to protect our plants and maintain their output at a normal figure?" "We want to operate in the South close to our raw materials, with its cheaper labor, surplus power and ideal working climate, but we cannot compete with similar plants in the North and continue to pay the malaria tax. We must have relief, else we stagnate or must move."

Those of us who are in a position to receive inquiries from industrial concerns regarding malaria protection have been impressed with their increasing numbers and definiteness, and their stronger insistence that relief from this burden be given to Southern industries. Chambers of commerce, railroads, industrial plants of all kinds, lumber mills and large plantations are demanding to know what method of malaria control is best suited to their location and surroundings, and which will offer them the surest protection at a reasonable cost.

This malaria awakening of Southern commercial interests from a purely business standpoint may not be prompted by what some would term the highest motives, but it is backed by shrewd business sense and offers the most immediate prospect of accomplishing malaria control on an extensive scale and permanent basis.

There are still many individuals, particularly among those who suffer most from the ravages of malaria,

* Read before the Section on Preventive Medicine and Public Health at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

who cannot be seriously impressed with the importance of this disease in relation to their own and their neighbors' health. Perhaps a generation hence a widespread appeal may be made directly on a health basis with a reasonable assurance of awakening a responsive interest, but for the present such methods are apparently wasted on the class that is most concerned.

Therefore it may be fairly questioned whether, from a standpoint of practical accomplishment, it would not be the wisest policy for health officials to convert their malaria control efforts into a purely business formula, thus:

Malaria is costing your community or plant, per year	$5,000
Malaria protection will cost you, per year	2,500
Net gain, per year	$2,500

Any progressive community or business concern can understand and will act on such a simple proposition.

If it be true, then, that a large part of the malaria problem of the South can and will be solved through agricultural development and the growth of industrial plants—both operated on strictly business principles—conserving the employees' health as a means to increased dividends, it may well be asked, what part the physician and the public health official should play in such a program. Undoubtedly a more active and important one than we have played in the past, or can hope to play by simply sermonizing on the health hazards of malaria to the general public. By familiarizing ourselves with the fundamentals of malaria control, by realizing their present limitations and, above all, by never losing sight of the fact that no community or business concern can long afford to pay more for malaria protection than it receives in return, we can insure the success of this program of malaria control based on commercial interest alone.

EXTENSION OF MALARIA CONTROL DEMONSTRATIONS

Following the successful malaria control operations of the U. S. Public Health Service in extracantonment zones during the war, and similar demonstrations conducted by the Arkansas State Board of Health, the U. S. Public Health Service and the International Health Board in certain Arkansas villages, this program of malaria control demonstrations has been extended this year to more than a hundred selected communities in eleven Southern states. These operations are being conducted under the general direction of the health departments of the different states, the U. S. Public Health Service furnishing supervision and the International Health Board financial aid. Each community has been required to provide at least 50 per cent. of the actual cost of malaria control operations, exclusive of supervision, and many of them have promptly contributed the entire amount; where this has not been done, the state department of health and the International Health Board have provided the remainder.

The selection of these communities was made by the various state health officers within their respective states, following a malaria survey of each locality. Many communities that were surveyed were not selected, either because they were unsuited for the purpose in view, or not yet ready to undertake malaria control operations on a permanent basis. In each case selection was made on practical grounds, such as high malaria incidence, feasibility of mosquito control, moderate per capita cost of initial operations and maintenance, favorable local sentiment, and future support.

These demonstration sites have been scattered throughout the malarious sections of the South with the expectation that their influence will spread and be felt over the entire region.

The business interests are watching these operations with keen attention, and the practical results obtained there will be applied around thousands of industrial plants in the South just as rapidly as competent advice and direction can be secured by them. Thus there will be established throughout the South bases of malaria control operations from which similar work, though possibly employing different methods, will be extended into the rural districts as rapidly as agricultural development and the cost of control operations will permit.

The practicing physician can enter into this program of malaria control with enthusiasm and the full assurance that he will share in the increased prosperity of the community to which he belongs. Some short-sighted physicians have felt that such antimalaria campaigns are conducted directly against them and their legitimate revenues, but this is a complete misconception of the facts. It may be that his collections will show an immediate decline; but ultimately the physician profits as his patients prosper, and whatever tends to increase their earning capacity will be reflected in the greater size and more prompt payment of his bills. The medical care of an impoverished community is always a work of charity, but the same community when freed from its malaria burden can well afford to pay for a more generous medical service than it has ever known.

The physician can aid in this program by the exercise of greater care in the diagnosis of malaria cases. It is notorious that the diagnosis of malaria in malarious regions is not made with the same precision that is expected in other diseases. Perhaps there are many reasons for this laxity, this anomaly as applied to malaria diagnoses—custom, convenience and popularity all point the way to a diagnosis of malaria in most febrile cases occurring in malarial regions. And when it is considered that in communities where malaria is prevalent, malaria must always be excluded, and that quinin dosage is the time-honored method employed for this purpose, it can readily be understood how the attending physician is practically forced into making a tentative diagnosis of malaria, which, although incorrect, need never be brought into question. It seems hardly fair to criticize the general practitioner too severely in this matter; but he certainly should employ all modern methods in establishing a diagnosis in doubtful cases and perhaps should display more readiness to correct one not justified by the course of the disease or its failure to respond to quinin medication. The physician who is unwilling to do these things is not fair to himself, to his patient, or to the community in which he lives.

The physician can aid in this program by exercising more care in the reporting of malaria cases to the proper health authorities. From a public health standpoint the reporting of all malaria cases is not so important, perhaps, as the reporting of typhoid and the eruptive febrile diseases, because malaria is an endemic disease and because we are at present powerless to control the movements of the most dangerous malaria carrier. If, however, we are entering on an extensive malaria control campaign throughout the South, as we believe to be the case, it is necessary that we know the

extent of the malaria problem in different localities in order that there may be no wasted effort and that a proper measure of results obtained may be secured. In no Southern state, except Mississippi, is malaria at present reported with sufficient exactness to enable us to do more than estimate these figures.

Perhaps the greatest assistance which the physician can give to this program of malaria control is in the adequate treatment of patients coming under his care. It has been found that the quantity of quinin necessary to control active malaria symptoms, and the duration of treatment usually given such cases, are entirely inadequate to prevent the development of sexually mature malaria organisms in the patient, and future relapses of the disease. Untreated and imperfectly cured patients usually become malaria carriers, the reservoir from which all future infections spring.

STANDARD TREATMENT FOR MALARIA

Following extensive investigations of Dr. C. C. Bass in the treatment of malaria in Bolivar and Sunflower counties, Mississippi, the National Malaria Committee has formulated a standard treatment for malaria:

> For the acute attack, 10 grains of quinin sulphate by mouth three times a day for a period of at least three or four days, to be followed by 10 grains every night before retiring for a period of eight weeks. For infected persons not having acute symptoms at the time, only the eight weeks' treatment is required.
>
> The proportionate doses for children are: Under 1 year, one-half grain; 1 year, 1 grain; 2 years, 2 grains; 3 and 4 years, 3 grains; 5, 6 and 7 years, 4 grains; 8, 9 and 10 years, 6 grains; 11, 12, 13 and 14 years, 8 grains; 15 years or older, 10 grains.

The committee does not claim that this is a perfect treatment, or even the best under all circumstances, but it does believe that in the great majority of cases this treatment will prevent relapses and the development of malaria carriers.

This standard treatment should be approved by the American Medical Association and by every state and county medical society in the South, and every practicing physician should follow it as nearly as practicable, using all means in his power to impress on his patients the importance of thorough continued treatment after the disappearance of active malaria symptoms.

DUTIES OF THE HEALTH OFFICER

What should the public health officer do to further malaria control measures undertaken by commercial interests? He should stand ready at all times to furnish competent advice concerning the extent of the malaria problem under consideration—the feasibility of its control—and the method or methods best suited for this purpose. These efforts at malaria control, although financed by private business concerns, will result in general public good; therefore they are entitled to receive from the public health officer such support as may be needed to insure their success. Not only this, but some protection should be afforded them from surrounding communities that are unwilling to finance malaria control operations for their own benefit.

The health officers of the Southern states should undertake to secure such legislation as may be necessary to prevent the increase of malaria, resulting from agricultural and industrial development—"man-made malaria," as Dr. Carter calls it—particularly in relation to (1) drainage projects, (2) highways construction, (3) new construction of railroads, and (4) impounded waters. The state health officer should be given proper legal authority to advise in the planning of these new projects so far as they may affect malaria prevalence. And where such undertakings will greatly increase the prevalence of malaria, the health authorities should have the power to prevent their construction.

The state and local health authorities should use every effort to secure the enactment and enforcement of an ordinance directed against the propagation of mosquitoes in those cities and incorporated towns that lie within the malarious districts of the state. The enforcement of such an ordinance in communities adjacent to those industrial plants which have already undertaken malaria control will add strength and completeness to their work.

In every state in which malaria is a serious sanitary problem, there should be created in the state health department a malaria division for the compilation of malaria statistics and the direction of malaria-control measures. Too many vague estimates of malaria losses and too few accurate figures have been given to the public in the past. Among its other duties, the malaria division should collect and distribute correct information concerning the yearly losses due to malaria for each county in the state. One of the prime duties of the state health department should be to secure the reporting of malaria cases as successfully as has been accomplished with other communicable diseases. The difficulties in accomplishing this end are appreciated; but if report blanks are prepared in the simplest form in the beginning, it can be done.

This program of malaria control, through the awakening of business interests, does not require an extensive educational campaign in order to insure its success: the results accomplished around each industrial plant will speak for themselves. But the public should be kept informed through the local press of the progress being made and the results obtained in each operation.

One would hardly dare to prophesy the extent to which this movement for malaria protection to Southern industries will affect the malaria problem of the South as a whole; but with thousands of industrial concerns and the communities surrounding them (representing one fourth of the population of the South) under proper malaria control, it is not too much to hope that the direct effect will be appreciable, and that indirectly it may lead to the removal of this handicap to Southern prosperity from all except the most remote settlements.

ABSTRACT OF DISCUSSION

DR. GRAHAM E. HENSON, Jacksonville, Fla.: Considering malaria as a national health problem, we might ask ourselves why the disease is endemic in all areas of the world having a suitable topography for the mosquito. For several hundred years we have been in possession of a specific that will not only control and cure the disease, but will even prevent the formation of the sexual forms in the human host. We know that after the sporozoites are introduced into the human host by the mosquito, asexual reproduction goes on for a more or less indefinite time, depending on the resistance of the patient, treatment and other factors. We know that if we properly attack the parasite in the human host at any time during this period, the sexual forms will never form in the human host, for while evolution goes on and the merozoites, the product of succeeding sporulations, multiply with each succeeding sporulation, the sexual forms will never develop if the specific is properly applied in proper dosage for a sufficient time. The answer to my question is that we are not properly

applying the specific. This should not in any way interfere with the eradication of the mosquito where it is feasible to control and eradicate this insect. But our work should be more confined to the treatment of the infections in their incipiency in the human host, especially in those areas where it is not possible to eradicate or control the mosquito.

DR. A. C. CHACE, Texarkana, Ark.: The St. Louis Southwestern Railway was one of the first industrial concerns to take up the control of malaria as an economic problem. The cost of having malaria was greater than the cost of undertaking the control of the disease. We have a centrally located hospital, and we have determined that there has been a reduction of about 70 per cent. in malaria cases treated in that hospital. In the towns through which this railroad goes, from St. Louis down to Texas, interest was stimulated among the merchants and others and in that way we contributed to the welfare of our communities as well as to the welfare of the industries concerned. What was the cost of getting rid of malaria? We determined that approximately 30 cents per capita, under some conditions, will get rid of malaria. That expenditure will not get rid of the mosquitoes, but it will reduce the anopheles to such an extent that malaria will not become an economic problem. This work is done in the three ways mentioned by Dr. Fricks: by drainage, by quinin and by eliminating the carrier. We have a standardized treatment very similar to that which Dr. Fricks has given, except that we use another salt which is more soluble, and we mix with the quinin some powdered ginger root to increase absorption. The result has been that these cases have been almost negligible among our employees since this plan has been put in operation.

DR. C. C. BASS, New Orleans: I wish to endorse and emphasize one particular phase of Dr. Fricks' paper. Numerous demonstrations have been made throughout the world, and recently a great many have been made throughout the United States, showing that it is possible, and it is economical, to control malaria by mosquito control. These demonstrations, however, have been in comparatively limited areas, and have usually been in towns and villages. Most of the malaria in this country is in the rural districts; as a matter of fact, the malaria problem is largely a rural and not an urban problem. Whether it will be practical to employ the same methods of mosquito control, and thereby control malaria in rural sections, remains to be demonstrated. However, if such a plan is feasible and successful, in all probability it will be many years before a great deal of territory can be covered, and before the big malaria problem can be affected very greatly. Enormous sums of money must be expended. It is not necessary to wait until we work out and develop machinery by which we can control mosquitoes and thereby control malaria in this rural part of the country; it is possible to control it by disinfecting the malaria carrier by the standard treatment Dr. Fricks mentioned. In the particular locality with which I am most familiar it has been found that approximately from 20 to 25 per cent. of the malaria is treated by the physicians in the locality. If these physicians would cure or disinfect their patients, from 20 to 25 per cent. of the malaria would be controlled at once. The National Malaria Committee has endorsed a standard method of treatment which they hope the physicians of the South will adopt. There is considerable evidence that this standard treatment is being adopted rapidly and usually with great satisfaction. If I read the signs of the times aright, the near future holds out the promise of a considerable decline in the prevalence of malaria over this whole country, regardless of any antimosquito or sanitary measures that we may carry out. The standard method of treatment is not necessarily the best method of treatment, and it is surely not the only method that may disinfect the patient, but it is a method that will disinfect the patient with reasonable certainty, which is more than can be said for the treatment employed by many physicians at the present time. One idea that was suggested is, I think, slightly erroneous. It is with reference to the value of the history of attacks in finding the malaria carriers in a community. Our experience in comparing the blood findings with the history in 31,459 persons examined showed that only 55 per cent. of those whose blood contained parasites gave positive histories. Forty-five per cent. of those whose blood contained parasites gave negative histories as to attacks during the previous twelve months. I believe, however, that in the absence of facilities for this examination, history is useful, and it will find the majority of the infected persons, but it falls very far short of finding all.

DR. W. S. LEATHERS, University, Miss.: Malaria in our state constitutes a considerable public health problem. I have watched with a great deal of interest the various demonstrations which have been made and are being made in the control of malaria by the International Health Board and the U. S. Public Health Service. I feel certain that no one questions that malaria cannot be controlled by the extermination of the mosquito, or by the sterilization of the blood of one who is infected with malaria. I think it is conceded that we have ample information for use in the control and ultimate suppression of this disease. The foremost question at this time is: What is the most economical plan that can be used in the control of malaria from the standpoint of a county or state? The conditions which face the public health official in dealing with this disease in a public health way in a town or city and in the country are manifestly different. It is often not possible to emphasize one method in fighting malaria exclusive of other methods. For instance, it may be advisable to use all methods in a city, especially the extermination of the mosquito, while, on the other hand, there are certain rural districts where it may be advisable to emphasize the sterilization of the blood of infected persons. In advising the people of the county or state relative to the control of this disease, I am coming more and more to the point of view that we must adopt a broad program. We must not lose sight of the fact that advocating drainage is of tremendous importance not only in the control of malaria, but also in the agricultural development of the state. It would also seem advisable to emphasize constantly the importance of screening the homes for the reason that it not only serves to check the spread of malaria, but it will be of much value in the control of typhoid and other diseases of this group. In a word, these things make for comfort as well as the control of disease, and therefore we cannot afford to minimize the importance of drainage and screening. So that it appears to me that we are forced to this conclusion: that if malaria is to be eradicated in a county, the area should first be studied carefully, a survey made, the problem analyzed in a practical way and then a plan worked out which will as nearly as possible get the variations of population and local conditions essential to the control and suppression of this disease. This will be a means of attacking the disease from every possible angle, which is necessary in dealing with this difficult problem. A great deal may be done in controlling malaria by intensive educational methods. This has not been done to the extent necessary. The people are not acquainted, generally speaking, with some of the simple facts relative to this disease, or at least their acquaintance with such facts is not of such a character as to cause them to act or to apply the principles involved. The people are receptive at this time and if such information is presented to them properly, I believe that far-reaching effects will be achieved. The use of quinin in the sterilization of infected people is certainly a most valuable method. In many rural districts it is the only method that can be applied with economy. It is very necessary, however, to supply quinin to the people at cost, by having quinin stations, because in this way they are more likely to buy it and this will also probably contribute to its use. To this end, the county may be placarded and other methods used to impress the people with the importance of taking quinin in the right way when they contract this disease. Extensive demonstrations in the control of malaria have been conducted under the auspices of the Mississippi State Board of Health in Bolivar and Sunflower counties. This work has been under the scientific direction of Dr. C. C. Bass and the final report relative to the plan of operation and the results obtained will be most helpful in future public health work in the control of malaria.

DR. J. W. SCHERESCHEWSKY, Washington, D. C.: There is one thing to remember about the quinin control of malaria,

and that is the question of the limit of the supply of quinin. I doubt very much that it would be possible to apply it as the only measure, for the simple reason that I do not believe there is enough quinin to do it. The supply of quinin—quinin being a natural product—is strictly limited. Of course, it is quite possible that a substitute for quinin may be discovered. And it is highly desirable, if intensive campaigns are to be carried on, that we have a substitute for quinin. There are some features about quinin which could be improved. Then we find, as Dr. Leathers pointed out, that drainage operations, by removing malaria, will not only result in a betterment, an improvement in the health of the people, but it will add much to the material prosperity of the country by the addition of these drained lands. For instance, in certain rural sections where the chief sources of malaria are swamps, it is evident that by the drainage of those swamps we will add some extremely fertile land to the tillable land of the country, because all swamps are alluvial land, and the placing of this rich virgin land under cultivation will add to the resources of the country.

DR. JOHN A. FERRELL, New York: Dr. Fricks has indicated that the demonstrations of malaria control are being conducted in selected towns in practically all of the Southern states. I have the estimates of the cost of this work for six of the states. Thirty-five towns are included, having an aggregate population of 155,500. The estimated average per capita cost for antimosquito measures is $1.05. Of this amount the towns have contributed 63 cents; the states, 18 cents; and the International Health Board, 24 cents. Cooperative budgets for the selected towns in the other states have not yet been adopted, but the cost in them will not, I think, vary greatly from the figures quoted.

DR. JOHN P. DAVIN, New York: Last year when Dr. Guiteras, the national health officer of the Republic of Cuba, discussed this subject, he gave it as his opinion that the control of malaria in Cuba had been solved, as far as he could solve it, by the distribution of quinin to the exclusion of drainage and other methods. That was the only practical method they could employ. Dr. Guiteras seemed to be perfectly satisfied with that measure for the eradication of malaria, independent of measures employed for other purposes. It seems to me that the solution of the problem lies in the rational prescribing of quinin by physicians under the conditions laid down by the National Malaria Committee. As to the question of cost: the average individual today ought to be well able to pay the cost of a course of quinin treatment, for people are earning money in amounts that they never got before. The solution of the whole problem rests on the intelligent understanding of this question by the ordinary physician. Dr. Guiteras gave it as his opinion that the problem was practically solved in Cuba by the distribution of quinin to those who could not buy it themselves.

DR. LUNSFORD D. FRICKS, Memphis, Tenn.: The point I was attempting to bring out was that here is a method that is available. The business interests of the South are willing to undertake this control work themselves, and all that is necessary for the health authorities and the people who are interested to do is to give it support, and in that way we will certainly accomplish a great amount of good. The men who have given the problem of malaria control much thought are well aware that it is not a simple proposition. So many factors are connected with it, and there are so many ramifications that it is an extremely difficult proposition to effect complete malaria control over the entire South. There is no use saying that it is simple; that it is an easy thing to accomplish, because it is not. And for that reason it seems to me highly advisable, in fact, necessary, that we, as health officials, and as men interested in the health of the South, should take advantage of every possible means, particularly those that are practically self-supporting, such as extensive industrial interests, in enabling us to carry on this malaria control campaign. I certainly had no idea of suggesting that the state officials, who have the responsibility for the health of their states on their shoulders, should exclude any other method, such as a campaign of education, or whatever it might be. But I do believe that they should give considerable thought to the best means by which they can support the demand of the industries of the South for malaria protection and the control of malaria mosquitoes. And I am sure that from those areas in which we have shown that malaria and the mosquito can be controlled, there will spread out all over the South a wider general sentiment for malaria control.

OCULAR SYMPTOMS IN EXOPHTHALMIC GOITER *

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My object in this paper is to set forth before the members of this section in array the signs present in exophthalmic goiter; to give what appears to be a simple, obvious and reasonable explanation of the great majority of them; to remove a certain amount of confusion which I think exists generally, and to describe what appear to be several signs which have not been heretofore remarked. There is no disease in medicine wherein so many men's names have been attached to signs as in this. The underlying cause of this, I believe, is the sense of scientific justice which is inherent in us all, whereby we are willing to bestow merited immortality on those who have benefited the human race; but the exploitation of this impulse has been carried in many respects beyond the limits of reason, particularly in this disease.

The first sign, and that on which all the others practically depend as a logical sequence, is the protrusion of the eyeball forward, known as exophthalmos, or proptosis. Singularly enough, no one has attached his name, nor has any one caused to be attached any one else's name to this sign. Its cause is generally recognized as an excessive amount of blood in the vessels behind the ball lying in the orbit, particularly the veins, and an increase in the amount of orbital fat. To this may be added reasonably some degree of hyperplasia of all structures in the orbit, as the result of long-continued congestion. As stated, exophthalmos is the first and basal sign of this disease; and all the rest, with a few exceptions, follow that for mechanical reasons. My main object is to set forth this idea. I shall discuss the signs in order.

THE DALRYMPLE SIGN

The first sign, which follows logically on the exophthalmos, is that known as Dalrymple's sign. In conditions of health, when the eye looks straight to the front in the horizontal plane, the upper lid touches the cornea or covers a small portion of it, and the lower lid likewise is in contact with the cornea. In the Dalrymple sign there is a separation of the lids, so that the fissure is greater than in health. This causes a band of sclera to be seen between the upper lid and the edge of the cornea, and the lower lid and the edge of the cornea. In the majority of cases, the band is visible both above and below. Sometimes it is visible only below. I hold that this sign is due to the protrusion of the eyeball forward. It gives very largely the look of fright, dismay and even horror in exaggerated cases, which is characteristic of the disease. Let it be remarked, without misunderstanding, that

* Read before the Section on Ophthalmology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

this sign exists both when the eyes are in motion and at rest, but it should be described from the standpoint of rest. There are those who have gone far afield to seek the cause of this appearance, when the real cause lies close at hand. Some hold that the unstriated fibers of Müller's muscle are excited through the sympathetic system, which is in a more or less pronounced condition of excitement in this disease. The muscle of Müller is found in both upper and lower lids.

I believe it is a logical sequence that this sign should exist in exophthalmic goiter and in direct proportion to the exophthalmos. The upper lid is apparently retracted because the eyeball is pushed so far forward it passes the limit of the action of the upper lid, and the sclera shows below because the eyeball is pushed beyond the limit of the action of the lower lid. By this protrusion the muscles of both the upper and lower lids are stretched laterally, and the fibers are crowded on each other from before backward. This impedes freedom of motion.

Sharkey thinks that this sign, and the other two to be mentioned presently, are due to loss of power in the orbicularis rather than in the action of the levator. He is, I believe, to some extent correct, but I think he fails to attribute the loss to the right cause. He does not mention the protrusion of the eye and the pressure resulting therefrom.

There are other conditions which may produce a widening of the palpebral slit. This phenomenon is seen in excessive fright—staring of the eyes in horror. I believe the cause here is also mainly the one herein set forth. The heart action is exaggerated in fright; there is a natural congestion of the head; the eyes bulge; and the strained condition of all the muscles in the head readily adds to the venous congestion behind the eyeball. At the same time, it is not unthinkable that the fibers of Müller in both lids may be affected by reason of excessive stimulation of the sympathetic system, and so a combination of the two produces the picture.

I have seen the Dalrymple sign in a case of violent apoplexy which developed under my eyes within two hours, and which terminated in complete coma. During the convulsions the face became purple and the eyes bulged from their sockets, showing this sign both above and below the cornea. In this case, likewise, the congestion of the vessels behind the ball with irritation of the sympathetic system could alone be assigned as the cause. Shakespeare evidently observed this sign, for he puts into the mouth of Henry V, in his address to his troops, these words: "Let the eye pry through its portals like a brass cannon."

Orbital tumor produces this sign, and it is marked in proportion to the degree of proptosis. I have noticed in one case of orbital tumor that the scleral band was greater below than above, though proptosis appeared to be directly in the horizontal plane. Cocain, after repeated injections into the sac, is known to increase the size of the palpebral slit. I have never seen the Dalrymple sign marked after the use of cocain, except in cases of so-called "pop-eyes"—a condition in which the eyes lie shallow in the orbit, whether by reason of the size of the ball, shallowness of the orbit, or an excess of orbital fat.

Hysteria following childbirth is said to produce this effect, and I think it can be explained also on the theory of the congestion of the orbital vessels due to preceding efforts of expulsion of the child, together with irritation of the sympathetic system. It is said to exist in lockjaw by reason of a spasm of the occipitofrontalis muscle occurring in that disease. I have not seen this.

In amaurosis, the Dalrymple sign sometimes is seen, and again I have remarked that it is more obvious below than above. The most dramatic picture of the Dalrymple sign I have ever seen was in a case of macrophthalmos; in this case the eye bulged so far forward the lids barely reached the equator. In attempting to manipulate the eye, I caused the patient to jerk backward, when the lids retracted from the eyeball entirely. The patient stated that this happened to him at times, but by an effort with his fingers he could replace it. It was the most striking picture I have ever seen.

All these facts are consistent with the theory that proptosis is caused mainly by congestion of the vessels behind the ball, but with other factors also, and that the Dalrymple sign follows naturally on the protrusion of the ball, in direct proportion to the amount of the protrusion.

THE GRAEFE SIGN

The Graefe sign is usually described by writers before that of Dalrymple; but this is illogical, since the Graefe sign is the inevitable consequence of the existence of the Dalrymple, even as the latter is the necessary sequence of the protrusion. Whereas the Dalrymple sign is to be noted in the condition of rest of the eye when open, the Graefe sign obtains when the eyeball is in action only and in movement from above downward. It consists in the lagging of the upper lid in relationship with the upper edge of the cornea in motion from above downward. In health, if the eye is directed upward, and then follows an object—say the finger, brought down *slowly* to the horizontal meridian, the relationship of the upper lid to the cornea is preserved constantly; but in the Graefe sign the upper lid lags, and if there is sclera showing between the upper lid and the cornea in the position of rest, the band of sclera is seen to be wider as the eye descends from above downward. When the eye passes the horizontal meridian, the scleral band above becomes broader yet. When the Dalrymple band above is not visible in the primary position, I have noted that it frequently is seen as soon as the eye begins to descend from above downward. In such cases, likewise, when the horizontal meridian is passed, the band becomes still more marked. I have noticed other cases in which there was no Dalrymple sign in the primary position, and none in the descent from above to the horizontal meridian, but after the passing of the horizontal meridian, the sign became evident.

COMPARISON OF DALRYMPLE AND GRAEFE SIGNS

1. The Dalrymple sign may or may not be present in the primary position of the eye.

2. When it is present in the primary position, the Graefe sign becomes more marked as soon as the horizontal meridian is passed in motion downward.

3. When it is not present in the primary position but shows as soon as the movement downward is commenced, the Graefe sign is still more marked below the horizontal meridian.

4. When it is not present in the primary position, and does not appear in the movement downward as far as the horizontal meridian, the Graefe sign may, nevertheless, appear in the movement below the horizontal meridian.

5. The Graefe sign is more marked in movements below the horizontal meridian in all cases.

The Dalrymple sign is the natural sequence to the proptosis, and the Graefe sign is the natural sequence to the Dalrymple. I wish to lay particular stress on the fact that the Graefe sign is seen best when the eye descends very slowly. It will sometimes be lacking in marked cases if the motion downward is too quick. I have also noticed that the scleral band above in the Dalrymple sign is not of the same size at all times for the same position, but is sometimes more and sometimes less, according to the effort made by the patient to fix or relax.

These points may be looked on as overrefinements in observation; but as I have noted them, I believe they are worthy of remark, particularly since they have never been made before in print, so far as I am aware.

THE STELLWAG SIGN

The Stellwag sign has been confused with the Dalrymple, but should not be. The sign is simply infrequent winking, or nictitation, and is due, in my opinion, to the exophthalmos. The cornea, by reason of the protrusion and the retraction of the lids, becomes more or less insensible through exposure. Since the act of winking in health is caused by acute sensibility of the cornea to minute foreign bodies, air and wind, it naturally follows that if its sensibility is diminished, involuntary winking becomes lessened. Winking is nature's means of keeping the cornea smooth and moist.

Apropos of this sign, it has been noted that lacrimation—on one side or both sides—occurs in this disease; likewise epiphora. The latter is the natural result of excessive lacrimation. I have noted lacrimation mainly in exaggerated cases; and I believe it is due to irritation of the cornea from wind and foreign bodies. We cannot afford to forget, however, the possibility of the emotional element as a contributory cause.

MISCELLANEOUS OBSERVATIONS

Gifford, in 1906, reported, as an early sign in this disease, difficulty in everting the upper lid on account of its retraction and rigidity. He noted that the sign was not always present, and disappeared in from three to six weeks. I have found it always present since he remarked it, and in direct degree to the amount of proptosis. This would be natural in view of the stretching of the lid and the crowding of the muscle fibers by the protrusion of the eyeball. I doubt the accuracy of the observation that it disappears in from three to six weeks.

The Rosenbach sign consists in a trembling of the upper lid in closing the eye gently as though in sleep. He observes that the trembling disappears as soon as the eyes open, and is not present in actual sleep. I do not think this sign is characteristic of this disease alone. I have noticed it in excessively emotional people; and recently I have noticed it in a case of exaggerated exophthalmic goiter when the eyes were looking toward the front in the primary position. I believe this sign is due to instability of the tone of the muscular fibers of the levator and the orbicularis, caused by stretching from the protrusion and the exhaustion of nervous control. I think it is analogous to the trembling which takes place in the fingers when a delicate act is attempted after violent exhaustive exercise of the hand and arm. The same thing occurs with some surgeons when they attempt difficult and delicate operations. In rough acts, the hand is steady; but when delicate control is demanded, the muscular tone is lacking.

It has also been remarked that the tache cérébrale appears on the upper lids at times. This would be consistent with vasomotor irritability. I have not observed this. Pigmentation of the lids has also been noted. I have not seen this. Loss of the eyebrows and eyelashes has been observed. Nor have I seen this. An intelligent patient with exophthalmic goiter tells me that in her own case, and in the case of two sisters similarly affected, the hair on the head has become noticeably thin since the development of the disease.

An overhanging fold of skin on the upper lid has been noted. The lower lid likewise is said to be at times puffy. These two phenomena may be considered consistent with the protrusion of the eyeball. I have noted a puffiness of the upper lid, but not of the lower one. When the proptosis is very great, the cornea may become inflamed through dryness, and ulcers and pannus may occur. Protrusion would explain this. Several cases of choroiditis have been noted, and have been attributed to exposure of the cornea. I doubt that the choroiditis was due to exposure of the cornea.

Becker has found arterial pulsation of the retina in six out of seven cases. Others have made the same observations. I have never seen this. Inequality of the pupils has been noted. I have observed this. But I wish now to make the observation regarding the pupils which I believe on second thought almost every one will admit to be in accordance with his experience: In advanced exophthalmic goiter the pupils are almost always large. Dr. John Rogers, who has kindly sent me a number of his patients to study, has made this observation independently of myself. I have come to look on this fact as a consistent sign of exophthalmic goiter well expressed. I have noted that the pupils are larger in blonds than in brunettes. This would be consistent with the well known sympathetic sensitiveness of blonds. I have recently studied some other patients sent to me by Dr. Rogers and noted that the pupils in several cases were smaller than usual. These were postoperative cases. Dr. Rogers informed me that he has generally remarked that the pupils become smaller after operation.

As a rule, the external muscular system of the eye is unaffected, though bilateral paresis of the abducens has been mentioned; also that of isolated muscles. Moebius has remarked an insufficiency of combined convergence. This would be consistent with proptosis in the horizontal plane, with stretching of the internal recti, which are straighter and shorter than the external. Some have attributed these pareses to nuclear lesions, others to peripheral. I think they may readily be explained on the ground of the proptosis.

SUMMARY

1. Exophthalmos, or proptosis, is the first and basal sign of exophthalmic goiter. The great majority of the other signs follow this sequentially. The order in which the most prominent ones should be mentioned is: exophthalmos, Dalrymple's sign, Graefe's sign, Stellwag's sign.

2. In the Dalrymple sign, the sclera shows above and below the cornea and more markedly and frequently below than above. It may be absent above but present below, or vice versa. It is distinctly a sign observed in a condition of rest in the primary position of the eye.

3. The Graefe sign is seen only in motion from above downward, and is more marked in all cases in movements below the horizontal meridian. In order to demonstrate this sign, the eye should be made to move *very slowly* from above downward.

4. The pupils are as a rule larger than normal in exaggerated cases; and this sign is more marked in blonds than in brunettes.

5. Trembling of the upper lid sometimes occurs without closure of the lid.

The sign exophthalmos, taken in conjunction with goiter in the neck, tachycardia, and the nervous and psychopathic symptoms which go with these signs, form a picture that constitutes the entity known as Parry's disease, Graves' disease, Basedow's disease and exophthalmic goiter—the most marked and dramatic disease in the realm of medicine.

ABSTRACT OF DISCUSSION

Dr. Albert E. Bulson, Jr., Fort Wayne, Ind.: Dr. Claiborne's theories as to the pathogenesis of the ocular signs in exophthalmic goiter are open to doubt, especially the view that exophthalmos is due to venous congestion in the orbit and an increase in the amount of orbital fat. I take exception to his statement that exophthalmos is the first and basal sign of ophthalmic disease, and that nearly all the other symptoms follow that symptom for mechanical reasons. Exophthalmos is one of the most striking features of ophthalmic goiter, though not so constant as other symptoms. The liability of exophthalmos to rapid changes upsets the theory that exophthalmos is caused by the abnormal deposit of retrobulbar fat; or that exophthalmos is due to the serous infiltration of the retrobulbar connective and fatty tissues of the orbit on account of vasomotor disturbances caused by thyrotoxicosis. If edema should really exist there would be no reason why it should not extend to the eyelids, and edema of the eyelids is far from constant in exophthalmic goiter. Postmortem examinations do not support the theory of a passive and venous congestion of the orbit as a cause of exophthalmos. Nor is there evidence of such congestion in the veins in direct communication with the orbital veins through the nasal, frontal and supra-orbital veins communicating with the ophthalmic veins. There should be, too, a venous stasis of the retina, but there is not. As to the exophthalmos being due to a marked dilatation of all of the arteries of the orbit, caused by thyrotoxic condition, and possibly to direct stimulation of the sympathetic nerve, we should expect to find a pulsating exophthalmos, which is never observed, even in the most pronounced cases. Dr. Claiborne does not consider the permanent contraction of Landstrom's muscle on account of the permanent thyrotoxicosis excitation of the sympathetic nerve as being a causative factor in the production of exophthalmos. While this theory is quite satisfactory to many, it fails to give a satisfactory explanation for the cases in which protrusion of the eyes is so marked as to cause dislocation of the eyeball. The sympathetic is an active and potent factor in the production of exophthalmos. That the exophthalmos is due to the mechanical irritation of the sympathetic nerve by the hyperplastic goiter is open to question. The sympathetic disturbances are, in the majority of cases, secondary and not primary. The Dalrymple symptom is entirely independent of the exophthalmos itself. Enlargement of the palpebral fissure is often found in normal individuals. Likewise, the Graefe symptom is found when no or little exophthalmos is present. When accompanied with some other thyrotoxic symptoms these signs become of great diagnostic value.

The diagnostic value of the Stellwag sign has been exaggerated because sometimes, and even in the most severe case of exophthalmic goiter, it fails to be present. The Moebius symptom is not in proportion to the degree of exophthalmos. According to Crotti, the Graefe, Kocher and Dalrymple symptoms are due to the irritation of the sympathetic nerve which supplies Müller's muscles. The theory that a disturbance of the sympathetic system is responsible for all of the signs of exophthalmic goiter, and that the thyrotoxic poison acts selectively on the sympathetic system, though the sympathetic disturbances are secondary and not primary has not been disproved.

Dr. W. H. Wilder, Chicago. I cannot agree with the view that all the ocular signs of this disease can be explained by the mechanical effect produced by the exophthalmos. Dr. Claiborne does not place enough value on the nervous influence. Exophthalmic goiter may exist without any noticeable exophthalmos. Some of the later signs like that of Stellwag, might be explained by the mechanical theory, but the peculiarity of the von Graefe signs seems to be the slight spastic action of the levator muscle of Müller. Excitation of the sympathetic nervous system by a toxin is a more probable cause of this sign and of a sign I first observed about twenty-five years ago. It consists of a peculiar little jerk or twitch of the eyes at the instant of changing the movement of abduction to that of adduction. This sign can best be elicited by having the patient gaze intently at the end of the finger or at a pencil held about 18 inches in front of the eyes and moved with a slow even pace from side to side so as to make the eye perform an excursion of abduction and adduction. When the eye reaches the limit of the excursion and changes from abduction to adduction, there will be seen a more or less pronounced jerk or twitching before it regains its steady movement. I have observed this as one of the earliest signs, even before those of von Graefe, Stellwag or Dalrymple, and I have never failed to get it in any case of exophthalmic goiter that I have studied. However, it may be observed in some nervous diseases, such as multiple sclerosis and lateral sclerosis, in which one may also observe varieties of spastic tremors of which this seems to be an illustration.

Dr. Edward Jackson, Denver: In the absence of measurement of the amount of exophthalmos and the position of the eyeball in the orbit with reference to the outer margin of the orbit, the symptoms of exophthalmos must be accepted with a good deal of skepticism. For several years I have been measuring the position of the eyeball in the orbit and I have been astonished to find that there was no exophthalmos when inspection disclosed a very decided exophthalmos; or to find an inequality in position of the eyeballs, one protruding much beyond the other, when I saw no difference in their appearance. In some cases the upper and lower lids are retracted and the eye appears to stand out, but after measuring in these cases again and again it has been a surprise to me to find that the appearance of exophthalmos does not agree with the actual position of the eye in the orbit. My attention was not called to the symptom Dr. Wilder described until yesterday. It is very striking, more so than the von Graefe sign and quite as positive as to exophthalmos. The jerk of the eye amounted to two millimeters or more in a case in which it was demonstrated to me.

Dr. J. Herbert Claiborne, New York: I have studied the subject from the standpoint of Dr. Bulson, and after deliberation it appeared to me that while other factors may exist in the causation of exophthalmic goiter, mechanical pressure is largely the cause. Dr. Jackson has set forth an idea which has been occurring to me since I began to write this paper. I wish I had always had at hand an exophthalmometer to study the question from that standpoint. I have observed that when the lid comes down and passes beyond the horizontal plane the scleral band between the lids becomes more obvious. I have noted that for twenty years. In several patients recently operated on by Dr. Rogers there was marked exophthalmos before operation; in three of these cases there was no exophthalmos whatever after the operation. Dr. Rogers is not an ophthalmologist, but he knows an exophthalmos when he sees it. Dr. Bulson stated that there is no arterial throbbing. Becker has reported seven cases in which there was arterial pulsation. I have also observed that in exophthalmic goiter the pupils are larger in blonds than in brunettes. Two of Dr. Rogers' patients were blonds, and he maintained that the pupils were much larger in them before the operation than is usual in brunettes.

THREE PERTINENT QUESTIONS ON MATERNAL FEEDING*

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It is not my purpose in this paper to find fault with our textbooks. The authors of them are deserving of much credit and commendation. I merely wish to ask the question whether a divergence of opinion does not exist between some of our textbooks on pediatrics and the actual practice of a goodly number of pediatricians, on three points. The belief that this difference of opinion does exist prompts me to ask:

1. Is uncomplicated pregnancy an indication for immediate weaning?
2. May we not question the advisability of immediate weaning in mild typhoid fever?
3. Should not more positiveness exist in our textbooks regarding the advantages of complemental feeding over the method of alternating the breast and the bottle?

IMMEDIATE WEANING IN UNCOMPLICATED PREGNANCY

A fair number of our textbooks unqualifiedly state that the intercurrence of pregnancy is an indication for immediate weaning. Others leave a decided doubt in the reader's mind as to the advisability of immediate or slow weaning. A few others make it perfectly clear that pregnancy in itself is not an indication for immediate weaning.

I do not wish to question the advisability or the practice of slowly weaning a baby from the breast on the advent of pregnancy. I fully appreciate that nature does not intend or expect the mother to nurse a baby at the breast, and at the same time to nourish one in the womb. It is the advisability of *immediate* weaning, in uncomplicated pregnancy, that I think should be seriously questioned.

We fully appreciate that pregnancy "per se" does not generate toxins, or cause them to be formed in the mother. We further know that it is the exception, rather than the rule, for toxemia to complicate pregnancy, especially in these days, with expectant mothers so carefully and intelligently handled by our obstetricians. It is true that, as a general rule, pregnancy causes a diminished flow of milk, and also weakens its quality, especially the fats. Very rarely does it cause the milk to approach the character of colostrum milk, and give rise to digestive symptoms. In some cases the breasts continue to secrete abundantly, and the milk remains of such good quality that the infant could be properly nourished at the breast.

If such are the facts in the case, that uncomplicated pregnancy, in the vast majority of cases, only weakens the quality of the milk and diminishes the flow, why should we not slowly wean? If we immediately wean the baby, it will be necessary to start with a weak cow-milk formula, for the purpose of teaching the digestive organs to digest cow's milk. On this cow-milk formula it is not expected that the baby will properly thrive. If in ten days or two weeks or longer, we shall have succeeded in reaching a strong enough formula on which the baby will gain, satisfaction will be felt. Does it not seem logical, and a safer procedure, to utilize the breast-milk, even though the breast-milk is not as nourishing as before pregnancy, and slowly wean the baby? It does seem reasonable to expect that breast-milk, even though it is weak, is safer, more digestible, and just as nourishing as our weak milk formulas. If it be that the quantity of breast-milk is diminished by pregnancy, would not "complemental breast-feeding" be a more rational procedure than the sudden weaning process, especially when we remember that sudden or immediate weaning is fraught with many dangers of upsetting digestion.

The advisability of the slow weaning process is highly advisable, I will say, in our Southern states, during the excessive heat of the summer months. It has been my practice for many years to wean slowly in an uncomplicated pregnancy of the mother. I have had uniformly good results, and only in rare cases have I found it necessary to resort to immediate weaning. On the other hand, I have observed some very sad results in cases that I have seen in consultation, and in other physicians' practice, in which immediate weaning in uncomplicated pregnancy had been practiced.

As we consider the question from a commonsense point of view, does not the slow weaning, rather than the immediate or sudden weaning process, in uncomplicated pregnancy, appear to be a more rational procedure? Should not our textbooks be more instructive and specific on this point, and either approve or disapprove the actual practice of a large number of pediatricians and general practitioners?

IMMEDIATE WEANING IN MILD TYPHOID FEVER

Here again there is a diversity of opinion in our textbooks, some advocating immediate weaning, without any qualifying statements as to whether the typhoid is mild or severe, or whether the diagnosis is made early or late (say the tenth or twelfth day), or whether the breasts are secreting freely and have to be relieved artificially, or if the baby's blood shows a positive Widal reaction, or whether the mother feels equal to, and is anxious to nurse her baby. There are other textbooks in which the authors express themselves much more conservatively along this line. I wish it distinctly understood that I do not question the advisability of immediate weaning in severe cases of typhoid fever; in such cases prostration is marked, the breasts promptly stop secreting, and nursing is out of the question. It is only in the mild and very mild cases in which no direct contraindications exist that I would raise the question.

It appears to me that there are two questions to be considered in weaning a baby from the breast of a typhoid mother: (1) the danger of infection to the baby from the mother, and (2) the wear and tear on the mother. As regards the danger of infection to the baby, we know that typhoid fever is a relatively rare disease during the nursing age. Holt [1] says:

> In over 14,000 admissions to the Babies' Hospital, New York, covering a period of thirteen years, but eleven cases of typhoid were observed under 2 years of age, and but five cases of 1 year or under, the youngest case observed being a child 8 months old. In Philadelphia, where there has been much more typhoid generally than in New York, Griffith reports, under his personal observation, or in the Children's

* Read before the Section on Diseases of Children at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Holt, L. E.: Diseases of Infancy and Childhood, Ed. 7, New York, D. Appleton & Co., 1918.

Hospital, forty-five cases under 2 years, and nine under 1 year; his youngest cases were children aged 3, 5 and 9 months, respectively. It is during epidemics that most of the infantile cases are seen, but even in epidemics it is surprising that so few infants are attacked.

As nursing mothers are no more protected against typhoid and its epidemics than other persons, it does appear singular that so few babies are infected from nursing typhoid mothers. Holt's and Griffith's figures seem quite convincing on this point. If, in addition to these statistics, we bear in mind that with the average case of typhoid in the nursing mother, the baby has usually been nursing for from seven to ten days before the diagnosis is made, and if we remember that this is the time when the typhoid organisms are found most abundantly in the blood; also, if we recall the fact that mother's milk has great protective powers, containing antibodies that render the baby immune to most infectious diseases, and that positive Widal reactions have been obtained with the milk of the mother ill with typhoid, and with the blood of her healthy nursing infant, it seems reasonable to state that there is not much danger of a typhoid mother transmitting the infection through her milk to the baby.

It is true that the intimate relationship existing between the mother and her nursing baby does expose the baby to infection from other sources. However, if proper precautionary measures are taken to safeguard against it, the likelihood of infection from this source is quite small. Furthermore, it almost invariably happens that the baby does not contract typhoid when suddenly taken from the breast of a typhoid mother, on the seventh or tenth day, when diagnosis has been confirmed by a positive Widal reaction. Is it not fair to assume, therefore, that there would be no more danger after the seventh or tenth day, with proper precautions, than existed for the first seven or ten days, when no precautionary measures had been practiced?

The Effects on the Mother.—We have all seen a fair number of mild, and I might add, very mild, typhoid cases, in young healthy mothers, with very little prostration, and a rather low continuous fever. In such cases the mother is not very ill, and her ability to nurse her baby is but slightly curtailed. In several instances I have seen babies taken suddenly from the breast and given artificial feeding, while at the same time the trained nurse had to express the milk from the mother's breast, for the sake of comfort. It is in these mild cases, in which, generally, the diagnosis has been made on the seventh, tenth or twelfth day, with the breasts secreting freely, the baby's blood showing positive Widal reaction, and the mother feeling equal to nursing her baby, that I would seriously question whether it is not good practice to continue the baby at the breast, and piece out, if necessary, with a complemental feeding.

I recall three cases of typhoid fever in nursing mothers that may be of interest in this connection:

I was called in consultation to see a baby, aged 3 months, who was nursing a mother with typhoid fever. The diagnosis had been confirmed by a positive Widal reaction. The attending physician insisted on immediate weaning, the mother protesting against it. It was in the country, in summer time, poverty existed, no ice was to be obtained, and the environment was anything but sanitary. The mother had been ill some ten or twelve days, and had been nursing her baby during her illness. The baby's blood showed a positive Widal reaction. I advised that the baby continue at the breast, as the mother's case was rather a mild one, with slight prostration, and the breasts were secreting well. The mother made an uneventful recovery, the baby did well, and did not contract typhoid fever.

Another case of typhoid came into our hospital, in which the mother had been ill some ten days before the diagnosis was made. In the meantime the baby, aged 6 months, had been nursing the breast with no ill effects. Both the baby's and mother's blood showed positive Widal reactions. The case was not a severe one, and the baby was allowed to nurse the mother and was given a complemental feeding. The mother recovered; the baby did exceptionally well and did not contract typhoid fever.

Another similar case, seen in consultation, was that of a mother who had been ill twelve days with typhoid before a positive diagnosis was made and confirmed with a positive Widal test. The case was a rather mild one, with the breasts secreting generously, the baby being about 7 months of age. The physician in charge had immediately weaned the baby for two days before I saw the case. The breasts were causing discomfort to the mother, and she was very anxious to nurse her baby. The breasts had to be relieved with the breast-pump. The baby's blood showed a positive Widal reaction. The baby was put back to the breast, with no complemental or artificial feeding, and the mother and baby went through the trouble with no ill results. The baby did not contract typhoid.

ADVANTAGES OF COMPLEMENTAL FEEDING OVER THE METHOD OF ALTERNATING BREAST AND BOTTLE

By complemental feeding I mean an artificial feeding given the baby after it has nursed the mother; by supplemental feeding an artificial feeding given the baby in place of the breast. Successfully to practice complemental feeding, a few points are necessary to remember. Sedgwick, the chief exponent of complemental feeding, stresses the persistence of demand made on the breast for more milk. Also, he emphasizes the importance of emptying the breasts by manual manipulation, or finger milking, after the baby has nursed the breasts; or, in case the baby is too weak to nurse, expressing the milk by manual manipulation at least five or six times daily, at regular intervals. In his own words, he advises the expression of the milk, to be carried out thus: "The breast is grasped about 1 cm. back of the colored areola, and a milking motion is carried out toward the nipples." He calls attention to the anatomy of the breast, reminding us that the ducts which contain the milk extend but a short distance back of the areola; also to the fact that in milking the cow we do not milk the udder, but the teats. Again, he mentions that massaging the breasts may do harm by causing trauma.

I believe it is generally accepted and agreed on by the profession today that unless the mother's health contraindicates it, complemental feeding has many advantages over the method of alternating the breast and bottle—supplemental feeding. I myself think it is a serious mistake to give supplemental feeding when complemental feeding can be practiced. With supplemental feeding it almost invariably happens that we begin by supplementing one breast-feeding with a bottle-feeding. Then we have to give a second bottle. Later a third bottle is required, and so it continues, until finally we have an entirely artificially fed baby; the mother's breasts receiving less and less stimulation, and less work being demanded of them, they slowly but surely cease to function.

It appears to me that there is a very vital point to remember in comparing the merits of supplemental with complemental feeding. That point is, the help

the breasts need when they cannot secrete enough milk properly to nourish a baby is not relief from work, but just the opposite, more stimulation, more demand for milk, and more work put on them.

Within the last year there have been presented to the profession many convincing reports on the establishment, maintenance and reinstitution of breast-feeding. Sedgwick of Minneapolis reports about 90 per cent. of breast-fed babies, in some 2,000 cases, obtained by means of his complemental breast-feeding. S. Josephine Baker of New York reports that about five or six years ago, in the health centers of New York City, there was only one breast-fed baby. Today, with these health centers caring for about 60,000 babies, at least 90 per cent. are breast-fed. By way of further substantiation of this fact, it might be well to recall the siege of Paris, in 1871, during which time the French mothers were not able to feed their babies artificially, and had necessarily to nurse them. The infant mortality in Paris never had, and has not since, reached as low a point as during that period. Again, it has been reported by a Belgian physician that during the World War, when the Belgian mothers were on starvation diet and were forced to nurse their babies, they did it so successfully that the infant mortality fell to a point the lowest in their history.

With such results before us, and with many other pediatricians who are properly and persistently using complemental breast-feeding and who are securing approximately 90 per cent. breast-fed babies as a result, does it not appear high time for the profession to awaken to the full realization that nature is a better friend to us, and to the babies, than we have heretofore appreciated? Should not our textbooks take cognizance of these facts and state that supplemental feeding, or alternating the breast and bottle, is wrong in principle and in practice; that it not only does no good, except in a few exceptional cases, but does a great deal of positive harm by taking work off the breasts; that with complemental breast-feeding, breast-milk can be established, maintained and reinstituted; that the tendency today is to go back to nature, and to do as little artificial feeding as possible?

ABSTRACT OF DISCUSSION

DR. JOHN LOVETT MORSE, Boston: It is improbable that a woman can nourish three people at the same time. In considering when and how we shall wean, we must consider the good of all three, the mother, the child in utero and the child born. It never occurred to me that when a textbook said that the baby should be weaned when the mother was pregnant, anybody had ever thought that the baby should be weaned quickly. I thought everybody meant that it should be weaned slowly. As to the complemental and supplemental feedings: I thoroughly believe in breast feeding, and I am convinced that many more women can nurse their babies than now do. They should be made to nurse their babies. Yet, there is another side to it. There is no question that certain wetnurses can nurse several babies; on the other hand, three is a limit to the amount of milk that a woman can give. There is a limit to the amount of milk which the overnervous and overrefined woman of today can produce. It is our business to get these women up to that limit, but we must realize that they cannot go beyond it. I have had no luck in reestablishing the supply of breast milk after it was gone, although I have read about other people doing it. On general principles, it is far better to give a complemental feeding than it is to give supplemental feedings. In deciding as to whether to use complemental or supplemental feedings, however, we must consider the circumstances in the individual case. If the mother is a woman who is always at home, it is a great deal easier for her to nurse her baby all the time, and never to make use of a bottle. If she is a woman with many other cares and duties, it may be far wiser for her to give the baby one or two bottle feedings a day. In fact, there are many women who will produce more milk if they can drop one nursing a day, and get out and have some amusement and attend to their other duties. Of course, the one thing which does increase the milk supply is the use and the complete emptying of the breasts.

DR. JAMES D. LOVE, Jacksonville, Fla.: The physician should be guided by his own experience. The maternal nervous organism is to be considered. If the mother, on account of her knowledge of her pregnancy, has acquired a morbid fear or dread in consequence thereof, it will produce such a profound disturbance of her nervous equilibrium as to cause marked alterations in the quality of the breast milk. Relative to the withdrawal of the baby from the breast in cases of mild typhoid fever, Dr. Mulherin has proved by his statistics that the danger to the baby is practically nil if allowed to continue nursing and much less in all probability than the baby would be subjected to were it abruptly removed from the breast. The satisfaction the mother derives from being able to nurse her baby is worthy of consideration. Probably the continuance of this function would have a very slight weakening effect on her. The discomfort that attaches to the frequent mechanical withdrawal of the breast milk is also a matter worthy of some consideration. I agree with Dr. Morse, and to a certain extent disagree with Dr. Mulherin, relative to complemental feedings. I believe that all healthy babies, certainly after they have reached the age of two or three months, should have one bottle feeding a day, provided, of course, that the milk supply is not very scant. It gradually accustoms the baby's digestive organs to the reception of some other food than the breast milk, and allows the mother from four to six hours a day, which she can devote to recreation, to rest or to social diversion. Thereby, her health oftentimes is so materially improved that she is not only able to nurse her baby longer than she otherwise would, but the quality of the breast milk is materially improved. It becomes our duty as pediatricians to impress upon the general public the importance of not lightly considering the withdrawal of the baby from the breast in cases of mild febrile disturbance, or in cases of uncomplicated pregnancy.

DR. I. L. VAN ZANDT, Fort Worth, Texas: My experience has been varied. I started out with the idea that the pregnant woman must on no account nurse her child. A woman with a very sick baby from bowel trouble had a miscarriage at six months. Her milk came, and her baby began to fatten up. I felt that the milk of a pregnant woman was poison to a baby! However, another woman was nursing a baby a year or two old when she was six months pregnant. The baby had not suffered. Evidently the milk of a pregnant woman was not poison! I saw a little girl, 10 years old, ill with typhoid. A nine months old baby in the family had the same kind of fever. The mother was nursing it; and yet she was six months pregnant. The baby lived, and so did the other child. I saw a woman nurse her two year old baby while in labor. This was her fifth child, and she had never stopped nursing, except after the first one; and yet she had reasonably healthy children. A woman with typhoid had a forceps delivery. She got well, but the baby died. Another woman with typhoid had a baby two or three months old. She nursed it. That baby got sick about the time the mother got well. In two weeks she had plenty of milk for her baby and it got well. A woman sick about ten days with typhoid was delivered of a child at about normal time. She had an abundant flow of milk, was allowed to nurse the baby and mother and baby both did well.

DR. A. J. SCOTT, JR., Los Angeles: An infant, 9 months old, with typhoid, was nursing a mother who evidently had walking typhoid. It did not become ill. In Los Angeles, if it is necessary to wean abruptly, we do not have the gastro-intestinal disturbances that you have in the East; but, as a rule, we advise the gradual discontinuance.

DR. LOUIS H. RODDY, Waco, Texas: Most pregnant women who come to us are not seen when they first become pregnant. They come when the nursling is not well. It is not just a

matter of weaning the child. We must give that child a supply of food on which it will thrive. No one would take a child off of any milk that is agreeing with it. As to weaning in acute infections, we must not only take care of the child, but we must think of the mother as well. In our last epidemic of influenza, we had many cases of pneumonia that I know would have proved fatal to the mother if we had weaned the child immediately. The very fact of having her breast massaged by a nurse or a doctor who does not know how to manipulate the breast properly is more nerve-wracking than the mother can stand; and that may have been a factor in determining whether the mother would get well or die. In those cases we generally let the child nurse. In the case of a mother who has had three weeks of typhoid, when considering whether I should let the mother nurse her child for two or three weeks longer, or take the child off the breast, and do the mother a tremendous amount of harm by trying to dry up the breast, I certainly would let that child nurse.

Dr. William Weston, Columbia, S. C.: The chief contribution that the pediatricians have made to the reduction of infant morbidity and infant mortality has been that they have insisted on going back to Nature. In lower animals, the fact of pregnancy does not act as a reason for the cessation of nursing offspring. That is also true among primitive people, and among humble people. Why should not we insist on all people observing these rules, so far as we may be able to influence their lives? That will depend entirely on how the mother and the baby are getting along. If they are both getting along well, we should leave conditions as they are, and insist on the infant continuing to nurse its mother.

Dr. Charles James Bloom, New Orleans: These cases divide themselves into four distinct groups, the first group being those that are able to nourish without any symptoms whatsoever; the second group including those that are able to nurse with after-nutritional disturbances; the third group being those that are able to nourish at times other than during the physiologic periods; and the fourth group, those that are unable to nurse at all. The first group has unfortunately been limited. The number of children that are able to nurse without any symptoms whatsoever have been less than 10 per cent. of the number of cases that I have observed. The second group has constituted a very large proportion of my cases. The third group also forms a limited class. The fourth group forms a very large proportion of the cases. Not infrequently a mother will bring a child to a specialist concerning the whys and wherefores regarding the number of stools the child is having. The child might have a stool after each feeding, or vomit after each nursing. Some children have an urticarial rash, or other evidences of intestinal intoxication. I have considered this question, both from the standpoint of the abrupt cessation of nursing, and from the standpoint of supplemental and complemental feedings, and it is, in my judgment, the right thing to do, to feed the child at the time when the diagnosis is made—rather than continuing breast feeding alone.

Dr. W. A. Mulherin, Augusta, Ga.: If every one would read and interpret our textbooks as Dr. Morse has, there would be no need for my paper. Unfortunately, there does exist a divergence of opinion between our pediatric books and the actual practice of the pediatricians. That mothers are not cows, and that their breasts have a limited capacity for secreting milk, is the vital point in complemental feeding. The fact that mothers have a limited capacity for nursing their babies is recognized, and the point is stressed that this limited capacity can be increased by putting more work on the breasts, by extra stimulation and more demand made on the breasts for milk. If less work is demanded of the breasts, less milk will be secreted. A very important essential to success with complemental feeding is thorough conviction on the part of the physicians and mothers who practice it. As to giving one bottle at three months of age, irrespective of the amount of breast milk, the object in substituting artificial feeding, in the early months of life, is to anticipate and prevent trouble in weaning in the later months; also to relieve the mother of the strain of too constant nursing. If the baby is taught to take water from a bottle, it will answer the purpose of teaching the baby to take the bottle, and therefore one artificial feeding would be unnecessary. As regards relief to the mother, I think that taking work off the breasts tends to promote a lack of secretion, and therefore should not be advocated. As regards Dr. Bloom's statement that immediate weaning is the better practice when pregnancy supervenes in a nursing mother, his experience is not in keeping with mine, and the experience of many other pediatricians. If Dr. Bloom will give slow weaning another fair trial, he will find it to be the better of the two. I wish to specially stress that there exist today very few direct indications for immediate weaning, and, therefore, as a rule, slow weaning is a more practical, more logical and a safer procedure than immediate weaning.

FREQUENCY OF SYPHILIS WITH CANCER OF THE LIPS, TONGUE AND BUCCAL MUCOUS MEMBRANE*

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The literature abounds with discussions of syphilis as an etiologic factor in cancer of the mouth and especially of the tongue. Statistics of the proportion of cases of cancer of this region associated with a positive Wassermann reaction or other evidence of syphilis vary from less than 2.5 to more than 40 per cent. Reference is made to a recent statement of the view that syphilis is an important etiologic factor presented by D'Arcy and no further review of the literature will be attempted here, as my purpose in this paper is not to renew the entire discussion, but to present the statistics compiled from a comparatively large series of cases and to call especial attention to their bearing upon one important consideration—the decision for or against a course of antisyphilitic treatment in mouth lesions associated with evidences of syphilis.

The tables submitted in this report were compiled from 907 case histories in the record files of the Surgical Pathology Laboratory of the Johns Hopkins Hospital, the material being drawn from that hospital, the clinic of Dr. Joseph C. Bloodgood at St. Agnes Hospital, and from various other sources. All the case records available were included, and the series does not, therefore, represent selected cases.

In a series as large as this and taken from varying sources, it is inevitable that many of the records should be incomplete. It was particularly noted that Wassermann tests were recorded in only a comparatively small percentage, this being due in part to the lack of completeness of many records, but also very largely to the fact that the earlier cases of the series antedate the use of the Wassermann test. Each case record has therefore been studied to ascertain any history of primary sore or of secondary or tertiary manifestations or of so-called parasyphilitic lesions. In the accompanying tables, cases are classed as "positive" when either a positive Wassermann test or reasonable evidence of syphilis in the past history has been found.

Of the 907 mouth lesions in this series, 771 were malignant and 136 benign. Of all the cancer cases, only three occurred in the white female, and in none of these could syphilis be proved as an etiologic factor—in all three cases, irritation of the mucous membrane had been produced at the site of growth by the habit of placing snuff under the tongue. No cases of cancer were observed in the black female and only two in the

* From the Surgical Pathology Laboratory of the Johns Hopkins Hospital, Dr. Joseph Colt Bloodgood, director.

black male, in spite of a very considerable proportion of negro patients in Baltimore clinics. This fact is of special interest in view of the well-known prevalence of syphilitic infection in this race.

The association of leukoplakia with cancer has been reported by other observers with great variability; but a discussion of the relations of leukoplakia, cancer and syphilis is outside our purpose here and mention will only be made in passing that a very small number of cases of cancer associated with or preceded by leukoplakia have shown a positive syphilitic history.

To recognize the presence of leukoplakia is, of course, very important. To know that cancer exists with the leukoplakia is most important. The greatest error that can present itself in the association of syphilis with leukoplakia and cancer is the loss of valuable time in carrying out a protracted course of antisyphilitic treatment on the theory that leukoplakia is due to syphilis, when an actual malignant neoplasm is already present.

In the accompanying tables, the statistics compiled are shown first grouped according to the important locations in the mouth, and then the cancer cases from all locations are collected in one table.

In the group of cases presented in Table 1, there were thirty-five cases of cancer, in none of which could be found a positive Wassermann test or definite evidence of syphilis in the past history. In two syphilitic lesions, the Wassermann tests were positive.

TABLE 1.—LESIONS OF THE UPPER LIP

Lesions	History of Syphilis or Positive Wassermann Test	No Evidence of Syphilis
Cancer	0	35
Malignant wart	0	1
Benign wart	0	5
Other benign tumors	0	3
Ulcers (nonspecific)	0	2
Tuberculosis	0	0
Syphilis	2	..
Totals	2	46

Total number of cases..... 48
Total number of cancer cases..... 35
Percentage of cancer cases with evidence of syphilis..... 0

In the 407 cases presented in Table 2, syphilitic and tuberculous lesions were not found. There were 364 cases of cancer, in only twelve of which, or 3.4 per cent., was either a positive history of syphilis or a positive Wassermann test obtained.

TABLE 2.—LESIONS OF THE LOWER LIP

Lesions	History of Syphilis or Positive Wassermann Test	No Evidence of Syphilis
Cancer	12	352
Malignant wart	0	14
Benign wart	0	8
Other benign tumors	1	11
Ulcer (nonspecific)	1	8
Tuberculosis	0	0
Syphilis	0	0
Totals	14	393

Total number of cases..... 407
Total number of cancer cases..... 364
Percentage of cancer cases with evidence of syphilis..... 3.4

Of the 173 cases of cancer presented in Table 3, a history of syphilis was given in seven. In four of these the Wassermann test was negative, but regardless of negative Wassermann findings, these cases which gave fairly definite histories of primary or secondary syphilitic lesions are grouped in the column of cases showing positive evidence of syphilis.

In the records of the cancer cases in this group, twenty-three Wassermann tests were reported, three positive and twenty negative.

TABLE 3.—LESIONS OF FLOOR OF MOUTH AND MUCOUS MEMBRANE OF LOWER JAW

Lesions	History of Syphilis or Positive Wassermann Test	No Evidence of Syphilis
Cancer	7	166
Malignant wart	0	7
Benign wart	0	5
Other benign tumors	0	7
Ulcer (nonspecific)	0	4
Tuberculosis	0	2
Syphilis	0	0
Totals	7	191

Total number of cases..... 198
Total number of cancer cases..... 173
Percentage of cancer cases with evidence of syphilis..... 4.65

In the group of cases presented in Table 4 there were 254 cases, of which 199, approximately four fifths, were cancer. Of these cancer cases, twenty-nine, or 14.5 per cent., gave a positive history of syphilis or a positive Wassermann reaction or both. The majority of these were old men with a history of

TABLE 4.—LESIONS OF THE TONGUE

Lesions	History of Syphilis or Positive Wassermann Test	No Evidence of Syphilis
Cancer	27	172
Malignant wart	1	1
Benign wart	0	20
Other benign tumors	1	12
Ulcer (nonspecific)	0	7
Tuberculosis	0	9
Syphilis	4	0
Totals	33	221

Total number of cases..... 254
Total number of cancer cases..... 199
Percentage of cancer cases with evidence of syphilis..... 14.5

syphilis covering periods of from two to forty years. Wassermann tests are recorded in twenty-two cases in this group, ten positive and twelve negative.

Of the 907 lesions of the mouth, 721 were cancer. A positive history of syphilis or a positive Wassermann reaction or both were found in forty-eight, or

TABLE 5.—TOTAL OF ALL CANCER CASES

Location of Cancer	Evidence of Syphilis	No Evidence of Syphilis	Totals	Evidence of Syphilis Per Cent.
Upper lip	0	35	35	.00
Lower lip	12	352	364	3.40
Mucous membrane of mouth	7	166	173	4.65
Tongue	29	170	199	14.50
Totals	48	723	771	6.23

6.23 per cent. This is perhaps somewhat lower than the usual percentage of positive Wassermann reactions obtained in a general service of dispensary patients. The point of especial interest, however, is not the gross percentage of positive Wassermann reactions or histories, but the percentages in the various location groups as shown in Table 5.

It will be noticed that the percentage of cases giving evidence of syphilis is more than three times as great in cancer of the tongue as in cancer in any of the other locations about the mouth. In spite of case record deficiencies, such a preponderance in a large series of cases is certainly very striking and bears out

the more or less widely accepted view of the frequent association of syphilis and cancer of the tongue, the assumption being that syphilis may predispose to cancer in this location.

The fact of greatest importance, however, and the one which it is desired to emphasize in this paper is that a history of syphilis or a positive Wassermann reaction or both may be obtained in at least one of every seven cases of fully developed cancer of the tongue. It needs no further argument to indicate that, if too much importance is attached to a history of syphilis or a positive Wassermann test, the early diagnosis—which is the urgently important diagnosis—of cancer of the tongue will be missed at least once in every seven cases.

The inference from these considerations is that, in the presence of a lesion, in the differential diagnosis of which cancer cannot be ruled out with certainty, only the briefest of courses of antisyphilitic treatment should be carried out before proceeding to excision and accurate histologic diagnosis.

CONCLUSIONS

1. Syphilis in association with cancer of the tongue is approximately three times more common than in association with cancer in other locations about the mouth—14.5 per cent., or about one in seven cases.

2. This very fact is urgent reason against protracted antisyphilitic treatment in tongue lesions which may be cancer, even in the presence of positive evidence of syphilis. Regardless of the causal relationship of syphilis to cancer, once a neoplasm has been established the prognosis is that of cancer and not of syphilis, and treating the syphilis will not affect the cancer, but will only delay urgently needed surgery.

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RADIUM IN THE TREATMENT OF MALIGNANT TUMORS OF THE NOSE AND THROAT

ITS USE AND POSSIBLE ABUSE *

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While the literature on any medical subject is, of course, a very important index of the activity of the work being done in that particular branch, still it is not entirely determinative, for many men because of one reason or another do not report their cases. This is fairly well shown in the fact that while the literature on radium therapy as such is voluminous, the references to its use in malignant tumors of the nose and throat are relatively few. In any field that is comparatively new it may, therefore, be advisable to describe typical cases, to survey carefully the available literature, weigh the evidence deduced from other men's reports, perhaps determine indications for the employment of a substance like radium, and consider its good and unfavorable effects, if any.

Just as it is true that "two swallows do not make a summer," so the report of any one case cannot go far toward formulating any conclusions regarding surgical procedure. The case to be here detailed was for a short time under the care of Dr. Joseph C. Beck, and it is at his instigation that I am presenting it and analyzing the literature.

History.—Mr. P. L., aged 62, Russian, watch-maker, was referred June 9, 1919, by Dr. S. Mann, who stated that he first saw the patient at the end of April. At that time there was pain in the right side of the throat, dysphagia and swelling of the tonsils and pillars, and the latter structures seemed agglutinated. Dr. Mann suspected malignancy and stated that the apparent infection of the posterior pillar was an intercurrent affair. He had excised the mass, and blood escaped. The Wassermann reaction at that time was negative. The pain continued and there was considerable loss in weight. A month later the patient was examined by Dr. Novak, who also found the swelling and had another Wassermann test made, with negative results.

Examination.—When I first saw the patient he was suffering great pain, especially on swallowing, and had lost about 20 pounds in weight. The pharynx showed great swelling of the right tonsil, faucial pillars, especially the posterior, and the soft palate. There was an ulcer almost the size of a dime on the right posterior pillar, covered by a thick, tenacious secretion, and some swelling behind the right posterior pillar. The right cervical lymph glands near the angle of the jaw were enlarged. Smears made from the ulcer were negative for the fusiform bacillus and the spirillum of Vincent's angina. The swelling behind the right posterior pillar was incised, but only a very small amount of pus escaped, and the swelling of the other structures of the right side of the pharynx did not diminish. Another Wassermann test was made and again found negative. A piece of tissue excised from the right posterior pillar was sectioned and proved to be a mixture of spindle and round cell sarcoma.

Treatment.—Radium treatments were then instituted by the late Dr. Woelfel of the Physicians' Radium Association. Let me say here that so far as possible, I believe radium treatments should be in the hands of the laryngologist, in cooperation with the radiologist. July 18, 1919, at Michael Reese Hospital, two platinum needles 0.3 mm. thick, containing 12.5 mg. of radium each, were inserted into the soft palate and right tonsil for ten hours. Six double strength radium plaques containing 120 mg. of radium, with an area of 12 square centimeters, screened with 3 mm. of silver, were placed at a distance of 9 mm. from the right side of the neck opposite the tonsils to cross fire, and to irradiate the lymph glands, for twelve hours. July 31, two needles of 12.5 mg. each were inserted in the right tonsil for six hours. August 22, three capillary glass tubes containing 25 mg. each of radium, screened by 1.4 mm. of gold, in parallel on thick lead spatulas, were held against the right tonsil for five and a half hours. August 23, three tubes of 25 mg. radium each, screened with 1.4 mm. of gold on a thick lead holder curving around the right half of the soft palate (one tube posteriorly, one tube on the margin, one tube on the anterior surface), were held in place two and a half hours. August 25, the same procedure was adopted as on August 23, for two and a half hours. Thus a total of 2,630 mg. hours of radiation were used.

The patient had noticed a metallic taste ever since the radium treatment had been instituted. July 25, one week after the first radiation, the swelling of the tonsil, the faucial pillars and the soft palate had greatly diminished. August 22, the swelling was even smaller, and the ulcer on the right posterior pillar had healed; the cervical lymph glands were very small. From September 5 to October 3, the patient was in the hands of Dr. Joseph C. Beck during my vacation. Such extensive and painful burns had developed on the soft palate and right side of the tongue that swallowing was impossible, so he had to be fed with a stomach tube. There was a necrotic mass in the supratonsillar region and on the anterior pillar. Hot boric compresses, hot salt gargle and pyramidon were used. By September 23, the necrotic mass was practically gone, and on October 3 the patient was doing nicely and could swallow easily. November 20, the patient was feeling very well, looking fine and had regained

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

his former weight. The pharynx showed half of the right tonsil gone and in its place a smooth scar. The latter was also seen in the soft palate. December 17, the patient presented himself and was feeling perfectly well; the same condition was noted, Jan. 14, 1920. He then went to California, and the reports received from him since then are to the effect that he is in perfect health.

For malignant neoplasms of the nose and throat, operations were probably the earliest form of treatment, with varying success, depending on the extent of the growth, the stage at which the operation was performed, and its thoroughness. When confined to the nasal chambers, tumors can be removed with snares, the galvanocautery loop, thermocautery, etc.; but when the accessory sinuses are involved, only a radical procedure will avail. Later there was added to the surgical treatment the use of arsenic and *Streptococcus erysipelatis* or Coley's serum. Finally roentgen rays, fulguration with the high frequency spark, and radium were employed in the effort to arrest and eradicate the malignant process.

THE PHYSICS OF RADIUM

While we are acquainted with the physics of radium, it may not be amiss for the sake of completeness to note briefly the fundamental facts and principles involved.

Atoms are said to consist of a nucleus of positive and negative electrons with an outer system of negative electrons rotating about the nucleus, and these two sets of electrons are supposedly balanced. In some substances the atoms are in a transitional state, and are continuously "exploding," as it were, with rearrangement of the electrons, and usually with expulsion of charged particles traveling at high speed. These are the so-called "radioactive" bodies, and by their disintegration other products are formed which again undergo changes, until stable substances are reached. There are three of these radioactive series—the uranium, actinium and thorium. In the uranium series the radium is the most important member, with a half value period of 1,700 years; that is to say, it diminishes in weight one-half in that length of time. As it breaks down, alpha particles are given off, and a heavy gas called "radium emanation" (or niton) is formed, whose half value period is only 3.85 days, so that it is much more radioactive than radium itself. This emanation emits beta and gamma rays, and has the property of conferring radioactive power on the various substances with which it comes in contact. Three kinds of rays are thus derived from radium: Alpha, which consist of positively charged helium atoms traveling at the rate of 12,000 miles a second. These rays have very slight power of penetration, and are easily screened by a few layers of paper or by very thin glass tubes. Beta rays are negatively charged electrons of the same type as the cathode rays of the roentgen-ray tubes, are 100 times as penetrating as alpha rays, and have approximately the velocity of light. There are soft and hard beta rays, the latter penetrating deeply. These rays may be absorbed by a few millimeters of heavy metals, such as platinum. Gamma rays, similar to hard roentgen rays, are derived from radium C, and are more perentrating than the hardest rays from a Coolidge tube. The gamma rays consist of ether pulses of extremely short length but of great velocity. They are from ten to 100 times as penetrating as the beta rays.

When beta or gamma rays impinge on any substance, secondary rays are produced which are very penetrating and often produce burns. In radium therapy we depend on the action of the hard beta and the gamma rays, and, as will again be noted later on, by covering the tubes or applicators with rubber the action of these secondary rays on the tissues is avoided. Platinum, silver, lead or even aluminum, filter out the alpha and the soft beta rays.

THERAPEUTIC EMPLOYMENT

Units Employed.—For radium salts the weight is used as the unit. But in the case of the emanation, the estimation is made in curies. A curie is the amount of radium emanation in equilibrium with 1 gm., of radium element; that is, the point at which the quantity of emanation disintegrating per second is equivalent to the quantity produced by the radium in the same time. By subdividing the curie we get the millicurie and microcurie.

Dosage.—Colwell and Russ [1] maintain that "milligram-hours" is a very uncertain and indefinite expression of dosage; that there is a geat difference between a large dose acting for a short time, and a small quantity acting for a long time. They state that "undesirable damage is eliminated by keeping the quantity factor of the radium dose high and the time factor low in the case of the columnar-cell complex, and vice versa in the squamous-cell complex."

Methods of Application.—While the emanation has been used by inhalation (alone or with oxygen), or dissolved in water, oil or other liquids, its chief value lies in its use in glass or metal tubes employed like radium tubes, by insertion into tumor masses the rapid reduction in the activity of the gas ever being borne in mind. The emanation may by special electrical device be deposited on metal points or flat surfaces. The form perhaps most generally used is that of radium salts. It may be applied on linen ("toile"), which is impracticable when asepsis is needed; or, it is more extensively used in flat applicators which are covered with a varnish, or it may be mixed homogeneously in thin glass plates. Screens of lead or other heavy metals are used to protect the surrounding tissues. Most commonly used are tubes of thin glass screened by platinum, gold, etc., and containing the free salts of radium, of which the sulphate is most often employed. The tubes are sometimes made of very small diameter and pointed like a needle, thus facilitating their insertion into the tissues. These tubes may be used externally, within the cavities of the body, such as the nose, mouth or esophagus, or by insertion into the tumor itself. The effects of radium application are dependent on the amount of radium used, the duration of exposure, the distance of the applicator from the tissues, and the character of the filters employed. The latter must be of definite thickness, depending on the quantity of radium used and the tissues to be treated. According to Knox, silver and lead have equal powers of obstructing the passage of rays, while platinum possesses twice their absorptive action. Not only are filters needed, but it must be remembered that the secondary rays produced by the action of radium rays on these filters are injurious to the tissues and may produce burns. Rubber tubing, from 0.25 to 4 mm. thick, will cut off these secondary rays. Air space between the radium and the body also acts as a filter by pre-

1. Colwell and Russ: Radium, X-Ray and the Living Cells, 1915.

venting radiations of certain length from reaching the tissues. In long exposures, from ten to thirty layers of lint should be placed between the radium tubes and the body. When radium tubes are used in the substance of a tumor, various points, according to Knox, should be taken into consideration namely: (1) The tube must be surrounded by the growth; (2) if more than one is used they should be placed at equal distances so that an equal action may be obtained throughout the growth and, (3) the radium tube inside the filter should be enveloped in rubber tubing closed at each end.

Effects of Radium on Tissue Cells.—Wood and Prime showed that exposure to beta and gamma rays for a time just too short to kill the tumor cells caused a marked slowing in their growth. They cannot explain the variability in lethal action of the rays except to say "that it is exhibited only in groups of young cells undergoing, or which have recently undergone mitosis, and that older cells escape to grow in the tissues of the host and produce tumors." They found that from 80 to 100 mg. of radium element would kill cancer cells in seven hours. To get lethal action in the depths of the tissue the gamma rays are essential. That immature cells or those in a state of subdivision are more sensitive to radiations than those which have already acquired adult morphologic and physiologic characters is the law propounded by Bergonne and Dribondeau, and quoted by Knox.[2] Radium acts on normal tissues by stimulating in small doses, with larger amounts producing early congestion and later fibrosis. If the exposures are prolonged and the filtration is insufficient, the action of the rays may become caustic, or the process may go on to necrosis or sloughing. With proper exposure there will be inflammatory reaction, which slowly subsides; fibrous tissue forms, cutting off the blood supply, with necrosis if the action is rapid, or atrophy if it is slower. Radiation effects depend on quantity of radium, filtration, distance of application and length of exposure. Ionization of the nuclei, alteration in type of the cells to a more benign form, the production of antibodies, etc., are some of the theories advanced by Ewing,[3] Lazarus-Barlow,[4] Wood and others, to explain the action of radium on the tissue cells.

Methods of Application.—Wickham[5] treated superficial lesions with all rays; Dominici filtered out all but the gamma rays; Knox and most others believe that the best results are obtained without too much filtration, using both beta and gamma rays. For superficial effects the filter is thin or lacking, and the exposure short; for deep effect a filter and longer exposure are employed. The appearance of even slight reaction on the skin or mucosa indicates that the maximum dose has been given. Lannois, Sargnon and Moutet[6] aim to strike hard, and use as large a dose as possible, such as from 30 to 120 mg. of radium bromid left in place from twenty-four to thirty-six hours. Hanford[7] also favors very large doses in the effort to get quick results, using from 1,200 to 1,500 mg. hours, preferably in two sessions in cases of cancer of the tonsil. Ramos[8] uses 12 mg. of radium bromid in tumors of the nose and throat, but does not state for what length of time. E. G. Beck and G. W. Warner[9] advocate removing the skin and overlying tissues in treatment of deep-seated, inoperable cancer, since the skin, fat, etc., act as very strong filters. Superficial malignant growths respond readily to the roentgen ray and radium, and by thus exposing the deeper tissues they then react practically like superficial growths. Barajas,[10] in laryngeal tumors, uses gamma rays, carefully avoiding the stimulant action of secondary rays. He employs from 45 to 80 mg. of radium with a maximum duration of two hours at each session. In his opinion radium is contraindicated in the hemorrhagic forms, as its use increases hemorrhage from the tumor and the areas immediately around it. This view, however, is just the opposite of that held by most other men who employ radium.

Indications for the Use of Radium.—That radium should be used both preoperatively and postoperatively is recommended by Boggs[11] and also by Levin.[12] Probably most of the cases of malignant tumors of the nose and throat are treated, if one may judge from the reports, with radium irrespective of whether operative work is contemplated or not. Handley[13] says that the area to be covered should be from 12 to 16 inches with the center at the site of the growth when postoperative radiation is employed in order to affect the lymph channels along which the cells grow and spread. Field[14] suggests radium when surgery is impossible or impracticable, combined with surgery when complete removal is impossible, or in hopeless cases to relieve pain, hemorrhage, odor, discharge and sepsis.

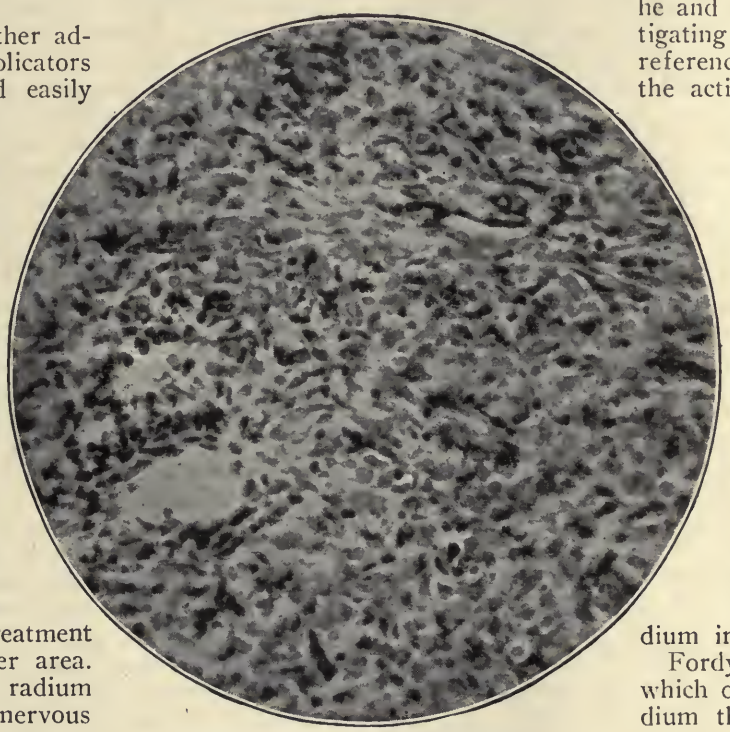
Action of Radium in the Various Types of Tumors.—The consensus as voiced by Lannois,[15] Willis,[16] Woelfel, Dawson Turner,[17] Barajas, Kennedy,[18] Pinch[19] and others, seems to be that tumors from the mesoderm are very sensitive to radium rays, while those from the ectoderm are much less responsive. That the destructive action of radium on tissues is apparently directly proportional to the amount of nuclear material in the tissues irradiated seems to be demonstrated in the fact that sarcomas are very favorably influenced, especially the lymphosarcoma, or round-cell forms. The carcinomas are much more resistant to treatment, especially the squamous-cell type. Hence it is that cancer of the lingual and buccal

2. Knox: Actions of Radiations on Tissues, Radiotherapeutics, London, 1917.
3. Ewing, James: Some Late and Distant Effects of Radium, J. Cancer Res. **4**: 45, 1919.
4. Lazarus-Barlow, W. S.: Arch. Radiol. & Electroth. **24**: 1 (June) 1919.
5. Wickham, Louis, and Degrais, Paul: Radium Therapy, New York, Paul B. Hoeber, 1912.
6. Lannois, Sargnon, and Moutet: Radium in Treatment of Tumor of Ear, Nose and Throat, Bull. del'Acad. de méd. **81**: 638 (May 13) 1919; abstr. J. A. M. A. **73**: 68 (July 5) 1919.
7. Hanford, C. W.: Large and Small Doses of Radium, Surg., Gynec. & Obst. **30**: 210 (Feb.) 1912.
8. Ramos, A.: Treatment of Laryngeal Tumors with Radium, Med. Ibera **7**: 20, 1919; abstr. Surg., Gynec. & Obst., September, 1919; id., ibid., abstr., **29**: 229.
9. Beck, E. G., and Warner, G. W.: Surg., Gynec. & Obst. **29**: 325 (Oct.) 1919.
10. Barajas, H.: Treatment of Laryngeal Neoplasms by Radium, Med. Ibera, Numero Extraordinario cour nac. de med. y cir., 101; abstr. Surg., Gynec. & Obst. **29**: 479 (Dec.) 1919.
11. Boggs, R. H.: Comparative Value of Radium and X-Rays, Am. J. M. Sc. **156**: 690 (Nov.) 1918; Radium in Malignancy of Mouth and Throat, Pennsylvania M. J. **21**: 511 (June) 1918.
12. Levin, I., and Levine, M.: Evidence of Therapeutic Value of Radium and X-Ray, Ann. Surg. **67**: 422 (April) 1918.
13. Handley, W. S.: On the Mode of Spread of Cancer in Relation to Its Treatment by Radiation, Arch. Radiol. & Electrotherapy **24**: 137, 1919; abstr. Surg., Gynec. & Obst., Ferbuary, 1920.
14. Field, C. E.: Radium, Its Present Status as Surgery's Adjunct, M. Rec. **95**: 1081 (June) 1919.
15. Lannois: Radium Therapy of Tumors in Otolaryngology, Bull. de l'Acad. de méd. **76**: 638, 1919; abstr. Surg., Gynec. & Obst., September, 1919.
16. Willis, A. M.: Preoperative and Postoperative Treatment of Neoplasms with Radium, Virginia M. Month., April, 1919.
17. Turner, Dawson: Notes on Radium Treatment, Edinburgh M. J. **22**: 79 (Feb.) 1919.
18. Kennedy, T. C.: Present Status of Radium Therapy, J. Indiana M. A., February, 1919, p. 36.
19. Pinch, A. E.: Report of the Radium Institute, M. Rev. London **21**: 141, 1918.

mucosa is very refractory and usually gives disappointing results. Lannois asserts that the epithelioma containing epithelial pearls (globe corné) is hardly amenable at all to radium. Knox classifies the response to radiation of the various tissues in the following order: Most rapid are the inflammatory enlarged glands; less so the lymph adenomatous glands, the sarcomatous, tuberculous, and then carcinomatous glands. The last named rarely disappearing completely.

Comparison of Radium with Roentgen Rays.—Both forms of rays have selective and inflammatory action, but radium can be made to produce a reaction of much greater degree without permanently injuring healthy tissue than can the roentgen rays. With radium, cancer cells are destroyed at a distance of only 2.5 to 4 cm. from the tube, but this action can be increased by cross-firing. The beta and gamma rays of radium, especially the latter, have greater penetration than any of the roentgen rays.[20]

Radium possesses further advantages in that the applicators are small, portable and easily handled, and there is no danger of high-tension electric shocks to patients. Radium can be easily applied to the interior of tumors without destruction of intervening tissues, and can very well be used in cavities like the nose, mouth, pharynx and larynx. Radium costs more than roentgen apparatus, but there is no appreciable deterioration. While its effects may be easily confined to small areas, it has the disadvantage of requiring much longer exposure, the average treatment requiring four hours per area. Furthermore, the use of radium is not so alarming to nervous persons, and patients in poor condition do not have to be transported to some special place for treatment. Coagulation and necrosis are produced painlessly by radium. Altogether, it would seem that in many ways radium bears comparison with roentgen rays most favorably.



Sarcoma of tonsil, × 375 diameters.

Complications.—Lannois, Sargnon and Moutet report as complications in the use of radium, perforation of the hard palate which occurred in one case; the uvula dropped off in three cases of epithelioma of the tonsils. They call attention to the fact that while radium burns are usually unimportant, they may cause gangrene, particularly if they occur in the larynx. Knox states that the dangers from radiations are acute dermatitis or chronic dermatitis, the latter being at times very intractable, lasting indefinitely and sometimes becoming malignant. Among the late manifestations that may occur are telangiectases or ulcerations, which may be very painful. James Ewing quotes F. C. Wood to the effect that the toxicity which is sometimes observed is due to escaped radiation affecting the bone marrow, liver or other organs. Dr. Joseph C. Beck, reported a case at the February, 1920, meeting of the Chicago Laryngological Society in which toxemia resulting from the use of a large dose of radium apparently caused the death of the patient:

> A man, aged 47, suffering from carcinoma of the larynx, received 150 mg. of radium treatment applied to the skin in the region of the larynx for twelve hours (1.800 mg. hours) the day before the laryngofissure was performed. Then two 12.5 mg. radium needles were inserted at the line of incision for four hours (100 mg. hours). Before leaving the table the patient vomited, and a few hours later developed a dyspnea which was not relieved by laryngeal suction. A rapid pulse and cardiac asthenia developed which was uninfluenced by large doses of digitalis. Death occurred forty-eight hours after the operation.

Through the kindness of Dr. Beck I was permitted to see the notes of a paper now in preparation in which he and Dr. Gradwohl are investigating the blood chemistry in reference to toxemia caused by the action of massive doses of radium in malignant disease. They have found that creatinin in the blood is doubled in amount twenty-four hours after radiation. To quote from their paper:

"There appears to be a toxemia which is developed in cases of malignant disease wherein large doses of radium and roentgen rays are employed, which differs from the ordinary toxemia found in cancer, or toxemia from the use of roentgen rays and radium in nonmalignant disease."

Fordyce[21] reports a case in which one year after use of radium the patient had a palm-sized second degree burn over the face, neck and a large part of the scalp, together with telangiectasis, alopecia and loss of pigmentation.

MacKee[22] cites a case in which a radium dermatitis was followed by death; the patient received several intensive radium treatments with the idea of affecting the deeper tissues and sparing the skin, using thick lead filters. Several weeks later there was severe abdominal pain, then swelling, hyperemia, ulceration and death. MacKee thinks that there was radium inflammation of the deep tissues with later necrosis and death from exhaustion.

Kelly,[23] describes a case of nasopharyngeal neoplasm dispelled by radium in which 50 mg. of radium screened by 2 mm. of silver and covered with 2 mm. of rubber was used. The patient suffered greatly for a week from ulceration of the palate and fauces.

20. Weed, W. A.: Present Status of Local Application of Radium and X-Ray, New York M. J. **107**: 495 (March) 1918.

21. Fordyce, J. A.: J. Cutan. Dis., April, 1919, p. 252.
22. MacKee: Case of Radium Dermatitis Resulting in Death, J. Cutan. Dis., April, 1919, p. 253.
23. Kelly, A. Brown: Nasopharyngeal Neoplasm Dispelled by Radium, J. Laryngol., Rhinol. & Otol., August, 1916; abstr., Laryngoscope, April, 1917.

Dr. J. C. Beck, in discussing Dr. Stein's[24] case, mentioned a patient with sarcoma of the hard palate cured in two weeks with massive doses of radium, but with the result that there was very severe burning of the tongue and soft palate.

Considering the many cases of severe injuries following the use of roentgen rays, one is somewhat surprised to find so few instances of complications following radium applications. Whether the toxemia which may result from the radiation was ascribed to other conditions in the patients cannot be determined: but the possibility of serious results must be borne in mind when applying radium. Superficial burns are of no great moment, as they usually heal quickly; but deep burns, such as occurred in our case, may seriously affect the patient by the pain caused, or by interference with the swallowing of food. In some instances the after-effects of radiation may even cause death.

RESULTS OBTAINED

Lannois, Sargnon and Moutet report cure in six out of sixteen malignant tumors of the tonsils, in nearly all of six cancers of the nose, and in four cancers of the nasopharynx.

Boggs says: "The value of radium in mouth and throat is incontestable; as a curative and palliative it surpasses all." He reports a case in which the entire throat was filled with sarcoma, but which remained cured for three and a half years after treatment. He also cites a case of sarcoma in which three operations were followed by rapid recurrence, but within six weeks after radium was used the growth disappeared, although it had filled two thirds of the pharynx.

Botey[25] says that superficial epithelioma of the nose is usually cured in six exposures of from thirty to sixty minutes, but he does not give the dosage. He further states that "in laryngeal carcinoma large doses for a few hours are much more effective than small doses for many hours, but large doses produce too much secondary reaction, the deeper cells are not destroyed but stimulated, and metastases and recurrence are much more frequent than after radical operation."

Stein reports sarcoma entirely filling the right nares arising from the ethmoid cells. He used 100 mg. of radium for five hours on three consecutive days and repeated the dose nineteen, thirty and sixty days later, using a total of 4,100 mg. hours, and 2,125 mg. hours applied to the enlarged lymph glands. The immediate results were excellent, with cessation of all pain and hemorrhage in one week. There was entire disappearance of the tumor and restoration of normal breathing. Perforative appendicitis caused death four months later, but at postmortem there was no evidence of sarcoma or metastases in the abdomen, nasal fossae, ethmoids or frontals. Dawson Turner reports a case of chondrosarcoma involving the left maxillary antrum in a 6 year old boy treated with 1,440 mg. hours of radiation. There was no recurrence within two years. He agrees with Knox that "maximum dose should be given at the first treatment."

Simpson[26] mentions an epithelioma involving the tongue, medial glossal epiglottic fold and left vallecula treated with three radium needles inserted into the growth by a special introducer and left for eight hours. There was complete healing in six months and the patient had remained well for over a year.

Greenough[27] reports thirty-nine cases of cancer of the lip, of which nineteen received radium treatment; in four the tumor disappeared, four were improved, and eleven showed little or no improvement. Out of eight cases of carcinoma of the palate, seven of the tonsil and five of the buccal muscosa, twenty in all, twelve had radium, but none showed more than a temporary improvement.

Adam[28] cites an epithelioma of the nasopharynx treated with 50 mg. of radium, screened by 1 mg. of gold for twenty-three hours. In two weeks the tumor was all gone except a small round mass near the eustachian orifice.

Collier[29] reports a case of large round-cell sarcoma of the nasopharynx treated for twenty-four hours with 150 mg. of radium. Seven days later necrosis began and recovery followed.

J. C. Beck[30] states that carcinoma of the nose, mouth and throat invariably terminate fatally, no matter what form of treatment is employed.

New[31] reports radium used in malignant tumors of the nose, nasopharynx, tonsils, larynx, etc., and concludes that "immediate results are very encouraging, but permanent cures are probably very few. Any neoplasm which is surgical should be treated as such and the radium used as an adjunct."

Hanford cites a tumor of the tonsil which had caused a loss of 40 pounds in weight; 150 mg. of radium were stitched in the cavity and left for nine hours. Two days later the same amount was again inserted and left for five hours; a few days later another six hour dosage was used, making a total of 3,600 mg. hours in five days. There was great improvement in twelve days.

Clark[32] has never seen benefit from radium or roentgen rays alone in cases of carcinoma of the oral cavity, but considers them merely as adjuncts. He reports 200 cases of malignant disease of the oral cavity, etc., treated with electrothermic methods or in combination with surgery, roentgen rays and radium. Of these patients a very large percentage were apparently cured for long periods of time, a smaller number had recurrences, and a still smaller percentage died. I am not in a position to discuss the relative value of the electrothermic method, except to say that in the hands of a master like Clark it seems to give excellent results.

Barajas, in fifty-six cases of laryngeal cancer, noted great improvement for a time but not one complete cure following the use of radium. He says, however, that the analgesic effect of radiation even in moderate doses constitutes an important benefit.

Delavan[33] quotes the Royal Infirmary report of

24. Stein, O. J.: Case of Nasal Sarcoma Cured by Radium, Practical Medicine Series 3, 1918; Ann. Otol, Rhinol. & Laryngol., September, 1917.

25. Botey, R.: Radium in Cancer of Upper Passages, Rev. Española de méd. y cir., December, 1918; abstr. Laryngoscope April, 1919.

26. Simpson, F. E.: Cancer of Base of Tongue and Epiglottis, S. Clin. **3**: 63, 1919; Internat. Abstr. **35** (July) 1919.

27. Greenough, R. B.: Radium in Treatment of Buccal Mucoso-Carcinoma, Boston M. & S. J., May 2, 1918; abstr. Laryngoscope, April, 1919.

28. Adam, James: Endothelioma of Nasopharynx Apparently Cured by Radium, J. Laryngol., Rhinol. & Otol., August, 1916; abstr. Laryngoscope, April, 1917.

29. Collier, C. C.: Sarcoma of Nasopharynx Treated with Radium and Mesothorium, J. Ophth., Otol. & Laryngol., October, 1916; abstr. Laryngoscope, April, 1917.

30. Beck, J. C.: Management of Malignant Disease of Upper Respiratory Tract, Ill. M. J. **32**: 194 (Sept.) 1917.

31. New, G. B.: Canadian Med. Quarterly, May, 1919.

32. Clark, W. L.: Cancer of the Oral Cavity, Jaws and Throat, J. A. M. A. **11**: 1365 (Oct. 26) 1918.

33. Delavan, D. B.: Radium in the Field of Laryngoscopy, Med. Rec. **90**: 50, 1916.

1915 to the effect that "while in advanced cases of cancer cure may not have been effected, in practically all more or less relief was obtained through the diminution of pain, cessation of discharges, healing of ulcerated surfaces, removal of local growths and prolongation of life."

Moore [34] reports sarcoma of the antrum greatly aided by radium.

Roy [35] refers to cases reported by Hastings,[36] Martineau,[37] Tilley [38] and Patterson [39] in which sarcoma of the nasopharynx was cured by 40 mg. doses of radium bromid inserted in the growth for twenty-four hours.

SUMMARY OF RESULTS OBTAINED BY VARIOUS AUTHORS

	Apparently Cured	Free One or More Years	Improved	Unimproved	Total
Nose and sinuses	13	2	14	12	41
Nasopharynx	12	..	..	..	12
Pharynx, palate and tonsils	20	4	14	27	65
Mouth and tongue	10	2	50	54	116
Larynx	8	..	14	82	104
Upper jaw and cheek	8	4	14	12	38
Lip	16	8	16	23	63
Total	87	20	122	210	439
Percentages	17	4	24	42	

Janeway [40] concludes that radium as a palliative agent in advanced cases has a limited field of usefulness in producing retrogression of tumors, with relief of pain. In some forms, however, there is later an extension which may be quite as painful as before. A complete clinical retrogression, however, is not a cure; by many surgeons it is considered necessary to wait for from three to five years before declaring a case entirely cured. He considers radium useful as a preliminary measure before operation to control the activity of the growth. He reports three epitheliomas of the nasal mucosa which showed improvement in one instance and no improvement in two others. There were twenty-four epitheliomas of the lip; six were cured; four free from recurrence for one year or longer, six improved, and one still under treatment. There were twenty-five cancers of the superior maxilla of which four were clinically cured, two free one year or more, eleven improved, two still under treatment, and nine unimproved. There were eleven neoplasms of the cheek; of these four were cured, two free from recurrence over one year, three improved and three unimproved. There were twenty-six cancers of the tonsil, of which six were cured, two free for over a year, fourteen improved and six unimproved. There were fifty cancers of the tongue, of which four were cured; two free from recurrences for over a year; twenty-two improved, and twenty-four unimproved. There were twenty-seven cases of cancer of the larynx, of which four were cured, seven improved and sixteen unimproved.

As this paper deals primarily with the use of radium, the accompanying summary of the results obtained by the various authors is compiled of those case reports in which radium was the main form of treatment employed. This, therefore, does not include the large list reported by Dr. W. L. Clark, in which the electrothermic method was mainly relied on. Of the cases tabulated, many were still under treatment when reported by the authors. Some writers merely speak of "malignant" disease of certain tissues or structures so that it is impossible to state whether they were carcinomas or sarcomas. We have, therefore, not been able to differentiate in the table. In general, it was the sarcomas that gave most favorable results, especially those of the nasopharynx, while in tumors of the tongue and larynx in which carcinoma predominated, the results were usually unfavorable. Since many of the authors fail to state whether death occurred, the percentages are not entirely accurate.[41]

CONCLUSIONS

1. The future of radium therapy seems very bright, particularly in reference to applications in tumors of the nose and throat; but great caution is advisable in statements regarding actual cures. It is important to watch for recurrences during a period of from two to five years.

2. In reporting cases, authors should give details of the preparation used, the method of application, duration of exposure, etc., in radium treatments.

3. Following up the cases and reporting on them again whenever possible is of the utmost importance in the formulation of definite conclusions regarding the results of radium treatment.

4. Radium is probably of great value before, and certainly after operations. It is very efficient in relieving pain, hemorrhage, discharge, etc. in many inoperable cases.

5. Sarcomas are especially responsive to radiation; the carcinomas yield much less readily, and the squamous type of epithelioma is scarcely amenable to radium at all.

6. Complications, at least those reported, are not so frequent as one would be likely to expect. Burns were the most common ones, but even death may result from toxemia.

7. Radium has many advantages as compared with roentgen rays, especially for application in the nose and throat.

8. The diagnosis of the malignant cases should be made by a competent laryngologist, and the radium applied either by him or in cooperation with a radiologist. Only in this way will correct statistics and reliable results be obtained, with greatest benefit to the patient and the safest guidance to the profession.

29 East Madison Street.

34. Moore, Irwin: Case of Sarcoma of Maxillary Antrum, Proc. Royal Soc. Med., Sect. Laryngol. **12**: 210, 1919.
35. Roy, Dunbar: Sarcoma of Nasopharynx, Tr. Am. Laryngol., Rhinol. & Otol. Soc., June, 1919.
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ABSTRACT OF DISCUSSION

DR. WILLIAM B. CHAMBERLIN, Cleveland: I have had some rather unfortunate experiences with regard to papillomas in children. In a recent case I used 50 mg. of radium for twenty minutes. This had been successful in a number of cases of papillomas in adults. It seemed that the papillomas recurred rather more quickly than they had previously after operation where radium was not used. In one case I used 50 mg. of radium in a small rubber tube (the child had previously been tracheotomized) and left it in for five hours. The child left the hospital with the tracheotomy tube out and breathing freely. How soon the papillomas will recur or whether they will recur, I do not know.

DR. CULLEN F. WELTY, San Francisco: In Dr. Clark's clinic I saw many carcinomas in the process of recovery or cure. These cases were largely of the face; some were of the mucous membrane of the cheek and some of the nose. I did not see any eye cases. This gave me the idea that the plan was feasible in accessory sinuses and larynx cases. I first did a tracheotomy, opened the larynx and removed the growth by fulguration. I did this in three different cases, but the patients died. However, I believe I did not use sufficient strength in my current and did not get the mass entirely away, because I had done some other work with the high frequency current and it had been most satisfactory. In a case of carcinoma of the floor of the mouth that had been treated by radium and the roentgen ray over a period of two years, the high frequency current was very satisfactory in the removal of the tongue, but the man died the second day after from pneumonia. A man with cancer of the larynx went to Philadelphia for radium treatment. He returned with a perfectly good larynx, but with some marks similar to perichondritis. I saw him two years afterward. He had real carcinoma of the larynx without doubt. In a case of carcinoma of the false vocal cords I used radium. The growth has not increased in size; it remains just about the same as it was, but the man has no trouble from it and I have reason to believe that it has been arrested. This was done four months ago. A man who had lost his eye from the use of radium was cured by the use of the high frequency current. A patient with epithelioma of the lip and cheek has had radium treatment for a year and a half, without benefit. It required the taking away the lip above and below, and the whole of the cheek. He is now well; that is, everything is closed up, the cancer mass is gone. He has been out of the hospital for about four months. The high frequency current offers so much that I can recommend it, but to use this current you must have seen it used by an expert for some time before your technic will fit the individual case.

DR. JOSEPH D. HEITGER, Louisville: A colored woman gave a history of tonsillitis beginning about a year previously, and a swelling of the glands on the right side of the neck for about a month. When I saw her she could hardly talk, the tongue was thrust forward, but the glands on the left side of the neck were not enlarged very much. The Wassermann test was negative; the general physical examination was negative with the exception of a slight secondary anemia. November 17 the case, from a surgical standpoint, appeared to be practically inoperable. The throat on the right side had what I thought was a papilloma with a concave surface into which the left tonsil fitted, and just below that, next to the tongue, was a small triangular area through which she breathed. She was unable to eat any solid food. November 17, we used 50 mg. radium screened through 1 mm. of brass and 1 mm. of silver; two hours' exposure over each area. November 18 we used 50 mg. screened through 1 mm. of silver. The radium was poured into the right tonsil in three areas, four hours for each; the left tonsil, two areas, four hours each. Nothing further was done. March 23, 1920, the throat did not show that anything had ever been the matter with it. The enlarged glands had disappeared. That day eight areas, four on each side, were again mapped out and given a three-hour exposure with 50 mg. screened through 1 mm. of brass and 1 mm. of silver. Just what the final outcome of this case will be remains to be seen. There is a possibility, on account of the case being bilateral, that while the pathologic report was lymphosarcoma, it may be a localized Hodgkin's disease.

DR. G. E. PFAHLER, Philadelphia: I have patients who have had recurrent malignant disease of the maxillary sinuses, some for as long as sixteen years, not treated with radium but with the roentgen ray. I have used radium for ten years, and I believe we can accomplish a great deal, probably more than by any operative method. I believe we should use the roentgen ray with radium. We should place radium within the tumor tissue. About eight months ago I saw a patient with a carcinoma involving the maxillary sinus and extending through the ethmoid cells back to and including the sphenoid sinus. I introduced into the maxillary sinus 50 mg. of radium in 0.5 mm. of gold, which is equivalent to 1 mm. of lead, surrounded by 1 mm. of rubber, and left it there for twenty-four hours. I applied 50 mg. on the left side in front of the maxillary sinus, filtered through ½ mm. silver, 1 mm. of brass and 2.5 cm. of felt, and then I placed on the outside another 50 mg. filtered in the same way. I know from experience that each one of those pieces of radium will produce an erythema in twenty-four hours, and that means that I have gone the limit with that amount of radium. I know also that it will kill the cancer tissue in that area, but it will not reach the disease in the ethmoid and sphenoid cells. They are too far away. To help in that area I placed radium in the posterior nares. That will reach, perhaps 2 or 3 cm. of the area back of the maxillary sinus, but it will not reach the disease in the sphenoid sinuses, therefore I had to reach that area with the roentgen ray. I crossfired from every possible angle. I saw the patient last week and so far as I can determine the disease is gone. I do not know for how long. Other patients have remained well as long as sixteen years. The fact that I was able to make the disease disappear leads me to believe that by carefully treating this patient at longer and longer intervals I shall be able to control the disease and keep him well. In a number of cases of sarcoma involving the posterior nares I have succeeded in causing the disappearance of recurrent sarcoma. We can get results in many of these cases, but we ought to be more careful about reporting our technic and the accuracy of our results. In that way we can help each other and get more of these patients well. In regard to electro-coagulation, I have treated hundreds of patients by this method, but we must go very carefully in cases involving the air passages and accessory sinuses. I have had some patients die of secondary hemorrhage, but they all die anyway, so I have not been very enthusiastic.

DR. S. G. HIGGINS, Milwaukee: There is definite value in the use of radium, but the difficulty is the limited supply in this country. The government should require that radium found in the United States should not be exported. In the case of a child with sarcoma, operated on two years ago and again for recurrence after one year, the disease has been held in check by the use of radium and by crossfiring with the roentgen-ray intranasally from the outside. The child has done better under radium therapy than under roentgen-ray therapy. The roentgenologists and the rhinologists should cooperate in the use of radium and the roentgen ray.

DR. ALBERT F. TYLER, Omaha: These patients with malignancy in the nasopharynx and accessory sinuses deserve the maximum amount of help, no matter what the treatment may be, therefore, why should we recommend one method of treatment to the exclusion of all others which have proved of decided benefit. Dr. Pfahler is right. We should use radium with the roentgen ray, using the maximum dose with the highest possible filtration. In selected cases we can use electrocoagulation. It is dangerous to cut into these growths, especially a sarcoma. These patients had better be referred for radiation without surgical mutilation. Our results will be better.

DR. ROBERT SONNENSCHEIN, Chicago: While it is true that clinically multiple papillomas in children act like malignant growths, yet considering their histology we do not classify them as malignant tumors. Dr. Welty spoke of Dr. Clark's method. I mentioned that in the paper, and also said that Dr. Clark stated that he thought that that method should be applied which best fitted the case and would give the greatest

relief to the patient. As to Dr. Heitger's case, radium has a great effect on enlarged glands such as those found in Hodgkins disease. Dr. Pfahler calls attention to the fact that erythema is a sign of maximum reaction. If you get a reaction, you must stop for some time. I think Dr. Higgins' statements regarding the retention of radium in this country, and the cooperation of the rhinologists and radiologists, is most apropos.

CLOSURE OF FISTULOUS OPENINGS THROUGH ALVEOLAR PROCESS INTO ANTRUM OF HIGHMORE *

CULLEN F. WELTY, M.D.
SAN FRANCISCO

A man, aged 35, had had a tooth extracted ten years before. The antrum of Highmore became infected, and had continued to discharge through a fistulous opening of the alveolar process ever since. The patient's favorite way of cleansing the antrum was to take water into his mouth and force it

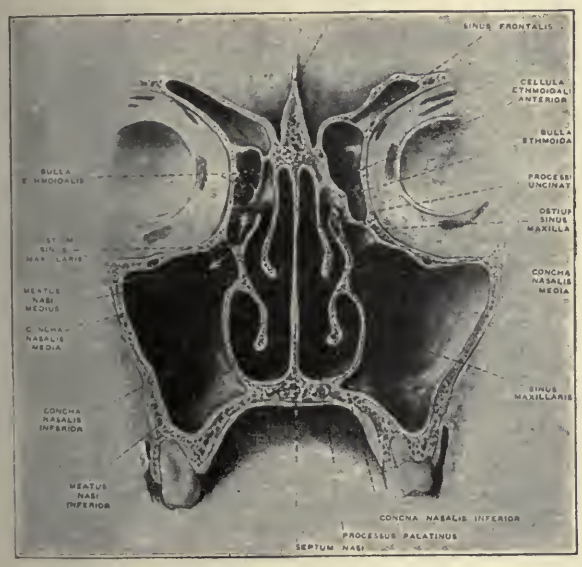


Fig. 1.—Teeth in place; relation of alveolar process to antrum of Highmore.

through the opening into the nose. This was repeated until the wash water returned clear. Repeated attempts had been made to close the fistulous connection, but without success. Three days before I saw the patient, he had suffered an acute exacerbation of the antrum infection which profoundly infected him. He was having chills and fever, and was quite uncomfortable. During this time, he could not force solutions through the fistulous opening.

The patient was in good physical condition; the temperature was 104; he had had chills and chilly sensations for the last forty-eight hours. The right side of the nose was full of pus of a foul odor; there was deviation of the septum to the same side. There were no hypertrophies or polypi. The fistulous opening was located, and the sinus washed for diagnostic purposes. Two teeth had been extracted at the site of the fistula. I recommended that the patient have the radical antrum operation, septum operation and the tonsils removed. I will not speak further of the septum and tonsils, as they were corrected and had no further bearing on the case.

The antrum of Highmore was very large, and was almost completely filled with polypoid masses and offensive pus; one end of a root of a tooth that had not been extracted was lying almost loose in the polypoid mass on the floor of the antrum. Two other roots of the same tooth were projecting into the cavity, uncovered and carious. The alveolar process at this place had so atrophied that there was very little left. However, I extracted this tooth, which joined the fistulous opening

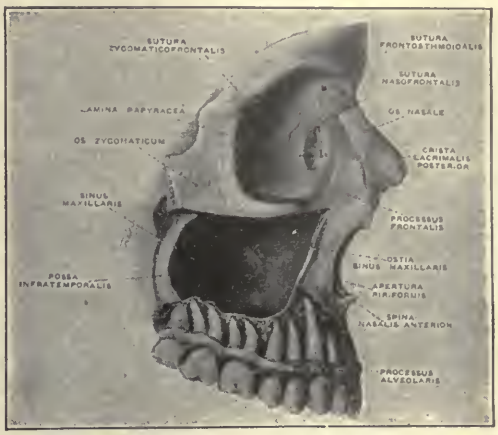


Fig. 2.—Depth of alveolar process and relation of teeth.

before spoken of, hoping to have the surfaces adhere, closing my operation in the usual way. In the course of three weeks, the antrum was well; however, the fistulous opening was larger than ever; with curettage and various applications, the opening seemed to grow larger. At this time, I had a roentgenogram of the jaw made and found that the remaining tooth on this side had a tooth-root abscess, and the side that adjoined the fistulous tract was entirely uncovered. While this tooth was being cared for, the fistulous opening was made larger still, with no tendency to heal at all.

It occurred to me that a device similar to the cleft palate operation was the only procedure that could close the antrum permanently, so I devised the following procedure: Under general anesthesia, an incision was made at each end of the fistula on the outer side of the alveoli, and carried well up to



Fig. 3.—Alveolar process on each side removed; mucous membrane and periosteum lying loose.

where the bone had been removed in the antrum of Highmore operation. Periosteum and mucous membrane were removed from the alveolus, and afterward the whole of the outer border of the alveolus, into the antrum of Highmore. A similar incision was made on the inside at each end of the fistula, periosteum and mucous membrane elevated from the bone, and the bone removed. By this time, I had an opening an inch and a half long, into which I could easily put my finger and enter the antrum of Highmore.

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

An incision was now made in the median line of the hard palate its entire length and the periosteum elevated over the entire area. It is easy to understand that by this procedure all tension will be removed when sutures are introduced. That the sutures may not cut the tissue, two perforated lead disks are used on each side and the sutures tied rather snugly. This can remain for ten days, when it will be found that the union has been complete and the patient will be very well satisfied.



Fig. 4.—Incision and elevation of periosteum and hard palate, and incision from each side of fistula.

I have had a second case somewhat similar, with very satisfactory results.

I report this case in detail, because I know there are many persons about the country suffering from a fistulous communication with the antrum of Highmore who can be readily cared for in the way I have described. However, I must insist that the radical operation for the antrum of Highmore be performed, preferably with the modification I have described, and brought to a successful issue before the latter is attempted.

ABSTRACT OF DISCUSSION

DR. JOSEPH A. STUCKY, Lexington, Ky.: This operation is entirely new to me. I have seen cases of fistula from the antrum of Highmore, but I have never had to resort to anything quite as extensive as this procedure to close it. I wonder if the simple procedure I have followed would have

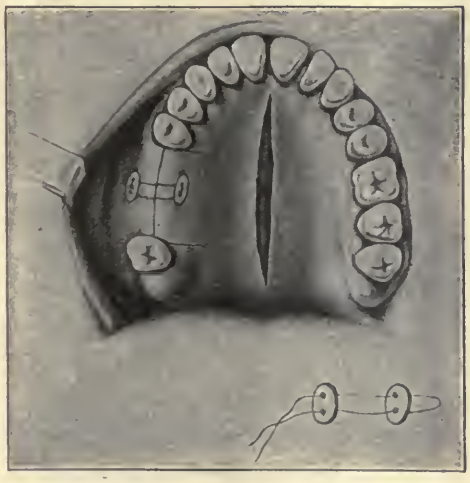


Fig. 5.—Wound approximated and held by metal plates; suture extending through tissues instead of over them, as shown in the elevation.

removed the focus of infection above and thus got rid of the cause of the fistula. I have curetted the fistulous tract in many cases, and the results have been very good. I do not recall ever having a case in which I had any trouble in closing the fistula leading from the antrum. In complicated cases, in cases of osteomyelitis with antrum trouble, if I do not remove the source of infection above, I might be tempted to try this method and drain throught the nose. The method is unique and is to be considered.

DR. JOSEPH C. BECK, Chicago: There is nothing in plastic surgery that gives as much trouble as the closing of an opening as described by Dr. Welty, and if he can close it by this very rational method, then he has added a great deal to our technic.

DR. CULLEN F. WELTY, San Francisco: Up to the present time I have been able to cure my fistulas by removing the infection from the antrum of Highmore, as have most of you, but sometimes we encounter cases that resist everything. I suggest this operation for these cases.

A NEW OPERATION FOR THE RELIEF OF DACRYOCYSTITIS THROUGH THE NASAL ROUTE*

MEYER WIENER, M.D.
AND
WILLIAM E. SAUER, M.D.
ST. LOUIS

Operations for the relief of inflammation of the lacrimal sac or stenosis of the lacrimal passage are almost as old as the history of medicine. In fact,

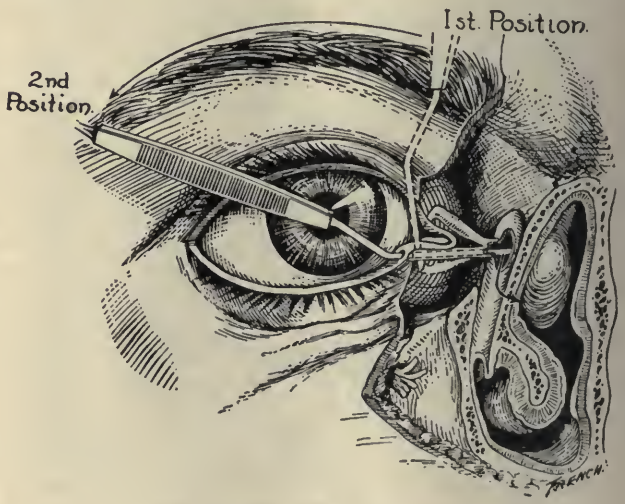


Fig. 1.—Path of probe from time of its introduction.

Galen himself advocated breaking through the lacrimal bone and introducing a caustic to prevent closure of the newly made opening. Operation by the intranasal route, however, is comparatively recent, and was first popularized by the work of J. M. West,[1] who presented before the American Ophthalmological Society in 1910 a method, the essential feature of which was the making of a large opening or window into the nose at the lower end of the duct, and extending the opening laterally to its apex. Later he modified the technic, which he thus describes:

A number 4 probe is passed through the dilated punctum as a guide and then, by means of a small bevel-edged chisel, a portion of the lacrimal bone and superior maxilla is removed just above the inferior turbinal, forming a large opening in the duct. It is necessary to use care to avoid opening the maxillary sinus. Local anesthesia is used. Structures below the window opening are unimportant, as tears will drain through the window, while any stenosis up in the duct is removed by the operation.

* Read before the Section on Ophthalmology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. West, J. M.: Tr. Am. Ophth. Soc., 1910, p. 654.

Toti [2] had previously devised a more complicated and difficult operation by making a large incision from the skin side. The skin incision is elliptical, from 3 to 3.5 cm., the concavity toward the inner canthus and 3 mm. outside the tendon attachment of the orbicularis. Incision begins at the junction of the posterior lacrimal crest with the orbital process of the frontal bone, curving downward and toward the nose, until beyond the tendon, when it again curves outward and downward to the level of the beginning of the bony lacrimal duct. The periosteum is raised on that side of the mucosa toward the eye only; and after the lacrimal fossa has been uncovered, this area is swabbed dry and covered with tampons of epinephrin and cocain 20 per cent. The nose is next anesthetized. The bony margin of the orbit at the border of the lacrimal fossa is first resected; then the bony floor of the lacrimal fossa itself is resected away, posteriorly to the posterior crista lacrimalis, inferiorly to the lacrimonasal duct, and superiorly to the curved elongation of the crista lacrimalis. The mucosa should be preserved intact.

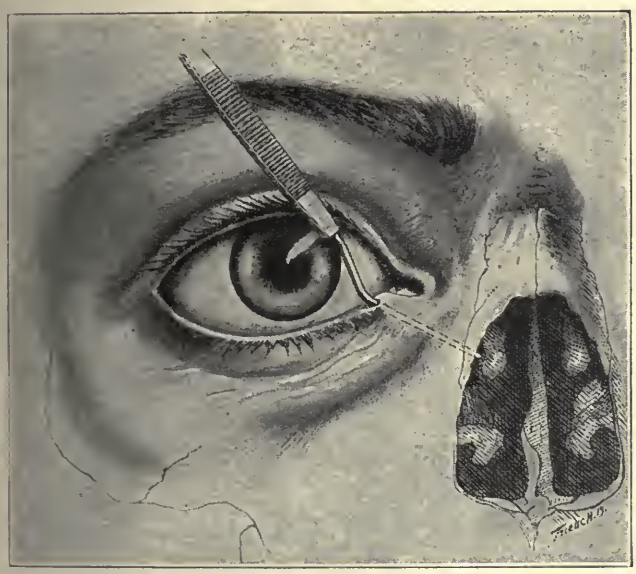


Fig. 2.—Direction of probe as it is forced into nose from bottom of sac.

If the ethmoidal cells are encountered, they should be cut away. The nasal mucosa is forced into the bony opening after the bony margins have been smoothed off, and an opening is made to correspond with the posterior wall of the lacrimal sac. After the sac wall has been cut away, the sac is replaced and the skin sutured. The nasal mucosa is now held in place against the lacrimal sac by tampons of iodoform gauze. In this way the bony walls of the lacrimal sac are covered with mucosa, and healing without constriction of the opening is assured.

Salus [3] reported twenty-nine cases in which operation was performed by the Toti method, there being thirteen perfect results, with no tearing or irritation of the conjunctiva. In eleven there was no epiphora under ordinary conditions, but insufficient drainage; while in five cases there was no improvement at all. Török [4] reported nine cases with six resulting in perfect drainage, two with moderate tearing out of doors, and one with tearing, but no secretion.

Kuhnt [5] modified the Toti procedure. He does not cut out the piece of nasal mucous membrane corresponding to the removed medial wall of the tear sac,

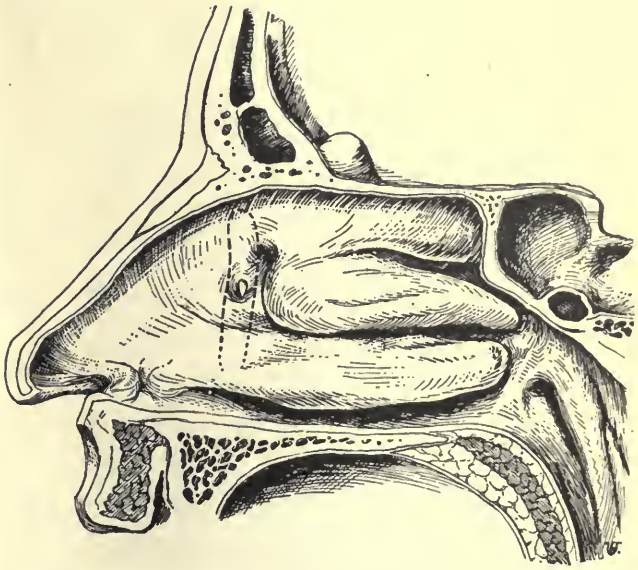


Fig. 3.—Position of probe as it emerges just anterior to middle turbinate. Dotted line is sac and duct.

but forms a flap of it whose base is exactly applied to the resected margin of the frontal process.

Cirincione,[6] in 1904 isolated the sac with the canaliculi, bored anteriorly to the lacrimal ridge, made sure of its freedom of communication into the nose, and



Fig. 4.—As probe is slowly withdrawn, under blade of forceps is slipped in and bony wall and mucous membrane of nasal wall of sac is removed.

pushed the lower portion of the sac into this new opening. He thus utilized the lining of the sac as a lining for the new opening. The points wherein his operation differs from Toti's are that he removes the sac and its intra-osseous continuation; he leaves only a small part of the anterior wall, just where the canalic-

2. Toti: Clin. mod. N. O. **35**, 1904.
3. Salus: Klin. Monatsbl. f. Augenh., July, 1911, p. 54.
4. Török: Arch. Ophth., May, 1911, p. 237.
5. Kuhnt: Ztschr. f. Augenh. **31**: 379.
6. Cirincione: System of Ophthalmological Operations **11**: 1603.

ulus opens into it, and he makes his new bony canal farther forward in the nasal portion of the superior maxilla alone.

Yankauer [7] makes a temporary elevation of the mucous membrane of the outer wall of the nasal wall, resects the bony wall of the duct, slits open the entire membranous canal from below its nasal orifice up to and including the sac, and thereby divides all strictures,

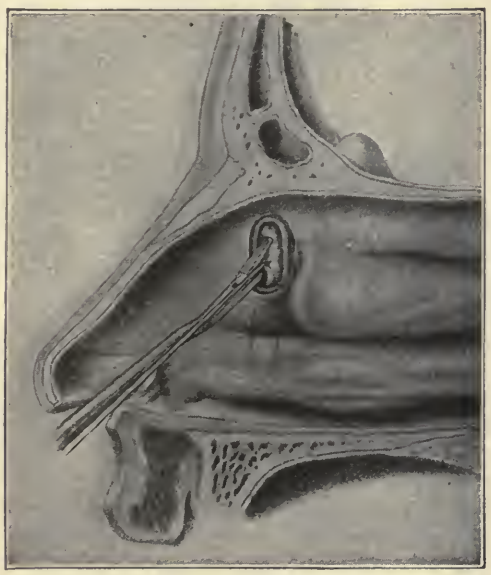


Fig. 5.—Sac is pushed through opening with probe, grasped with tenaculum and large piece punched out.

destroying the venous plexus surrounding the canal, and evacuating the pus. Finally, he replaces the mucous membrane of the outer nasal wall. The result of the operation is enlargement of the bony membranous passages, and the reestablishment of drainage in the manner originally designed by nature.

Halle's [8] method is similar to West's. A circular piece of mucous membrane with its underlying periosteum about the size of the sac is removed from near the anterior attachment of the middle turbinal directly over the torus lacrimalis. A mucous flap is then made and turned back with a chisel or burr; bone is then removed over the sac. A probe is pushed through the canaliculus and sac, and the sac is pushed into the nose and cut off. The mucous flap is then put into position.

Polyak's [9] procedure is also similar to the West operation except that the upper part of the nasal duct is opened and the membranous canal and the limitation of the sac defined.

Schoch [10] slits the canaliculus, enters a small drill into the canal as far as the nasal wall, and mills it between the thumb and fingers at an angle of 75 degrees, piercing the bone until the nostril is reached.

Holmes,[11] after cocainization of the anterior portion of the middle fossa, makes a vertical cut through the mucous membrane. This is elevated both forward and backward. Then, with a curet, the bony wall of the duct and sac are removed with the outer mucous membrane. A probe is then passed through the new opening into the middle fossa of the nose. He then passes a piece of wire through the nasal opening into the duct, upward, as the probe is withdrawn from above. The wire is worn three weeks.

Prince [12] begins with local anesthesia of the sac and corresponding area in the nose. He opens the punctum, passing a canaliculus knife to the sac, and then passes a lacrimal groove director through the sac into the nasal canal, slitting the canaliculus and passing the largest possible lacrimal probe. Then he passes a gouge 4 mm. wide to the bottom of the sac. By pressing toward the nose it will enter the middle meatus and may be readily seen from below. The gouge is now removed and a strip of sheet lead, 3 mm. long, 4 mm. wide and 1 mm. thick is introduced, with the point slightly tapered. While observing the end of the plate through the nose, the operator withdraws it until it almost disappears. Then it will be found that the nasal wall of the sac, together with the corresponding portion of the lacrimal sac, will rest on the extremity of the lead plate. By grasping the end of this with appropriate forceps, one will be able to remove the inner wall of the sac, the thin lacrimal bone and the end of the strip of lead at the same time, and thus establish permanent drainage.

Moretti [13] introduces to the strictured point, through an opening made directly into the sac, a probe with a platinum tip. This tip is brought to red heat by the current and cauterizes the stricture, freeing the canal.

Pratt [14] makes an incision into the sac, starting at the upper canaliculus. A dental burr is now introduced and a hole bored into the nasal cavity. This, with modifications, has been taken up by Green [15] and others.

O'Kunneff first removes the anterior third or half of the inferior turbinate to expose the nasal opening



Fig. 6.—Appearance of nasal window into sac, on completion.

of the lacrimal canal. He next frees the canal by introducing one branch of special scissors forceps, cutting the bony wall with the other blade. The operation is contraindicated in bony lesions, abundant

7. Yankauer: Laryngoscope **22**: 1331, 1912.
8. Halle: Arch. f. Laryngol. **28**: 331.
9. Polyak: Ophthalmoscope, June, 1915.
10. Schoch: System of Ophthalmological Operation **2**: 1593.
11. Holmes, E. M.: Ann. Otol., Rhinol. & Laryngol. **23**: 286.
12. Prince; American Encyclopedia of Ophthalmology **9**: 6980.
13. Morretti: Rec. d'ophth., September, 1908.
14. Pratt: Ophth. Rec., April, 1915.
15. Green, John, Jr.: Discussion on Thompson, W. R.: The Rational Etiology and Satisfactory Treatment of Dacryocystitis, J. A. M. A. **71**: 1729 (Nov. 23) 1918.

purulent secretion, ectasia of the sac, and extensive obliterative changes of the mucous membrane.

Blakesley,[16] after cocainizing the sac and corresponding mucous membrane of the nose, injects cocain into the skin and makes a vertical incision one-quarter inch in length over the sac at its mesial margin, entering into the sac at its nasal attachment. Through this opening a specially constructed trephine, with a diameter of from 2 to 3 mm., is introduced into the sac, held in a dental right angle, and operated by a small motor with foot control. This is directed down and in, toward the torus. The ceasing of resistance indicates its passage into the nose. It is then withdrawn and the process repeated until the whole nasal floor of the sac is removed. The operation requires only a few minutes' time.

Graham and Patton[17] remove a small circular piece of mucous membrane from the outer wall of the nostril opposite the end of the middle turbinate. A rectangular flap of membrane, including this hole, is then turned backward and upward and the bone forming the inner wall of the tear-sac is chiseled away. A probe is then passed in the tear-sac through the lower canaliculus, and pushes the wall of the sac through the bony opening. This bulge is then snipped away. When the flap of nasal mucous membrane is put back into position, the holes in the sac walls, bone and nasal membrane coincide. A strand of strong catgut or thin lead wire is passed through the lower canaliculus, through the new passage and out of the nose to help keep the flaps in position and opposite one another while healing takes place. The nose is plugged for the first two or three days.

Patterson and Fraser[18] make a D-shaped opening over the surface of the frontal process of the superior maxilla, with curved portion anteriorly, just in front of the end of the middle turbinate. This is raised with the elevator and removed, exposing the inner surface of the frontal process over an area one-half the size of a finger nail. The bone in this area is removed with a gouge and hammer, exposing the lacrimal sac. A probe is then passed into the sac, an incision made and then this piece punched out. They found no tendency to the formation of crusts. Twenty-four cases were reported, in which nineteen patients were completely cured, two complained of watering and three were not benefited.

Benedict and Barlow[19] introduce a lacrimal probe into the sac and duct as far as it will go, and allow it to remain there. This gives direction. The mucous membrane of the agger nasi is now elevated, and a resected flap, 1 cm. in diameter, removed just in front of the middle turbinate. The bone is next removed with a small chisel to make an opening slightly smaller than the opening in the mucosa. The lacrimal probe is then withdrawn slightly until its tip causes a tenting of the sac. The sac is incised with a small knife, the flap grasped and the incision continued in a circular path. The probe is then removed and the sac irrigated.

Chorowshitzky[20] devised an operation for opening the tear sac through the canaliculus, which he does not slit. A specially devised probe is entered through it and pushed through the lacrimal sac into the middle fossa of the nose. A chisel applied 5 or 6 mm. in front of the probe will expose the sac, which is then pushed out of the wound with a probe and excised.

This method embraces the principle of the procedure that we advocate. The conception of our plan arose from passing a Ziegler probe in a case of congenital dacryocystitis in a girl, aged 4 years, April, 1911, in whom we found, on examining the nose, that the probe had not gone down the duct into the valve of Hasner, but had made a false passage through the lower end of the sac into the nose. It occurred to us then that it would be good practice to break through the nose intentionally in this manner, and, utilizing the projecting end of the probe as a guide, which furnished a definite point on the inner wall of the sac, proceed to enlarge the opening upward, exposing the entire nasal wall of the sac and affording even better drainage than that obtained through the small opening made by the Ziegler probe. The results justified our expectations. A brief description of the performance of our operation with two cuts has already appeared.[21]

DESCRIPTION OF OPERATION

A Ziegler probe is introduced through the inferior canaliculus into the lacrimal sac. The probe is then directed downward until it reaches the bottom of the sac, when it is turned inward at an angle of 45 degrees and then forced through the external nasal wall into the nasal cavity. In some cases a punctum dilator must be used before the Ziegler probe can be introduced. In a few cases we were unable to introduce the probe through the lower canaliculus, but had no difficulty in going through the upper one. In none of the cases did we find it necessary to slit the punctum.

The probe enters the nasal cavity just in front of the anterior end of the middle turbinate. In some cases in which the middle turbinate is large, a portion of the anterior end must be removed immediately preceding the introduction of the probe. In cases in which the nose is narrowed by a septal deviation, a submucous resection must precede this operation, but in the majority of cases this is not necessary.

The next step is to withdraw the probe partially, having enough of the point visible in the nose to serve as a guide for the removal of as much of the bony covering of the canal and lacrimal sac as is necessary to establish a permanent opening. The opening made by the probe may be enlarged with a small punch forceps or chisel. In some of the cases we have been able to enlarge the opening by introducing a Hajek hook and turning the point upward, and with a little pressure medially fracturing the nasal wall of the sac and then removing this fractured bone with small biting forceps. In some cases a chisel curved on the flat has been used when the bone is unusually thick. The bony opening is extended upward so that the probe may be introduced into the nose almost at right angles. That is, the handle of the probe, instead of being almost vertical as when pushed into the nose, may now be introduced in a horizontal position. It will now be found that a portion of the sac may be pushed through the bony opening into the nasal cavity; with the sac held in this position, biting forceps are introduced into the nose and as much of the sac as possible is grasped between the jaws and held there until the probe is removed, and then the jaws of the forceps are closed, biting out a portion of the sac.

The bleeding is usually very slight; in no case has packing been required. The patient is not disturbed until the third day, when a No. 4 Bowman probe is introduced into the nose. This is repeated every third day or oftener, depending on the tendency of the opening to close. Granulations are kept down by means of a 40 per cent. solution of silver nitrate until the wound in the nose is entirely healed. The introduction of the probe and the applications of the silver

16. Blakesley: Demonstrated before Kansas City Eye, Ear, Nose and Throat Club, Feb. 19, 1920.
17. Graham and Patton: Opthalmoscope, November, 1914.
18. Patterson and Fraser: Brit. J. Ophth., May, 1919, pp. 197-204.
19. Benedict and Barlow: Am. J. Ophth., December, 1919, p. 843.
20. Chorowshitzky: Arch. f. Laryngol. u. Rhinol. **28**: 363.
21. Loeb, H. W.: Operative Surgery of the Nose, Throat and Ear, St Louis, C. V. Mosby Company, 1917.

solution are the chief points in the success of the operation. If these cases are not carefully watched after the operation, the opening quickly closes.

Mosher [22] has remarked that "all intranasal methods must face danger of reclosure of the canal, and that every operation on the lacrimal and nasal duct is only a temporary success, unless supplemented with frequent probing or the prolonged wearing of a style." This is true in a measure, but in the cases treated by us by the method just described, the results have been most satisfactory, without the use of a style or prolonged probing. We have found it necessary to use the probe only as a means of keeping the wound open until such time as the newly made bony window is covered with a smooth, healed surface. The average time required for this to take place is approximately four weeks.

The following case reports exemplify the variations in the process of healing which may occur in different individual cases. These include cases in which healing occurred without incident, as well as complications of a more or less serious nature. The latter must be handled, according to the exigencies of the situation, with that surgical judgment acquired by all operators with a broad experience.

REPORT OF CASES

CASE 1.—Mrs. C. C., aged 45, was first seen, Aug. 28, 1913, with tearing from the right eye. She was not seen again until November 10. February 17, she reported with a phlegmon of the right sac, which disappeared under hot applications. March 14, she was operated on under local anesthesia; the opening in the nose was probed every other day with a No. 4 Bowman probe until March 28; the patient was not seen again until April 9. For a time there was some tearing, but this gradually disappeared. A telephone communication, Feb. 14, 1920, informed us that she has been entirely free from symptoms since May 1, 1914.

CASE 2.—Mrs. H. J. F., aged 65, with mucocele of the right side, had been treated for nearly thirty years by different oculists, during which time she was repeatedly probed. She had suffered a nervous breakdown which she attributed to daily visits at physicians' offices. She had had some nasal treatment without benefit. Under cocain anesthesia the operation was performed at the Jewish Hospital, July 3, 1916. No packing was required. A No. 4 Bowman probe was passed every third day. July 17, the fluid was easily washed into the nose. July 21, a No. 6 Bowman probe was passed without difficulty. July 24, a quantity of bloody mucus had accumulated in the sac. No fluid could be washed through the sac into the nose. July 25, a probe was introduced through the sac into the nose, and the opening into the sac was enlarged with a Graefe knife. July 26, fluid passed into the nose. The patient had no further difficulty until October 13, when she appeared at the office with some pus in the sac; but fluid could be easily syringed through the sac into the nose. The probe was again passed at intervals of a few days. November 11, there was no pus, and fluid easily passed into the nose. The patient was last seen, May 10, 1917, when her condition was quite satisfactory; there was no pus and no epiphera. A telephone communication, February 15, revealed the information that the patient has been entirely well since the last report in May, 1917.

CASE 3.—B. G., aged 8, with bilateral chronic dacryocystitis and obstruction of both ducts following an automobile accident, Dec. 7, 1915, was first seen, March 6, 1916. There was a marked epiphora with mucopurulent discharge from both sacs. There was marked disfigurement as the result of fracture of the nasal processes of both superior maxillae and the nasal bones. There were large adenoids and hypertrophied tonsils. April 21, under general anesthesia, a Ziegler probe was passed; there was great difficulty in finding the openings into the nasal ducts because of the previous fracture, but finally we were able to introduce both sizes of the probes. Owing to the marked deviation of the septum and narrow nasal passages, nothing further was done. Very little bleeding followed the probing. April 25, the patient was discharged from the hospital with sacs in much better shape. May 13, 1916, adenoids and tonsils were removed. September 5, there was still some secretion, but very little pus. The patient was not seen again until Feb. 19, 1917. There was still a little secretion; we were unable to wash any fluid into the nose. March 12, 1918, he reported again; there was still considerable tearing, but there was no pus. Aug. 4, 1919, considerable pus was discharging, but we were unable to express any from the sac. The operation as described was performed on the right side at the Jewish Hospital, September 13. September 22, the operation was performed on the left side. September 29, fluid passed easily into nose; no probing was necessary. October 4, fluid washed readily into the nose. October 26, there was decided improvement in the tearing. December 6, fluid was easily syringed through both sides. December 27, there was no secretion and practically no tearing.

CASE 4.—Mrs. J. B., aged 25, first seen by Dr. H. L. Wolfner, Dec. 3, 1912, with a large abscess of the sac, which he opened, had several attacks after this and appeared at Barnes Hospital Clinic in April, 1918, with a mucocele. Our method was attempted by one of the junior surgeons, but was poorly executed. A terrific infection followed, lasting several weeks. The patient was reoperated on by us, May 20, 1918; she reported for treatment six times. When last seen, June 11, 1918, there was no secretion and no tearing. This patient reported over the phone, Feb. 14, 1920, that she has not been conscious of any eye symptoms whatsoever, since the operation.

CASE 5.—Mrs. G. M., aged 62, with dacryocystitis, first seen, March 13, 1918, had had tearing from the left eye for the last year. She had had some pain about the eye, radiating to the temple and left ear. Some mucopurulent discharge could be expressed from the left lacrimal sac. The following day she was operated on under local anesthesia; a No. 4 Bowman probe was passed every other day for two weeks, at the end of which time there was neither secretion nor tearing, and cut surfaces in the nose were apparently healed.

CASE 6.—Mrs. I. B., aged 50, consulted Dr. Wolfner, May 9, 1917, for dacryocystitis and ulcer of the left cornea. She was operated on by us at the Jewish Hospital, June 1. July 14, the ulcer had healed and the sac was draining nicely into the nose. August 20, fluid washed into the nose, but pus collected in the sac. August 29, fluid washed into the nose, but the sac did not drain. Another attempt was made to enlarge the opening in the sac from the nose. September 8, the condition was slightly better, 1 per cent. ethylhydrocuprein (opotochin) was used. November 11, it was much better. Dec. 8, it was still discharging. December 15, it was still discharging; the sac was washed out. Fluid passed readily into the nose. From Dec. 15, 1917, to June 13, 1918, the patient reported from time to time, but refused any further operative measures. June 13, she consented to operation. The probe was easily passed, but pus continued to accumulate. Two further attempts were made, Feb. 6, 1919, and May 20, 1919. Great difficulty was encountered in passing the Ziegler probe through the sac. There is some obstruction in the sac itself; fluid washes through readily and the probe goes into the nose through a wide bony opening, but it is held tight in the sac. Pus continues to collect.

SUMMARY

Cases 1 and 5 exemplify the uninterrupted process of healing without complications and with perfect end-results. Attention is especially called to the few times it was necessary to pass the probe.

Case 2, which ultimately ended in an entirely satisfactory manner, emphasizes the importance of painstaking after-care. This case was rescued from what

22. Mosher, H. P.: Discussion on Chamberlin, W. B.: The Endonasal Operation on the Lacrimal Sac, J. A. M. A. **69**: 19 (July 7) 1917.

might have been an unhappy result, to a most successful outcome.

In Case 3 a satisfactory result was obtained in spite of the deformity due to the fracture and the narrow nasal passages.

Case 4 illustrates how an operative plan can be condemned or brought into disrepute on account of faulty technic. In this case a perfect result in the minimum space of time was accomplished by the second operation.

Case 6 proves the futility of almost any standard of intranasal operation for the relief of a certain type of dacryocystitis. A complete obliteration of the sac had evidently occurred, and in its place the space filled up with dense scar tissue.

The simplicity of the operation and the large percentage of cures justify our faith in the superiority of this method of procedure.

ABSTRACT OF DISCUSSION

DR. WILLIAM H. WILDER, Chicago: Operations of the kind described show the desirability of securing a more or less natural drainage of the tear secretion into the nose and the drainage of the tear sac. The fact that many different methods have been proposed suggests that the subject is not so simple as would appear at first thought, and that the results are by no means uniformly successful. Naturally, much will depend on the technic employed. It would seem that the use of a guide forced through the sac and the bony wall of the nose would insure a more accurate opening. It would seem to be essential that the opening into the nose should be at the most dependent portion of the sac or of that part of the nasal duct that still remains patent, and that it should be abundantly large. If any portion of the sac or the duct is not drained through such an opening it would form a pocket for the retention of infectious material. I understand that the authors claim that this essential feature is met by their method of operation. To insure permanency of the opening its edges must be covered with periosteum and mucous membrane. If the sac wall is much thickened and diseased, there would be likelihood of granulation tissue blocking the opening and defeating the result. Might it not be well to first examine the sac wall through an incision from the outside and determine at what point to make the opening into the nose to insure its being at the most dependent part or whether it might be best to extirpate the sac rather than attempt to drain it? In the interest of safety to the eye through the eradication of a dangerous focus of infection, complete extirpation of the lacrimal sac will be the operation of choice and the wisest procedure in many of the cases of dacryocystitis in which the duct is no longer patent.

DR. WALTER B. LANCASTER, Boston: I have seen two or three cases in consultation in which orbital cellulitis of more or less severity followed. It seems to me that if one wishes to make an opening in this manner, it is much better to make an incision through the skin lying over the sac, and then make an opening into the nose, so that one can see what he is doing. The edges can be lined with a mucous membrane flap, and in that way a large opening is secured; one that will stay open. I cannot say that the operation appeals to me. In many cases epiphora cannot be cured by making an opening into the nose. These cases are common among patients over 50. The trouble is not in the drainage apparatus, but in the secretory apparatus. Hence an operation to reduce secretion is indicated and in the absence of dacryocystitis or other source of removable irritation to cause hypersecretion, extirpation of some of the lacrimal gland is most likely to be successful.

DR. WILLIAM L. BENEDICT, Rochester, Minn.: The endonasal operation for the relief of dacryocystitis offers several distinct advantages over other methods of treatment. The restoration of function to the lacrimal passages affords much comfort to the one who has had a troublesome epiphora. I am strongly in favor of dacryocystostomy where such operation is indicated. The surest and best treatment of this condition lies in a procedure that at once is not difficult of performance, requires little or no after-treatment, and gives immediate relief of annoying symptoms. Among our patients who were operated on successfully no recurrence of symptoms has been noted. We have been extremely slow to recognize the very frequent association of dacryocystitis with hyperplastic or suppurative ethmoiditis. I have reoperated for dacryocystitis or lacrimal fistula on patients operated on elsewhere to find that the sac had been cleanly removed, but the symptoms of the disease persisted through discharge from diseased ethmoid cells. Schaffer calls attention to the pneumatization of the bone surrounding the lacrimal duct, and the ease with which a chronic ethmoiditis can produce a chronic dacryocystitis, and vice versa. From whatever route the disease is attacked the ethmoid cells should be observed. This can be done better by the endonasal route. After-treatment, if necessary, can be carried out better, and at the same time a chance for restoration of function is afforded which cannot be said of the extirpation operation.

DR. WILLIAM C. POSEY, Philadelphia: In the discussion of a paper read by Dr. Mosher of Boston last fall in Philadelphia, describing his operation for lacrimal obstruction, it was shown that notwithstanding the successful completion of his operation, in many cases probing was necessary some months later to keep the passages open. If this is true of all endonasal operations, are we any better off than if we continued to probe the lacrimal nasal duct itself? Of course, it is desirable, if possible, to restore the normal drainage from the eye to the nose, but with extensive disease of the mucous membrane lining the passages, removal of the sac is the best procedure of all.

DR. LOUIS D. GREEN, San Francisco: In 1913 I became very enthusiastic over the endonasal operation after seeing Halle and West do quite a number of these operations. On my return to San Francisco I gathered all the cases I could and performed this operation. After a period of about six months my enthusiasm began to disappear with the disappearance of the openings, so that ultimately I discontinued the operation. In the majority of these cases the opening closed, no matter what I did. The operation described by the essayists is much simpler than the other types of endonasal operations, and that is one thing in its favor. Dr. Wiener emphasizes the necessity of using a strong silver nitrate solution. We did not use a 40 per cent. solution, but almost everything else was done to keep this opening patent, and yet a majority of them closed. Often, with the immediate relief obtained, the patient feels so much better that he thinks he is well, but unless I am able to see a colored solution dropped into the eye appear in the nasal cavity in a few moments I do not feel that I have accomplished much.

DR. EARL WHEDON, Sheridan, Wyo.: Among the Crow and Cheyenne Indians there is much trachoma and dacryocystitis, in some cases with definite ulceration. I have been using different intranasal operations and I have had the same trouble—the opening will close up. I follow the Gifford method, and I feel that I have saved many eyes.

DR. MEYER WIENER, St. Louis: In our operation, the essential feature is the guiding of the probe in the location of the sac; and we have not found a mucous flap necessary. Introduce the probe and push it down until the bottom of the sac is reached, from which point it is crushed through into the nose at an angle of 45 degrees. We open up the sac from this point upward. I have not seen any case of orbital cellulitis following this operation. If you use the Ziegler probe, which is pointed, you will not get any fracture because the bony wall at this point is quite thin and the mucous membrane through which you force the probe affords a protection that prevents fracture. Probes should be passed before the application of silver is made, to get rid of secretions; then the surface is thoroughly cleansed before the silver is applied. Before discharging any of these patients we follow them up from time to time, washing from the duct into the nose and seeing that the fluid readily passes through.

OBSERVATIONS ON DÉBRIDEMENT OF WOUNDS

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AND
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It is not our purpose to discuss the indications for the débridement of a wound incurred as the result of an outward force. Much has been said and written on the subject; its technic has been described. The method of treating war injuries by débridement, drainage, solution irrigation, or posture, likewise has occasioned the publication of numerous articles. The surgeon of today is familiar with these details and has become more or less experienced with this method of surgical treatment of traumatic wounds. Some there are whose experience has been limited and who have not encountered the end-results or the incapacity that has resulted from a too universal application of this method of treatment. The impression seems to be somewhat fixed that no baneful or untoward results ensue: that contraindications do not exist. It is therefore desired to present certain observations that have been made.

These observations are based on the many debrided wounds that came under our care while in France (between three and four thousand), some 1,500 examinations made of ex-service men applying for compensation and vocational training, and the employment of débridement in the treatment of industrial injuries —a total of more than 5,000 cases.

It is recognized that the adoption of the débridement of war injuries was without doubt a valuable standardized method that prevented a high mortality in battle casualties. It is also recognized that not every wounded soldier was the recipient of a skilful débridement. The fatigue of the operator from long hours of operating, the need for speed on account of hundreds of waiting wounded, the forgotten anatomic relationship of structures, all account for some of the untoward results. We take into consideration these factors, not for critical reasons, but to emphasize the more clearly that the débridement of an inflicted wound is not a simple procedure that can be lightly undertaken by every possessor of scalpel and scissors. On the contrary, the operator must be endowed with training, experience, and familiarity with the principles of modern surgery, surgical technic, bacteriology, principles of draining, and anatomic relationship; and also, he must be one whose surgical work consists of more than an occasional operation. Such qualifications will achieve the greatest good when débridement is employed—their lack will result in a higher percentage of untoward results.

HERNIA OF MUSCLES

Our observations and subsequent experience have taught us that destruction, unnecessarily, of course, of fascia tissues, superficial and deep, must not be heedlessly and recklessly accomplished. To do so invites muscle hernia and impaired muscle function as well as loss of a large part of the use of an arm or leg, and intense, constant pain in the herniated muscle.

Some of these wounds in ex-service men, now well over eighteen to twenty-four months since débridement, present muscle hernias of varying size and produce more or less incapacity. We have examined many of them and have gone into a detailed examination of the cause and nature of the prima injury, the time element between the sustaining of the wound and the time when operated on, the length of time the wound was kept open, the irrigation solutions employed, and the method by which complete healing was accomplished. From such a study we conclude that:

1. All too frequently fascial tissues were needlessly sacrificed.
2. Drainage and surgical solution of chlorinated soda (Dakin's solution) was employed over a too extended period.
3. Secondary closure was not utilized.
4. Fat transplants were not employed.

Therefore, to lessen muscle hernia and its debility the operator should be familiar with the factors that produce and the factors which lessen muscle hernia probabilities.

LARGE, INDURATED, PAINFUL SCARS

It naturally follows that in extensive wounds large scars are bound to ensue. Their indurations, extent and painfulness may be minimized. Many of the debrided wounds that we have seen may be termed almost failures and crimes for the following reasons:

1. The extended débridement was permitted to heal by granulation, and this healing retarded by persistent irrigations and packing over an unnecessarily long period of time.
2. The principles of drainage were faultily instituted and persisted in.
3. Bacteriologic cultures were not employed.
4. Secondary closure was not performed.
5. There was failure to cover exposed nerve trunks with fat implants.

Extensive scars, painful scars, cicatricial deforming contractions, and thickened, leather-like scars may be almost always prevented by the observing of these guiding principles.

While in France, from December, 1918, to May, 1919, we observed these principles in several hundred cases with most satisfactory results. The ultimate scar, the anatomic results and the appearance of the final scar created a justifiable enthusiasm in behalf of these principles. With careful, painstaking technic it is possible to secure thin, straight line healing of skin and fascia very similar to those the surgeon now encounters in his open treatment of fractures, laparotomies, etc., that heal by primary union. We have become accustomed to refer to this method as "secondary plastic closures." We inserted the word "plastic" because the operation frequently calls for plastic formation of fascia and skin covering. Its success depends on the surgical sterilization of the wound, bacteriologic count, excision of exuberant and partly organized granulations, infiltrated areas, the placement of fat transplants and skin closure by means of flaps sutured without tension, a detailed attention to the institution of a careful sterile technic, and lastly to proper dressing, bandaging and immobilization of the part. We feel that disfiguring, deforming and painful scars may be avoided if, after débridement, secondary plastic closure is utilized. In fact, one has not completed his surgical work if the patient is permitted to be discharged without the employment of a plastic closure.

EXPOSED AND HYPERSENSITIVE NERVE TRUNKS IN DEBRIDED WOUND SCARS

A complete débridement often exposes or involves in the healing process sensory nerve trunks or branches. In some this does not become pronounced until healing has been complete and ultimate scar contraction ensues. The condition is most painful, incapacitating, and a cause for constant complaint as well as eagerness to obtain relief. In its effect on the individual, the condition is virtually equivalent to tic douloureux. Especially is this true if the wound exists on the buttock, back or posterior surfaces of the thighs and arms, because of their being subject to more frequent pressure. There is but one method for accomplishing relief, namely, resection of the scar, exposure of the nerve, placement of a fat transplant, and closure by plastic flap.

We have lately been called on in a number of such cases to accomplish the relief of this condition, and are satisfied that this is the most efficient method. It is also a precaution to be observed in the performance of a débridement and the subsequent care of the wound to prevent such a result.

SINUSES FOLLOWING DÉBRIDEMENT

Our observations are that persistent discharging sinuses result from: (1) foreign bodies remaining in the wound; (2) bone involvement and necrosis, or (3) organized fibrinous granulations, so-called, lining a track that has been kept open unduly long by drainage tube or gauze. In some the skin heals over, only to break down again repeatedly, by reason of retentive accumulations of serums or purulent material.

When confronted with such a sinus, the true condition should be ascertained by roentgen-ray examination. The course and extent of the sinus track and its ramifications may be most satisfactorily outlined by injection with a 20 per cent. aqueous solution of sodium iodid, and stereoscopic plates.

Treatment consists of removal of all foreign bodies, removal of diseased bone, bacteriologic cleansing of the wound, and final closing of the wound in conformity to the method previously described.

SCARS ADHERENT TO BONY STRUCTURES

When the débridement has necessiated the removal of soft part to such a degree that a bone is exposed, a resulting scar adherent to the bone creates a most troublesome condition. When this condition exists, an attempt should be made to correct by massage, vibration and definite exercises. When the release of the adhesion cannot be thus secured, it becomes necessary to resort to the interposition of a fat transplant. The condition can be avoided by early secondary closure.

CAUSE OF UNTOWARD RESULTS

These aforementioned results following débridement of wounds may be looked for in a large percentage of injuries in which débridement has been incompletely performed, the subsequent care characterized by failure to employ bacteriologic control of the wound, prolonged, persistent irrigation and drainage, permitting wounds to heal by granulation, failure to employ secondary plastic closure, and, lastly, failure to institute massage and rehabilitating functional exercises.

The observations recorded are not carping criticisms; they are, on the contrary, a somewhat terse summarization of our conclusions arrived at after an impartial study of involved factors in cases in which the ultimate result might well have been otherwise. Our reconstructive measures have resulted in causing satisfactory end-results, thus substantiating the allegation that this was possible in the first instance. We believe that avoidance of these errors will achieve the greatest desirable end-results when performing a débridement.

In dealing with industrial wounds of certain types, the surgeon must likewise be familiar with certain definite causes of failure and prevent their incidence. In these cases, débridement has been wrongfully condemned because of neglect or lack of familiarity with the principles involved. The subject is one that we propose to discuss in a future article based on 1,000 industrial injuries. To do so in this article would involve the writing of a far too extended single paper.

A SECOND ATTACK OF MENINGITIS AFTER AN INTERVAL OF EIGHTEEN MONTHS

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The proportion of the general population attacked by sporadic meningitis is small, so that a second attack of meningitis is necessarily very uncommon. In epidemics, however, a small proportion of patients have second attacks, and the study of these recurrences may throw some light on the degree and duration of the immunity conferred by an attack of meningitis—a very obscure subject at the present time.

Netter[1] has reviewed the early cases reported and described five cases of his own. He cites Boudinn's cases, one a man, aged 69, who had attacks from January 9 to February 24, from May 3 to May 18, from May 27 to June 9, and from June 17 until death, June 20. The man seemed perfectly well between attacks, and returned to work. A second patient suffered with meningitis in February, 1841, and again in February, 1842; Boudinn treated a third patient in 1851 who had two attacks in 1849 and one in 1850. Netter also cites North's case of meningitis recurring after an interval of twenty-five months, Hermann and Kober's case recurring after months, and Washaur's case recurring after five years.

In 1898, Councilman, Mallory and Wright[2] were able to collect five instances from the literature. In reviewing even the modern literature of this subject we are at once confronted with the difficulty of distinguishing between recrudescences, relapses and recurrences. Clinically, the chronic cases run in an intermittent, fitful course, and it is impossible to say when recovery is complete. The spinal fluid, which is our best guide in treatment as well as in prognosis, is not an unfailing criterion of the progress of the infection, as the spinal fluid may be clear and without meningococci, while these organisms may be active or dormant within the sealed off ventricles or cisterna magna or within the thick, purulent, fibrinous exudate over the meninges. The time necessary for the absorption of this exudate is necessarily variable and uncertain.

Arbitrarily, we have considered any new clinical manifestation of infection within thirty days as a recrudescence in the course of a chronic case. The

1. Netter, A., and Debré, R.: La méningite cerebrospinale, Paris, Masson et Cie, 1911, p. 131.
2. Councilman, Mallory and Wright: Special Report to Massachusetts State Board Health, 1898, p. 77.

course of such cases is well shown by Gordon,[3] who reports ten fatal chronic cases with eight necropsies. His patients would almost recover clinically, only to relapse within nine to twenty-one days with acute symptoms. The duration of the disease varied from two and one-half to thirteen months, with progressive increase in motor, sensory and psychic disturbances. In all, the ventricles were dilated and sealed off, containing purulent or cloudy fluid. The spinal fluid on puncture was generally clear. At necropsy a diffuse pachymeningitis of brain and cord was present.

During the second and third months after apparent recovery, reinfection is probably much more common from within than from without; after a three months' symptom-free interval we are ready to consider the probability of reinfection from without—that is, a recurrence or second attack of meningitis.

Netter[4] says that remissions may last from a week to three or four months and reports[1] four cases with symptom-free intervals of from thirty to seventy-three days. His first and third cases seem ordinary relapses after thirty and thirty-one day intervals, respectively. His second case recurred after seventy-three days, having passed through both measles and diphtheria in the meantime. His last case occurred in a girl of 5 who recovered promptly under treatment. She had a second attack after two months, during which time other members of the household had meningitis. These four cases constituted 1.14 per cent. of his 350 cases, or 1.56 per cent. of his 255 nonfatal cases.

Stone and Truitt,[5] in their experience at Fort Riley, found that 5 per cent. of their patients gave a history of a preceding carrier state, and two of their 191 cases gave a definite history of a previous attack of meningitis. One of these died. Two of their series were readmitted in second attacks. "The first patient was in the hospital thirty-two days with a typical moderately severe attack. Sixty-five days after his discharge from the hospital he was readmitted unconscious in a second attack from which he recovered in thirty-three days." The second patient had a moderately severe attack and was discharged on the forty-second day; eighty-four days later he was readmitted with typical meningitis. He had ventricular or spinal blockage and was sensitive to serum. He was given sensitized vaccine and recovered after four months. These four cases constitute 2.09 per cent. of this series.

Herrick,[6] in 1918, reported two replases after three and four weeks, respectively, finding that the relapse may be more severe than the first attack. He stated at that time that "the fact of their occurrence lends discouragement to vaccine prophylaxis and other measures for the production of immunity."

The next year Herrick and Dannenberg[7] reported seven cases of recurrent meningitis, six of which constitute 2.2 per cent. of Herrick's 265 cases at Camp Jackson. As the case reported here occurred in Herrick's series, the percentage is raised to 2.64. He suggests in the article that the passive immunity conferred by the serum treatment is transient, and as the body has little opportunity to establish active immunity, the use of vaccine following meningitis would probably prevent these recurrences. Four of Herrick's and Dannenberg's cases recurred during the second month after recovery; one recurred after an interval of fifty-seven days during which all deep reflexes were exaggerated, and the right abdominal reflex was greater than the left; another case started convalescence with a residual strabismus and relapsed after seventy-three days. One case recurred after a symptom-free interval of 135 days. As the authors suggest, these (the first six at least) were more likely to be reinfections from within than from without.

Sophian[8] quotes Ker as saying that relapses occur in from 15 to 20 per cent. of cases; but in his own opinion, true relapses occur in less than 5 per cent. of cases. He says that most of these relapsing cases have during apparent convalescence symptoms of hydrocephalus of varying degree, followed by recrudescence instead of relapse.

REPORT OF CASE

Corporal R. S. B., 316 F. A., 81st Division, seen with Drs. Gilbert McLeod and W. C. Mudgett at the James McConnell Hospital, Sept. 21, 1919, had meningitis in December, 1917, at Camp Jackson. He remembered having had four lumbar punctures and being returned to duty after a month. He did no heavy work for several months, and went overseas in May, 1918, where he performed his usual duties throughout the campaign except for a few days in November, 1918, when he was in a field hospital with bronchitis. He was discharged in August, 1919, in Class A. He had been sick six weeks with headache and irregular fever, having fever from one to three days, with a free interval of several days. During the preceding week he developed projectile vomiting and stiff neck, and lumbar puncture two days before gave a very cloudy fluid. When seen, he had stiff, slightly retracted neck; pupils equal, reacting poorly because of opiates; ocular movements normal; no palsies. The tongue was coated, the throat normal. There were no enlarged glands, and no evidence of previous intravenous medication. The heart, lungs, abdomen, genitals and extremities were normal. There was no skin eruption. Both the superficial and the deep reflexes were exaggerated. There was no clonus and no Babinski reflex; Kernig's sign was present, well marked, bilateral and equal. Hearing and vision were good. Cerebration was normal. The patient had lost flesh, but was in good condition in view of the pain, fever and partial starvation for several weeks. When seen, his temperature was 98.8, the white blood count, 11,000. The pulse had not risen with the fever. Lumbar puncture produced 50 c.c. of opalescent fluid under moderate pressure. This fluid showed many leukocytes, all polymorphonuclear, and was crowded with gram-negative diplococci, mostly extracellular. Under repeated injections of serum, the patient recovered completely.

Herrick[6] reports his first attack as mild, with early diagnosis, and only intraspinal therapy.

Baeslack and his associates[9] report one negative culture from spinal fluid, but positive culture from the blood. Unfortunately in neither attack was the organism typed.

Dr. McLeod later obtained from the patient the information that in March, 1919, there had been twenty-four cases of meningitis in this man's outfit and forty-two carriers who were transferred to a Casual Company. He himself was negative to several cultures. The last week in May the forty-two who had been carriers were returned to the organization and came home in the same transport, going to the same camp for discharge. This was undoubtedly a case of

3. Gordon, Alfred: The Chronic Form of Meningococcus Meningitis, Arch. Int. Med. **23**: 150 (Feb.) 1919.
4. Netter, A.: Arch. de méd. d. enf. **22**: 72 (Feb.) 1919.
5. Stone, W. J., and Truitt, R. C. P.: A Clinical Study of Meningitis Based on Two Hundred and Fifteen Cases, Arch. Int. Med. **23**: 282 (March) 1919.
6. Herrick, W. W.: The Intravenous Serum Treatment of Epidemic Cerebrospinal Meningitis, Arch. Int. Med. **21**:451 (April) 1918.
7. Herrick and Dannenburg: Med. Clinics N. A., September, 1919, pp. 379-387.
8. Sophian, A.: Epidemic Cerebrospinal Meningitis, 1913, p. 101.
9. Baeslack, F. W.; Bunce, A. H.; Brunelle, G. C.,; Fleming, J. S.; Klugh, G. F.; McLean, E. H., and Salomon, A. V.: Cultivation of Meningococcus Intracellularis (Weichselbaum) from the Blood, J. A. M. A. **70**: 684 (March 9) 1918.

reinfection from without, due probably, as Dr. MeLeod suggests, to the failure of his temporary immunity after eighteen months.

Sophian and Black [10] report that vaccination with the meningococcus produces a considerable degree of immunity which persists for at least two years.

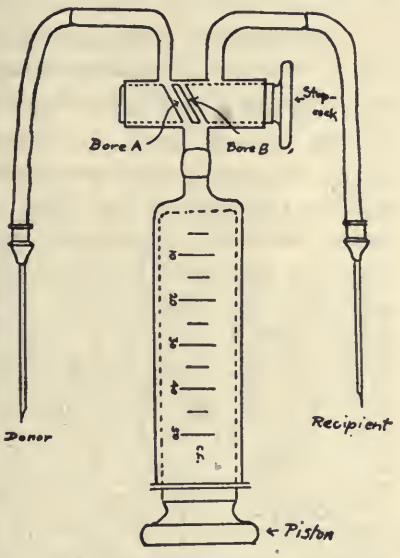
In view of this finding it seems wise to adopt Herrick's suggestion that besides the passive immunity conferred by serum, we also stimulate active immunity by the use of meningococcic vaccine.

Clinical Notes, Suggestions, and New Instruments

DIRECT BLOOD TRANSFUSION APPARATUS

BARNETT GREENHOUSE, NEW HAVEN, CONN.

Recently I suggested [1] the use of a two-way glass stopcock as a probable solution of the direct transfusion problem. This made the apparatus a bit clumsy. To obviate this and to increase the ease with which the instrument can be used, a single three-way stopcock can be substituted for the two two-way stopcocks, according to the accompanying illustration.



Direct blood transfusion apparatus, with three-way stopcock.

The apparatus as sketched is ready to receive the donor's blood, since Bore *A* is in direct communication with the donor's needle and the syringe, while Bore *B* is closed. After the syringe is filled by drawing out the piston the stopcock is turned half way around. This at once shuts off Bore *A* and places Bore *B* in direct communication with the syringe and the recipient's needle. The blood is then forced into the recipient's vein by pushing in the piston. The process is repeated until sufficient blood is transfused.

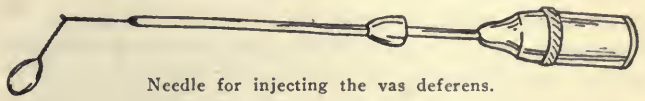
28 Hallock Street.

A NEEDLE FOR INJECTING THE VAS DEFERENS

THOMAS M. PAUL, M.D., ST. JOSEPH, MO.

A needle with the smallest lumen that will admit a strand of silkworm gut is selected. Its point should be cut off square with the shaft and the edges rounded in toward the opening. A drop of solder should be fused around the shaft about three-quarters inch from the point. The solder should then be smoothed off to an angle of about 45 degrees with the shaft. The conical slant thus formed should, of course, be on the side looking toward the needle point. These mechanical details can be easily executed by any dentist. A carborundum wheel is used to round off the needle's point, and a sandpaper disk to give the conical shape to the solder.

After the vas is opened, and a strand of silkworm gut inserted into its lumen, the needle is threaded on the silkworm gut and pushed into the vas until the shoulder of solder plugs the opening. The silkworm gut is withdrawn, the loaded syringe attached to the needle, and the injection made. After the injection, the silkworm gut is again passed up the vas, through the needle, for about 5 or 6 inches, and its free end tied in a common knot with the two ends of another strand of silkworm gut which has been passed beneath the vas. At the next injection the vas is pulled out of the



Needle for injecting the vas deferens.

scrotal wound by drawing on all three strands, the knot is untied, the strand passing beneath the vas removed, the needle threaded on the strand remaining in the vas, and the injection made as before. I prefer this to using only one strand of gut passed in through the lumen of the vas and out through its side.

The shoulder of solder effectively prevents the regurgitation of the injected fluid into the epididymis and the consequent production of a chemical epididymitis, which is very distressing. Its adoption was suggested to me by Dr. J. E. Weedin, a dentist with offices in the same building as my own, when I invaded his laboratory and attempted to blunt a needle with one of his files. He informed me that such solder beads are constantly used by him to gage the depth to which a needle is inserted in nerve blocking. It is hardly necessary to add that it was he who demonstrated to me the advantage of a carborundum wheel and dental engine, in the hands of a dentist, over a common file in the hands of a physician.

A similar needle is suitable for irrigating the kidney pelvis and ureter, through the ureteral catheter; its outside caliber should be scarcely small enough to admit its entering the catheter, and the slant, formed by the shoulder of solder, should be very gradual, so that the beginning of the shoulder will enter the lumen of the unyielding catheter, and thus effectively prevent the regurgitation of fluid during the injection.

Physicians and Surgeons Building.

A CASE OF DOUBLE VAGINA AND DOUBLE CERVIX

LEON WILLET HYDE, M.D., HILLSBORO, ORE.

During the year 1915, a young woman consulted me with regard to her condition in view of prospective matrimony. She said that she had never suffered any at the menstrual period, but that at times the flow was scanty. Sometimes the menstrual flow would stop and be followed a few days later by a similar flow. On examination, the vagina was found so small that it was impossible to make a digital exploration. At the fourchette a distinct septum could be felt. This was firm and manifestly formed the central separation of two vaginae. I informed the patient of the condition, and recommended operation. This was delayed for about two months, at which time I removed a complete vaginal septum which, except for size, was characteristic of the vaginal wall in appearance. Using a good sized speculum, I examined the os. Instead of a single os there were two distinct and well formed ora. Except for being small, both vagina and ora were perfect. After painting the cartilaginous bases, left as a result of the removal of the septum, with iodin, I packed the vagina with gauze and put the patient back to bed. Recovery was uneventful.

In about six months this woman was married and moved to Portland. I requested that, should she become pregnant, she ask her physician to let me know. This she did. The physician, getting the report of the case from me, was interested in the outcome of her pregnancy. In due time he reported the birth of a healthy and normal child. In view of the report of Dr. H. G. Steele [1] of Bluefield, W. Va. I felt that this report would be of interest.

10. Sophian, Abraham, and Black, J. H.: Prophylactic Vaccination Against Epidemic Meningitis, J. A. M. A. **59**: 527 (Aug. 17) 1912; **63**: 2126 (Dec. 12) 1914.

1. Greenhouse, Barnett: "Blood Transfusion Apparatus," J. A. M. A. **74**: 967 (April 3) 1920.

1. Steele, H. G.: A Case of Vaginal Septum and Bicornate Uterus, J. A. M. A. **75**: 309 (July 31) 1920.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, SEPTEMBER 25, 1920

THE VIABILITY OF RED BLOOD CELLS

Presumably, foremost among the various reasons for transfusing blood in suitable cases is that of restoring the number of functionally competent red blood cells when a dearth of them is indicated by some sort of anemia. Strangely enough, comparatively little is as yet known with precision regarding the fate of transported erythrocytes. If they are expected to continue as physiologically effective carriers of oxygen and to perform in the same normal way as in their donor, they must obviously continue to function thus when they have entered the circulation of the recipient; otherwise, blood introduced into the veins would be little more than a relatively inert chemical mixture. Furthermore, in these days of frequent transfusion at short notice in imperative cases, it is an enormous advantage to be able to retain blood in vitro for such emergencies without appreciable loss of its restorative value.

Not long ago, Rous [1] and his associates at the Rockefeller Institute for Medical Research demonstrated that red blood cells can be preserved fourteen days or more in suitable solutions without apparent decrease in "viability." At any rate, when injected into the circulation they seemed to function so well that the experimental animals showed no detectable disturbances or variations from the normal blood picture. Cells preserved for twenty-three days, however, though they were apparently intact and morphologically unchanged when transfused, soon left the circulation.

On the basis of animal experiments, Kambe and Komiya [2] of the University at Tokyo have also concluded that preserved blood or even erythrocytes alone may retain their physiologic potencies so that they show a normal length of life after transfusion. It is known from microscopic examination of the blood that during rapid regeneration of the red cells following hemorrhage they show the presence of nucleated forms. The Japanese investigators accordingly produced experimental anemias by hemorrhage and then injected blood cells preserved in various ways. The absence of characteristic morphologic regenerative forms among the blood cells during the days following the transfusion indicated that the newly supplied erythrocytes were evidently capable of performing the usual functions of blood cells so that the hematopoietic organs were not stimulated to produce new ones. In this way it was demonstrated, for rabbits, that erythrocytes preserved as defibrinated blood can maintain their normal vitality for twenty days, and in mixtures of isotonic sodium citrate solution and glucose solution, even for thirty days or more. Hence they may be used to replace lost blood. It is to be hoped that these findings will ultimately be investigated with sufficient thoroughness to render them applicable to man when appropriate occasions arise in which the usual more direct technic is not readily attainable.

1. Rous, Peyton, and Turner, J. R.: J. Exper. Med. **23**: 219, 239 (Feb.) 1916.
2. Kambe, H., and Komiya, E.: The Transfusion Experiment with Red Corpuscles, Am. J. Physiol. **53**: 1 (Aug.) 1920.

PITUITARY EXTRACT AND INTESTINAL ABSORPTION

When the long history of the scientific investigation of the thyroid gland is considered, it becomes less surprising that so much uncertainty still exists respecting the functions of the other less well known endocrine structures. The pituitary gland, for instance, has been associated by physiologists with a variety of activities, the alleged effects of the posterior lobe on plain muscle and that of the blood vessels and the uterus in particular being most prominent. It has also been believed that the hypophysis exerts a specific effect on the kidney and the mammary gland of lactating animals. Careful observations of this announced influence on milk secretion have demonstrated, however, that pituitary extracts are not true galactagogues; they stimulate, not the actual production or secretion of milk, but rather the expulsion of the milk that has already collected in the alveoli and ducts of the mammary glands.

In the case of the renal function, on the other hand, the state of present-day knowledge is most confusing to the ordinary student. He is told, on the one hand, that administration of extracts of the posterior lobe of the pituitary gives rise to increases in the flow of urine, and that this diuresis may sometimes be followed by glycosuria. One might suspect that the gland extracts produce such a reaction by causing a vasodilatation. The known facts with respect to the renal circulation speak against this assumption, as does the knowledge that elsewhere in the body pituitary extracts tend to produce vasoconstriction, if anything.[1] On the other hand, it is taught that pituitary medication is of distinct value in cases of chronic polyuria (diabetes insipidus),[2] although its repeated

1. Macleod, J. J. R.: Physiology and Biochemistry in Modern Medicine, St. Louis, C. V. Mosby Company, 1918, p. 769.
2. New and Nonofficial Remedies, Chicago, American Medical Association, 1920, p. 206.

administration over long periods of time is not advisable and it is less effective when given by mouth.

Some of the confusion caused by such seemingly contradictory statements might be removed if some explanation were available for the at least temporary antidiuretic effects that have lately been recognized in both experimental and clinical observations after subcutaneous administration of pituitary extracts. Instead of looking solely at the kidney factor, Rees [3] of the University of South Dakota has considered the possible variations in the transport of water in the body during the action of the pituitary products. He has thus observed that subcutaneous injection of the latter in animals actually results in a delay in the absorption of water from the bowel. This delay may not be sufficient in all cases to account for the retardation of secretion of water by the kidneys; nevertheless, it illustrates the danger of drawing conclusions as to the pharmacodynamics of potent products until all the physiologic factors have been carefully considered. It is one effect to reduce the excretory functions by direct action on the renal structures, but quite a different one to delay excretion by preventing water from reaching the kidney.

THE SPECIFICITY OF HEMOLYTIC STREPTOCOCCI

During the last few years there has been a rapid advance in the understanding of the bacteriology and immunology of pneumonia, and it has become fairly well established that there are not only a number of distinct types of pneumococci, but that there perhaps is some therapeutic value in the use of specific immune serum. It is now generally accepted that Type I pneumococcus is a unique variety, has marked pathogenicity, and is rarely found in normal throats; the so-called Type IV is heterogeneous and is found widespread under normal conditions. Hemolytic streptococci are found under much the same conditions as pneumococci, and it is possible that certain biologic differences exist among hemolytic streptococci corresponding to those between pneumococci. Heretofore, the classification of streptococci has been based on the morphologic and cultural characteristics without respect to distribution and pathogenicity; but in order to establish any specificity it may be necessary to include their immunologic properties as well.. Previous to 1903, streptococci were classified roughly according to morphology and staining reactions; but with the introduction of the blood agar plate by Schottmüller, two large groups were established, the hemolytic and nonhemolytic. Then came a period when streptococci were subdivided on the basis of acid production in certain test sugars, and numerous classifications were suggested, the most successful being based on the amount of hemolysis produced on blood agar and further subdivision by the use of fermentation reactions. No one classification, however, has thus far proved entirely adequate, and we now seem to have reached the point at which the immunologic properties of hemolytic streptococci are to receive special attention.

Repeated attempts have been made to determine the specificity of streptococci by immunologic reactions, but with confusing results, owing, perhaps, to the fact that much of the work was done before the introduction of the more accurate methods of separation of pneumococci from green-producing and hemolytic streptococci. At all events, recent studies along these lines have yielded more consistent results; indeed, they open the way to the establishment of biologic groups among hemolytic streptococci. Dochez, Avery and Lancefield [1] studied the agglutination of 125 strains of hemolytic streptococci from a wide variety of sources, and found that human hemolytic streptococci do not conform to a single type but probably consist of a number of types; at least six of these were demonstrated. Not only were these facts established by the study of specific agglutinins, but also there was found a corresponding specificity in the effect of antistreptococcus serum in its protection of inoculated animals. Tunnicliff [2] showed, first, that green-producing streptococci—generally regarded as heterogeneous—may be reliably differentiated by means of the opsonic reaction, and recently she demonstrated that hemolytic streptococci also are differentiated by this reaction. By means of opsonin and agglutinin tests, she found that hemolytic streptococci from the throat early in scarlet fever are different from hemolytic streptococci from other sources; that they may differ from streptococci recovered during convalescence, and further that hemolytic streptococci in complicating lesions usually differ immunologically from those from the throat in the acute stage of scarlet fever. Using the type serums and methods of Dochez, Avery and Lancefield, Bliss [3] found that 80 per cent. of the hemolytic streptococci isolated from the throat in scarlet fever were agglutinated by the corresponding immune serum, none of these strains being agglutinated by serums produced by the injection of other types of streptococci. It may be concluded that most of the hemolytic streptococci in the throat in scarlet fever belong to a specific biologic group as determined by immune reactions, and the question once more presents itself whether scarlet fever, after all, is not a streptococcus disease.

As specific biologic groups of hemolytic streptococci without doubt exist, it now remains to carry the work further and to include other acute infections in which hemolytic streptococci predominate in order to deter-

3. Rees, M. H.: The Influence of Pituitary Extracts on the Absorption of Water from the Small Intestine, Am. J. Physiol. **53**: 43 (Aug.) 1920; ibid. **45**: 471 (March) 1918.

1. Dochez, A. R.; Avery, O. T., and Lancefield, R. C.: J. Exper. Med. **30**: 179 (Sept.) 1919.
2. Tunnicliff, Ruth: Specific Nature of the Hemolytic Streptococcus of Scarlet Fever, J. A. M. A. **74**: 1386 (May 15) 1920.
3. Bliss, W. P.: Bull. Johns Hopkins Hosp. **31**: 173 (May) 1920.

mine, if possible, whether specific streptococci cause specific diseases and whether specific immune serum can be developed that will have therapeutic value.

Current Comment

THE ALKALI RESERVE OF THE PLASMA IN SURGICAL SHOCK

Among the problems of medical and surgical significance emphasized by the exigencies of the World War, the nature and management of shock early assumed conspicuous importance. The progress of the interallied investigations undertaken to solve the important questions at issue has been recorded from time to time in THE JOURNAL. Very early the possibility that "acidosis" is a potent factor in the production of surgical or traumatic shock was brought to the attention of investigators in this field of clinical research. The fact that alkaline fluids had long been recommended as exceptionally effective in restoring animals that are in state of shock gave added probability to the assertion that acidosis is a causal feature in the genesis of this clinical condition. The view gained considerable popularity through its early championship by Cannon. Little by little, however, the untenability of the acidosis theory has been revealed. The fall in the alkali reserve of the blood plasma is in many cases merely an incident, rather than a preexisting cause, of the lowered sensibility and blood pressure. It may attend anesthesia uncomplicated by "shock" symptoms from which complete recovery can be attained. Recently Raymund [1] of the University of Chicago recorded the results of extensive experiments which showed that when the shock ensued suddenly, the fall in the alkali reserve of the plasma was relatively insignificant. When shock was slow in appearing after trauma, the plasma might even show a high alkali reserve for some time after the animal examined had become virtually moribund. There was apparently no correlation between the type of shock, i. e., its relative severity, and the degree of alkali depletion. In other words, the condition of the animal could not be gaged by its alkali reserve. Corroboratory is the added fact that injections of acid solutions into the circulation—surely a phenomenon resembling acidosis—failed to produce shock or any allied condition.

INSECT POWDER

When the elusive flea, the nocturnal bedbug or the festive cockroach turns up his nose at insect powder instead of lying on his back and turning up his toes, there is a reason. The reason, according to a recent report from the Bureau of Chemistry of the Department of Agriculture, is adulteration and sophistication of the insect powder. Real insect powder, composed of pyrethrum, representing the powdered flowers of the chrysanthemum, will invariably cause the aforementioned species of insects to shuffle off this mortal coil. As far back as 1856, it was discovered that the powder of these flowers had the peculiar power to attract insects and then numb or kill them. Although early writers believed it harmless to man and larger animals, isolated case reports are available of harmful effects following the absorption of fairly large doses. Naturally, any substance with such potent properties early became the subject of exploitation and, unfortunately, insect powder appears to have been extensively adulterated since it first entered into commerce. From the first this adulteration consisted of mixture with the powder of other flowers, and with the grinding up of the stems and leaves as well as the potent portion of the plant. More recently, barium chromate, lead chromate, yellow ocher and similar substances have been used as adulterants. Because of the nature of the substance, the determination of the purity is a difficult matter. The best test is to try it out on the insects. If it does not affect one or more species within a fairly reasonable amount of time, it is heavily adulterated. If, on the other hand, in the words of Glover, when sprinkled over them or placed in a circle and they are made to pass over it, for a few steps they appear very lively, but soon stagger, and after a few struggles fall over and soon cease to live, then it is good insect powder. Microscopically, certain determinations may be made by those well informed as to the cellular characteristics of the plants and, chemically, the ash of the powder may be examined for foreign chemical substances. All of these methods the Bureau of Chemistry has summarized in a recent pamphlet.[1] Genuine insect powder kills insects.

STRENGTH TESTS

E. G. Martin [2] of Stanford University, who has devised strength tests well suited to determining the extent of muscular impairment in persons, chiefly children, afflicted with infantile paralysis, has lately studied the performance of large numbers of workers, both male and female, under conditions in which something of the effect of external factors could be ascertained. The most obvious of such influences are climatic. It appears that certain days are more favorable to high output than others, and the influences that underlie the differences are such as to affect all workers in a single environment. Martin's data suggest that the temperature at which work is carried on is important. There is evidence that persistent exposure to temperature above 30 C. (86 F.) is unfavorable to strength. Relative humidities between 70 and 80 per cent. appear to favor high strength showing. Other climatic influences have not been demonstrated to be operative. Hence they need not be taken into consideration at present in the application of the strength test as a criterion of health. Evidence has been collected to show that the impairment of physique due to exhaustion may be so severe as to require considerable time of rest for recovery to normal strength. There is evidence that the effects of fatigue are persistent, in that they

1. Raymund, B.: The Alkali Reserve in Experimental Surgical Shock, Am. J. Physiol. **53**: 109 (Aug.) 1920.

1. McDonnell, C. C.; Roark, R. C., and Keenan, G. L.: Insect Powder, Bulletin 824, United States Department of Agriculture, Government Printing Office, 1920.

2. Martin, E. G.: Strength Tests in Industry, Pub. Health Rep. **35**: 1895 (Aug. 13) 1920.

tend to appear on the day following a day of fatigue. Severe fatigue is more likely to show this persistent effect than is mild fatigue. Days of poor physical condition are more likely to be followed by days of fatigue than are days of good condition, or days on which no demonstrable fatigue appears. Incidentally, Martin's measurements support the thesis that with men, laborious operations tend to develop approximately equal strength among the workers; in other words, there is a "standard" strength for each job. Among women and men alike, demonstrable fatigue is more manifest in weaker workers than in stronger. The most pronounced indications of fatigue are presented in an operation requiring close concentration and carried on in a disagreeable environment.

NONALCOHOLIC EXTRACTS

As most physicians know, the passing of John Barleycorn was not wholly complete. The "kick" of alcohol still remained in many pharmaceutical preparations, more or less medicated, and in the household extracts of vanilla, lemon and sundry other flavors utilized for putting the taste in cakes and ice cream. But step by step Mr. Barleycorn is being wholly urged toward complete submergence. At the last session of the American Chemical Society, recently held in Chicago, it was reported in the section on agricultural and food chemistry that such extracts can now be made with glycerin as a substitute for alcohol. The thrifty housewife need no longer fear the possibility of fastening the rum habit on the younger generation. When mince pie has been thoroughly denatured, alcohol will remain in the home merely as a fuel for chafing dishes —and these are no longer fashionable.

STATE REGULATION OF INFLUENZA

The epidemic of influenza of 1918 caught many states and health departments totally unprepared. As there were no adequate regulations aside from the powers of the boards of health for handling this disease, much emergency legislation ensued. It is generally realized that there is a wide divergence of opinions and regulations in the various states and municipalities concerning this disease. In an endeavor to ascertain points for a model control of the subject, the state of Minnesota[1] sent a questionnaire to state health officers in each of the states covering the general points of greatest importance. It was found that 97.5 per cent. of forty states that replied have some method of reporting the disease: in 74.4 per cent. to the local health officer and in 12.8 per cent. to the state health officer. There is quite a diversity in the rules regarding quarantining and placarding. Isolation or quarantine is maintained in twenty-four states, the time varying from two days after return to normal temperature to fourteen days after return to normal temperature, and in five states until complete recovery from all clinical symptoms. Influenza is placarded in fourteen states, not placarded in nineteen, and controlled by local authorities at their option in five. There is no definite ruling in many states regarding the policy of closing public places in epidemics. The tendency is for the state health officers to shift these responsibilities to the local health authorities. An interesting point brought up in the questionnaire was: "Do you recommend the use of serum (*a*) as a prophylactic, (*b*) as treatment?" One state recommended its use for prophylaxis only, and no other state recommended it at all, although some answered that they recommended antipneumococcic vaccine as a prophylactic against complications. This analysis is valuable as an indication of the necessity for greater knowledge of the disease, its etiology, mode of transmission, duration, etc., before adequate control can be effected.

1. Feezer, L. W.: Comparative Study of State Regulations for the Control of Influenza, Pub. Health Rep. **35**: 2155 (Sept. 10) 1920.

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ALABAMA

Graduate Course at Tuskegee.—A graduate course in medicine and surgery for colored physicians will be given under the auspices of the John A. Andrew Clinical Society, in cooperation with the John A. Andrew Memorial Hospital at Tuskegee.

Health News.—Dr. Samuel Terrell Hardin, Northport, has been appointed assistant health officer for Northport precinct No. 10, and for precincts 6 and 7.——Dr. Surry Foster Mayfield, Tuscaloosa, has been appointed assistant county health officer to have charge of the free clinic and laboratories.

Constitutionality of Birmingham Ordinance Upheld.—Constitutionality of the Birmingham ordinance, providing for examinations of persons suspected of suffering from venereal diseases, and quarantine and treatment of such persons when necessary, has been upheld in the circuit court by Judge Horace C. Wilkinson.

ARKANSAS

Hospital Site Purchased.—A site for the new Baptist State Hospital has been purchased. The site includes the old Little Rock Sanatorium, which will be remodeled and put to temporary use.

Instructor Resigns.—Prof. H. E. Morrow of the department of chemistry of the University of Arkansas, Little Rock, has resigned to accept the chair of biologic chemistry in the University of Tennessee College of Medicine, Memphis.

COLORADO

Personal.—Dr. Mary Noble, Colorado Springs, has been appointed chief of the division of child health of the State Health Department of Pennsylvania.

People to Vote on Psychopathic Hospital.—At the November elections, the people of Colorado will vote on the question of appropriating funds for a psychopathic hospital. A sufficient number of signatures have been secured on a petition to have the question placed on the ballot.

School of Tuberculosis.—The Colorado School of Tuberculosis, Colorado Springs, Dr. Gerald Bertram Webb, president, initiated a course to extend over six weeks, beginning September 10. Sanatoriums and laboratories of the Pike's Peak region will be used for clinical purposes. The schedule will include lectures and individual instruction, and more than half of the course will be in the form of clinics to be given at four sanatoriums by the teaching staff.

FLORIDA

Personal.—Dr. Eustis R. Marshburn, Chattahoochee, for two years a member of the medical staff of the Chattahoochee Hospital, has been appointed physician to the state prison farm at Raiford.

Hookworm Disease.—At the recent encampment of the Florida National Guard at Camp Johnston a partial survey of the troops by representatives of the state board of health under the direction of Dr. Daniel Currie Campbell disclosed that 25 per cent. of the men were infected with hookworm or other intestinal parasites.

ILLINOIS

Anti-Tuberculosis Association Opens Office.—The Hancock County Anti-Tuberculosis Association has established offices in the court house at Carthage. The county nurse, Miss Josephine Packer, is in charge.

Sanatorium Seeks Funds.—The trustees of the Macon County Tuberculosis Sanatorium are planning to submit to the voters in November a request for approval of an additional levy to build and maintain the hospital.

Chicago

American Chemical Society Meeting.—At the regular meeting of the Chicago Section of the American Chemical Society at the City Club, September 24, Dr. Arthur I. Kendall, dean of the Northwestern University Medical School, read a paper on "Bacteria as Chemical Reagents."

Field Day.—The North Side Branch of the Chicago Medical Society held a field day, September 15, at St. Mary's Training School, Desplaines, which was attended by a large number of the members of the Chicago Medical Society. After a tour of the building and grounds, several games of basket ball and a game of volley ball were played. An airship taxicab was exhibited. There was a drill by the training school battalion, after which a basket supper was served on the lawn. A brief business meeting was held, followed by moving pictures on the lawn, and dancing. Dr. Austin A. Hyden is president, and Dr. Ed White was chairman of the sports committee.

KANSAS

Health Officer Appointed.—Dr. Charles E. Brown, Leavenworth, has been appointed county health officer to fill the unexpired term of Dr. Cyrus D. Lloyd.

County Votes Bonds for Hospital.—Lyon County has voted $200,000 in bonds for a county hospital at Emporia. It is thought that still further funds will have to be provided because of the increased cost of construction.

MARYLAND

Sanatorium for Convalescents.—Mercy Villa Sanitarium, a new home for convalescing patients, has been opened by the Sisters of Mercy for the reception of patients at Govans, Baltimore.

Night Clinic Opened.—The Baltimore City Health Department has opened a night clinic for persons having tuberculosis, at 2000 North Charles Street, Baltimore. It will be open every Tuesday evening for the benefit of those who because of their occupations are unable to take advantage of the day clinic.

Indictment of "Associated Doctors."—Papers for the extradition of "Dr." Guy J. Payne, one of the "associated doctors" whose offices in Baltimore were raided by detectives last winter, have been issued. Payne was arrested in Philadelphia recently. Other members of the associated doctors are Dr. John Newhall Kirk, Philadelphia, and Dr. Grant F. Hartzell, Baltimore, who are out on $2,500 bail each awaiting grand jury action.

Personal.—Dr. Jean Edward Bigwood, Brussels, Belgium, has matriculated at the Johns Hopkins Medical School and will become a special student under Dr. William S. Thayer, in the department of internal medicine. Dr. Bigwood, who received the degree of M.D. at the University of Brussels last June, is a member of the educational foundation, Commission for Belgian Relief. Dr. Louis H. Naylor, Pikesville, has gone to Belgium as the exchange for Dr. Bigwood, and will study at the University of Liége.

Joint Society Meeting.—A joint meeting of the Baltimore County Medical Association and the Maryland Psychiatric Society was held at the home of Dr. John Winfield Harrison, president of the Baltimore County Medical Association, at Middle River, September 15. Following a luncheon, Dr. Leslie B. Hohman, resident physician at the Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital, read a paper on "Epidemic Encephalitis; Its Psychotic Manifestations," and Dr. William Rush Dunton, Jr., Sheppard and Enoch Pratt Hospital, spoke on "The Psychosis of a Famous Portraitist."

MASSACHUSETTS

Epidemic of Poliomyelitis.—It is reported that an epidemic of poliomyelitis is prevailing in Massachusetts. A total of 111 cases were recorded up to September 13. The city council of Boston has appropriated $10,000, on recommendation of the health department, to combat the epidemic.

Surgical Association Proposed.—Definite plans are under way for the organization of a Massachusetts state surgical association for the purpose of encouraging frequent meeting and the holding of clinics by the surgeons of the state. The Boston City, Massachusetts General, Women's Free and Peter Bent Brigham hospitals have already agreed to give special surgical clinics for the society. Dr. S. Chase Tucker, Peabody, is secretary of the organization committee.

MICHIGAN

Tuberculosis Clinic.—The first of the free tuberculosis clinics in Lenawee County was held early in September at Tecumseh under the auspices of the Lenawee chapter of the American Red Cross.

Detroit Votes Filtration Plant.—At the elections held August 31, a bond issue of $12,000,000 for the extension of the water works was approved by the voters of Detroit. The new plans call for a plant capable of filtering 400,000,000 gallons of water daily.

NEW JERSEY

Personal.—Dr. Howard Iszard, Glassboro, sustained minor injuries when his automobile was wrecked at a grade crossing on the West Jersey and Seaside Railroad.

State Appropriation for Hospital.—Plans for the expenditure of $800,000 at the Morris Plains Hospital for Insane have been approved by the state house commissioners.

NEW YORK

Typhoid Epidemic.—Reports from Seneca Falls indicate that a serious epidemic of typhoid fever is raging there. Health authorities are taking steps to cope with the disease, of which more than fifty cases have already been reported.

Veterans' Camp Closes.—The canvalescent camp for American soldiers, sailors and marines at Bear Mountain, which has been operated during the summer months by the Tuxedo Park chapter of the American Red Cross under the auspices of the War Camps Community Service, is to be closed shortly. The camp has entertained more than 1,000 wounded men, most of whom are students at the federal vocational schools, since its opening in June.

State Drug Clinics Closed.—All clinics established by the State Narcotic Drug Control Commission in sixteen cities were ordered closed by Commissioner Walter R. Herrick, because of the refusal of hospitals to receive drug addicts to complete the treatment begun by the clinics. The next legislature will be asked to construct at least three state hospitals for drug addicts, of whom, it is estimated, there are at present approximately 37,000 in the state.

State Hospital for War Veterans.—As the result of a conference of Governor Smith and state officials with R. G. Cholemeley-Jones, director of War Risk Insurance, it has been decided to erect a state hospital for the care and treatment of World War veterans who have become insane. In order to carry out the plan the legislature will be asked to appropriate about $1,000,000. The state will provide the hospital buildings, while the federal government will operate and maintain the institution under the supervision of the War Risk Insurance Bureau. It is estimated that there are in the state today about 900 ex-service men who are demented as a result of the war. Of these, 474 are in state hospitals, while the rest are in other institutions. The proposed hospital will probably be located on Long Island or in New York.

Industrial Training for Convalescent Tuberculous Soldiers.—The Federal Vocational Board and the National Tuberculosis Association are cooperating with the New York Tuberculosis Association in conducting a workshop and training school for the industrial rehabilitation of ex-service men convalescent from tuberculosis whose disease has reached the arrested stage. The shop is incorporated under the name of the Reco Manufacturing Company, Inc., and is located at 458 Pierce Avenue, Long Island City. The object is to teach a trade that will not be injurious and in which, after the men have learned to make marketable goods, they will be paid the same wages as others doing the same work. The training does not affect any compensation that these men are now receiving from the

government. In order to gain admission men must come in person to the New York Tuberculosis Association, 10 East Thirty-Ninth Street, New York City. Physicians having under their care tuberculous ex-service men who might be benefited by such work are urged to send them to this training school.

New York City

Memorial Services to Dr. Cantor.—Memorial exercises for Dr. Bernard Cantor, who died at Jarmolinetz, Urkaine, July 5, while on a mission for the Joint Distribution Commission for the Relief of Jewish War Sufferers, were held at Carnegie Hall, September 9.

Estate of Dr. Jacobi Settled.—The executors of the estate of Dr. Abraham Jacobi have applied to the surrogate's court to have the estate judicially settled. The application shows that his estate amounted to $333,099. The New York Academy of Medicine has received a cash bequest of $5,000 and a library valued at $4,567 in accordance with the conditions of Dr. Jacobi's will.

Change in Care of Poliomyelitis Cases.—A change in the city's plan of treating poliomyelitis cases has been put into effect. Hitherto about 500 children have been treated at the clinics of the city hospital three times a week, but the new plan provides that these patients shall be admitted to the hospitals as resident patients and that a public school teacher shall be provided for each hospital taking these children. The fact that many of the city hospitals are running below bed capacity makes the reception of these several hundred cases possible. The hospitals accepting such cases include Bellevue and the Allied Hospitals, City, Metropolitan, Kings County, Cumberland Street, Coney Island, Greenpoint and Seaview hospitals.

Health Department Takes Hand in Housing Shortage.—When the special session of the legislature convenes next month to consider the ways and means of meeting the housing shortage, Health Commissioner Copeland plans to go before that body with the following suggestions: That the state and city be authorized by the legislature to engage in the purchase of land and the construction and rental of dwellings; that there be a renovation of existing insanitary tenements as contemplated by the State Reconstruction Commission and the Joint Legislative Housing Committee; that immediate steps be taken to obtain the cooperation of labor and those in control of building materials; that there be a modification of existing interest and taxation statutes, so that private capital may be made available for housing, and that unnecessary and selfish building be prohibited. One of the chief recommendations to be made is the appointment of a Central Housing Commission, with power to handle rent problems, to determine what is essential construction, to pass on all plans for building operations, and to seize houses withheld from occupancy because of exorbitant rent and rent them to the homeless at reasonable prices. The health department holds that the vital relation of housing to public health makes this a problem with which public health organizations should concern themselves.

NORTH CAROLINA

New Health Officer.—Dr. Robert B. Wilson, Swannanoa, has been appointed full-time health officer of Buncombe County, to succeed Dr. William H. Scruggs, resigned.

Biltmore Hospital to Be Enlarged.—The Clarence Barker Memorial Hospital and Dispensary, Biltmore, has purchased adjoining property, including the residence of Rev. R. R. Swope, for a consideration of $25,000. The Swope residence has been converted into a nurses' home.

Antityphoid Campaign.—An antityphoid campaign is being carried on in Mecklenburg County under the direction of Dr. Charles S. Mangum. Almost 6,000 persons took the full course of three vaccinations. Physicians in the communities volunteered their service in aid of the campaign.

OHIO

Tuberculosis Society Headquarters.—Permanent headquarters will be established in November for the Columbus Society for the Prevention and Cure of Tuberculosis, at Washington Avenue and Oak Street.

Personal.—Dr. Frank P. Stafford has been appointed to serve as physician for the inmates of the county infirmary, Lima.——Dr. Frank C. Anderson, assistant superintendent of the state sanatorium, Mt. Vernon, has been appointed superintendent, succeeding Dr. Stephen A. Douglass, resigned.——Dr. John W. Haines, Croton, who recently underwent a serious operation at Columbus, is reported to be improving.——Prof. George N. Stewart, director of the H. K. Cushing Laboratory of Experimental Medicine, Western Reserve University, Cleveland, had conferred on him the degree of Doctor of Laws at the recent commencement exercises of the University of Edinburgh.——Dr. David Marine, associate professor of experimental medicine in Western Reserve University, has been elected director of laboratories in the Montefiore Home and Hospital, New York.

PENNSYLVANIA

New Board of Health at Lemoyne.—A new board of health consisting of Dr. John E. Beale, and Messrs. Samuel Sweigart, Frank Kennedy, Charles Horner and L. S. Beam, has been named by the president of the borough council of Lemoyne to succeed the board of health recently dissolved by State Health Commissioner Edward Martin on the grounds of inactivity.

Philadelphia

Personal.—Dr. Joseph M. Spellissy of the staff of St. Joseph's Hospital was severely injured in an automobile accident at a grade crossing near Point Pleasant Beach, N. J., September 12. Dr. Spellissy is still critically ill.——Dr. William W. Keen has been decorated by King Albert of Belgium with the Belgian Order of the Crown, the decoration being conferred at a dinner tendered Dr. Keen in Brussels, in August.——Dr. Ernest LaPlace has been appointed delegate to the fifteenth annual congress against alcoholism in Washington, September 21 to 26.

Smallpox Cases Discovered.—Almost 5,000 persons were quarantined and vaccinated in West Philadelphia, September 10, in the district bounded by Market and Race and Fifty-Eighth and Sixtieth streets, following the discovery of two cases of smallpox. Both victims were colored men, one of whom is reported to have had a slight case of it for a month and had visited various sections of the city, while the other had been ill two weeks. The department of health is considering prosecuting the colored physician who attended the men for not reporting the cases promptly.

SOUTH CAROLINA

Negro Hospital Opened.—St. Luke's Hospital for negroes, Greenville, has been formally opened. The hospital will be in charge of Mary H. Bright, recently superintendent of the Good Samaritan Hospital in Columbia.

Personal.—Dr. Fitzhugh P. Salley, Union, who has been in the City Hospital suffering from pneumonia, has recovered sufficiently so that he can return to his home.——Dr. George Dawson Heath has been appointed official surgeon for Clemson College, succeeding Dr. Alexander M. Redfern, who retired after twenty-seven years of service.

City Commissioner Controls Clinic.—As the result of efforts by the Greenville city board of health, the entire control of the free venereal clinic passes from the state board of health to City Health Commissioner Clarence E. Smith. Drs. B. L. Chiley and James E. Daniel succeed Drs. Machen T. Moore and Theodore M. Davis in taking charge of the clinic.

Plague Prevention Campaign.—In an intensive campaign for the destruction of rats along the water front of Charleston, under the direction of Dr. Charles V. Akin, official figures recently announced, indicate that almost 6,000 rodents were killed. Although no plague was found in any of the animals it is believed that the campaign will have great influence in preventing trichinosis and other parasitic diseases.

TENNESSEE

Home for Tuberculous Soldiers.—It is reported that the director of the Bureau of War Risk Insurance has announced that the Mountain Branch National Soldiers' Home at Johnson City is to be converted into a sanatorium for discharged tuberculous soldiers.

Meeting of Social Agencies Council.—The Tennessee State Council of Social Agencies was organized recently at Nashville for the purpose of consolidating efforts of all societies engaged in social service and welfare activities. One of the advantages is that any agency entering a community for welfare work will have the privilege of utilizing machinery already in existence. The first meeting of the council was held in Knoxville, September 13. Tennessee's health program, its health centers, rural sanitation, health in state institutions, the state program against tuberculosis and venereal diseases were topics of discussion.

TEXAS

New Industrial Hospital.—The Gulf Sulphur Company at Gulf is constructing a tile-stucco hospital.

Memorial Sanatorium.—The government has agreed to accept the memorial hospital, now under construction at Kerrville, for tuberculous ex-service men. The building will be completed as soon as possible and the sanatorium will be operated by the U. S. Public Health Service.

Compulsory Vaccination Urged.—City commissioners of Waco have under advisement an ordinance providing for compulsory vaccination. Petitions have been presented asking that the measure be left to a vote of the people, and it is expected that the commission will order the election.

Baylor Medical College Reorganized.—Complete reorganization of the teaching and administrative staff of Baylor Medical and Dental Colleges was made during the summer. Dr. Edward H. Cary, Fort Worth, has resigned as chief of the medical school to become chairman of the advisory board and chairman of the faculty, and Dr. Walter H. Moursund was chosen acting dean.

WISCONSIN

New Health Center.—The first health center in western Dane County has been opened at Mt. Horeb, under the superintendency of Miss Mabel Danielson.

New State Officers.—At the annual meeting of the Wisconsin State Medical Society held in LaCrosse, September 10 and 11, the following officers were elected: president, Dr. Henry W. Abraham, Appleton, vice presidents, Drs. Mathias A. McCarthy, LaCrosse, John P. Koehler, Milwaukee, and Rolla U. Cairns, River Falls; secretary, Dr. L. Rock Sleyster, Wauwatosa (reelected), and treasurer, Dr. Sydney S. Hall, Ripon. The feature of the meeting was a free tuberculosis clinic at which hundreds of men, women and children were examined, and those found to have the disease were given an opportunity to apply for admittance to the county sanatorium.

CANADA

Public Health Notes.—For the week ending September 4, Montreal had sixty-eight cases of contagious disease, of which twenty-two were tuberculosis with fifteen deaths.——After more than a year, Toronto is at last free from smallpox cases.——Dr. Helen Boyle, an eminent English neurologist, now in Montreal, recently lectured on her experiences in Serbia with the expedition organized by Dr. Berry, senior surgeon of the London Free Hospital, England.

Personal.—Dr. Archie N. Jenks, Montreal, has returned from Boston where he has been pursuing studies in the hospitals and in Harvard University.——Dr. C. W. Bibbs, Fort Dearborn Hospital, Chicago, was in Toronto recently.——Brig.-Gen. Arthur E. Ross, M.P., Kingston, Ont., sometime head of the medical services in France for the Canadian Expeditionary Forces, has been appointed superintendent of the General Hospital of that city, to succeed Dr. Donald C. Matheson, Kingston, who has resigned, to take up his duties with Queen's University.

Studying Industrial Hygiene.—Dr. John J. R. Macleod, Toronto, professor of physiology in the University of Toronto, and vice dean of the medical faculty, is chairman of the Committee on Industrial Hygiene in Canada. With him are associated Prof. Archibald B. Macallum, members of departments of physiology and psychology in various universities in Canada, and one representative each of the department of labor, Ottawa, of industry, and women's organizations. A secretary of the committee is established in the medical department of the University of Toronto.

GENERAL

Stops Use of Whisky in Medicines.—Dr. R. W. Stone, prohibition director of Chicago, announced September 10, that no more withdrawals of whisky for the manufacture of medicines will be approved.

Southwestern Physicians to Meet.—The annual meeting of the Medical Association of the Southwest, which includes physicians from Kansas, Missouri, Oklahoma, Arkansas and Texas, will be held in Wichita, Kan., November 22 to 24.

Bubonic Plague.—A new case of bubonic plague was discovered at Pensacola, Fla., following the investigation of the death of a negro. This brings the total cases in the city to ten, six of these fatal.——The twelfth case and ninth death of bubonic plague at Galveston, Texas, was reported, September 7.

Medical Organizations to Meet.—The Tri-State District Medical Society will hold its annual meeting, October 4 to 7, at Waterloo, Iowa, under the presidency of Dr. George Van I. Brown, Milwaukee.——The annual meeting of the Northern Tri-State Medical Association of Michigan, Indiana and Ohio will be held in Fort Wayne, Ind., October 26, under the presidency of Dr. Charles C. Terry, South Bend, Ind.

American Electrotherapy Association Elects.—The American Electrotherapeutic Association at its thirtieth annual meeting held in Atlantic City, September 14-17, elected the following officers for the ensuing year: president, Dr. Byron Sprague Price, New York City; vice presidents, Dr. Virgil C. Kinney, Wellsville, N. Y.; Drs. Chris M. Sampson, and Charles R. Collins, Washington, D. C.; Dr. Douglas A. Cater, East Orange, N. J.; Dr. William T. Johnson, Philadelphia; treasurer, Dr. J. Willard Travel, New York City; secretary, Dr. A. B. Hirsh, New York City.

To Vaccinate Immigrants.—Orders have been issued to all officers of the U. S. Public Health Service on duty at European ports not to permit any third class passengers to depart for the United States without having been vaccinated against smallpox. Four additional public health officers have been sent to Europe, making a total of ten now on duty there. Asst. Surg.-Gen. Rupert Blue will remain in Paris throughout the winter to perfect the organization of the Public Health Service in an endeavor to lessen the danger of the carrying of smallpox, typhus fever and other contagious diseases to this country.

Bequests and Donations.—The following bequests and donations have recently been announced:

Children's Free Hospital, Detroit, $25,000; Harper Hospital, Detroit, $10,000, by the will of Mr. James W. Walker, Detroit.

To establish a hospital in Fairfax, S. C., $300,000, by the will of Dr. William J. Young, Fairfax.

Mt. Sinai Hospital, New York, $25,000, by the will of Henry L. Einstein.

Temple University, Philadelphia, the income of the estate of John K. Schaffer, amounting to $49,000, to be paid ultimately to promote the study of nervous diseases.

Clark Memorial Home, Springfield, Ohio, $2,000, by the will of Mrs. Achsa E. Blee, Springfield, Ohio.

St. Luke's Hospital, Newburgh, N. Y., and Thrall Hospital, Middletown, N. Y., each $5,000, by the will of Col. Thomas W. Bradley.

Nurses Home Fund, Hazleton State Hospital, a donation of $1,000 from Mrs. Eckley B. Coxe, of Drifton, Pa.

Conference on Venereal Diseases.—The first of the series of regional health conferences authorized by the International Health Conference at Cannes will be held in Washington, D. C., December 6 to 13, under the joint auspices of the U. S. Interdepartmental Social Hygiene Board, U. S. Public Health Service, American Red Cross and American Social Hygiene Association. Dr. William H. Welch of Johns Hopkins University will preside. The conference will review past experiences and existing knowledge as to the cause, treatment and prevention of venereal diseases, will deal with administrative and research problems and will consider the topic of venereal diseases from these four aspects: (1) medical measures; (2) enforcement of repression and protection laws; (3) sex education; and (4) provision of recreation facilities. An attempt to work out a feasible three-year program for each of the countries in the western hemisphere will be made.

FOREIGN

Institutes for Hydrobiologic Research in Italy.—Professor Mazzerelli has founded an *osservatorio idrobiologico* on Lake Fusaro, near Naples, and Professor Carazzi another near Pisa. The one near Messina, founded in 1915, is being enlarged.

Hookworm in Jamaica.—A well organized campaign against hookworm is being carried on in Jamaica under the direction of Dr. B. E. Washburn, assisted by Dr. L. Oliver Cresswell, supervising sanitary officer. Owners of large sugar estates are zealously assisting in this campaign.

Prizes for Works on Hygiene.—The Italian Red Cross offers a prize of 5,000 lire for the best work on hygiene to educate the public in ways and means for healthy, vigorous and constructive living. It also offers a similar amount for a work on hygiene and social welfare work for the use of the schools. The latter must not be larger than ten printed octavo forms. Competing articles must be received at the headquarters, Ufficio Propaganda della Croce Rossa Italiana, Via Toscana N. 10, Rome, before June 30, 1921.

Investigation of the Work of the French Military Medical Service During the War.—The *Presse médicale* relates that the Union des Syndicats médicaux de France has decided

to make an investigation of the work of the Service de santé during the war, and appeals to physicians that were mobilized to send in data bearing on the subject. A questionnaire is to be sent to each one asking for details in regard to grade, service, etc., not only of the one addressed but of all medical men serving in his environment on a different specified date for each of the five years of the war.

Subjects for Prize Competition.—One of the prizes offered by the Berlin medical faculty is for the best work on explantation, that is, the capacity of living tissue, especially epithelium, to maintain its vitality and power of reproduction outside of the living body, with criticism of the work hitherto done in this line. The Munich medical faculty has selected as the topic for competition research on the epiphysis; cicatrices of the human skeleton. The veterinary school offers a prize for work on the anatomy of the external ear in domestic animals, to aid in constructing an otoscope for animals, especially for carnivora.

Abortive Treatment of Syphilis.—The German Dermatologische Gesellschaft is organizing a collective inquiry on the abortive treatment of syphilis. The *Deutsche medizinische Wochenschrift* brings an appeal to all colleagues who are interested in the study of this most important problem in the treatment of syphilis and those willing to aid by contributing statistical material are requested to ask for a questionnaire at the address of the headquarters of the society, D. D. G., Maxstrasse 1, Breslau. Kreibich of Prague is to analyze the data received before Feb. 1, 1921, and to present his report at the next meeting of the society during the summer of 1921, at Hamburg.

Congress for Medical History.—This meeting was held as announced with a comparatively large attendance at Antwerp early in August, on the tricentennial anniversary of the founding of the Cercle Médical of Antwerp, Dr. Tricot-Royer in the chair. The *Scalpel* of Brussels gives an interesting summary of the transactions. Dr. Thompson described the history of medicine in England from the sixth to the eleventh centuries, his articles based on some MSS in the British Museum. Giordano of Venice told of study of anatomy on the living subject (criminals and alien prisoners), and Albiñana described the cooperation of Spain in the prosperity of the ancient Montpellier medical school. Jeanselme of Paris related the history of alcoholism from the fifth to the tenth century, Fasseyeux the care of the insane in the seventeenth and eighteenth centuries and Prof. Laignel-Lavastine described from some ancient documents the cult of Priapus. Delaunais discussed the fads and charlatans of the eighteenth century, and Trétrop traced otorhinolaryngology back to the days of the Pharaohs. Others recalled the ancient history of obstetrics, ophthalmology, surgery, etc., and Wickersheimer showed that one of the figures in the antique painting of Saint Anthony of Grünewald is a typical case of pellagra. Dr. Meeus of Antwerp described the long and curious history of the colony for the insane at Gheel, where the "no restraint" was in force long before the insane had lost their chains elsewhere. Eight sessions were held, and another congress was planned for 1921, to meet at Paris.

Deaths in Other Countries

Lieut.-Gen. Sir. **William Babtie,** C.B., C.M.G., V.C., London, England; L.R.C.P., L.R.C.S., Edinburgh, 1880; M.B., Glasgow, 1880; aged 61; principal director of medical services in the Mediterranean during the operations in Gallipoli, Egypt and Salonika in 1915-1916; died in Belgium, about September 14.——Dr. **M. Herlant** of Brussels, a pioneer in biologic research, applying the laws of physical chemistry to the problems of embryology, aged only 32.——Dr. **M. T. Podestá,** professor at the University of Buenos Aires, secretary of the national public health service and author of several popular novels, besides serving in the legislature, aged 67.——Dr. **Brohl** of Cologne.——Dr. **Franz** member of the board of the Leipzig League and of the antiquackery committee of the German Aerztevereinsbund, aged 65.——Dr. **E. Lombard,** a prominent otologist of Paris, known by the sign called by his name for detecting simulation of deafness by raising the voice. His last work was a report of study of equilibration in aviators. For fifteen years he was the director of the *Annales des maladies de l'oreille et du larynx.*——Dr. **K. A. Helbig,** a collaborator on the *Siglo médico* of Madrid.——Dr. **Cicero Rodrigues Ferreira** of Bello Horizonte, Brazil, chief of the local public health service and founder of the local medical school, aged 61.——Dr. **J. P. Nuel,** professor of ophthalmology at the University of Liége, aged 73.——Dr. **L. de Boucaud,** a surgeon of Bordeaux.

Government Services

Appointment of Medical Officers

The War Department announces the appointment of the following emergency officers in the Medical Corps of the Regular Army; this is a second list of the medical men who have qualified in the July, 1920, examinations for commissions in the Medical Corps; the names of other successful candidates will be printed in THE JOURNAL from time to time:

MAJORS

A. N. Baggs, Oteen, N. C.
G. H. Boyer, Ft. Bliss, Tex.
A. M. Brailsford, Houston, Tex.
D. B. Brinsmade, Camp Jackson, S. C.
Y. E. Coville, Nogales, Ariz.
W. W. Conger, Detroit.
R. H. Cox, Chicago.
A. S. Dabney, Nashville, Tenn.
A. H. Eber, Camp Grant, Ill.
E. C. Greene, Norfolk, Mass.
M. W. Hall, Ft. Sam Hauston, Tex.
H. B. Hanson, Camp Grant, Ill.
C. D. Holmes, Washington, D. C.
B. R. Hunter, Charlotte, N. C.
J. V. Littig, Camp Taylor, Ky.
W. H. Lloyd, Camp Meade Md.
J. A. Lloyd, Washington, D. C.
J. P. Long, Camp Gordon, Ga.
T. L. Long, Kelly Field, Tex.
R. F. Longacre, Kelly Field, Tex.
J. J. McCormick, Washington, D. C.
T. R. Marshall, Camp Dix, N. J.
W. H. Mitchell, New London, Conn.
H. B. Montgomery, Washington, D. C.
R. T. Morris, Washington, D. C.
B. P. Norvall, Douglas, Ariz.
E. L. Parmenter, Mondovi, Wis.
A. L. Parsons, Jr., Louisville, Ky.
B. D. Ridlon, Portland, Me.
D. M. Roberts, New Richmond, O.
R. B. Shackelford, The Plains, Va.
P. R. E. Sheppard, Ft. Bliss, Tex.
A. E. Sherman, Aurora, Ill.
C. G. Souder, Chicago.
G. F. Suker, Chicago.
E. L. Titus, Camp Grant, Ill.
M. L. Todd, Camp Lee, Va.
W. H. Tukey, Chicago.
W. O. Wetmore, Ft. Bliss, Tex.
W. F. Zelinski, Ft. Sheridan, Ill.

CAPTAINS

S. H. Ackerman, Ft. Mott, N. J.
R. F. Annis, Camp Benning, Ga.
G. E. Atwood, Galveston, Tex.
J. R. Bibighaus, Camp Lee, Va.
E. Blackshear, Ocala, Fla.
P. N. Bowman, Camp Meade, Md.
H. Brooks, Ft. Bliss, Tex.
R. B. Bretz, Jasper, Ind.
R. W. Browne, Winthrop, Mass.
W. J. Burdell, Ft. Dade, Fla.
R. M. Butler, Atlanta, Ga.
H. A. Callahan, Camp Dix, N. J.
P. G. Capps, Camp Knox, Ky.
A. M. Coffey, El Paso, Tex.
J. E. Campbell, Hoboken, N. J.
O. Christian, Camp Taylor, Ky.
H. A. Clark, Dorchester, Mass.
R. E. Cloward, Prince, Utah.
S. E. Clinard, St. Louis.
C. F. Costenbader, Ft. Bliss, Tex.
T. B. Cracroft, Ft. Sheridan, Ill.
J. E. Cramond, Great Falls, Mont.
L. Craven, Adel, Ia.
R. R. Decker, San Antonio, Tex.
W. E. Devers, Cowles, Neb.
M. A. Farlow, Camp Jackson, S. C.
R. Favour, Jr., Bowdoinham, Me.
D. B. Faust, Camp Gordon, Ga.
L. Z. Fletcher, Ft. Sam Houston, Tex.
H. B. Forbes, Ogden, Utah.
J. F. Gamble, Ft. Ringgold, Tex.
H. B. Gantt, Washington, D. C.
C. C. Gans, Baltimore, Md.
C. V. Gautier, Lakeland, Fla.
I. J. Gibson, Camp Grant, Ill.
E. Giddings, New York.
E. H. Gist, Camp Holabird, Md.
S. H. Graham, Ft. Sam Houston, Tex.
G. Granger, Hampton, Va.
J. H. Graves, Ft. Sam Houston, Tex.
G. D. Griggs, Markelton, Pa.
F. A. Haggard, Camp Taylor, Ky.
J. G. Hall, Camp Travis, Tex.
G. L. Harker, Camp Gordon, Ga.
E. F. Harrison, Ft. Wayne, Ind.
C. C. Harvey, Council Grove, Kan.
E. D. Hatch, Brookline, Mass.
H. W. Hayes, Osteen, N. C.
J. R. Herrick, Camp Travis, Tex.
G. E. Hesner, Camp Travis, Tex.
B. Hibbard, Ft. Sam Houston, Tex.
J. S. Hickman, Bluffton, Ind.
R. W. Horton, Eagle Pass, Tex.
H. C. Johannes, Chicago.
L. H. Kice, Laredo, Tex.
A. G. Kinberger, Camp Custer, Mich.
H. W. McCloskey, Philadelphia.
S. A. McConnell, Marfa, Tex.
N. C. Mashburn, Camp Taylor, Ky.
C. W. Metz, Camp Sherman, O.
E. M. Morris, Winthrop, Mass.
P. D. Moulton, Camp Upton, N. Y.
J. G. Newgord, Ft. Monroe, Va.
B. J. O'Conner, Louisville, Ky.
J. R. Oswalt, Douglas, Ariz.
E. H. Perry, Ft. Benj. Harrison, Ind.
P. E. Rossiter, Cape Vincent, N. Y.
H. P. Sawyer, Washington, D. C.
J. B. Schreiter, Savanna, Ill.
H. W. Taylor, Camp Devens, Mass.
R. E. Thomas, Ft. Washington, Md.
J. B. Warden, Mystic, Conn.
L. H. Winemiller, Ft. Sheridan, Ill.

FIRST LIEUTENANTS

Anthony Avata, Marfa, Tex.
J. F. Brooke, Ft. Riley, Kan.
W. S. Crawford, Ft. Ontario, N. Y.
W. F. Dingle, Ft. Crook, Neb.
W. T. Fisher, Ft. Strong, Mass.
W. J. Froitzheim, Ft. Huachuca, Ariz.
O. J. Gee, Ft. Sam Houston, Tex.
W. F. Hamilton, Ruidosa. Tex.
W. H. Houston, Camp Lee, Va.
H. J. Hutter, Tulsa, Okla.
B. W. Johnson, Philadelphia.
S. V. Kibby, Hartford, Conn.
A. C. McCall, Washington, D. C.
T. R. McCarley, Camp Funston, Kan.
J. A. Mendelson, Washington, D. C.
C. R. Mueller, Camp Lee, Va.
E. C. Pratt, Ft. Sheridan, Ill.
F. L. Pratt, Staten Island, N. Y.
L. F. Putnam, Ft. Bliss, Tex.
S. W. Reeves, Fawn Grove, Pa.
W. L. Thompson, Andover, N. J.

Provisions for Veterans with Mental Diseases

The Public Health Service has taken over a part of the government hospital for insane at Washington, D. C., to care for a number of the World War veterans suffering from acute mental disorders as distinguished from neuropsychiatric cases. One hundred and seventy patients have already been transferred from institutions in New York and others will be sent to the government hospital for insane from hospitals over the country as cases of insanity develop among the soldiers.

Civilian Staff for War Risk Insurance Bureau

The Bureau of War Risk Insurance is shortly to name a chief medical advisor and an entire new medical staff, chosen from members of the medical profession in private life. Ever

since the bureau was established, its medical staff in Washington and in the various districts throughout the country was constituted of officers of the Public Health Service. The proposed change is being made in order to facilitate and coordinate the work of adjusting compensation and insurance claims of World War veterans and their widows.

Treatment of Leprosy with Chaulmoogra Oil

Success in the treatment of leprosy with an ethyl ester of chaulmoogra oil is announced by the United States Public Health Service after experiments on fifty-nine patients in the Hawaiian Islands. These have all recovered sufficiently to warrant their release and after freedom for over a year none has shown the slightest symptom of recurrence. The study was conducted by officers of the Public Health Service in cooperation with Prof. L. E. Dean, head of the chemical department of the College of Hawaii, who isolated the active constituents of the drug.

Standard Microscopic Equipment

A standard microscope equipment has been selected for use in the Army Medical Department, according to information given out by Surgeon-General Ireland. The models are the Bausch and Lomb FFS8 and Spencer 44 H, including the Spencer folding microscope for portable laboratories in the field. A recent survey of Medical Corps equipment disclosed that there are many different makes and models in use in the service, and all of these are to be replaced by the new models. The reason for the selection of these types lies in the fact that oculars, objectives, condensers, mechanical stages and dark field illuminators of these models are interchangeable.

National Leprosarium

Dr. Oswald E. Denney has been selected to take charge of the new leprosarium to be established by the U. S. Public Health Service at Carville, La. This institution has been operated by the Louisiana health authorities and is shortly to be transferred to the Public Health Service. At the present time about twenty-five patients are under treatment, but extensions, sufficient to accommodate 2,000 lepers, will be made. It is estimated that there are now about 1,800 lepers in the United States, most of whom are scattered throughout the South, with a large number in the Northwest. It is the intention of the Public Health Service to place all of these in the leprosarium at Carville.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 28, 1920.

The Doctrine of Evolution

At the annual meeting of the British Association a discussion which took place in the joint session of the geologists, botanists and zoologists attracted a large audience. The discussion dealt with the mode of the process of evolution. No speaker doubted the fact of evolution, but it was apparent that unanimity has not yet been reached in a controversy that has lasted for a quarter of a century. Darwin believed that whatever might be the cause of evolution, it had come about by the summation of small modifications. Examination of every individual plant or animal revealed minute differences from other animals and plants of the same kind, and he thought that these were the chief material on which natural selection acted. There has always been a school which looked to occasional large variations, called "sports" or "mutations," as the more probable source of new species, urging that, as species were discontinuous, they had come into existence by the selection of discontinuous variations. This school was suddenly reenforced by the rediscovery of Mendel's work on hybrid peas, and his theory that organisms were compounded of unit factors, each of which was transmitted and inherited in a state of purity. An eager body of experimental workers followed the mendelian line of investigation and added triumph after triumph to their experimental dissection of organisms into unit factors, and their tracing of the fate of these factors in inheritance. Some of the more extreme partisans of the view discarded natural selection and the influence of the environment from their conception of the process of evolution. They returned to a new form of a mystical medieval theory, and held that evolution was simply a deployment of unit factors, all of which had been contained in the primordial germ of life. Mutations were inherited or transmitted in all their purity, but variations due to the environment left no trace on the permanent chain of life. Students of fossils might have been expected to support the view that evolution had come about by sudden changes, especially as the gaps in the series of fossils were great. But, on the other hand, they were unanimous as to the evidence from the rocks being in favor of slow, continuous change. Whenever a series was complete, and had been studied carefully, it showed a slow and continuous evolution. It showed, moreover, that the points in which old animals differed from young animals frequently anticipated the changes by which later species differed from earlier species. The facts strongly supported the belief that, somehow or other, the environment had an effect on living creatures, and that this effect became grafted on the constitution of the race, so that it would subsequently appear independently of the environment. They believed, therefore, that evolution was continuous, that some force like natural selection directed it, and that the environment and not the unrolling of latent possibilities was the chief factor in eliciting variation. As was to be expected in the case of an extremely active branch of experimental science, the advocates of mendelism were not all in agreement. But it was admitted by many that mendelians had laid too much stress on discontinuity, and that what they called mutations and unit factors were often so minute that only experts could identify them. Still more important was the admission that the mendelian theory of the purity of the unit factors could not be maintained. In certain cases, mendelian units were transmitted without alteration, while in a growing number of cases it appeared that blended inheritance was the rule. The general result of the discussion was to show that mendelian work, instead of being opposed to the darwinian principles of evolution, was likely to reinforce them, and that paleontology, zoology and botany bore witness to the greatness of the darwinian conceptions.

Action Against a Physician for the Negligent Use of Cocain

A patient sued a physician for damages for alleged negligence in the use of cocain as a local anaesthetic in operating on a small cyst of the hand. A 5 per cent. solution combined with epinephrin was injected. After the injection of 5 minims it was found that the requisite anesthesia had not been produced, and a further injection of 5 minims was made, when alarming symptoms followed. An illness lasting three and one-half years, from which the patient had only partially recovered, was ascribed to the effects of the cocain, and this was apparently not in dispute. The only question, indeed, for Mr. Justice Salter, who tried the case, was that of the alleged negligence. The negligence, his lordship said, was alleged in three ways—that: (1) it was negligent to use cocain for hypodermic injection; (2) too large or too strong a dose was administered, and (3) there was unskilfulness and carelessness in the administration of the second injection. It was contended that cocain as used was obsolete and dangerous. As to this, the judge understood from the evidence before him that the risk was practically confined to persons abnormally sensitive to the drug, a peculiarity of the patient not discoverable beforehand. With regard to the danger of using cocain, the relative merits of other drugs

for the same purpose, and the correct dosage, he was satisfied from the evidence, called on both sides, that the highest medical opinion was not in agreement. He had evidence of chemists and of pharmacists that cocain was still widely used, and that although the proportion prescribed was frequently less than 5 per cent. this proportion was used if the strength was not mentioned, because it was the strength prescribed in the British Pharmacopeia. In fact, cocain was included in the British Pharmacopeia for the purpose and in the proportions in which the defendant had used it. A physician could not be convicted of negligence for having administered a preparation agreeing both in strength and amount with the British Pharmacopeia, and of which, moreover, he had had satisfactory experience for many years. As to the suggestion that a small vein had been pierced in making the second injection, even if this had been so there was evidence before him that it was possible to inject cocain into a small or even into a larger vein without danger to a normal person, such as evidence showed the plaintiff apparently to be. In giving judgment for the defendant the judge expressed deep sympathy with the plaintiff.

Queensland Institute of Tropical Medicine

Important recommendations for extending the scope and usefulness of the work of the Institute of Tropical Medicine at Townsville, North Queensland, were decided on at a recent meeting of the committee, when it was decided to recommend to the federal cabinet proposals for strengthening the staff of the institute and extending and intensifying its work. These include the opening of experimental stations at Port Moresby, Papua and Rabaul, and an addition to the staff of officers to carry out investigations on the spot into any outbreaks of tropical disease without interfering in any way with the regular routine of the laboratory work and tests. While these proposals involve some additional expense, it is held that the committee will be amply justified by the more thorough manner in which it will be possible to cope with tropical diseases in Australia, and by the extension of the sphere of operations to Papua and former German territory. It is hoped that eventually all the medical officers appointed to posts in the Pacific territories will take a course at Townsville. When the institute was established, the preparatory work took some time, and then, with a depleted staff, and other difficulties the institute took up the treatment of soldiers from Rabaul suffering from malaria. So marked was the success that returned men from the other states who had been badly affected by malaria were sent to Townsville, and their treatment proved an almost dramatic success.

RIO DE JANEIRO

(From Our Regular Correspondent)

Aug. 12, 1920.

Organization of the National Department of Public Health

May 26, a decree was signed by President Pessoa creating a public health department. Besides an administrative and three technical bureaus, namely, land, sea and rural sanitation and prophylaxis, sections on statistics, sanitary engineering, leprosy and venereal disease prophylaxis, medicine, pharmacy, dentistry and midwifery, food inspection, tuberculosis prophylaxis, hospital assistance and child welfare have been created. The bill, which consists of ninety-five pages and 1,257 paragraphs, encountered great opposition not only by scientific and daily papers but also by many physicians. In a short time this law was so severely criticized that the president was obliged to revoke it. One of its greatest faults is that sanitation of the interior of the country is not provided for, although congress had made specifications for it. No sacrifice was considered too much in benefit of the population of the northern and northwestern states, where malaria and hookworm have reigned for many years. Nevertheless, more than a million dollars was destined for government officials and professionals solely in the city of Rio de Janeiro. This sum does not include the services for leprosy and venereal disease prophylaxis, tuberculosis eradication, physicians for contagious disease hospitals, students serving in the smallpox vaccination section, nurses, and the like. Before the reorganization there were sixty-eight nonprofessional officers, whereas at present there are more than 400.

Death of Arnaldo Vieira de Carvalho

The death of Prof. Arnaldo Vieira de Carvalho, one of the most prominent physicians of São Paulo, is deeply regretted throughout the country. The deceased was director of the medical school of the hospital S. Casa de Misericordia, and president of the Sociedade de Medicina e Cirurgia. His position as director of the medical school will be assumed by Dr. Ovidio Pires de Campos.

Personal

Dr. Rocha Lima, professor at the Hamburg University, has been visiting friends in Rio. At the Academy of Medicine he reviewed his research work during the war in Turkey and Poland on typhus. He read a paper on Peruvian wart before the Medicosurgical Society. At São Paulo he addressed the Medicosurgical Society on yellow fever.——Prof. Custodio Cabeça, well known surgeon of Lisbon, and Professor Morquio, well known physician for children's diseases, are sojourning in Rio.——Prof. João Marinho and Dr. Marcondes Castilho have left for Buenos Aires to represent Brazil at the congress of otorhinolaryngology in that city.

New Professors in the Medical School

Dr. Del Vecchio has been appointed professor of chemistry at the medical school, and Dr. Augusto Brandão, professor of surgery.

Public Health Department in São Paulo

Dr. Arruda Sampaio has been appointed head of the public health department in São Paulo.

New Hospitals for Rio

Dr. Domingos Mascarenhas, congressman for Rio Grande do Sul, has asked congress to approve his bill creating three new hospitals, one for noncontagious diseases, under the direction of the medical school, and two others for tuberculosis and other contagious diseases under the supervision of the public health department.

BELGIUM

(From Our Regular Correspondent)

Aug. 20, 1920.

Federation of Scientific Societies

There has recently been formed at Brussels a Fédération belge des sociétés de sciences mathématiques, physiques, naturelles, médicales et appliquées. Thirty-three societies have already joined the federation, and many others have promised to become affiliated in the near future. The group includes various scientific societies which give evidence of their activity by the publication of original work, and the movement is designed to unite and coordinate all efforts for the general advancement of the pure and applied sciences, although the component societies retain their own autonomy. The federation will endeavor to encourage initiative and to procure the requisite material and moral assistance for the furtherance of scientific work, and it will collaborate in perfecting scientific publications. It may, especially, summon congresses, organize conferences and expositions, and found or support useful scientific institutions.

Among the principal aims of the federation may be mentioned: (1) an increase of the resources of affiliated societies

sufficient to continue their publications, and (2) the collection of works published by the federated societies and exchange of publications with analogous federations in allied and neutral countries.

A general council of fifteen members administers the affairs of the federation. The officers for 1920 are Professor de la Vallée-Poussin (Louvain), president; Paul Pelseneer (secretary of the Académie royale de Belgique), vice president; J. Wauters (secretary general of the Société chimique de Belgique) treasurer, and Messrs. Zunz and Lucien, secretaries.

The Journal de Neurologie

During the war the Société de médecine mentale de Belgique had suspended publication of its bulletin. A special number has just appeared which will fill the gap from 1914 to 1920. From now on the journal will be issued regularly, six numbers each year, and it will contain original articles in addition to the transactions of the society.

Chair of Urology

The Liége medical faculty has recently opened the first urologic clinic in Belgium. Up to the present time, in fact, the teaching of urology has been only fragmentary, some of the subjects coming under the domain of surgery and others under venerology, and the establishment of the first chair of urology constitutes, therefore, an event in the history of medical education. In his opening address, Professor Hogge referred to Necker's great school and paid a tribute to his teacher, Guyon, only a few days before the latter's death.

Medical Epigraphy

Under inspiration of the work of Professor Blanchard of Paris, Professor Lams has laid before the Société de médecine of Ghent a suggestion of interest to the history of medicine. All documents having any relation to medical art deserve to be rescued from oblivion, and so he appealed to all his confrères to collaborate in this endeavor and to send to him every curious or interesting inscription connected with medicine. This initiative, if it becomes general, will contribute enormously to the collection of a vast amount of scattered data and will facilitate the arduous work of historians.

Retrogasserian Neurotomy

Dr. De Beule, who originated the surgical treatment of facial neuralgia by section of the posterior root of the gasserian ganglion, has lately reported his personal experiences to the Académie de médecine. He claims that the method has two incontestable advantages: The results are more permanent and more constant than those obtained by injections of alcohol, and there is far less danger than with gasserectomy. In fifteen patients on whom the operation was performed, no recurrence of the affliction was observed. He has, however, seen some trophic disorders of the side of the eye, and facial and oculomotor paralysis, but these sequelae proved very transitory. It seems at present that De Beule's operation is coming more and more into use; the statistics of Adson of Rochester, Minn., have confirmed its value and his instrumentation has improved the technic.

BERLIN

(From Our Regular Correspondent)

Aug. 13, 1920.

Excess of Boys Born During the War

The popular opinion that during and after a war a great many more boys are born than girls, an opinion also contained in various scientific manuals, has been tested in a few investigations. As Dr. Behla, the former director of the medical section of the Prussian office of statistics, has reported, up to 1917 there had been no extraordinary excess in births of boys. The usual proportion of the two sexes, 100 girls to about 105 boys, was also maintained in 1915. Professor Silbergleit, of the Berlin office of statistics, is of the same opinion. During the first years of the war he does not exclude a slight but meaningless rise in the usual surplus of boys, but he is not inclined to believe in the mysterious force of nature striving to fill hastily the gaps which the war has caused in the ranks of the male population. So far as the excess of boys in general is concerned, this ranged, according to Silbergleit, among the living new-born in Germany, from 5 to 6 per cent. during the first decade of the twentieth century, the same as in Austro-Hungary and other countries. England is apparently the only exception to this, for there the average excess was only 3.9 per cent. in 1906-1910. It is, however, doubtful whether different statistical methods do not play an important rôle in this computation. For comparing the statistics of the living new-born, it is highly essential from what point of view the births are regarded. In Germany, every birth must be reported within twenty-four hours, with explicit information as to whether or not the child was stillborn. In France, a delay of three days is granted, so that infants dying before registration are reported as stillborn. In England and Ireland, however, the period of grace is not less than six weeks. The "stillbirths" occurring under these circumstances are wholly disregarded, as actual stillbirths are not recorded at all. Now it must be remembered in this connection that there is an important difference in mortality of the two sexes especially during the first days and weeks, the vitality being considerably lower in male than in female new-born. Hence it may justly be assumed that, owing to this peculiar laxity in birth notification in England, because of early deaths less births of living male infants than of female infants are recorded. According to Silbergleit, the small excess of boys in England is essentially due to certain official conditions and is not founded on facts. So far as the higher mortality of male new-born is concerned, 202 boys died, as compared to 170 girls, out of every thousand, according to the German vital statistics for the first decade of the twentieth century. Hence there is on the side of the male sex an excess mortality of 32 to each 1,000 living new-born. In 1912, the proportion of deaths under 1 year of age, as compared to the births of living female infants, was 13.37 per cent. If we apply this percentage to the 961,742 living male infants born in the same year, we obtain 128,585 deaths; in reality, however, 154,207 male infants died, or 25,622 more than was to be expected. The greatest excess of mortality occurs during the first month. Calculating the excess mortality of boys in percentage of the girl mortality, according to the principal causes of death, we obtain for the male excess mortality in 1912 this series: defective vitality, 23.8 per cent.; diseases of the digestive organs, 20.8 per cent.; diseases of the respiratory organs (exclusive of pneumonia) 18 per cent.; pneumonia, 17 per cent., and infectious diseases, 0.0 per cent. Professor Silbergleit is therefore fully justified in concluding that defective vitality and diseases of the digestive organs are the main causes of the excess mortality in male infants. Better care and nursing, appropriate feeding and careful supervision can help to combat the diseases that are caused by the apparently weaker constitution of male infants. The same question was discussed by the late Professor Schauta of Vienna, in 1916. Between April 1, 1915, and April 1, 1916, for each 100 girls, 102 boys were born in his clinic, while before the war the proportion was 100 to 106; here we find a decrease in the births of boys. Bumm of Berlin found the proportion to be 100 to 116 (before the war 100 to 103). Krönig of Freiburg found no increase of boys. As can be seen, there is a predominant opinion that the lay notion regarding an increase in births of boys as the result of war is incorrect. A final judgment cannot be given until complete

statistics of the war have been studied, as observations made up to date are based on too small statistic material.

Periodic Examination of the Apparently Well

Recently, Ministerial Director Gottstein published an article in which evidence was presented that systematic physical examination of persons who feel well leads to the discovery of incipient disease and of predisposition to disease which by appropriate treatment can be eliminated before the menace to health and life becomes manifest. Gottstein referred to a lecture by E. L. Fisk on the same subject in 1914. Although Germany has no such organization as the "Life Extension Institute" of New York, we have institutions working or tending to work in the same directions, despite the fact that they are organized along entirely different lines and are based on entirely different principles. The German institutions are rather closely connected with the concept of disease which has been gained from the experiences of the last two or three decades and for which the introduction of social legislation has been prominently responsible. Disease is no longer exclusively considered as an anatomic condition but as a functional disorder with certain stages of development, a regulatory intervention with which is the principal problem of medical endeavor. For this purpose early medical recognition is necessary, and this very often must anticipate the subjective manifestations of the disease. Therefore periodic examination of all persons, even those who feel healthy, is the ideal to be reached. It has been attained in a practical form only in the army and with the majority of the school population of cities, partly also with infants and children up to school age. The age between school and military service is, however, not supervised, and during this period especially pulmonary tuberculosis is a menace. In regard to this Gottstein writes: "We know that tuberculous infection prevails to a remarkably high extent among the school youth of the proletariat in large cities, and that it is based on a well defined anatomic localization clinically characterized less by local symptoms than by inhibition of the general development and of hematopoiesis. Further, we know that only in a small percentage it leads to death by direct progression and by destruction of organs, and that the infection is consequently surprisingly benign. On the other hand, we know that from 15 up to 25 and 30 years of age the proportional number of tuberculous infections is considerably less than during school age, but in this period it has overcome the protective barrier of the glandular and lymphatic system, and settles most destructively in the lungs and often follows a rapid, unfavorable course." Hence it is clearly seen that regular examination, in view of the curability of incipient tuberculosis, is of great importance to the individual as well as to the community. The great importance of extending treatment in the first stages of the disease cannot be better demonstrated statistically than in typical infectious diseases of acute course. Gottstein cites scarlet fever and diphtheria in this connection and compares the figures of six different districts, with reference to the number of physicians in the district; namely, Oppeln, 2.36 physicians to 10,000 inhabitants; Gumbinnen, 2.48; Bromberg, 2.63; Stettin, 4.47; Königsberg, 5.03, and Breslau, 5.80. It can be assumed without question that where there are many physicians, medical care is as a rule obtained earlier in the course of a disease. The numbers of death in these six districts for every hundred patients are:

	Scarlet Fever	Diphtheria
Gumbinnen	18.9	46.5
Oppeln	23.5	25.8
Bromberg	23.9	23.8
Stettin	6.9	8.9
Königsberg	12.5	15.6
Breslau	4.1	10.8

Naturally, there are other contributory factors, but in any event, these figures prove that early medical attention guarantees a greater likelihood of recovery.

Marriages

PHILIP LOUIS COULTER, Major, M. C., U. S. Army, Fort Sheridan, Ill., to Miss Margaret Marie Rundlett, of Detroit, Minn., September 7.

PHILIP S. EASLEY, Statesville, N. C., to Miss Marguerite Schmidt, of Coblenz, Germany, at New York, September 1.

RALPH CHESSE PURNELL TRUITT to Miss Eleanor McConnell, both of Chicago, September 2.

RUPERT O. ROETT to Miss Katherine Juanita Bryant, both of Houston, Texas, recently.

ARTHUR JOSEPH BABIN to Mrs. Laura Hartnett, both of New Orleans, September 1.

ALEXANDER J. DE GRAND to Miss Elizabeth McFarland, both of Chicago, September 11.

BENJAMIN F. GUMBINER to Miss Anna Inez Bleiweiss, of Chicago, September 16.

S. H. CLEMONS to Miss Durrell, both of Chattanooga, Tenn., recently.

Deaths

Frederic Henry Gerrish, Portland, Me.; a graduate of the Medical School of Maine, Portland, in 1869, died September 9, aged 75. He was a member, and president in 1901-1902, of the Maine Medical Association. After serving as lecturer and professor of therapeutics, materia medica and physiology at the University of Michigan, he returned to his alma mater as professor of materia medica and therapeutics, 1875-1882; of anatomy, 1882-1904; of surgery, 1904-1911, and since then emeritus professor of surgery. He was president of the Maine State Board of Health from 1885 to 1889, the American Academy of Medicine, 1887-1888, and American Therapeutic Society, 1908-1909; consulting surgeon and director of the Maine General Hospital; author of several medical works and editor of the Text-Book of Anatomy by American Authors.

Jehn Harlan Stuart, Minneapolis; Bellevue Hospital Medical College, 1867; aged 84; formerly consulting physician to the City, St. Mary's and Asbury hospitals, Minneapolis; sometime professor of physical diagnosis and clinical medicine in Hamline University, Minneapolis; president of the Kansas State Medical Society in 1882; for two terms president of the Hennepin County Medical Association; died, August 31.

Benjamin Franklin Churchill, New York; University of the City of New York, 1887; aged 66; visiting surgeon for the New York Dispensary and Hospital; gynecologist to the Northeastern Dispensary; assistant surgeon at the Manhattan Eye, Ear, Nose and Throat Hospital; died, August 20.

John Joseph Molloy, Covington, Ky.; Bellevue Hospital Medical College, 1886; aged 60; a member of the Kentucky State Medical Association; for many years president of the medical staff of St. Elizabeth's Hospital, Covington; died, September 7, from nephritis.

James Harvey Lowright, Center Valley, Pa.; Jefferson Medical College, Philadelphia, 1881; aged 61; a member of the Medical Society of the State of Pennsylvania; died at the Allentown (Pa.) Hospital, August 28, from cerebral hemorrhage.

Thomas Hull Andrews, Cuthbert, Ga.; University of Pennsylvania, Philadelphia, 1875; aged 68; a member of the Medical Association of Georgia, and president of the Randolph County Medical Society, in 1919; died, September 6.

Nicholas B. Drewry, Griffin, Ga.; Atlanta (Ga.) Medical College, 1855; aged 86; formerly consulting physician at Griffin (Ga.) Hospital; died at Davis-Fischer Sanatorium, Atlanta, July 1, following a prostatectomy.

James Lewis Ellis, Dothan, Ala.; Memphis (Tenn.) Hospital Medical College, 1886; aged 59; a member of the Medical Association of the State of Alabama; died, August 29, following an operation for appendicitis.

Urbane V. Williams, Frankfort, Ky.; Jefferson Medical College, 1858; aged 86; secretary of Franklin County Medical Society for ten years; died, September 1, from senile debility.

⊕ Indicates "Fellow" of the American Medical Association.

Alvin Rufus Scott ⊕ Fort Collins, Colo.; Jenner Medical College, Chicago, 1906; University of Illinois, Chicago, 1907; aged 43; died in St. Luke's Hospital, Denver, August 31, from septic embolism of the liver.

Thomas J. Walker, Dyersburg, Tenn.; University of Louisville, Ky., 1867; aged 79; a member of the Tennessee State Medical Association; died at the Baptist Memorial Hospital, Memphis, August 30.

Stephen Van Wickle Stout, Jersey City, N. J.; Columbia University, College of Physicians and Surgeons in the City of New York, 1868; aged 74; died at the Memorial Hospital, September 7.

John Charles Martin, Findlay, Ohio; Jefferson Medical College, 1881; aged 64; a member of the Ohio State Medical Association; a veteran of the Spanish-American War; died, September 1.

Galen L. Cline, Perintown, Ohio; Medical College of Ohio, Cincinnati, 1882; aged 63; formerly a member of the Ohio legislature; at one time assistant surgeon, U. S. Army; died, August 29.

Richard Alexander Urquhart, Los Gatos, Calif.; University of Virginia, Charlottesville, 1874; aged 69; died in Lane Hospital, San Francisco, September 4, from streptococcus septicemia.

George Huhner, New Orleans; Tulane University, New Orleans, 1881; aged 71; died at the Charity Hospital, June 10, from injuries received when struck by an automobile, June 7.

Albert E. Koonz, New York; Columbia University, College of Physicians and Surgeons in the City of New York, 1896; aged 46; also a dentist; died in St. Luke's Hospital, September 8.

Harry Richard Nordley ⊕ Minneapolis; University of Minnesota, Minneapolis, 1912; aged 32; Lieutenant, M. C., U. S. Army; died at West Arm, Lake Minnetonka, August 24.

William Holyoke Niles ⊕ Marshall, Mich.; University of Vermont, Burlington, 1915; aged 35; Lieutenant, M. C., U. S. Army, and discharged May 26, 1919; died recently.

George Harrington McGuire, New York; University of the City of New York, 1883; aged 58; died, September 12, from injuries received in an automobile accident.

Samuel B. Lewis, Madison, Ind.; Cincinnati College of Medicine and Surgery, 1862; aged 80; a veteran of the Civil War; died, August 19, from heart disease.

Edward Frank O'Day, Dover, Del.; University of Maryland, Baltimore, 1891; aged 54; at one time a member of the Delaware legislature; died, September 7.

David H. Davis, Nanticoke, Pa.; University of Pennsylvania, Philadelphia, 1880; aged 67; died at the home of his sister in Tunkhannock, August 26.

Ralph Nevin Gordon, Vancouver, Wash.; University of Michigan, Ann Arbor, 1897; aged 46; died, July 6, from acute dilatation of the heart.

Rebecca Hanna, Red Oak, Iowa; State University of Iowa, Iowa City, 1874; aged 78; died at St. Joseph's Hospital, Omaha, August 28.

Solomon F. Wehr, Staunton, Ill.; Eclectic Medical College of Philadelphia, 1862; aged 86; a veteran of the Civil War; died, September 1.

Aaron H. Hastings, Muncie, Ind.; Hahnemann Medical College and Hospital, Chicago, 1887; aged 78; died, September 2.

Frederick K. Everett, Chicago; Chicago Homeopathic Medical College, 1888; aged 62; died, August 11, from paralysis.

Nathan Tucker, Mt. Gilead, Ohio; Bellevue Hospital Medical College, 1866; aged 82; died, August 29, from nephritis.

Thomas Lee Settle, Paris, Va.; Kentucky School of Medicine, Louisville, 1857; aged 84; died, August 26.

Henry Ford Gould, Denver, Tenn.; Vanderbilt University, Nashville, Tenn., 1879; aged 64; died recently.

John M. Mussey, Oakland, Calif.; Castleton (Vt.) Medical College, 1854; aged 87; died, September 2.

Horace G. Colley, Wilkes-Barre, Pa.; Jefferson Medical College, 1874; aged 68; died, September 3.

Joseph Henry Hayes, Lock Haven, Pa.; Jefferson Medical College, 1862; aged 79; died, August 25.

William Follett, Machias, N. Y.; University of Buffalo, N. Y., 1892; aged 49; died, August 29.

John P. Burchfield, Pittsburgh; Jefferson Medical College, Philadelphia, 1865; died, September 5.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

SOME MISBRANDED VENEREAL NOSTRUMS

Injection Cadet.—E. Fougera & Co., New York, shipped in July, 1918, a quantity of "Injection Cadet," said to be made by G. Durel of Paris, France. The federal chemists analyzed this product and reported that it consisted of a dilute watery solution of copper sulphate and unidentified plant material. The federal authorities charged that the therapeutic claims made for the product were false and fraudulent. In October, 1919, no claimant having appeared for the property, the court, after entering judgment of condemnation and forfeiture, ordered it destroyed by the United States marshal.—[*Notice of Judgment No. 7263; issued Aug. 16, 1920.*]

Knoxit.—The federal authorities made a number of seizures of these products. The nostrums were consigned by the Beggs Mfg. Co., Chicago, and were shipped at various times between June, 1918, and April, 1919, inclusive. Analysis of "Knoxit Injection" made in the Bureau of Chemistry showed that it consisted essentially of a slightly perfumed solution of zinc acetate and alkaloids of hydrastis in glycerin and water. "Knoxit Liquid" was also found to be a solution of zinc acetate with alkaloids of hydrastis in glycerin and water perfumed with oil of rose. "Knoxit Globules" were reported to consist essentially of a mixture of volatile and fixed oils and oleoresins, including copaiba balsam, cinnamon and cassia. The three products were declared misbranded because they were falsely and fraudulently represented as cures for gonorrhea, blennorrhea, catarrhal affections of the genito-urinary organs and for various other conditions. When the various cases came before the court no claimant appeared for the property and the court ordered in each instance that judgment of condemnation and forfeiture should be entered and the stuff destroyed by the United States marshal.—[*Notices of Judgment Nos. 7260-61-62-77-78-81-84-85-86-87, issued Aug. 16, 1920; Nos. 7310-11-12-16-17-25-49, issued Sept. 3, 1920, and Nos. 7353-65-78-88-89-92, issued Aug. 31, 1920.*]



Grimault and Co.'s Injection.—E. Fougera & Co., New York, shipped in November, 1918, four dozen bottles of this product which federal authorities declared misbranded. The Bureau of Chemistry reported that analysis showed the stuff to consist of a weak watery solution of copper sulphate and plant extractives, probably matico. The labels bore the claim that "The Matico Plant has been found to have remarkable preventive and astringent properties in the treatment of chronic and acute discharges from the urethra." This claim was declared false and fraudulent. In June, 1919, the court entered judgment of condemnation and forfeiture and ordered the United States marshal to destroy the product.—[*Notice of Judgment No. 7265; issued Aug. 16, 1920.*]

Halz Injection.—In October, 1918, and January, 1919, a quantity of this product had been shipped from Missouri into Oklahoma, having been consigned by the Ed. Price Chemical Co., Kansas City, Mo. The federal chemists reported that "Halz Injection" consisted essentially of zinc sulphate, boric acid, glycerin, traces of alum and formaldehyde and water. Some tablets that seemed to go with the product were reported

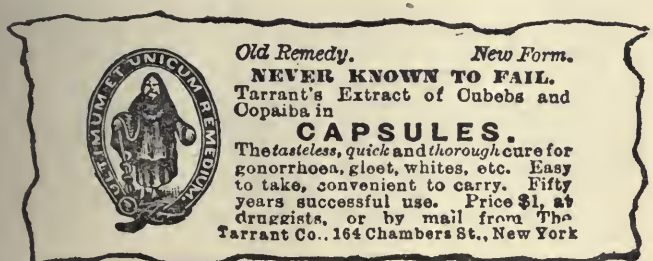
to consist essentially of calcium and magnesium carbonates, copaiba, a laxative plant drug, plant extractives, a small amount of an unidentified alkaloid, sugar and starch. The stuff was sold as a cure for gonorrhea, gleet, leucorrhea, etc. The therapeutic claims made for the product were declared false and fraudulent. In July, 1919, the Alexander Drug Co. of Oklahoma City, Okla., having filed an answer that the product was the property of the Ed. Price Chemical Co., manufacturer of the product, judgment of condemnation and forfeiture was entered and it was ordered by the court that the product should be destroyed and that judgment should be entered against the Ed. Price Chemical Co. for the costs of the proceedings.—[*Notice of Judgment No. 7344; issued Sept. 3, 1920.*]

Noxit.—The Frederick F. Ingram Co., Detroit, shipped to California in August, 1918, a quantity of a product labeled "Noxit an Injection." The federal chemists reported that analysis showed the stuff to consist essentially of opium, berberine, a zinc salt, glycerin, alcohol and water. The stuff was sold "for the treatment of gonorrhea, clap and gleet" and the therapeutic claims made for it were declared false and fraudulent. In June, 1919, the court entered judgment of condemnation and forfeiture and ordered the product destroyed.—[*Notice of Judgment No. 7306; issued Sept. 3, 1920.*]

Crossmann Mixture.—The Wright's Indian Vegetable Pill Co., New York City, shipped in March, 1918, a quantity of "Crossman Mixture." Analysis by the federal chemists showed this stuff to be essentially an alcoholic solution of volatile oils, including balsam of copaiba and cubebs. The stuff was declared misbranded because of the false and fraudulent claims regarding its alleged curative effects in gonorrhea, gleet, etc. In June, 1919, the court entered judgment of condemnation and forfeiture and ordered that the product be destroyed.—[*Notice of Judgment No. 7297; issued Aug. 16, 1920.*]

Santal-Pearls.—The S. Pfeiffer Mfg. Co., St. Louis, Mo., consigned a quantity of "Santal-Pearls" that were shipped in June, 1918, to Pennsylvania. When analyzed by the federal chemists the stuff was found to consist essentially of a cinnamon-flavored mixture of santal oil and copaiba. The product was sold as an alleged remedy for gonorrhea and the curative effects claimed were declared false and fraudulent. In July, 1919, the court entered judgment of condemnation and forfeiture and ordered the product destroyed.—[*Notice of Judgment No. 7370; issued August 31, 1920.*]

Cu-Co-Ba Tarrant.—The Tarrant Co., New York City, shipped in March, 1919, a quantity of "Cu-Co-Ba Tarrant." This, apparently, is a trade name for "Tarrant's Compound



Extract of Cubebs and Copaiba when put up in capsule form. The article bore such claims as:

"Of special value in gleet, gonorrhea and leucorrhea when uncomplicated with diseases of uterus or appendages."

"In inflammations of vagina, bladder and kidneys, it has been used with success; also in irritation of prostate . . . leucorrhea or whites."

"In the contagious disorder known as gonorrhea or clap, Cu-co-ba gives positive results in the great majority of cases."

The federal chemists reported that analysis showed the stuff to consist of a mixture of extracts of cubebs and copaiba with magnesium oxid. The therapeutic claims made for the products were declared false and fraudulent. In January, 1920, the court entered judgment of condemnation and forfeiture and ordered the product destroyed.—[*Notice of Judgment No. 7288; issued Aug. 16, 1920.*]

Hygienic and Preservative Brou's Injection.—E. Fougera & Co., New York, shipped in November, 1918, a quantity of this product which was said to be "for the Cure of all recent and chronic Discharges of the Urinary Organs, Gonorrhea, Leucorrhea and Gleet." The chemists of the bureau reported that analysis showed the article to consist essentially



of acetates and sulphates of zinc and lead, morphin, water and a very small amount of alcohol. The therapeutic claims were declared false and fraudulent. In December, 1919, E. Fougera & Co. having consented to a decree, judgment of condemnation and forfeiture was entered and the court ordered that the product be released on payment of the costs of the proceedings and the execution of a $250 bond on condition in part that the product should be relabeled under the supervision of a representative of the Department of Agriculture.—[*Notice of Judgment No. 7264; issued Aug. 16, 1920.*]

Correspondence

ALL-AMERICA CONFERENCE ON VENEREAL DISEASES

To the Editor:—On the basis of our present knowledge, syphilis, from being one of the most prevalent of human afflictions, can be made as rare as smallpox. Excepting perhaps diphtheria, is there another widely prevalent infectious disease for whose control we now have available so many practical discoveries as we have in the case of syphilis? Ignorance and inertia on the part of the people are the chief obstacles, and these are now being overcome with encouraging progress, thanks largely to the World War.

The extraordinary demands for man power made on all the warring nations during the last few years served to focus attention on the fearful devastation wrought by the venereal diseases. As a consequence, legislators and administrators, official and unofficial organizations, took active steps to control the venereal diseases, especially as they affected the military forces. In the United States these steps included the passage of an act appropriating several million dollars out of the federal treasury for combating venereal diseases in the various states. Largely as a result of the educational activities carried on under this appropriation, nation-wide interest has been aroused in the campaign against venereal diseases, and states and municipalities are actively engaged in efforts to control these infections.

At this point the question arises whether the scientific knowledge which we have concerning the venereal diseases is everywhere being properly utilized. It would seem highly desirable to examine carefully the work thus far carried on so that profitable activities can be more fully developed and others abandoned or curtailed. Much can certainly be expected from an account of the experiences of active workers in this field. Moved by these considerations, the official leaders of the antivenereal campaign in the United States have organized a conference to be held in Washington, Dec. 6 to 11, 1920, where recognized authorities in their respective

fields will be brought together and where a comparison and evaluation of the methods now being employed in various parts of the world for the control of venereal diseases can be undertaken. The All-America Conference on Venereal Diseases, as the conference has been named, is the first of a series of regional conferences suggested by the International Health Conference held last year at Cannes under the auspices of the League of Red Cross Societies.

In the program as thus far arranged, provision is made for discussions under the heads of: (1) present status and recent progress in medical investigations relating to venereal diseases; (2) education as a means of controlling venereal diseases; (3) law enforcement and protective social measures with individuals, and (4) social influence in the control of venereal diseases. Specifically, the conference will endeavor to adopt recommendations relating to a practicable three-year program for each of the North and South American countries participating, and to suggest plans for putting such program into effect. Copies of the program and detailed information regarding membership may be obtained by addressing the executive secretary, All-America Conference on Venereal Diseases, 411 Eighteenth Street, Washington, D. C.

CHARLES BOLDUAN, Washington, D. C.
Acting Executive Secretary.

"CREDULITY AND CURES"

To the Editor:—In a communication to THE JOURNAL (Aug. 21, 1920, p. 558), Dr. Theodore Diller made a statement which is not borne out by the recent developments in psychanalysis. Concerning psychanalytic therapeutics he wrote: "Only in orthodox medicine are failures recorded, even when conditions and technic are perfect," and later adds that he is well acquainted with the literature on medical psychanalysis.

One contribution to psychanalysis, however, seems to have escaped either Dr. Diller's attention or memory, namely, a paper which I published in the *Psychoanalytic Review* (April, 1917), under the title of "Some Statistical Results of the Psychoanalytic Treatment of the Psychoneuroses." This paper was based on an unselected series of ninety-three cases which were personally psychanalyzed, and so far as known, was the first complete statistical study of psychanalytic therapeutics. The material was classified according to the diagnosis of the neurosis treated and, contrary to Dr. Diller's rather dogmatic statement, failures *were* recorded; but these failures occurred in cases of neuroses of long duration or when the unconscious resistance toward recovery was so strong that it could not be overcome by the psychanalytic technic used.

For instance, under the heading of "A Discussion of the Statistical Results," it was stated: "In looking over the table of results, it will be noted that the largest percentage of recoveries (nine out of eleven cases) occurred in the homosexual group, while in the stammering, which is really a severe form of an anxiety neurosis, no complete recovery was recorded." Each group of cases was discussed in a similar manner, the duration of the treatment stated, and the reason given either for recovery or nonrecovery.

If Dr. Diller will read my paper carefully, he will easily see that I have entered into a discussion of the psychanalytic methods the same as is done in other departments of clinical medicine. Most of the adverse criticisms of psychanalysis have emanated either from those who have had no extensive experience with the method or were unacquainted with its rapidly growing literature. Psychanalysis is based on the fundamental principle that its practice and technic must be directed toward that unconscious thinking which forms the basis of every neurosis.

ISADOR H. CORIAT, M.D., Boston.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

CALCIDIN TABLETS (ABBOTT)—SCHOOLS FOR MENTALLY DEFICIENT CHILDREN

To the Editor:—1. What is the composition of calcidin tablets (Abbott) and what is their value? 2. Is there any school for mentally deficient children in Kansas City, Denver or any other town in the Middle West or Southwest? If so, I would like the name and address of the person in charge. Please omit my name in replying.

J. S.

ANSWER.—1. Calcidin is claimed to be a mixture of iodin, lime and starch. In contact with water, the iodin and lime react to form calcium iodid and calcium iodate. By the acid of the gastric juice, the calcium iodid and calcium iodate are decomposed with liberation of free iodin. The administration of calcidin tablets amounts to giving free (elementary) iodin. In the past the advertising for calcidin has contained the unwarranted claim more of less directly that it was the most effective and only noninjurious preparation of iodin for internal use, and that it possesses all of the valuable properties of the iodin with all of the objectionable effects left out. So far as we know, the effects produced by the administration of free iodin do not differ from those produced by the administration of iodids and, therefore, calcidin has no advantage over the iodids, such as sodium iodid.

2. Missouri Colony for Feeble-Minded and Epileptics, Marshall, Mo.; Dr. Robert P. C. Wilson, superintendent; state.
Emmaus Asylum for Epileptics and Feeble-Minded, Marthasville, Mo.; Rev. C. F. Sturm, superintendent; private.
Emmaus Asylum for Epileptics and Feeble-Minded, St. Charles, Mo.; Rev. J. W. Frankenfield, superintendent; private.
State Home and Training School for Mental Defectives, Ridge, Colo.; Alfred P. Busey, medical director; state.
Beverly Farm, Godfrey, Ill.; Dr. W. H. Smith, superintendent; private.
Powell School for Backward and Mentally Deficient Children, Red Oak, Iowa; Dr. Velura E. Powell, physician in charge; private.
Stewart Home, Farmdale, Ky.; Dr. John P. Stewart, physician in charge; private.
Trowbridge Training School, 2891 Troost Avenue, Kansas City, Mo.; Dr. E. H. Trowbridge, superintendent; private.
Texas School for Defectives and Sanitarium for Mental and Nervous Diseases, 1112 East Ninth Street, Austin, Texas; Dr. T. O. Maxwell, superintendent; private.
Wyoming State School for Defectives, Lander, Wyo.; Dr. Charles E. Lane, superintendent; state.

DETECTION OF LEAD IN WATER

To the Editor:—I am in charge of a lead mine hospital in Mexico and we have many cases of lead poisoning. Please give me instructions how to make a simple test to detect lead in drinking water, for we are using water from different springs and we do not know which one contains the lead.

Kindly give me a simple and easy method for this test and tell me, if possible, how to remove lead from water. In answering please do not use my name.

D. J.

ANSWER.—The following method for the detection of lead in water is described by E. G. Jones (Chemistry for Public Health Students, Methuen & Co., London, 1920, p. 159):

"Fill three Nessler cylinders with the water; to two of them add 2 or 3 drops of a fresh solution of ammonium sulphid (this must be colorless) and compare with the water in the third cylinder. Lead and copper produce brown colorations; iron gives a greenish-brown coloration; zinc produces a white turbidity. If there is a coloration, keep one cylinder for comparison and treat the other as follows: Add a few drops of dilute hydrochloric acid; if the color disappears, iron is present. If the color does not go, add potassium cyanid and sufficient ammonium hydrate to render alkaline (the latter will not be necessary unless a great deal of acid has been added); if the color now disappears, copper is present. If the color still remains, the water most probably contains lead." As a confirmatory test for lead: "To 100 c.c. of water in a Nessler cylinder add a few drops each of acetic acid and of potassium chromate solution. Allow to stand for a few minutes and examine in a good light against a dark background; lead is indicated by a yellow turbidity, which may take some time to appear if the quantity is very small. Compare with distilled water, similarly treated."

We know of no practical method to remove lead from water to be used for drinking purposes, short of resorting to distillation.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, Oct. 5-6. Sec., Dr. Ancil Martin, Phoenix.

ARKANSAS: Little Rock, Nov. 9-10. Sec. Reg. Bd., Dr. F. J. Stout, Brinkley. Sec. Electic Bd., Dr. C. E. Laws, Ft. Smith.

CALIFORNIA: Sacramento, Oct. 18-21. Sec., Dr. C. B. Pinkham, 529 Forum Bldg., Sacramento.

COLORADO: Denver, Oct. 5. Sec., Dr. David A. Strickler, Denver.

CONNECTICUT: Hartford, Nov. 9-10. Sec. Reg. Bd., Dr. Robert L. Rowley, Hartford.

CONNECTICUT: New Haven, Nov. 9. Sec. Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec. Eclectic Bd., Dr. James E. Hair, Bridgeport.

DISTRICT OF COLUMBIA: Washington, Oct. 12-15. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.

FLORIDA: Jacksonville, Nov. 4. Sec., Homeo. Board, Dr. Geo. A. Davis, Sec., East Port.

GEORGIA: Atlanta, Oct. 12-14. Sec., Dr. C. T. Nolan, Marietta.

IDAHO: Boise, Oct. 5. Commissioner. Hon. Robert O. Jones, Boise.

KANSAS: Topeka, Oct. 12-13. Sec., Dr. H. A. Dykes, Lebanon.

LOUISIANA: New Orleans, Nov. 2. Sec., Homeo. Board, Dr. F. H. Hardenstein, 702 Macheca Bldg., New Orleans.

LOUISIANA: New Orleans, Nov. 2-4. Sec., Dr. E. W. Mahler, 1551 Canal St., New Orleans.

MAINE: Portland, Nov. 9-10. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

MICHIGAN: Lansing, Oct. 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, Oct. 5-7. Sec., Dr. Thomas S. McDavitt, St. Paul.

MISSOURI: Kansas City, Oct. 6-8. Sec., Dr. Geo. H. Jones, State House, Jefferson City.

MONTANA: Helena, Oct. 5. Sec., Dr. S. A. Cooney, Helena.

NEBRASKA: Lincoln, Nov. 11-12. Sec., Mr. H. H. Antles, Lincoln.

NEVADA: Carson City, Nov. 1. Sec., Dr. Simeon L. Lee, Carson City.

NEW JERSEY: Trenton, Oct. 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.

NEW MEXICO: Santa Fe, Oct. 11-12. Sec., Dr. R. E. McBride, Las Cruces.

NEW YORK: Albany, Buffalo, New York and Syracuse, Oct. 4-7. Assistant Prof. Examinations, Mr. Herbert J. Hamilton, Albany.

OKLAHOMA: Oklahoma City, Oct. 13-14. Sec., Dr. James M. Byrum, Shawnee.

PORTO RICO: San Juan, Oct. 5. Sec., Dr. M. Quevedo Baez, San Juan.

RHODE ISLAND: Providence, Oct. 7-8. Sec., Dr. Byron W. Richards, Providence.

SOUTH CAROLINA: Columbia, Nov. 9. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

WEST VIRGINIA: Charleston, Oct. 12. Sec., Dr. S. L. Jepson, Charleston.

WYOMING: Sheridan, Oct. 4-6. Sec., Dr. J. D. Shingle, Cheyenne.

ADDITIONAL HOSPITALS APPROVED FOR INTERN TRAINING

Since the publication of the list of hospitals furnishing acceptable internships in the Educational Number of THE JOURNAL, Aug. 7, 1920, the following institutions have been added to the list:

South Shore Hospital, 8001-17 Luella Ave., Chicago, Ill.
St. Bernard's Hospital, 6337 Harvard Ave., Chicago, Ill.
West Side Hospital, 1850 W. Harrison St., Chicago, Ill.
Butterworth Hospital, Michigan and Bostwick Ave., N. E., Grand Rapids, Mich.
St. Mary's Hospital, Cor. Cherry St. and Lafayette Ave., Grand Rapids, Mich.
St. Mary's Hospital, Minneapolis, Minn.
Stetson Hospital, 1745 N. 4th St., Philadelphia, Pa.
Holy Cross Hospital, Salt Lake City, Utah.
St. Luke's Hospital, Summit Blvd. and A St., Spokane, Wash.
Friends' Hospital, Philadelphia, has been admitted to Section II of the List which includes "State Hospitals and Hospitals for the Insane."
Children's Hospital Society, Los Angeles, Calif., is approved as a children's hospital and classified under "Special Hospitals," Section III of the List.

Connecticut July Examination

Dr. Robert L. Rowley, secretary, Connecticut Medical Examining Board, reports the written examination held at Hartford, July 13-14, 1920. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 50 candidates examined, 41 passed and 9 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Yale University (1920) 77, 81.1, 82.3, 82.7, 84, 84.2, 84.9, 85.7, 85.7, 87.6.		
Loyola University	(1920)	76.1
University of Maryland	(1917)	77
Johns Hopkins University	(1920)	83.4, 87.2, 92.5
Harvard University (1919) 82.4. (1920) 83.5, 86.1,		89
Tufts College Medical School	(1918) 78.4, (1919)	75
Dartmouth Medical School	(1910)	81.3
University of Buffalo	(1914)	84.2
Albany Medical College	(1903)	80.4
Fordham University	(1917) 79.3, (1920)	84.7, 85.5
Columbia University (1907) 80.2, (1911) 81, 85.1, (1919) 80.4, 83.2, (1920) 86.2.		
New York University Medical College	(1896)	78.1
Woman's Medical College of Pennsylvania	(1915)	75.2
Jefferson Medical College	(1917) 82, (1920)	76.9, 89.9
University of Pennsylvania	(1917) 77.9, (1920)	76.9
University of Vermont	(1920)	82.1
FAILED		
Bennett Medical College	(1914)	67
Bowdoin Medical School	(1920)	73.7
University of Maryland	(1920)	74.4
Harvard University	(1894)	58
Jefferson Medical College	(1919)	74.4
Baylor University	(1920)	69.4
Medical College of Virginia	(1917) 69.5, (1919)	68
Montreal School of Medicine and Surgery	(1918)	58.5

Book Notices

LE CŒUR ET L'AORTE. Études de Radiologie Clinique. By H. Vaquez, Professor à la Faculté de Paris, and E. Bordet, Ancien chef de laboratoire adjoint à la Faculté de Médecine de Paris. Third edition. Paper. Price, 20 francs. Pp. 259, with 188 illustrations. Paris: J. B. Baillière et Fils, 1920.

The first edition of this work was published in 1913, the second in 1918. That a new edition is called for so soon is evidence of the popularity of the book. This popularity is founded on real merit. The writers stick to their subject, which is clinical radiology. They do not wander off into irrelevant discussions of the construction of roentgen-ray machines or technical questions connected with the working of the apparatus. Nor is space unnecessarily taken up by tiresome consideration of theories that have no practical bearing on the subject. Bibliographic references are few. In addition, the style is clear so that the book makes easy and interesting reading. As to clinical features, all essential details are minutely presented. There is abundant evidence that the work is based on a rich clinical experience, supplemented by extensive reading. It is a pleasure to note the writers' familiarity with American literature bearing on the topic. The book is well printed, on good paper, and the illustrations are many and helpful.

DIAGNOSTIC METHODS: CHEMICAL, BACTERIOLOGICAL AND MICROSCOPICAL. A Text-Book for Students and Practitioners. By Ralph W. Webster, M.D., Ph.D., Assistant Professor of Pharmacological Therapeutics and Instructor in Medicine in Rush Medical College, University of Chicago. Sixth edition. Cloth. Price, $9. Pp. 844, with 207 illustrations. Philadelphia: P. Blakiston's Sons & Co., 1920.

During the four years that have elapsed since the last edition of this book appeared—1916—research work has suffered somewhat; but many new methods have nevertheless been brought forward. The present edition is therefore considerably larger; a great deal of space is devoted to the various tests devised by Folin for the various constituents of the urine and blood, and to new methods of blood chemistry, particularly the work of Van Slyke, Rowntree and Marriott. Throughout the text the author has made frequent references to new literature on various subjects. There are many references to articles published during 1917 and 1918, and a few even to the latter part of 1919. On the whole, the book represents a complete and inclusive work on laboratory diagnosis. It is valuable not only as a textbook but also as a reference work for all physicians.

THE OXFORD MEDICINE. By Various Authors. Edited by Henry A. Christian, A.M., M.D., Hersey Professor of the Theory and Practice of Physic, Harvard University, and Sir James Mackenzie, M.D., F.R.C.P., LL.D., Consulting Physician to the London Hospital. In Five Volumes. Volume 1: The Fundamental Sciences and General Topics. Cloth. Price, $62.50 for set. New York: Oxford University Press, 1920.

From time to time the advance numbers of this publication have been reviewed in this department of THE JOURNAL. They have now been grouped under a single loose-leaf cover as the first volume of this "System." The mechanical device is easily handled. The authoritative character of the articles and their excellent presentation make the volume a worthwhile acquisition to any medical library.

Medicolegal

Damages of $1,000 for Pterygium Attributed to Cinder

(Louisville & N. R. Co. v. Roberts (Ky.), 218 S. W. R. 713)

The Court of Appeals of Kentucky says that plaintiff Roberts alleged that, while she was a passenger on one of the defendant railroad company's trains, a hot cinder entered her right eye, owing to a brakeman's coming into the car and negligently leaving the front door open just as the train entered a tunnel. The plaintiff testified that in about a week she went to a physician, who removed the cinder. After that a growth appeared in her eye, and she consulted a specialist, who prescribed for her. The physician first referred to testified that he removed something from the plaintiff's eye about the size of a pin point, but could not say whether it was a cinder. Another physician testified that there was a growth in the plaintiff's eye, which he called a pterygium, but that the growth could be removed by an operation. A third physician testified that he discovered a little growth in the plaintiff's eye, and that this growth could have been caused by a cinder. A specialist deposed that a cinder, if left in the eye, could have caused the growth; but another specialist testified that a cinder could not have caused the growth. The trial resulted in a judgment for $1,000 damages in favor of the plaintiff. In affirming that judgment, the court of appeals says that it may be conceded that ordinarily the fact that a window or the door of a car is left open is not evidence of negligance, since passengers are in the habit of raising and lowering windows and going in and out of doors; but that rule could not be applied here, because it was the rule of the company to close the doors of the cars when going through a tunnel, and the brakeman was charged with notice of the location of the tunnel. So, if he left the door open as stated, and that caused the cinder to enter the plaintiff's eye, he was guilty of negligence for which the company was liable.

Liability of Seller of Pads Causing Injury

(Harmon v. Plapao Laboratories (Mo.), 218 S. W. R. 701)

The St. Louis (Mo.) Court of Appeals says that the plaintiff alleged that she purchased three pads manufactured by the defendant, which were advertised and known as "Stuart's Adhesif Plapao Pads," for rupture. Her evidence tended to prove that the defendant sold her the pads, representing that they were harmless and would effect a cure. She used the pads as directed, but, after using them for forty days they became so painful that she was compelled to call a physician. He testified that on examination of the plaintiff he found an inflammation of the tissue around the navel; that the tissues were sloughed and had become black, what is ordinarily called gangrene; that there was a decided peritonitis; and that there was fever and distention over the bowels. There was further evidence on behalf of the plaintiff tending to show that the pads sold to her contained, among other ingredients, tannic acid and lanolin; that tannic acid when used for any length of time under pressure will become an irritant, and when used in connection with lanolin would penetrate into the abdomen, while if glycerin was used in connection with tannic acid it would prevent the harmful effects of the acid. The defendant's theory of the case was to the effect that the ingredients contained in these pads were harmless; that the pads as prepared by it contained 5 per cent. of tannic acid, which, when used in that proportion with glycerin, was not only harmless, but beneficial in cases of rupture. Still there was evidence introduced by the plaintiff from which it could be inferred that in the particular pads sold to her there was an excess of tannic acid, without any glycerin, and that under those circumstances tannic acid was injurious and could cause the injuries which the plaintiff received. There was also evidence on behalf of the plaintiff that before applying this pad she had been troubled to some extent with hernia, but that after applying the pad as directed by the defendant it caused her great pain, and she became in a much worse condition thereafter. From this evidence it could be inferred that the use of the pads caused the injury. The trial resulted in a judgment for $3,000 damages in favor of the plaintiff; but that judgment is reversed, and the cause remanded for a new trial, on account of errors in the instructions given to the jury.

There was no evidence that the defendant had actual knowledge that the pad contained injurious ingredients, if such was the fact; but, in the event that the jury believed that the pad did contain injurious ingredients, the court thinks there was evidence from which the jury might further infer that the defendant should have known of such fact, had it exercised ordinary care. The court thinks that, under the evidence, the case was for the jury, and that if the defendant sold to the plaintiff the pads, representing them to be beneficial and harmless, and that the plaintiff used the pads as directed by the defendant, and that the pads contained deleterious, irritant and corrosive ingredients, which caused the plaintiff's injury, and that the defendant knew or should have known through the exercise of ordinary care, the character of the pads, then the defendant would be liable.

Of its own motion, the trial court gave an instruction to the jury which predicated liability on the relation of physician and patient, and told the jury that it could hold the defendant responsible for the failure to exercise the care and skill of the average physician. That theory of recovery should not have been thrown into the case, as the pleadings did not justify it, and the plaintiff was not suing on any such theory.

Nor was it proper to instruct the jury that, if the defendant, from its own experience with the compound, believed, or had reason to believe, that it was not possessed of any such harmful quality, and used it with the belief that it was harmless, there could be no recovery in this action. That was error, as the question for determination was whether the defendant had exercised ordinary care in selling the pad.

Limit to Power to Remove City Health Commissioner

(State ex rel. Churchman et al. v. Hall et al. (W. Va.), 102 S. E. R. 694)

The Supreme Court of Appeals of West Virginia, in denying the relators, members of the state public health council, a writ of mandamus to compel the retirement from office of a city health commissioner and the mayor of the city to nominate some other person for health commissioner, holds that when a provision of a general statute expressly empowers the state public health council to remove from office a city health commissioner who refuses or neglects to observe and enforce the laws and regulations prescribed by the public health council to control and prevent the spread of an epidemic declared to be dangerous to the public health of such city, the exercise of such power is limited in its scope to the situation therein named, and does not, in the absence of express terms, confer authority to remove for other causes, when, as in Charleston, the charter authorizes the mayor of the city to appoint and remove the city health commissioner therefor. Furthermore, mandamus is not an appropriate process to enforce performance of a public duty, when the right to such relief is of doubtful or uncertain character.

Society Proceedings

COMING MEETINGS

Am. Acad. of Ophthal. and Otolaryng., Kansas City, Mo., Oct. 14-16.
American Association of Railway Surgeons, Chicago, Oct. 6-8.
American Child Hygiene Association, St. Louis, Mo., Oct. 11-13.
American Hospital Association, Montreal, Quebec, Oct. 4-8.
Delaware State Medical Society, Wilmington, Oct. 11-12.
Indiana State Medical Association, South Bend, Sept. 23-25.
Kentucky State Medical Association, Lexington, Sept. 27-30.
Minnesota State Medical Association, St. Paul, Sept. 29-30.
Mississippi Valley Medical Association, Chicago, Oct. 26-28.
New England Surgical Society, Providence, R. I., Oct. 6-7.
New Mexico Medical Society, Roswell, Oct. 15-16.
Pennsylvania, Medical Society of the State of, Pittsburgh, Oct. 4-7.
Tri-State District Medical Society, Waterloo, Iowa, Oct. 4-7.
Vermont State Medical Society, Rutland, Oct. 7-8.
Virginia, Medical Society of, Petersburg, Oct. 26-29.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

June, 1920, 3, No. 6

Pseudotumors of Uveal Tract. E. Jackson, Denver.—p. 397.
Hyperplastic Subconjunctivitis. H. McI. Morton, Minneapolis.—p. 402.
Congenital Atresia of Lacrimal Duct. C. S. G. Nagel, San Francisco.—p. 406.
Visual Acuity at Low Illumination and Use of Illumination Scale for Detection of Small Errors in Refraction. C. E. Ferree and G. Rand, Bryn Mawr, Pa..—p. 408.
A Field Investigation of Etiology of Trachoma in Eastern Kentucky. Stereomicrometer. H. J. Howard, Feking, China.—p. 417.
F. B. Eaton, San Francisco.—p. 422.
Ophthalmic Service of a Division of Belgian Army in Field. M. Danis, Brussels, Belgium.—p. 427.
Operation for Keratoconus; Report of Two Cases. A. S. Green and L. D. Green, San Francisco.—p. 429.

Archives of Dermatology and Syphilology, Chicago

September, 1920, 2, No. 3

Some Thoughts on Precedent. M. F. Engman, St. Louis.—p. 273.
*Chemistry of Arsphenamin and Its Relation to Toxicity. G. W. Raiziss and A. Proskouriakoff, Philadelphia.—p. 280.
*Summary of Experimental Studies on Histopathologic Changes Produced by Arsphenamin and Neo-Arsphenamin. J. A. Kolmer and B. Lucke, Philadelphia.—p. 289.
*Salient Facts Regarding Toxicity of Arsphenamin and Neo-Arsphenamin. G. B. Roth, Washington, D. C.—p. 292.
Applications and Limitations of Arsphenamins in Therapeutics. J. H. Stokes, Rochester, Minn.—p. 303.
Use of Permanent Solution of Arsphenamin. D. D. Stetson, New York.—p. 324.
Polyneuritis Plus Dermatitis Exfoliativa Following Neo-Arsphenamin. B. B. Beeson, Chicago.—p. 337.
*Provocative Procedures in Diagnosis of Syphilis. P. A. O'Leary, Rochester, Minn.—p. 348.
Stability of Silver Stains as Applied to Spirillar Organisms. T. G. Perrin, Mexico, D. F.—p. 354.
Case of Lichen Planus Linearis: Its Relation to a Cutaneous Nerve Experimentally Shown. L. W. Ketron, Baltimore.—p. 358.
*Borderline Case of Neurotic Excoriations. W. A. Pusey, Chicago.—p. 361.
*Protein Sensitization in Eczema. Report of Seventy-Eight Cases. M. A. Ramirez, New York.—p. 365.
Adenoma Sebaceum Associated with Teratoma of Kidney. Report of Case. E. D. Crutchfield, Galveston, Texas.—p. 368.

Arsphenamin Toxicity.—Analytic study of arsphenamin leads Raiziss and Proskouriakoff to believe that the impurity causing reactions in patients is present only in very small quantities.

Tissue Changes Produced by Arsphenamin.—Kolmer and Lucke found that tissue injuries produced by neo-arsphenamin have generally been of the same character as those produced by arsphenamin, but, in comparison to dosage, have been less severe. The arsphenamins and neo-arsphenamins prepared by different laboratories produced similar changes.

Toxicity of Neo-Arsphenamin.—Roth claims that neo-arsphenamin behaves differently in the animal organism from arsphenamin and should not be regarded simply as arsphenamin in a convenient form for administration. When administered intravenously and at a constant rate, acid solutions of arsphenamin are much more toxic than the corresponding alkaline solutions, the toxicity of the acid solutions increasing with the concentration. A properly alkalinized 2 per cent. arsphenamin solution when administered intravenously and in high dosage is slightly more toxic than a 0.5 per cent. solution. The toxicity of properly alkalinized arsphenamin increases greatly as the rate of its intravenous administration is increased. Rate of administration is, therefore, an important factor in determining toxicity. When neo-arsphenamin is found to dissolve with comparative difficulty, it is generally highly toxic and should be discarded. Shaking aqueous solutions of neo-arsphenamin or alkalinized arsphenamin in the presence of air increases their toxicity markedly. When a 4 per cent. solution of neo-arsphenamin is shaken vigorously for ten minutes its toxicity is more than quadrupled. Arsphenamin preparations made in the United States are generally less toxic than those of foreign manufacture. Neo-arsphenamin preparations made in the United States compare favorably with, and in certain instances are decidedly less toxic than, most of the foreign products.

Provocative in Diagnosis of Syphilis.—The provocative procedure employed by the section of dermatology and syphilology of the Mayo Clinic consists of a single intravenous injection of 3 dg. of arsphenamin, with a series of seven Wassermann tests made at twenty-four hour intervals, the first blood being drawn just before the arsphenamin injection, and, if indicated, daily observation of the patient.

Malingering or Neurotic Excoriation.—Pusey reports a case in which the amount of destruction of the skin equaled that in many cases of typical malingering, but in this case the psychic condition was that seen in neurotic excoriations. He suggests that it may, perhaps, be regarded as a borderline case between the two conditions.

Protein Sensitization in Eczema.—Of seventy-eight cases of eczema tested with proteins by Ramirez, thirty gave positive skin tests. Like asthma, anaphylactic eczema occurs more frequently under the age of 30. Eczema associated with asthma or hay-fever is usually anaphylactic. Only a small percentage of all eczema cases are anaphylactic, but it is essential that patients be tested thoroughly in order that they may be classified properly and treated correctly.

Boston Medical and Surgical Journal

Sept. 2, 1920, 183, No. 10

*Multiple Resections of Small Intestine. E. L. Hunt, Worcester, Mass.—p. 275.
*Results of Cholecystectomy with Particular Reference to Dilatation of Common Duct. J. Homans, Boston.—p. 282.
*Acute Intestinal Obstruction: A Study of a Second Series of Cases from The Massachusetts General Hospital. E. P. Richardson, Boston.—p. 288.
*Cancer: Factors Entering into Delay in Surgical Treatment. C. C. Simmons and E. M. Daland, Boston.—p. 298.

Multiple Resections of Small Intestine.—Hunt reports a case of bullet wound of the abdomen with multiple perforations of the bowel and mesentery, treated by primary resection of three segments with end to end anastomoses by means of Murphy buttons, secondary drainage of jejunum, final closure of fistula, and complete recovery. In cases of severe traumatism to the intestine Hunt advises that multiple resections be made when a single resection would deprive the patient of an undue amount of bowel. In such cases, where the paralytic ileus has begun or its supervision is to be anticipated clearly, primary enterostomy proximal to the traumatized area is theoretically indicated. In cases of postoperative ileus enterostomy should not be deferred too long.

Results of Cholecystectomy.—The histories of 223 cases of cholecystectomy were analyzed by Homans to discover, if possible, whether the ducts were dilated in the presence of an obvious loss of the normal function of the gallbladder, and whether any particular symptoms corresponded to this condition. Of the 223 patients, twelve died in consequence of the operation. Of the remaining 211, forty-six have not been traced, leaving only 165 patients among whom the percentages of successes and failures can be established. Of these, six have had recurrences and may be called failures, thirty-two are improved but still suffer from symptoms more or less similar to those for which operation was performed, and the remaining 127 patients (77 per cent. of the traced cases) can be considered well as regards the cure of complaints directly or indirectly referable to the gallbladder and biliary passages. Homans states that there is satisfactory experimental evidence that removal of the gallbladder is followed by dilatation of the extrahepatic biliary ducts, and there is also clinical evidence that destruction or loss of function of the gallbladder within the human body is frequently followed by duct dilatation. Duct dilatation occasionally occurs while the gallbladder is functioning and in the absence of common duct stone. There are no symptoms characteristic of dilatation of the biliary ducts. There is no evidence that dilatation of the biliary ducts is actually harmful to the individual.

Acute Intestinal Obstruction.—A series of 118 cases, occurring through the ten years 1908 to 1917, inclusive, are analyzed by Richardson. The general mortality of 41.5 per cent., as compared with a previous mortality of 60 per cent., shows a drop along certain lines particularly, as in early postoperative obstruction, volvulus, and mesenteric thrombosis. The impor-

tant field for improvement in results lies in earlier diagnosis and early operation, at a stage when so difficult a problem for surgical treatment is not presented.

Cancer Statistics.—This paper is based on 518 cases. The average age of the patients was 52.9 years. The average duration of the total number of cases was 12.49 months. The average duration of the disease from the onset of symptoms to the first consultation with a physician was 5.4 months. The first symptom was tumor or ulcer in 36 per cent. of the cases, pain in 25 per cent., what may be termed symptoms peculiar to the organ in 18 per cent., and miscellaneous in 21 per cent. The average delay in all cases on the part of the physician from the time the patient first consulted him to the time operation was advised was three months. The average delay on the part of the patient after operation was advised until it was performed was three weeks. Of all the cases less than one half (44.5 per cent.) were considered suitable for an attempt at cure by a radical operation, and in these cases there was an operative mortality of 15 per cent., confined chiefly to operations on the intestinal and genito-urinary tracts. In 28 per cent. of the cases no operation was performed or exploration only, while in 27 per cent. a palliative operation, such as gastro-enterostomy, cauterization of the cervix, or tracheotomy, was done. The operative mortality following these palliative procedures was nearly as great (14.5 per cent.) as in those cases in which a radical cure was attempted, but in this second group the patient was often in poor physical condition and the operation was not one of choice. In cancer of the buccal cavity and lip, the mortality was 4 per cent.; in cancer of the abdominal cavity in which a laparotomy was performed the mortality was 32 per cent., and in cancer of the genito-urinary tract 27 per cent. In operations for cancer of other organs, breast, uterus, larynx, skin, etc., the mortality was 4.5 per cent. Of the entire group 37.7 per cent. of the patients entering the hospital survived a radical operation. The percentage of cures varies greatly in carcinoma of different regions but it seems fair to say that not over 25 per cent. of patients subjected to a radical operation are cured, which corresponds to 9.4 per cent. of all cases admitted to the hospital. Considering the cases in groups, the expectation of operative cure in consecutive cases entering a general hospital is as follows: carcinoma of the buccal cavity (if 16 per cent. of all patients surviving a radical operation are cured), 10 per cent.; carcinoma of the cervix (if 25 per cent. of the patients are cured), 8.7 per cent.; carcinoma of the rectum (if 20 per cent. of the patients are cured) 5.4 per cent.; carcinoma of the stomach (if 20 per cent. of the patients operated on are cured, 1.2 per cent. The chief cause of death in all operative cases was sepsis in some form. Forty-six patients (11.4 per cent.) gave a history of cancer occurring in the immediate family.

Canadian Journal of Mental Hygiene, Toronto

July, 1920, **2**, No. 2

Psychiatry and Internal Medicine. C. F. Martin, Montreal.—p. 137.
Childhood: The Golden Period for Mental Hygiene. W. A. White, Washington, D. C.—p. 144.
Trade-Unionism and Temperament. E. E. Southard, Boston.—p. 153.
Work of Psychopathic Hospital. A. G. Morphy, Montreal.—p. 167.
Work of Manitoba Psychopathic Hospital. A. T. Mathers.—p. 177.
Survey of Toronto Public Schools. E. R. Clarke, Toronto.—p. 182.
An Experiment in Grading Children. E. A. Irwin.—p. 186.

Florida Medical Association Journal, St. Augustine and Jacksonville

August, 1920, **7**, No. 2

Common Surgical Conditions of Knee. E. Jelks, Jacksonville.—p. 20.
Suggested Improvements in Caring for Mental Cases Prior to Admission to State Hospital. W. M. Bevis, Chattahoochee.—p. 23.
Diagnosis of Chronic Gastritis. G. M. Niles, Atlanta.—p. 24.

Journal of Cancer Research, Baltimore

July, 1920, **5**, No. 3

*Primary Spontaneous Tumors of Ovary in Mice. Studies on Incidence and Inheritability of Spontaneous Tumors in Mice. M. Slye, H. F. Holmes and H. Gideon Wells, Chicago.—p. 205.
*Rhabdomyoma of Ovary. H. E. Himwich, New York.—p. 227.
Malignancy of Crown Gall and Its Analogy to Animal Cancer. I. Levin and M. Levine, New York.—p. 243.
*Kinetic and Invasive Power of Regenerating Tissue and Similarities in Behavior of Thyroid Transplants and Carcinomas. L. Loeb, St. Louis.—p. 261.
Glycemic Reaction in Its Relation to Transplatable Malignant Tumors. G. L. Rohdenburg, New York.
Skin Involvement in Breast Cancer with Reference to Its Bearing on Interpretation of Appearances of Transition Between Normal Epithelium and Cancer. A. R. Kilgore, Baltimore.—p. 291.

Primary Tumors of Ovary.—Among 22,000 mice of the Slye stock dying natural deaths at all ages were forty-four with spontaneous primary ovarian tumors not including simple ovarian cysts. Of these, thirty-eight had simple benign solid papillary adenomas, only occasionally with slight cyst formation. One showed a typical papillary cystoma. One had a typical solid teratoma containing a great diversity of tissue elements. Of the thirty-eight cases of solid papillary adenomas, nineteen, or 50 per cent., were bilateral, so that there were fifty-seven tumors of this class. There were four unquestionably primary malignant tumors of the ovary, all showing the "mesothelioma" type of growth characteristic of malignant tumors derived from the sex glands; one of these produced perirenal metastases. There was one other tumor of the same type primary in either the ovary or the suprarenal. Two round cell sarcomas were found that arose either from the ovary or some other organ, while two other sarcomas had produced secondary growths in the ovary. Of the forty-four mice with primary ovarian tumors, twenty-six had tumors in other parts of the body. In the literature were found reports of eight other cases of tumors arising in the ovaries of mice which exhibited quite the same characteristics as the tumors described in this paper.

Rhabdomyoma of Ovary.—A girl, 1½ years of age, had a mass in the abdomen reaching half way to the umbilicus. In shape and size it seemed to resemble a kidney with the long diameter horizontal. It was freely movable. There were no subjective symptoms. At the time of the operation, nine months later, the mass appeared to fill the whole abdomen up to the umbilicus. A well encapsulated tumor was found, arising apparently from the region of the left ovary, filling the pelvis, with a narrower upper portion lying under the inferior surface of the liver. The capsule was attached to the anterior abdominal wall posterior to the umbilicus. The entire new growth was removed. In the process of removing the tumor the capsule was broken so that some of the myxomatous tissue fell into the abdominal cavity. The child died of abdominal recurrence three months after the removal of the original tumor. The tumor was a rhabdomyoma of the ovary. Teratoma is a twin inclusion. A group of cells was found in this tumor which appears only in rhabdomyoma of the heart. Therefore, Himwich says, the present tumor is a rhabdomyoma of the heart of a twin inclusion.

Invasive Power of Regenerating Thyroid Tissues.—The observations recorded by Loeb demonstrate that some of the fundamental characteristics of cancerous growth can be found in regenerative growth. In addition, they bring out very sharply some of the factors which, under ordinary conditions restrain regenerative proliferation. Regenerating tissue of the thyroid may possess an invasive power not unlike that of cancerous tissue. Growing transplants of thyroid tissue may apparently show a transition from acinar to alveolar structure. The kinetic and invasive activity of regenerating thyroid tissue is associated with febroblastic activity. In contradistinction to carcinomatous growth regenerating growth regenerating growth of the thyroid comes to a standstill, although the typical structures of the thyroid may not yet have been reestablished and the cell strands are as yet without their normal connections with neighboring epithelium.

Journal of Immunology, Baltimore

July, 1920, **5**, No. 4

*Precipitin Test in Cases of Pneumococcus Empyema. C. Floyd, Boston.—p. 321.
*Nephelometric Method of Estimating Number of Organisms in a Vaccine. G. C. Dunham, Washington, D. C.—p. 337.
Effect of Ultraviolet Rays on Antigenic Properties. I. Studies on Meningococcus. F. Eberson, St. Louis.—p. 345.
*Hypersensitiveness: Anaphylaxis and Allergy. A. F. Coca, New York.—p. 363.
Relation of Sputum Bacteria to Asthma. F. M. Rackemann, Boston.—p. 373.
Constitution of Complements of Different Animals. T. J. Mackie, Cape Town, South Africa.—p. 379.
Placental Transmission of So-Called Normal Antibodies. II. Antitryptic-Acting Bodies. G. C. Reyman.—p. 391.

Precipitin Test in Pneumococcus Empyema.—Twenty-two cases of empyema were studied by Floyd as to the presence of demonstrable precipitins in the exudation and their fluctuation; and the effect on them of the introduction of appropriate immune serum. At the same time, the nature of the infection, the entrance of secondary invaders, and the amount of pleural phagocytosis was noted. The amount of demonstrable agglutinin in the exudation of empyema is often very small, but when present it is generally a favorable prognostic sign. Phagocytosis runs a parallel course with increasing pleural resistance. Pleural irrigation with an appropriate immune serum in pneumococcus empyema is suggested as a means of treatment in order to increase locally those immune substances that tend to limit the duration of the infection.

Estimating Bacteria in Vaccine.—A method is described by Dunham for estimating the number of organisms per cubic centimeter in a vaccine by means of the nephelometer. The estimation can be made in less time and with less labor than a microscopic count, and the results are fully as accurate as those obtained with the microscope.

Anaphylaxis.—In view of the facts that form the basis of the discussion by Coca it seems necessary to conclude: first, that if anaphylaxis does occur in man, it does so only very rarely, and, secondly, that there is no positive evidence that anaphylaxis occurs at all in human beings.

Journal of Laboratory and Clinical Medicine, St. Louis

August, 1920, **5**, No. 11

*Rubber Tubing as a Factor in Reaction to the Blood Transfusion. G. J. Busman, Rochester, Minn.—p. 693.
Chemical Changes in Blood in Disease. V. Carbon Dioxid Combining Power. V. C. Meyers, New York.—p. 700.
*Chlorid Metabolism. H. F. Host, Christiania, Norway.—p. 713.
*Blood Sugar Tolerance as an Index in Early Diagnosis and Roentgen-Ray Treatment of Hyperthyroidism. E. R. Wilson, Los Angeles, Calif.
Nutrition Experiments with Rats. E. L. Ferry, New Haven, Conn. —p. 735.
New Form of Etherizing Device for Use in Animal Experimentation. G. Raap and D. E. Jackson, Cincinnati.—p. 745.

Rubber Tubing Causes Reaction in Blood Transfusion.—The brand of supposedly pure gum rubber tubing which in preliminary experiments by Stokes and Busman produced reaction in arsphenamin administration is apparently also able, when new, to produce reaction if used in blood transfusion work. New tubing can be rendered harmless and incapable of producing reaction by soaking for six hours in normal sodium hydroxid solution. The toxic substance is taken up in sufficient amounts to produce reaction in patients receiving transfusions of citrated blood through 80 cm. of new rubber tubing of 4 mm. internal diameter. Enough of the toxic agent is taken up by 250 c.c. of normal uncitrated blood drawn through as little as 35 cm. of new tubing (internal diameter, 4 mm.) enroute from the vein to the container of citrate solution, to produce marked reaction when given through an old tube. It is not, therefore, necessary that whole blood be citrated to absorb the toxic principle. The mechanically removable débris from the inside of new sterilized tubing does not produce reactions when given in suspension in distilled water or 0.18 per cent. sodium hydroxid solution. The identity and toxicology of the poisonous principle is under investigation.

Chlorid Metabolism.—By means of Bang's micromethod Host examined the concentration of the blood chlorids in several healthy men and women and found it to vary between 0.44 and 0.48 per cent. Bang's method is correct within 5 per cent. The concentration of the chlorids in the serum varied between 0.55 and 0.60 per cent. This great difference between the concentration in blood and serum shows that the chlorids exist chiefly in serum, to a much less degree in the corpuscles. Host examined the chlorid content of blood and urine in nine patients suffering from acute nephritis and who had been taken ill suddenly. They had cephalalgia, edema, increased blood pressure, retention of urea in serum and had protein, blood and casts in the urine. These were typical cases of glomerulonephritis. The experiments with three patients are reported in detail. The chlorid concentration of the blood in two patients suffering from uremia, which represented a combination of the "renal uremia" and the "eclamptic uremia" (Volhard and Fahr) was also determined. Both patients had increased urea in the blood, 0.247 and 0.340 per cent, respectively. They were somnolent, had a systolic blood pressure above 200 and had convulsions. In one case the chlorid concentration in the blood was 0.44 per cent., consequently quite normal, while in the other it was 0.59 per cent., which is the greatest concentration Host has found in the blood.

Blood Sugar Tolerance Determination in Hyperthyroidism.—The blood sugar tolerance test Wilson finds of distinct importance in the early diagnosis of hyperthyroidism. Seemingly advanced cases of hyperthyroidism will respond but moderately to roentgen-ray therapy, as shown by the blood sugar tolerance test. An abnormal blood sugar tolerance curve when due to hyperthyroidism will tend to approach the normal under roentgen-ray therapy, indicating that excessive toxic secretion is lessened. Clinical manifestations of hyperthyroidism may be lessened, but an abnormal blood sugar tolerance curve may exist after series of roentgen treatments. The blood sugar tolerance curve is an index to thyroid hypersecretion in those cases in which toxic secretion has manifested itself by a decreased glucose tolerance.

Journal of Medical Research Boston

May. 1920, **41**, No. 4

Pathologic Histology of Tonsils Containing Hemolytic Streptococci. E. Kellert, Albany, N. Y.—p. 387.
*Precise Titration of Complement. S. C. Brooks, Boston.—p. 399.
Regeneration of Complement after Radiation or Heating. S. C. Brooks, Boston.—p. 411.
*Action of Benzol. VI. Benzol Vapor Leukopenia (Rabbit). H. G. Weiskotten, C. B. F. Gibbs, E. O. Boggs and E. R. Templeton, Syracuse, N. Y.—p. 425.
*Histologic Changes of Different Types of Carcinoma after Exposure to Radium Rays. N. M. Alter. Baltimore.—p. 439.
*Types of Streptococci Found in Sputum of Bronchial Asthmatics. J. Adkinson and I. C. Walker, Boston.—p. 457.
*Study of Streptococci Obtained from Mouth in Cases of Chorea. C. Floyd, Boston.—p. 467.
*Studies on Compensatory Hypertrophy of Thyroid Gland. IV. Influence of Iodin on Hypertrophy of Thyroid. L. Loeb, St. Louis.—p. 481.

Precise Titration of Complement.—A critical study of the conditions causing error in complement titration and the adoption of appropriate modifications of the customary methods has enabled Brooks to titrate complement with a probable error of about 1 per cent. in the relative efficiency of one or more samples. This far surpasses in accuracy any method hitherto in use. The most important modifications are: (1) substitution of a physiologically balanced solution especially adapted to the red blood cells employed, in place of the physiologic sodium chlorid solution usually used as a diluent; (2) determinations of the proportion of cells hemolyzed in each mixture rather than of the number of cells; i. e., the depth of the color of the supernatant fluid; (3) interpretation of the results of titration by determining the relative amounts of complement necessary to cause given degrees of hemolysis in a definite length of time. This is done by graphic interpolation in the most accurately known portion of the titration curves, chosen degrees of partial hemolysis being substituted for complete hemolysis in determining the end point.

Action of Benzol.—Exposure of rabbits to benzol vapor with maximum sublethal dosage causes leukopenia, hemorrhages and slight anemia. The percentage and absolute decrease of small mononuclears is greater than that of polymorphonuclear amphophils. Apparently, after discontinuance of exposure, the total leukocyte curve rises to a permanent general level, lower than that existing before exposure. This relative leukopenia is permanent. It is due to a failure of the absolute small mononuclear curve to rise to as high a level as that existing before exposure. The results of exposure are of the same general nature as those produced by subcutaneous injections of olive oil benzol mixture. Diphasic leukopenia was not observed.

Carcinoma After Exposure to Radium Rays.—Alter claims that different types of carcinoma show characteristically different behavior toward the rays of radium. The behavior

depends mainly on the state of differentiation of the different types of carcinoma. The more undifferentiated and embryonic in type the carcinoma is, the more effective is the action of radium rays on it. On the differentiated types the rays of radium have a hastening effect. If the effect of these rays is proportional to the absorbed amount, the nuclei and protoplasm of different types of carcinoma and benign tissue absorb different amounts of the rays.

Types of Streptococci in Sputum.—Comparison of the types of streptococci isolated by Adkinson and Walker from the sputum of bronchial asthmatics during two seasons, which were nearly identical for several months, and then, later on, were markedly different in the severity and variation of the weather, shows that the types of streptococcus present are constant and not influenced by conditions of temperature and weather. The types of streptococci present are not numerous. Practically all of the hemolytic streptococci were of the four types, namely, *S. subacidus, S. anginosus, S. pyogenes* and *S. infrequens,* with rarely *S. hemolyticus* i and equi. Practically all of the nonhemolytic streptococci were of three types, namely, *S. ignavus, S. salivarius* and *S. mitis* with rarely *S. fecalis* or *S. nonhemolyticus* i. The types of organisms present in the sputum of asthmatics are subject to constant and frequent variation, and the organisms present in the nasal secretion may be the same or entirely different from those occurring in the sputum. Therefore the present work confirms the results of the previous study, and it is still more evident that autogenous vaccine, rather than stock vaccine, should be employed in the treatment of bronchial asthma, and that autogenous vaccine should be made frequently rather than to use the same vaccine continuously. Furthermore, in doing skin tests on bronchial asthmatics, it is advisable to use the protein of the types of streptococci which are frequently found in the sputum as noted above, rather than one single strain or a combination of all known types of strains.

Streptococci from Mouth of Chorea Cases.—As a result of experimental work in the production of endocarditis, acute articular rheumatism and chorea, one or more members of the group of streptococci have been found by Floyd to be the organisms producing pathologic results. Positive cultural results in clinical cases have, in the main, shown members of the streptococcus group. The clinical sequence of tonsillitis, articular rheumatism, with chorea or endocarditis, points to a localized lesion producing periodic systemic infection. Experimental work shows a much higher percentage of carriers of certain types of virulent streptococci in the substance of the tonsils and about the teeth in cases of chorea than occur in normal controls. The frequency with which virulent strains of streptococci are found in the mouth in cases of infection of the meninges, the joint surfaces and the endocardium suggest more than a casual relationship between their presence in the mouth and systemic disease. It is suggested that the teeth and tonsils in all probability offer two portals of entry to the body for streptococci in producing any one of these clinically grouped diseases.

Hypertrophy of Thyroid Gland.—According to Loeb, administration of iodin does not diminish the intensity of the hypertrophic changes in the thyroid gland of the guinea-pig which follow extirpation of such a quantity of the gland as is necessary to call forth compensatory hypertrophy. There is, on the contrary, an indication that possibly iodin preparations increase such hypertrophic changes. The effect of iodin on compensatory hypertrophy differs, therefore, markedly from that on endemic goiter. In those experiments in which great parts of the thyroid gland were extirpated during the summer months, compensatory hypertrophy resulted in a much lower percentage of cases than in experiments carried out in the colder season. This suggests a relation between compensatory hypertrophy and temperature.

Journal of Urology, Baltimore

June, 1920, **4**, No. 3

*Pathology of Renal Pelvis in Two Cases Showing Hematuria of So-Called Essential Type. W. C. Quinby, Boston.—p. 209.
Idiopathic Gangrene of Scrotum. Alexander Randall, Philadelphia.—p. 219.
Spinal Anesthesia in Urology. G. H. Smith, Boston.—p. 237.
*Cure of Prostatic Abscesses. A. R. Stevens, New York.—p. 249.
Physiologic and Pharmacologic Studies of Prostate. D. I. Macht and S. Matsumoto, Baltimore.—p. 255.
*Local Treatment for Seminal Vesiculitis. V. D. Lespinasse, Chicago.—p. 265.
Anatomic Embryologic and Physiologic Studies of Trigone and Neck of Bladder. M. B. Wesson, Baltimore.—p. 279.
*Treatment of Essential Hematuria by Intrapelvic Injections of Silver Nitrate. A. G. Rytina, Baltimore.—p. 317.

Renal Hematuria.—Two cases are reported by Quinby in each of which a kidney was removed and subjected to careful pathologic study. Although the cause for this condition is not clear the location of the hemorrhage just under the epithelium of the pelvis and to a less extent in the substance of the papilla itself makes a definite and clear cut picture. Whether the condition has been caused by soluble toxins which have chosen these areas of the kidney as their point of elective action or whether it is due to infection by bacteria is not to be determined. A most careful search of the material at hand failed entirely to demonstrate bacteria, even in cases which showed evidences of inflammation.

Treatment of Prostatic Abscess.—The routine employed by Stevens has been to clean the patient, place him in the lithotomy position, administer gas and oxygen anesthesia and introduce a rather pointed sound with a small curve (F. 23) into the urethra. One finger in the rectum controls the rest of the procedure. The tip of the sound is located at the apex of the prostate, introduced about 2 cm. further, turned 90 degrees and with care forced through the lateral wall of the urethra into the corresponding lateral lobe of the prostate. It is then withdrawn to the apex of the prostate and in similar manner made to enter the other lateral lobe. To be sure of a larger opening for drainage, a larger sound (F. 28) is put through the same maneuver. This, however, may be an unnecessary step. At this stage, slight pressure on the prostate produces, in most instances, a copious discharge of pus at the external urinary meatus. A simple irrigation fluid is then forced into the urethra, washing the urethral contents into the bladder. Finally a large rubber catheter is introduced and the bladder irrigated until clean. No catheter is left in the urethra. Eight patients have been treated in this way.

Treatment of Seminal Vesiculitis.—Lespinasse states that puncture of the vas deferens and injection of fluids through it into the seminal vesicle is possible without cutting the skin. Acriflavine solutions in 1:1,000 strength destroy the epithelium of the vas and hence cannot be used. Sodium bicarbonate solution, 1 per cent. strength, is proper and safe. In 5 per cent. solution it is destructive to the epithelium of the vas. The only medicament that can be used safely by means of precutaneous puncture of the vas is bactericidal serum.

Silver Nitrate for Essential Hematuria.—The treatment of essential hematuria by intrapelvic injections of 5 per cent. silver nitrate solution is not considered by Rytina a specific for all these cases but is mentioned as a method that has been productive of good results, after many of the previously mentioned methods have failed to achieve the desired result. The technic consists of the injection of from 4 to 8 c.c. of a 5 per cent. solution of silver nitrate into the kidney pelvis after a thorough urologic examination has eliminated, as far as possible, the presence of stone, tumor, or tuberculosis from the bleeding side. The treatment is repeated in a few days if the desired result has not been achieved. The treatment is usually followed by some reaction characterized by pain and increase in the hematuria. Three cases of hematuria are reported in which this method was productive of good results.

Kentucky Medical Journal, Bowling Green

August, 1920, **18**, No. 8

Industrial Medicine. J. O. Jenkins, Newport.—p. 271.
Value of Roentgen Ray to Surgeon. J. G. Sherrill, Louisville.—p. 275.
Modern Advances in Diagnosis and Treatment of Cerebrospinal Meningitis. E. B. Bradley, Lexington.—p. 282.
Influenza. D. S. Bonar, Newport.—p. 288.
Influenza: Management of Nose, Throat and Ears. R. W. Bledsoe, Covington.—p. 289.
Symptoms, Diagnosis and Treatment of Influenza. R. L. Bird, Covington.—p. 291.
Influenza Sequels. F. S. Clark, Rome.—p. 293.
Diagnosis of Influenza. W. L. Tyler, Curdsville.—p. 294.
Influenza. W. Burne, Russellville.—p. 295.
Goiter. B. F. Van Meter, Lexington.—p. 297.
Sleeping Sickness. J. F. Dunn, Arlington.—p. 300.

Maine Medical Association Journal, Portland

August, 1920, **11**, No. 1

Workmen's Compensation as It Affects the Doctor. A. Robinson, Portland.—p. 3.
Patent Foods in Infant Feeding. T. A. Foster, Portland.—p. 14.

Medical Record, New York

Sept. 4, 1920, **98**, No. 10

Mobilization in Injured, Infected and Fractured Joints. C. A. McWilliams, New York.—p. 379.
Dilatation and Plication of Caput Coli. D. H. Stewart, New York. —p. 383.
Surgery of Neck. E. G. Jones, Atlanta, Ga.—p. 386.
Anomalous Sigmoid Sinus Thrombosis; Report of Cases. J. F. Barnhill, Indianapolis.—p. 388.
Principles of Suprarenal Support. H. H. Harrower, Glendale, Calif. —p. 391.
Germ Plasm. C. I. Redfield, Chicago.—p. 396.

New York Medical Journal

Sept. 4, 1920, **112**, No. 10

Fractures of Long Bones and Their Repair. E. H. Smith, San Francisco.—p. 301.
*Splenectomy; Report of Cases. G. I. Miller, Brooklyn.—p. 304.
Horatio C. Wood. H. Beates, Jr., Philadelphia.—p. 308.
Evolution of Modern Medicine Leading to Group Diagnosis. H. Goldstein, New York.—p. 312.
Binocular Single Vision. G. W. Vandergrift, New York.—p. 320.
Present Status of Rabies. B. M. Underhill, Philadelphia.—p. 323.
Protein Fever. G. F. Cott, Buffalo.—p. 325.

Traumatic Puncture of Spleen; Splenectomy.—Miller cites a case in which a pneumonia was followed by an empyema and the attending physician decided to treat the patient by introducing a large cannula for drainage instead of performing an open operation. The patient experienced considerable pain and shortly afterward collapsed. Three hours later Miller found her in bed, looking very pale, her lips white and the pulse faintly perceptible. She showed all the evidences of abdominal hemorrhage. On opening the abdomen, he found a ruptured ectopic gestation, and a ragged rent in the convex surface of the spleen, caused by the thrust of the cannula. He repaired the torn spleen with two mattress sutures. The patient made an uneventful recovery. In a case of splenic anemia a successful splenectomy was done. Four or five accessory spleens, about the size of walnuts, were present. The patient has been absolutely cured by the operation. In a case of Banti's disease, in which a splenectomy was done, the result was death about two weeks after operation.

Sept. 11, 1920, **112**, No. 11

Medical Men in the American Revolution. Louis C. Duncan, Washington, D. C.—p. 345.
Historical Notes on Practice of Medicine in New York City. G. L. Rohdenburg, New York.—p. 349.
Dental Infection. S. Tousey, New York.—p. 353.
*Relationship of Anemias to Life Insurance. H. Z. Giffin, Rochester, Minn.—p. 358.
Clinical Significance of Cardiac Murmurs. F. A. Jones, Memphis. —p. 362.
Fissure Fractures of Tibia: Report of Cases. J. Grossman, New York. —p. 364.
Intravenous Quinin Treatment of Malaria. B. S. Wyatt, Plano, Texas.—p. 366.
Intravenous Medication. C. G. Cumston, Geneva, Switzerland.—p. 369.
Proper Equipment for a Rural Physician. M. A. Hays, New York. —p. 371.

Pernicious Anemia and Life Insurance.—Griffin concludes that the increase in the incidence of pernicious anemia makes it advisable to consider this disease separately in mortality statistics, rather than to include it among anemias in general. Medical examiners should be required to report a hemoglobin estimation of each applicant (the use of a simple scale would be sufficient). Blood smears forwarded to the laboratory of the central offices by examining physicians would be of great assistance in eliminating for insurance applicants with pernicious anemia and leukemia. Applicants with anemia from chronic recurrent hemorrhage, anemia from insufficiencies of diet, or as a result of functional dysphagia, may be expected to recover within one year at most after proper treatment, and should be given the privilege of reapplication at a subsequent time. Applicants who have had splenectomy for splenic anemia, provided cirrhosis of the liver, gallbladder disease, and thrombosis of the splenic vessels are not present, might be considered acceptable risks for term insurance after having been well for five years following operation. Applicants who have recovered following splenectomy for hemolytic jaundice may safely be considered for a more liberal form of policy if they have remained well for five years.

South Carolina Medical Ass'n Journal, Greenville

August, 1920, **16**, No. 8

Schick Test and Toxin-Antitoxin Immunization for Diphtheria. C. V. Akin.—p. 190.
Cancer of Stomach. R. L. Sanders and J. J. McCaughan, Memphis. —p. 193.

Texas State Journal of Medicine, Fort Worth

August, 1920, **16**, No. 4

Surgical Principles Involved in Treatment of Rectal Fistula. I. C. Chase, Ft. Worth.—p. 154.
Paraffin Treatment of Burns. L. G. Witherspoon, El Paso.—p. 158.
Focal Infection as Factor in Production of Secondary Inflammation Following Operations and Injuries of Eye. R. H. T. Mann, Texarkana, Tex.—p. 159.
Spinal Anesthesia. C. C. Green, Houston.—p. 160.
Rheumatism. N. D. Buie and A. J. Streit, Marlin.—p. 162.
Cutaneous Reactions to Focal Infection; Report of Two Cases. I. L. McGlasson, San Antonio.—p. 165.
Present Status of Blood Chemistry in Nephritis. A. E. Greer, Houston.—p. 167.
Treatment of Syphilis in Its Early Stage. W. O. Williams, Houston. —p. 170.
Cerebrospinal Fluid in Syphilis. J. H. Black, Dallas.—p. 174.

Virginia Medical Monthly, Richmond

August, 1920, **47**, No. 5

Gastric and Duodenal Ulcer. G. P. Hamner, Lynchburg.—p. 197.
Roentgen-Ray Diagnosis of Gastric and Duodenal Ulcers. H. B. Spencer, Lynchburg.—p. 201.
Diagnostic Value of Ear Examinations by Turning and Douching Tests. C. R. Dufour, Washington, D. C.—p. 204.
Technic for Enucleation of Tonsils with Local Anesthesia; Report of Two Cases. E. G. Gill, Roanoke.—p. 210.
Theory and Practice of Autogenous Vaccines. E. C. L. Miller, Richmond.—p. 213.

Wisconsin Medical Journal, Milwaukee

August, 1920, **19**, No. 3

Surgical Work at an Evacuation Hospital. C. A. Evans, Milwaukee. —p. 99.
Tuberculous Kidney. A. G. Sullivan, Madison.—p. 104.
Bacteriologic Examination of Wounds to Determine Time of Closure. E. L. Tharinger, Milwaukee.—p. 107.
Headache in Its Relation to Eye Strain. G. I. Hogue, Milwaukee.— p. 109.
My Experience as an Army Surgeon. T. W. Nuzum, Janesville.—p. 112.
American Army in Last German Drive. J. W. Frew, Milwaukee.— p. 115.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Glasgow Medical Journal

August, 1920, **94**, No. 2

*Digestion and Absorption of Fats in Case of Congenital Atresia of Bile Ducts. H. S. Hutchison and G. B. Fleming.—p. 65.
Psychotherapy in General Practice. D. Yellowlees.—p. 72.
War Pensions. J. Green.—p. 91.
*Method for Test Meals. J. MacIntyre.—p. 101.

Fat Digestion in Bile Duct Atresia.—In the case studied by Hutchison and Fleming there was complete atresia of the bile ducts, and no bile entered the gut. The digestion of fat by fat splitting was only slightly inhibited. Fat absorption was greatly decreased. The bile therefore seems to have only a slight influence on the fat splitting properties of the pancreatic secretion. Its chief rôle is to aid absorption.

Evacuator for Stomach Contents.—The evacuator devised by MacIntyre consists of a wide-mouth bottle (of pickle-jar shape) with rubber stopper. The stopper is perforated in two places so as to take two glass tubes bent at right angles, as a Woulfe bottle. One glass tube must be of the caliber of a medium-sized stomach tube, the other of the caliber of an ordinary Higginson's enema syringe. The efferent ("soap and water") end of the syringe are attached to the lesser glass tube by means of rubber tubing, and the external end of the stomach tube is passed in usual fashion, and the bulb

of the Higginson's syringe is pressed. Air is continuously evacuated and stomach contents flow continuously into bottle.

Indian Medical Gazette, Calcutta

July, 1920, **55**, No. 7

"Medical" Advertisements in Indian Press. W. D. Sutherland.—p. 241.
*Cases of Fever. R. B. S. Sewell.—p. 244.
Duties and Responsibilities of Students and Practitioners of Medicine. B. H. Nanavatty.—p. 247.
Cases of Human Bites. P. H. Hennessy.—p. 250.
Etiology and Treatment of Pyorrhea Alveolaris. R. Ahmed.—p. 252.
Management of a Drug Godown in India. S. Clarke.—p. 253.
Treatment of Purpura Hemorrhagica. P. S. Khosla.—p. 254.
Treatment of Plague by Solution of Iodin and Camphor. S. Mallanah.—p. 255.
*Plea to Ligate Hydrocele Sac with Living Tissue. M. L. Bundu.—p. 256.
Transverse Inguinal Versus Vertical Scrotal Incision in Operation for Radical Cure of Hydrocele. K. S. Ningam.—p. 257.
Flavine in Ophthalmic Practice. P. Ganguli.—p. 258.
Elephantiasis Scroti Weighing Thirty-Six Pounds. S. T. Hosain.—p. 259.
Two Cases of Abdominal Hydatid Cysts. R. N. Coorlawala.—p. 259.

New Type of Fever.—A type of fever hitherto unrecognized is the basis of Sewell's paper. Thirty-one cases of this particular type of disease were seen. In every case the onset of the fever was abrupt; in the morning a man would be doing his full duty, by the afternoon he would report sick and be found to have an axillary temperature of from 101 to 103 F. The patient almost invariably complained of frontal headache and pain in the lumbar region or in the joints of his limbs. Always it was the larger joints that were affected, most often the knees or elbows, less often the hip joint, shoulders or ankles, and rarely the wrists. The small joints of the hands and feet were practically never affected. In a few cases the onset of the pains was delayed until the patient had been ill for three or four days. Constipation was generally found, but in a few cases there was slight diarrhea. The tongue was moist and slightly coated with a uniform white fur. The lung signs were negative, though several patients complained of a slight cough. The pulse rate was somewhat rapid, but only proportionately to the height of the fever. The heart sounds were normal. In every mild case the fever lasted for only twenty-four or thirty-six hours, after which convalescence set in. In more severe cases the fever continued high for several days and then the temperature showed a slight evening rise for one or two days before finally becoming normal. One of the most interesting features of this type of fever was the marked tendency to a relapse. Out of the thirty-one cases fourteen showed a single relapse of greater or less intensity. In no case was there more than one relapse. In such cases the initial febrile period was, as a rule, comparatively short, rarely lasting longer than two days and frequently being of only twenty-four hours' duration; this was followed by an afebrile period lasting from thirty-six to sixty-four hours, and the temperature then again rose. In mild relapses the temperature only rose to 99 or 100 F. and then dropped to normal and convalescence set in, or there might be a rise to 100 or 101 F. on two consecutive nights; but in a severe case the temperature continued to rise each evening for four or five days and in some cases remained almost continuously raised throughout.

New Operation for Hydrocele.—Bundu proceeds with the incision until the almost bloodless layer of the tunica vaginalis is reached, and which appears as a bluish translucent layer, the water showing underneath and a few tiny blood vessels ramifying in it. This layer is separated and pushed out, and the sac is opened longitudinally in the usual way and in a part which has no vessels, and this obviates any ligaturing of vessels. Bundu then cuts out a strip of this thin layer of the sac, sufficiently long to be used as a ligature and broad enough to give it strength—a piece about 6 inches long and one-half inch broad—and uses it in ligaturing the averted sac, piercing it in four different places. A few extra knots are necessary to prevent it from slipping. The wound is then closed after reposition of the testes. The absence of foreign material prevents any irritation and the living ligature engrafts itself quickly and at once starts obliterating the sac by preventing any falling back of the everted layers.

Journal of Tropical Medicine and Hygiene, London

Aug. 16, 1920, **23**, No. 16

*Case of Undulant Fever with Unusual Nerve Sequels. P. W. Bassett-Smith.—p. 201.
Sprue in American. E. J. Wood.—p. 201.

Herpes Zoster in Undulant Fever.—In Smith's case herpes zoster complicated the undulant fever, implicating the posterior root ganglia of the fourth and fifth lumbar nerves. Though the evidence of the specific toxin was abundant, the organism could not be isolated from the blood or urine. Under a course of freshly prepared ordinary melitensis vaccine improvement was marked.

Lancet, London

Aug. 28, 1920, **2**, No. 5061

Students' Number, Session 1920-1921.

Medical Journal of Australia, Sidney

Aug. 7, 1920, **2**, No. 6

Abdominal Pain and Its Associated Reflex Phenomena. J. I. Hunter.—p. 115.
Bacillary Dysentery. J. Bentley.—p. 122.

Aug. 14, 1920, **2**, No. 7

Urinary Infection. A. S. Roe.—p. 141.
*Abdominal Pain and Its Associated Reflex Phenomena. J. I. Hunter.—p. 143.

Abdominal Pain.—An attempt is made by Hunter to interpret abdominal pain by tracing afferent stimuli: (*a*) along the somatic sensory nerves and (*b*) along the splanchnic sensory nerves. It has been noted that: (1) the pain in peritonitis is due to stimulation of the somatic sensory fibers from the extraperitoneal fat. (2) Visceral pain is due to deep sensibility impulses from hypertonic involuntary musculature being transmitted to the same second relay cells as the somatic afferents. Internal pressure or tension is the result of this muscular contraction and not the exciting cause of the pain. (3) The skin and extraperitoneal fat sensory nerves are reflexly connected with the abdominal muscles. When stimulated in peritonitis by exudate or stretching of the parietal peritoneum, the extraperitoneal nerves cause reflex rigidity of these abdominal muscles, the response of which may be localized and specific according to the site of stimulation. (4) The gut wall is connected by sympathetic afferents to efferent sympathetic cells, which excite inhibition of the gut wall. Contraction of the ureter is brought about by similar reflex. Pain occurs when the hypertonicity of the muscle is so great that the impulses can be transmitted by the pain path to the cortex. (5) These sympathetic arcs have a collateral connection with the abdominal muscles by way of the reflex through the anterior horn cells. This is the visceromotor reflex of MacKenzie and rigidity of the muscles results from its stimulation. (6) Rigidity stimulates fibers of deep sensibility and tenderness results. Pain is caused by the stimulation of cells in the pain column of the posterior horn of the cord by either somatic or splanchnic fibers.

Medical Journal of South Africa, Johannesburg

June, 1920, **15**, No. 11

Use of Nitrous Oxid and Oxygen with Re-Breathing as a General Surgical Anesthetic. G. W. Daniell.—p. 235.

Practitioner, London

August, 1920, **105**, No. 2

*Renal Calculus. H. Lett.—p. 81.
Recent Work on Urinary Surgery. J. W. T. Walker.—p. 93.
*Treatment of Diseased Gallbladder. R. Warren.—p. 102.
*Shock and Its Allied Conditions. J. E. R. McDonagh.—p. 110.
Differences in Value of Different Modes of Auscultation. W. Gordon.—p. 136.
Recent Work in Otology. M. Yearsley.—p. 139.
Subthyroidism. W. F. Stiell.—p. 146.
Influenza and Its Treatment with Phenol. C. B. Richardson.—p. 150.
An Interesting Case of Carditis. G. A. Stephens.—p. 151.

Renal Calculus.—Among Lett's fifty cases were nine cases of pyonephrosis, in six of which nephrectomy was performed, and one case of perinephritic abscess. They all recovered. Among the remaining forty cases, which included several of acute pyelitis, there were two fatal cases. One of these patients had been suffering from calculous anuria and complete suppression of urine for three days. There were calculi

in both kidneys and in the left ureter. Operation was undertaken as a forlorn hope, and merely consisted in draining the pelvis of each kidney. At the postmortem examination, it was found that the patient was also suffering from an attack of acute or chronic endocarditis. The second case was a woman who had had attacks of renal colic for ten years. Lett removed one large stone and three small ones from the right kidney. The operation was straightforward and uncomplicated, but she developed an acute exacerbation of a colitis from which she had suffered for some time, and it proved fatal.

Cholecystectomy and Cholecystotomy.—Of the seventy-six cases analyzed by Warren the gallbladder was excised in thirty-nine while in thirty-seven the bladder was drained and stones removed. In each group two patients died before leaving hospital, so that the primary operative mortality was practically equal, about 5 per cent. In the excision group, the average age was 48, the oldest being 74 and the youngest 26. A considerable number of the patients were aged or of late middle age, so that considering the gravity, in many instances, of the condition for which operation was required, the immediate risk of attacks on the gallbladder compares favorably with other abdominal operations. The cases in which excision was performed, fall into two groups, the acute and the chronic. In the acute group were twenty-four cases, showing all manner of degrees of cholecystitis from gangrene or perforation to simple distention with pus and mucopus; in many there was localized peritonitis. In this group were the two patients who died. In the other group were fifteen cases of chronic cholecystitis, in some cases with a very shrunken gallbladder, filled with stones to a varying extent; none of these died. Of the thirty-seven cases in which drainage was performed, there were definite complications in ten, viz., stone in the common duct in four; subacute pancreatitis in four; one case of abscess around the gallbladder; one case of rupture of an acutely inflamed gallbladder. In the other cases, drainage rather than excision was performed for various reasons, such as the age and condition of the patient. Of the seventy-two patients who survived, thirty were traced after from three to seven years; of these, twenty were cholecystectomies, ten only were cholecystostomies. In the excision case the results were very good in sixteen and good in four. In the drainage cases the results were very good in five, good in four and poor in one case.

Nature of Shock.—McDonagh claims that shock, anaphylaxis, allergy, hypersensitiveness, and nitritoid crisis are all words for the one phenomenon, which is an upset of the normal hydrogen ion concentration. Asthma, urticaria pigmentosa, and various chronic dermatoses may be symptoms of chronic shock.

Seale Hayne Neurological Studies, London

April, 1920, **1**, No. 6

Seeing, Looking and Hysterical Blindness. A. F. Hurst and A. W. Gill.—p. 297.
After-treatment of War Neuroses; Question of Pensions. R. G. Gordon.—p. 308.
General Paresis, Value of Treatment. J. W. Moore.—p. 313.
Consciousness in Relation to Neuroses. R. G. Gordon.—p. 318.
Somnabulistic States. R. G. Gordon.—p. 322.
Hysterical Pain and Its Treatment. S. H. Wilkinson.—p. 327.
Stammering. J. F. Venables.—p. 331.

South African Medical Record, Cape Town

July 24, 1920, **18**, No. 14

Schistosomes of Man and Beast in Natal. F. G. Cawston.—p. 264.
Problem of Impotence. A. M. Moll.—p. 264.
Causation and Treatment of Irritable Cough. C. E. Jones-Phillipson.—p. 267.
Thyroid Extract in Angioneurotic Edema. F. N. Holden.—p. 269.

Archives Médicales Belges, Liége

April, 1920, **73**, No. 4

*Cancer of the Pancreas. Koetlitz.—p. 291.
First Case of Beriberi in Spain. F. Fernández Martínez.—p. 299.
The Military Medical Service in Russia, 1915-1918. V. Brassine.—p. 306.

Cancer of the Pancreas.—In the case reported there had not been any jaundice or steatorrhea, and the tumor and pains had seemed to point to the stomach, except for the intensity of the pains, independent of the meals and worse at night. Laparotomy showed the stomach intact and an inoperable cancer in the head of the pancreas, extending back of the stomach and pressing on the pylorus.

Bulletin Médical, Paris

Aug. 7, 1920, **34**, No. 39

Indications for and Results of Artificial Pneumothorax. M. Léon-Kindberg.—p. 703.

Aug. 14, 1920, **34**, No. 40

*Retention of Air in the Stomach: Aerogastry. F. Ramond.—p. 721.
Confusional Mental States of Puerperal Origin. R. Dupouy.—p. 722.
Abortive Treatment of Gonorrhea. R. Le Fur.—p. 725.
Diagnosis and Treatment of Appendicitis in Children. H. Stévenin.—p. 728.

Blocked Aerophagy.—Ramond applies this term to the retention of swallowed air in the stomach, from a valvelike closure of the cardia or from relaxation of the diaphragm allowing the stomach to protrude upward. There is no eructation, but the discomfort from the distention of the stomach and the displacement of the heart may cause symptoms liable to be mistaken for heart disease or even angina pectoris. Charcoal has been recommended to absorb the gas but is of little use. The air can be expelled sometimes by drinking a cup of tepid mineral water and flexing the trunk, while pressing on the lower abdomen, bending as far forward as possible with a very deep inspiration. The combined effect is to force the air into the duodenum. Or a slender duodenal tube can be introduced into the stomach, fasting, or four or five hours after a meal. He has one patient who uses a small flexible tube of the kind from time to time, and has resumed normal, active life when before that his condition had been pitiable from the dyspnea and recurring angina pectoris. The anatomic conditions seem to be returning to normal.

Bulletins de la Société Médicale des Hôpitaux, París

July 2, 1920, **44**, No. 24

*Schick Reaction in Postdiphtheric Paralysis. De Lavergne and Zoeller.—p. 954.
*Transient Tobacco Amaurosis. P. Pagniez.—p. 956.
*Gangrene of Lung; Recovery under Induced Pneumothorax. J. Loiseleur.—p. 958.
Spinal Fluid in Epidemic Encephalitis. P. Boveri.—p. 960.
*Colon Bacillus Septicemia. Widal and others.—p. 963.
*Auscultation with Friction of Chest. Crouzon and Béhague.—p. 976.

Schick Reaction in Postdiphtheria Paralysis.—The four cases related show that it is impossible to base a retrospective diagnosis on the findings of the Schick diphtherin test, as it may be negative even with pronounced diphtheric paralysis. It is superfluous to give antitoxin for sequels of diphtheria when there is a negative Schick reaction.

Recurring Unilateral Amaurosis Probably from Tobacco Poisoning.—The case was peculiar in that the color of the iris changed likewise during the weeks of the amblyopia. For several years the young man had had mild albuminuria, not above 0.5 per cent. Blood pressure was normal. Vascular spasm in the eye would explain the amblyopia and the modification in the color of the iris, which became much yellower. He is a great smoker, and recently had an attack of angina pectoris of the tobacco-spasm type described by Huchard. In the discussion that followed, Laubry stated that he had seen with his own eyes the onset of the spasm of the retina responsible for the transient amaurosis in a case of lead poisoning. He has recently had a patient whose attacks of intermittent claudication did not return after the young man gave up smoking. The spasms in these cases are like those responsible for extrasystoles, suggesting angina pectoris, from abuse of tobacco.

Gangrene of Lung Cured by Artificial Pneumothorax.—Loiseleur reports the prompt and complete cure of post-influenzal pulmonary gangrene in a woman of 27 when artificial pneumothorax was induced, three months after the first symptoms.

Colon Bacillus Septicemia.—The four cases described by Widal and his co-workers confirm the great variety of clinical pictures for which colon bacillus septicemia may be responsible. The colon bacilli lingered in the blood even after defervescence for a time. The septicemia followed gastro-

intestinal derangement or childbirth, and there was jaundice in two of the cases.

Auscultation While Chest Wall is Rubbed.—Crouzon and Béhague comment on the instructive findings when the thumb or finger is drawn along the skin of the chest parallel to the clavicle or first rib; the resulting vibration is stronger when the rubbing is done with the bone for the background. They found that the sound from the rubbing was much less distinct when there was an effusion in the pleura, while the sound was exaggerated in cases of congestion of the pleura and lung, incipient infiltration, and bronchopneumonia, compared with symmetrical points on the other side. The sound is less distinct when an infiltration is developing into a cavity containing a fluid, and also in apical sclerosis, while the auscultation findings are magnified when a cavity is superficial or free from contents, and also in partial pneumothorax.

Encéphale, Paris

July 10, 1920, **15**, No. 7

Necropsy Findings in Case of Paralytic Myasthenia. H. Claude and R. Porak.—p. 425.
Manometer Compressor for the Eyeball to Induce Oculocardiac Reflex. J. Roubinovitch.—p. 437.
Mental Disturbances with Epidemic Encephalitis. Hesnard.—p. 443.
*Treatment of Epilepsy. G. Maillard.—p. 455.

Treatment of Epilepsy.—This society report states that Maillard described sixteen cases of epilepsy in which systematic treatment with phenylethylbarbituric acid (luminal) was followed by improvement far surpassing any he had witnessed under other measures. He states that the results were "réellement merveilleux." In the discussion that followed, de Fursac cited Ducosté's experience with the drug (dose not over 0.15 gm.). The radical arrest of the seizures was accompanied in some of his patients with certain mental disturbances, violent, impulsive acts and even delirium. Maillard noted the same tendency in some, but it was mild and transient. Laignel-Lavastine reported a case in which the drug has been taken for four years, and the formerly violent and frequent seizures have almost completely disappeared, but vertigo and spasms are more frequent than before. Hartenberg's two patients have taken the drug for six or seven years, and have no further seizures but have become so irritable and irascible that he says it is a question whether they have been really benefited. Claude's four patients have taken the drug for several years and have no further seizures or very slight ones. In one the seizures had been extremely violent, unmodified by bromids and decompressive craniectomy. Maillard's dose was from 0.2 to 0.4 gm. per day for the course. His experience dates only from November, 1919, but he says that it justifies the highest hopes. In one case he increased the dose for two or three days to 0.6 gm. He gives half in the morning and half in the evening, with a hot drink.

Journal de Chirurgie, Paris

1920, **16**, No. 4

Treatment of Wounds of Vertebral Artery. P. Hallopeau and R. Gouverneur.—p. 369.
Surgical Treatment of Heart Wounds. H. Costantini.—p. 383.
*Reconstruction of Joint Ligaments. D. de Frenelle.—p. 399.

Reconstruction of Ligaments by Grafts and Transplantation of Tendons.—De Frenelle says that the best way of rebuilding articular ligaments is by grafting and transplantation of tendons. Animal tendons should be used, it being then possible to choose one of the proper length, size and resistance. Kangaroo, reindeer and calf tendons are very good, their resorption being very slow, thus giving time to the organism to build the autogenous tendon which is needed. In case of marked luxation, a graft of strong animal tendon is indispensable, traversing both epiphyses and thus buckling the joint ends together. Transplantation of the periarticular tendons is excellent to supplement the grafting. The typical operation for this, in a case of paralytic luxation of the knee described, consisted in fastening the tibia to the outer condyle with two new ligaments. One in front, slit off from the fascia lata, was fastened to the third adductor, and one behind, slit from the semitendinosus, was fastened to the posterior crucial ligament.

Presse Médicale, Paris

Aug. 7, 1920, **28**, No. 55

Opening Lecture of Experimental Medicine Course. F. Arloing.—p. 533.
Pulmonary Tuberculosis plus Primary Cancer; Two Cases. M. Letulle.—p. 537.
*Occipital and Trigeminal Neuralgia. W. Janowski—p. 537.

Cure of Neuralgia of the Head.—Janowski remarks that occipital neuralgia may escape recognition for months or years as no one thinks of palpating the occipital nerves as they emerge from the skull. Moderate pressure at these points elicits pain which may spread to temples and vertex with occipital neuralgia. With trigeminal neuralgia, pain is elicited by pressure on the nerve in the supra-orbital sulcus or in the suborbital groove where the nerve emerges on the surface of the upper jaw. The patient complains only of an ordinary headache, and neuralgia is not suggested. He encountered over 200 cases of the kind in Russia during the war, and has a record of almost 500 cases in less than thirty years. Crushing the nerve as it emerges has proved an infallible cure for these primary neuralgias. The masseur presses the patient's head against his own chest, holding it firmly with the left arm, while the painful point is compressed with the right forefinger, exerting strong pressure for a half or a whole second, repeating this ten times in succession. An interval of a second is allowed between each pressure, but the finger is held on the spot all the time. During the first four to six days this procedure causes extreme pain. A second series is begun after a two day interval; the number of series necessary to crush the nerve and cure the neuralgia varies from case to case. Four series were enough in some cases; others of up to twenty or more years' standing required six series. Recent cases yielded in ten to twelve days. Although so effectual Janowski has never seen this old method applied by others, although in some of his cases the periodic attacks for five, ten, twenty, up to forty-two years of this pseudomigraine had often been agonizing.

Aug. 11, 1920, **28**, No. 56

*Cartilage Grafts. P. Mauclaire.—p. 545.
*Inflamed Axillary Glands with Mammary Cancer. R. Bonneau.—p. 547.

Cartilage Grafts.—Mauclaire traces back to 1852 the history of cartilage implants, and reviews the recent work in this line. Autografts of costal, tracheal, laryngeal and ear cartilage in soft parts may prove successful, but as a rule the graft becomes transformed into fibrous tissue or is absorbed or encysted. In heterologous tissue, success is less frequent, and heteroplastic implants are always resorbed. Costal cartilage grafted on bone tissue seems to be successful; it is an active graft on almost homologous tissue, and it functions. The epiphyseal cartilage reimplanted in similar tissue dies in the center, and although the periphery lives, yet it is of no practical utility. The hope of using cartilage from animals has had to be abandoned for the present. Diarthrodial cartilage grafts may succeed if their nourishing synovial membrane is left on them and a little bone tissue.

Inflammatory Process in Glands Near Nonulcerating Cancers.—Bonneau's experience indicates that when a mammary cancer is not suppurating, the glands in the axilla may be the seat of merely inflammatory processes, and not invaded by the cancer. This encourages to extend the limits of operability. The surgeon is unable to differentiate the process in the gland at the operation, but examination of the excised glands later reveals the absence of malignant disease in the glands. Fage's thesis (1909) stated that the lymphoid tissue in the axilla with a closed epithelioma of the mamma frequently showed merely ordinary reactions, without cancerous involvement. This fact explains why excision of the gland mass in the axilla sometimes is so easy, while in other cases it is difficult and tedious.

Aug. 14, 1920, **28**, No. 57

*Threshold for Excretion of Glucose by the Kidneys. A. Chabanier and M. Lebert.—p. 553.
Danger with Inhalation of Fumes of Iodin. L. Cheinisse.—p. 556.

Renal Threshold of Glucose Excretion.—Chabanier and Lebert give a curve showing the threshold for glucose and the glycemia, the averages from 400 tests. They also give the exact figures in a typical series from 100 normal subjects.

In the normal, the threshold is well below 3:1,000; the figure is generally lower than that of the glycemia, but very close to it. The threshold rises and falls with the glycemia but does not parallel it, not climbing with the glycemia. In diabetics, the glycemia has to be higher than in the normal or intense acetonemia is liable to develop, so that the glycemia in diabetics seems to be in one sense a compensatory mechanism. In both the normal and the diabetic with stable metabolism, after ingestion of glucose both the glycemia and the exhalation of carbon dioxid increase. The sugar content of the blood thus seems to be one of the factors regulating the consumption of glucose by the organism. The glycemia in the diabetic has to be increased much more than in the normal subject to accomplish the same task, and the renal threshold rises with it. In the normal the threshold fluctuates readily. When the threshold follows only sluggishly the variations in the glycemia, we have the clinical picture of what is called renal diabetes. This inertia of the threshold is observed also in true diabetes. It is a purely renal phenomenon independent of the normal or abnormal metabolism of carbohydrates. The glucose threshold fluctuates independently of the thresholds of the other substances eliminated by the kidneys. Certain substances modify it, notably phlorizin, by reducing it directly, and suprarenal and pituitary extracts, indirectly, by modifying the glycemia. In conclusion they emphasize that the glucose threshold being essentially movable with the glycemia, and not being a function of the derangement in the utilization of sugars which constitutes diabetes, it is no criterion of the existence or the gravity of the diabetes in any case.

Progrès Médical, Paris

July 17, 1920, **35**, No. 29

*Tolerance for Arsphenamin. L. Lortat-Jacob.—p. 313.
"Psycholepsy." Laignel-Lavastine.—p. 315.
Mineral Waters for Clearing Out the Intestines. J. Baumann.—p. 317.
Comminutive Fractures of Sacrum Without Nervous Lesion. L. Moreau.—p. 318.
Magnesium Oxid. G. Faroy.—p. 319.

Preexisting Factors Modifying Reaction to Arsphenamin.—Lortat-Jacob warns that persons suffering from abnormal functioning of the thyroid are peculiarly liable to display intolerance for arsphenamin treatment. He has frequently noted that attacks of diarrhea in apparently healthy persons were soon followed by tremor and restless irritability; then came acceleration of the pulse and palpitations and—perhaps not until after a long interval—the thyroid began to enlarge and finally exophthalmos completed the picture of exophthalmic goiter. Consequently he warns to be wary with a patient who has been having attacks of diarrhea without apparent cause. When the febrile reaction to the arsphenamin does not develop until the second day or later, it indicates intolerance, and calls for measures to reduce it. If the reaction includes symptoms suggesting suprarenal and thyroid derangement, especially attacks of diarrhea and vasomotor disturbance, besides the high temperature, he advises suspending the arsphenamin and treating the thyroid and suprarenals, as their participation in the accidents imputable to the arsphenamin may be of serious import.

July 31, 1920, **35**, No. 31

Severe Dyspepsias. F. Ramond.—p. 335.
Roentgen-Ray Treatment of Fibromas. Delbet.—p. 337.
*Cure of Oxyuriasis with Bismuth Carbonate. M. Loeper.—p. 339.

Aug. 7, 1920, **35**, No. 32

Paradoxic Increase of Albumin Content of Blood Serum with Cancer. M. Loeper and J. Tonnet.—p. 345.
History of Grafts of Glandular Organs. P. Mauclaire.—p. 345.

Cure of Oxyuriasis Under Bismuth Carbonate.—Loeper recommended bismuth carbonate to two patients with gastric and duodenal ulcer, and was surprised to learn that the drug had had an unanticipated effect in completely freeing them of pinworms, which had resisted all previous measures. He has since prescribed bismuth carbonate regularly in treatment of oxyuriasis, and has found it effectual, even in families where parents and children were all affected. In four or five days the parasites and ova disappear from the stools, or a second or third course may be required. He gives adults on two successive days 10 gm.; children of 7, 4 gm., and under this age, only 2 or 3 gm.

Riforma Medica, Naples

July 10, 1920, **36**, No. 28

*Roentgenotherapy in Asthma, etc. M. Ascoli and A. Fagiuoli.—p. 622.
*Pregnancy Pernicious Anemia. E. Signorelli.—p. 624.
Glycuronuria. A. Azzi.—p. 629.

Roentgen-Ray Treatment of the Pituitary in Asthma.—Ascoli and Fagiuoli have been treating certain sluggish endocrine glands with small doses of roentgen rays, hoping to stimulate the glands to normal functioning. Radiotherapy as usually applied is to destroy and annul functioning, but their aim was to promote deficient functioning. A boy of 15 with dystrophia adiposogenitalis was given pituitary and testicle extract treatment for several months, and then the pituitary gland was given four roentgen-ray exposures at four week intervals. The results were most gratifying, as also in a case of scleroderma in which both pituitary and thyroid were rayed, and in a case of exophthalmic goiter given two exposures of the thymus. In the latter case the pulse dropped from 120 to 100, the circumference of the neck from 34 to 31.1 cm. and the patient felt much better generally. Tentative treatment of various endocrine organs in a case of angioneurotic edema, in three of diabetes and in a eunuchoid man of 26 failed to display any benefit. Probably some other organ than the one treated was responsible for the disturbances. In five cases of asthma, however, exposures of the pituitary were followed by pronounced improvement. In four of the cases there have been no, or very slight, attacks since; in the fifth case instead of a daily severe attack there are only two or three a week at most, and they are mild. About four exposures were made at weekly intervals. The crossfire was through the brow and temples to a total exposure of twelve minutes with a 2 mm. aluminum filter, 3.5 milliamperes, focal distance about 45 cm., and spark of 18-20 cm. In conclusion Ascoli and Fagiuoli suggest that this mild action of the roentgen rays may prove useful in research on the normal function of the various endocrine glands, and to enhance the action of those which seem to prevent or check malignant disease. Four German clinicians in the last few months have reported similar radiotherapy of endocrine glands: Stettner, the pituitary, in cases of arrested development of ossification centers; Stephan, the spleen, to promote coagulation; Fränkel, recommending small doses as a functional stimulant for endocrine deficiency, and Klewitz exposed the thorax in asthma, without benefit.

Pregnancy Pernicious Anemia.—Signorelli adds another to fifty-six cases he has found on record in which pernicious anemia in a pregnant woman subsided after induced or spontaneous delivery, and has never returned, the intervals in the various cases to date up to thirty years.

Revista Médica del Uruguay, Montevideo

May, 1920, **23**, No. 5

Interpretation of Certain Symptoms of Influenza. F. Paladino.—p. 209. Cont'n.
Present Status of Knowledge of Cancer. J. Servetti Larraya.—p. 215.

Siglo Médico, Madrid

May 22, 1920, **67**, No. 3467

*Ligation of Splenic Artery. J. A. Cejudo.—p. 381.
Notes on Medical History in France. Albiñana.—p. 393.

Spleen Sloughed Off After Ligation of Artery.—Cejudo relates that he has apparently cured completely a patient with Banti's disease by ligating the splenic artery to induce atrophy of the spleen in the woman of 39. The symptoms had been developing for several years, with intense cachexia, jaundice and anemia and the spleen was enormously large. Splenectomy was found impossible on account of adhesions, and Cejudo merely ligated the splenic artery at two points. An abscess developed, and pus was evacuated daily from the flank during the fourth month. With it came scraps of necrotic spleen tissue until finally the entire spleen thus sloughed off, with floods of pus, under Carrel treatment. By the fifth month the cure seemed complete, with 4,500,000 red and 5,000 white corpuscles instead of the 3,500,000 and 30,000 at the first operation.

June 12, 1920, **67**, No. 3470

*Medical Treatment of Ileus. E. Escomel (Peru).—p. 433.
Physiology of Meditation and Dreams. E. Luengo.—p. 435.

Medical Treatment of Intestinal Obstruction.—Escomel did not dare to operate on an incarcerated hernia in a woman of 84 with valvular disease. As a last resort, he had her swallow a tablespoonful of liquid petrolatum every half hour. She began this at 8 a. m. and at 2 p. m., the hernia spontaneously subsided. He has since applied this treatment in fifteen other cases, ordering the spoonful of odorless liquid petrolatum every ten or fifteen minutes, supplemented in some cases with an intramuscular injection of pituitary extract, and raising the foot of the bed to allow the intestine to slide down against the diaphragm and thus relieve the pressure on the hernia, and correct torsion or invagination. Gentle taxis after four or five hours of this may correct conditions; if not, irreducible adhesions or torsion or invagination are probably responsible. He advises the petrolatum at once in all cases of intestinal obstruction as it does no harm, and may render an operation unnecessary.

Deutsche medizinische Wochenschrift, Berlin

June 17, 1920, **46**, No. 25

Eye Disease Associated with Influenza. E. Fraenkel.—p. 673.
Drug Stimulation of Blood Production. Heinz.—p. 674.
Adulteration of Drugs. H. Fühner.—p. 675.
*Model for Instruction in Pathology of Pelvis. Lichtenstein.—p. 676.
*Fever Treatment of Psychoses. R. Weichbrodt.—p. 678.
Treatment by Suggestion of Neurotic Menstrual and Genital Disturbances. A. H. Hühner.—p. 679.
Experiences with Silver Arsphenamin. K. Wiener.—p. 680.
Diagnosis of Amebic Dysentery. Hage.—p. 682.
*Pathology of Blood Coagulation. R. Stephan.—p. 684.
*Stenosis of Small Intestine. F. Frisch.—p. 686.
Injections of Turpentine in Surgical Tuberculosis. E. Glass.—p. 637.
Relative Avidity of Diphtheria Antitoxins. R. Kraus (Buenos Aires).—p. 687. Reply. W. Kolle and H. Schlossberger.—p. 688.
Etiology and Pathogenesis of Sciatica. F. Lindstedt.—p. 688.
*Diagnostic Significance of Hematuria. Sfakianakis (Athens).—p. 690.
Unscrupulous Methods of Marketing New Remedies. H. Zernik.—p. 691.
Rhinolaryngologic Hints for General Practitioners. Finder.—p. 691.

Teaching Phantom for Pathology of Pelvis.—Lichtenstein has been using a model of the pelvis in instructing advanced students in the diagnosis of pelvic conditions, especially in the pregnant, and has found it very useful. He does not approve of the practice of students making examinations in pregnancy until they have had a course of training on a phantom. Those who have had such preliminary instruction seem to learn much more rapidly and accurately when the opportunity is offered later to examine the living form. He suggests that if midwives could be induced to take such a preliminary course, it would enable them to recognize a contracted pelvis as the cause of many complications of childbirth, and thus know when to call in an obstetrician before it is too late to save the child.

Fever Treatment of Mental and Nervous Disease.—Weichbrodt refers to the published instances of improvement in general paresis, etc., under the influence of an intercurrent febrile infection, and relates systematic attempts of the kind at the psychiatric clinic at Frankfort. He used spirochetes of relapsing fever as the most convenient and least harmful means of inducing a brief, high fever. The experiences are too recent for a final decision, but the impression to date is that the benefit is not so pronounced as when malarial fever is induced. He has applied the latter method also, but abandoned it as the patients' general health suffered too much from the malarial infection.

Pathologic Changes in Blood Affecting Coagulation.—Stephan has been examining a large amount of clinical material to find some means for estimating the pathologic changes occurring in the blood in various diseases as affecting the normal coagulation process. He describes in detail the simple method that he has worked out, which he thinks marks a distinct advance in the study of the pathology of blood coagulation. The coagulation phenomena of a given blood specimen are compared with the manifestations of normal blood; that is, he establishes, first, the action of the active and inactivated blood serum and blood plasma of the given blood specimen and compares the results with the corresponding findings with normal blood, and, second, he studies the effect of normal blood serum and blood plasma of known value on the coagulation of the given blood specimen. His method is based on the assumption that the coagulation of all normal blood specimens occurs in from twenty-eight to thirty-three minutes. All methods showing a normal coagulation time of less than twenty minutes Stephan found entirely unusable. He follows, in determining the coagulation time the method commended by Fonio in which four watch crystals in the moist chamber are used. His extensive research has confirmed that the coagulation process in normal blood manifests extraordinary constancy and precision. In fact, he declares, as an index of immune reactions, it is as practical and reliable as the hemolysis index, and far simpler.

Roentgenology and Clinical Aspects of Stenosis of Small Intestine.—Frisch reports two cases to show that in the presence of a residue in the stomach five hours after ingestion of a test meal, and no other positive findings in the stomach and duodenum, low stenosis of the small intestine from multiple adhesions should be suspected.

Diagnostic Significance of Hematuria.—Sfakianakis reports three cases to show some of the diagnostic problems that arise in connection with hematuria. In one case it seemed at first that a papilloma near the left ureter mouth, presenting necrotic spots, was the immediate cause of the hematuria, but the indigocarmin test disclosed that the blood came from the left kidney. The papilloma itself was not bleeding. Operation on the kidney revealed a far advanced carcinoma. The patient recovered rapidly after the operation, and the hematuria did not return. The papilloma was not treated further. A benign papilloma, therefore, should not be operated on unless it can be shown to be bleeding or to be a hindrance in micturition.

July 22, 1920, **46**, No. 30

Peculiar Type of Cardiac Arrhythmia. Gil-Casares (Spain).—p. 821.
*Effect of Implantation of Testes. R. Mühsam.—p. 823.
Origin of Loose, Solitary Bodies in Knee Joint. Axhausen.—p. 825.
Observations on Children with Dry Skin. P. Karger.—p. 827.
Recent Types of Serum Culture Mediums. E. Czaplewski.—p. 828.
Action of Friedmann Bacillus as Antigen. F. Lust.—p. 829.
Technic for Injection of Silver Arsphenamin. L. Dub.—p. 831.
Colloidal Silver in Typhus. H. E. Kersten.—p. 831.
*Some Peculiar Aspects of Herpes Zoster. A. Stern.—p. 832.
Otologic Hints for General Practitioners G. Brühl.—p. 833.

Testicle Implants.—Summarized in the Berlin Letter, p. 755.

Some Peculiar Aspects of Herpes Zoster.—Stern says that while herpes zoster does not ordinarily recur, in certain rare cases there are periodic recurrences. It is in such cases often associated with facial paralysis and paralysis of other motor nerves, as the expression of a general infectious disease. He describes an atypical case of the kind. In some cases the general symptoms, swelling of glands and paralysis of motor nerves, occur even without the characteristic skin eruption of herpes zoster.

Münchener medizinische Wochenschrift, Munich

May 28, 1920, **67**, No. 22

Epidemiologic and Diagnostic Investigations in Pulmonary Tuberculosis. H. Curschmann.—p. 623.
Rhythmic Phenomena in Eye Disease. W. Lohmann.—p. 625.
Eye Symptoms in Lethargic Encephalitis. R. Cords.—p. 627.
The Internal Ear in Lethargic Encephalitis. K. Grahe.—p. 629.
Late Results of Encephalitis after Influenza. Speidel.—p. 630.
*Source of Error in Examination of Dark and Light Adaptation. E. Grafe.—p. 634.
Urochromogen Reaction in Surgical Tuberculosis. Klare.—p. 635.
Etiology and Diagnosis of Acute Bilateral Blindness. H. Hensen.—p. 637. Begun in No. 21, p. 601.

Source of Error in Estimation of Adaptation to Light and Darkness.—Grafe explains that sensitiveness to light is modified by the diameter of the pupil, but that this point has not been sufficiently heeded in studying the power for dark adaptation. It must have often happened that disturbance in adaptation was ascribed to other causes when in reality the pupil was contracted to a degree which interfered with the response. The practical conclusion of the research reported is that all adaptation findings in conditions which are associated with disturbances of the pupil, especially in tabes, must be evaluated with great caution. In such cases the actual picture of the dark adaptation of the retina can be secured only with artificially dilated pupils. In hemeralopia, asso-

ciated with miosis, it was found that atropin had a certain therapeutic value owing to its dilating effect on the pupils.

Significance of the Urochromogen Reaction for the Prognosis of Surgical Tuberculosis.—Klare has been applying the urochromogen test in all his cases of surgical tuberculosis for the last two years, and reports that what Weiss states in regard to the significance of urochromogen in pulmonary tuberculosis holds good in the main for surgical tuberculosis: The continual demonstration of urochromogen is to be regarded as indicating a very unfavorable prognosis, and while patients presenting a transitory urochromogen reaction may live for several years they have no prospects of recovery. Thirty of his cases (18 soldiers and 12 children) gave a positive urochromogen reaction. Of these 18 soldiers, 12 died within a year; the other 6 have not improved. Of the 12 children, 4 died within a year; as regards the other 8, the condition of some is unchanged and of others worse. In only one case has there been any improvement. In the progressing cases, the intensity of the urochromogen reaction has increased. He declares that a persisting positive urochromogen reaction with a tuberculous joint process is sufficient indication for amputation.

June 4, 1920, **67**, No. 23

*Roentgen Differentiation of Tumors. L. Seitz and H. Wintz.—p. 653.
*Reflex Relaxation of Abdominal Muscles. O. Bruns.—p. 654.
Effect of Seasons on Cutaneous Disease. Bettmann.—p. 656.
*Eczema and the Vegetative Nervous System. E. Moro.—p. 657.
Open and "Closed" Pulmonary Tuberculosis. F. Hamburger.—p. 659.
Encephalitis Epidemica Choreatica. O. Oehmig.—p. 660.
Neurocerebral Forms of Influenza. Heiss.—p. 663.
*Recent Progress in Pneumoperitoneum Technic. R. Decker.—p. 664.
Hereditary Aspects of Dementia Praecox. W. Weinberg.—p. 667.
Untoward Effects of Horse Serum. H. Wisser.—p. 668.

Roentgen Irradiation as a Means of Differential Diagnosis of Tumors.—Seitz and Wintz call attention to the differential diagnostic value of the varying sensibility of tumors to the roentgen ray. A myoma suspected of sarcomatous degeneration should not be irradiated with the ordinary myoma dose, equivalent to 34 per cent. of the skin erythema unit dose, but should receive the sarcoma dosage of from 60 to 70 per cent. If the tumor begins to retrogress in a few days after irradiation is begun, and if retrogression has become marked within two weeks, and is more or less complete in four or five weeks, the probability is that the tumor is a sarcoma. But if the retrogression does not begin until three or four months after irradiation is begun, if it proceeds slowly and is not complete except after the lapse of one or two years, the tumor is doubtless a myoma. Since the cells of the various malignant neoplasms (being immature, rapidly developing cells) have a greater sensibility to roentgen rays than the fully mature cells of clinically benign tumors, a differential diagnosis can often thereby be reached. Large ovarian and abdominal sarcomas react quickly and markedly to irradiation.

Reflex Relaxation of the Abdominal Muscles as Food Enters the Digestive Tract.—Bruns has been making investigations on animals under local anesthesia to discover the effect on abdominal pressure exerted by food as it enters and passes through the digestive tract. He reports that the expansion of the stomach and intestine is only possible owing to the simultaneous relaxation of the abdominal muscles. This reflex loosening of the tension originates in the inner wall of the stomach and extends on through the gastric plexus and the semilunar ganglion to the spinal cord.

Fatal Eczema and Seasonal Hyperexcitability of the Vegetative Nervous System.—Without being able to assign other than empirical reasons for his belief, Moro holds the view and acts accordingly in practice that eczema in infants should not be treated vigorously during the first months of the year. Thoroughgoing external treatment should be reserved for the summer or fall months. He cites fifteen fatal cases in support of his view. Thirteen of the deaths occurred during the three-month period from February 1 to March 31, while only two occurred during the other nine months of the year.

Recent Progress in Pneumoperitoneum Technic.—Decker records the advances made in pneumoperitoneum technic. Roentgenoscopy by this method is especially adapted to demonstrate the presence of abdominal adhesions, for which purpose no other method is quite so good.

Wiener klinische Wochenschrift, Vienna

June 17, 1920, **33**, No. 25

Pathogenesis of Influenza. R. Wiesner.—p. 531.
Viscerovasomotor Zones. E. Zak.—p. 535.
Case of Primary Heart Tumor. O. Weltmann.—p. 537.
*Laryngectomy and Retraining of the Voice. H. Stern.—p. 540.
Adulteration of Arsphenamin. L. Arzt.—p. 541.

Retraining Organs of Speech After Laryngectomy.—Stern describes the patience that is required and the difficulties that confront the patient and his teacher when he comes to try to find his voice following laryngectomy. Most of such patients use the stomach as resonator, and it was noted that natural ventriloquists were the most successful in getting renewed control of their organs of speech. It will be some time before all the problems of speech mechanism for such patients will be solved, but much valuable progress has already been made.

Zentralblatt für Chirurgie, Leipzig

July 3, 1920, **47**, No. 27

*Round Ligament as Support in Gastroptosis. G. Perthes.—p. 818.
*Treatment of Postoperative Tetany. A. Jenckel.—p. 821.
*Influence of Spleen on Blood Coagulation. A. T. Jurasz.—p. 824.
*Toxic Effects of Regional Anesthesia. F. Hering.—p. 827.

Round Ligament of Liver as Support in Operation for Gastroptosis.—Perthes says that we owe it to Rovsing that the clinical importance of gastroptosis is coming to be better recognized and that more attention is being paid to operations to correct it. Rovsing's operative method, while it has accomplished much in many cases, cannot be regarded as the ideal solution of the problem. We cannot expect that an operation in which broad adhesions are produced artificially along the anterior wall of the stomach, thus depriving this organ of a good part of its normal mobility, will always be without injurious consequences. Believing that a method which would preserve the stomach in its normal form and shape, without such adhesions, was to be preferred, Perthes has of late employed a method which he describes in detail (two illustrations). He suspends it by the round ligament passed lengthwise through the wall of the lesser curvature. The ligament retains its natural connections with the liver, which insures a normal blood supply. The distal end is inserted under the left costal arch in the posterior sheath of the left rectus abdominis and here securely sutured. The operation has been successful in each of the four cases. The oldest case is only four months old but the outlook seems very promising. Roentgenograms before and after the operation show distinctly that the stomach has been raised. The associated symptoms, such as cardialgia, an uncomfortable sense of fullness, vomiting spells and intractable constipation, have been relieved. While Perthes has not as yet used this method in gastroptosis combined with hepatoptosis, he believes it is worth a trial. It is to be assumed that also the liver could be thus raised and retained in normal position.

Treatment of Postoperative Tetany.—Jenckel urges that in postoperative tetany we should not resort to transplantation, the results of which depend on whether there are still remnants of parathyroid tissue present or not, until parathyroid tablets have been prescribed. He cites his case in a woman of 66. She had been operated on in April, 1913, for bilateral goiter. The wound healed by first intention, but in the region of the already closed wound suppuration set in, which lasted until the middle of August. The patient's face showed marked edema and her mental faculties were beginning to be seriously impaired, so that by August she had to give up her business, became unduly silent, somnolent, and disoriented and was confined to her bed. There were also cramps in the extremities. Jenckel was consulted September 2, and he prescribed at first thyroid tablets (as parathyroid tablets could not be secured at once), and later parathyroid tablets, one tablet three times daily, whereupon a striking improvement in the general condition of the patient was noted. The myxedema receded, the mental faculties cleared up and the cramps ceased. Treatment was kept up at home for over a year (two tablets daily), so that the patient entirely recovered and has retained her health for the past six years. However,

a small goiter tumor about the size of a walnut has developed on the left side of the neck but does not occasion any trouble. No nerve symptoms have reappeared.

Surgical Importance of the Influence of the Spleen on Blood Coagulation.—Jurasz refers to Stephan's finding that by irradiation of the spleen with roentgen rays the coagulation time of the blood can be materially shortened and the quantity of coagulative ferment in the blood serum considerably increased. He thinks there are indications that the spleen may be regarded as the central organ with respect to the blood coagulation process. Stephan's discovery opens up far-reaching vistas in practical surgery, not only from a therapeutic standpoint but also as a prophylactic means of reducing bleeding during and after operations. Irradiation of the spleen may prove effective in checking hemorrhage and saving a patient even when blood transfusion, used as a last resort, has failed. Before undertaking prophylactic irradiation, Jurasz recommends that the coagulation time of the patient's blood be determined by Stephan's modification of the Fonio method, by which 20 drops of blood are put in a watch crystal, which is transferred to a covered petri dish. By tipping the dish from time to time the exact moment when coagulation is completed is determined. This coagulation time is then compared with the normal time, which must be determined for each individual laboratory. In Jurasz' laboratory, normal time was from twenty-eight to thirty-two minutes. If the coagulation time of the patient is retarded by as much as four or five minutes, it always indicates some disturbance of the coagulation process, and points to the danger of serious hemorrhage during or following operation. In this case irradiation of the spleen must by all means precede surgical intervention. As to just how long before the operation this irradiation should be given is an important point. Jurasz' experience thus far points to from fifteen to twenty hours preceding the operation as the most favorable time. (Stephan's article is reviewed on p. 904.)

Accidents Following Regional Anesthesia.—Hering reports six cases in which more or less serious accidents, fatal in three instances, followed nerve blocking. With the improvements in technic and increased experience in using the various methods, accidents have become much fewer until, in some quarters, nerve blocking has come to be regarded as an absolutely safe method. In one of his cases (malignant goiter) paravertebral anesthesia by Härtel's method was used. The patient became suddenly unconscious, rolled up her eyes, displayed muscle contractions of the face and stertorous breathing, although the pulse remained good. She recovered quickly at the end of three minutes. In a second case (mild manifestations of exophthalmic goiter) paravertebral anesthesia (Härtel) was also employed. During the injections the patient became suddenly pale, and complained of dizziness and oppression in the heart region. The manifestations improved when the patient was spoken to in an encouraging tone, but complete collapse occurred after the injections were concluded. The patient became livid; the pulse small and accelerated; breathing superficial and irregular, and a heavy sweat appeared. In spite of all measures employed to give relief, the patient did not recover until toward evening. In neither of these cases was there any evidence that a vein had been punctured. In the third case (pleural empyema), rib resection was done under paravertebral anesthesia. Severe collapse occurred after completion of the injections. The patient was extremely pale, and did not respond when spoken to. The pulse was small and very rapid. Breathing was superficial, and sweating profuse. A half hour elapsed before the patient recovered sufficiently so that the operation could be performed. The fourth case was that of a bronchial fistula following gunshot wound of lung. Paravertebral anesthesia by the Kappis method was employed. During the sixth injection there was a sudden collapse and death ensued within a few minutes. Necropsy did not reveal the cause of the collapse. In the fifth case, an empyema fistula, paravertebral anesthesia (Kappis) was used. Severe collapse occurred during the injections. As anesthesia was not complete, it became necessary to give some ether. The patient did not recover from the shock, and died thirty-six hours after the operation. In the sixth case, a tendon sheath phlegmon in a woman of 52, plexus anesthesia by the Kulenkampff method was employed in connection with arm amputation which septic conditions made necessary. Anesthesia was complete and nothing worthy of note occurred during the injections or the operation. The patient felt well during the next three days, but then began to complain of pain in the region of the left breast. Pneumothorax occurred, followed by marked dyspnea and death. Necropsy revealed that puncture of the pleura, followed by tension pneumothorax, was the cause of death.

Zentralblatt für Gynäkologie, Leipzig

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Experimental Investigation of Blood Transfusion. L. Nürnberger.—p. 720.
Priority for Own Blood Transfusion. F. Burgkhardt.—p. 724.
Restrictions on Men as Obstetricians from the Earliest Times to the End of the Middle Ages. P. Diepgen.—p. 725.

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1919, No. 9. Parallel Dutch-English Edition.

The Spleen Index in Malaria. W. Schüffner.—p. 1.
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Development of Malaria Parasites in Certain Mosquitoes. N. H. Swellengrebel.—p. 53.
*Quinin in Prophylaxis among the Natives. J. T. Terburgh.—p. 72.
Larvae of Certain Netherlands Indian Anophelines. N. H. Swellengrebel and J. M. H. S. de Graaf.—p. 119.

Quinin Treatment of Malaria in Java Natives.—Terburgh gave quinin treatment to 11,677 inhabitants of several native villages in 1908 and to 10,184 in 1909. The dose was 0.6 gm. on two consecutive days each week. Of 11,080 persons of thirty villages who had not been given the quinin or had been discharged as cured, reexamination at the end of the year showed that 45 per cent. presented abnormally large spleens. In other villages 85.4 per cent. presented the spleen tumor at the end of the year notwithstanding the intensive quinin treatment. The experiences were thus an experiment on a huge scale of the effects of quinin treatment on about half of the inhabitants of populous villages. The impression was favorable, but the opposition on the part of the authorities (not the local authorities), to coercion, and the fact that provision had not been made to treat at once the acute cases, interfered with the continuance of the work. The results were much superior to those reported by the Sergents with 2,130 cases, with reexamination of 575.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

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Anthropologic Data from Amsterdam Children. K. H. Bouman.—p. 2374.
To Reduce Infant Mortality. J. G. A. Honig.—p. 2383.
Case of Anthrax from Shaving Brush. L. Bouwmeester.—p. 2395.

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*Medical Topics in Netherlands Engravings. G. van Rijnberk.—p. 9.
Cause and Treatment of Cystitis in Women. E. Deddes.—p. 42.
Blood Transfusion. T. S. van Ravenswaaij.—p. 47.
Case of Echinococcus Disease of the Lung. W. H. van der Tak.—p. 53.

Medical Subjects in Netherlands Engravings.—Van Rijnberk reproduces thirty-five old engravings portraying physicians or medical subjects. They date from the sixteenth to the eighteenth century, and contain many new and interesting reproductions, as also several of the sets of four pictures showing the doctor as a savior, then as an ordinary man and then as a devil as the patient passes from gratitude to grumbling about the fee. One print shows on the left a physician guiding a happy family through sunshine, fruits and blossoms, while on the right side is an unfortunate family pelted with rain and hailstones and weak with disease, their fruit trees bare all because they have no qualified physician to guide them. In nearly all the prints of the sixteenth and seventeenth centuries the physician is holding a flask of urine up to the light. The latest one in the series represents a physician in the torture chamber of the Inquisition, where he is called to watch over the victims so that the tortures can stop short of killing them.

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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, NO. 14 CHICAGO, ILLINOIS OCTOBER 2, 1920

PROTEIN SENSITIZATION IN ECZEMA OF ADULTS *

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Among the many diseases of the skin whose etiology has long remained unsolved, eczema occupies a prominent place. The possibility of an anaphylactic origin of this disease was suggested by Fordyce [1] in 1911. Since then a number of investigators have used cutaneous inoculations of various proteins to study the problem of protein sensitization as a cause of eczema. Much of the work along these lines has been done by the pediatricians in eczema of infants and children. Schloss,[2] who was a pioneer in this work, concluded that "a number of cases of eczema will prove to be due to food allergy." Blackfan [3] found that twenty-two out of twenty-seven patients, mostly infants and children, gave evidence of susceptibility to proteins. Strickler and Goldberg [4] tested fifteen children suffering from eczema, by the intradermal method, using solutions of proteins which they had specially prepared. Five of their patients reacted positively and several gave weak positive or "suggestive" reactions. C. J. White [5] in a recent paper on the treatment of eczema in childhood, reported 66 per cent. of positive reactions in cases in which he used the food proteins prepared according to the method of Turnbull (quoted in White's report). In a series of sixteen cases in infants and children, Talbot [6] observed fourteen positive reactions to egg white and a smaller number of reactions to other proteins.

Previous to the publication of his paper on eczema in children, White [7] wrote a preliminary report on the anaphylactic phenomenon in eczema. He tested sixty-four patients with chronic eczema (mostly adults) by the cutaneous method with four substances, representing different types of foods. These were fat free milk, egg albumin, salt free butter and lactose or oatmeal water, the milk representing the food of children and the others albumins, fats and carbohydrates, respectively. In about 80 per cent. of his cases positive reactions to one or more of these substances were obtained. In a second communication, White [8] published observations on a series of 107 patients as a continuation of the same work. In these cases, however, he obtained 45 per cent. of positive reactions, as opposed to 80 per cent. in his first report. He concluded that "a goodly proportion of patients affected with chronic eczema show sensitization to the various types of foods." He regretted not having used pure proteins of various foods in his work, a condition that was remedied in his later report (quoted in the foregoing) on eczema in children.

Strickler [9] made tests in forty-six cases of eczema (mostly adults) with fifteen different proteins, prepared according to the method described in the paper of Strickler and Goldberg.[4] He used the intradermic test, injecting 0.1 c.c. of a solution of protein, and adopted the following factors as the standard for a positive test. In order of their appearance they were: persistence of the reaction for forty-eight hours, presence of a distinct papule, erythema and local tenderness. In twelve cases, or 26 per cent., the tests were entirely negative. Of the remaining patients, twenty-three, or 50 per cent., "were in greater or less degree benefited by changed diet as shown by the anaphylactic food test." In all of his cases, wherever possible, local treatment was withheld to observe the effect of diet on the eruption. In discussing the effects of the tests on certain skin diseases, Strickler concluded that "these reactions find their greatest value in eczema where the development of a strong reaction holds out great hope for an improvement or cure in the skin condition."

The optimistic opinions of White and particularly of Strickler, concerning the practical value of the protein sensitization tests in adults, do not appear to be shared by some of the pediatricians in the case of younger patients. John Howland, in discussing the paper of Schloss, said in regard to children: "Therapeutically there is a small number of cases that can be cured or very much improved, but there is a large number that at present cannot be improved." In regard to infants, Blackfan thinks that the removal of some or all of the animal proteins from the food is not successful. This is because it is impossible to keep them on such a diet for a long time without the danger of seriously affecting the nutrition and because there is a strong tendency for the eczema to relapse. Such a

* Read before the Section on Dermatology and Syphilology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Fordyce, J. A.: Infectious Eczematoid Dermatitis; Possible Influence of Anaphylaxis in Skin Reactions, J. Cutan. Dis. **29**: 129, 1911.

2. Schloss, O. M.: Allergy to Common Foods: A Preliminary Report, Tr. Am. Pediat. Soc. **27**: 62, 1915.

3. Blackfan, K. D.: Cutaneous Reaction from Proteins in Eczema, Am. J. Dis. Child. **11**: 441 (Jan. 22) 1916.

4. Strickler, A., and Goldberg, J. M.: Anaphylactic Food Reactions in Dermatology, J. A. M. A. **66**: 249, 1916.

5. White, C. J.: The Treatment of Eczema in Childhood, Boston M. and S. J. **178**: 5 (Jan. 3) 1918.

6. Talbot, F. B.: Eczema in Childhood, Med. Clin. N. Am. 985 (Jan.) 1918.

7. White, C. J.: The Anaphylactic Phenomenon in Eczema and the Recent Progress in Our Knowledge of the Etiology and Treatment of the Disease (A Preliminary Report), J. Cutan. Dis. **34**: 57 (Feb.) 1916.

8. White, C. J.: Two Modern Methods to be Employed in the Treatment of Chronic Eczema, J. A. M. A. **68**: 81 (Jan. 13) 1917.

9. Strickler, A.: Anaphylactic Food Reactions in Skin Diseases, with Specific References to Eczema, New York M. J. **104**: 198 (July 29) 1916.

method of treatment, however, he thinks, in some older children and adults effects great improvement.

I. Chandler Walker,[10] in one of his many valuable studies on protein sensitization, has recently reported some interesting cases of eczema "produced by proteins which are not foods, but with which persons come in contact throughout life, and which so far have not been recognized as causes of these conditions." Of Walker's four cases of eczema, two were caused by the proteins of horse dandruff, and one each by the proteins of timothy and ragweed pollen, respectively. The first two cases represented sensitization to horse dandruff through two different channels, one by natural exposure to horses and the other by subcutaneous injection of the protein. Case 1 occurred in a boy of 11, who had suffered from asthma and eczema since his first year. Riding behind horses caused attacks of asthma. He reacted positively to proteins of horse dandruff and ragweed pollen. Treatment by desensitizing injections showed rapid improvement in both asthma and eczema. Case 2 occurred in a girl of 15 who had suffered from asthma for nine years and who reacted positively to horse dandruff protein and to ragweed pollen. She was given desensitizing injections of horse dandruff, and after a few injections an eczema appeared which resisted all treatment. The injections were then stopped, and at the end of two weeks the eczema had practically disappeared.

The technic we have used in our work was that of Walker,[11] who described it as follows:

A small number of cuts, each about an eighth of an inch long, are made on the flexor surfaces of the forearm. These cuts are made with a sharp scalpel, but are not deep enough to draw blood, although they do penetrate the skin. On each cut is placed a protein and to it is added a drop of tenth normal sodium hydroxid solution to dissolve the protein and to permit of its rapid absorption. At the end of half an hour, the proteins are washed off and the reactions are noted, always comparing the inoculated cuts with normal controls on which no protein was placed. A positive reaction consists of a raised, white elevation or urticarial wheal surrounding the cut. The smallest reaction that we call positive must measure 0.5 cm. in diameter. All larger reactions are noted by a series of plus marks and any smaller reaction is called doubtful.

In performing our tests we have made a few slight variations from the technic of Walker. In some of our women patients the tests have been made on the abdomen instead of the forearm in order to avoid the slight disfigurement, which, however, disappears in a week or two, and is never permanent. We have also found it convenient to place the drop of alkali on the skin, next, to mix a small amount of protein, using a fresh toothpick for each inoculation, and then make a small scarification. Several controls have been made in each case.

We have not tried the so-called intradermal method recommended by Strickler and Goldberg. A comparative study of the relative value of the cutaneous and intracutaneous tests in cases of asthma and hay-fever was made by Walker and Adkinson,[12] who came to the following conclusions:

The skin test is specific; it separates closely related proteins; it is sufficiently sensitive and yet not too sensitive; it is a safe index to proper treatment; it is easy to do and it does not inconvenience the patient.

On the other hand, they concluded that:

The intradermal test is much less specific; it does not always separate closely related proteins; therefore it may be nonspecific; it is much too sensitive; therefore it is not an index to proper treatment; it is much more difficult to do and causes the patient considerable annoyance and discomfort, therefore it is not as practical when many proteins must be tested.

Blackfan, in speaking of Strickler and Goldberg's statement that a reaction with the intradermal method is to be considered positive only when an erythema remains around the point of inoculation for forty-eight hours, wrote: "There does not seem to be justification

TABLE 1.—CASES OF ECZEMA WITH NEGATIVE REACTIONS

Number	Sex*	Age	Duration	Location	Type	No. of Proteins Tested
1 D. M.	♂	30	1 yr.	Back of neck, forearms and buttocks	Papulo-squamous	24
2 E. C.	♂	90	4 wks.	Generalized, especially on legs and buttocks	Erythemato-squamous	20
3 T. H.	♂	12	18 mos.	Feet and ankles....	Papulo-squamous	21
4 J. D.	♀	45	17 mos.	Scalp.....	Squamous	19
5 J. T.	♂	67	6 wks.	Hands, wrists, cubital spaces and thighs	Papulo-squamous	18
6 A. S.	♀	35	2 mos.	Eyelids and forearms	Erythematous	28
7 J. P.	♀	40	10 mos.	Behind and above ears and in axillae	Squamous	20
8 W. C.	♂	22	4 mos.	Hands and feet....	Vesico-papular	20
9 J. S.	♂	45	2 yrs.	Perineum.....	Papulo-squamous	18
10 M. S.	♀	52	6 mos.	Eyes and nose.....	Erythematous	20
11 W. W.	♂	49	7 yrs.	Face, arms and legs	Erythematous	29
12 A. H.	♂	15	3 wks.	Forehead and cheeks	Vesico-squamous	25
13 M. P.	♂	16	6 yrs.	Forehead and cheeks	Vesicular	21
14 F. F.	♂	39	4 mos.	Sacral region, thighs and about ears	Papular	23
15 L. W.	♂	55	3 yrs.	Legs and forearms	Vesiculo-squamous	32
16 J. R.	♂	22	1 mo.	Scalp.....	Papular	26
17 R. M.	♂	41	Infancy	Face, hands and legs	Papulo-squamous	33
18 W. M.	♂	22	14 mos.	Scalp, face, chest and back	Squamous	32
19 J. G.	♀	50	3 wks.	Generalized on trunk, arms and legs	Erythemato-papular	23
20 C. C.	♀	30	3 mos.	Fingers.....	Papulo-squamous	29
21 J. T.	♀	40	6 mos.	Hands.....	Papulo-squamous	33
22 J. M.	♂	26	14 mos.	Hands and arms...	Papulo-squamous	26
23 J. S.	♂	62	2 wks.	Hands, arms and legs	Vesiculo-papular	19
24 H. L.	♂	35	15 yrs.	Face and neck.....	Erythemato-squamous	20
25 J. G.	♂	54	3 yrs.	Forehead, nose and cheeks	Squamous	23
26 J. S.	♂	43	7 yrs.	Back, axillae and arms	Papular	27
27 S. B.	♂	69	15 yrs.	Generalized.....	Erythemato-squamous	23
28 M. V.	♀	45	1 yr.	Neck.....	Squamous	35
29 H. B.	♂	24	6 mos.	Arms, forearms and hands	Squamous	20
30 R. M.	♂	24	2 mos.	Generalized, chiefly on extremities	Papulo-squamous	30
31 A. L.	♀	40	2 mos.	Backs of hands, wrists and cubital spaces	Papulo-erythematous	25
32 G. O'C.	♂	16	1 yr.	Hands.....	Vesicular	31
33 I. C.	♀	49	3 wks.	Generalized, chiefly extremities	Erythemato-papular	23
34 G. C.	♀	35	18 mos.	Hands and feet....	Squamous	37
35 M. S.	♀	17	5 mos.	Face, backs of hands and cubital spaces	Erythemato-papular	13
36 H. L.	♂	28	2 yrs.	Backs of hands and wrists	Squamous	31
37 F. H.	♀	22	3 mos.	Face and chest.....	Papulo-vesicular	26
38 D. B.	♀	30	1 yr.	Face.....	Erythemato-papular	27
39 P. V.	♂	29	1 mo.	Scrotum and penis	Erythemato-squamous	29
40 C. H.	♀	45	3 mos.	Extremities.....	Papular	22
41 T. P.	♂	65	8 mos.	Arms and legs.....	Erythemato-papular	20

* In this column male is indicated by ♂ and female by ♀.

10. Walker, I. C.: Causation of Eczema, Urticaria and Angioneurotic Edema by Proteins Other than Those Derived from Food, J. A. M. A. **70**: 897 (March 30) 1918.
11. Walker, I. C.: Studies on the Cause and the Treatment of Bronchial Asthma, J. A. M. A. **69**: 363 (Aug. 4) 1917.
12. Walker, I. C., and Adkinson, J.: A Comparison Between the Cutaneous and the Intradermal Tests in the Sensitization of Asthmatic and Hay Fever Patients, J. M. Res. **37**: 287 (Nov.) 1917.

for the establishment of such a criterion." He quoted the case of Smith in which there was a violent local reaction after applying buckwheat to the denuded surface, the reaction persisting only a few hours. He also quoted the case of Schloss, in which the patient, "with all clinical and laboratory evidences of hypersensitiveness to several proteins, reacted locally but only temporarily."

The cutaneous method of performing the sensitization tests is a simple procedure after a little experience and causes the patient no appreciable pain or inconvenience. In a few of our cases the skin was so irritable that the reactions could not be read and the results were not included in our report. In two cases delayed reactions were noted by the patients about twelve hours after the tests had been performed; but as they were not seen by us they have also been omitted from our table.

Our work has been almost entirely confined to eczema occurring in adults. Two of our patients were boys of 12 and 13, and two others were 15 and 16 years old. The ages of the remaining patients varied from 17 to 90 years. We have tested our patients solely by the cutaneous method, using the ordinary commercial proteins. Our cases included various types of subacute and chronic eczema. Special care was taken to exclude cases of trade eczema or others due to some known local irritant. We also tried to exclude cases that might have had a parasitic origin, such as the epidermophyton or ringworm fungus, as well as so-called cases of infectious eczematoid dermatitis.

Of the sixty patients tested, forty-one gave entirely negative reactions, the number of proteins used in each case varying from thirteen to thirty-seven (an average of twenty-four). The attempt was always made to test the foods that were ordinarily eaten by each individual patient. There were nineteen patients that reacted positively to one or more proteins. Each individual was tested with fifteen to forty-four proteins (an average of twenty-five). Five patients reacted to celery, five to cheese, four to bean and turnip, three to cabbage, lettuce and sweet potato; two to carrot, cauliflower, oat and potato, and one each to asparagus, beet, coffee, corn, grapefruit, onion, orange, oyster, plum, pork, rye, tomato and wheat. Following Walker's technic, we considered a + reaction to be a wheal 0.5 cm. in diameter; a + +, 1 cm.; + + +, 1.5 cm., etc. No account was taken of the accompanying erythema. On this basis we observed in one patient (Case 11, Table 2) five reactions of + + + + intensity (wheal of 2 cm.), namely, to bean, carrot, celery, lettuce and turnip. One patient gave a + + + reaction to oyster, and in eight patients + + reactions were given to cabbage, carrot, cauliflower, celery, lettuce, sweet potato and turnip. The remainder of the foods mentioned above caused a + reaction. We were struck by the fact that the great majority of reactions, and especially all of the severe ones (except that to oyster), were given by vegetables.

In some of our cases we tested with proteins (other than foods) of epidermal origin. Of these, twenty-two patients were tested with the protein of horse dandruff, to which three gave a doubtful or ± reaction. Of thirteen patients tested with the protein of dog hair, one reacted positively, while eight patients, tested for chicken feathers all gave negative reactions.

The practical results of our work were unfortunately not very satisfactory. A large number of cases were of private patients, and it was not feasible to withhold treatment for several weeks to observe the effect of a diet, modified according to the results of the tests. This has been somewhat compensated by the inclusion of Dr. Ramirez's cases which follow. We also regret having failed to obtain information from our patients regarding a personal and family history of asthma, as this condition is claimed to be associated at times with eczema. Some of the material was obtained from the dermatologic department of the Harlem Hospital, while three patients were very kindly referred by Dr. Boleslaw Lapowski from the Good Samaritan Hospital.

Our most favorable result of treatment by modified diet was in the case of a man, aged 55, who had suffered for eight years from a severe eczema of the backs of the hands and wrists (Case 2, Table 2). He had been a great eater of cabbage and sauerkraut, and gave a + + reaction to cabbage. After omitting this article of food from his diet, he showed a most striking improvement at the end of a week. As he expressed it, the eruption was "200 per cent. better." On eating cabbage one month later, at our request, the eczema again became worse. The patient also recalled that during the previous year after a hearty meal of

TABLE 2.—CASES OF ECZEMA WITH POSITIVE REACTIONS

Number	Sex*	Age	Duration	Location	Type	Number of Proteins Tested	Positive Reactions
1 A. T.	♀	27	2 mos.	Neck, arms and legs	Papular	32	Oat +, onion +
2 F. E.	♂	55	8 yrs.	Hands and wrists	Squamous	25	Cabbage ++, lettuce ++, bean +, coffee +
3 W. B.	♂	58	1 yr.	Face, neck, shoulders and elbows	Erythematosquamous	17	Cabbage +, beet +, celery +
4 J. H.	♂	31	3 wks.	Face and neck	Papulovesicular	30	Oyster +++, cabbage +, oat +, plum +
5 J. H.	♂	13	Infancy	Generalized, face, trunk and extremities	Papulosquamous	20	Orange +, tomato +
6 B. M.	♂	63	4 wks.	Face and neck	Erythematous	19	Celery ++
7 M. P.	♀	35	3 mos.	Eyelids	Erythematous	18	Cheese +
8 E. R.	♂	23	4 mos.	Face and popliteal spaces	Erythematosquamous	35	Carrot ++, cauliflower ++
9 C. W.	♂	16	Infancy	Forehead and left temple	Vesicopustular	44	Corn +
10 L. V.	♂	29	7 mos.	Hands	Squamous	19	Cheese +
11 S. C.	♂	41	10 days	Face and fingers	Erythematous	32	Bean ++++, carrot ++++, celery ++++, lettuce ++++, turnip ++++, asparagus +
12 R. H	♀	28	5 wks.	Wrist, neck and shoulders	Erythematosquamous	34	Bean +, cauliflower +, celery +, lettuce +, sweet potato +
13 G. D.	♂	23	5 mos.	Face and elbows	Vesicopapular	20	Pork +, turnip +
14 F. B.	♂	19	18 mos.	Thighs	Vesicopapular	26	Sweet potato ++, dog hair +
15 F. Z.	♀	25	2 yrs.	Face, neck and chest	Erythematopapular	24	Sweet potato ++, bean +, celery +, potato +, wheat +
16 J. M.	♂	22	4 wks.	Face, neck and legs	Erythematosquamous	19	Cheese +
17 M. D.	♀	67	6 wks.	Chest	Squamous	15	Turnip ++, cheese +, potato +
18 A. S.	♂	29	2 yrs.	Hands	Vesiculosquamous	20	Rye +
19 T. K.	♂	37	3 mos.	Feet	Erythematosquamous	32	Cheese +, grapefruit +, turnip +

* In this column male is indicated by ♂ and female by ♀.

cabbage, his hands, within half an hour, became distinctly redder, a condition which was remarked on by his daughter.

Several cases (5, 8, 11 and 13, Table 2) appeared to throw considerable doubt on the practical value of the tests. None of these persons improved when the diet was regulated by omitting the foods that had caused reactions. In fact, the eruption in one case became so severe that the patient was treated for six weeks in a hospital. All of the other three later improved under roentgen-ray treatment and did not become worse when they again (at our request) ate the foods that had given positive reactions.

Through the kindness of Dr. M. A. Ramirez, who has had a very extensive experience with the protein skin tests in asthma and hay-fever, we are able to quote his results (unpublished) in eczema of adults. Of the sixty-six cases in which the test was applied by Ramirez in persons of 15 years or older, twenty (or 30 per cent.) gave positive reactions, and forty-six negative cutaneous reactions. In all of the positive cases the reaction was to more than one protein. The foods that caused positive reactions in the order of frequency were: corn, rice, wheat, egg-white, potato, celery, pork, lettuce, cabbage, beef, rye, fish, crab, lobster and milk. None of his patients received any treatment whatever, but were simply put on a diet modified according to the results of the tests. Of the twenty patients with positive reactions, six were cured, nine improved and five unimproved. In the cases of cure and improvement, the improvement was noticed in the first week. In the cases of apparent cure, there were no recurrences within six months, and in some for one year. Tests performed six months later in the cured patients were negative.

One of Ramirez's most striking results occurred in a woman, aged 28, who had suffered for a year from an eczema of the hands. She reacted + + to banana and + to celery. She had previously eaten bananas every morning for breakfast. After she omitted this food from her diet the eczema cleared up at the end of a week, to return again in two weeks when she again ate bananas. She then stopped eating bananas, and again the eruption disappeared and had not returned at the end of one year. Ramirez expresses the opinion that only a comparatively small percentage of eczemas are anaphylactic, but that the ones associated with asthma or hay-fever are generally of this type.

CONCLUSIONS

It seems difficult to draw definite conclusions at present regarding the true value of the protein skin tests in eczema of adults. Most of the published reports with which we are familiar have dealt with eczema of infants or children.

In his experiments in eczema of adults, White used four types of foods that were not pure proteins. He performed the tests by the cutaneous method and ultimately concluded that the commercial proteins (which we used) were unreliable. Strickler in his work used a limited number of proteins and tested his patients by intracutaneous injections of solutions of proteins.

In our work (similar to that of Ramirez) we have tested each patient by the cutaneous method with a goodly number of the ordinary commercial proteins. The results of these different methods have varied greatly, and we feel that a good deal of investigation remains to be done to determine the real value of the tests. It would appear to us that they will ultimately prove to be of therapeutic assistance in a small proportion of cases of eczema of adults.

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ABSTRACT OF DISCUSSION

DR. JOHN H. STOKES, Rochester, Minn.: The results of cutaneous sensitization tests are occasionally spectacular. On the other hand, they are much of the time indeterminate or highly confusing. Technical difficulties and group reactions are responsible for a certain amount of difficulty. Too deep scarification, in particular, may yield untrustworthy results. We should recall also that there are in all probability two types of sensitization phenomena, one of them manifesting itself in cutaneous allergy and systemic anaphylaxis. It has recently been shown that the one does not necessarily predicate the other. It is well to recall, too, that allergy producing substances introduced by way of the gastro-intestinal tract need not necessarily give rise to identical reactions with those produced by parenteral injection.

DR. WALTER J. HIGHMAN, New York: My experience with the method has not been in connection with that group of diseases which is still called eczema in dermatologic literature, but if this condition can be caused by protein sensitization, it is very likely that the principles underlying its mechanism are identical with those underlying that of another group of diseases, particularly urticaria and allied conditions. The glowing testimonials endorsing this method as a diagnostic means are, perhaps, not entirely justified. In using a substance of this sort, the first thing that strikes one is that the method is not going to supply the etiology of a great number of diseases, nor is it going to supply a correct therapy, and yet there is a considerable residuum of cases in which the method may be of great value both diagnostically and therapeutically. The second point is that a man may be sensitive to sweets, fat and rice, and it is very difficult to understand how three such substances can be the underlying cause of a given disease, whether it be urticaria or eczema. A great many investigators, notably Schloss and his collaborators, have found out that there are group similarities in various foods, and it is likely that if allergy in the skin can be demonstrated to one member of a group, related members may be responsible for the causation of the disease. The chemical similarity of widely different products is a matter to be considered in connection with a great many contradictory reactions that are found. I remember one patient who reacted to numerous proteins most intensively, most of all to carrots; when carrots were removed the urticaria stopped. With all the complicated problems that enter into the study of anaphylaxis and protein sensitization we cannot yet talk sensibly about the phenomenon. The whole question is in a state of flux. We do not even know positively whether cutaneous reactions are an anaphylactic phenomenon; or how the patient becomes sensitized and why. Until these facts are more definitely established I do not think we can advocate the method as one that is valuable for the general use of physicians, although those of us who pursue it approach it with a little more enthusiasm than is expressed in my spoken words.

DR. NORMAN WALKER, Edinburgh, Scotland: It is most interesting to find out that doctrines I had been ignorantly advocating have a scientific basis. My colleagues at home chaff me about advocating the importance of the idiosyncrasies of the skin to so many things. Dr. Fox referred to the fact that he had found diet a very important cause of dermatitis. In my younger days the preaching of the importance of diet by the older school was excessively overworked. The fact is that some diets do harm and some do not, and it is interesting to know that the scientific tests demonstrate the correctness of one's clinical observations. I have never recognized cabbage as a cause of dermatitis, but I shall in future keep it in mind. Dr. Stokes mentioned a case of sensitization in his own family and I have a similar experience. My daughter had at one time occasional widely separated attacks of urticaria. We found that she had an attack every

time she ate flounders. I have not met with any similar case, but I always impress on my patients the desirability of searching for a definite cause and removing it. The idiosyncrasies of the skin are the most important thing to be considered by those who are interested in dermatology.

THE VALUE OF PROPHYLAXIS AGAINST VENEREAL DISEASES

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The low annual incidence rate of venereal disease during the war was due to several factors which have been discussed in recent communications. The various methods [1] employed, however, would have accomplished less satisfactory results had it not been for the use of prophylactic measures. During 1918-1919, as consultant urologist to the District of Paris, I was able to study the results of prophylaxis on a large scale; and the information thus obtained forms the material of this paper.

Ashburn [2] concludes that the measures employed in combating venereal disease were effective in this order:

1. Those that keep men chaste.
2. Those that diminish the opportunities for sexual contact, especially efforts at the suppression of prostitution.
3. Those that diminish the dangers of contact, especially venereal prophylaxis.
4. Those that exact punishment.

That the first two measures accomplished something in the Paris District has been shown in a previous paper.[3] Within a two months' period, an annual incidence rate of 330 per thousand, attained during five months when no special effort was made to lower it, was cut practically in half by various disciplinary and social measures. In Paris, however, we were able to do nothing toward the suppression of prostitution; and we had the feeling, without definite proof to support it, that we did not succeed in keeping many men chaste who would not have remained so without the aid of our efforts. The element of punishment played no greater rôle among Paris troops than elsewhere in France. Yet, even without much aid from Ashburn's first two important points, the annual rate for Paris troops was finally reduced to an average level of 94 per thousand, a rate approximately the same as that for the regular army in peace time.

IMPORTANCE OF PROPHYLAXIS

Our efforts to diminish contacts succeeded up to a certain point; but, because of our inability to control the source of contact—the prostitute—and the opportunity for contact—the small hotel—we were confronted with a minimum irreducible number of exposures. For permanent troops, as will be shown below, this averaged seventy-six exposures per thousand strength per week; for casuals, 218 per thousand per week. It can be shown that had not prophylaxis been at our disposal, there would have resulted sufficient cases of venereal diseases to produce an annual rate unequaled in our army. For the Paris District, at least, the conclusion therefore became inevitable that prophylaxis was the most powerful weapon available. Furthermore, it will be shown that prophylaxis, as we employed it, was efficacious in an unexpectedly high proportion of cases.

The situation in Paris was different in many respects from that obtaining elsewhere in France or in this country. The troops to be dealt with were divided into two main groups: a rapidly growing number of men, increasing from 5,000 to 22,000, permanently stationed in the district, to whom the city of Paris was always accessible; and casuals, at first consisting of men absent without leave or passing through Paris and later augmented, after the armistice, by men on leave.

In order to reduce the incidence of venereal disease by means of prophylaxis, the treatment must be made easily available for all men as soon as possible after exposure. This meant either that prophylactic outfits must be distributed for individual use, or that stations with trained attendants must be provided in all parts of the city and its suburbs. The first alternative was rejected both for sanitary and for moral reasons. It had been tried in our navy before the war and had failed; and it had been a failure in the New Zealand Expeditionary Force in France. It was therefore necessary to provide a great number of stations in and about Paris. The policy was adopted of opening a station in every building housing more than fifty Americans. By February, 1919, it was possible to equip no less than seventy-two stations in the district.

A sufficient number of stations having been provided, it was necessary to insure that the men knew about them, so that a man who was exposed at one end of the city would avail himself of the nearest station, without waiting one or more hours to get back to his own barracks, perhaps 10 miles distant. This was accomplished, for the permanent troops, by lists of stations, revised as necessary, posted on company bulletin boards. For casuals, cards were distributed at all railway stations, giving the locations of the most central stations. Military police were furnished with a complete list of stations, and each was required to know the location of the one closest to his beat, so that inquiries could be promptly directed.

The fact that continence is the best preventive of disease was not neglected, and great stress was laid on this point in repeated general orders and in lectures by medical and company officers. It was recognized, however, that a certain proportion of the men (33 per cent., Ashburn) were likely to be unrestrained by the influence of religion, home ties, or fear of disease, and that no matter what advice was offered or what penalties imposed, they would expose themselves repeatedly. An additional percentage exposed themselves occasionally; and a third group, under special circumstances, very rarely. On all these men it was essential to impress the value of prophylaxis, and a constant effort was necessary to keep the facts before them.

When a sufficient number of stations had been provided, and all available methods of persuasion and coercion employed to insure their use, the next question was the quality of the treatment employed. While the feeling grew that under the worst imaginable conditions prophylaxis was to some degree effective, it was obvious that a certain number of cases of venereal disease were occurring because of faults in administering the treat-

1. Young, H. H.: Preventive Medicine as Applied to Venereal and Skin Diseases, J. A. M. A. **73**: 1668 (Nov. 29) 1919.
2. Ashburn, P. M.: Factors Making for a Low Venereal Record in the American Expeditionary Forces, J. A. M. A. **73**: 1824 (Dec. 13) 1919.
3. Moore, J. E.: Venereal Campaign in Paris District of the American Expeditionary Forces, J. A. M. A. **74**: 1158 (April 24) 1920.

ment. It was discovered, for example, that a number of cases of chancroid were occurring after prophylaxis had been taken and that the reason for this was the lack of use of soap and water.[4] Our efforts were then directed toward improving the quality of the treatment given. Attendants were not assigned to stations until they had had at least one week's training in the large central venereal disease clinic of the district. Here they were given lectures, shown cases, and instructed in the technic of prophylaxis. All stations were inspected daily by a trained sergeant, and weekly by a medical officer. Each week a bulletin was distributed to the attendants, showing the number of new cases of venereal disease occurring during the week, with an analysis of the latter in relation to prophylaxis. All failures of prophylaxis were charged up to the responsible attendant and counted against him in the granting of special privileges. Thus a spirit of competition was fostered, and the morale of an otherwise objectionable job strongly bolstered up.

METHOD OF ADMINISTERING TREATMENT

It was found necessary to adopt an absolutely iron-clad method of administering the treatment, from which no deviation was permitted. The essential points of this are worth detailing:

Under no circumstances was a patient (even an officer) allowed to administer the treatment to himself; it must always be done by the attendant. If for any reason the attendant was unable to employ the treatment exactly as directed, he must state the reasons therefor and the deviation adopted on the prophylactic record. As a first step, the patient was instructed to urinate. Then he was provided with a pint of warm water in a basin and a gauze wipe, with which he washed thoroughly, while the attendant dropped liquid soap on the penis. An examination of the genitalia was made; if the patient had a discharge or a genital sore, the fact was noted on the record and the patient instructed to report to the clinic, but this was as far as the attendant was allowed to go in making a diagnosis. He must continue the treatment as usual. The next morning, on receipt of the records at the clinic, all such records were separated from the others, and the commanding officer of the patient's organization requested to have him report for examination at once. The next step was the injection of 1 dram of a 2 per cent. protargol solution (freshly made up twice a week and kept in a closely stoppered bottle to avoid deterioration) into the urethra by the attendant. The patient then held the meatus firmly between the thumb and forefinger for five minutes, from time to time allowing a drop to escape from the meatus so that all parts of the urethra were in contact with the solution. At the end of five minutes, the protargol was allowed to escape without pressure so that a few drops remained. One-half dram of 33⅓ per cent. calomel ointment was next rubbed thoroughly by the patient, under the observation of the attendant, into all parts of the penis for five minutes, special attention being paid to the retracted prepuce, the frenum and the glans. Finally the penis was wrapped in toilet paper to protect the clothes, and the patient instructed not to urinate for four or five hours. Throughout, the strictest precautions as regards sterility of syringes by boiling was maintained to prevent transfer of infection from one patient to another.

RECORDS OF TREATMENTS

Of the seventy-two stations in the district, twenty-five were under my immediate control. The other forty-seven stations were inspected and advised by me, and a uniform system was in use in all. Careful records were kept of each treatment, showing the name and organization and the date and hour of exposure as stated by the patient, the date and hour of treatment and the signature of the attendant, with any necessary explanatory remarks. From the twenty-five stations under my control (in which were given about 70 per cent. of the total number of treatments in the whole district), these records were sent daily to the central clinic, where they were analyzed and filed alphabetically and by dates. From the other stations weekly reports were received. New cases of venereal disease developing among permanent troops were referred to the central clinic for diagnosis. If the figures of disease to be cited represented only those cases in which the men voluntarily presented themselves for treatment, they would be of little value (this situation existed with regard to casual troops). However, two checks were afforded (1) by the prophylactic records, from the comments of which it was possible to have referred for observation all cases presenting symptoms at the time of treatment, including not only those who actually had a venereal disease but also those who, by virtue of abrasions, etc., were more than likely to develop one; and (2) by means of bimonthly physical inspections by teams of medical officers, attendance at which was rigidly insisted on, with adequate penalties provided for absenteeism. In addition, arrangements were made through the French Service de Santé and the American Red Cross that no American soldier with venereal disease would be permitted to take treatment at any of their hospitals or clinics, thus closing all avenues of

TABLE 1.—FIGURES FOR ENTIRE PERIOD

Total Prophylactic Treatments	New Cases of Venereal Disease Among Permanent Troops and Casuals	Occurrence after No Prophylactic Treatment (Patient's Statement Only)	Prophylaxis Claimed But Not Verified, Either Because Claimed Elsewhere Than Paris (U. S. or Other Parts of France) or, if Claimed in Paris, No Records Could Be Found	Failure Because of Man's Own Fault (See Reasons, Columns 8 to 12, Table 2)	Genuine Failures (Statement of Patient Checks With Record; No Faults Discovered in Methods of Treatment)
95 916 (Includes all treatments given in Dist.)	1,845	1,037 (56.2%)			
Whole Period: 35,086	942	560 (59.4%)	235 (24.9%)	71 (7.5%)	76 (8.06%)
Period 2—May-November, 1918: 28,258 (Includes only treatments given at stations under my personal command, records from which could be verified)	629	373 (60.1%)	152 (Total of Cols. 4 and 7) Table 2) (24.5%)	60 (Total of Cols. 8, 9, 10, 11 and 12, Table 2) (9.6%)	35 (5.6%)
Period 3—Nov. 8, 1918-March 5, 1919: Total of Periods 2 and 3 63,344	1,562	933 (59.7%)	387 (24.7%)	131 (8.5%)	111 (6.8%)

4. Moore, J. E.: The Diagnosis of Chancroid, and the Effect of Prophylaxis on Its Incidence in the American Expeditionary Forces, J. Urol. 4: 169 (April) 1920.

treatment except that afforded by the army. It is felt, therefore, that for permanent troops at least, practically every case of disease that developed is shown in the figures presented herewith.

As will be evident from the tables, the year for which I have figures can be divided into three periods: (1) the whole period, for which no figures are at hand except the total number of treatments given (95,916) and the total number of new cases of disease (1,845) among permanent troops and casuals, with the fact that in 56.2 per cent. of all cases of disease, the patients admitted failure to use prophylaxis; (2) a period of six months, from May to November, 1918, during which somewhat more accurate figures were kept; and (3) the last period of fifteen weeks, included in the time between Nov. 1, 1918, and March 5, 1919, from the detailed figures of which a statistical study of the efficacy of prophylaxis can be made.

EFFICACY OF PROPHYLAXIS

In attempting to determine the relative percentage failure of prophylaxis, more is necessary than the simple acceptance of the patient's word that he took the treatment, and the conclusion that he developed disease because prophylaxis failed to prevent it. If this method be adopted, we should reach the conclusion that about 40 per cent. of all cases of disease developed in spite of prophylaxis, since any set of figures, at least from the Paris District, are uniform in that almost exactly 40 per cent. of the men claimed to have taken the treatment.

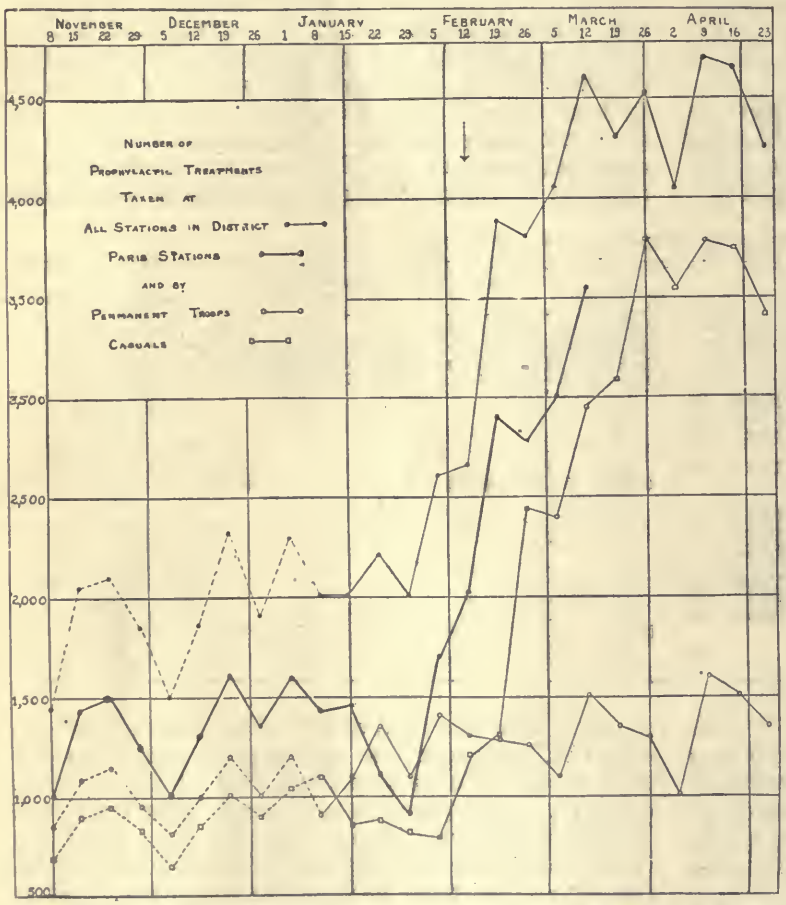
That this is by no means the case will appear in Table 2. During the fifteen week period that this table covers, 620 cases of venereal disease developed among permanent and casual troops. Of these, 373, or 60.1 per cent., admitted not having used prophylaxis. An additional 108, or 18.7 per cent., stated that they had taken the treatment elsewhere than the Paris District, often in the United States. The statements of these men could not be verified. The remaining 139 all claimed to have taken prophylaxis in the Paris District, and because of our system the truth of their statements could be proved. In forty-four of the latter cases, or 36.1 per cent., no record of prophylaxis could be found, demonstrating that these men had not taken treatment at all. If we assume that in 31.6 per cent. of the 108 cases in which it was claimed that treatment had been given elsewhere than in Paris the patient's statement could also be proved false, we find that instead of 373 cases, 60.1 per cent., occurring after no prophylaxis, we have 451 cases, or 72.7 per cent., in which the patients failed to use it. On further examination, we find that of the ninety-five patients whose statements could be verified, sixty developed disease for various reasons having no relation to the efficacy of the treatment: either they waited more than eight hours after exposure (Rigg's report shows that treatment after a seven hour interval is of little avail); or they stated that their exposure and treatment was on a date which could have had no relation to the development of disease (for example, a patient develops gonorrhea, January 3, which he claims is the result of exposure, Novermber 25—a statement so obviously impossible that it is evident that he refers back to the date of his last treatment, instead of his last exposure, in the hope of mitigating his court martial sentence); or they admitted multiple exposures, some without prophylaxis; or they already had a venereal disease at the time of treatment; or they failed to follow out the prescribed regulations for treatment. At least three of these categories also imply that the statement that prophylaxis was taken is false, which would add an additional 21.6 per cent. of the number claiming prophylaxis to the list of those who failed to use it, making a total of 504 of the 620 cases of disease (81.2 per cent.) in which prophylaxis was not used at all. We thus conclude that of 620 patients, only 116, or 18.8 per cent. took prophylactic treatment. In only thirty-five (5.6 per cent.) of these cases can it be proved, even when the widest laxity is allowed, that disease occurred because the treatment failed to prevent it.

In order to determine the percentage failure of prophylaxis, one must divide the number of failures of prophylaxis in a given number of troops by the number of prophylactic treatments taken by the same troops. Here a double error, partially unavoidable, is introduced. There is no way to determine how many infections will result from a given number of exposures without prophylaxis. That not every man will be infected is certain, owing to varying conditions of exposure and local immunity. The only available figures on this point are those deduced by Ashburn [2] from a questionnaire prepared by him. He concludes, from 13,649 replies received from four different areas of France, that for each case of disease there were approximately ninety exposures with prophylaxis and thirty without. There are obvious limitations and errors to this method of investigation, and the accuracy of the conclusions is not above suspicion. In Paris,

TABLE 2.—FIGURES OF PERIOD FROM NOV. 8, 1918, TO MARCH 5, 1919

	Total Prophylactic Treatments Given at Paris Stations	New Cases of Venereal Disease, All Troops	Occurring After No Prophylaxis	Prophylaxis Claimed Outside Paris, Hence Unverified	Prophylaxis Claimed in Paris			Failure of Prophylaxis Due to Fault of Patient: No Records Found; Patient Did Not Use Prophylaxis	Incubation Period: Interval Plus 8 Hours	Incubation Period: Plus or Minus	Multiple Exposures	Had V. D. at Time of Treatment	Failure to Follow Directions	Genuine Failures Chargeable to Treatment	Failure of Prophylaxis, per Cent.
Permanent Troops	9,890 (Estimated; see text)	395	238	55	108	Gonor.	63	15	9	6	1	6	3	23	....
						Chanc.	29	8	6	2	5	1	—	7	....
						Syph.	16	6	4	—	3	—	—	3	....
						Total	108	29	19	8	9	7	3	33	0.33
			(60.3%)	(13.9%)	(27.3%)			(26.8%)	(17.5%)	(7.4%)	(8.3%)	(6.4%)	(2.7%)	(30.5%)	
Casuals	18,268 (Estimated; see text)	225	135 (60.0%)	53 (23.5%)	31 (13.7%)	Gonor.	16	8	3	1	—	2	—	2	....
						Chanc.	9	3	3	1	—	1	1	—	....
						Syph.	6	4	1	—	1	—	—	—	....
						Total	31	15	7	2	1	3	1	2	....
Total	28,258	620	373 (60.1%)	108 (17.4%)	139 (22.4%)	Grand total	139	44 (31.9%)	26 (18.7%)	10 (6.2%)	10 (6.2%)	10 (6.2%)	4 (0.6%)	35 (25.1%)	....
Column	1	2	3	4	5		6	7	8	9	10	11	12	13	14

there were fifty-two exposures with prophylaxis for each case of disease. If we assume, as does Ashburn, that thirty exposures without prophylaxis took place for each new case, then there must have been 55,350 exposures without prophylaxis, from which arose 81.2 per cent. of all disease, or 1,498 cases. In other words, of every thirty-seven men who exposed themselves and failed to use prophylaxis, one contracted venereal disease. If the 95,126 men who took prophylaxis had failed to use it, there would have resulted on this basis an additional 2,571 new cases which were avoided because prophylaxis existed. To put it differently, there resulted from 95,126 exposures with prophylaxis only one case of disease for every 274 exposures, so that the man who failed to use the treatment was more



Prophylactic treatments from Nov. 8, 1918, to April 23, 1919. Where the dotted line is used, the figures are estimated.

than seven times as likely to contract disease as the man who did use it.

The other point of error which creeps in is in the division of the treatments given the permanent troops and casuals. Unfortunately, for the Paris stations alone no such division was made at the time; and it is from these stations that the figures are drawn. An accurate estimate can, however, be reached.

The accompanying chart shows the number of treatments given (1) at all stations in the district; (2) to permanent troops; (3) to casual troops; and (4) at the Paris stations under my direction. From November 8 to January 8, the only figures at hand are those of all troops at Paris stations. From January 8 on, the others became available. During the week ending February 19, the tremendous increase due to the influx of troops on leave becomes evident, and is a disturbing factor from thence onward. For ten weeks (January 1-March 12) during which Paris stations can be compared with the whole district, 70.2 per cent. of all treatments were given at Paris stations. From this the whole district figures can be established backward. There is a six week period, moreover (January 8-February 16), when all four figures are available and during which, as inspection of the chart will show, they were relatively stable. From this six weeks, it is possible to extend backward the factors of total treatments to permanent troops and to casuals. During the six weeks January 8-February 15, permanent troops took a weekly average of 1,239 treatments, while casuals averaged 1,041 (total average, 2,280). Thus, in this period permanent troops took 54.3 per cent. of all treatments given, while casuals took 45.7 per cent. In this time, except for the last two weeks, when a few leave men (perhaps from 100 to 300 a day) began to enter, it is fair to assume that the number of casuals was fairly well fixed. When the estimated extension backward is made, one finds that during the period of fifteen weeks covered by Period 3, while 28,258 treatments were given at Paris stations, all stations in the district gave 39,340 treatments, of which 17,663 were to permanent troops and 21,676 to casuals.

During a ten week period (January 8-March 12) there were given, in the whole district, 12,788 treatments to permanent troops, of which 7,146, or 56 per cent., were given at Paris stations. Applied to the whole period under discussion (17,663 treatments to permanent troops during Period 3), we arrive at the conclusion that 9,890, or 34.9 per cent., of the 28,258 treatments were given to permanent troops, while 18,368, or 65.1 per cent., were given to casuals.

By applying the figure 9,890 to the Paris troops in Table 2, we can determine that from this number of prophylactic treatments, only thirty-three new cases of venereal disease arose because of actual failure of the treatment—a percentage failure of 0.33. This figure is considerably lower than the 1.7 per cent. mentioned by Young. This means that the prophylactic treatment as we employed it is 99.6 per cent. efficient. The results are more striking when it is considered that many of the treatments were taken long after the optimum period of one hour after exposure had lapsed—in some cases, as long as twenty-four hours.

An estimate of the percentage failure of the total number of treatments, including those given casuals, is impossible because of the fact that disease among those troops usually did not develop until they had left Paris and returned to their own organizations.

It is of interest to note the difference in the exposure rate of permanent troops and casuals. The weekly exposure rate for permanent troops equals the average weekly number of prophylactic treatments divided by the average mean strength, which for the 16 weeks January 8-April 23, is 1,317 ÷ 17,153, or 0.076 (76

exposures per thousand men). For casuals this is more difficult to estimate, since the strength for the period January 8-February 12 is unkown. However, during this period casuals took 6,247 treatments (average, 1,041), while in the same period the average for permanents was 1,239. During the next ten weeks, in addition to the ordinary floating personnel, leave was opened, and about 1,500 men arrived each day (for three day periods), so that each week about 9,000 men passed through the city. During this period, casuals took 29,925 treatments, a weekly average of 2,992. If from this figure (2,992) we subtract the average 1,041, representing the treatments taken by the "fixed" number of casuals, which presumably did not vary, we arrive at the conclusion that approximately 9,000 leave men took a weekly average of 1,951 treatments. This being so, the weekly exposure rate for leave men is represented by the figure 0.2185 (219 per thousand men)—a rate three times as high as that for permanent troops.

TABLE 3.—FIGURES OF PERIOD FROM JAN. 8 TO APRIL 23, 1919

	Total Number of Cases Developing Among All Troops	Per Cent. of Total Disease	Estimated Number of Cases in Table 2	Patients Who Did Not Take Prophylaxis*		Patients in Whom Prophylaxis Failed Because of Own Fault		Genuine Failures of Prophylaxis	
				No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
Gonorrhea..	569	65.1	404	348	86.1	31	7.6	25	6.1
Chancroid...	214	24.5	152	125	82.2	20	13.0	7	4.8
Syphilis.....	89	10.1	63	51	80 9	9	14.2	3	4.7
Tota's.....	814	99.7	619	524	84.6	60	9 6	35	5.6

* Patient's statement plus failure to verify by record.

Further inspection of Tables 1 and 2 reveals information of value. Period 2 (May-November, 1918) is not subject to the same careful analysis as Period 3 (covered in Table 2), but it does show the fact that of the total cases of venereal disease, seventy-six, or 8.06 per cent., developed because of failure of the treatment. It was about at the end of this period that a definite effort to improve the quality of the treatment was undertaken. The corresponding percentage for Period 3—5.6 per cent.—is proof that a certain number of new cases can be prevented by more care in administering the treatment, and represents a reduction of 31.6 per cent. in the cases occurring in spite of prophylaxis.

In Table 3 an effort has been made to discover whether or not the prophylactic treatment as we employed it was more or less efficacious against the three different diseases. The 620 cases covered in Table 2 are used for this purpose. No record was kept of the number of cases of gonorrhea, chancroid and syphilis in this total, but from a longer period (during which time a part of the 620 cases occurred) in which the figures are available, an accurate estimate can be made. In sixteen weeks, there developed a total of 814 new cases, of which 65.1 per cent. were gonorrhea, 24.5 per cent. chancroid, and 10.1 per cent. syphilis. Applying these percentages to the 620 cases, we find that there were 404 cases of gonorrhea, 152 of chancroid, and fifty-one of syphilis. The percentage of each of these who failed to take prophylaxis is in close agreement. It is interesting to note that there developed because of the patient's fault in using the treatment (Table 2), only 7.6 per cent. of the cases of gonorrhea as compared with 13 per cent. chancroid and 14.2 per cent. syphilis; and that disease developed because of actual failure of the treatment in a slightly higher percentage of gonorrhea than of the other two diseases. The difference in these percentages is too slight to be regarded as of importance. If the probable statistical error is taken into account, we find no evidence that prophylaxis was either more or less effective against any of the three diseases. The conclusions drawn in a previous paper as regards the effect of prophylaxis on the incidence of chancroid are by no means vitiated by this result, since the period covered in that paper was one much earlier than the one now under discussion.

CONCLUSIONS

1. So far as the District of Paris was concerned, the use of prophylaxis was the largest single factor in the prevention of venereal disease. With Ashburn's figures on the relation of exposure to disease as a basis for argument, it is estimated that 2,571 new cases of disease were prevented.

2. The method of prophylaxis described is calculated to make the treatment more efficacious.

3. The statistics presented show that prophylaxis is 99.6 per cent. efficient in the circumstances under which we employed it.

4. Prophylaxis is probably equally efficacious against all three venereal diseases.

316 Professional Building.

DEVELOPMENT OF THE BACTERICIDAL POWER OF WHOLE BLOOD AND ANTIBODIES IN SERUM*

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AND
PAUL PIERCE, A.B.
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The announcement by Heist and the Solis-Cohens [1] of a method adapted to the determination of the bactericidal power of blood before clotting has occurred apparently opens a new avenue of approach to some phases of immunology. Using the pneumococcus, they showed a high bactericidal titer in the naturally immune pigeon, while the blood of the nonresistant white mouse was devoid of bactericidal power. They called attention to the decisive bactericidal activity as contrasted with the absence of agglutinins, complement fixing bodies and opsonins. Apparently, this method has as its basis a fundamental condition which could not be determined by the known serum tests and should offer a means of explaining natural immunity in the absence of antibodies in the serum and defibrinated blood. They advance the hypothesis that the "number of organisms destroyed by the blood is, to a certain extent, proportional to the natural immunity . . . to the organism. This likewise appears to be true of the immunity induced by inoculation."

* From the Laboratory of Bacteriology of Baylor University College of Medicine.
* Read before the Section on Pathology and Physiology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Heist, G. D.; Solis-Cohen, S., and Solis-Cohen, M.: The Bactericidal Action of Whole Blood with a New Technique for Its Determination, J. Immunology 3: 261 (July) 1918.

PLAN OF EXPERIMENTS

The work reported here was undertaken primarily to determine: (1) whether this method would prove serviceable in demonstrating the progress of the development of an artificially induced immunity; (2)

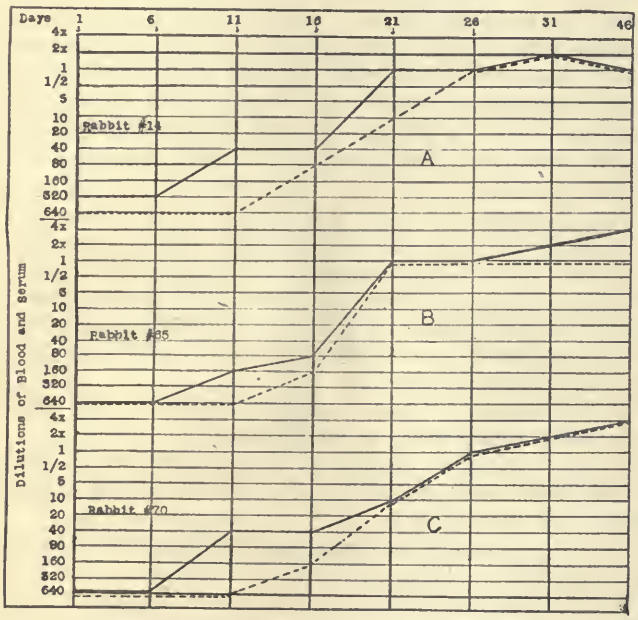


Chart 1.—Bactericidal tests of blood and serum: solid line, blood; broken line, serum: *A*, intravenous inoculation; *B*, subcutaneous inoculation; *C*, intraperitoneal inoculation.

whether any recognizable relationship may exist between the bactericidal titer of the whole blood and the antibodies in the serum, and (3) whether any information may be obtained by this method as to the mechanism of the bactericidal action.

The typhoid bacillus was selected for our work in order (1) to obviate, by the use of an organism which grew quite uniformly, the difficulty encountered by Heist and the Solis-Cohens due to the irregular growth of the pneumococcus, making comparable determinations from day to day difficult and necessitating wide steps in dilution; (2) to determine whether the same results could be obtained with an organism of entirely different type, and (3) because it was felt desirable, in this work, to use an organism which readily stimulates the production of antibodies in the serum.

A recently isolated culture was secured from the laboratory of the base hospital at Fort Sam Houston. This was shown by inoculation to be highly virulent. The culture was kept in the icebox and from it daily transplants were made into tubes containing uniform quantities of broth and in which uniform growth was readily obtained, These twenty-four hour cultures were used for all bactericidal tests.

Rabbits were used because of their availability and their ability to furnish sufficient blood for all tests. Although they are known to possess a certain immunity to typhoid bacilli, and Bull [2] states that normal rabbits agglutinate typhoid bacilli in vivo, we found only one serum agglutinating in a dilution as high as 1:4. One showed fixation of complement in a dilution of 1:16. In none were typhoid bacilli killed in a greater concentration than 1:640 of a twenty-four hour culture. However, to care for this possible objection, a virulent culture of *B. dysenteriae*, Shiga, was secured through the courtesy of H. K. Mulford Company and two rabbits were immunized with this organism. As will be seen, the results were entirely comparable to those obtained with typhoid bacilli.

The bactericidal titer of the blood was compared with simultaneous determinations of the bactericidal titer of the serum, complement fixation, agglutination, the leukocyte count, and the phagocytic index. Control tests were made before immunization was begun. An autolysate, as recommended by Perry and Kolmer,[3] was used for all typhoid injections, while the dysentery bacilli were washed to remove any possible soluble toxin and killed by heat. Injections were made each five days, and twenty million organisms per kilogram of body weight were given at each injection. To determine any possible influence on the curve of development by the route of injection, certain of the animals were inoculated subcutaneously, others intravenously, and one, intraperitoneally. The bactericidal tests on the blood and serum followed faithfully the technic of Heist and the Solis-Cohens.[1] For the macroscopic agglutinations we used a formaldehyd-treated culture prepared according to the method proposed by Dreyer. The autolysate (two billion per cubic centimeter) was used as antigen for the complement fixation tests. Leukocyte counts were made twenty-four hours after the injections with the expectation of finding the counts at their highest points. The phagocytic activity was measured by mixing in capillary tubes equal quantities of the rabbit's own leukocytes, serum and the twenty-four hour culture. On the day of injection, blood was drawn

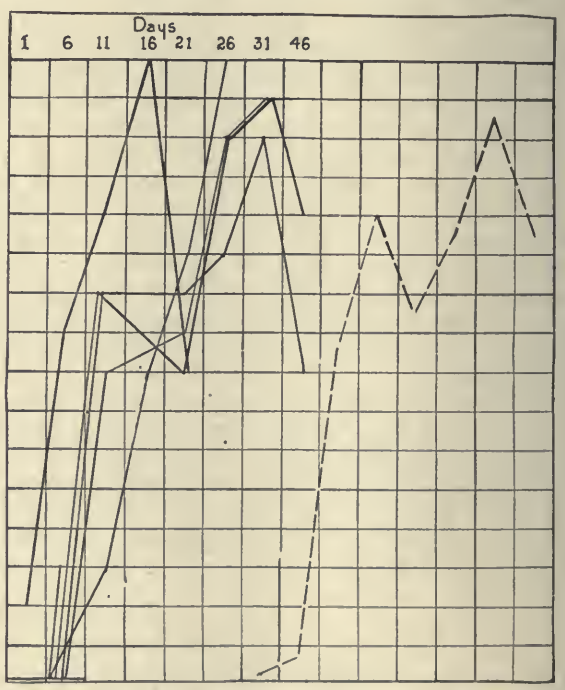


Chart 2.—Development of agglutinins: solid lines, all curves, broken line, average curve.

for all tests save the leukocyte counts, thus providing a record each five days. Six injections were given each rabbit, and tests were made five and twenty days, respectively, after the last injection.

2. Bull, C. G.: J. Exper. Med. **21**: 484, 1915; **24**: 25 (July) 1916.

3. Perry, M. W., and Kolmer, J. A.: J. Immunology **3**: 247 (July) 1918.

EXPLANATION OF CHARTS

It will be seen from Chart 1 that the development of the bactercidal power of the blood is quite comparable regardless of the route of inoculation. It will also be noted that the bactericidal titer of the serum,

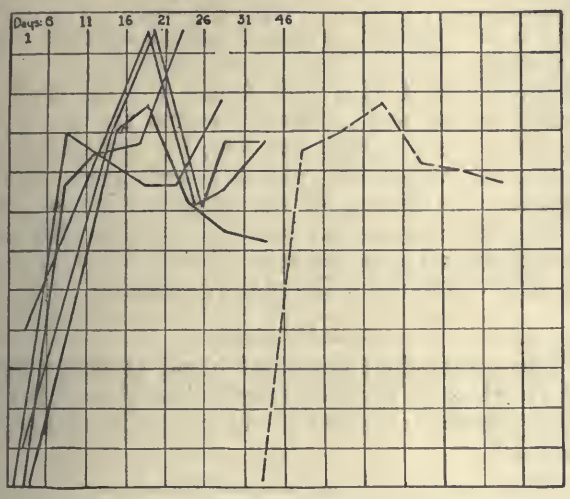


Chart 3.—Complement fixation: solid line, all curves, broken line, average curve.

while developing somewhat more slowly than that of the blood, soon reaches and maintains approximately the same level. This was true for all rabbits whether inoculated with typhoid or dysentery bacilli.

Chart 2 illustrates the development of agglutinins, and shows not only considerable differences in the curves but also a fall in the curve in some before immunization has been completed.

Chart 3 shows the complement fixation curves and demonstrates that, while there is more uniformity than in the preceding chart, there may also be seen in some of them a falling curve.

The leukocyte counts are shown in Chart 4. There is a marked lack of uniformity, and it is easily seen that the peak of the curve does not, in several instances, correspond to the period of immunization. It may also be noted that, with one exception, the last count is not materially higher than the first.

The phagocytic indexes, while showing some general uniformity, as seen in Chart 5, also show a falling curve as immunization proceeds.

Chart 6 presents, for comparison, curves illustrating the development of the various substances in the blood and serum. These curves are the averages obtained from all rabbits used. They show plainly that the leukocyte count and the phagocytic index are not reliable criteria by which to judge the bactericidal power. In a general way, the complement fixation and agglutination curves are representative. However, they develop more rapidly and, after considerable height has been reached, show wide fluctuations so that they do not illustrate with any exactness changes of moderate degree in the actual bactericidal power. The paralleling of the blood curve by the serum curve is quite striking and demonstrates that, so far as the typhoid and desentery bacilli are concerned, the determination of the bactericidal titer of serum is of as much value as the examination of the unclotted blood. This is in marked contrast to the findings of Heist and the Solis-Cohens when they used pneumococci.

In an attempt to secure information as to the mechanism of destruction of bacteria by the blood, the blood of the immunized animals was set up with an undiluted culture and incubated for periods of time ranging from five minutes to twenty-four hours. Much to our surprise, it was found that the organisms were destroyed at the end of five minutes. No bacilli or recognizable fragments could be seen in the leukocytes, and we believe that phagocytosis was not concerned in their destruction. In the earlier stages of immunization, it was common to find agglutinated masses of organisms; but after immunization had been completed, lysis occurred so rapidly that no evidence of any previous agglutination could be obtained.

Since the citrate method of transfusion has become the method of choice, and since the transfusion of convalescent and "immune" blood in the treatment of the infections is becoming more frequent, it was felt that it would be worth while to determine whether citrating the blood of these immunized animals would interfere with the bactericidal power. At the completion of immunization, tests were set up using citrated and defibrinated blood. Destruction of organisms was complete. Varying concentrations of sodium citrate making a final dilution of citrate in the blood ranging from 0.5 to 2 per cent. were used, and organisms were destroyed in all. Citrated blood which had been allowed to stand in the icebox for six hours had lost none of its bactericidal power. Simultaneous tests of the whole blood, serum and citrated blood showed (Chart 7) that, while destruction of all organisms occurred in all tests, the lytic action of the serum and citrated blood was materially slower than that of the fresh, whole blood. This chart will also serve to show that twenty-four hours was not by any means necessary for the determination of the bactericidal power. If this should be found true for other organisms, it should be of material value in greatly shortening the time required for these tests.

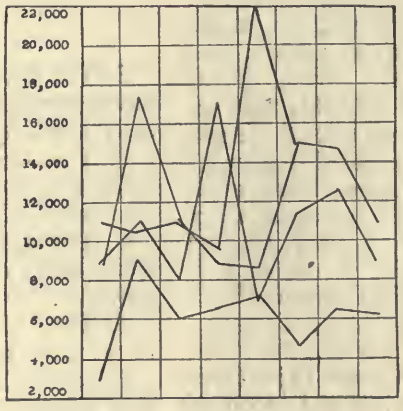


Chart 4.—Leukocyte counts.

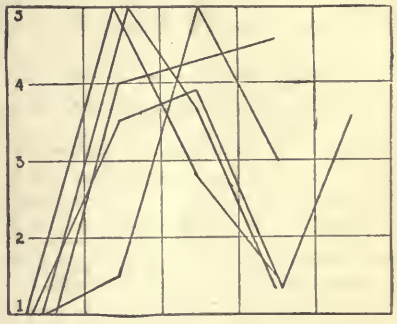


Chart 5.—Phagocytic index.

The statement of Heist and the Solis-Cohens [1] that contaminations were infrequent, and that only organisms virulent for that animal would grow in its blood, has not been confirmed by us. We have allowed blood to flow from the vein of an uncleaned ear and have found many tubes to show contaminating organisms at the end of the twenty-four hour incubation period. These organisms were found to be different from day

to day, and frequently in different tubes on the same day. The possibility of their origin in the culture was excluded. Cutting down the incubation time to one hour did not interfere with the killing of the

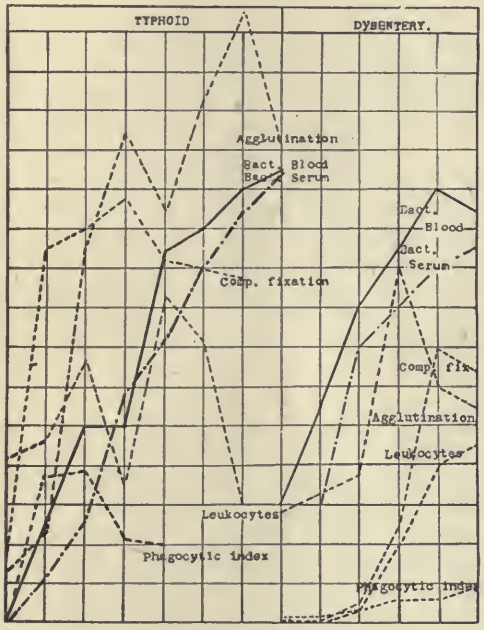


Chart 6.—Average curves superimposed.

organisms, but did materially assist in keeping down the contaminating bacteria.

Teague and McWilliams [4] reported finding normal rabbits protected against a lethal dose of living typhoid bacilli twenty-four hours after an intravenous injection of killed bacilli. They termed this the "refractory state," and concluded that it probably had some bearing on the phenomena seen in the clinical course of typhoid patients subsequent to intravenous injection of typhoid vaccine. To determine whether or not this "refractory state" had its counterpart in the bactericidal power of the blood, tests were set up twenty-four, forty-eight and seventy-two hours after the first injection. One of these rabbits had been injected subcutaneously; the other, intravenously. Chart 8 illustrates graphically this "refractory state." It will be noted that twenty-four hours after the injection, there is a very marked rise in the bactericidal power of the blood of the rabbit receiving the intravenous injection, while the blood of the other shows a very slight change. Twenty-four hours later conditions were reversed; the blood of the rabbit subcutaneously injected then killed the organisms in high concentration, while the blood of the other had dropped to almost its former level. At the end of seventy-two hours, both were killing undiluted culture. This apparently demonstrates a basis for the "refractory state," and also seems to show that after a single injection, mobilization of lytic substances is slower following subcutaneous than intravenous injection. That this is not true for subsequent injections is seen also from the chart, as it shows, twenty-four hours after the second injection, a rise to the point attained previously after forty-eight hours. The same results were obtained in those rabbits injected with Shiga bacilli.

Minutes:		5	10	15	20	30	60
Blood	14	−	−	−	−	−	−
	132	−	−	−	−	−	−
Citrated Blood	14	+	++	+	+	+	−
	132	+	+	+	+	−	−
Serum	14	+++	+++	++	+	−	−
	132	+	+	+	+	+	−

Chart 7.—Incubation time required.

Matsunami and Kolmer [5] found the bactericidal power of human and guinea-pig serum for meningococci diminished, though not lost, by destruction of complement. After our animals had been highly immunized, the serums of the animals injected with both typhoid and dysentery bacilli showed no difficulty in destroying all organisms of the undiluted culture after inactivation at 55 C. for thirty minutes.

CONCLUSIONS

1. The bactericidal power of blood as determined by the method of Heist and the Solis-Cohens [6] is the most dependable criterion of the actual immunity of the animal.

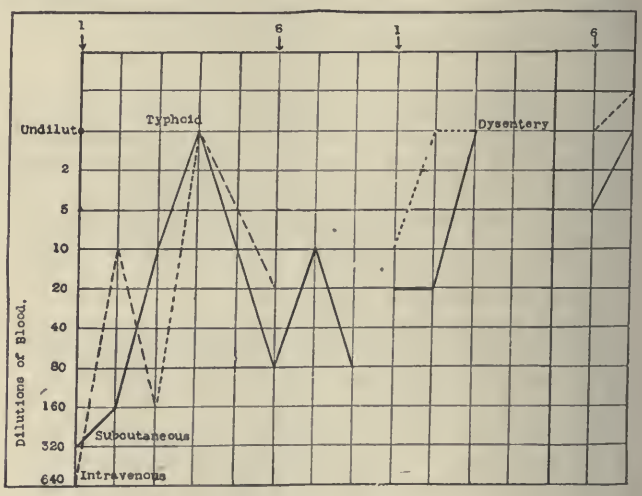


Chart 8.—"Refractory periods."

2. The development of the bactericidal power of the blood against typhoid and Shiga bacilli was practically identical with that of the serum.

3. The route of inoculation made no material difference in the rapidity or height of the development of bactericidal power.

4. The agglutinins and complement fixing bodies were only roughly comparable to the bactericidal power.

5. The leukocyte counts and phagocytic index were of no value in determining the degree of immunity.

6. In the rabbit immunized to typhoid and dysentery bacilli, lysis occurs with great rapidity, and a short incubation period is sufficient.

7. No evidence could be secured as to the mechanism of lysis. Phagocytosis, in all probability, was not a factor.

8. Citrating and defibrinating blood of rabbits immunized to typhoid and dysentery bacilli did not affect the bactericidal activity save to slow the reaction.

4. Teague, O., and McWilliams, H. I.: J. Immunology **2**: 185 (Feb.) 1917.

5. Matsunami, T., and Kolmer, J. A.: J. Immunology **3**: 177 (May) 1918.

6. Heist, G. D., and Solis-Cohen, S.: J. Immunology **4**: 147 (July) 1919.

9. In the blood of typhoid and dysentery immune animals, contaminating organisms may grow luxuriantly. A short incubation period removes most of the difficulty due to contaminants.

10. The refractory state of Teague and McWilliams is shown to depend probably on a rapid rise in bactericidal power, and the rapidity of mobilization of this power varies with the route of injection.

11. Inactivation of serum of immunized rabbits did not materially reduce the bactericidal action.

ABSTRACT OF DISCUSSION

DR. D. J. DAVIS, Chicago: Some years ago I was interested in this problem in studying meningococci. I found that meningococci when placed in normal defibrinated blood would in some cases develop, while in others they would not. I never found meningococci that would live in the blood of a patient who had recovered from meningitis. The meningococci, however, when planted in human serum, whether it was serum from a normal person or from a person who had meningitis, will not grow. Defibrinated human blood, therefore, is a far better medium for the growth of meningococci than serum. I think the results which I obtained with meningococci are in general accord with those reported by Dr. Black. I did not find that the leukocytes in the blood had any appreciable effect on the growth of meningococci.

THE SEGREGATION OF PNEUMONIA*

THOMAS S. SOUTHWORTH, M.D.
NEW YORK

The study of means for the protection and care of the child has received a tremendous impetus from the World War, and never before has the attention of so many agencies been concentrated upon its problems.

Our country has been peculiarly fortunate in this respect, owing to the foundation that has been laid in former years. Not only had the science and art of pediatrics attained an enviable position of development here; but the purity of our milk supply, the supervision of the child in the school, prenatal care, milk depots, health centers, the prevention of tuberculosis and blindness, the operation of health boards, and all forms of social service activity had advanced to a point at which the work exceeded both in amount and excellence that of other countries.

In consequence, we were not only able to spare trained and enthusiastic workers who gave themselves unselfishly to the task of ameliorating the lot of the child on the war-torn continent, but we were also prepared with the insight and trained personnel necessary to embark on a continent-wide crusade on behalf of the child in our own land.

It would be almost impossible to estimate the concrete benefits of the children's year in our national life, and many of the seeds sown will not reach their fullest fruition for years to come. This work will go on, and public conscience once awakened will, with our characteristic national energy, peer into the dark places and demand progress where heretofore there has been little or none.

Already greater attention is being paid to the prevention of infectious diseases, especially of such as bear particularly upon the child. Here adequate separation of the sick from the well is indispensable, and the principle is capable not only of stricter enforcement, as in rural communities, but also of intelligent extension everywhere into new fields. One of the latter I would bring to your attention.

Pneumonia is admittedly one of the great endemic plagues of the world, for which less has been accomplished by way of limitation of its ravages than for any other malady of like importance save pandemic influenza. This has been due, not to any lack of interest in the problem, but rather to its complexities, since the processes we call pneumonia are several pathologic entities, of diverse etiology, and with somewhat loosely correlated clinical manifestations. I need enter on no general discussion of the pneumonias of childhood, with which all physicians are familiar, and the direct and indirect mortality of which is well known.

Untiring effort has been expended on the pneumonia group in countless laboratories; but while many separate links in the chain of knowledge have been forged, little has been accomplished in welding them together to bind and limit the scourge. Even in the matter of treatment, if we except the serovaccines developed by Cole—which are as yet little applicable to the young—we are still forced to content ourselves with supporting nature until her time-honored vis medicatrix fails or effects a cure.

Possibly, however, while all energies have been directed to the most serious end of averting catastrophe in the presence of established pneumonia processes, we have not considered so clearly the possibilities of guarding against their inception. We may not have been sufficiently punctilious in taking measures to prevent the individual from becoming infected. Here also the field is a wide one, worthy of further pains-taking study.

But there is one patent avenue which has not been properly guarded. I refer to that of the exposures of susceptible individuals in dangerous propinquity to those having active cases of the disease. I do not think that this is stating the matter too strongly.

In the pneumonias we have processes caused by the presence of micro-organisms of recognized pathogenic virulence. In common with other acute affections of the respiratory tract accompanied by cough, we know that the active micro-organisms of the pneumonias may be distributed within certain limits in the surrounding air by the act of coughing. Yet it has long been our common custom to treat pneumonia patients in the general wards of our hospitals, and to place about them in the home only the ordinary precautions of the sickroom.

It is not only pathetic but humiliating to realize that it required a devastating experience in our military camps with pneumonia in measles, and with pneumonia in influenza, to force any considerable recognition of the infectiousness of pneumonia. Segregation of such cases may, heretofore, have been practiced by thoughtful individuals: but the idea had not found its way, and has not yet done so, to the general medical conscience, nor been advocated widely in our literature as a self-evident proposition. The question may very properly be raised whether, granting the theoretical possibility of such transmission of pneumonia, there is proof that it takes place.

No one questions the contagiousness of smallpox, measles, mumps or whooping cough. The periods of incubation are too definite and the susceptibility too

* President's address, read before the American Pediatric Society, Highland Park, Ill., May 30, 1920.

general. This was not so, however, at one time with tuberculosis, whose period of incubation was long and to which susceptibility was less general.

To demonstrate a new matter convincingly, one must select the most credible instances. Such a one is measles-pneumonia occurring in groups. Years ago, in a children's hospital, I repeatedly had the opportunity both as physician and as pathologist, to observe the incidence of pneumonia in wards quarantined for general outbreaks of measles, and also among groups of children who were segregated as they showed evidence of measles. Whenever pneumonia appeared among such children quarantined for measles, it extended rapidly with an appalling mortality. Such an experience is not readily forgotten.

Similar observations were made in the quarantine pavilion of another institution, and have been confirmed by the reports published by others. I have therefore for years insisted, when possible, on the prompt isolation of the first pneumonia patients among children having measles, with a resulting limitation of the number of cases, and have extended the practice of segregation to all pneumonias.

Others, reviewing their own experience, must have noticed that measles epidemics among grouped children are usually simple, with the exception of the common ear complications, until the appearance of pneumonia changes the picture. They will probably also have observed that during ward epidemics of "colds" or grip, and even in families, pneumonias occur in groups strongly suggestive of direct infection. There is, however, no reason for believing that susceptibility to infection from pneumonia is limited to those already suffering from measles and other catarrhal processes.

That pneumonia patients should not be allowed to remain in close propinquity to other persons, even those of apparently fairly normal condition, appears scarcely debatable. Yet there is little apparent appreciation of the risk involved in our present lax methods. It has so long been customary to treat pneumonia patients in general wards that its propriety seems to be accepted without question. The fresh or open air treatment of pneumonia has, indeed, happily had the secondary effect of segregating the patients; but I am not aware that it has been advocated for any other reason than the benefit to the patient himself. The employment of the cubicle system is a step, though possibly only a step, in the right direction.

During the days of my old hospital internship, scarcely more than three decades ago, patients in advanced stages of pulmonary tuberculosis were treated in the general wards, often occupying beds next to those convalescing from pleurisy and other respiratory affections. Such a disposition would be almost unbelievable today; and shortly afterward, owing to an appreciation of Koch's demonstration of the infectiousness of tuberculous sputum, such patients were segregated in special wards, and still later in special hospitals. Few infectious diseases are now allowed to remain in general wards. Typhoid fever and pneumonia constitute the most notable remnant of exceptions.

To allow one of the accepted list of quarantinable diseases to remain in contact with a ward or other group of children would be to invoke prompt censure. Not all such cases, however, were formerly considered quarantinable. The matter has been one of slow growth. Naturally, those maladies whose infectiousness was most active and most evident were the first to be so treated; then, one after another, but often at considerable intervals, additions have been made to the list. That pneumonia does not as yet appear among them proves little or nothing.

We may grant that comparatively few adults in good health can be shown to have contracted pneumonia while in close attendance on those ill with the disease; but the case is different with infants and young children, who are rendered especially susceptible by even slight disturbances of the respiratory tract. Measles, influenza and the allied grippal affections, as heretofore stated, lead the list, but do not complete it. Young children have little acquired immunity, and the inmates of children's hospitals and institutions are commonly below par. To allow a pneumonia patient to remain in a measles ward is, to my mind, little short of criminal. But if pneumonia is admitted to be transferable in any types of cases, then nothing short of the most complete protective measures for young children, sick or well, is either logical or justifiable.

In attempting to account for a succession of pneumonias in a group, it is not sufficient to say that each case may have been a former passive carrier. This would be valid only in case different types of micro-organisms were proved to be present in each. Here lies an opportunity for important research. But what is the source of the pneumococci found in our respiratory tracts? How do human beings become carriers? Do these organisms come from space or from other human respiratory tracts, and find a foothold?

If the carrier is a menace both to others and to himself, is it unreasonable to assume that a frank case of pneumonia is an equal or greater menace? Unless we assume the omnipresence of pneumonia organisms in nature, they must be derived from some antecedent contact, direct or indirect. The accepted view appears to be, however, that the active case, the convalescent carrier, and the chronic healthy carrier, are most menacing in the order given.

At present, we cannot in all probability eliminate the pneumococcus carriers—indeed, no attempts have been made thus far to do so; but it does appear humanly possible to limit the formation of carriers and the direct infection of others by isolating pneumonia patients as soon as they are detected. Until further research establishes more definitely the ways in which pneumonia is spread—and I have not here touched on the possibilities of indirect transference—we cannot be certain of all the etiologic factors; but the less we know of a disease, the greater the obligation to exercise every precaution.

It is probably a safe assumption that there are few physicians who, two years ago, having in their own person a simple influenza, would have elected to be transferred to a ward containing patients with influenzal pneumonitis; or who, when their attention had been directed to the possibilities, would put a patient having an uncomplicated case of measles into the same room with a pneumonia patient.

The real question is not whether the case for the infectiousness of the pneumonias is fully proved to the satisfaction of the most skeptical, but whether we are individually to assume the responsibility of permitting exposure to cases of pneumonia which we should not permit to many types of less serious illness,

the latter having been declared quarantinable, while pneumonia thus far has not.

The sad experiences of our recent mobilization camps, and the well known history of primitive or aboriginal communities, serve to remind us that such groups have much of the susceptibility to infections which are ordinarily more or less limited to childhood. This question of the isolation of pneumonia patients has, therefore, a wider application than that of our homes and our hospitals.

We are far from possessing valid proofs that cases of pneumonia may be left with impunity among young children or susceptible adults. By doing so, we assume a risk that conditions, of which we cannot always be immediately cognizant, may at any time greatly augment. Prompt segregation alone eliminates all avenues of danger.

It would therefore appear that the obligation is imperative to anticipate the day—to my mind, not far distant—when the movement to control the scourge of pneumonia may make the retention of such cases in a general ward as repugnant to our medical sense of propriety as the retention of an open case of pulmonary tuberculosis.

LACTIC ACID MILK*

DEWITT H. SHERMAN, M.D.
AND
HARRY R. LOHNES, M.D.
BUFFALO

The motive of our study of lactic acid milk was to investigate the reasons for the variations in this preparation of milk, and to devise a means, if possible, to prevent their occurrence. Furthermore, we desired to devise a simple method of preparation that would always insure a uniform product, and one that would remain unchanged, even though it aged.

Particularly when made through the fermentative action of the Bulgarian bacillus, lactic acid milk has been considered efficient to inhibit the action of putrefactive germs in the intestinal canal, and hence to lessen the absorption of their putrefactive toxic products. To the Bulgarian bacillus was given most of the credit for this beneficial result; but according to Herter, Bryce, Mendel, Bastedo and others, the Bulgarian bacillus has no real value in this direction. If this is true, how has lactic acid milk a therapeutic effect?

To aid digestion, hydrochloric acid is the acid of our choice; but it has been stated that other acids can be substituted for it, and that they will produce more or less good results. Consequently, if the fermentative action of the special bacillus, the Bulgarian bacillus, is theoretically correct but practically doubtful, the beneficial results from lactic acid milk must be due largely to the acid. If the results do depend on the acid, they must follow because the acid stimulates the gastro-intestinal function through raising the acidity of the stomach to a point at which it not only aids gastric digestion, but later stimulates the digestive secretions of the upper intestine, when it is poured into the duodenum.

It is questioned, however, whether acids other than hydrochloric acid are aids to digestion. Often the presence of lactic acid in an adult gastric analysis indicates a hypochlorhydria; and if hydrochloric acid is administered, it prevents the formation of lactic acid, which under the circumstances is considered an abnormal acid, an acid disturbing rather than aiding digestion. If this theory, as applied to the adult stomach, is correct, it is not the lactic acid itself which gives lactic acid milk its therapeutic effect.

The question then arises, How does it aid? According to the newer ideas of the gastro-enterologists, it is Meltzer's law of "contrary innervation" that has so much to do with the gastro-intestinal functions. It is agreed, according to this law, that whatever increases the amplifications of the waves of peristalis will, through this increased relaxation and contraction, increase the function of the gastro-intestinal canal.

Following this law, lactic acid may favor the amplification of peristalsis and thereby improve function. Practically, it does seem especially efficient in the very class of cases of infants in which we desire to use lactic acid milk, that is, in those cases that are physically undertone, those with dilated stomachs due to a relaxed musculature.

Lactic acid milk differs from ordinary sour or spoiled milk, because it is a sour, uncontaminated, sterile milk. At the Children's Hospital, for the last eight months, we have been using lactic acid milks in the difficult feeding cases, and have been very much pleased with the results. We are inclined to believe that our results are as good as, if not better than, with the much lauded protein milk.

Protein milk is advised especially for six main reasons: e. g., the high protein with its high calcium; the full fat; the low lactose; the low soluble salts; the fine curd during digestion, and the concentrated food. If our contention is true, it is the lactic acid in the protein milk which is the stimulator of digestion, both gastric and intestinal, and the sterilizer of the intestinal contents.

With our method of mixing, we get four of the points of advantage which are emphasized in protein milk. We can secure a relatively high protein, a full fat, the fine curd during digestion, and the concentrated food. The amount of lactose, which is nearly the same as in sweet cow's milk, may be considered a disadvantage. But this is not a major disadvantage, because lactic acid milks contain only 1.5 per cent. more lactose than does protein milk.

In protein milk, great stress is laid on the decreased salt content. In comparison lactic acid milk does contain nearly twice as much of the soluble salts as does protein milk and less of the insoluble salts, the calcium and magnesium.

In the few cases in which we must use a low soluble mineral element and a high insoluble mineral element, protein milk is without doubt the better food; but the accuracy of the needs of the infant for this chemical relationship of the soluble and insoluble salts has not been demonstrated without question.

In the first place, we use two kinds of lactic acid milk, one made of skimmed milk, and the other of whole milk. This makes the formulas very flexible as regards the use of fat, the tolerance for which is so commonly broken in this class of case. We are likely to start with the skimmed lactic acid milk, and we work it up to the desired ratio with its diluent, or as high as it can be well borne. As the child's digestive tolerance permits, we replace the skimmed lactic acid milk by the whole lactic acid milk.

* Read before the American Pediatric Society, June 1, 1920.

We find Marriott's statement true, that an unexpectedly high ratio of lactic acid milk, especially if it is skimmed, can be used. With this high ratio, we secure a fairly high protein, which is considered so essential.

In order to make the formula smooth, we have mixed the lactic acid milks with barley water. The resulting mixture has an attractive appearance, and we find the barley water to be a great aid in holding the mixture in even suspension. We make the barley water of a strength of from 0.5 to 0.75 per cent.

The great difficulty with any lactic acid preparation is the control of the acidity as the buttermilk ages. If the acidity is too low and if the milk is not clotted in fine curds, it clumps into a large mass when boiled, even though stirred. If the acidity is too high, the infants either refuse or reject it. But the difficulty is how to get that acidity and keep it. We have worked out two simple methods which we hope time will prove to be satisfactory and successful. In both the methods we boil the milk first so as to have an uncontaminated fermentation.

The first method is to warm the milk, which has been boiled and then cultured, and put it away, either in a fireless cooker or the child's ordinary icebox so frequently found in the household. If the cultured milk is put away in the evening at 85 F., in the morning it will be found to have undergone a proper fermentation with an acidity of from 70 to 90. To check further fermentation we put it on ice, or, preferably, rapidly bring it to a boil. I mention rapid boiling, because slow boiling lengthens the period in which the warmth is sufficient to favor fermentation and hence the increase of acidity. During this boiling, active stirring with a Dover egg beater is essential to keep the curds fine and prevent clumping. This boiling renders the fermenting Bulgarian bacillus inert, and leaves a milk sour but sterile: a milk that is very different from a sour milk spoiled by various ferments, and a milk that is probably as efficient as if the Bulgarian bacillus were active.

The second method that we have worked out is still simpler. It is well known that the fermentation of lactic acid milks continues up to a certain point of fermentation, that is, of acidity. At about 60, as measured by decinormal sodium hydroxid solution, spontaneous fine clotting occurs. At about 170 to 190, the acidity destroys or renders inactive the fermenting bacillus, and the process consequently of itself ceases.

We have taken the milks, either skimmed or whole, and in the morning added the ferment (1 ounce of ferment to 31 ounces of milk) and stood them away in a warm place till a convenient time the next morning. Knowing by numerous tests that the acidity has reached about 170 to 190 by that time, we dilute the skimmed or whole lactic acid milk with an equal amount of skimmed or whole sweet milk that has been boiled, and we have the desired acidity of from 75 to 95. Because the acidity is above 60, there occurs a spontaneous fine clotting of the added sweet milks with a resulting homogeneous, smooth, clotted mixture. This mixture of lactic acid and sweet milks is then boiled or not, as we desire. It is then further modified, as the case demands, and put away on the ice. It keeps nicely, changing very little in the following twenty-four hours, the change being much less if boiled a second time.

This is surely a simple method, which can be carried out even in the household of the ignorant. It requires merely the making of a certain amount of whole or skimmed lactic acid milk, to which can be added an equal amount, or more, of whole or skimmed boiled sweet milk. The small clots, which are formed during the process of fermentation, are flocculent in character and are very easily digested. Should the infant reject the lactic acid milk of correct acidity, the curds are small and soft, and show evidence of prompt digestion. To supply the carbohydrate needs we have added corn syrup; first, because of its contained variety of sugars, and secondly, because it is cheap. We have had cultures taken of an unopened can, and have found it germ free.

Our series of cases tested on lactic acid milks has amounted to only about twenty-five, and we may consequently be presuming to make a report on such a small number. Given a mixture of the proper acidity, we find the infants very quickly seem to like it and furthermore, those with rebellious stomachs retain it nicely. The effect on the stools is marked and quickly obtained. The foul, putrefactive odor, so common in this class of hospital case, promptly ceases, and the stools become even, smooth, and of good color.

The infants seem rapidly to become less toxic, as is shown by the disappearance of various signs and symptoms:

1. Their appetites improve, and they take the formula well and are likely to retain it.

2. They soon lose their ashy gray color. Their mucous membrane, especially of the lips, shows a decided betterment in color. This occurs before the gain in weight has been marked.

3. Their temperature becomes more stable, and an early monothermia occurs.

4. They soon become less fretful—in other words, are more happy.

5. Their sugar tolerance seems less easily broken, and gas formation is less likely to complicate the condition.

6. The loss of weight, or stationary weight, is soon likely to be overcome by a substantial weekly gain, and caloric feeding seems easier to reach.

The age of the infant seems to make very little difference with lactic acid milks. Finkelstein does not advise protein milk before 3 months of age, though this rule is not inflexible. But we have used lactic acid milks in the very young with as good results as with older infants. As an example, one of our patients was a premature infant of seven months' gestation, weighing 4 pounds at birth. At the end of its first month it weighed 5 pounds. It was started on its second day of age with a one-half skimmed lactic acid milk. This was gradually raised to a two-thirds mixture of lactic acid milk, which was made of one-half skimmed lactic acid milk and one-half whole lactic acid milk. This is approximately a 2 per cent. fat mixture.

The therapeutic effects of lactic acid milk or buttermilk are too often only superficially understood. The curds formed from it are small and easily cared for. The acidity seems to stimulate both the gastric and the intestinal function, and the sterilization of the protein fermentation of the intestinal canal is marked. This change of intestinal state markedly lessens the absorption of toxic products, and the whole process of metabolism is hence beneficially affected.

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DIAGNOSIS OF CHRONIC INTRA-OCULAR TUBERCULOSIS *

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Notwithstanding the fact that the ophthalmic literature in the last few years has had many papers on intra-ocular tuberculosis, and many interesting and well worked out cases have been reported, it is not uncommon to meet oculists of more than ordinary ability who say that they have never had a case in their practice. A statement of this character is disquieting to the mind of one, who, for a number of years, has been treating cases diagnosed as such, and it at first causes one to doubt whether the proper diagnosis was made.

I shall therefore make a review of the disease in defense of those who are diagnosing and treating it, and for the encouragement of those who have not found it in their practice.

The first step in the consideration of intra-ocular tuberculosis is to accept as a fact the statement of all practitioners who are treating general tuberculosis that most persons are infected with it during their lives. Different authors vary in their opinion as to just what percentage of the entire population has been infected. Kolmer [1] states that over 90 per cent. of those past their eighteenth year have been infected, while numerous authorities assert that the percentage reaches almost 100.

Many develop a more or less passive immunity which may leave inactive tuberculous foci in the tissues for many years, again to become active or distribute infection to other parts of the body when the individual's resistance is lowered through any cause, such as disease, overexertion or exposure.

Accepting the foregoing as a statement of facts, it follows that each individual for a certain period of his life would be liable to a relighting up of old infected areas, with the possibility of the infection being distributed to new localities. Therefore, we may consider that the person, particularly in early adult life, who has not built up sufficient resistance against active tuberculosis is subject at all times to the disease, both from old and from newly infected areas.

PATHOLOGY

The healing process which takes place in tuberculosis is most often due to the surrounding of the infected area with a fibrinous exudate, which shrinks, encapsulating the tubercle bacilli, with possibly eventual destruction of the micro-organisms. This area, however, is subject to reactivity, and there exists the possibility of distributing the infection to other parts of the body, no doubt through the blood streams or lymph channels.

MacCallum [2] states that:

> After entering the body the bacilli may be transported by at least four different methods: first, mechanically, along with air, food and secretions; second, by growth through the tissues; third, by way of the lymph channels; fourth, by way of the blood stream.

The first does not enter into the consideration of this paper, and the second only so far as it may cause extension into the lymphatic channels or blood stream.

MacCallum says further, of the third method:

> When the lymph channels are entered by the infection, the bacilli may be carried in the terminal lymphatics, and swept along with the stream until they lodge somewhere, usually in the next lymph node.

Of the fourth method, he says:

> The extension of a caseating process in the walls of a vein or artery is quite common, and a great number of bacilli may be thrown into the blood stream, no doubt in the veins; for by entering the arterial system, they would be carried to the terminals of these vessels, while in the veins they would be distributed through the general circulation.

This is evidently Sahli's [3] belief, for in several places in his work, he mentions the blood stream as a carrier, notably in his consideration of ocular tuberculosis. He refers to the cases of phlyctenular condition of the eye treated with tuberculin, and says:

> The cases mentioned have led me to think that these affections might possibly have a similar origin to the tuberculoids of dermatology. I agree with Wolff-Eisner that these tuberculoids are inflammatory reaction due to the tubercle bacilli, carried to the spot by the circulation. Probably, owing to the strong allergic reaction and hypersensitiveness of the organism, they do not produce actual tubercles, nor are the bacilli increased to a great extent, but only inflammatory reactions are seen.

Stock's [4] experiments, in which he injected a culture of tubercle bacilli in the blood of rabbits, producing lesions resembling chronic uveitis, would go a long way toward confirming the belief that the infection is distributed through the circulation. However, Verhoeff,[5] carrying on animal experiments, differs with him by holding that the infection is not necessarily due to direct metastasis from the blood, advancing the view that tuberculous scleritis and choroiditis are due to an infection from the aqueous through the filtrating angle.

The laboratory examination of tuberculous eyes is fairly well standardized, so that even though many cases are pronounced to be tuberculous by the pathologists when no tubercle bacilli are found, they are warranted in their statements. A general picture of the tissue without the presence of tubercle bacilli has been accepted by pathologists to consist of epithelioidal cells, with the center of the mass frequently occupied by a giant cell.

Tooke,[6] in a recent article, says:

> A demonstration of tubercle bacilli is naturally enough conclusive evidence, but the diagnosis is not necessarily excluded on account of the inability to demonstrate the micro-organism.

Otori,[7] in the examination of one of his cases, stated that the tubercle bacillus was found only in parts of the retina, where there was relatively little change.

It would seem that the mode of transmission was more frequently through the blood stream, no doubt through the veins, which, on account of the thinness of their walls would be more easily penetrated by erosion. In addition to this, the distribution would be much wider through these channels than through the arteries.

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* Read before the Section on Ophthalmology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Kolmer. J. A.: Infection, Immunity and Specific Therapy, Ed. 2, Philadelphia, W. B. Saunders Company.
2. MacCallum, W. G.: Text Book of Pathology, Philadelphia, W. B. Saunders Company.
3. Sahli: Tuberculin Treatment.
4. Stock: Arch. f. Ophth. (Graefe's).
5. Verhoeff: Tr. Am. Ophth. Soc. **46**.
6. Tooke, F. T.: Am. J. Ophth. **2**: 395 (June) 1919.
7. Otori: Arch. f. Augenh. **79**: 44.

Naturally, the finding of tubercle bacilli is conclusive evidence in confirming a diagnosis; but the fact that many sections are necessary, and at times the technic is faulty, might possibly account for their absence in numerous cases.

As the disease has a tendency to self-limitation, undoubtedly many of these micro-organisms are destroyed before the stage of enucleation has been reached. However, the microscopic appearance of tuberculous tissue has been recognized so long by the general pathologists that we should have no hesitancy in accepting the diagnosis of tuberculosis when this tissue is found.

I believe that the history of a case is never complete without a testing of the patient with subcutaneous injections of tuberculin. I have this criticism to make regarding the recent article of Tooke's,[6] for in the four cases reported there was only one that had been tested with tuberculin, one other having a positive cutaneous test, which was made after the enucleation.

CLINICAL DIAGNOSIS

The general character of all tuberculosis is that of slow development, with absence of pain, the disease having gained quite a headway before the person is aware that he has trouble of any kind. There is a general tendency in all tuberculous lesions to hemorrhage, owing to erosion of the vessels.

Localized tuberculosis often has a history of trauma or of disease, leading one to suspect that where there has been an injury, or the tissue is diseased from any other cause, the soil is prepared for planting the tuberculous infection.

This fact may account for the frequency of intra-ocular infection among apparently healthy persons, these cases being analogous to the lymph nodes, which, primarily affected by diseased tonsils, subsequently become tuberculous, and to the joint which becomes tuberculous following a slight injury.

Three of my cases have a bearing on this point: An apparently healthy man, with tuberculous choroiditis, gave a history of a rather severe injury to the eye a year and a half before reporting to me. Another, with choroiditis, who had recently been discharged from the army with full normal vision, had received a slight injury of the eye a few months before. The third patient, having iritis, had an apical abscess of a molar tooth on the same side as the affected eye, which had been in existence for a number of years. The eye cleared very rapidly after the tooth was extracted, but the acute condition recurred about one month later, at which time he gave a positive general, local and focal reaction with tuberculin. I think it is quite possible that the trouble was due to the tooth primarily, with secondary infection of tubercle bacilli.

All tissues of the eye, with the exception of the lens are susceptible to infection, and I agree with Török,[8] who calls attention to the close relationship of the cornea, sclera and uveal tract in this disease, as inflammation of all these three tissues is usually present. There may not be direct bacillary invasion, but I believe there are few cases of any extent in which all the tissues are not more or less changed, some of them possibly by toxins. Therefore, when we have more than one tissue of the eye involved, such as iritis with choroiditis, scleritis with keratitis, or other combinations, we are warranted in suspecting tuberculosis.

8. Török, E.: Arch. Ophth. **48**: 242 (May) 1919.

DIAGNOSIS

There are certain noticeable changes in this disease, which seem to differ from those produced by other causes, and which I should like to point out for consideration.

Sclera—Many cases of scleritis, possibly the majority of them, are considered to be a tuberculous process. The one most typical is that with nodules, or heavy infiltration. At times there is an invasion of the cornea extending in from the limbus, usually tongue shaped and frequently vascularized. The extension over the cornea is frequently quite rapid, and the appearance is usually so typical that one is warranted in starting the treatment without a further investigation as to the etiology.

Cornea.—Ellis and Gay,[9] who carried on a satisfactory series of investigations with local applications of dilute solutions of tuberculin in the eye, state that they have arrived at the conclusion that all superficial nebulae and maculae of the cornea are of tuberculous origin. This is a very broad statement, but no doubt they feel warranted in their assertion.

It is true that the cornea is greatly disposed to become cloudy from any tuberculous lesion, usually secondary to a process in some other part of the eye. The types of these lesions are numerous, varying from solitary spots on the clear cornea, with apparently no other sign of activity in the eye, to interstitial keratitis with the cornea entirely cloudy. Other changes in the nature of stripes and punctate formations are seen.

In some of my cases I have found changes in the cornea which seemed to me to be typical of tuberculosis. These were small opaque spots, from 1 to 2 mm. in extent, near the limbus, under the intact epithelium. These spots were rather dense in the center, shading off to the edge until they blended in the clear corneal substance. Their tendency was to increase in size and density until they coalesced, forming one opaque mass, until the patient was fully under the effects of the treatment.

One of my patients had these spots develop on both the nasal and temporal limbi, increasing in size until the cornea became entirely opaque at the margin, extending gradually in a vertical line on each side of the center until they met. The case was one of tuberculous iritis, with tubercles plainly distinguishable in the iris. The cornea entirely cleared under treatment, leaving normal vision. An interesting feature was the fact that the patient had been an inmate of one of the government institutions for the treatment of tuberculosis, and after being under observation for many months without a sign of activity in any part of the body, had been discharged shortly before reporting to me.

"Mutton fat deposit" on the posterior corneal surface is considered by numerous authorities as being of diagnostic value.

Iris and Ciliary Body.—According to the literature, the iris is more commonly involved than any other tissue. Lang[10] reports having found 11 per cent. of his cases of iritis due to tuberculosis. Brown and Irons[11] report 8 per cent.

The disease usually comes on slowly. It is frequently hard for the patient to give the exact time of the beginning of his trouble, and as a result the synechiae have been in existence longer and are more firmly fixed.

9. Ellis, H. A., and Gay, H. M.: Lancet **2**: 156 (Aug. 4) 1917.
10. Lang: Lancet, June 23, 1917.
11. Brown and Irons: Tr. Am. Ophth. Soc. **14**.

The character of the tubercle depends on the stage of the disease. In the early stage, the tubercles may be indistinguishable until after a reactionary dose of tuberculin. When they can be seen, they are grayish yellow spots, in my experience found in any part of the iris. I have seen them in the root of the iris at the pupillary margin and half way between. In the latter stage of the disease, after having been under treatment, they are much lighter in color and may exist as a white fibrinous or atrophic spot in the iris for many years; in fact, it is doubtful whether or not they ever disappear.

Knapp [12] mentions heterochromic iritis as one of the results of tuberculous infection. I have only partially tested one of these cases with tuberculin, but this was sufficient to warrant me in investigating other cases along the same line.

Vitreous.—Vitreous opacities may be of various types, many of them no doubt the result of intra-ocular hemorrhage. In several cases I have found white fibrinous bodies, irregular in shape, free in the vitreous and at times evidently attached to the retina or retinal vessels, having the appearance of retinitis proliferans.

In considering these vitreous opacities, we should remember that it was with tubercle bacilli that Stroud [13] made his experiments, on which he based his conclusions that there could be a simple hyalitis without involvement of any other part of the eye.

I have recently found in one of my cases, in which there was a positive reaction to tuberculin, vitreous opacities resembling asteroid hyalitis, reported by Holloway [14] and Stark [15] a few years ago.

Retina.—With this tissue, the involvement seems to be more confined to the vessels, and there is a tendency to hemorrhage. The picture depends on the stage of the disease. Early, there is a white exudate, frequently of triangular form, at the bifurcation of one of the vessels, with the base in the opposite direction from the nerve. The exudate is fluffy and fine, and deeper in the center than at the edge. As time passes this shrinks, flattens out, and becomes more localized, constricting the vessels. In the older cases, many of the vessels can be seen as a clear white line for quite a distance.

Choroid.—The tendency of the affection in this tissue is to become localized more frequently in the areas with the finer vessels, in most of my cases being well forward toward the ora serrata.

An old, slightly pigmented spot, which has apparently healed spontaneously, is due more often to tuberculosis than to any other cause.

The fresh involvement has a white exudate, sometimes very extensive, covering the involved area.

The old lesions are elevated in the center, with less pigment than those produced by other causes. The large, solitary spots are of a grayish appearance, frequently quite elevated in the center, so that they at times could be mistaken for a detached retina or a tumor. The line of demarcation is usually sharply defined between the diseased and the healthy tissue, with a small amount of pigment at the edge, which generally does not surround the entire area. Frequently, apparently healthy retinal vessels can be distinguished, crossing the diseased area.

Optic Nerve.—We find no record of a distinguishing feature between neuritis and papillitis, from tuberculosis and that from any other cause. However, I have seen papillitis of several diopters develop following diagnostic doses of tuberculin. Whether this was due to a tuberculous involvement of the optic nerve, or to the tissues surrounding it, or was purely toxic, I was unable to determine. Therefore, I feel that one should ever keep in mind this possibility in giving diagnostic doses of tuberculin when the nerve is not under direct observation. In my case, the swelling subsided under treatment, leaving good vision.

I have in no way tried to describe all the conditions found in tuberculous affections of the different tissues of the eye, but have simply mentioned the appearance of those which seem to be of special diagnostic value.

There are necessarily border line cases hard to distinguish from those produced by other causes; but the conditions I have described are so characteristic that, if found, one is always warranted in suspecting tuberculosis, and in many cases in starting the treatment without further investigation as to etiology.

TUBERCULIN DIAGNOSTIC METHODS

I believe that practically all tuberculin diagnostic methods for intra-ocular tuberculosis have been discarded with the exception of subcutaneous injection and the cutaneous test. The latter can be used many times to determine the sensitiveness of the patient to tuberculin, before the selection of the subcutaneous dose. In children it may be advisable in many cases to be satisfied with this test alone, especially as at times there will also appear a focal reaction.

We have been taught that, in the subcutaneous administration of tuberculin, we should watch for three reactions. These are thus explained by Kolmer [1]:

> The general reaction, which is due to the effect of the toxin on the body cells, indicated by a sudden rise in temperature of 1 degree or more, not more than forty-eight hours after the injection.
>
> The local reaction, which is indicated by tenderness and redness at the point of injection, owing to the concentration of the poison at this point.
>
> The focal reaction, which is characterized by increased activity and exudate in the infected areas, owing to the fact that the cells about the lesion are more sensitive to the effects of the poison than in any other area, and probably because they are the most concerned in antibody production.

Kolmer [1] states that these reactions may be obtained from any type of tuberculin, and that "after securing a reaction from one type, another reaction can be secured by the injection of another form of tuberculin."

The most popular type undoubtedly is that of old tuberculin, which is almost universally used for diagnostic purposes. There can be no standardized dose for all cases, and it is seldom that any two men agree on the amount to be given.

After a preliminary examination of the blood and urine, and the elimination of the possibility of focal infection, I have the lungs investigated and take the temperature four times a day for at least three days, following which the pupil of the affected eye is dilated, if diagnostic doses of tuberculin are to be given. I roughly divide my patients into four different classes:

1. Those to whom no diagnostic dose should be given: These are the patients who show signs of activity in the lungs sufficient to cause a daily rise of temperature. The diagnosis in these cases is made by exclusion.

2. Those with recent activity in the lungs, but now with normal temperature. These patients are gen-

12. Knapp: Medical Ophthalmology.
13. Stroud: Tr. Ophth. Soc. U. K. **32**, 1912.
14. Holloway, T. B.: Arch. Ophth. **47**: 50 (Jan.) 1918.
15. Stark, H. H.: Arch. Ophth. **46**: 38 (Jan.) 1917

erally started on a combined diagnostic and therapeutic dose of $\frac{1}{500000}$ mg., which is doubled until a reaction occurs. In this class of cases I have had reactions occur with $\frac{1}{50000}$ mg., and in one case with $\frac{3}{10000}$ mg.

3. Those patients who had activity several years before, but who have apparently been well for a number of years. In these cases we can safely begin with an initial dose of $\frac{1}{10000}$ mg., doubling each time until the reaction occurs.

4. Those patients who give no history of activity at any time during their lives. These cases may be approached with greater assurance, so we can select for the initial dose from 0.5 to 1 mg., followed each forty-eight hours by 2, 3 to 5 mg., and so on up to the point of saturation. The greatest amount I have ever given in one investigation was 17 mg.

In addition to the three reactions, the fact that the patient improves with small diagnostic doses of tuberculin is also of value. Several of my patients have been started with an initial dose of 0.01 mg., the second dose being 0.1 mg., and the third dose 1 mg., who showed marked improvement before the full reactionary dose was reached.

The diagnostic value of this method depends on whether or not in using tuberculin we are dealing with a specific protein. Kolmer [1] says:

> The tuberculin reaction is highly specific. Most instances in which positive reaction was observed in the apparent absence of tuberculosis had usually narrowed down to the fact that the lesions were so small or so situated as to escape detection; and, indeed, this has been shown so conclusively by autopsies, that in the presence of a tuberculin reaction, on the autopsy must rest the burden of proof or blame.

There are qualifications in this statement, with explanations as to why some cases with great activity in the lungs do not show a reaction; but they do not enter into the consideration of this subject.

On the other hand, it has been shown by many investigators that tuberculin in healthy persons, even in massive doses, causes no reaction.

There is far greater possibility of a false negative than there can be of a false positive reaction.

There may be a possibility of doubt in a general reaction secured by a large dose of tuberculin, as it is well known that general reactions can be secured by other foreign proteins, both in tuberculous and nontuberculous persons; but with a reaction from a moderate dose, it is safe to say that it is the result of a specific protein. The local reaction is less likely to occur from other foreign protein, while the focal reaction is undoubtedly the result of a specific protein and will not occur from any other cause.

While it has always been considered necessary in the diagnosis of intra-ocular tuberculosis to have the three combined reactions before a positive diagnosis can be made, I myself do not feel that this is true. However, I am always more satisfied when the three occur as the result of the injection, but am willing to accept as positive a well marked focal reaction alone.

I believe that the danger in this method of diagnosis has been exaggerated, provided one selects his cases carefully. The majority of cases are fortunately in patients with no sign of active tuberculosis in other parts of the body. In these cases the danger is slight. The danger to the eye is naturally great if due caution is not used; but when the pupil is dilated, the dose carefully selected and gradually increased, and the eye kept under observation constantly during the administration of the tuberculin, the danger is only slight.

Even patients with a tendency to hemorrhage, I believe, frequently benefit from a marked reaction, as the exudate subsequently shrinks and constricts the vessels involved, thus lessening the danger of a future hemorrhage. However, I am more cautious in handling these cases than others.

I believe that failures in this method are frequently caused by not bringing the patient up to the point of saturation, irrespective of the amount of tuberculin required.

TUBERCULIN TREATMENT AND RESULT

While it is not the province of this paper to take up the question of treatment of intra-ocular tuberculosis, I do consider that the successful treatment of any disease, particularly along specific lines, is the most certain diagnostic method we have. Therefore, laying aside the method of diagnosis, when we secure a favorable result, it is the only proof necessary that we have been dealing with a tuberculous lesion.

Failure to secure results in suspected tuberculous cases by the administration of tuberculin may be due to several things. The process may have advanced so far before the diagnosis was made that we are dealing with a generally diseased eye, other changes having taken place which render the task of saving it hopeless.

I believe that many times patients would have done better had there been a change made to some other type of tuberculin. My attention has been called to several cases of general tuberculosis in which the patients began to improve immediately after getting under the effects of a different form of tuberculin.

Another source of error is the fact that tuberculin treatment is not continued long enough, and the treatment repeated at intervals for a number of years.

Intra-ocular tuberculosis acts the same as localized tuberculosis in any other part of the body, and will not respond to treatment unless the general health of the patient, particularly any tuberculous lesion of the lungs, is progressing favorably.

ABSTRACT OF DISCUSSION

DR. WILLIAM C. FINNOFF, Denver: Tuberculosis has been recognized as the etiologic factor of many of the chronic inflammatory diseases of the eye, and our knowledge of the symptoms and visible changes which take place when the tubercle bacillus—or its toxin—affects the various tissues of the eye is becoming more accurate. Textbooks are lacking in adequate description of these changes, and the student is compelled to consult the current literature. Stock, Tooke and Verhoeff did much to increase our understanding of tuberculosis of the eye by recording their observations after animal experimentation. We should follow our cases closely and carefully, and when possible enucleate the eyes at the time of death for microscopic examination. After excluding the conjunctiva we can roughly classify chronic inflammatory eye diseases into three groups, namely, those due to syphilis, those due to focal infection, and those due to tuberculosis. If the Wassermann reaction is negative, and the lesion shows no improvement under strenuous antisyphilitic treatment, syphilis can be excluded. The exclusion of focal infection is more difficult and involves a thorough examination of the nasal sinuses, the tonsils and adenoids, genitourinary and gastro-intestinal tracts. If the urine is negative and the vessels show no sclerotic changes and the presence of syphilis and focal infection can be eliminated, the condition in all probability is due to tuberculosis. Inasmuch as most persons who reach the age of 18 have had tuberculosis in some form, they have become sensitized to tuberculin. Therefore, a positive von Pirquet reaction or a positive

subcutaneous reaction is of no value as a diagnostic method in the adult. It will only prove that the patient has, or has had, tuberculosis in some form. The only manifestation that is of positive diagnostic value following the subcutaneous injection of tuberculin, is the focal reaction, an intensification or aggravation of the symptoms or of the inflammation at the site of the suspected lesions. The use of tuberculin as a diagnostic measure is to be avoided in tuberculosis of the retinal vessels, because the walls of the retinal vessels are weakened. Tuberculin given in diagnostic doses under these circumstances might result in a focal reaction with extensive exudates and severe hemorrhage with the loss of some vision. One must make the diagnosis of tuberculosis of the retinal vessels from the ophthalmoscopic appearance and the changes which occur in the lesion. The ophthalmologist, if he does not give the tuberculin, should act in an advisory capacity and determine the size of the dose of tuberculin to be used. For the tuberculin to be of any value, the dose should be kept just under the reacting point or be sufficient to produce an evanescent reaction. Tuberculin, if given intelligently is of both diagnostic and therapeutic value.

The point brought out by the essayist that inflammation in the eye resulting from focal infection might lower the local tissue resistance to such a degree that a suitable area is produced for secondary infection by an attenuated tubercle bacillus, is worthy of further investigation.

Dr. Walter R. Parker, Detroit: A mistake in diagnosis which I made recently taught me a good lesson. A woman, aged 26, had uveitis in the right eye which had existed two years; vision was reduced to light perception. A uveitis developed in the left eye two months before she came under my observation, and vision was reduced to $^{20}/_{40}$, this being a typical case of low grade uveitis. She was given, as I supposed, a careful examination in every way. The various examinations revealed that she had septic tonsillitis and that two teeth were abscessed. The tonsils were enucleated and the teeth were extracted. The woman returned in four months much worse than when she left the hospital. Not until this time had a test for tuberculosis been made. The subcutanous tuberculosis test was positive. She was put on tuberculin beginning with $^{1}/_{10,000}$ mg. The treatment was begun six weeks ago and she is still under treatment. I believe this is a true case of tuberculous uveitis. Whether or not her infected tonsils or the infection from the teeth made her more susceptible to tuberculous manifestation, I am unable to say. One of the most frequent conditions overlooked in routine work is this inflammatory condition of a tuberculous nature. The most characteristic clinical symptom of local tuberculosis is that there is not as much pain as one would expect for the degree of inflammation present. Another clinical observation that has helped me in these cases is that in spite of treatment these patients have not done as well as they should have done had the diagnosis been correct. I believe that every case of keratitis, iritis, scleritis or uveitis which does not respond to the ordinary medical treatment should suggest the possibility of tuberculosis, and every case of recurrent retinal hemorrhage should be regarded as a possible case of tuberculosis.

Dr. Edward Jackson, Denver: For a number of years after going to Colorado I believed ocular tuberculosis was very rare. We must accept the statement that a very large proportion of us have been infected with tuberculosis at some time, and in a way that is capable of developing active disease under favorable circumstances. The obstacle to diagnosis is principally that we do not find what we recognize from our textbooks and our student-day observations as the usual signs of tuberculosis. These symptoms are not characteristic symptoms of tuberculosis. A most typical case of eye tuberculosis was that of a perfectly healthy, vigorous young man, who had been examined for life insurance and passed without a question as to his fitness. He suddenly developed a pulmonary hemorrhage. Tuberculosis specialists failed to find a focus of disease in the lung, but the hemorrhage continued for several days. The man developed pneumonia and died. The postmortem examination showed a cavity in the lung the size of my little finger. A section showed the bacilli and all the pathologic changes of tuberculosis. If such a case can occur and go unrecognized ninety-nine times out of one hundred, we are justified in assuming that it is likely to be tuberculosis, even though there have been no previous symptoms traceable to that cause. If there is any lesion in the eye that might be caused by tuberculosis, tuberculosis should be borne in mind, and if, as Dr. Parker says, the case does not yield promptly to treatment along other lines, it should be examined carefully by specific tests.

Dr. Harry S. Gradle, Chicago: A young woman with a chronic unilateral uveitis, had a 3 plus Wassermann reaction, for which she had been treated for several months. She had had several infected teeth removed. I gave her an injection of 0.1 mg. of tuberculin, but she did not respond. She did respond, however, to 0.3 mg. with a rather unusual reaction. In addition to the local and general reaction, the injection, which was made in the right arm, produced a very acute exacerbation at the site of the injection in the left arm, a rather unusual reaction which, as far as I know, has never been described. Too many men are apt to give one injection and if that is negative, they consider the case is not tuberculosis. It is essential to pursue your diagnostic injection clear through a series, preferably in the hands of an internist who can control the general reaction rather than an ophthalmologist who is more concerned with the focal reaction.

Dr. Hiram Woods, Baltimore: Dr. Gradle spoke of discouragement because you get too little reaction or none at all on first trial. I want to speak of the other side, where you get scared out of your wits because you get too much reaction. I am perfectly willing to accept Dr. Jackson's final remark, that you want to go on with your therapeutic test under the conditions he described, but I do want to warn against diagnostic enthusiasm. Some years ago I saw a woman with a moderately acute choroiditis in one eye, and an atrophic spot in the other. She was given about 0.4 mg. tuberculin for diagnostic purposes. She had $^{20}/_{30}$ vision in the one eye in spite of the choroiditis; she got a focal reaction. Her vision went down to $^{1}/_{200}$ and never got any better. I have seen that happen also in a case of peripheral choroiditis, but fortunately it did no harm. Theobald Smith laid down certain definite rules which are of great help in keeping us out of trouble. One is that tuberculous cases have "Hands off!" written all over them when there is fever or when there are marked evidences of acute, active inflammatory processes going on. Another is that nobody can tell just what is going to be a reactive dose for any individual. Another is that in the mixed infections, syphilis and tuberculosis, for instance, you are very apt to stir up the latent power of some outside infection other than tuberculosis. We should not give tuberculin on our own responsibility. When the clinical facts are, negative Wassermann, no improvement under medical treatment, no pain, a low grade inflammatory trouble, we should suspect tuberculosis. Secure the aid of an internist who understands the disease; work with him; use tuberculin from a small dose up, and when you get a reaction stop. Do not push a case over the line in the formation of antibodies. Nature is at work probably and can do better work than you can do.

Dr. George S. Derby, Boston: I have seen one case where both eyes were lost and I believe absolutely as the result of too energetic use of tuberculin. In a second case one eye was lost and had to be removed and I am not sure but the other eye is by this time gone also. Listening to a discussion of this sort is apt to give men who have not had much opportunity to come into contact with tuberculous disease of the eye the idea that the whole treatment of tuberculosis of the eye lies in the use of tuberculin. The whole treatment of tuberculosis of the eye is the treatment of general tuberculosis. Tuberculosis of the eye is a chronic condition that lasts usually over a period of months; the average case perhaps has a duration of eight months, and it is of the greatest importance that these patients should be watched most carefully as to general hygiene, and then if you want to use tuberculin do it with the cooperation of someone who has had experience in its use, and do it with a great deal of caution.

DR. HARRY H. STARK, El Paso, Texas: Referring to Dr. Finnoff's statement regarding the retinal vessels, I believe that at certain stages a reaction is really a good thing, as the exudate which is thrown out subsequently shrinks, thus preventing a further hemorrhage. The pathology, as I see it, at the first stage of the disease, is a para-arteritis. When this condition exists, I believe there is very little danger of hemorrhage. Atypical cases are frequently due to tuberculosis, that is, cases which we have treated for years as syphilitic because we found no other etiology to account for them.

Only a few years have elapsed since we ceased to believe that tuberculosis existed only in the lungs. Even at the present time we are looking at the question through the wrong end of the telescope. We are sending patients to the chest men, who report back "lungs negative," and to the roentgenologist, who says "lungs negative." This means absolutely nothing, except that we still are using a crude method of determining the presence of tuberculous foci in the body. I was pleased to hear the reports from Dr. Parker and Dr. Gradle. It shows perfectly the point I made —that is, the possibility of previous focal infection preparing the soil for a secondary invasion of tubercle bacilli. This is the only explanation for the occurrence of so many cases of intra-ocular tuberculosis in the eye of an apparently healthy individual. I agree with Dr. Woods that the reaction can frequently be too strong. I have tried to eliminate the danger of giving too large a dose by dividing the cases into four groups and regulating the initial dose accordingly. While it is still a rough method, it is an improvement in the technic. It may be better to determine the sensitiveness of the patient by the von Pirquet test, or to use a very small initial dose of tuberculin, say 0.0001 mg. I believe that all injections, both diagnostic and therapeutic, should be made with the eye constantly under the observation of the oculist.

ETHYLHYDROCUPREIN IN DISEASES OF THE EYE*

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In 1911, Morgenroth and Levy[1] reported their experiments with quinin derivatives. They seem to have reported the first use of ethylhydrocuprein hydrochlorid for pneumococcus infections, and were able to kill the pneumococcus not only in the test tube but also in the living mouse. The drug was then employed in the treatment of pneumonia in man; but because of the many cases of amaurosis, it was not universally adopted. This complication has been reported by several observers. At the present time, it is seldom used in pneumonia. With few exceptions, all American reports have been concerning the effect of this drug on serpiginous ulcers of the cornea. This report is based on its continued use since early in 1914 in more than 1,000 cases.

Ethylhydrocuprein hydrochlorid is a white crystalline powder, a methyl derivative of quinin, fluorescent, neutral, bitter, and soluble in the proportion of 1 to 10 of water. In the test tube it has a killing effect on the pneumococcus, but penetrates the medium only 0.2 mm. It is more irritant than quinin, more anesthetic and more toxic. Locally it has been used in water, in oil and in a solution of red cells, in strength varying from 1 to 5 per cent. The frequency of instillation has varied from a single application of a 5 per cent. solution directly to the infected part to a 1 per cent. solution every hour in the conjunctival sac. Some have reported a local necrosis, particularly of the cornea, after the direct application of the 5 per cent. solution; others have failed to get it; I have never observed it. All agree that after the use of ethylhydrocuprein hydrochlorid for a considerable period, tolerance is established, and that if the drug be continued, it has a stimulating effect on the microorganism. A long series of experiments shows the ordinary reaction time of the first irritation to last from two to six minutes. This reaction bears no relation to age, sex or condition of the eye; for example, a high strung child of 5 years complained for only two minutes, whereas a plethoric man was bothered for six minutes. All complain of photophobia, which may last from two to thirty seconds. The conjunctival congestion, which may be slight and disappear in a few minutes, may be intense, lasting for hours. The corneal anesthesia has usually been present as soon as the original irritant symptoms have subsided, and may last for several days. After one drop, this anesthesia is usually sufficient to enable one to use the tonometer without discomfort to the patient. We have noted no change in the pupil after a single instillation; but not uncommonly, prolonged use causes a slight dilation without a tendency to increased tension. When the drug is in contact with the iris or the lens, it produces neither increase in pain nor change in the clearness of lens. Although the watery solution is the one most commonly used, some claim to have better effect in oil, particularly Morgenroth and Ginsberg,[2] who noted anesthesia of the cornea a moment after using a 4 per cent. solution in olive oil.

In trying to determine some reasons why failures have been reported after using ethylhydrocuprein hydrochlorid, Dr. Anton S. Schneider carried out the following experiments:

1. Pneumococcus Types I, II, II, IV.
2. Ethylhydrocuprein, $C_{20}H_{22}N_2O.H$.

Dilutions: 1:100, 1:1,000, 1:10,000, 1:100,000, 1:400,000, 1:800,000, 1:1,600,000.

EXPERIMENT 1.—Dextrose broth cultures of pneumococcus type.

(*a*) (I) + 2 c.c. 1:100; (II) + 2 c.c. 1:100; (III) + 2 c.c. 1:100; (IV) + 2 c.c. 1:100 allowed to remain five minutes, and then some plated and inoculated for twenty-four hours.

(*b*) Same except solution was allowed to remain thirty minutes.

Result: No growth after twenty-four hours' incubation either in five minutes' exposure to the drug or thirty minutes' exposure.

EXPERIMENT 2.—(*a*) (1) + 2 c.c. 1:400,000; (2) + 2 c.c. 1:400,000; (3) + 2 c.c. 1:400,000; (4) + 2 c.c. 1:400,000 five minutes' exposure to drug.

(*b*) Same with thirty minutes' exposure.

Result: Diminished or inhibited growth after five minutes' exposure. After thirty minutes' exposure, more marked growth on plates.

EXPERIMENT 3.—Dextrose broth tubes + 2 c.c. of 1:100 and 1:400,000 incubated twenty-four hours.

Result: In 1:100 dilution, culture remained the same as when the drug was added. In 1:400,000, a marked increase in growth so that the tube became quite cloudy.

Inference: There must be a direct proportion between the amount of drug used and the number of organisms.

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* Read before the Section on Ophthalmology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Morgenroth and Levy: Chemotherapy of Pneumococcus Infection, Berl. klin. Wchnschr. **48**: 1560, 1929, 1979, 1983, 1911.

2. Morgenroth and Ginsberg: Anesthesia with Quinin and Its Derivatives, Berl. klin. Wchnschr. **49**: 2183, 1912; ibid. **50**: 8, 1913; Mechanism of Corneal Anesthesia, ibid. **50**: 315, 1913; ibid. **50**: 343, 1913; Centralbl. f. prakt. Aerzte **37**: 315, 1913.

EXPERIMENT 4.—Action of ethylhydrocuprein on blood.

A. Whole blood suspension in physiologic sodium chlorid solution:

(*a*) 1 c.c. suspension + 10 to 12 drops of 1 : 100 dilution.
(*b*) 1 c.c. suspension + 10 to 12 drops of 1 : 1,000 dilution.
(*c*) 1 c.c. suspension + 10 to 12 drops of 1 : 10,000 dilution.
(*d*) 1 c.c. suspension + 10 to 12 drops of 1 : 100,000 dilution.
(*e*) 1 c.c. suspension + 10 to 12 drops of 1 : 400,000 dilution.
(*f*) 1 c.c. suspension + 10 to 12 drops of 1 : 800,000 dilution.
(*g*) 1 c.c. suspension + 10 to 12 drops of 1 : 1,600,000 dilution.

(*a*) This shows a ball formation of all elements of the blood, leaving a clear fluid surrounding it. After approximately five minutes' definite hemolysis is seen which later becomes more marked and reduces the size of the "ball." After twenty-four hours, complete hemolysis takes place.

(*b*) This shows no tendency to ball formation or hemolysis. There is perfect suspension of cells.

(*c*) This shows only slightest tendency to ball formation, with an apparently normal looking suspension above.

(*d*) This shows definite ball formation.

(*e*) (*f*) and (*g*) These are the same (*d*).

B. The same results obtained with 5 per cent. cell suspension as used in the Wassermann reaction.

C. The same result obtained with defibrinated blood.

Conclusion: There must be some chemotaxis in the strong dilutions and in the weak ones so that dilutions for animal inoculations must be those causing no reaction.

EXPERIMENT 5.—Animal inoculation.

Ten c.c. of a 1 : 1,000 dilution were injected intravenously. No bad effects were noticed either in the animal or at the site of inoculation.

Twenty-four hours later a second injection of the same dose and strength was given. There was a marked chill, rapid respirations and trembling, lasting for one-half hour.

Twenty-four hours later a third injection was given with no outward effects.

Blood at this time was taken to make microscopic agglutinations. The results of this experiment were negative and seem to indicate the absence of any antibody production.

EXPERIMENT 6.—As some writers have asserted that ethylhydrocuprein, when combined with certain of the common drugs, particularly atropin, loses its effect, the experiment outlined in the accompanying tabulation was performed.

EFFECT OF ETHYLHYDROCUPREIN COMBINED WITH OTHER DRUGS

Control Broth culture pneumococci with ethylhydrocuprein	Growth
1:800,000	+
1:600,000	+ slight
1:800,000 and boric acid	+
1:600,000 and boric acid	+
1:800,000 and atropin	+
1:600,000 and atropin	+
1:800,000 and argyrol	+
1:600,000 and argyrol	+
1:800,000 and cocain	+
1:600,000 and cocain	+

It is evident, therefore, that boric acid, atropin, argyrol and cocain may be used with ethylhydrocuprein, as they do not lessen its action.

This is further shown by the report of Dr. Arthur Knudson, associate professor of biologic chemistry of the Albany Medical College:

A 1 per cent. solution of ethylhydrocuprein hydrochlorid was mixed in equal proportion with a 1 per cent. solution of atropin sulphate, boric acid and zinc sulphate, respectively, and no apparent chemical or physical change was noticed in the solutions. The ethylhydrocuprein hydrochlorid solution and atropin sulphate solution were mixed in proportion of 2 : 1 and 1 : 2, respectively, with no changes. Likewise, similar proportions of boric acid and zinc sulphate were tested with no apparent changes.

These results would indicate that ethylhydrocuprein hydrochlorid is compatible in all proportions with atropin sulphate, boric acid and zinc sulphate.

It would seem, therefore, that there is no chemical reason for believing that atropin lessens the efficiency of the drug, which has numerous clinical indications for its use.

A low grade blepharitis, with slight reddening of the lid margin and a few adherent scales which has seemingly resisted all other treatment, is often entirely cured within a week by using the 1 per cent. aqueous solution three times a day. It should be remembered that in referring to cases of blepharitis or conjunctivitis, it is presumed that the other causes of the disease, such as refractive error and nasal obstruction, have been treated.

Purulent conjunctivitis is so often improperly diagnosed as gonorrheal conjunctivitis without smear or culture that any treatment claiming results must be based on bacteriologic examination. It is necessary, therefore, for the proper observation and recording of all conjunctival discharge, that at least a smear be made before treatment is started.

The acute pneumococcus conjunctivitis characterized by slight injection of lid and globe conjunctiva with a few subconjunctival hemorrhages, slight watery secretion with some mucus, and considerable ocular discomfort responds very rapidly to the drug when used in 1 per cent. solution every two hours. The purulent type, both acute and chronic, responds readily to treatment. Gradle [3] has reported favorably on its use in conjunctivitis.

Puscariu [4] has had excellent results in gonnorheal conjunctivitis. I have treated only three cases. Two of these patients made a quick recovery, but the third was not cured until silver nitrate was applied to the conjunctiva. Wyler's [5] experience was unfortunate in that the patient had serious corneal involvement.

Vernal conjunctivitis, of the type characterized by extreme photophobia and itching, will at times show more improvement by the use of ethylhydrocuprein every six hours than by any other drug, even including epinephrin chlorid. It should be understood that when tolerance is established, another form of treatment must be substituted.

Several have reported good results in the treatment of trachoma. These have been in those cases in which the granulations were large and succulent, with congested conjunctiva, much discharge, vascularization of the cornea, and many minute ulcers. In a number of these, the conjunctival congestion has been greatly lessened within twenty-four hours, the ulcers have started to heal, and several patients have been restored to full occupational function within ten days, after having been out of work for months. Just as we know that arsphenamin hastens the cure of some cases of syphilis, so this drug has favorably influenced many seemingly stationary cases of trachoma and frequently has made more radical treatment unnecessary; and in none has healing been delayed. A number have been so treated successfully after operation had failed.

3. Gradle: Newer Therapy of Pneumococcus Infections of Eye, München. med. Wchnschr. **41**: 2076, 1914; Clinical Experiences with Ethylhydrocuprein, Klin. Monatsbl. f. Augenh. **55**: 229, 1915; Pneumococcus Conjunctivitis, ibid. **55**: 362, 1915.

4. Puscariu: Treatment of Gonorrheal Conjunctivitis with Ethylhydrocuprein, Clin. ophth. **20**: 357, 1914; Klin. Monatsbl. f. Augenh. **53**: 342, 1914; Berl. klin. Wchnschr. **52**: 85, 1915; Ann. Ophth. **25**: 784, 1916.

5. Wyler: Ethylhydrocuprein in External Diseases of the Eye; Pneumococcus Infection, Lancet **114**: 579, 1915; Ophthalmology **12-13**: 741, 1915-1916; Ann. Ophth. **25**: 103, 1916.

Dacryocystitis is often poorly treated. This infection is opening an ever enlarging field for this treatment, and it is becoming less common to resort to operation without the proper exhibition of this drug. I have seen acute suppurative dacryocystitis, with marked distention of the sac, surrounding redness of skin and profuse purulent discharge, permanently cured within four days by the simple use in the culdesac of a 1 per cent. solution of ethylhydrocuprein every two hours. Such an experience should convince one that some of the operations on the lacrimal apparatus are not only unnecessary but absolutely unjustifiable. I have further seen chronic dacryocystitis with almost constant sac swelling and abundant purulent discharge cured within five days.

The proper relief of the primary causes of the condition, such as ethmoiditis, frontal sinusitis or simple hypertrophy of the turbinates, must always be part of the treatment. I do not wish to be understood as saying that chronic dacryocystitis based on definite duct stenosis, granulation tissue within the sac or extensive nasal bone destruction will be cured by the use of this drug; but all will be gratified by the frequent rapid reduction of the purulence of the discharge. If one finds that there is a decrease in the discharge for two, three, four or even five days, followed by a return of pus or an increased mucopurulent secretion, one will know that the drug will not give the desired effect and must be discontinued, although one finds that the pneumococci have been destroyed by it.

In treating corneal ulcers I fear that some fail to recognize the different types, and that not a few treat all in the same way unless destruction is rapid. They then become alarmed and immediately use some of the tissue destroyers, such as phenol (carbolic acid), iodin, the galvanocautery or silver nitrate. A smear or culture should be taken from all ulcers. We know that the pneumococcus ulcer is destructive; but with this drug it loses its terror, and usually the corneal ulceration does not progress. Contrast this with the former understanding of sepiginous ulcers, in which, despite the most vigorous treatment, the cornea often sloughed, and large hypopyon developed, with perforation of the cornea and even deep infection demanding enucleation. All will agree that anything which lessens the severity of the disease is well worth considering. A treatment that not only modifies the disease but actually cures it promptly and effectively with marked lessening of time and with conservation of vision must be accepted by all; and those who carefully follow this will agree that it is worthy of continued use.

The corneal ulcers following the entrance of a foreign body, showing the ring of grayish yellow infiltration, can be easily cured by ethylhydrocuprein within a few days. The severe ulcer with deep undermining yellowish margin with exudate on the posterior surface of the cornea, beginning hypopyon, intense injection of iris and marked globe congestion, if treated every two hours with a 1 per cent. solution will, within twenty-four hours, show lessened infiltration; and within seventy-two hours, in the usual case, it will show absence of hypopyon, beginning healing of the ulcer, marked disappearance of all symptoms, and eventually a scar not greater than the actual loss at the time treatment was started.

In phlyctenular diseases, the effect has been a lessening in the lid spasm without curing the condition. I have used the drug in interstitial keratitis of the tuberculous and syphilitic type, without improvement.

Infection of the corneal wound following cataract extraction responds rapidly to this treatment. Ellett and Kraupa [6] have reported excellent results. Recently, in consultation, I saw a severe infection of the cornea, following a cataract extraction, with infiltrated iris, clouded aqueous and intense bulbar congestion. With the use of ethylhydrocuprein every two hours, the cornea was completely cleared and the infiltration absorbed. The patient, however, died as a result of uremia.

To speak of an indefinite group of symptoms as responding to a certain treatment is unscientific; but we have all seen patients who, after the most careful refraction and the removal of every outside irritation, still complain of photophobia, itching, with burning and smarting of the lids. After other things have failed, the use of one drop of the 1 per cent. solution of this drug, three times a day, has resulted in surprising cures.

SUMMARY

Ethylhydrocuprein hydrochlorid, when given in sufficient dose, is a pneumococcus destroyer; in smaller doses, an inhibitor, and in still smaller, a real excitant, tending to increase the pneumococci.

Although it is an ocular anesthetic, it causes no permanent clouding of the cornea.

It can be combined with atropin without loss of bactericidal action.

The best results are secured only by the frequent exhibition of a fresh solution of the drug, at least every two hours in the beginning of the severe infections.

Too long continuance produces a tolerance and frequently makes the condition for which treatment was started worse.

It has been used with success in blepharitis, acute and chronic pneumococcus conjunctivitis, gonorrheal conjunctivitis, vernal conjunctivitis, dacryocystitis, corneal ulcers and phlyctenular disease.

CONCLUSION

A more extensive use of the drug is urged, in view of the fact that if the few rules herein reiterated are followed, all will find that ethylhydrocuprein hydrochlorid is a most valuable aid in curing ocular infections that formerly were considered most serious.

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ABSTRACT OF DISCUSSION

Dr. Harry S. Gradle, Chicago: Morgenroth was the first to propose the use of ethylhydrocuprein. Its use in ophthalmology first came from Goldschmidt in 1913, and since then it has become widely spread. Dr. Bedell spoke of the tolerance for the drug acquired by the organism. I question that. To my mind it is a chemical change in the drug itself. After the use of the drug for four or five days in some resistant conditions, the disease came to a standstill, showing there was no further influence obtained from the solution used; but on substituting a fresh solution a rapid change in the condition was observed. That led me to think that it was not tolerance of the drug, but a chemical change in the drug itself from standing. This is particularly true when the drug is used in ointment form. Ointment should not be used more than three days before a new lot is prepared. The use of the drug in gonorrheal inflammation has been very unsatisfactory in my experience. In one chronic case of gonorrheal conjunctivitis I used three instillations of ethylhydrocuprein which produced an enormous edema of the conjunctivae and lids so that the eyes could not be opened and ice applications were

6. Kraupa: Prophylaxis of Corneal Ulcers of Miners, Wchnschr. f. Therap. und Hyg. d. Auges **18**: 254, 1915.

necessary. I thought little of it at the time, but on repeating the use of the drug some weeks later I obtained the same results. In xerosis of the conjunctiva or the cornea the drug is of great value. It seems to have the same effect on the xerosis bacillus as on the pneumococcus.

DR. EDWARD C. ELLETT, Memphis, Tenn.: It has been my unfortunate experience to see corneal ulceration in gonorrheal ophthalmia usually progress to destruction of the eye, but in one case the ulceration was arrested under this treatment and the eye saved. In corneal ulceration due to other than pneumococcus or gonorrheal infection, it has seemed to be of value. It does not appear to be an anesthetic, on the contrary, the application is quite painful. In view of the difficulty of obtaining the drug at times, it is well to remember that quinin hydrochlorid has been proposed as a substitute. It is used in 1 per cent. solution in the same way as ethylhydrocuprein. It is cheaper and is said to cause less itching and other subjective disturbances. Other soluble salts of quinin, in addition to those mentioned, have long been employed in the eye as an antiseptic.

DR. JAMES M. PATTON, Omaha: A number of years ago Dr. Gifford and I began the use of ethylhydrocuprein. We found that in spite of using a fresh solution in cases of undoubted pneumococcus origin certain patients did not respond as they should. Then we began to apply the powder direct to the surface of the ulcer, and found that in those cases we were able to get the improvement which we had not been able to get from the fresh solution. This powder must be applied carefully on a small applicator and thoroughly massaged into the surface of the ulcer, especially at the advancing margin. Dr. Bedell speaks about the slight penetrating power of this drug, and it is possible that the massage with which we have applied the powder may account for the increased efficiency of the treatment. The only sign that may be called untoward is that occasionally there is a small amount of desquamation of the epithelium. In no case in our experience has it produced harmful results; the epithelium is quickly restored and the transparency of the cornea has not been impaired. We have found this method beneficial in violent cases where the ulcer has advanced in spite of usual treatment. We have not had any experience in the use of this drug in acute dacryocystitis.

DR. WILLIAM ZENTMAYER, Philadelphia: Some years ago I reported a series of cases of pneumococcus ulcers treated with this drug and my results were very favorable. I have used the drug since and have no reason for changing my original opinion as to its value. Particularly noteworthy is the fact that the resulting scar has been very much less than that obtained by any other form of treatment heretofore used. I have heard many adverse reports also. There must be something wrong in the technic or something else to account for this. If the virtue of the drug is that it is a specific for the pneumococcus, we are asking too much to expect the instillation of a 1 or 2 per cent. solution, two or three times a day, to be effective. To be of value it should be brought constantly in contact with the organism, therefore my plan has been to instil into the conjunctival sac every two hours a 1 per cent. solution, and apply to the ulcer itself, three times a day, a 2 per cent. solution. The hourly instillations are kept up throughout the night. In dacryocystitis my results have been good. We can hardly expect, however, to cure or to get immediate results from its use in acute conditions because the inflammation has spread outside the sac itself.

DR. LEWIS H. TAYLOR, Wilkes-Barre, Pa.: What do you mean by a "fresh" solution? Must it be fresh every hour, every day or two, or once a week?

DR. HARRY H. STARK, El Paso, Texas: I have always felt that the specific qualities of ethylhydrocuprein depended on the quinin. In the army, when we could not obtain the ethylhydrocuprein we used quinin sulphate put in solution with dilute sulphuric acid. We treated forty patients with apparently very good results. Eventually, we changed the solution to the more soluble bisulphate to see if it would give the same result, but I left the service before we could carry on further experiments.

DR. LEE M. FRANCIS, Buffalo: Attention should be called to recent reports in regard to the contraindication for the use of ethylhydrocuprein in connection with atropin.

DR. WILLIAM C. FINNOFF, Denver: In a case of acute conjunctivitis in which a gram-positive diplococcus resembling the pneumococcus was found, a 1 per cent. solution of ethylhydrocuprein was ordered to be used every two hours following the cleansing of the eye with boric acid solution. Two days later the lids were greatly swollen and the man's suffering was increased. He had an urticaria covering the lower lids, the side of the face, and the back of the hands, and he complained of severe headache and a slight ringing in the ears. He asked me if there was any quinin in the medicine, and informed me that he was very susceptible to that drug and could not take it internally. The ethylhydrocuprein was discontinued and argyrol was given in its stead. The swelling of the lids cleared up rapidly, and the skin rash disappeared. I feel sure this was a case of intoxication from the quinin in the ethylhydrocuprein. I do not remember ever seeing such a case reported.

DR. ALLEN GREENWOOD, Boston: I rather deplore Dr. Bedell's effort to ascribe quite so many cures to ethylhydrocuprein. Perhaps many of the diseases of the exterior portion of the eye may be cured by ethylhydrocuprein, but it seems wiser not to be too dogmatic in our expressions in regard to the effect of drugs. May be ten years from now we will have the use of ethylhydrocuprein on its proper basis. I have no doubt that Dr. Bedell's paper will stimulate all of us to use the drug more freely and compare it with other drugs of similar nature.

DR. ARTHUR J. BEDELL, Albany, N. Y.: I do not claim that all patients are cured. I offer this treatment to you as a suggestion for the amelioration of symptoms in some intractable conditions. Ethylhydrocuprein is not to be accepted as a general cure-all. Dr. Gradle made a very important suggestion, the frequent changing of the solution. I had felt that tolerance was established when the eye would not respond and am delighted to know that it is lessened action of the drug. The reaction that Dr. Gradle and Dr. Finnoff spoke of I have seen in three cases, although not as extreme as in Dr. Finnoff's case. A single drop has caused extreme edema in several cases; many were tried several times with the same effects. In relation to Dr. Ellett's criticism, in my paper I particularly call attention to the irritation that follows the instillation and that the corneal anesthesia results. Dr. Patton speaks of the use of the powder directly on the ulcer. That is added proof of the penetrating power of the drug. Dr. Taylor asks what a fresh solution is. That varies with different workers. Dr. Gradle believes a solution is fresh when it is made every five days. I have considered it to be so from seven to ten days, but I will adopt Dr. Gradle's suggestion and make it five days. Dr. Stark refers to the action of quinin and ethylhydrocuprein. Ethylhydrocuprein has a more destructive power than quinin. Dr. Francis calls attention to the contraindication for the use of atropin. Our experiments show that atropin and some of the common drugs we use are compatible with ethylhydrocuprein.

Culture and the Practice of Medicine.—It is certain that true progress in medicine can only come through the continuous application of the scientific method; but when this method is carried to the patient, if it is to be thoroughly effectual, it must be tempered by a spirit which science alone cannot give. Such a spirit embraces a love of humanity, a wise toleration of ignorance, a broad understanding of the lives of divers persons, a controlling influence which curbs or stimulates according to need. The list could be enlarged until it included all the qualities which best fit a man for a life of service to his fellows. Great care is needed here or the service will be given consciously with a consequent fall in value. In approaching every case the consciousness should be fully occupied by the scientific method, the rest being at least subconscious. Unless this relation is preserved the patient is deprived of the full fruits of scientific resources, for the conscious mind will have enough to do in grappling with this aspect.—*Brit. M. J.*, Aug. 7, 1920.

EPILEPSY, AND CERTAIN TYPES OF EPILEPTIFORM ATTACKS

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Some weeks ago there appeared a paper,[1] the gist of which was a warning against the adoption of new methods of treatment in epilepsy, when those methods have no better foundation than some unproved novel theory of the cause of that disease. This short essay is intended both as a warning against making the diagnosis of epilepsy in a given case for no better reason than that the person who is ill has had a series of convulsive attacks, and as a plea for the more comprehensive study of patients, from the laboratory as well as from the clinical standpoint.

A paper written with this aim in view may seem superfluous, but every neurologist has seen patients who had been treated for months and even years as epileptic, when in fact they were suffering from different conditions; and all because they had never had a really thorough examination. It does not require a vivid imagination to picture the harm that can be done by that sort of thing in many cases.

Of course, nothing like a full discussion of epilepsy, (and by that term I mean only the so-called "idiopathic" form) and of all the pseudo and symptomatic epilepsies can be gone into here. I shall only attempt to give, first, the briefest sort of outline of the present day views of its causation, and then an equally short summary of the points of differentiation between the condition itself and the convulsive attacks, sometimes extending over a period of years, which are due to certain other disease processes.

No clinical entity older than epilepsy is known to medicine, and none whose etiology has been the subject of a wider range of speculation. Even within the last five years it has been regarded, on the one hand as caused by the absorption of toxic products from the intestinal tract, and, on the other, as a psychogenic condition brought about by a conflict between the patient's repressed character trends and the circumstances of his or her conscious life, and hence as amenable to psychanalysis. This idea was advanced in 1915, but I do not know whether or not its author still holds to it.[2] The latest view that I know of is that put forward by two Danish writers,[3] who draw an analogy between epilepsy and tetany, and suggest that the former disease may, like the latter, be due to a deficiency in the parathyroid glands. They base their conclusions on the finding of a great increase in the ammonia content of the blood of patients before an attack.

The consensus of modern opinion, however, is that epilepsy is primarily the result of a true degenerative constitutional instability or hyperirritability of the cerebral motor cortex, which renders its victims liable to attacks of profound unconsciousness, accompained in the major type by motor explosions, under the influence of stimuli, internal or external, that would not so affect a normal person. I shall not take up the theories advanced to account for the so-called psychic equivalents or the petit mal seizures. The incidence of recoveries of epileptics under the usual treatment of the disease, which aims at the twofold object of removing or minimizing the stimuli and reducing the assumed nervous hyperirritability, is fairly direct evidence in support of this view, which is also borne out by most of the late statistical studies of which I have knowledge. In this connection I might mention a clinical study of epilepsy that I undertook in the Neurological Dispensary of the Johns Hopkins Hospital in 1916. Owing to my entry into service in the following year, the work had to be abandoned. So far as it had been carried on, however, it showed three things: (*a*) A majority of the cases in the series came from definitely neuropathic families; (*b*) there was a higher percentage of mental deteriorates among such cases than among those coming from untainted stock, and, (*c*) measured by intelligence tests, the deteriorates in the former group graded lower than did those in the group having clear family histories.[4] These facts seem to me to uphold still further the hypothesis of a constitutional degenerative state of the central nervous system as the ultimate cause of epilepsy. Of course, it is still an open question whether the cortical degeneration and glia proliferation occasionally found in epileptic brains at necropsy represent the pathology of the disease per se, or are the result of the attacks.

So much for the theories as to the etiology of epilepsy. From a list of the conditions that I have known to be confused with that disease, I have selected cerebral syphilis of the vasculomeningitic type, general paresis, brain tumor, hyperthyroidism and multiple sclerosis as pathologic processes whose nature and whose rôle in the production of the supposed epileptic attacks should always be recognized if the patients are properly gone over.

If the pathology of cerebral syphilis is remembered, it is easy to see how epileptiform seizures can be symptomatic of that condition. They occur in those cases in which the diffuse gummatous meningitis has affected the membranes of the convexity in the motor areas; and, as would be expected, they are usually of the jacksonian type. Generalized convulsions, however, do take place. They differ from those of true epilepsy in that the attacks of the latter disease, which begin with focal symptoms or are limited to one side of the body, naturally always involve the same muscle groups. The convulsions of cerebral syphilis, on the other hand, are characteristically variable in their mode of onset. They may start at one time, for instance, in an arm, and at another in the face, or perhaps in an opposite extremity. This is because of the fact that the meningeal lesions may be subsiding in one place while progressing rapidly in another. At some stage of the disease, also, involvement of the basal meninges will surely bring out other symptoms in the form of paralysis of one or more of the cranial nerves. Finally, the increased cell count and protein content of the spinal fluid, and the probably positive Wassermann reaction in both the blood and the spinal fluid, will aid in establishing the correct diagnosis. It almost seems as if a mistake could not be made in such cases; yet a short while ago I saw a woman of 35 who had been treated for nine months as a true epileptic.

1. MacRobert, R. G.: Fits and Fallacies, J. A. M. A. **74**: 1000 (April 10) 1920.
2. Clark, L. P.: The Nature and Pathogenesis of Epilepsy, New York M. J., Feb. 27 to March 27, 1915.
3. Bisgaard, A., and Nørvig, J.: Regulation of Neutrality in Epilepsy, Hospitalstidende **63**: 49 (Jan. 28) 1920.
4. Stuart, D. D. V., Jr.: A Clinical Study of Epilepsy: Preliminary Report, South. M. J. **9**: 767 (Sept.) 1916.

Besides her convulsions she showed a left third nerve weakness that had not been noted. Her blood and spinal fluid picture confirmed the clinical opinion in her case as soon as examined; but it is likely that after the lapse of nearly a year, degenerative brain changes had set in which would prevent the institution of treatment for the real condition from having its desired effect.

Epileptiform attacks, sometimes focal and sometimes generalized from the beginning, are frequent in general paresis. Often enough they are the first noticeable evidence of anything wrong; and they may precede the mental symptoms by long intervals of time, though a careful examination will usually show some of the physical signs of the disease. Here, again, blood and spinal fluid tests will reveal the true state of affairs. Since, however, the pathology of general paresis is a true parenchymatous degeneration of the brain tissue, which does not respond to antisyphilitic measures, delay in starting treatment in a paretic who has been labeled epileptic is not so serious a matter as is loss of time in some of the other conditions mentioned.

Brain tumors, cortical or deep seated, may give rise to convulsions with loss of consciousness. Naturally, if a cortical growth affects a motor area, it virtually always causes definite focal symptoms; but a neoplasm anywhere in the brain may produce generalized attacks that can be explained only on the ground of irritation due to the increased intracranial pressure. Slowly growing tumors may exist for years with convulsive seizures as their only obvious symptom, unless the patient is given a careful and competent neurologic study.

Epileptic-like attacks may occur in cases of hyperthyroidism, and may appear before the signs of thyroid intoxication, as ordinarly recognized, are at all prominent. This is especially interesting in view of the theory of Bisgaard and Nørvig, mentioned above, as to the etiology of true epilepsy. Of course it may be said that the thyroid disease merely furnishes the stimulus which acts as the exciting factor in a potential epileptic. I myself, however, feel that the attacks are simply toxic convulsions, such as happen in uremia, for instance. In the cases that I have seen, treatment of the thyroid condition was promptly followed by cessation of the supposed epilepsy. I doubt whether an outspoken case of exophthalmic goiter would go unrecognized for long, but the masked forms certainly do. In all such, the test for epinephrin hypersensitiveness and the determination of basal metabolism are invaluable aids.

Lastly, disseminated sclerosis, as a rule, through irritative involvement of the motor tracts as they pass down through the pons and medulla, may occasionally give rise to epileptiform attacks. If the disease had its starting point in that locality, such attacks may be a very early symptom; and, since multiple sclerosis is essentially chronic, it may be a long time before other frank signs show themselves. Serology does not offer much help in this disease, but a survey from the neurologic standpoint will always bring to light something in the way of evidence besides the seizures: cranial nerve disturbances; beginning ataxia of the extremities; areas of diminished pain, touch and temperature perception, and the like. This is understandable from the nature of the process going on. It is hardly possible to conceive of a solitary sclerotic focus producing only an irritative motor lesion with resulting convulsions. The foci, as the name indicates, are multiple and scattered throughout the brain and cord.

In conclusion, I wish to say that all the convulsive attacks mentioned may exactly simulate true epilepsy. They may be ushered in by aurae, the unconsciousness may be so deep as even to bring about abolition of the pupillary light reflex, there may be loss of sphincter control, and so-called postepileptic phenomena may occur. The point I wish to emphasize here is that observation of the convulsions alone, even when they appear to be typical and even if repeated many times, is not sufficient to warrant the positive diagnosis of epilepsy.

I might sum up my remarks in one sentence: It is unsafe to assume that any patient is a true epileptic until that patient has had the thorough going over that he or she is entitled to; and until, by this means, other convulsion-producing diseases have so far as possible been eliminated.

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THE COMPLEMENT FIXATION REACTION IN TUBERCULOSIS

REPORTING SIX THOUSAND FIVE HUNDRED REACTIONS *

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Much water has passed under the bridge since Caulfield's article [1] on this subject in 1911, but the stream has not increased in clarity as fast as it has grown in volume. It is, therefore, necessary that reports be continued and discussion kept up until all useless ideas are sedimented and we can clearly see bottom.

In 1917, one of us [2] reported our first 500 reactions, with preliminary conclusions. Since that time, we have made 6,000 additional reactions, maintaining an open mind to the diverse statements appearing in literature, and drawing definite conclusions only after a critical study of our own results. We wish, at this time, to make a statistical report of the entire 6,500 reactions, and to discuss briefly the two or three fundamental points in dispute regarding this test.

TABLE 1.—RESULTS OF SIX THOUSAND FIVE HUNDRED COMPLEMENT FIXATION REACTIONS FOR TUBERCULOSIS

	No.	Per Cent.
Clearly negative	2,078	
Inconclusive (over 50 per cent. hemolysis)	1,027	
Total negative	3,105	48
Moderately positive (from 25 to 50 per cent. hemolysis)	1,344	
Strongly positive (no hemolysis)	2,051	
Total positive	3,395	52

In Table 1, we give the general results on these reactions, from which it will appear that 48 per cent. were negative and 52 per cent. positive. From our roentgen-ray records and sputum examinations, and from his-

* Read before the Section on Pathology and Physiology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Caulfield: J. M. Research **24**: 101 (Jan.) 1911; abstr. J. A. M. A. **57**: 540 (Feb. 8) 1911.

2. Boynton: Southwestern Med. **2**: 9 (Jan.) 1918.

tories and clinical records of physicians sending the serums to us, we have obtained data which permit us to classify 3,168 of these reactions with respect to tuberculosis, as follows:

Class A: From patients proved to be tuberculous, 1,103 serums.

Class B: From patients clinically tuberculous, but not proved, 521 serums.

Class C: From patients in whom tuberculosis was suspected, but not definitely diagnosed, 822 serums.

Class D: From patients not examined for tuberculosis, 554 serums.

Class E: From patients examined and found clinically nontuberculous, 168 serums.

The reactions given by the serums in these various groups are shown in Table 2.

TABLE 2.—CORRELATION OF CLINICAL FINDINGS WITH COMPLEMENT FIXATION REACTIONS

Class	No. of Serums	Positive— No.	Positive— Per Cent.	Negative, No.
A	1,103	865	78	238
B	521	336	64.6	185
C	822	303	37	519
D	554	183	33	371
E	168	7	4.2	161

Of 1,103 serums from patients definitely proved to be tuberculous, 865, or 78 per cent., gave positive reactions. The 238 negative serums in this group represent twenty-six moderately active, seventy-three arrested, and eighty acute or general tuberculosis, with no detailed information on fifty-nine serums.

Of 521 serums from patients with clinical tuberculosis not confirmed by sputum or roentgen-ray examination, 336, or 64.6 per cent., gave positive reactions. This class includes more cases of arrested disease than does Class A, since the disease was never so far advanced; but we have not undertaken to search these out.

Of 822 serums from patients in whom tuberculosis was suspected but not established, 303, or 37 per cent., gave positive reactions. This class will include patients with foci too small for definite demonstration by physical or roentgen-ray examination.

Of 554 serums from patients who were not examined for tuberculosis, 183, or 33 per cent., gave positive reactions. This, as would be expected, approximates the percentage in the previous group.

Of 168 serums from patients in whom examination revealed no evidence of tuberculosis, seven, or 4.2 per cent., gave positive reactions.

These figures speak for themselves, and we will pass to the discussion. In reviewing the literature, we find the three main points still in dispute to be concerning (*a*) the antigen, (*b*) the specificity of the reaction, and (*c*) the clinical value of the results.

THE ANTIGEN

Miller[3] and Moon,[4] in 1917, reviewed the various antigens then in use, and this has recently been brought down to date by Petroff.[5] Most of the workers in this country have preferred bacillary suspensions or emulsions of some kind. In Caulfield's[1] work a watery suspension was used. Stimson,[6] Miller,[7] Moon,[4] Fleisher,[8] Wilson,[9] Burns and his colleagues,[10] Stivelman,[11] Stoll and Neuman,[12] and Pritchard and Roderick,[13] used some form of bacillary suspension or emulsion. Craig,[14] Petroff[15] and Bronfenbrenner[16] have been the best known advocates of tuberculin or extractive antigens, and Petroff,[17] later recommended an antigen made by boiling the bacilli in glycerin, making a suspension in a glycerin extract. The Corper[18] antigen is an autolysate of a bacillary suspension. Fleisher's antigen differs from Miller's by being triturated in water and suspended in phenol-salt solution. Cooke's[19] antigen for experimental work consists of bacillary mass extracted with alcohol, dried and suspended in phenolized physiologic sodium chlorid solution. Wilson's antigen is similar,[9] being extracted with alcohol and ether, dried and suspended in physiologic sodium chlorid solution.

An impartial observer of the reports of work done with these antigens finds little to influence a choice, provided the whole bacillus is used and thoroughly broken up. Whether this is done by trituration, dry (Miller) or wet (Fleisher), by boiling in glycerin (Petroff), by dissolving off the wax and suspending (Cooke, Wilson), or is allowed to occur by lysis (Corper), seems to make little difference. In a study which compared the antigens of Corper, Wilson and Petroff, Young and Givler[20] found little difference in efficiency, and we believe their results would have been the same had they included Miller's antigen. The reactions here reported were done with the Miller antigen, prepared from tubercle mass containing eight strains. We have become convinced that the longer the mass is ground, the more efficient will be the antigen, and we now grind the bacilli with salt for four hours. We have also noticed an increase in efficiency with aging of the antigen emulsion, possibly owing to lysis of the bacterial protoplasm. We are, therefore, willing to grant that if bacilli can be more thoroughly broken up by other methods than trituration with salt, the antigen should be better; but our results compare favorably with those published from other sources, so that we have not yet seen reason for changing. None of the emulsions made by us have shown the close margin between antigenic strength and anticomplementary effect, complained of by Corper and Sweany.[21] Our antigen dose is usually from 0.05 to 0.1 c.c. of the emulsion, and we have never found anticomplementary effect in doses smaller than 1 c.c.

In the tests, we use two strengths of antigen, usually 0.1 and 0.25 c.c. We have read our results according to four degrees of hemolysis in the two strengths of antigen; namely, (*a*) strongly positive, (*b*) moderately positive, (*c*) inconclusive, and (*d*) negative. In this report only the first two, never more than 50 per cent. hemolysis in the larger antigen dose, are classed as

3. Miller: J. Lab. & Clin. Med. **1**: 816 (Aug.) 1916.
4. Moon, V. H.: A Further Consideration of Complement Fixation in Tuberculosis, J. A. M. A. **71**: 1127 (Oct. 5) 1918.
5. Petroff: Am. Rev. Tuberc. **3**: 683 (Jan.) 1920.
6. Stimson: Bull. 101, Hyg. Lab., U. S. P. H. S.
7. Miller, H. R.: The Clinical Value of Complement Fixation in Tuberculosis, J. A. M. A. **67**: 1519 (Nov. 18) 1916.
8. Fleisher and Ives: J. Lab. & Clin. Med. **3**: 302 (Feb.) 1918.
9. Wilson: J. Immunology **3**: 345 (Sept.) 1918.
10. Burns, N. B.; Slack, F. H.; Castleman, Philip, and Bailey, Karl: Application of the Complement Fixation Test to Tuberculosis, J. A. M. A. **68**: 1386 (May 12) 1917.
11. Stivelman: Am. Rev. Tuberc. **3**: 546 (Nov.) 1918.
12. Stoll, H. F., and Neuman, Lester: The Complement Fixation Test in the Diagnosis of Tuberculosis, J. A. M. A. **72**: 1043 (April 12) 1919.
13. Pritchard, J. S., and Roderick, C. E.: Complement Fixation Test for Tuberculosis, J. A. M. A. **73**: 1879 (Dec. 20) 1919.
14. Craig: Am. J. M. Sc. **140**: 781 (Dec.) 1915.
15. Petroff: Am. Rev. Tuberc. **1**: 33 (March) 1917.
16. Bronfenbrenner: J. Lab. & Clin. Med. **3**: 50 (Oct.) 1917.
17. Petroff: Am. Rev. Tuberc. **2**: 523 (Nov.) 1918.
18. Corper: J. Infect. Dis. **19**: 315 (Sept.) 1916.
19. Cooke: J. Infect. Dis. **25**: 452, 474, 493 (Dec.) 1918.
20. Young and Givler: Am. Rev. Tuberc. **3**: 476 (Oct.) 1919.
21. Corper, H. J., and Sweany, H. C.: Complement Fixation Tests in Tuberculosis, J. A. M. A. **68**: 1599 (June 2) 1917.

positive, the inconclusive reactions being grouped with the negative. This is done, in spite of the observation that these are often weakly positive, the patients giving more positive reactions if retested. We use a mixed complement, titrated against a fixed dose of high titer amboceptor and a fixed quantity of sheep cells. Our technic is identical with that employed by us in the Wassermann reaction, except for the antigen. All serums are inactivated and water bath incubation is used, a parallel Wassermann reaction being done on each serum.

SPECIFICITY

Bronfenbrenner [16] called attention to the fact demonstrated by him and other experimenters that complement fixing antibody would be produced by animal inoculation with the tubercle bacillus, or by tubercle antigen in the human being. Cooke,[19] in experimental work, found that tuberculous serums would bind complement only with antigens of acid fast bacteria; therefore, bacilli of leprosy and tuberculosis were the only micro-organisms pathogenic to human beings which would give positive reactions with such serums. Petroff's [5] latest contribution concludes that the fixation in tuberculosis is more specific for that disease than the Wassermann is for syphilis; that the positive reaction is due to the antibodies of the tubercle bacillus and that, therefore, these organisms must exist in the body in a state of activity.

To cite, as a proof against the specificity of the reaction, the occurrence of positive fixation in patients without evidence of tuberculosis is an appropriation of infallibility on the part of clinicians to which they are not entitled. When 20 per cent. of the men passed as nontuberculous by a competent review board can be shown by the roentgen ray to have tuberculous lesions, as one of us [22] demonstrated in recent draft work, we cannot accept the absence of physical evidence of tuberculosis as a valid argument against the specificity of the positive complement fixation for this disease. The best proof of such specificity is the demonstration, in the hands of competent observers, that the reaction in

TABLE 3.—RELATION BETWEEN POSITIVE WASSERMANN REACTION AND TUBERCULOSIS FIXATION

Wassermann Reaction	Tuberculosis Fixation Positive	Negative
++ and +++	325	228
+	105	89
Total	430	317

proved tuberculosis will approach 100 per cent. positive, and in the clinically nontuberculous will approach 0 positive. When the reaction fails to attain the perfect 100 per cent. and 0, respectively, if this is regarded as an error, it should be charged against the clinical diagnosis and not against the laboratory method, just as is done with the Wassermann.

In regard to possible cross fixation in syphilitic and tuberculous serums, Bronfenbrenner's simple demonstration that, where there is double infection, each reacting substance can be absorbed from the serum without affecting the other, still stands undisputed. Miller, Stoll and Neuman, Corper, von Wedel,[23] Petroff, Craig and Burns found that there was no cross fixation between syphilitic and tuberculous serums. The conclusions of Moon, Corper and Sweany, and Snow and Cooper [24] that syphilitic patients would give nonspecific fixation for tuberculosis is not capable of proof, since it would be necessary to show that the patients are absolutely nontuberculous, which is obviously impossible. In our work we have found that the two fixations are entirely independent. In this series of 6,500 reactions, there were 747 giving positive Wassermanns. The relation between the positive Wassermann serums and the tuberculosis fixation is shown in Table 3, while Table 4 shows a comparison of tuberculous and nontuberculous patients in relation to the Wassermann reaction.

Table 3 shows that, in 430 serums, both reactions were positive, while in 317 the Wassermann was positive and the tuberculosis fixation was negative. Of the positive Wassermann cases, 40 per cent. gave negative

TABLE 4.—WASSERMANN REACTION IN TUBERCULOUS AND NONTUBERCULOUS PERSONS

Wassermann Reaction	Classes A and B	Classes C, D and E
Positive	110	163
Negative	1,514	1,381
Total	1,624	1,544

tuberculosis fixation, so closely approximating the 48 per cent. of the entire series which gave negative tuberculosis fixation that we can safely conclude that in this series syphilis did not affect the tuberculosis fixaon. Table 4 shows that, of 1,624 serums from patients definitely or clinically tuberculous (Classes A and B), 110, or 7 per cent., gave positive Wasserman reactions, and of 1,544 serums from patients chiefly nontuberculous (Classes C, D and E), 183, or slightly over 10 per cent., gave positive Wassermann reactions. We cannot, therefore, admit that tuberculosis will give false positive Wassermann reactions, even with cholesterinized antigen, as claimed by Snow and Cooper.[24] Our + Wassermann reaction represents complete inhibition with cholesterinized antigen and hemolysis with acetone insoluble extract; but since we secured only 7 per cent. of positive Wassermann reactions of all degrees out of 1,624 tuberculous serums, we certainly cannot regard this as an objectionably high percentage.

CLINICAL APPLICATION

The positive reactions in classes C, D and E represent the weakness of this laboratory aid in the eye of the clinician. This weakness cannot be surmounted by any refinement of reagents or technic, since it adheres to the fundamental pathology of the disease; and the sooner clinical pathologists cease trying to overcome an inevitable weakness and emphasize the many advantages of the reaction, the sooner shall we have the attentive ear of the clinical world. Every attempt to place the complement fixation for tuberculosis on a par, clinically, with the Wassermann reaction leads us further into error. So far as percentage of results is concerned, it is already on a par or ahead of the Wassermann reaction; so far as specificity is concerned, this is more firmly established in regard to tuberculosis fixation that in the Wassermann test. A positive Wassermann reaction is usually accepted as proof of syphilis; a positive tuberculosis fixation reaction just as certainly means tuberculous infection; but the comparison can go no further, owing to the fundamental pathologic and clinical differences in the two diseases. Syphilis is first a localized lesion, suddenly

22. Watkins, W. W.: Am. J. Roentgenol. **6**: 283 (June) 1919.
23. Von Wedel: J. Immunology **3**: 351 (Sept.) 1918.
24. Snow and Cooper: Am. J. M. Sc. **152**: 185 (Aug.) 1916.

and inevitably invading all parts of the body through the blood. A small chancre is just as dangerous and produces just as severe secondary and tertiary lesions as a large one. Therefore, the positive Wassermann reaction carries no indication to measure the size of the initial sore or count the spirochetes incubating there, but calls for immediate and intensive treatment, regardless of symptoms. On the contrary, the positive tuberculosis fixation reaction carries exactly the indications mentioned; that is, to ferret out the lesion and measure its size and activity, because a large focus is of clinical significance while a small one may be negligible. Since tuberculosis is a localized disease, spreading slowly by way of the lymphatic stream, with a persistent tendency to spontaneous arrest, we must have definite clinical evidence that the focus is damaging the general health, or is threatening to do so, before the positive fixation reaction can have clinical significance. The reaction indicates activity in a tuberculous focus, but the difference between pathologic activity and clinical activity, which Brown and his colleagues [25] have recently discussed, must be appreciated when interpreting this reaction. We believe with Petroff [5] that scrupulous attention to technic in the hands of highly trained workers is essential to the best success, but that no modification of antigen or technic will enable clinical activity to be differentiated from simple pathologic activity by complement fixation.

We have become firmly convinced that one of the most valuable features of this reaction is the negative test in a case of proved tuberculosis. If the conception of the reaction is correct, that it is a biochemical titration of tuberculous antibody, then the result should be very instructive to the physician. A patient with an active tuberculosis and insufficient antibody to bind complement should be regarded as in a state of exhaustion of his immunity processes. The quoted exceptions of patients with positive reactions who died soon afterward are beside the mark.

Most tuberculous patients die from streptococcic or other mixed infections, from nephritis, diabetes, toxic hearts, hemorrhage or other complications. Such patients can give positive tuberculosis fixation even when moribund, since this reaction has reference to tuberculous antibody only and a patient can, conceivably, have a marked resistance to the tubercle bacillus and still be dying from some complication. Patients with acute, florid or generalized tuberculosis, without mixed infection, or those whose lack of resistance is shown by extension of this infection to bones or abdomen, are the type which gives negative reactions. Of our 238 negative reactions in proved tuberculosis (Table 2), eighty, or 34 per cent., were of this type.

On the other hand, the observation that patients lose their positive reaction and become negative as their disease becomes arrested is of distinct clinical value in checking the progress of arrest. Here, as with the Wassermann test, repeated observations are necessary, because the antibody content of such patients will fluctuate greatly. Of the 238 negative reactions in proved tuberculosis, seventy-three, or 30 per cent., were in arrested cases.

We find, therefore, in proved tuberculosis that only eighty-six out of 1,103 serums gave negative reactions which were not explained by the character of the disease, and, if we accept Cooke's and Bronfenbrenner's interpretation of the negative reaction, we are justified in concluding that these eighty-six patients, also, by their negative reactions, were given definite warning of a low specific resistance. We have repeatedly observed this failure of antibody (negative reaction) precede by several months the development of new active areas in the lungs, or have noted its occurrence in patients examined at the end of a long railroad journey, returning to positive after a week or two of rest in bed. On the other hand, we have watched the reaction fade from strongly positive to moderately positive, and finally become negative as the disease became arrested.

Whether it is positive or negative, therefore, the clinical significance of the result is to place an increased responsibility on the physician, making all the more essential an intensive study of the history, symptoms and general condition of his patient. If he is looking for relief from such responsibility and a short cut to diagnosis, the clinician will find neither in this reaction. If, however, he is earnestly seeking every possible fact in regard to his patient and intends to make an intelligent application of the result, based on a knowledge of tuberculous pathology, he will find in the complement fixation test a procedure of real and definite value.

CONCLUSIONS

The Miller antigen is serviceable, practical and efficient for the complement fixation test in tuberculosis.

The reaction is specific for tuberculosis and, when positive, should be interpreted as indicating tuberculosis of some degree of activity. When the Wassermann and tuberculosis fixation reactions are both positive, they should be interpreted without relation to each other.

The positive fixation reaction can be interpreted as indicating tuberculosis, either active at the time, or recently active. The focus may or may not be of clinical significance, which fact must be determined by other means.

The negative fixation reaction indicates either absence of infection, excessive activity of the disease, exhausting the antibody, or arrest of the disease with spontaneous disappearance of antibody no longer required.

ABSTRACT OF DISCUSSION

Dr. Ward Burdick, Denver: I have used the antigens of Gray, Craig, Besredka, Calmette and the partial antigens of Much, as well as the bacillary emulsions used by Drs. Watkins and Boynton. My observations correspond with theirs. The bacillary emulsion is the most specific antigen. It contains only ground bacillary bodies, suspended in salt solution. I can also verify the statement that the longer the bacilli are ground, the better the antigen. Complement fixation in tuberculosis, using this antigen, is of marked value in the diagnosis and prognosis of the disease. A positive reaction means active tuberculosis. I think the icebox method of incubation increases the value of this test, although I have not tried it. How soon do you read the tests?

Dr. W. H. Harris, New Orleans: It is necessary to be very careful in considering a negative reaction as false, inasmuch as even at the postmorten table the question of ascertaining the presence of small lesions is sometimes difficult. There may be very small foci. One makes two or three sections into a gross, boggy lung with no lesions demonstrated. At the postmortem table, with the aid of the roentgen ray, Opie has shown that lesions may be located that may otherwise be overlooked. Some years ago, in connection with leprosy studies, I carried out a very considerable number of

25. Brown, Lawrason; Heise, F. H.; Petroff, S. A., and Sampson, H. L.: A Preliminary Study of Clinical Activity, Am. Rev. Tuberc. 3: 612 (Dec.) 1919.

complement fixation tests on leprosy patients and on animals that had been immunized by whole bacilli antigens and Gay's modification of the Besredka method. I was attempting to demonstrate specific antibodies for certain cultures isolated from the leprosy lesion, as there are eight or ten different cultures which are thought by different workers to be the Hansen bacillus. I was not able to determine any specificity. I employed quite a number of acid-fast antigens, such as the Moeller drug bacilli, the various tubercle bacilli (avian, bovine and human), the various leprosy strains, Smegma bacillus, timothy hay bacillus, etc. I was unable to point out any specificity for the different acid-fast cultures. I obtained group-binding for acid-fast bacilli as a whole. Did you employ any saprophytic acid-fast bacilli as controls? Cooke recently carried out some serologic observations on acid-fast bacilli from an experimental standpoint as well as in leprosy and tuberculosis. Cooke arrived at the same conclusions I did some years ago, i. e., while there is some specificity for acid-fast bacilli as a group, there is no specificity for the individual strains. One can obtain an acid-fast fixation as differentiated from nonacid-fast, but there is no specificity for the different varieties. It would be of interest in the complement fixation test in tuberculosis to employ control antigens of other acid-fast bacilli and also nonacid-fast antigens.

DR. F. M. JOHNS, New Orleans: The complement fixation test in tuberculosis is in its experimental stage. We would be more apt to come to some satisfactory conclusion if there was some such place as the Hygienic Laboratory to prepare a definite, uniform antigen that other experimenters might use, either in their work or to check up their own antigens. In this way we might arrive at conclusions as favorable as the essayists have brought out. For several years I have been working with various antigens and find that some will give practically identical fixation as the usual cholesterin fortified antigen, while others give a more or less specific reaction in tuberculosis.

DR. W. C. JONES, Birmingham, Ala.: Did you find any limit of time at which the antigen became weak or inert? Does it ever lose its strength or become entirely inactive?

DR. FRANK J. HALL, Kansas City, Mo.: Have you done any work with complement fixation meningeal tuberculosis?

DR. W. W. WATKINS, Phoenix, Ariz.: In tuberculous meningitis, we do the test as a routine. We so tested all spinal fluids received at the laboratory until we had satisfied ourselves that the test would not be positive in syphilitic spinal fluids or in ordinary meningitis. We never secured a positive reaction in a spinal fluid, except in one instance, that the patient did not follow the regular course of tuberculous meningitis. We had one positive spinal fluid. The child went on to complete recovery from the meningitis. This must have been a technical error; at least the clinical diagnosis was changed when the patient recovered. We have never made an antigen which weakened before we used it, so I do not know how long it would keep its strength. We recently made up a large quantity (two liters) and may be able to determine this point before this is used up. I think that any antigen is satisfactory if the whole bacillus is used. I do not think the important point is the antigen, but a proper understanding of the significance of the test. So far as laboratory results are concerned, the results are as good as they are with the Wassermann test, but as long as the clinician applies them as he does the Wassermann test, he will not be wholly satisfied with his work. Dr. Cooke found that the leprosy bacillus and certain nonpathogenic acid-fasts would bind tuberculous serum. We have not done any of this experimental work.

In regard to Dr. Burdick's question: our technic is just exactly like the Wassermann, except for the antigen. We incubate the same length of time and read at the same time, frequently in the same rack as the Wassermann tubes. That may be an error; some workers contend they should be read earlier and others say they should stand a while. We prefer to keep the technic the same as the Wassermann technic. We are just adopting the icebox technic for our Wassermann tests, and will run both reactions by that method. Dr. Burdick said a negative reaction means nothing. I do not think he means that the way it sounds; I think he means the same as the Wassermann negative. If we consider that a patient either has tuberculosis or has not, a negatitve reaction certainly means something in a pathologic sense. Our attention was first called to its significance by tests of tuberculous patients just arrived in Phoenix after a long railroad journey. Many of them give negative reactions, although evidently actively tuberculous. After a few days' rest the test becomes positive. Their immunity processes were exhausted along with their physical strength.

VENIPUNCTURE IN THE TREATMENT OF CERTAIN DISEASES OF THE SKIN

ITS VALUE AS AN OCCASIONAL ADJUVANT*

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Bloodletting is probably the oldest therapeutic measure known. Its origin is lost in antiquity. While it was practiced by the Egyptians, even as far back as 2500 B. C., it did not attain prominence until the hippocratic era. Very little is found in the literature on venesection in relation to its use in dermatology. Hippocrates, who was the first to describe accurately the indications for phlebotomy, used this method in the treatment of leg ulcers. Daniel Turner, of the College of Physicians, London, a contemporary of Dr. William Dawes, wrote a treatise on "Diseases of the Skin," the first edition of which was published in 1712. In this interesting work, the author describes a considerable number of varied dermatoses in which he recommends phlebotomy. He states particularly that in pruritus bleeding is generally necessary, and also speaks very favorably of its use in urticaria. In view of our present knowledge, it is interesting and rather amusing to note that all of his patients with ringworm of the scalp and alopecia prematura were intensively bled. This is entirely comprehensible in view of the fact that orgies of bloodletting prevailed at the time. In spite of this, however, the value of the method in the treatment of certain diseases of the skin was well recognized.

In the Sydenham Society translation of Rayer's great work on dermatology, under date of 1835, we find this paragraph:

> When eczema is acute and the pruritus exceedingly troublesome, and the inflammation runs high, it may be necessary to abstract blood once or oftener. I have had the occasion to prove the utility of bleeding in a number of cases, even in chronic eczema. When one bleeding has been followed by a notable improvement in the symptoms, it is commonly an inducement to repeat the operation after a few days have elapsed.

Rayer also bled in psoriasis, and states that he frequently made experimental bleedings in other diseases of the skin.

Biett and Cazenave, contemporaries of Rayer, also recommended venesection in certain cases of skin disease. Erasmus Wilson, in the earlier editions of his textbook, advocated topical bleeding (leeches and

* Read before the Section on Dermatology and Syphilology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

scarification) in acute eczema in suitable subjects. Milton, in his book on "Diseases of the Skin," states that in cases of prurigo, Hunt bled to faintness, a practice often followed by great improvement in the eruption and speedy relief from the pruritus. The same author states that he himself used the method only to a limited extent. He did not consider the results encouraging, though the method had been strongly recommended by Sir William Jenner, Hunt and Bazin. Hunt, in discussing the value of bleeding in skin disease, states that "no other satisfactory mode of treatment has yet been matured." He enthusiastically recommends it for prurigo, psoriasis and eczema. He cites a case of prurigo in a woman, aged 54, from whom in a little more than six months he had abstracted 85 ounces of blood. At one time her pruritus kept her awake all night, and the eruption was greatly inflamed. Hunt removed 13 ounces of blood, and from that time there was a sudden and permanent improvement, the patient ultimately recovering entirely. A patient with a very extensive case of psoriasis, with large acutely inflamed and scaly plaques, consented to lose blood; 16 ounces were taken from the arm. Four days later, the patches had greatly faded and were smooth and denuded of scales. Two patients with eczema seemed to have improved materially after venesection.

Bloodletting in diseases of the skin may be said to have slumbered until a decade or so ago, when it was revived as a preliminary to the practice of saline intravenous infusion in the treatment of dermatitis herpetiformis and other pruriginous dermatoses. After being in use for a number of years, it seems to have been abandoned. Generally speaking, the results from this method were not encouraging, and when good results were reported no credit was given to the preliminary abstraction of blood. The injection of autoserum in the treatment of certain diseases of the skin has somewhat recently been brought forward. With this method, approximately 200 c.c. of blood are withdrawn at intervals of from five to seven days, in order to inject the requisite amount of autoserum. The method was first employed by Spiethoff. Later Gottheil and Satenstein reported good results in about twelve cases of psoriasis, in all of which the serum treatment was followed by daily inunctions of a weak chrysarobin ointment. The authors discuss the possibility of the good results being due to the bloodletting alone, but in their conclusion state that they do not believe the benefits of the procedure can be ascribed to it alone. They refer to an interesting experience of the late S. Weir Mitchell, who early in his career was left in sole charge of a very severe case of psoriasis; not knowing exactly what to do, he put the patient to bed, bled her every day, and to his surprise and great satisfaction the eruption entirely disappeared.

Howard Fox treated twenty-eight cases of psoriasis with autogenous serum, and states that from the injections alone he was unable to see any decided effect on the lesions. To get good effects from the method, chrysarobin ointment had to be employed. While it was the author's opinion that bloodletting alone would lessen the intensity of the inflammatory dermatoses, he believed that the results obtained in his cases were not due solely to it. In conclusion, he states that autogenous serum alone is not of value in psoriasis, but that when employed in conjunction with chrysarobin it is of decided benefit.

We are of the opinion that the reason for the seemingly increased beneficial effect from the use of chrysarobin in the treatment of psoriasis by the means of this method lies in the elimination of waste products and toxins from the blood through venesection, thus tending to reduce inflammation, rather than from the autoserum injected. It may well be that venesection, while removing a certain amount of waste products from the blood, does not do so sufficiently to effect complete disappearance of the lesions, but does remove enough to enable the comparatively weak chrysarobin ointment to exert its specific effect.

The systemic effects of bleeding are marked and varied. Dutton quotes Da Costa as saying: "Venesection diminishes blood pressure, increases the speed of the blood current and thus amends stasis and absorbs exudates; lowers temperature, arrests cell proliferation, and stops effusion." Venesection also removes toxic material from the blood in direct ratio to the amount of blood withdrawn; it stimulates the formation of antitoxins and increases the agglutinating properties of the blood serum. The number of leukocytes is greatly increased; the blood-making organs are incited to make new blood cells, and, moreover, they are produced in excess of the number lost. It would therefore appear that repeated abstraction of small quantities of blood results in the production of blood of a better type. In addition to a depurative action of the blood, as the result of renal stimulation, a certain quantity of waste products and toxins is withdrawn in the abstracted blood. To the combined detoxicating effect must be added the increased ability of the regenerated blood to withstand toxic influences.

For a number of years past, one of us (J. K.) has been accustomed, both in private practice and at the Presbyterian Hospital, to abstract blood in various dermatoses. Some years ago, in the First Dermatological Service at the New York Skin and Cancer Hospital, we bled a considerable number of selected patients with varied and extensive dermatoses, in order to test the value of the method. We practiced venipuncture extensively in psoriasis, dermatitis herpetiformis, and urticaria; but less frequently in erythema multiforme and dermatitis medicamentosa. The method should not be used in asthenic debilitated, anemic or chlorotic patients.

It is superfluous, before an audience of this character, to enter into a description of the technic of venipuncture, save to recommend a platinum needle of fairly large caliber (from 16 to 14 gage). Its lumen is much smoother than that of a steel needle, and very much more blood can be removed before it becomes occluded. The amount of blood withdrawn varies from 100 to 300 c.c., depending on the asthenic condition of the patient. We usually bleed once or twice a week. The method is more or less empiric; we do not attempt to set up a definite theory for its use save a detoxicating and depurative action on the blood, stimulation of the excretory organs, the increase of antitoxins, and regeneration of the blood mass.

In psoriasis, bloodletting seems to be of value in the acute cases with marked congestion around the lesions. These patients were invariably benefited. In erythema multiforme, it is a therapeutic adjuvant of very decided value. In dermatitis herpetiformis, venipuncture repeated systematically invariably improves

the condition of the eruption and relieves the subjective symptoms. The most gratifying results, however, were obtained in urticaria, particularly in that type of the disease with large raised wheals and associated angioneurotic edema with intense pruritus. One of us (J. K), while on service in France, employed venipuncture with considerable success in the treatment of the anaphylactoid urticarial eruptions following the injection of antitetanic serum in wounded soldiers.

CONCLUSION

We believe that the method is of occasional value in certain cases of psoriasis, erythema multiforme, and dermatitis herpetiformis. It is of great value in the treatment of urticaria, and in our hands afforded more relief in severe cases of that disease than any other therapeutic method.

ABSTRACT OF DISCUSSION

Dr. John H. Stokes, Rochester, Minn.: I thought I had observed beneficial effects from venipuncture alone in a case of pityriasis lichenodes chronica, a disease whose resistance to treatment is notorious. I also feel that the withdrawal of from 200 to 300 c.c. of blood twice a week, in cases of dermatitis herpetiformis with reinjection of serum thus obtained is of marked benefit. It is possible that some of this benefit is traceable to the effect of the withdrawal of blood rather than to the reinjection of the autogenous serum.

Dr. William Allen Pusey, Chicago: I have not used blood letting, but I have thought of it very frequently since we began the use of autogenous serum a few years ago. I believe it is worthy of trial in certain types of skin diseases in sthenic patients.

Dr. Augustus Ravogli, Cincinnati: When the psoriasis patient loses albumin by a protracted illness the psoriasis disappears temporarily. Bloodletting is nothing less than diminishing the strength of the protein elements and the albumin; in consequence, there is some improvement, but it is only temporary. I have seen psoriasis disappear entirely after a severe attack of pneumonia, and then reappear again. Therefore, I have used blood letting, taking the corpuscles out and using the blood autogenous serum again, injecting it into the patient according to the method of Dr. Howard Fox. This has brought some little improvement, but it was only temporary and the patient got psoriasis again. As in dermatitis herpetiformis, there are some toxic elements in the system that maintain this disorder, by poisoning the nervous system, and so long as these toxins are not neutralized the condition will remain.

Dr. F. W. Cregor, Indianapolis: Itching of the skin comes from one of two conditions, either a dilatation of blood vessels, or a piling up or thickening of the epidermis, causing a pinching of the nerve endings and consequent itching. I can see wherein this method may be of great value in the treatment of many patients. We are employing the method in a case of pemphigus vulgaris, afterward replacing the serum. After five injections the patient has shown some improvement. I believe that venipuncture has greater usefulness and should receive more attention than it has recently.

Dr. Howard Fox, New York: When I reported on the use of venipuncture as an adjuvant to chrysarobin in the treatment of psoriasis, I stated that the improvement might have been due to the bloodletting alone or to the special interest that an old psoriatic would naturally take in a new method of treatment. I am now inclined to think that the venesection had a great deal to do with it. I thought the autoserum treatment of psoriasis had had a quiet burial in the dermatologic "Potter's field." I was, therefore, interested to hear Dr. Schamberg say recently that in the eruptive stage of an attack of psoriasis he considered the autoserum injections to be of value.

Dr. Paul E. Bechet, New York: The words "occasional adjuvant" were used in the title of the paper in order to exclude any thought of a claim that permanent results invariably followed the use of this method. In certain cases venipuncture is a valuable therapeutic adjuvant. In psoriasis of the acutely inflamed type it quickly relieves the congestion.

New and Nonofficial Remedies

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application. W. A. Puckner, Secretary.

ICHTHYNAT. — Ammonium Ichthynatum. — An aqueous solution the important medicinal constituents of which are ammonium compounds containing sulphur in the form of sulphonates, sulphones, and sulphides. These characteristic forms of sulphur result from the sulphonation of the tarlike distillate obtained from certain bituminous shales.

Actions and Uses.—See general article on sulphoichthyolate preparations and substitutes.

Dosage.—Internally, from 0.2 to 2 Cc. (3 to 30 minims) mostly in simple solutions in water, or peppermint water, sometimes in the form of pills or capsules. Locally, in vaginal, uterine or rectal suppositories, in from 0.06 to 0.18 Cc. (1 to 3 minims) bougies, or from 1 to 3 per cent. solution in treatment of gonorrhea. Ointments containing from 10 to 40 per cent. of ichthynat may be prepared, using as a base fat, lanolin or petrolatum.

Manufactured for The Heyden Chemical Works, Garfield, N. J. No U. S. Patent. U. S. Trademark No. 44,053.

Ichthynat is a brown-black, syrupy liquid having a characteristic, empyreumatic odor and burning taste.

It is completely soluble in water; incompletely soluble in alcohol or ether, but nearly soluble in a mixture of equal volumes of alcohol and ether; also soluble in a mixture of equal volumes of alcohol, water and ether. It is miscible with glycerine.

The aqueous solution of ichthynat (1:10) has a faintly acid reaction on blue litmus paper. The aqueous solution of ichthynat (1:10) yields a greenish-black resin-like precipitate on the addition of hydrochloric acid. This precipitate is soluble in ether; it is partially soluble in alcohol; soluble in water, but if dissolved in the latter solvent it may again be precipitated from solution by the addition of hydrochloric acid or sodium chloride test solution. With barium chloride test solution the aqueous solution of ichthynat (1:10) gives a brownish-black precipitate which is insoluble in diluted hydrochloric acid. If the aqueous solution of ichthynat (1:10) be boiled with potassium hydroxide test solution ammonia is evolved. If 1 Gm. of ichthynat be ignited it should leave not more than 0.5 per cent. of residue. If 10 Gm. of ichthynat be diluted with 90 Cc. of water, the mixture placed in a glass-stoppered cylinder and allowed to remain undisturbed for twenty-four hours, no deposit should form.

If dried at 100 C. ichthynat should not lose more than 47.0 per cent. of its weight (absence of an undue amount of *water*). If from 5 to 6 Gm. of ichthynat be weighed into a flask, 25 Cc. of potassium hydroxide test solution and 100 Cc. of water be added, the mixture distilled until no more ammonia passes over, the distillate collected in 15 Cc. of normal sulphuric acid to which 1 drop of methyl orange test solution has been added and the excess of acid then titrated with tenth-normal potassium hydroxide, the amount of normal sulphuric acid consumed should correspond to from 3 to 5 per cent. of total ammonia (NH_3). If from 5 to 6 Gm. of ichthynat be weighed into a beaker, diluted with 50 Cc. of water, 10 Cc. of a 10 per cent. solution of albumin added, followed by 5 portions of 5 Cc. each of diluted hydrochloric acid, shaking after each addition, the mixture made up to a volume of 500 Cc. and filtered through a dry filter, and if 200 Cc. of the filtrate be heated to boiling, 10 Cc. of barum chloride test solution added, the mixture allowed to stand for twenty-four hours, the precipitate of barium sulphate collected, heated and weighed in the usual way, the weight of barium sulphate obtained should correspond to from 5 to 7 per cent. of ammonium sulphate. If from 0.5 to 1 Gm. of ichthynat be weighed into a Kjeldahl flask, diluted with 30 Cc. of water, 5 Gm. of potassium chlorate added, followed by 30 Cc. of nitric acid the mixture evaporated to about 5 Cc., 25 Cc. of hydrochloric acid added, this solution evaporated to about 5 Cc., 25 Cc. of hydrochloric acid again added, this solution evaporated to about 5 Cc., 100 Cc. of water added, this solution heated to boiling, 10 Cc. of barium chloride test solution added, the mixture allowed to stand for twenty-four hours, the precipitate of barium sulphate collected, heated and weighed in the usual way, the weight of barium sulphate should correspond to from 8 to 10 per cent. of total sulphur. If the ammonia contained in the ammonium sulphate as previously determined in ichthynat be calculated, and the result subtracted from the "total ammonia" as previously determined, the remainder should represent the ammonia combined with the organic-sulphonic acids. If this value be multiplied by 1.88 the result (from 3 to 5 per cent.) should represent the sulphur present in the sulphonic acids in an oxidized state, i. e., the "sulphonic sulphur." If the sulphur contained in the ammonium sulphate as previously determined in ichthynat be calculated, and the result subtracted from the "total sulphur" as previously determined, the remainder should represent the sulphur present in the organic sulphonic acids contained in the substanee. If the "sulphonic" sulphur in ichthynat as previously calculated be subtracted from the sulphur in the organic-sulphonic acids as previously calculated, the remainder should correspond to from 5 to 8 per cent. of "organic" ("sulphid") sulphur.

Ichthynat is incompatible with acid and saline solution, fixed alkalies, their carbonates and iodides, alkaloidal salts and mercuric chloride

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, OCTOBER 2, 1920

METHYLENE BLUE REDUCTION TEST IN STUDY OF PROBLEMS IN INFECTION AND IMMUNITY

It may be recalled that Ehrlich demonstrated that living cells reduce methylene blue by appropriating oxygen. When oxygen is taken away from methylene blue it becomes colorless, and the so-called methylene blue reduction test has been applied with interesting results in the study of various problems in infection and immunity. The question as to the manner in which this reduction is brought about still remains open, some holding that it is caused by a "vital activity" of the cytoplasm, others that it is brought about by a simple chemical reaction, and still others that it is an enzymatic process.

Neisser and Wechsberg [1] used methylene blue as an indicator to demonstrate the vitality of leukocytes, spermatozoa, etc., and they found that filtrates of staphylococcus cultures impair leukocytes so that they no longer can reduce it. This effect was found to be due to a true toxin known as staphyloleukocidin. Ricketts [2] applied methylene blue in a study of the action of neurotoxic serum produced by injecting an animal with extracts or suspensions of nervous tissue. He found that an emulsion of normal nervous tissue reduced methylene blue by the conjoint action of heat-resistant and heat-sensitive substances. No reduction took place within twenty-four hours if the tissue had been exposed to a temperature of 70 C. for half an hour, but the addition of normal serum restored the reducing power. Strassnar [3] observed that methylene blue is reduced by sulphydrid (— SH) groups of the tissues and that their activity is destroyed by heat but restored by the addition of tissue containing sulphydrid groups, thus confirming in a way the observation of Ricketts. Recently Nakayama [4] used methylene blue to test the vitality of leukocytes in a study of streptoleukocidin, a toxic substance produced by virulent streptococci, and he presents evidence that this substance is of the nature of a true toxin acting directly on the leukocytes to destroy their morphologic and functional characteristics. Possibly this streptoleukocidin is one of the weapons used by streptococci in their combat with the anti-infectious forces of the body.

Gordon [5] gives an interesting account of the reduction of methylene blue by the meningococcus. He found that the meningococcus has almost no reducing power in water and salt solution, but is very energetic in serum and broth, this difference being explained as the result of impairment of the vitality of the organisms in the fluids mentioned. It was found, further, that disinfectants such as mercuric chlorid, zinc sulphate and chloramin-T also diminish the reducing power of meningococci. Contrary to expectation, it was found that a temperature of 60 C. for half an hour, which is detrimental to the organisms themselves, had almost no effect on their reducing power. As no reduction takes place in cultural fluids from which the organisms have been completely removed, Gordon concludes that it concerns an insoluble enzyme that is confined to the surface and interior of the cocci, in other words, an endo-enzyme. It was also found that while a sterile exudate produced by injection of Witte peptone into a rabbit intraperitoneally failed to reduce methylene blue, a purulent exudate containing meningococci caused reduction in a dilution as high as 1:64, and it is suggested that this reduction test may detect meningococci in purulent exudate if they are alive and present in large numbers.

The reduction of methylene blue may therefore be used for at least two purposes: first, to test whether cells have suffered damage and loss of vitality; and, second, to test whether pathogenic bacteria produce reducing substances which, in turn, possibly may be made use of in diagnosis. In connection with this matter it is of interest to note that Drew [6] finds that cells of malignant tumors possess greater power to reduce methylene blue than normal cells. Possibly a better insight into the activities of malignant cells may come from further studies along this line.

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6. Drew: British J. Exper. Path. **1**: 115, 1920.

THE GROWTH OF POPULATION AND THE FOOD SUPPLY

This is the year in which a census of the population of the United States is taken. The increase in the number of persons in a given area, in some instances, directs attention to the possibilities of subsistence for them. Population and food supply are indissolubly linked together. Will there be enough or will there be a famine? In view of the increase of population, it has been a favorite pastime for scientists to calculate the possibilities of the food supply of the future and to venture prophesies involving the prospect of impending failures. In his presidential address in 1898 before the British Association for the Advancement of Sci-

ence, Sir William Crookes affirmed that England and all civilized nations stand in deadly peril of not having enough to eat. The shortage has not appeared in the expected time and order because this eminent scientist did not adequately take into account the possibilities of increased acreage of cereal grains, greater productivity, and changes in the food supply.

The World War has decreased the number of consumers and producers, and has "brought the wolf of hunger to the doors of millions of people." Yet the menace of famine is gradually being dispelled, so that Sir Henry Rew, whose long experience on the board of agriculture in Great Britain entitles his opinions to respectful consideration, declared in his book on "Food Supplies in Peace and War," published last year, that, "given settled social and political conditions, food production in Europe as a whole may be expected to be restored to its prewar level in the course of two or three years, or, say, after the harvest of 1921." The pressure of economic necessity, combined with the suggestions of agricultural science, are more than likely to keep away direst want from the great majority, even though limited areas may suffer severely because of unfavorable local, geographic or political conditions.

What about ourselves on this side of the Atlantic? During the great struggle just closed, we gave thought to the needs of European brethren in ways that contributed to the filling of empty stomachs as well as the conservation of ethical principles. Our own future now demands some consideration. Pearl and Reed,[1] of the department of biometry and vital statistics at Johns Hopkins University, have estimated, by methods which only an expect statistician may be expected to understand, that the maximum population which continental United States, as now areally limited, will ever have will be roughly twice the present population. This would represent about sixty-six persons for each square mile of land area, a density of population far smaller than that of such countries as Belgium and the Netherlands, with several hundred persons in the same unit of area. Although they are economically self-supporting, they do not produce the means of subsistence directly. On the basis of our present food habits, which in turn are essentially dependent on physiologic requirements, a population of twice our size would require about 250,000,000,000,000 calories per annum.

What is the outlook? According to Pearl,[2] the United States, during the seven years 1911-1918, produced as an annual average, in the form of human food, only 137,163,606,000,000 calories per year. Pearl and Reed [1] remark that unless our food habits radically change, and a man is able to do with less than from 3,000 to 3,500 calories a day, or unless our agricultural production radically increases, it will be necessary, when their modest figure for the maximum population is reached, to import nearly or quite one half of the calories necessary for that population. It seems improbable that the population will go on increasing at any very rapid rate after such a condition is reached. Meanwhile, the menace of famine does not appear as distressing as the pessimists would have us see it. However, before the pinch comes it may be well to realize what are the foremost sources of our nutrition. Wheat occupies the outstanding position; next to it comes the hog; the dairy cow is third. The wheat crop, the hog and the cow together comprise our great reservoir of human nutrients. Together they produce 62 per cent. of all the protein and carbohydrate used as human food, 69 per cent. of all the fat, and 65 per cent. of all the calories. Hence, as Pearl has pointed out, any campaign for increased food production, to be really effective in a nutritional sense, must be concentrated on a very few of the great staples. It would be an economic mistake to overemphasize the calorific value of the dozens of other foods that enter into the dietary of Americans, even though they take a significant physiologic part.

1. Pearl, Raymond, and Reed, L. J.: On the Rate of Growth of the Population of the United States Since 1790 and Its Mathematical Representation, Proc. Nat. Acad. Sc. **6**: 275 (June 15) 1920.
2. Pearl, Raymond: The Nation's Food, Philadelphia, W. B. Saunders Company, 1920.

CALCIUM CONTENT OF THE BLOOD

The element calcium has acquired a position of importance among the inorganic components of the body, and its problematic rôle has grown to considerable significance with the development of modern physiology. The various functions that have been ascribed to calcium cannot be summarized here in detail. Aside from its obvious relation to the growth of the tissues, particularly the bones, the element is known to be involved in the clotting of the blood and of milk, in the maintenance of the physiologic equilibrium that makes the blood an ideal circulating medium and nutrient for the heart, in the preservation of a normal permeability of the blood vessels, and in maintaining a normal irritability of various parts of the nervous system.

In view of these facts and hypotheses—for some of the items cited can scarcely be designated as indisputable facts—one naturally inquires how calcium is transported in the organism. Is it maintained at a constant content in the blood, like sugar or chlorids; or does it fluctuate in amount in the circulation according to variations in supply and demand? Owing to the imperfections of analytic technic, the answers to these questions have been involved in considerable uncertainty. Recently, Kramer and Howland [1] of the Johns Hopkins University have demonstrated anew that the concentration of calcium in the serum of normal adults is singularly constant, so that even small deviations are regarded as diagnostic of disorder. For

1. Kramer, B., and Howland, J.: Method for Determination of Calcium in Small Quantities of Blood Serum, J. Biol. Chem. **43**: 35 (Aug.) 1920.

instance, whereas human blood serum exhibits a content of 9 or 10 mg. per hundred cubic centimeters, the serum of infants suffering from tetany may exhibit a decrease in calcium amounting to more than 50 per cent.[2]

A second problem concerns the possibility of altering the calcium content of the blood. Considerable evidence might be cited to show that the feeding of diets rich or deficient, respectively, in calcium makes no appreciable difference in the amount of this element found in the blood, bones or other tissues.[3] Confirmation has just been afforded by Clark,[4] at the University of California. Feeding a calcium-rich diet to animals had no effect on the calcium content of their blood. A transitory increase could be obtained only by intravenous or subcutaneous injections of lime salts. These findings with respect to the blood, however, do not justify the assumption that in the long run variations in the intake of calcium are without moment to the body.

THE ANTIVIVISECTION INITIATIVE IN CALIFORNIA

The public and the medical profession in California are facing a serious situation. An antivivisectionist initiative is to be voted on by the people of the state at the November election. If the majority of the voters approve the measure, it will become a law without any action on the part of the legislature or of the governor.

Even a cursory examination of the proposed legislation reveals its harmful character. If adopted, all the experimental research in general biology, in agriculture, and in general and veterinary medicine would have to be discontinued. Furthermore, the proper training of students in these essential subjects would be rendered impossible. The measure would virtually abolish in California the use of modern diagnostic methods in the practice of medicine. No Wassermann reactions, no diphtheria tests for virulence, no inoculations to determine the presence of tuberculosis would be permitted. The preparation of vaccines and curative serums, and the standardization of drugs by animal tests could not be carried out. Many public health activities would be paralyzed. For example, the making of a positive diagnosis of bubonic plague, and the control and study of certain epidemics of food poisoning would be stopped because they require procedures prohibited by the proposed law.

The Board of Regents of the University of California and the Trustees of Stanford University have united in a public protest against the antivivisectionist initiative. A part of the statement is as follows:

> The advance of sanitation, modern medicine and physiology and the teaching of biology all rest on animal experimentation. The control of epidemic diseases, the management of surgical operations and of childbirth, and the certification of milk and water supplies would be impossible without the knowledge gained by such studies. In fact, the whole structure of the present day protection of the public from disease rests upon animal experimentation.
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> The University of California and Stanford University are vitally interested in this initiative measure since its passage would stop the research work now going on in their medical schools, hospitals and laboratories, and in the Bureau of Animal Industry. The studies on botulism in olives, which will not only save the ripe olive industry of the state, but many lives, would cease, as would likewise the manufacture of serum for the prevention of hog cholera, the preparation of vaccine for anthrax, and the various other measures that annually save millions of dollars and prevent great suffering among domestic animals. Even feeding experiments on animals would be impossible.
>
> No worse attack on the welfare of the state and on the right of the university to seek and teach the truth could be made. Every man, woman and child, every unborn babe, every domestic animal in the state will be affected if this measure becomes a law. It is unnecessary special legislation due to prejudice and misinformation. No one will tolerate cruelty to animals. The present laws of the state are drastic and quite sufficient to control any abuse. We know that there is no cruelty to animals in the laboratories of the universities. They are in charge of men and women of the highest character, who are unselfishly working to better the lot of their fellow men. Anesthetics are always used for animals in the laboratory in exactly the same way that they are used by surgeons in the operating room. The real object of the antivivisectionist is not the prevention of cruelty to animals, but the prevention of progress in science and medicine.

With reference to the statement that the present laws of the state are sufficient to control any abuse, it is well to recall that in 1915, Hiram Johnson, then governor, vetoed a proposed antivivisection law, and in explaining his refusal to sign the bill, declared:

> I may add that the laws of the state of California for the prevention of cruelty to animals and the punishment of those guilty are plenary. Full authority is given to the humane officer, under the law, to obtain search warrants, enter premises, and gather such evidence as he may suspect exists. With our drastic laws, there can be no excuse for those who insist cruelties are practiced upon animals for permitting these cruelties to continue or those practicing the cruelties to go unpunished.

In the history of the efforts of antivivisectionists to prevent the progress of medicine by methods that have proved of the utmost value in every one of the natural and biologic sciences, this is the first time that an appeal has been made directly to the voters. Eastern antivivisection journals have called repeatedly for financial and other support for the propagandists who are working in California. The activities carried on there indicate that a large amount of money has been contributed from other parts of the United States, and that the usual distribution of misleading and harrowing descriptions of laboratory procedures, a practice so severely censured by the British Royal Commission, has been employed. A test is thus to be made of the general intelligence of the voters of California. When people are properly informed of the methods of animal

2. Howland, J., and Marriott, W. McK.: Quart. J. Med. **11**: 296, 1917-1918.

3. Weiske, H.: Ztschr. f. Biol. **7**: 179, 133, 1871. Weiske, H., and Proskou, H.: Ibid. **8**: 239, 1872. Weiske, H.: Ibid. **10**: 410, 1874. Voit, E.: Ibid. **16**: 55, 1880. Aron, H., and Sebauer, R.: Biochem. Ztschr. **8**: 1, 1908. Kost, A.: Die Kalkverteilung im Organismus nach Aufnahme von Chlorcalcium, Inaug. Diss., Bonn, 1913. Patterson, S. W.: Biochem. J. **3**: 39, 1908. Denis, W., and Minot, A. S.: J. Biol. Chem. **41**: 357, 1920.

4. Clark, G. W.: Effect of Hypodermic and Oral Administration of Calcium Salts on the Calcium Content of Rabbit Blood, J. Biol. Chem. **43**: 89 (Aug.) 1920.

experimentation, the precautions that are taken to avoid unnecessary pain, the character of the investigators, and the beneficent results that flow from medical research, there is no question that a large majority will not only tolerate, but will promote the efforts of the laboratory workers. It is of prime importance that well-informed physicians recognize the fundamental question which is presented by this legislation, and that they spend time freely to give information as to what the measure really means. The burden of responsibility is placed on the enlightened because we live in a democracy, and are ruled democratically.

Current Comment

A NEW PHASE IN THE SERUM THERAPY OF EPIDEMIC MENINGITIS

We have no experimental evidence that meningococci secrete soluble toxin in the strict sense of the word, and it has been assumed by some that the action of meningococci is due largely to substances of the nature of endotoxins, so called. The first definite evidence that such may be the actual case has been produced by Gordon,[1] who finds that extract of dried meningococci in distilled water is fatal to mice in doses of from 0.1 to 0.2 c.c. intraperitoneally. This extract is highly heat resistant, withstanding a temperature of 100 C. or even 120 C. for half an hour without any apparent loss of toxicity which, however, is lost after heating to 120 C. for two hours. Increase in the virulence of a meningococcus strain is not necessarily associated with a demonstrable increase in the production of endotoxin, as Gordon found the virulence of a strain of Type I could be increased tenfold while its toxicity remained unchanged. Another point in favor of the existence of a meningococcus endotoxin is furnished by the following observation: At the beginning of the outbreak of epidemic meningitis in the British armies, the antimeningococcus serum used failed to reduce the gross mortality below 40 per cent. except in the London District, where the serum reduced the mortality to 18.5 per cent. With a view to finding the cause of this variation in the potency of the serum, Gordon took up a study of the specific antibodies in antimeningococcus serum, and he came to the conclusion that the efficiency of the serum used in the London District was not due to its content in agglutinin, precipitin, opsonin, bacteriolysin or complement fixing substances, but to the presence of an antiendotoxin. He found that 0.5 c.c. of the therapeutically successful serum neutralized one minimal lethal dose for the mouse of endotoxin of either Type I or II. Gordon finds that antiendotoxin serum for either Type I or Type II can be produced by injecting rabbits with the corresponding dried meningococci, Type II, though less toxic to the animal, being the better antigen. Further experiments looking to the production of a more potent antimeningococcus serum by making it more definitely antiendotoxic are desirable.

1. Gordon: Special Report 50, Medical Research Committee, 1920.

MOSQUITOES AND BATS

Since the danger of mosquitoes as a factor in the transmission of disease has come to be clearly understood, many suggestions for their eradication have received serious consideration. Some of the proposed plans have proved to be practical and have been put into operation in various parts of the world. This is particularly true of schemes for destroying the breeding places of the mosquitoes by drainage and other sanitary procedures. Where this has proved to be too costly or difficult, suitable chemical treatment, such as the spreading of oil in the objectionable localities, has been found efficacious in reducing the numbers. Among other projects has been the search for biologic agencies that will destroy the insects. Thus, there are species of fish which consume the mosquito larvae. Considerable newspaper notoriety has been attained by a suggestion widely advertised in one of the Southern states suggesting the desirability of securing an increase in the numbers of bats living in localities where mosquitoes and mosquito-borne diseases abound. The proposal is based on the admitted fact that bats devour mosquitoes among the other flying insects that they capture on the wing. Experts of the Bureau of Entomology have been investigating the assertion that bats are important mosquito-destroying animals with respect to the alleged desirability of encouraging the erection of the proposed bat-roosts. The report[1] does not warrant any undertaking of this sort. The evidence in regard to Southern bats is still conflicting, while even experimentation with Northern bats seems not to justify the expense. Bats, however, do feed on injurious insects, and very likely should be protected, a course that the state of Texas is being urged to adopt. However much sanitarians may regret the apparent untenability of the bat-roost idea and the inadvisability of attempting the institution of artificial batteries, the public at large is not likely to regret the decision to leave the bat where it naturally belongs.

IS FAT ABSORBED DIRECTLY INTO BLOOD VESSELS?

It is almost a self-evident truth that, in order to recognize and understand properly abnormalities in the metabolism of matter in the body, we must first know precisely what normally becomes of the food that we eat. The story of the transformation of the nutrients in the organism still remains to be written in its entirety. Even the first steps were scarcely recognized until recently. Today it is known fairly well how carbohydrates leave the alimentary tract and enter the portal blood stream to be mobilized by the liver. The fact that proteins are largely converted into amino-acids prior to their absorption has also been a recent contribution. They reach the tissues directly through the circulation. Fats, too, are now known to be digested, i. e., hydrolyzed, prior to absorption. A resynthesis of the fatty acids occurs after they leave the lumen of the intestine, and it has long been taught that, in contrast with the products

1. Howard, L. O.: Mosquitoes and Bats, Pub. Health Rep. **35**: 1789 (July 30) 1920.

derived from the other two classes of foodstuffs, they find their way first into the lymphatic system, from which they presently reach the general circulation. For a long time there has been doubt as to whether this is the sole path of entry. In the quantitative experiments directed to the solution of this problem, not all the reabsorbed fat has been recovered in the chyle discharged into the jugular vein. To account for the portion that has disappeared, various hypotheses have been offered. Mathews,[1] for example, suggests that it may be catabolized during its passage through the mucous epithelium, or may find its way directly into the blood and so to the liver. If we may rely, however, on the latest experiments by Zucker[2] at Columbia University College of Physicians and Surgeons, the fat content of the portal vein never rises above that of the jugular during the active absorption of fat. This precludes, as he insists, the assumption of any very marked participation of the blood vessels in the absorption of fat. The dominance of the lymphatics in this process thus remains unchallenged, even if the fate of remnants of absorbed fat is not yet made clear.

THE FRUITS OF QUACKERY

One of the best hotels in a great city, towering high on a beautiful boulevard, almost within the business district and yet overlooking the lake! In a beautiful suite high up, away from the noisy bustle of the city, sits a kindly looking gray-haired man. A touch of the wall buttons brings servants scurrying to do his bidding, for he is free with tips and with his smile. At his word a seven-passenger Peugeot, of the latest model, guided by a uniformed chauffeur, rolls up to the entrance. He wishes, perhaps, to attend the theater or to take an airing in the park or to see a friend. Not too often the latter, for he has few friends! The transient guests inquire of the clerk as to his identity. Perhaps he is a member of some foreign royal family; perhaps a magnate resting on the well-earned laurels of some gigantic deal in copper or in cotton! But no! It appears he made his fortune by selling sugar and salt. A pinch of salt and a pinch of sugar in a barrel of hydrant water guaranteed to cure any disease if the sufferer will only put one drop in each eye night and morning—approximate cost, 6 cents a gallon—selling price, $5 an ounce! Through the Middle West, in little country graveyards, are the bodies of some who read the advertisements and believed. And the "professor" orders out his car and says to the chauffeur with a lordly wave of his hand: "To the park, James." The mills of the gods grind slowly . . . Obviously.

1. Mathews, A. P.: Physiological Chemistry, New York, 1915, p. 452.
2. Zucker, T. F.: Studies in the Absorption of Fats, Proc. Soc. Exper. Biol. & Med. **17**: 89, 1920.

Correction of Drop Foot.—Blanc y Fortacin describes in *Medicina Ibera* **11**:191, 1920, how he permanently corrected talipes equinus in extreme adduction by lengthening the Achilles tendon and shortening the tendons of the anterior aspect of the ankle. Then he drove a peg, 6 cm. long, taken from the crest of the tibia, into the external malleolus and astragalus after boring a tunnel for it, using the Albee apparatus to prepare the peg. He says that he would not hesitate to use more than one peg if it seemed necessary.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Chinese Doctors Fined.—Two Chinese doctors, Hong Wong and Cetoon Fong, of Santa Cruz, were fined, respectively, $200 and $100 for practicing medicine without a license. A third, Chew Yuen of Oroville was fined $300 under a similar charge.

Physician Sentenced.—Dr. James E. Thompson of Oakland is reported to have been given an indeterminate sentence of from two to five years in San Quentin prison for having performed an illegal operation. Petition for a new trial was denied.

Narcotic Clinics Closed.—Reports state that the Los Angeles and San Diego narcotic clinics, which were established for the care of persons addicted to the use of morphin, opium and like narcotics, have been permanently closed by order of the government.

Farmers Disapprove Antivivisection Initiative.—The antivivisection initiative measure to be placed on the November ballot was disapproved by the Agriculture Legislative Committee meeting at the state fair on the grounds that the measure would be inimical to control of diseases of live stock.

Illegal Practitioners Arrested.—At Los Angeles, recently, C. E. Parsons, claiming to be a chiropractor, was arrested for practicing medicine without a license. B. E. Frank and Mabel Kellom of Chico are being tried under a similar charge. It is stated that Frank had been arrested six times previously on a similar charge but had never been convicted.

FLORIDA

Trachoma in Public Schools.—In a survey of the schoolchildren at Chattahoochie and Mount Pleasant, recently made under the auspices of the state board of health, the prevalence of trachoma was indicated by the finding of twenty cases among 211 children examined. All children suffering from trachoma are being treated at the Florida State Hospital.

Sanitary Rules for Auto Campers.—The Florida State Board of Health has promulgated regulations to safeguard the health of auto campers during the touring season. The rules and regulations pertaining to the sanitation of automobile camps within the corporate limits of any city or town in Florida provide for sanitary protection of the source of drinking water, proper sewerage facilities, a safe system of garbage disposal, and, in general, provision for the cleanliness of all camping sites. Copies of the regulations are being sent to the various newspapers throughout the United States in order to acquaint those touring in Florida with the details of the new rules.

GEORGIA

Health News.—Dr. Gordon T. Crozier, Valdosta, has been elected commissioner of health of Lowndes County, to succeed Dr. Joe D. Applewhite, resigned.——Dr. Henry D. Allen, Jr., Milledgeville, has been elected commissioner of health of Baldwin County.

Chiropractor Indicted.—J. H. Carrick, chiropractor, was recently indicted by the Laurens County grand jury at Dublin, for practicing medicine without a license. He is said to be the fourth chiropractor to be indicted under the same charge within four weeks.

Hospital Appeals for Radium.—Grady Hospital through its medical board has made an appeal to public spirited philanthropists to present the hospital with a sufficient amount of radium to treat successfully the cancer patients who almost daily apply to the institution for relief. It will require approximately $20,000 to purchase the amount of radium which Grady Hospital needs, and this expenditure is not within the means of the hospital board.

ILLINOIS

Contract for Hospital Awarded.—A contract for the building of the McDonough County Tuberculosis Sanatorium at Bushnell was awarded at a meeting of the board of Macomb, at a contract price of $67,516. Work will be started as soon

as materials can be delivered, and it is expected that the sanatorium will be completed by Aug. 1, 1921.

General Hospital Discontinued.—The Lovell General Hospital at Fort Sheridan was ordered discontinued, effective October 1. About 120 of the patients are to be transferred to Walter Reed General Hospital, Washington, D. C., and the remainder will be cared for at the Post Hospital, Fort Sheridan. The hospital buildings are to be turned over to the commanding general, Sixth Army Corps Area, Chicago.

Anthrax in Shaving Brushes.—A case of anthrax having been discovered in a resident of Ridgefield, Dr. Clarence St. Clair Drake, state director of health, traced the infection to a shaving brush. Further examination revealed that a lot of these infected articles, made in New York, had been distributed from that city to Chicago. The Chicago supply was distributed throughout Illinois, Indiana, Michigan, Wisconsin, Iowa, Missouri, Oklahoma, Arkansas, Texas and Colorado. From New York the brushes were distributed throughout that state, Vermont, Virginia, Kentucky, Ohio and Florida. Five persons died of anthrax in Chicago during May, at which time infection was traced to curled hair used in a factory, several employees of which were victims.

Chicago

Drug Traffic on Wane.—There are fewer drug addicts and less illegal traffic in drugs in Chicago at present than at any other time within the last three years, according to a statement by Dr. Samuel A. Braun, chief of the federal anti-narcotic squad. The decline was ascribed to vigorous application of the Harrison law.

Course in Social Service.—The University of Chicago has inaugurated a graduate school of social service administration, beginning with the autumn quarter, October 1. Elementary, intermediate and full graduate courses are offered to nurses, social workers and others interested in social service. In addition, two extension courses on related subjects will be given.

INDIANA

Physician Sentenced.—Dr. Joseph H. B. Adams, Indianapolis, reported to have been arrested twice within fourteen months on the charge of having performed criminal operations, is said to have been found guilty, fined $1,000 and sentenced to the penitentiary for from three to fourteen years.

National Psychiatric Sanatorium.—Dr. Frank F. Hutchens, Indianapolis, has been appointed medical director and superintendent at the National Sanatorium to be established at Marion for the treatment of psychiatric cases among veterans of the World War. It is expected that the home will be open by November 1, when selected cases of mental conditions will be received there for care. The Civil War veterans now in the home will be sent to other homes.

Tuberculosis Activities.—At a recent meeting of the directors of the Marion County Tuberculosis Association it was pointed out that the three fresh air schools of Indianapolis were filled on the first day of school and that each has a waiting list of children. Thus far none of the branch clinics authorized by the state board of health have been opened because of the inability to secure quarters.——The Flanner House Clinic, hitherto supported by the tuberculosis association, has been taken over by the city board of health which will henceforth bear the entire expense.——Dr. Charles J. McIntyre has been appointed tuberculosis clinician and assigned to the Christamore settlement clinic.

MARYLAND

Personal.—Dr. Joseph A. Seligman is recuperating from an operation at Union Memorial Hospital, Baltimore.

Infantile Paralysis Reported.—A fifth case of infantile paralysis in Washington County was recently reported to the county health board from Clearspring; the other four cases were reported from Williamsport.

Effects of Prohibition.—According to statistics compiled by the Baltimore City Health Department, prohibition is helping to lower the city's death rate, besides cutting down the number of prisoners in the Baltimore City Jail and House of Correction and lessening the population at Bay View Asylum. There have been no fatalities from alcoholism this year, as compared to fourteen in 1919, twenty-eight in 1918, thirty-seven in 1917, and ninety-four in 1916.

New Neuropsychiatric Center.—After the transfer of medical and surgical cases from Perryville Public Health Service Hospital No. 42 to Fort McHenry and the transfer of patients from the hospital at Cape May, N. J., to the Perryville institution, the latter will become the center for psychoneurotic cases in this district. The Maryland institution is one of fifty-nine similar hospitals established by the U. S. Public Health Service, and its work consists of caring for convalescent former soldiers whose condition does not warrant their discontinuing hospital attention. The work is carried on in connection with the Bureau of War Risk Insurance. Old government buidings have been remodeled and a new hospital has been built to accommodate 300 patients.

MASSACHUSETTS

Lindsey Case Continued.—Willard M. Lindsey of Worcester is reported to have been tried recently by the board of registration in medicine for practicing without a license. He immediately started proceedings against the attorney-general and others seeking to restrain them for interfering with his practice. The case has been continued.

Campaign Against Infantile Paralysis.—In an effort to control the outbreak of poliomyelitis, 138 cases of which have been reported since August 1, the city council of Boston appropriated an emergency fund of $10,000, and Dr. Samuel A. Levine, Boston, has been appointed expert diagnostician in the health department for a period of three months.

MICHIGAN

Mobile Health Department Laboratory.—The Muskegon Department of Public Health recently made a survey of the health conditions of Muskegon County resorts, using a truck containing a fully equipped laboratory. Special attention was paid to water and sewage disposal and impure water was found at numerous summer resorts.

Personal.—Dr. Artemas W. Chase has been appointed acting assistant surgeon in connection with the medical work of the War Risk Insurance Bureau in Adrian and Lenawee counties.——Dr. Edwin Rank Vanderslice, for several years medical director of the Michigan Anti-Tuberculosis Association, has resigned to enter private practice in Lansing.

Children's Camp Successful.—Camp Forest Hills, a summer camp for physically subnormal children maintained by the Detroit Department of Health, had a very successful season. Throughout the period of ten weeks, an average of 125 children were guests at the camp and the results attained warrant extension of facilities in 1921, as there are at least 1,100 children who need special health consideration.

MISSOURI

Tuberculosis Society Appoints Committee.—The St. Louis Tuberculosis Society has appointed a medical advisory committee, for the purpose of coordinating the efforts of medical practitioners and institutions in the control of tuberculosis, consisting of Dr. Louis P. H. Bahrenburg, U. S. P. H. S.; Drs. Louis Boislinier and Lawrence Schlenker, Mount St. Rose Hospital; Dr. Seelig Simon, Jewish Home for Chronic Invalids; Dr. M. D. Dwyer, Koch Hospital; Dr. E. L. Opie, Washington University; Dr. O. H. Lamb, St. Louis University; Dr. James Stewart, board of education; Drs. Jacob Jesse Singer and Adolph M. Frank, Washington University Clinic; Dr. A. E. Henske, St. Mary's Hospital, and Drs. Samuel T. Leipsitz and Adelheid Bedal.

Survey of Feebleminded.—A survey of the feebleminded of Missouri was begun in the latter part of August under the direction of Dr. Thomas H. Haines, representing the National Committee for Mental Hygiene. At the request of the national committee, Governor Gardner has appointed an advisory commission to cooperate in the survey, and at its first meeting at Jefferson City, September 15, plans were adopted for giving adequate publicity to the work and for inviting the assistance of those who can solve some of the problems involved in the care of feebleminded. Drs. Malcolm A. Bliss, St. Louis; Edward J. Goodwin, St. Louis; George H. Jones, Jefferson City; Robert Patterson C. Wilson, Marshall, and J. E. Wallace Wallin, St. Louis, are among those appointed on the commission.

NEBRASKA

District Medical Society Meeting.—The meeting of the Third Councilor District Medical Society was held at Table Rock, September 19, under the presidency of Dr. Roy W. Fouts, Falls City, councilor of third district.

Hospital Affiliates with Medical College.—The Methodist Episcopal Hospital has reorganized and enlarged its staff

and has affiliated as a clinical teaching department with the University of Nebraska, College of Medicine, Omaha.

New Hospital Opens Doors.—The Fenger Memorial Hospital, Omaha, the first Danish Hospital in the United States, was opened, September 22, by formal dedication services. The hospital is open to the medical profession in general and will accommodate about 200 patients.

NEW YORK

Centenary of Oswego Medical Society.—In connection with the annual meeting of the Medical Society of the County of Oswego, October 12 and 13, the society will celebrate its hundredth anniversary. Headquarters will be at the Hotel Pontiac, where a banquet will be given on the evening of October 12.

Botulism and Encephalitis Made Reportable.—By recent action of the Public Health Council, botulism and epidemic encephalitis have been made reportable communicable diseases. The amended sanitary regulations governing the reporting of these diseases have been published in the June and July issues of the *Health Officers' Bulletin*.

Deportation of Alien Insane.—Increased appropriations for the United States immigration authorities for the purpose of deporting insane aliens have been urged by the New York State Hospitals Commission. Although 290 insane aliens were deported during the last fiscal year, a large number still remain in the state who might be returned if funds were available. The federal law provides that insane aliens may be deported at any time within five years after their immigration.

Central Association Meeting.—The fifty-second annual meeting of the Medical Association of Central New York will be held at Genessee Valley Club, Rochester, October 7, under the presidency of Dr. O. E. Jones, Rochester. Allegany, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Cortland, Erie, Genesee, Livingston, Madison, Monroe, Niagara, Onondaga, Ontario, Orleans, Oswego, Seneca, Steuben, Wayne, Wyoming and Yates counties are included within the association.

New York City

Ask Physical Test for Auto Drivers.—Health Commissioner Copeland has made public a letter recently written to Secretary of State Francis M. Hugo, in which he suggests that amendments be made to the sanitary code making it impossible for those with defective vision or hearing, or those addicted to narcotic drugs, to become chauffeurs.

Poliomyelitis Reappears.—Following closely on a warning sent out by Dr. Copeland to every physician in the city to guard against poliomyelitis since it had made its appearance in Boston, three cases were reported, September 25. There have been forty-eight cases and eight deaths from the disease in this city since January 1, and a few cases have also been reported upstate. It is urged that all suspicious cases be at once reported to the health department.

NORTH CAROLINA

Typhoid in Thomasville.—In view of the fact that the greater number of cases of typhoid fever reported in Davidson County originated in Thomasville Township, a special antityphoid campaign has been inaugurated by the county health officer, Dr. Richard Victor Yokeley. Special efforts will be made to vaccinate all residents of the township.

O'Reilly Hospital Closed.—O'Reilly Army General Hospital, at Oteen, near Asheville, was ordered closed as an Army hospital, October 15, and the patients transferred to the government tuberculosis hospital in Denver. The hospital buildings have been turned over to the Public Health Service for the hospitalization of War Risk Insurance Bureau patients.

OHIO

Medical College Centenary.—The University of Cincinnati College of Medicine is planning to celebrate the one hundreth anniversary of the founding of the Ohio-Miami Medical College, the name under which the medical school was first established. It is said that Sir Auckland Geddes, ambassador from Great Britain to the United States, has accepted an invitation to speak at the celebration.

Medical Chautauqua at Dayton.—Virtually every doctor in Montgomery and the seven other counties comprising the second councilor district of the Ohio State Medical Society attended the meetings, held September 20-24. The program virtually constituted a postgraduate course, to which papers were contributed by Drs. Hugh T. Patrick, Dean D. Lewis and Alfred C. Croftan, Chicago, Walter B. Cannon, Boston, and Henry J. Gerstenberger and Charles F. Hoover, Cleveland.

District Medical Society Election.—At the annual meeting of the Tenth District Medical Society held at Chillicothe, September 9, at which more than 150 physicians were in attendance, Dr. J. B. Mayes, New Holland, was elected president, and Dr. J. A. Beer, reelected secretary. The next annual meeting will be held in Circleville, sometime in September. Dr. Henry Gerstenberger, professor of pediatrics in Western Reserve University, Cleveland, was the principal speaker at the meeting.

PENNSYLVANIA

State Medical Society to Meet.—The seventieth session of the Medical Society of the State of Pennsylvania will be held October 4 to 7, at the William Penn Hotel, Pittsburgh.

Society Unveils Tablet.—At the first called session of the Washington County Medical Society, held September 14, at the Pennsylvania Training School, Morganza, a tablet in honor of the members of the society who entered the military service during the World War was unveiled. The tablet was provided by a committee appointed by the society more than a year ago, and the presentation address was made by Dr. John Boyd McMurray, Washington.

Test Case on State Aid.—Hearing of the mandamus proceedings brought by Willis Collins of Norwood to test the right of the Pennsylvania Legislature to make appropriations to charitable institutions alleged to be denominational or sectarian, was begun in the Douphin County Court, September 22, before Judge Frank P. Wickersham. The institutions involved in the hearing are Jewish Hospital, Philadelphia; Sisters of Mercy of Crawford and Erie counties; St. Timothy's Hospital, Philadelphia, and the Protestant Deaconesses Home, Pittsburgh.

Philadelphia

Jefferson Medical College Notes.—Dr. Hobart A. Hare, professor of materia medica, delivered the address introductory to the ninety-sixth annual session of the Jefferson Medical College in the clinical amphitheater of the Jefferson Hospital, September 22.——Dr. Frank Crozer Knowles has been appointed professor of dermatology, succeeding Dr. Henry W. Stelwagon, deceased.

Public Health Service Hospital.—A neuropsychiatric hospital, known as U. S. Public Health Service Hospital No. 49, has been opened at the old Naval Hospital, Gray's Ferry Road. The institution, specially fitted for the care of psychiatric patients of the Bureau of War Risk Insurance, has a capacity of 420 beds. The present census is 381, 262 of which were recently transferred from U. S Public Health Service Hospital No. 39, Parkview, closed by order of the Public Health Service.

TENNESSEE

Pure Milk Campaign.—The city health department of Memphis, under the direction of the superintendent, Dr. James Johnson Durrett, is making a crusade to insure for the residents of the city an abundant supply of clean milk, handled in a sanitary manner. The woman's central committee has issued a call to all women who are interested to take an active part in the campaign.

Warning.—The Tennessee State Board of Health has issued a warning calling attention to the operation and activities of a "Dr. Quimby," who is traveling through some of the counties of Tennessee representing himself as an agent of the state board of health and treating cancer with some preparation of his own. "Dr. Quimby" advises his prospective victim that at least two treatments will be necessary, and collects what he can for the first treatment. He has never returned to administer the promised second treatment.

TEXAS

Plague in State.—The ninth death from bubonic plague has been reported from Galveston.——Dr. H. F. White, Passed Assistant Surgeon, U. S. P. H. S., has been ordered to Galveston to take charge of the plague work, and Dr. J. H. Smith has been transferred to Beaumont to carry out plague prevention measures there.

Educational Campaign Against Malaria.—The Cotton Belt, M. K. and T., and other railroads traversing Texas are cooperating with the state board of health in conducting an

educational campaign against malaria. The Cotton Belt's health car, "Anopheles," which includes model screening demonstrations, a supply of state board of health literature on malaria, and illustrations of the life cycle of the mosquito, is being used for an extensive educational tour.

WASHINGTON

Joint Meeting of Tuberculosis Societies.—At a joint meeting of the King County Anti-Tuberculosis League and the Washington State Tuberculosis Association, held in Seattle, September 4, Dr. Donald B. Armstrong, Framingham, Mass., was the guest of honor. He outlined the work done at Framingham in the control of tuberculosis over a period of three years.

Societies Elect.—At the annual meeting of the Stevens County Medical Association, Dr. W. A. Cartright, Valley, was elected president, Dr. Roy Sumner Wells, Colville, vice president, and Dr. Ralph Goetter, Colville, treasurer.——At the annual meeting of the Cowlitz County Medical Society, held in Woodland, Dr. Earl Charles Hackett, Kelso, was elected president, Drs. Lumen Samuel Roach, Kalama, vice president, and Dr. Luther M. Sims, Kalama, secretary.

CANADA

Drug Addicts in Canada.—The department of health, Ottawa, is endeavoring to obtain from physicians a report as to the number of drug addicts now undergoing treatment by each physician.

Alberta Society Meets.—At the annual meeting of the Alberta Medical Society, held September 23, at Edmonton, Dr. Walter S. Galbraith, Lethbridge, was elected president and Calgary was named as the place of meeting for 1921. The new fee table adopted at the meeting provides a fee for day visits of $3, for night calls, $5, and maternity cases, $35.

Personal.—Major-Gen. George Stirling Ryerson, Toronto, will shortly sail for France to spend the winter in southern Europe.——Dr. Romeo R. Boucher, Montreal, recently left for Paris where he will remain for three years.——Dr. Roy J. Farmer, London, Ont., recently was a victim of a shooting accident and is in a precarious condition.

Professor McPhedran Honored.—Dr. Alexander McPhedran, formerly professor of medicine in the medical department of the University of Toronto, was tendered a complimentary banquet and presented with an oil portrait of himself and a club bag, September 24. Dr. Lewellys F. Barker, Baltimore, unveiled the portrait and made a complimentary address. Physicians were present from New York, Cleveland, Connecticut, Ottawa, Hamilton, Guelph and other points.

GENERAL

Child Hygiene Association Meeting.—The annual meeting of the American Child Hygiene Association will be held in St. Louis, October 11-13, under the presidency of Dr. Phillip Van Ingen, New York City.

Mississippi Valley Association Meeting.—The forty-fifth annual meeting of the Mississippi Valley Medical Association will be held in Chicago, October 26-28, under the presidency of Dr. Frank B. Wynne, Indianapolis. Headquarters and meeting place will be at the Congress Hotel.

Railway Surgeons Meet.—The annual session of the New York and New England Association of Railway Surgeons will be held in New York City, October 19, with headquarters at Hotel McAlpin. Clinics in connection with the meeting will be held at the Hospital for Crippled and Ruptured Children and the Post-Graduate Hospital and a cancer conference at the Memorial Hospital.

Missouri Valley Society Elects.—At the annual meeting of the Missouri Valley Medical Association held at Omaha, the following officers were elected: president, Dr. Willson O. Bridges, Omaha; vice presidents, Drs. Elbert J. Watson, Diagonal, Iowa, and Austin McMichael, Rockport, Mo.; secretary, Dr. Charles W. Fassett, Kansas City, Mo., and treasurer, Dr. Oliver C. Gebhardt, St. Joseph, Mo.

Liquor Removed from Navy Supply Table.—By an order recently issued by the Bureau of Medicine and Surgery, the U. S. Navy medical supply depots are prohibited from issuing whisky except to hospitals. When the present supply becomes exhausted no further purchase will be made and whisky will be stricken from the supply table of the medical department of the Navy. It is estimated that the supply now on hand will last not more than two or three weeks.

American Red Cross Medical Personnel in Europe.—The medical report for July shows ninety-six physicians, nine dentists, ten pharmacists, one chemist and one laboratory man, making a total of 116 for the medical personnel in Europe. This number will be cut rather rapidly by the expiration of contracts, so that by November 1, 50 per cent. of this number will have returned home. According to the present plans, there will be about fifty medical men in Europe on December 1.

Child Health Campaign.—The U. S. Public Health Service has inaugurated a campaign of education for the promotion of child health. Supplementing the recent propaganda of education on "The Care of the Baby," a large number of articles have been prepared and distributed to more than 100 newspapers for publication in serial form. The series is entitled "The Growing Child," and deals with a wide variety of subjects for the maintenance and promotion of the health of children.

New Officers of Health Association.—At the forty-ninth annual meeting of the American Public Health Association, held in San Francisco, September 15, the following officers were elected: president, Dr. Mazycke Porcher Ravenel, professor of preventive medicine at the University of Missouri; vice presidents, Dr. Theodore Bruce Beatty, Salt Lake City, Dr. Louis I. Dublin, New York City, Dr. William C. Hassler, San Francisco, and Dr. Roger I. Lee, Boston, and secretary, Mr. A. W. Hedrich, Boston.

Porto Rican Physician Honored.—The remains of the prominent Porto Rican physician, politician and writer, Dr. R. E. Betances, have at last been returned to his native land on an American transport. Dr. Betances was the leader of the Porto Rican revolution against Spain, on the failure of which he had to leave the island. Since this date, 1868, he remained an exile in Paris until his death in 1899. Dr. Betances represented the Cuban revolutionists for many years in Paris and the government of Cuba is now considering granting a pension to his widow. On the arrival at New York City, Dr. Betance's remains were placed in state at the City Hall and were escorted to the transport by a regiment of the National Guard, in addition to a police detachment. The remains have been interred at his native place, Cabo Rojo, Porto Rico, where it is intended to erect a monument to his memory.

Philippine News.—On account of criticism made of the administration of Culión leper colony, an investigation has been made recently of this institution by Dr. J. Albert of the Philippine Board of Public Health. He recommends the addition of two physicians to the personnel, some nurses and the creation of a laboratory, as the present personnel and facilities are inadequate. The number of lepers in the colony has increased from 3,959 in September, 1915, to 4,837 in June, 1920. Out of 8,227 lepers received at Culión, over 4,800 have died there. The expenses of the leper colony amount to 800,000 pesos yearly out of a total appropriation for public health purposes of 3,000,000 pesos.——Dr. F. Calderón, the editor of the *Revista Filipina de Medicina y Farmacia,* has been appointed president of the Philippine Board of Health, and Dr. L. López Rizal, secretary.——There have been opened recently in the General Hospital of the Philippines an electrocardiographic department and a new dispensary for venereal and skin diseases.——Another monument to the national Philippine hero, Dr. José Rizal, has just been erected at Tondo, Manila.——There have been several complaints made against the medical examining board because of the form of the examination questions and the delay in reporting the results of the April examinations. Twenty-two of the candidates at these examinations have been licensed and twenty-six licensed conditionally.

LATIN AMERICA

Physicians in Congress in Colombia.—The *Repertorio de medicina y cirugía* of Bogotá states that there are now eight physician members of the chamber of representatives of Colombia: Drs. L. Zea Uribe, A. Saá, R. Alvarez Durán, F. H. Porras, H. Rodríguez, D. Gutiérrez y Arango, J. Medina and R. Rengifo.

Personal.—Dr. V. Ribón has been appointed professor of anatomy in art at the Escuela Nacional de Bellas Artes at Havana.——Dr. V. Delfino, member of the editorial staff of the *Semana médica* of Buenos Aires, has been appointed director of the Instituto Tutelar de Menores.——Dr. A. López del Valle was the official representative of Cuba at the funeral of General Gorgas.

Guiteras in Africa.—The *Crónica médica-quirurgica* of Havana relates that a cablegram has been received from Dr.

Juan Guiteras announcing his arrival at Dakar in western Africa on his scientific mission under the auspices of the Rockefeller Institution. From the Gold Coast he intends to proceed to Fernando Po and then to the extreme south of Africa. It will be remembered that this is the mission on which General Gorgas had started.

FOREIGN

Testimonial to Bajardi.—On the retirement of Prof. D. Bajardi, on account of having reached the age limit, a bronze portrait tablet was recently unveiled at the Istituto di Clinica e Patologia chirurgica at Turin, with appropriate ceremonies.

Politzer's Library Presented to University of Vienna.—Prof. A. Politzer, whose death was recently reported, has bequeathed his extensive and unique library of works on otology to the university with which he had been connected from 1861 to 1907.

New Hospital in China.—Chinese residents of Huchow have given several acres of land for a hospital site. The projected hospital will have a normal capacity of eighty-two beds, and will be provided with all modern equipment. It is expected that the American Baptist Foreign Mission Society will cooperate with the Methodist Church South and the China Medical Board in the erection of the new plant.

Appeal from Austria.—In a letter received by the American Relief Committee for Sufferers in Austria from Prof. Adolf Lorenz, Vienna, the latter states that if the "hopeless condition of new Austria is not grasped to its full extent by the outer world very soon, the twentieth century of progress and civilization will witness the spectacle, unheard of in the history of mankind, of a people doomed to die of hunger, although it is intelligent, skilful and willing to work."

Spanish Physicians in America.—Dr. Florestán Aguilar, secretary of the Spanish medical and dental associations, and Dr. S. Recasens, a noted gynecologist and dean of the School of Medicine of Madrid, who have been visiting in this country, have returned to Spain. They had intended to proceed to South America to invite Latin American physicians to attend the next Spanish medical congress, but as the date of this meeting has been indefinitely postponed, they had to put off their Latin American trip. During their stay in this country they visited New York City, Baltimore, Washington, D. C., Rochester, Minn., and Chicago.

International Review of Statistics.—Notice has been received of the founding in Italy of a quarterly to be devoted to statistical methodology and its application to various branches of science. Prof. Raymond Pearl of the chair of biometry and vital statistics of Johns Hopkins University is listed as the United States representative on the editorial staff. Among the others are the directors of vital statistics in Argentina, Australia, Belgium and France. The editor in-chief is Prof. Corrado Gini of the University of Padua, Italy. The subscription is 50 lire a year, to be sent to the publishers, Industrie Grafiche Italiane, Rovigo, Veneto, Italy. Articles may be contributed in English, French, German or Italian. The circular states that the scientific grain accumulating in different countries now often goes unharvested on account of the ignorance of competent statistical methods for garnering and using it, and *Metron* has been planned to remedy this.

Deaths in the Profession

Dr. **Rocco Gritti,** dean of the surgeons of Italy, aged 92. ——Dr. **M. A. Pettersson** of Upsala, formerly physician in chief of the Nyköpings hospital, aged 74.——Dr. **L. Cajiao Cardenas** of Honda, Colombia.——Dr. **J. Berrueco** of Madrid. ——Dr. **E. Kuhn,** an internist of Berlin.——Dr. **D. P. von Hansemann,** formerly of the chair of pathologic anatomy at Berlin, prosector at the Virchow Hospital, aged 62.——Dr. **W. P. Ruysch,** inspector-general of the public health service of the Netherlands and since 1912 president of the public health advisory council, aged 72. He founded organizations to promote the welfare of the insane and of industrial workers, etc., organized the first international conference on public and school baths, and often took a leading part in other international public health and medical gatherings.

CORRECTION

Error in Marriage Announcement.—In the marriage announcement of Dr. H. P. Mosby, recently published, the latter was incorrectly referred to as Lieutenant Mosby. Dr. Mosby was discharged from the military service some time ago with the rank of captain.

Government Services

Appointment of Medical Officers

The War Department announces the appointment of the following emergency officers in the Medical Corps of the Regular Army; this is a third list of the medical men who have qualified in the July, 1920, examinations for commissions in the Medical Corps; the names of other successful candidates will be printed in THE JOURNAL from time to time:

LIEUTENANT-COLONEL

A. R. Pendleton, Warrentown, N. C.

MAJORS

J. C. Breitling, Fort Sam Houston, Tex.
E. H. Burgher, Fort Bliss, Tex.
W. A. Chapman, Camp Jessup, Ga.
R. K. Cole, Camp Travis, Tex.
H. L. Conner, Oteen, N. C.
L. C. Covington, Charleston, W. Va.
J. W. Easley, Brownsville, Tex.
F. Gardner, Bloomington, Ind.
A. P. Hitchens, Washington, D. C.
N. O. Lewis, Fort Oglethorpe, Ga.
C. H. Lovewell, Chicago.
A. L. Ludwick, Carlstrom Field, Fla.
J. J. Madigan, Fort Bliss, Tex.
B. J. Marshall, Houston, Tex.
C. P. Martin, Fort Huachuca, Ariz.
B. H. Olmsted, Detroit.
E. A. Palmer, Brownsville, Tex.
J. E. Poore, Columbia, S. C.
P. C. Riley, Takoma Park, D. C.
W. F. Sappington, Fort McPherson, Ga.
H. H. Smith, Jackson, S. C.
H. N. Stilphen, Oteen, N. C.
H. K. Stinson, Fort McPherson, Ga.
H. W. Stuckey, Fort Hancock, N. J.
A. K. Taylor, Camp Travis, Tex.
E. L. Whittemore, Camp Benning, Ga.
C. H. Witherell, Fort Monroe, Va.

CAPTAINS

J. H. Ashcraft, Camp Bnning, Ga.
C. R. Baker, Fort McPherson, Ga.
L. R. Bice, Fox Hills, N. Y.
A. E. Brown, San Francisco.
C. L. Brown, Washington, D. C.
J. S. Brumette, Harrodsburg, Ky.
O. Burkard, New York.
C. R. Bullock, Fort Morgan, Ala.
J. S. Craig, Wevaco, W. Va.
W. M. Crandall, Northwood Narrows, N. H.
H. A. Davis, Washington, D. C.
H. N. Dean, Washington, D. C.
C. M. Deck, Memphis, Tenn.
R. A. Dickson, Washington, D. C.
M. M. Dougherty, Fort McPherson, Ga.
F. J. Eisenman, San Francisco.
T. M. England, Washington, D. C.
D. W. Fetterolf, New York.
R. S. Ferguson, Fort Sheridan Ill.
W. J. Freebourn, Fox Hills, N. Y.
C. Graner, Fort Bliss, Tex.
E. H. Hamilton, Houston, Tex.
J. F. Hamner, Denver.
M. P. Hamrick, Columbus, N. M.
S. J. Harris, Denver.
H. E. Hearn, Fort Oglethorpe, Ga.
F. Holt, Oteen, N. C.
F. B. Hutton, Jr., Camp Gordon, Ga.
R. B. Irving, Washington, D. C.
J. A. Johnson, Camp Jackson, S. C.
H. Killikelly, Camp Travis, Tex.
M. A. Leach, Laredo, Tex.
C. B. Leedom, New York.
O. W. Little, Central, N. M.
J. N. Lothrop, Camp Taylor, Ky.
R. S. Loving, Fort Bayard, N. M.
W. McFarland, Washington, D. C.
R. S. McKenzie, Camp Pike, Ark.
V. N. Meddis, Fort McPherson, Ga.
P. A. Mix, Washington, D. C.
A. Morehouse, Fort Sam Houston, Tex.
D. A. Myers, El Paso, Tex.
R. J. Newman, Camp Gordon, Ga.
C. C. Odom, Fort Sam Houston, Tex.
E. W. O'Donnell, Nogales, Ariz.
S. W. Pennington, Washington, D. C.
C. H. Perry, Washington, D. C.
R. Peterson, Carlisle, Pa.
W. L. Phares, Washington, D. C.
W. C. Porter, Columbus Barracks, Ohio.
C. P. Price, Harrodsburg, Ky.
A. A. Roby, Brownsville, Tex.
G. W. Rogers, Birmingham, Ala.
J. R. Sands, Oteen, N. C.
J. A. Scull, Chicago.
B. L. Shellhorn, Peru, Neb.
R. H. Simmons, Camp Benning, Ga.
S. Smelsey, Fort Sam Houston, Tex.
R. P. Smith, Philadelphia.
H. S. Steenberg, Carlstrom Field, Fla.
C. O. Stimmel, Washington, D. C.
F. O. Stone, Camp Jackson, S. C.
R. P. Strome, Washington, D. C.
O. A. Tandrop, Camp Funston, Kan.
R. Turner, Fort Oglethorpe, Ga.
L. M. Weaver, Camp Funston, Kan.
M. Weinberg, Brooklyn.
J. M. Weiss, Rock Island, Ill.
F. O. Wells, Camp Funston, Kan.
L. C. White, Lee Hall, Va.
W. M. White, San Antonio, Tex.
P. L. Whitmarsh, Atlanta, Ga.
H. T. Wickert, Camp Dix, N. J.
T. G. Williams, Plattsburg, N. Y.
G. C. Young, San Francisco.

FIRST LIEUTENANTS

R. T. Arnest, Camp Taylor, Ky.
J. F. Arthur, Atlanta, Ga.
D. W. Bedinger, Riverside, Calif.
D. R. Blakely, Camp Gordon, Ga.
E. E. Brown, Camp Travis, Tex.
F. T. Chamberlin, Washington, D. C.
F. J. Clune, Camp Taylor, Ky.
C. A. Cummings, Buckingham, Ia.
W. P. Dodds, Camp Taylor, Ky.
J. M. Fontaine, Camp Dix, N. J.
E. C. Hagler, Fort Crockett, Tex.
H. H. Hendricks, Del Rio, Tex.
W. G. Jenkins, Denver.
H. A. Kirkham, Anchorage, Alas.
C. C. Langley, Fort Bliss, Tex.
B. A. McDermolt, Denver.
H. W. Meisch, Camp Gordon, Ga.
J. M. Miller, Camp Jackson, S. C.
R. R. Paronidas, San Francisco.
A. G. de Quevedo, Caguas, Porto Rico.
G. E. Rehberger, Oteen, N. C.
G. W. Ryer, Camp Harry J. Jones, Ark.
W. R. Lewis-Reinhardt, Fort Sam Houston, Tex.
B. T. Sharpton, Clarks Hill, S. C.
C. U. Snider, Camp Lewis, Wash.
C. C. Starkes, Metropolis, Ill.
D. L. Stewart, Fort Leavenworth, Kan.
T. H. Stewart, Jr., Camp Gordon, Ga.
J. E. Weir, Evansville, Ind.
T. F. Weldon, Brooklyn.
A. A. Werner, St. Louis.
G. T. Wilhelm, Memphis, Tenn.
R. C. Wolfe, Camp Grant, Ill.

Examinations for Admission to the Public Health Service

The U. S. Public Health Service has convened boards of medical officers to meet at Washington, D. C., and San Francisco, for the purpose of examining candidates for admission as assistant surgeons. The members of the board at Wash-

ington are Surgs. J. W. Kerr, W. H. Slaughter and D. J. Prather, and of the San Francisco board, Asst. Surg.-Gen. L. D. Williams, and Surgs. J. D. Long and Robert A. Jones.

Longevity Credit for Service in World War

Announcement has been made by Surgeon-General Ireland that former temporary officers recently commissioned in the Army Medical Corps will receive credit for all service rendered as commissioned officers since April 6, 1917. This will prove particularly beneficial to those appointed to the grade of first lieutenant, as they receive promotion to the grade of captain immediately on the expiration of three years' service.

Communicable Diseases in the Army

A case of meningococcus meningitis was reported to the Surgeon-General's office during the week ending September 3, from Fort McDowell, Calif. This is the second case reported from that station within the last three weeks. Two new cases of typhoid fever also developed, one in a soldier recruited at Columbus Barracks and the other at Camp Pike, Ark. The report from Columbus Barracks indicates that infection was acquired prior to the soldier's enlistment in the service.

Medical Officers for the Army

As a result of the action of the selection board which was designed by law to select officers under the new army reorganization bill, 400 medical officers have been secured, the names of those appointed being announced in this and in the two previous issues of THE JOURNAL. Of those selected two have been appointed as lieutenant-colonels, 117 as majors and 281 as captains and lieutenants. While this is encouraging there still remain may vacancies to be filled, and a new examination is announced for October 25-31. Officers who served during the recent war are eligible for this examination. The examination is not competitive, since the number of vacancies in the Medical Corps is sufficient to provide for any reasonable number of applicants who may qualify, the only requirement being that candidates must be under 58 years of age and meet the physical requirements. Applications received later than October 9 will not be considered. They should be sent to the Adjutant-General of the Army on Form 739 A. G. O., which may be obtained by writing direct to the Adjutant-General, Washington, D. C., or at any military post or station.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Sept. 11, 1920.

The Typhus Menace

In the name of the council of the League of Nations, Mr. Balfour has issued an appeal to the various governments for the immediate provision of $1,250,000 out of the $50,000,000 needed to combat the typhus epidemic in Poland and Galicia. Mr. Balfour says that the council of the League of Nations made an appeal last May to all members of the family of nations for funds to enable it to deal with the growing menace of typhus in Poland and eastern Europe. As yet the appeal has met scant success; but so convinced is the council of the greatness and urgency of the peril that it has requested Mr. Balfour in the name of the council to repeat it with all earnestness and emphasis. In Russia the disease seems to be epidemic. A physician just returned from that country says that it has been swept from end to end by typhus; that scarcely a town or village has escaped, and that half the physicians engaged in combating the plague have died. From this vast center of infection the disease is carried westward by an unceasing stream of emigrants. Prisoners returning to their homes, refugees flying for safety, crowd the railways. Two million have passed the Polish disinfection stations since the armistice, and doubtless many more have entered Poland without being subject to medical examination.

Every precaution is being taken at British ports to prevent the introduction of typhus. Aliens from areas where the existence of typhus is suspected are allowed to land only at scheduled ports, and each is subjected to a searching medical examination. Verminous persons are not permitted to land, but if they come from countries which are infected or under suspicion, and have no symptoms, their names and addresses are taken, and the health officer of the district is at once notified. Although British subjects coming from such areas are not subject to the medical examination required of aliens, they would have to undergo inspection if the circumstances required it. The powers of the ministry of health have been greatly extended in this direction. The health officer has powers to examine any person who is suffering from infectious disease on board a ship, and to examine any person who is on board a ship when he has reasonable grounds for believing or suspecting that infectious disease is or may be present on board, or that persons on board the ship have been exposed to infection during the voyage of the ship or during a period of three weeks immediately preceding the arrival of the ship in the district. The ministry regularly communicates to port health officers the information concerning the prevalence of infectious disease abroad.

Prospects for Development of the White Race in Tropical Australia

The deliberations of the medical congress at Brisbane on tropical diseases and the possibilities of living for white people in a tropical climate form an important contribution to the subject. Dr. Cumpston, the director of federal quarantine, moved the following resolution, which the congress adopted: "This congress finds nothing pointing to the existence of inherent insuperable obstacles to the permanent occupation of tropical Australia by a healthy indigenous white race. The whole question of the successful development of a settlement in tropical Australia of white races is fundamentally a question of applied public health as practiced by the American authorities in the Philippines before the war and throughout the Allied armies during the war. The absence of semicivilized colored peoples in northern Australia simplifies the problem, but a considerable extension of the population and a settlement under the existing loose conditions of sanitary practice cannot hope for lasting success. The practical details do not present any difficulty."

The congress urged the improvement of the quarantine defense system; the establishment of diagnosing laboratories at Darwin, Thursday Island, Cairns, Rockhampton and other places; an extension of the hookworm campaign; the elaboration of the Australian Institute of Tropical Diseases, and the appointment of a federal ministry of health. It was pointed out that legislation would be necessary to insure a mode of life suited to the conditions, including the limitation of the consumption of alcohol, town planning, suitable hours of working, facilities for a change at the coast and in the hinterland, cheap communication with the south, and assistance to suitable immigrants. It was emphasized that the problem was one of national importance and needed expenditure. Dr. Cumpston said that it was quite possible to build up a virile race of white people in the tropical North, and that it was time that the superstition that white people could not work there was buried. The leading life assurance offices did not treat residents in northern Queensland differently from those in other parts of Australia, and the death rate was

lower for most diseases, while the birth rate was the same. Infant mortality was favorable, while tropical diseases, except hookworm, were scarce.

Prohibition Endorsed by the British Medical Association in Australia

Under the liquor act for 1920 a referendum is to be held in Queensland every three years, of which the first will take place next October, on three issues: (1) state management of manufacture, importation and sale of fermented and spirituous liquors; (2) prohibition of manufacture, and importation and retail of fermented and spirituous liquors, to take effect in 1925; (3) continuance of the present system. A meeting of the Queensland branch of the British Medical Association has been held in Brisbane to consider the attitude to be adopted toward the referendum. Dr. A. H. Marks, C.M.G., D.S.O., opened the discussion. He said that he had enjoyed a glass of wine or an iced "lager" in the summer time and heartily agreed with the verse from Ecclesiasticus that "wine measurably drunk and in season bringeth gladness to the heart and cheerfulness to the mind." He had held the opinion until the last few years that prohibition or any other drastic interference was wrong. During recent years he had traveled a long distance and had seen large numbers of men congregated together and working under peculiar circumstances of stress and strain. He had had command of and responsibility for varying numbers of men. On returning home to a country where the old liquor acts were still in action, he had noted more drunkenness and the results of drunkenness than in Egypt, England, Ireland or South Africa. He had been so impressed by this experience that, although he still liked his "spot," his vote would go for prohibition. Dealing with objections, he said that prohibition was stated to interfere with the liberty of the subject. But the same might be said of the sale of opium or other drugs, or quarantine. It was said to be unworkable, but it had worked very well in Mohammedan countries and in some American states. A discussion followed in which all the speakers favored prohibition. The motion was then carried unanimously that the metropolitan members of the Queensland branch of the British Medical Association, at a special meeting called to consider the liquor referendum, endorse prohibition. It was then moved and carried that a referendum of all the members of the Queensland branch of the British Medical Association be taken on the question.

A Guy's Man on the Johns Hopkins Hospital

A letter from an anonymous Guy's man who has been admitted as an intern to the Johns Hopkins Hospital appears in *Guy's Hospital Gazette*. Having described the course of study pursued there, he ends with a comparison between the systems of teaching at what may be regarded as the most famous examples of the American and the English hospital:

"The whole intellectual atmosphere is as stimulating as the climate is depressing. Yet there is something missing which we have at Guy's and they have not, some intangible quality the lack of which is felt more plainly than it can be described. Perhaps the scrupulous attention to detail is achieved at some sacrifice of general comprehension, and the desire for minute accuracy leads to a suspension of judgment in diagnosis which we, in our British manner, would call unsporting. Perhaps it is that the bustle and rush of competition and the grind of elaborate routine leave room for too little of the friendly personal relations which obtain between the house physician and the Borough (the name of the district of London in which Guy's Hospital is situated). Moreover, the men in the house allow very little time for relaxation; the presence in all parts of the hospital of megaphone attachments, from which his name is called from a central telephone office if he is wanted, allows the house officer little rest; meals are hurried through on the way to more work, and shop is talked between mouthfuls. Purely scientific achievement brings its own rewards, but to the ordinary mortal half measure satisfaction; one feels sometimes that a little bread throwing at the residents' table would be all to the good. How far the finished product of the Johns Hopkins Hospital would be suited for consulting work in England it is hard to say. He strikes one as being almost too dependent on minute laboratory examinations. The many special tests which he has been trained to consider essential before pronouncing a definite opinion would not appeal to the general practitioner or his patients. But it is to be remembered that the medical education of the lay public here is in striking contrast to that of Great Britain. The casual laborer is not content with a "bottle of medicine," but expects a systematic physical examination. Every man in the street knows the meaning of the terms "blood pressure" and "Wassermann test." The high standard of scientific work which obtains here must depend to a large extent on financial resources. There are many whole-time workers in departments of both teaching and research; laboratories are excellently equipped, not only with apparatus, but with skilled technicians. Here scientific medicine is practiced and taught under optimum conditions. High ideals are attained and high standards arrived at. It is a great place to work in, and the kindness of the residents makes it a pleasant place to live in—in spite of the climate."

MEXICO CITY

(From Our Regular Correspondent)

Sept. 12, 1920.

Plague and Yellow Fever

The outbreak of plague which began at Vera Cruz in the latter part of last April may now be considered as ended, since the last case of the disease occurred on June 30. At this date there are no cases in the pesthouse, and the examination of rodents continues to be uniformly negative so far as microscopic plague lesions or *B. pestis* are concerned. Without reflecting on the influence exerted on this result by the energetic antiplague campaign, it seems that one of the factors involved in the success was the high temperature at Vera Cruz, which probably attenuated the virulence of the plague bacillus. This assertion is based on the fact that after inoculations were made on guinea-pigs with the germ isolated from the Vera Cruz patients, these animals lived five days and even longer. Orders have been issued to stop the campaign, although measures will still be enforced to prevent a new importation of the disease, taking into consideration that some cases of plague still recur in American gulf ports. In the antiplague campaign a very active part was taken by the Citizens' Committee on Public Health, consisting of the most prominent persons of Vera Cruz, which will be continued permanently. To wind up its work this committee has decided to present a medal and a diploma to Mr. Foster, the American consul, as an acknowledgment of his services. Dr. Michel, the sanitary representative of the American government and a faithful co-worker in the plague campaign, will also receive some acknowledgment, although its form has not been decided as yet.

Yellow fever is still present at Vera Cruz, although the type of the disease is not so severe. So far eighty-four cases with twenty-seven deaths have been reported, and there remain seven patients under treatment. The campaign against this disease has been pushed in every possible way: oiling of lagoons, ponds and pools, so abundant at Vera Cruz and its suburbs, and also other rain receptacles; isolation of patients as soon as discovered, and the other measures previously reported. It has been impossible to try prophylactic

vaccination on a large sale, as the vaccine was soon exhausted and the germs in Mexican laboratories show very little vitality. It has therefore been necessary to wait until the *Leptospira* cultures made recently from guinea-pigs inoculated with blood from the Vera Cruz patients show a sufficient growth for the preparation of the vaccine (at least three weeks, according to Noguchi's advice). The national department of public health sent a cablegram to the International Health Board of the Rockefeller Foundation, asking a supply of antileptospira serum. The foundation, however, has been unable to send this on account of having fulfilled requests from Guatemala and El Salvador. We hope, however, to receive shortly a supply of the serum which, according to Dr. Heiser of New York, has fulfilled all hopes. This seems proved by the experience in Peruvian patients treated with it. Meanwhile the use of neo-arsphenamin is being continued. In Tuxpan and Puerto México (Vera Cruz), cases of "black vomit" have been reported. In the first town there have been seven cases and two deaths, and in the second only one case, which ended in death. Outside the state of Vera Cruz there have been reported four suspected cases of the same disease in the city of Culiacán, state of Sinaloa. In view of this alarming situation the national department of public health has multiplied its activities, trying to combat the disease as soon as it has been reported, trying to prevent the spread of the epidemic and urging the people of the invaded and threatened regions to cooperate in the eradication of the disease. At Mérida and Progreso (state of Yucatán) no new cases have occurred, and Dr. Hernández Fajardo, of the first of these two cities, reports good results with Noguchi's serum in two cases in which there was used some which was presented by the New York bacteriologist when he was there last. In the municipality of Peto, in the same state, two other cases of yellow fever have been reported.

After isolating *Leptospira* first from a guinea-pig infected with patient's blood and then from human tissue, Dr. Pérez Grovas has begun to study the agglutination of these germs by the serum of yellow fever patients in order to find some early and easy diagnostic procedure.

The Department of Public Health

This governmental agency has begun a period of decided and beneficent activity in response to an invitation of the American Public Health Association. Dr. Alfonso Pruneda, secretary of the department, was designated to represent the latter at the meeting which will be held in these days in the city of San Francisco. Dr. Pruneda will present to the public health association a report on antiplague measures, another on the yellow fever campaign and another specifying the plans under consideration to conduct campaigns against malaria, hookworm infection and other parasitic diseases of the gastro-intestinal tract that prevail so much in this country. The destruction of the anopheles mosquito by means of bats, which is reported to have given good results at San Antonio, Texas, and other places, is one of the measures being studied by the board of public health, which has already communicated with Dr. Campbell requesting practical details regarding the breeding of these animals. The department has also invited applicants for the position of special delegate in the city of New Orleans to show their competence in a special examination. Besides possessing necessary medical knowledge, they must speak English. The appointee will receive a monthly salary of $500, and must agree to take a graduate course in hygiene and public health in one of the New Orleans schools, besides observing conditions on Mexican-bound ships. The creation of this position has been due to express orders from the president of the republic, who has in mind the training of young physicians in these subjects. As soon as possible, other physicians will be sent to American universities to specialize in public health.

The Rockefeller Foundation has informed the department of public health that it will provide in the United States a fellowship in bacteriology in public health for a Mexican physician, and the president of the republic has decided to accept this meritorious offer, taking upon himself the duty of designating the appointee. One individual who took an active part in this matter, which had been previously initiated by other persons, was Dr. A. R. Goodman of the American embassy. The carrying out of this plan, which begins the wider cultural interchange between the two countries, often advocated by THE JOURNAL, not only is advantageous for this country but also implies closer relations between the neighboring countries. This, in the end, will be profitable for the United States, as all public health advance results sooner or later in better commercial relations.

Personal

Dr. Alfredo Caturegli has resigned the financial agency of Mexico in New York, and will be charged with another important duty.——After a long absence, Dr. Fernando Zárraga has returned to this country from Los Angeles, where he practiced his profession. Dr. Zárraga's friends gave him a banquet, and he has been appointed professor of obstetrics in the school of medicine, a position he filled several years ago with great honor.——Dr. Alvaro Torre Díaz has been designated Mexican minister to Brazil, having already left for Rio de Janeiro. He formerly occupied a similar position in Washington.——Dr. Donato Moreno, former professor of anatomy, has been elected governor of the state of Zacatecas.——Dr. Carl Michel (U. S. P. H. S.) still remains at Vera Cruz engaged in the campaign against yellow fever.——Dr. Juan Graham Casasús has been placed in charge of the campaign against yellow fever at Vera Cruz.

BELGIUM

(From Our Regular Correspondent)

Sept. 1, 1920.

First Congress on Medical History

The first Congress on Medical History was held in Antwerp, early in August, thanks to the initiative of Dr. Tricot. The occasion served to bring together the principal historians of Belgium and foreign countries, among whom might be mentioned Drs. Heger of Brussels, Alcalde and Albiñana of Madrid, Thompson of London, and Laignel-Lavastine of Paris.

THE HISTORY OF ALCOHOLISM

Professor Jeanselme of the Paris medical faculty gave a detailed account of the relation of wine-growing to the spread of alcoholism during the settlement of ancient Gaul by the barbarians from the fifth to the tenth centuries. Quoting from Tacitus and Cicero in support of his thesis, he showed the excesses of intemperance of the Germanic tribes. The Nervi, among others, tried to restrict drunkenness by means of special edicts, but without success. Early in the second century the Romans introduced wine-growing into Narbonne, whence the industry traveled north in the third century. In the fifth century Bordeaux was literally covered with grapevines, and grapes were planted in Poitiers, Angers and the whole Champagne region in the sixth century, though our ancestors for a long time still retained their preference for cerevisa, cider and mead. However, wine entailed and spread drunkenness among the barbarians and this was still more accentuated among the Germans, notwithstanding the edicts of Charlemagne which were designed to regulate the drink evil.

THE CARE OF THE INSANE IN PARIS

The care of the insane of Paris during the eighteenth century was the subject of special study by Fosseyeux. In 1791 there were 1,333 insane patients in the hospitals of Paris, under rather lamentable conditions. At the Hotel Dieu, insane patients were kept for only three months, after which they were transferred to Bicêtre or the Salpêtière. In those days lunatics were considered objects of ridicule, and the mortality at Bicêtre was frightful. At the Salpêt.ière, the insane were kept in chains, their beds consisted of some putrid straw, and their food was passed to them through the bars of their prison. Fragments from an old detailed report gave a realistic picture of the appalling conditions.

POPULAR MEDICINE

Dr. Delaunay of Le Mans reviewed the history of popular medicine and quackery in France during the eighteenth century. Popular medicine had its roots in primitive traditions, while the religious pilgrimages caused the wholesale erection of the shrines, fountains, arbors, etc., where the faithful invoked the saints in aid of healing their maladies. The empirics meanwhile continued their evil practices, and all efforts to restrict these proved vain. Even the hangman himself practiced medicine by selling pieces of the noose and bones of the executed, as well as objects which had done service in the torture.

SUCCESS OF THE CONGRESS

It may be of interest to remark that this initial meeting was highly successful, in the opinion of foreign participants. In fact, the small historical exhibition that had been set up at the Maison des médecins, in the words of more than one spectator should serve as a nucleus for the eventual establishment of a museum of the history of medicine. Moreover, this will not be the least accomplishment of the Cercle médical of Antwerp in having instituted this congress on the occasion of the tercentenary of its own foundation, for it has been decided to hold a second congress in Paris in 1921, and favorable action was taken on more suggestions than had been even remotely hoped for. The most important among these were the suggestion of Professor Giordano that a federation be formed of all countries represented at the congress and that a bulletin be issued under its auspices for the purpose of centralizing all work related to medical history, and the proposal of Professor Guiart to study in a systematic way the great epidemics that have visited humanity in the course of the ages.

BERLIN

(From Our Regular Correspondent)

Aug. 27, 1920.

Reform of the Medical Curriculum

The conviction entertained by many university lecturers and medical practitioners that some improvement was necessary in the methods of training medical students was strengthened by the experiences of the war. Professor Schwalbe, editor of the *Deutsche medizinische Wochenschrift*, published an essay in 1918, in which he called attention to the inadequacy of the German system of medical education and made certain proposals for its improvement. The essence of his remarks may be briefly summarized as a criticism that too much time was given to the theoretical sciences at the expense of practical exercises, and that, moreover, the scientific instruction itself could be improved in certain directions. The main question was whether the so-called practical year, which followed the medical examinations after the termination of the university instruction, should be maintained in the face of the severe criticism against this arrangement in the last few years. The courses of instruction in the natural sciences demanded improvement, as medical students received instruction in the natural sciences in conjunction with students of chemistry, physics, pharmacy, etc., from members of the science faculty, and not from medical teachers. Too much of their time was devoted to pure science without regard to its medical importance. Schwalbe suggested that these courses be given by medical instructors and that the medical students be assigned classes apart from other students. Other demands related to improving the clinical training so that the students might receive practical preparation for their future professional careers, and not merely attend the clinics as spectators, as has been the common custom. For this purpose the students should serve as assistants (famuli) in the various clinics, principally in the main clinics (medical, surgical and gynecologic and obstetric) and for shorter periods in the special clinics, so that the student might learn at least the elementary diagnostic and therapeutic principles of the specialties. The theoretical instruction in pathologic physiology, social medicine, medical ethics and medical history should be extended, while the courses in anatomy, physiology and other sciences should be purged from all matter superfluous to the future practitioner of medicine or of interest only to specialists and scientific investigators. With slight modifications, these suggestions were submitted at the congress of the Deutscher Aerztevereinsbund in 1919.

After the medical congress, there appeared a great number of articles on the subject, and members of the medical faculties especially made many divergent suggestions. Definite action was taken at the fourth congress of medical faculties held at Halle-on-the-Saale, Jan. 30-31, 1920. The principal decisions related to the following demands: abolishment of the practical year (only a minority favored retention or shortening), and in its place extension of the university course to twelve semesters and obligatory nursing service during two months of the first semester.

The necessity for more thorough practical training is, however, recognized everywhere. Five semesters will be devoted to preclinical studies. The natural sciences will still be taught by members of the science faculty, but particular reference will be had to medicine. Special instruction in zoology and botany will be continued, but with omission of the systematic details. It was unanimously agreed to decrease the number of hours devoted to anatomy. The course in physiology will be more intensive, and a course in psychology will be introduced after the preliminary examinations. Optional attendance on lectures in philosophy will be made feasible by suitable arrangement of the lecture hours. In lieu of the practical year, the students will be given more thorough practical training by compulsory service as assistants at the clinics, hospitals and maternity institutes during the clinical semesters. This service will be absolved during the vacation periods, and will comprise four months in medical, three months in surgical, and three months in gynecologic and obstetric clinics. Pathologic physiology will be made an independent subject, but social medicine will be added as a course in the curriculum, and will include insurance medicine and medical economics. Special lectures will be given on the history of medicine. A standard curriculum for all German universities is declared to be desirable.

All essential demands will be settled by subsequent conferences between practicing physicians and university instructors. The governments of the various states have circulated questionnaires regarding the main points at issue, and the material obtained in response to these will be submitted to a commission composed of representatives of the government, universities, physicians and students, which will make final decisions regarding the reform of medical education. It is to be hoped that this goal will be attained by the beginning of the next year.

Marriages

ROY MACLEAY FORTIER, Major, M. C., U. S. Army, to Miss Theodora Katherine Henckels of Washington, D. C., September 8.

KENNETH BLAKE KEELER, Concord, Mich., to Miss Laura Karine Anderson of Maywood, Ill., September 11.

BIRKHEAD MACGOWAN to Miss Mary Barbara Morris, both of Baltimore, September 6.

MILBANK JOHNSON, Los Angeles, to Miss Isabel Simeral of Cleveland, September 9.

Deaths

Benjamin Franklin Baer ⊕ Philadelphia; University of Pennsylvania, Philadelphia, 1876; aged 74; a veteran of the Civil War; one of the founders of the Polyclinic Hospital; a member of the American Gynecological Society and of the Obstetrical Society of Philadelphia; died at his home, September 11, from bronchial pneumonia.

Henry William Harrison, Roanoke, Va.; Medical College of Virginia, Richmond, 1882; College of Physicians and Surgeons in the City of New York, 1884; aged 71; a member of the Medical Society of Virginia; a Confederate veteran; at one time professor of ancient languages in the University of Virginia; died, September 1.

Horace Carlisle Robles, Albany, Ga.; Atlanta (Ga.) Medical College, 1914; aged 30; a member of the Medical Association of Georgia; scientific assistant, U. S. P. H. S.; while diving into Kinchafoonee Creek sustained injuries from which he died in Phoebe Putney Memorial Hospital, September 14.

James Moore May, Beaver Falls, Pa.; Bellevue Hospital Medical College, 1870; aged 70; commander of the One Hundred and Third Pennsylvania Infantry during the Civil War; one of the organizers of the Beaver Valley General Hospital, New Brighton; died, September 13.

William Edward Nichols, Tulsa, Okla.; Rush Medical College, 1894; aged 47; a member of the Oklahoma State Medical Association; Captain, M. C., U. S. Army, and discharged Dec. 3, 1918; died, September 8, from injuries received when his automobile collided with a sand wagon.

Charles Stuart Brady, Union Hill, N. J.; Hahnemann Medical College and Hospital, Chicago, 1900; Captain, M. C., U. S. Army, and discharged Dec. 16, 1918; for several months on duty with the American Red Cross in Siberia; is reported to have died at Riga, Russia, recently.

John S. Stearns, Port Allegany, Pa.; University of Buffalo, N. Y., 1872; aged 72; a member of the Medical Society of the State of Pennsylvania; died, September 7, from a gunshot wound of the head, self-inflicted, it is believed, while despondent on account of ill health.

Jake Henry Rozzelle, Salisbury, N. C.; North Carolina Medical College, Charlotte, 1912; aged 32; Lieutenant, M. C., U. S. Army, and discharged February 11, 1919; died in a hospital in Charlotte, September 12, following an operation for intestinal obstruction.

James Thomas Gibson, Yonkers, N. Y.; Bellevue Hospital Medical College, 1886; aged 64; a member of the Medical Society of the State of New York, consulting physician to St. Joseph's Hospital; died in Ramsey, N. J., September 16, from heart disease.

Edward J. Barcal, East Palestine, Ohio; Chicago Medical College, 1893; aged 47; a veteran of the Spanish-American War; acting assistant surgeon, epidemiologist, U. S. P. H. S., died in Chicago, September 8, from gangrene of the lower extremity.

William Edwin Gregory ⊕ Stroudsburg, Pa.; University of Pennsylvania, Philadelphia, 1877; aged 66; at one time a member of the Pennsylvania State Legislature and of the Stroudsburg Board of Health; died, September 9, from myocarditis.

Edwin James Rothwell, Denver; University of Michigan, Ann Arbor, 1875; aged 78; a member of the Colorado State Medical Society, and for twenty-five years treasurer of the Denver County Medical Society; died, September 7.

Samuel Philip Heilman, Lebanon, Pa.; University of Pennsylvania, Philadelphia, 1867; aged 78; a member of the Medical Society of the State of Pennsylvania; died, September 11, following an operation for biliary calculus.

Isaac M. Callaway ⊕ Shreveport, La.; Tulane University, New Orleans, 1893; aged 52; for eight years resident physician at Charity Hospital, Shreveport; died in a sanatorium in Shreveport, September 8, from pneumonia.

Thomas B. Luxford, Princess Anne, Va.; Medical College of Virginia, Richmond, 1895; aged 49; a member of the Medical Society of Virginia; died, September 8, from an overdose of morphin taken to relieve pain.

Lemon Thomson, Glens Falls, N. Y.; Albany (N. Y.) Medical College, 1882; aged 63; founder of the first hospital in Glens Falls; health officer of Glens Falls for twenty-five years; died suddenly, September 15.

William C. Steele ⊕ North Canton, Ohio; University of Wooster, Medical Department, Cincinnati; aged 68; a practitioner of North Canton for forty years; died, August 6, from abdominal aneurysm.

Henry W. Earthman, Conroe, Texas; Hospital College of Medicine, Louisville, 1898; aged 49; a member of the State Medical Association of Texas; died, August 3, from nephritis.

John Morgan, New York City and Hadlyme, Conn.; Yale University, New Haven, Conn., 1869; aged 75; a member of the Massachusetts Medical Society; died, August 28.

Edwin Edward Wuttke, Sumner, Iowa; University Medical College of Kansas City, 1906; aged 31; lieutenant, M. C., U. S. Army, and discharged, April 19, 1920; died, June 5.

Paul Pollach, Chicago; Hering Medical College, Chicago, 1895; aged 59; at one time professor of nervous and mental diseases in his alma mater; died, September 22.

Richard J. Hamlen, Detroit; Michigan College of Medicine and Surgery, Detroit, 1892; aged 58; a member of the Michigan State Medical Society; died, September 8.

John P. Matthewson, Paris, Tenn.; University of Nashville, Tenn., 1866; aged 80; surgeon in the Confederate service during the Civil War; died, September 10.

Francis Nathaniel Mattoon, Columbus, Ohio; Starling-Medical College, Columbus, 1873; aged 77; a veteran of the Civil War; died, September 13, from paralysis.

Henry S. Bennett, Jonesville, La.; Memphis (Tenn.) Hospital Medical College, 1907; aged 42; died in New Orleans, La., June 18, from cerebral hemorrhage.

John Henry Cotter, Brooklyn, N. Y.; Albany (N. Y.) Medical College, 1894; aged 52; died in the Brooklyn Hospital, September 15, from heart disease.

Robert Barr Judge, Philadelphia; Jefferson Medical College, Philadelphia, 1887; aged 51; died, September 8, from pernicious anemia.

William S. Vickrey, Bowie, Texas; Worthington Medical College, 1879; aged 67; died, June 17, from acute dilatation of the heart.

John Wallace Cole, Otto, Texas; Vanderbilt University, Nashville, 1884; aged 61; died in Southmayd, Texas, August 17.

Richard Wiltz Vincent, Orange, Texas; Tulane University, New Orleans, 1905; aged 50; died, August 9, from angina pectoris.

Nathan Elbert Eddy, Auburn, W. Va.; University of the South, Sewanee, 1899; aged 41; died, August 6, from angina pectoris.

John Mason King, Fort Smith, Ark.; University of Louisville, Ky., 1892; aged 54; died, August 24, from toxic jaundice.

John Harris Comfort, Port Dalhousie, Ont.; Victoria University, Cobourg, Ont., 1862; aged 93; died September 6.

Alonzo T. Conley, Cannon Falls, Minn.; State University of Iowa, Iowa City, 1874; aged 72; died, September 11.

Samuel M. Hunter, Oklahoma City, Okla.; Louisville (Ky.) Medical College, 1879; aged 66; died, August 31.

John W. Diffenderfer, Bellwood, Pa.; Kansas City (Mo.) Medical College, 1886; died, August 6.

Samuel Young, Halls, Tenn.; University of Louisville, Ky., 1890; aged 78; died, July 4.

Correction.—The notice of the death of Dr. Jacob H. C. King, Greenwood, Ark., which appeared in THE JOURNAL of September 18, page 829, is incorrect. This should have had reference to Dr. John Mason King, Fort Smith, whose obituary notice appears in this issue.

⊕ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

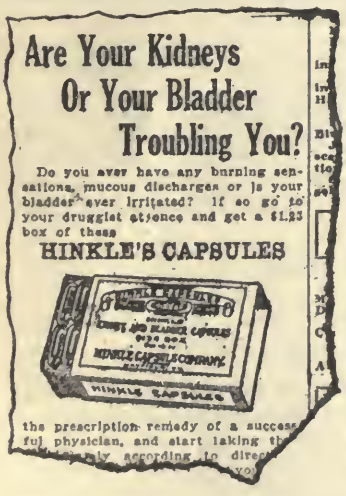
IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

MORE MISBRANDED VENEREAL NOSTRUMS

Injection Malydor.—The Williams Mfg. Co., Cleveland, Ohio, consigned a quantity of "Injection Malydor" that was shipped from Ohio to California in May and December, 1918. The product was recommended as a treatment for venereal diseases and piles. The federal chemists reported that it consisted essentially of a dilute watery solution of boric acid, phenol, a zinc salt, glycerin, acetanilid and unidentified plant material. The therapeutic claims made for the preparation were declared false and fraudulent. In May, 1919, the court entered judgment of condemnation and forfeiture and ordered the product destroyed.—[*Notice of Judgment No. 7395; issued August 31, 1920.*]

G Zit.—The Stearns-Hollinshead Co., Inc., Portland, Ore., shipped in April, 1917, a number of packages of "G Zit Complete—Stearns" and "G Zit Antiseptics." The first named product were bougies which the federal chemists reported consisted essentially of cacao butter and a silver compound, probably nucleinate; the "antiseptics" were reported to be composed essentially of oils of copaiba and cubebs and a compound of sulphur. The stuff was declared misbranded because of false and fraudulent claims to the effect that the stuff was a treatment for gonorrhea, gleet and certain other diseases. In October, 1919, the court entered judgment of condemnation and forfeiture and ordered the stuff destroyed. —[*Notice of Judgment No. 7373; issued August 31, 1920.*]

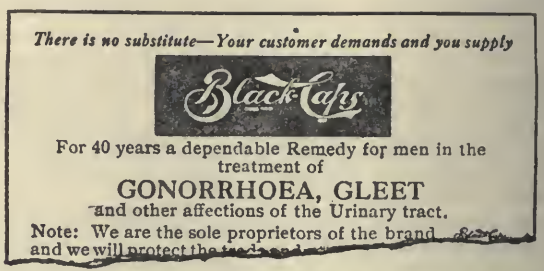
Hinkle Capsules.—The Hinkle Capsule Co., Mayfield, Ky., shipped in November, 1918, a quantity of this product from Kentucky to Oklahoma. The stuff was labeled "For the treatment of Gonorrhea, Gleet, Leucorrhea, kidney and bladder affections, etc." The federal chemists report that it consisted essentially of powdered cubebs, copaiba and cannabis indica with indications of oil of sandalwood and pepsin. The therapeutic claims were declared false and fraudulent. In October, 1919, the court entered judgment of condemnation and forfeiture and ordered the product destroyed.—[*Notice of Judgment No. 7379; issued Aug. 31, 1920.*]



Tisit-Pearls.—A quantity of this product consigned by the S. Pfeiffer Mfg. Co., East St. Louis, Ill., and shipped in June, 1918, from Illinois into Pennsylvania was declared misbranded. The federal chemists reported that the stuff consisted essentially of a mixture of oil of sandalwood, balsam of copaiba, oil of cinnamon and a fixed oil. The stuff was sold for the alleged cure of gonorrhea and gleet and the claims made for it were declared false and fraudulent. In June, 1919, the court entered judgment of condemnation and forfeiture and ordered the stuff destroyed.—[*Notice of Judgment No. 7330; issued Sept. 3, 1920.*]

Tisit.—A quantity of this product consigned by the S. Pfeiffer Mfg. Co., East St. Louis, Ill., and shipped in April, 1918, was declared misbranded. Analysis showed that Tisit was a yellow colored watery solution of zinc sulphate, thymol, alum and glycerin. The federal authorities charged that it was falsely and fraudulently represented as a treatment for gonorrhea, gleet and genito-urinary disorders, and that the claims had been applied to the article with a knowledge of their falsity for the purpose of defrauding purchasers. No claimant having appeared, judgment of condemnation and forfeiture was entered in June, 1919, and the court ordered that the product be destroyed.—[*Notice of Judgment No. 7401; issued Sept. 13, 1920.*]

Black-Caps.—In April, 1919, a quantity of this product was shipped from Ohio to California, being consigned by the Safety Remedy Co. of Canton, Ohio. The federal chemists reported that the preparation consisted essentially of copaiba, cubebs and saw palmetto. The stuff was sold as a cure for venereal diseases and the curative claims made for it were declared false and fraudulent. In May, 1919, the court entered judgment of condemnation and forfeiture and ordered the stuff destroyed.—[*Notice of Judgment No. 7396; issued August 31, 1920.*]



Hexagon.—In April, 1919, a quantity of "Hexagon" was shipped from Missouri to Oklahoma. The article was labeled in part:

"Injection. '4 Ounces Hexagon, for Gonorrhoea and Gleet. . . . Will not cause Stricture. . . . Acts quickly and surely. . . . Quick Acting—1 to 5 days. Prepared by Montebello Laboratories, Billy Grant, Ph.C., 622 Wyandotte St., Kansas City, U. S. A.' Capsules. 'Hexagon capsules, to be taken in half glass of water twice a day in combination with injection.'"

The federal chemists reported that the "injection" consisted essentially of a rose-scented, watery solution of zinc sulphocarbolate, boroglycerid and undissolved bismuth subnitrate and that the "capsules" contained hexamethylenamin. The products were sold as "a proven, quick acting, harmless treatment for Gonorrhea, Gleet and Strains." The therapeutic claims were declared false and fraudulent and in July, 1919, the court entered judgment of condemnation and forfeiture and ordered the product destroyed.—[*Notice of Judgment No. 7351; issued August 31, 1920.*]

Hyatt's A. B. Balsam.—In March, 1919, a quantity of this product was shipped from New York to Pennsylvania having been consigned by the C. N. Crittenton Co., of New York City. The article was labeled in part:

"A depurative and Alterative Compound . . . for obstinate, long-standing cases of syphilis, ulcers, gout, rheumatism, skin diseases, etc." ". . . more especially designed for severe and obstinate cases of Rheumatism, Chronic Ulcers and other blood diseases."

The federal chemists reported that analysis showed the stuff to consist essentially of potassium iodid, alum, Epsom salt, plant extractives and unidentified alkaloids, sugar, glycerin, and 10.55 per cent. alcohol. The curative claims were declared false and fraudulent. In July, 1919, the court entered judgment of condemnation and forfeiture and ordered the product destroyed.—[*Notice of Judgment No. 7372; issued August 31, 1920.*]

DuQuoin's Compound Santal Pearls.—Wm. R. Warner & Co., Inc., New York City, consigned a quantity of this product which was shipped in April, 1919, from New York to Pennsylvania. Analysis by the federal chemists showed the product to consist essentially of a cinnamon-flavored mixture of santal oil and copaiba. The therapeutic claims made for the product as an alleged remedy for gonorrhea and gleet were

declared false and fraudulent. In July, 1919, judgment of condemnation and forfeiture was entered and the court ordered the product destroyed.—[*Notice of Judgment No. 7371; issued August 31, 1920.*]

Correspondence

IMMUNIZATION AGAINST PLAGUE: EXPERIENCE OF A MEDICAL MISSIONARY WITH HAFFKINE'S VACCINE

To the Editor:—I have just read the interesting editorial on "Immunization Against Plague: An Argument for Controlled Experiment," in my last copy of THE JOURNAL, June 19, 1920. As I have lived almost constantly for the last eighteen years in the plague-stricken districts of India, and have performed nearly 30,000 inoculations with Haffkine's vaccine prepared at the government laboratory at Parel, Bombay, the subject of the editorial is of deep interest to me. The plea for accurately controlled experiments to determine the value of therapeutic measures cannot be made too strong or be reiterated too often. And the necessity for it grows apace with the ever-widening range of new agencies constantly pressing forward to assist us, or confound us, in our struggle with disease. As the limitations to our knowledge of the beneficial effects of so many therapeutic and prophylactic agencies are pretty closely paralleled by limitations to our knowledge of their harmful effects, we are justified only in a very robust skepticism toward all newcomers in these lines, unless special conditions offer opportunities for carefully controlled experiments. We certainly are under deep obligations to the scientists for constantly pointing out the importance of this attitude of mind, though, at the same time, all recognize that established knowledge of great value has now and then been acquired in departure from this rule.

Eighteen years ago, when I went to Ahmednagar, one of the plague districts of India, after two years' residence in another part of the country, I found the government offering Haffkine's vaccine as a prophylactic against the disease. As the disease seemed to respond to nothing in the way of treatment, and six or eight out of every ten persons attacked died, whether treated or not, we turned to this vaccine on such recommendation as the government had to offer, though statistics at that time were not such as to furnish any conclusive evidence as to the effects of vaccine. I inoculated between 500 and 600 persons the first year, not Europeans, but Indians, and was in close contact with them throughout the epidemic. The first striking impression I received regarding the effects of the inoculation was not from the number of inoculated persons who escaped infection, but from the clinical picture of the disease in the few attacks I was called on to treat among the inoculated. I have treated several thousand cases of bubonic plague, and I seldom have seen a case in an uninoculated person in which the first, and deep, impression on examining the patient was not that a desperately sick person was lying before me. As I have said, from two to four out of every ten I have seen with plague have recovered, but it has invariably been by a very narrow margin. In most striking contrast to this, I found in my first year's experience that the few cases that occurred among the inoculated, with a very few exceptions, presented a clinical picture of a very mild infection, with a temperature range from about 100 to perhaps 102, and little to give the patient distress besides the pain of the bubo. I say, with a few exceptions, for we never have failed in any epidemic to see now and then a rare case among the inoculated that was very severe and terminated fatally. But severe attacks among those inoculated with the regularly prescribed dose of the vaccine are certainly extremely rare.

As Ahmednagar was a city of 35,000 people, the few hundred inoculated that year made no impression on the progress of the epidemic; but after five or six months it gradually died out. The following year another epidemic occurred, and we resorted again to inoculation so far as we could induce the natives to submit to it. This vaccine was by that time being used in many different places in the country, and it is common knowledge in India today how its use has steadily, and enormously, increased in spite of deep prejudice against it on the part of the vast majority of Indians. This vaccine, with attempts at rat extermination, are the two recognized weapons we have for fighting the disease. We do not have pneumonic plague as an epidemic disease.

Thirteen out of the last eighteen years I have worked through plague epidemics. The epidemics last from four to six months, beginning gradually, with an occasional case in one section of the town, slowly spreading and increasing in the number of daily attacks, until the fastigium is reached after perhaps six weeks or two months. For a couple of months more it may remain at about the same height. Then it gradually dies out. We have used this vaccine in every epidemic I have worked in, and in my work as a medical missionary I have been in the town daily among both the inoculated and the uninoculated. I have no intention of trying to prove the value of the inoculation by statistics, though the staff of the Bombay Government Laboratory, Parel, Bombay, is able to furnish voluminous figures on the subject for those who care for them. But from intimate observation our faith in the value of the vaccine is very strong. It is perfectly true that its effects are not lasting, and the necessity for reinoculation is a great drawback. But it does confer, in a large majority of cases, a high degree of immunity lasting through one epidemic. We also believe we find some traces of immunity in the second year. I have been inoculated with this vaccine myself eleven times in the last eighteen years.

Wai, where I have worked for the last twelve years, with the exception of two furloughs in America of about a year each, passed only one continuous twelve months without an epidemic in the eleven years preceding 1919. When we first came here the people were slow to consent to inoculation, but they have now come to accept it readily in large numbers. It is a town of 10,000 people. The census is taken with great care by the British government. In the epidemic of the winter months of 1916-1917 we inoculated 4,378 persons. In the epidemic of 1917-1918 we inoculated 4,831. I know positively that the inoculated were just as widely scattered through the town (through the infected areas, for all parts of the town were infected) and were of the same castes, same stations in life, sanitary surroundings, habits of life, and exposure to the disease, as the uninoculated were. In fact, they were really more exposed to the infection than the uninoculated, for it is always people in whose houses plague rats have actually died who come in largest numbers to be inoculated. And the inoculated now are much less afraid of the disease than those who have not been inoculated, and take far less pains to avoid houses where rats have died. The uninoculated commonly endeavor to move out of a house known to be infected (where rats have died), but the inoculated in great numbers live on in their homes, throughout the epidemic, when dying rats are certainly leaving the hungry fleas with only the inhabitants of the houses to feed on. In 1916-1917, among less than 6,000 uninoculated persons in Wai, there were 275 attacks of plague and 167 deaths, and among 4,378 inoculated there were only 39 attacks and 10 deaths. In 1917-1918 among the uninoculated, which were less than 6,000 people, there were 76 attacks and 47 deaths, while among 4,831 inoculated there were 17 attacks and 2 deaths. These

figures are from careful daily house to house inspections, checked, as to deaths, by burning ghats reports. As cremation on the burning ghats is the regular method of disposing of the dead, accurate records as to the number and name of the dead are easily kept. The municipal council, of which I am a member, takes great pains to keep accurate figures regarding these facts. Of course, no figures from a few small epidemics of this kind establish final facts as to the efficacy of such an agency; but these figures correspond with our experience year after year, and they come from events that have worn down prejudice among the people until the whole initiative for inoculation now comes from them, not from us. I have had the experience in later years of seeing great crowds gather around an inoculation place, clamoring for admission and actually pulling one anothers' coats off in the struggle to enter and get their turn to be inoculated, and this where, in former years, it took great persuasion at public meetings, and doles of one or two days wages for the poor, to get even a few to submit to inoculation. I have inoculated more than a thousand in a single day, with many more waiting to be done when darkness brought our work to an end. Why every one does not get inoculated might be a natural question; but human, and Eastern, inertia is the sufficient answer, even if it were not a wholly impossible undertaking to inoculate every year the million who occupy the plague infected areas.

LESTER H. BEALS, M.D.,
Wai, Satara District,
Bombay Presidency,
India.

Medical Missionary, American Board of Commissioners for Foreign Missions.

WHY LEFT LIGHT FOR READING PURPOSES?

To the Editor:—I desire here to correct what I believe to be a misapprehension as to the proper light that is called hygienic for reading purposes. I have seen the statement made in the columns of THE JOURNAL, in an article published within the last six months, and a similar statement published in the last issue of the *American Red Cross Magazine,* to the effect that (among other things) the light for reading purposes should come from the left side. I have seen this statement in books, heard it in school, and seen it so often repeated in magazine articles that I believe the idea that light for reading purposes should come over the left shoulder or from the left side, preferably, is generally accepted, even by the profession, as an indisputable fact, a simple, obvious truth.

With an apology in advance, for my confessed ignorance on this subject, I make free to state that I know of no anatomic, physiologic or psychologic reason for preferring light to come over the left shoulder rather than the right for reading purposes. I surmise that this popular conception had its origin in the fact that most of us are right handed, and that in writing, a shadow would be cast on the written characters by the hand that writes, when the light comes from the right side. With the light coming from the left side, however, no such objection prevailed, and the trail left by the pen or pencil was found to be well illuminated. From the obviously best method of lighting for writing purposes, it would appear that the dictum as to the proper lighting for reading purposes has been accepted unquestioned. The time spent by the average person in writing is so small a part of the time he spends in using his eyes for all purposes that it is not conceivable that the average person develops a more acute vision from left-hand illumination. It would seem to me, therefore, that it is a statement of the obvious that for reading purposes it is immaterial from which side the light comes, neither side to be preferred over the other; and that in the case of a left-handed person, for writing purposes, light from the right side is to be preferred.

SOL ROSENBLATT, M.D., Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

"INTERMITTENT TREATMENT WITH ANTIPYRETICS"

To the Editor:—May I ask for further definite information regarding Königer's article on "Intermittent Treatment with Antipyretics," abstracted from the *Münchener medicinische Wochenschrift* (The JOURNAL, Sept. 4, 1920, p. 709).

I infer from your abstract that the "profound effect on the progress of the disease" — tuberculosis — noted by Königer, is favorable. If my inference is correct, it becomes important to know what particular antipyretic he employs by preference, since the therapeutic effects of the various antipyretics could hardly be identical, varying in chemical composition and physiologic action as they do.

BOYD CORNICK, M.D., San Angelo, Texas.

ANSWER.—Königer says further in regard to the effect of antipyretics on the course of tuberculosis that such remedies, if administered intermittently, exert therapeutic effects that go far beyond symptomatic improvement. This applies, however, only to selected cases. In severe, steadily progressing cases, with high fever, it is useless to expect that any markedly favorable changes for the better can be brought about by the reactions produced by antipyretics. In mild cases these reactions are not infrequently followed immediately by an improvement in temperature and in the course of the disease, so that the causal connection seems well established. Occasionally, only a few reactions are required, but usually a considerable number of reactions are necessary to bring about lasting therapeutic effects. Since the identical antipyretic dose produces quite different reactions according to the activity of the disease process and the character and stage of the fever, it is necessary to consider carefully individual peculiarities to secure a proper gradation of the reactions. The length of the intermission, namely, will depend on the character and duration of previous reactions. A cautious procedure is that in which the several reactions are allowed to wear off before treatment is repeated, thus establishing intervals of from three to five days. If the reactions are weak, much shorter intervals are indicated. In his experiments, Königer confined himself to the following antipyretics in small doses: pyramidon, dosage, from 0.05 to 0.2 gm.; acetanilid, from 0.1 to 0.25 gm.; acetylsalicylic acid, from 0.25 to 1.0 gm., and quinin, from 0.25 to 0.5 gm.

ALCOHOL, ARSPHENAMIN AND THE WASSERMANN TEST

To the Editor:—1. It is generally believed among physicians using arsphenamin and neo-arsphenamin that alcoholic drinks taken while under treatment with these drugs counteract their effect. If this is true, please give me the explanation as to why such is the case. 2. It is said that a positive Wassermann test becomes negative under the influence of alcohol. If this is correct, please inform me of the changes in the system that bring about this effect.

O. S. HARE, M.D., Bluefield, W. Va.

ANSWER.—1. The use of alcohol during arsphenamin treatment should be forbidden, because alcoholics are generally more susceptible to by-effects after arsphenamin injections. It is believed that this is probably due to the toxic effect exercised on the blood vessels that are already diseased, especially those of the kidneys. Possibly, too, the metabolism of the alcoholic person favors more rapid decomposition of the drug in the organs and tissues.

2. It has been stated that under the effects of alcohol a negative Wassermann reaction becomes positive. There is no evidence that the converse is true. The exact mechanism is not understood.

PRONUNCIATION OF SALICYLATE

To the Editor:—To settle discussion, please pass upon the pronunciation of the word "salicylate."

C. D. CUDWORTH, M.D. Winsted, Conn.

ANSWER.—Almost all dictionaries now give the pronunciation sal'i-cyl-ate, with the accent on the first syllable. This has the advantage of emphasizing the derivation from *salix,* willow.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, Nov. 9-10. Sec. Reg. Bd., Dr. F. J. Stout, Brinkley. Sec. Electic Bd., Dr. C. E. Laws, Ft. Smith.

CALIFORNIA: Sacramento, Oct. 18-21. Sec., Dr. C. B. Pinkham, 529 Forum Bldg., Sacramento.

CONNECTICUT: Hartford, Nov. 9-10. Sec. Reg. Bd., Dr. Robert L. Rowley, Hartford.

CONNECTICUT: New Haven, Nov. 9. Sec. Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec. Eclectic Bd., Dr. James E. Hair, Bridgeport.

DISTRICT OF COLUMBIA: Washington, Oct. 12-15. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.

FLORIDA: Jacksonville, Nov. 4. Sec., Homeo. Board, Dr. Geo. A. Davis, Sec., East Port.

GEORGIA: Atlanta, Oct. 12-14. Sec., Dr. C. T. Nolan, Marietta.

KANSAS: Topeka, Oct. 12-13. Sec., Dr. H. A. Dykes, Lebanon.

LOUISIANA: New Orleans, Nov. 2. Sec., Homeo. Board, Dr. F. H. Hardenstein, 702 Macheca Bldg., New Orleans.

LOUISIANA: New Orleans, Nov. 2-4. Sec., Dr. E. W. Mahler, 1551 Canal St., New Orleans.

MAINE: Portland, Nov. 9-10. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

MICHIGAN: Lansing, Oct. 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

NEBRASKA: Lincoln, Nov. 11-12. Sec., Mr. H. H. Antles, Lincoln.

NEVADA: Carson City, Nov. 1. Sec., Dr. Simeon L. Lee, Carson City.

NEW JERSEY: Trenton, Oct. 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.

NEW MEXICO: Santa Fe, Oct. 11-12. Sec., Dr. R. E. McBride, Las Cruces.

OKLAHOMA: Oklahoma City, Oct. 13-14. Sec., Dr. James M. Byrum, Shawnee.

PHILIPPINE ISLANDS: Manila, Oct. 11. Sec., Dr. Fortunato Pineda, 610 Rizal Ave., Manila.

SOUTH CAROLINA: Columbia, Nov. 9. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TEXAS: Dallas, Nov. 16-18. Sec., Dr. Thos. J. Crowe, 617-20 Trust Bldg., Dallas.

WEST VIRGINIA: Charleston, Oct. 12. Sec., Dr. S. L. Jepson, Charleston.

Montana April Examination

Dr. S. A. Cooney, secretary, Montana State Board of Medical Examiners, reports the written examination held at Helena, April 6-8, 1920. The examination covered 10 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 17 candidates examined, 15 passed and 2 failed. One candidate was licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Columbian University		(1897)	92.1
Hahnemann Medical College and Hospital, Chicago		(1893)	80.3
Rush Medical College	(1903) 81.4, (1911) 77.9,	(1917)	82.1, 84.5
Johns Hopkins University		(1919)	78.9
University of Minnesota Med. School	(1907) 85.2,	(1920)	81, 83.6
St. Louis College of Physicians and Surgeons		(1909)	77.6
University of Pennsylvania		(1903)	78.7
Chattanooga Medical College		(1907)	75.4
Lincoln Memorial University		(1916)	81.9
National University of Ireland		(1916)	90.1
	FAILED		
Loyola University		(1917)	64.1
National Medical University, Chicago		(1907)	42.8

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Cooper Medical College		(1909)	Washington

Indiana July Examination

Dr. W. T. Gott, secretary, Indiana State Board of Medical Registration and Examination, reports the written examination held at Indianapolis, July 13-15, 1920. The examination covered 16 subjects and included 98 questions. An average of 75 per cent. was required to pass. Of the 31 candidates examined, all passed, including one osteopath. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University		(1920)	90
Hahnemann Medical College and Hospital of Chicago		(1920)	86
Indiana University	(1920) 84, 85, 86, 86, 86, 86, 87, 87, 87, 88, 88, 88, 88, 89, 90, 90, 90, 92.		86, 86,
University of Louisville		(1920)	88, 90
St. Louis University School of Medicine		(1920)	88
Eclectic Medical College		(1920)	90, 92
University of Cincinnati		(1920)	87, 91

Book Notices

REGIONAL ANESTHESIA (VICTOR PAUCHET'S TECHNIQUE). By B. Sherwood-Dunn, M.D., Officier d'Académie. Paris. Cloth. Price, $3.50. Pp. 294, with 244 illustrations. Philadelphia: F. A. Davis Company, 1920.

This book summarizes the writings of Victor Pauchet on the subject of regional anesthesia and of his experiences with it, together with those of P. Sourdat, J. Labouré, and those of the author, B. Sherwood-Dunn. The regional or nerve trunk method of local anesthesia is strongly favored by the author as compared with the infiltration tissue method. He uses procain solution with epinephrin except for anesthetizing the peritoneal ligaments, omental tissues and serovascular pedicles, when he often employs a 1 per cent. solution of quinin and urea hydrochlorid. He uses the latter solution, he states, following the advice of Crile. Through the misplacing of a period in the second paragraph on page 17 (line 8) a wrong idea is conveyed as to the quantity of 0.5 per cent. procain solution that may be safely used. The statements in the paragraph as punctuated would be extremely misleading to one seeking exact information as to the safety with which this solution may be employed. The author undoubtedly intended that it should read: "The high percentage solutions should be injected very slowly, and in amounts never exceeding 20 to 40 c.c. Of the 0.5 per cent. solution, we have employed, however, as much as 300 c.c. without any harm." An excellent description of the technic of anesthesia of the cranial nerves is given. The anesthesia of the fifth nerve and its branches is considered in detail. The author strongly recommends paravertebral anesthesia, which consists in bathing the thoracic and lumbar nerves at the intervertebral foramina with a solution of procain-epinephrin, and he considers paravertebral anesthesia preferable to infiltration of the nerves in the region of the operation. This also anesthetizes the viscera, through the anastomosis with the sympathetic nerves. He considers it the ideal regional anesthesia for the upper portions of the trunk. Intraspinal anesthesia is preferred for most intra-abdominal operations or extensive procedures on the lower extremities. The genito-urinary organs, which are supplied chiefly by the second, third and fourth sacral nerves, are thus anesthetized by the author: In thin subjects, the injections are made through the sacral foramina, the transsacral route; in stout subjects by inserting a needle anterior to the sacrum between it and the rectum, the presacral route. The book is a valuable reference work since it offers through the use of regional anesthesia in a majority of cases an effective anesthesia to those who become skilful in its use. Pauchet states that it may be used in 80 per cent. of cases. It is also a stimulus to the reader to increase continually the number of operations he is doing under local instead of general anesthesia.

MEDIEVAL MEDICINE. By James J. Walsh, K.C.St.G., M.D., Ph.D., Medical Director, Sociological Department Fordham University. Cloth. Price, $2.75. Pp. 221, with illustrations. New York: Macmillan Company, 1920.

Dr. Walsh needs no introduction as a writer on medical history topics. He has gathered here in a small volume many data on the medicine of the middle ages. The book is one of a series of historical manuals being issued by this publisher at a moderate price. The style of presentation is well written narrative, making the book easily readable.

SEXUAL IMPOTENCE. By Victor G. Vecki, M.D. Sixth Edition. Cloth. Price, $3 net. Pp. 424. Philadelphia: W. B. Saunders Company, 1920.

Dr. Vecki, in characteristically forceful manner, has written an excellent work on the subject of impotence. He discusses the condition as a clinical complex which necessitates for its diagnosis a complete physical and endocrine examination, as well as an examination of the urinary and sexual organs. Some sections, but particularly the one in regard to drugs, should be greatly condensed. The chapters in regard to diagnosis, prophylaxis and treatment are especially good. All the necessary methods and technics are described fully. The perusal of these chapters emphasizes the fact that the man-

agement of a case of impotence presents quite a problem, and that its treatment necessitates a broad human sympathy, excellent general medical observation, and skill in the use of urethral diagnostic instruments. All the various methods of treatment are accurately and carefully described, so that any one can carry them out after a little study.

Medicolegal

Seller of Shaving Brush Not Liable for Anthrax

(S. H. Kress & Co. v. Lindsey et al. (U. S.), 262 Fed. R. 331)

The United States Circuit Court of Appeals, Fifth Circuit, in reversing a judgment obtained by the plaintiffs, who were the widow and the minor children of one Lindsey, holds that they could not recover, in an action on a breach of warranty alleged to have been made by the defendant, a mail-order concern, in the sale of a shaving brush to Lindsey, it being averred in the complaint that the brush was charged with bacilli of anthrax, so that, when Lindsey undertook to shave himself and accidentally cut himself slightly with his razor, and then used the brush, he became inoculated with the germs of anthrax, and died from the effects of the disease. The court is of the opinion that the plaintiffs had no privity with the contract containing the alleged warranty, and hence no right of action. There was no survivorship to them under a breach of warranty directly to Lindsey himself. As to the contention that the action was really in tort, and based on the breach of duty by the defendant arising out of an alleged warranty contained in its catalogue, the court says that, if this were so, the right of recovery and the measure of recovery would be fixed by the Mississippi "Wrongful Death Act," as the use of the brush was in that state; and the court thinks that it was necessary, if the action was intended to be under that statute, that the complaint should contain some allegation of knowledge or notice on the part of the defendant that the brush contained anthrax germs, or some sufficient allegation of a negligent act or omission on the part of the defendant which caused the injury to Lindsey.

Evidence and Rules of Evidence in Fracture Case

(Dean v. Sceman (S. D.), 176 N. W. R. 649)

The Supreme Court of South Dakota, in affirming an order denying the defendant a new trial after a judgment had been rendered in favor of the plaintiff for an amount not stated, says that the plaintiff fractured the femur in one of his legs, and, after two months' treatment by the defendant, it was found that the ends of the broken bone were not in proper place, but lapped in such a way that the injury could not heal. It appeared from the undisputed evidence that the fragments of the broken bone were placed in proper apposition by the defendant immediately after the injury. The limb was then placed in splints and bandages. The fracture was obliquely across the bone, but the defendant applied no "extensions" or other means to overcome the tendency of the muscles to contract, other than the use of the splints and bandages. The limb was left in this condition about twenty-four days, when the defendant removed the splints and put it in a plaster cast. He was assisted in this operation by a professional nurse, who testified that when the splints were removed it was apparent that the bones had slipped out of place, and that she directed the defendant's attention to that fact. He denied that he knew, or was told that the bones were out of place at that time, but the jury had the right to believe the nurse, and would have been justified in finding—and probably did find—that the fragments of the bone were out of place and in such a position, when the cast was put on, that a union was improbable. Another significant fact, and one from which the defendant ought to have known that the fragments of bone were not in place, was that the patient's foot did not remain in an upright position, but would gradually lop over, sometimes outward and sometimes in toward the other foot, and frequently had to be straightened up. Moreover, the defendant admitted that, shortly after the cast was applied, he discovered a shortening of the patient's limb, and admitted that he knew that this indicated that the fragments of the bone were slipping by each other, yet the cast was not removed, nor were any steps taken to prevent this slipping, until nearly a month after the cast was put on.

On the question of negligence the jury was instructed that, in order to render a verdict in favor of the plaintiff, it must find that the defendant did not render the services for which he was employed, and did not exercise due and ordinary skill and care, such as is required of physicians. It must also find, if it found that there was an injury, that this was caused by the lack of skill and care (the skill and care rendered by the defendant); there must be a direct connection between the two. Unless it was proved by a preponderance of the evidence that the defendant failed to exercise such reasonable, ordinary and average learning, care and skill, in the treatment of the plaintiff's injury, then the verdict must be for the defendant. These instructions correctly stated the law as applicable to the foregoing facts, and the verdict in favor of the plaintiff was warranted by the evidence.

The mere fact that the broken bone did not stay in place after it had been set and did not grow together in the usual length of time did not necessarily prove, or even imply, that the defendant was negligent or unskilful. Physicians and surgeons are not to be held responsible for results, but only for the kind of service rendered by them.

It was not necessary to plead the failure to use weights in order to admit the testimony of the plaintiff's wife that no weights or extensions were applied. The question as to whether they were used was competent, under the general allegation of negligence, to show the manner in which the defendant treated the plaintiff's injured limb.

The plaintiff had a right to assume and to prove, if he could, that there was but one usual or proper way of treating an injury like his. But this was not conclusive or binding on the defendant. He had the right to rebut this testimony, and to prove, if he could, that some other way was the usual way, or that there was more than one proper way.

During the trial, the court, over the defendant's objection, permitted the plaintiff to exhibit the injured limb to the jury. What the purpose of this exhibition was was not apparent. There was no dispute as to the nature, location or extent of the injury, or as to the extent of the recovery. The supreme court is unable to see how the jury had any more knowledge relative to the issues involved after the inspection than it had before, and the trial court should not have permitted it. On the other hand, the supreme court is unable to see how the defendant was prejudiced by the inspection.

Larger Award for Injuries Justified Now

(Standard Oil Co. v. Titus (Ky.), 219 S. W. R. 1077)

The Court of Appeals of Kentucky, in affirming a judgment for $15,200 damages in favor of plaintiff Titus, a man 35 years of age, whose injuries were such that it was necessary to amputate one of his legs 8 inches below the knee, says that the defendant oil company insisted that the verdict was excessive; but, "since the cost of living has greatly increased and the purchasing power of a dollar is far less than it used to be," the court concludes that the verdict was not excessive.

Society Proceedings

COMING MEETINGS

Am. Acad. of Ophthal. and Otolaryng., Kansas City, Mo., Oct. 14-16
American Association of Railway Surgeons, Chicago, Oct. 6-8.
American Child Hygiene Association, St. Louis, Mo., Oct. 11-13.
American Hospital Association, Montreal, Quebec, Oct. 4-8.
Delaware State Medical Society, Wilmington, Oct. 11-12.
Mississippi Valley Medical Association, Chicago, Oct. 26-28.
New England Surgical Society, Providence, R. I., Oct. 6-7.
New Mexico Medical Society, Roswell, Oct. 15-16.
Pennsylvania, Medical Society of the State of, Pittsburgh, Oct. 4-7.
Southern Medical Association, Louisville, Ky., Nov. 15-18.
Tri-State District Medical Society, Waterloo, Iowa, Oct. 4-7.
Vermont State Medical Society, Rutland, Oct. 7-8.
Virginia, Medical Society of, Petersburg, Oct. 26-29.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Surgery, Chicago

September, 1920, 1, No. 2

*Distribution of Adenomyomas Containing Uterine Mucosa. T. S. Cullen, Baltimore.—p. 216.
*Studies in Bone Transplantations: Experimental Study of Comparative Success of Autogenous and Homogenous Transplants of Bone in Dogs. B. Brooks and W. A. Hudson, St. Louis.—p. 284.
*Gallbladder Disease. C. Jacobson, Boston.—p. 310.
*Open Pneumothorax: Experimental Study of Functional Pathology of Sucking Chest Wounds. C. H. Lenhart, Cleveland.—p. 336.
*Blood Pressure in Cases of Prostatic Obstruction. V. J. O'Connor, Boston.—p. 359.
*Surgical Experiences with An Intracranial Approach to Chiasmal Lesions. G. J. Heuer, Baltimore.—p. 368.
*Results of Operations for Inguinal Hernia, Performed in Johns Hopkins Hospital. A. S. Taylor, Baltimore.—p. 382.

Adenomyomas Containing Uterine Mucosa.—The eighteen cases cited by Cullen show that adenomyomas, consisting of a matrix of nonstriped muscle and fibrous tissue with typical uterine mucosa scattered throughout, are to be found in the uterus, rectovaginal septum, tubes, round ligaments, utero-ovarian ligaments, uterosacral ligaments, sigmoid flexure, rectus muscle and umbilicus, and that occasionally large quantities of normal uterine mucosa are found in the ovary. The cases are reported in detail as to clinical history and pathologic findings.

Bone Transplantation.—The animal experiments performed by Brooks and Hudson demonstrated that a defect in the shaft of a bone of a dog may be permanently regenerated by a bone transplant removed from another dog. Homogenous transplants of bone were successful in 76.8 per cent. of instances as compared with 84.8 per cent. of successful results in autogenous transplants. The age of the animals is an important factor in determining the proportion of success and failure of autogenous transplants of bone in dogs. The importance of the age of the donor or recipient as a factor in determining the success or failure of the homogenous transplant of bone in a dogs is probably of less important than factors of incompatibility of tissue of different individuals.

Gallbladder Disease.—A statistical study of hundreds of cases made by Jacobson shows that gallbladder disease—cholecystitis and cholelithiasis—is a disease of middle age occuring with special frequency in women and closely associated with the increasing incidence of pregnancy. Many cases evidently originate in early age and persist with only vague indefinite symptoms until later in life. Gallstones are due in all probability to a hematogenous infection, commonly streptococcal, of the gallbladder and biliary passages, and are associated with an altered cholesterin content of the blood. Common duct and pancreatic complication are of frequent occurrence in the long persisting cases. There appears to be no special dilatation of the extrahepatic biliary passages in the slow obliteration of the gallbladder through chronic infective processes with fibrosis. Recurrences are due mainly to overlooked or reformed stones, persistence of the original infection or to its extension as a chronic pancreatitis. Injury to the biliary passages during operation is due to the rather frequent abnormalities in the blood vessels and biliary passages. Cholecystectomy is the operation of choice in cholecystitis and cholelithiasis whenever feasible. There is a marked beneficial effect in the long continued drainage of the biliary passages in the complicated cases of cholecystitis and pancreatitis. There is no special detrimental effect of cholecystectomy on the body economy. There is an increasing mortality rate with the increase in the complications of disease. This is an argument for early diagnosis and operation.

Open Pneumothorax.—Experimental open pneumothorax in rabbits causes an intense dyspnea, provided the anesthetic is not too deep, and death, if unrelieved by closure of the thoracic opening. The volume of air respired per minute is decreased despite the increased respiratory effort. The rate of oxygen consumption is variable, due probably to variable compensatory musclar action rather than to impaired gaseous exchange between lung and blood. The excretion of carbon dioxid is impaired, often to a great degree. The respiratory quotient is constantly reduced. There is an increase in the total carbon dioxid content of the blood, and at the same time an increase in the hydrogen ion concentration. These functional changes are important in open chest wounds, in the operation for empyema and related surgical conditions. The results of Lenhart's work as applied to the operation for empyema would suggest these advantageous procedures: In early cases the aspiration of the pus through a needle for a few days in order to allow time for stiffening of the mediastinum. The use of local, instead of general, anesthesia. Closer observation of the patients for the first few hours after operation. The incomplete removal of pus at the operating table. The temporary application of a Politzer bag to the drainage tube, by which a "sucking" wound is prevented and into which the pus may drain. The probably unnecessary refinement of the use of negative pressure per se. In any case it will not be long before the formation of adhesions and the plastic exudate will prevent the development of this condition.

Blood Pressure in Prostatic Obstruction.—A study of the blood pressure changes in fifty-six patients with urinary retention due to prostatic obstruction, fifty-five of whom were operated on was made by O'Connor. Complete drainage of the bladder in patients suffering from urinary retention was attended by a marked fall in systolic blood pressure during the first forty-eight hours. During this period the renal function was diminished. If satisfactory drainage of the bladder was continued, the blood pressure was gradually maintained at a definite, nonfluctuating level. During this period the adequacy of the renal function and the general condition of the patient indicates that he was in the best possible condition for operation. Patients prepared for operation by waiting until this fixed blood pressure level had been established showed a very insignificant postoperative decrease in blood pressure. The majority of these patients who had suffered from long standing urinary retention and who originally presented themselves with a hypertension, have continued thus far to be relieved of their abnormally high blood pressure, except in a few instances in which demonstrable cardiac disease existed.

Intracranial Approach to Chiasmal Lesions.—Heuer's experience is at variance with the views held by other surgeons. He says that from the standpoint of accessibility every chiasmal lesion excepting the portions of hypophysial tumors which have extended far behind the chiasm may be exposed by an intracranial route. Tumors entirely confined to the sella turcica (rare) or portions of tumors within the sella turcica are easily accessible when properly approached and are susceptible of removal. Tumors which have passed beyond the confines of the sella are not only accessible but their size and their operability can be determined. Cysts of the hypophysis are readily accessible, for they, as the solid tumors, appear forward and are as readily susceptible of drainage or removal as by the transsphenoidal approach. Suprasellar lesions are accessible, as are the true chiasmal lesions, tumors which cannot be approached by the nasal route. From the standpoint of accessibility, Heuer says that an intracranial approach best exposes and can most adequately deal with the greatest number of chiasmal lesions; and that the transsphenoidal approach should be considered only in those early cases in which there are sellar headaches but no neighborhood symptoms. The operation employed by him is fully described and well illustrated.

Results of Operations for Inguinal Hernia.—The brief historical review made by Taylor goes back twenty-one years, but chiefly his article deals with the cause of recurrence or weakness in the wound following the various procedures made use of in the efforts to cure hernia, and an appraisement of the value to be attached to each of the several features of the operation. The findings are based on 2,486 herniotomies. Only nineteen of these patients died: seven from strangulated hernia; four from pulmonary embolism; four from pneumonia; two from meningitis, and one each from myocarditis

and status lymphaticus. Halsted's operation is performed almost invariably. All details are reviewed and tabulated. One step in the operation is stressed by Taylor—overlapping of the aponeurosis of the external oblique.

Arkansas Medical Society, Journal, Little Rock

August, 1920, **17**, No. 3

Treatment of Tuberculosis. J. D. Southard, Fort Smith.—p. 64.
Recent Advances in Neurologic Surgery and Especially Diagnosis and Treatment of Brain Injuries. W. Sharpe, New York.—p. 64.
Eye, Ear, Nose and Throat in General Disease. O. Tydings, Chicago. —p. 74.

California State Journal of Medicine, San Francisco

September, 1920, **18**, No. 9

Prehistoric Trephining of Frontal Sinus. F. A. Burton, San Diego, Calif.—p. 321.
*Eclampsia with Seventy Convulsions; Recovery. A. B. Spalding, San Francisco.—p. 325.
Surgical Treatment of Acute Otitis Media in Children, with Report of Fifty Consecutive Cases. J. A. Bacher, San Francisco.—p. 327.
Hookworm and Amebiasis in California. C. A. Kofoid, Berkeley, Calif.—p. 329.
*Basal Metabolism in Thyroid Disease Aid to Diagnosis and Treatment; Utility of Modified Tissot Apparatus. A. H. Rowe, Oakland, Calif. —p. 332.

Seventy Convulsions in Case of Eclampsia.—In a group of seventeen reported cases of eclampsia in which seventy or more convulsions occurred, eight patients died which gives, with the present case report, a total mortality of 44.50 per cent. Considering only eleven cases with less than 100 convulsions, the mortality was only 27 per cent. or the usual expected mortality for the disease. On the other hand, of seven women having more than 100 convulsions, five died, giving a mortality for this group of 71 per cent. Spalding adds one case to this list.

Basal Metabolism in Thyroid Disease.—The value of the estimation of basal metabolism as an aid to the intelligent diagnosis and treatment of thyroid disturbances is emphasized by Rowe. The test helps to differentiate the mild hyperthyroid cases from the neurotic and incipient tuberculosis sufferers. It tells the degree of toxicity of an obvious case of hyperthyroidism, be it associated with a hyperplastic or an adenomatous type of thyroid. The metabolic rate determinations must be the guide of all surgeons who would operate most successfully on toxic goiters. As a safeguard to roentgen-ray therapy, it is already a well recognized necessity. Finally, in diagnosing hypothyroidism in its various degrees and especially in gaging the amount and duration of thyroid administration, basal metabolism has gained a place of great value. Much unnecessary, harmful and unwise thyroid feeding will be obviated if clinicians will administer thyroid only when accurate basal rate determinations indicate it. Rowe also calls attention to the desirability of the modified Tissot type of respiration apparatus as an instrument suitable for installation in an office and one which though more time consuming to operate than the portable type of Benedict yields more extensive information and wider possibilities of investigation in respiration study.

Illinois Medical Journal, Oak Park

September, 1920, **38**, No. 3

*Diphtheria Immunization. A. B. Bosler, Chicago.—p. 185.
Doctors and Public Health. C. W. Lillie, East St. Louis.—p. 190.
Should the Medical Profession Organize or be Bolshevized? Votes, Votes and More Votes. G. F. Lydston, Chicago.—p. 191.
Catharsis Following Abdominal Operations. J. F. Herrick, Ottumwa, Ia.—p. 194.
Roentgen-Ray Manifestations of Diseases of Chest. R. E. L. Gunning, Galesburg.—p. 196.
Diagnosis of Heart Lesions Simplified. J. Weatherson, Chicago.—p. 199.
Cervical or Krönig Cesarean Section. E. L. Cornell, Chicago.—p. 203.
Points in Infant Feeding of Value to General Practitioner. J. R. Gerstley, Chicago.—p. 206.
Analysis of Cases of War Neuroses. L. J. Pollock, Chicago.—p. 208.
Vasotomy Indications; Description of Technic; Postoperative Treatment. R. H. Herbst and A. Thompson, Chicago.—p. 212.
Lithiasis of Urinary Organs. I. S. Koll, Chicago.—p. 218.
*Unilateral Nephritis. G. Kolischer and J. Eisenstaedt, Chicago.—p. 224.
Carrel-Dakin Treatment. W. E. Potter. Oak Park.—p. 225.
Skull Fracture; Two Cases. E. S. Murphy, Dixon.—p. 229.
*Colon Malfusion: Analysis of Cases. R. Hazen, Paris.—p. 231.
Sacral Anesthesia. I. Perrill, Chicago.—p. 236.
Malingerer as Medical and Medicolegal Problem. W. M. Krohn, Chicago.—p. 239.

Diphtheria Immunization.—Of the sixty-eight adults tested by Bosler as to the Schick reaction, twenty-six were positive. Of fifty-four children, aged from 3 to 14 years, fifteen were positive. Out of fifty nurses, twenty-three were positive and eighteen of these gave a 2 or 3 plus reaction. The immunizing effects of toxinantitoxin were also studied. The injections were made in the arm and three injections were given at seven day intervals. Among the fifteen children immunized, no severe reactions were observed. Among the twenty-six adults severe reactions were noted in nineteen. The local reactions in adults were for the most part severe and consisted of marked swelling, induration and redness, extending in some instances from the shoulder to the elbow, and in two or three assuming a cyanotic (purple) appearance. The constitutional symptoms were characterized by a temperature of from 100 to 104 F., chills, malaise, prostration and in one instance by delirium. The second and third injections were, on the whole, less marked than the first, but in several instances the reactions were just as severe and in one case more so. It was noted that those giving the more pronounced Schick reaction gave, as a rule, the more pronounced reaction to the toxin-antitoxin. Also those giving the severer reactions to the toxin-antitoxin were more likely to become immune at an earlier date. The only case giving a positive Schick reaction on retest one and a half years after immunization was one giving a slight reaction to the mixture.

Unilateral Nephritis.—That one kidney may function absolutely normally, while the other excretes urine showing unmistakable evidences of nephritis or nephrosis is the keynote of this paper by Kolischer and Eisenstaedt. A permanent disorder in one kidney is always a menace to its mate and consequently to the carrier on account of the mobilizing of nephrologic elements from the diseased kidney.

Colon Malfusion.—The process by which, in the embryo, the colon becomes agglutinated and fixed in position Hazen speaks of as fusion. Malfusion means a badly fused colon. Hazen claims that these cases are far from being uncommon and that many incorrect diagnoses and operations are performed for chronic appendicitis, ovary trouble, floating kidney, gallbladder disease and ulcer of the duodenum and stomach. After the operation, it is a great embarrassment to the physician to find that his patient has been in no way relieved. These cases, in Hazen's experience, are practically all cases of colon malfusion. The characteristic points in the clinical history, which should serve definitely to distinguish the colon malfusion case from cases of other common abdominal conditions, are: Gradual onset of indefinite abdominal disturbance. Fatigue, usually dating back to early adult age, with physical inefficiency and loss in weight. Pain, dragging in type with more or less steady soreness, which is aggravated by certain postures, and recurrent exacerbations which are definitely induced by exertion or jolting.

Iowa State Medical Society Journal, Des Moines

Aug. 15, 1920, **10**, No. 8

War Surgery. D. S. Fairchild, Clinton.—p. 257.
Infection of Gallbladder. J. E. Brinkman, Waterloo.—p. 266.
Postoperative Tetany. J. H. McGrady, Independence.—p. 270.
Pernicious Vomiting with Plea for Mother. P. E. Gardner, New Hampton.—p. 273.
Student Health Department of University of Iowa. C. R. Thomas, Iowa City.—p. 275.

Journal of Bacteriology, Baltimore

July, 1920, **5**, No. 4

Growth Cycle of Azotobacter. D. H. Jones, Guelph, Canada.—p. 325.
*Diagnosis of Anthrax from Putrefying Animal Tissues. W. H. Hagan, Ithaca, N. Y.—p. 343.
Bacterial Decomposition of Salmon. A. C. Hunter, Washington, D. C. —p. 353.
*Fusiform Bacilli of Vincent's Angina. S. R. Gifford, Omaha, Neb.—p. 365.
Highly Resistant Thermophilic Organism. P. J. Donk, Washington, D. C.—p. 373.
Biology of Clostridium Welchi. J. R. Esty, Providence, R. I.—p. 375.
Use of Agar Slants in Detecting Fermentation. H. J. Conn and G. J. Hucker, Geneva, New York.—p. 433.

Diagnosis of Anthrax.—The chief difficulty in the way of a cultural diagnosis of anthrax, the difficulty in distinguishing rapidly between the true anthrax and the anthrax-like organisms Hagan claims is obviated by a method which consists in examining directly with a high power objective the minute structure of the suspected colony. The method gives at once the morphology of the organism, whether or not it is motile, whether or not spores are present, their location and shape if present, and the relation of the organisms to each other in the colony. Hagan does not advocate the method as one to supersede entirely the use of guinea-pigs in the diagnosis of anthrax from more or less decomposed animal material, but he believes it is a valuable aid in making a rapid diagnosis and will eliminate the guinea-pig in the majority of cases.

Fusiform Bacilli in Vincent's Angina.—Bacilli were found to be more numerous than spirilla in seventeen out of twenty-four examinations. The fusiform bacilli of Vincent's angina show much greater variation in their gram-staining properties than ordinary organisms. A slight predominance of gram-positive organisms was noted, but not great enough to justify any conclusions. The method of staining is not responsible for the variation noted. No spirilla were found in cultures. An organism greatly resembling the fusiform bacilli of Vincent's angina was found as the predominant organism in the postmortem on a case of bronchopneumonia. It was grown to the seventh generation but not isolated.

Journal of Biological Chemistry, Baltimore

August, 1920, **43**, No. 1

*Presence of Iodin in Large Quantities of Sheep Pituitary Gland. E. C. Seaman, New York.—p. 1.
*Hemato-Respiratory Functions. III. Fallacy of Asphyxial Acidosis. H. W. Haggard and Y. Henderson, New Haven, Conn.—p. 3.
*Hemato-Respiratory Functions. IV. How Oxygen Deficiency Lowers Blood Alkali. H. W. Haggard and Y. Henderson, New Haven, Conn.—p. 15.
*Hemato-Respiratory Functions. V. Relation of Oxygen Tension and Blood Alkali in Acclimatization to Altitude. Y. Henderson, New Haven, Conn.—p. 29.
*Method for Determination of Calcium in Small Quantities of Blood Serum. B. Kramer and H. Howland, Baltimore.—p. 35.
*Determination of Minute Amounts of Acetone by Titration. R. S. Hubbard, Clifton Springs, N. Y.—p. 43.
*Determination of Acetone in Expired Air. R. S. Hubbard, Clifton Springs, N. Y.—p. 57.
Biochemical Changes in Flesh of Beef Animals During Underfeeding. C. R. Moulton, Columbia, Mo.—p. 67.
Amino-Acid Synthesis in Animal Organism. Can Nor-Leucine Replace Lysine for Nutritive Requirements of White Rat? H. B. Lewis and L. E. Root, Urbana, Ill.—p. 79.
*Effect of Hypodermic and Oral Administration of Calcium Salts on Calcium Content of Rabbit Blood. G. W. Clark, Berkeley, Calif.—p. 89.
Toxic Action of Ingested Linseed Meal on Trout. L. H. Almy and R. K. Robinson, Washington, D. C.—p. 97.
*Antiscorbutic Value of Honey. H. K. Faber, San Francisco.—p. 113.
Synthesis of Phytic Acid. R. J. Anderson, Geneva, N. Y.—p. 117.
*Experiments on Carbohydrate Metabolism and Diabetes. II. Renal Threshold for Sugar and Some Factors Modifying It. F. M. Allen and M. B. Wishart, New York.—p. 129.
Determination of Iodin in Connection with Studies in Thyroid Activity. E. C. Kendall, Rochester, Minn.—p. 149.
Determination of Iodin in Blood and in Animal Tissues. E. C. Kendall and F. S. Richardson, Rochester, Minn.—p. 161.
Formation of Gum, Levan, by Mold Spores. N. Kopeloff, L. Kopeloff and C. J. Welcome, New Orleans.—p. 171.
Chemistry of Phosphomolybdic Acids, Phosphotungstic Acids, and Allied Substances. H. Wu, Boston.—p. 189.
Reaction of Milk in Relation to Presence of Blood Cells and of Specific Bacterial Infections of Udder. J. C. Baker and R. S. Breed, Geneva, N. Y.—p. 221.
Relation of Urochrome to Protein of Diet. K. F. Pelkan, Berkeley, Calif.—p. 237.
Conjugated Nuclei Acid of Pancreas. E. Hammarsten, Stockholm.—p. 243.
*Water-Soluble Vitamins. I. Are Antineuritic and Growth-Promoting Water-Soluble B Vitamins the Same? A. D. Emmett and G. O. Luros, Detroit.—p. 265.
Water-Soluble Vitamins. II. Relation of Antineuritic and Water-Soluble B Vitamins to Yeast Growth-Promoting Stimulus. A. D. Emmett and M. Stockholm, Detroit.—p. 287.
*Studies in Vitamin Content. W. H. Eddy and H. C. Stevenson, New York.—p. 295.

Iodin in Pituitary.—Fresh sheep pituitary glands were trimmed, ground, dried, and powdered by Seaman. The presence of iodin was determined by the Baumann-Riggs method. Three samples were examined, the first consisting approximately of 30 gm.; the second 50 gm., and the third 100 gm. In none of these samples was any iodin detected. These findings corroborate the findings of Denis.

Hematorespiratory Functions: Asphyxial Acidosis.—The prevailing conception of asphyxial acidosis according to Haggard and Henderson, is in many respects diametrically opposed to the facts. Under low oxygen overbreathing occurs before the blood alkali is appreciably reduced. Intravenous injections of lactic acid do not induce an acidosis at all commensurable with the amount administered. It is improbable that such a condition as "lactic acid acidosis" ever occurs in life. An increase of lactates in the blood or urine is probably an indication, not of acidosis, but of low ratio of carbonic acid sodium bicarbonate, that is, alkalosis.

Oxygen Deficiency and Blood Alkali.—Haggard and Henderson state that the process through which oxygen deficiency lowers the blood alkali is as follows: overbreathing blows off an excess of carbon dioxid (acapnia), leaving the carbon dioxid ratio, i. e., the relation of carbonic acid to sodium bicarbonate, and therefore presumably the C_H in the blood, below normal. This alkalosis is then compensated by a disappearance of alkali from the blood. On restoration to normal oxygen tension the reverse process occurs: the breathing is relatively depressed, the carbon dioxid ratio carbonic acid sodium bicarbonate and the C_H of the blood are raised above normal, and this acidosis recalls alkali to the blood.

Oxygen Tension, Blood Alkali and Altitude.—The barometric pressure to which one becomes acclimatized, through the tension of oxygen, Henderson states is the fundamental factor controlling the volume of air breathed per unit mass of carbon dioxid eliminated, the alveolar carbon dioxid tension, and the amount of alkali called into use in the blood. The law of these relations is formulated by Henderson and its bearing on the unknown anoxemic respiratory stimulant and hyperoxemic respiratory depressant is indicated.

Determination of Blood Calcium.—A method is described by Kramer and Howland whereby the calcium in 2 c.c. of serum may be determined with a maximum error of 3 per cent. In individual determinations of a series the error may often be less than 1 per cent.

Determination of Acetone in Dilute Solutions.—A method is described by Hubbard by which the Messinger titration method may be applied to dilute acetone solutions, certain reactions of acetone were studied, and a method is proposed by which small amounts of acetone can be separated from much larger amounts of alcohol and other interfering compounds.

Determination of Acetone in Expired Air.—A method is described by Hubbard by which acetone can be determined in the expired air by iodin titration or by precipitation with Scott-Wilson's reagent after removal of such interfering compounds as primary alcohols, aldehydes, phenols, and the simple cyclic hydrocarbons. Close agreement of results obtained by these chemically different methods of determination on the breath of normal subjects indicates strongly that the compound so determined is acetone. A series of results obtained by the method on normal subjects and on a few pathologic cases is included.

Effect of Calcium Salts on Blood Calcium.—While the intravenous or subcutaneous injections of calcium salts may cause a transitory increase in the calcium content of rabbit blood, Clark says that feeding a calcium-rich diet has no effect on the calcium content.

Antiscorbutic Value of Honey.—In nine out of a series of ten guinea-pigs fed by Faber on a diet of oats, water, and honey, severe scurvy developed in from four to six weeks. Hence, it is probable that no antiscorbutic vitamin is present in honey.

Carbohydrate Metabolism and Diabetes.—A diminished renal permeability for glucose, in the sense of a raised threshold according to tests with Benedict's copper solution, is definitely proved as the rule in diabetic animals. Various possible causes for the elevation of the threshold are discussed by Allen and Wishart. The prolonged excess of sugar in the blood may be an important factor, but some considera-

tions seem to oppose it. Certain observations suggest that high fat diets may raise the sugar threshold in diabetes even without acidosis. The renal function may be affected by various extraneous causes, of which the elevation of the threshold by epinephrin is one interesting example. No interrelation of the renal and pancreatic functions is demonstrable in the sense of an increased readiness of sugar excretion even in totally depancreatized animals. An elevation of the threshold seems to be connected particularly with severity of the diabetes, but a teleological interpretation of this as a protective mechanism for saving to the body is considered improbable.

Water-Soluble Vitamins.—Emmett and Luros found that the antineuritic vitamin (pigeons) in unmilled rice is stable to heat at 120 C. and 15 pounds pressure for one hour. It is partially altered by heating in the air oven at 120 C. for two hours, and totally destroyed at 120 C. and 15 pounds pressure in two and six hours. The vitamin in extracts is more easily altered by heat. The water-soluble B vitamin (rats) in unmilled rice appears to be stable to heat at these same temperatures, that is, it is not distinctly or totally broken down. Whether this vitamin was slightly destroyed could not be definitely ascertained due to the lack of quantitative methods. These findings suggest tentatively, at least, that the antineuritic (pigeons) and the water-soluble B (rats) vitamins are not the same, and that it would be better to consider them as being different until further proof to the contrary has been adduced.

Vitamin Content Measurement.—Eddy and Stevenson present experiments conducted with both the Bachmann and Williams technic for vitamin measurement and present a new technic which seems to eliminate some of the difficulties in manipulation of these two tests. Evidence is presented in regard to the specificity of the test that seems to confirm the view that the cause is the B vitamin and that the presence of the C vitamin does not in any way affect the test. Two applications of the test are given as illustrative of its field of application.

Maine Medical Association Journal, Portland

July, 1920, **10**, No. 12

Defects in the Draft in Maine. C. B. Sylvester, Portland.—p. 351.
Mental Condition of Prisoners. H. M. Swift, Portland.—p. 362.

Medical Record, New York

Sept. 11, 1920, **98**, No. 11

Mammalogy: An Anatomic and Taxonomic Consideration of Group to Which Man Belongs. R. W. Shufeldt, Washington, D. C.—p. 421.
Therapy of Hyperthyroidism. M. F. Morris, Jr., Atlanta, Ga.—p. 431.
Fundamental Principles Underlying Intestinal and Rectal Surgery. J. M. Lynch, New York.—p. 432.
Lethargic Encephalitis. W. A. Campbell, Colorado Springs, Colo.—p. 434.
*Accurate and Simple Method of Testing Coagulation Time of Blood. G. R. Love, Chicago.—p. 436.
Spontaneous Closure of Large Vesico-Uterine Fistula. G. L. Brodhead, New York.—p. 437.
Supernumerary Breasts in Axillae. G. B. Lake, Columbus Barracks, Ohio.—p. 438.

Testing Coagulation Time of Blood.—The coagulation time is determined by Love within twenty seconds. The end-point is definite and is entirely independent of the judgment of the operator. The method described employs capillary tubes and resembles in principle McGowan's capillary tube method. The blood is procured from the median basilic. The first few drops of blood are discarded and then 1 or 2 c.c. are collected in a paraffined test tube. The capillary tubes are filled by dipping the drawn out ends into the blood and sucking it up rapidly to the shoulders of the tubes. The time is recorded when the blood first enters the capillary tubes. Two or three tubes are filled and the time noted when the blood enters each tube. The tubes are now laid flat on a stand alongside a thermometer. At two minutes before coagulation should occur normally, about 2 cm. of the first tube are broken off and the separated part is held before transmitted light and broken between the fingers in such manner that the proximate ends may be drawn apart parallel to each other without injuring the thread of fibrin. This process is repeated at intervals according to the accuracy desired until the end-point is reached. The end-point comes when a thread of fibrin will stretch seven to ten millimeters across the break. The second and third tubes are not used if the end-point is reached in the first tube, except as a general check on the final end-point. The time that the blood remains in the paraffined test tube before drawing it up into the capillaries must not exceed two minutes. Repeated experiments have been made which show that if the blood flows from the needle into the test tube in a stream, there will be no changes in the blood for two minutes which will affect the coagulation in the capillary tubes.

Military Surgeon, Washington, D. C.

August, 1920, **67**, No. 2

Delousing American Army in France. H. L. Gilchrist.—p. 129.
Training Down. R. M. Culler.—p. 149.
Medical Activities in Zone of Armies. A. N. Stark.—p. 154.
*Early Use of Convalescent Serum in Influenza. F. D. Francis, M. W. Hall and A. R. Gaines.—p. 177.
History of Overseas Division, Surgeon-General's Office During War Period. S. J. Morris.—p. 180.
Future of Psychiatry in Army. T. W. Salmon.—p. 200.
Factors Making for Low Venereal Record in Army. P. M. Ashburn.—p. 208.
Measles and Measles-Pneumonia. J. R. Gerstly.—p. 214.
*Case of Multiple Echinococcus Cyst. H. W. Jones.—p. 219.
Emergency Measure and Foresight in Malaria Control. L. D. Fricks, U. S. P. H. Service.—p. 224.
Ocular Symptoms of Lethargic Encephalitis. E. B. Spaeth.—p. 230.
American Red Cross Assistance to Army Medical Department in the United States. H. C. Connor.—p. 232.

Use of Convalescent Serum in Influenza.—During the epidemic of influenza in January and February, 1920, at Fort Sam Houston, Texas, a trial was made of the use of convalescent serum in the treatment of influenza. Twenty-six patients received the serum. The serum was given in addition to the routine treatment administered to all the patients in the hospital at the time. It consisted of one or more injections of from 50 to 100 c.c. given intramuscularly. The first injection was given as promptly after admission as was possible. Other injections followed at intervals of twenty-four hours if the course seemed to demand it. Intravenous injection was not practised in order to avoid the complications incident to the possibility of using incompatible types of blood. In fifteen cases only one injection was given as all acute symptoms promptly subsided. Ten patients received a second injection, and one patient received three injections in four days, this being the only patient in the series to develop pneumonia after treatment had been instituted. The course of the pneumonia was very mild, the temperature dropping to normal on the fifth day. In no case was there any reaction or untoward effect from the use of the serum. The general impression was that the men who received the serum had an easier time.

Multiple Echinococcus Cysts.—In addition to a large cyst of the liver Jones' patient also had a very large cyst of the spleen, multiple cysts of the liver, an empyema of the right pleural cavity from a rupture of one of the abscessed cysts through the diaphragm and the common duct was filled with detritus from a cyst.

Missouri State Medical Association Journal, Chicago

September, 1920, **17**, No. 9

*Full Term Extra-Uterine Pregnancy. Q. U. Newell, St. Louis.—p. 357.
*Malignant Tumors in Childhood. M. B. Clopton, St. Louis.—p. 361.
Conclusions in Juvenile Deforming Osteochondritis (Perthes' Disease). C. B. Francisco, Kansas City, Mo.—p. 366.
*Operative and Nonoperative Treatment of Tuberculosis of Spine. C. A. Stone, St. Louis.—p. 367.
Tuberculosis of Hip. J. E. Stewart, St. Louis.—p. 368.
Examination of Infant. F. C. Neff, Kansas City, Mo.—p. 373.
Relation of Proctologist to Group Diagnosis. W. H. Stauffer, St. Louis.—p. 376.
Obstruction of Colon; Report of Cases. O. A. Ambrose, St. Louis.—p. 377.

Full Term Extra-Uterine Pregnancy.—Three cases of full term extra-uterine pregnancy have been seen by Newell. In two cases living fetuses were delivered and in one case a fetus dead for some time previous to operation was obtained.

All the mothers survived the experience in good shape. The literature is reviewed.

Malignant Kidney Tumors in Children.—Cases of malignant tumors of the kidney, eye, brain, spine, testicle, vagina, ovary, intestine and bone are reported by Clopton. He says that early operation offers the best chances, but he is more convinced than ever that Coley's toxin should be used in these cases with great thoroughness. He cannot agree that all giant cell growths need the toxins because these are benign and should be eradicated, if possible, but in all other growths, whether operative or not, the patient should get the injections and have the benefit of the roentgen ray in massive doses, or be treated with radium.

Treatment of Tuberculosis of Spine.—The total number of cases reviewed by Stone is sixty-five. Thirty-three patients were operated on in one way or another while the remaining thirty-two received what is termed conservative treatment. On the basis of findings ankylosing operations for tuberculous spine in children are not recommended by Stone. About 19 per cent. of cases of Pott's disease treated in the usual way developed abscesses. Fourteen, or over 42 per cent., of thirty-three operative cases, had abscesses. Operation has not prevented increase in deformity, and after care must be carried out during as long a time following operation as if nothing had been done. The mortality of operative cases was 15 per cent.

New Orleans Medical and Surgical Journal

September, 1920, **73**, No. 3

Uterine Fibroids Complicating Pregnancy. A. P. Heineck, Chicago.—p. 85.
Case of Goundou (Anakhre) Observed in Bahia, Brazil. F. Luz and O. Torres, Bahia, Brazil.—p. 100.
*Dressing for Fracture of Clavicle. E. L. Leckert, New Orleans.—p. 104.

Dressing for Fractured Clavicle.—To avoid the irritation caused by zinc oxid plaster in the South, Leckert uses ordinary cloth. A piece long enough to make a posterior figure of eight about the shoulders, and from four to five inches wide is padded with cotton in each part that is to encircle the axillae. The affected side is padded heavier, and if pressure is desired over the site of fracture, that part fitting over the clavicle, likewise. The cloth is folded to two or two and a half inches, and sewed sausage-like. This is applied as a posterior figure of eight bandage, and after drawing the shoulders fully back which in most fractures reduces the deformity, the ends are firmly sewed together. This dressing acts as a reduction and retentive bandage and an axillary pad. A second piece of cloth is padded on one end for several inches, and likewise folded and sewed. The arm is well drawn back and the free end is sewed to the lower opposite part of the figure of eight. Some elevation of the shoulder is thus obtained and complete immobilization of the arm. A sling may be used.

Northwest Medicine, Seattle

August, 1920, **19**, No. 8

Quarter Century's Progress in Medicine. B. L. Steeves, Salem.—p. 193.
*Operation for Lumbago and Sciatic Rheumatism. N. A. Johanson, Seattle.—p. 195.
Diseases of Ethmoid and Sphenoid Sinuses. J. H. Harter, Seattle.—p. 199.
Plastic and Cosmetic Surgery of Face. A. G. Bettman, Portland, Ore.—p. 205.
Cinematic Amputations. E. W. Rockey, Portland, Ore.—p. 209.
Case of Atrophied Placenta in a Twin Pregnancy. J. M. Taylor, Boise, Idaho.—p. 211.

Spinal Bone Graft Operation for Lumbago.—Faulty development of the lower lumbar vertebrae and the upper sacral segments is of very frequent occurrence, and most patients complaining of aches or pain of the spine locate the trouble in the small of the back. Johanson states that only those cases in which a definite deformity of the fifth lumbar vertebra, due to congenital defect or changes incident to chronic osteoarthritis should be considered surgical. An apparently normally developed fifth lumbar may be found but well marked osteitis and osteoarthritis are present. In these cases a diligent search should be made for focal infection and such focal infection, if found, must be removed. Johanson has operated in six cases by the method used for tuberculosis of the spine, by inserting a bone graft from the tibia, the graft extending from the third to the first vertebra. The patient is kept in bed for six weeks; a plaster of Paris cast is made after the operation to fit the back of the patient, extending from below the shoulder-blades to the end of the sacrum, covering the back only. This cast is then taken off and allowed to harden and applied later under the patient in bed. The bed should have a fracture-board and a Bradford frame. The patient is kept on his back with the cast under him for three weeks; then the cast is removed and the patient is allowed to turn on his sides. Only one pillow should be allowed the patient. All the patients operated made excellent recoveries, except one in which infection occurred and the graft was lost.

Pennsylvania Medical Journal, Harrisburg

August, 1920, **23**, No. 11

Significance of Arrhythmia in Infections of Childhood, with Special Reference to Diphtheria. C. B. Farr, Philadelphia.—p. 633.
*Diphtheria from Public Health Standpoint. H. L. Hull, Harrisburg.—p. 638.
Sexual Psychoneuroses as Studied in a Medical Dispensary. E. J. G. Beardsley, Philadelphia.—p. 645.
Corneal Disease of Tubercular Origin. Treatment by Tuberculin. E. B. Miller, Philadelphia.—p. 651.
Three Cases of Partial Ligation of Common Carotid Artery and Resection of Orbital Veins in Pulsating Exophthalmus; Cases of Orbital Tumor with Operation. W. C. Posey, Philadelphia.—p. 658.
Cycloplegic Refraction. F. C. Stahlman, Charleroi.—p. 662.
*Trichinosis Occurring in a Family Group. W. W. Maclachlan, Pittsburgh.—p. 665.

Lowering Diphtheria Mortality.—The vital statistics concerning diphtheria analyzed by Hull show that we have reached practically a dead level. Among the registration states Pennsylvania has next to the highest mortality rate per 100,000 population. In combating this situation the following suggestions are made: Early and correct diagnosis with the rational use of laboratory methods, which includes the application of the Schick test more extensively and the immunization of the susceptibles with the toxin-antitoxin mixture. Prompt reporting and isolation of suspects. The use of antitoxin treatment to immunize those exposed. Study of the problem of diphtheria carriers and their isolation until safe to release. The introduction of proper instructions to school teachers and pupils in the prevention of communicable diseases.

Familial Trichinosis.—Maclachlan cites the histories of two brothers, a brother-in-law and his son who presented marked eosinophilia and *Trichina spiralis* in the muscle tissue examined. The wives of both men and a son of one of them showed an eosinophilia of 8, 27 and 37 per cent., respectively. As they were all apparently well, and as according to their own statements they had never been sick, the removal of muscle was not possible. These ten people were well until very shortly after they had eaten pork, which later was proved to be infected by *Trichina spiralis*.

Southwestern Medicine, El Paso, Texas

August, 1920, **4**, No. 8

Some Features of Influenza. W. G. Hope. Albuquerque, N. M.—p. 1.
Fluoroscopy Versus Physical Diagnostic Methods of Chest Examination in Army Work. D. C. Twichell, Albuquerque, N. M.—p. 3.
Perforation in Gastric and Duodenal Ulcer. F. H. Crail, Las Vegas, N. M.—p. 5.

Tennessee State Medical Ass'n Journal, Nashville

August, 1920, **13**, No. 4

Ocular Manifestations of General Diseases. E. C. Ellett, Memphis.—p. 121.
Etiology of Diabetes Mellitus. W. K. Vance, Bristol.—p. 127.
Empyema. Lucius E. Burch, Nashville.—p. 134.
Diagnosis of Kidney Lesions. C. F. McCuskey, Dyersburg.—p. 136.
Carrel-Dakin Treatment of Infections. H. E. Happel, St. Louis.—p. 139.
Laryngo-Tracheo-Bronchoscopy. A. E. Goodloe, Chattanooga.—p. 141.
Cancer of Stomach. R. L. Sanders; J. J. McCaughan, Memphis.—p. 147.
Venereal Disease Control; Methods, Obstacles and Results. G. A. Hays, Nashville.—p. 152.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

August, 1920, **1**, No. 4

Oxygen Consumption of Normal and Cancerous Mouse Tissues in Vitro. B. R. G. Russell and W. E. Gye.—p. 175.
*Glandular Adipose Tissue; Relation to Other Endocrine Organs and to Vitamin Problem. W. Cramer.—p. 184.
*Mycelial and Other Micro-Organisms Associated with Human Actinomycosis. L. Colebrook.—p. 197.
Variation in Agglutinability of Bacteria Associated with Variation of Cultural Characters. T. J. Mackie.—p. 213.

Glandular Adipose Tissue.—In all types of mammals which have been investigated Cramer says there exists a glandular type of adipose tissue. It has been described under various names, e. g., "primitive fat organ," "fat gland," "hibernating gland," "brown fat," "interscapular gland." In all species it has in the embryo a characteristic glandlike structure. In some species (white rat, tame mouse, hibernating animals) it retains this characteristic histologic structure. But in most species the tissue acquires the appearance of ordinary adipose tissue soon after birth, so that the process has been looked on as one of the stages leading to the formation of the adipose tissue of the adult organism. It is shown that this tissue, which is very vascular, is functionally distinct from ordinary adipose tissue. The fatty material which it contains is rich in cholesterin compounds and other lipoids in addition to ordinary true fat. This load of lipoid is retained under conditions which bring about the disappearance of the ordinary adipose tissue. Evidence is given to show that it is functionally related to the thyroid and suprarenal glands. A particularly close relationship exists between the lipoids of this tissue and those of the suprarenal cortex. The significance of the changes of the lipoids in the suprarenal cortex is discussed. The interdependence of the cortex and medulla of the suprarenal gland for the normal functioning is again emphasized. If vitamins are completely withheld from the diet the lipoids disappear from the suprarenal cortex and from this tissue, which persists, however, as a tissue and exhibits the appearance of a very vascular endocrine organ. The existence of this tissue throws fresh light on the problem of deficiency diseases, since disturbance of the functional activity of this glandlike tissue will have to be considered as a factor in the etiology of these diseases. In view of its appearance, its function and its importance, Cramer proposes to call this glandular type of adipose tissue the "lipoid gland" or "cholesterin gland."

Mycelial Organisms in Actinomycosis.—Cultures of mycelial organisms were obtained by Colebrook from the granules of twenty-four cases of human actinomycosis. Twenty-one of the twenty-four strains conformed in their general characters to the anaerobic type (*Actinomyces bovis*); two strains were also anaerobic organisms but with slightly different cultural characters; and one was a quite different, aerobic type. All strains of *Actinomyces bovis* which were tested showed coarse agglutination with the serum of heavily infected patients. The serum of rabbits inoculated with the organism also gave a strong agglutination reaction. The current hypothesis that actinomycosis is directly conveyed to man from vegetable sources or from soil is held to be probably false. Certain evidence is put forward which suggests that the organism is a common inhabitant of the human alimentary tract. Attention is called to the fact that, in addition to the mycelial feltwork always found in acinomycotic granules, there are frequently immense numbers of minute gram-negative coccobacilli. In 80 per cent. of the cases these organisms have been found at some period of the disease; and in about a dozen instances they have been cultivated on artificial mediums. They are of unfamiliar type, and have not, so far as is known, been met with in any other circumstances. It was proposed by Klinger, who reported the cultivation of similar organisms from four cases of actinomycosis in 1912, to apply to them the name *B. actinomycetum comitans*. This name is employed by Colebrook. The association of *B. actinomycetum comitans* with actinomyces in the granules is discussed but no satisfactory explanation has been arrived at. The findings are somewhat suggestive of a genetic relationship between the bacillary organism and actinomyces, analogous to that which Dunbar claimed to have demonstrated in the case of cholera-like vibrios and algae.

British Medical Journal, London

Sept. 4, 1920, **1**, No. 3114

Educational Number.

Japan Medical World, Tokyo

July 31, 1920, **10**, No. 31

Experimental Treatment of Tuberculosis with Taulin and Metallic Compound Taulin. S. Takeoka.
Apparatus for Filtering Water Containing Encysted Larvae of Clonorchis Sinensis in Special Reference to Public Health. S. Muto. To be cont'd.

Aug. 7, 1920, **10**, No. 32

Apparatus for Filtering Water Containing Encysted Larvae of Clonorchis Sinensis in Special Reference to Public Health. S. Muto.
Separtive Culture Medium for Cholera Vibrio. B. Koguchi.
Malpighian Glomerules. T. Suzuki.

Aug. 14, 1920, **10**, No. 33

*Standing Albuminuria. H. Saito.
*Quantity of Milk Taken by Baby in Natural Feeding. A. Uchino.
Distribution of B. Dysenteriae in Intestines of Fatal Cases of Infantile Dysentery. M. Minoda.
Abnormal Substances in Urine, Especially So-called Indican in Gynecology and Tocology. M. Dohi.

Standing Albuminuria.—By standing albuminuria Saito means albuminuria occurring in a person who was forced to stand. The author observed this condition in ten cases, which are briefly dealt with in the paper.

Quantity of Milk Nursed by Infants.—The quantity of the mother's milk nursed by the baby was determined by Uchino by weighing the baby after each nursing. The total amount of the milk sucked by babies on the first day ranged between 29 and 156 gm., the average being 71 gm., or 12 gm. at each nursing. On the seventh day, the total weights were from 224 to 600 gm. or 413 gm. per day and 59 gm. per nursing. The quantity of the milk nursed by each baby is proportional to the weight of the baby.

Aug. 21, 1920, **10**, No. 34

Abnormal Substances in Urine, Especially So-called Indicanuria in Gynecology and Tocology. M. Dohi.
*Effect of Prophylactic Vaccination Against Influenza at Hidachi Mines. Y. Kanazawa.
Case of Lethargic Encephalitis. S. Nukada.

Use of Vaccine in Influenza.—The vaccine used by Kanazawa was a pure influenza bacillus vaccine. There were 1,005 cases and fifty-four deaths from influenza during the entire course of the outbreak; in other words, 3.75 per cent. morbidity and 5.4 per cent. mortality. Among those who received only one inoculation the morbidity and mortality were less while among those who received two inoculations, the morbidity was one seventh of the corresponding figures obtained with the nonvaccinated, while the mortality was one third of the nonvaccinated. There were 783 cases of influenza among the nonvaccinated, while there were 115 and 107 cases among the vaccinated receiving the initial and the second injections, respectively. Of these 122, eleven, and eight, respectively, had a complicating pneumonia. The mortality was only one third. From these results it is concluded that the influenza vaccine prepared with the pure culture of *B. influenzae*, as supplied by the Kitasato Institute for Infectious Diseases, has a remarkable prophylactive efficacy, because, it has no by-effects among the vaccinated population, morbidity is greatly diminished, also living complications are greatly diminished in number and consequently there is a smaller percentage of mortality.

Archives de Médecine des Enfants, Paris

August, 1920, **23**, No. 8

*Demarcation of Feces in Infants. E. Lesné and others.—p. 449.
Infant Mortality in Bavaria During the War. J. Peyrot.—p. 457.
Natality and Infant Mortality. Nobécourt and Schreiber.—p. 474. Conc'n.
Perforation of the Stomach in Month-Old Infant. Phélip and Fey.—p. 490.
Dilatation of the Colon. J. Comby.—p. 493.

Demarcation of Feces in Infants.—About 0.2 gm. of carmin in 20 c.c. of water were added to the infant's bottle and the diapers were watched for the stain. In thirty-five infants under 3 months old it appeared in eight hours and thirty minutes; in twenty-two of 3 to 6 months, in eight hours and forty minutes; in fifteen of 6 to 12 months, in nine hours, and in twelve between 1 and 2 years old, in ten hours. The passage was more expeditious and more regular in the breast fed. The results of tests of the reducing power did not correspond to the duration of the passage.

Bulletins de la Société Médicale des Hôpitaux, Paris

July 9, 1920, **44**, No. 25

Basophil Bodies in Erythrocytes from a Case of Jaundice with Splenomegaly. M. Renaud.—p. 982.
Symptoms in Case of Brown-Séquard Syndrome. Guillain and Lechelle.—p. 983.
Simple Technic for Transfusion. Fiessinger and Janet.—p. 986.
*Typhobacillosis. G. Caussade and E. Doumer.—p. 987.
Another Case of Spirochetal Jaundice at Paris. Villaret and others.—p. 993.
Sequels of Epidemic Encephalitis. Bourges and others.—p. 995.
Twelfth Case on Record of Spontaneous Rupture of Abdominal Aorta. Goéré and Marcandier.—p. 998.
*Chronic Cholecystitis. J. Minet.—p. 1002.
*Onset of General Paresis. C. Mirallié.—p. 1004.
*Three Cases of Epidemic Encephalitis in One Family. P. P. Lévy.—p. 1007.
*Phonendoscopy of Friction Sounds. E. May.—p. 1011.

Tuberculous Typhobacillosis.—Caussade and Doumer describe a case of the Landouzy type of tuberculosis, that is, with a pronounced contrast between the severe general symptoms of the infection and the insignificant local lesion. The tuberculosis septicemia had followed close on a nodular and vesicular eruption. The lesion in this case was merely a focus of congestion in the lung which retrogressed completely, like a pneumococcus process, and the whole storm seemed to blow over in about nine weeks.

Medical Treatment of Chronic Cholecystitis.—In Minet's case the woman of 33 had long had disturbances from gallstones, with recurring jaundice and fever so severe that she was clamoring for an operation, when he began to treat her with hexamethylenamin. He gave it by the vein in a series of five daily doses of from 0.5 to 1 gm.; in a second series from 1.25 to 1.75 gm. and in a third series up to 2 gm. The total was thus 21.25 gm. in fifteen days, given in a 0.25 gm. per cubic centimeter solution in distilled water. The clinical cure was then complete, both subjective and objective symptoms having subsided.

Onset of General Paresis.—Mirallié reports that a woman of 36 had been presenting symptoms suggesting tabes for three years, when suddenly paretic dementia developed, fatal in less than four months. A similar sequence was noted in ten other cases, but certain other slight symptoms in these suggested general paresis from the first.

Contagiousness of Epidemic Encephalitis.—The three children in the family described by Lévy developed epidemic encephalitis with intervals of two and four months. The girl of 13 died.

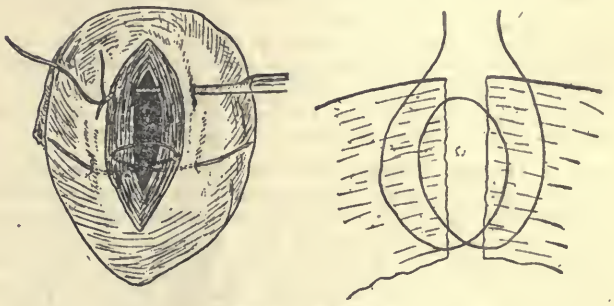
Phonendoscopy of Friction Sounds.—May refers to the extent of the area of skin from which friction sounds can be heard by auscultation in the same way as the spleen can be outlined by phonendoscopy. In his study of 300 normal and pathologic subjects he found that a very large increase in the area accompanied sclerosis of the lung, usually associated with emphysema.

Gynécologie et Obstétrique, Paris

1920, **1**, No. 4

*Conservative Cesarean Section. J. Vanverts and H. Paucot.—p. 320.
*Subcutaneous Symphyseotomy in Argentina. H. Zarate.—p. 331.
Spontaneous Peritonization in Case of Uterine Cancer. A. Kotzareff.—p. 346.
*Bladder and Ureters in Gynecologic Disease. J. Mock and J. Doré.—p. 357.
*The Ureter Danger with Gynecologic Operations. C. Stajano.—p. 369.

Double Circle Suture for Cesarean Section.—Vanverts and Paucot have adopted for cesarean section Lambotte's concentric circle suture, and have found that it holds the lips of the incision absolutely perfectly and ensures hemostasis. The curved needle is passed into the incised uterus wall and draws the suture from close to the peritoneum down to close to the mucosa. This is repeated in the other lip of the incision. The long ends in the depths are thus crossed and brought up through all the tissues, thus forming a slightly excentric circle around the first circle. Peritonization of the sutured incision is such an effective barrier against infection from the uterus that they ventured to leave the uterus in two cases in which conditions are usually regarded as calling for hysterectomy.



Double circle suture.

The death of both women from peritonitis taught them that too much must not be expected of peritonization, but it is so simple, easy and useful that it should never be omitted.

Subcutaneous Symphyseotomy in Argentina.—Zarate's experience in thirty cases impels him to affirm that subcutaneous symphyseotomy is a simple and mild operation which permits spontaneous delivery and triumphs over dystocia from relatively contracted pelvis. Version and forceps are contraindicated with it and serve only to bring it into disrepute. The contracted pelvis of Argentine women, is almost always of the relatively contracted type. With an obstetric conjugate of 7.5 cm. as the limit, subcutaneous symphyseotomy will in time, he declares, reign supreme over the violent methods.

The Bladder and Ureters with Uterine Cancer, etc.—Mock and Doré discuss the important services liable to be rendered by cystoscopy and catheterization of the ureters with gynecologic disease, and especially with uterine cancer. The bulging of the bladder wall, displacement of the trigonum or other region, local pulsation, wrinkling, edema, etc., are signs of disease nearby and disturbance in the circulation. Retention catheters inserted in the ureters much facilitate the Ries and Schauta operations for uterine cancer and, if the ureter happens to be cut, render suture an easy matter. In their two cases of rectal cancer in men, not much information was derived from cystoscopy.

Injury of the Ureter During Gynecologic Operations.—Stajano comments on the difficulty of avoiding injury of the ureter at gynecologic operations as the ureter has no settled position but follows the caprices of the lesions developing in the pelvis. At the superior inlet there is danger of pinching or ligating the ureter in ligating the utero-ovarian vessels and in suturing the peritoneum. Tumors in and near the broad ligament should be carefully shelled out to leave the peritoneum intact and with it the ureter which may lie in front of the tumor. He warns further that after the uterine artery is severed, it usually retracts; in the search for it, the ureter may be seized by mistake and ligated for the bleeding artery. Still another danger is that the ureter may be included in the spiral suture with the Gersuny technic. This occurred in one case in his experience, the anuria from the mechanical obstacle keeping up for forty-eight hours after the suture had been removed.

Journal de Radiologie, Paris

April, 1920, **4**, No. 4

*Radiography of the Skin. H. Béclère.—p. 145.
*Roentgen-Ray Treatment of Lymphadenoma. H. Bordier.—p. 150.
Radio-Active Treatment of Cancer of Cervix. S. Laborde.—p. 155.
Measurement of Electric Stimulation of Neuromuscular System. A. Strohl.—p. 161.

Radiography of the Skin.—Béclère's roentgenograms show with remarkable distinctness all the lines in the skin, like a finger print carried to the nth power. He has the skin rubbed with hydrous wool fat, and then bismuth carbonate is gently

rubbed into the skin for ten minutes, and the excess wiped off. The bones show up perfectly. This method renders it possible to take finger prints of the drowned.

Roentgen-Ray Treatment of Lymphadenoma. — Bordier reports two cases of lymphadenoma of the neck or chest in which the serious affection retrogressed completely under radiotherapy. The patients were men of 34 and 36.

Schweizerische medizinische Wochenschrift, Basel

July 29, 1920, **50**, No. 31

*Iron in Anemia. Nägeli.—p. 661.
*Doses of Iron in Anemia. A. Alder.—p. 663.
Isolated Sprains of Humeroradial and Ulnaradial Joints and Their Relation to Epicondylitis. C. Kaufmann.—p. 665.
*Spinal Ganglions with Scleroderma. Martha Herzog.—p. 667.
Rubber Drains in Roentgenogram. Schinz and Preiss.—p. 674.
Anilin Dyes in Treatment of Anthrax. Baumann.—p. 676.

Iron in Anemia.—Nägeli's analysis of the literature on the action of iron on anemia and especially in chlorosis shows the conflicting opinions of different clinicians, but his own clinical experience indicates that iron in proper doses elicits in two or three days a stormy reaction in the bone marrow, which throws quantities of young elements into the blood. Not merely the hemoglobin molecules but the whole of the bone marrow seems to be whipped up. Everything points to a direct and intense stimulation of the marrow by the iron. He adds that in ten cases of anemia with gastric ulcer, no benefit was evident under iron until large doses were given, and then the hemoglobin ran up rapidly from 37 to 82 and then to 100 per cent., and the reds to 5,024,000.

Proper Doses for Iron in Anemia, Chlorosis, etc.—Alder writes from Nägeli's clinic to supplement the latter's article, summarized above, describing the technic and doses, insisting that it is only a question of the dose for a cure of even the most torpid cases. No mishaps have ever occurred under the large doses in the clinic, and they were not followed by constipation except where there was a constant tendency to this. In the severer cases, the iron was given in pills, each of 0.1 gm. of reduced iron, from three to ten pills being taken daily as needed. The improvement in the blood reaches its acme in three weeks and then keeps stationary thereafter. Only one refractory case was encountered, and this woman soon gave signs of pulmonary and laryngeal tuberculosis. In chlorosis, after taking 100 Blaud's pills in the course of twenty-three days, the hemoglobin averaged an increase of 29.4 per cent.

Degeneration of Spinal Ganglions with Scleroderma.—Herzog found cystic degeneration of the spinal ganglions and posterior roots with progressive scleroderma in a man of 61, but does not venture to define the connection between them. Marburg has described a similar case of disease of spinal ganglions with trophic changes in the skin.

Pediatria, Naples

May 15, 1920, **28**, No. 10

*Acetone in Spinal Fluid in Tuberculous Meningitis. G. Genoese.—p. 449.
*Factors in Endocrine Derangement. O. Pentagna.—p. 455.
Splenopneumonia in Boy of Two. G. Salvetti.—p. 472.

The Spinal Fluid in Tuberculous Meningitis.—Genoese obtained an intense response to the Ricci and Frommer tests for acetone in the urine of 20 of 23 children with tuberculous meningitis, and a weak response in the 3 others. The spinal fluid gave a 3 plus response in 21 of the children; the 2 giving a negative response were in the small group giving a weak response in the urine.

Pathogenesis of Endocrine Derangement.—Pentagna found 115 cases of unmistakable endocrine malfunction among 20,000 children examined at the Naples children's clinic since 1914. In all but 23.4 per cent. of the cases, syphilis was certain or highly probable. The syphilis toxins may not induce direct syphilitic manifestations, but merely influence the embryonal development of the ductless glands. This explains the impotence of mercury, etc., in such cases.

Brazil-Medico, Rio de Janeiro

June 12, 1920, **34**, No. 24

*Electronic Reflexes. E. Muniz de Aragão.—p. 367.
*Stain for Malaria Parasite. N. B. Gonçalves.—p. 374.

Electronic Reflexes.—Muniz discusses recent work on geomagnetism and the polarity of the body, and Abrams' research in particular, especially with electrodes which induce contraction in certain muscles when approaching a body of water. He cites further Regnault's recent experiments with well locaters who are able to detect the presence of a subterranean body of water. It has now been demonstrated, he states, that certain persons with exaggerated electronic reflexes respond with slight wrinkling of the skin in some regions when approaching a body of water.

Stain for Malaria Parasite.—Gonçalves advocates, as giving especially fine results, a reagent consisting of Manson's boraxed azure, methyl alcohol and glycerin, each 25 parts, with 2.5 parts acetone. Six drops of this are mixed with 5 c.c. of water and six drops of a solution of 0.5 parts eosin in 1,000 parts distilled water. A few drops of methyl alcohol are dropped on the thin layer of blood and the slide is left to dry upright. It is then covered with the stain. This is rinsed off thirty minutes later until the tint is frankly pink. The boraxed azure is prepared by dissolving 2 parts of methylene blue in 100 parts of a hot 5 per cent. solution of borax in distilled water. The reagents are best made up fresh.

Gaceta Médica de México, México

April-July, 1920, 4, s., **1**, No. 6

Surgical Treatment of Chronic Otomastoiditis. P. Percdo.—p. 195.
Vaccine Therapy and Results. F. Paz.—p. 208.
Medical Folk-lore of Mexico. N. León.—p. 217.
Influenza in Public Hospital in 1918. R. Carrillo.—p. 226.
Surgery of the Wrist. G. M. Malda.—p. 237.
*Certain Causes of Constipation. R. Ortega.—p. 249.
Yeast from Pulque. M. Cordero.—p. 254.
*Obstruction of Common Bile Duct. M. Godoy Alvarez.—p. 258.
*Cinematographic Study of Development of Embryo. T. G. Perrin.—p. 266.
Should German Salvarsan Be Preferred? A. Brioso Vasconcelos.—p. 271.
*Recklinghausen's Disease in Mexico. F. Ocaranza.—p. 276.
*Scleropolycystic Ovaritis. Rosendo Amor.—p. 301.
Second Case of Goundou to be Published in Mexico. J. De J. Gonzalez.—p. 305.
Agglutination in Mexican Typhus. T. G. Perrín.—p. 309.
Lange's Colloidal Gold Test in Mexico. J. Arroyo.—p. 320.

Causes of Constipation.—In Ortega's first case the obstruction of several years' standing seemed to be from internal hemorrhoids. Ortega advised the man to refrain from straining at stool and to press with his hands on the region to compress the dilated superior hemorrhoidal veins. Rhythmic contraction of the anal sphincter repeated during the efforts at expulsion also aids in evacuating the rectum.

Obstruction of Common Bile Duct.—Godoy has noticed that colic seldom occurs during the development of malignant disease in the bile-duct region, while with gallstones there is usually a history of more or less frequent colics before the bile duct becomes totally obstructed. The pain early with cancer is more a dull ache, chronic rather than acute. The jaundice with gallstone obstruction varies; as it increases, the stools grow more clay-colored, and vice versa. With gallstone obstruction the gallbladder is usually small, retracted and painful, while with organic obstruction it is dilated as a rule, but is not painful. Godoy relates a number of typical cases to show the difficulty of differentiation in such cases, including one of a woman of 40 with jaundice, and pain in the bile-duct region but not of the nature of colics. The gallbladder was much distended and the stools were permanently clay-colored. The diagnosis of carcinoma, probably of the pancreas judging from the rapid development, all within three months, was confirmed by the laparotomy, the biliary apparatus being free from calculi.

The Cinematography of Development of the Embryo.—Perrín describes the reproduction in moving picture of the microscopic findings during and following fecundation of the ovum of a sea urchin, *Estrongilocentrotus lividus*. He exhibited the corresponding films, the work of Mlle. Chevroton of Paris, at a recent meeting of the Academia nacional de Medicina.

Case of Recklinghausen's Disease.—Ocaranza's patient has more than 800 of the characteristic tumors; one in the sacral region is 58 cm. in circumference. He is a man of 38 and crouches silent and immovable most of the time.

Polycystic Ovaritis.—Rosendo Amor emphasizes the rapid development of scleropolycystic ovaritis when it is of gonococcal origin, accentuated by the premature menopause which it frequently induces. Cystic degeneration of the ovaries with neuralgic pains of noninfectious origin is generally traceable to repeated pelvic congestions with the nervous-gouty diathesis. Removal of the ovaries does not always cure, while relief is often obtained with a simple laparotomy, ignipuncture of the ovary, stretching the anus, or section of the sacral sympathetic, confirming the nervous origin of the disturbances. Entirely different from this is the rapid course of the gonococcus cases, and no intervention here is of any use unless the whole organ is removed or panhysterectomy done.

Policlinico, Rome

Aug. 2, 1920, **27**, No. 31

Deficiency Diseases. P. Ramoino.—p. 819.
Intensive Sodium Cacodylate Treatment of Nervous and Circulatory Disturbances. G. Roasenda.—p. 826.
Fatal Anthrax from Shaving Brush. G. Sampietro.—p. 830.

Deutsche medizinische Wochenschrift, Berlin

June 24, 1920, **46**, No. 26

Epidemic (Lethargic) Encephalitis. A. Strümpell.—p. 705.
The Epidemic Appearance of Encephalitis. Hoestermann.—p. 707.
Albinism in Relation to Heredity. W. Jablonski.—. 708.
*Abderhalden's Test for Renal Tuberculosis. F. Wauschkuhn.—p. 711.
*Muscular Rigidity with Appendicitis. A. Krecke.—p. 712.
*Cervicovaginal Fistulas. K. Grasmann.—p. 713.
Salt Aids Flotation of Helminth Ova in Brine. Fülleborn.—p. 714.
Variations in Electric Mains and Roentgen-Ray Work. Schreus.—p. 715.
Late Fatal Effect of Skull Injury. Friedemann.—p. 716.
Rhinolaryngologic Hints for General Practitioners. Finder.—p. 717.

Abderhalden's Test in the Diagnosis of Renal Tuberculosis.—Wauschkuhn reports that the results with the test were disappointing. It was impossible to distinguish an acute or chronic nephritis from renal tuberculosis.

Lack of Rigidity of Abdominal Wall in Destructive Appendicitis.—Krecke recalls that the reflex abdominal rigidity which is the best sign for the recognition of a severe type of appendicitis, is occasionally lacking. In this case the appendix lies close to the posterior abdominal wall, behind the cecum.

Cervicovaginal Fistulas.—Grasmann found in his case of cervicovaginal fistula occurring in a primipara, aged 22, during an abortion at the fourth month, that the condition was due to the same causes as reported by Wiczynski; namely, extreme anteflexion, rigidity of the cervix, and an unyielding external os, with a tendency to hypoplasia.

Jahrbuch für Kinderheilkunde, Berlin

1920, **92**. First half

*Disordered Heart Action in Children. K. Stolte.—p. 1.
*Pathology of Disturbance Due to Fat in Infant Feeding. G. Bessau.—p. 14.
*Flour in Infant Feeding. H. Aron.—p. 82.
*Edema in Spasmophilia. O. Bossert.—p. 121.
Familial Shortness and Slant of Spine. Harriehausen.—p. 143.
*Bacteriology of Infant Blood. Bossert and Leichtentritt.—p. 152.
*Active Immunization Against Diphtheria. H. Opitz.—p. 189.
*Fate of Children with Congenital Syphilis. R. Gralka.—p. 205.

Disordered Heart Action in Children.—Stolte remarks that atony as the cause of murmurs should be suspected in children unusually tall for their age, of a neuropathic tendency, especially when the murmur can be influenced without change of position by improving the vascular tonus. The disappearance of the murmur as the child grows stronger confirms that the defective closure of the valve was due to relaxation of the muscular ring. The functional tests of the heart by climbing stairs, etc., may be followed in children by an apparently normal response, even with severe valvular incompetency. An indistinct first sound at the apex is a sign of pathologic conditions; such children are usually slow in their movements and do not join in games, and they urinate very little during the day but large amounts at night, and are often subject to enuresis. When they lie down during the day, the amount of urine increases, as the circulation is thus relieved. The urine is normal otherwise. Spasm of the vessels may shut off the blood from the extremities; this may occur in an extreme form in infectious diseases. His experience has demonstrated that disturbance in the circulation need not be feared with pathologic conditions of the heart, congenital or acquired, so long as the second pulmonary flapping sound grows less distinct after exertion. Adults do not have the child's possibilities for compensation, and the sound becomes accentuated in them after exertion. Lively children may be in almost perpetual motion and the heart grows stronger all the time, while children inclined to be lazy, who do not get much exercise but are addicted to masturbation, may acquire hypertrophy of the heart with pounding apex beat, displaced more or less to the left. He reports typical cases of the kind in two masturbating twin brothers of 5. They complained of the shaking of the chest wall, and the mother had already noticed it. Supervision of the children and diversion of their attention brought both subjective and objective improvement. Treatment of hypertrophy of this origin and from chronic nephritis is by exercise to actual fatigue. By this means the peripheral or renal vascular resistance is overcome. The possibilities for compensation are so great in children that with perfectly compensated organic valvular defect, responding to functional tests in the same way as with extracardial heart-lung murmurs and accidental murmurs due merely to reduced tonicity, this can encourage us to allow the child progressively increased demands on its heart. The heart will grow stronger under it.

Pathology of Disturbance from Fat in Infant Feeding.—In this first communication on this subject, Bessau discusses the clinical aspect of the *Milchnährschaden*, and emphasizes that the light color of the stools is the only symptom by which the clinician can recognize the condition. The decoloration of the bile pigment is the clinical indicator of it, and the process which accomplishes this is probably the cause of the clinical disturbances. Everything tends to incriminate both fat and protein as the causes, while, on the other hand, promotion of fermentation processes in the intestines is effectual treatment for it. Breast-fed children may develop "white dyspepsia," but this is not due to decoloration of bile pigment, as in the fat dyspepsia. The latter is cured at once by changing the child from cow's to breast milk; there may still be disturbances of various kinds, but not of *Milchnährschaden* type.

Flours in Infant Feeding.—Aron calls attention to the way the infants thrived during the war on flour containing a large proportion of bran. It was first made into bread dough and baked in thin sheets, and then pulverized. The low carbohydrate content of the flour thus prepared and hence its low fermentability, on the one hand, and, on the other, its high content in extractives which stimulate metabolism and peristalsis, have solved, he declares, the problem of flour in infant feeding.

Edema in Infants with Spasmophilia.—Bossert's research on the metabolism confirmed his clinical findings that children with severe spasmophilia but sound heart and kidneys are liable to respond with edema and sometimes with carpopedal spasm when fed with egg-flour gruel with no more salt than the percentage in breast milk. No edema develops when the children are getting a mixed diet at home. Nitrogen and minerals are retained, but when the egg is dropped and abundance of water given, they are eliminated. He theorizes to explain this, adding that the edema is not doughy but rather taut.

Bacteriologic Examination of Blood in Infants.—This communication reports the results of puncture of the longitudinal sinus in 250 cases to obtain blood for bacteriologic examination. Bacteria were found in forty-four cases and all but three in this group terminated fatally. Nearly all of the various kinds of bacteria isolated are capable of inducing the clinical picture of alimentary intoxication, and only examination of the blood will differentiate the etiology.

Immunization Against Diphtheria.—Opitz reports that he was able with dilutions of pure diphtheria toxin, injected intradermally, to induce active immunization against diphtheria as effectually as with Behring's toxin-antitoxin vaccine. The detailed findings are tabulated.

The Fate of Children with Congenital Syphilis. — Gralka relates that the experience at Breslau with 410 children with congenital syphilis shows that under combined arsphenamin and mercury treatment much better results are attained than with mercury alone, and that breast feeding is not unconditionally necessary to save the child's life. The unmistakable manifestations generally develop during the second month. When treatment is inadequate, a positive Wassermann reaction may be obtained fifteen or twenty years later. In conclusion he emphasizes the extreme importance of keeping these children under constant supervision, or at least to ensure that they return for further treatment at the first sign of flaring up of symptoms. Eight pages of close-set literature on the fate of syphilitic children are appended.

Münchener medizinische Wochenschrift, Munich

June 25, 1920, **67**, No. 26

*Postmortem Pigmentation of the Skin. K. Neubürger.—p. 741.
*Observations on a Cecal Fistula. H. Beuttenmüller.—p. 743.
*Insufficiency of the Ileocecal Valve. B. Hannes.—p. 745.
*Placenta Praevia Isthmica-Cervicalis. E. Vogt.—p. 746.
"Thermolabile" Precipitation in the Sachs-Georgi Reaction. T. Baumgärtel.—p. 747.
*Demonstration of Hemin Crystals. Strassmann.—p. 748.
Quick Cure of Chancroid with Zinc Chlorid. Mergelsberg.—p. 749.
*Visual Disturbance After Hot Baths. M. Müller.—p. 751.
Shepherd's Purse as a Drug. L. Kroeber.—p. 752.
*Crystal Filters in Roentgen-Ray Work. G. Loose.—p. 752.
About Needles, Threads, Ligatures and Sutures. H. Hans.—p. 753.
Successful Treatment of Polycythemia by Roentgen Ray and Blood Transfusion. W. Förster.—p. 754.
*Diagnosis of Chronic Bartholinitis. O. Feis.—p. 755.

Postmortem Pigmentation of the Skin.—Neubürger states that incubation of the skin of cadavers at a temperature of 56 C. usually causes after from one to three days a dark discoloration to appear. The pigmentation does not seem to be affected by the disease of the deceased, except that in Addison's disease the pigmentation is more pronounced.

Studies on Small Intestine Through a Cecal Fistula. — Beuttenmüller reports her observations on a patient with a cecal anus: The intestinal mucosa is not sensitive and only occasionally traction on the mesentery causes pain. Even contractions of the intestine produced by faradic stimulation are not painful. Mixed, bland food remains in the small intestine from two to three hours; if exceptionally dry, from four to five hours; if more or less fluid, from one and a half to three hours. Corroborating roentgen-ray findings, the contrast test meal reaches the end of the small intestine in from two to three hours, where it remains over four hours, until the beginning of defecation. This fact shows how cautious we must be in judging the time of passage of a contrast meal through the gastro-intestinal tract. Of the various cathartics, Glauber's salt, Epsom salt and a Carlsbad salt mixture acted most promptly; next to these came phenolphthalein. Astringents affect the small intestine like dry food; ingestion of more fluid food reduces the astringent effect. In this particular case, astringents and laxatives affected the small and the large intestine alike. Bilirubin appears in the stool only after the ingestion of salines. Immediately after the passage of the ileocecal valve, hydrobilirubin appears; or, on account of pathologic conditions, the reduction of pigment begins in the small intestine. Reaction of the fistular feces is always alkaline. The odor of the feces is not feculent, but when ascitic fluid is added to the feces, large quantities of putrefaction bacteria develop. The consistency of the feces depends on the nature of the food, as in feces passing through the natural outlet. The dry residuum of the fistular feces coincides very closely with that of normal feces. After the passage of the ileocecal valve, inspissation of the feces begins. The microscope shows few muscle fibers and large numbers of micro-organisms, the colon bacillus becoming supplanted by large gram-positive bacilli and cocci. Digestion of starch is begun in the small intestine and continued in the large intestine (the frequently positive fermentation test probably indicates pathologic processes in the small intestine). Traces of albumin are present, while peptones are not demonstrable. The presence of sugar could not be shown. Of the ferments, traces of amylase are present, but trypsin is not noted.

Experimental Research on Insufficiency of the Ileocecal Valve.—Hannes found from experiments on cats and dogs that the ileocecal valve is open in animals when the stomach is empty, and closed after they have been eating. One experiment went to show that psychic motility was sufficient to close promptly the valve that had been open during a state of fasting; for in the dog that had fasted two days 200 c.c. of tap-water (37 C.) injected rectally were ejected at once from an ileac fistula, but, after 200 c.c. of bouillon had been ingested by mouth, which in a few minutes was ejected from a duodenal fistula, and then 200 c.c. of water were injected rectally a second time, no fluid came out of the ileac fistula. It is therefore evident that the closure of the ileocecal valve is not due merely to the mechanical filling of the small intestine but rather to the psychic motility aroused by eating. A definite analogy is thus established between the pylorus, which prevents the bile from entering the stomach from the small intestine, and the ileocecal valve, which prevents the contents of the large intestine reentering the small intestine. As regards roentgen-ray technic, a practical conclusion would be that, before injecting rectally a contrast fluid, psychic motility should be stimulated by prescribing some appetizing drink.

Placenta Praevia.—Vogt states that heretofore only twenty-three cases of placenta praevia isthmica-cervicalis have been reported in the literature. He adds ten of his own cases that occurred between 1908 and 1919—an unusually large number—out of 179 cases of placenta praevia. The chief symptom in placenta praevia isthmica-cervicalis is the hemorrhage, which may occur at any time during pregnancy, although in his ten cases it happened always during the second half; twice at term. The severity of the hemorrhage differs widely and offers nothing characteristic. Sometimes hemorrhages occurred at irregular intervals; then again the first hemorrhage might be so severe as to render immediate medical assistance necessary. He thinks that abdominal, cervical cesarean section is indicated in the case of every severe hemorrhage, provided the child is viable and no severe infection is present. The advantages of the cervical operation are discussed. Vogt operated in all ten of his cases, and both mother and child were saved in each instance.

Demonstration of Hemin Crystals.—Strassmann describes a modification of the Teichmann test for the demonstration of hemin crystals in blood. Particles from the suspected blood stain are mixed on a glass slide with a few drops of a mixture composed of 1 part of a 5 per cent. sodium chlorid solution and either 3 or 10 parts of concentrated glacial acetic acid, and covered with a cover-glass. The acid is evaporated in the usual manner over the flame. This mixture may be preserved, ready for use, for some time.

Visual Disturbances Following Hot Baths.—Müller reports two cases of serious disturbance of vision during or following hot baths. He assumes an intracranial hemorrhage as the cause. The patients were women aged 65 and 84. In the one case the patient asked to have the electric heat turned off as she could not see. According to her statement, she was completely blind for a time but vision gradually returned the following day.

Crystal Filters in Roentgen-Ray Work.—Loose no longer uses the ordinary metal filters, aluminum, copper, zinc, etc., in his roentgen-ray work, but employs instead so-called crystal filters, which are plates composed of layers of crystals of metallic salts. The advantages of this method appear to lie in a sort of purifying effect that the crystals exert on the roentgen rays; in any event, since he has been using them, the biologic effect of irradiation has been uniformly good and no damages to the skin have resulted. Most patients show no outward evidence of having ever received roentgen-ray treatment; only exceptionally does a slight pigmentation appear.

Diagnosis of Chronic Bartholinitis.—Feis finds that frequently attempts to secure a specimen of the secretion of the vulvovaginal gland for diagnostic purposes are unsuccessful, in which case he recommends the use of a sound to secure a specimen. It is well to roughen the head of the sound so that the secretion may adhere to it better. In 31 cases of subacute

and chronic gonorrhea treated during the previous six months he was unable to secure any secretion from the gland by expression. He succeeded, however, in passing a very fine sound in 22 of the cases. In 9 a sound could not be introduced. Examination of the sparse secretion adherent to the sound gave the following result: in 4 cases the findings were negative; in 11 cases gonococci were found; in 7 cases the secretion was free from gonococci, but a more or less pathologic condition existed, as evidenced by accumulation of leukocytes and desquamation of the epithelium. In treating gonorrheal infection of the vulvovaginal gland Feis tried first protargol and formaldehyd, but finds a 0.5 per cent. solution of silver nitrate more efficacious, daily injections being made. Within four to six weeks he succeeds in securing a gonococcus-free smear from the excretory duct. Also the leukocytes disappear or are reduced.

Therapeutische Halbmonatshefte, Berlin

May 15, 1920, **34**, No. 10

Prophylactic and Therapeutic Use of Bacterial Vaccines. H. Langer.—p. 277. Conc'n.
Surgical Treatment of Colitis. H. Klose.—p. 281.
Treatment of Migraine. Grober.—p. 287.

Wiener klinische Wochenschrift, Vienna

June 24, 1920, **33**, No. 26

Acute Leukemia. C. Sternberg.—p. 553.
So-Called Psychogenous and Physiogenous Neuroses. J. Gerstmann.—p. 557.
*Dosage in Recent Syphilis. A. Brandweiner.—p. 558. Conc'n in No. 28, p. 608.
Polyuria with Epidemic Encephalitis. E. Hoke.—p. 652.
The Sachs-Georgi Flocculation Reaction. L. Kumer.—p. 562.

July 8, 1920, **33**, No. 28

Arrhythmic Pulse and Extrasystole. Kaufmann and Rothberger.—p. 599.
Tetany of Bladder and Its Treatment. Schwarz and Wagner.—p. 604.
Cowslip Root as an Expectorant. R. Joachimowitz.—p. 606.

Dosage in Treatment of Recent Syphilis.—During the war Brandweiner was connected with the largest Austrian hospital for venereal diseases. He recalls that arsphenamin accidents occur more frequently at the beginning of treatment, and admits that in a certain number of cases—not very large—we may doubtless overtreat the patient, but believes that this disadvantage is outweighed by the advantage derived by giving really adequate treatment in other cases. He urges that while adopting a mode of treatment that will give the best therapeutic results, we must also give most careful attention to the manner in which each individual patient reacts to the remedies administered; that is, the treatment must in one sense be generalized and made effective, but in another sense it must be individualized to conform to the varying needs of patients. A case which shows the slightest evidence of a positive Wassermann reaction cannot be regarded as a purely primary case; to be regarded as primary, a case must show an absolutely negative reaction both before and directly after the first injection of arsphenamin.

Zentralblatt für Chirurgie, Leipzig

June 19, 1920, **47**, No. 25

Operative Treatment of Old Empyema Cavities. P. Graf.—p. 610.
Biochemical Reactions with Carcinoma. W. Budde.—p. 611.
*The Management of Perforated Gastric Ulcer. W. Burk.—p. 614.
"Extraperitoneal Incision for Abdominal Nephrectomy." Stutzin.—p. 615.
*Use of Traction Sutures in Prostatectomy. Zuckerkandl.—p. 616.
*Repair of Large Clavicle Defect. E. Unger.—p. 617.
*A Case of Vaginal Calculus. V. Winckler.—p. 617.

The Management of Perforated Gastric Ulcer.—Burk describes the method that he has employed of late in dealing with perforated gastric ulcer. Two anchor sutures are placed on opposite sides beyond the infiltrated wall of the ulcer. The threads, which are left long, are drawn out through the abdominal rectus and tied over pads of gauze. By this means the surface of the ulcer is pressed tightly against the abdominal wall and the parietal peritoneum thus sealing the open ulcer surface. For safety's sake a drain is inserted. The sutures are removed the tenth day.

Traction Sutures in Prostatectomy.—In operations on the prostate, Zuckerkandl has of late used traction sutures as recommended by Hartert and by Claessen, and he regards their use as a great improvement in technic. For example, through the body of the prostate adenoma either a single suture is placed medially or two sutures may be used, one on either side, and enucleation is performed while traction is exerted on the suture threads. In the case of large tumors of the prostate it is sometimes necessary to place the sutures at deep points. He has found traction sutures valuable also in operations on deep-seated cancer of the bladder, in which case a series of sutures may be placed in the margin of the tumor.

Repair of Large Clavicle Defect.—Unger reports a case in which, the distal half of the clavicle having been shot away, the remnant of the clavicle and the coracoid process were joined with two wire sutures, and a good function of the shoulder joint was secured. The height of the shoulder is normal. Between the scapula and the clavicle a large callus has developed. The patient can raise his arm about 45 degrees above the horizontal. Rotation movements are entirely normal.

Calculus in Vagina.—Winckler reports a case in which a girl of 13 had suffered from nocturnal enuresis since her second year. Examination revealed a yellowish white, rough body protruding from the hymen, and a wedge-shaped calculus weighing 4 gm. was brought to light. It contained no foreign body. Its pathogenesis seems to have been connected with the enuresis. Decomposition of urine entering the vagina through the central opening in the hymen doubtless caused the formation of the stone, in much the same manner as catarrh of the urinary bladder may lead to production of calculi. After the removal of the stone, there was no further nocturnal enuresis. In every instance of enuresis careful search for the cause should be made, and we should not be satisfied with merely giving general advice on the subject.

Zentralblatt für Gynäkologie, Leipzig

June 12, 1920, **44**, No. 24

*The Freund-Wertheim Carcinoma Operation. A. Mayer.—p. 617.
*Puerperal Fever. C. Neis.—p. 622.
*Laceration of Intestine by External Trauma. H. Schaedel.—p. 624.
*Intestinal Obstruction by Pelvic Exudate. F. R. Brewitt.—p. 627.
Traumatic Hematoma of the Vulva. F. Jacobi.—p. 630.

The Freund-Wertheim Carcinoma Operation. — Mayer reports the experience of the Tübingen Universitäts-Frauenklinik during the fifteen years ending with 1916 with the Freund-Wertheim operation. Of the 893 cases of carcinoma of the uterus that were observed during this period, 81.2 per cent., were carcinoma beginning in the cervix, while 18.8 per cent., were in the body of the uterus. Of the 725 cases of carcinoma of the cervix, 34.7 per cent., were inoperable. The inoperability had its basis almost without exception in the local spread of the disease. If operation is attempted in the inoperable cases, death is the inevitable result. Radiotherapy does not seem to offer much hope in such far advanced cases; in fact, it would seem at times as if the rays acted as an irritant and hastened the end. Of the 474 operable cervix cases 457 were operated on; the operative mortality was 20.3 per cent. Of the 343 patients operated on before 1913, 68 died, and of the 275 that survived the operation there were recurrences in at most 165 cases; 107 patients (39.3 per cent.) had been free from recurrence for at least five years, others longer. In carcinoma of the body of the uterus (130 cases) the primary mortality was much lower (9.6 per cent.), and the percentage of permanent cures was higher (62.2 per cent.), so that here the need for a different method of treatment is not as great as in the case of carcinoma of the cervix.

Puerperal Fever.—Neis reports a case of puerperal fever from which he concludes that if a case seems of obscure origin it is well to consider the possibility of endogenous infection. Bacteriologic examination of the blood for both aerobic and anaerobic organisms should be made. At the same time a smear from the cavity of the uterus should be developed.

Laceration of Intestine by External Trauma at End of Pregnancy.—The young woman fell on the edge of a pitcher

but the pains and vomiting which developed an hour later were ascribed to labor, as two days later she was delivered at full term. Colic and borborygmus persisted whenever she drank anything, and after eating mashed potatoes and meat croquettes the twentieth day after the accident, symptoms of ileus developed with fecal vomiting, but expectant treatment was continued, with fluid food, for several weeks until a tumor was palpated in the right upper abdomen. Laparotomy revealed a perforated laceration of the intestine which had ulcerated and closed the perforation, and was well on the way to healing. Prompt recovery followed resection of a 35 cm. loop. In case of laceration of the intestine, when operation is impossible, Schaedel thinks it might be advisable to belt in the abdomen and give opium, hoping for a spontaneous healing. In this case the full abdomen had helped to immobilize the injured loop.

Postoperative Intestinal Obstruction.—Brewitt reports four cases of intestinal obstruction resulting from compression by exudates in the true pelvis arising after gynecologic intervention. He says that antiphlogistic measures, such as hot-air baths, compresses and packs, proved useless, and that it is poor surgery in such cases to perform a laparotomy in order to search for adherent intestinal loops in Douglas' pouch. It is an unnecessarily serious operation for the patients, who are usually in a much weakened condition. He recommends as the operation of choice a temporary, lateral fistula in the descending colon, which operation can be performed under local anesthesia. The operation is described in detail. The patients begin to improve at once. In from ten to twelve days the severe symptoms disappear as the exudate is absorbed, and the fistula can be allowed to close, which it will do spontaneously.

Zentralblatt für innere Medizin, Leipzig

July 10, 1920, **41**, No. 28

Soot Deposits in Skin of Chimney-Sweeps. Pichler.—p. 489.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

July 24, 1920, **2**, No. 4

Horizontal Rod Piercing the Penis Worn by Certain East Indian Tribes. J. Kleiweg de Zwaan.—p. 289.
*Osteomyelitis of Upper Jaw in Infants. E. Marx.—p. 294.
*Case of Banti's Disease with Death Under Neo-Arsphenamin. B. K. Boom.—p. 304.
Keratitis in W Form. G. Wisselink.—p. 312.

Ocular Lesions Consecutive to Osteomyelitis of the Upper Jaw in Infants.—Marx has encountered three cases and compiles thirty-three from the literature in which this was followed by an abscess or fistula or merely inflammation in the conjunctiva of the same side, in infants from 3 days to 9 months old. He found staphylococci in two of his cases but this may have been a secondary invasion. In one case cited, both staphylococci and streptococci were cultivated from the mother and also from her child. About 25 per cent. of the cases terminated fatally, but the prognosis is favorable if the osteomyelitic process in the bone is discovered and treated properly in time. The antrum is so small at this age that we can scarcely speak of a sinusitis, the lesions being an actual osteomyelitis, and it spreads in the spongiosa to the eye. In eight of the total thirty-five cases the disturbances in the eye were the first thing that attracted attention to the osteomyelitis. In nearly 25 per cent. of the cases, exophthalmos was pronounced, and this seems to occur constantly with inflammatory processes in the ethmoid sinus. Two cases of the latter in infants have been published, and both children recovered after the pus had been cleared out of the sinus. In Stephenson's recent compilation of ten cases of ethmoid sinusitis with exophthalmos, one was in a 2 weeks babe.

Neo-Arsphenamin in Banti's Disease.—The girl of 11 had an extremely large spleen, secondary anemia, leukopeny with preponderance of mononuclear cells, chronic diarrhea, and unstable pulse and temperature. By exclusion, Banti's disease was diagnosed, but splenectomy was postponed for tentative treatment with neo-arsphenamin, 0.015 gm. by the vein once a week for six weeks. Then jaundice developed, with a hemorrhagic diathesis and high fever, and necropsy disclosed fatty degeneration and necrosis of the liver. The Wassermann reaction had been constantly negative. Boom attributes the fatality to the drug, the liver being in such a precarious condition that it could not stand even these small amounts of the comparatively harmless neo-arsphenamin. The case warns to be wary with arsphenamin treatment with a substandard liver, but unfortunately, he adds, we have no means of ascertaining this beforehand. The retrospective diagnosis was disease of the liver from inherited syphilis which had finally assumed the picture of Banti's disease. At necropsy in cases of Banti's disease, search should be made for syphilitic lesions.

Hospitalstidende, Copenhagen

July 28, 1920, **63**, No. 30

*Operations for Scarlatinal Otitis. S. T. Sørensen.—p. 457.

Operative Treatment of Otitis with Scarlet Fever.—Sørensen emphasizes the difference in the general condition and resisting powers in or convalescing from scarlet fever when it is a question of operative intervention, compared with conditions when a chronic otitis is inducing cerebral or pyemic symptoms. His experience has further confirmed the evil results liable to follow an extensive mastoid or other operation for scarlatinal otitis and its complications. On the other hand, he has a record of fifty-seven cases of suppurative processes of scarlatinal otitis origin in which the periauricular abscess healed after simple incision, with recovery of all the patients. He describes three cases in which the mastoid operation seemed to have turned the scale to a fatal outcome; in one of these, severe uremia complicated the clinical picture but the condition was not hopeless until acute exacerbation followed the mastoid operation; in another case necropsy revealed diffuse tuberculosis, so the outcome would have been death in any event, but the child might have been spared the operations on mastoid, sinus, ligation of vein, etc. In three other cases the child recovered after a series of operations; the course seemed to be much aggravated by them as the scarlatina in each instance had been mild. Another argument against extensive operations is the difficulty of the differential diagnosis; in one case an abscess in the brain escaped detection even at the operation, and in two other cases with cerebral symptoms leading to assumption of otitic complications, the ear had not been affected by the scarlet fever, and the disturbances were traced to erysipelas spreading from the nose. At necropsy of patients with severe otitis he has sometimes found the mastoid cells full of purulent masses when during life there had been no signs of secondary otitic symptoms. To operate before symptoms develop would lead to many unnecessary operations, and to fatalities in the scarlatinal cases.

Ugeskrift for Læger, Copenhagen

Aug. 5, 1920, **82**, No. 32

Physical Bases for Radiotherapy. S. Nordentoft.—p. 999.
Influenza at Sundholm, 1920. O. Studtgarth.—p. 1016.
*Treatment of Gastroptosis. C. J. Baastrup.—p. 1019.

Combined Treatment of Gastroptosis.—Baastrup suspects gastroptosis in women with long flat trunks, the upper abdomen curving in and the lower somewhat prominent, thin, nervous, complaining of dull headache, constipation, very frequent micturition, etc. In a case of the kind he found the lower level of the stomach at the symphysis, and the condition had not been improved by repeated courses of bed rest and forced feeding and other measures during seven years under various specialists. He applied massage to the arms, legs and back, and gave arsenic, and had the foot of the bed raised to aid in restoring the stomach to place. The result was surprising; the woman gained rapidly in weight and was fitted with a belt to support the stomach. All the symptoms disappeared for over three years. Then came recurrence of some of the symptoms, but they subsided anew under a two weeks' course of massage without confinement to bed, but the foot of the bed was raised at night. In a second case, bed rest for three or four weeks with the same measures was supplemented with out of door exercise and a special corset which includes the features of Lane's belt. The young woman was soon in perfect health and has had no disturbances since.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, No. 15 CHICAGO, ILLINOIS OCTOBER 9, 1920

CLINICAL OBSERVATIONS ON THE DIGITALIS-LIKE ACTION OF SQUILL *

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Squill has long been in use as a diuretic, an expectorant and a heart tonic. Is is classified now as a digitalis-like drug. As it has not hitherto been subjected to both of the two most satisfactory clinical tests of digitalis action, it has seemed of considerable interest to us to make a brief clinical study of the digitalis-like action of squill. The two tests which are pathognomonic of digitalis and its allies are (1) the production of heart block, particularly in auricular fibrillation, and (2) the change in the *T* deflection of the electrocardiogram.

The production of heart block by digitalis has long been recognized. It is best seen in patients with auricular fibrillation. Cases with normal rhythm may show delayed conduction and finally dropped beats after large doses of digitalis have been given; but cases with auricular fibrillation usually show the effect more quickly by a rapid drop in the heart rate from the high figure found before treatment.

The change in the shape of the *T* wave of the electrocardiogram resulting from digitalis is of relatively recent discovery. Cohn and Fraser,[1] in 1913, pointed out that digitalis may invert the *T* wave of the electrocardiogram. Since then this condition has been found to be quite the usual result of digitalization. The *T* wave, which is normally upright in Lead II, becomes at first lower, then flattened, and finally inverted with progressive digitalization. Patients with or without auricular fibrillation show the same tendency for the *T* wave change.

The drug squill is made up of the inner scales of the bulb of *Urginea maritima* or *Scilla maritima* (sea-onion). It is a plant that has been used for many centuries in the treatment of disease. It is said [2] that the ancient Egyptians employed it to induce vomiting. Hippocrates [3] used it both externally and internally. Pythagoras wrote a treatise about it, and Pliny described a method of preparing the vinegar of squill and the honey of squill for dropsies.

In works on pharmacology and therapeutics, squill is discussed under the heading of "digitalis and its allies," but its chief use in practice has been as an expectorant or as a diuretic. Haynes,[4] however, in 1906 claimed that it was a more efficient cardiac stimulant than digitalis or strophanthus. Dixon,[5] the same year, stated that squill has the disadvantages of uncertain absorption, strong gastro-intestinal irritation and vasoconstriction, particularly of the coronary vessels. Cushny,[6] in 1911, considered that clinically squill had only one-half to one-quarter the strength of digitalis. Hatcher,[7] in 1912, found that in cat units squill had little more than one-sixth the strength of digitalis.

TABLE 1.—ASSAY OF TINCTURES

Tincture 1	0.006
Tincture 2	0.0035
Tincture 3	0.007
Tincture 4	0.005
Tincture 5	0.007

The various preparations of squill are the dried bulb (scilla) with a dosage, according to the U. S. Pharmacopeia of 0.1 gm. (1½ grains); vinegar of squill (acetum scillae), 1 c.c. (15 minims); fluidextract of squill, 0.1 c.c. (1½ minims); oxymel, from 2 to 4 c.c. (½ to 1 dram), B. P.; pill ipecac with squill, from 0.25 to 0.5 gm. (4 to 8 grains), B. P.; syrup of squill, 2 c.c. (30 minims); compound syrup of squill, 2 c.c. (30 minims), and tincture of squill, 1 c.c. (15 minims). In our investigation we have made use of the tincture, five different preparations: Nos. 1 and 2 at the House of the Good Samaritan, and Nos. 3, 4 and 5 at the Massachusetts General Hospital. They were all obtained from good pharmacists. One (Tincture 2) was received bottled originally as a physiologically assayed tincture; the others were made up from biologically assayed fluidextracts.

Dr. Worth Hale of the Department of Pharmacology of the Harvard Medical School has very kindly tested all five of these tinctures. The results of his assay are as given in Table 1, expressed in cubic centimeters of the drug (which is a 10 per cent. solution) per gram of frog necessary to produce in one hour systolic

* From the Massachusetts General Hospital and the House of the Good Samaritan.

* Read before the Section on Pharmacology and Therapeutics at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

* Owing to lack of space, this article has been abbreviated by the omission of the protocols. The complete article appears in the Transactions of the Section and in the authors' reprints. A copy of the latter may be obtained on application to the authors.

1. Cohn, A. E., and Fraser, F. R.: J. Pharmacol. & Exper. Therap. **5**: 512, 1913.
2. Buck, A. H.: The Growth of Medicine from the Earliest Times to about 1800, New Haven, 1917.
3. Stillé, Alfred: Therapeutics and Materia Medica, 1868. Pereira, J.: The Elements of Materia Medica and Therapeutics, 1854.
4. Haynes, G. S.: Biochem. J. **1**: 62, 1906.
5. Dixon, W. S.: Brit. M. J. **2**: 1459, 1906.
6. Cushny, A. R.: Am. J. M. Sc. **168**: 469, 1911.
7. Hatcher, cited in Sollmann, Torald: Manual of Pharmacology, 1917, p. 411.

standstill of the heart. Since the standard frog unit (U. S. P.) is 0.006, it is evident that all the preparations except Tincture 2 are standard or close to standard. Tincture 2 is twice the strength of the

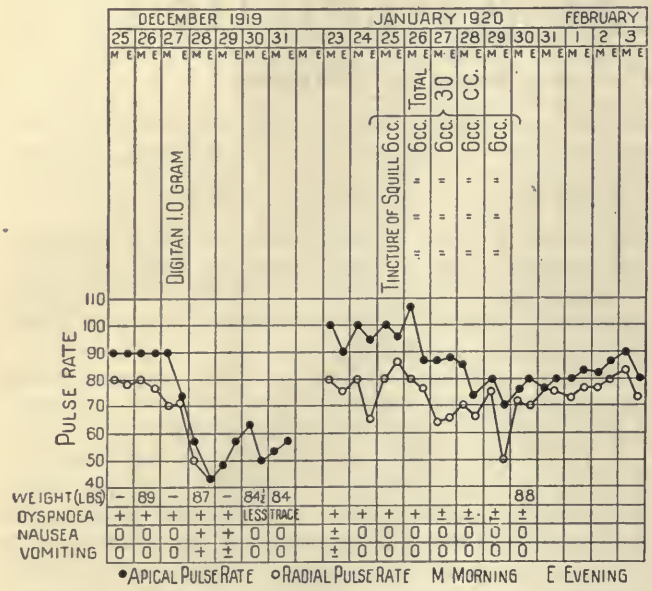


Fig. 1.—Effect of squill in Case 1.

standard. This is important because we thought at first that the feeble effect on the heart from ordinary doses of the tincture of squill in the cardiac cases tested might be due to weak, below standard preparations.

EFFECT OF SQUILL ON FOURTEEN PATIENTS

The effect of squill on thirteen cardiac patients with auricular fibrillation and on one with auricular flutter has been studied by us. These cases and the results of squill and digitalis administration are fully described in the protocols.

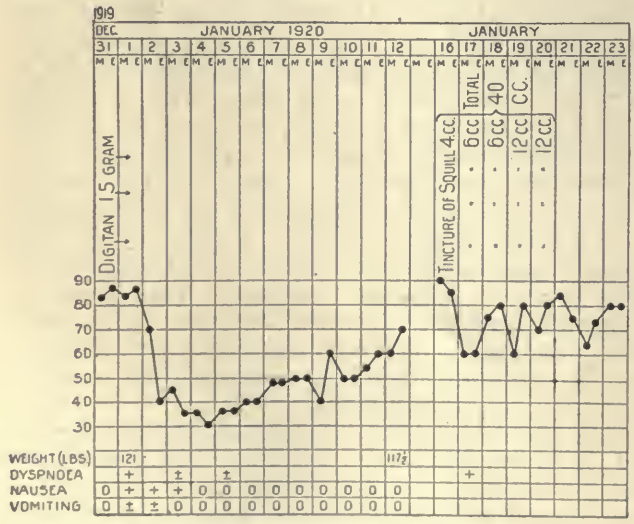


Fig. 2.—Effect of squill in Case 2.

1. *First Group.*—The first seven patients of the fourteen were at a hospital for chronic disease, the House of the Good Samaritan. One of the advantages in their study lay in the fact that most of them had been in the hospital for months and had shown already the effects of rest in bed and digitalis. They were thus in a stable equilibrium when tested. They all had auricular fibrillation, six due to rheumatic heart disease, five of whom had mitral stenosis and one aortic stenosis; the other patient had cardiorenal disease. Six had edema of the legs or of the liver, or of both.

(*a*) Effect of Digitalis: Before the squill was given, all of these seven patients first received massive doses of digitalis in the form of digitan (digipuratum), from 1 to 2 gm., within four hours. All reacted vigorously to this therapy with striking and rapid falls in apical pulse rate: 90 to 40 within twenty-four hours in Case 1; 86 to 40 within twenty-four hours in Case 2; 95 to 55 in Case 3; 110 to 80 in Case 4; 80 to 40 in Case 5; 90 to 44 within twelve hours in Case 6, and 130 to 55 within twenty-four hours in Case 7. There was nausea with vomiting in Cases 1, 2, 5 and 6 as the result of the digitalis; these patients were more or less prostrated for one or two days by the toxic effects, especially Case 5; this patient vomited for three days following the digitan, of which she received 2 gm., which

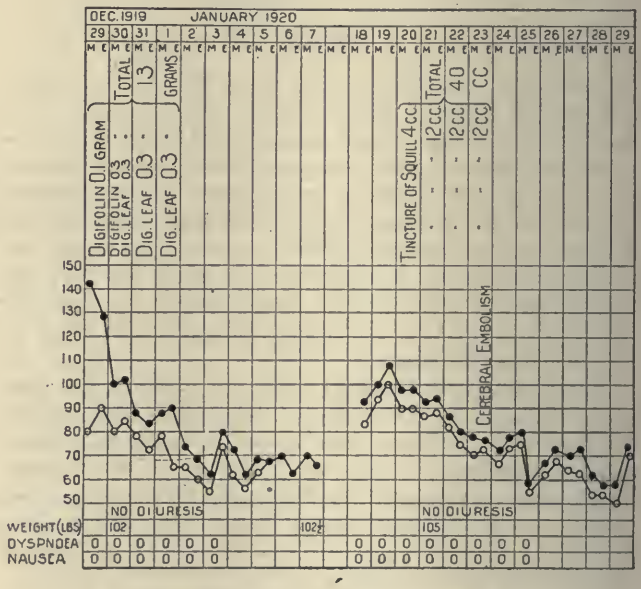


Fig. 3.—Effect of squill in Case 8.

was the largest massive dose given. There was definite symptomatic and objective circulatory improvement in all seven patients so soon as the toxic effects had disappeared. In some cases with edema, diuresis followed the drop in pulse rate. There was also increase in the vital capacity along with the subjective improvement.

(*b*) Effect of Squill: As it had thus been proved that these patients would all respond to digitalis favorably, an interval of about two weeks was allowed to elapse after the massive dose of digitalis in order to permit the complete excretion of this drug. Then tincture of squill in the dosage of from 2 to 4 c.c. (30 to 60 minims), which is from two to four times the average dose, was given three times daily for several days. Thus, in Case 1, 30 c.c. (7½ drams) was given in five days; Case 2, 40 c.c. in five days; Case 3, 48 c.c. in five days; Case 4, 48 c.c. in four days; Case 5, 48 c.c. in five days; Case 6, 52 c.c. in five days, and Case 7, 32 c.c. in five days. Tinctures 1 and 2 were given in about equal amounts to each patient except in Case 1, in which only Tincture 1 was given. Three of the

patients, 2, 3 and 6, showed no effects whatever except that possibly 3 and 6 had a little cumulative effect that aided the action of digitalis given again later. Patient 7 had slight nausea but no other symptom or sign of squill action. Patient 4 had very slight reduction in pulse rate (10 beats, 80 to 70) but otherwise no evidence of action. Patients 1 and 5 seemed slightly improved subjectively, and in them there was reduction of the pulse rate, 100 to 70 in Case 1 and 80 to 55 in Case 5. These results are noted in Table 2.

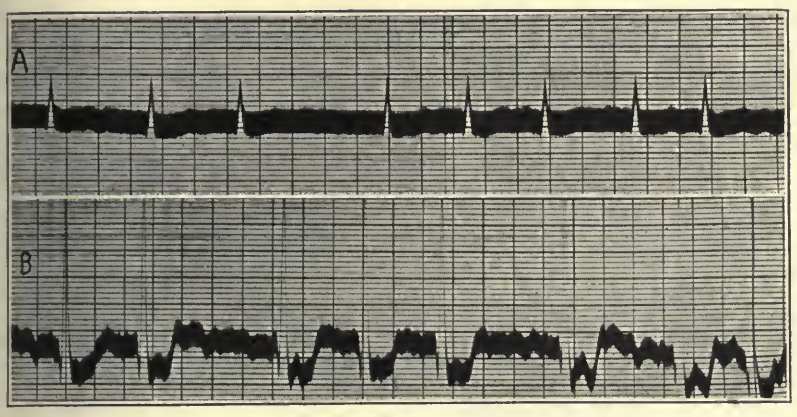


Fig. 4 (Case 9).—*A*, Lead II before administration of squill. Abscissa, 0.2 second. Ordinate, 10^{-4} volt. *B*, Lead II, showing effect of tincture of squill. Note inverted *T* wave and increased amplitude of *R*.

TABLE 2.—EFFECT OF SQUILL

Case	Reaction to Digitalis	Tincture of Squill: Amount, C.c.	Tincture of Squill: Days Taken	Effects of the Squill: Heart Block	T Changes	Diuresis	Toxic Effects	Improvement
1	++++	30	5	Slight	..	0	0	Slight
2	+++	40	5	0	..	0	0	0
3	+++	48	5	0	..	0	0	0
4	++	48	4	? Slight	..	0	0	0
5	++++	48	5	+	..	0	0	Slight
6	++++	52	5	?0	..	0	0	0
7	++++	32	5	?0	..	0	Slight	0
8	++++	40	3½	++	?0	0	0	0
9	.....	136	12	+	++	+	0	+
10	.....	184	15	+++	+	0	0	Slight
11	.....	112	4½	+	+	0	+	Slight
12	++++	192	4	+	+	0	+	Slight
13	.....	176	3	+	+	0	0	Slight
14	++	184	4	+++	+	+++	0	++++

To summarize these seven cases, it may be said that patients with auricular fibrillation mostly of rheumatic origin who respond definitely to digitalis respond little if at all to two or four times the average pharmacopeial dose of tincture of squill continued for four or five days. In this group of cases, electrocardiograms were not taken.

2. *Second Group.*—The second group of seven cases was studied at the Massachusetts General Hospital. Six of these patients had auricular fibrillation, three of the rheumatic type, two with mitral stenosis; one of the other three had cardiosclerosis, and the other two cases were of unknown cause, probably rheumatic. The seventh patient had auricular flutter with cardiosclerosis. At the Massachusetts General Hospital there was one disadvantage, that of not having observed the cases for some months previously in the same environment. On the other hand, there were two advantages: Electrocardiograms were taken daily or every other day just before, during and after the administration of the course of the squill, and most of these cases were studied later than the Good Samaritan group, and so received larger doses of the squill. The dose varied in these patients from 4 c.c. (1 dram) to 16 c.c. (½ ounce)—from four to sixteen times the pharmacopeial dose—and was given three times daily. In Case 8, 40 c.c. were given in three and a half days; Case 9, 136 c.c. in twelve days; Case 10, 184 c.c. in fifteen days; Case 11, 112 c.c. in four and a half days; Case 12, 192 c.c. in four days; Case 13, 176 c.c. in three days, and Case 14, 184 c.c. in four days. The absence of effect in the cases at the House of the Good Samaritan caused us to start with the dose of 4 c.c. As this was ineffective, it was doubled for later cases and finally quadrupled for the last three cases. It was only when we were giving 16 c.c. (4 drams) at a dose instead of 1 c.c. (15 minims) that we obtained finally very definite digitalis-like action from tincture of squill.

(*a*) Effect of Digitalis: Three of these seven patients were given digitalis also, Patient 8 receiving 1.3 gm. of digifolin and digitalis leaf in three and a half days; Patient 12 was given a massive dose of 1 gm. of digitan at entrance, and Patient 14 was given digitan and tincture of digitalis, equivalent to 2 gm. of the leaf, in the course of four days. An interval of two weeks or more separates the digitalis from the squill administrations, in the first two cases the digitalis preceding the squill and in the last vice versa. Patients 8 and 12 reacted remarkably to the digitalis, Patient 14 definitely but not so markedly. Digitalis, in large amounts at least, was not given to the other four patients.

(*b*) Effect of Squill: In these seven cases at the Massachusetts General Hospital the squill showed a definite digitalis-like action in every case (Table 2). In Case 8 there was slight effect, the pulse rate dropping but the *T* wave of the electrocardiogram showing little if any change; this patient received, however, only 40 c.c. of the drug, which was discontinued because of cerebral embolism. Case 9 showed more squill effect, not only in the reduction of the pulse rate, but also in the inversion of the *T* wave, diuresis and subjective

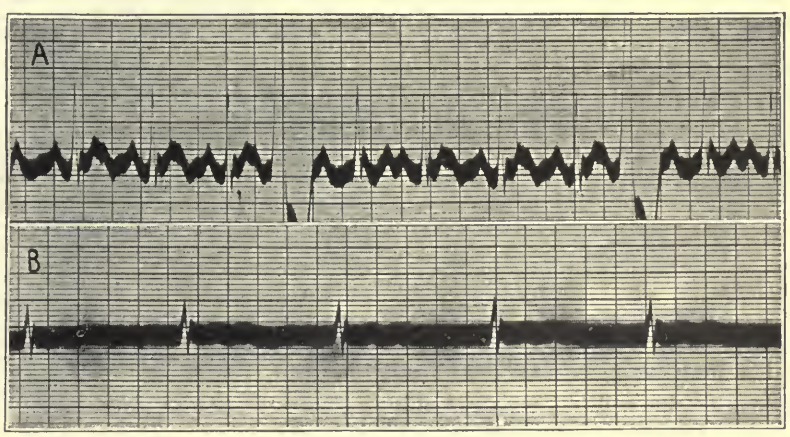


Fig. 5 (Case 10).—*A*, Lead II, before administration of squill. Auricular flutter. *B*, Lead II, showing effect of squill: flattened *T* wave, disappearance of flutter, decreased amplitude of *R*.

improvement. The drug was stopped on the occurrence of an embolism in the foot. Case 10, with auricular flutter, showed apparently definite squill effect also—in the breaking up of the auricular flutter, slight subjective improvement, and a flattening of the *T* wave of the electrocardiogram. Case 11 showed

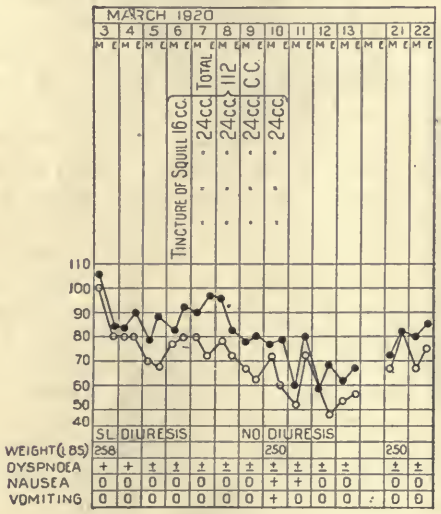


Fig. 6.—Effect of squill in Case 11.

squill effect in subjective improvement, reduction of the apex pulse rate, flattening of the *T* wave, and nausea and vomiting. Case 12 showed a pronounced effect from the squill, especially in the electrocardiogram, a bigeminy due to ectopic ventricular complexes occurring, with the *T* wave much decreased in height (Fig. 7). In Case 13 there was slight subjective improvement, some reduction of the apex rate and inversion of the *T* wave. Case 14 showed the most striking effect of all. This patient, who entered the hospital almost moribund, improved rapidly and markedly under the squill, with great reduction of apical pulse rate, marked diuresis following the pulse drop and the improvement in the heart and circulation, and inversion of the *T* wave of the electrocardiogram (Figs. 9 and 10).

RESULTS

1. *Production of Heart Block.*—Turnbull[8] produced marked sinus arrhythmia, premature beats, and a slight degree of heart block after exercise in a patient with mitral stenosis without auricular fibrillation by giving 11 drams (44 c.c.) of the tincture of squill in eleven days. Altogether, 20 drams (80 c.c.) were given to this patient in twenty days, with finally loss of appetite and general malaise. In another paper[9] he stated that tincture of squill in 15 minim doses four times a day produced no symptoms in most cases, even in amounts up to 21 drams (84 c.c.) in twenty-one days; the exception he cites is the case already described in his other paper. He stated that this dose of 15 minims (1 c.c.) four times daily "proved sufficient in several cases to maintain the slowing and good effects produced by digitalis. The squill used was one and a half times as strong pharmacologically as the digitalis." In the discussion of this paper, E. I. Spriggs considered digitalis more effective in slowing the heart and arresting its irregularities than strophanthus or squill. Whiting,[10] in 1918, reported an interesting case of mitral stenosis which he treated before and after the onset of auricular fibrillation. He found that tincture of digitalis gave wonderful improvement during fibrillation, while in the prefibrillation days it had had only a trivial effect, if any, on the heart, with some improvement in the general condition of the patient. Tincture of squill was tried in this case and appeared to be equivalent to a weak digitalis. From 1½ to 2 drams (6 to 8 c.c.) was given daily for five days (30 to 40 c.c.) to five weeks (210 to 280 c.c.); the pulse remained at about 72; there was no definite diuresis; slight headache was the only toxic symptom.

In our fourteen cases especially selected because of their ready response as auricular fibrillation or auricular flutter to digitalis, there was strikingly little production of heart block except with large doses. With a dose from eight to sixteen times the average U. S. P. dose, there was definite digitalis effect, a pronounced blocking, especially marked and typical in Case 14 (Fig. 9).

2. *Electrocardiographic Changes.*—So far as we know, no observations of the effect of squill on the electrocardiogram have hitherto been made. Of the seven cases of our second group from which electrocardiograms were obtained, six showed definite changes in the *T* wave, a decrease, flattening or inversion. This is a typical digitalis effect. In only one case, Case 8, was there no apparent change, and here only 40 c.c. of the tincture of squill was given. In two cases the *Q-R-S* complexes changed considerably during the squill administration: in Case 9, in which they increased greatly in amplitude with improvement in the patient's condition (Fig. 4), and in Case 10, in which the reverse occurred (Fig. 5).

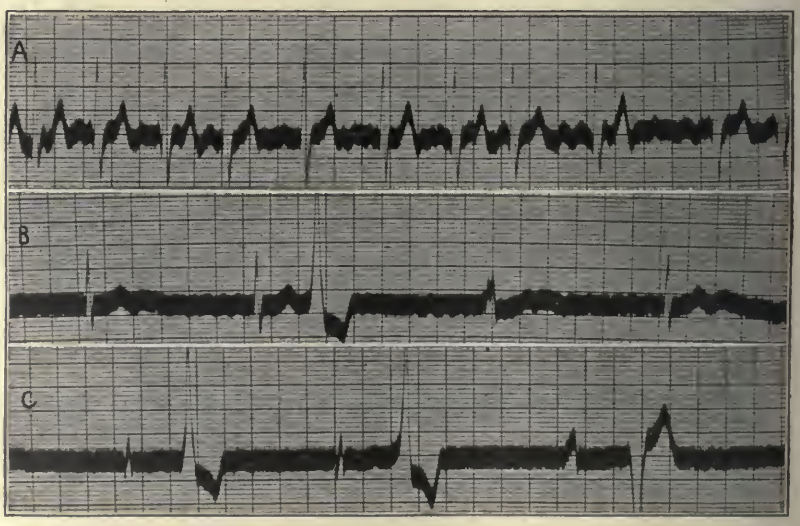


Fig. 7 (Case 12).—*A*, Lead II, before administration of squill. Note high *T* wave. *B*, Lead II, showing squill effect: bradycardia, flattened *T* wave and ectopic complex. *C*, Lead III, showing coupling, bigeminy, the result of squill.

8. Turnbull, H. H.: Heart **2**: 15, 1910-1911.
9. Turnbull, H. H.: Proc. Roy. Soc. Med. **4**: 25, 1910-1911.
10. Whiting, A. J.: Proc. Roy. Soc. Med., Sect. Therap. **11**: 1, 1918.

3. *Diuresis.*—Wood,[11] in 1856, considered that squill ranked among the most energetic diuretics, being inferior only to digitalis and potassium bitartrate in efficiency. Now, of course, digitalis is recognized as a diuretic only secondarily; that is, through the improvement of the heart and circulation by digitalis, diuresis will follow in edematous cases. In our group of fourteen cases there was diuresis from squill in only two, both of which were edematous before the administration of squill. In both cases the diuresis followed the reduction in pulse rate. Hence squill should probably be regarded as a diuretic in heart disease only secondarily, like digitalis, through its improvement of the heart and circulation.

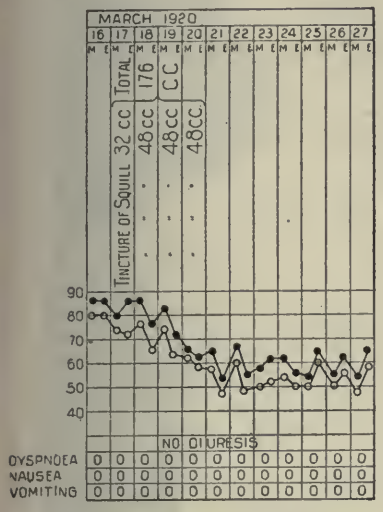


Fig. 8.—Effect of squill in Case 13.

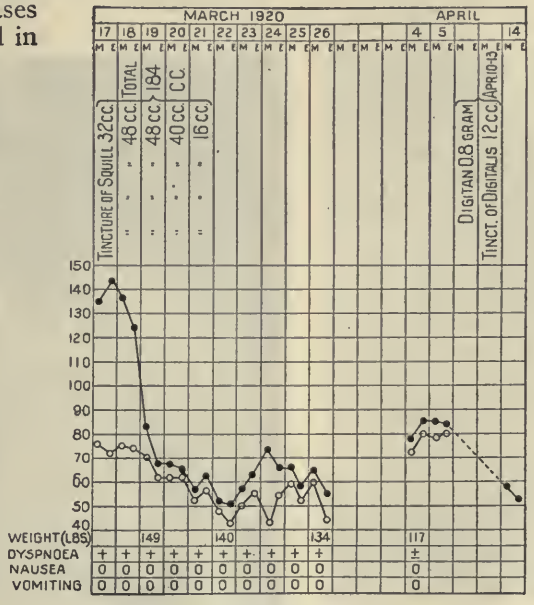


Fig. 9.—Effect of squill in Case 14.

4. *Toxic Effects.*—Toxic effects occurred in only three of the fourteen cases, nausea in one, nausea and vomiting in another, and a bigeminal pulse in a third. In the third case there was no nausea. There was no diarrhea in any case. Expectorant action was not observed in any case, except as associated with the nausea in the two cases cited above.

SUMMARY

1. The digitalis-like action of squill has been studied in fourteen patients with heart disease, complicated by auricular fibrillation in thirteen cases and by auricular flutter in one case.

2. The two definite clinical signs of digitalis action are the production of heart block and the lowering of the *T* wave of the electrocardiogram.

3. Heart block was produced in this series by the standardized tincture of squill only in large dosage.

4. The *T* wave of the electrocardiogram was flattened or inverted by large doses of the squill, similarly as by digitalis.

5. No diuresis occurred even with very large doses of the standardized tincture of squill, except in two cases of edema after the pulse rate had been reduced and the circulation improved.

6. Toxic symptoms were very rare, even with the largest doses.

7. With the reduction in pulse rate (and diuresis) there was subjective improvement in some of the cases.

8. Finally, the conclusion is justified that squill does have a definite digitalis-like action, but only in larger dose than that now stated as an average, e. g., from 2 to 4 drams (8 to 16 c.c.) instead of 15 minims (1 c.c.) of the tincture at each dose.

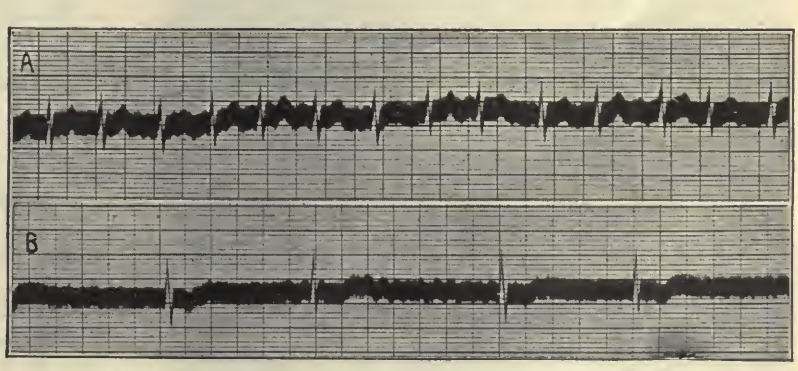


Fig. 10 (Case 14).—*A*, Lead II, before administration of squill. *B*, Lead II, showing squill effects: heart block and inverted *T* wave.

ABSTRACT OF DISCUSSION

DR. J. T. HALSEY, New Orleans: There are several important points about squill which we want to know. Is it as effective as digitalis in producing the all important "block" effect and also the effects on the functions of the heart muscle which are probably also of much importance? Is the generally accepted view that squill is more diuretic than digitalis correct? Is squill more emetic and nauseant than digitalis? I would ask Dr. White to state whether his observations have permitted him to reach any conclusions on these matters.

DR. CARY EGGLESTON, New York: Dr. White's paper has been very interesting to me from one particular point of view, that is, the question of the absorption of squill. He quoted Dr. Hatcher in saying that squill was only one sixth as active as digitalis. I do not remember that statement by Dr. Hatcher, but we now know that a first class preparation of squill when compared with a first class preparation of digitalis is sometimes of equal activity, at least by the cat method. Consequently Dr. White's observation does not mean that squill is relatively inactive on the heart so much as that squill is poorly absorbed from the gastro-intestinal tract. I think the fact that such large doses of squill, as compared with digitalis, were required may be due to its poor absorbability. We have made observations of the absorption of squill from the intestinal tract in the cat and we found that it is very poorly absorbed. We think it is safe to conclude from the observations in the cat that absorption may be poor in man, for the reason that we found throughout the range of digitalis bodies that where the absorption was poor in the cat, it subsequently proved to be poor in man. To my mind the most significant contributions that Dr. White made are: The final proof that squill is a cardiac drug, capable of producing the same effect in man as digitalis; and the fact that squill is not a substitute for digitalis for oral administration because it is so poorly

11. Wood, G. B.: A Treatise on Therapeutics and Pharmacology, 1856.

absorbed. I believe that is the reason why squill has been so successful as a nauseant, and the cardiac action of squill has been overlooked I certainly think we have no reason for using squill in the treatment of cardiac disease and believe Dr. White agrees with that suggestion. Whether there is justification for its use in other diseases will remain to be seen, and I think is a matter of considerable doubt.

Dr. G. M. Balboni, Boston: As far as the diuretic effect of squill is concerned, in small doses there has been none. Only when we gave 16 c.c., three times a day, have we obtained diuresis as a secondary effect in patients with edema. As far as the expectorant action goes, we do not believe that it is such a good expectorant as we are told in books, but with the onset of nausea, there is an expectorant effect, probably chiefly salivation. As far as toxicity is concerned, we did not find that it had a severe toxic effect. This may be due to its inability to be absorbed by the gastro-intestinal tract. I was very much interested in looking over one of the recent books on pharmacology and therapeutics (Wilcox, p. 147) to find that he says squill produces a much more violent gastro-intestinal irritation than digitalis, causing in large doses crampy pains, vomiting and even marked enteritis. This has not been our experience. The effect of the alcohol in the large doses of tincture of squill was very transient, very slight and would tend to raise pulse rate rather than the reverse.

INFECTIOUS ECZEMATOID DERMATITIS*

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It has recently been stated that the term "infectious eczematoid dermatitis" is lacking in grace and euphony, as well as in accuracy, but at this time I know of no appellation that will adequately take its place. While it is true that our conception of the affection as it was first described has undergone some changes, these changes tend to increase rather than diminish the clinical importance of the disorder. Scarcely a fortnight passes that I do not receive a letter from some medical man located in one of the smaller cities asking for information and advice regarding "a peculiar disease" which developed secondary to scabies, furunculosis or other common suppurative condition, and then, almost invariably, there follows a more or less typical description of infectious eczematoid dermatitis.



Fig. 1.—Infectious eczematoid dermatitis of hand; lesions resemble those due to tinea; attack followed furunculosis.

As originally described by Engman, in 1902, "staphylogenetic (?) eczematoid dermatitis" is thus characterized:

1. The initial or earliest lesion may be a vesicle, pustule or erythematous, scaly or crusted point or plaque.



Fig. 2.—Infectious eczematoid dermatitis following scabies: The disease involved the entire body as well as the neck and face.

2. The vesicles are not so closely placed and are larger than those seen in an acute symmetrical vesicular eczema.

3. There is no symmetry in the arrangement of the lesions, except when thus accidentally inoculated.

4. It occurs in patches, usually not involving a large area of surface in a single patch. When the disease begins as vesicles, they soon break to form a scaly patch which extends in the usual manner. New foci may begin as a cluster of vesicles.

5. The patches are circumscribed with sharply defined borders. The epidermis at the periphery is usually undermined, split up, detached or raised, the two latter events being caused by perceptible or imperceptible serous or seropurulent fluid, which may, if it contains much fibrinous material, instantly form a thin ridgelike crust about the periphery; while if in larger amounts and more fluid, drops of it can be pressed out from under the raised epidermis.

6. The disease increases by peripheral extension of the patches and the formation of new ones by autoinoculation.

7. The exposed parts are the most frequently affected.

8. There is no attempt at central involution.

9. There is a minimum amount of itching.

10. The nearest lymphatic glands are often enlarged.

11. The initial and earliest vesicle, pustule, scaly or crusted spot contains the yellow or white staphylococcus in pure culture, as well as the surface and crusts of the later patches.

12. Experimental autoinoculation can usually be successfully performed, but the lesion thus produced begins as an erythematous patch which soon weeps and crusts, and not as vesicles.

13. The history of trauma, infection or association with suppurative conditions is characteristic of the affection.

14. Local antiparasitic applications are sufficient to effect a cure.

In 1910, Fordyce[1] read a valuable and thought-provoking paper on the subject, emphasizing the

* Read before the Section on Dermatology and Syphilology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Fordyce: J. Cutan. Dis., 1911, p. 129.

important part played by antecedent lesions and diseases of the skin, such as scabies, wounds or traumatisms which had become infected, furuncles, intertrigos, sinuses left after operation on bone, etc., in the causation of certain types of dermatitis. In this communication he first called attention to "the more complex types of cutaneous eruption caused by pus organisms or their toxins," and to our hesitancy "to extend the rôle of these organisms, at least as causative agents, to such affections as the intertrigos and eczemas." At the time Fordyce's paper was presented, our knowledge of anaphylaxis and its relationship to cutaneous eruptions was in its infancy, and focal infection was a total stranger. During the ten years that have elapsed since then, we have learned much, but even now we are not entirely certain that our conclusions are always based on scientific fact. A careful survey of the clinical and experimental evidence at our disposal would indicate, however, that



Fig. 3.—Infectious eczematoid dermatitis of the body and face, showing urticarial character of lesions.

the phenomenon of protein sensitization plays an extremely important part in the etiology of a number of well recognized cutaneous maladies. The most typical and characteristic of these is, of course, urticaria, with erythema multiforme a fairly close second.

Von Pirquet [2] and Major and Noble [3] believe that anaphylaxis is a prominent factor in the causation of the skin eruptions of the various exanthems, von Pirquet being of the opinion that the prodromal stage corresponds roughly in time with the development of the anaphylactic reaction, and that the eruptive stage is produced by a combination of the antibody with the virus of the disease, probably in the blood stream. He emphasizes the fact that the eruption commonly first appears, and later becomes more intense, in the richly vascular localities. I have twice seen the eruption of smallpox develop on small, circumscribed hyperemic areas (once beneath a mustard plaster, and once on an area that had been painted with iodin) seventy-two hours before other, nonirritated, parts of the body were affected.

While infectious eczematoid dermatitis is in no sense of the term a purely anaphylactic manifestation, in many instances there is a concurrent eruptive phenomenon which can be ascribed to no source other



Fig. 4.—Infectious eczematoid dermatitis of hand following furunculosis.

than that of allergy. The association of the two conditions is too frequent to be due to accident alone. In a series of seventy-four case histories, selected at random and scattered over a period of two years, I found a record of concurrent urticarial eruptions in nineteen instances (more than 25 per cent.). The antecedent disorders varied greatly, but were fairly characterisitic: lacerated, infected wound of the hand; furuncle of the right thigh; scabies; infected ingrowing toe-nail; ecthyma; infected wound of the right forefinger; otitis media; infected, incised wound of the right hand; infectious discharge from the nose; infected wound of the right shin; furuncle of the left axilla; paronychia; infected wound of the thumb, and furuncle of the scalp. As a rule the anaphylactic

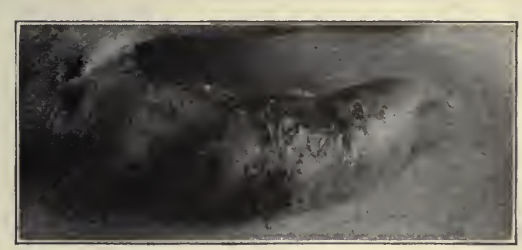


Fig. 5.—Infectious eczematoid dermatitis of finger: Lesions resembled those of trichophytosis, but no fungi were found in the culture, and recovery was prompt under the use of simple astringent lotions.

manifestations did not appear until after the staphylococcic disorder was well under way. A considerable percentage of these patients had never before suffered from urticaria. In a few instances, the wheals were accompanied by vesiculation, with subsequent infection and pustulation. As a rule, the pustules did not heal promptly.

2. Von Pirquet: München. med. Wchnschr. **63**: 1457, 1906.
3. Major and Noble: Ztschr. f. exper. Med. **2**: 9, 1913.

The urticarial eruption was most pronounced on the trunk, but the limbs also, and, occasionally, the face and ears, were involved. Not infrequently the urticaria-like eruption would disappear promptly following treatment, only to break out anew, and apparently with redoubled vigor, a few days later. All of the attacks were nonfebrile. As a rule, the earlier lesions were frankly suppurative (of fourteen cases in which cultures were made, *Staphylococcus aureus* was recovered in eleven), and autoinoculable. In the later, more generalized eruptions, however, attempted cultivation frequently proved unsuccessful.

In the postscabetic cases, the dermatitis, which commonly started in the axillary or the genital regions, might at first resemble a rash due to drug irritation (sulphur), but the manner in which new lesions quickly developed on the face and other distant parts of the body precluded a probable diagnosis of dermatitis medicamentosa.

The eruption was usually roughly symmetrical and involved areas which had never received local treatment of any kind. The urticarial manifestations may persist for several weeks after the early, suppurative lesions have healed.

The problem of successful treatment is often a vexatious one. In the earlier stages of the disease, I have found that a mild astringent, such as an aqueous solution of aluminum acetate (0.5 per cent.), or even lead and opium lotion (lotio opii et plumbi subacetatis) is more effective than one of the greasy preparations. At the end of forty-eight or seventy-two hours, however, one may profitably begin the use of a weak ammoniated mercury ointment (2 per cent.), together with a bland dusting powder containing a small amount of boric acid. After the tendency to suppuration has been overcome, phenolated zinc oil may be substituted for the mercurial ointment.



Fig. 6.—Infectious eczematoid dermatitis of trunk, face and forehead: Disease developed following furunculosis of axillae.

For the relief of the pruritus which often accompanies the urticarial lesions, calamine lotion, to which liquor carbonis detergens (from 2 to 10 per cent.) has been added, affords much relief. If necessary, a small amount of phenol (1 per cent.) or menthol (0.5 per cent.) may be added to the ammoniated mercurial preparation, and the ointment used in conjunction with the lotion.



Fig. 7.—Infectious eczematoid dermatitis involving face, forehead and scalp: Attack followed infection of hand.

In many instances, unfortunately, local treatment alone fails to bring about a cure, at any rate within a reasonable length of time. Internally, alkaline preparations, such as sodium acetate and sodium citrate (as recommended by Skillern [4] in combating furunculosis), in large doses, combined, if the patient is nervous and irritable, with sodium bromid, frequently prove helpful. If these, too, fail, I have found the most serviceable remedy to be a mixed staphylococcus vaccine. It is possible, as Davis [5] has suggested, that preparations of this type serve as nonspecific proteins rather than as specific vaccines, but I always endeavor to give the remedy the benefit of the doubt; and as the ensuing results have been satisfactory in my experience, I recommend it here. The initial dose should be small (from 25,000,000 to 75,000,000), and I usually repeat the injections every third day, gradually increasing the amount each time.

No one realizes better than I that our present knowledge of anaphylaxis, and particularly of anaphylaxis as related to the etiology of cutaneous disorders, is far from complete. Nevertheless, I believe we may safely assert that this phenomenon plays an important part in the prolongation, if not in the actual causation, of many cases of infectious eczematoid dermatitis.

4. Skillern: Pennsylvania M. J. **16**: 790, 1913.
5. Davis, D. J.: Vaccine Therapy, J. A. M. A. **68**: 159 (Jan 20) 1917.

ABSTRACT OF DISCUSSION

DR. FRANCIS E. SENEAR, Chicago: I am entirely in accord with Dr. Sutton. We have been inclined to consider this as rather an unusual or rare disorder, but if we will look for it we will see it more frequently. In one case, after all treatment, including roentgen rays, had failed, the vaccine suggested by Dr. Sutton brought about complete cure. The patient has been without treatment for about three months and there has been no recurrence.

DR. AUGUSTUS RAVOGLI, Cincinnati: Is this a dermatitis or eczema? Eczema is dermatitis, but dermatitis is not eczema. Dr. Sutton says there are pustules, but there is a pustular eczema. I would not like to say "eczematoid dermatitis" but rather pyodermatitis if infected with staphylococci and erysipelas if infected with streptococcus not only locally, but the whole system, as shown by the fever and the general sickness.

DR. EVERETT S. LAIN, Oklahoma City: After seeing a case from Dr. Sutton's clinic in which a diagnosis of infectious dermatitis had been made and which later developed into a clear case of circinate lichen planus, I was disposed to question his diagnosis of this class of cases. However, after hearing his description of this eruption, I am inclined to believe that it should be separated from the ordinary dermatitis which frequently follows drugs or irritants. I have seen a number of such cases associated with scabies and have usually termed them sulphur or balsam dermatitis.

DR. ERNEST L. MCEWEN, Chicago: This nomenclature is confusing. The case is infectious, eczematoid and a dermatitis. It is difficult to differentiate between an eczema and a dermatitis. I do not know exactly what is meant by the term "eczematoid dermatitis." It is designated as "infectious"; we speak also of a "parasitic dermatitis," but the two are not necessarily identical. This multiplicity of terms of closely related meanings is most confusing, especially for students.

DR. HAROLD N. COLE, Cleveland: Eczematoid dermatitis is an unfortunate term. I would suggest "impetiginous dermatitis," a term used by Professor Jadassohn. If we make cultures we will find not only the staphylococcus but the streptococcus in many instances. Making cultures on four or five successive tubes of agar, the last one will be almost a pure culture of streptococcus. I have found the use of a 1 per cent. potassium permanganate aqueous solution "soak" every day very successful. If these "soaks" are used for four or five



Fig. 8.—Infectious eczematoid dermatitis of forearms, which developed following an infected wound of the finger.

days, the eruption will be eradicated almost entirely. If we stop at that point the eruption returns, but if this treatment is followed with radiotherapy the eruption does not return.

DR. WILLIAM A. QUINN, Chicago: I hope some day some one will write a book on dermatology in which there will be no such word as eczema. If a man cannot find some cause for a disease he should at least not classify it as eczema for that only adds to the confusion.

DR. J. N. ROUSSEL, New Orleans: I see from twenty to twenty-five cases of this disease in my office every week. I have never seen salicylic acid fail to cure, if it is used properly. No matter how severe the symptoms, I clean off the area with gasoline and apply a saturated solution of salicylic acid. I seldom have to use it twice. I follow this treatment with ammoniated mercury. The permanganate packs are good but they are hard to use. We more often find the streptococcus as the cause than any other organism.

DR. WILLIAM H. MOOK, St. Louis: When Dr. Engman attempted to separate this group, he took a group of pyodermics which had been given various names and termed them "eczematoid dermatitis." The etiologic factor in eczematoid dermatitis is the staphylococcus, and it attacks the follicle primarily. These follicular lesions coalesce and produce a patch. The streptococcus attacks the superficial layer of the skin, not the follicles; the crust is not follicular. "Infectious"



Fig. 9.—Infectious eczematoid dermatitis of hand: Lesions bore some resemblance to those of dermatitis repens, but were very superficial, and in this instance responded promptly to simple astringent lotions.

describes the disease. It is really an infectious condition of the skin. The term eczema gives the clinical description.

DR. M. J. FARBER, St. Joseph, Mo.: In my opinion this phenomenon of dermatitis follows scabies and is not due to the scabies, but to the treatment of scabies. Every general practitioner treats scabies with a different preparation and does not give the patient proper instruction how to use it. The eruption from the treatment of scabies which is produced in that way is a dermatitis medicamentosa.

DR. RICHARD L. SUTTON, Kansas City, Mo.: I am sorry that the name "infectious eczematoid dermatitis" does not meet with approval, but I disclaim all responsibility although I think the appellation a good one. We have not succeeded in securing a culture from the urticarial lesions, but this is not surprising when we consider their probable nature. The disease is undoubtedly common and the fact that it is seldom recognized would indicate that it has not received the attention it deserves.

The Mother's Own Health.—The period between school and marriage is a critical one for the future mother. She has often to engage in work under conditions which do not make for full physical development. Long hours, a sedentary life, unduly heavy work, insufficient or unsuitable food, lack of fresh air, any or all of these may lead to an unsatisfactory state of health and result in an anemic, undernourished body which is no good preparation for future motherhood. In any event the burden of maternity is a heavy one. We owe a duty to the mother, and particularly to the working class mother, to do all in our power to lighten it and to relieve it of avoidable hardship, disability and danger. To put the matter at its lowest, it is not to the advantage of the nation that so large a number of its women should be prematurely worn out or disabled because of the heavy strain of bearing and rearing a family, together with the illness, sickness and injury so often involved, at a time when they should still be full of health and vigor. The least we should do is to ensure that the mother is properly nourished before and after childbirth, that she is spared domestic or industrial work likely to cause undue fatigue or other injury, that skilled advice is available, when needed, and that the treatment she receives is careful and competent.—*J. State Med.*, July, 1920.

SOME OBSERVATIONS ON CHRONIC NEPHRITIS

WITH SPECIAL REFERENCE TO CHRONIC INTERSTITIAL NEPHRITIS *

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Every student of pathology is familiar with the histologic picture of that condition of the kidneys known as chronic interstitial nephritis: the enormous mass of connective tissue in comparison with the normal, and the absence of the tubules and the glomeruli. Earlier students of this condition were struck with this picture; apparently it seemed to them that the most striking thing about it was the increase in the connective tissue, and it appeared to represent the end-result of the hypertrophy of the stroma which was responsible for the absence of the parenchyma; hence the name, chronic interstitial nephritis. Futhermore, this term implies that there is a condition that would be called acute interstitial nephritis, in other words, a condition in which this hypertrophy of the stroma is an active process, choking to death, as it were, the tubules involved in the areas of stroma hyperplasia. A careful study of the chronic condition, however, shows that the most striking thing in the picture is not the increase in stroma, but the absence of functionable parenchyma, and that there is very little real increase in the stroma, the apparent increase being more relative than actual. In the first place, the kidney is



Fig. 1.—Drawing of area of senile nephritis in normal kidney.

reduced in size, which would tend apparently to increase the stroma, since the parenchymal decrease is responsible for the reduced size. In the second place, not an inconsiderable part of the mass of tissue that at first sight appears to be connective tissue consists of epithelial cords representing former tubules, for no tubule or glomerulus that ever existed entirely disappears unless there has been a necrotic process, which is not the case in this form of diseased kidney. Further, there has not been discovered any acute or early condition that could be considered the forerun-

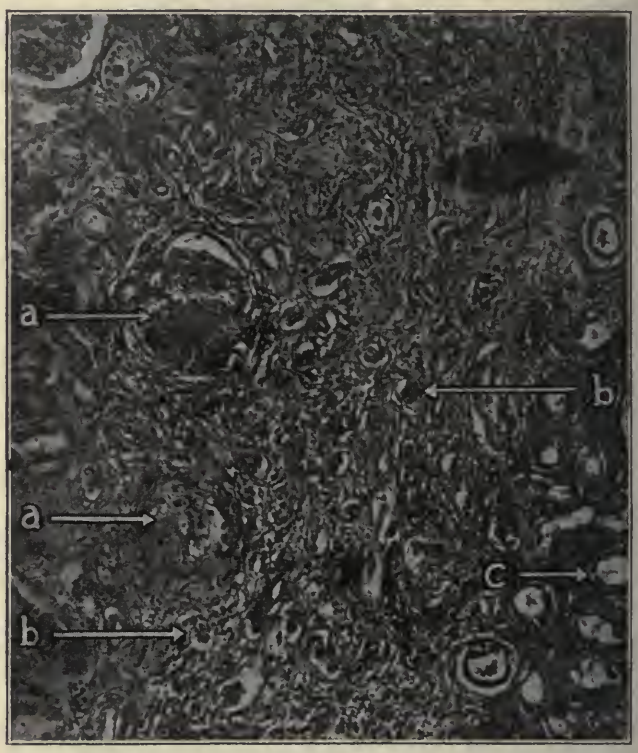


Fig. 2.—Fibrosed area in chronic senile nephritis: *a, a,* fibrosed glomeruli; *b, b,* epithelial cords of former tubules; *c,* partially atrophied tubules. Concentric atrophy; × 150.

ner of the chronic condition. In making the latter statement, I am aware of the fact that nephritis, by the time it has reached a stage that is recognized clinically, has gone on until the kidney is dangerously near its physiologic minimum, or in other words, it is already in a chronic condition; but an examination of the kidneys in cases of death from other causes would, in some cases, reveal this early condition if such a condition existed, and no such early interstitial hyperplasia and choking of the parenchyma has been found.

Connective tissue does not hypertrophy spontaneously except in tumor formation, and there is no question of that in the condition under discussion. The conditions leading to the hypertrophy of the connective tissues, so far as they are known, are: (1) trauma; (2) chronic hyperemia; (3) destruction of tissue, as by bacteria or other infective agents; (4) retrogressive processes of tissues of which connective tissue forms the stroma, and (5) perhaps the action of some as yet unknown chemical substance. In the condition under discussion, only three of these could be considered: the passive congestion, the retrogressive processes and the chemical irritant. In case the first and the last of these were operating, the connective tissue hypertrophy would precede the parenchymal reduction, and a careful study of the condition shows that this is not the case; further, it can be shown and will be brought out later that in cases of so-called chronic interstitial nephritis, there is no inconsiderable amount of nonfunctioning parenchyma

* Read before the Section on Pathology and Physiology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

in areas that are not the site of connective tissue hypertrophy, but that the connective tissue hypertrophy depends on the character of the parenchymal retrogression. Therefore we must conclude that the parenchymal retrogression precedes the stroma hypertrophy so that we are not dealing with an interstitial condition at all. Also, the question arises as to the early processes that precede the condition now called chronic interstitial nephritis.

An examination of one of these chronic kidneys reveals the following conditions: Grossly, there is a reduction in the size of the organ, and the surface has a granular appearance. This granular appearance is due to alternate elevations and depressions. A microscopic examination of a section of one of these kidneys discloses that the areas of elevation seen on the outside are occupied by hypertrophied tubules and glomeruli, some of which are fairly normal so far as the character of the epithelium is concerned, and were the tubules that were functioning at the time of death. The other tubules of this region are, some of them, enlarged, and others more normal in diameter; but both have an atrophied or degenerated epithelium, and the lumen is usually filled with amorphous homogeneous material that stains pink or reddish with eosin. The depressed areas seen on the outside are occupied by fibrosed glomeruli, and the tubules are atrophied to mere epithelial cords, and the increased connective tissue that has given the name to the condition. A careful consideration of this picture reveals the fact that there are two classes of non-



Fig. 3.—Chronic senile nephritis: hyperplastic tubules, not functioning at time of death. Dark masses within tubules are casts that have shrunk from the walls during fixing. Note the atrophied epithelium and small amount of intertubular connective tissue; × 150.

functioning tubules, both of which have atropied epithelium. In one case the actual diameter of the tubule may be increased, and in the case of the other the lumen, if there can be said to be a lumen, is almost ultramicroscopic in size. In the case of the latter these cords are separated by considerable connective tissue, while in the case of the former there is little if any increase in the stroma. But the important point is that, so far as the function of the organ is concerned, so far as the pathologic condition of the epithelium is

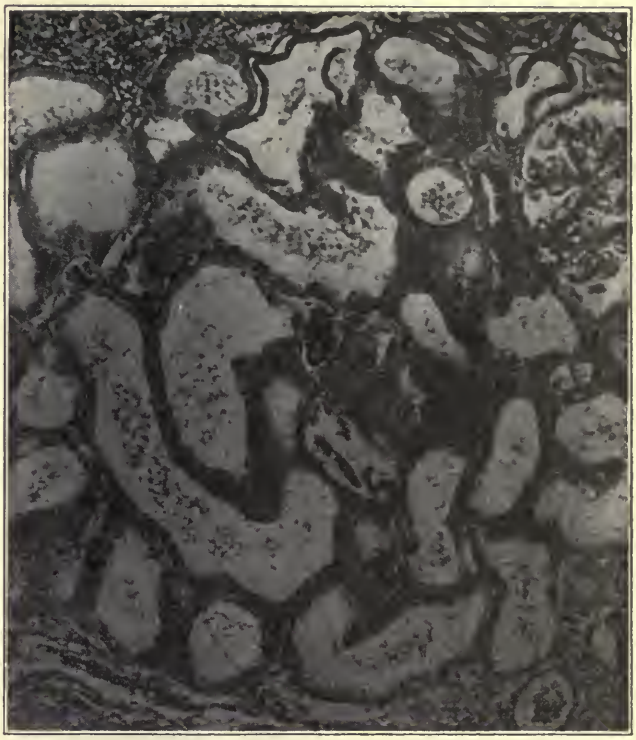


Fig. 4.—Chronic senile nephritis: hyperplastic tubules functioning at the time of death; × 150.

concerned, and therefore so far as the real pathologic condition is concerned, the two areas are the site of the same processes, the difference being that in the case in which there is a reduction of the size of the tubules there is an increase in the connective tissue between the tubules, but where there is no reduction in the size of the tubule there is no increase in the connective tissue—a fact which, in itself, would lead us to conclude that the steps in the formation of the condition known as chronic interstitial nephritis are a reduction in the amount of parenchyma, followed here, as in all parts of the body, by an increase of the surrounding connective tissue.

Now, if we study kidneys with the idea of finding the earlier steps in this process, we find facts that support and prove this conclusion.

It is a well known fact among pathologists that in any kidney, and in almost any section of kidney, a careful search will reveal the presence of fibrosed glomeruli and atrophied tubules surrounded by increased connective tissue. A careful study of such lesions reveals the fact that the atrophic condition is far in advance of the hypertrophy of the stroma, and that we shall find completely atrophied tubules surrounded by a very loose connective tissue. We also find these tubules surrounded by the dense connective tissue that is characteristic of the kidney seen at necropsy, and these islands, as it were, surrounded by perfectly normal tubules. Further, the connective tissue which surrounds these atrophied tubules in normal kidneys is of the adult type and shows no evidence of active pro-

liferation, such as young cells or mitotic figures, and at first sight appears as if the intercellular fibrils were pulled apart by the decreasing size of the tubules. Also, in this stage the areas of such lesions are much larger than those in which the process is complete, which further indicates that the actual increase of the connective tissue is not so great as might be thought from a study of the chronic condition alone.

If we would attempt to describe the history of the process leading to the condition commonly known as chronic interstitial nephritis, it would be somewhat as follows: Whenever the kidney is the site of an acute nephritis of any severity, there are some of the functional units that do not regenerate but degenerate and atrophy, and the connective tissue in the immediate neighborhood undergoes some hypertrophy and contracts into the loose cicatricial form. Later, following another attack of acute nephritis, more tubules undergo the same process. This process continues until considerable part of the kidney is involved. As soon as the reduction in the number of tubules becomes considerable, the remaining tubules undergo compensatory hypertrophy. In later years some of these hyperplastic tubules and some of the more normal tubules become plugged with casts or by some other means, and the epithelium undergoes an atrophy from the center outward. Thus we have the picture seen in the sections of the small, red, granular kidney, namely, areas of increased connective tissue in which are to be found the epithelial cords representing former tubules, and the whorls of connective tissue



Fig. 5.—Hyperplastic descending arm of Henle's loop in chronic senile nephritis; × 150.

representing former glomeruli; hyperplastic tubules with fairly normal epithelium; hyperplastic tubules with atrophied epithelium and filled with casts or other material and between which there is little if any more connective tissue than in the normal kidney, and tubules in all stages between these and the cords mentioned above.

Therefore, since we find that the connective tissue increase follows and does not precede the reduction of the parenchyma, and that the increase of connec-

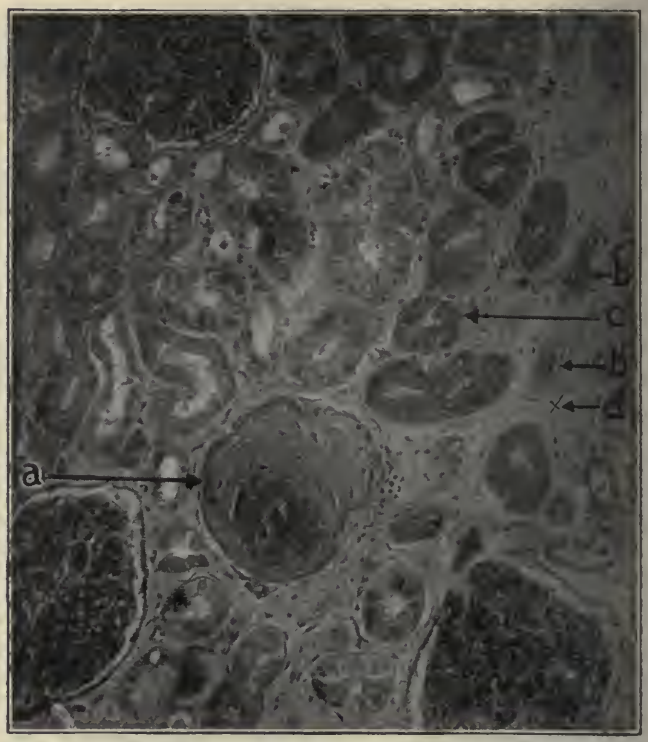


Fig. 6.—Area of senile nephritis in normal kidney: *a*, fibrosed glomerulus; *b*, *b*, completely atrophied tubules; *c*, tubules beginning to atrophy; *d*, loose connective tissue; × 150.

tive tissue depends on a form of parenchymal reduction that results in the diminution of the size of the tubules; and since we find areas in otherwise normal kidneys in which there is such reduction in the size of the tubules followed by connective tissue increase in the immediate environment, we are forced to the conclusion that there is no such condition as chronic interstitial nephritis, and that the condition now known by that name is the end-result of a process that begins in early life and is added to as the years go on, a process characterized by the degeneration and atrophy of some of the functional units following each attack of acute nephritis, and which results in later life in a very much reduced functional parenchyma, and an increase in the interstitial connective tissue. In giving this condition a name, if we would conform here to the custom of naming like conditions in other parts of the body, we would call it senile nephritis.

ABSTRACT OF DISCUSSION

DR. ROBERT H. BLOCKMAN, Shreveport, La.: Few men have been favoring the conception that all degrees of kidney infection, beginning with simple acute nephritis to the end-results of chronic interstitial nephritis are one and the same condition, differing only in degree, and that the changes that take place in acute nephritis are only the end-results of a former condition of toxemia, and represent the response to cardiorenal or cardiovascular or renal conditions brought about by high blood pressure, which has been existing for a number of years and resulted from some toxemia or some acute infectious disease, such as typhoid or scarlet fever, or the use of

large amounts of coffee, tobacco, tea, meats, and other things that produce blood dyscrasia. The toxemia of an acute condition is but the end-result of disease; it is not the beginning of the condition, as for instance, a hypertrophied heart which is an end-result of some other disease in which too much of a load has been thrown on the heart and the heart must hypertrophy in order to overcome the difficulty. I have felt for a long while that we cannot recognize any difference in nephritis, as to whether it is parenchymatous or interstitial. They are one and the same condition, in the beginning probably interstitial, a preliminary process to a parenchymatous infection.

METROTHERAPY, OR THE MEASURE OF VOLUNTARY MOVEMENT

ITS VALUE IN SURGICAL RECONSTRUCTION

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NEW YORK
AND
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HANOVER, N. H.

The influence of morale on the return of physical function in cases of injury to the bones, joints, tendons and muscles is striking, and a potent factor in the progress of recovery. This has been demonstrated again and again in military hospitals where hundreds of our wounded soldiers were spending months in convalescence from severe disabilities or from plastic operations. The progress of recovery in many cases was so slow and painful that improvement was not perceptible to the patient. It was not surprising, therefore, that many became despondent, took little interest in helping themselves, and grew either disgruntled or quite indifferent to their present surroundings and to future usefulness. This developed into a



Fig. 1.—Apparatus for measurement of finger flexion-extension.

problem of morale of a type that exerted a most dangerous influence not only on the physical progress of the individual himself but also on his fellow patients.

Occupational therapy helped to solve this serious problem in our reconstruction hospitals by diverting these men from themselves and from a morbid concentration on their personal ailments, and supplied, in exchange, an interesting occupation in a constructive bit or work. The change in morale was rapid and striking; men who seemed most morose and unresponsive were frequently the first to show improvement under the influence of some form of vocational therapy. They became happy, anxious to get well and do something, confident that their disabled limbs would be of some use once more.

The explanation of this change in morale lay in the fact that that energy of mind which formerly had been concentrated on self and morbid introspection



Fig. 2.—Apparatus for measurement of wrist adduction-abduction (above). A separate hand piece adapts this instrument for wrist flexion-extension, as shown below.

was now directed into other channels, namely, the creation of some simple but diverting object, a child's toy, perhaps, or a bead watch-fob, or a piece of carpentering. The sense of satisfaction derived from this work transformed the mental attitude from one of indifference or downright antagonism to one of cooperation with the surgeon, and a desire to help oneself.

Vocational therapy proved invaluable as an adjunct to the postoperative care of those cases requiring surgical reconstruction in our military hospitals, and the same therapeutic measures applied to our industrially injured in our civilian institutions will yield as great benefits. The author has been particularly impressed, both in military experience and in civil practice, by the efficiency of active motion as a form of postoperative treatment. By some type of vocational exercise, in which the disabled limb is brought into play, not only is the morale influenced by proving to the patient that use of the injured member *is* possible, but a healthy stimulus to bone growth and tissue metabolism is afforded. Passive exercise, such as massage or Zander treatment, cannot accomplish the same results. The ideal combination of treatment over the postoperative period is some form of selected vocational therapy, carefully supervised, thoroughout a large portion of the day in conjunction with a short period of physiotherapy. Many factors enter into the progress of functional improvement, but of no little importance is the mental attitude of the patient himself; any measure that stimulates morale aids in stimulating recovery.

"Metrotherapy" means treatment through measurement. It is not a treatment in the same sense as medical or surgical treatments, physiotherapy or occupational therapy. It is, rather, a means of demonstration to the patient just what effect his other forms of treatment are producing. By means of accurate measurements of the amplitude, strength and rapidity of voluntary movement of the impaired joint or limb, the patient is shown the nature and the rate of his recovery. One of its greatest values lies in its psychologic effect on the man in interesting him in the



Fig. 3.—Apparatus for measurement of forearm pronation-supination.

progress of his own case. The measurements of the first day show him the extent and the nature of his injuries, as compared with the record of a normal individual. Succeeding measurements show how rapidly he is improving, and indicate how long treatments will be necessary.

It is hardly possible for one who has not seen the measurements taken to realize the interest the patient takes in his progress. He may be apathetic on the first day, but he usually becomes exceedingly interested by the second or third measurement. While the amount of voluntary movement is, of course, dependent on a large number of factors, improvement is as much dependent on the amount of personal effort put into the exercise as on any one factor. Even a small gain is most encouraging, and the patient is urged to try to beat his former records. These factors induce a maximum of voluntary effort and create a healthy interest in the mind of the patient. Moreover, the spirit of competition enters in—competition not only with himself, in beating his earlier records, but competition with his fellow patients who, like himself, are working perhaps in the vocational shops and receiving physiotherapeutic treatment each day for injuries equally severe. It has not been an uncommon experience to hear these men discuss their gain in degrees while waiting their turn in the massage-room, or in the hospital corridors. Many a patient who at first was indifferent to any form of treatment became responsive and eager to be helped and to cooperate in every possible way when he discovered that he was making a gain of 5 or 10 degrees each week in return function in an injured ankle, wrist or knee. And the striking influence of the changed morale on rapidity of improvement was noted by all who were working for the recovery of the patient.

Coincident with the beneficial influence on the patient is the importance of an objective set of accurate measurements to the surgeon, masseurs, the vocational director and to others interested in the progress of the case. The record serves a purpose similar to that of the temperature chart or the sphygmomanometer. In the first place, it indicates whether recovery is taking place as it should. If not, a change of treatment may be necessary, or possibly an operation. Then again, if recovery is not taking place uniformly, this is brought out in the measurements, and the chart indicates where most attention should be directed. When the surgeon has a large number of patients under his care, it is impossible for him to remember the condition of each case, its needs and its progress; by a system of accurate and clear records, it is an easy matter for him to see at a glance just where the patient stands.

The value to the plastic surgeon of an accurate chart of functional improvement is well illustrated by a case while one of us (Albee) was chief surgeon at U.S. Army General Hospital No. 3, at Colonia, N. J. In making rounds, the chart-room in the department of metrotherapy was visited, where the charts of the progress in return function were studied in a large number of cases. One chart stood out strikingly, in that after the showing of a very small initial gain, no progress whatever was indicated by the graph; in fact, a portion of the curve showed an apparent relapse. On immediate investigation of the case, it was found that there was some question of the mentality of this patient, who was recovering from a gunshot wound of the right elbow. His vocational teachers complained that he took no interest in the work, and it was with difficulty that he made the slightest effort. A neurologic examination revealed the mentality of a child of 10 years. This explained, to a large degree, the unreceptive state of mind of the patient and the futility of attempting to stimulate his cooperation, or of expecting satisfactory maintenance of morale.

The foregoing instance serves to emphasize the practical use of such a system of measurements in a large hospital service such as that of Colonia Hospital, at which at one time more than 2,000 patients were enrolled, and more than 90 per cent. of these patients requiring surgical care. It is naturally difficult for a surgeon to follow intelligently the details of the con-

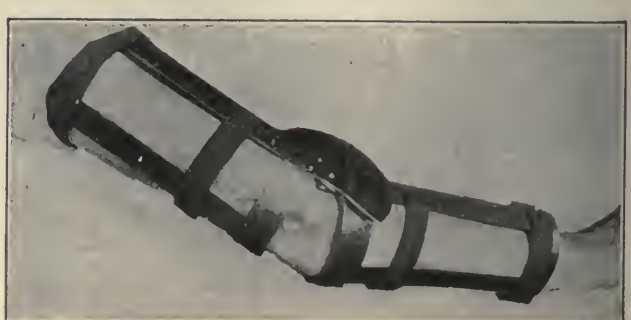


Fig. 4.—Apparatus for measurement of elbow flexion-extension. A larger instrument of the same kind is used to measure knee flexion-extension (Fig. 6).

valescence of a large number of patients; and were it possible, by an ordinary physical examination, to measure accurately return of function, it would be most difficult for him to remember the stage of recovery of the individual at his last measurements.

Realizing the value of carefully kept records of progress of functional return, both to the surgeon and to the patient himself, a well-organized department

of metrotherapy was established at Colonia Hospital in the early months of its activity. Thoroughly equipped with apparatus adequate to measure the return of function of the important anatomic regions, the department proved to be a most valuable adjunct to the surgical service in managing convalescence in the large number of difficult surgical cases under treatment there.



Fig. 5.—Apparatus for measurement of shoulder adduction-abduction. This apparatus may also be used for the measurement of shoulder flexion-extension. In making measurements of hip flexion-extension and adduction-abduction, this apparatus may be used by adjusting the protractor over the center of rotation of the hip joint.

The apparatus used by the metrotherapeutist in the measurement of return function included instruments especially designed and constructed to record the movements of the individual joints. Apparatus was designed to measure the amplitude of flexion - extension of the finger (Fig. 1); flexion-extension and adduction-abduction of the wrist (Fig. 2); pronation - supination of the forearm (Fig. 3); flexion-extension of the elbow (Fig. 4); flexion - extension and adduction-abduction of the shoulder and hip (Fig. 5); flexion-extension of the knee (Fig. 6); flexion-extension of the ankle (Fig. 7); and inversion-eversion of the ankle (Fig. 8).

This apparatus has been supplemented by more or less standardized instruments and methods for the measurement of strength and rapidity of movement. Metrotherapy differs from other forms of measuring movement which have been used and described, in that the apparatus has been constructed on such accurate and yet simple principles. The instruments devised, moreover, are adequate for measurement of all types of extremity and joint injuries. The purpose and technic also differ from other methods in that metrotherapy does not include exercise or passive movement.

At Colonia Hospital more than 600 different men reported for measurement in the six-month period January to July, 1919. They came from the orthopedic wards, from the department of physiotherapy, or as an assignment in occupational therapy. All types of injuries to the joints and extremities were encountered in these cases; many of the patients were recovering from serious plastic operations, such as replacement of extensive loss of bone by the bone graft, nerve sutures, and the like. Cases of injury resulting in partial or complete loss of voluntary movement in some part of the body were classified in the three groups: (1) adhesions, including fibrous and bony ankylosis; cicatrizations of muscles with bone, tendon, skin or other muscular tissue; muscular atrophy, and loss of bone, tendon or muscular tissue; (2) peripheral nerve injury, and (3) central nerve injury.

Measurements were taken two or three times each week, and recorded on cards. As soon as several records had been obtained, a graph was made to show clearly the nature and rate of recovery. The department proved to be most successful in handling large numbers of cases. The accuracy of the methods served in a great measure to impress the individual patient and to give him confidence in putting forth his best effort. An interesting feature of this work lay in the fact that the instruments devised and used at Colonia were actually made by the patients themselves in the hospital curative workshops. Some of the men reporting for measurements were the ones who had been engaged in the manufacture of these very instruments as a part of their assignment in vocational therapy. The apparatus made by them was thus, in turn, used to measure their functional progress stimulated, in large degree, by this vocational work.

Three cases, herewith reported, are typical of the records of these men. In the accompanying graphs, the ordinates represent improvement (amplitude measured in degrees; strength in pounds or kilograms; rapidity in taps in fifteen seconds). The abscissas indicate the number of days over which the record extends.

REPORT OF CASES

CASE 1.—Private L. R., an Italian who had been a stonemason before joining the American army, was injured in both hands and both wrists in the Battle of Fismes, Aug. 10, 1918, from the explosion of a German hand grenade which he unsuccessfully attempted to throw back into the enemy lines. Its explosion produced a compound, comminuted fracture of both wrists, and the metacarpal joints of the third finger of the right hand and of the fourth finger of the left hand. Ankylosis of these joints resulted. The fifth metacarpal joint of the left hand was practically destroyed, and the finger was flexed by contraction. There were, however, no nerve lesions in this case. The little finger of the left hand was amputated shortly after the patient's admission to Colonia Hospital.

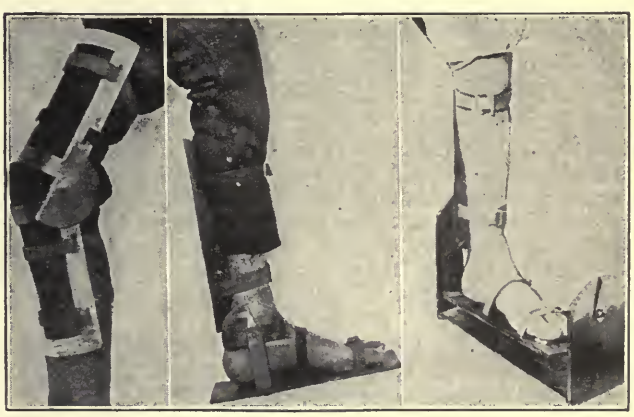


Fig. 6.—Apparatus for measurement of knee flexion-extension.

Fig. 7.—Apparatus for measurement of ankle flexion-extension.

Fig. 8.—Apparatus for measurement of ankle inversion-eversion.

Measurements in metrotherapy were begun in January, 1919, and these were continued until the patient's discharge in the following May. Figure 9 shows graphically the record of functional progress of the right hand over a long period of time. The graph indicates the records for piano trilling for fifteen seconds by alternate taps of *A*, second and third fingers, and, *B*, third and fourth fingers. A normal record for

either set of fingers is about 100. *C* in the graph indicates progress in wrist adduction-abduction (the normal is 100 degrees). *D* in the graph indicates flexion-extension of the second joint of the middle finger (the normal is 120 degrees).

This man began wood-working with hand tools in the department of vocational therapy, in the early part of February, 1919, and this, no doubt, accounts largely for the rapid gain brought out by the records at this time. Massage and curative gymnastics were other important forms of treatment. The patient worked hard and earnestly, and, considering his serious disability, his recovery was remarkable.

CASE 2.—Corporal C. S. was shot through the middle third of the right forearm at Château-Thierry, July 31, 1918, resulting in a compound comminuted fracture of radius and ulna. On admission to Colonia Hospital, about two months later, the wounds were healed and the general condition of the patient was good. There was nonunion of the fractured bones, and a bone-graft operation was subsequently performed, in which a graft from the patient's right tibia was inlaid into the right ulna. Following the removal of the plaster cast, in which the arm was immobilized for ten weeks, the patient was given daily treatments of gentle massage and baking to aid in the proliferation of the graft and the strengthening of its union.

This man was also assigned work in vocational therapy, consisting of sawing and use of the plane. He likewise worked each day at the typewriter, in order to exercise wrist and fingers, as well as for the purpose of making himself proficient in stenography. Measurements were begun in metrotherapy to show the effect of his other treatments. Figure 10 shows the progress in return function for a period of nearly two months. Four months after operation, this patient was transferred to a convalescent camp; roentgenographic and physical examination made at this time showed perfect union and healing.

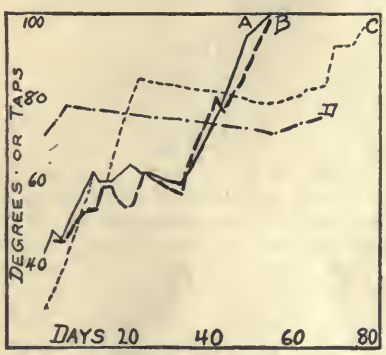


Fig. 9 (Case 1).—In this case, there was ankylosis of wrists and finger joints, following severe gunshot wounds. Progress in return function of the right hand is shown graphically. *A*, piano taps in fifteen seconds with second and third fingers (normal is about 100); *B*, piano taps in fifteen seconds with third and fourth fingers (normal is about 100); *C*, wrist adduction-abduction (normal is 100 degrees); *D*, flexion-extension of second joint of middle finger (normal is 120 degrees).

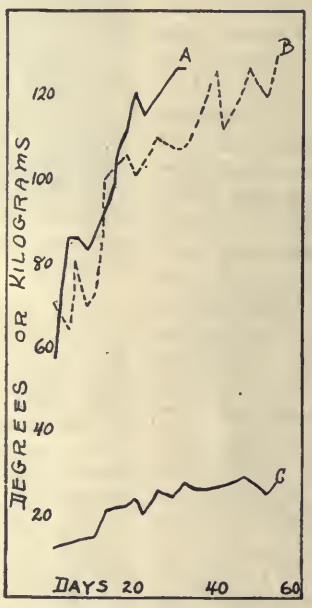


Fig. 10 (Case 2).—Progress in return function of right forearm, in a case in which an ununited fracture of the ulna was treated by bone graft. *A*, gain in elbow flexion-extension (normal is 130 degrees); *B*, progress in forearm pronation-supination (normal is 225 degrees); *C*, increase in strength of grip with hand dynamometer (normal is 60 kg.).

CASE 3.—At the Battle of Verdun, Sept. 28, 1918, Private J. S. was wounded by a fragment of a high explosive shell which passed through the right elbow, producing a compound, comminuted fracture, with resulting ankylosis. The arm was incised, and fragments of dead bone were removed at Colonia Hospital. Carrel-Dakin treatment was instituted, and continued until the wound was sterile.

This patient was formerly a college athlete, and as soon as the wound was healed, he began pitching baseball. This was the best possible form of exercise for breaking down adhesions in the elbow-joint, and recovery in his case was very rapid, as is shown in the steady, upward trend in Figure 11. At the time of the last reading, before his discharge, the elbow had regained normal flexion, but lacked 32 degrees of full extension.

COMMENT

Whatever has been said in the foregoing observations on the value of organized postoperative therapy in our military reconstruction hospitals applies equally well to large numbers of injured in our civilian institutions. In 1913, F. L. Hoffman [1] estimated that in the industries, annually, 25,000 were killed and 700,000 were injured so seriously that they lost four weeks, or more, of work. A great improvement in methods and practice in civilian hospitals will undoubtedly result from our experiences in military reconstruction work. It is believed that in the treatment of great numbers of these industrially injured there is a place for metrotherapy. Moreover, in cases of spastic hemiplegia and diplegia, as well as in other forms of paralysis due both to hereditary and acquired causes, a record of regular measurements will prove valuable to patient and to surgeon.

Accuracy of observation and control of both postoperative and traumatic cases cannot be too strongly urged. Careful supervision during convalescence is particularly necessary in cases of bone transplantation, in which the graft must be adequately protected and supported during the slow development of its diameter. Long confinement of the part during the requisite immobilization in plaster leaves contractures and adhesions which must be worked out. Although active motion is highly recommended in these cases, vocational retraining must be done cautiously and, in the early convalescence, under direction of the surgeon, lest fracture occur or the graft become dislodged. Likewise in cases of tendon transplantation, there must be slow and painstaking reeducation of the brain cells, whereby the tendon may learn to perform an entirely new function. Adequate postoperative care in these cases of surgical reconstruction is as essential to successful results as skilful surgical technic. Many a practitioner has suffered severe criticism, not because of any failure to secure the reduction of a fracture and its maintenance in a proper position, but because he was too anxious to discharge his patient, or failed to follow and properly direct the convalescence.

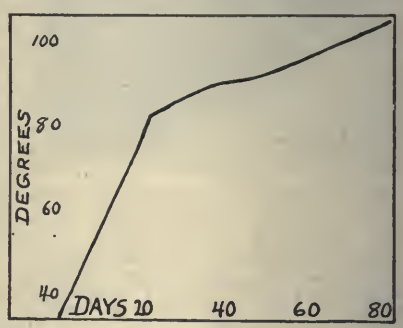


Fig. 11 (Case 3).—Return function in elbow flexion-extension, following ankylosis of elbow from gunshot wound. This patient progressed from 34 degrees to 104 degrees in the seventy-nine-day period recorded (the normal is 130 degrees).

1. Hoffman, F. L.: Bull. 157, U. S. Labor Statistics.

Early American Science.—"At the commencement of the Revolutionary War we had one medical book by an American author, three reprints and about twenty pamphlets."—J. S. Billings.

SOCIAL AND MEDICAL ASPECTS OF CHILDHOOD DELINQUENCY*

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In surveying the records of the Children's Court of New York City during the last three years one finds that during that time nearly 45,000 children under the age of 16 years have been taken to the Children's Court either by school authorities, parents, social organizations or police officers. They are taken there for various delinquencies or because of improper guardianship. These figures, from an economic standpoint alone, furnish food for reflection; from a social standpoint the question at once arises as to what may be the reasons for this seemingly large number of delinquencies and conduct disorders in children. Do these 45,000 children end up in court—on the technical charges of petty larceny, assault, robbery, unlawful entry, disorderly conduct, etc.—because there is something inherently wrong with their mentality—"born criminals," as one hears stated? Is the adult criminal class to be recruited from the ranks of these delinquent children? Is there some defect in the oversight or management of children of school age that predisposes them to delinquency? Are environmental and social conditions at fault? These are some of the questions one may ask.

The public school authorities of New York City feel the need of a fuller understanding of these problems. They have nearly 300 truant officers, a number of schools and protectories where truant and delinquent children are sent, often to remain in residence; they have the assistance of child welfare organizations, police and court officials; but they desire an approach other than from the custodial standpoint, which will, if possible, reveal causes and origins. With a view to ascertaining what can be learned of these questions from the medical and psychologic points of view through a thorough investigation, they have invited the National Committee for Mental Hygiene to carry on a study in one of the probationary schools of the city. The work has been done by a physician, a psychologist and a social service worker, thereby approaching the subject from all angles, so that such questions as the physical condition of the child, the mental state, the existence of mental deficiency, and the importance of social and environmental factors may be determined and their significance estimated. In the examination of about 150 children, these conditions are observed as causative factors in delinquency:

NERVOUS CHILDREN

About one third of these 150 boys, ranging from 8 to 16 years of age, may be classified as nervous children; that is, they show various symptoms of either mild or severe character, constituting a neurosis. It is thought that the terminology which is generally used in describing symptoms in adults is not entirely satisfactory in respect to children. Such terms as psychasthenia, compulsion neurosis and claustrophobia convey a definite meaning to us; at least, in a general way they imply a well established neurosis often likely to be of considerable duration, and resistant to treatment. One encounters similar symptoms in children; but to apply the same terms, implying the same duration and outcome, would be misleading. In children these states of anxiety, emotional conditions, fears, nervous habits, etc., are, as a rule, much less fixed in character. They are of simpler origin and often are quite amenable to treatment. For this reason the formal terminology used with adults is avoided.

Hyperactive Types.—A considerable number of these children, especially those under 10 years of age, show symptoms of overactivity. They are overactive both in the motor and in the psychic spheres. They are restless, sleepless, constantly on the go, and at the same time often are ill nourished and exhausted. Intellectually they are alert, but are inattentive and distractible in their studies, and are inclined to be mischievous and irritable. Such symptoms existing over a period of weeks or months constitute a neurosis. Causes of this condition are not always apparent, but probably arise from a variety of sources. The dietary is evidently one factor that may cause such symptoms. A number of these hyperactive children, because of improper food, are undernourished, and this condition apparently gives origin to overactivity and irritable states. This cause could be established in certain instances. After Public School 37 had been going for some time, a lunch was introduced at the noon hour. Several of the hyperactive children gained quickly in weight, and with the improvement of their nutrition their symptoms entirely disappeared. In other cases an insufficient dietary with overstimulation was found to be at fault. The consumption of large amounts of tea and coffee resulted in overactivity, and with the elimination of these stimulants from the dietary, improvement occurred. One child, aged 11 years, of the hyperactive type, recovered when prohibition was enforced. He had been taking considerable whisky at meals, and often was partly intoxicated on Sundays and holidays.

Hypo-Active Types.—Some children show just the reverse of the foregoing picture. They are languid, lacking in energy, do not have the normal interest in games, and appear physically and mentally exhausted. The causes of this condition are not quite so clear, but in some cases overexertion, such as work after school—morning paper routes, etc.—appeared to be an important factor, associated with an insufficient dietary.

Emotional Types.—A number of these children have nervous symptoms as shown by lack of emotional stability. They are subject to episodes of irritability, anger or impulsiveness. Such children are often unduly sensitive, and overreact to minor irritations. Because of this unstable emotional state they cannot take part in the ordinary games and amusements afforded the other children. They misinterpret and misunderstand the motives of others, take offense when none is intended, and as a result are teased and imposed on. Such a mental state lasting over a period of months may become an established habit.

The causes of this hyperemotional state appear to be less physical than the conditions mentioned above. It may accompany hyperactive states, but is not necessarily associated with overactivity. In many of these cases there is good reason to believe that the causes are psychologic. It must be remembered that the mind of the child is very sensitive to the influence of upsetting psychologic factors at home or in the school life. When there is any special distress at home, or nervous tension or irritability, this is felt by the child and becomes manifest in his emotional condition. Alterca-

* Read before the New York Neurological Society, May 4, 1920.

tions between the parents, nervousness of the mother, unnatural friction in the family of any kind, give the child a sense of tension oftentimes, although the causes may not be fully understood. Such mental maladjustments find expression in emotional changes. A child, where there is family discord, may feel a sense of social inferiority. He becomes self-conscious, sensitive and irritable with other children. Dr. William L. Healy of Boston, who has had such broad experience with all these cases, attaches much importance to the foregoing factors as causes of mental conflicts in children. Such upsetting influences may be quite unsuspected by the parents and teachers, and revealed only by confidential conversation with the child. Difficulties in the school, such as inability to learn some subject, or perhaps to get along satisfactorily in the class, may cause maladjustments which can be corrected only by changing the child to another class or to a different neighborhood. Needless to say, not all psychologic causes arising in the home, the community or the school can be enumerated, but it is well to remember that the developing mind of the young child is sensitive, in ways that may be unsuspected, to unfavorable psychologic influences, and various neurotic symptoms may result.

In respect to the treatment of these states arising from mental maladjustments, it has been shown that an exploration of the cause—talking it out with the child and correcting the situation by changing the environment—often brings about a very prompt cure.

Anxiety Types.—States of anxiety accompained by fears and obsessive ideas of various kinds are sometimes encountered, and may be the result of some concrete experience to which the child has been subjected. A case of this kind is recalled in which a boy had been in an anxious, fearful state for nearly a year. His trouble had commenced after he saw a street fight in which a man was stabbed and severely injured. The boy improved greatly after a few explanatory interviews, and in a short time was able to go on with his work, well on the way to recovery. Another boy, aged 10 years, became fearful and would not go from one room to another alone. His relatives could not understand the cause of the difficulty, but in the course of the interview it was found that his older brother, when the mother was out, dressed up in a red cloak, represented himself as a lion and frightened his little brother. The representation proved too realistic. This case should not be considered a phobia as we think of it in the adult; the fears promptly disappeared with the removal of the cause.

A number of these nervous children suffer from stammering to a varying extent. By studying these cases from every point of view, one is impressed by the fact that the underlying causes of stammering should be attributed to a neurotic condition. These children are excitable and lack emotional control, and general treatment aimed at removal of this neurotic state is the proper preliminary procedure for the treatment of stammering. A number of cases in the school have improved remarkably under general management alone. I recall a case cited by Holt in his textbook, of a young child who began stammering after a serious physical illness. He was sent to the country, and on improvement of his physical condition, the speech defect disappeared. I feel that the treatment of the underlying nervous symptoms is very necessary in this particular type of case, supplemented by such special treatment as is indicated.

The Endocrines and Nervous Children.—During recent years much interest has arisen in the study of faulty functions of the endocrines in relation to the neuroses, to mental retardation, and various other mental manifestations, including conduct disorders, particularly of the adolescent period. From these studies it seems probable that a group of cases, formerly not very clearly defined, will be identified as attributable to disordered endocrine function. This group, of course, must be kept in mind in the physical examination of children, and in the interpretation of the various symptoms found. In respect to these cases it may be said at this time that when neurotic children are receiving such glandular therapy as is indicated, it is desirable that they receive supervision in a general way as well. Their mental dulness or nervous symptoms or conduct disorders are likely to be attributed to some cause other than their physical state, and so proper arrangements have to be made for them in the school, in the home and in the community. In other words, glandular therapy should be supplemented by general measures, such as apply to all other maladjusted cases.

MENTAL DEFICIENCY

The question of unrecognized mental deficiency as a basis for delinquency and conduct disorders is one that has attracted considerable attention in recent years. Psychologic surveys have been made in schools and have indicated that mental defect as an underlying basis for conduct disorders is of considerable importance. These findings, however, should not confuse the main issue in respect to delinquency. When a child is found to be defective, mental defect should be the primary diagnosis and the delinquency considered as a secondary symptom. With this classification in mind, psychologic surveys are of great value in the schools, for by this means morons are early recognized and much time can be saved by giving them proper vocational training and training in conduct, rather than by attempting to teach them in purely intellectual directions. There is reason to believe that many of the conduct disorders of this class can be avoided by systematic training when they are young.

Valuable as psychologic surveys are to determine mental age, it should be appreciated that they are in no way adequate for the complete mental examination of the child. A child may make a good showing intellectually, but emotionally be very unstable and neurotic. Such a child also may be in advance of his grade, but have very little social experience and be unable to get along with his fellows. Ill-nourished, nervous children are not infrequently in advance of grade, and any examination that measures the intellect alone without a thorough investigation of the physical, social and emotional condition is incomplete.

PERSONALITY AND DELINQUENCY

Any one first coming upon the problem of delinquency in childhood would doubtless ask whether, after all, there is not something in the inherent mental make-up of these children which predisposes them to conduct disorders. From our observation of adults we should be inclined to this view. We find that the adult delinquent shows traits of character or of constitution which appear to be inherent, and this personality explains to a great extent the basis for the abnormal conduct. In frank mental disorders, a study of the underlying personality of the individual has also been of great value

in determining the diagnosis and prognosis, and in clearing up the problem generally. But in the case of children one is not warranted in interpreting the symptoms found on the basis of anything inherent in the personality. During childhood the character is in the formative state, and to say that inherent characteristics already exist is assuming a great deal, particularly in view of the fact that one finds so many things in the environment which appear to cause the symptoms. It is true that in children one finds the emotional instability, the irritable, suspicious tendencies, and the lack of moral control which have been termed "psychopathic" when encountered in the adult. But these traits may well be dependent on very evident factors, and are amenable to treatment. They therefore can scarcely be regarded as inherent. A study of personality in children is of great interest when one considers what may happen in case such symptoms are allowed to continue year after year until adolescence is reached. There is reason to believe that habits become firmly fixed in this way, and in adult life we may, indeed, encounter an established personality, but one which has been acquired because of an unfortunate chain of circumstances, rather than inherent.

One does, of course, find children with special mental characteristics. There are the children with particular aptitudes, who do very well at one kind of work and fail at another. They are uneven in school work, have hobbies, and show brilliance in some things and lack of interest in others. These unusual children are likely to become dissatisfied with school because the tendency is to make them conform to the general routine. It is necessary to make special provision for such children, as they often turn out in an unsatisfactory way unless they receive special attention. Another type of child is one of rather limited capacity so far as school attainments are concerned. Children of this type often come from parents of the peasant class of Europe, and while they grade as dull by the psychologic tests, they are nevertheless intelligent and normal in the ordinary affairs of life; but they are slow in acquiring school knowledge, partly probably from lack of intellectual ability and partly from lack of interest in this direction. They very often become truant and subsequently delinquent. Much of this could be prevented by enriching the school curriculum, and adding vocational classes. A child of this kind may have excellent inherent tendencies, but because of constant friction in school and inability to get along he may become rebellious and antisocial. Attempts at forcing him to comply with usual standards are not successful, and the problem must be solved in other ways.

ENVIRONMENT AND DELINQUENCY

In view of the unfortunate home conditions and environment of many of these children, one wishes to know to what extent these factors have to do with conduct disorders and delinquency. From the psychologic standpoint they probably operate in several ways. If a small child before school age is left with some one in the neighborhood while both parents go to work, he receives very few favorable home influences, and is likely to grow up entirely untrained. Such children learn very little discipline; the hours of meals and of sleeping are most irregular, for example; and in many ways they fail to receive training or to acquire habits of action which enable them to get along with others who have had such training. When they come under the regularity and system of school they are quite unprepared to comply with the regimen. Such children are likely to be very difficult; and if allowances are not made for them while they are being instructed, conflicts arise. If they do not receive proper training in their earlier years of school life, it is difficult for them to acquire it later. They do not fit in well with the group, and therefore maladjustments result.

Children who do not have proper guardianship suffer in other ways. From early years they are often obliged to look out for themselves as to their ordinary needs and desires. They begin work as soon as they possibly can be of value to any one, and are imposed on by adults. The immature mind of a child competing, more or less, with an adult, often acquires the undesirable qualities rather than the better ones. If the child goes on in this way for some years he learns a great deal of trickery and slyness, especially if he has been involved in a few delinquencies. When he becomes an adult, if his tendencies remain uncorrected, he continues in delinquent ways. The condition is not to be considered inherent, but acquired. Before puberty, if such a child can be taken out of his surroundings and brought under proper influences, there is reason to believe that he will turn out favorably; but after he has reached puberty and left school he becomes independent, and a desirable outcome is less probable. In any case, in view of the environment and early psychologic influences, one surely should hesitate to consider such cases as inherent. A study of character formation and personality which takes into account the experiences of the first ten years of life is most profitable in interpreting the characteristics of the mind as we find them in adult life.

It is by no means in the neglected homes or in cases of improper guardianship that all of these unfavorable psychologic influences exist. Often in the best of homes, with the oversolicitude of parents for their children, or with an unhealthy mental atmosphere from various causes, influences quite as unfavorable, from the psychologic standpoint, occur, and certainly delinquency is not confined to children from poor homes.

INTERPRETATIONS OF DELINQUENCY

In drawing general conclusions from this survey, a few of the most striking features may first be indicated. From a careful observation of delinquent children one cannot but feel that by proper management these conduct disorders might, to a great extent, have been avoided. As a rule, it appears that the child has been misunderstood, or at least, the problem has been misunderstood. Efforts are made to force the child to do something that he is entirely incapable of doing. He may be nervous, lack emotional control or intellectual ability in some directions, and so find it difficult or impossible to acquire an interest in the tasks given him. From this I do not wish to infer that I would discontinue school training for boys who do not get on in the usual way; but I would say that special provision is required for those who, for the reasons enumerated above, cannot conform to the regular schedule. It is useless to attempt to force them—worse than useless, as results show.

These boys are the material from which delinquents are made. They are not inherently "bad." As stated above, they are simply nervous, or are dull in scholastic things, or they are boys with particular abilities who

cannot tolerate routine; we see many such adults. Why these children become delinquent has been indicated; and from that it might be inferred that delinquency in childhood is, after all, a rather simple affair; so it is—in the beginning. Delinquency is often a minor affair at first, occurring in a child with no very unusual tendencies, who cannot adjust himself to a certain situation. With a little understanding at this time and proper preventive measures the whole thing may be corrected; but if allowed to continue, these minor affairs without preventive measures become serious in later years. If, during the developmental period, maladjustments continue and the child establishes undesirable habits of conduct and action, one cannot be sure of the outcome in later life. Probably many adjust themselves spontaneously after they leave school and are capable of making such changes and provisions for themselves as are necessary to get along. Apparently others who might have been corrected in early childhood go on to adult delinquency. It is much easier to continue established habits of conduct, even if they are bad habits, than to form new ones. Sufficient incentive may not arise to bring about a change, and these persons drift on to repeated childhood delinquencies and to adult disorders of the same character.

This way of regarding the situation would explain the contrast in personality one finds between child delinquents and adults. In the adult the condition has become a part of the individual—indeed, it appears to be inherent; but with the child most observers now agree that no such personality can be demonstrated. In the past we have nodded our heads wisely and repeated that these things, after all, were inherent from the start, implying that little was to be done about it. This attitude arose from our drawing conclusions almost exclusively from observations of the static personality one encounters in adults.

It is almost needless to say that preventive treatment is the only rational way to manage childhood delinquency. Every one should appreciate that there always will be special children who require special consideration. These children are not intrinsically abnormal—they may be very intelligent; but when for any reason a child shows delinquent tendencies, the parents, teachers and others coming in contact with him are greatly upset. Instead of trying to keep the matter secret and regarding it as a disgrace, as parents are inclined to do, or of attempting coercion, as others may institute, desired results are obtained only by painstaking investigation of the problem from every point of view, and then applying such remedies as are indicated. The social attitude in the past toward conduct disorders of any kind has doubtless stood in the way of a just understanding of them, and this seems to apply to children as well as to adults. Such an attitude is surely based on mistaken ideas.

Economic provisions aiming at preventive treatment for these children would not be difficult. Provision should be made for the prompt examination of all cases showing evidences of not getting along, and this examination should be broad enough to cover the entire problem. Special classes in schools, and probably special schools with vocational classes, would be a gain from an economic standpoint, to replace truant schools, protectories and similar partly custodial agencies. Special examiners in medical matters pertaining to mental health as well as to physical, in psychology and in social conditions, would be less of an economic burden than the agencies now employed, and their services would be of constructive character aiming at preventive measures. Fortunately, the need of such arrangements is appreciated by educational authorities, and small beginnings have already been made in many places. It is to be hoped that these may eventually be firmly established and take their place as permanent institutions of the school system.

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SUSPECTED ASYNCHRONISM OF RESPIRATORY MOVEMENTS IN LOBAR PNEUMONIA

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In a report on disturbance in the coordination of respiratory movements, which is ascribed to asynchronism in activation of the diaphragm and intercostal muscles, Coleman [1] says:

> Asynchronism of the respiratory movements is characterized by a separation of the moment of contraction of the diaphragm and intercostal (and other thoracic) muscles by definite, though variable, time intervals.

Farther on, the phenomenon is thus described:

> In the fully developed type of asynchronism, the diaphragm reaches the expiratory phase before the contractions of the intercostals set in, and the abdomen and chest rise and fall alternately. "See-saw" best describes the impression conveyed.

This description of the respiratory excursion of the thorax is vague, and reveals a lack of criticism in determining exactly what were the evidences of activation and of excursion from the intercostal muscles and what were the evidences of activation and excursion from the diaphragm.

Since the appearance of this article, I have seen three cases of lobar pneumonia in which there appeared the type of respiration described by Dr. Coleman. As he rightly says, the impression conveyed is that of "see-saw" between the abdomen and thorax; but such a statement cannot be accepted as proof of an asynchronism in activation between the intercostals and the diaphragm. The vague term "see-saw" does not identify the evidences of activation and of excursion of the diaphragm as exhibited by movements in the hypochondria and in the costal margins. Should there be activation of the diaphragm at a time when the intercostal muscles are not activated, there may be retraction of the entire thoracic cage in its transverse and anteroposterior diameters, but the costal margins in their entire extent are then drawn toward the median line.

My patients with lobar pneumonia who presented the phenomenon described by Dr. Coleman were two young women and one man 40 years old. The two women presented the phenomenon in a striking way. One had lobar pneumonia at the right base and one at the left, and they were both very ill. The respiratory phenomena in the two were identical, and a description of one of them will suffice for both.

The patient was about 25 years of age and weighed 125 pounds. The thorax was broad but had a notably small anteroposterior diameter. On the fifth day of the disease,

1. Coleman, Warren: Asynchronism of the Respiratory Movements in Lobar Pneumonia, J. A. M. A. 73: 1923 (Dec. 27) 1919.

when I first saw her, the temperature was 103; the pulse ranged from 140 to 160, and the respiratory rate varied between 50 and 60 per minute. The lips and finger nails were cyanotic. The volume of the pulse was not small, and should be described as having a normal volume but with marked celerity in the catacrotus. The patient was breathing as hard as she could, and the air hunger was so intense that it was very difficult for her to talk. It was quite apparent that the ventilatory function of her lung was being taxed to its utmost. The entire lower right lobe was infiltrated, and the entire lower left lobe showed evidences of pulmonary edema. During inspiration the abdomen was violently protruded and the outer portions of the costal margins and the hypochondria moved so violently in a lateral direction that they suggested the flapping of the wings of a barnyard fowl, but the movement of the median or inner halves of the costal margins was disproportionately small compared with the movement in their outer portions. It might be suspected that this manner of thoracic excursion was accompanied by rebreathing between the upper and lower parts of the lung, but this is very improbable in view of inspiratory enlargement of the thorax, which occurred in the transverse diameter throughout its entire length. During inspiration the lower end of the sternum was violently drawn toward the vertebrae, and the sternum as far up as Louis' angle shared in this movement. The manubrium itself was firmly anchored, but the entire sternum from Louis' angle to the xiphoid cartilage moved vertebrad on account of a retracting force which was applied at the xiphoid process. During inspiration it was also observed that the ribs on both sides of the sternum, as far as the midclavicular line, were retracted during inspiration. This retraction was plainly visible as far downward as the sixth rib. The seventh rib moved strongly in a normal direction, and from the seventh rib down, the ribs from the costal margin to the posterior axillary line could be plainly seen to have an exaggeration of their excursion in a normal direction. Moreover, when the upper ribs were traced into the axillary line, it was found that there they also moved in a normal direction; so that throughout the entire length of the thorax there was on inspiration a distinct increase of its transverse diameter in the midaxillary plane. It was perfectly clear that the ribs, from the second to the sixth inclusive, were retracted during inspiration as far laterally as the midclavicular line; but when the arches of these ribs were examined laterally from this line, they were found to have a distinctly normal bucket-handle movement. It is not conceivable that the intercostal muscles were activated as far as to the midclavicular line and failed of activation in those parts which lay to the median side of that line. So the inspiratory retraction of the median portions of the upper ribs and sternum must have been due to the fact that in this region the normal results of the activating force of the intercostals were overcome by some conflicting agent.

Dr. Coleman refers to J. Hughlings Jackson[2] as describing a similar case and interpreting the phenomenon as due to asynchronism in activation of the intercostals and diaphragm caused by morbid changes in the spinal cord. The cord disease was supposed to originate from the effect of pneumotoxins on its lateral horns. This flight of fancy would have been spared the writer if the activities of the intercostal muscles and diaphragm had been rightly interpreted. In his description of the patient's breathing, Jackson said: "The lowest part of his chest everted in inspiration, but the diaphragm *by itself* can evert the lowest ribs." In several articles[3] I have expounded the falsity of this statement, showing that eversion of the costal margins during inspiration is caused only by activation of the intercostal muscles. Neither activation nor excursion of the diaphragm causes outward movement of the costal borders. So the fact that the costal margins moved in a lateral direction proves that the intercostal muscles were activated synchronously with the diaphragm.

As stated above, in my patients the lower end of the sternum was violently retracted and the inner portions of the costal margins had a disproportionately small lateral excursion as compared with that of the lower and outer parts of the costal margins. Flattening of the midportion of the subcardial diaphragm accounts for this phenomenon. These patients had a globular enlargement of the heart. The enlargement was not great, but was sufficient to show a slight extension of the heart's area to both the left and the right, and there was also very marked increase in the systolic anterior thrust of the right ventricle. These patients had a cardiac rate which varied between 130 and 160. Moreover, inspiration was performed with the utmost effort the patients could employ. The intercostal muscles and the diaphragm were activated synchronously and to an unusual degree. Great protrusion of the abdomen, with strong eversion of the costal borders and great spread of the hypochondria, can be explained only by strong, synchronous action of the diaphragm and intercostals. Vertebrad retraction of the lower end of the sternum and median parts of the upper ribs was caused by flattening of the midportion of the subcardial diaphragm, which to a limited degree defeated the strong inspiratory effort; but a normal bucket-handle movement of all the ribs in the axillary lines proved all the intercostal muscles to have been activated synchronously with the diaphragm.

In Quain's "Anatomy" we find the statement that the portion of the diaphragm that is inserted at the lower end of the sternum may in some instances contain no muscle fibers. This fact has much importance in considering the inspiratory excursion of the lower end of the sternum. As a rule, when there is sufficient flattening of the subcardial diaphragm to cause inspiratory narrowing of the subcostal angle, the sternum is also retracted in a vertebrad direction. This is not invariably the case, for sometimes in cardiac dilatation there is inspiratory narrowing of the subcostal angle, while the lower end of the sternum moves in an anterior direction. It is quite possible that in the latter cases there are no muscle fibers in that part of the phrenic leaf which is inserted at the lower end of the sternum, so that flattening of the diaphragm under such conditions does not influence the direction the lower end of the sternum will take during inspiration. With moderate cardiac enlargements it is not uncommon to see distinct retraction of the lower end of the sternum in a vertebrad direction, when the subcostal angle still shows moderate widening during inspiration; and after the heart will have improved, the lower end of the sternum will move anteriorly during inspiration, and normal inspiratory widening of the subcostal angle will be resumed. In some normal subjects the lower end of the sternum does not move in an anterior direction, although the subcostal angle reveals perfectly normal inspiratory widening.

Dr. Coleman believes that the inspiratory sign described above indicates severe toxicosis of pneumonia. The phenomenon has a grave significance, but it is not caused by disease of the spinal cord. One of three patients referred to in this article recovered, and the thoracico-abdominal "see-saw" was replaced with

2. Jackson, J. H.: Lancet **2**: 1472, 1894.
3. Hoover, C. F.: The Functions of the Diaphragm and Their Diagnostic Significance, Arch. Int. Med. **12**: 214 (Aug.) 1913; Diagnostic Signs from the Scaleni, Intercostal Muscles and the Diaphragm in Lung Ventilation, ibid. **20**: 701 (Nov.) 1917; The Functions of the Intercostal Muscles, J. A. M. A. **73**: 17 (July 5) 1919; Diagnostic Significance of Inspiratory Movements of the Costal Margins, Am. J. M. Sc. **159**: 633 (May) 1920.

a normal inspiratory movement when the heart's rate and volume and the hyperpnea diminished.

The manner of excursion of the thorax here considered merely indicates moderate enlargement of the heart. The "see-saw" respiratory movement occurs if air hunger and hyperpnea supervene; for then there is exaggeration of inspiratory retraction of the sternum and of the adjacent costal parts, and this serves by contrast to magnify the large excursions of the hypochondria and epigastrium.

The foregoing criticism is offered because failure rightly to interpret respiratory excursions of the thorax is a fruitful source of error and may lead to profitless fancy when simple facts suffice.

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IMPORTANCE OF THE VITAL CAPACITY IN THORACIC SURGERY*

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The act of inspiration consists of an enlargement of the thorax with a resultant inrush of air down the trachea and into the lungs in order to equalize the pressures of the air outside the body and inside the lungs. The act of expiration, on the contrary, is accomplished by a diminution of the thorax, which in turn forces the air out of the lungs. The amount of air, therefore, which is taken in and given out with each act of respiration, under normal conditions, is regulated almost entirely by the extent to which the thorax enlarges itself. The limit of possible enlargement is determined by a number of factors, important ones of which are the size of the individual, the flexibility of the thorax and the strength of the respiratory muscles. Hence it is evident that even so-called normal individuals may differ widely in their ability to enlarge their thoraces, and that those who have particularly strong respiratory muscles, athletes, for example, will show a greater ability to enlarge the thorax than other individuals of the same size who have poorly developed respiratory muscles.

John Hutchinson,[1] in 1846, published direct measurements which he had made on a large number of people, by means of his spirometer, of the amount of air which is inspired in ordinary respiration, and of the amount which is given out in the greatest possible expiration after the greatest possible inspiration. The former he called the "tidal air," and the latter the "vital capacity." The value of the vital capacity in the normal subject is very much greater than that of the tidal air. The difference is made up by the "complemental air," which is the additional amount that can be inhaled after an ordinary tidal inspiration, and the "supplemental air," which is the additional amount that can be exhaled after an ordinary expiration. Even after the supplemental air has been exhaled, there is still a considerable amount of air remaining in the lungs which is usually called the "residual air." The average values of these different volumes of air have been generally considered to be about as follows: the tidal air, 500 c.c.; the complemental air, 1,500 c.c.; the supplemental air, 1,500 c.c.; the vital capacity, 3,500 c.c.; the residual air, 1,500 c.c. More recently, especially through the work of Peabody and Wentworth[2] and of Dreyer,[3] it has been found that the generally accepted value of about 3,500 c.c. for the average vital capacity is very often greatly exceeded, and that men in general show a considerably higher value than women. Thus, the average in normal men of from 5 feet, 8½ inches to 6 feet in height was found by Peabody and Wentworth to be 4,800 c.c.; and one man, 6 feet, 3½ inches tall, had a value of 7,180 c.c. The average vital capacity in normal women over 5 feet, 6 inches in height was only 3,275 c.c.

Bearing in mind that the vital capacity represents in reality the greatest possible volume of air that one can voluntarily take into his lungs in addition to the already present residual air, it is evident that a determination of it in a particular case will afford a fairly accurate index of that individual's ability to compensate for any encroachment on his breathing surface. That is to say, an individual whose tidal air is only one third or one fourth of his vital capacity will have less margin of safety if his breathing surface is further diminished than one whose tidal air is only one seventh or one eighth of his vital capacity. The reason for this is that the inflation of the lungs is chiefly a purely passive occurrence because of the fact that with an expansion of the thorax, as in the act of inspiration, the pressure within the pleural cavities becomes increasingly less than that of the atmosphere, so that air from the outside rushes into the lungs to fill a partial vacuum. If negative pressure cannot be established, at least during some part of the inspiratory act, obviously the lungs cannot be inflated. The establishment of negative intrapleural pressure depends to a great extent on the ability to enlarge the thorax. This fact lends itself readily to experimental demonstration. For if an interference with respiration is suddenly created, the most frequent and characteristic response is an increase in the amplitude (or depth) of the respiratory movements, a type of reaction which represents a compensatory effort to diminish the intrapleural pressure to a greater extent in order to inflate the lungs. If, in spite of the maximum respiratory efforts, the individual is able to take in barely enough air to maintain life, it is clear that he will be unable to compensate for any further encroachment on his breathing surface. In other words, if his vital capacity is so low that it practically equals his tidal air, any further interference with respiration, even if very slight, will almost surely result in death from asphyxia.

These considerations have a very important bearing on the treatment of empyema particularly, and also on thoracic surgery in general. In acute empyema, especially of the streptococcus type, one of the striking clinical features during the early stages is a marked dyspnea and cyanosis. In other words, these patients are already having so much difficulty in obtaining enough air to maintain life that their vital capacities approach their tidal air requirements. Obviously, therefore, their abilities to compensate for any further encroachment on their breathing surfaces will be exceedingly limited. For this reason alone, therefore, the addition of any factor likely to embarrass respira-

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* Read before the Section on Surgery, General and Abdominal, at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Hutchinson, John: On the Capacity of the Lungs and on the Respiratory Functions, Med. Chir. Tr., London **29**: 137, 1846.

2. Peabody, F. W., and Wentworth, J. A.: The Vital Capacity of the Lungs and Its Relation to Dyspnea, Arch. Int. Med. **20**: 443 (Sept.) 1917.

3. Dreyer, G.: The Normal Vital Capacity in Man and Its Relation to the Size of the Body, Lancet **2**: 227 (Aug. 9) 1919.

tion still more, as the creation of an open pneumothorax to establish drainage, should be carefully avoided. There has been a commonly expressed feeling, however, that, because in some cases the exudate is large in amount, the lung on that side is already "collapsed," and that the creation of an open pneumothorax will cause little if any further harm. This feeling exists largely because of the prevalent conceptions that the mediastinum constitutes a more or less rigid partition between the two pleural cavities so that it is possible for one lung to be completely collapsed with maintenance of respiration only with the other lung.

It is possible, however, to show by direct experiment the incorrectness of the prevalent conceptions of the mechanism of open pneumothorax. During the summer of 1918, the writer,[4] in conjunction with R. D. Bell, while we were members of the Empyema Commission appointed by the Surgeon General, carried out experiments which seem to have an important bearing on this whole question. For the details the original article should be consulted. Briefly, these experiments showed that, contrary to the usual belief, the normal thorax from the standpoint of pressure relationships is practically one cavity instead of two. The normal mediastinum, in reality, offers so little resistance to changes in pressure that any alteration in pressure in one pleural cavity is accompanied by an alteration of practically the same amount in the other pleural cavity. For example, if air is forced into one pleural cavity in even so small an amount that a pressure is established equivalent to that exerted by a column of water only 10 cm. high, the pressure in the opposite pleural cavity will vary between that of 9 cm. and 9.5 cm. of water. In other words, the resistance offered by the mediastinum to even so slight a change of pressure is equivalent to that exerted by only 1 cm. or 0.5 cm. of water (0.4 mm. or 0.8 mm. of mercury); and it is therefore negligible. There is no noticeable difference in this respect between the dog and the human being, and therefore experiments on intrapleural pressures conducted on the dog are directly applicable to man. It would seem to follow from this that the two lungs must be about equally compressed if the pressure in one pleural cavity is altered. Direct experiment again demonstrates that this conclusion is correct, for determinations of the relative densities (and therefore the relative degrees of compression) of the two lungs when one pleural cavity contains air at a pressure equivalent to 10 cm. of water are practically equal.

In the living dog, the type of response which occurs after the creation of an open pneumothorax is usually somewhat as follows: Immediately on the making of a moderately large pleural opening there is an increase of pressure to practically the same extent in the two pleural cavities. Whereas, before the opening is made both the inspiratory and expiratory pressures are entirely negative, immediately afterward the pressure rises so much that it is almost entirely positive; the indicators descend below the base line of atmospheric pressure only near the end of the inspiratory act. These changes are also coincidental with an effort on the part of the respiratory mechanism to compensate by making a greater effort to get air into the lungs, and accordingly there is a marked change in the respiratory movement. Usually this change is rather an increase in amplitude than an increase in rate. If the pleural opening is small enough to allow compensation, the intrapleural pressures will gradually diminish so that negative pressure will be reestablished. The negative pressure, however, is never restored so completely as to reach the level at which it was before the opening was made, provided the opening remains in communication with one pleural cavity. Instead of both the inspiratory and expiratory intrapleural pressures being negative, as in the normal state, the pressure at the height of expiration will be positive. The ability, therefore, to withstand an open pneumothorax is dependent on the ability to compensate by increasing the respiratory effort. If the opening is made sufficiently large, the animal will pass through a state of marked dyspnea and die of asphyxia within a few minutes, owing to his inability to compensate, no matter how great his respiratory effort; for if the opening is so large that, despite his maximal respiratory efforts, he is unable to establish a negative pressure in the pleural cavity, he will be unable to get air into his lungs; or if he is able to establish a slight negative pressure, he may be able to get a little air into his lungs, but not enough to maintain life.

The degree of asphyxia which will follow the creation of an open pneumothorax in a normal chest will therefore depend to a considerable extent on the ratio of the amount of air which enters the thoracic opening to the amount which enters the lungs at each inspiration. It is possible to show this relationship by means of the following mathematical expression, in which, as will be seen, the vital capacity is an important factor:

$$X = \frac{V - \frac{R_1}{R_2} T}{\frac{R_1}{R_2} T} aC$$

V, vital capacity.
R_1, rate of respiration before the opening is made.
R_2, rate of respiration after the opening is made.
T, tidal air (approximately 500 c.c.).
a, a factor less than 1 (assumed to be 0.8).
C, area of the glottis (about 2.25 sq.cm.).

If in substituting numerical values in the equation we insert 4,800 for V (the normal vital capacity of men with a height of from 5 feet, 8½ inches to 6 feet, according to Peabody and Wentworth [2]), 15 for R_1 (an average rate of respiration during complete rest) and 60 for R_2 (an estimated maximum rate for the greatest possible depth of respiration), then

$$X = \frac{4{,}800 - 125}{125} aC = 37.4 \times 1.8, \text{ or}$$

$X = 67.32$ sq.cm., or 10.4 sq. inches.

In other words, therefore, a normal man of from 5 feet, 8½ inches to 6 feet in height theoretically should be able to withstand a thoracic opening of about 67 sq.cm., or 10 square inches, for as long a time as his respiratory muscles are able to maintain a maximum effort. This theoretical value harmonizes fairly closely with the findings during the war that wounds of the chest which were often of surprising magnitude did not necessarily result in death from asphyxia. Actually, of course, during operative procedures on the chest, openings which are apparently very large are in reality much smaller because of the presence in the incision of a lung that has been delivered out, gauze packs, the fingers of the operator, instruments, etc., all of which tend to plug the opening somewhat and thus reduce its size.

On the other hand, it is readily apparent that if the vital capacity is smaller or larger than the value used

4. Graham, E. A., and Bell, R. D.: Open Pneumothorax: Its Relation to the Treatment of Empyema, Am. J. M. Sc. **156**: 839 (Dec.) 1918.

in the example given above, the maximum nonfatal opening will also be smaller or larger, respectively. During the acute pneumonic stage of an empyema the vital capacity is always low. I do not know of any actual observations on the vital capacity during a severe acute pneumonia, but it is obvious that if, in spite of a maximal respiratory effort, air hunger and extreme cyanosis persist, the vital capacity must be nearly as low as the tidal air requirement. It will follow also from the theoretical considerations already given that when such a condition is present, any opening, no matter how small, is likely to result in a fatal asphyxia. Recently a striking confirmation of the validity of the mathematical expression occurred.

A young man who gave a history of having had pneumonia in the early part of February, and in whom pus had been found by aspiration, March 4, was admitted to the hospital March 7. An aspiration which was performed then resulted in the withdrawal of about 300 c.c. of moderately thick pus which contained hemolytic streptococci. A question as to the existence of an active pneumonia induced us to postpone the operation for a few days. March 12, immediately before the operation, the vital capacity reading was 1,600 c.c. and the tidal air, 400 c.c. It was felt that by this time sufficiently firm adhesions would be present to circumscribe the abscess and to prevent a general pneumothorax on that side. A resection of the eighth rib in the right posterior axillary line was made under nitrous oxid and oxygen anesthesia, and 400 c.c. of pus escaped. Immediately after the escape of the pus an alarming dyspnea with labored breathing occurred which was promptly improved by plugging the opening. On releasing the plug of gauze the dyspnea recurred; and it was again improved by applying a firm pad of dressings over the opening after a large drainage tube and a Carrel tube had been hurriedly inserted into the wound. Although the dyspnea was improved after the opening had been covered, it persisted to an uncomfortable degree for several hours. On the second day a tracing of the wound was taken and its area was computed by means of an Amsler planimeter, which revealed an area of about 2.1 square inches. A computation of the maximum nonfatal opening which this man could have on the basis of his vital capacity of only 1,600 c.c. gave a value of 3.3. square inches. If stabilizing adhesions were not present, therefore, the operative opening of 2.1 square inches allowed him a margin of safety of only 1.2 square inches, and it is not surprising that severe dyspnea resulted. As further evidence that firm adhesions were not present at the time of operation is the fact that one week later the cavity measured 1,300 c.c., although at operation only 400 c.c. of pus escaped, an indication that probably the alarming dyspnea was the result of a more or less general pneumothorax.

If firm adhesions are present, however, or if the mediastinum has been made more or less rigid by induration from long-standing inflammation, as in the case of chronic empyema and in many cases of pulmonary tuberculosis, then a change of pressure in one pleural cavity may not affect the other pleural cavity to anything like the same degree as in a chest without adhesions.

The older prevalent conceptions of the mechanism of action of an open pneumothorax will not explain the phenomena which have just been discussed; for, on the basis of such conceptions, death from asphyxia would be impossible from a unilateral open pneumothorax. The worst that could happen would be collapse of the corresponding lung, and life could still be maintained by the other lung. Moreover, a bilateral open pneumothorax would always be practically immediately fatal. Direct experiment, however, shows that a bilateral open pneumothorax is not appreciably more dangerous than a unilateral one, provided the combined areas of the bilateral openings are not greater than that of the opening on the single side. Apparently the only explanation of such a finding is on the basis of the conceptions which have been developed above. The importance of the determination of the vital capacity as indicating approximately the maximum nonfatal opening of the chest wall in operative procedures which involve entering the pleural cavity is apparent. As has been already stated, however, the presence of adhesions and induration of the mediastinal pleura will diminish the danger by lessening the compressing effect on the opposite lung. Before establishing an open drainage in a case of empyema, it would seem to be a matter of prudence to calculate in advance the theoretical maximum nonfatal opening on the basis of a determination of the vital capacity. If adhesions are not well developed, this preliminary calculation may save lives by the avoidance of too large an opening. In our service this preliminary calculation is always made.

A reduction of the vital capacity in cases of empyema is apparently always to be expected. It is very difficult to obtain an accurate reading during the acute pneumonic stage, but in a recent series of nine cases of adults the average reading at the time of operation for the establishment of drainage was only 37 per cent. of what the normal should have been for those individuals based on the tables of Peabody and Wentworth of the normal vital capacities for people of different heights.

COURSE OF DIMINUTION OF CAVITY AND INCREASE OF VITAL CAPACITY

Date	Capacity of Cavity C.c.	Vital Capacity C.c.	Tidal Air C.c.
February 24	260	1,250	300
March 3	90	1,750	300
March 28	60	1,950	...
April 17	25	2,300	300

The lowest reading at the time of operation was 27 per cent. of the normal, and the highest 62 per cent. Six of the cases showed a hemolytic streptococcus and three a hemolytic staphylococcus. Another case of actinomycotic empyema gave a vital capacity reading of 47 per cent. of the normal. It is interesting that the vital capacity shows only a very slight improvement, if any at all, during the first few days after the withdrawal of a considerable amount of exudate, an observation which has previously been made by Peabody and Wentworth. Slowly, however, as the cavity diminishes and as the patient's general condition improves the vital capacity increases. This increase, coincidental with a diminution in the size of the cavity, is illustrated in the following case:

A young woman who had pneumonia in January entered the hospital, February 15. She was dyspneic and cyanotic. A right pleural effusion was diagnosed, and an electrocardiograph tracing revealed a heart block which was diagnosed by Dr. Wilson as due probably to digitalis which the patient had been taking. An aspiration of the chest resulted in the withdrawal of 1,450 c.c. of thin purulent fluid which contained both hemolytic streptococci and staphylococci. By February 21 she had recovered from the heart block and was much less dyspneic and cyanotic. Her vital capacity was 1,000 c.c. An intercostal incision was made and 800 c.c. of pus removed. From then on the diminution of the cavity and the increase of the vital capacity were as given in the accompanying table.

She was discharged practically well, April 17, with a cavity of which the capacity was only 25 c.c. and with a vital capacity of 2,300 c.c., which represented a gain of from 36 per cent. of the normal vital capacity for a woman of her

height (5 feet, 4 inches) to one which was 82 per cent. She was treated continuously with surgical solution of chlorinated soda (Dakin's solution) from the time of the operation until the drain was removed, March 30, except for a period of a few days beginning about February 24 and ending March 1. The interruption was because of a small pulmonary fistula which developed but which healed spontaneously during the period of cessation of the irrigations. She also used "blowing bottles" beginning a few days after the operation.

Another use which we have made recently of the vital capacity is to show the permanent physiologic deformity which results from extensive thoracoplastic operations. These operations not only are accompanied by a high mortality, but they often fail in stopping the suppuration, the very purpose for which they were intended, even if the patient survives the operation. Moreover, in addition to the mutilating anatomic deformity, there is apparently a permanent diminution in the vital capacity. This permanent decrease in the vital capacity is a serious handicap to the patient because it means that if he ever acquires a condition which in itself lowers the vital capacity, his chances of recovery will be considerably decreased as compared with an individual who at the start had a normal vital capacity. Such conditions are, of course, pneumonia or any other pulmonary disease, an uncompensated heart lesion, etc. Obviously, therefore, these operations should be undertaken only as a very last resort. The excellent results which have been achieved in the army with even the chronic cases of empyema as a result of an intelligent and painstaking use of Dakin's solution indicate clearly that extensive thoracoplastic operations will be unnecessary in all but the most exceptional cases. The additional evidence that these operations impose a permanent physiologic handicap should act as a further deterring factor in the consideration of the use of these procedures. The effect of an operation of the type of the Estlander-Schede is shown in the following brief report of a case:

A trained nurse, aged 28, presented herself, April 8, because of a discharging fistula in the left side of the chest at about the level of the ninth rib in the midaxillary line. She had had pneumonia followed by empyema two years before. The empyema had been treated by a rib resection as the primary operation. Without the trial of irrigations of any kind she had been subjected to an Estlander-Schede operation only a few weeks after the primary operation. This had been followed by several minor procedures at various times during succeeding months, but she was never relieved of her purulent discharge from the chest. She had also practically never been free from fever, and she was about 40 pounds under weight. An examination disclosed the usual anatomic deformity from this type of operation due to an absence, in her case, of all the ribs on the left side from the third to the tenth. In addition, the fistulous tract was found to pass upward and inward for a distance of about 6 inches and to communicate directly with the lung so that irrigations were promptly coughed up into the mouth and tasted. Her vital capacity was only 1,500 c.c, which is only about one half of what it should be for a normal woman of her height (5 feet, 4½ inches). An operation was advised for the purpose of closing the pulmonary fistula, and this was carried out, April 10. The tract was dissected up, for a distance of about 6 inches, to where it entered the lung, ligated and cut off. The stump was then phenolated and inverted into the lung in a similar manner to the handling of an appendix stump. She has apparently been healed since April 15, and she has been entirely free from fever since April 13, the longest time she thinks since her original illness two years before. But despite the fact that she seems healed, her vital capacity is still only about one half of what it should be normally. In other words, she is probably permanently handicapped to such an extent that if she ever again gets pneumonia or any other condition which in itself lowers the vital capacity, she will have only about one-half as good a chance of recovery, other things being equal, as she would have if her vital capacity were normal. The final conclusion concerning the case, therefore, is that probably the mutilating operation was unnecessary in the first place, it has failed to prevent two years of invalidism and it has left her not only with a very bad anatomic deformity but also with a serious physiologic handicap which will probably be permanent.

SUMMARY AND CONCLUSIONS

Determinations of the vital capacity by means of a spirometer, when used in connection with the mathematical expression given in the text, will indicate approximately the maximum opening in the chest wall compatible with life, if the mediastinum is not already stabilized by adhesions and induration. If such observations are made before establishing open drainage in cases of empyema or before any thoracic operation, doubtless many lives will be saved. Both theoretical conclusions and actual observations show that in empyema the vital capacity is greatly reduced. That this reduction does not depend merely on the presence of the fluid exudate in the pleural cavity is shown by the fact that an appreciable increase in the vital capacity occurs only gradually after the removal of the exudate. This fact is of importance in being an additional argument against the establishment of an open drainage during the acute pneumonic stage of an empyema when the vital capacity is so low as to approximate the tidal air requirement. Extensive thoracoplastic operations result in apparently a permanent marked reduction in the vital capacity. They should be employed, therefore, only in the rarest instances and only after other methods have been given an intelligent trial for at least many months.

RELATIVE VALUE OF VARIOUS OPERATIVE PROCEDURES EMPLOYED IN ACUTE EMPYEMA*

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During the last few years many articles on empyema have appeared in the literature, usually consisting of a report of a series of cases with advocacy of a certain method of treatment. The claim is advanced that the particular method advocated is superior to others, and statistics are submitted to substantiate this claim. Some of the articles can be classed as constructive, in that they help in the understanding of the disease and contribute something that will help us better to treat it, while others are merely fads that will be short lived. During this period there has been no contribution that has greatly modified our conception of either the pathogenesis of acute empyema or of the best routine treatment. The period has been marked rather by having certain facts, known before, emphasized and brought forward for discussion. The two most valuable points have been:

1. General recognition of the importance of an acute pneumothorax.
2. The systematic attempts at sterilization of the empyema cavity by means of chemical solutions.

*Read before the Section on Surgery, General and Abdominal, at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

In studying the various empyema reports, one is impressed with the fact that in many of them comparison is made only on the basis of treatment and mortality rate. This is an incomplete and untrustworthy method, for every one who is familiar with the subject knows that cases differ considerably, and that other factors must be taken into consideration.

Empyema cases should be studied with regard to: (1) the antecedent disease; (2) the type of organism concerned and its virulence; (3) the prevailing climatic conditions; (4) whether cases are sporadic or those of an epidemic; (5) the treatment, and (6) the mortality rate.

That all these factors may play an important rôle was impressed on me in a two years' experience with empyema in various army camps, during which time I had the opportunity to follow several series of cases at different periods, and in different parts of the country, with ample facilities for the study of necropsy material.

In 1919, I reported [1] a series of seventy acute cases, from a Southern camp, with comments on the difference in cases depending on the antecedent disease and organism producing the infection. My article covered the early period of the war, and included the fulminant septic cases following measles. Our total mortality was 27 per cent. Fifty-four of the cases were of pneumococcal origin, with a mortality of 17 per cent., and sixteen of streptococcal origin, with a mortality of 62 per cent. On the basis of this one series, I naturally came to the conclusion that it was chiefly a question of the organism concerned.

Shortly after that, I had occasion to study a series of cases in a Western camp of which by far the larger number were streptococcus cases, with a total mortality of only 6 per cent. Part of this series is included in a report of the influenza and pneumonia epidemic from Camp Custer, compiled under the direction of Lieut.-Col. Ernest E. Irons, by Major Lynn S. Beals, Capt. Wyndham B. Blanton and Capt. John F. Bresnahan; it gives the interesting figures reproduced in Table 1.

TABLE 1.—ORGANISMS CONCERNED IN WESTERN CASES

		Cases	Deaths
Sterile fluids		25	
Empyema:			
Streptococcus hemolyticus	42		3
Streptococcus viridans	9		
Streptococcus undetermined	2		
Pneumococcus Type I 7	53		1
Pneumococcus Type II 0			
Pneumococcus Type III 5			
Pneumococcus Type IV 5	17		
Thick pus, no bacteria	2	72	
	72	97	4

What explanation for this can one offer? Had the treatment been different, one might attribute it to that; but it was exactly the same as that advocated and carried out in the latter part of the period covered by my paper, namely, repeated aspirations until the pneumonia had subsided and pus had formed, and then intercostal incision or rib resection.

One is compelled to assume that though the organism in these cases was also a hemolytic streptococcus, it was not the same virulent organism that caused the fulminant septic cases associated with measles in the winter of 1917-1918. Similar observations can no doubt be cited by other observers; they simply emphasize how misleading it is to draw definite conclusions from one group of cases.

In another series of twenty-nine cases, representing all the empyema cases of an influenza epidemic in a Southern camp, there was a mortality of eight, or 27.6 per cent. They are divided as in Table 2.

TABLE 2.—ORGANISMS CONCERNED IN SOUTHERN CASES

	Cases	Deaths
Streptococcus hemolyticus	10	4
Pneumococcus Type I	3	0
Pneumococcus Type II	2	0
Pneumococcus Type III	6	1
Pneumococcus Type IV	4	0
Staphylococcus aureus	4	3
	29	8

Necropsies, performed in six of the eight fatal cases, disclosed:

CASE 1.—*Streptococcus hemolyticus;* left, complete empyema; bilateral bronchopneumonia; suppurative pericarditis, and vegetative endocarditis.

CASE 2.—*Streptococcus hemolyticus* and pneumococcus Type I; bronchopnuemonia; purulent pericarditis, and bilateral empyema.

CASE 3.—*Streptococcus hemolyticus;* right empyema; purulent pericarditis; bronchopneumonia, and serofibrinous peritonitis.

CASE 4.—*Streptococcus hemolyticus;* left pyopneumothorax: an abscess of the right upper lobe; bilateral bronchopneumonia, and pericarditis.

CASE 5.—*Staphylococcus aureus;* bilateral empyema; pericarditis, and vegetative endocarditis.

CASE 6.—*Staphylococcus aureus;* left empyema; lobar pneumonia; fibrinous pleurisy, and pericarditis.

These findings demonstrate conclusively that probably no method of treatment known at present could have saved the patients. The cure for these septic cases is to be looked for, not from surgery, but from serum treatment.

In the one pneumococcus case that was fatal, no necropsy was obtained. The man had been extremely sick, and had had a bilateral pneumonia and empyema and a positive blood culture with Type III pneumococcus. His death was predicted by the medical service on the strength of laboratory findings, before an operation was performed.

The eighth patient who died, in one of the staphylococcus cases, was in a septic state with ear complications and acute dilatation of the stomach. Not one of the patients died of an uncomplicated empyema, and not only those who died but also many of those who recovered were extremely sick, and careful individual treatment alone made it possible to keep the mortality rate so low. To compare such a series with the type of empyema cases ordinarily encountered only on a treatment and mortality basis is manifestly not possible. We must recognize that there is a difference in cases, and that those of an epidemic are usually more virulent than sporadic cases.

THE NATURE OF EMPYEMA

This leads to a consideration of what empyema really is. The general conception is that it is a collection of pus in the pleural cavity more or less encapsulated and usually following pneumonia. Had we in the army been confronted with this type alone, very little discussion would probably have arisen. But with

1. Eggers, Carl: Empyema: Analysis of Seventy Cases at Base Hospital, Camp Jackson, South Carolina, Surg., Gynec. & Obst. **28**: 348 (April) 1919.

the incidence of measles and influenza in our army camps, complicated with a severe bronchopneumonia bilateral in character and often associated with profuse exudation into the serous cavities, a clinical picture was presented that was unfamiliar to many of the surgeons who were suddenly called on to treat large numbers of these patients.

On the theory that all infected fluid in the thorax was a potential empyema, prompt operation was resorted to, with unfortunate results in many instances. Various attempts to reduce the mortality followed. It was chiefly in two directions that a remedy was sought:

1. One group of operators who considered the presence of any infected fluid within the thorax an empyema, and who thought its immediate removal of primary importance regardless of the stage of the pneumonia, developed a technic that would give drainage and at the same time prevent an acute pneumothorax.

2. The other group, led by experience to the conviction that in the majority of cases the fluid present in the course of a pneumonia, even if infected, was not of primary importance, delayed operation until the pneumonia had subsided and adhesions formed to wall off the fluid, and in the meantime resorted to aspirations.

In the group of seventy cases mentioned before, I made various observations. One was that empyema following a primary lobar pneumonia was likely to be different from empyema following a bronchopneumonia secondary to some other acute infectious disease, such as measles or influenza. Another observation was that empyema of pneumococcal origin was different from the early streptococcus empyema. The inflammation of the pleura associated with a pneumococcus lobar pneumonia is usually limited to the involved lobe. It is due to direct extension of the infectious exudative process in the lung to the overlying pleura. There is no rupture of a subpleural abscess; as a matter of fact, no abscess formation takes place in the lung. The pneumonia has usually subsided when the empyema becomes fully developed, and complete restitution of the lung to normal takes place. The pleural exudate early consists of thick pus well encapsulated.

If, on the other hand, we deal with a streptococcus or staphylococcus infection, we usually find a bronchopneumonia bilateral in character and frequently associated with multiple abscess formation in the lungs. Wherever a patch of pneumonia appears close to the surface, the overlying pleura may become involved. A profuse serous exudation develops and this extensive exudate may become infected.

Occasionally a small subpleural abscess may rupture and be responsible for the empyema, but this is probably the exception instead of the rule. At times we have incontrovertible evidence that such a rupture has occurred and that is in the cases of pyopneumothorax. Some of the patients that take the Dakin treatment poorly may also belong to this class, but the total of such cases is small—certainly not sufficient to warrant the statement that all empyema cases are due to rupture of a subpleural abscess. The latter would not explain the appearance of a suppurative inflammation in the pericardium or the peritoneum that occasionally are coincident with the pneumonia and the empyema. The fact that a clear serous exudate containing streptococci often exists for days would speak against rupture of an abscess. Had an abscess ruptured, the fluid would at once take on the characteristics of pus, as it does in patients with a pyopneumothorax.

We have to consider these cases as general streptococcus or staphylococcus infections, with localization in the lungs and serous membranes. The many suppurative complications in other parts of the body would substantiate this view. The pneumonia in these cases often runs a long course, affecting one part of the lung after another, and the fluid may remain serous for some time before it changes to actual pus.

METHODS OF TREATMENT

Aspiration.—When speaking of the treatment of acute empyema by repeated aspirations, one does not intend continuing aspirations until a cure results or even "as long as possible." A fixed objective is followed, namely, to rid the body of an infected fluid early in the course of pneumonia until the process in the lungs has subsided and the fluid been walled off. As soon as this stage is reached, an operation should be performed. Aspiration is a simple procedure, and the best apparatus to be employed is the Potain aspirator. The needle should be introduced to just within the thoracic cavity, to avoid injuring the lung. All the fluid may be removed, or just enough of it to give relief from respiratory distress, depending on the case. With proper technic, the introduction of air is effectively prevented. Aspiration gives great relief in acute cases, and should be freely employed until a patient is ready for operation. As a curative measure it is of little value, for we are dealing with an inflamed, infected pleural membrane that will continue to secrete. Occasionally, however, a cure does result, as several authors have reported. I have had under treatment two cases, one with a streptococcus, the other with a pneumococcus culture, that cleared up after one complete aspiration.

Open Methods.—The two paths available are the intercostal incision or the resection of a portion of a rib. In either event a drainage tube is inserted and the pus given free exit. These are the oldest methods in use, and in the past they have given satisfactory results. Have they failed in their usefulness since empyema has attracted so much attention? They certainly give good and ample drainage, which is continuous and easily maintained. The operation may be performed under local anesthesia, either at a hospital or at home. Little or no embarrassment of respiration results; on the contrary, breathing becomes easier, with free drainage of the infected material and subsequent diminished absorption. Drainage can be instituted wherever it is demanded, i. e., wherever the pus is found. The patient may be out of bed as soon as his general condition permits, and his position in bed may be changed as desired and as is compatible with his comfort.

No special appliance or apparatus is required, for a drainage tube is easily procured or improvised, and altogether the operation is so simple that many a life has been saved by a practical physician who, at the right time, instituted open drainage.

The after-treatment is usually very simple, and an assistant or nurse may be entrusted with it. If irrigation, or especially if Carrel-Dakin treatment is used, more care is required, for the details of treatment must be carried out as advocated. With an empyema drained at the proper place, early healing is favored by keeping the cavity empty, sterilizing it, and preventing damming back of pus. The lung will gradually

expand, the formation of a thick disabling pleura will be prevented, and as a result the danger of recurrence is minimized.

What, then, is the objection to the operation? Does it invite complications, or does it not effectively avoid dangers? In the ordinary empyema cases, in which the pneumonia has subsided and the fluid become pus, there is no danger connected with the operation if ordinary surgical principles are observed. No special skill is required to make an intercostal incision or to resect a small piece of rib under local anesthesia.

All steps are performed under guidance of the eye, bleeding is easily controlled, pus and fibrin clots can be evacuated, and drainage can then be instituted. An acute pneumothorax does not result because the pus has become walled off before the operation is performed.

Closed Methods.—These may be divided into two main groups: (*a*) intermittent and (*b*) continuous closed drainage. In each group there are numerous subdivisions based on special appliances or procedures advocated by individual authors. Though these methods have been used for years, they have never been universally adopted as routine operations. The reason for this is that they have failed in certain important respects, the chief of which are inadequate drainage and inability to dispose of large fibrin clots. Cumbersomeness and easy derangement of apparatus are other objections raised to it, but all of them have been and can be successfully met in a case in which the method is really indicated.

Perhaps the chief argument against the general adoption of closed drainage is that it is unnecessary, and that it often delays rather than favors early healing. Some of the closed methods are easily applied; others are more difficult and require special skill. Practically all of them necessitate the use of some special appliance or special treatment to be effective.

The after-treatment needs constant supervision by one familiar with all the details, and who understands and values the importance of an acute pneumothorax. An error in technic may negative all that the treatment was instituted to prevent.

Some of the advocates of closed drainage state that it is of minor importance where the puncture is made, as long as the tube enters the cavity. It is claimed that suction will remove all secretions effectively. Such teaching is misleading, because in the upright position sacculation of pus may occur. Healing will often be delayed because drainage is not free and secondary accumulations of pus are more likely.

We have observed that a chronic pneumothorax may result in spite of the treatment, and that an already existing pneumothorax is not obliterated by the application of negative pressure.

It appears that with a trocar stab a lung puncture results more often than with other methods. One author reports bronchial communication in ten cases in a series of thirty-two. This is much more frequent than ordinarily encountered.

There is one method of treatment I want to refer to particularly, namely, the injection of formaldehyd glycerin into the cavity after aspiration. The injection of this fluid inhibits the growth of bacteria, but it forms a more or less complete cast of the cavity and gives rise to a very thick abscess wall which is quite disabling. Though the organisms do not grow on culture, they constitute a menace to the patient, and he is more or less invalided. Twenty-one cases of this character came under my treatment at one time, and it was necessary to perform a secondary operation in seventeen of them. In several of these, simple open drainage, followed by Dakin treatment, was sufficient to bring about a cure, while in the others a radical operation had to be performed.

Bearing in mind the advantages and disadvantages of closed drainage, one may use it in properly selected cases. Excellent results have been reported by a number of authors.

Closed drainage finds its greatest application in those septic cases in which, early in a pneumonia, the presence of the fluid itself is considered a meance to the patient. It is here used to bridge over the critical period until the pneumonia has subsided and adhesions have formed. A secondary drainage operation may be performed later. Closed drainage is also invaluable in cases with a double empyema and in patients with a pyopneumothorax.

STUDY OF CHRONIC CASES AND WHAT THEY HAVE TAUGHT

The causes of chronic empyema cavity may be classed as (*a*) avoidable and (*b*) unavoidable. We need not discuss the unavoidable causes, because the treatment of acute empyema has no bearing on them. Of the avoidable causes the most common is inadequate drainage through a narrow sinus, allowing damming back of pus, repeated reinfection of the cavity, and the development of a thick, unyielding pleura.

The next most frequent cause is an improperly placed drainage opening, one not at the dependent part of the cavity.

Another common cause is too early operation, allowing the lung to collapse at a time when no adhesions or only a few have formed.

All these causes argue for delay in operating until the pneumonia has subsided and the fluid has been walled off. Once this stage has been reached good drainage should be established, usually at the classical site, and Dakin-Carrel treatment then instituted.

SUGGESTED TREATMENT

There exists at present some confusion regarding the best routine method of procedure in acute empyema. The proper treatment of empyema, in all its phases, requires a knowledge and an appreciation of the physiology of normal respiration and also of the variations in the presence of disease. No one method will always give uniformly good results, and no attempt should be made to make a case fit a given method of treatment. On the contrary, that treatment which will most likely restore the patient to health in the shortest time should be adopted in each case. Individualization is the keynote of the successful treatment of empyema, and clinical experience and observations made at the necropsy table must guide us in the right direction. From these observations we have learned that there is such a thing as a common type of empyema, following pneumococcus pneumonia, in which the pus collects in the lower part of the chest. It becomes walled off early and the costopleural angle becomes obliterated by adhesion of the diaphragm to the chest wall. Intercostal incision in the eighth or ninth space or the resection of a portion of the eighth or ninth rib will place the drainage at the dependent part of the cavity.

Simple open drainage or the addition of irrigations, preferably with surgical solution of chlorinated soda

(Dakin solution), constitutes the after-treatment. By far the larger number of all empyema cases conform to this type.

Taking this as a basis, one may modify the treatment as indicated in a given case. If there is an unusually large amount of fluid, as is so often found in the septic streptococcus or staphylococcus cases, and it is considered that the presence and absorption of this fluid itself, regardless of the stage of the pneumonia, is dangerous to the patient, one of two courses may be followed.

1. The fluid may be aspirated, and this may be repeated as often as the thorax refills, until the pneumonia has subsided. Coincident with resolution, the fluid has usually become pus and has become walled off. A simple drainage opening may then be made, as advocated above, and the case treated the same as a pneumococcus empyema.

2. If more urgent treatment is demanded, one may make a small intercostal incision, introduce a drainage tube, close the tissues around it, and then lead the tube into a partly filled bottle under the bed. This gives a closed method of drainage. A Brewer tube may be used for this purpose, or an ordinary rubber tube sutured to the edges of the wound. Good drainage with little respiratory disturbance will be obtained. The tube fits snugly for from five to seven days, and at the end of that time the treatment can safely be converted into an open one, because by that time sufficient adhesions will have formed to prevent a pneumothorax.

Occasionally the bottle system of drainage with negative pressure, as advocated by the Empyema Commission, can be used to advantage. It permits the introduction of Dakin's solution, with flushing of the cavity while drainage is going on. However, suction should not be employed while the inflammation in the lung is active. It will not draw out a lung filled with inflammatory exudate, and if it could, it would be harmful. An inflamed organ should be put at rest. To employ suction after the inflammation has subsided is unnecessary, for the secret of healing is not suction but sterility. This sterility is best obtained by open drainage, perhaps favored by irrigation with antiseptic solutions. I believe that the only safe healing for an empyema is by obliteration of the cavity. The two opposing layers should adhere, and they will adhere just as soon as the surfaces are sterile. For this reason I believe the catheter method of drainage as a routine method, advocated by several authors, is not going to prove satisfactory. Stab wounds of abscesses with subsequent cupping by means of Bier cups, at one time so much lauded, has been given up for the same reason, that it also affords inadequate drainage. When pus is present we must follow the oldest rule in surgery and give it free exit.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. GRAHAM AND EGGERS

DR. ALEXANDER LAMBERT, New York: A physician cannot discuss with surgeons the wisdom of proceeding with this or that mechanical method of empyema. He could discuss very pertinently the wisdom of getting house staffs together and seeing that empyema cases in the medical ward are quickly reported to the visiting surgeon and not to the house surgeon. That will do more good to save these patients than anything I have yet found. Empyema is not, as a rule, a sequel of pneumonia; it is a complication appearing, as a rule, on the fourth or fifth day. Bronchopneumonias are not always streptococcal in character. They vary in pathogenesis and in the kind of germ causing them. One great difficulty has been well pointed out by Dr. Eggers, and that is, that the pneumonia causes more deaths in the early stages of empyema than does the empyema, because it prevents recourse to surgery. The pneumonia must subside before it is safe to operate, and the old idea whether the pus is laudable or damnable makes no difference. It is a question of the activity of the pneumonia. Moreover, in the present influenza, there is as much danger from minute abscesses of the lung as from empyema. I think I lost six or eight patients from multiple abscesses scattered over both lungs. In cases of one large abscess of the lung we succeeded in saving 60 per cent. of our patients. Moreover, an important question which few think of in connection with the physiology of the lack of breathing space is that when the lung starts to collapse it does not collapse straight up from base to apex. After the lower part is collapsed it holds by the root and swings so that an entire collapse of the lung is against the mediastinum. This is not usually realized. In all cases of complete collapse of the lung, a sausage-shaped lung is lying against the mediastinum. Surgeons should teach that inserting a trocar into a lung cavity in pleurisy is a trauma and more liable than anything else to produce empyema; to do aspirations in the early stages of pneumonia, and to refer the patient to the surgeon as soon as the pneumonia has subsided. Next to pneumonia, the most frequent cause of empyema is from the traumatism done by a dirty needle.

DR. MARTIN B. TINKER, Ithaca, N. Y.: Attention has been called to the slight progress which has been made in the treatment of pleurisy and infectious effusions from the time of Hippocrates until the time of the great war. We have accumulated a great deal of valuable experience and it is highly important that we should get the lessons of this experience thoroughly. It was demonstrated abundantly that early operation in empyema and purulent effusions produced a large number of deaths. At first we resected a rib and evacuated the pus in all cases. The death rate was so high that we realized we must resort to some other method. We aspirated until in many cases the fluid became so thick it would not come through the canula. Then we diluted the pus with salt solution and finally when it became too thick to aspirate, we resected the rib. The mortality was reduced from over 60 per cent. to 22 per cent. In these cases the antecedent infection is of great importance. No doubt the empyema due to the pneumococcus should be handled differently from empyemas due to the streptococcus, especially the hemolytic streptococcus. Dr. Eggers called attention to the fact that in many cases pleura, peritoneum and pericardium were affected, and with such multiple infection of serous cavities it is hardly to be expected that the patients will recover by any means of treatment. Aspiration and cannula treatment is not always successful. I believe that the use of the cannula and aspiration will cure a considerable percentage of cases, but as Dr. Eggers emphasized, it is going to be necessary to resect a rib and drain in many cases. There is nothing gained in most of these cases in taking out more than one rib. If one rib is resected and the cavity is thoroughly sterilized by surgical solution of chlorinated soda the majority of patients will recover without any more extensive operation. Extensive thoracoplastic operations are unnecessary, except in very unusual cases. Dr. George R. Fowler, of Brooklyn, called attention to decortication of the lung as a means of handling these chronic empyema cases five years before Delorme did so.

DR. ARVINE E. MOZINGO, Indianapolis: The open thoracotomy has high mortality, inertia of custom and prestige of surgical tradition. I developed an improved technic for a closed method and had but two deaths in 138 cases, 45 acute and 93 chronic. The operation is simple and success depends largely on after-treatment. One author recently reported a series of 410 cases with forty-eight deaths following open operation, and 100 deaths in cases he considered unsuitable risks for any operation other than aspiration. While repeated aspirations are no doubt advisable before the open operation is done, aspiration is very unnecessary with the closed method.

The statement made by Dr. Eggers that the twenty-one transfers were aspiration cases treated with formaldehyd-glycerin is not correct. Thirteen patients had been operated on overseas by the open method, one by Phillip's, four by Diederich's and three by my method. One of my patients was permanently healed, one had been operated on but two weeks previously and the other was a bilateral case with persistent bronchial fistula.

Dr. James F. Mitchell, Washington, D. C.: Controversy between the open and closed methods of treating empyema is unnecessary. Both methods are good, each in its place, and we should learn to think of empyema not as a single condition to which all our attention should be devoted, but as only part of a more general condition. In this way we can, as Dr. Eggers suggested, select the treatment according to the stage of the condition. We are now getting together an enormous amount of material through the surgeon general's department of the army, which will afford enlightenment on the whole subject of empyema. Dr. Edward K. Dunham, of New York, is tabulating the complete records of 4,000 cases treated in the Army epidemic, and this brings out some very interesting facts. Dr. Dunham sums the thing up in a sentence. In a letter to me he says: "Two points, however, are very simple: (1) that in fatal cases there are associated foci of infection within the thorax and in other parts that in themselves are so serious that they menace life; (2) that there is a critical period in these severe cases that lasts several days—say, up to three weeks—during which the single empyema is of relatively small account, succeeded by a period in which that empyema becomes the main problem for treatment." The lessons are: In the first period, save life (if you can); in the second period, reduce the period of convalescence and minimize the final disability. "On these two commandments hang all the laws and *profits*." The experience of the Empyema Commission verifies practically what Dr. Eggers said that you must select a time for operation and fit the operation to the time and carry out the commandments of Major Dunham; in the first few days save life, later reduce the period of convalescence and minimize deformity.

Dr. Moses Behrend, Philadelphia: The bacteriologic control of these cases is probably the most important point brought out. In all cases of *Streptococcus hemolyticus* infection, no extensive operation should be performed. A simple aspiration should be done until the acute symptoms subside. In all streptococcus, staphylococcus and pneumococcus infections, when pus has formed, the sooner we get it out the better and the best operation is rib resection. A great deal of harm has been done by these other operations, such as thoracotomy, introduction of trocar or cannula and simple drainage tubes. I do not think they have any place in the treatment of this disease when pus has once formed and acute symptoms have subsided. Dr. Eggers has brought out well that the only way to remove pus from any part of the body is by drainage, and the only proper way to treat an empyema is by excision of ribs.

Dr. C. D. Lockwood, Pasadena, Calif.: I have had no experience on the experimental side of chest surgery, but I have had considerable experience in traumatic surgery in front line hospitals. Practically, we seldom met with the condition Dr. Graham speaks of, i. e., extreme asphyxia, even when we produced a large pneumothorax. The most important lesson gained from our experience in the Army is that we can apply the same principles in surgery of the chest that we do to other portions of the body in civil life. At Brest I saw many of the early cases of influenza contracted during transit. We soon learned that these patients died if drainage was done early. We used early aspiration and injected 2 per cent. liquor formaldehydi in glycerin even before the recommendation of the Empyema Commission in this country. I agree with Dr. Eggers that we cannot determine the value of any method of treatment in a single series of cases. Each case is a law unto itself. Another important factor has not been mentioned in this discussion—the routine use of the roentgen ray in connection with drainage of the pleural cavity.

Dr. George J. Heuer, Baltimore: Owing to Dr. Graham's failure to be more explicit in his statements, there has arisen some confusion as to the practical application of his work in intrathoracic surgery. In conversation with surgeons interested in thoracic surgery I have heard it stated that Dr. Graham's work is a positive proof of the necessity of pressure anesthesia in operations on the thorax because the operative opening in the thorax is greater than that found by Dr. Graham to be compatible with life. It was our experience abroad in treating wounds of the thorax that the chest may be opened very widely without causing respiratory upsets; and that regardless of the intrathoracic pressure relationships or the degree of collapse of the lung in the opened and unopened sides, respiration was sufficient for the patient during the period of an operation if the lung on the unopened side was normal. Obviously, the best way to treat chronic empyema is to prevent its occurrence. Our experience has shown that if we keep patients in the hospital a little longer we can effect a cure in every case of acute empyema. When, however, patients come to the hospital with chronic empyema, we should rather direct our efforts to sterilizing the cavity than to obliterating it by rib resections. In our experience with twenty-four cases of chronic empyema, these sterile intrapleural cavities have remained unobliterated for a variable time after the operative or spontaneous closure of the sinus tracts, but eventually have been spontaneously obliterated. In no instance has the unobliterated intrapleural cavity been an inconvenience to the patient. We can, therefore, disregard the cavity if we can sterilize it; and our efforts should primarily be directed toward the sterilization of chronic empyemic cavities.

Dr. Carl A. Hedblom, Rochester, Minn.: During the last two years we have treated 150 cases of chronic empyema at the Mayo Clinic. Dr. Eggers pointed out very rightly that the treatment of acute empyema should be adapted to the patient, and that the particular operation the surgeon favors should not be used regardless of the special features of the case. Forty-two of our patients were cured or materially improved by simple drainage. In fifty-one cases, cavities were obliterated or nearly so by irrigation with surgical solution of chlorinated soda. Some of these were instances of practically complete collapse of the lung. There remained a group of cases of relatively long duration, in which neither rib resection for efficient drainage nor the irrigation sufficed. In thirty such cases a decortication was done, after preliminary sterilization. There remained twenty-seven cases in which it was necessary as a last resort to do a plastic operation, involving sacrificing a considerable portion of the chest wall. Dr. Graham mentioned one of the chief objections to an extensive plastic operation on the chest wall—namely, the greatly lowered vital capacity that may result. The main object should be to get the patient well, without avoidable loss of function. In my opinion, an avoidable mutilating operation, involving a considerably increased mortality is not justifiable for the sake of shortening convalescence. If every other means has failed, then radical destructive operation may be advisable. There were four deaths in this series of 150 cases.

Dr. H. M. Richter, Chicago: Dr. Graham made a serious error in comparing the respiratory movement of the dog with that of the human being. The transverse diameter of the chest of the human being is twice that of the anteroposterior diameter. The dog's is only half as much. The area of the diaphragm as compared with the transverse diameter of the two chests is tremendously different. The lateral motion of the median septum of the human chest—which is trifling compared with the capacity of each side of the chest—as compared with the lateral motion of the median septum of the dog's chest, is such that when one opens the dog's chest one immediately reduces tremendously the vital capacity, but when one opens one side of the human chest one diminishes the capacity to but a trifling degree. I think it is because of this that the modern transthoracic operations have been so much more successful than in former days, for instead of a small intercostal incision one is made that enables one adequately to explore and to do what should be done. We have been so long taught to drain pus where we find it, to make free incision for pus that needs drainage, that we forget that the pleura is not a large cavity. It is a trifling cavity. When

the two layers of the pleura are in contact we have nothing but a capillary space which holds but a centimeter of fluid. In empyema we convert that trifling space into a tremendous space. We are at first impelled to make free incision to drain that large cavity. The fact is that any means which tends to bring the lung out to the chest wall immediately converts that large cavity of the empyema into the small normal cavity of the pleura and then there is need for only trifling drainage. I do not refer to the many exceptions to the rule, such as the old rigid lung that cannot be brought out, or masses of fibrin that cannot come through a small tube. The logical thing is to carry out such a method of suction treatment as will quickly bring together the two layers of the pleura.

DR. T. TURNER THOMAS, Philadelphia: Dr. Eggers said first that the drainage opening should be in the dependent position, and, then, that it should be in the eighth or ninth interspace. He said also that the costophrenic sinus in these cases was obliterated by adhesions. I have been emphasizing during the last eight or ten years a method used years ago by the elder Ashhurst. This consists essentially in the introduction of a grooved director curved at the end; or a similar instrument, such as a urethral sound, at a safe level, i. e., high enough, where we know we shall find pus and not injure the diaphragm. The tip of this exploring instrument is then turned downward to the bottom of the empyemic cavity, where it can easily be felt through an intercostal space, and an opening then safely made on it at the bottom of the pus cavity. A piece of the rib just above may then be excised or not, as desired, a good sized rubber tube being inserted for drainage. I have thus placed the opening usually in the eleventh interspace. I have placed my finger at the bottom of the costophrenic sinus in almost, if not every, case and have found it not obliterated by adhesions, but widely distended by the pus. It has proved to be a very simple and safe operation requiring not more than four or five minutes after the first exploratory opening is made. Sometimes the lowest part of the empyema will be in the tenth interspace, much more often in the eleventh, but always at the bottom of the cavity.

DR. ROSALIE SLAUGHTER MORTON, New York: A point not emphasized is the relative effects of gas gangrene following chest wounds and those of other parts of the body. It is never so serious, either from the standpoint of pain or of fatality, in the chest as where muscular tissue which is confined is wounded, as, for instance, in the bottle shaped wounds of the leg and thigh the result of necrosis of muscle fiber due to the pressure of gas which formed there quickly and caused a rapidly resulting septicemia. The pressure caused a great deal of pain. Ripping these wounds open was the first step in their treatment. As the chest wounds were usually gaping, the pressure effects were not serious, and mortality was little increased by this complication, whereas in small wounds of the leg the mortality was high.

DR. JOHN B. HAEBERLIN, Chicago: In reference to the technic of advanced empyemas or neglected empyemas, those that are seen late, the object is to drain the chest cavity with the minimum amount of shock or reaction to the patient. Whenever possible do a rib resection. Get the pus out without unnecessary manipulation. If you place a sterile piece of gutta percha, 10 by 10 inches, over the chest immediately after the operation is completed, you will find that with each positive phase the empyema sac will drain itself and the gutta percha will hold the air that wants to be aspirated, so in that way we are able in extreme cases to do our work quickly and accurately and yet avoid the annoyance and irritation of drainage tube and gauze. The patient will be extremely comfortable after being put to bed. Redressings are not painful. Dress for from six to nine days until you want to use tube or gauze. The change is made by applying sterile oil and slipping out the gutta percha with a fresh piece lying over it.

DR. EVARTS A. GRAHAM, St. Louis: As to whether a positive or negative pressure apparatus is absolutely essential in the performance of intrathoracic operations, I do not think so. The work of which I have spoken has shown clearly that there is no definite physiologic necessity for using intratracheal insufflation or any cumbersome negative pressure apparatus, at least in the majority of cases which demand intrathoracic operations. If the man of average vital capacity can withstand a free opening in his chest wall of ten square inches, it is clear that for such a case no artificial means of maintaining respiration will be required during the operation. For as a matter of fact, it is very seldom necessary to maintain a free operative opening of so great an area, and usually the operative opening is actually much less than it seems to be because of the presence in the incision of fingers of the operator and his assistants, gauze pads and sponges, instruments and frequently a lung which has been delivered, all factors which tend to reduce very markedly the actual free area for the admission of air into the pleural cavity. It should be emphasized again, however, that there are conditions in which the vital capacity is so reduced, as, for example, in pneumonia, that compensation cannot be made for an opening of any size. I cannot see the importance of the shape of the chest, and I cannot understand how it could make any difference whether the chest is cuboidal, spherical, or polyhedral, or what the anteroposterior diameter happened to be. In order to breathe, it is necessary only for negative pressure to be established at some time during the respiratory act so that the lungs will be inflated sufficiently to obtain the tidal air. This is accomplished ordinarily by the fact that the respiratory muscles suddenly increase the size of the thorax. The sudden increase in size necessarily reduces the pressure of the interior, and air rushes into the lungs. If you have either a cube or a sphere containing air and suddenly increase its size, the pressure within obviously will be reduced until enough air has entered from the outside to make up for the increase of volume. When an opening is made into the chest wall, with the free admission of air, the ordinary response is an increase in the amplitude of the respiratory movements, or, in other words, an increase in the size of the thorax. If the opening is a small one, it is possible by a sudden increase in size of the thoracic cavity to reduce the intrapleural pressure sufficiently to enable the lungs to obtain the tidal air, because of the relatively slow entrance of air through a small thoracic opening. But, if the opening is sufficiently large, so much air will enter the pleural cavity with each inspiration that it will be impossible to establish a negative intrapleural pressure because the expansibility of the thorax is limited. Obviously, if negative intrapleural pressure cannot be established, the lungs cannot be inflated and respiration will cease. It seems to me that the explanation which I have offered is the only one which can explain the striking fact noted in the war that large wounds may be made in the chest wall without a necessarily fatal result. On the basis of this explanation, there is nothing surprising about the facts observed in the war. Unfortunately, at the time I published my first article I understated the maximum nonfatal opening of the chest wall in an average sized normal man because I had the impression from available textbooks of physiology that 3,700 c.c represented the average vital capacity in men. Subsequent information on the value of the vital capacity showed that the maximum nonfatal opening of the chest wall in the average man must be larger than originally stated.

DR. JOHN L. YATES, Milwaukee: As suggested both by Dr. Mitchell and Dr. Heuer, it is most desirable to prevent the development of chronic empyema. My argument is that the surest method of prevention is to arrest the process in the stage of acute serous pleurisy before acute empyema has developed. It must be recognized that the pleura reacts primarily in the same way to all irritants, and that differences in later reactions are not of necessity specific for any microorganism, but are due to variations in the intensity and duration of irritation as well as its character. If irritated visceral pleura be maintained in contact with the parietal pleura, fibrinous adhesions obliterating the pleura cavity are inevitable and empyema becomes impossible. Some day purulent pleurisy will be regarded as purulent peritonitis is now considered—a confession of therapeutic failure. Diagnostic methods for the prompt recognition of acute serous pleurisy will be developed. The institution of continuous automatic airtight drainage at this time is required. It is easily and simply done and without any cumbersome or expensive apparatus. From observations made as to the plan pursued by various operators, it was apparent that some men preferred to use differential pressure

and some did not; some preferred primary one-way drainage and some did not. The greatest advances to be made in thoracic surgery are to come through the prevention of empyema. The positive pressure gas-oxygen analgesia, devised by Gwathmey, and primary air-tight one-way drainage are going to make thoracotomy a feasible, safe operation, because they give the greatest protection against purulent pleurisy.

Dr. Carl Eggers, New York: No treatment of empyema is always the best. In the majority of cases, if actual pus is present, open drainage will give the best results. If we are dealing with a thin fluid, containing streptococci, it is best to delay open operation until pus has formed, and in the meantime use aspiration or some form of closed drainage. Empyema must be considered a serious condition, and if we are confronted with a patient with acute empyema we have to take into consideration all the factors pertaining to that case and then make up our mind what is best to do. I do not believe that empyema always starts as a simple pleurisy. I believe that in the majority of cases the fluid is infected from the beginning. All the streptococcus cases I have seen have had organisms at the first aspiration even though the fluid was still clear. I believe Dr. Mozingo's method of treatment is of value in certain forms of acute empyema, just as other closed methods are. In the cases we received from him, however, it was apparently not of much value. Some of the patients were classed as cured, but they had pain and dyspnea and the roentgen ray showed a well defined cavity filled with pus. Aspiration demonstrated pus filled with organisms, though the culture was negative. I could not consider such a patient cured. I do not believe an empyema patient is cured until all the fluid has disappeared and the cavity been obliterated.

POTENCY OF SOME OLD HUMAN ISOHEMAGGLUTINATING SERUMS

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Some human isohemagglutinating serums of the parasthenic, II, and of the antiparasthenic, III, groups have been kept for one year. The bulk of the serums has been preserved by the addition of phenol to the extent of 0.5 per cent. A small portion of the serums was dried before an electric fan at room temperature and pulverized in a mortar. All of the serums were kept in the icebox, except that the phenol-preserved serums were taken out now and then for an hour or so to be used in determining the blood groups of prospective donors for blood transfusion. At the end of the year the erythrocytes of thirty persons were sufficiently agglutinated by the serums of the same persons in order to determine their blood groups. The value of the preserved serums to indicate the groupings of these persons was then determined. The thirty persons were distributed among the four groups as follows: sthenic, thirteen; parasthenic, twelve; antiparasthenic, three; antisthenic, two.

The phenol-preserved serums are very cloudy and have a distinct but slight sediment in the bottom of the rubber stoppered ampules in which they are kept. They give off a slight odor of phenol. The dried serums appear as dull buff powders. Just before they were used they were dissolved as far as they could be in distilled water containing 0.5 per cent. phenol, in the proportion of 75 mg. of the dried serum to 1 c.c. of the water.

In making the tests one drop of each of the phenol-preserved serums, falling from a capillary pipet of 1 mm. diameter, was placed on a series of slides. One drop falling from the same pipet of about a 10 per cent. suspension of the erythrocytes of the various persons of known blood groups, in 0.85 per cent. sodium chlorid solution, was added to the serum drops after the manner of Vincent.[1] To mix the erythrocytes and the serums the slides were gently rocked from time to time and observed for a period of fifteen minutes, being examined over a white background or a daylight microscope lamp with the unaided eye or with a pocket lens magnifying 10 diameters, or in doubtful cases under the low power of the compound microscope. Agglutination, when it occurred, was essentially always evident within five minutes.

TABLE 1.—ACTION OF DILUTIONS OF YEAR OLD PHENOL-PRESERVED SERUMS OF GROUPS II AND III ON THE ERYTHROCYTES OF PERSONS OF BLOOD GROUPS II AND III*

	II Serum on		III Serum on	
Dilutions	II Cells	III Cells	II Cells	III Cells
1:64	—	±	±	—
1:32	—	±	+	—
1:16	—	+	+++	—
1:8	—	+	+++	—
1:4	—	++	++++	—
1:2	—	++++	++++	—

* In the tables, — indicates no agglutination; ±, doubtful agglutination; +, ++, +++, ++++, agglutination in increasing degrees.

In the case of the dried serums their solutions were employed in the same manner as the phenol-preserved serums.

In all cases the phenol-preserved serums indicated the proper groupings of the thirty persons of known blood groups. In the case of the dissolved dried serums, the proper groupings were indicated in all those persons belonging to the sthenic and the antisthenic groups. In the case of the twelve persons belonging to the parasthenic group, eight were correctly indicated; four were incorrectly indicated as members of the antisthenic group, there being weak agglutination of their erythrocytes by the dissolved parasthenic serum. In the case of the three persons of the antiparasthenic group, the proper groups of two were correctly indicated by the dissolved dried serums; one was incorrectly indicated as a member of the antisthenic group, his erythrocytes showing weak agglutination by the dissolved antiparasthenic serum.

TABLE 2.—ACTION OF DILUTIONS OF DISSOLVED YEAR OLD DRIED SERUMS OF GROUPS II AND III ON THE ERYTHROCYTES OF PERSONS OF BLOOD GROUPS II AND III*

	II Serum on		III Serum on	
Dilutions	II Cells	III Cells	II Cells	III Cells
1:64	—	—	—	—
1.32	—	—	—	—
1:16	—	±	+	—
1:8	—	±	+	—
1:4	—	±	++	±
1:2	—	+	++++	+

* Erythrocytes from the same individuals as in Table 1 were used.

The original agglutinating titer of these serums unfortunately was not obtained. It was noted when the serums were fresh, a year ago, that the antiparasthenic, III, serum was conspicuously more potent than the parasthenic, II, serum. The year old agglutinating titer of the two serums on the same sets of erythrocytes is shown in the tables. The loss of the agglutinat-

1. Vincent, Beth: A Rapid Macroscopic Agglutination Test for Blood Groups and Its Value for Testing Donors for Transfusion, J. A. M. A. **70**: 1219 (April 27) 1918.

ing properties of the dried serum is marked, as has already been noted by Karsner and Koeckert,[2] and by Kolmer;[3] but the loss is not nearly so great as reported by these authors. The acquisition of nonspecific agglutinating properties by the dried serums, also reported by Karsner and Koeckert, was noticed to a slight extent only, thus substantiating in part Sanford's[4] method of keeping isohemagglutinating serums. It is probable that various samples of isohemagglutinating serum vary somewhat in the retention of their activity and of their specificity.

SUMMARY

A sample of known parasthenic, II, and another of antiparasthenic, III, isohemagglutinating serum have kept preserved with 0.5 per cent. phenol and in the icebox for one year. Their agglutinating activities are good and they do not give nonspecific agglutinations.

The same serums kept in a dry pulverized state and in the icebox, redissolved in distilled water containing 0.5 per cent. phenol, for the most part show good agglutinating properties, but much inferior to the phenol-preserved serums. They also show a tendency to nonspecific agglutination.

AN IMPORTANT FACTOR IN THE SUCCESSFUL TREATMENT OF MALARIA

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It has probably occurred in the experience of most of us who practice in those localities where malaria exists to find occasionally a case of malarial infection in which, in spite of a most thorough and proper treatment, it is apparently impossible to effect a cure. The patient, after being discharged as cured, as shown not only by clinical observation but by careful and repeated blood examinations following a recognized efficient course of treatment, will return after a variable interval with all the evidence of the infection again being present.

It is because of such occurrences that one is inclined at times to question not only his method of treatment but also the efficiency of quinin as a therapeutic agent in malaria. Quinin is the specific for malaria, and no other drug as yet has been proved to have the sterilizing power with *Plasmodium malariae* that it has. One's faith in the drug should not be shattered when the important factor in the successful treatment of malaria as brought out in this article is presented. When the excellent piece of malaria control work was being conducted jointly by the International Health Board and the Mississippi State Board of Health by Bass and his co-workers in 1916-1917 in Bolivar County, Mississippi, it was found that in the survey of the inhabitants of the county there were many carriers (infected individuals without clinical manifestations) of the malarial parasite who did not show visible clinical evidences of the disease. Since that time it has been my custom, whenever a case of malarial infection is discovered, to examine the bloods of all the members of the household. It is rather interesting to note that positive findings are discovered in this way. The presence of carriers in a household is the probable explanation of the apparently unsuccessful treatment in those cases of malarial infection that do not respond to the proper use of quinin, or to those that are proved cures, though the patients return with a supposed relapse, which is in reality a reinfection.

REPORT OF ILLUSTRATIVE CASE

A colored boy, aged 6 years, was brought to the outpatient department of Touro Infirmary with the complaint of having had fever for two months. His mother stated that the fever was accompanied with chills and that he had fever every day. On being examined, the child was found to be infected with the estivo-autumnal type of *Plasmodium malariae*. His spleen was enlarged; otherwise the examination and history were negative. He was placed on quinin treatment, as advocated by Bass,[1] and his blood findings soon became negative and remained so. He was discharged as cured. After a lapse of several days he returned again complaining of chills and fever. His blood examination showed the presence of *Plasmodium malariae* estivo-autumnal type. He was placed on the quinin treatment again. His mother was instructed to come back and bring the other members of the household, two sisters and a brother. They were all found to be infected with the crescent form of the estivo-autumnal malarial parasite, though with the exception of enlarged spleens, they showed no other clinical manifestations of the disease. They were all treated and their bloods sterilized. They have not returned from that day to the present time, a period of five months, with the exception of one child 1 year and 8 months old brought for "worms" having a proved infection of *Ascaris lumbricoides*. The blood of this child continued to be free from plasmodia.

COMMENT

The foregoing is an example of what might occur in the practice of any one, and should be constantly borne in mind when treating malaria. I can recall instances in the past before the plan suggested was instituted when properly treated patients would return with the disease after apparent cures, and in one instance the daughter of a physician who underwent several courses of treatment before she would "stay cured." In all these instances it is probable that had the bloods of the members of the households been examined, the sources of the infections would have been discovered.

1. Bass, C. C.: Studies on Malaria Control: II. The Treatment of Malaria, with the Special Object of Disinfecting Infected Persons, Adopted After Wide Experience in Malaria Control by Treating Malaria Carriers in the Mississippi Delta, J. A. M. A. **72**: 1218 (April 26) 1919.

2. Karsner, H. T., and Koeckert, H. L.: The Influence of Desiccation on Human Normal Isohemagglutinins, J. A. M. A. **73**: 1207 (Oct. 18) 1919.

3. Kolmer, J. A.: "The Influence of Desiccation on Human Normal Isohemagglutinins," J. A. M. A. **73**: 1459 (Nov. 8) 1919; The Influence of Desiccation upon Natural Hemolysins and Hemagglutinins in Human Sera, J. Immunol. **4**: 393 (Nov.) 1919.

4. Sanford, A. H.: A Modification of the Moss Method of Determining Isohemagglutination Groups, J. A. M. A. **70**: 1221 (April 27) 1918.

Control of Diphtheria Carriers.—During the average diphtheria outbreak, quarantine of the reported sick constitutes about 90 per cent. of the control measures now in common use, and is perhaps about 40 per cent. effective. Wherein does the average community fall down? In not attempting to find and properly care for the carriers. We quarantine the sick, placard the house, practice terminal fumigation and leave the care of the carrier to a kindly but overburdened Providence. It should be the routine business of all departments of health to see that the carriers in the homes of those sick should be found. Following every reported case of diphtheria, cultures from all members of the household should be secured through the physician, inspector or nurse.—L. L. Williams, Jr., *Commonhealth*, March-April, 1920.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Five dollars per annum in advance

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SATURDAY, OCTOBER 9, 1920

IRON AND BLOOD REGENERATION

Although the management of the effects of simple hemorrhage and other types of secondary anemias represents one of the problems with which the clinician is frequently confronted, it must be admitted that the procedures still employed rest on a decidedly empiric basis. One is reminded, for example, that the rapidity of the restoration of the blood to normal depends "not alone upon the severity of the hemorrhage but also upon the age of the individual, his general nutrition, the supply of iron, and the reaction of the bone marrow."[1] There are, however, factors which include much that is vague and indefinite, particularly when an attempt is made to adjust a rational therapy to them. Thus, it is believed by many that the administration of iron salts may be beneficial not only in chlorosis, in which iron therapy has long had a favorable reputation, but also at times in secondary anemias.[2] The evidence of shortage of iron either in the body or in the available diet is mostly unfavorable to the need of special administration of the element to supply any such lack. The dosage of iron rarely bears any relation to the amount which it is expected will be utilized in the formation of hemoglobin; indeed, there is a subtle humor in the remark that the amount administered is frequently regulated with reference to the tolerance shown by the stomach. In defense of the otherwise inexplicable traditional iron therapy, it is often assumed that the element acts not merely as a building stone in forming the ferruginous hemoglobin, but rather as a drug which stimulates the hematopoietic organs, presumably the little understood bone marrow.

Iron therapy in cases of secondary anemia has at length been tested experimentally under well controlled conditions at the Hooper Foundation for Medical Research in the University of California.[3] The outstanding fact was that iron given as Blaud's pills (consisting essentially of ferrous carbonate, potassium sulphate and sugar) has no influence in simple secondary anemias, even under varied conditions of diet which of themselves do or do not favor rapid blood regeneration. Hemoglobin, the normal pigment of the red corpuscles, however, does exert a distinctly favorable influence. Most striking, on the other hand, is the effect of suitable dietary factors. Whipple and his associates[4] have demonstrated on dogs that whereas a diet of bread and milk sufficient for body maintenance will rarely permit of complete blood regeneration after simple secondary hemorrhage, although a very liberal ration of this type may gradually induce restoration, certain animal tissues in the food may have a profoundly beneficial effect. Cooked lean beef and beef heart are diet factors of importance. These food substances, alone or in combination with other foods, will give a rapid blood regeneration after anemia. Cooked liver is as sufficient as meat, and may be even more efficient in promoting complete blood regeneration subsequent to a standard anemia. The water extracts of meat or liver do not have this potency; whether it is associated with the proteins of these organs or some tissue pigments remains to be learned. The California investigators, having clearly demonstrated the profound effect of food factors on blood pigment regeneration, as they have also done in relation to bile pigment production, are thus justified in holding that those who claim iron to be a potent drug must first exclude the dietary influences that have just been indicated. The new investigations give another illustration of how often the physician may advisedly point to the grocery or butcher shop instead of the drug store as the source of potent preparations for his patients.

It is of considerable clinical interest to learn that even during fasting, after hemorrhage, measurable regeneration of red blood cells and hemoglobin may go on. Evidently the catabolizing protein furnishes the structural units for the new nitrogenous blood pigment. Unexpected is the observation that a hemorrhagic animal will actually form more red cells and hemoglobin during a fasting period than during a similar period of sugar feeding. Whipple, Hooper and Robscheit point out that since in neither case nitrogenous material is taken into the body, whatever hemoglobin and red cell stroma may be formed must be constructed in the organism from body protein or protein split products. They believe that the explanation lies in the well known protein-sparing action of carbohydrates, which tend to protect the body from disintegration and losses of protein and thus prevent the formation of catabolic "fragments" which would ordinarily be available to form new blood cells. In the words of the investigators themselves, the view here expressed postulates a strict

1. Hewlett, A. W.: Pathological Physiology of Internal Diseases, New York, 1917, p. 588.

2. Hatcher, R. A., and Wilbert, M. I.: Pharmacology of Useful Drugs, Chicago, American Medical Association, 1915, p. 365.

3. Hooper, C. W.; Robscheit, F. S., and Whipple, G. H.: Blood Regeneration Following Simple Anemia, V, The Influence of Blaud's Pills and Hemoglobin, Am. J. Physiol. **53**: 263 (Sept.) 1920.

4. Whipple, G. H.; Hooper, C. W., and Robscheit, F. S.: Blood Regeneration Following Simple Anemia, I, Mixed Diet Reaction, Am. J. Physiol. **53**: 151 (Sept. 1) 1920; II, Fasting Compared with Sugar Feeding, Analysis of "Sparing Action of Carbohydrates," ibid., p. 167. Hooper, C. W.; Robscheit, F. S., and Whipple, G. H.: III, Influence of Bread and Milk, Crackermeal, Rice and Potato, Casein and Gliadin in Varying Amounts and Combinations, ibid., p. 206. Whipple, G. H.; Robscheit, F. S., and Hooper, C. W.: IV, Influence of Meat, Liver and Various Extractives, Alone or Combined with Standard Diets, p. 236

conservation by the body of certain protein fractions which may be recast into hemoglobin. The presence of carbohydrate may facilitate this reaction, but the actual new formation of hemoglobin may depend in part on the type and amount of amino-acid groups available from normal protein catabolism. Hemoglobin is admittedly a chemically unique protein. The few data already available show that not all proteins fed can facilitate its replacement with equal readiness. The physiology of the amino-acids thus again comes to the forefront of consideration.

THE NORMAL URINARY PIGMENT, UROCHROME

The pigments that occur or arise in the body, with the exception of those of the blood and bile, have received little attention until a comparatively recent period. Enough has been learned of late, however, to demonstrate that it is no longer tenable to look on the various coloring matters encountered in the body as derivatives of the blood pigment, hemoglobin. Some of the circulating or deposited pigmentary products, such as xanthophylls and carotins, are unquestionably derived from ingested food, being ultimately of plant origin. Of late, the production of a carotinemia under certain conditions of diet has become familiar and accordingly has directed attention to the exogenous character of pigments that have in the past doubtless been mistaken as metabolic products.[1]

When one considers the rather characteristic color of the urine and the fact that it is continually being obtruded on our attention, it is indeed surprising that so few definite statements can be made about an ever-present physiologic phenomenon. The urine may at times be the carrier of varied coloring substances: bile pigments, blood pigments and their immediate derivatives, such as hematin and hematoporphyrin, urobilin and less well defined chromogens. Some of these compounds have an immediate diagnostic significance to the physician. But in addition to such pigments there is the omnipresent amber color to which the indefinite name of urochrome has been assigned.

This is the "normal" pigment of the urine. Discussed for more than a century, it has at most given rise to indefinite hypotheses as to its origin, and conflicting theories as to its nature.[2] Evidently it cannot be solely exogenous in origin, for the color of the urine persists unaltered after days or even weeks of fasting. Is it derived from blood or bile pigments? Is it a more direct product of metabolism? One will search physiologic literature in vain for a convincing answer. Experiments lately recorded by Pelkan [3] from the Department of Biochemistry of the University of California may help to establish the origin of urochrome more clearly. The comparisons that he has made between the output of this pigment in the urine and the plane of protein metabolism suggest a causal relation between these two factors. On a diet low in protein, the excretion of the pigment was invariably reduced. Increase in the protein intake tended to augment the output of the normal urinary color, although the expected proportionality was not always attained.

Pelkan suggests that the failure to secure a great increase in urochrome may be due to the inability of the organism to deal with more than a certain limited amount of the substance. The protein gelatin did not promote an increase in the output of pigment. As gelatin is an "incomplete" protein in that it lacks certain amino-acid groups—tyrosin, tryptophan and cystin—and since the missing aromatic radicals are the usual color-producing groups, the failure of gelatin to produce increments of urochrome may be thus explained. Pelkan asserts that he can obtain from proteins a derivative which gives reactions identical with those of urochrome, so that he ventures the belief that urochrome, lactochrome, and the newly discovered "protochrome" are identical and, at least to a large extent, are derived from the food proteins. Despite the uncertainty still attached to these questions, it is interesting to speculate on the possibilities of study that may be opened up if the urine color should actually be demonstrated to be an index of protein metabolism.

1. Carotinemia, editorial, J. A. M. A. **74**: 32 (Jan. 3) 1920; The Pigments Found in Nerve Tissues, ibid. **74**: 531 (Feb. 21) 1920.
2. A review of the subject is given by St. Dombrowski: Ztschr. f. physiol. Chem. **54**: 188, 1907-1908.
3. Pelkan, K. F.: Relation of Urochrome to the Protein of the Diet, J. Biol. Chem. **43**: 237 (Aug.) 1920.

THE POPULAR "ARSENICALS"

The September issue of the *Archives of Dermatology and Syphilology* presents a number of significant features regarding the use of arsphenamin and related compounds that are at present being widely employed in the treatment of syphilis. To one who studies these statements of laboratory and clinical investigators in the special field involved there must come the conviction that many therapeutic perplexities still remain at the end of nearly a decade of trial for the types of compounds which Ehrlich introduced. It is well for the practitioner to realize this, especially when expert workers still make an appeal for conservative interpretations. Stokes [1] forcefully summarized the situation when he stated at the New Orleans session of the American Medical Association:

> Too short a time has elapsed since the discovery of these drugs, and too little is as yet known about the ultimate problems of the pathology, immunology and parasitology of syphilis, to justify the announcing of new infallibilities. The necropsy pathologist of the next fifty years may well, like Warthin, upset our most plausible generalizations of today. Seasoned tradition and conservatism are still the wisest guides in our interpretation of clinical cure. Arsphenamin has made it apparently possible and even probable, but only to the inexperienced has cure been made absolute and inevitable.

1. Stokes, J. G.: The Applications and Limitations of the Arsphenamins in Therapeutics, Arch. Dermat. & Syph. **2**: 303 (Sept.) 1920.

It is recognized that the exact composition of arsphenamin in its available form is not fully determined. As has been emphasized again, the quantitative determination of arsenic alone in arsphenamin is insufficient to estimate its purity;[2] in fact, interstate sale of arsphenamin is controlled by toxicity tests on guinea-pigs made by the Hygienic Laboratory of the United States Public Health Service. Consequently, practical medicine must be on its guard to employ a product which is carefully controlled by such toxicity tests as well as by other criteria. It will not do to charge untoward results offhand solely to idiosyncrasy of the patient, faulty administration or other errors in technic. The drug itself still has inherent dangers. It should be borne in mind also that neo-arsphenamin behaves differently in the animal organism from arsphenamin, and should not be regarded simply as arsphenamin in a convenient form for administration.

It is gratifying to learn from a government expert[3] that after the long struggle to produce satisfactory products, arsphenamin preparations made in the United States are generally less toxic than those of foreign manufacture. Neo-arsphenamin preparations made in the United States compare favorably, and in certain instances are decidedly less toxic than most of the foreign products. Timely presentations of the faults and dangers as well as the undisputed advantages of current therapy in the management of syphilis should be welcomed.

Current Comment

AMERICAN MEDICAL DIRECTORY

In the advertising pages this week is an announcement concerning the American Medical Directory. We emphasize the announcement here because of its importance. The securing and compiling of the information have been attended with extreme difficulties; not only has the number of removals and changes on the part of physicians been unusually large within the last two years, but also the labor situation has not been all that could be desired. All of this makes not only for delay, but also for increased expense in production. One of the big expenses yet to be met is that of paper —and here is the real reason for the announcement and for this editorial comment. In the past we have been liberal in printing a large number of books that might be called for later on; it is proposed this year to print only a sufficient number to supply those who order in advance and, on a carefully conservative estimate, the probable demand until the next biennial issue. Therefore all who desire the 1920 Directory should subscribe before November 1. Thus they can be sure not only of securing a copy but also of the pre-publication discount.

2. Raiziss, G. W., and Proskouriakoff, A.: The Chemistry of Arsphenamin and Its Relation to Toxicity, Arch. Dermat. & Syph. **2**: 280 (Sept.) 1920.

3. Roth, G. B.: Some Salient Facts Regarding the Toxicity of Arsphenamin and Neo-Arsphenamin, Arch. Dermat. & Syph. **2**: 292 (Sept.) 1920.

PREVENTION OF AMPUTATION NEUROMAS

One of the undesirable phenomena frequently encountered after division of peripheral nerves is the formation of bulbous enlargements on the distal ends of the proximal segments. These neuromas, or nerve tumors, as they have been called, arise not only after damaging injuries to the tissues concerned but also after carefully conducted operations by skilful surgeons, and despite the absence of suppuration or similar inciting causes. The fact that they are peculiar to nerves suggests some special abnormality in the behavior of the peripheral nervous tissue. Owing to the spontaneously developing pain in their neighborhood, the neuromas are often the occasion for considerable professional concern. The importance of scar tissue in the production of amputation neuromas has repeatedly been emphasized in the past. An elaborate experimental study of the subject by the neurologist G. Carl Huber and the surgeon Dean Lewis[1] has brought considerable clarity in regard to the problems involved. They point out that a neuroma indicates an attempt, which is thwarted or blocked by scar tissue, on the part of the neuraxes of a divided nerve to seek the distal segment and thus complete nerve repair. These blocked regenerating neuraxes then either form spirals or irregularly distributed and dispersed fibers in the bulb, which react on its connective tissue elements. As a consequence, the latter thus increase in number and maintain their embryonal characteristics longer than is normally the case. Huber and Lewis found that various modes of operative procedure designed in the past to avert neuroma formation are ineffective in this respect; at most they may delay the undesired outcome somewhat. On the other hand, bearing in mind that any method likely to be successful must be directed against the neuraxes rather than against the connective tissue at the end of the nerves, these investigators have attained the desired results by injections of absolute alcohol. When this is thus introduced into the nerve a short distance above the plane of section, it has proved to be more successful in preventing neuroma formation than any of the other methods ordinarily employed. With a suitable technic to prevent escape of the irritating alcohol into the surrounding tissues and the possibility of scar tissue formation on that account, Huber and Lewis have not observed any appearance of a neuroma at the site of the injection. There is, accordingly, a prospect that amputation neuromas can be averted in the clinical surgery of the future.

THE CENTENARY OF "OERSTED'S EXPERIMENT" AND THE SCIENCE OF ELECTROMAGNETISM

Electricity crosses the professional path of the physician in dozens of ways in the course of his medical work. The widespread utilization of electrical energy in the industries of today has exposed man to its dangers. Numerous accidents are caused by the electrical current, resulting in bodily harm and not infrequently in death to the victims. Before the

1. Huber, G. C., and Lewis, Dean: Amputation Neuromas, Arch. Surg. **1**: 85 (July) 1920.

invention of the dynamo there were rarely serious misfortunes of this sort, the cases of death arising only after electricity became applied industrially. Today they are of common occurrence. Electricity is not merely a menace, however: it is used by the physician in beneficent ways. Apparatus in which it plays a dominating part enters into the method of diagnosis and into the domain of therapy. The electrocardiogram is becoming familiar. Electrotherapy has long had a place in practice. Hence the medical fraternity may appropriately pause to pay a tribute to the memory of Hans Christian Oersted, who was responsible for the beginnings of the science of electromagnetism just a century ago. It was during the winter of 1819-1820 that Oersted observed that a wire uniting the ends of a voltaic battery affected a magnet placed in its vicinity, and after prosecuting his inquiries some months longer, in July, 1820, he published his Latin tract, "Experimenta circa effectum Conflictus Electrici in Acum Magneticum." [1] It is interesting to know that this distinguished Danish physicist, who was a professor at the University of Copenhagen, where the centenary of his great discovery has just been fittingly celebrated, was the son of a country apothecary and originally studied medicine. Thus, like many others who have achieved distinction in science, Oersted began his career with ambitions for a knowledge of medical disciplines. His observations, connecting electricity with magnetism in ways not anticipated before the "Oersted experiment," are a lasting monument. It has been said that Oersted stumbled upon his discovery by sheer accident. The answer, given to a similar remark about Newton, is illuminating: "Such accidents only meet persons who deserve them." [2]

UROBILIN OF HEPATIC ORIGIN

To a group of pigments derived by bacterial action from the normal pigments of the bile, the name urobilin has been given. The appearance of the latter in the urine is usually looked on as a sign of irregular or abnormal functioning somewhere in the organism. A common hypothesis allocates the formation of urobilin to the intestine. From there it may be excreted through the bowels, destroyed or reabsorbed and carried to the liver, whence it is returned to the bile and consequently to the bowel.[3] Unless bile pigments are reaching the intestine, urobilinuria does not ordinarily occur, thus suggesting the intestine as the usual seat of its formation. Urobilinuria is insignificant or absent when there is a complete obstruction of the common bile duct. On the other hand, the presence of urobilin or related compounds in the urine is frequently interpreted as a sign of hepatic disorder on the theory that some damage to the liver has interfered with its normal function of removing the reabsorbed transformation pigment from the portal blood, so that it has a chance for excretion by the kidneys. Obviously, the recognition of urobilinuria as an indication of disease postulates some accurate information as to the origin of urobilin. Whipple, Hooper and Robscheit [4] assert that there is no conclusive proof that urobilin is ever absorbed from the intestine. They have made the significant observation of the constant presence of urobilin in the bile of fasting dogs carrying a biliary fistula. They state that at times the bile pigments may be almost completely replaced by the urobilin pigment. According to them it seems probable that the appearance of urobilin in such animals is attributable to its production, in part at least, from the bile pigments in the bile ducts as the result of the activity of bacteria known to be responsible at times for this reaction in the intestine. It is pointed out that during fasting periods the flow of bile is very sluggish, and this inferior drainage of bile gives a favorable opportunity for the bacteria to multiply. It can be stated that bacteria are numerous in all bile fistula tracts and may at times set up an inflammatory reaction in the bile passages which will cause trouble. Flushing out the bile passages by cholagogue action as a rule gives relief to this condition. In view of all this, the occasional if not frequent hepatic origin of urobilin is suggested. This must hereafter be borne in mind in all attempts to interpret the clinical conditions in association with which urobilin is noted in the urine.

1. Science **52**: 288 (Sept. 24) 1920. Cajori, F.: A History of Physics, 1916.
2. Jones, B.: Life and Letters of Faraday, London **2**: 390, 1870.
3. Wilbur, R. L., and Addis, Thomas: Urobilin: Its Clinical Significance, Arch. Int. Med. **13**: 235 (Feb.) 1914. Meyer-Betz: Ergebn. d. inn. Med. **12**: 734, 1913.
4. Whipple, G. H.; Hooper, C. W., and Robscheit, F. S.: Blood Regeneration Following Simple Anemia, II, Fasting Compared with Sugar Feeding, Am. J. Physiol. **53**: 167 (Sept.) 1920.

CIRCUMSPECT LYING

"Succus Cineraria Maritima" is sold by the Walker Pharmacal Company as a "nonsurgical treatment for cataract and other opacities of vision." The medical profession is at present receiving through the mail circulars extolling this nostrum for its alleged virtue in "absorbing" various forms of cataract. False and fraudulent claims made on or in the trade package provoke trouble. In February, 1917, the Bureau of Chemistry of the United States Department of Agriculture issued Notice of Judgment No. 4508: "United States *vs.* the Walker Pharmacal Company." The government had seized a quantity of Succus Cineraria Maritima and analyzed it, reporting that the stuff "was essentially an aqueous solution of glycerin, boric acid and vegetable drug extractives carrying tannin-like bodies." The Walker Company had been indiscreet enough to make claims on the trade package to the effect that this nostrum was a remedy for cataract and other opacities of the eye. As a result, the company was haled into court on the charge that these claims "were false and fraudulent in that the same were applied to the article knowingly and in reckless and wanton disregard of their truth or falsity." Did the company justify the claims—claims that it is still making through other avenues to the medical profession? It did not; it entered a plea of guilty and was fined! Subtract the claims made by nostrum venders in their trade packages from the claims made in their circulars and other advertising, and what you have left is falsehood. And there is usually a great deal left.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

District Medical Society Election.—At the meeting of the Tenth Councilor District Medical Society at Little Rock, September 16, the following officers were elected for the ensuing year: president, Dr. John J. Smith, Paris; secretary, Dr. John H. Harvey, Little Rock, and treasurer, Dr. Arthur F. Hoge, Fort Smith.

CALIFORNIA

Personal.—Dr. Eugene G. Nothington has assumed his duties as superintendent of the San Francisco Hospital, succeeding Dr. Richard George Brodrick.

Chiropractors Seek Special Legislation.—Through an initiative measure to be submitted to the people in November, the chiropractors of California are seeking to secure a separate board of registration. Their registration is already provided for under the medical practice law which limits their practice to the use of chiropractic methods.

Diphtheria Carriers Barred from School.—In defiance of the order of the health officer of Berkeley regarding the attendance of diphtheria carriers in public schools, fourteen pupils of high schools recently attended the classes. It was ruled by the district attorney that the order of the health board be carried out compelling all pupils declared to be carriers or contracts with diphtheria to remain out of school.

FLORIDA

New Hospital.—A hospital corporation capitalized at $160,000 has been formed at Panama City for the purpose of building a modernly equipped charity hospital.

Plague Research Station at Pensacola.—The U. S. Public Health Service has established at Pensacola a research station for the study of bubonic plague. A number of trained experts in addition to those already on duty in Pensacola will be detailed to that city. Additional research equipment will be provided to facilitate their investigations.

State Board of Health Widens Program.—By the new program recently adopted by the state board of health, the message of health will be carried directly to the homes of citizens, particularly in the remote rural districts. Field directors will work simultaneously in several adjoining counties under the direction of an experienced director of rural sanitation, and a campaign to correct any defects discovered after careful survey will follow.

GEORGIA

Personal.—Dr. Dawson Allen has been appointed health officer of Baldwin County, succeeding Dr. J. L. Herring, resigned.——Dr. Dorothy Bocker, Milledgeville, has been appointed by the state board of health as assistant director of child hygiene.

Battey Memorial Favored.—At a meeting of the Floyd County Medical Society, September 18, a resolution was adopted favoring the Dr. Robert Battey Memorial movement recently launched by the Seventh District Medical Society. Drs. Robert H. Wicker, Robert O. Simmons and William J. Shaw, all of Rome, were appointed as a committee to cooperate with the district body.

ILLINOIS

Hookworm and Pellagra in Illinois.—Five cases of pellagra were recently discovered in Williamson County by Dr. Andrew W. Springs. A case of hookworm disease was also reported from the county, and a thorough investigation is being made by Dr. Christian S. Deihl, special investigator of the state department of health.

Physicians Violate Federal Acts.—It is reported that Drs. Cornelius J. Donovan and Walter K. Hoover, Lovington, pleaded guilty to charges of violating the Harrison Narcotic Act by failing to keep records of prescriptions on blanks provided by the government for the purpose. Both were fined $100 and costs.——Dr. James M. Juvinall, Weldon, is reported to have pleaded guilty to a charge of issuing whisky prescriptions without previous examination and was assessed a fine of $500 and costs.

Chicago

Hospital Elects Chief of Staff.—At a meeting, held September 25, Dr. Archibald Hoyne was elected chief of staff of the Cook County Contagious Disease Hospital.

Laryngologic and Otologic Society Holds Meeting.—The Chicago Laryngological and Otological Society held its first meeting October 4, at the Palmer House. Prof. Carl E. Seashore of the University of Iowa presented a paper on "The Psychology of Sound." A dinner, at which Professor Seashore was the guest of the society, preceded the regular meeting.

Chicago Medical Society Meeting.—Preceding the regular meeting of the Chicago Medical Society, October 6, a banquet was given at the University Club with Dr. Fred H. Albee, New York City, as the guest. Dr. Frank Smithies later addressed the society on "Non-Surgical Drainage of the Biliary Tract," and Dr. Albee delivered an illustrated lecture on "Osteoplastic Surgery."

INDIANA

State Medical Association Meeting.—The annual meeting of the Indiana State Medical Association was held in South Bend, September 23-25, under the presidency of Dr. Charles H. McCully, Logansport, and the following officers were elected: president, Dr. David Ross, Indianapolis; vice presidents, Drs. Hugh J. White, Hammond, Ira M. Washburn, Rensselaer, and Otto R. Spigler, Terre Haute; secretary-treasurer, Dr. Charles N. Combs, Terre Haute (reelected); delegate to the American Medical Association for two terms, Dr. Joseph Rilus Eastman, Indianapolis, and alternate, Dr. Malachi R. Combs, Terre Haute. A resolution paying tribute to the memory of Gen. William C. Gorgas, and outlining General Gorgas' influence in the cause of scientific medicine and his work for humanity, was unanimously adopted by the association. The next annual meeting will be held at Indianapolis, Sept. 27-29, 1921.

IOWA

Personal.—Dr. Winfield S. Devine, Marshalltown, has been appointed chief surgeon of the Iowa Soldiers' Home to succeed Dr. George A. Mershon, resigned. The appointment became effective September 1. Dr. Mershon will return to Mobile, Ala., to engage in private practice.

State Board of Health Laboratory.—A branch of the state board of health laboratory has been established at 319 Iowa State Bank Building, Burlington, with M. E. Chehak as bacteriologist in charge. This is in conformity with the established policy of the state board of health to place laboratories in the larger cities throughout the state. Bacteriologic examinations, including examinations for diphtheria, typhoid fever and tuberculosis, will be performed at the laboratory and it is expected that full reports will be obtainable within from eight to twelve hours after receipt of the specimen.

KENTUCKY

Typhoid in Jefferson County.—Numerous scattered cases of typhoid fever have been reported from points throughout Jefferson County. Dr. Irvin Lindenberger, Louisville, county health officer, has issued a warning to residents to take special precautions to guard against infection. Most Kentucky drinking water, unless filtered, requires some method of purification. The engineering bureau of the state board of health suggested as the most effective disinfectant, chlorid of lime. Seventy-eight cases of the disease were reported up to the middle of September.

Legality of Health Board Attacked.—In the course of their defense in the trial of the Standard By-Products Company, which was charged with maintaining a nuisance in Louisville, the attorneys attacked the legality of the Louisville City Health Department, declaring that an ordinance of 1893 provided for its election by the city council. The legality was defended by the declaration that the authority for its appointment came from an older ordinance which gave the naming of the board, and complete authority over it, to the board of safety. This older ordinance had not been amended when the 1893 ordinance was adopted.

LOUISIANA

Malaria Incidence Greatly Reduced.—It is reported by Dr. Oscar Dowling, president of the Louisiana State Board of Health, that malaria has been reduced 50 per cent. at Mound

within the current year, as a result of the work done there by health officers under the direction of the state board of health and the International Health Board. Mosquitoes have been reduced 87 per cent. in houses in that vicinity.

Segregation of Tuberculous.—The Covington Board of Health has passed an ordinance, effective October 1, prohibiting any person, firm or corporation from housing for pay any consumptive within 1,500 feet of the parish court building. The measure is aimed to stimulate the tuberculous to live in open rural sections rather than the congested part of the town, and to protect visitors at the hotels from contact with the tuberculous.

MARYLAND

Infantile Paralysis in Washington County.—Five cases of infantile paralysis have been reported to Dr. Samuel M. Wagaman, Hagerstown, health officer of Washington County, within the last few months. The last case was found near Big Pool.

Typhus Fever in Baltimore.—A case of typhus fever has been discovered in Baltimore, according to a statement by Health Commissioner C. Hampson Jones. The patient, a white girl, 17 years old, employed in a factory, had been ill several days before the diagnosis was made. It has been pronounced a typical case by experts called in consultation. The health department is investigating the source of infection.

Plans for Hospital Campaigns.—A "hospital luncheon" was given recently at the Church Home and Infirmary, Baltimore, in preparation for a drive for funds which will be made during the ten days starting October 15. Due to lack of sufficient facilities, twice as many persons have been turned away as have been admitted during the last year. Dr. Thomas S. Cullen is chairman of the medical advisory committee.——A canvass for subscriptions to the $350,000 campaign of the University Hospital, for a nurses' home and maternity hospital, was formally opened, October 1, at a dinner at the City Club.

Day Nursery Opened.—The first municipal day nursery was formally opened in Baltimore at 1513 Presstman Street, October 1, under the auspices of the Bureau of Child Welfare. The nursery, which is for colored children, will make provision for the care of children of women who are employed during the day. All three floors of the building have been turned over to the new health work and the nurseries are splendidly equipped with white safety cribs, spotless blankets and bed muslins. Two rooms on the lower floor are to be used as playrooms and are fitted with tables and toys. Dr. Alma S. Rothholz will make medical inspections of the children three times a week.

MASSACHUSETTS

Ether Day Anniversary.—The exercises commemorating the seventy-fourth anniversary of Ether Day will be held in the Massachusetts General Hospital, Oct. 18, 1920. The Ether Day address will be delivered by Dr. Alonzo E. Taylor, Philadelphia.

Epidemic of Poliomyelitis.—Up to September 11, 211 cases of poliomyelitis were reported to the Massachusetts State Board of Health. Most of these cases were in eastern Massachusetts, in the general vicinity of Boston. The Boston City Hospital has opened a special ward for victims of infantile paralysis. A commission at Harvard University, consisting of Drs. Milton J. Rosenau, Robert W. Lovett and Francis W. Peabody, has been conducting special investigations, and has been holding clinics and conferences in an endeavor to cooperate in the control of the epidemic.

Medical Registration Act Upheld.—An equity suit of Willard M. Lindsey, Worcester, to compel the state board of registration in medicine to grant him the right to practice medicine without examination was decided, by a decision written by Justice Oliver Wendell Holmes of the United States Supreme Court, in favor of the board. In his decision Judge Holmes said in part: "The charge of malice and improper motives against the board are immaterial. It was plainly their duty under the statutes to refuse a demand without examination when the demand was not made until 1898."

MICHIGAN

Detroit Extends Sewerage System.—Together with a bond issue for water works extension, approval was recently given by the voters of Detroit for an outlay of $25,000,000 to build sewer extensions. This work will open up for home development large tracts of land now sparsely settled owing to want of sewers. The highest infant mortality rates in the city are found in some of these unsewered areas. The construction of sewage treatment plants will also put an end to pollution of boundary waters.

Tuberculosis Preventorium Opens.—The tuberculosis preventorium established by the Grand Rapids Anti-Tuberculosis Society was formally opened, September 19, by public inspection. Children between the ages of 5 and 14 residing in homes where they are exposed to tuberculosis, or those who are undernourished, will be admitted to the home in order that they may be given an opportunity to regain their strength and thus be better able to resist the disease. The home will provide accommodations for twenty-five patients.

MISSISSIPPI

County Society Meeting.—Physicians of Holly Springs were hosts to the North Mississippi Six-County Medical Society which convened there September 15. The society is composed of physicians of Marshall, Benton, Tippan, Union, Lafayette and Yelobusha counties.

County Plans Malaria Survey.—Monroe County Health Department under the direction of Dr. Felix Joel Underwood will make a complete malaria survey of Aberdeen. A house to house canvass will be made and a drop of blood will be taken from each individual for microscopic examination. Those persons found infected with malaria will be referred to the family physician for persistent treatment until cured. The test will be optional and no one will be coerced against his will.

MISSOURI

Medical Society Meeting.—The program of the St. Louis Medical Society will be furnished by visiting physicians in attendance on the meetings of the American Child Hygiene Association, which will hold its annual session in St. Louis, October 11-13, and the Central States Pediatric Society, which will meet October 13-14.

Postgraduate Meeting in St. Louis.—The councilor of the twentieth district, the secretary of the Missouri State Medical Association and officers of the St. Louis Medical Society are cooperating to arrange a large number of clinics to be held at St. Louis, November 9-11. It is their intention to have medical, surgical and special clinics in practically every hospital in the city during these days. Physicians of Missouri and Illinois will be given an opportunity to attend the clinics.

NEBRASKA

Typhoid Epidemic in Omaha.—Twenty-one cases of typhoid fever were recently put on record in the city health department of Omaha. Ten of these were found in the district north of Nicholas to Ohio streets and east of Twenty-Fourth Street. The homes of these patients were served by one milk route supplied by a certain dairy. On investigation, Dr. J. F. Edwards, health commissioner, stopped all sales of milk from that dairy, and the number of new cases immediately declined.

NEW MEXICO

State Medical Society to Meet.—The thirty-eighth annual meeting of the New Mexico Medical Society will be held at Roswell, October 15 and 16, under the presidency of Dr. Charles A. Frank, Albuquerque. The meeting place and headquarters will be at the Elks' Club, where the annual banquet will be given Saturday, October 16.

NEW YORK

New Hospital.—Ground has been broken for the erection of St. Jerome's Hospital, Batavia, to cost $100,000.

Healthmobile in Fulton County.—The "healthmobile," a motor truck completely equipped with electric generator, storage battery, moving picture machine and screen, so that health films can be shown anywhere in the state, the property of the state department of health, is making a tour of Fulton County from September 28 to October 15.

Smallpox Outbreak at Elmira.—An unrecognized atypical case of smallpox at Elmira recently caused thirteen other cases among hospital patients, employees and other contacts. The minor epidemic was traced to a rolling mill worker, who was taken to the Elmira Hospital with the diagnosis of pneumonia, eight days after his arrival from Alabama, and who at the time of his discharge had numerous papules over his face and hands. All of the cases were mild.

Blood Examinations Required in Stillbirths.—Commissioner of Health Hermann M. Biggs has addressed a letter to every

physician of the state asking that a specimen of blood be examined in each instance of stillbirth, miscarriage or abortion. It is hoped in this way to discover those cases needing antisyphilitic treatment and thereby to reduce the number of stillbirths. The average number of stillbirths in New York state during the last five years has been slightly over 10,000. The state laboratory at Albany and the branch laboratory in New York City are prepared to make the tests free of charge.

New York City

Leper Suspect in Hospital.—Chin Hoang, a Chinaman, recently arrested by federal agents on a charge of stealing cocain from a ship in South Brooklyn, after examination by three physicians was certified as a leper suspect. The United States attorney declared that he would not submit prisoners to the possibility of contagion and sent the prisoner to the Willard Parker Hospital for contagious diseases.

Work for Undernourished Children.—The gratifying results of the summer play schools, established primarily for the benefit of undernourished and backward children, have influenced Health Commissioner Royal S. Copeland to recommend an extension of this work. Five such schools were operated during the summer, medical reports from which show that the nutrition grade of every child increased about 15 per cent., the average gain in weight being 2 pounds.

NORTH CAROLINA

Personal.—Dr. Arch Cheatham, Durham, superintendent of health, who has been away from his office for some time on account of failing health, has recovered sufficiently to return to duty.——Dr. R. A. Herring, health officer of Wilmington, has tendered his resignation to accept a professorship in the medical department of the University of Georgia, Augusta.

Venereal Clinic to Reopen.—The free clinic for the treatment of venereal diseases at Greensboro, which was discontinued some time ago when state aid for its maintenance was withdrawn, will be reopened according to plans recently arrived at by the city commissioners. The commissioners voted to appropriate an additional $100 per month to defray expenses of the health department and this appropriation will enable the commissioner of public safety to reopen the clinic.

OHIO

Contract Awarded for Hospital.—Contracts have been awarded for a new $130,000 children's tuberculosis hospital at Columbus.

Cleveland Academy Meeting.—At a special meeting of the Cleveland Academy of Medicine, October 8, Dr. Harvey Cushing, Boston, delivered an address on "The Special Field of Neurological Surgery."

PENNSYLVANIA

State Assumes Health Control.—Legal representatives of the state department of health have taken charge of health administration in the boroughs of Eddystone, Delaware County; Lemoyne, Cumberland County, and Elco, Washington County, until new boards of health can be organized and given charge.

Activities of Antivivisectionists.—It is reported that letters were recently sent to candidates for the legislature of the state of Pennsylvania in an effort to influence them in behalf of the antivivisectionists' program of restricting the field of scientific medicine. The letters were on the letter head of the American Anti-Vivisection Society, 22 South Eighteenth Street, Philadelphia.

Personal.—Dr. Joseph J. Meyer has been appointed chief of the genito-urinary dispensary, Johnstown.——Dr. J. Moore Campbell, associate medical director, has been appointed as acting chief medical director, to succeed Dr. Howard L. Hull, who resigned to enter the U. S. Public Health Service. ——Dr. George K. Strode, West Chester, chief of the division of school hygiene, has resigned to accept an appointment with the Rockefeller Institute.——Dr. Wilmer Dreibelbis, Lehighton, has left for service in China.——Dr. Frank F. D. Reckord, Harrisburg, associate director of the tuberculosis division of the state department of health for the past five years, has resigned to resume private practice.——Dr. David I Miller, Harrisburg, has been appointed medical director for Dauphin County and chief of the state tuberculosis dispensary, located at Harrisburg.——Dr. William L. Estes, South Bethlehem, for nearly forty years a practitioner in that place, having reached the age of 75 years, has retired from the staff of St. Luke's Hospital.

Philadelphia

Jefferson Dedicates Memorial Tablet.—The Alumni Association of Jefferson Medical College dedicated a bronze memorial tablet to the graduates of the college who died in service during the World War, October 7. The exercises were held in the hospital amphitheater. Introductory remarks were made by Dr. S. Solis-Cohen, president of the Alumni Association, and the presentation was made by Dr. John C. DaCosta, Samuel D. Gross professor of surgery.

Personal.—Dr. Paul A. Lewis, director of the laboratory at the Henry Phipps Institute, sailed, September 25, for England where he will attend the meetings of the British Tuberculosis Association at Liverpool, early in October. From England Dr. Stewart will go to France as a representative of the National Tuberculosis Association of the United States to the Interallied Conference on Tuberculosis.——Dr. John F. X. Jones was slightly injured in an automobile accident, September 29.——Dr. Walter R. Krauss, for four years assistant superintendent of the State Hospital for the Criminal Insane at Fairview, has resigned to enter the U. S. Public Health Service.——Dr. Morris Smith has been appointed laryngologist, and Dr. John B. Donnelly, pediatrician, at the State Tuberculosis Clinic.

SOUTH CAROLINA

New Hospital for Negroes.—In order to promote the welfare of the negro race of Laurens County, Mrs. C. M. Gibbon, a woman of financial means, has set aside a trust fund of $11,000 for the purpose of establishing and maintaining a hospital for negroes. The gift is made on condition that the negroes of the county raise a sum of $15,000 within three years to be devoted to the same purpose. The hospital, if established on the terms set forth, will be known as the Corrinna Gibbon Hospital.

TEXAS

Tuberculosis Worker Publicly Entertained.—A public luncheon was given for Dr. Donald B. Armstrong, assistant secretary of the National Tuberculosis Association, on the occasion of his recent visit to Houston, as the guest of the Houston Anti-Tuberculosis League. Dr. Armstrong later addressed the Harris County Medical Association on the scientific methods of combating tuberculosis employed at the Framingham health demonstration in Massachusetts.

Health Notes.—Dr. Claude E. Watson, assistant state health officer of Dallas, has tendered his resignation in order to enter private practice in Dallas.——Three new health workers have been added to the field staff of the Texas Public Health Association to aid in the campaign for improving health conditions in Texas.——Employees of the state department of health presented the department with a portrait of Dr. Charles W. Goddard, formerly state health officer, who resigned to accept directorship of the medical staff of the University of Texas.

UTAH

Health Notes.—Dr. Albert E. Thompson has been appointed health officer of St. Clair to fill the unexpired term of Dr. Frank E. Carney, resigned.——For the purpose of explaining the meaning of "clean school contests" and the crusader movements, James H. Wallis, executive secretary of the Utah Public Health Association, has arranged a series of visits to teachers' institutes in southern Utah.

State Medical Association Meeting.—At the last annual meeting of the Utah State Medical Association, held in Salt Lake City, the following officers were elected for the ensuing year: president, Dr. Robert Hampton, Salt Lake City; vice presidents, Drs. Eugene H. Smith, Ogden, Claude E. McDermott, Castle Gate, and Claude J. Shields, Salt Lake City; secretary, Dr. William L. Rich, Salt Lake City, and treasurer, Dr. Frederick L. Peterson, Salt Lake City. It was decided to hold the 1921 meeting at the state university, Salt Lake City.

VIRGINIA

State Society Meeting.—The Medical Society of Virginia will hold its annual meeting, October 26-29, at Petersburg. It is confidently expected that the attendance will outnumber the record of previous years.

New Health Officer for Norfolk County.—Dr. Edgar Clay Harper, formerly engaged in public health work in Henry County, was recently elected director of health of Norfolk County succeeding Dr. Hasbrouck DeLamater, resigned.

CANADA

Western Ontario Academy of Medicine.—At the meeting of the Divisional Ontario Medical Association and the Western Ontario Academy of Medicine, held in London, Ont., September 30, Prof. Benjamin P. Watson, Toronto, was one of the principal essayists. Dr. James H. Mullin, Hamilton, president of the Ontario Medical Association, and Dr. Frank A. Kelly, Detroit, were among the honored guests at the meeting.

Department of Soldiers' Civil Reestablishment.—Dr. Walter C. Arnold has been appointed director of medical services of the Department of Soldiers' Civil Reestablishment, succeeding Dr. Evans G. Davis, recently appointed a member of the Board of Pension Commissioners for Canada.——There are at present 5,923 exsoldiers on the lists as beneficiaries of the Canadian Department of Soldiers' Civil Reestablishment. In addition during each week an average of 9,000 attend the clinics of the department for medical advice, massage and occasional treatment.

Health Department Investigates "Cancer Cure."—Dr. John Amyot, C.M.G., deputy minister of health, Ottawa, recently spent four days in Toronto investigating the reputed cancer cure of Dr. Thomas James Glover. Dr. Glover has been ordered by the Federal Department of Health to make a complete presentation of his serum and cases before the Toronto Academy of Medicine within three weeks, and he will be afforded whatever assistance he needs in the presentation of his case. The department of health had been in receipt of many communications on the subject, but, as Dr. Glover had never disclosed his serum nor published any scientific communications nor presented his claims before any recognized body, the department was not qualified to reply intelligently to the communications.

GENERAL

Dietetic Association to Meet.—The annual meeting of the American Dietetic Association will be held at New York, October 25 to 27. Headquarters will be at the Hotel McAlpin.

Ohio Valley Association Meeting.—The twenty-third annual meeting of the Ohio Valley Medical Association will be held in Evansville, November 9 and 10, under the presidency of Dr. Virgil Moon, Indianapolis.

Southern Tuberculosis Conference.—The Southern Tuberculosis Conference will be held in Jacksonville, October 11-13, and state health officers from Mississippi, Georgia, Kentucky and Florida have been invited to attend.

Exchange Students from Belgium.—Twenty-two Belgian graduate students recently arrived in the United States to enter various American universities under a fellowship exchange plan instituted by the educational foundation of the Commission for Relief in Belgium. A number of these Belgian students are graduates in medicine and will continue their medical studies in this country.

LATIN AMERICA

Epidemic Encephalitis in Uruguay.—The National Board of Public Health of Uruguay has decided to make lethargic encephalitis a reportable disease and to apply to it the same preventive measures applied to influenza. During the month of June, 1920, twelve cases of the disease were reported at Montevideo.

Personal.—Dr. Carl Heuser of Buenos Aires has been visiting medical and research centers of the United States, especially in New York City, Chicago, Rochester, Detroit and Pittsburgh. Dr. Heuser is a well known radiologist and is the author of a treatise on radiology highly praised by Argentine medical journals. The chief purpose of Dr. Heuser's trip was to attend the meeting of the American Society of Radiology.——Dr. Pedro Fariñas of Havana attended the meeting of the American Society of Radiology as representative of the Department of Sanitation of Cuba. ——Dr. Rogerio Holguín of Colombia arrived in New York City, September 24.——Dr. L. F. Calderón has returned to Bogota after eight years in the Old World.——Dr. J. Zuloaga has returned to Manizales after a trip to Europe and the United States.——Dr. A. de Vasconcellos, Dr. A. Rocha and Dr. Marques Lisboa are the representatives of Brazil at the International Congress on Foot-and-Mouth Disease which convened at Buenos Aires in September.——Dr. G. de Paula Souza, professor of hygiene and forensic medicine at the S. Paulo medical school, has returned to S. Paulo from a two years' study in the United States in connection with the Rockefeller Foundation.——Dr. Wilson Smillie of the Rockefeller Foundation in Brazil was tendered a "lunch" by the medical profession of S. Paulo as he was leaving to spend his vacation in the United States.——Dr. A. de Castro of S. Paulo has gone to Montevideo to present his method of treating foot-and-mouth disease in competition for the prize offered by the Uruguay Society for an effectual cure of this disease.

FOREIGN

Experimental Research on Heredity.—The Prussian Academy of Sciences has awarded 1,000 marks to Dr. Agnes Bluhm to aid her experimental research on problems of heredity.

Orthopedic Meeting.—The second Congrès français d'orthopédie meets at Paris this week to discuss Abbott's treatment of scoliosis, Volkmann's ischemic retraction, and tendon anastomosis for paralysis.

Nomenclature Commission Meeting.—The French Government has convoked the International Commission for the Revision of the Nomenclature of Diseases and Causes of Death to meet in Paris, Oct. 11, 1920. Dr. Jacques Bertillon is permanent secretary of the commission.

Italian Radiology Congress.—The third Italian Congress on Medical Radiology is to convene at Rome, Oct. 28, 1920, with Prof. F. Ghilarducci in the chair. The three principal subjects to be discussed are radioactivity in biology and the clinic; radiologic study of the heart and large vessels, and the present status of radiotherapy of cancer.

Poland Gets Typhus Hospital.—At the request of the League of Red Cross Societies a large typhus research hospital will be operated in connection with the new American Red Cross hospital recently established at Wilno. For the last two years hospitals in northern and eastern Poland have been flooded with typhus patients and in localities where hospitalization is inadequate, as in Galicia, whole villages have been wiped out.

Morphin Addicts Among Physicians.—The *Vie médicale* comments on the recent trial at Paris of eight physicians for having obtained unusually large amounts of morphin, from 2,000 to 7,800 ampules in the course of three months. They admitted the transactions but claimed that they were not "guilty" but "diseased," saying that the morphin was indispensable for them to relieve their own sufferings. The judge acquitted them.

German Medical Organization for Sexual Ethics.—The German Aerztebund für Sexualethik already numbers 1,000 members and is rapidly growing. It appeals to all German physicians to join and aid in the accomplishment of its purpose which is to eradicate prostitution and to make it possible for every young German man to marry when he reaches 25. The organization publishes a monthly, *Der Arzt als Erzieher*. The headquarters of the organization are at Anhalterstr. 16, Halle a. S.

Cancer in Switzerland.—The *Deutsche medizinische Wochenschrift* in commenting on a recent compilation of cases of mammary cancer in Switzerland, states that cancer is so prevalent in Switzerland that every twelfth person over 35 years old faces the prospect of dying of cancer. In a recent five year period, gastric cancer formed 37.9 per cent. of the total; cancer of the female genitals 16.1 per cent., and mammary cancer, 10.6 per cent. The average survival of the operative mammary cancer cases was a little less than five months.

Mushroom Poisoning.—Our German exchanges mention that during the first two weeks in August, eighty-eight fatal cases of mushroom poisoning were reported, 165 persons having been affected in the fifty-one places from which reports were received. A central organization to promote the cultivation and consumption of mushrooms has offered a prize for a series of photographs, pictures and negatives of mushrooms that can be used for teaching purposes. The headquarters of this organization, the Pilz- und Kräuterzentrale, are at Heilbronn a. N. The competition closes Nov. 20, 1920.

The Medical Group in the French Legislature.—The medical members of the French parliament hold regular meetings and have recently been able to influence legislation on public sanatoriums. The points on which they especially insisted were that the board of nine members which examines and classes candidates for posts as sanatorium physicians should include a representative of the medical school of the region, and a representative of the national medical association and of the national Union des syndicats médicaux. Also that a representative of the medical faculty should form one of the

superior board of five members. The supervision of the public sanatoriums is not to be left to public health officers but to form part of the duties of the professor of hygiene in the nearest medical school. The medical parliamentary group was also successful in its plea to have the salaries of sanatorium physicians 9,000 and 14,000 francs to start with.

Deaths in Other Countries

Dr. **W. Wundt,** a pioneer in physiologic and experimental psychology, professor emeritus of philosophy at Leipzig after teaching physiology at Heidelberg and Zurich, aged 89.—— Dr. **M. Valladão,** one of the founders of the Sociedade de Medicina e Cirurgia of S. Paulo, Brazil, and founder of the Polyclinica.—Dr. **L. Blau,** an otologist of Berlin, aged 72. ——Dr. **H. Hecht,** an otologist of Munich, aged 52.——Dr. **M. Aparicio,** a leading physician and statesman of Guatemala, who served as intern in the Paris hospitals in the seventies, aged 79.——Dr. **G. Benasach y Espinosa,** a medicolegal expert at Havana, aged 72.——Dr. **J. D. Rueda** of Bogota.—— Dr. **Mello Barreto** of S. Paulo, formerly of the public health service.——Dr. **J. de Araujo Bastian,** professor at the medical school of Porto Alegre, Brazil. The *Brazil-Medico* states that according to a telegraphic dispatch he was a victim of bubonic plague.

Government Services

Medical Officers Detailed for Postgraduate Courses

Announcement has been made by Surgeon-General Ireland that fifteen officers of the Medical Corps have been sent to leading universities of the United States and England to take postgraduate courses. The officers are to specialize in advanced subjects such as hygiene, surgery and others, and are assigned to the universities at the expense of the government on detached service. This is the first time that the Army Medical Corps has selected officers for postgraduate courses, such authority having been granted by the Army Reorganization Bill.

Reserve Officers' Training Schools

Progress is being made by the Surgeon-General in his plans to establish reserve officers' training schools for medical officers at the ten leading universities of the country. Practically all the medical colleges designated by the Medical Corps have given the proposition a favorable reception and are awaiting action by their boards of trustees. Announcement of the names of the universities and the selection of medical officers to conduct the training courses are expected to be made within the next several weeks. Students attending these universities will be eligible to take the military course and become officers in the Medical Reserve Corps after graduation.

Occupational Therapy Proves Successful

Reports from the tuberculosis sanatoriums operated by the U. S. Public Health Service demonstrate the value of occupational therapy in the treatment of discharged and disabled soldiers. As carried out by the reconstruction aides of the Public Health Service, occupational therapy, consisting of mental work and manual handicraft for curative and diversional purposes, has been very successful in the care and treatment of discharged and disabled soldiers by maintaining contentment among the patients. Out of 392 patients admitted to one sanatorium, 263 took occupational therapy and 129 did not. Of the former class, only two patients left the hospital against the advice of physicians in charge, while on the other hand, of the 129 who did not take occupational therapy, eighty-three either deserted or left the hospital against the advice of the physicians in charge. Over 300 aides, mostly women, are employed in occupational therapy and physiotherapy by the Public Health Service.

Health Conditions in the Army

With the exception of malaria, the incidence of epidemic diseases decreased during the week ending September 24. One new case of pneumonia was reported from Aberdeen Proving Ground, one of influenza from the Sixth Corps Area, three of measles from Camp Jackson and one of dysentery from Fort McDowell. The admission rate for malaria was higher, it being reported in small numbers from many camps and stations. Camp Pike and the Eighth Army Corps Area led all other stations in the number of new cases, each reporting seven. The Brownsville district, from which formerly a large number of admissions were reported, had only one case from the command and one by transfer. The death rate for disease, 1.98, is considerably lower than in the preceding week, 3.5. Of the six deaths from disease, three resulted from tuberculosis, two from endocarditis and one from peritonitis. There were two deaths from pneumonia among the American forces in Germany.

Foreign Letters

LONDON

(*From Our Regular Correspondent*)

Sept. 18, 1920.

First Report of the Ministry of Health

The first annual report of the newly created Ministry of Health is largely concerned with the costs of the various services, which are increasing to an enormous extent. The most important part deals with venereal disease. Upward of 98,000 cases were reported for the first time in 1919, but 15,500 of the patients were found not to be suffering from venereal disease. Attendances at the treatment centers numbered 1,003,000, as compared with 488,000 in 1919. Even allowing for the increased tendency to seek treatment and for the additional facilities provided, it is evident that venereal disease is not being prevented. The cost for the year ending March 31, 1919, was a little over $1,000,000, exclusive of grants for propaganda.

Tuberculosis is another disease that is proving costly, and statistics do not suggest that much headway is being made. To March 31, 1920, $2,200,000 has been paid and $4,500,000 promised in aid of institutions for treatment. This amounts to an increase of about 50 per cent. on the previous year. However, the statistics show a fall in the cases of tuberculosis:

INCIDENCE OF TUBERCULOSIS

Number of notification:	1918	1919
Pulmonary	79,025	67,123
Other forms	20,215	17,775
Deaths:		
Pulmonary	46,077	36,662
Other forms	11,996	9,650

On child welfare the expenditure was $2,600,000, about double that of the previous year.

Attention is drawn in the report to the composition of egg and custard powders. About 1.5 per cent. of those on the market were found not to be genuine. One sample described as "Double Cream Custard, Extra Delicious and Creamy," proved to consist of 100 per cent. of tinted starch, without any trace of cream or eggs.

An American's Impression of Guy's Hospital

Dr. Edward J. Wood, a member of the Association of American Physicians, has given his impressions of Guy's Hospital in the *Gazette* of that institution. He says that no greater inspiration in medical Europe is to be found than that of going through the matchless museum and actually handling the pathologic specimens placed there a century ago by the great teachers Addison, Bright, Hodgkin, Astley Cooper, Gull and Wilks. The kidneys of Bright, the suprarenals of Addison, the lymph glands of Hodgkin may well be the start of such an excursion. His feeling is that the place is by no means a mausoleum of ancient achievement, but that there are as many Addisons, Brights, Coopers and Hodgkins as there ever were and that in addition to the brilliant work of today there will soon appear another burst of medical glory. In the general work, nothing impressed him more than the close relation of the wards to the necropsy room and the

general practice of doing necropsies. Few deaths occurred without a necropsy. Indeed, the success in this respect was almost as great as what he saw in Müller's clinic in Munich. The practice of the assistant physicians in performing a portion of the necropsies was admirable, and he hoped that the plan would be instituted some day in America. The clerking privileges and opportunities were not excelled in any hospital with which he was familiar. But he would like to see more blood counting done in the wards. Although Guy's must be regarded as essentially a training place for undergraduates, he found it admirable for graduate medical work. The material in the wards as well as in the outpatient departments was seemingly limitless, and one could follow out any particular line of clinical research desired.

Death After Arsphenamin Injections

Deaths following the use of arsphenamin injections continue to be recorded from time to time. An inquest has been held on a woman who contracted a chancre on her nose. The source of infection appeared to be some dirty rags which she removed from underneath a bath in an empty house. She was given three injections of 0.3, 0.3 and 0.45 gm. according to the recognized standard treatment. Five days after the last she became unconscious, and on the following day she died without regaining consciousness. A necropsy failed to determine the cause of death, and the organs were sent for analysis, with the result that a grain of arsenic was traced. The analyst expressed the view that the woman was unduly sensitive to the drug. Her friends had the satisfaction of hearing that the treatment had been the approved one.

Death Due to Swallowing the Contents of a Golf Ball

An inquest has been held on a girl who died after swallowing some liquid in stripping the covering from a golf ball with her teeth. Analysis disclosed that the core of the ball was a liquid contained in a small rubber pouch. The liquid was strongly alkaline, and its basic principle was sodium silicate. Serious injury to the eye of a golfer through the inner core bursting on examining the construction of a ball has previously occurred in this country. Analysis of the contents by the *Lancet* revealed that the inner rubber pouch contained a fluid of high density which proved to be a strongly alkaline fluid consisting mainly of potash soap.

A Chair of Industrial Medicine

A new departure in this country is the proposal to set up a chair of industrial medicine at St. Mary's Hospital. A number of influential persons, including professional leaders such as Sir Clifford Allbutt, Sir Almroth Wright and Sir Malcolm Morris, have signified their interest in the project. In this matter America is ahead of us. She has six chairs on the subject. It is proposed to train physicians in the care of the human machinery, as engineers are trained to look after machines.

PARIS

(From Our Regular Correspondent)

Sept. 10, 1920.

Congress of Alienists and Neurologists

The twenty-fourth Congress of Alienists and Neurologists of French-Speaking Countries was held recently at Strasbourg under the presidency of Dr. Dupré, clinical professor of mental diseases at the Paris medical faculty. Among other papers on the program, exophthalmic goiter was the subject of a very interesting discussion. The essayist, Dr. Gustave Roussy of Paris, has given special attention to a study of the lesions of the thyroid gland in this disease. He found that the fundamental change in the gland is a parenchymatous hyperplasia, and this alteration is so constant that Roussy concluded the pathogenesis of exophthalmic goiter to be an essential disease of the thyroid gland. Undoubtedly, during the war, cases of exophthalmic goiter developed after traumatism or emotional shock, and this lent support to the theory of a nervous or sympathetic origin of the disease; but Roussy thinks that these cases are extremely rare, or they were incompletely studied, and that they cannot overthrow the thyroid theory, which has firm support in the pathologic findings. So far as remedial measures are concerned, these should be directed to a reduction of the perverted hyperactivity of the gland, either by surgical intervention or by radiotherapy. For controlling the treatment, one should take advantage of the new facts obtained from determinations of the basal metabolism as developed by American investigators. Drs. Barré (Strasbourg) and Sicard and Sollier (Paris) never saw a single case of exophthalmic goiter induced by the emotions of war, while Dr. Briand (Paris) thought that the emotion is more often the effect and not the cause of the goiter, which may exist in latent form, especially in women. Dr. Crocq (Brussels), in spite of all this, believes that emotional causes may provoke the disease, and that the nervous element should be taken into account. Since this affection is much more rare in men than in women, it is not surprising that few cases were seen among soldiers.

An International Institute of Anthropology

Several days ago there was held a preliminary meeting for the founding of an international anthropologic institute in Paris. Many French and foreign scientists, delegates from more than fifteen nations, attended the inaugural session held at the Ecole d'anthropologie. The United States was represented by Prof. Charles Peabody, of the Peabody Museum, Harvard University. The Institute of Anthropology, which will establish a permanent international office, will have as its principal functions the organization of anthropologic investigations in conformity with uniform plans, the encouragement of periodic general meetings, and the establishment of mutual relations among the scientists of various countries.

Books for the Blind

The Valentin Haüy Association for the Welfare of the Blind has deposited in six municipal libraries of Paris a collection of special books printed in braille type, to be placed at the disposal of blind readers residing in the department of the Seine, under the same terms that govern the loans of the ordinary collections in the libraries. The books may be removed to the homes of the readers, and they will be replaced at intervals from funds provided by the Valentin Haüy Association.

Strikes and the Practice of Medicine

In a preceding letter, reference was made to the protests of the physicians and surgeons of Bordeaux hospitals because of the difficulties placed in the path of the practicing physicians as a result of the strikes. This question of strikes, which has profoundly affected all economic walks as well as the medical profession, was the subject of discussion by the administrative council of the Syndicat des médecins of the department of the Seine. Certain physicians demanded that members of the syndicate refuse medical attendance to the strikers and their families. But this measure has not been approved, as the majority felt that the syndicate should not enter into political activities and should not take sides for or against strikes. Others remarked that by putting itself on a strictly professional plane, the syndicate has the right and even the duty to point out the difficulties placed in the way of the practice of medicine by the last strikes, especially that of the transportation workers, difficulties which endangered the public health, and which therefore interested not only the physicians but all the residents of Paris. There is just cause to request the public authorities to enforce the necessary

measures to facilitate the practice of medicine and to make it possible for physicians to respond to the calls of their patients. The subjoined resolution was adopted:

The administrative council of the Syndicat des médecins of the Seine, having ascertained the great difficulty which the strikes of the transportation workers has entailed in the practice of medicine by preventing the physician from responding to the appeal of the sick and wounded, calls the attention of the public authorities and of the professional syndicates concerned to the necessity of assuring the prompt transport of the physician to the patient's bedside under all circumstances.

Award of Prizes by the Academy of Sciences

The Académie des sciences has awarded the L. Lacaze prize (10,000 francs) to Dr. Maurice Arthus, professor of physiology at the Lausanne medical faculty, in recognition of his important work. The Montyon prize (2,500 francs) was awarded jointly to Drs. Pierre Delbet, professor of clinical surgery at the Paris medical faculty, and Noel Fiessinger, for their work on the biology of war wounds. Drs. Auguste Marie and Levaditi received the Bréant prize (3,000 francs) for their studies on general paralysis; and the Barbier prize (2,000 francs) went to M. A. Berthelot of the Pasteur Institute for his researches on the intestinal flora.

The annuity of 5,000 francs from the Charles Bouchard fund for scientific research was assigned to Dr. Charles Vaillant in reward for his work in radiography, which resulted in a series of painful mutilations.

An Appreciation of the American Medical Association

A long letter on the activities of the American Medical Association by Dr. Faxton E. Gardner, New York, has just been published in the *Gazette des hôpitaux*. The author states that the program of activities of the Association embraces everything that relates to medicine. The three most salient fields of activity of the American Medical Association are its scientific work, the campaign for the improvement of medical education, and the propaganda for veracity and honesty in the sale of pharmaceutic products. The author lays considerable stress on the rôle of the Association in raising the level of medical education in the United States. He says that the European who comes to the United States with the idea (common in some quarters) of the overwhelming superiority of the educational system of his own country will be rapidly undeceived. Medical education in the United States is today equal to that in any other country. Great progress has been made within the last fifteen years, and the most potent factor in this has been the American Medical Association. When the United States shall have a federal department of health and, as a natural consequence, many questions shall have been consolidated and have become national, the field of activity of the Association, already vast, will grow to an almost inordinate extent. He demonstrates what influence can be exerted for the cause of medicine by a large and strong medical organization.

BERLIN

(From Our Regular Correspondent)

Sept. 10, 1920.

Health Certificates and Marriage

The protracted attempts to induce betrothed persons to seek information regarding their physical condition before entering into matrimony have received renewed impetus in Germany from the legislation enacted within the last few years in America, Sweden and Norway. The protagonists of such legislation may be divided into two camps. The one group is in favor of legislative provision for compulsory examination of both candidates for matrimony, and apprisal of the respective parties of the reciprocal findings. The Munich Medical Society favored the appointment of special examiners for this purpose, who should be known as "Eheberater." Furthermore, this society approved of the interdiction of marriage in cases of the discovery of transmissible or heritable diseases. These extensive stipulations are opposed by members of the other camp, who adopt the view that the populace is not sufficiently well informed to permit such legal regulations and restrictions. It is justly feared that the majority of the populace will oppose such regulations and that the legal provisions would be only paper regulations. This conception is apparently based on the experiences gained in America, Sweden and Norway where it is currently reported so many evasions of the regulations occur that these are ineffectual in practice. For this reason certain medical, hygiénic and sociologic societies of Berlin agreed that legislative enactments on the question should be waived for the moment, and that, instead, each state should pass the necessary ordinance making it obligatory on the marriage license bureaus to issue to prospective bridal couples and their parents a leaflet suggesting a physical examination.

It was objected against this plan that the desired purpose of discouraging marriage in the presence of a serious illness would not be attained at this late stage. There is undoubtedly much justification for this objection, but naturally no earlier occasion offers to suggest such a precautionary measure. On the other hand, it may be assumed that this procedure will deter at least some of the betrothed persons in the event that a serious illness is disclosed. Even though results of the examination do not prevent the marriage in an unfavorable case, the warning will have the effect of warding off dangerous sequelae. The mere suggestion of the expediency of a physical examination will advance the cause of personal and social hygiene. Several of the German states, Lübeck for instance, had introduced the system. The procedure has now been made a legalized matter through all Germany, through the action of the National Assembly which, in an amendment to the registration laws, ordained that the registrar shall issue to the betrothed and to all those whose consent is demanded by the law before the bans are announced, a circular calling attention to the importance of medical advice before entering into marriage. The national board of health shall determine the substance of the circulars.

Suicide of Physicians

Professor Weintraud, chief of the division of internal medicine at the municipal hospital of Wiesbaden and former pupil of Naunyn and Gerhard, committed suicide several days ago. During and after the war, a number of prominent men have died under similar circumstances, including several important physicians. Among these were Prof. Adolf Schmidt, noted gastro-enterologist and director of the medical clinic at Bonn, Prof. Max Rothmann, Berlin, neurologist and pupil of Hermann Munk, noted for his experimental work on the decerebrate dog and ape, and Professor Lewandowsky, Berlin neurologist. All three committed suicide during the war. Professor Schmidt had a psychopathic taint, but before his death he repeatedly maintained that he could not survive Germany's misfortune. Professor Rothmann was deeply affected by the death of his eldest son on the battlefield.

Marriages

Samuel Rush Miller, Knoxville, Tenn., to Miss Victoria Lucretia Jordan of Wabash, Ind., September 29.

Louis John Matlock, Caruth, Mo., to Miss Callie Schram of Benton, Ill., August 27.

James A. Becton to Miss Jean Hardy, both of Nashville, Tenn., September 25.

Norman M. Keith to Miss Edna Alexander, both of Toronto, August 31.

Gladys Lydia Carr, Fresno, Calif., to Mr. W. B. Patterson, September 14.

Deaths

Lewis Grenshaw Bosher ⊕ Richmond, Va.; Medical College of Virginia, Richmond, 1883; aged 60; emeritus professor of practice of surgery and genito-urinary surgery in his alma mater; visiting surgeon to and one of the founders of Stuart Circle and Memorial hospitals, Richmond; a member of the American Association of Obstetricians and Gynecologists, American Surgical, Southern Surgical and Gynecological, and American Urological associations and American College of Surgeons; died suddenly, September 12, from organic heart disease.

Isaac Kay, Springfield, Ohio; Starling Medical College, Columbus, Ohio, 1849; aged 91; a member and in 1871 vice president of the Ohio State Medical Association; one of the organizers, for twenty years secretary, and for two terms president of the Clark County Medical Society; a practitioner of Springfield for more than sixty years; for nine years a member of the Springfield Board of Education, and at one time coroner of Clark County, died, September 20.

John William McKemy, Dayton, Ohio; Jefferson Medical College, Philadelphia, 1903; aged 44; a member of the Ohio State Medical Association; captain, M. C., U. S. Army, and discharged April 1, 1919; at one time coroner of Montgomery County, and police surgeon of Dayton; was instantly killed, September 13, when the automobile in which he was riding plunged over an embankment.

John Aloysius Dillon, Springfield and Holyoke, Mass.; University of Pennsylvania, Philadelphia, 1906; aged 42; a specialist in diseases of the eye, ear, nose and throat; a member of the American Academy of Ophthalmology and Oto-Laryngology, and New England Otological and Laryngological Association; died suddenly, September 12, from heart disease.

Albert Johann Hahn, Pattenburg, N. J.; Eclectic Medical College of the City of New York, 1880; College of Physicians and Surgeons, Boston, 1882; Dartmouth Medical School, Hanover, N. H., 1885; aged 67; a member of the Massachusetts Medical Society; died at his summer home, in Sharon, Vt., August 1, from cerebral hemorrhage.

John Charles Reeve, Dayton, Ohio; Cleveland Medical College, 1853; aged 94; a member and president emeritus of the Ohio State Medical Association; at one time vice president of the American Gynecological Society; died, September 15. He bequeathed his brain to Professor Wilder, Cornell University, for use in anatomic research.

George Morewood Lefferts, Katonah, N. Y.; College of Physicians and Surgeons in the City of New York, 1870; aged 74; clinical professor of laryngoscopy and diseases of the throat, 1874-1896; of laryngology and rhinology, 1896-1904, and since 1904 emeritus professor of laryngology in his alma mater; died, September 21.

Adolph Gehrmann ⊕ Chicago; Chicago Medical College, 1890; aged 52; emeritus professor of bacteriology and hygiene in the College of Physicians and Surgeons, Chicago; superintendent of food inspection and bacteriologist in the Chicago health department from 1894 to 1903; died, October 3, from tuberculosis of the larynx.

J. Albert Hedrick, Dalhart, Texas; Fort Worth (Texas) School of Medicine, 1901; aged 56; acting assistant surgeon, U. S. P. H. S., and on duty at Vera Cruz, Mexico; one of the American physicians engaged in the campaign against yellow fever in Mexico; died at Vera Cruz, September 26, from yellow fever.

Charles T. Burchard, Falls City, Neb.; Rush Medical College, 1879; aged 64; a member of the Nebraska State Medical Association; was found dead, September 14, from the effects of poison taken with suicidal intent, it is believed, while despondent on account of ill health.

Arthur Gilbert Kessler, Crookston, Minn.; Illinois Medical College, Chicago, 1903; aged 44; a member of the Illinois State Medical Society; physician in charge of the Sunnyrest Sanatorium, Crookston; died suddenly in that institution, September 10, from heart disease.

P. K. Black, Mount Carmel, S. C.; Atlanta (Ga.) Medical College, 1885; aged 64; died in University Hospital, Augusta, September 11, from injuries received August 23, when the automobile in which he was riding was struck by a train near Mount Carmel.

Henry Carver Paist, Philadelphia; Pennsylvania Medical College, Philadelphia, 1854; aged 87; a member of the Medical Society of the State of Pennsylvania; died in Germantown, September 21.

John J. Miller, St. Louis; St. Louis Medical College, 1864; aged 78; a member of Missouri State Medical Association; assistant surgeon in the Confederate Army during the Civil War; died, September 17.

John F. Baerecke, De Land, Fla.; University of Georgia, Augusta, 1899; aged 71; a member of the Florida Medical Association; died, September 12, from carcinoma of the bladder.

Harry Huesten Long ⊕ La Porte, Ind.; Rush Medical College, 1893; aged 58; for two terms coroner of La Porte County; died suddenly, September 13, from heart disease.

Joseph Marshall Sterling, Philadelphia; Medico-Chirurgical College of Philadelphia, 1912; aged 30; died in Mt. Sinai Hospital, September 24, from septic endocarditis.

John Marcus Tracy, Mound City, Mo.; Eclectic Medical Institute, Cincinnati, 1873; aged 82; a member of the Missouri State Medical Association; died, September 12.

Walter Raleigh Hicks ⊕ Menominee, Mich.; Bellevue Hospital Medical College, 1888; aged 55; died on a yacht, recently, while returning from a fishing trip.

Martin L. Jarrett, Jarrettsville, Md.; University of Maryland, Baltimore, 1864; aged 78; a veteran of the Civil War; died in Baltimore, September 23.

Anna Mary Marshall, Philadelphia; Boston University School of Medicine, 1879; aged 80; died in Lansdowne, Pa., September 20, from pneumonia.

William S. Dodd, Washington, Pa.; Cincinnati College of Medicine and Surgery, 1878; aged 74; died, September 19, from angina pectoris.

Henri Alphonse Hamel, Chicoutimi, Que.; Laval University, Quebec, 1896; aged 50; died, June 6, from atrophic cirrhosis of the liver.

Frank H. Turner, Frederic, Wis.; Keokuk (Iowa) Medical College, 1893; aged 53; died, September 21, from cerebral hemorrhage.

William E. Foster, Owenton, Ky.; Medical College of Ohio, Cincinnati, 1878; aged 64; died, September 18, from cerebral hemorrhage.

Elmer D. Burch, Long Lake, N. Y.; University of Vermont, Burlington, 1890; aged 53; died, September 22, from cerebral hemorrhage.

Raymond W. Stough, Beach, N. D.; University of Illinois, Chicago, 1905; aged 41; died at the Bismarck Hospital, September 13.

Bernard N. Graeser, Des Moines, Iowa; Hahnemann Medical College and Hospital, Chicago, 1878; aged 83; died, September 18.

Hannibal McDuffy Little, Boone, N. C.; College of Physicians and Surgeons, Baltimore, 1880; aged 63; died, September 10.

Milo Avery, Primghar, Iowa; Rush Medical College, 1884; aged 67; a member of the Iowa State Medical Society; died recently.

William L. Penney, Pittsburgh (license, Pennsylvania, 1881); aged 76; a veteran of the Civil War; died, September 16.

Finley Young Hanna, Wauchula, Fla.; Cincinnati College of Medicine and Surgery, 1880; aged 68; died, September 4.

Reuben H. Andrews, Philadelphia; University of Pennsylvania, Philadelphia, 1874; aged 70; died, September 17.

Elisha Averett Jenkins, Brooklyn (license, Virginia, 1897); aged 46; died at Saranac Lake, N. Y., September 18.

Orman G. Gowin, McCune, Kan.; Eclectic Medical Institute, Cincinnati, 1882; aged 60; died, September 2.

Obediah H. Garrett, Cadiz, Ind.; Indiana Medical College, Indianapolis, 1883; aged 61; died, September 18.

John L. Slayden, Dexter, Mo.; University of Louisville, Ky., 1879; aged 65; died recently.

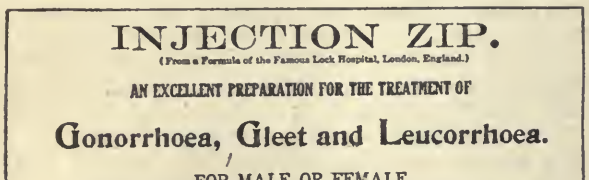
⊕ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

MORE MISBRANDED VENEREAL NOSTRUMS

Injection Zip.—The Baker-Levy Chemical Co., Indianapolis, Ind., shipped in April, 1919, a quantity of "Injection Zip" from Indiana to Ohio. The stuff was labeled as an effective



treatment for gonorrhea, gleet and leucorrhea. The federal chemists reported that analysis showed it to consist essentially of acetates and sulphates of zinc and lead, opium, berberin, plant extractives, alcohol and water. The therapeutic claims made for the product were declared false and fraudulent. In June, 1919, the court entered judgment of condemnation and forfeiture and ordered the stuff destroyed.—[*Notice of Judgment No. 7359; issued August 31, 1920.*]

Three Days Cure.—In May, 1919, the "3 Days" Cure Co., Washington, D. C., shipped a quantity of this product, which was alleged to be a "prompt and reliable remedy for Gonorrhea and Gleet." The federal chemists reported that the stuff consisted essentially of zinc sulphate, boric acid and water. The therapeutic claims were declared false and fraudulent. In June, 1919, the court entered judgment of condemnation and forfeiture and ordered the stuff destroyed.—[*Notice of Judgment No. 7356; issued August 31, 1920.*]

Redsules.—A quantity of this article consigned by H. Planten & Son, New York, was shipped in August, 1917. The Bureau of Chemistry reported that analysis showed the article to consist essentially of oil of santal, copaiba and methyl



salicylate. The product was represented as "for the treatment of Private Diseases of Men" and for "Affections of the Genito-Urinary Tract, Gonorrhea, Gleet, Inflammation of the Bladder. . . ." The curative effects claimed for the article were declared false and fraudulent. In June, 1919, no claimant having appeared, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 7430; issued Sept. 13, 1920.*]

Blakes Capsules.—A quantity of this product alleged to have been shipped in February, 1919, by Henry K. Wampole & Co., Philadelphia, was declared misbranded. The federal chemists reported that the capsules contained essentially a tablet of salol suspended in a mixture of volatile oils, oleoresins and plant extractives, including copaiba and cubebs. The capsules were labeled "For Gonorrhea, Gleet, Chronic Seminal and Mucous Discharges." It was declared misbranded because the therapeutic claims were false and fraudulent. In July, 1919, no claimant having appeared judgment of condemnation and forfeiture was entered and the court ordered the product destroyed.—[*Notice of Judgment No. 7427; issued Sept. 13, 1920.*]

Compound Extract of Cubebs with Copaiba.—The Tarrant Co. of New York City shipped in September, 1918, a quantity of this product which was labeled in part:

"A valued medicine for Gonorrhea, Gleet, Whites, etc."
"Specially Prepared for the Treatment of Gonorrhea, Gleet, and simple Whites or Leucorrhea, . . . disorders of the kidneys, bladder, prostate, vagina and urethra in which these drugs have proved their usefulness."

Analysis of a sample made in the Bureau of Chemistry showed it to consist essentially of cubebs, copaiba, and magnesium oxid. The curative claims were declared false and fraudulent. No claimant appearing, the court, in January, 1920, entered judgment of condemnation and forfeiture and ordered the product destroyed.—[*Notice of Judgment No. 7289; issued Aug. 16, 1920.*]

Santal Midy Capsules.—E. Fougera & Co., New York, shipped in May, 1919, a quantity of this product into Maryland. The federal chemists reported that the globules contained essentially oil of santal of an average content of 0.2 grams. The product was declared adulterated because of a shortage from the declared weight of 19 per cent. It was



declared misbranded because it was falsely branded as to the country in which it was manufactured, it being labeled in prominent type in French "House of Grimault & Co., . . . Paris," which misbranding was not corrected by the statement in small type "Bottled in the New York Laboratories by Dr. Ph. Chapelle." Furthermore, the curative and therapeutic claims made for the treatment of gonorrhea, gleet, etc., were declared false and fraudulent. In September, 1919, the court entered judgment of condemnation and forfeiture and ordered the product destroyed.—[*Notice of Judgment No. 7400; issued August 31, 1920.*]

THE BETHLEHEM LABORATORIES EXPLAIN

In this department of THE JOURNAL for August 14 there was discussed the proposition that had been made to a number of physicians by the Bethlehem Laboratories, Inc. Briefly, it was to the effect that this company had "decided to allow one thousand of the leading physicians a three-day option to purchase four shares of the 8 per cent. Cumulative Preferred stock, $400.00." The circular sent to physicians also stated that the Bethlehem Laboratories "controls the manufacture of Hyclorite." This preparation, as our readers know, is made by the General Laboratories, Madison, Wis., and has been accepted by the Council on Pharmacy and Chemistry for inclusion in N. N. R.

Since the article was published THE JOURNAL has received a communication from the president of the General Laboratories, who is also vice president of the Bethlehem Laboratories, explaining how the Bethlehem Laboratories happened to be put in this unfavorable light. It seems that the Bethlehem Laboratories is a sales and distribution organization

for Hyclorite, while the General Laboratories manufactures the product. While the entire policy of publicity in the exploitation of Hyclorite was supposed to be subject to the approval of the General Laboratories, the instance to which THE JOURNAL took exception was, apparently, an unauthorized act on the part of an authorized agent. In the communication previously referred to, this incident is thus explained:

"Now the fact is, that a certain amount of preferred stock, together with a plain business statement, approved by both of our corporations, and by corporation attorneys of very high standing, were placed in the hands of a broker to be offered by him, presumably to his regular business clientele, and the broker evidently prepared and sent other matter, including letters, to physicians, without any knowledge or approval whatsoever on our part, and contrary to instructions that all proposed letters and other publications used by them should first bear our written approval before being used. The broker presumably is not familiar with the ethics of the medical association, nor was it necessary for him to be, if he had simply adhered to the agreement under which the business was entrusted to his hands.

"The officers of General Laboratories and Bethlehem Laboratories both regret the blunder and agree fully with you as to the impropriety of permitting the solicitation of members of the medical profession. The broker was immediately stopped as soon as it was discovered what had happened, and I am authorized to say to you on behalf of both companies that so far as lies within our power, nothing shall be permitted or done with respect to Hyclorite, which does not conform in every particular to clean, approved ethics, both professional and in a business way."

Correspondence

ACETONE AS A DECOLORIZER IN GRAM'S STAINING METHOD

To the Editor:—With the increasing cost of alcohol and the difficulty of obtaining the pure substance, the following uses of acetone for alcohol may prove of interest. Available literature does not mention them, but they are so simple that acetone must have been used in this manner before.

The current local price of medicated 95 per cent. alcohol is $1.60 per pint, and absolute alcohol cannot be purchased locally. In place of alcohol, acetone 50 cents per pint, kept dehydrated with calcium chlorid, has been used for tissue work not only for dehydrating preparatory to embedding in paraffin in the usual manner, but also for passing from xylene to water and hematoxylin and thence from water to xylene again in staining sections on slides. The results are very satisfactory, and with a small amount of eosin in the last acetone, counterstaining and dehydration are accomplished in one step.

Gram's method of staining shows variations in results, depending on the amount of time used in decolorizing by the alcohol as well as by the length of time that the stains are applied. That the method is open to variations in results and can be performed by various technics is shown by the two methods recommended by the Committee on the Descriptive Chart of the Society of American Bacteriologists (*Journal of Bacteriology* **4**:112, 1919) and the unwillingness of the committee to adopt a standard without more investigation. The committee recommends absolute alcohol in each case as a decolorizer.

For some unknown reason, acetone was tried as a decolorizer for Gram's method, the first slide being a prostatic smear containing numerous pus cells and secondary invading pus cocci. The rapidity and completeness with which the gentian violet-iodin compound was washed out of the pus cells was remarkable; but the pus cocci retained the stain perfectly. This method of decolorization has been used ever since with much satisfaction. In order to check results, smears for Gram's staining are made on slides containing colon bacilli on one end and staphylococci on the other. The results checked in this way have been perfect. The acetone gives quicker and more complete decolorization of gram-negative bodies than does alcohol, as it is sufficient to flood the slide a few times with acetone, about five to ten seconds, to bring about decolorization. The quickness of decolorization, aside from the cheapness of acetone over alcohol, has much to recommend the method. The gentian violet used is a formaldehyd mixture, which appears to keep indefinitely (gentian violet, 4.8; alcohol, 100; formaldehyd solution, 15; water to 400). The iodin solution is the usual 1, 2, and 300 combination of iodin, potassium iodid and water. The counterstain used is safranin (safranin, 1; alcohol, 25; water to 200). The stains and the iodin are applied about one minute each.

Acetone is also useful in drying pipets and syringes, instead of the usual two washings with alcohol and ether.

M. W. LYON, JR., M.D., South Bend, Ind.

"CREDULITY AND CURES"

To the Editor:—According to the concluding lines of Dr. Isador H. Coriat's communication (THE JOURNAL, Sept. 25, 1920, p. 892), "psychanalysis is based on the fundamental principle that its practice and technic must be directed toward that unconscious thinking which forms the basis of every neurosis." Who told the psychanalysts that unconscious thinking formed the basis for every neurosis? Was it Virchow, perhaps? Virchow, the liberator of medicine from mysticism, told us that an objective cause lay behind every subjective symptom. Some of us surgeons believe that Freud as a mystic has set medicine well back toward the middle of the last century, a sort of blight that comes over our profession from time to time. When we dispose of a neurosis that has been precipitated by some peripheral irritation or focal infection and do this in a pragmatic sort of way with a jackknife, we are prone to conclude that any unconscious thinking in the case must have been done by the wily microbe. I admit that when a patient has dreams after eating Welsh rabbit at night there may be something in the repressed wish idea, a repressed wish that quail on toast had been eaten instead of the rabbit. The repression in this case, however, would relate to the fact that the dreamer couldn't afford to pay for quail.

ROBERT T. MORRIS, M.D., New York.

"TETANY FOLLOWING FORCED RESPIRATION IN MAN"

To the Editor:—In THE JOURNAL, September 11, p. 746, is an editorial on "Tetany Following Forced Respiration in Man." As the work of Grant and Golden, which you quote, is in large measure confirmatory of the results published by Collip and Backus in the April issue of the *American Journal of Physiology*, I take it that through some oversight that paper has been overlooked. So far as I am able to ascertain, it contained the first account of definite tetany following forced respiration.

J. B. COLLIP, PH.D., Edmonton, Canada.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ESTIMATION OF KIDNEY FUNCTION WITH PHENOLSULPHONEPHTHALEIN METHOD

To the Editor:—1. Please describe the laboratory method in detail for estimating the phenolsulphonephthalein excretion when this substance is given intravenously and the urine is collected through the ureteral catheter for two fifteen minute periods.

2. What is the normal output of phenolsulphonephthalein for the first and second fifteen minute periods, when the urine is collected through the ureteral catheter?

Please omit my name and address. L. M. P.

ANSWER.—1. While phenolsulphonephthalein for the purpose of testing the kidney function may be injected intra-

venously, the intramuscular injection into the lumbar muscles is ordinarily preferred. It may also be injected subcutaneously. Six mg. of the drug is injected. The solution may be obtained in ampule form ready for use, or it may be prepared by diluting 0.6 gm. of the substance and 0.84 c.c. of double normal sodium hydroxid solution to 100 c.c. with 0.75 per cent. sodium chlorid solution, and then adding 0.15 c.c. of double normal sodium hydroxid solution. The solution is then filtered. The filtrate contains 0.6 mg. of phenolsulphonephthalein to the cubic centimeter. From twenty to thirty minutes before the injection is given, the patient receives from 200 to 400 c.c. of water to insure sufficient diuresis. If desired, the bladder may be emptied by catheter. If the urine is to be taken directly by ureteral catheterization to determine the function of the individual kidney, the usual antiseptic precautions must be observed to avoid the possibility of infection of any part of the urinary tract. When the bladder has been emptied thoroughly, the phenolsulphonephthalein is injected and the time noted. When an intravenous injection has been given, the urine may be collected for two separate fifteen minute periods and at the end of one hour, the time of collection beginning with the appearance of the drug on the first side. Thus, information as to the function of the kidneys may be obtained quickly, if necessary. Following the intramuscular injection, after the appearance of the color the patient urinates at the end of one hour into one receptacle and again at the end of the second hour into another receptacle.

Both samples are rendered strongly alkaline with an amount of 25 per cent. sodium hydroxid solution sufficient to bring out the maximum of color (a fine purplish red), and the time of its appearance is noted. The amount of phenolsulphonephthalein is then determined colorimetrically either by the aid of a Duboscq instrument or the Rountree and Geraghty modification of the Hellige colorimeter. In the absence of a colorimeter, fairly accurate results may be obtained by placing a measured quantity of the alkalinized urine in a test tube and comparing the color with a tube containing a known quantity of the drug and diluting the latter until the colors match, when the percentage eliminated is ascertained.

2. Under normal conditions the time of appearance of the drug varies between five and eleven minutes. After intramuscular injection the elimination of the first hour is between 40 and 60 per cent. and that of the second hour between 20 and 25 per cent. The average normal eliminations following intravenous injection are from 35 to 45 per cent. in fifteen minutes; from 50 to 60 per cent. in thirty minutes, and from 65 to 80 per cent. in one hour.

AMOUNT OF SPACE REQUIRED IN A BABIES' HOSPITAL

To the Editor:—How many cubic feet of space are required for each baby in a babies' hospital? Where shall I find plans for an ideal babies' hospital?

E. C. D.

ANSWER.—The space required for each baby in a ward or room varies from 500 to more than 800 cubic feet. Eight hundred is the average requirement for adults. From 500 to 800 cubic feet should be a fair estimate for children from nursing age to puberty. If space in the whole hospital is meant, the requirement will doubtless be in the neighborhood of 5,000 cubic feet per patient, varying with the proportion of private rooms, also with the amount of room devoted to the laboratory, laundry, kitchens, examination and dressing rooms, etc.

Any hospital architect will furnish plans and assist prospective builders in all the problems connected with plans, construction, finish and equipment.

Edward F. Stevens, 9 Park Street, Boston, and Richard E. Schmidt, Garden and Martin, 104 South Michigan Avenue, Chicago, are among those who have made a specialty of planning hospitals, including children's hospitals.

Following are names of some architects and children's hospitals which they planned:

Windsor Saule, Santa Barbara, Calif.: Maternity pavilion of the glass inclosed nursery for Cottage Hospital, Santa Barbara, Calif.

Kenyon and Maine, Minneapolis: Children's pavilion of the Abbott Hospital, Minneapolis.

Hamilton W. Rogers, Lynn, Mass.: Children's Hospital, Lynn, Mass.

Charles A. Coolidge, Boston: Children's Hospital, Boston.

S. Hunt and S. R. Burns, Los Angeles: Children's Hospital, Los Angeles.

Mauran, Russell and Crowell, St. Louis: St. Louis Children's Hospital.

Proudfoot, Bird and Rawson, Des Moines, Iowa: Children's building of the Iowa State University, Iowa City.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, Nov. 9-10. Sec. Reg. Bd., Dr. F. J. Stout, Brinkley. Sec. Electic Bd., Dr. C. E. Laws, Ft. Smith.

CALIFORNIA: Sacramento, Oct. 18-21. Sec., Dr. C. B. Pinkham, 529 Forum Bldg., Sacramento.

CONNECTICUT: Hartford, Nov. 9-10. Sec. Reg. Bd., Dr. Robert L. Rowley, Hartford.

CONNECTICUT: New Haven, Nov. 9. Sec. Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec. Eclectic Bd., Dr. James E. Hair, Bridgeport.

DISTRICT OF COLUMBIA: Washington, Oct. 12-15. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.

FLORIDA: Jacksonville, Nov. 4. Sec., Homeo. Board, Dr. George A. Davis, Sec., East Port.

GEORGIA: Atlanta, Oct. 12-14. Sec., Dr. C. T. Nolan, Marietta.

KANSAS: Topeka, Oct. 12-13. Sec., Dr. H. A. Dykes, Lebanon.

LOUISIANA: New Orleans, Nov. 2. Sec., Homeo. Board, Dr. F. H. Hardenstein, 702 Macheca Bldg., New Orleans.

LOUISIANA: New Orleans, Dec. 2-4. Sec., Dr. E. W. Mahler, 1551 Canal St., New Orleans.

MAINE: Portland, Nov. 9-10. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

MICHIGAN: Lansing, Oct. 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

NEBRASKA: Lincoln, Nov. 11-12. Sec., Mr. H. H. Antles, Lincoln.

NEVADA: Carson City, Nov. 1. Sec., Dr. Simeon L. Lee, Carson City.

NEW JERSEY: Trenton, Oct. 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.

NEW MEXICO: Santa Fe, Oct. 11-12. Sec., Dr. R. E. McBride, Las Cruces.

OKLAHOMA: Oklahoma City, Oct. 13-14. Sec., Dr. Jas. M. Byrum, Shawnee.

PHILIPPINE ISLANDS: Manila, Oct. 11. Sec., Dr. Fortunato Pineda, 610 Rizal Ave., Manila.

SOUTH CAROLINA: Columbia, Nov. 9. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TEXAS: Dallas, Nov. 16-18. Sec., Dr. Thomas J. Crowe, 617-20 Trust Bldg., Dallas.

WEST VIRGINIA: Charleston, Oct. 12. Sec., Dr. S. L. Jepson, Charleston.

State Hospital Committee in Wisconsin Made Permanent

At the annual meeting of the Wisconsin State Medical Society, September 8, the house of delegates voted to make permanent its committee on hospitals and appropriated a sum of money to enable the committee to extend the work of inspecting the hospitals of that state. The members of the committee and the terms which they have been reappointed to serve are as follows: Dr. L. F. Jermain, Milwaukee, five years; Dr. L. E. Fazen, Racine, four years; Dr. F. S. Wiley, Fond du Lac, three years; Dr. J. V. R. Lyman, Eau Claire, two years; Dr. F. G. Connell, Oshkosh, one year. The committee's report to the Council on Medical Education and Hospitals of the American Medical Association showed that during the last year 110 hospitals in Wisconsin had been inspected. This makes a total of more than 1,800 hospitals inspected and reported by the hospital committees of the various state medical associations. The State Medical Society of Wisconsin is the first state society to vote a definite appropriation to cover the expenses of its committee on hospitals.

Indiana Reciprocity Report

Dr. W. T. Gott, secretary, Indiana State Board of Medical Registration and Examination, reports that 46 candidates were licensed by reciprocity from January 1 to July 1, 1920. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Atlanta College of Physicians and Surgeons		(1912)	Georgia
Bennett Medical College		(1912)	Illinois
Chicago Coll of Med. and Surgery	(1912), (1913), (1913), (1914), (1915)		Illinois
College of Physicians and Surgeons, Chicago		(1912)	Illinois
Hahnemann Med. Coll. and Hosp. Chicago	(1914),	(1917)	Illinois
Loyola University School of Medicine		(1916), (1918)	Illinois
Rush Medical College		(1910), (1917)	Illinois
Northwestern University		(1900), (1908)	Michigan-Utah
Univ. of Ill.	(1911), (1913), (1914), (1916), (1919, 2)		Illinois
Indiana University School of Medicine		(1909)	Ohio
Kentucky School of Medicine		(1894)	Kentucky
Univ. of Louisville	(1893), (1900), (1908),	(1914)	Kentucky
University of Kansas		(1911)	Kansas
College of Physicians and Surgeons, Baltimore		(1892)	Illinois
Johns Hopkins University		(1913)	Illinois

University of Maryland	(1915)	W. Virginia
Barnes Medical College	(1899)	Illinois
Ensworth Medical College	(1909)	Missouri
University of Michigan Homeopathic Med. College	(1918)	Michigan
University of Michigan Medical School	(1917)	Michigan
University and Bellevue Hospital Medical College	(1915)	New York
Leonard Medical School	(1906)	Texas
University of Cincinnati	(1913)	Kentucky
Miami Medical College	(1906)	Ohio
Starling-Ohio Medical College	(1908)	Ohio
Western Reserve University	(1914)	Ohio
University of Pennsylvania	(1909 2)	Penna.
Meharry Medical College	(1913)	Tennessee
Tennessee Medical College	(1905)	Tennessee

Book Notices

AMERICAN MEDICAL BIOGRAPHIES. By Howard A. Kelly, M.D., LL.D., F.A.C.S., and Walter L. Burrage, A.M., M.D. Cloth. Price, $15. Pp. 1320. Baltimore: The Norman, Remington Company, 1920.

The first edition of this book was published in two volumes in 1912 as the "Cyclopedia of American Medical Biographies"; it contained biographic notices of 1,184 physicians and scientists. From the new edition, fifty-one of these biographies have been deleted; practically all of the remainder have been revised and corrected, and 815 new biographies have been added; the present volume thus contains 1,948 biographic sketches. All of the physicians whose biographies are included were residents of the United States and Canada. The principle of selection has been to include the names of all the deceased physicians who contributed to the advancement of medicine or who became illustrious in other fields. The biographies have been written by various authors; as a result, there is an unevenness of quality and style. Some of the sketches are almost as staccato as the notices in "Who's Who"; others are good examples of literary style; some are confined to repetition of scientific, literary or political achievement; others are fascinating because of their personal tone, numerous anecdotes and quotations. We do not deem it worth while to call attention to a few minor errors; however, it may be well to mention that in the biography of Christian Fenger, it is pointed out that Billings attended him in his last illness, and a "q. v." directs the reader to the latter's biography. The reference, however, is to John Shaw Billings. It was Dr. Frank Billings who attended Dr. Fenger, and he fortunately, is still among the living. Among the more interesting biographies are those of William Beaumont, John Shaw Billings, Daniel Brainard, Ephraim Cutter, Oliver Wendell Holmes, James Jackson, Walter Reed, Nicholas Senn, Caspar Wistar and Weir Mitchell. This book represents a great deal to American medicine in a historical way, since it places on record the names and works of many men whom a too material public might quickly forget. The authors are to be commended for the industry which the issuing of such a book involves, and also for its general excellence.

THE MECHANISM AND GRAPHIC REGISTRATION OF THE HEART BEAT. By Thomas Lewis, M.D., F.R.S., F.R.C.P., Physician of the Staff of the Royal Medical Research Committee. Cloth. Price, $16. Pp. 452, with illustrations. New York: Paul B. Hoeber, 1920.

Students of cardiology will be glad to know that Thomas Lewis has brought out a new edition of his "Mechanism of the Heart Beat." Published eight years ago, the book, together with "Clinical Disorders of the Heart" and many articles embodying the results of his fruitful investigations, has given to Lewis a position and reputation as an expert on the heart second to that of no other man. In this new edition, which is really a new book with its rearrangement, modifications and numerous additions, there is seen that clear and direct way of putting things that Lewis possesses to such an unusual degree. But no matter how well he might be able to handle the English language, he could not make such a presentation of the subject if he were not its complete master. His very positiveness and dogmatic way of stating an opinion make for clarity. We make no pretense of reviewing his work; this is a mere notice. But we have no hesitation in saying that it is the best book on this subject that is in print. It is up to date, scholarly, scientific.

Social Medicine and Medical Economics

SOME UNSETTLED LEGAL QUESTIONS IN NARCOTIC PRACTICE

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NEW YORK

The Harrison Narcotic Law has been considerably clarified by court decisions within the last few years, but there are still a number of points that are left in doubt, and some in actual confusion through conflicting decisions. It may be of interest to state a few of the more important questions and refer to some of the decisions in point.

In view of the action of the American Medical Association at its annual session in "emphatically condemning" the ambulatory treatment of drug addiction, perhaps the most interesting of these questions is the legal status of the ambulatory treatment. This so-called treatment consists in prescribing or dispensing opiates or cocain to addicts for self-administration over varying periods of time. Its legality when used as a treatment intended for the cure of addiction by a progressively reduced dosage was tacitly recognized by a regulation of the Commissioner of Internal Revenue, known as T. D. 2200, issued in May, 1915. The Supreme Court in March, 1919, handed down two decisions[1] which led the commissioner to revoke this ruling in July, 1919, by T. D. 2879. The latter ruling was at the time understood by many to amount to a prohibition of prescribing or dispensing more of the drugs than was necessary to meet the immediate needs of a patient. It had, however, no such effect in itself, leaving that question to be determined by the courts as a matter of construction of the Harrison law.

Since that time the practical construction of the law adopted by the federal district courts in trials of physicians has been such as to make the good or bad faith of the physician the sole criterion of his guilt or innocence. The judges have usually charged the juries that if the physician on trial honestly intended to cure or benefit the patient by prescribing or dispensing narcotics, he must be acquitted. The prosecution has usually placed medical experts on the witness stand to prove that the ambulatory treatment was not a method calculated to cure or benefit patients, and that it was not recognized or approved by the medical profession in general. This testimony, however, has not been conclusive, since even if the jury believed it to be true, it might also feel that the defendant physician honestly believed the contrary. Under the construction adopted by the trial courts, a physician might be well aware that the ambulatory treatment was generally disapproved by the profession, and was generally considered worthless as a therapeutic treatment, but could not be convicted for employing it unless the jury was convinced beyond a reasonable doubt that he himself disapproved it and considered it therapeutically worthless.

It will be readily understood from the foregoing that the Harrison law, as construed by the trial courts, is not effective in preventing practices which do not conform to recognized medical standards, in the sense in which certain other laws are effective. For example, Christian scientists have been successfully prosecuted for failing to give proper treatment to their children in cases of diphtheria, even though it was undisputed that they honestly believed in the efficacy and propriety of the Christian science treatment. In civil suits for malpractice, damages can be recovered from a phy-

1. U. S. v. Doremus, 249 U. S. 86; Webb et al. v. U. S., 249 U. S. 96.

sician for failure to use ordinary skill in accordance with recognized professional usage, and he cannot successfully defend such suits by proving his ignorance, or the holding of peculiar views. Whether the defect is in the text of the Harrison law, or is due to a mistaken construction by the lower courts, is an open question. Last year I pointed out[2] that a judicial construction of the law holding the ambulatory treatment to be illegal in itself, regardless of the intent of the physician practicing it, would be entirely in harmony with the decisions of the Supreme Court cited above, as well as with general principles of legal construction. No case involving this question has yet reached the Supreme Court, however, and until the question is presented to that court, or the act amended to cover the point, the construction adopted by the district courts will probably continue to prevail.

Another doubtful question is whether a physician who prescribes these drugs in bad faith, for the admitted purpose of gratifying the craving of an addict, and without any intention of cure, can be convicted in case the prescriptions are innocently filled by a druggist between whom and the physician there is no collusion. The Harrison law does not specifically forbid prescribing, but only the sale, bartering, exchange or giving away of the drugs. In a case in which a physician was indicted for selling in the circumstances set forth above,[3] the circuit court of appeals held that the act of the physician could not be considered a sale, and therefore his conviction could not be sustained. In a similar case,[4] the district court held that he was guilty of selling within the meaning of the law. The latter case has been appealed, but has not yet been reached for argument in the Supreme Court. It has been thought that if the view taken in the former case is correct, a conviction might be secured by indicting the physician, not for selling, but for aiding and abetting the druggist who made the sale. A recent opinion in the circuit court of appeals, in a case arising on such an indictment,[5] intimates very clearly that the physician cannot be convicted under this form of indictment if the druggist who filled the prescription did so innocently. This decision is presumably based on the view that a person cannot be guilty of being an accessory to a crime unless the principal has committed the crime. If the Supreme Court should ultimately sustain this view, and should also hold that the issuance of a prescription, thereafter filled, is not a sale, it would be necessary to amend the law so as to make the issuance of an improper prescription an independent crime.

In connection with the case last mentioned, holding that a druggist filling a prescription must be guilty in order to support the conviction of the physician issuing it for aiding and abetting the sale, it may be well to note that the court held that the guilt of the druggist could be inferred from the fact that he had filled a number of prescriptions for the same patients for large amounts of drug, extending over considerable periods without substantial reduction, and that some of the prescriptions were evidently for addicts. The proposition that guilty knowledge, whether expressly proved, or implied in the manner indicated, was necessary to make the druggist guilty of unlawful sale is not supported by all the decisions, and in fact seems directly opposed to some decisions of equal authority. The Harrison law forbids sales to consumers except on a prescription; the Webb case, cited above, holds that a prescription written by a physician for other than legitimate therapeutic purposes is not a prescription within the meaning of this exception. In a case arising under a statute forbidding the sale of liquor to Indians,[6] the circuit court of appeals held that one selling to an Indian was guilty even though he had no knowledge that his customer was an Indian, and in fact honestly believed him to be a Mexican. It is an open question, therefore, whether a druggist filling a prescription of the character declared by the Supreme Court not to be a prescription is not guilty even though he honestly believes it to be a prescription; but until this question is specifically passed upon by the Supreme Court, the decision that guilty knowledge is requred for conviction in the case of a druggist will probably be followed by the lower courts.

A question that is of considerable importance in the state of New York, and may arise in other states having similar laws, is as to the effect of the conviction of a physician for violation of the Harrison law on his right to practice. The Public Health Law of New York declares that conviction of a felony shall automatically operate as a forfeiture of a physician's license to practice medicine. Under the federal jurisdiction, violation of the Harrison law constitutes a felony; but the state law defines a felony as a crime punishable by imprisonment for a specified period in a state prison. As those convicted of federal felonies and sentenced to imprisonment for the time specified are confined in a federal prison, the question has been raised whether the state law covers such a case, and this question has not been passed upon by the courts, so far as known.

Of course, all sorts of questions may arise under state statutes, and it would not be of general interest to discuss them; but a decision of the highest court of New York rendered last year is worthy of comment, since it is based on principles of law generally applicable. In this case[7] the court held that a parent could recover damages for the loss of services of her minor son from a druggist who had continuously sold heroin to him, and by thus catering to his addiction had kept him in a condition unfit for work. The facts occurred before the passage of the Harrison law, and at a time when the state law merely provided that none of the poisonous drugs specified should be delivered by a retailer "until he has satisfied himself that the purchaser is aware of its poisonous character and that the poison is to be used for a legitimate purpose." Since the facts were held to constitute a violation of this statute by the druggist, and also to furnish sufficient ground for a civil suit, there can be no doubt that now, since the passage of the Harrison law and of more stringent statutes in most of the states, such suits could be maintained against physicians and druggists who supply drugs to addicts under legal age.

While not of special interest to physicians, the question of whether possession of drugs illegally obtained can be made the basis of criminal action under the Harrison law is one of some importance with reference to the enforcement of this law. By an amendment to Section 1 of the law passed last year, an attempt was made to forbid the purchase, as well as sale, of these drugs without a prescription or order form. Possession of the drugs without appropriate internal revenue stamps was declared to constitute prima facie evidence of illegal purchase. The validity of this amendment has not yet been passed upon by any of the higher courts, but an interesting question suggests itself as to whether, if sustained, it might not prove unfortunate as a matter of policy. Evidence against illegal sellers is usually presented through the testimony, under subpena, of addicts who have bought from the defendants. This testimony is in many cases unwillingly given, as the addicts are generally friendly to their sources of supply; but they can be forced to testify under threat of punishment for contempt.

2. Greenfield, A. D.: Some Legal Aspects of the Narcotic Drug Problem, New York M. J. **110**: 100 (July 19) 1919.
3. Foreman v. U. S., 255 Fed. 621.
4. U. S. v. Jin Fuey Moy, 253 Fed. 213.
5. Doremus v. U. S., 262 Fed. 849.
6. Feeley v. U. S., 236 Fed. 903.
7. Tidd v. Skinner, 225 N. Y. 422.

If, however, their testimony would tend to prove themselves guilty of crime, they would have a constitutional right to refuse to testify; the result might be that by making it possible to convict unlawful purchasers, the amendment would make it more difficult to get legal evidence against unlawful sellers.

As presented, some of the questions that have been discussed in this paper may seem to raise serious doubts of the practical efficiency of the Harrison law. It should be remembered, however, that sooner or later they will presumably all be passed upon by the Supreme Court, and that body may confidently be expected to render decisions which will aid, rather than hamper, the enforcement of the law. Moreover, any defects revealed by the raising of these questions can be corrected by appropriate amendments to the law or by appropriate state legislation, or by both. The fact which has most strongly impressed itself on me, after a close study of the operation of the Harrison law, is that in spite of handicaps, some of which have been noticed in this discussion, the federal officials charged with its enforcement, both those of the Bureau of Internal Revenue and those of the Department of Justice, have succeeded in performing their duties to an extent which has gone far toward the accomplishment of the essential purpose of the law—the prevention of the spread of drug addiction. Those who may be inclined to be impatient because they have not gone farther and faster should reflect that so long as in many communities no adequate provision has been made for the medical care and treatment of drug addicts, or of the defective individuals whose underlying condition is likely to express itself in addiction, a gradual tightening of the legal barriers may be wiser and juster than a sudden and complete clamping of the lid. Medical men, at any rate, may be expected to see the importance of a proper provision for taking care of the medical side of the problem, and to realize that such provision should at least keep pace with the purely restrictive measures.

52 Broadway.

Medicolegal

Public Charitable Hospitals Not Liable for Negligence in Selecting Servants

(Roosen v. Peter Bent Brigham Hospital (Mass.), 126 N. E. R. 392)

The Supreme Judicial Court of Massachusetts, in affirming judgments in favor of the defendant hospital, says that two actions were brought, one to recover for the conscious suffering, and the other for the death, of a patient to whom it was alleged that corrosive sublimate was administered in place of Epsom salt. One of the main questions presented was whether a public charitable hospital can be held liable for the negligence of its managing officers in selecting incompetent servants and agents. But there is no sound distinction in reason between the liability of a hospital for the negligence of its inferior agents and its ability for the carelessness of its managers. The conduct of both relates to the execution of the charity. The inferior agents usually work for pay, while the managing officers, as matter of common knowledge, generally undertake the administration of the public charity without compensation, solely out of public spirit in a desire to serve the general welfare. If the hospital is held responsible for their acts of negligence, the funds devoted to the relief of suffering humanity must be diverted in the one instance to the same extent and manner as in the other to the payment of claims wholly foreign to the purposes of the public trust. The doctrine of liability of an employer for negligence in the selection of servants is a doctrine of the law of master and servant. So far as concerns third persons (except where there is some special statutory provision), there is no distinction between the liability of an employer for the negligence of his servants in the course of their employment and for his own negligence in selecting incompetent servants. The measure of responsibility in one case is the same as in the other. If a hospital is to be held responsible for negligent treatment of patients, there seems to this court to be no sound ground for a distinction between the negligence of the managers of the hospital and the negligence of subordinate servants as a basis of liability. A sound ground for distinction between exoneration from liability for the negligence of managers and that of subordinate agents seems equally wanting. Since it is settled, in Massachusetts, that there is no liability for negligence of the latter, it must follow that there is none for that of the former. The inevitable result of the Massachusetts decisions is to relieve a hospital from liability for negligence of the managers in selecting incompetent subordinate agents as well as for the negligence of such subordinate agents selected with care; and this conclusion is supported by the great weight of authority in other jurisdictions. Nor is any liability imposed on a hospital toward a patient, under the circumstances here alleged, by the so-called death statute of Massachusetts, which imposes a liability when "a person or corporation by his or its negligence, or by the negligence of his or its agents or servants while engaged in his or its business, causes the death of a person who is in the exercise of due care." The terms of that statute are not applicable to a case in which, from the nature of the corporation as a public charitable hospital, it cannot be guilty of negligence in respect of the treatment of its patients pursuant to the great charitable purpose for which it was established.

Death from Use of Infected Towels Held Accidental

(Business Men's Acc. Ass'n v. Schiefelbusch (U. S.), 262 Fed. R. 354)

The United States Circuit Court of Appeals, Eighth Circuit, in affirming a judgment in favor of plaintiff Schiefelbusch, says that the defendant association issued a policy of accident insurance to her husband. The policy insured him "against loss resulting from bodily injuries, effected directly, independently, and exclusively of all other causes, contributing or proximate, through external, violent, and accidental means. . . . Blood poisoning resulting directly from bodily injuries shall be deemed to be included in the said term 'bodily injuries.'" The evidence on the part of the plaintiff showed that the insured, who was a dentist, was bald-headed, and, perspiring profusely on his head and neck during hot weather, had the habit of using, to the extent of a dozen times a day or more, to wipe the perspiration from the top of his head and neck, towels which he had used in the practice of his profession, that were dirty and had blood and pus on them, from the mouths of patients, as well as hardened particles of plaster of Paris. On Wednesday, he complained of pain at the back of his neck and the top of his head. There were circumscribed red spots on the top of the head and on the neck. They were inflamed and swollen. He suffered pain in the locality mentioned on Thursday and Friday. On Saturday morning he had a chill, and went to bed exhausted. He continually grew worse, became delirious on Sunday afternoon, and died early on Monday morning. A physician incised the red spot on the top of the head on Thursday, and found a small necrotic area underneath the skin, and no free pus. In the physician's judgment, the man had been infected by bacterial or septic infection; and there was medical testimony that not a day passed that he could not have been infected by the towels with the streptococcus germ. If he knew that the towels he used in the manner indicated would cause an abrasion of the skin, and also were infected with the streptococcus germ, then the means of death was not accidental, within the language of the policy. But the fact that he had this knowledge was matter of defense. If the insured used the towels without this knowledge, then the plaintiff showed that his death was caused by accidental means, as he could not be said to have intended the use of a towel that would infect him. There was nothing to indicate that the germ which caused blood poisoning came from any other source. Therefore the court holds that his death was caused by accidental means.

Society Proceedings

COMING MEETINGS

Am. Acad. of Ophthal. and Otolaryng., Kansas City, Mo., Oct. 14-16.
American Child Hygiene Association, St. Louis, Mo., Oct. 11-13.
Delaware State Medical Society, Wilmington, Oct. 11-12.
Medical Association of the Southwest, Wichita, Kan., Nov. 22-24.
Mississippi Valley Medical Association, Chicago, Oct. 26-28.
New Mexico Medical Society, Roswell, Oct. 15-16.
Southern Medical Association, Louisville, Ky., Nov. 15-18.
Virginia, Medical Society of, Petersburg, Oct. 26-29.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

September, 1920, **20**, No. 3

*Significance of Xanthochromia of Cerebrospinal Fluid. I. A. Abt and I. H. Tumpeer, Chicago.—p. 153.
*Bodily Mechanics; Its Relation to Cyclic Vomiting and Other Obscure Intestinal Conditions. F. B. Talbot and L. T. Brown, Boston. —p. 168.
Circulatory Reactions to Graduated Exercise in Normal Children. M. G. Wilson, New York.
*Relative Efficiency of Different Mercurial Preparations in Treatment of Congenital Syphilis in Infants and Children as Determined by Quantitative Analysis of Mercury Elimination in Urine. W. R. Ramsey and O. A. Groebner, St. Paul.—p. 200.
*Spasmophilia and Vitamins. L. von Meysenbug, Minneapolis.—p. 206.
*Case of Priapism Resulting from Rapidly Spreading Myxosarcoma with Generalized Metastases. D. B. Cowie, Ann Arbor, Mich.—p. 211.
Review of Literature of 1919 on Genito-Urinary Disease of Children. L. B. Hill, Boston.—p. 222.

Xanthochromia of Cerebrospinal Fluid.—A case is reported by Abt and Tumpeer because of the occurrence of yellow spinal and ventricular fluid in an infant of eight months period of gestation who lived thirty-seven days and who also manifested marked internal hydrocephalus, pyelitis and bronchopneumonia. The xanthochromia of the cerebrospinal fluid was due to a meningo-encephalitis, with numerous subpial hemorrhages as the source of the coloration.

Bodily Mechanics and Obscure Intestinal Conditions.—Faulty bodily mechanics is held by Talbot and Brown to be responsible for a great loss of efficiency. It is common to all ages, is easily corrected and can be corrected most economically during childhood. It is responsible in most instances for diminished powers of digesting fat in children and is the cause of a certain amount of chronic constipation. It is the background and probably the cause of many, if not most, cases of recurrent vomiting. In many instances the symptom of acute abdominal pain in children, when associated with chronic constipation, is due to poor bodily mechanics. These symptoms are often so severe that they are confused with those of acute intestinal obstruction due to other causes. In the cases cited by the authors in which the faulty body mechanics have been corrected, in connection with the other treatment, the patients have all shown a more speedy recovery than is seen in cases without this correction.

Mercury Preparations in Congenital Syphilis.—The study made by Ramsay and Groebner showed that mercurial ointment, 50 per cent., is preferred to the less concentrated forms and need not be repeated more often than twice weekly instead of daily. The quantity of mercury absorbed is much increased by friction. Calomel ointment is absorbed but less rapidly and to a less extent than the mercurial ointment and it should, therefore, be given in greater concentration. Mercuric salicylate in oil should be given hypodermically twice weekly instead of once. The mercuric chlorid, by hypodermic injections, although the dose is very small, continues to be eliminated for six or seven days. The fact, however, that its use frequently is followed by the appearance of protein in the urine should exclude it from the treatment of syphilis in children. Calomel by the mouth is absorbed in small amounts, and continues to be eliminated for a considerable time so that it is probable that it would be sufficient to give it at intervals of several days, thus avoiding diarrhea. Gray powder is absorbed to a small degree and eliminated rather rapidly so that large doses repeated daily would probably be necessary to maintain mercury in the circulation.

Spasmophilia and Vitamins.—The evidence presented by von Meysenbug shows that increased electrical irritability—so-called "spasmophilic reactions"—is not dependent on a deficiency in the diet of the water-soluble vitamin or of the other two known food accessory factors.

Priapism Caused by Scrotal Myxosarcoma.—Cowie reports a case of a rapidly developing tumor in the scrotum associated with what he believes to be multiple metastatic growths in the skeletal structures, intracranial changes, indefinite intrathoracic changes particularly on the left side, not involving the heart; with a history of injury which, however, occurred, apparently, after he first complained of back stiffness, but which may have had an influence in the process. It was impossible to determine the cause of the painful rigidity of the back and neck muscles. The patient seemed to be holding himself for fear of being hurt. The boardlike stiffness resembled that described by Escherich in his cases of pseudotetanus. Instead of more than one process being at work to induce the different groups of symptoms, Cowie believes the entire process to have been due to a malignant tumor with bone and visceral metastases.

American Journal of Ophthalmology, Chicago

July, 1920, **3**, No. 7

Coordination of Refraction with Spectacle and Eye Glass Fitting. S. L. Olsho, Philadelphia.—p. 481.
Wasp Sting Keratitis, with Special Color Changes in Iris. Y. Yoshida, Kyoto, Japan.—p. 493.
Apparent Sympathetic Ophthalmia, Nine Months After Enucleation, with Implantation of Gold Ball in Tenon's Capsule. D. N. Dennis, Erie, Pa.—p. 497.
Peripheral Communicating Vessels Between Retina and Choroid. Fold of Inner Limiting Membrane in Chorioretinitis. M. Feingold, New Orleans.—p. 499.
Case of Ocular Pemphigus. W. C. Posey, Philadelphia.—p. 507.

August, 1920, **3**, No. 8

Cataract Operation on Glaucomatous Patients. V. Morax, Paris. —p. 561.
Nature of So-Called Blood Infiltration of Cornea. Y. Matsuoka, Kyoto, Japan.—p. 564.
Early Diagnosis of Pituitary Tumor with Ocular Phenomena. W. L. Benedict, Rochester, Minn.—p. 571.
Uniformity in Essentials of Perimetry. L. C. Peter, Philadelphia. —p. 584.
Ocular Notes on Lethargic Encephalitis, with Two Case Reports. G. Dickinson, Syracuse, N. Y.—p. 587.
Origin of Vitreous. H. J. Howard.—p. 589.
Are Objective Findings in Refraction Work Most Acceptable to Patient? W. N. Sharp, Indianapolis.—p. 597.

Boston, Medical and Surgical Journal

Sept. 9, 1920, **183**, No. 11

William T. G. Morton, Discoverer and Revealer of Surgical Anesthesia: Plea for His Place in Hall of Fame. S. A. Knopf, New York. —p. 317.
*Gastric and Duodenal Ulcers: Typical and Atypical Forms; Relative Values of Diagnostic Procedures. C. W. McClure and L. Reynolds, Boston.—p. 321.
Implantation Methods in Cosmetic Rhinoplasty. S. Oppenheimer, New York.—p. 329.
*Bikinetic Therapeutics. J. Taylor, Philadelphia.
Endometritis: Pathology and Differentiation from Malignancy. W. C. Usher.—p. 333.

Sept. 16, 1920, **183**, No. 12

Value of County Tuberculosis Survey with Clinics. B. W. Billings, Boston.—p. 343.
Plea for Department of Tuberculosis in Medical Schools. W. J. Gallivan, Boston.—p. 348.
Itinerant Consultation Service. H. S. Wagner, Pocasset, Mass.— p. 351.
Occupational Therapy for Tuberculous. F. H. Hunt, Mattapan, Mass. —p. 356.
Nutrition Clinics and Tuberculosis. W. R. P. Emerson, Boston. —p. 361.

Gastric and Duodenal Ulcers.—In order to appreciate better and to evaluate more properly the significance of various methods as aids in the diagnosis of gastric and duodenal ulcer, and to comprehend better their relative importance, an analysis of the records of eighty selected cases of duodenal and gastric ulcer has been made by McClure and Reynolds. Fifty-five diagnoses were confirmed by operation. In the remaining cases the roentgen-ray findings or frank hema-

temesis made the accuracy of the diagnosis practically certain. The authors are convinced that the typical type of peptic ulcer may be diagnosed with a high degree of accuracy by the aid of the roentgen ray. In the diagnosis of the atypical class roentgen-ray studies are of the utmost value; in many cases the diagnosis cannot be made without the aid of the roentgen ray. Therefore, roentgen-ray studies should form a part of the physical examination of every gastro-intestinal case. In the great majority of cases laboratory findings are of less value as an aid in the diagnosis of peptic ulcer than those obtained from roentgenographic studies.

Biokinetic Therapeutics.—This term is offered by Taylor to describe remedies applied from the outside, accessory or supplemental or auxiliary, or so-called physical therapeutics.

Sept. 23, 1920, **183**, No. 13

Puerperal Sepsis and Its Treatment. R. S. Titus, Boston.—p. 371.
Correlation of Data in Cases Seen at Psychopathic Department and Foxboro State Hospital. L. G. Lowrey, Boston.—p. 377.
*Frequency of Fractures. A. Radiologic Analysis of 1,226 Cases. C. R. Scott, New Haven, Conn.—p. 384.
*Multiple Serositis. W. D. Reid, Boston.—p. 386.

Frequency of Fractures.—In radiologic analysis of 1,226 cases made by Scott as to locations the results were: skull, 7.01 per cent.; vertebrae, 2.11 per cent.; humerus, 4.89 per cent.; radius, 8.80 per cent.; clavicle, 3.26 per cent.; scapula, 1.38 per cent.; ulna, 7.01 per cent.; carpals, 0.97 per cent.; metacarpals, 5.30 per cent.; phalanges, 3.59 per cent.; pelvis, 2.93 per cent.; femur, 10.44 per cent.; fibula, 13.53 per cent.; tibia, 14.92 per cent.; tarsals, 3.18 per cent.; metatarsals, 3.18 per cent.; phalanges, 2.28 per cent.; patella, 0.89 per cent.

Multiple Serositis.—Fifteen such cases were found by Reid among 3,900 necropsy reports, making the incidence of this disease just under 4 per cent. The condition was fully appreciated only at the necropsy. In two cases, however, the clinicians discovered an adhesive pericarditis, and in a third case the diagnosis was "chronic fibrous peritonitis." Physical examination was normal in nine cases. Of the remaining six, five presented definite ascites which was evident clinically and one showed slight ascites at the necropsy. In these six cases with ascites, the perihepatitis and perisplenitis were well marked, but in four cases the heart showed endocardial or myocardial lesions sufficient to be a factor in the production of the abdominal effusion. In seven instances the chronic multiple serositis (pericarditis, pleuritis, perihepatitis and perisplenitis) was the primary finding, and in the remaining eight it was listed as a secondary lesion. This group of cases was characterized by pathologic evidence of a previous inflammation of the pleura, pericardium and peritoneum.

Canadian Medical Association Journal Toronto

September, 1920, **10**, No 9

Certain Fundamental Errors in Diagnosis and Treatment of Myocardial Insufficiency. C. L. Green, St. Paul.—p. 785.
*Surgical Treatment of Ulcerative Intestinal Tuberculosis as Occurring Chiefly in Course of Pulmonary Tuberculosis. E. A. Archibald, Montreal.—p. 804.
Psychiatry and Internal Medicine. C. F. Martin, Montreal.—p. 827.
Acute Intestinal Obstruction; Diagnosis. J. McKenty, Winnipeg.—p. 835.
Importance of Biochemical Tests in Patients Suffering from Prostatic Enlargement. F. S. Patch, Montreal.—p. 841.
Surgical Gynecology. H. P. Newman, San Diego, Calif.—p. 846.
Case of Myxedema. A. T. Mathers, Winnipeg.—p. 859

Surgical Treatment of Intestinal Tuberculosis.—The two chief contraindications to operation mentioned by Archibald are extensive and progressive pulmonary involvement and extensive disease in the small bowel. The most promising cases for operation he says are those in which physical examination and the roentgen ray combine to indicate a localization of the disease to the cecum and the right colon, while at the same time the lungs are but slightly affected and the patient is in good general condition. The operative procedure to be adopted under varying circumstances is discussed.

Indiana State Medical Association Journal, Ft. Wayne

Sept. 15, 1920, **13**, No. 9

Hyperactivity of Thyroid. M. F. Porter, Fort Wayne.—p. 295.
The Physician; The Young Doctor. F. B. Wynn, Indianapolis.—p. 298.

Journal of Mental and Nervous Diseases, Lancaster, Pa.

April, 1920, **51**, No. 4

*Deep Localization in Cerebral Cortex. E. G. Van't Hoog, Amsterdam.—p. 313.
*Multiple Brain Abscesses Secondary to Bronchiectasis and Kyphoscoliosis. C. C. Saelhof, Chicago.—p. 330.

Deep Localization in Cerebral Cortex.—According to Van't Hoog's investigations, the deep suprarenal cortex layers are receptory associative in accordance with Ariëns Kappers functional division. The functional nature of the granules is also receptive and associative in the postcentral region. The granular cells should, moreover, be conceived of as matrix cells not only in the fascia dentata but also in the neocortex.

Secondary Multiple Brain Abscesses.—A case of multiple brain abscesses secondary to bronchiectasis caused by the wedging of the lower lobe of the right lung into a pocket formed by kyphoscoliosis is described by Saelhof. The causative agents isolated and cultivated from both the abscesses and the suppurating lung were *B. fusiformis* and anaerobic streptococci. The author believes that the most probable route by which the infection traveled from its primary focus was the blood stream.

May, 1920, **51**, No. 5

*Two Different Types of Epidemic Encephalitis: Lethargic and Myoclonic. P. Boveri, Milan, Italy.—p. 409.
Biologic Problem of Adaptation. S. Paton, Princeton, N. J.—p. 413.
*Treatment of Disorders of Spinal System by Intraspinal Method and Its Value to Business Man. F. J. Farnell, Providence, R. I.—p. 420.
*Recent Experimental Investigations on Etiology of Disseminated Sclerosis. C. DaFano, London.—p. 428.

Lethargic and Myoclonic Epidemic Encephalitis.—Boveri maintains that the different symptomatology between the lethargic and the myoclonic types of epidemic encephalitis suggests a different pathologic localization of the virus. In the lethargic form the centers of encephalitis are localized particularly on a level with the central peduncles and the locus niger. It is a question whether in the myoclonic form of the disease the centers may not be localized in the optic thalamus in different degrees in a transitory manner.

Extradural Medication in Spinal Disorders.—Farnell suggests that extradural treatment should be considered as a part of the therapeutic procedure in such cases as do not respond to the intravenous method of treatment and that it may be used as a reinforcement to the intravenous method because of the fact that it does not interfere with the patient's usefulness to himself and society through his vocation. Puncture headache and stay in bed are avoided, hence this form of treatment might appeal to the business man and cause him to seek treatment sooner than he does and persist in it. Farnell injects arsphenamized serum into the extradural space.

Etiology of Disseminated Sclerosis.—DeFano says that more confirmatory evidence is necessary before one can definitely accept the view that disseminated sclerosis is an infectious disease originating and essentially due to the still mysterious penetration into the body of a specific spirochete.

June, 1920, **51**, No. 6

German Institute of Psychiatric Research. E. Kraeplin, Munich.—p. 505.
*Case of Diffuse Cerebrospinal Sclerosis. S. Uyematsu, Danvers, Mass.—p. 514.

Diffuse Cerebrospinal Sclerosis.—The case cited by Uyematsu differed clinically and anatomically from other cases. It showed in the beginning almost typical manicdepressive manifestations, but later the constantly progressing dementia was in the foreground. The patient showed evidence of hemiplegia, but the spastic paralysis was not as marked as in a case of the Heubner form. The principal pathologic-anatomic findings were abnormal firm consistency of the medullary substance with softened and cystic areas; diffuse increase of neurogliar elements in various forms; diffuse degeneration of the myelin sheaths and axis cylinders of the white matter, etc. As for the pathology, Uyematsu assumes an endogenous factor based on the number of hyperplastic conditions of the brain and the body organs.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

August, 1920, **16**, No. 1

*Toxicologic Study of Some Alcohols; Especial Reference to Isomers. D. I. Macht, Baltimore.—p. 1.
*Elimination of Carbon Monoxid from Blood After a Dangerous Degree of Asphyxiation; Therapy for Accelerating Elimination. Y. Henderson and H. W. Haggard, New Haven, Conn.—p. 11.
*Effect of Emetin on Endameba Dysenteriae in Stools. W. Allan, Charlotte, N. C.—p. 21.
Clotting Efficiency of Thromboplastic Agents: A Reply. P. J. Hanzlik, Cleveland.—p. 35.
*Carminative Action of Volatile Oils. J. W. C. Gunn, London.—p. 39.
Influence of Reaction on Precipitation of Proteins by Tannin. T. Sollmann, Cleveland.—p. 49.
*Stability of Benzyl Alcohol Solutions. D. I. Macht and A. T. Shohl, Baltimore.—p. 61.

Toxicologic Study of Some Alcohols.—The toxicity of the normal alcohols—methyl, ethyl, butyl and amyl—Macht says increases with their place in the aliphatic series, as indicated by the lethal dosage for cats, and by their effects on isolated frogs' hearts and plain muscle preparations. The secondary propyl, butyl and amyl alcohols were found to be less toxic than the corresponding primary alcohols. In discussing the toxicity of alcohols, Macht states a distinction should be made between the acute or immediate, and the secondary or remote effects of the drugs, as is well illustrated by the studies on methyl and benzyl alcohols.

Carbon Monoxid Asphyxia.—It is shown by Henderson and Haggard that during the development of carbon monoxid asphyxia there is vigorous hyperpnea, and that thereafter, probably owing to deficient oxygenation and other causes, there is a diminished production of carbon dioxid. As a result of deficiency of carbon dioxid in the blood, asphyxiated animals when restored to pure air exhibit for half an hour or more a very marked depression of breathing. The rate of elimination of carbon monoxid is correspondingly slow. The condition of tissue asphyxia is thus continued, although the body is surrounded by fresh air. It is suggested that this postgassing period of continued asphyxia may be of critical importance in inducing subsequent structural degenerations and functional impairments. Its abbreviation is therefore an important object both for therapy and prophylaxis. Oxygen inhalation during this period has only a slight effect; it is not adequately inspired. Inhalation of carbon dioxid diluted with air has an immediate effect. It augments breathing and thus hastens the elimination of carbon monoxid. Inhalation of oxygen plus carbon dioxid is far more effective than either gas alone; for the augmented breathing allows the oxygen to effect a rapid displacement of carbon monoxid from the blood. Functional restoration is correspondingly accelerated.

Effect of Emetin on Endameba Dysenteriae.—Using emetin and *Endameba dysenteriae* from various sources, Allan says in no instance did emetin affect the appearance or motility of these organisms in the stools in dilutions weaker than 1:2,000 in from one to two hours, and often dilutions as strong as 1:150 failed to kill the endameba in the allotted time.

Carminative Action of Volatile Oils.—Gunn is of the opinion that the carminative action of volatile oils can best be explained by their relaxing and inhibiting the movements of plain muscle. Their other effects on the gastro-intestinal tract may be explained by their local irritant action, by reflexes arising therefrom or possibly by acceleration of absorption.

Stability of Benzyl Alcohol Solutions.—Various specimens of benzyl alcohol solutions were sealed in ampoules made of different kinds of glass, and such solutions were examined by Macht and Shohl at intervals of time in regard to their anesthetic efficiency on the one hand, and their hydrogen-ion concentration on the other. Solutions of benzyl alcohol kept in nonsoluble glass preserve their anesthetic properties completely for long periods of time and such solutions tend to increase their hydrogen-ion concentration very slowly. Benzyl alcohol solutions kept in soft glass or alkaline containers tend to become alkaline in reaction and rapidly deteriorate in their anesthetic efficiency. It is suggested that the best method of preserving benzyl alcohol solutions is to prepare such solutions from a benzyl alcohol free from benzaldehyd, and to seal the same after the addition of a buffer solution in hard glass ampules.

Medical Record, New York

Sept. 18, 1920, **98**, No. 12

Abandonment of Therapeutics in Medical Schools Due to Neglect of Its Curative Subdivision: Pharmaco-Endocrinology. C. E. De M. Sajous, Philadelphia.—p. 463.
Tissue Acidosis vs. Blood Acidosis. W. H. Mercur, Pittsburgh.—p. 467.
Therapeutics of Decreasing Body Alkalinity. W. H. Porter, New York.—p. 471.
Control of Hyperchlorhydria and Its Consequences by Cholecystogastrostomy. W. W. Babcock, Philadelphia.—p. 476.
Treatment of Syphilis. W. J. Highman, New York.—p. 477.
Guillotine: Simple One-Man Instrument for Doing Circumcisions. C. T. Stone, Brooklyn.—p. 479.

Military Surgeon, Washington, D. C.

September, 1920, **47**, No. 3

Physiotherapy at U. S. Naval Hospital, New York. C. H. T. Lowndes, F. E. McCullough, A. M. Fauntleroy and W. S. Bainbridge, U. S. N.—p. 261.
Morale in Naval Hospitals. J. T. Boone, U. S. N.—p. 268
Neurologic Service in Naval Hospitals R. Sheehan, U. S. N.—p. 295.
Standardization of Material. A. Farenholt, U. S. N.—p. 303.
Case of Foreign Body in Lung. W. S. Russell, U. S. N.—p. 308.
Mastoid Cases. L. G. Jordan, U. S. N.—p. 310.
Subsistence of Patients at Naval Hospitals and the Commissary Officers' Functions. F. Fulton, U. S. N.—p. 318.
Case of Ruptured Urethra with Fractured Pelvis. J. R. Allison. —p. 324.
Motor Ambulances Observed Abroad. F. L. Pleadwell, U. S. N. —p. 331.
Single Exostosis of Long Bones. P. J. Reel and C. C. Hugger, U. S. N.—p. 338.
Four Cases of Dermatitis Exfoliativa Following Arsphenamin Administration. J. Magnette, U. S. N.—p. 342.
Yaws; Case Which Developed in Temperate Climate. C. S. Stephenson, U. S. N.—p. 344.

Minnesota Medicine, St. Paul

September, 1920, **3**, No. 9

Diagnosis in Injury of Peripheral Nerves. A. S. Hamilton, Minneapolis.—p. 413.
Peripheral Nerve Injuries. J. F. Corbett, Minneapolis.—p. 422.
Cases of Acute Perforations of Stomach and Duodenum. N. O. Ramstad, Bismarck, N. D.—p. 430.
*Treatment of Fifty-One Selected Cases of Influenza in Epidemic of 1920. W. C. Chaney, Rochester, Minn.—p. 436.
Paralysis of Abducens Nerve Secondary to Mastoiditis. G. C. Dittman, St. Paul.—p. 439.

Treatment of Influenza.—The most important essentials in the treatment of influenza, Chaney says, are rest and isolation in the complicated cases, fresh air, and the maintenance of a uniform temperature of 60 F. When indicated, maximum elimination is encouraged by saline laxatives, liquid diet, large quantities of water, and tepid sponge baths whenever perspiration is profuse. Small doses of acetphenetidin may be given for muscular pains, and small doses of morphin control restlessness when other drugs fail. Gastro-intestinal disturbances may be relieved by sodium bicarbonate in 3 gm. doses until the urine becomes alkaline. In this connection it is interesting to note that the estimation of alkali reserve in the blood rarely indicated more than a mild acidosis. Rosenow's pneumococcic antigen seemed to be a helpful therapeutic measure in Chaney's experiences.

New Jersey Medical Society Journal, Orange

September, 1920, **17**, No. 9

Consideration of Results in Treatment of Simple Fractures. W. L. Estes, South Bethlehem, Pa.—p. 291.
Internist's Duty to Profession and Public. W. B. Stewart, Atlantic City, N. J.—p. 298.

New York Medical Journal

Sept. 25, 1920, **112**, No. 13

*Persistent Voluntary Mutism. A. Gordon, Philadelphia.—p. 433.
Nature and Cause of Stammering. M. Solomon, Chicago.—p. 435.
National Morale in Relation to Hysteria, Military and Industrial. T. A. Williams, Washington.—p. 436.
Rhythmic Electric Currents in Treatment of Abdominal and Pelvic Relaxation. G. Betton Massey, Philadelphia.—p. 441.
First Aid in Infant Feeding. J. Sobel, New York.—p. 442.
Disturbances of Heart and Liver Caused by Low Grades of Astigmatism. E. L. Jones, Cumberland, Md.—p. 447.
Squint. J. H. Dunnington, New York.—p. 452.

Persistent Voluntary Mutism.—Gordon reports the case of a boy, aged 13, who, along with normal features in the intellectual sphere, presented certain abnormalities in the field of judgment and in the domain of his affective faculties. The

abnormal manifestation of absolute mutism developed rapidly after reading a story on mutism. No power of persuasian or argumentation succeeded in breaking the disorder.

Northwest Medicine, Seattle

September, 1920, **19**, No. 9

*Recent Advances in Diagnosis of Heart Disease. A. W. Hewlett, San Francisco.—p. 224.
War and Heart. K. Winslow, Seattle.—p. 227.
*Three Cases of Pericarditis in Which Early Symptoms Were Entirely Referred to Abdominal Cavity. W. B. Holden, Portland, Ore. —p. 230.
Diagnosis of Prostatism. F. Hinman, San Francisco.—p. 231.
Surgical Treatment of Urinary Tuberculosis. A. H. Peacock, Seattle. —p. 235.
Cystitis. W. J. Pennock, Spokane, Wash.—p. 239.

Value of History in Diagnosis of Heart Disease.—In the examination of patients with cardiac complaints Hewlett says an accurate history and a correct interpretration of the symptoms elicited is of as great importance now as it has always been. The more recent additions to diagnosis have served to furnish new objective evidence of cardiac disease. Particular search should be made for cardiac infection, for diastolic murmurs, for enlargement of the heart, for significant changes in rhythm and for alterations in the form of the electrocardiogram. If one of more of these can be found, organic disease cannot be excluded. If, on the other hand, they cannot be found and if the symptoms are such as to suggest an irritable heart, the latter condition becomes a probable explanation of the cardiac complaints.

Pericarditis with Abdominal Symptoms.—In one of the cases cited by Holden the symptoms manifested led to a diagnosis of perforating ulcer and immediate laparotomy was done. The abdomen was negative. Two days later positive signs of pericarditis were present. Necropsy revealed purulent pericarditis. In the second case a probable diagnosis of appendicitis was made and operation advised. Laparotomy revealed a normal appendix. Twenty-four hours later a marked pericardial friction was present. The third patient had been sick one day with abdominal pain, tenderness and rigidity, fever, leukocytosis, urine negative, chest and heart negative. Symptoms and signs pointed to trouble below the diaphragm. Operation found a normal abdomen. Two days later pericarditis and endocarditis were unmistakably present.

Ohio State Medical Journal, Columbus, Ohio

Sept. 1, 1920, 16, No. 9

Some Surgical Phases of Cancer Problem. F. Warner, Columbus. —p. 645.
Precancerous Condition of Skin. E. D. Tucker, Toledo.—p. 651.
Diagnosis of Incipient Pulmonary Tuberculosis. B. C. West, Dayton. —p. 652.
Laryngologist and Diseases of Lungs. J. A. Thompson, Cincinnati. —p. 655.
District Tuberculosis Hospitals. R. R. Richison, Springfield.—p. 658.
How We Attempt to Do Scientific Obstetrics in General Practice. A. A. Brindley, Port Clinton.—p. 660.
Treatment of Syphilis of Central Nervous System. C. L. Cummer, Cleveland.—p. 663.
Intradural and Extradural Optic Nerve Tumors and Their Surgical Management. H. Reid and R. Sattler, Cincinnati.—p. 666.

Porto Rico Medical Association Bulletin, San Juan

December, 1919, **13**, No. 124

Medical Profession as Social Entity. F. del Valle Atiles.—p. 94.
Clinical Studies on Influenza. M. Quevedo Baez.—p. 104.
Necessity for Medical Inspection of Eye, Nose and Throat in the Schools of Porto Rico. A. R. Laugier.—p. 115.
*Mycotic Dermatitis of Feet in Porto Rico. J. Barreiro.—p. 121.
Prognosis of Gallbladder and Bile Duct Infections. J. Avilés.—p. 124.

Mycosis of Feet in Porto Rico.—Barreiro remarks that the same factors of heat and humidity which promote the luxuriant vegetation of the island promote the growth of micro-organisms of the fungus type. The skin in the tropics is a magnificent incubator for cultures, always in the best of working order. He selects for special study here the mycosis of the feet of the Hebra eczema marginatum type. This is very common but it is often regarded as a manifestation of syphilis, liver or other disease, its mycotic nature unrecognized. The first symptom is generally itching between the toes and then the minute vesicular eruption develops in folds and crevices. This is usually the whole of the clinical picture, but occasionally the mycosis invades the lymphatics in the leg and groin, with accompanying fever, and sometimes foci of suppuration deep in the tissues. He has had occasion to incise several of these deep abscesses in the leg or groin whose origin might not have been suspected if the causal trichophyton had not been sought and found, the primary lesion in the foot having been so insignificant as to have escaped attention. He treats the mycosis by painting the lesion with 10 per cent. tincture of iodin and dusting with powder when dry, repeating this every second or third day, using a 5 per cent. tincture until recovery is complete. This treatment is not only effectual but it clears up the diagnosis, as it has never failed in his 100 cases.

June, 1920, **14**, No. 126

Differential Diagnosis of Tropical Pyrexias Most Commonly Observed in Porto Rico. A. Torregrosa.—p. 25. Cont'd.
Professional Fees. F. del Valle Atiles.—p. 58.
*Venereal Granuloma. Salvador Giuliani.—p. 61.

Venereal Granuloma.—Giuliani relates that two young women were admitted to his service with the diagnosis of inoperable cancer of the vagina, but one proved to be a patient whose case history he had published some years before as a venereal granuloma, the causal bacterium being found in pure cultures. The other patient had a spirochete ulceration. The granuloma was extremely extensive and so painful that sedatives had to be given. The vulvovaginal lesions were laved with a 1:1,000 solution of tartar emetic and 2.5 c.c. of a 1 per cent. solution of the same were injected into a vein at the elbow. In three weeks five injections were given by the vein, in increasing doses up to 20 c.c. as the maximum. No effect on the granuloma was evident, and treatment was continued with the local applications alone. In the course of the next week, however, the ulcerating granuloma cleared up, there was no further secretion, and smooth cicatricial tissue lined the defect in the tissues. By another week the cure seemed to be complete, and the woman left the service. This experience confirms the fine results obtained with tartar emetic in Brazil, the success of treatment clearing up the diagnosis in dubious cases.

Southern Medical Journal, Birmingham, Ala.

September, 1920, **13**, No. 9

*Syphilis of Heart and Aorta. I. I. Lemann and A. Mattes, New Orleans.—p. 623.
*Analysis of One Hundred Cases of Neurosyphilis. G. M. Eckel, Hot Springs, Ark.—p. 629.
Syphilis of Mucous Membranes. L. Thompson, Hot Springs, Ark.— p. 631.
Diseases of Pancreas: Case Reports. J. E. Knighton, Shreveport, La. p. 636.
Gastric Neuroses. A. G. Brown, Richmond, Va.—p. 639.
Lessons from Study of Typhoid Fever Among American Soldiers. L. J. Johns, Tallapoosa, Ga.—p. 642.
Recent Advances in Diagnosis and Treatment of Syphilis and Gonorrhea in Relation to Public Health Measures. D. M. O. Robinson, Washington, D. C.—p. 647.
Rural Dental and Surgical Clinics. G. M. Cooper, Raleigh, N. C.— p. 654.
Opportunities of Rural Public Health Nurse to Develop Child Hygiene. R. A. Dodd, Columbia, S. C.—p. 658.
Barrel Stave Splint in Fracture of Clavicle. H. A. Royster, Raleigh, N. C.—p. 663.
Injuries of Spleen: Report of Four Cases. E. B. Claybrook, Cumberland, Md.—p. 667.
*Accidental Inflation of Colon. R. B. Slocum, Wilmington, N. C.— p. 669.
Value in Systematic Examination of Urogenital Tract. G. Timberlake, Baltimore.—p. 670.
Surgery of Prostate. J. H. Carter, Memphis, Tenn.—p. 673.
New Operation for Ptosis-Cautery Puncture. W. P. Reaves, Greensboro, N. C.—p. 679.

Syphilis of Heart and Aorta.—Only nine of the one hundred aortas studied by Lemann and Mattes postmortem appeared to have a smooth intima and of these nine, three when studied microscopically presented the histologic picture of syphilis. Thus only six out of one hundred aortas were normal and five of the six were those of children below the age of ten; only one adult aorta (twenty years old) was normal. There were three aneurysms of the aorta in the series, an incidence approximating that usually found. In a former study of 2,000 necropsies Lemann found aneurysms of the aorta in 3 per cent. Another series of one hundred cases of cardiovascular disease in which Wassermann reactions were made were analyzed.

Thirty-six reactions were positive; sixty-four were negative. The hearts of the fifty-five bodies showing mesaortitis syphilitica were apparently normal grossly in forty-one instances. However, only sixteen of these forty-one proved on histologic examination to be entirely free of abnormality. The findings in both series of cases are discussed.

Neurosyphilis.—Of the series of 100 cases analyzed by Eckel, forty-four (44 per cent.) were cases of tabes dorsalis, and of these 30 per cent. occurred among females and 70 per cent. among males. The earliest occurred at the age of 31 and the oldest at 58. The probable date of the onset of symptoms from the date of the initial lesion, as best estimated from the history of the patient, varied from three to twenty-one years with the average at eleven years. Of the forty-four cases of tabes, twelve were advanced, thirteen moderately advanced, and nineteen were in the early or incipient stage. Of blood Wassermanns done on the tabetics, 45 per cent. showed negative, and of these only three became positive after provocative arsphenamin. There were twenty-one cases showing neurasthenic complex with greatly exaggerated reflexes and usually hyperactive pupils easily fatigued; five cases of Erb's syphilitic spinal paralysis; sixteen cases of sciatica varying from subacute to chronic forms with atrophy and paralysis; seven cases of optic atrophy. There were cases showing symptom complexes closely resembling chronic recurring tetany, multiple sclerosis, amyotrophic lateral sclerosis, bulbar palsy, progressive muscular atrophy, and one case of syringomyelia.

Competency of Ileocecal Valve.—Slocum's case is of interest in connection with Cannon's work on the movements of the large intestine, showing, as it does the competency of the ileocecal valve.

Southwest Journal of Med. and Surg., El Reno

July, 1920, **28**, No. 7

Importance of Recognizing Cases of Ectopic Pregnancy. L. A. Sutter, Wichita, Kan.—p. 117.
Elbow Injuries. H. D. Jerowitz, Kansas City, Mo.—p. 121.
Hysteria. A. D. Young, Oklahoma City, Okla.—p. 125.
Operative Technic of Prostatectomy. E. G. Mark, Kansas City.—p. 130.

Surgery, Gynecology and Obstetrics, Chicago

September, 1920, **31**, No. 3

*Tumors of Bladder. W. C. Danforth and B. C. Corbus, Chicago.—p. 219.
*Syphiloma Vulvae. Arthur Stein, New York.—p. 277.
*Effects of Radium Emanations on Brain Tumors. C. F. Frazier, Philadelphia.—p. 236.
*Effects of Radium on Normal Brain Tissue. C. S. Williamson, R. O. Brown and J. W. Butler, Philadelphia.—p. 239.
Recklinghausen's Disease with Surgical Complications. C. E. Caldwell, Cincinnati.—p. 243.
Interpretation of Muscle Function in Relation to Injuries of Peripheral Nerves. C. C. Coleman, Richmond, Va.—p. 246.
*Clinical Consideration of Osteomyelitis. A. J. Oschner and D. W. Crile, Chicago.—p. 263.
Moisture and Ash of Maternal and Fetal Blood. H. J. Stander and M. Tyler, New Haven, Conn.—p. 276.
*Amniotic Hernia; Report of Case. E. Friend, Chicago.—p. 282.
Management of Fractures of Femur. J. J. Moorhead, New York.—p. 288.
Bone Pin Grafts in Ununited Fractures of Lower Jaw. R. E. Soule, Newark, N. J.—p. 298.
*Radium Treatment of Cancer of Bladder; Report of Case. H. A. Kelly and R. M. Lewis, Baltimore.—p. 303.

Tumors of Bladder.—Three carcinomas, three papillomas and one condyloma of the bladder are reported by Danforth and corbus. They emphasize the necessity of remembering that syphilitic growths may very closely simulate carcinoma and that careful observation may be needed to distinguish between them. They also call attention to the value of radiotherapy as an adjunct to operative measures.

Syphiloma of Vulva.—Three cases are reported by Stein. He says that the treatment under all circumstances should consists of (1) operative removal of all tumors, hypertrophied tissues and ulcers, followed in the same session by (2) energetic cauterization and combined with (3) intensive antisyphilitic medication.

Radium Therapy of Brain Tumors.—Radium has been applied in Frazier's clinic under the direction of Dr. Henry K. Pancoast in the treatment of brain tumors in twenty-four cases. Three cases are cited as illustrations of what radium may accomplish. In these there seems to be indisputable evidence that by radium emanations the growth of the tumor has been arrested and in all probability the tumor destroyed.

Effect of Radium on Normal Tissues.—Williamson and his associates found by experiments that the roentgen rays after passing through 0.4 millimeter of platinum penetrate brain tissue and have a destructive action within a radius of 5 millimeters, with the dosage of 900 milligram hours. The effect on the blood vessels varies according to the distance from the radium and the number of hours applied. These experiments give assurance that, in the case of those brain tumors which respond readily to radium, little or no damage will be inflicted on the brain tissue surrounding the tumor, if the radium is implanted in the growth. The dosage employed on the growth can be regulated so as to be destructive only to the periphery.

Treatment of Osteomyelitis.—Local foci of infection, such as abscesses of tonsils or teeth or sinuses, Ochsner and Crile state, should invariably be eliminated at once on undertaking the treatment of patients suffering from osteomyelitis. The operation should consist in splitting the periosteum for a distance of from 2 to 5 cm. beyond the area of pain on pressure in the bone in each direction, and the periosteum should be loosened from the bone for a distance of from 1 to 2 cm. on each side of the incision. In extremely severe cases this should be the extent of the primary operation. In less severe cases ultimate healing can be hastened by carefull opening the medullary canal at the point previously located because of pain on pressure. Moist hot antiseptic dressings with fixation of the extremity and with the use of electric light treatment increases the comfort and facilitates healing.

Amniotic Hernia.—Amniotic hernia is a rare condition. Congenital umbilical hernia of the cord in Friend's opinion is a misnomer and should be substituted by the term amniotic hernia. The treatment, when resection of abdominal organs is not indicated is operative immediately after birth; for small protrusions or in the case of failure to recognize the condition until late, palliative treatment is indicated. Friend's patient died on the second day after birth. The necropsy report is given in full.

Radium Treatment of Bladder Cancer.—A case of infiltrative bladder carcinoma treated by radium, the patient being now apparently well, is reported by Kelly and Lewis.

Texas State Journal of Medicine, Fort Worth

September, 1920, 16, No. 5

*Bubonic Plague. M. D. Levy, Galveston, and D. McMicken, Beaumont.—p. 195.
Calculi in Right Half of Horseshoe Kidney. A. I. Folsom, Dallas.—p. 200.
Report of a Case of Orthostatic Albuminuria. B. Reading, Galveston.—p. 201.
Some Clinical Features of Prostatic Hypertrophy. H. McC. Johnson and J. M. Venable, San Antonio.—p. 202.
Cardiac Arhythmias. L. A. Riely, Oklahoma City.—p. 204.
Use of Electrocardiograph in Diagnosis of Difficult Heart Cases. J. S. Davis and G. M. Underwood, Dallas.—p. 206.
Cortical Inlay Bone Graft Emplaced Under Pressure. G. Hamilton, Houston.—p. 210.

Bubonic Plague.—Among the fourteen cases of plague reported by Levy and McMicken there were only six deaths, which the authors regard as corroborative evidence as to the efficacy of antiplague serum in large doses in the treatment of this disease. The cases embraced the bubonic and septicemic forms, and in one case meningitis was a complication. Of the six patients who died, only two received serum treatment, and of these, one received only one injection of 50 c.c. before death ensued. The authors suggest that patients with axillary buboes be given much larger initial doses than those with femoral or inguinal involvement.

Virginia Medical Monthly, Richmond

September, 1920, **47**, No. 6

Historic Petersburg: Three Centuries of An Old Virginia Town. A. K. Davis, Petersburg.—p. 233.
First Aid to Insane. W. F. Drewry, Petersburg.—p. 244.
Pyelitis. J. B. Jones, Petersburg.—p. 247.
Intubation for Laryngeal Diphtheria. E. L. McGill, Petersburg.—p. 250.

Management of Influenza at "Old Hickory." G. H. Reese, Petersburg.—p. 254.
Importance of Routine Examinations of Nose, Throat and Ear. W. C. Moomaw, Petersburg.—p. 256.
Some Experiences and Records of a Municipal Health Department in an Extra Cantonment Zone, 1917-1919. R. A. Martin, Petersburg.—p. 259.
Epidemic Encephalitis, Report of Two Cases. G. A. Ezekiel, Richmond.—p. 263.

West Virginia Medical Journal, Huntington

September, 1920, **15**, No. 3

Maniac Depressive Psychosis. L. V. Guthrie, Huntington, W. Va.—p. 81.
Microbes and Men. W. W. Brown, Shenandoah Junction, W. Va.—p. 89.
Cancer Problem. F. L. Hupp.—p. 91.
Physician and Hospital. H. E. Gaynor, Parkersburg, W. Va.—p. 93.
Pyelitis in Childhood C.-B. Preston, Kingston, W. Va.—p. 96.
Symptoms and Treatment of Urethritis. C. A. Farren, McClung, W. Va.—p. 98.

Wisconsin Medical Journal, Milwaukee

September, 1920, **19**, No. 4

Plastic Work in Surgery of Jaw. G. V. I. Brown, Milwaukee.—p. 143.
Evacuation of Wounded in Battle. G. W. Neilson, Milwaukee.—p. 152.
Indications for Radium Therapy in Surgical Conditions of Pelvic Organs. H. Schmitz, Chicago.—p. 157.
Radium Treatment in Gynecology. A. H. Curtis, Chicago.—p. 172.
Radium in Dermatology. H. R. Foerster, Milwaukee.—p. 174.
Roentgen Rays in Dermatology. C. A. Baer, Milwaukee.—p. 177.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Aug. 28, 1920, No. 3113

Clinical Significance and Course of Subacute Bacterial Endocarditis. H. D. Rolleston.—p. 301.
*Chronic Abdominal Pain. E. Deanesly.—p. 312.
*Roentgen Rays and Appendix. R. A. Bennett.—p. 316.
*Anesthesia in Tonsil and Adenoid Operations. C. Yorke.—p. 318.

Diagnosis of Gastric and Duodenal Ulcer.—Deanesly has found that in cases in which gastric or duodenal ulcer is verified by operation, the clinical history and symptoms have almost always enabled a correct diagnosis to be made beforehand. On the other hand, many cases with symptoms apparently pointing clearly to ulcer, such as a definite time relation between pain and food, and even hematemesis actually observed, were found at the operation to have no demonstrable ulcer either in the stomach or duodenum. In other words where the ulcer existed it was nearly always diagnosed, but many were diagnosed without being found. Another observation which has impressed Deanesly strongly is that in every case in which he has operated in which there was a definitely observed chronic melena, he has found a duodenal or pyloric ulcer. Another impression gathered is that the clinical history of cases diagnosed or suspected of ulcer but disproved by operation, though sometimes resembling very closely the history of a true ulcer, when scrutinized fails in one or more important features. The symptoms are apt to be more vague; the time relation between pain and food is less precise than usual. Hematemesis is almost always absent.

Roentgen Rays and Appendix.—In a series of fifty consecutive opaque meals given for one purpose or another, but always having in view the behavior of the parts in the ileocecal region, Bennett says the appendix was definitely recognized in a much smaller percentage of cases than might have been expected; in only 45 per cent. could one be sure that what one was looking at was really the appendix. Of the appendices seen twenty were found diseased at the subsequent operation, two were apparently normal. Of the remaining twenty-eight in the series, fifteen were diseased, thirteen were normal; of the fifteen the lumen was obliterated in three, and in twelve the organ was so bound down to the side or back of the cecum that even with a patent lumen full of barium, it would have been impossible to differentiate its shadow from that of the surrounding coils of intestine.

Anesthetic for Tonsil and Adenoid Operations.—Yorke advocates the use of nitrous oxid or local anesthesia in preference to ether and chloroform, in the removal of tonsils and adenoids.

China Medical Journal, Shanghai

July, 1920, **34**, No. 4

*Some Current Problems in Protozoal Dysentery. F. G. Haughwout.—p. 343.
Surgery of a War Hospital in England. J. L. Maxwell.—p. 358.
Lethargic Encephalitis in Canton. Wm. W. Cadbury.—p. 371.
Lethargic Encephalitis in Hwaiyuan. H. A. Judson.—p. 373.
Lethargic Encephalitis in Peking. Wm. G. Lennox.—p. 376.
Tetanus Neonatorum: A Study in Prophylaxis. J. Kirk.—p. 378.
*Tetanus Due to Ear Infection. S. Neville.—p. 381.
Cystic Disease of Fibula. W. C. Dale.—p. 382.
Bier's Regional Venous Anesthesia. H. B. Taylor.—p. 385.
Rupture of Abscess of Liver into Pleura. Report of Case. R. E. Brown.—p. 387.
Bacillus Pyocyaneus Infection: Report of Case. E. T. H. Tsen.—p. 389.

July, 1920, **34**, No. 4 (Anatomical Supplement)

Anthropology of Asiatic Peoples. A. Hrdlicka.—p. 30.
Stone Implements of Neolithic Type in China. J. G. Anderssen.—p. 40.
Origin of Vitreous. H. J. Howard.—p. 47.
Motor Nerve of Soft Palate and Relation Between Soft Palate and Paralysis of Facial Nerve M. Inouye.—p. 58.
Concerning Anthropometry and Observations on Healthy Subjects. D. Black.—p. 64.

Benzyl Benzoate in Protozoal Dysentery.—Haughwout considers benzyl benzoate an admirable remedy in the treatment of acute protozoal dysentery and is possibly not excelled by any of the other drugs customarily employed. However, much remains to be discovered regarding its action on the infection, and patients will have to be watched for a long period after treatment to discover if a cure has been effected. It is still too early to form an opinion one way or the other.

Tetanus Following Ear Infection.—In China it is the custom for barbers to remove polypi or wax from the ears. Owing to ignorance, carelessness and the dirty instruments used serious results not infrequently follow this practice. In the particular case reported by Neville tetanus was the result. A feature of interest was the long incubation period—one month.

Edinburgh Medical Journal

September, 1920, **25**, No. 3

Valedictory Address to the Edinburgh Obstetrical Society. J. H. Croom.—p. 145.
Importance of Symptoms in Medical Practice and Research. J. Mackenzie.—p. 156.
Functional Mental Illnesses. R. G. Rows.—p. 166.
Case of Retroperitoneal Fibromyomatous Tumor of Uterus. F. D. Cairns.—p. 178.
Syphilis: Its Early Diagnosis and Initial Treatment. D. Lees.—p. 182.

Indian Medical Gazette, Calcutta

August, 1920, **55**, No. 8

Superfluous Woman. H. F. Stephens.—p. 281.
*Case of Melancholic Stupor (Psychocoma). O. St. J. Moses.—p. 281.
Vaccine Therapy in Typhoid and Paratyphoid Fever. C. J. Fox.—p. 282.
*Sodium Morrhuate and Sodium Hydnocarpate in Leprosy. P. Ganguli.—p. 284.
Case of Hydrophobia. S. Amritaraj.—p. 286.
Bacteriologic Investigation of Normal and Diseased Eyes. C. C. Sinha.—p. 288.
*Thymol Treatment of Hookworm Disease. B. H. Lal.—p. 289.
Organotherapeutic Treatment of Malaria. A. J. Noronha.—p. 289.
Hazaribagh: A Popular Health Resort. A. Roy.—p. 290.
Case of Penetrating Abdominal Wound. S. N. Misra.—p. 298.
*Large Lipoma in Child. J. C. Tull and M. Alam.—p. 299.

Psychocoma.—Moses reports the case of a man, aged 42, whose state of melancholia became psychocoma. For two and three-quarter years, the patient lay in a state of utter stupor, without manifesting any change that was perceptible. During the whole of the time, he lay on the flat of his back, in practically the same position, with his forearms flexed at the elbows, his hands flexed at the wrists and meeting over the sternum, and his legs drawn up in semi-flexion. All his limbs were as rigid as could be, and he resisted all efforts made, with any reasonable degree of force, to extend them. The muscles of the back and neck shared in this extraordinary stiffness, so that if he were lifted by the occiput, the entire head, neck and body could be raised as if he were a block of wood. His eyes in wakefulness were always wide open, and had a fixed, vacant, far-away stare, and the veins on his forehead stood out with a certain degree of promi-

nence. There was an utter loss of volitional power. He passed urine and excreta in bed, and seemed to feel no annoyance or discomfort owing to this circumstance. His expression remained exactly the same throughout—utterly vacant. Words addressed to or shouted at him made not the slightest difference in his expression. On no occasion was he known to call for food or to manifest any desire for it, and never was he seen or known to help himself to any when food was placed beside him. Feeding was carried out throughout his illness by means of the nasal tube. Occasional attacks of diarrhea were the only other untoward incidents in the course of the case. His circulation remained moderately good throughout, and the reflexes remained normal. At no time were there any trophic changes, the patient keeping marvelously well-nourished and entirely free from bed-sores or any approach to these—a circumstance which appears to be characteristic of cases of psychocoma. The patient suddenly awoke as if from a long dream. For the first time after nearly three years of the most rigid silence, he spoke in a feeble whisper and indicated his desire to write. He was given pencil and paper, and instantly, in a perfectly legible though somewhat shaky handwriting, he wrote in English a few lines which had a perfectly rational meaning. Two days thereafter his voice was distinctly audible and his speech quite intelligible. He was able to sit up with help and to take semisolid food, but appeared to be somewhat depressed. Before the week was out he was able to feed himself, and gradually attained to full vegetarian diet. He had only a very vague recollection of what had happened during the past three years. Massage and practice have restored his power of walking.

Sodium Morrhuate and Sodium Hydnocarpate in Leprosy.—Five cases of leprosy are reported by Ganguli in which good results were obtained from the use of sodium morrhuate and sodium hydnocarpate. Both preparations have a remarkable action on the maculo-anesthetic type of leprosy. Mixed treatment with both drugs produces very desirable results. Where sodium morrhuate failed to quickly reduce the nodular deposits, sodium hydnocarpate succeeded.

Night Blindness in Uncinariasis.—The most striking observation made by Lal was that in eight of the 451 cases treated, the patients, before treatment, suffered from night blindness, and the treatment resulted in a complete recovery from this defect two or three days after the first administration of thymol.

Lipoma of Breast in Child.—The tumor in Tull and Alam's case was situated in the breast of a girl, 11 years old. It weighed 51 pounds.

Journal of Tropical Medicine and Hygiene, London

Sept. 1, 1920, **23**, No. 17

Graphic Method of Demonstrating Tropical Medicine and Hygiene. A. Balfour and S. H. Daukes.—p. 213.
*Surgical Treatment of Ulcus Tropicum. R. Howard.—p. 215.

Treatment of Tropical Ulcer.—The operation done by Howard consists in scraping away all the sloughs and softened tissue with a Volkmann's spoon. When a firm base of sound tissue has been obtained, the undermined edge of skin is cut away with scissors curved on the flat, so as to leave no pockets. Any ragged pieces of fibrous tissue that remain in the base of the ulcer are then cut away with scissors. The surface is washed over with an antiseptic, and then dressed with cyanid gauze and some antiseptic wool, and firmly bandaged. The first dressing is done forty-eight hours after the operation.

South African Medical Record, Cape Town

Aug. 14, 1920, **18**, No. 15

Action of Volatile Oil of Wild Celery. J. W. C. Gunn and E. M. K. Geiling.—p. 288.

Bulletins de la Société Médicale des Hôpitaux, Paris

July 23, 1920, **44**, No. 27

*Pseudoradicular Nevus. Laignel-Lavastine and Tinel.—p. 1048.
*Mega-Esophagus. Oettinger and Caballero.—p. 1052.
Radioscopy of Aorta. C. Laubry and L. Mallet.—p. 1058.
Spirochetal Jaundice at Paris. P. Menetrier and A. Durand.—p. 1063.
Brain Abscess with Bronchiectasia. Idem.—p. 1066.
*Contracture of Abdominal Wall with Pleurisy. F. Ramond and J. Deroche.—p. 1072.
*Gonococcus Jaundice. F. Widal and E. May.—p. 1076.
Onset of Lethargic Encephalitis with Delirium. H. Eschbach and P. Matet.—p. 1081.
*Pituitary Tumor. Reverchon and others.—p. 1084.
*Pyothorax from Amebic Abscess. R. Proust and L. Ramond—p. 1086.
*Biochemism of Scurvy. Labbé and others.—p. 1094.
Negative Radiologic Findings with Pleural Effusions. P. Ameuille.—p. 1099.
*Slow Cancer in Liver. Ribadeau-Dumas and de Laulerie.—p. 1101.
Pigmented Buccal Patches and Syphilis. A. Léri and Cochez.—p. 1105.
*Membranous Colitis. Florand and Girault.—p. 1108.
*Syphilis of the Stomach. Florand and Girault.—p. 1110; p. 1111.

Pseudoradicular Nevus.—The nevus extended from neck to finger, corresponding to an area innervated by the upper portion of the sympathetic center for chest and arm. It seemed to be a vasomotor paralysis, a dissociated sympathetic syndrome.

Idiopathic Dilatation of the Esophagus.—The esophagus and cardia are permeable in the two cases described, but the large esophagus is shaped like a radish, and the long end becomes kinked. One of the men works the contents down into the stomach by bending over backward and drawing a deep breath. The other gets relief by swallowing a glass of water when he feels that the food is arrested in the esophagus. As soon as the food passes into the stomach he bends forward and expels the water, sometimes repeating this three or four times at a meal. This mega-esophagus seems to be congenital, and systematic dilatation of the narrow outlet might help, but an anastomosis between esophagus and stomach offers the only prospect of a permanent cure.

Contracture of Abdominal Wall in Pleurisy.—Ramond and Deroche found the muscles of the abdominal wall contracted when palpated lightly below the costal arch, the patient recumbent, in cases of pleurisy. This contracture was never detected otherwise except with conditions not liable to be confused with a pleural effusion.

Gonococcus Jaundice.—Widal and May report the recovery under antigonococcus serum of a woman of 30 with gonococcus septicemia and jaundice.

Pituitary Tumor.—The man, now 27, had been losing his sexual characteristics after air concussion from a large shell, and the sella turcica became enlarged. Under six months of weekly exposures to the roentgen rays, the signs of pituitary insufficiency have gradually subsided and the progress of the other disturbances has been arrested.

Rupture of Amebic Abscess.—The abscess in the liver ruptured into the pleura, but the extensive pyothorax was finally cured by repeated punctures plus emetin and neo-arsphenamin.

Scurvy at Paris.—The officer of 51 had lived for two months on bread and sausage alone, and developed typical scurvy. The tabulated metabolic findings testify to defective protein metabolism. The third day after change to a proper diet he excreted in the urine 112 gm. of urea and 69 gm. of total nitrogen.

Slow Cancer of the Liver.—The microscope at necropsy showed the usual features of an adenocarcinoma of the liver, but it had run a five year course.

Membranous Colitis.—The effects of constipation and abuse of enemas under pressure had induced severe membranous colitis in the woman. It yielded promptly to tincture of belladonna supplemented with an extract of bile.

Syphilis of the Stomach.—Only the history of syphilis in the antecedents and the recovery under specific treatment revealed that the typical "chronic gastritis" was of syphilitic nature in the man of 52. In a second case the symptoms had been those of dyspepsia, but the contrast meal disclosed what seemed to be three gummas in the stomach wall.

Journal d'Urologie, Paris

1920, **9**, No. 4

*Idiopathic Dilatation of the Renal Pelvis. L. Bard.—p. 243.
*Correction of Hypospadias. J. Martin.—p. 249.
*Leukoplakia of Bladder. G. Marion.—p. 257.
*Orthopedic Resection of Renal Pelvis. G. Gayet.—p. 263.

Intermittent Hydronephrosis.—Bard declares that idiopathic dilatation of the kidney pelvis is the primary disturbance.

This in time entails kinks and distention by the obstacle afforded by the progressive development of the primary pocket. He describes an instructive case of intermittent hydronephrosis on the right side. Although roentgenoscopy revealed extreme dilatation of the kidney pelvis on both sides, there have been no symptoms from the left kidney to date. Attempts to dilate the ureter and rinse out the pelvis might be useful, but the only logical treatment is to transplant the ureter to the lowest part of the sagging renal pelvis.

Treatment of Hypospadias.—Martin applied a combination of Donnet's prepuce-flap method and Nové-Josserand's dermo-epidermis technic in a young man, and reports an excellent outcome.

Leukoplakia of the Bladder.—The extensive leukoplakia showed epitheliomatous degeneration at two points. There had been symptoms of rebellious cystitis for sixteen years, first noted at 15. The woman died at 31 from chronic suppuration in the kidney; she had refused nephrectomy until too late.

Plastic Operations on the Kidney Pelvis.—Gayet describes what he believes to be the fifth case on record of orthopedic resection of the pelvis for retention of urine in a wandering kidney. The sagging portion was resected, with nephrostomy and nephropexy, and clinically normal conditions were soon restored.

Nourrisson, Paris

July, 1920, **8**, No. 4

*Choleriform Diarrhea in Infants. A. B. Marfan.—p. 193.
*Leishmaniasis in Children. M. Labbé and P. Ameuille.—p. 209.
*Digestive Intolerance in Infants. R. Pierret.—p. 217.
Stenosis of Pylorus in Infant. Morlet.—p. 220.
*Dog's Milk for Infants. A. Legrand.—p. 223.
*Infant Welfare Work. A. B. Marfan.—p. 226.

Cholera Infantum.—Marfan gives here the clinical description of the stages of choleriform diarrhea in infants, the forms it may assume, the course and complications, and the pathologic anatomy.

Kala-Azar in Children.—The two cases described developed in France and have been previously mentioned in these columns. The disease was probably contracted from the dog the family had brought with them from Serbia. The dog had been ailing, but none of the parasites were found in it when killed, which is usually the case. The disease lingered for fifteen months in one of the children, not modified by tartar emetic not begun till after improvement was evident; the course in the younger was progressive during the ten months it was under observation. When last seen, the spleen reached to the pubis. A third child rapidly improved when sent from Nice to the mountains two or three months after the anemia and large spleen had been first noticed.

Treatment of Intolerance of Infant for Milk.—Pierret reports three cases in which the intolerance for condensed milk or breast milk seemed to be the result of anaphylaxis, and was conquered by Weill's anti-anaphylaxis. The child was injected subcutaneously with 5 c.c. of a mixture of 2 teaspoons of unsweetened condensed milk and 4 tablespoons of boiled water. There was no general reaction, no fever, and two days later the child began to thrive on the condensed milk diluted 1:4. Before this it had responded with high fever and diarrhea to every attempt to feed it with condensed milk. The temperature chart shows the remarkable change brought about by the injection in the 11 month infant. The other infants were 6 weeks and 3 months old and a subcutaneous injection of 5 c.c. of the mother's milk arrested the digestive intolerance, fever up to 39 or 40 C. (104 F.) and diarrhea at every feeding.

Dog's Milk in Infant Feeding.—Legrand has witnessed four instances in which, after the puppies had been drowned, the dog suckled the infant in the family. In one case Legrand advised utilizing the large female dog he noticed under the gypsies' wagon, when he saw that the gypsy twins he had delivered not long before were being fed on insanitary soup. The animals in all the cases served with evident delight, running to the infant when they heard it cry. All the infants thrived on the dog milk. The fourth case was a boy of 10 who sucked his dog's milk after its puppies had been taken away. He said the milk was richer than cow's and goat's milk. In this case the lactation had been kept up for five or six months.

Efforts for Infant Welfare.—Marfan discusses here the advisability of homes for nursing mothers and infants, and asylums for infants that cannot be breast-fed.

Paris Médical

Aug. 21, 1920, **10**, No. 34

*Primary Syphilitic Jaundice. G. Milian.—p. 141.
*Hemiplegia in Recent Syphilis. E. Gelma.—p. 144.
Plate to Screw on Fractured Bone. Dupuy de Frenelle.—p. 146.
Treatment of Lupus with Scarifications and Radium. B. de Laborie. —p. 149.

Primary Syphilitic Jaundice.—Milian reports three cases of jaundice contemporaneous with the primary sore. They confirm anew the peculiar affinity of the spirochetes for the liver. In one case the icterus had preceded the chancre by two or three days, and once the jaundice had subsided before the Wassermann reaction became positive. The jaundice never persisted after the subsidence of the primary sore. He adds that he has never found pruritus with syphilitic jaundice.

Organic Hemiplegia with Recent Syphilis.—The partial convulsions and hemiplegia with contracture in Gelma's two cases testified to a focal injury of the cortex from the recent syphilitic infection.

Presse Médicale, Paris

Aug. 21, 1920, **28**, No. 59

Wounds of the Knee; Sixty-Four Cases. J. Okinczyc.—p. 573.
*Expectoration with Pleuropulmonary Suppuration. P. E. Weil.—p. 574.
*The Vagosympathetic Reflexes. A. C. Guillaume.—p. 574.
*Is Rachitis a Deficiency Disease? M. Nathan.—p. 577.

Purulent Expectoration with Pleuropulmonary Suppuration.—Weil refers to expectoration of from 150 to 250 c.c. of sputum per day from a partial, suppurating pleurisy which keeps up interminably until the process is arrested by operative intervention. The condition is liable to be mistaken for tuberculosis. With exploratory puncture followed by injection of methylene blue, the sputum shows blue at once, confirming the opening into the air passages.

The Oculocardiac Reflex.—Guillaume reiterates that the sensory and vegetative reflexes rank high in pathology; they cooperate in numerous pathologic conditions, from shock to asthma. The pituitary in particular seems to be a special target for all the stimuli which elicit responses in the vegetative nervous system. With the oculocardiac and similar reflexes we are able to study these responses, and penetrate deeper into this "No Man's Land" of certain psychoses, neuroses, etc.

Is Rachitis a Deficiency Disease?—Nathan summarizes some recent research which seems to answer this question in the affirmative. Empiric observation had already demonstrated the efficacy of cod liver oil in treatment, long before its high content in fat-soluble vitamin had been recognized. In any event, he says, it will do no harm for the physician to bear in mind the possibility of a deficiency factor as he seeks to ward off and to treat rickets.

Aug. 25, 1920, **28**, No. 60

Physical Training. J. P. Langlois.—p. 585.
*Insufficiency of the Pylorus. E. Enriquez and Gaston-Durand.—p. 586.
*The Calmette-Massol Technic in Serology. R. Letulle.—p. 588.

Radioscopy of Pylorus Functioning.—Enriquez and Durand expatiate on the advantage of roentgen-ray examination in cases of suspected gastric ulcer. They reproduce the radiographic findings to be expected in such conditions.

Hemolytic Test for Tuberculosis.—Letulle relates that the National Antituberculosis Society has recently officially advocated the Calmette-Massol technic for the deviation of complement test as an aid in the early diagnosis of tuberculosis. He describes it in detail and commends it further for the diagnosis of syphilis as well. The principle of the test is the adding of progressively increasing amounts of complement to a constant amount of serum and of antigen.

Progrès Médical, Paris

July 24, 1920, **35**, No. 30

*Serotherapy in Tetanus. C. Achard.—p. 325.
Tests for Proteolytic Ferment in Tumor and Cancer Juice. Loeper and others.—p. 332.
Calcium Carbonate and Phosphate. G. Faroy.—p. 332.

Cephalic Tetanus.—Achard describes a case of cephalic tetanus in a woman of 50, seven days after a fall wounding the brow. This form of tetanus is characterized by contraction limited to the muscles of the face and neck, associated very often with facial, sometimes ocular paralysis. The onset is slow, but diagnosis is rendered easy by this peculiar association of contraction and paralysis, while the trismus and presence of a wound nearby naturally suggest tetanus. Treatment is the same as in ordinary cases, sedatives and especially chloral in large doses. The results from serotherapy, though encouraging, are not yet decisive. Its preventive properties are no longer doubted, but its curative action is not yet constant. The serum should be given repeatedly in large doses for eight days, even if during the first days there are no signs of improvement. In this case injection of 440 c.c. brought sufficient improvement for the antiserum to be dropped.

Schweizerische medizinische Wochenschrift, Basel

Aug. 5, 1920, **50**, No. 32

*Lenkanemia. Wanner.—p. 685.
Chemotherapy of Influenza. H. Ryser.—p. 695.
Spontaneous Valve Pneumothorax. Landolt.—p. 699.
*Thermometer for Deep Tissues, etc. B. Zondek.—p. 700.

Leukanemia.—In Wanner's case, in a young man, necropsy confirmed the diagnosis of associated acute lymphatic leukemia and pernicious anemia. Hemosiderosis was intense. The details of twelve similar cases are tabulated for comparison and also of eighteen others without hemosiderosis. He tabulates further six groups of anemias to a total of seventeen cases. The myelophthisis, he says, is evidently accompanied with hemolysis from the action of some still unknown toxin.

Clinical Thermometer for the Depths.—Zondek's "depth thermometer" set includes a metal tube with stout guide which is worked down into the tissues or the organ. The glass thermometer proper tapers to a long fine capillary tip which is pushed into the metal tube in place of the guide, to a depth of 3 cm. at least, and preferably the whole length of the tube, namely, 10 cm. The highest temperature in the body was always found in the rectum. The practical importance of this depth thermometer is for the detection of local inflammation in organs, etc. For example, he found in one woman the temperature in the thigh 31.7 C.; in the rectum, 38.3, and in a uterine myoma, 38.7 C. (101 F.). The assumption of a destructive process in the myoma was confirmed by the operation. The action of drugs and physical measures can be studied with greater accuracy by this depth thermometry.

Pediatria, Naples

April, 1920, **28**, No. 7

Lethargic Encephalitis in Children. O. Cozzolino.—p. 305.
Influenza-Bacillus Vaccine in Lethargic Encephalitis. Maggiore.—p. 319.
*Serotherapy in Meningococcus Meningitis. P. Foti.—p. 321.

Serotherapy in Meningococcus Meningitis.—Foti gives the details of twenty-two cases in children with recovery of 61 per cent. In eighteen cases given systematic serotherapy, the mortality was 66 per cent. in the children under 2, and 15 per cent. in the older children, none dying of the six over 6 years old. The influence of the antiserum was prompt and decisive, even in two cases in which the serotherapy was not begun until the fortieth and forty-seventh days. Usually four or five intraspinal injections of 20 c.c. each were given. The mortality was in inverse ratio to the age, but it was not so high in infants as in the statistics from most other clinics. He ascribes this to his supplementary use of a vaccine by the vein in cases refractory to the antiserum. Hot baths and hexamethylenamin were given also in some cases.

Policlinico, Rome

Aug. 9, 1920, **27**, No. 32

Abortive Treatment of Syphilis. L. Philippson.—p. 851.
Operate for Gastric Cancer! T. Cavazzani.—p. 855.
Scarlatiniform Eruption in Malaria. G. Genoese.—p. 858.

Aug. 16, 1920, **27**, No. 33

*Hyperhidrosis Below Spinal Cord Lesion. G. A. Pari.—p. 883.
The Maximal and Minimal Blood Pressure. G. Galli.—p. 888.
*Anatomic Bases for Anaphylaxis. A. Ilvento.—p. 889.
Phenol and Magnesium Sulphate in Tetanus. M. Gioseffi.—p. 891.

Hyperhidrosis Below Spinal Cord Lesion.—Pari theorizes on the basis of much clinical and experimental experience to explain the mechanism of this, and its exceptional frequency with syringomyelia.

Anatomic Basis for Anaphylaxis.—Ilvento presents evidence that the protein shock, from parenteral injection of peptone, for example, is a manifestation of anaphylaxis, and that this always corresponds to a grave functional and organic lesion of the nucleus of origin of the vagus nerve. Clinical and experimental experiences, he continues, have confirmed this injury of the nucleus of origin of the vagus in man and in animals. The resulting symptoms proceed from the paralysis of this nerve and the arrest of its inhibiting and regulating action on respiration and circulation, the combination entailing the clinical picture of anaphylaxis.

Riforma Medica, Naples

July 17, 1920, **36**, No. 29

*Review of a Year's Research. E. Maragliano.—p. 641.
Palpation of the Abdomen. M. Ascoli.—p. 649.
Case of Pernicious Anemia. B. Maggesi.—p. 650.
Odors of Human Body. A. De Blasio.—p. 652.

Vaccine Therapy of Tuberculosis.—Maragliano reviews the experiences at the medical clinic at Genoa last year. Among others of special interest he reports that three tuberculous patients were given vaccine treatment and the conspicuous and progressive development of antibodies was systematically recorded. The results were as favorable, he says, as in former years in all cases adapted for active specific treatment. In one case of tuberculosis of both kidneys in particular, surprising results were realized. Teissier of Lyons has also published impressive results with the vaccine in similar cases. The vaccine is the same as that Maragliano uses in prophylaxis, which has been repeatedly described in The Journal. He adds that a number of his clinically cured tuberculous patients passed through influenza without any signs of life from their extinct tuberculosis at the time or since. For over twenty years he has been preaching that if the children exposed to tuberculosis were given systematic preventive vaccine treatment, with killed bacilli, the campaign against tuberculosis would enter an effectual and positive phase.

Some of the other achievements he mentions are summarized separately below.

Index of Resistance of the Tuberculous.—Pietroforte gages the resisting powers and indications for active specific treatment by the weight curve under progressive fatigue tests. This is especially instructive when supplemented with the metabolic findings.

Prophylaxis of Bovine Tuberculosis.—Maragliano reports Sivori's success in treating cattle with heat-killed bacilli and demonstrating the immune phenomena that develop thereafter. He declares that this is the first certainly useful and certainly harmless method of immunizing cattle against tuberculosis.

Tuberculin Treatment of Asthma.—Pietroforte has explained arrest of asthma under treatment with Maragliano's tuberculin as confirming that asthma is a manifestation of anaphylaxis. The organism sensitized by tuberculous toxins becomes desensitized by the small, repeated doses of tuberculin. The success in this line and with similar treatment of lymphogranulomatosis has convinced the workers at the medical clinic in charge of Maragliano that the share of tuberculosis in many conditions is much more extensive than has hitherto been recognized.

Organotherapy in Experimental Tuberculosis.—Manfredi found that experimental tuberculosis in guinea-pigs seemed to be whipped up when the animals were treated with thyroid extract. Suprarenal treatment, on the other hand, attenuated the disease process.

Unreliability of Ambard's Formula.—Maragliano states that the kidneys do not eliminate the nitrogen waste proportionally

to the quantity of such waste in the blood. Hence the Ambard formula is based on erroneous premises. The toxic symptoms with nephritis are not due to mere retention of nitrogenous waste but to toxic degeneration of this waste in the intermediate metabolism—extrarenal factors. The kidneys have merely a passive rôle in eliminating the waste. Barlocco's research on nineteen cases of anuria from mercuric chlorid poisoning and on nephrectomized rabbits, has demonstrated an unexpected complexity in the nitrogen metabolism.

Rivista Critica di Clinica Medica, Florence

Aug. 5, 1920, **21**, No. 22

*Vaccine Therapy in Chronic Bronchitis. G. Stradiotti.—p. 253.

Vaccine Treatment of Chronic Bronchitis.—Stradiotti relates that he has had no failures in his numerous cases of chronic bronchitis treated with an autogenous vaccine. His first patient was a previously healthy woman of 30 who had been expectorating daily about 600 gm. of sputum after influenza about eight months before, rebellious to all treatment. The autogenous vaccine was injected at three day intervals, in the doses of 1, 2 and 3 c.c. There was no further coughing after this, and no expectoration by the third injection. He describes other cases, including one with a gangrenous process in the left lower lobe and adhesions preventing pneumothorax. Fifteen injections of the autogenous vaccine were required before the cure was complete. The only patient not completely cured was a boy of 11 with bronchial asthma.

Aug. 15, 1920, **21**, No. 23

*Temperature During Gastric Digestion. E. Riccioli.—p. 265.

Temperature During Gastric Digestion.—Riccioli's tests of twenty-six persons failed to confirm any rise in the rectal temperature during digestion in the stomach.

Brazil-Medico, Rio de Janeiro

Feb. 28, 1920, **34**, No. 9

*Diagnosis of Thoracic Adenitis. Martagão Gesteira.—p. 133.

Diagnosis of Tuberculous Glands in the Thorax in Children.—Martagão gives an illustration showing old tuberculous glands in the mediastinum of an infant one day old. The symptoms from mediastinal glands inducing compression and from toxic action of the disease included dyspnea in two of his cases, but attacks suggesting asthma were more common. It is possible that certain cases of laryngospasm might be traced to irritation from unsuspected diseased glands. Coughing is the most constant and the most instructive symptom, a spasmodic, dry cough, often mistaken for whooping cough. He discusses further the physical signs and roentgen-ray findings, and commends the intradermal tuberculin technic as the most reliable test.

April 3, 1920, **34**, No. 14

Cytology of Cerebrospinal Fluid. Ernani Lopes.—p. 219.
Treatment of the Gassed. F. Lisboa.—p. 222.
Cerebrospinal Fluid in Syphilis. G. de Moura Costa.—p. 223. Cont'd.

June 19, 1920, **34**, No. 25

Zinc Chlorid in Treatment of Epitheliomas. F. I. da Silva.—p. 391.
Syphilitic Disease of Heart and Aorta of Thirty-Five Years' Standing to Date. O. Clark.—p. 392.
*Priority for Korsakoff's Syndrome. M. Mourão Mattos.—p. 393.

July 24, 1920, **34**, No. 30

The Menopause. J. Adeodato.—p. 475.
Visual Acuity and Military Service. J. Santa Cecilia.—p. 478.

Priority of Description of Korsakoff's Syndrome.—Mourão claims that Prof. Erico Coelho of the medical faculty of Rio de Janeiro published a description in 1886 of the syndrome which some years later Korsakoff described. Coelho called it merely *phenomenos cerebrosthenicos.*

Gaceta Médica de Caracas

June 15, 1920, **27**, No. 11

Action of Tartar Emetic on Bilharzia. J. R. Risquez and Martín Vegas.—p. 131.

Tohoku Journal of Experimental Medicine, Sendai

April 29, 1920, **1**, No. 1

*Starch-Digesting Ferments. S. Osato.—p. 1.
*Suprarenals in Experimental Diabetes. I. Fujii.—p. 38.
*Action of Epinephrin on Pupil. T. Kato and M. Watanabe.—p. 73.
*Autolysis of Normal Serum. I. S. Yamakawa and K. Okubo.—p. 83.
*Pharmacologic Study of Ginger. R. Doi.—p. 96.
*Sympathetic Innervation of Intestines. K. Tashiro.—p. 102.
*Vasoconstriction by Blood Serum. M. Watanabe and T. Odaira.—p. 106.

Starch-Digesting Ferments.—Osato's extensive experimental research on the amylolytic ferments in the animal body was devoted mainly to maltase. (The article is in German.)

Suprarenals in Experimental Diabetes.—Changes were found mainly in the chromaffin substance of the suprarenals during experimental diabetes of central origin. Among the other points brought out in the tabulated findings from the sugar puncture and drug tests on rabbits is that the splanchnic nerve on each side innervates the epinephrin secretion only on the same side. (In German.)

Paradoxic Action of Epinephrin on Eye.—Kato and Watanabe refer to the action of epinephrin on the pupil after repeated subcutaneous injections of the drug. Instead of the usual dilatation of the pupil, it contracts. This does not occur when the eyes are under the influence of atropin or when the epinephrin is injected for the first time. The contraction occurs probably from chemical changes in the muscles controlling the pupil. (In English.)

Autolysis of Normal Serum.—This first report of research on substances capable of promoting autolysis of normal serum concludes with the statement that the activating influence of acetone is largely dependent on the external temperature and the length of contact. Temperatures above 30 C. or below 20 C. inhibit its activating power. Small amounts of certain substances, such as ketone and aromatic alcohols promote this action although these substances alone may not display any activating influence. (In German.)

Pharmacology of Ginger.—Doi relates that Nomura has recently isolated the principle in ginger root responsible for the odor, and has named it zingerone. When infused into the blood of a frog it caused motor paralysis, but when used internally there were no symptoms suggesting toxic action unless very large amounts were used. (In English.)

Sympathetic Innervation of Intestines.—Tashiro describes experiments to demonstrate the action of epinephrin on the sympathetic innervation of the intestine. Its action seems to depend on the quantity, exciting or inhibiting according to the amount used. (In English.)

Vasoconstricting Action of Blood Serum.—Human blood serum seems to have a constricting action on the blood vessels of the frog, and this increases with the interval after the serum is drawn. (In German.)

Deutsche medizinische Wochenschrift, Berlin

July 8, 1920, **46**, No. 28

Diabetic Coma in Pregnancy. F. Umber.—p. 761.
Relation of Acid-Fast Saprophytes to Tubercle Bacilli. Lange.—p. 763.
Treatment of Tuberculosis with Living, Avirulent Vaccines. F. Klopstock.—p. 764.
Roentgen-Ray Treatment of Surgical Tuberculosis. Elsner.—p. 765.
Comment. O. Strauss.—p. 766.
Incidence of Tuberculosis in Children. Hilgers and Gentzen.—p. 767.
Function of the Superior Semicircular Canal. R. Schilling.—p. 767.
Production of Secondary Rays and Their Therapeutic Importance. M. Fränkel.—p. 771.
Carrot Extract in Infant Feeding. Aron and Samelson.—p. 772.
Hutchinson's Teeth. (A Reply). P. Kranz.—p. 773.
Operation for Umbilical Hernia in Children. H. Spitzy.—p. 774.
Flat-Foot. (A Reply). E. Fisher.—p. 774.
Urine Determination of Body Temperature. G. Poelchau.—p. 774.
Rhinolaryngologic Hints for General Practitioners. Finder.—p. 775.

July 15, 1920, **46**, No. 29

Contracted Heart. E. Meyer.—p. 789.
Further Discussion of Nonspecific Immunity. H. Much.—p. 791.
Kidney Function in Diabetes. H. Schirokauer.—p. 791.
Elective Demonstration of Spirochetes in Various Sections of the Central Nervous System. F. Jahnel.—p. 793.
Darkfield Examination of Spirochaeta Pallida after Fixation. L. Dub.—p. 794.
Bacteriologic Findings in Influenza. Loewenhardt.—p. 794
*Treatment of Tuberculosis. H. Bach.—p. 795.
*Treatment of Gangrene of Lung. J. Alsberg.—p. 797.
Treatment of Fracture of the Radius. Klapp.—p. 798.
So-Called Nutritive Anemia in Relation to the Anatomy of the Blood. Rollin.—p. 799.
Transmission of Scarlet Fever by Fomites After Fifteen Years. Golliner.—p. 799.
*Pathogenesis of Kidney Disease. H. Strauss.—p. 800.
Rhinolaryngologic Hints for General Practitioners. Finder.—p. 802.

Value of Change of Climate and of Natural and Artificial Heliotherapy in Tuberculosis.—Bach summarizes the benefits to be derived for tuberculosis patients from change of climate and heliotherapy, stating that, from time to time, change of climate and interruption of natural or artificial heliotherapy are to be recommended. Only the ultraviolet rays exert a special influence on the whole organism; therefore, only from such sources of light as have large quantities of ultraviolet rays can a therapeutic effect be expected, for which reason the natural sunlight of the lowlands cannot replace either the sunlight of mountain regions or its artificial reproduction. The character of the skin and skin function in different individuals is to be considered. Lasting results can only be expected so long as the natural, healing forces of the organism are still able to act.

Treatment of Gangrene of the Lung with Neo-Arsphenamin.—Alsberg reports four cases of gangrene of the lung, in two of which spontaneous recovery took place; in one recovery was brought about by neo-arsphenamin, and in a fourth case, spontaneous recovery did not occur, nor did it react to neo-arsphenamin, so that surgical intervention became necessary.

Origin and Classification of Inflammations of the Kidney.—Strauss states that in considering the quantity of excreted albumin as evidence of definite pathologic changes in the kidneys, only exceedingly high degrees of albuminuria have marked diagnostic value, and that even then the clinical peculiarities of the case must be taken into account. The diagnosis of a pathologic condition of the tubular epithelium becomes more certain if we find, in the urine, kidney cells and such casts as indicate a breakdown of kidney substance. The presence of large numbers of erythrocytes in the urine opposes ordinarily the idea of the localization of the disease process in the small vessels and in the glomeruli, although occasionally, it is true, extravasated blood in the interstitial tissue may break through into the tubules. The high blood pressure in certain cases in which the vessels of the kidneys are affected is a valuable symptom, but we must first make sure of its renal origin. If we distinguish carefully between cardiogenic and nephrogenic hydrops, the latter may be taken as evidence of a pathologic condition of the tubular epithelium, although nephrogenic hydrops may be due to many complex factors.

Monatsschrift für Geb. und Gynäkologie, Berlin

July 5, 1920, **53.** Döderlein Festschrift. First Half

*High Vesico-Uterine Fistulas. P. Zweifel.—p. 3.
*Extraperitoneal Cesarean Section. O. Küstner.—p. 13.
*Dangers of Cicatrix from Cesarean Section. K. Baisch.—p. **57.**
*Influence of Site on Cancer. L. Seitz.—p. 70.
*Pregnancy after Schauta Operation. F. Weber.—p. 77.
*Duration of Vitality of Spermatozoa. Nürnberger.—p. 87.
Roentgen-Ray Treatment and Eugenics. Nürnberger.—p. 101.
Embryotomy of Living Child. W. v. Redwitz.—p. 105.
Results of Roentgen-Ray Treatment of Cancer of Cervix. E. v. Seuffert.—p. 115.
Posterior Colpotomy in Diagnosis and Treatment. H. Schnitzer.—p. 130.
Phenolethylbarbituric Acid (Luminal) in Eclampsia. Miltner.—p. 137.
Roentgen-Ray Treatment of Uterine Myomas, etc. E. Zweifel.—p. 155.

High Vesico-Uterine Fistulas.—Zweifel has applied in eight cases with smooth and afebrile recovery an abdominal technic which aims to detach the bladder from the uterus and the vagina. By this means the region of the fistula is rendered entirely movable. He cuts with scissors the bladder away from the vagina, and sutures the mucosa with catgut, the muscular layers in tiers with silk, and the serosa with fine silk, and he does not drain. Removal of the uterus is not needed or desirable. This method is applicable only to obstetric fistulas, not to those that develop from gangrene after hysterectomy.

Extraperitoneal Cesarean Section.—Küstner states that since he introduced extraperitoneal cesarean section in 1908 for delivery with contracted pelvis, he has applied this technic in 183 cases with only two deaths, including a fatality from a preceding unsuspected rupture of the uterus. There is much less danger of adhesions forming with this technic than with the transperitoneal, and there was never any peritoneal reaction in his cases except in the two fatal cases mentioned.

Dangers of Cicatrix from Cesarean Section.—Baisch has a record of 170 cesarean sections with only one death from infection; in this case the lochia had been previously fetid. In 28 cases the cesarean section had to be repeated at a later childbirth, and in 3 of these the cicatrix ruptured. To avoid this, he now makes a practice of delivering women with much contracted pelvis at term, without waiting for labor pains. The loss of blood was slight in the 10 cases in which this was done. He gave a dose of pituitary extract by the vein as he started to make the incision. This induced such vigorous contractions that the placenta was expelled almost at once. The lochia escape from the undilated cervix without hindrance.

Factors in Malignancy of Cancer.—Seitz argues that the resistance by the tissues in which the cancer is developing—the mechanical-static conditions in the tissues—have a great influence on the way in which it develops. Conditions are particularly favorable for the spreading of a cancer in the ovary, and hence these cancers are generally regarded as exceptionally malignant. But when radical excision is possible, there is no greater tendency to recurrence with these than with other cancers.

Outcome of Schauta Operation for Genital Prolapse.—Weber reports two cases of pregnancy after the Schauta operation plus ligation of or wedge resection of both tubes. Conception must have occurred before the operation. To prevent such mishaps, he now advises to curet the uterus before fastening it in the abnormal position by the Schauta technic. The two women were safely delivered by cesarean section, but they had suffered severely from traction pains during the last half of the pregnancy. The prolapse recurred in 2.4 per cent. of forty-three Schauta operations, but all the other patients have had their earning capacity completely restored except two who died from intercurrent or preexisting disease soon after the operation.

Duration of Vitality of Spermatozoa.—Nürnberger found living spermatozoa in the normal tube at a laparotomy the fourteenth day after the last sexual intercourse in one case, and the fifteenth day in another.

Monatsschrift für Kinderheilkunde, Berlin

July, 1920, **18,** No. 4

*Intra-Abdominal Pressure in Infants. A. Peiper.—p. 289.
*The Vegetative Nervous System in Pertussis. Martha Bardach and O. Lade.—p. 293.
*Parathyroid Implants in Tetany of Infants. Rosa Lange.—p. 328.
*Scarlatinoid Rash with Varicella. W. Arkenau.—p. 332.
Delirium with Pneumonia in Children. S. Freudenthal.—p. 334.
*Outbreak of Dysentery in Infants. Jacki.—p. 340.

Intra-Abdominal Pressure in Infants.—Peiper states on the basis of investigations on a long series of infants that the average intrarectal pressure in the dorsal position is from 20 to 30 cm. of water. Respiration caused regular oscillations of from 2 to 4 cm. The lowest intrarectal pressure, from 8 to 10 cm., was found in children with flaccid abdominal walls.

The Vegetative Nervous System in Pertussis.—As the result of research on twenty children with whooping cough, Bardach and Lade state that the vegetative nervous system is not necessarily hyperirritable before pertussis can develop. However, when the sympathetic system has low excitability and the autonomic system is easily depressed, the course of the disease is usually long and the type severe. As compared with adults, relatively high doses of pilocarpin, atropin and epinephrin were required for children to secure the same effect. The reaction to atropin, pilocarpin and epinephrin did not differ materially at the height of pertussis and in convalescence from the response in health. There was no evidence in the children of sympatheticotonia or parasympatheticotonia, and the stimulating action of epinephrin on the sympathetic system was unusually slight. The autonomic system reacted more readily to pilocarpin. The paralyzing effect of atropin on the autonomic system was greater than the stimulating effect of pilocarpin. Atropin aggravated the paroxysms. The minute details of the extensive research are tabulated in full.

Transplantation of Parathyroids in Tetany of Infants.—Lange reports the results of such transplantation in four infants 11 to 18 months old. Only in one case was there any therapeutic benefit and even that was questionable.

Scarlatinoid Rash with Varicella.—Arkenau reports an outbreak of varicella in which 19 per cent. of the thirty-two cases presented a scarlatinoid rash. There had been no case of scarlet fever in the hospital for several months previously. In one case the rash disappeared within twenty-four hours; in three cases it lasted three days, and in two cases even eight days.

Dysentery at Heidelberg.—Jacki reports an outbreak of dysentery occurring in September, 1919, in Heidelberg and vicinity. In the Children's Hospital 12 infants were taken ill the same day, presenting more or less fever and watery mucous stools, which, during the next few days, assumed a typical dysenteriform character. The infants, occupying three different wards, had all been fed a flour and butter gruel. Bacteriologic examination of the stools revealed the Shiga-Kruse bacilli. Examination of the kitchen personnel discovered an agglutination reaction of the blood serum, 1:200, of two wetnurses with the Shiga-Kruse bacillus, but no bacilli could be found in their stools. Of the 15 hospital cases and 15 in the homes, 21 were in children under 1 year, and the 18 mo : serious cases all ended fatally in from four to twenty-three ays. As for treatment, the best results were secured with animal charcoal (from 10 to 15 gm.) either alone or in combination with castor oil, from 2 to 4 teaspoonfuls to a dose. In recent cases, defervescence often promptly followed their administration.

Münchener medizinische Wochenschrift, Munich

July 23, 1920, **67**, No. 30

*Device for Collecting Roentgen Rays. H. Chaoul.—p. 861.
*Dermoids of the Anterior Mediastinum. O. Kleinschmidt.—p. 862.
*Operation for Cleft Palate. R. Drachter.—p. 865.
Arthrodesis. R. Pürckhauer.—p. 868.
*Foot-and-Mouth Disease in Man. E. Veiel.—p. 869. Treatment with Silver Arsphenamin. G. Kröncke.—p. 870.
Surgical Tuberculosis and the Friedmann Method. Krumm.—p. 870.
*The Fatal Single Dose of Epinephrin. A. W. Fischer.—p. 872.
Sliding Hernia with Perforation. J. Meyer.—p. 873.
Dermatitis Caused by Imitation Leather. Baer.—p. 874.
Medical Examination of Candidates for Matrimony. Schubart.—p. 874.
Deformity of Spine as Sequel of Tetanus. Becher.—p. 874.

Device for Collecting and Reflecting Scattering Roentgen Rays.—Chaoul, chief of the roentgenographic department of the University Clinic, Munich, describes with illustrations an apparatus of his own invention by which he collects and reflects back on to the field of irradiation the diverging rays whose energy would otherwise be lost. He claims for his "strahlensammler," or ray collector, that the irradiation time is materially shortened, which is much appreciated not only by the patients themselves but also by the attending personnel, and that a considerably economy of energy and in depreciation of apparatus is thereby accomplished.

Radical Operation for Dermoids in the Anterior Mediastinum.—Kleinschmidt reports two cases. The first was complicated by the perforation of the right pleural cavity by the dermoid, and after the first partial and then total removal of the growth, several secondary operations became necessary on account of fistulas, for infection of the fistulous cavities could not be avoided. In the second case the cavity had been closed completely at once, followed by primary healing. Eiselsberg's statement that the loosening of dermoids from their adhesions with surrounding organs is a comparatively easy matter was verified. Radical operation with primary suturing of the wound made it possible to dismiss the patient, cured, at the end of seventeen days.

Best Time for Operation on Congenital Cleft Palate.—Drachter advocates operating on the hare-lip first. He explains that congenital cleft palate, provided the operation for hare-lip has been done, passes regularly through three different stages. In the second stage the fissure is narrowest. During this stage the cleft should be closed, narrowing the fissure, bringing the roof of the mouth into a horizontal plane by lowering the vault, and bridging over the fissure. Normal speech depends on the extent to which the function of the velum can be restored; that is, whether the velum is long and mobile enough, and adequately trained. These demands are fulfilled by the operation during the second stage, supplemented by special instruction in enunciation and in voice culture in general. In the third stage, the soft palate, on account of the great width of the fissure, becomes too short and speech always remains defective. He defines the second stage as the interval before the cleft in the alveolar process closes; this may take up to a year after the operation on the hare-lip. The closure occurs more rapidly if the operation on the lip was done when the child was only a few weeks or months old. During this second phase, as the fissure is then narrowest, there is less lateral traction on the halves of the velum, and exercises in speech can be begun before bad habits of speech have become inveterate.

Treatment of Foot-and-Mouth Disease in Man with Silver Arsphenamin.—Kröncke at first employed silver arsphenamin only in cases in which other remedies failed or in which, after apparent recovery, a relapse occurred, but in recent cases he has given right at the start an injection of 0.1 gm. of silver arsphenamin, with local application of chromic acid or calcium chlorid, since which he has never found the disease refractory. More than two injections were never necessary. The only complication he has seen was once a rise in temperature to 39.7 C. on the evening following the injection. The disease was contracted from milk in the case described in detail.

What is the Fatal Dose of Epinephrin?—Fischer was called on to give a medicolegal opinion in a case in which, by mistake of a nurse, in place of the usual 1 per cent. procain-epinephrin solution, 10 c.c. of 1:1,000 solution of epinephrin were injected into the skin and muscle of the leg of a man of 35 in connection with an operation for bone fistula from a gunshot wound. The aim was to block the peroneal nerve at the head of the fibula and the tibial nerve above the ankle. Anguish followed the injection, with severe pain in the neck and back of the head, and palpitation of the heart. The pupils dilated and contracted, and in about six minutes death ensued, with manifestations of heart failure. During this six-minute interval the pulse was not perceptible to the finger. Necropsy several days later revealed status thymolymphaticus but no valvular lesions. There was no evidence that the epinephrin had been injected directly into the blood stream. Fischer was personally convinced that it was a case of epinephrin poisoning, but in view of the pathologic condition of the thymus he felt compelled in his decision to take a noncommittal attitude. The dilatation of the pupils, together with the pain in the head and the imperceptible pulse pointed to epinephrin poisoning, a general spasm of the vessels with consequent anemia of the brain. He therefore recommends caution as to the size of the single dose, but adds that, owing to the transient effect of epinephrin, the total daily dose need not be so carefully controlled.

Zentralblatt für Chirurgie, Leipzig

June 26, 1920, **47**, No. 26

*Incision for Gallbladder Operations. H. Braun.—p. 634.
*Fixation of Movable Kidney. E. Rehn.—p. 637.
Improved Transverse Cheek Incision. E. Pólya.—p. 640.
Advantages of Double Rectangular Flap Incision of Periosteum in Rib Resection. H. F. O. Haberland.—p. 641.
Amputation of the Thigh. J. Becker.—p. 643.
*Pressure Pain in Mesentery with Appendicitis. P. Rosenstein.—p. 644.

Right-Angle Incision in Gallbladder Operations.—Braun gives his experience with the Czerny-Kocher right-angle abdominal incision for the exposure of the bile ducts, which he thinks, gives the most convenient access to the bile ducts, without making it necessary to use retractors to hold the abdominal wound open; nor is the operator hampered to the same extent by protrusion of intestine. The operation is complicated somewhat by the great care required in so planning and starting the suture of the abdominal wall that it will withstand the strain of coughing and vomiting. The critical region is at the apex of the angle, on the median line, for if the suture tears out here, the whole suture usually gives way, resulting in a monstrous hernia. To avoid this, Braun passes a wire attached to a lead plate through all the layers of the abdominal wall. Then at the apex of the angle and on each side close to it, strong catgut sutures are placed close together which include only the aponeurosis and the peritoneum. An assistant crosses the ends of the middle one of the three catgut sutures, and pulls the ends apart, until the edges of the apo-

neurosis are coaptated. At the same time the operator ties the two other catgut sutures, and after this the middle suture. The transverse and vertical incisions are sutured in tiers as usual. The transverse incision shows no further tension after the apex is closed. If needed, a supplementary tension suture with lead plate makes the suture line perfectly secure. A drain may be inserted at the outer end of the transverse incision but never at the apex as recommended by Kehr. Braun thinks the wire lead-plate suture is by far the best means of taking the tension off of lines of suture until they can have time to heal. The article is illustrated.

Fixation of Floating Kidney Following Nephrotomy, etc.—Rehn grasps the lower pole of the kidney and presses it against the costal arch, while the other hand passes a curved needle with heavy silk thread through at the lower border of the twelfth rib near the outer edge of the sacrospinalis. The needle pierces the center of the lower pole of the kidney and passes on through the insertion of the diaphragm, emerging in the intercostal space close to the upper margin of the twelfth rib, as is shown in an illustration. The suture is tied over a roll of gauze and is removed in about fourteen days. The procedure has given good results in seven cases, in five of which fixation was done through the lumbar incision, once through the intraperitoneal incision along the costal arch, and once through a pararectal incision. Twice the complete success of the procedure was verified by later operations for other causes. As the procedure can be carried out very quickly and necessitates only a small incision, Rehn thinks that it deserves consideration for ordinary floating kidney, but he recommends it especially in the case of a movable kidney, inclined to sag or twist on its axis, following surgical intervention, especially nephrotomy.

Differentiating Pain with Appendicitis.—Rosenstein places the patient on his left side, both anterior superior spines of the ilium perpendicular to the plane of the bed. Then he applies pressure to the right side, three fingerbreadths inside of and a little below the right spine. This induces sharp pain if the appendix is inflamed and swollen, as it drops down and pulls on the mesentery which is usually supersensitive in such cases.

Zentralblatt für Gynäkologie, Leipzig

July 17, 1920, **44**, No. 29

Twilight Sleep in Obstetrics. H. Gänssbauer.—p. 789.
Ovarian Therapy in Obstetrics. J. Hofbauer.—p. 792.
Desquamation in the Newborn (a Reply). H. Lorenzen.—p. 797.

Zentralblatt für innere Medizin, Leipzig

July 17, 1920, **41**, No. 29

*Capillary Blood Pressure. E. Kylin.—p. 505. Idem. F. Volhard.—p. 512.

Capillary Blood Pressure in Relation to Abnormally High Arterial Pressure.—For measurement of the capillary blood pressure, Kylin has devised a simple apparatus to compress the capillaries in the finger under the microscope. A small glass chamber with manometer connection and bulb has a metal disk for the bottom in which there is a circular opening, 10 mm. in diameter, over which a transparent membrane is loosely stretched. With this device he measured the capillary blood pressure in about 100 healthy subjects, finding the normal range to be between 110 and 190 mm. of water. In glomerular nephritis, on the other hand, he found the capillary blood pressure abnormally high in all the 100 acute cases or exacerbations of chronic cases investigated, but never with benign nephrosclerosis. There seem, therefore, to be two types of abnormally high arterial blood pressure, one with and one without increased capillary blood pressure. In daily testing of over 20 scarlet fever patients, beginning with the second week of the disease, he found that some showed no increase of capillary pressure, while others presented a marked increase, which gradually subsided without albumin appearing in the urine. In three patients, however, a typical glomerulonephritis developed, with albumin, casts and red blood corpuscles in the urine. In these cases it was significant that this nephritis had been preceded for several days by an ever increasing capillary pressure. The glomerulonephritis set in when the capillary pressure reached about 300 mm. of water. In one case no signs of albuminuria appeared until a week after the first rise in the capillary pressure.

This assumption of two types of arterial hypertension was confirmed by injection of epinephrin. This raised both the general arterial and the capillary blood pressure, while application of cold to the arm raised the local arterial blood pressure but not the capillary. On the other hand, in 20 cases of benign nephrosclerosis, with markedly increased arterial blood pressure, in most cases over 200 mm. of mercury, the capillary blood pressure was always found within normal range, never exceeding 190 mm. of water. The increase was considerable, values of over 500 mm. of water not being uncommon; the highest was 750 mm. of water, equal to 55 mm. of mercury. During recovery the capillary pressure falls, along with the arterial pressure, but the capillary pressure remains high longer. In many cases, during the stay in the hospital, at least, the pressure did not fall to normal, and in such cases defective functioning was usually manifest. Even in 10 cases of acute glomerulonephritis, with normal blood pressure, an increase of capillary pressure was demonstrated.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

July 10, 1920, **2**, No. 2

*The Lipochrome Pigment in Serum and Organs. A. A. H. van den Bergh, P. Müller and J. Broekmeyer.—p. 127.
*Indican in Serum. I. Snapper and van Vloten.—p. 136.
*Influence of Rhythm on the Pulse Rate. J. H. O. Reys.—p. 141.

The Lipochrome of Blood and Organs.—Van den Bergh and his co-workers tabulate the findings in regard to the lipochrome pigment content of the serum and various organs from forty-three cadavers. No connection was apparent with the kind of disease, and no parallelism between the serum content and that of various organs. The content seems to be smaller before the age of 15 and after 50. The suprarenals in the young contained almost as much lipochrome as in the elderly. The data cited seem to indicate that the lipochrome has considerable physiologic significance. The palms and soles were intensely yellow in some cases of typhoid and in a child with septic endocarditis and two young women with anemia. One of the latter had eaten very little during the weeks before death, but the lipochrome figures were high: 4.5 for fat; 7.5 for the spleen; 20.5 for the liver, and 73 for the suprarenals. In one woman convalescing from typhoid, the serum contained 0.9, the highest figure encountered except in diabetics.

Indican in Serum as Test of Kidney Functioning.—This communication from Snapper's clinic emphasizes the importance of the normal indican level in the blood serum, as an excess points to deficient functioning of the kidneys. Any excess is readily determined by treating 3 or 4 c.c. of serum with equal parts of a 20 per cent. solution of trichloracetic acid to get rid of the albumin; 2.5 c.c. of the filtrate is diluted to 10 c.c. with distilled water. Then 1 c.c. of thymol spirit and 10 c.c. of the Obermayer reagent are added. After an interval of twenty minutes the tube is shaken with 2 c.c. of chloroform, and in half an hour the chloroform turns pink if the indicanemia is above the normal range. The intensity of the pink tint mirrors the indican content of the serum. In normal conditions, 2.5 c.c. of the filtrate corresponds always to the indican of 1.25 c.c. of blood serum. If more exact determination of the indican is desired, the Rosenberg test is commended. The Obermayer reagent used is a 4 per thousand solution of ferric chlorid in concentrated hydrochloric acid. Several possible sources of error with this and other tests for indican in blood and urine are described.

Influence of Musical Rhythm on Pulse Beat.—Reys' patient is a young woman whose pulse grew temporarily fast or slow to correspond to the rhythm of music. Even the beat of a metronome sufficed to modify the pulse beat to correspond. He reproduces the tracings of the pulse while the third or fifteenth Chopin preludes were being played in the room. With a metronome ticking 192 times to the minute, the pulse beat was 96 to the minute: 1:2. With a metronome beat of 80, the pulse was 80. With a metronome beat of 40, the pulse kept at 80. The subject was a young woman who at one time had been treated for "piano arm," but did not seem to be nervous.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, NO. 16 CHICAGO, ILLINOIS OCTOBER 16, 1920

EFFECT OF TONSILLECTOMY ON THE RECURRENCE OF ACUTE RHEUMATIC FEVER AND CHOREA

A STUDY OF NINETY-FOUR CHILDREN *

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For the last decade the tonsils have assumed increasing importance as sites for foci of infection; and although much has been written concerning their relation to the so-called "rheumatic manifestations," few series of cases showing the effect of their removal have been reported. The present attitude is largely one of "opinion" and "belief" based on individual experiences rather than on a close study of a large number of cases over a prolonged period of time. The difficulties associated with such careful and prolonged observations in clinic work are very great, and undoubtedly final judgment will be based on the total findings of many workers. Few of the series of cases already reported have been adequately studied. They have lost much of their value from failure to define the clinical entities present before the tonsils were removed, and the period of observation following the operation has been insufficient. In many instances the patients' subsequent course was not personally followed.

The cases here reported are under observation in a special children's cardiac clinic. Such patients frequently suffer from acute rheumatic fever, chorea and the allied rheumatic manifestations, and they provide excellent material for a study of the effect of the removal of the tonsils on the course and recurrence of these conditions. Exceptional opportunities for "follow up" were present, and in most instances these patients have been questioned and examined at intervals of from four to eight weeks during the entire period from the time of operation to the date of writing. In a small number of cases, these examinations have been somewhat less frequent, although all patients have been personally examined since March 1, 1920. On admission to the clinic and at each succeeding visit, much attention was centered on acute rheumatic fever, chorea, myositis, bone and joint pains ("growing pains") and tonsillitis; and their presence or absence was carefully recorded.

The series comprises ninety-four children, each of whom has suffered from one or several of the foregoing group of conditions. Fifty-eight patients were subjects of organic disease of the heart. Forty-nine were boys and forty-five were girls. The ages varied from 4 to 16 years at the time that the operation was performed. The average age was 8½ years. The period during which they were under observation after the tonsils were removed varied from two to six years. The average duration of this period was three and one-half years and no cases followed for less than two years after the operation have been included.

It is deemed wise to define specifically the clinical conditions included in the series. As a rule the conditions referred to as "rheumatic manifestations" are fairly definite clinical entities in children. By acute rheumatic fever is meant the classical polyarthritis (frequently monarthritis) associated with afebrile reaction and physical changes in the joints which return to normal (or apparently so) at the cessation of the attack. Cases showing any chronic changes in the joints have not been included. Myositis refers to conditions such as torticollis. By bone and joint pains are meant the dull aching pains in the feet, hands, long bones and larger joints which are unaccompanied by a constitutional reaction or physical change in the part. By chorea is understood the physical classical entity characterized by the typical movements. "Sore throat" is almost always due to or accompanied by tonsillitis, yet cases have been observed in which the tonsils had been completely removed. In these instances the pillars, the posterior wall of the pharynx and occasionally the tonsillar fossae were involved. The various groupings of these manifestations in individual cases may be seen in Table 4.

TONSILS AND ADENOIDS

The tonsils were markedly hypertrophied in twelve cases (13 per cent.), moderately so, protruding or buried in sixty-five cases (69 per cent.), and they were not enlarged in seventeen cases (18 per cent.) The operation recorded in Tables 1 and 2 was the second attempt to remove the tonsils in eleven cases, many of these having been the subject of tonsillotomy at a much earlier date. In nine other cases the amount of tonsil tissue remaining after operation was so great (frequently one half of one or both tonsils) that a second operation was indicated. The total in need of a second operation was therefore twenty cases, or 22 per cent. This fact is of utmost importance, for it bespeaks the necessity of postoperative examination of the throat. In many clinics the patients are never examined after the operation is completed and the danger of hemorrhage is past. Yet in this series reoperation was necessary in between one fifth and one fourth of the cases. If to this group the large number of cases with remaining tabs of tonsil tissue were

* From the children's cardiac clinic, St. Luke's Hospital.

* Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

added, the percentage in need of after-care would be much greater. It is frequently impossible to make sure that the tonsil has been completely removed at the time of the operation, and often a period of from two to four weeks is required for the tissues to return to normal from the operative trauma. Observation after this period is often necessary before a final opinion can be given as to the thoroughness of the removal. Final opinion on the success of a tonsillectomy as to the physical removal of the tonsils will vary largely with the bits of tonsil tissue were disregarded and only cases with appreciable amounts of tonsil tissue remaining, cases in which the operation had been obviously unsuccessful, were eliminated. It was necessary to eliminate nine such cases (Table 3). In all of these the condition was much the same (from the standpoint of foci of infection) as if the operation had not been performed. The study of the effect on the rheumatic manifestations was limited to the eighty-five cases remaining.

TABLE 1.—FIFTY-FOUR CASES IN WHICH THERE WAS NO RECURRENCE OF ANY RHEUMATIC MANIFESTATION AFTER TONSILLECTOMY*

Number	Name	Age at Operation	Sex†	Organic Cardiac Disease	Duration of Manifestations	Last Observed Manifestation before Oper.	Date of Operation	No. of Months Since Operation	Manifestations before Operation: Tonsils	Tonsillar Nodes	Acute Rheumatic Fever	Muscle, Bone or Joint Pains	Chorea	Sore Throat	Cardiac Failure	Manifestations after Operation: Tonsils	Tonsillar Nodes
1‡	V. G.	8	♂,♀	+	48	2	4/14	72	+++	++	+++	0	0	0	++	0	0
2	H. H.	7	♂,♀	+	18	½	12/14	64	+++	++	++	++++	0	++	0	0	0
3	A. F.	8	♂,♀	+	24	?	12/14	64	++	+	0	0	++++	0	0	0	0
4	M. R.	4	♀	0	8	1	8/15	55	++++	++++	0	+	0	+	0	0	0
5	C. P.	13	♀	+	18	1	6/16	45	+	+	+	+++	++	+	0	0	0
6	A. McA.	13	♀	+	26	½	7/16	44	+	+	0	+	++++	0	0	0	0
7	R. O'B.	12	♂	+	1	1	7/16	44	++	+	+	0	0	0	0	0	0
8	A. F.	11	♂,♀	0	72	½	8/16	43	+	+	++	+++	+	+	0	0	0
9	W. S.	7	♂	0	33	1	10/16	41	++	+++	0	0	++	+	0	0	+
10	C. M.	14	♀	+	36	1	11/16	40	++	++	0	++++	++	++++	0	0	0
11	M. F.	7	♂	+	2	24	11/16	40	++	+++	+	+	0	+	+	0	0
12	R. K.	6	♂	0	12	½	11/16	40	++++	++++	0	+++	0	++++	0	0	+
13	F. W.	8	♂	0	12	6	11/16	40	+++	++++	++	+++	0	++++	0	+	+
14	W. W.	7	♂	0	20	2	11/16	40	+++	++++	0	0	+++	0	0	+	0
15	J. D.	8	♂	0	24	½	11/16	40	++	+++	0	++++	+	++	0	0	+
16	E. D.	8	♂	+	18	¾	11/16	40	+++	+++	++++	++++	++	++	+	0	+
17	A. H.	6	♀	0	24	2	11/16	40	++++	+	+++	++++	0	++++	0	+	+
18	F. B.	7	♂	+	12	1	11/16	40	+++	+++	+	0	0	++	+	0	0
19	W. O'K.	11	♂	+	72	1½	12/16	39	+++	+	++	++++	0	++++	0	+	0
20	L. McM.	12	♂	+	90	1½	12/16	39	++	++++	++++	++++	++++	++++	0	0	+
21	E. R.	11	♂	+	1	5	12/16	39	+++	+	+	0	0	0	+	0	0
22	V. K.	10	♀	+	12	2	12/16	39	+++	+	0	+	0	+++	0	0	0
23	O. C.	11	♂	+	6	1½	12/16	39	++	+++	+	+	0	0	0	0	0
24	A. P.	9	♂	0	2	½	1/17	38	+	+	0	+	0	+	0	0	0
25	E. K.	6	♀	0	24	¼	1/17	38	++	++	0	++	+	++++	0	0	++
26	M. G.	10	♀	0	48	¾	2/17	37	+	+	0	++	++	0	0	0	0
27	M. H.	7	♀	0	24	2	2/17	37	+	++++	+	+	0	+++	0	0	0
28	T. P.	5	♂	+	10	¾	3/17	36	++	++	+	+++	+++	+	+	0	0
29	J. C.	8	♂	+	6	2	3/17	36	+++	+++	0	0	++	++	0	0	++
30	A. K.	7	♀	0	9	1	3/17	36	+++	+	0	++	0	+	0	0	+
31	L. K.	14	♂	+	48	¼	4/17	35	+++	+++	+++	++++	+	++++	0	0	0
32	E. McD.	9	♂	+	30	2	5/17	34	++	+++	++	++	0	+	0	0	+
33	C. H.	7	♂	+	12	1	5/17	34	++++	++++	++	++++	0	++++	0	+	+++
34	F. M.	7	♂	0	3	1	6/17	33	+	+	+	++	++	0	0	0	0
35	E. P.	5	♀	+	27	1½	6/17	33	+++	+	++	+	0	0	+	0	0
36	L. R.	10	♀	0	48	¼	6/17	33	+	++	++++	++++	0	++++	0	0	0
37	M. S.	9	♀	0	14	½	6/17	33	+	++	0	++++	++	++++	0	0	+
38	F. S.	6	♀	0	12	½	6/17	33	++++	++++	+	++	0	++++	0	0	+
39	M. S.	8	♂	0	12	¾	6/17	33	++++	++	0	++	0	++++	0	0	0
40	G. B.	7	♂	+	24	1¾	6/17	33	++	++	++	++	0	0	0	+	+
41	J. G.	10	♂	+	36	½	6/17	33	+++	++	++	++++	0	++++	0	0	+
42	J. R.	10	♂	+	30	½	7/17	32	+	+	+++	++	+	++	+	0	+
43	E. G.	7	♂	0	18	¼	7/17	32	+	+++	+	++++	0	++++	0	0	0
44	M. L.	9	♀	+	60	¼	7/17	32	++++	++++	+	++++	++	++++	+	+	0
45	H. W.	6	♂	0	12	2	7/17	32	++	++	0	++++	++	+++	0	0	+
46	J. C.	13	♀	+	48	½	8/17	31	+++	+	++++	0	0	0	0	0	0
47	O. C.	10	♀	0	6	5	8/17	31	++	+	0	++	0	+	0	0	+
48	F. McD.	13	♀	+	72	1	9/17	30	+	+	+++	++++	0	++++	0	0	0
49	M. C.	9	♀	0	6	1	9/17	30	++	++	0	0	++	+	0	0	0
50	L. H.	5	♀	+	24	2	12/17	27	+++	+	+	0	0	++++	0	0	0
51	M. B.	5	♀	0	12	2	1/18	26	+++	+	0	+++	0	+++	0	0	0
52	E. K.	8	♀	0	12	6	3/18	24	+++	++	0	0	+	+	0	0	+
53	M. E.	11	♀	+	4	3	3/18	24	+	+	+	0	0	0	+	0	0
54	F. C.	11	♀	+	48	½	7/17	32	++++	+++	0	0	+++	0	0	0	0

* In Tables 1, 2 and 3, the plus signs are thus employed: Tonsils: + indicates not enlarged before operation, and tabs of tonsil tissue after operation; ++ and +++ before operation indicate moderate enlargement; ++ and +++ after operation indicate ¼ to ¾ of tonsilremaining; ++++ indicates marked enlargement. Tonsillar nodes: + indicates size of pea; ++ indicates size of hazel nut; +++ and ++++, size of small and large hickory nuts. Acute rheumatic fever, chorea and cardiac failure: Each + sign indicates a specific attack. In cases of muscle, bone or joint pains and sore throat, + signs indicate degree in frequency and severity; +, occasional; ++, frequent; +++ and ++++, constantly recurring. Figures in column under "Duration of Manifestations" indicate months. Figures in column under "Last Observed Manifestations before Operation," months or part of a month. Figures in column under "Date of Operation," month and year.

† In this column, ♂ indicates male, and ♀ female

‡ This patient suffered from one attack of cardiac failure after tonsillectomy.

standard adopted. If to be successful the tonsillar fossae must be absolutely free from tabs or lichen-like plaques of tonsil tissue, the operation could have been called complete in only 70 per cent. of the cases in this series. In many instances two or more operations were necessary before the recorded result was obtained. Such tabs or plaques of tonsil tissue were present after operation in 30 per cent. of the cases. For the purpose of studying the recurrence of the rheumatic manifestations after the operation for removal, such small

INDICATIONS FOR OPERATION

The tonsils were removed according to these indications: (1) hypertrophy (protruding or buried); (2) evidence of infection; (3) enlargement of the tonsillar lymph nodes, regardless of the size or appearance of the tonsil, and (4) when the tonsils were the site of recurrent inflammation regardless of their size or appearance and regardless of the size of the tonsillar nodes. There have been, however, a few cases which, except for scarcely palpable tonsillar nodes, would not

have been included in these indications, yet which showed no recurrence of the rheumatic manifestations after the tonsils were successfully removed. The adenoids were invariably removed at the time of the operation on the tonsils. (The tonsils were removed in most instances by the Sluder-Beck instrument and the adenoids by a La Force adenotome and curet.)

TONSILLAR NODES

The tonsillar lymph nodes (nodes just behind the angle of the jaw) were palpable in 100 per cent. of the cases. They varied from a pea to a hickory nut size. This enlargement was constantly present at repeated examinations before the operation, and it was unaccompanied by any local signs of an acute nature. In 59 per cent. of the cases the nodes were impalpable after operation; but in the remaining 41 per cent., although much reduced in size, they remain permanently palpable. A fairly complete removal of the tonsils was followed by slight or no diminution in the size of these nodes in only six cases, or 7 per cent. It was not possible to determine the nature of this slight, although permanent, enlargement. Whether it represented continued drainage from the tonsillar fossae or healing with connective tissue production could not be demonstrated. Of the group in which the lymph nodes remained palpable there were no recurrences of any rheumatic manifestation in 57 per cent. of the cases, as compared to 68 per cent. in the group in which the nodes disappeared. Cases (about 4 per cent.) were observed in which the tonsillar nodes were found to be about the size of hickory nuts at repeated examinations during months before operation, yet which became impalpable within from three to six days after the tonsils were removed and while the fossae were still covered with slough. An infection sufficient to cause such an enlargement of the nodes which disappeared so promptly when the cause was removed must have been sufficient to produce a constant low grade toxemia and markedly to influence nutrition and general health. Little attention has been paid to the tonsillar nodes. Their relation to the tonsils, to the indications for tonsillectomy and to the standards to be met by a successful operation has been neglected, and the part they play in infection and nutrition has excited but little interest.

TABLE 2.—THIRTY-ONE CASES IN WHICH TONSILLECTOMY WAS FOLLOWED BY THE RECURRENCE OF RHEUMATIC MANIFESTATIONS

Number	Name	Age at Operation	Sex	Organic Cardiac Disease	Duration of Manifestations	Last Observed Manifestation before Oper.	Date of Operation	No. of Months Since Operation	Manifestations before Operation: Tonsils	Tonsillar Nodes	Acute Rheumatic Fever	Muscle, Bone or Joint Pains	Chorea	Sore Throat	Cardiac Failure	Manifestations after Operation: Tonsils	Tonsillar Nodes	Acute Rheumatic Fever	Muscle, Bone or Joint Pains	Chorea	Sore Throat	Cardiac Failure
1	C. M.	7	♀	0	?	?	11/14	65	++	+	0	+	0	++	0	+	+	0	+	+++	0	0
2	I. R.	6	♀	0	1	1	6/15	58	++	+	0	+	0	+	0	+	+	0	++	+	0	0
3	H. S.	9	♀	+	1	1	7/15	56	++	+	+	+	0	+	0	+	+	0	+	0	+	0
4	M. L.	9	♀	+	3	36	7/15	56	++++	++	+	0	0	++++	0	0	0	0	0	+	0	0
5	M. McK.	4	♀	+	0	0	11/15	52	++	+	0	0	0	0	0	0	0	+	0	+++	0	0
6	C. McL.	6	♀	0	36	¾	3/16	48	++	+++	0	+	0	++++	0	0	0	+	0	0	0	0
7	S. S.	12	♂	+	24	1	6/16	45	+++	+	+	++++	++++	++++	0	0	0	+	+	++++	++	0
8	A. G.	10	♀	+	6	3	6/16	45	+++	+++	0	0	++++	0	0	0	++	0	0	++++	0	0
9	A. F.	11	♀	+	12	1	7/16	44	++	++	0	++	+	+	0	0	0	+	++	0	0	0
10	L. G.	10	♀	+	6	60	11/16	40	+++	+++	0	0	++++	++	0	0	+	0	0	+	0	0
11	J. W.	6	♂	0	36	6	11/16	40	+	+	+++	+++	0	++++	0	+	0	0	+	0	0	0
12	P. Von T.	11	♂	+	24	¾	12/16	39	++++	++++	+	++++	+++	0	0	0	0	0	+	+	0	0
13	A. O'B.	8	♂	+	36	?	12/16	39	+++	++	++	+	0	+++	0	0	0	0	+	0	0	0
14	B. K.	11	♂	+	12	2	12/16	39	+++	+++	0	++	+++	0	0	+	0	0	0	+	0	0
15	J. M.	7	♂	0	18	¾	12/16	39	+++	+	0	+++	0	+	0	+	+	0	+	0	0	0
16	M. H.	10	♀	+	60	3	12/16	39	+++	++++	++++	++++	0	++++	0	0	0	+	0	0	0	0
17	L. R.	10	♀	0	12	¾	2/17	37	++++	++++	0	++++	+	++++	0	0	+	0	0	+	0	0
18	N. M.	7	♀	+	24	½	3/17	36	++	++	0	0	+++	0	0	0	++	0	0	+++	0	0
19	F. G.	8	♂	+	18	1	3/17	36	+++	++	0	+	0	++	0	+	+	0	+	0	+	0
20	J. McG.	9	♂	+	72	½	5/17	34	+++	+++	++	++++	+	++++	0	0	0	+	0	0	0	0
21	P. L.	11	♂	+	60	¼	5/17	34	+	+++	0	0	++++	++++	0	0	0	0	0	+	0	0
22	F. V.	5	♂	0	4	1/10	6/17	33	+	+	0	0	+	0	0	0	+	0	0	+	0	0
23	G. O.	16	♂	0	72	1	6/17	33	++	++	+++	++	0	0	0	0	0	+	0	0	0	0
24	L. Ru.	7	♂	+	2	¼	6/17	33	+++	++++	0	++	++	+++	0	0	++	0	+	++	0	0
25	F. B.	7	♂	0	4	⅙	7/17	32	++	+	0	+	++	++++	0	+	+	0	+	+++	+	0
26	L. O'D.	8	♂	+	24	1	9/17	30	+++	+	++	+	++	+	0	+	+	0	+	++	0	0
27	G. McD.	9	♀	+	6	1	11/17	28	++++	+	0	0	+	0	0	+	+	0	0	+	0	0
28	J. G.	6	♂	+	12	1	1/18	26	++	++	0	0	0	++++	0	0	0	0	0	+	0	0
29	M. R.	15	♀	+	2	¼	3/18	24	++	+	0	++++	0	++++	0	0	0	0	++	0	0	0
30	J. F.	8	♂	0	36	?	3/18	24	++	+	0	0	++	++++	0	0	0	0	0	+	0	0
31	M. M.	11	♀	+	48	½	3/18	24	+	++	0	++	+++	+	0	0	++	0	0	+	0	0

TABLE 3.—THE OCCURRENCE OF RHEUMATIC MANIFESTATIONS BEFORE AND AFTER OPERATION IN NINE CASES IN WHICH THE TONSILS HAD BEEN INCOMPLETELY REMOVED

Number	Name	Age at Operation	Sex	Organic Cardiac Disease	Duration of Manifestations	Last Observed Manifestation before Oper.	Date of Operation	No. of Months Since Operation	Manifestations before Operation: Tonsils	Tonsillar Nodes	Acute Rheumatic Fever	Muscle, Bone or Joint Pains	Chorea	Sore Throat	Cardiac Failure	Manifestations after Operation: Tonsils	Tonsillar Nodes	Acute Rheumatic Fever	Muscle, Bone or Joint Pains	Chorea	Sore Throat	Cardiac Failure
1	C. N.	10	♀	0	12	1	4/14	72	+++	++	0	+++	+	++++	0	++	++	0	++	++	++	0
2	R. P.	10	♂	+	60	1	3/15	60	+++	++	0	++++	0	+	0	+++	++	0	++++	0	++	0
3	H. C.	6	♂	+	12	1	10/16	41	+++	++	+	+++	0	++	+	+++	++	0	++	0	++	0
4	L. J.	5	♀	+	36	6	12/16	39	+++	++	+	++	0	++++	0	++	+	0	0	+	0	0
5	R. C.	12	♀	+	36	?	12/16	39	++	++	+++	0	0	++++	0	++	+	+	0	0	0	0
6	F. C.	10	♂	+	24	?	1/17	38	+++	++	+	+	0	++	+	+++	++	+	0	0	0	0
7	J. A.	8	♂	+	30	?	6/17	33	++	+	0	0	0	++++	0	++	+	+	0	0	0	+
8	J. G.	4	♂	+	12	½	7/17	32	+++	+++	++	++++	0	+	0	++	++	0	0	0	0	0
9	G. B.	11	♂	0	4	½	2/18	25	+++	++	+++	++	0	+	0	+++	++	0	++	0	0	0

RECURRENCES OF THE RHEUMATIC MANIFESTATIONS

Many factors must be considered in discussing the effect of tonsillectomy on the recurrence of the rheumatic manifestations in patients who have suffered from these conditions before the operation was performed. The existence of foci of infection in other locations, such as the teeth, the adenoids, the skull sinuses and the lymphoid tissue of the gastro-intestinal or other tracts, can seldom be demonstrated and never excluded. In several of the cases in this series, abscesses of the teeth or alveolar processes were observed during or just after attacks of acute rheumatic fever in patients from whom the tonsils had been completely removed (Case 6, Table 2). That these conditions bore a causal relation could not be definitely demonstrated. That the tonsils are not the only location for foci of infection is beyond doubt. Cases (as Case 5 in Table 2) have been observed in which there had been no history of tonsillitis or any rheumatic manifestation before the tonsillectomy was performed, and in which the tonsils had been completely removed yet which years later showed acute rheumatic fever or some other allied manifestation.

TABLE 4.—SYMPTOM GROUPS PRESENT IN SERIES; RECURRENCES BY GROUP IN EIGHTY-FIVE PATIENTS FROM WHOM TONSILS WERE COMPLETELY REMOVED

	Cases	Nonrecurrence No.	Nonrecurrence Per Cent.	Recurrence
Acute rheumatic fever alone	5	5	100	0
Chorea alone	8	3	37	5
Myositis, bone or joint pains	0	0	0	0
Acute rheumatic fever and chorea	1	0	0	1
Acute rheumatic fever and myositis, bone or joint pains	4	3	75	1
Acute rheumatic fever and tonsillitis	2	2	100	0
Acute rheumatic fever and chorea, myositis, bone or joint pains	1	1	100	0
Acute rheumatic fever and chorea and tonsillitis	1	0	0	1
Acute rheumatic fever and myositis, bone or joint pains and tonsillitis	18	13	72	5
Acute rheumatic fever and chorea, myositis, bone or joint pains and tonsillitis	13	8	61	5
Chorea and myositis, bone or joint pains	3	2	66	1
Chorea and tonsillitis	7	3	43	4
Myositis, bone or joint pains, and tonsillitis	11	8	72	3
Chorea, myositis, bone or joint pains and tonsillitis	11	6	54	5
	85	54		31

Recurrences of these conditions have frequently appeared after a successful operation. Single attacks of acute rheumatic fever and chorea are not uncommon, and their nonrecurrence after tonsillectomy does not necessarily bespeak a decisive influence for the operation. Yet these manifestations have a great tendency to recurrence in spite of every care. So marked is this, that if in a large percentage of cases, the removal of the tonsils was followed by the abrupt disappearance and nonrecurrence of these conditions, the influence of the operation could scarcely be denied. Therefore knowledge of the length of time during which the conditions were more or less constantly recurring, as well as knowledge of the length of the interval between the last observed manifestation and the removal of the tonsils, are of utmost importance in this connection.

If an attack of acute rheumatic fever or chorea occurred four or five years before a tonsillectomy was performed, with no other recurrence during that time, their absence following the removal of the tonsils would mean but little concerning the influence of the operation. Yet when attacks of acute rheumatic fever, chorea, bone or joint pains and tonsillitis have been constantly and frequently recurring over a period of years, when the last observed manifestation was within days or weeks of the operation and when the removal of the tonsils was followed by an abrupt disappearance and nonrecurrence of these conditions, it is impossible to believe that the operation was without influence. Such conditions were approximated in many cases, notably Cases 1, 6, 8, 10, 12, 13, 14, 19, 28, 31, 41, etc., in Table 1. Of the eighty-five cases studied, fifty-three had shown recurring manifestations over a period of from three months to two years; twenty-five from three to five years, and six from six to ten years. The last observed manifestation was within one week of the operation in ten cases, within one month in fifty-seven cases, and within six months in eighty-three cases. The bone and joint pains were particularly dramatic in this instance, for their constant recurrence from day to day or week to week over months or years of time contrasted strikingly with their prompt and permanent disappearance when the operation was performed.

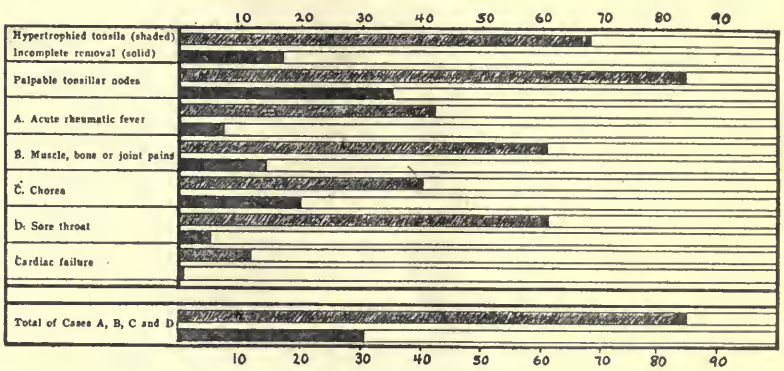
Other factors must remain constant before and after tonsillectomy if deductions concerning the influence of the operation are to be of greatest value. In this series much was done which tended to the better living and the improved general health of the children, with the consequent increased resistance to disease. With attention to diet, hygiene, other foci of infection, periodic vacations in the country, systematic routine, graduated exercises, regulated home life and constant observation for the return of any of the rheumatic manifestations, and with attempts at immediate relief when such occurred, the diminution in the frequency and severity of their recurrence could not but be expected.[1] As the tonsils were removed soon after enrolment in the clinic, and as these other measures for proper care were only then instituted, it happened that these children were under much better conditions during the period after the tonsillectomy was performed than they were preceding it. Yet many of these children have been observed to enjoy all these benefits for years with but little improvement in the recurrence of these manifestations until the tonsils were removed, when their nonrecurrence was often prompt and permanent.

The teeth received attention before and after the operation on the tonsils, but as a rule this care was greater afterward than before. Yet one familiar with the teeth of clinic children well knows that they constantly need attention, and that although their relation to foci of infection may be diminished directly as the care they receive, it is almost impossible so to care for them under existing dental possibilities in New York that they would cease to be a great factor as possible sites for foci of infection. For this reason the teeth may be largely eliminated from detracting from the after results present in this series. In many of these cases, conditions about the roots of the teeth have been confirmed by the roentgen ray. Unfortunately, few cases were so examined before 1917. Similarly, when this work was started, the attitude concerning the skull sinuses, the alimentary tract, etc., as sites for foci of infection was not nearly so clearly defined as at present, and investigations in these directions were not carried out in the earlier members of the series.

1. St. Lawrence, W. P., and Adams, E. Louise: The Organized Care of Cardiac Children, Hospital Social Service Quarterly, May, 1920.

In recording the influence of tonsillectomy, the tendency to deal in terms of "improvement" is great, indeed; for almost all cases seem to show some betterment. This term, however, is vague and indefinite, and it has seemed advisable to draw a sharp line between recurrence and nonrecurrence, and to leave such terms as "improvement" "frequency," "severity," etc., out of consideration. In cases of acute rheumatic fever, myositis and sore throat, little difficulty is experienced in this connection. Bone or joint pains in small children may, however, give some difficulty, for these patients frequently suffer from "pains in the legs" after trauma or prolonged and vigorous exercise. These may be due to muscle strain or trauma; and without care, they might be considered to be of "rheumatic nature." Similarly, orthopedic conditions, such as weak foot, fallen arches and chronic synovitis, might be misinterpreted. When such conditions were suspected in this series, final opinion was based on consultation with an orthopedist. Cases of habit spasm, and cases of "nervous" and fidgety" children might be wrongfully regarded as chorea, and frequent consultation with a neurologist has helped to minimize error in this direction.

The recurrences of the rheumatic manifestations are recorded in the eighty-five cases in which the tonsils had been successfully removed. Calculations have been made in three different ways. The first was based merely on the presence or absence of individual symptoms, as shown in the accompanying chart. The second was based on the recurrence of any of these conditions in any case, as shown under "totals" at the lower part of this chart. Each of the eighty-five cases here recorded presented some combination of these manifestations. Thirty-one cases have shown recurrence of some one or all of the manifestations. Fifty-four cases (60 per cent.) have shown no recurrence of any kind during the entire period that has elapsed since the operation was performed (average of three and one-half years). The third was based on the symptom grouping, and is shown in Table 4. Under nonrecurrence in this table are grouped the cases which have shown no manifestations of any kind after the tonsils were removed. Under recurrence are grouped the cases which have shown the return of one or all of the manifestations which had been present before the operation was performed. It will be seen that chorea, when associated with acute rheumatic fever or joint and bone pains, recurred less frequently than when it occurred alone or in combination with sore throat.



Effect of tonsillectomy on the recurrence of rheumatic manifestations: shaded area, number of cases before operation; solid area, number of cases after operation; figures above and below, number of cases.

TONSILLITIS

The tonsils were the site of recurrent inflammation in 73 per cent. of the cases; and of these, 7 per cent. have shown the recurrence of "sore throat" after the operation. Neither the history of recurrent tonsillitis, the size or appearance of the tonsil, nor the presence of minute tabs of tonsil tissue remaining after the operation seemed to bear any relation to the recurrence of other members of the rheumatic group. It was almost impossible to demonstrate the relation of the adenoids to foci of infection. The posterior cervical lymph nodes were palpable in a few cases, and operation was followed by their disappearance.

ACUTE RHEUMATIC FEVER

Recurring attacks of acute rheumatic fever were present in forty-two cases. After tonsillectomy there was no recurrence in thirty-five cases, or 84 per cent. In the five cases in which this condition appeared alone, it did not recur after the tonsils were removed. The average length of time during which these attacks occurred was twenty months, and the average interval between the last observed manifestation and the operation was two months.

CHOREA

The frequency with which chorea is associated with the rheumatic manifestations (thirty-two cases out of forty), and the frequency with which it is followed by cardiac disease, is sufficient reason for its inclusion in this study. Many other factors point toward the bacterial origin of this disease, although some neurologists resent any other attitude than that it is due to a disturbance of an emotional or endocrine nature. Forty cases showed recurring attacks of chorea before the tonsils were removed. It did not recur in twenty cases, or 50 per cent. Of the three cases in which this condition occurred alone and did not recur after the tonsils were removed, the average length of time during which the attacks recurred was thirty-four months; and the average interval between the last observed manifestation and the operation was one and one half months. In general, the effect of tonsillectomy on the recurrence of this condition seemed much less definite than existed in the case of the other rheumatic manifestations.

BONE AND JOINT PAINS

Sixty-one cases showed myositis, and bone or joint pains before the operation was performed, and there was no recurrence in forty-seven cases, or 77 per cent. Myositis was placed in this group because there were very few such cases, and none of these occurred without other manifestations. It did not seem advisable to make a special group for so small a number.

CARDIAC DISEASE

Fifty-eight cases of organic cardiac disease were present in the series. Twelve had suffered from at least one attack of cardiac failure (decompensation) before the tonsils were removed, and only one case showed an attack afterward. There were no cases of cardiac failure after the operation in those who had not had such an attack before it. The number in this group was insufficient for any deductions, and the improved hygenic conditions and careful regulation under which

these children had lived undoubtedly had much to do with these results. In the absence of some definite measure of the exercise tolerance in cardiacs, it is difficult at this time to give concrete facts concerning the degree to which it is influenced by tonsillectomy in cases presenting definite indication for removal of the tonsils. An opinion may, however, be given. In general there seemed to be a fairly prompt increase both in desire and in the capacity for exertion; and the exercise tolerance seemed to be favorably influenced more often, more promptly and to a greater degree by tonsillectomy than by any other measure utilized in the care of cardiac children. It may be that the tonsils or tonsillar nodes provide a constant source of low grade infection, the persistent toxemia of which may cause the excessive circulatory reactions so commonly encountered. It may also be that the improvement in general health and nutrition is responsible for improvement in the functional condition of the heart. Attention is called to the fact that this series consists entirely of children in whom many aspects of cardiac disease vary markedly from those occurring in adults.

NUTRITION AND GENERAL HEALTH

As with the exercise tolerance, it is difficult to deal in concrete terms in discussing the effect of tonsillectomy on nutrition and general health in cases presenting indications for the removal of the tonsils. The nutrition and general health are not always markedly influenced by a diseased condition of the tonsils and tonsillar nodes, although there is perhaps no other single factor so commonly the cause in children. Forty-two per cent. of the patients in this series were under the average weight at the time of the operation, while 29 per cent. were under it one year later. Some of the patients of the latter group had made normal gains for the year, although they still remained under the average. There seemed to be no definite relation between the weight gain and the recurrence of the rheumatic manifestations. However, such figures seem less important to one who has followed these children, than is the opinion formed on repeated experiences. No single factor (excepting prolonged country residence under regulation) stands out so strikingly in its effect on nutrition, well being and general health as tonsillectomy in cases which present indications for the removal of the tonsils. It is noticeable in the appearance of the child, the weight curve, the exercise tolerance, the desire for exertion, and the lessened frequency of intercurrent disease. Infections of sinuses, ears, nose, throat and respiratory tract, and the frequently unexplained attacks of fever so commonly encountered in children seem much less frequent after the tonsils have been successfully removed.

TABLE 5.—EFFECT OF TONSILLOTOMY AND TONSILLECTOMY ON THE RECURRENCE OF RHEUMATIC MANIFESTATIONS IN FIVE CASES

	Tonsils	Tonsillar Nodes	Acute Rheumatic Fever	Myositis, Bone or Joint Pains	Chorea	Sore Throat
C. M.:						
Before operation	?	?	0	0	0	++++
After incomplete removal (August, 1913)	++	++	0	++++	++	+
After complete removal (November, 1916)	0	0	0	0	0	0
L. McM.:						
Before operation	?	?	+	0	+	+
After incomplete removal March, 1907)	++	++++	+++	++++	++++	+++
After complete removal (December, 1916)	0	+	0	0	0	0
M. H.:						
Before operation	?	?	+++	++	0	++++
After incomplete removal (April, 1913)	+++	++++	+	++	0	++++
After complete removal (December, 1916)	0	0	+	0	0	0
L. K.:						
Before operation	?	?	+	++++	0	++++
After incomplete removal (February, 1914)	+++	+++	++	++++	+	++++
After complete removal (April, 1917)	0	0	0	0	0	0
F. McD.:						
Before operation	?	?	0	++++	0	+
After incomplete removal (June, 1915)	+	+	+++	++	0	++++
After complete removal (September, 1917)	0	0	0	0	0	0

TONSILLOTOMY AND TONSILLECTOMY.

Fortunately for purposes of comparison, a few of the patients have had both tonsillotomy and tonsillectomy performed. The interval between these operations was sufficient to compare the occurrence of the rheumatic manifestations before the former operation, between it and the latter, and for some years after the latter. The results in five cases are shown in Table 5. By reference to this table it will be seen that tonsillotomy (incomplete removal) had little or no effect on the recurrences, while tonsillectomy (complete removal) was followed by almost complete cessation. Some observers deny any good effect of tonsillectomy in these conditions, but on closer investigation it can frequently be found that these workers paid little or no attention to the type of operation performed or to the after-condition of the throat. In checking up the after-histories it is essential that the condition of the throat be known. All tonsillectomies are by no means accompanied by complete removal of the tonsils. Attempts at tonsillectomy by careful men of large experience have been observed in which almost an entire tonsil remained in position. "Tonsil operation" cannot be construed to mean complete removal of the tonsils. It has seemed that adverse criticism was more often applicable to improper operations or to poor results of the proper types of operation in instances in which it was directed against the operation in general.

This report is intended only as a presentation of the facts observed. The number of cases in the series is insufficient for the formation of definite and valid conclusions. Yet my experience has been such as to lead me to believe that the complete removal of the tonsils is the most important measure at present available for the prevention of acute rheumatic fever and the allied rheumatic manifestations.

SUMMARY

1. Eighty-five children, each of whom had presented one or several of the rheumatic manifestations before the tonsils were completely removed, were observed during an average period of three and one-half years after the operation was performed.

2. The tonsils were markedly hypertrophied in 13 per cent. of the cases, moderately so in 69 per cent. of the cases, and not enlarged in 18 per cent. of the cases. They were the site of recurrent inflammation before

the tonsils were removed in 73 per cent. of the cases. "Sore throat" recurred after removal of the tonsils in 7 per cent. of these. At least two operations were necessary before the tonsils were completely removed in 22 per cent. of the cases.

3. The tonsillar lymph nodes were enlarged in 100 per cent. of the cases before the operation was performed, while in 59 per cent. of the cases they were impalpable afterward.

4. One or more attacks of acute rheumatic fever had occurred in forty-two cases before the tonsils were removed. After tonsillectomy there was no recurrence in thirty-five cases, or 84 per cent.

5. One or more attacks of chorea had occurred before the removal of the tonsils in forty cases, and there was no recurrence after the operation in twenty cases, or 50 per cent.

6. Sixty-one cases showed myositis and bone or joint pains before the operation was performed, and there was no recurrence in forty-seven cases, or 77 per cent.

7. Fifty-eight cases of organic disease of the heart were present in the series. Twelve of these patients had suffered at least one attack of cardiac failure before the tonsils were removed. One patient suffered one attack afterward.

8. The exercise of tolerance in the cases of cardiac disease seemed to be favorably influenced by tonsillectomy in the instances in which indications existed for the removal of the tonsils.

9. Nutrition and general health were improved, and intercurrent disease was less common after the tonsils were removed.

10. Tonsillectomy (complete removal of the tonsils) would seem to be the most important measure at present available for the prevention of acute rheumatic fever and the allied rheumatic manifestations.

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ABSTRACT OF DISCUSSION

DR. LEWIS A. CONNER, New York: Dr. St. Lawrence's work is very convincing, showing that the tonsils are the most important single portal of entry for that form of infection termed "rheumatic," and that their removal prevents recurrences of such "rheumatic" manifestations. I know of no other statistical study of this matter which has covered the ground in anything like the careful way that Dr. St. Lawrence has covered it. His work, however, points a lesson of much wider significance than he has himself intended. It should serve as a model for future similar statistical studies. Rheumatic fever may be regarded as the very prototype of a systemic infection. Its febrile course, its constitutional disturbance, its polyarthritis, its self-limitation, everything conforms to our conception of a systemic infection, and we are ready to accept focal infection as the origin of such a general infection. But most affections which we think are related to focal infection do not conform to our conception of a general infection at all, and in these varied conditions it is all the more important that we should be able to substitute definite and demonstrative proof of the relationship for our present rather general and sometimes vague beliefs and suspicions.

DR. ALEXANDER LAMBERT, New York: I heartily concur in what Dr. Conner said about Dr. St. Lawrence's work. Without knowing that he was doing that work, I took a thousand cases of rheumatism in Bellevue Hospital to see what was the proportion with bad teeth and bad tonsils, and then took a thousand cases of pneumonia without joint affections, to see how many patients had bad teeth and how many did not. The proportion of bad teeth in the rheumatics was 68 per cent. and bad tonsils 25 per cent. Among the nonrheumatics, bad teeth were present in 57 per cent. and bad tonsils in 17 per cent. But in the rheumatics teeth were mentioned as good in only 6.7 per cent. and in controls in 19 per cent. That probably is also true if you take it through people of all ages suffering from rheumatic fever, teeth are more often the cause than tonsils. There is no question that in the young, in children, Dr. St. Lawrence is right. The tonsils, predominate over the teeth in the liability to give infection, because the tonsils are more often infected than the teeth. The total number of rheumatics in Bellevue has enormously decreased since the dental clinic was established, and since tonsils became a source of such suspicion that they were taken out whenever they were shown to be bad. It is interesting to notice, also, in these statistics that while the total number has dropped in all ages, the percentage to the total number coming in has remained about the same, except for the age period between 20 and 29, in which not only has the percentage amount to the total dropped, but the total number has dropped also, proving Dr. St. Lawrence's point, that if you get the tonsils out, rheumatism does not recur.

INDUSTRIAL EPIDEMIOLOGY*

WILLIAM ALFRED SAWYER, M.D.
ROCHESTER, N. Y.

Industrial epidemiology is that phase of medicine which seeks to improve the health of individual workers and prevent the transmission of disease to their fellows. This is my conception of the subject, and from that point of view I wish to discuss briefly some of its practical problems. Needless to say, the field of industrial epidemiology is still uncharted; but from experience and knowledge gathered from other fields of medicine, together with our own somewhat limited experience, perhaps we can, with safety, make a few deductions. If this aspect of medicine is to be of real service to industry, it must be applied so safely and sanely that it can show results to the men at the head of our industries. Fortunately or unfortunately as the case may be, this industrial patient takes more pacifying than the "pacifier" so often handed out by many public health authorities. To be sure, industry expects to be protected against the commonly known communicable diseases, as does the rest of our population, and may be satisfied for the time if its health supervisor watches over this phase of its problems; but this is not enough. Is it not true that there are diseases, pandemic, may we say, of physical impairment other than the group of communicable diseases so frequently epidemic or endemic, which are as detrimental to the well being of our industries, and to which we need to give our sincere attention? Let us consider first of all those communicable diseases that we think of as being under control, and which are now considered of most concern to industry.

Smallpox, typhoid, diphtheria, malaria and yellow fever have been conquerable or controllable so far as the general public is concerned and are no longer a menace. Eternal vigilance, however, is necessary if they are to be kept in control. What has been done with respect to the general public can the better be done for our industries, which are under more immediate supervision, and in the last analysis only concentrations of the general public.

SMALLPOX

In the organization with which it is my good fortune to be connected, vaccination against smallpox is

* Read before the Section on Preventive Medicine and Public Health at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

required of all new employees. This is true of a few other forward looking organizations, and must be true of all eventually. It may be of passing interest to relate a small so-called epidemic in my own company, which took place adjacent to one of its plants in 1915. The first case is believed to have been that of a milkman, who, having the disease without its being recognized, was permitted to continue at his work, thus spreading the infection. There were in this epidemic fourteen cases of smallpox, eight of which appeared among the employees of the company.

The means employed to control the disease were: (1) immunization by vaccination of all employees not giving a satisfactory history or showing a satisfactory vaccination scar; (2) isolation with quarantine of all cases of smallpox; (3) house to house canvass of all homes adjacent to the plant with examination of the occupants for possible smallpox, and (4) investigation of cause of absence of all employees from work one day or more.

In all, 2,050 vaccinations were performed, with more than 50 per cent. of "takes" and not a single case of infection. This is a small percentage of "takes" but is explained, I am told, by the high percentage of former vaccinations among the people of the plant and the community. Many of you may know that Rochester has been well protected against smallpox for many years. This epidemic of smallpox was of a mild type, that is, while most of the cases presented widely distributed eruptions, there were no fatalities, and for some of the patients there was little, if any, discomfort. In defense of the practice of vaccination it is of interest to note that of the fourteen cases making up the epidemic, only one had ever been vaccinated. This one had been vaccinated ten years before and had an extremely light attack. From that time vaccination against smallpox has been required of all new employees, and only in exceptional cases has there ever been any objection to it. Vaccinations may be done at the city health bureau or at one of the companies' dispensaries or by any physician. I know there have been attempts in our own organization to have this practice abandoned, because it was thought that it kept us from securing a certain few who objected to it.

TYPHOID

With regard to vaccination against typhoid, should we attempt in our industry to educate as to its value and then offer it without charge to all who wish to avail themselves of its protection, or should we go to the extent of making it compulsory? Surely there is no better time to introduce such a measure. If inoculations were made late Friday afternoon or Saturday morning, sufficient time in the majority of cases would be given for recovery from the reaction. City and health departments would furnish the vaccine, thus making the cost a negligible factor. To be sure, managements would object strenuously if much lost time were to result from the reaction, but let it be hoped that eventually they will be convinced of the value in industry of all such protective measures: It is "up to" the physician "on the job," together with the aid of public health authorities, to "put it across."

DIPHTHERIA

Diphtheria is a disease which seems to be constantly with us to a greater or less extent, but it can be diagnosed and prevented readily. In industry, cultures should be taken of all suspicious sore throats, and the employee should be sent home until it is proved that it is or is not diphtheria. This is good treatment for any one ill from sore throat, despite the etiologic factor. If it proves to be diphtheria, so much the better as regards recovery. All employees working in the same department with such a patient should have a culture of their throats taken and be given immunizing doses of antitoxin when indicated. If we had the same positive means of diagnosis and control for other diseases that we have for diphtheria, epidemiology in industry would be very simple. It has been suggested that we offer the Schick test to all employees. I do not know its value and I am not sufficiently familiar with it to offer a suggestion.

TUBERCULOSIS

Tuberculosis, of course, presents an ever present problem, just as vital in industry as in any other part of life and perhaps even more so. Industry can do much here in giving proper working conditions and providing proper ventilation and light, with absence of crowding. Complete and careful physical examinations of all new employees, with periodic reexaminations when indicated, cannot fail to help in the crusade against this disease. Fortunately, factory environment is relatively free from the menace of tuberculosis. If it be assumed, as seems reasonable, that tuberculosis is often acquired in childhood and usually shows itself in later life at some time of lowered vitality, the greatest service that industrial medicine can do, either for itself or for the community, is to make careful physical examinations, with follow-up in doubtful cases. It is not amiss in health supervision to consider carefully the possibility of tuberculosis in all cases presenting any one of the four signs: (1) loss of weight; (2) loss of appetite; (3) general weakness, or (4) rise in temperature. These factors should be carefully noted at the time of the entrance physical examination, and subsequently on any visit made to the medical department, and followed up if found present. Much more will be accomplished by such procedure than by waiting for signs in the chest so evident that an amateur can detect them. I believe that any one engaged in industrial work will agree that an astounding number are missed until it is to late; but by the foregoing consideration, it is possible to make much greater progress.

With respect to other contagious diseases not mentioned above, I have nothing to add, except that industry should cooperate to the fullest extent with all health agencies in their prevention and control.

RESPIRATORY DISEASES

As for respiratory diseases, such as the common colds, influenza and pneumonia, so little real progress has been made regarding the facts that little of a definite nature can be stated. In the influenza epidemic of 1918 and 1919, many practices were used in our industries, the essentials of which consisted for the most part of sending home all employees with a temperature of 100 F. or over, or who were coughing and sneezing, thereby menacing those about them.

In many instances such cases were followed up to see that the patient had proper attention and care at home. Bulletins, etc., usually appeared giving salient points as to prevention, while foremen and others in charge of workers were sometimes given information

that would help them in detecting workers with prodromal symptoms. By such procedures, spreaders of the infections were often eliminated early. Ventilation, general cleanliness of buildings and efforts to reduce overcrowding and fatigue in like manner were measures used to some extent. Frequently we hear of rooms being sprayed with this or that antiseptic or germicidal solution, or of this or that sure preventive being used in the nose and throat as sprays. One hesitates to speculate as to how much harm has thus been done or how much money has been wasted. Now that we have had time to think the matter over and the hysteria of the occasion is passed, may we not formulate some scheme or plan that will aid us, and until more of the story has been unfolded, help us in curtailing the large waste due to our very frequent and all too common colds and their resultant conditions?

OUTLINE OF A PLAN

1. Instruction for all those in a directing or supervising capacity, in recognizing a cold in its incipience, with orders to send to the physician every one who falls within this group.
2. Authority to the physician to send home employees who appear ill or have a temperature of 100 or over, and who are sneezing and coughing, or have a profuse discharge from the nose.
3. Follow up to see that those persons who are sent home receive proper treatment. This should be done by a visiting nurse. This means helping the local health department, in that certain other diseases may be detected in their early stages.
4. Careful inspection by the physician on their return of all who have been sent home.
5. Charting of records of sickness incidence by departments so that attention may be quickly turned to those departments showing an increased amount of illness.
6. Education for all as to methods of prevention, which may be done through plant publications, bulletins, leaflets or lectures.
7. Proper ventilation, cleanliness of surroundings, prevention of fatigue, and last but not least the avoidance of overcrowding. One has only to visit some of our industries late in the day when all the freshness and sweetness of the air has been vitiated to appreciate how far in the dark ages we are living.

I do not know how much time is lost in our industries from colds and their resultant ills, but I imagine it to be very large; and if such a program could be carefully and thoughtfully instituted in the fall of the year when the first scourge starts, much illness and loss of time might be prevented. This is a measure which all industries should study earnestly.

VENEREAL DISEASES

With regard to venereal diseases, industry should heartily cooperate with agencies now conducting a campaign against them. In many communities very thoroughgoing programs are being followed. Education by way of bulletins, pamphlets, lectures and movies is advisable. Employees should be made to feel that both syphilis and gonorrhea should be dealt with like other diseases, and in communities where a venereal disease clinic does not exist, arrangements should be made to treat all such cases properly. Employees should not be discharged or laid off as a penalty when it is discovered that they have such diseases. They should know that they can be taken care of in a proper way by a reliable physician, and that their job is secure. If this attitude is not taken they will not come to us, but will continue at work, perhaps only partially treated and without knowing the proper precautions to take for the protection of others. By a proper attitude of helpfulness, they will readily seek our assistance and heed advice, and industrial communities will be much less harmed than if we go on in our previous unsympathetic manner.

OTHER DISEASES

Finally, what of those conditions or impairments not communicable diseases in the strict sense, but which to such a large extent continually sap the vitality of industry? In my own company it is estimated that last year ten and one half days for each employee were lost because of sickness, and I believe it is safe to say that a very large proportion of that lost time can be attributed to such things as colds and their sequelae, focal infections of teeth, tonsils, sinuses, gallbladder, etc., together with the resulting conditions from dietary indiscretions and lack of proper exercise.

Adhering to the definition of industrial epidemiology that was given in the beginning, I am permitted, I believe, to rate such states of lowered vitality as belonging to the subject under discussion. I feel that, aside from etiologic considerations, they occur frequently enough and are of such moment to the well-being of industry that their prevention and control may be considered in relation to the prevention and control of the more often discussed communicable diseases.

Time does not permit of a complete discourse on this part of the subject, and in closing I can only draw your attention to what seems to me, for the present, to be the best method of practical prevention in industry of these conditions. I believe, first, last and always in the efficacy of a real physical examination, both at the time of entrance to employment and later, at stated intervals, which will, among other things, give an analysis of individual capabilities and susceptibilities, placing workers where they will not endanger their well-being through lowered resistance or uncorrected impairments. If epidemiology along these lines, or any other, is to mean anything, thoroughgoing physical examinations, the best working conditions, and health education are the three fields open to our cultivation if we would reap a harvest.

343 State Street.

ABSTRACT OF DISCUSSION

DR. A. C. CHACE, Texarkana, Ark.: The United States Railroad Administration has entered into contract with the shop crafts by which not only is all physical examination prohibited, but no one is permitted to inquire whether or not a man who enters the railroad shops has tuberculosis, diphtheria, smallpox or any other contagious or infectious disease. You must hire him if he comes to you and the position is open, and if he has learned his trade, no matter what disease he has, no matter how contagious his disease may be.

I would like to present a resolution, and I move its adoption:

Resolved, That the Section on Preventive Medicine and Public Health condemns the contract entered into by the United States Railroad Administration with the shop crafts, whereby physical examination of applicants for employment is prohibited, and that it recommends to the House of Delegates the adoption of some resolution condemning in terms that cannot be mistaken the entering into of a contract with any labor organization prohibiting physical examination.

DR. JOHN P. DAVIN, New York: This is a very serious problem for this section to undertake. It is flying both in

the face of the United States Government and in the face of the labor organizations. I do not think the labor men have arrived at the period when they should be compelled to be examined physically in order to earn their living. Any man coming from a source of infection, or any man known to have an infection, ought to be looked after. But to ask that the laboring man must sustain a physical examination is taking a tremendous step. Labor men are well within their rights in refusing to have any such contract for the sake of an imaginary protection on the part of themselves from those of their fellows who may be ill. The American Federation of Labor has done a great deal for the workers. And I think it will have a bad effect on the working men if they find that the American Medical Association has given its approval to what is a compulsory examination of a working man. A man's body has some rights, as well as his soul. When this government was established it was prohibited from interfering with the practice of any religion or the exercise thereof. It was never even supposed that any one would have to be prohibited from practicing medicine. But it looks to me as if we are rapidly approaching a condition where a state is going to take care of a man's body in lieu of his soul, and the endeavor is being made to reach his soul by ministering to his body. It would be ill advised for this association to go on record as voicing its opinion that the laboring man should have to be subjected to a strict physical examination, baring himself before his employer before he has a right to earn his daily wage.

DR. JAMES R. BEAN, Birmingham, Ala.: If I understood Dr. Sawyer correctly, he advised compulsory culturing of immediate contacts of a case of diphtheria, and the administration of an immunizing dose of antitoxin. I believe the contacts should be cultured, but I do not believe that the administration of an immunizing dose of antitoxin is good practice today; because of the danger of anaphylaxis to that person should he develop diphtheria, or need other serum therapy later. Of course, the production of antitoxic serum today is so refined that the danger is minimized, yet that point must be borne in mind. If they want to take steps to immunize these people, give them toxin-antitoxin mixture. I also think that an industrial plant is one of the best places in which to use the Schick test, because the men are under control all the time. It is more advisable to find the nonimmunes and immunize them rather than all the contacts. In reference to the administration of typhoid vaccine, I believe absolutely in the efficacy of typhoid vaccination; yet my experience in France led me to believe that there were times when a massive infection could overcome this immunization. This was illustrated in one outfit which started from Camp Cody, and when it arrived in France more than 50 per cent. of the men were sick with typhoid fever. Of the 250 men who finally arrived in our area more than 80 per cent. had had three complete courses of immunization. I have never seen typhoid fever in as virulent a form as it occurred in those men. Typhoid vaccination, without proper attention to the sanitary conditions surrounding the patients or the families exposed, and an epidemiologic study of the milk and water supplies, is almost useless.

DR. S. W. WELCH, Montgomery, Ala: I do not understand that these medical examinations of working men are entirely for the protection of their fellows. The principal protection comes to the man with the ailment. One of the chief values of the examination is to find in their incipiency those defects which, if discovered in time, can be relieved, and which, if neglected, lead not only to the death of the man affected, but mean pauperism to his family. Incidentally, he is removed from his fellows, and they and their families are protected. But it should not be forgotten that larger benefits come to the individual and to his family as well.

DR. W. A. SAWYER, Rochester, N. Y.: The greatest value of physical examination is to the individual himself. I have never yet met a man who has objected to a physical examination whom I could not examine eventually. I understand on reliable authority that the right of an employer to ask for a physical examination before employment played an important part in the recent steel strike in Pennsylvania.

INFLUENZA AND HYPOPHRENIA

THE INTERRELATION OF AN ACUTE EPIDEMIC INFECTION AND A CHRONIC ENDEMIC (BRAIN) AFFECTION *

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Influenza seems to have had certain neuropsychiatric effects. It is these effects which are to us as physicians most important from the pragmatic standpoint, rather than any hypothetic propositions of cause. These concrete effects we may approach as tangible globar material, and it is the essence of pragmatism that to capitalize this concreteness will in the end yield results nearer truth than the spinning, however deft, of tenuous inductive hypotheses. Hughlings Jackson put it that "the study of the thing caused must precede the study of the cause of the thing."

The whole subject of mental defect stands in a fair way to illustrate the value of the pragmatic point of view. After hundreds of years of desultory search for *causes,* we have within the last few decades turned our attention to the *effects* of feeblemindedness, with the result that more advancement has been made in that short space of time than in all the preceding centuries; for the fact remains that however important the cause (and who will deny this?) it is in general a thing difficultly accessible; yet, in the pursuit of it, the obvious data of effects, from which so much can be learned, have been ignored.

Influenza, as I would demonstrate, had certain definite effects on hypophrenia, or feeblemindedness. The importance of this fact, and these data, in arriving at a correct conception of the nature of feeblemindedness must be obvious. Yet that such effects of influenza have ever occurred appears to be a naive observation. I mean simply that the literature is almost barren of any discussion of the matter. The whole problem of the effects of acute infections on the brain and its diseases is a strangely neglected one, and particularly is this true of feeblemindedness. It is only from the standpoint of alleged cause that infectious disease is discussed by writers on feeblemindedness, and even as such it is not even mentioned by many of them, and by others only casually.

Thus, to illustrate, Tredgold [1] in his well-known treatise on mental defect, devotes only eighteen lines (1908 edition) of the nearly 400 pages to the discussion of infections as causes of hypophrenia. Ireland [2] devotes a chapter to "Inflammatory Idiocy," but it is not very illuminating, and infectious disease is not mentioned in the chapter on "Causes of Idiocy." Bourneville [3] was apparently more interested in the structural alterations wrought than in the modus operandi by which they were wrought. In a cursory search of his reported cases, I find no discussion of infections as a causative factor in mental defect. The

* Read before the Section on Nervous and Mental Diseases at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the latter will be sent by the author on receipt of a stamped, addressed envelop.

1. Tredgold, A. F.: Mental Deficiency, New York, William Wood & Co., 1908 and 1914.

2. Ireland, W. W.: The Mental Affections of Children, Idiocy, Imbecility and Insanity, London, J. A. Churchill, and Edinburgh, J. Thin, 1898.

3. Bourneville: Recherches sur l'épilepsie, l'hystérie, et l'idiotie, Paris, 1881-1901.

standard English textbooks of psychiatry [4] either make no mention of the matter or refer to it briefly.

Occasionally one finds some attempt at statistical solutions. Thus, in Piper's [5] statistical compilations there are reported seventy-five cases of acquired idiocy without convulsions: 29 per cent. were due to scarlet fever and diphtheria, 12 per cent. to measles and 8 per cent. to encephalitis. Of thirty-two cases of acquired idiocy with convulsions, 22 per cent. were traced to scarlet fever and typhoid and 10 per cent. each to measles, "gastric fever" and encephalitis. This is roughly equivalent to finding 40 per cent. of acquired idiocy due to infectious diseases. The statistics of other writers do not bear out these high figures. For example Koernig,[6] in a list of 260 cases of idiocy, carefully analyzed as to etiology, found 3.4 per cent. (he questions whether this should be lowered to 2.3 per cent.) due to infectious diseases aside from syphilis. Even in his list it ranks above traumatism as a cause, and several times greater in frequency than the oft-cited consanguinity of parents. Pearce [7] cites several tables. Beach and Shuttleworth's figures from the Royal Albert Asylum are given, showing "acute infectious fevers" to be causative in 119 of 1,200 cases. Figures for 1,180 cases from the Darenth asylum [8] are also quoted without the mention of infectious diseases! Tredgold [9] gives a table to show the postnatal extrinsic causes; of the 150 cases studied, thirty-seven cases, or nearly one-fourth, fall in this group, but of these only seven are ascribed to "infectious fever." It is surprising that so capable a writer should have ascribed no less than ten cases to "teething convulsions" [sic].

There seems to be no doubt but that syphilis may be a cause of feeblemindedness.[10] This, however, opens up too big a field for present discussion and is really beside the point, since we are here dealing with acute infections, and syphilis must certainly be regarded as chronic.

The classification of G. E. Shuttleworth and Fletcher Beach [11] of England should be mentioned.[12] These authors proceed then to the pathogenesis. This subject is discussed in greater detail by others writers, e. g., Bolton,[13] Hammarberg,[14] and above all, the elaborate monograph of Fernald, Southard and Taft.[15]

4. Church and Peterson, Jelliffe and White, Paton, Diefendorf, DeFursac, etc.

5. Piper, Hermann: Zur Aetiologie der Idiotie, Berlin, H. Kornfeld, 1893.

6. Koernig, W.: Die Aetiologie der abortiven Formen einfacher Idiotie verglichen mit derjenigen der cerebralen Kinderlähmungen, Allg. Ztschr. f. Psychiat. **61**: 133, 1904.

7. Pearce, F. S.: Causes Conspiring to Produce Mental Enfeeblement in Children, Am. Med. Surg. Bull., Aug. 1, 1895, p. 908.

8. These figures are taken from Tuke's Dictionary of Psychological Medicine **2**: 659-665, 1892.

9. Tredgold, A. F.: Amentia, Mott's Arch. of Neurol., Pathological Laboratory of the London County Asylum **2**: 328-423, 1903.

10. Southard, E. E., and Solomon, H. C.: Neurosyphilis, Boston; W. M. Leonard, 1917.

11. Shuttleworth, G. E., and Beach, Fletcher: Presented at the Thirteenth International Medical Congress, Paris, 1900, and embodied in their article in Allbutt and Rolleston's System of Medicine, London, the Macmillan Company, 1910. Vol. 8. In general, it consists in grouping the forms of mental defect according to etiology, as congenital, developmental and accidental. Waiving the obvious deficiencies of a scheme which does not foresee the conflict between the second and third groups as given and named, I shall proceed to the minutiae of the third group, with which we are now concerned. They recognize under the "acquired" or "accidental" etiology group a traumatic form, a sclerotic form and a postfebrile form. Again, passing the first two items of a series of three (one is struck by the trinitarian tendencies of the writers), we read that this is "another important type;" and measles, pertussis, typhoid and scarlatina are specifically mentioned.

12. Tregold (Footnote 9) adds smallpox and syphilis.

13. Bolton, J. S.: The Histological Basis of Amentia and Dementia, Mott's Arch. of Neurol. **2**: 424-620, 1903; On the Brain in Health and Disease, London, E. Arnold, 1914.

14. Hammarberg, Carl: Studien über Klinik und Pathologie der Idiotie, Upsala, E. Berling, 1895, p. 126; Leipzig, Koehler.

15. Fernald, W. E.; Southard, E. E., and Taft, A. E.: Waverly Researches in Pathology of the Feebleminded, Mem. Am. Acad. of Arts and Sciences **14**: (May) 1918.

METHODS OF STUDY

What is the effect of influenza *re* feeblemindedness? This is the specific question of my research. More minutely, it is to learn whether or not influenza does or can produce frank mental defects, and whether or not it alters for better or worse the mental status of patients with an already existent mental defect. These questions are really put to us, not by the influenza epidemic, but by the progress of study and research concerning hypophrenia. The influenza epidemic has contributed data to their solution.

The collection of these data was thus made: In the first place, to insure a wide sweep of material, questionnaires were prepared and sent to the superintendents of all state institutions for mental defectives except those located in states where the influenza epidemic was inconsequential.

To summarize: Of seventeen institutions with a total population, according to the figures of the superintendents, of over 16,000, in only two institutions and in one of them in only one case, was any relation observed between influenza and mental defect. Surely one might consider this a definite answer to the proposed questions.

SECOND METHOD OF STUDY

As a matter of fact, the surprisingly barren results of the first method are probably misleading. The fallacy may lie in the inattention to details which the pressure of executive work, influenza itself and shortage of professional help combined to make inevitable. It may lie in the crudity of our standards of comparison, our clinical psychometry. It may lie in the wording of the questions.

But wherever the location of the fallacy, fallacy we must believe it to be in the face of data acquired from scanning specific cases encountered in private practice and neuropsychiatric dispensaries and hospitals. From such sources the cases reported herewith are taken.[17]

Under the caption of Simple or Uncomplicated Hypophrenia (as opposed to hypophrenia with complicating factors or tendencies), there are three groups, easily separable on the basis of Southard's [19] ingenious scheme for labeling the qualitative variations in the psychic constitutions of hypophrenics. The groups are: (1) those with intellectual sphere disturbances conspicuous; (2) those with emotional disturbances uppermost, and (3) those with conduct disturbances prominently intensified after influenza. Or, to use Southard's nomenclature, these three groups might be thus labeled:

Group 1. Hypognosis = the prominent psychic product of influenza.

Group 2. Dysthymia (parathymia or hypothymia) = the prominent psychic product of influenza.

Group 3. Parabulia = the prominent psychic product of influenza.

17. Of the following cases, six are from our Boston series (Menninger, K. A.: Psychoses Associated with Influenza, J. A. M. A. **72**: 235 [Jan. 25] 1919), from which previous studies have appeared (the reference just given; Footnote 16, and Menninger, K. A.: Influenza and Neurosyphilis, Arch. Int. Med. **24**: 98 [July] 1919). Three were reported in a letter to the writer from Dr. Joseph H. Ladd of the Exeter School of Rhode Island, at Slocum. Two of the patients were seen in private practice in this state (Kansas), one by Dr. O. S. Hubbard, superintendent of the Kansas State School for Epileptics, in consultation with another physician, and one by the writer in consultation with Dr. W. S. Lindsay, of Topeka, Kan. To all of these men credit is herewith duly awarded, and an expression of gratitude proffered for their kindness in putting at my disposal the data on the cases that I did not see.

19. Southard, E. E.: Suggestions in the Nomenclature of the Feeblemindednesses, Mental Hygiene **2**: 605 (Oct.) 1918.

The complicated cases require a somewhat different approach. They, too, fall into three classes:

Group 4. Hypophrenia with neurologic manifestations prominent.
Group 5. Hypophrenia with psychic manifestations prominent.
Group 6. Hypophrenia with psychopathic manifestations prominent.

These, like the elements of the preceding group, may be abbreviated, as:

Group 4. Hypophrenia with encephalopathy.
Group 5. Hypophrenia with psychosis.
Group 6. Hypophrenia with psychopathy.

Each of these six groups will be taken up separately and illustrated with the appropriate cases.

SIMPLE HYPOPHRENIA: GROUP 1. WITH INTELLECTUAL DISTURBANCES CONSPICUOUS

Hypophrenia with disturbances (loss) in the intellectual sphere prominent following influenza (or hypophrenia, with hypognostic aggravation by influenza) is, of course, the only type in which the demonstration of mental loss by such mathematical means as the Binet scale and its descendants is possible. The thrill afforded the psychologist in finding the mental age of a child to have fallen so many points after influenza can never be equaled in a cold, critical psychiatric study of conduct or affect before and after.

Case 1 fits well into this group, although, of course, as usual, there was an associated disturbance of conduct and emotional balance. This case is reprinted with abridgment from my expository analysis of the postinfluenzal mental cases, where it was given to illustrate the hypophrenic group.[20]

Case 1.—*Abstract.—A lad, aged 10, of American parentage, previously very dull in school, but well enough behaved, after an attack of influenza became much disturbed and was brought to the hospital for care. When his excitement subsided it was found that his intellectual level had apparently fallen even lower than before. The diagnosis, on admission, was low grade moron; on discharge, high grade imbecile. The effect of influenza was aggravation of the hypophrenia, all spheres, but particularly the intellectual.*

GROUP 2. WITH EMOTIONAL DISTURBANCES

Cases 2 and 3 are illustrative of predominant dysthymic manifestations of hypophrenia as aggravated by influenza.

Case 2.—*Abstract.—A negro lad, aged 16, who, although always regarded as peculiar, had never been troublesome or disagreeable, after an attack of influenza became so inexplicably irritable, sullen and irresponsible that his father took him to court as a "stubborn child that hasn't good sense," to "have his mentality taken." The diagnosis was hypophrenia, low grade moron. The effect of influenza was distinct aggravation, particularly of emotional disturbances.*

History.—The mother was an epileptic, who had had influenza in September and presumably in her delirium, had jumped from the roof of her house, killing herself. The father seemed to be above the average negro, and had had a university education. There was no history of any nervous or mental trouble among the six siblings. The patient was born in Boston and had attended kindergarten at the age of 5. He left the fourth grade at the age of 16, after having been held back in every grade. At the age of 5 or 6, he was "vaccinated" for diphtheria during an epidemic, but contracted the disease nevertheless, and "had never been the same since." He was always regarded as peculiar, even by his parents. He seemed to have been a sociable lad and was fond of going to parties and dances. He wandered about a good deal and could not succeed in keeping any job more than a few weeks. Apparently he worked well, but objected to having his father take his wages ($9). However, until the present illness he had never been in trouble of any kind, nor was there any record that he was ever suspected of being feebleminded or insane.

Present Illness.—In September, the patient had influenza. He was ill for two weeks and was delirious for two or three days. Both the boy's father and the boy himself dated the onset of his present trouble from that event. In the course of the examination, the lad said, "Since I had the flu I ain't been well, and people tell me I am wrong in the head. I don't get along as well as I used to, especially at home." The father's account was that since he had had influenza he had become very stubborn, wayward, distractible and irresponsible (these are almost the father's exact words). His emotional balance had become very much upset so that while occasionally cheerful and agreeable he was most of the time sullen, morose and irritable. He took to sitting alone in the dark for hours, idle and abstracted. The father finally, in desperation, took him to the police station and swore out a warrant against him as a stubborn child. He affirmed in court that the boy "hadn't good sense." It was from this court that the boy was sent to the hospital for examination.

Examinations.—Mental: The mental examination confirmed very well the father's report of the child's emotional disturbances and his volitional and intellectual deficiency. He was at first not at all cooperative or attentive, and was sullen, restless and ill at ease. Later he became more cooperative and accessible, and talked pleasantly in the ward. He became quite panic stricken on contemplation of the rumored lumbar puncture. Later he was somewhat obstreperous about being confined in the hospital. His attention was never very good, and his thought processes showed a general scattering and weak associations. His thought content showed a paucity and inadequacy in the ideational realm, but there were no delusions, obsessions or phobias. There were no hallucinations in any sphere. His orientation was only approximate; his memory for remote events was quite poor and for recent events quite inaccurate. He had very little or no insight, although he said, "They claim I am wrong in my head."

Psychologic: "The patient graded irregularly with a variation of 17 at a mental age of 8.7. In the supplementary tests, he did very well in the memory test. Nine out of ten suggestions were accepted. He cooperated well."

Physical: Thorough physical and neurologic examinations were entirely negative. The blood pressure was: systolic, 118; diastolic, 70. He was 5 feet, 2½ inches tall, and weighed 120 pounds.

Laboratory: Examinations of urine, blood and spinal fluid were entirely negative.

Case 3.—*Abstract.—A teamster, aged 29, apparently a typical moron, without previous episodes of emotional or conduct disturbance, after influenza, diagnosticated in a base hospital, became disinterested in life and melancholy to the point of attempted suicide. The diagnosis was hypophrenia (moron grade) with depression. The effect of influenza was aggravation, particularly of the dysthymic symptoms.*

History.—The family history, which was obtained in detail, was entirely negative, including an account of the parents and of the paternal and maternal siblings. The parents were as ignorant as the average Irish immigrants, but the six siblings were all progressive and self-supporting. The father was described as being sociable, good natured, but quick tempered, and nonalcoholic; the mother as having a quiet, friendly, even disposition. Both parents and siblings were well, and the only death in the family was that of a year old brother. The patient was born in a Boston suburb, where he started to the parochial school at the age of 5, and after 10 years achieved only the fourth or possibly the fifth grade. The reason for his leaving may have been his failure to progress, although the brother, who seemed to be a man of some intelligence, ascribed it to extraneous conditions, poor teachers, insufficient books, etc. No conduct disorder was alleged. After leaving school, he served as errand boy for a grocery

20. This point has been made by numerous writers, e. g., Jelliffe, Menninger, Althaus and Fell.

(at $9 a week) for a few years, became a teamster, and had remained at that work more or less continuously since. It was hard for him to hold a job very long. For a year and a half before being drafted, he worked for an ice company at $3.25 and two meals a day. He started drinking when about 17, and had kept it up steadily since, periodically and distinctly to excess. He had been arrested repeatedly for drunkenness. He smoked more than twenty cigarets a day. He had never been married, and denied excessive sexual irregularities and venereal disease. He was regarded by his family as "spendthrifty." The brother and father said: "He has a quiet, good-natured disposition, and has many friends. He is naturally lazy and inclined to be selfish. He likes to go to movies and theaters, and read newspapers. He has never been considered as nervous in disposition, but is rather staid and serious."

Present Illness.—The patient, for some unknown reason, steadfastly denied having had influenza or any other illness. Nevertheless, the facts seem to be that about six or seven weeks before admission to our hospital, he was in a U. S. Army base hospital with the ubiquitous influenza, so diagnosed, where he remained for twelve days. Shortly after his recovery he was discharged, physically well, because of the demobilization. He had seemed to his relatives, with whom he lived, to be unusually quiet, ambitionless and depressed. "He kept saying he would like to be in the good condition he was in before going into the army. He was sad, could not work, . . . tried it one day, but felt too weak." Apparently his depression increased, and on the day before admission he attempted suicide by turning on the gas. He stated afterward that this was a subterfuge of his own device to gain admission to the hospital (!). He was taken to the police station, revived, and advised to go to the psychopathic hospital by the physician called. This he willingly did.

The mental examination confirmed the diagnosis suggested by the history. The psychometric age was 9.3. He recognized his own mental inferiority. There were, in addition to the usual shallowness of thought processes, the paucity of ideas, puerility of judgment, etc., of hypophrenia, and symptoms of depression with retardation of thought and movement.

The physical examination and laboratory findings were negative.

The emotional disturbances which the influenza seems to have provoked in these cases are perhaps analogous to the psychic discomfiture, the depression, irritability, languor, and sometimes mild agitation or melancholy which is so often seen in (supposedly) normal persons after an attack of influenza. I have previously pointed out [21] that, whereas these depressive symptoms, or a depressive tendency, are very frequent in normal persons (some say they are always present, e. g., Pritchard,[22]) they are comparatively infrequent in persons who develop psychoses. The observation has been disputed by Fell [23] but without sufficient substantiation by clinical data.[24]

21. Menninger, K. A.: Psychoses Associated with Influenza, I, A Statistical Analysis, J. A. M. A. **72**: 235 (Jan. 25) 1919.

22. Pritchard, W. B.: Nervous Diseases and Psychoses Following the Grippe, Internat. Clinics Series V, **11**: 1.

23. Fell, E. W.: Postinfluenzal Psychoses, J. A. M. A. **72**: 1658-1661 (June 7) 1919.

24. In the hypophrenic patients there has not been noticed any general tendency to depression following influenza. The usual cheerfulness is in most cases apparently retained. Nor have I heard from the superintendents of the institutions caring for the feebleminded that irritability, moroseness or truculence were increased after the epidemic. On the other hand the emotional disturbances in the hypophrenic patients whose mental state was distinctly altered by influenza in other ways is noteworthy. The striking manifestation of it in Case 3 is able evidence. Case 4 is even more pertinent, since the dysthymia is the outstanding feature. Consequently, one is led to deduce that the hypophrenic patients follow an inverse law to that applied to normal and psychotic individuals. These two principles may be thus contrasted: Most normal persons suffer emotional depression after influenza, but of those in whom the influenza precipitates a psychosis, few exhibit depression. Most hypophrenic patients do not suffer depression after influenza, but of those in whom influenza produces marked mental changes, the majority do exhibit emotional disturbance (depression or irritability, etc.).

GROUP 3. WITH CONDUCT DISTURBANCES

Conduct and volitional disorders are so constantly associated with intellectual lack in hypophrenia that one might expect a postinfluenzal volitional disturbance in some hypophrenics. Such is actually the fact, and these cases are apparently the most frequent of all. Perhaps it is that these known hypophrenics whose psychomotor control becomes impaired to a noticeably greater extent are only more conspicuous than the cases of intellectual deterioration, or those emotionally disturbed. The fact of the greater ease of recognition may account in some degree for their greater frequency. At any rate, we have been able to collect the reports of several cases from the recent epidemic, one of which (from our Boston series) appears below. Three of the cases mentioned by Burr [25] would probably fall in line here.

CASE 4.—*Abstract.—A white girl, aged 17, clearly subnormal, of a hypophrenic family, whose conduct disorder became so remarkable after an attack of influenza that she was brought to the psychopathic hospital for examination, was diagnosed as being hypophrenic (of subnormal grade). The effect of influenza was distinct aggravation of symptoms, particularly conduct and emotional disorders.*

History.—The patient, who was born in Boston of New England parentage, had two brothers in state institutions for the feebleminded, and five other siblings were in the public schools. Her physical life had always been excellent, and there were no stigmas of nervous or epileptic disease, such as fainting attacks or enuresis. She attended school from 6 to 13, and progressed to the fifth grade. At that age she was committed to the state reformatory for girls because of her extravagant sexual promiscuity. There she remained through a stormy period of four years. She was given a place to work after her discharge from there, but lost it through a sexual exploit. A second place was secured which she voluntarily gave up because of disinclination to do the work, saying that she was engaged and did not need to work much longer.

Present Illness.—The girl had influenza late in the fall. Subsequently, she became "very ugly and irritable," charging unjust treatment, and was evidently highly exasperating (and so impressed the examining and admitting physicians at our hospital). She had talked much of her wish and hope to die, and "exposed herself again to influenza" in the hope of attaining that result. She capped the climax by sending for the physician and then running away to a cinema before he arrived. The parole board sent her to the psychopathic hospital for examination.

Mental Examination.—The prominent features of the psychic examination were the emotional instability and the intellectual lack. She was extremely antagonistic at first, irritable, impertinent and quite inaccessible. She talked constantly, but refused to answer questions. Later she made herself quite agreeable and cooperative. Her ideation and judgments showed the typical childishness and inadequacy. Many of her statements were of questionable reliability and veracity. There was a slight paranoid coloring to her story, as is frequent with the delinquent hypophrenic sent by the parole board for examination. The psychometric test gave her a mental age of 12 years, with a variation total of 11. "The patient cooperated well (!). Her performance on the construction puzzles and on the memory tests was good. In the suggestibility test she resisted all ten of the suggestions offered!" (The latter is interesting in view of her reputed immorality, etc.). Her retention of school knowledge was very poor, indeed, except in arithmetic, in which she did only fairly well.

Physical, gynecologic and neurologic examination, and analyses of urine, blood and spinal fluid proved negative.[26]

25. Burr, C. W.: Mental Complications and Sequelae of Influenza, Med. Clin. North America **2**: 709 (Nov.) 1918.

26. The case of improvement of uncomplicated hypophrenia given below would logically fall in this group of simple hypophrenia, but it deserves the emphasis of later consideration.

COMPLICATED HYPOPHRENIA

The preceding cases of the three groups have all been examples of simple, idiopathic mental defect without psychiatric or neurologic complications. Now follow cases of hypophrenia, of mental defect to be sure, but cases in which there are neurologic or psychiatric elements that are conspicuous enough to determine their place in the list.

GROUP 4. WITH NEUROLOGIC SYMPTOMS CONSPICUOUS

CASE 5.—*Abstract.—A girl, aged 4 years and 4 months, with a father and two half-brothers with notably large heads, who, although not very bright, had never been considered particularly dull, and certainly never in ill health, prior to an exceedingly light attack of influenza, subsequently developed an intention tremor and a flaccid triplegia, incontinence, hypotonia, absent abdominal reflexes, positive Babinski reflex, neuroretinitis and a marked mental enfeeblement. A diagnosis of gross brain disease (Multiple sclerosis? Cerebral neoplasm or abscess?) was made. The influenza was apparently causative.*

History.—Two aunts and two cousins had died of tuberculosis; a paternal uncle had suffered from periodic headaches. The father wore a 7⅞ hat, and had a massive head and body. Two other children of the same mother, but by a different father, were remarkable for their large heads. One boy, aged 9, wore the same sized hat as his foster-father, and his 14 year old sister also had a large head (these were half-siblings of the patient). There was no history of nervous or mental disease in the family. The child was born normally, at full term, and was breast fed for one year. There were no convulsions in infancy, and teething, talking, walking, etc., were not delayed. She had always been a healthy and apparently normal child. There was nothing to prove that she had been hypophrenic before the influenza. She had learned a few rhymes and was able to repeat them, even during the present illness. Her parents thought her "as bright as the other children," and no doubt was entertained as to her or their mentality.

Present Illness.—The child had influenza in December, 1918, and remained in bed a week, although she was "not sick at all and it was like punishment to keep her in bed." About March, the parents began to notice a "very slight trembling of the hands when she went to use them." When they were quiet, this was absent. This tremor increased very slowly. But in April she began to be "a little wavy" and unsteady in her walk, with "not quite so firm a step as usual." Both these symptoms increased in severity. Vomiting attacks, never projectile, but of all degrees of severity, came as the next symptom. They recurred for a time about once in ten days, but with no regularity. At this time, also, she had mild headaches, but these were never severe, nor did the child ever complain of any pain, or show symptoms of a psychosis.

May and June were uneventful, save for a steady though slight increase in the symptoms described. She began to be unable to walk on rough ground, then unable to walk even in the house save by clinging to chairs, etc., and finally not at all. But the arms, meanwhile, got no worse after June, "and may be a little better." (With Dr. Lindsay, I saw the child in September.) The intention tremor remained very noticeable, so that she spilled water and food in her lap when she ate, etc.

During July and August there was little further change, except incontinence of urine and feces. She became entirely bedridden, but gained weight, vomited much less frequently, and rarely complained of headache and then only casually.

Examination.—Several factors interfered with the examination, but the chief findings are recorded: The child lay apathetically on the examining table, smiled occasionally, cried when hurt, spoke very little or none at all, answered no questions, and was distinctly apathetic, disinterested, torpid and dull. A psychometric test was, of course, impracticable, but she would surely have rated no higher than 2 years.

Physically she was without defect.

The neurologic examination revealed a very large head (the parents insisted no larger than always, and no larger than her half-brother's), with Macewen's percussion sign very marked (according to Leftwich,[29] Oppenheim and others an indication of massive intracranial disease); pupils reacting promptly but insufficiently to light; absent abdominal reflexes; bilateral Babinski reflex; occasionally elicited Oppenheim and Shaffer signs; a very marked hypotonia, and an angry retina with normal sized vessels but with curious disks which appeared to be in a state of postneuritic atrophy. In addition, there was an intention tremor of the left arm which was unmistakable; the right arm could be used with good direction but with little force, and both legs could be guided, but could not sustain weight.

Examination of the blood and spinal fluid, and of the urine, all proved wholly negative. Six Wassermann tests on the spinal fluid were negative. The cell count was 1; the globulin test was not reported.

A roentgen-ray examination disclosed a large but vague shadow located centrally in the brain, and marked evidences of pressure. (The spinal fluid was not under pressure at time of withdrawal.) Whether or not the roentgen ray confirmed the diagnosis of tumor or of internal hydrocephalus was equivocal.

The diagnoses of cerebral neoplasm or abscess, and multiple sclerosis are both supported by some of the findings and contradicted by others. The fact of the presence of marked mental impairment was obvious, and for that reason the case was included here.

CASE 6.—*History* (from a letter by Dr. O. S. Hubbard).—"Baby C. was seen in consultation. Eleven months old. Heredity, siblings and past history negative. History of enlargement of head since attack of influenza. Rather poorly nourished, with a leaking heart, and a well marked hydrocephalus. The child had the characteristic enlargement of the head with the large area between and above the eyes. The child seemed considerably reduced mentally, and was afraid of strangers, could not use its body much, and appeared to be in pain when moved."

GROUP 5. WITH PSYCHOSES

Psychotic episodes in the course of feebleminded-ness are so familiar and so frequently observed that it is rather remarkable that this should be a matter so little investigated or understood.

The precipitating causes of even these episodic displays are little enough understood. It seems likely that both physical and psychic factors may act. Thus "Zip," a notorious case described (with necropsy) by Fernald, Southard and Taft,[14] died during what appears to have been a psychotic episode precipitated by psychic pain (chagrin, anger, etc.). As for physical (or should we, after R. C. Cabot,[30] utilize the word exophysical?) causation, the following cases are apropos.

Case 7 was to have been an elaboration of the case reported by Burr.[25] A communication from Dr. Burr, just before mailing this manuscript, informs me that further data are not available. I quote from his article, just cited: "A girl 14 years old, who had been simply feebleminded, became violently delirious during the fever, hallucinatory and delusional later, and finally had to be sent to an institution, where she now, three months later, remains. She is dirty, destructive, foul-mouthed—a complete imbecile."

Harris and Corcoran,[31] in a recent article dealing with psychoses following influenza in fifty cases, report one instance of a psychosis in a hypophrenic. The case as summarized in the original article is quoted verbatim (Case 8):

29. Leftwich: Index of Symptoms, London, 1915.
30. Cabot, R. C.: Discussion of Southard's classification before the Congress of American Physicians and Surgeons, Atlantic City, 1919.
31. Harris, I. G., and Corcoran, David: Psychoses Following Influenza, New York State Hosp. Quart. 4: 469-477 (Aug.) 1919.

Waterman and Folsom [32] mention, without any comment or detail, that "of the twenty-three male influenza cases, one [was diagnosed] as psychosis with mental deficiency [and one as] psychosis with constitutional psychopathic inferiority." [33]

GROUP 6. WITH PSYCHOPATHY

CASE 9.—*Abstract.—A girl, aged 13, who, without manifesting pronounced intellectual lack, had always been troublesome, untrustworthy and dishonest in the home, after an attack of influenza had a number of "fainting attacks" of dubious nature, and her conduct became more incorrigible than ever. The diagnosis was psychopathy in a (probable) hypophrenic. The effect of the influenza was possibly aggravation; the data were insufficient.*

History.—This child had been observed in the outpatient department of the Boston Psychopathic Hospital. Very little data of family and past history were obtained. She was known to have stolen money from her parents since the age of 6, and to have been increasingly incorrigible.

The mother's story was that the child had had influenza in the fall, and since that time had suffered dizzy spells. In some of these she fell, and in some of them she was unconscious for at least fifteen minutes. She was "unruly and uncontrollable at home, steals and lies."

Examination.—A mental examination at the hospital revealed the fact that she was "quite incapable of discriminating between right and wrong." Yet she admitted that stealing was wrong, but could not say why she had stolen except that she did it "on the impulse" (the examiner's phrase). She thought she controlled her temper quite well. She professed to like Dickens, and expressed a fondness for "detective stories and newspapers." The examiner (who was more freudian than psychiatrist) satisfied himself that no "sexual complex is present," but unfortunately neglected to secure a psychometric test.

Physical, neurologic and laboratory examinations were negative.

CASE 10.—*Abstract.—A French-Canadian girl, aged 15, with a long history of profligacy and immorality, but with a courteous and cooperative manner, since an attack of influenza had complained of feeling weak. Her maladjustments to her human environment may also have been somewhat greater since that time. The diagnosis was hypophrenia, with psychopathic elements prominent. The effect of the influenza was possibly slight aggravation, but data were insufficient.*

History.—This girl presented quite a different picture, at first, from the usual hypophrenic delinquent. She was quiet, courteous, accessible and cooperative, and made a good impression. The immediate charge for bringing her to the psychopathic hospital was alleged neglect of her baby, a charge which she explained away deftly, but not adequately, without decrying or vilifying her parole officer or employer, neither of whom, however, she seems to have cared for. On the other hand, the girl came to the hospital with a long, black history of "breaking all the conventions of society since her ninth year," including the maltreatment of an illegitimate child, threats of infanticide, unsatisfactory service, "and is probably hypophrenic" [sic].

Her family history was what one might expect. The father was a garbage collector and the mother was separated from him. Her past history, in point of physical development and health, was quite negative. Of schooling she had little; she repeated the second grade, left at the fourth, and had little or none in the reformatory where she was sent for sexual transgressions, because of her confinement.

In October, while employed at housework, she was ill with influenza for two weeks, her temperature reaching 102. Since that time she had complained of being weak, and seemed to have increasing difficulty of adjustment with employers and parole officer. There were, however, no definite recorded data on this point.

Examination.—As to hypophrenia, however, there was no doubt whatever. Her retention of school knowledge was almost nil. She declared that "the United States entered the war, Nov. 11, 1918," and gave as the allies of Germany, "Australia is one, and the Dutch was in it." The Mississippi and the Charles were given as representative oceans, the change from a $2 bill after a 32 cent purchase as 69 cents. She did, however, give correctly the dates of the Civil War. Her psychometric rating was 9.8 years, with a variation total of only 8. "She did the puzzles fairly well and showed good learning ability. She did the memory tests fairly well. She accepted all of the ten suggestions in the suggestibility tests. She cooperated well."

Mental examination revealed her chief lack to be in the intellectual sphere. Physical, neurologic, gynecologic and laboratory examinations (including spinal fluid) proved entirely negative.

IMPROVEMENT OF HYPOPHRENIA AFTER INFLUENZA

To these cases of hypophrenia aggravated by influenza, I append now a most remarkable case of amelioration by influenza. This was the symptomatic improvement of a severe grade of feeblemindedness immediately following an attack of influenza. I saw this child at the Massachusetts School for the Feebleminded at Waverley, and I am indebted to Dr. W. E. Fernald, whose name has made the name of Waverley mean so much in American neuropsychiatry, for his kindness in furnishing me with an abstract of the history of this case.

Speaking for the moment of the generic process of amelioration *ex nocentibus* as exemplified by influenza and neuropsychiatric cases, I may mention the recently reported cases of recovery of (presumably) schizophrenia by Henry Damaye.[35] Improvement in the manifestations of epilepsy are on record, and I am elsewhere presenting some cases in detail in the course of a general article concerning influenza and epilepsy. But as for simple hypophrenia, the case here presented is, I believe, the first recorded instance.

CASE 11.—*Abstract.*—Dorothy, aged 6, the daughter of college bred parents, whose maternal grandfather and his four brothers all had had "nervous breakdowns," who had a brother and a sister, the former very "nervous," the latter normal, was born with difficulty and had had a stormy infancy with pneumonia at 10 months, delayed dentition, etc. She had never learned to talk or to control her excreta. She had learned to walk after 3 years.

She was admitted to Waverly when 4 years old. Physically, she was practically normal. "She sits and gazes at the end of a colored stick, waving it back and fourth. She gazes fixedly at the ceiling. Screams violently if crossed in her play." The psychometric test rating was 10 months (Stanford-Binet).

In October, 1918, at the age of 5, she was taken ill with influenza, followed by bronchopneumonia, and this by empyema. During the long convalescence, she began to show marked signs of mental awakening; she began to talk and to be tidy, learned to feed herself, learned the letters of the alphabet, attended kindergarten and cooperated with teacher and physicians. The Binet test rating in April, seven months after the influenza, etc., was 2 years and 4 months. In January, 1920, it was 3 years and 10 months, an improvement of 450 per cent. thus measured! And she continues to gain.

DETAILS OF CASE

Synopsis of Findings at Admission.—The patient was the third of three children; the first a boy, who had had periodic vomiting from 2 to 7 years and who was very nervous and irritable, but was improving; the second, a bright, active and normal girl. The father was a clergyman, and the mother was a college graduate (the mother's father was extremely

32. Waterman, Chester, and Folsom, R. P.: Psychoses Associated with Influenza, New York State Hosp. Quart. **4**: 452-468 (Aug.) 1919.
33. A letter requesting details on these cases was unanswered.

35. Damaye, Henry: Progrès méd. **34**: 501 (Dec. 13) 1919.

nervous, he and his four brothers all had had nervous prostration and depression), was born in September, 1913. She was breast fed until 6 months old. The birth was difficult, the child being taken manually; there was malposition of the placenta, rapid dilation of the cervix with version and forcible manual pressure on the after-coming head. The patient had had pneumonia at 10 months, and at 2 years she suffered from vomiting and diarrhea without apparent cause. At 3 or 4 months she rolled her head. Her teeth began coming at 15 months (the other siblings had had teeth late, at 16 and 13 months). During an illness at 1½ years, her spine had been rigid. The illness at 10 months had also been called tuberculous meningitis. She began to walk a little after 3 years; she did not talk and was untidy both day and night.

Physical Examination.—The child was rather attractive looking, with a vacant stare, and she cried loudly whenever touched. The sight and hearing were apparently normal; the skin was smooth and clear. The feet were cold; the muscular development poor. She walked well. On the back of the left of the spine, there was a scar which looked like an old abscess scar.

Feb. 17, 1916, at the Waverley outpatient clinic, her mentality was rated at from 6 to 8 months. She reached and grasped things. She liked colored balls. She knocked blocks together and seemed to like noise. She did not walk, but pulled herself around rapidly. She had some minutes when she seemed to attend intelligently. She waved her hands or objects in front of her eyes.

Aug. 31, 1917: On the admission examination by the Goddard-Binet test she scored 1.[1] She would not obey a simple command and would not take either candy or wood but screamed if they were brought near to her. She tested 10 months by the Stanford-Binet. She cried in the weak tones of a small baby when I took her from the hospital and brought her to the laboratory, and she again cried when I took her back. She could walk, but would only sit on the floor and play with colored sticks. There was something about her behavior which seemed really uncanny. She would wave the colored sticks back and forth slowly and watch the end of the stick; then she would pose with one end of the stick resting on the floor. At other times she would sit with the head thrown back looking fixedly at the ceiling and could not be made to change her attitude when called or when moved unless one attempted to remove one of her toys. She would do none of the tests which required the slightest amount of cooperation. If not allowed to have her own way, she would scream violently and hit at some one or at herself. Even an imperative tone in one's voice would help to bring on such a spell. She seemed to be a miniature reproduction of adult psychosis which had reached the idiotic stage.

History Since Admission.—Oct. 3, 1918, the patient was taken ill with influenza. Bronchial pneumonia developed a few days later. The temperature increased to 105 F. for several days. This was followed by empyema. The pleural cavity was drained, and a long convalescence followed. During this convalescence, marked symptoms of mental awakening were noted. She began to call the nurses and physicians by name. She distinguished between two picture books, a "Dolly Book" and a "Topsy Book," and asked for the one she wanted. She made a few associations; for example, a nurse whose glasses attracted her, she called "Kelly-glasses." A nurse who had given her some bright hair pins she referred to as "kitchen hair pins." There was a large rabbit on one of the pianos, so each time she heard music she would say "bunny-piano." From this time on, she improved rapidly. Her automatic movements disappeared. She learned to feed herself. She became tidy in her habits, never wet or soiled her clothing, talked in sentences, knew all the letters of the alphabet by sight, buttoned her clothing, and could say her prayers, "Now I lay me," etc. She memorized short rhymes, such as "Mary Had a Little Lamb," and played like a child of 3 or 4 years of age, feeding her doll, dressing and undressing it and putting it to bed, etc. She attended kindergarten and played most of the kindergarten games.

April 16, 1919: The mental age of the patient by the Stanford test was 2.[4] She pointed to her eyes, nose, mouth and hair, named key, watch and pencil. She was very distractible, but was interested for a short period. She learned rather quickly, put knobbed pegs in holes, and on the Witmer cylinder test she improved her method and reduced the number of errors. Exact counts were not taken until about the third trial, as she was playing with these materials while other children were being tested. When observed more closely on the third trial, she put in cylinders with increasing diameters, and those with equal diameters and increasing lengths with as many errors as correct moves, correcting her own errors easily. She sorted three colors of pegs when watched and when her attention was called to error ("No"). She made many errors when not corrected. Her attention wandered. After being corrected she would place the next two colors correctly.

Jan. 18, 1920: The mental age according to the Stanford-Binet test was 3 years, 10 months.

CONCLUSIONS

1. The awakened interest in the study of the effects of hypophrenia (feeblemindedness), together with the advances made in neuropathology, have put us in a receptive attitude toward the theories of exophysical causation of feeblemindedness, and have stimulated constructive research.

2. The pragmatic value of studying effects rather than causes was overlooked by the older writers, who, taking for the most part the standpoint that hypophrenics are "born, not made," persist in it inflexibly in spite of clinical evidence and statistics which would indicate the importance of the effects of infections and the possible infectious causes of feeblemindedness.

3. Influenza as a type of acute infection, with known neurotoxic potency, gave opportunity for study of its effect in relation to hypophrenia in the recent epidemic.

4. Inquiries addressed to superintendents of state hospitals for the feebleminded afforded seventeen replies, representing more than 16,000 patients, but were almost entirely barren of important results, owing in part possibly to the burden and pressure of duties incident to the care and alleviation of the physical disease.

5. This negative evidence is offset by data from the cases of our Boston series and from private practice, illustrating effects of influenza on hypophrenia.

6. The uncomplicated cases represent: (1) hypophrenia (feeblemindedness) with aggravation of intellectual lack prominent after influenza; (2) hypophrenia with emotional sphere disturbances notably intensified after influenza; and (3) hypophrenia with volitional and conduct disorders conspicuously aggravated by influenza; to which may be added (4) a single instance of symptomatic improvement, in all spheres but notably that of intellect, following influenza. (*Vide infra.*)

7. The complicated cases represent: (5) hypophrenia with conspicuous neurologic manifestations after influenza; (6) hypophrenia with psychotic manifestations following influenza; and (7) hypophrenia with psychopathic manifestations prominent after influenza.

(These seven groups may be tersely summarized, using Southard's terminology, as hypophrenia with hypognosia, hypophrenia with dysthymia, hypophrenia with parabulia, hypophrenia with improvement, hypophrenia with encephalopathy, hypophrenia with psychosis, and hypophrenia with psychopathy. In each case it is understood that influenza was the apparent effector.)

8. Generic processes illustrated as to the rôle of the influenza are comparable to those observed in the

study of the psychoses associated with influenza, namely, creation, precipitation, aggravation and amelioration.

9. The process of creation is very imperfectly illustrated by two cases, both open to question.

10. The process of precipitation is not illustrated at all; no cases were observed, although the possibility is not inconceivable.

11. The process of aggravation, however, was comparatively frequent, and is illustrated by the majority of the cases here cited.

12. Amelioration is illustrated by one case, by courtesy of Dr. W. E. Fernald.

13. In this, then, the relation of influenza to hypophrenia differs from that of influenza to the psychoses, since aggravation in the latter was the least frequently observed phenomenon, and in the case of hypophrenia the most frequently observed.

14. From which we conclude that:

(*a*) The usual effect of influenza on the brain is not the production or precipitation of hypophrenia, and if it ever produces hypophrenia it is probably by means of a more or less obvious encephalopathy.

(*b*) On the other hand, of those already manifesting mental lack, certainly a few are influenced adversely by influenza, and the symptoms of hypophrenia aggravated, an aggravation which may be predominantly in the intellectual sphere, in the emotional sphere or in the volitional sphere.

(*c*) Psychoses of an indeterminate type are occasionally precipitated by influenza in the feebleminded, even as in normal persons.

(*d*) At least occasionally, though rarely, the effect of influenza on hypophrenia may be symptomatic amelioration.

Mulvane Building.

ABSTRACT OF DISCUSSION

DR. ANDREW L. SKOOG, Kansas City, Mo.: Dr. Menninger laid stress on the possibility of influenza affecting the somatic as well as the psychiatric disorders of the nervous system. He stated in a general way that influenza may precipitate feeblemindedness, but that most of the feebleminded states are merely aggravated by the added acute illness. The case of simplemindedness cited illustrating the possibility of relative or symptomatic improvement as the result of influenza, is very interesting. In certain other diseases, notably in epilepsy, also mentioned by Dr. Menninger, I have seen improvement occur following acute infectious diseases. Why that is the case, I do not know. It is possible that in feeblemindedness, where a toxin or an organism is affecting the nervous system, development or growth is stimulated by irritation of the neurons.

DR. HYMAN CLIMENKO, New York: During the last two epidemics of influenza, lethargic encephalitis either ran parallel with or immediately followed influenza. It would, therefore, be very important to rule out encephalitis in the cases reported by Dr. Menninger. In one group of his cases, the encephalopathies, some very suggestive signs of encephalitis are in evidence. The improvement in these case strongly suggests lethargic encephalitis. Was a lumbar puncture made in all these cases? What were the findings in examination of the cerebrospinal fluid?

DR. OSCAR J. RAEDER, Boston: The case of feeblemindedness in which improvement took place in the mental condition, following an attack of influenza, is a most interesting one. I can understand how a toxemia would cause an augmentation of hypophrenia, but this case brings up a new point. I know of a similar case of feeblemindedness in which the patient had an infectious disease followed by pneumonia and empyema. During this illness the patient had a very high temperature but made a complete recovery. Following convalescence, the child showed marked improvement of the hypophrenia and, after several months, a most remarkable raising of the intelligence quotient. The question presents itself rather as to whether this might be the awakening of some sort of endocrine hibernation. Perhaps, the stimulation resulting from the toxemia or high temperature caused the arrested development to be pushed over the bar, so to speak, and improvement in the physical condition of the patient and raising of the intelligence was the result.

DR. TOM A. WILLIAMS, Washington, D. C.: In my opinion, Dr. Menninger's theory can be expressed much more simply in this way: We all know that the influenza poison has a most deleterious effect on the whole organism, including depression of the cerebral function. Nearly all of us who have had a severe attack of influenza have experienced, sometimes for a long time, periods of greatly reduced psychic potentiality; we carry on with impaired intellectual functions; but we carry on, nevertheless. The disturbance frequently takes the form of depression. In a case of hypophrenia psychometric methods will show definite lowering of function, as expressed by the hypophrenic and other tests. It can scarcely be expressed in measures by those who have a higher plane of intelligence. Therefore, what appears to be an aggravation of feeblemindedness is, in reality, only depression of cerebral function. Before one could say that there is an increase in the feeblemindedness, these patients must be observed over a long period, a year at least, because experience has shown that in the majority of cases of postinfluenzal complications recovery ensues after some months. It would not seem, therefore, that we are dealing with a condition very different from the familiar toxi-infectious psychic states which occur after infectious diseases, especially influenza.

DR. C. F. NEW, Indianapolis: Do you regard these reactions as characteristic of influenza in itself, or are we not apt to get similar reactions in these persons when they contract infectious diseases from other causes?

DR. KARL A. MENNINGER, Topeka, Kan.: Routine lumbar punctures were made in all cases, together with complete physical and mental examinations, all of which are included in the original data. Syphilis was definitely ruled out. Answering the second query: I think influenza itself is not so important, except that it has given us an opportunity to study somatic and psychic interrelationships. We do not know much of this part of psychiatry. As a matter of fact, no book in the English language deals with the mental complications of influenza. Anything which will contribute to our knowledge of somatopsychic interrelationships ought to be favored. Typhoid fever is rapidly disappearing; therefore, further study of that disease will soon be impossible. Influenza offers that opportunity and we should take advantage of it. Dr. Williams suggested that what I have said could be simplified. I think so and I hope so. I want to further the minute analysis, the critical study, of the data presented, right now while they are available. I hope that eventually the results will be shaped into more generic principles as Dr. Williams has intimated that they can be.

Juvenile Courts Abroad.—Spain has now a juvenile court. It is the last of the principal European countries to adopt the modern point of view that delinquent children should not be treated as criminals, but rather as victims of adverse conditions and surroundings. Spanish authorities have followed America's experience. Under the Spanish law the children's judge is not necessarily a member of the bench. He is assisted by two advisory members appointed by the Commission for the Protection of Children. Privacy is guarded closely; no one except probation officers is allowed in the court except by special permission, and the press is forbidden to publish any information about cases of juvenile delinquents. Since Chicago established the first juvenile court in 1899 similar courts have been established in England, France, Belgium, Holland, Denmark, Switzerland, Italy, Germany, Russia, Austria and Hungary.

A CLINICAL STUDY OF EPITHELIOMA OF THE LOWER LIP*

EVERETT S. LAIN, M.D.
OKLAHOMA CITY

During the last few months I have been impressed by the increasing number of cases of epithelioma of the lower lip which I have had occasion to see. After observing a few metastases in unusual regions, I was led to make a partial review of medical literature for reports on malignancy in this particular region of the body, and to correlate and summarize my own private cases which have occurred during the last ten years. In reviewing some of the literature, I was rather disappointed to find that although cancer of the lower lip constitutes more than 2 per cent. of all deaths from cancer, American physicians have not in their writings dealt very frequently with this subject.

Among foreign writers, Halstrum, Fricke and Hertzler have reported a total of several thousand cases of lower lip cancers, which statistics are freely quoted. Among American writers, Bloodgood, Judd, Pusey, Sutton, Montgomery, New, Hazen and others have reported a combined number of less than 1,500 cases, including a recent report of 537 cases of squamous cell epitheliomas of the lower lip, by Broders [1] of the Mayo Clinic. Doubtless several thousand cases could have been reported, had public as well as private clinics been reviewed.

These reports are quite instructive and call attention to certain facts. Worthy of special mention is the difference in percentage of reported cures by foreign surgeons as compared with American. Hertzler reports cures in only about 25 per cent., while Halstrum reports cures in 67 per cent. of selected cases, all treated surgically. Should foreign reports be



Fig. 1 (Class 1).—Epithelioma of lower lip.

brought up to date, since early diagnosis and technic of treatment have so much improved, the percentage of cures would doubtless be raised. American writers report cures ranging from 49 per cent. in unselected cases to as high as 93 per cent. in selected, or early cases. These reports include cases which were treated by both surgical and radiotherapeutic methods, and some by combined methods.

LYMPH SUPPLY AND METASTASIS

This leads us to a study of the cause of the comparatively high mortality rate of epithelial cancers in a location which is apparently so freely accessible to treatment. It is generally recognized that epithelial



Fig. 2 (Class 1).—Same patient as in Figure 1, living nine years later.

malignancies or epitheliomas metastasize or are transferred to other locations by pathologic cells which, after becoming separated from the primary growth, are carried by afferent lymph vessels to their nearest lymph gland, where they are delayed and tend to be destroyed. They may then pass out through efferent vessels to other lymph nodes.

By way of illustration, we might say that throughout the course of Nature's lymph highways there have been constructed delay stations or nodes which have a sieve or meshwork-like structure, not unlike an electrified wire fence, in which these drifting cells are arrested. For guard, executive and other duties in these stations or lymph nodes, Nature has also placed a regiment of her most healthy and active soldiers, the leukocytes. During the battle which takes place in these lymph glands, if the enemy should be winning, some are permitted to pass on to other more largely supported glands. If the enemy should win in any one station, we have resulting necrosis and destruction of other adjacent tissues, and thus the battle goes on.

Ewing [2] tells us "the invasion of the lymphatics by malignant cells is greatly retarded or suppressed in favorable cases by extensive collections of lymphocytes which gather in the vessels and which may even surround the tumor cell with a rich lymphoid ring. Occasionally the entire tumor is infiltrated with lymphocytes and in such cases the occurrence of many degenerating tumor cells indicates that the lymphoid infiltration is a phenomenon of immunity."

After reviewing the anatomy of the lymph system of the head and neck, noting the drainage of the lower lip, we can better understand the gravity of the malignant growth on this part of the face, as well as be impressed with the need for routine methods of treat-

* Read before the Section on Dermatology and Syphilology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Broders, A. C.: Squamous-Cell Epithelioma of the Lip: A Study of Five Hundred and Thirty-Seven Cases, J. A. M. A. **74**: 656 (March 6) 1920.

2. Ewing, James: Neoplastic Diseases, Philadelphia, W. B. Saunders, 1919, p. 463.

ment in an endeavor to prevent metastasis. According to Poirier and Cuneo: [3]

The lymphatics of the lower lip arise from two networks, one cutaneous and the other mucous, which are in continuity with each other at the free border. From these two networks run the collecting trunks which receive, in their course, the vessels of the muscular coat. In the lower lip the subcutaneous vessels are two or four in number on either side. The trunks from the middle of the lip drain into the submental, those from the sides and angles of mouth into the anterior submaxillary glands. Sometimes one or more of these lower lip vessels may pass above the submaxillary glands directly into the deep cervicals. Lymph vessels of the upper lip do not have anastomosing connections, but the cutaneous group of the lower lip have several such connections, also one or more to their mates on the opposite side of the face and neck. Sometimes there may exist an anomalous efferent vessel, having intercommunication with those from the upper lip to the buccinator glands.

AUTHOR'S CASES AND THEIR CLASSIFICATION

In the private practice of Dr. M. M. Roland, my associate, and myself during the last ten years we have seen 122 cases in which the diagnosis of epithelioma of the lower lip was made. We have for several years found it convenient from the standpoint of prognosis to classify such epitheliomas in three separate, though not sharply differentiated groups. A similar classification was suggested by Pusey [4] as early as 1912.

In making this classification from a clinical instead of the usual pathologic or laboratory classification, I am fully conscious that I shall probably be severely criticized. Until more recent years many of our lower lip cases were patients who possessed an undue



Fig. 3 (Class 2).—Epithelioma with enlargement of submental glands. Routine treatment of metastasizing region.

fear of surgery or who had refused operation, and who perhaps had refused to permit a small section of tissue to be excised for examination. Judging from certain clinical manifestations as well as the very low percentage of basal cell epitheliomas occurring on the lower lip, namely less than 1 per cent. reported by Broders,[5] to the highest, less than 4 per cent. reported by Hazen,[6] I am confident that a high percentage of our cases herein reported were squamous or spinous cell growths.

For purposes of prognosis and routine treatment we have found it convenient to classify epithelioma of the lower lip in three groups:

Class 1. Epitheliomas which may begin as a seborrheic-like crust, a small recurrent vesicle or



Fig. 4 (Class 2).—Same patient as in Figure 3, living more than two years later.

fissure, at first superficial, later becoming infiltrated and indurated, etc., and situated entirely or almost entirely on the cutaneous surface of the lower lip. These lesions are generally of slow growth and late to metastasize. If metastasis does eventually take place, it is usually in the smaller and more superficial of the submental, supracricoid or anterior submaxillary glands, which are easily palpable and freely accessible to treatment by any method.

Class 2. Those which are so located that one third or more of the lesion overlaps the mucocutaneous border of the lip, though no glandular enlargement is easily palpated. However, if a more careful examination is made in each of these cases, perhaps after only a few weeks' duration, there probably can be felt, in the suprathyroid of the the deep submaxillary regions, glandular enlargement due to an already beginning infiltration with malignant or other inflammatory products. These are the cases which have in the past so frequently deceived both the surgeon and radiotherapist by the rapid metastatic development within a few weeks or months after the primary growth had apparently been successfully treated or removed. We are convinced that routine attention to the lymph drainage of this class of epitheliomas, however early or localized they may at first appear, whether the treatment be surgery or radiotherapy, will result in quite a perceptible increase in the percentage of cures.

Class 3. All cases in which more than half of the malignant growth is situated on the mucous surface

3. Delamère, G.; Poirier, P., and Cuneo, B.: The Lymphatics, London, Constable & Co., 1913, p. 267.
4. Pusey, W. A.: Concerning Epithelioma of the Lip, J. Cutan. Dis. **31**: 73, 1913.
5. Broders, A. C.: Basal Cell Epithelioma, 1912, Mayo Clinic, reprint; read before Southern Minnesota Medical Association, Mankato, Jan. 20, 1919.
6. Hazen, H. H.: Prickle-Cell and Basal-Cell Skin Cancers, J. A. M. A. **64**: 958 (March 20) 1915.

of the lip of many weeks' or months' duration, and cases which owing to neglect or incomplete treatment, have had a marked recurrence. In this class of cases there has frequently already begun in the submental, submaxillary and perhaps the upper group of the deep cervical glands, metastases which are extremely difficult to discover and remove. In this class of cases the prognosis by any known method of treatment is always unfavorable.

In our series of 122 consecutive cases of epithelioma of the lower lip, 117 were men and 5 were women, the ages ranging from 23 to 86 years, affecting mostly farmers and outdoor laborers. Treatment

TABLE 1.—ONE HUNDRED AND TWENTY-TWO CONSECUTIVE CASES OF EPITHELIOMA OF LOWER LIP WITHOUT REGARD TO CELL STRUCTURE *

	Number	Per Cent.
Patients	122	
Men	117	
Women	5	
Occupation:		
Farmers	65	53.2
Outdoor laborers	18	14.7
Professional and clerical workers	12	9.8
All others	27	
Location:		
Center of lip	10	8.1
Right side of lip	45	36.8
Left side of lip	67	54.9
Belonging to Class 1	72	59.1
Belonging to Class 2	31	25.4
Belonging to Class 3	19	15.5

* The youngest patient was 23; oldest, 86; average age, 49.8 years.

with the roentgen ray or radium, singly or combined, was given to 107 patients. Of seventy-two patients treated and belonging in Class 1, 95.8 per cent. are living today or have lived for more than three years. Of twenty-seven patients belonging in Class 2, 70.3 per cent. lived from one to nine years. In Class 3, nineteen patients were examined, of whom four were treated. Three of these died within one year.



Fig. 5 (Class 3).—Epithelioma with enlarged submental and submaxillary glands. Routine treatment to glands was not properly given.

TREATMENT

All agree that radical removal of all possible pathologic cells is the single aim of any successful method of treatment, and that complete surgical extirpation of the primary growth, with careful dissection of all metastasizing glands has cured a high percentage of cases of epithelioma of the lower lip. However, no well informed, unbiased physician longer doubts that just as successful work with either roentgen ray or radium, or with their combined application, may be accomplished in a certain class of cases in the hands of expert radiotherapists.

When we consider the complete function of the lymph glands, is it not reasonable to suggest that a certain degree of stimulation instead of extirpation is the



Fig. 6 (Class 3).—Same patient as in Figure 5. Patient died about twelve months later.

more scientific method of eliminating or preventing metastases in a certain class of epitheliomas, as well as in ordinary inflammatory products which they collect?

Abbe [7] and others have repeatedly demonstrated that pathologic cells of any nature, when wandering

TABLE 2.—ONE HUNDRED AND TWENTY-TWO CONSECUTIVE CASES OF EPITHELIOMA OF LOWER LIP

Treatment and Results:	Number	Per Cent.
Did not treat	15	
Previously had plaster or caustic treatment	5	
Previously had one or more operations.	7	
Treated by us, roentgen ray or radium, singly or combined	107	
Class 1:		
Total cases treated, roentgen ray and radium	72	
Living today or lived more than three years, death not due to cancer	69	95.8
Died within three years, cancer other locations; one shoulder, one liver and one hand	3	
Deducting the patient who died of metastasis from epithelioma on hand, lip well, total cases, good results	70	97.2
Class 2:		
Total cases examined	31	
Total cases treated	27	
Did not complete treatment, changed to plaster, etc., until death	6	
Living one to nine years after, condition good or fair	19	70.3
Living more than three years out of a total of fifteen cases treated, condition good	10	66.6
Class 3:		
Total cases examined	19	
Total cases treated	4	
Living, results fair, less than one year	1	
Died within one year	3	

through lymph channels, are more sensitive to an active agent, such as the roentgen ray or radium.

Georgine Luden [8] demonstrated that the cholesterol content of the blood promotes cell multiplication, whether normal or malignant in nature. Luden further proved that radium treatment will materially reduce the cholesterol content in the blood of animals. This fact had not usually been taken into account as

7. Abbe, Robert, in discussion on New, G. B.: The Use of Heat and Radium in the Treatment of Cancer of the Jaws and Cheeks, J. A. M. A. 71: 1369 (Oct. 26) 1918.

8. Luden, Georgine: Studies on Cholesterol, J. Lab. & Clin. Med. 4: 849, 1918.

one of the beneficent effects of radium in the treatment of cancer.

CONCLUSIONS

1. Considering the gravity of epithelioma of the lower lip and its frequency in adult males, we believe the subject has not been given the study and attention it deserves by American physicians.

2. As noted by others, our reports also show epithelioma of the lower lip to be far more common in outdoor workers, and most frequently seen on the side of the mouth where a cigar or pipe is held.

3. Early diagnosis and treatment of the lymph drainage of the lips will materially raise the percentage of cures.

4. Neither surgery, radiotherapy nor any other one successful method of treatment should be used in all cases alike.

5 Radium and the roentgen ray, singly or combined, give the most satisfactory results in a selected class of epithelioma of the lower lip.

RESTORATION OF THE MARGIN AND NEIGHBORING PORTION OF THE EYELID

BY A FREE GRAFT FROM THE LOWER PART OF THE EYEBROW AND THE SKIN DIRECTLY BELOW IT: REPORT OF AN ILLUSTRATIVE CASE *

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In cases of loss of substance of the eyelid, sometimes restoration of a part or all of the margin and nearby portion of the lid is an important problem. Restoration of the eyelash line is an important part of the problem, as the presence or absence of shading along the lid margin has much to do with the patient's

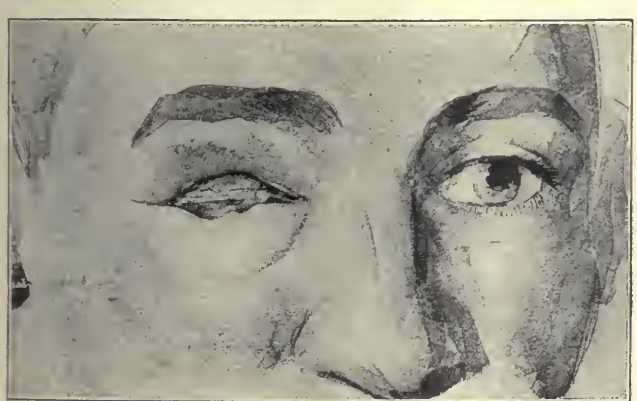


Fig. 1.—Photograph of water color to show condition before operation: On right side, lid margins are entirely gone; cilia, tarsal plates and conjunctiva have been completely destroyed; between the palpebral folds of skin can be seen a plaque of grafted epidermis, the result of old attempts to restore the culdesacs.

appearance. Strangely enough, in plastic surgery of the eyelids, hair line restoration has been almost entirely neglected, and some surgeons have ridiculed the possibility of such an accomplishment. In undertaking to imitate the appearance of the normal lid at and near its margin, the surgeon has not an impossible task to accomplish. Reasonable success is possible. In order to present the subject graphically, I will report an illustrative case:

REPORT OF CASE

History.—While C. H., man, aged 37, a sergeant in our air service, serving as a mechanic in our overseas army, March 29, 1918, was melting lead in a ladle, a piece of iron fell

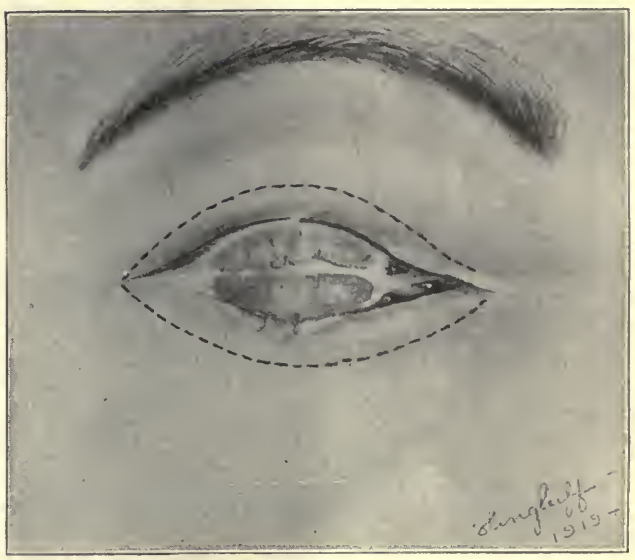


Fig. 2.—Before operation: Dotted lines in upper and lower folds indicate primary incisions.

into the hot lead, causing it to splash. The right eye was struck by molten lead, and was so badly burned that it was enucleated a week after the accident. During the following few weeks four operations of a plastic nature were performed in France. The patient says that some mucous membrane was taken from the lip, and twice skin was taken from the hip with a razor. Probably attempts were made to restore the culdesacs.

June 30, 1919, this patient was admitted to U. S. Army General Hospital No. 2 at Fort McHenry, Md. On admission, the left eye and lids were normal. On the right side was a striking condition. There was no sign of a lid margin above or below. There were no eyelashes, and the marginal portions of both upper and lower lids were absent. There was no sign of a tarsal plate above or below. Only irregular folds of skin remained to suggest eyelids. The canaliculi had been thoroughly slit and were open, so that their mucous membrane lining was exposed. Otherwise there was not a particle of mucous membrane to be seen. The conjunctiva had entirely disappeared, and there were no culdesacs. Beween the folds of lid skin there was exposed a small plaque of epidermis about 20 mm. long and 12 mm. wide, which had been grafted on the orbital contents. This plaque was immobile, so that there was a most peculiar lifeless appearance in the orbital region in contrast with the normal appearance of the left side (Fig. 1). In order to obtain a presentable result, skin had to be furnished for the marginal portions of the eyelids, a hair line had to be furnished in imitation of eyelashes for both upper and lower lids, the culdesacs had to be restored so that an artificial eye could be worn, and mobility of the stump was called for. All this was attempted, and a presentable appearance resulted.

Restoration of the Marginal Portion of the Upper Eyelid.—July 8, 1919, under local anesthesia (procain and epinephrin), the bed was first prepared to receive the graft for the upper lid. An incision through the skin of the upper lid was made from 3 to 4 mm. from its margin and about 40 mm. long (Fig. 2). The skin below the incision was unrolled, and bands of scar tissue were removed. Then paraffin silk sutures were passed through the skin fold near the cut margin, and

* Read before the Section on Ophthalmology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

by means of these the skin fold was tacked down to the plaque of skin on the orbital contents, and the denuded fusiform area to receive the graft was thus held on the stretch. Next a fusiform dermic graft was dissected free from the lower part of the right brow and the skin below it (Fig. 3). In taking this graft it does not matter if there are a few extra hairs, as superfluous ones can be epilated. This graft was 45 mm. long and 8 mm. wide in the center. The graft, raw surface upward, was placed on a little pad of gauze, soaked with warm physiologic sodium chlorid solution, and with the scissors tags of subcutaneous tissue and muscle fibers were removed carefully. An attempt was made to avoid injuring the hair follicles in the process. As soon as the graft was prepared it was put in place in its bed, upside down, so that the hair line would be in proper position to mimic eyelashes. With fine paraffined silk sutures the graft was sewed in place. Then, after slight undermining of the skin, the wound occasioned by removal of the graft was sutured (Fig. 4). In preparing the bed and in taking the graft, care was taken not to commit traumatism. A very small amount of sterile petrolatum was smeared over the graft and the wounds; rubber tissue was placed over all, and gauze fluff was packed evenly over the rubber tissue. Strips of adhesive plaster were placed so as to hold the dressing snugly, and *firm pressure* was obtained by bandaging. Pressure is important, as complete contact is essential to the life of the graft. The dressing was left undisturbed for five days. July 13, the dressing and rubber tissue were carefully removed and the secretion was cautiously wiped away with sponges damp with boric acid solution. The graft had taken completely, and the wounds were in good condition. The sutures were carefully removed, and rubber tissue and dressing were replaced. Ten days after operation the dressing was left off and the graft was kept anointed with a very small amount of sterile petrolatum, and protected by a shield. Two weeks after operation it was difficult to follow the outlines of the graft, so well did it match the color and texture of the surrounding skin. The old epithelium had desquamated, and new epithelium had formed.



Fig. 3.—Bed prepared for upper graft: Skin below primary incision has been unrolled and put on the stretch by being sewed to orbital contents; graft from lower part of brow is being taken to place over denuded area.

Restoration of the Marginal Portion of the Lower Eyelid.—July 22, under local anesthesia, the bed for the reception of the graft for the lower lid was prepared in a similar manner (Fig. 5). More tissue had to be supplied for this lid, however, so the graft was larger (50 mm. long and 20 mm. wide in the center). This graft was taken from the lower part of the left eyebrow and the skin below it. After the slight amount of subcutaneous and muscle tissue that was taken with the skin had been removed, it was placed with the hair margin up to supply shading at and near the new lower lid margin. The operative technic and postoperative care were the same used for the upper lid graft, and this graft also "took" completely.

Restoration of the Culdesacs.—August 5, under ether anesthesia, the little plaque of grafted skin was left adherent to the orbital contents, and an incision was made around its margin. The dissection was carried to the periosteum at the



Fig. 4.—Graft from lower part of brow has been turned upside down so that hair line is along its lower margin and graft is sutured in position. Brow wound has been closed by sutures.

orbital margin. A mold of dental impression compound was made to fit the cavity and was completely covered with Thiersch grafts, raw surface outward. This was placed in the cavity made by the dissection, and both upper and lower culdesacs were restored at one operation. This resulted in a complete "take," and no granulation tissue appeared. The details of the culdesac restoration are not pertinent in the presentation of my topic. At the time of this operation, the disfiguring mucous linings of the slit canaliculi were dissected out and the little flaps were sewed together for obliteration of the canaliculi.

Repair at Outer Canthus and Trimming of Lid Margins.—After healing from the grafting operations was complete, the patient was able to wear an artificial eye acceptably, but the fissure was a little too long for the best cosmetic effect, and the new-formed lid margins were slightly uneven. So, by a little plastic operation at the outer canthus, Jan. 7, 1920, under local anesthesia, the palpebral fissure was shortened about 3 mm. and the lid margins were made straight and even by careful trimming with the scissors.

Fat Implantation into the Orbit.—This operation was performed, February 4, under ether anesthesia, to fill in the socket, as it was somewhat sunken, and to furnish as much motility of the stump as possible. The fat was taken from the abdomen and placed inside the muscle cone. Healing was uneventful.

RESULT

Figure 6 is a photograph taken March 4, 1920, four weeks after the final step in the operation. At this time no tenderness exists, and there is no discomfort of any kind. The patient says there is no secretion from the socket. There is a little motility of the prosthesis, which is on a slightly lower level than the left eye, and of almost equal prominence with it. In the healing process most of the hairs at the lid margins fell out, and new ones came to take their places, growing in good position, but with slightly faulty direction for

eyelashes. They still slant somewhat toward the nose, as nothing has been done to train the direction. The outlines of the grafts are not visible, except at the outer end of the lower lid graft. The thickness of the lids is about normal. The patient was shown at the February meeting of the New York Ophthalmological Society, and the members present were charitable in their expressions about the result. The new eyelashes received favorable comment. Needless to say, the patient feels that he has acquired a new lease on life.

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ABSTRACT OF DISCUSSION

Dr. Nelson M. Black, Milwaukee: I had considered restoration of the hair line of the lid margin quite out of the realm of practical attainment, and I have not found in the literature a report of a parallel case. While it is to be hoped, for the sake of the person concerned, that such restorative operations will not frequently be required, there are times when such a result would be a large asset to an ophthalmic surgeon; for instance, after the removal of a lid for epithelioma, or for severe burns. Possibly Dr. Wheeler's method might be used in restoring the hair line where the hair follicles of a portion of the lid margin have been destroyed by burns from molten metal, but with an intact eyeball, as is frequently encountered in industrial eye injuries.

Dr. William C. Posey, Philadelphia: I reported a case some years ago in which I utilized some of the hairs from the eyebrow in making a ciliary border for a woman who had lost her right eye and a greater part of the upper lid as a result of cellulitis. After doing a Mules operation on the sightless stump, I made an incision through the middle of the brow and dissected downward the skin and mucous membrane containing the lower half, thereby forming the internal portion of the new lid. The external portion was obtained by superimposing a tongue-shaped pedicled flap taken from over the brow, on the denuded area. After an artificial eye was inserted and the wound had healed she had a very natural appearing lid. I do not believe, however, that the artificial row of eyelashes made in this way would be applicable where there is a seeing eye back of the lid, on account of the

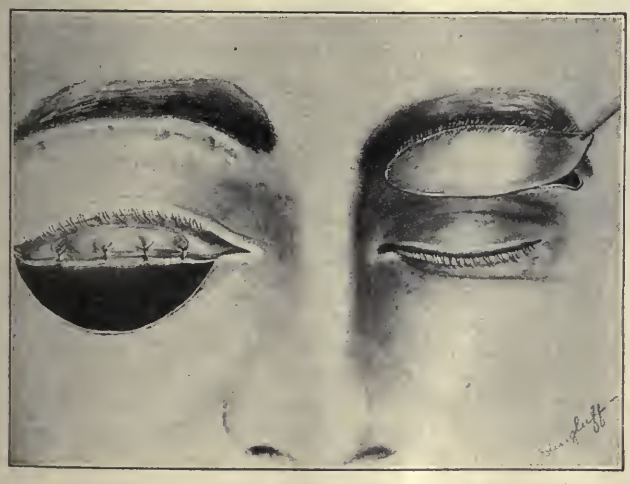


Fig. 5.—Dissection made for preparation of bed to receive lower graft: Graft is being taken from lower part of left eyebrow, to be placed (hair margin upward) over denuded area.

resulting irritation to the eyeball by the irregular row of lashes. I wonder what sort of lining Dr. Wheeler obtained for the new lids, and what the appearance of the left upper eyelid was after he cut out a flap 20 mm. wide from it. I have taken flaps from the upper lid in making sockets, but even when I have not used as broad a flap as 20 mm., I have at times produced some deformity in the lid.

Dr. Gaylord C. Hall, Louisville, Ky.: Is such plastic work applicable to young children, say 2 or 3 years of age, where the eye is destroyed by a lye burn, or should such work be deferred until later life?

Dr. John M. Wheeler, New York: As to the propriety of this operation for partial loss of hair line in industrial cases: Most of the patients that I have operated on by this method have had only a partial destruction. I have not had any patients with intact eyeballs. In most cases of serious injury the eyeball had been removed. As to the appearance of the left upper lid after the removal of the graft: In this



Fig. 6.—Appearance of patient four weeks after final step of operative procedures.

case the left eye closed with difficulty for a few days after the operation; then it closed with ease. If you were to see the patient you would not guess that skin had been removed from the upper lid. It is apparently a perfectly safe procedure. I have taken many grafts from upper lids without using the hair line, and the results are beautiful as compared with other grafts. In regard to the application of the operation to children, I cannot say from experience, but one need not fear late contraction of the lid in these cases. The grafts are thin, and if there is no considerable amount of granulation tissue formation under the graft, there is only slight contraction, and that takes place early in the life of the graft. I think it would be perfectly feasible to use this method for children.

CONDYLOMATA ACUMINATA*

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Condylomas of two kinds may develop about the vulva, namely, condylomata lata and condylomata acuminata. The former, which have a broad base, are an accepted manifestation of syphilis while, as yet, the etiology of the latter has not been clearly defined. Small, discrete, pointed papillae at first, condylomata acuminata become confluent and form growths of considerable size, especially during pregnancy. Ordinarily they are ascribed to a persistent, irritating discharge, the result of gonorrhea, but it is now admitted that they may have an independent origin.

Early medical writers, ignorant of the fact that there was more than one venereal disease, thought that, in spite of differences in morphology and topography, papillomatous growths about the vulva were always due to the same cause. In the course of time this view

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became untenable and Ricord, in 1838, stated that careful clinical observation would serve to differentiate syphilitic condylomas from those of the acuminate type. This teaching was not widely accepted; even at present from the gross appearance of condylomas it is difficult occasionally to decide whether or not they are a manifestation of syphilis. Futhermore, the same patient may present the two types and, in such instances, the acuminate variety is likely to develop at the margin of the syphilitic condylomas. In these circumstances, obviously, two distinct lesions must be reckoned with. One has been proved to be the result of syphilis; the other may be the result of gonorrhea



Fig. 1.—Condylomata acuminata in a primiparous 16-year-old negress. The cleft between the masses distinguishes the one attached to the right labium major from that on the left. Numerous discrete lesions are seen on the inner surfaces of the thighs and on the mons veneris. The anus is obscured by the overhanging labial tumors. From a drawing by Max Brödel.

or may develop independently, as was suggested in 1872 by Aimé Martin, who observed acuminate condylomas in patients not infected with either syphilis or gonorrhea.

Condylomata acuminata are seen not infrequently in gynecologic and venereal clinics. Their incidence is illustrated by the fact that among 7,700 gynecologic patients at the New Haven Dispensary they were observed twenty times, or approximately once in 400 cases. Of these patients the youngest was 12, the oldest, 30. While cases are recorded both earlier and later in life, the disease is most common in young adults. Most frequently the site of the lesion is the labia, but it occurs also on the perineum and within the vagina.

Among the twenty cases studied here, ten gave a strongly positive Wassermann reaction. In five others with a negative Wassermann the presence of gonorrheal infection was demonstrated by smears; in two the clinical history indicated a previous infection, but gonococci were not found. On the other hand, in three instances no evidence of gonorrhea or syphilis was obtained either from the history or from the clinical examination of the patient.

Histologically these growths are true papillomas, and are characterized by a great increase in the thickness of the epidermis. The zone of stratified squamous epithelium is three or four times as deep as normal. The hypertrophy relates to all the layers of the epithelium, especially the superficial horny layer and the malpighian layer, in which the cells are larger and more deeply pigmented than usual. The basement zone is densely packed with actively growing epithelial cells. The underlying connective tissue not infrequently shows areas of leukocytic infiltration and increased vascularity. The epithelium shows no tendency to invade neighboring structures.

Seven of the twenty women in this series were pregnant, and in one case the size of the tumor was unusual. In this instance the mass, measuring 10 by 16 by 5 cm., completely covered the external genitalia, hung over the perineum and closed the introitus. The tumor was composed of two growths which arose, respectively, from the right and the left labium majus. The cauliflower mass presented a moist and macerating surface. Many smaller growths were located on the inner surface of the thighs and around the anus.

It is noteworthy that this patient, a negress 16 years of age, was in the fourth month of her first pregnancy. The lesion had been noticed three months previously and began as a small nodule on the left labium. The Wassermann reaction was negative both before and after a provocative dose of arsphenamin. Neither the patient nor her husband gave a history or clinical evidence of gonorrhea.

Thus far, attempts to determine what is the specific causation of condylomata acuminata have not proved conclusive. Fiori's[1] observations of "cell inclusions" resembling protozoa have not been corroborated, and likewise bacteria are clearly not the cause of the lesion. We have been able to confirm the statement of Rohrer and Juliusberg that bacteria in the tissues are frequently demonstrable by the Gram-Weigert method, but their distribution near the surface of the papilloma indicates that they are secondary invaders associated with maceration. In the deeper portions of the condyloma no bacteria are found.

The contention that these growths may be transmitted by contact has never been substantiated. Both Güntz and Cathcart collected series of cases in which there was evidence pointing toward the contagious

1. Fiori, P.: Sopra uno speciale reperto di inclusioni cellulari nel condiloma acuminato, Pathologica, Genoa **6**: 36, 1913; A proposito dei corpi del condiloma acuminato, Pathologica **8**: 53, 1915; Ueber einen besonderen Befund von Zelleinschlüssen bei dem Condyloma acuminatum, Centralbl. f. Bakteriol., Section 1 **74**: 580, 1914; Osservazione sul condiloma acuminato, Sperimentale **69**: 221, 1915.

nature of the growths. And great stress was once laid upon the experience of one of Sir Ashley Cooper's assistants. In this instance, following an operation in a case of condylomata acuminata, a similar lesion developed at one point where the assistant



Fig. 2.—Proximal surface of the growth on the left labium showing the relative area of the pedicle and the characteristic pointed and rounded papillae of the cauliflower-like tumor.

pricked his finger. Criticism of his views, more particularly by Petters, led Güntz to implant condylomas into fresh incisions in the skin of human subjects; and as these attempts at inoculation were unsuccessful, Güntz admitted that his earlier contention was unjustified.

As certain cutaneous irritants, such as tar, paraffin and anilin dyes, were known to incite epithelial overgrowths, Yamagiwa and Ichikawa [2] painted coal tar on rabbits' ears and produced lesions that resembled papillomatous warts both grossly and histologically. After repeated applications over a long period, these warts occasionally presented malignant changes. As the substances employed possessed bactericidal properties, an infectious origin of the growths was excluded. The analogy between these experimental warts and condylomata acuminata is noteworthy; but even more interesting is the report of the experimental reproduction of condylomata acuminata recently made by Cronquist.[3] Scarification with the scalpel between the labial folds provided suitable points for irritation, and to these were applied cotton pledgets saturated with a 1.5 per cent. solution of sodium hydroxid. In other cases, cotton moistened with vaginal secretion was applied. The application was held in place for several days with adhesive plaster. In three cases, Cronquist reports, the resulting lesion microscopically resembled condyloma. Weaker solutions of sodium hydroxid failed to reproduce the picture.

It is pertinent that following pulmonary insufflation with a solution of hydrochloric acid, Winternitz [4] has recently observed epithelial proliferation in the tracheal and bronchial mucous membranes of dogs. Such a reaction lends support to the view that condylomata acuminata may result from chemical irritation. Whether an acid or an alkaline vaginal secretion provides the more effective irritant is a question that must be left open.

These growths, it is noteworthy, do not develop during the acute stage of gonorrhea, but appear later in association with chronic vulvitis. Usually they begin in the crevices between the labial folds where the secretion collects and is less likely to be removed by cleansing. The same location of the primary foci pertains to cases of pregnancy in which an increase of the vaginal secretion is referable not to infection but to the physiologic activity of the glands. Furthermore, it is recognized that races with a deeply pigmented skin are predisposed to these growths.



Fig. 3.—Photomicrograph of a section from the tumor. The keratinized tips of the papillae are apparent; there is a delicate connective tissue core.

2. Yamagiwa and Ichikawa: Ueber die künstliche Erzeugung von Karcinom, Verhandl. d. japan. Path. Gesellsch. **6**: 169, 1916; Experimentelle Studie über die Pathogenese der Epithelialgeschwülste, Mitt. a. d. Med. Fak. d. K. Univ. Tokyo **15**: 295, 1916; Experimental Study of the Pathogenesis of Carcinoma, J. Cancer Res. **3**: 1, 1918. The Experimental Production of Cancer, editorial, J. A. M. A. **68**: 1818 (June 16) 1917.

3. Cronquist, Carl: Ueber die Aetiologie und Pathogenese der spitzen Condylome, Dissertation, Malmö, Georg Cronquists Bokhandel, 1912.

4. Winternitz, M. C.; Smith, G. H., and McNamara, F. P.: Effect of Intrabronchial Insufflation of Acid, J. Expr. Med. **32**: 199 (Aug.) 1920.

The treatment of condylomata acuminata is not likely to be sufficiently radical and thorough, and perhaps for this reason recurrences have been frequently noted. The topical application of ointments and escharotics produces either a slow effect or none at all. Removal by the cautery, also, is likely to be followed by recurrence. Surgical excision offers the most efficient method of treatment. The larger growths may be amputated at the point of attachment of the pedicle, and the raw areas closed with cutaneous sutures; the smaller growths may readily be shaved off with a scalpel held at an appropriate angle. After removal of the smaller papillomas, bleeding is usually controlled by pressure; if not, the thermocautery will be effective.



Fig. 4.—High power photomicrograph through the epithelium, showing the uniform proliferation of all the layers and the pigmentation of the younger cells.

Surgical treatment has been employed during the course of pregnancy without untoward complication. Thus, in the case which presented the largest condylomas of the series, the growths were excised during pregnancy. The healing was prompt, there was no recurrence, and two months later the patient was delivered spontaneously of a normal infant.

Cleansing Skin for Vaccination.—The United States Public Health Service has issued a warning against the use of denatured ethyl alcohol containing phenol for the purpose of cleansing the skin at the site of vaccination against smallpox, because it is believed that such a procedure would materially decrease the likelihood of securing successful "takes" from smallpox vaccine, and it is suggested that cleansing the skin with soap and water is preferable, and that if another agent is desired, ether may be used.—*Pub. Health Rep.* **35**:399 (Feb. 20) 1920.

ABSCESS OF THE LUNG*

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Today abscess of the lung is a common disease, although it was only a few years ago that the standard textbooks and the journals referred to it as rare. Some writers attempt to make a distinction between abscess and gangrene. This is usually impossible, for they are often combined. With few exceptions it is secondary to a previously existing inflammatory process which has reached the lung through a neighboring structure. Recently, a number of reports of abscess of the lung, following tonsillectomy under a general anesthetic, have appeared in the literature. In most of these cases the infection is carried by inhalation directly into a bronchus. Pulmonary abscesses develop more commonly, however, as a complication of pneumonia. In 1,200 cases observed by Frankel, 2 per cent. had abscesses. At the Massachusetts General Hospital, in fifty cases of pneumonia coming to necropsy, abscesses were found in fourteen. The recent epidemics of influenza showed a striking tendency to various pulmonary complications. Thus, at Bellevue Hospital in forty-five necropsies, sixteen pulmonary abscesses were found. During 1916 at the Mayo Clinic there were sixteen cases of abscess of the lung in which operation was performed. The etiologic factors in this group are given in the accompanying table.

CAUSE OF ABSCESS

Pneumonia (postoperative)	4
Teeth extraction	3
Tonsillectomy (operation elsewhere under general anesthesia)	2
Gastro-enterotomy for ulcer	1
Grip	1
Trauma (followed by pneumonia)	1
Questionable	4

DIAGNOSIS

The diagnosis of abscess of the lung before extensive destruction has taken place may be very difficult. A careful history will often bring out suggestive data connected with a previous illness or the swallowing of a foreign body. The presence of cyanosis or clubbed fingers should direct attention to the lung as the probable location of the lesion. The cough, the fetid breath, and the expectoration of a large amount of mucopurulent sputum are almost conclusive. The physical signs, although variable, are usually those of consolidation or cavity formation. The location of the abscess, the extent of the surrounding area of induration and its relation to a bronchus are some of the factors that influence the physical signs. The presence of a pleural effusion may add to the difficulties of diagnosis.

While a leukocytosis is the rule, it is not invariably present. The temperature may be normal, or there may be fever, remittent or intermittent.

The roentgen-ray is a valuable aid in the diagnosis of lesions of the lung. Occasionally an unsuspected focus is revealed by the ray, or it helps in the interpretation of confusing physical signs. The best results are obtained when several plates are taken and these in turn compared with others taken at intervals. After all, it should be remembered that in the roentgenogram we are dealing with shadows, and the manner of their

* Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

interpretation may depend wholly on the person who reads the plate. This is especially true in abscess of the lung, in which the shadows are both dense and varied.

TREATMENT

The mortality of abscess of the lung could be greatly reduced by early operation. Too much time is lost in making a diagnosis and in temporizing measures. While an occasional patient may recover under the expectant treatment, prolongation of this method



Fig. 1 (Case 3).—Club fingers.

increases the chances for complications. Artificial pneumothorax has given such encouraging results in the hands of Tewksbury and others that it merits further trial. I am convinced, however, that early drainage by the two-stage operation under local anesthesia will give the highest percentage of recoveries. The use of bismuth paste in those cases in which the drainage tract refuses to heal has seemed to hasten the closure of the fistula.

REPORT OF CASES

CASE 1.—*History.*—Mrs. F. R. C., aged 27, whose previous history was negative, in the ninth month of pregnancy developed uremic convulsions. She was carried to the hospital, and under ether anesthesia the child was delivered. Forty-eight hours later she had pneumonia. I saw her six weeks after delivery. The temperature was running from 99.5 to 103; the pulse, 125; respiration, 35. She was having sweats. There was clubbing of the fingers.

Examination.—There was hyperresonance of the lungs anteriorly above the fifth rib; and posteriorly over this region, there was impaired resonance. Below this there was dulness and entire absence of breath sound. Blood examination revealed: hemoglobin, 75 per cent.; white blood cells, 15,250. The sputum was purulent, and contained elastic fibers, staphylococci, streptococci and pneumococci; there were no tubercle bacilli. The roentgenograms were confusing because of the dense fibrosis of the lung around the region of the abscess.

Operation and Result.—Under local anesthesia, Dr. D. F. Talley resected 2 inches of the seventh rib at the angle of the right scapula. A needle was inserted and pus located about 3 inches within the lung. The abscess was opened with an electric cautery and a drainage tube inserted. In twenty-four hours the temperature dropped to normal. The drainage wound closed in six weeks. The patient rapidly regained her former health and has remained perfectly well since. The clubbed fingers were quite evident six weeks after the onset of the pneumonia, and returned to normal within three months after the drainage wound healed.

CASE 2.—*History.*—Miss A. W. L., aged 34, referred by Drs. Prince and Moore, had influenza in November, 1918. The previous history was negative. In January, 1919, she was quite ill for ten days with a second attack of influenza complicated by pneumonia. The temperature ranged from 100 to 103; there was cyanosis, marked dyspnea, etc. At the end of the second week all symptoms had disappeared, but the dulness in the right base did not clear up. By the middle of February the patient was going about, although still coughing, presenting an irregular temperature, and having night sweats. In March, 1919, the right base was aspirated and pus withdrawn. A rib resection was performed in the midaxillary line and a quantity of pus located. The patient's general condition rapidly improved for a time after this. The sinus seemed to be draining satisfactorily, but she soon began to expectorate a quantity of pus. On admission to the hospital the temperature ranged from 99 to 101, and she had night sweats. There was slight clubbing of the fingers.

Examination.—Blood examination revealed: hemoglobin, 80 per cent.; white blood cells, 8,000. The sputum contained thin pus, many pus cells, staphylococci and streptococci, but no tubercle bacilli. There was dulness of the entire right base and impaired resonance of the upper part of the right lung. The breath sounds were distant pretty much throughout, excepting over the upper lobe, where they were bronchovesicular and bronchial. Roentgenoscopy revealed such a confusing shadow that little could be made out of it. After injecting bismuth into the drainage tract, however, it became evident that the fistula ran into a cavity within the lung. By April, 1920, four bismuth injections had been made, the last one in November, 1919. There has been no drainage since January, and the patient has no fever and no cough.

CASE 3.—*History.*—D. C., a girl, aged 9 years, referred by Drs. Prince and Moore, and presenting negative family and previous personal history, had been in good health up to three years before. In January, 1914, she developed pneumonia. At the end of six weeks, fluid was suspected in the right side. Aspiration revealed pus. Partial osteotomy of the seventh



Fig. 2 (Case 3).—Abscess injected with bismuth paste. Great deformity of affected side of chest.

rib with drainage of the pleural cavity was performed. The tube was removed in one month. The fistula drained for nearly one year, but in spite of this the child's health improved. In December, 1917, she had pneumonia again in the right side. This attack was not nearly so severe as the first. In two weeks she was up and convalescing satisfactorily, except for a hacking cough. By the end of January she began to have a mucopurulent expectoration. The quantity of the sputum gradually increased and assumed a foul odor. She then had recurring attacks of fever, chilly sensations and sweats. In October, 1919, for the second time a resection of a rib was done and a large quantity of pus

evacuated. The fistula following this operation had nearly healed. On admission to the hospital she was too weak to walk alone. She was very anemic. Her fingers and toes were markedly clubbed. There were cyanosis and dyspnea. She coughed frequently, expectorating large quantities of fetid pus. The temperature was 101, pulse 110 and respiration from 27 to 30. There was great deformity of the chest on the right side.

Examination.—On account of the great deformity of the chest wall it was difficult to make much out of the physical signs. A small area between the clavicle and the third rib was resonant, and feeble breath sounds could be made out. Aside from this region, the right chest was dull to flat throughout, and no breath sounds were heard on auscultation. Blood examination revealed: hemoglobin, 65 per cent.; white blood cells, 11,000; polymorphonuclears, 71 per cent.; small mononuclears, 26 per cent.; large mononuclears, 3 per cent. The von Pirquet and Wassermann tests were negative. The sputum on many examinations contained no tubercle bacilli but many staphylococci and a few streptococci; there were elastic fibers. A roentgenogram revealed great retraction of the lung and deformity of the chest wall. After injection of bismuth paste, the size and position of the abscess cavity was easily seen. This patient has been injected three times, but so far the results are doubtful.

Case 4.—*History.*—H. C. B., a man, aged 23 years, admitted to the South Highlands Infirmary in March, 1917, with no history of tuberculosis in the family or exposure to the disease, had been in good health up to Christmas, 1915. He caught cold and developed a cough with expectoration. In February he began to have a little fever, and soon after this a pain in the left axilla which radiated to the back. Early in March, 1916, his temperature reached normal, his cough was much better, and the expectoration had almost ceased. Soon after this time, however, he began to have hemorrhage. From March to October, 1916, he spat up blood in varying quantities almost daily. The largest single hemorrhage was "about one quart." During this period his temperature was elevated most of the time. In October the hemorrhage stopped. Only a few days after the last hemorrhage, in a fit of coughing, he spat up a "quart of foul smelling pus." Since this time he has continued to expectorate quantities of this



Fig. 3 (Case 5).—Abscess as it appeared Feb. 1, 1919.

fetid pus daily. The temperature on admission to the hospital was 99.2; pulse 95, and respiration 22. His temperature did not rise above 99.6 any time during his stay in the hospital. His color was good. His weight was 160 pounds. His fingers were clubbed.

Examination.—The chest was well formed. Expansion of the left side was diminished. Fremitus was diminished. There was impaired resonance in the upper lobe and dulness at the base. Breath sound over the base was distant but tubular in type. A few small mucous râles over the base and an occasional crackle in the upper lobe might be heard. Blood examination revealed: hemoglobin, 70 per cent.; white blood cells, 12,500. The sputum was mucopurulent and contained pus cells and staphylococci, but no tubercle bacilli.

Treatment.—The foot of the bed was elevated and the patient was urged to try various positions to find the one in which drainage seemed to be the best. The results were so satisfactory from the beginning that this plan was continued. The quantity of the sputum gradually decreased, and the odor became less fetid. In three weeks he was so much better that



Fig. 4 (Case 5).—This patient was operated on in October, 1919. Roentgenogram was made Jan. 5, 1920.

he was allowed to return home to continue the same plan there. He remained in bed one month after returning home and slept with the head of the bed elevated for another month. He has steadily gained since that time. In April, 1920, he weighed 168 pounds and was as fit for the work on the farm as at any time in his life. The physical signs showed dulness at the base and impairment over the upper left lobe. The breath and voice sounds were diminished in the lower lobe, while in the upper lobe the breath sounds were bronchovesicular in character. An occasional click was heard above the scapula.

Case 5.—*History.*—Mrs. W. F. O'F., aged 28, had had tonsillitis off and on since childhood. Endocarditis was discovered ten years before I saw her. Since then there had been two attacks of fever of a continuous type thought to be due to infectious endocarditis. The removal of the tonsils had often been urged. Tonsillectomy under ether anesthesia was performed, Oct. 3, 1918. One week later the patient complained of pain in the right shoulder; there was no fever at that time. October 14, she was seized with a sharp pain in the right axilla, increased by deep breathing. No friction rub could be heard. The temperature was 104. There was no cough. There was slight tenderness at the site of the pain. In a few days there was impairment of resonance and distant breath sounds in the midaxillary region and at the angle of the right scapula. She then began to cough and to expectorate a small amount of mucopurulent sputum. These symptoms continued without change ten days, then she began to improve steadily. By the end of November, 1918, the temperature was normal and she was about the house. A slight cough with little expectoration continued throughout December. The temperature in the meantime ranged from 99.5 to 100. The patient's general condition was good. December 27, she began to show a daily rise, and the cough and expectoration became more annoying. The sputum for the first time became fetid and gradually increased in amount (perhaps as much as a tablespoonful during the twenty-four hours). Through January and February the temperature range was from 99.6 to 100.6, with a day now and then when it would reach 101.5. Below the angle of the right scapula the percussion note was dull and the breath sounds were enfeebled. The fingers now showed slight clubbing.

Examination.—Blood examination revealed: hemoglobin, 82 per cent.; red blood cells, 3,255,010; white blood cells, 15,000. The sputum contained pus and staphylococci, but no tubercle bacilli. Roentgenoscopy revealed a dense shadow in the right base, running as high as the seventh rib.

Course.—Early in March, 1918, the patient went to Asheville, N. C., where she slowly improved. She spent the months of July and August in Michigan. In July she had a small hemorrhage. On returning home in September she again had a recurrence of the old symptoms. An operation was then urged. October 9, under ether anesthesia, a partial resection of the seventh and eighth ribs was done and a drainage tube inserted.

The indurated lung was needled to locate the abscess cavity, but this was unsuccessful. The wound was packed. Two days later she developed pneumonia which rapidily involved the entire right lung. She was desperately ill for several days. A week later she had an empyema of the right side. This was drained by a tube in the operative wound. After a stormy convalescence, she finally recovered. She still has a slight cough and at times expectorates a little mucopurulent sputum. She weighs 168 pounds.

CASE 6.—*History.*—A. O. T., a man, aged 19 years, referred by Drs. Prince and Moore, and presenting a negative past history, had pneumonia in the left lung in January, 1917, when he was three weeks in bed. His health was good until February, 1918, when he again had pneumonia in the left lung. The pneumonia ran its course in two weeks, but the fever continued and very soon he began to have sweats and occasional chills. For three months he was up and down with fever and sweats. When admitted to the hospital (November, 1918), he had been expectorating mucopurulent sputum in large quantities for several months. It had a foul odor. His fingers were clubbed.

Examination.—The upper part of the left chest was impaired, and breath sounds were distant; the base was flat on percussion, and there was an absence of breath sounds. At the posterior axillary line and between the seventh and ninth ribs there was a small area in which the percussion note and the breath sounds seemed to vary from time to time. The temperature on admission ranged from 99 to 100 in the morning to 102 and 103 in the afternoon. The pulse was



Fig. 5 (Case 6).—Appearance of abscess before operation in November, 1918.

100. The cough came in paroxysms two or three times during the day, when the patient would expectorate from 1 to 4 ounces of thick, foul smelling pus. Blood examination revealed: hemoglobin, 70 per cent.; red blood cells, 3,400,000; white blood cells, 10,000. The sputum contained purulent, elastic fibers, many staphylococci and a few pneumococci; but no tubercle bacilli. Roentgenoscopy revealed a dense shadow involving most of the lower left lobe.

Operation and Result.—Under local anesthesia a partial resection of the eighth rib was performed. A needle attached to a syringe was used to locate the abscess. About 150 c.c. of foul smelling pus were evacuated and a drainage tube inserted into the cavity. The patient made an uneventful recovery. He left the hospital in four weeks after the operation. The wound healed within three months. He rapidly regained his normal weight and has since remained well. In April, 1920, he weighed 146 pounds and had no cough. There was still impaired resonance and feeble breath sounds over the left base.

CASE 7.—*History.*—R. B., boy, aged 17 years, seen in consultation with Dr. O. P. Board, and presenting negative



Fig. 6 (Case 6).—Appearance of abscess after operation, March 25, 1920.

family and previous history, was operated on under ether anesthesia for acute appendicitis in May, 1919, without drainage. The second day after operation pneumonia developed in the right base. The crisis occurred on the eleventh day. Cough and expectoration and irregular temperature continued. In spite of this, however, the general health slowly improved. I first saw the patient in August, 1919, when he had been admitted to the South Highlands Infirmary for study. At that time his temperature was normal, although he was coughing and expectorating a large quantity of mucopurulent sputum. He had night sweats once or twice a week. His fingers and toes were clubbed. He had a hemorrage shortly after coming to the infirmary.

Examination.—Expansion of the right lung was diminished. Tactile fremitus was absent at the right base. The base was dull. There was bronchial breathing, and a few mucous râles over the right base. Blood examination revealed: hemoglobin, 85 per cent.; white blood cells, 10,250. The sputum was mucopurulent and contained elastic fibers, staphylococci, streptococci and pneumococci, but no tubercle bacilli. A roentgenogram revealed dense shadow at the right base.

Operation and Result.—Drs. Prince and Board, under local anesthesia, resected 2 inches of the eighth rib; a needle was inserted to locate the abscess. As the aspiration was unsuccessful, the wound was packed with the intention of making a second trial a few days later. On the second day after the operation the patient developed pneumonia in the middle lobe of the right lung, from which he died on the sixth day.

ABSTRACT OF DISCUSSION

DR. CHARLES F. HOOVER, Cleveland: Dr. Peters failed to include in his paper an accurate statement about the methods of auscultation which he employed. Usually when pulmonary abscess is suspected the problem is to differentiate between intrapulmonic and intrapleural disease. When there is much resistance and impairment of excursion in the thorax, one should auscultate not only with the stethoscope but also with the ear applied directly to the thoracic wall, because then one not only hears sounds which are transmitted from the chest wall to the air, but also sounds which are conducted

from the chest wall to the bones of the skull. Sounds which may be picked up in this manner may not be transmitted from the chest wall to the air. The constancy of drumstick finger-ends, as observed by Dr. Peters, may be a very important point in differentiating between intrapleural and intrapulmonic disease. Thus far it is not perfectly clear just how much the formation of drumstick finger-ends depends on anoxemia and how much it may depend on some undetermined factor. It seems very probable, however, that the drumstick finger-ends may be accepted as evidence for intrapulmonic process as against intrapleural disease.

Dr. O. M. Gilbert, Boulder, Colo.: It is difficult to diagnose bronchiectatic cases, which may be an abscess. It is merely a matter of whether the disease begins in the parenchyma of the lung or in the bronchial tubes, and extends from there. A case in which I operated for abscess of the lung, after all roentgen-ray examination and the usual physical clinical signs had been positive, and it proved to be a localized bronchiectasis, with numerous dilatations of the bronchi in that region. The usual surgical treatment is by no means successful in this type of case. As to the treatment of the more acute abscesses, particularly those which present no adhesions, or very few adhesions, to the chest wall, by artificial pneumothorax, Tewkesbury reported on twelve cases treated by this method, and a few other reports have been made in the literature. Three years ago I attempted



Fig. 7 (Case 7).—Abscess of right lung.

to produce an artificial pneumothorax in a case of chronic abscess of the lung, one which had existed for more than a year, and in which there was extension of the inflammatory process throughout the lobe. I was successful only to the degree of limiting the inflammatory extension, controlling the process so that the patient was in such condition that the surgeon operated more safely and easily, curing the man absolutely. Then I attempted it in a similar case last August, with even a lesser degree of success, but again limiting to some extent the extension of the inflammatory process. This patient was operated on recently, the operation having been rendered more successful, I think, by the adhesions that had been formed. Last August I saw a patient who had aspirated a tooth in the course of a tonsillar operation, and had an extensive pulmonary abscess, with extensive inflammatory process throughout the lower lobe. The tooth was removed by bronchoscopy, but the patient went into a serious septic condition, with temperature up to 105.8 F. I agreed to attempt, as a last resort, the compression of the lung. The patient was 8 years of age. We introduced only 100 c.c. of filtered air the first time, 150 c.c. the next day, and 150 c.c. two days later. After the third injection the temperature fell below 100 F. Complete collapse of the lung was attained in ten injections, extending over six weeks. The lung was kept completely collapsed for eight weeks, and was then permitted to expand. The boy has remained entirely well for four months. I believe it is the method which should be resorted to in these rather desperate acute cases, the patient being too ill for operation by the usual means, and in which we have every reason to assume that pleuritic adhesions do not exist.

Dr. C. J. Fishman, Oklahoma City: Owing to the multiplicity of reported cases from various sections of the country of lung abscess following operations on the tonsils, it behooves us to try to discover by examination of the pathogenesis of this condition whether or not the various types of operation have been a contributing factor in the cause. The probabilities are that after an operation we have a thrombus in one of the veins of the tonsillar area, which is highly septic or sterile, and from this an embolus occurs in the blood stream, which lands in the lung tissue. These may either cause no symptoms, or very slight symptoms, or may be sufficiently large so that an abscess occurs due to a necrosis without infection, or to an infectious process on top of the necrosis. The type of operation, therefore, that is used in tonsillectomy should be investigated. In the few cases I have seen I found that most of them followed the result of the rapid method of operation, possibly because there was more damage to the tissues, and the chance for septic thrombi or sterile thrombi to occur was greater. As far as the management of very acute cases is concerned, one point might be mentioned in addition to those already spoken about, and that is the position of the patient. I have found that if the patient is put over the edge of the bed, so that his head is down toward the floor, drainage occurs, and it is possible, in some cases at least, to empty the cavity, so that restoration may take place more quickly than without this procedure.

Dr. Allan Eustis, New Orleans: In the South amebic abscess of the liver often extends through the diaphragm and ruptures into a bronchus. Diagnosis before rupture will often save the patient years of invalidism. I have found a constant physical sign in such cases, which has not been mentioned heretofore. The abscess usually penetrates the center of the right lung and usually causes a hydrothorax, the fluid from which is often withdrawn without the true condition being recognized until the abscess ruptures into a bronchus. If the bell of a stethoscope is placed in the right axillary space and the patient is instructed to repeat "three, thirty-three," while the stethoscope is moved downward from time to time, bronchophony and pectoriloquy will be elicited when the instrument rests over the liver. The voice sounds will be transmitted from the bronchus through the thickened abscess cavity to the liver and transmitted directly to the ear. In four cases the diagnosis was based on this sign alone and was confirmed by roentgen-ray examination and subsequent operation on the liver. In two other cases in which rupture into a bronchus had occurred several years previously, the true character of the lung abscess was elicited by the presence of bronchophony over the liver, drainage of which by competent surgeons resulted in complete cure of the lung abscess.

Dr. U. J. W. Peters, Birmingham, Ala.: I am glad Dr. Hoover called attention to the use of the naked ear in auscultation. Most of us use the ear at times, but either through the invention of the newer stethoscopes, or perhaps for lack of time or being in a hurry, which is a common American fault, we have neglected to use the ear, until most of us do not feel keen and certain about what we might hear with the ear alone. However, many sounds can be better heard that way.

Rudimentary Tabes.—Gonçalves Vianna emphasizes the necessity for suspecting tabes in puzzling cases with suspicion of syphilis, and reports in the *Revista dos Cursos* of Porto Alegre seven instructive cases. Asthenia, insomnia and vomiting dominated the clinical picture in one case, with death the fourth month; neurasthenia in another case, with headache, vertigo and pains in the legs. Specific treatment restored this young man to clinical health but the objective signs of the tabes were not modified. One patient was a physician who casually discovered that his pupils were unequal, but laboratory tests for tabes have been constantly negative during the year to date.

RETROPERITONEAL PERIRENAL LIPOMAS

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Retroperitoneal perirenal lipomas, arising from the fat which is normally present around the kidneys, attain enormous size and constitute a class of probably the

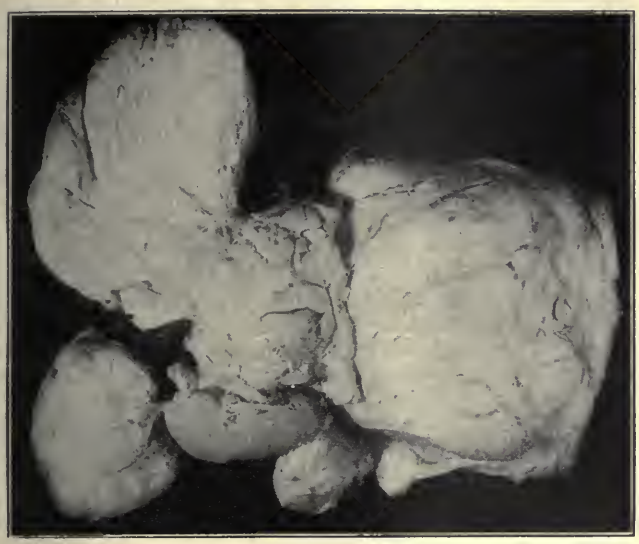


Fig. 1.—Tumor removed at operation. Note the multilobular character of the tumor and its intimate connection with the kidney.

largest solid abdominal tumors. This overgrowth of fat surrounding an otherwise normal kidney forms neoplasms weighing in some cases from 40 to 70 pounds. These tumors are reported in the literature as lipoma, myxoma, myxolipoma, myxofibrolipoma, myxosarcolipoma, etc. Hirsch and Wells [1] have rightly suggested that all these tumors might be grouped under one general name, as they all contain fatty and fibrous tissues in different proportions with usually more or less malignant degeneration.

All authors agree in giving Morgagni [2] credit for the report of the first case of retroperitoneal lipoma in the latter half of the eighteenth century. After him, other authors (Broca [3] and Moynier [4]) observed retroperitoneal lipomas in the course of necropsies. Péan [5] and Madelung [6] reported the first cases in which attempts were made to remove such tumors at operation. In latter years, Adami,[7] Terrier and Guillemain [8] Herisson,[9] Proust and Trèves,[10] Reynolds and Wadsworth,[11] Lecène,[12] and others have contributed to our knowledge of this interesting class of tumors.

My attention was called more especially to this subject through a case of perirenal lipoma in which I had the opportunity of operating from the gynecologic clinic of the Johns Hopkins Hospital.

1. Hirsch, E. F., and Wells, H. G. Retroperitoneal Liposarcoma, Am. J. M. Sc. **159**: 356 (March) 1920.
2. Morgagni: De Sedibus et Causis Morborum **2**, Epist. xxxix(1779.
3. Broca: Bull. de la Soc. anat. de Paris, 1850, p. 137.
4. Moynier: Lipome de la cavité abdominale, Compt. rend. Soc. de biol. **2**: 139, 1850.
5. Péan: Tumeurs de l'abdomen et du bassin, Paris, G. Masson, 1880.
6. Madelung: Berl. klin. Wchnschr., 1881, p. 75.
7. Adami, J. G.: On Retroperitoneal and Perirenal Lipomata, Montreal M. J. **25**: 529, 1896.
8. Terrier and Guillemain: Sur les lipomes rétropéritonéaux, Rev. de chir. **12**: 747, 1892.
9. Herisson, G.: Les lipomes rétropéritonéaux, Thèse de Paris, 1908.
10. Proust, R., and Trèves, A.: Contribution à l'étude des lipomes rétropéritonéaux, Rev. de gynec. et de chir. abd., January, 1908, p. 93.
11. Reynolds, E, and Wadsworth, R. G.: Retroperitoneal Perirenal Lipomata, Ann. Surg. **44**: 60, 1906.
12. Lecène, P.: Les tumeurs solides paranéphrétiques, Rapport Assc. française de chirurgie, XXVIII Congres, Paris, 1919.

REPORT OF CASE

History.—M. H., a white woman, aged 43 (Gyn. No. 22,377), was admitted to the Johns Hopkins Hospital, July 31, 1916, complaining of abdominal swelling, backache, and pain in the right lower abdomen. The family history and past history were essentially negative. The present illness began two years prior to admission with a diffuse swelling of the abdomen. The growth of the tumor, during the two years as noted by the patient, was gradual and associated with very few symptoms: slight pain in the right lower abdomen, increased at the time of her menstrual periods, and some shortness of breath on exertion. Her appetite had remained good, the bowels, regular. There had been no loss in weight associated with the growth of the tumor.

Physical Examination.—The patient was fairly well nourished. The general physical examination was essentially negative. The clinical interest in the case was centered entirely in the examination of the abdomen. The abdomen was symmetrically distended, resembling the picture of a full term pregnancy. The skin of the abdominal wall was normal in appearance. There was no dilatation of the superficial veins. The enlargement of the abdomen was due to a tumor which extended from the symphysis pubis to the costal margins, with bulging in each flank. There was no visible peristalsis. The surface of the tumor was smooth, soft and semifluctuant. On palpation, it felt in every respect like an encapsulated cystic tumor. When the patient raised her head, the masses in the lower abdomen were shoved into the iliac fossae, where the prominences became greater. Percussion note was flat over the tumor except for a strip of tympany below the right costal margin, extending as a band three fingers' breadth in width across the epigastrium as far to the left as the midclavicular line. A percussion wave was felt. There was no shifting dulness. The liver, kidneys, and spleen

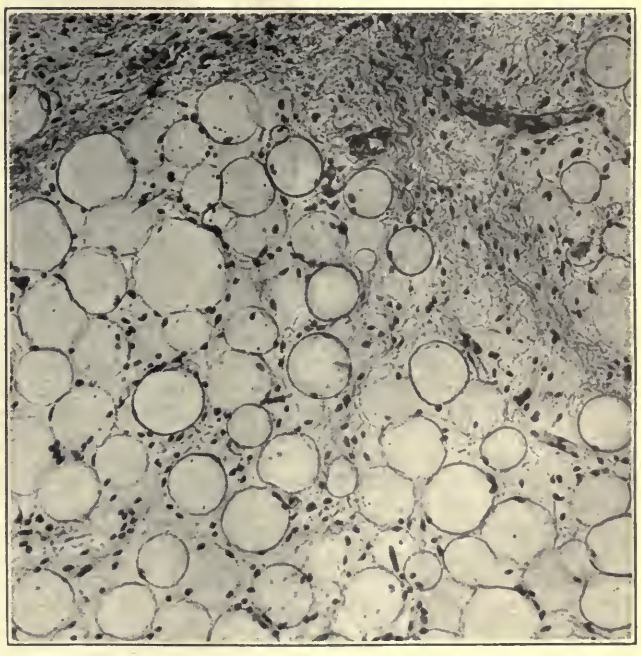


Fig. 2.—Fatty areolar tissue which makes up the bulk of the tumor. Note the fat cells greatly distended with fat. Scattered among the fat cells are numerous small, deep staining, irregular, nuclei suggestive of malignant degeneration.

were not palpable. The uterus was found enlarged, lying in retroposition. Filling the anterior vaginal vault was a soft, semifluctuant mass which seemed continuous with the mass felt on abdominal examination.

Cystoscopic Examination.—The external urethral orifice was normal, and dilated easily. A No. 8 Kelly cystoscope was used. The bladder was normal in appearance. The right

ureter was catheterized, without obstruction to its passage, with a No. 7 renal catheter. The pelvis of the right kidney held 6 c.c. No scratch marks were observed on wax tip or bulb. The urine was negative.

Laboratory Findings.—There was a normal phenolsulphonephthalein secretion, 65 per cent. at the end of two hours. The white blood count was 8,400; hemoglobin, 95 per cent.

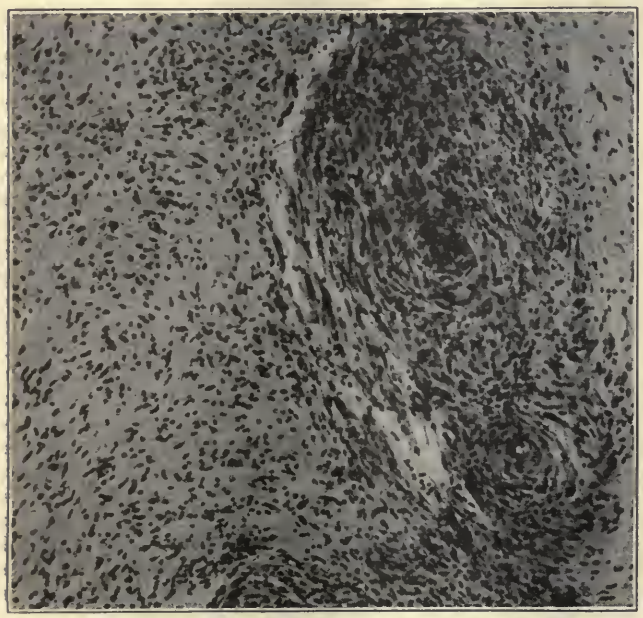


Fig. 3.—A section from one of the nodules of the tumor which resembles an ordinary fibrosarcoma.

A bismuth enema flowed in freely, no obstruction being encountered. Roentgenoscopy revealed kinking of the sigmoid, suggesting pelvic adhesions.

Operation and Result.—The abdomen was opened through a liberal incision in the median line extending from the symphysis pubis to the xiphoid cartilage. In the peritoneal cavity there was no free fluid. The pelvis was first exposed. Scattered over the posterior wall of the uterus were a few small subperitoneal myomas. The tubes and ovaries were normal. The tumor was evidently not of pelvic origin. The upper portion of the sigmoid and descending colon were found greatly displaced, appearing beneath the midline incision. The large bowel was stretched across the top of a retroperitoneal mass which filled the space between the anterior and posterior abdominal walls. The tumor was everywhere covered by the posterior layer of parietal peritoneum. By passing the hand in the left upper quadrant, I found that the tumor extended to the diaphragm. On the right side, the mass extended as high as the edge of the liver. Below, the tumor extended into the pelvis, displacing the sigmoid and pelvic peritoneum. The intestinal viscera were crowded into the upper right quadrant below the liver. There were no metastases nor intraperitoneal nodules.

It was first thought that the condition was one of inoperable retroperitoneal sarcoma. Before closing the incision, I decided to open the posterior layer of peritoneum and obtain a better view of the tumor. An incision was made to the right of the descending colon in the posterior parietal peritoneum between the mesenteric vessels. When the peritoneum and capsule of the tumor were opened, the mass was found to present an interesting picture. The tumor was soft, multilobular and yellowish white, resembling in its gross appearance an ordinary fibrolipoma. The tumor was encapsulated. There was a definite line of cleavage between the capsule and the tumor which made the enucleation of the mass possible. The dissection was slow and at times laborious, but it was possible to enucleate the tumor in mass without severe hemorrhage or injury to the abdominal viscera. Some difficulty was encountered in delivering the large mass, which filled the upper abdomen, extending high up under the dome of the diaphragm. The greatest technical difficulty was encountered in avoiding injury to the mesenteric vessels which were stretched out across the surface of the tumor. The left suprarenal capsule, pancreas, spleen, vena cava, and abdominal aorta were exposed during the posterior enucleation of the mass. The tumor was dissected free except in the region of the left kidney. The growth entirely encircled the left kidney and was evidently its seat of origin. At this stage of the operation, the patient was beginning to show signs of shock. To have dissected free the kidney would have entailed a considerable length of time and great difficulty as there were numerous blood vessels coming into the tumor from the renal blood supply. The left kidney was therefore removed along with the tumor. After enucleation, the edges of the posterior parietal peritoneum could be easily brought together, leaving a smooth posterior abdominal wall. Inspection of the large bowel at the close of the operation did not elicit any evidence of impaired circulation. A small cigaret drain was placed down into the retroperitoneal space, and the abdominal incision closed in layers.

The patient made an uneventful convalescence and was discharged from the hospital well, September 1.

Pathologic Report.—The tumor weighed 25 pounds. The specimen consisted of a very large, nodular, semisolid tumor and the left kidney, with about 6 cm. of the left ureter. The tumor was made up roughly of four large nodules, and was apparently encapsulated, having been shelled out of its bed. The tumor was quite bloodless, and yellowish white. In general, the tumor had the appearance of a fibrolipoma (Fig. 1). Some of the nodules had a semitransparent, pale, gray color, exuding a slimy mucinous material, suggestive of a myxomatous tumor. The capsule of the kidney was densely adherent to the tumor. The kidney on section had a normal appearance.

Histologic Examination.—The histologic picture varied in different parts of the tumor. Sections showed that the bulk of the tumor was made up of fatty areolar tissue. The fat cells were very large and distended with fat. Scattered

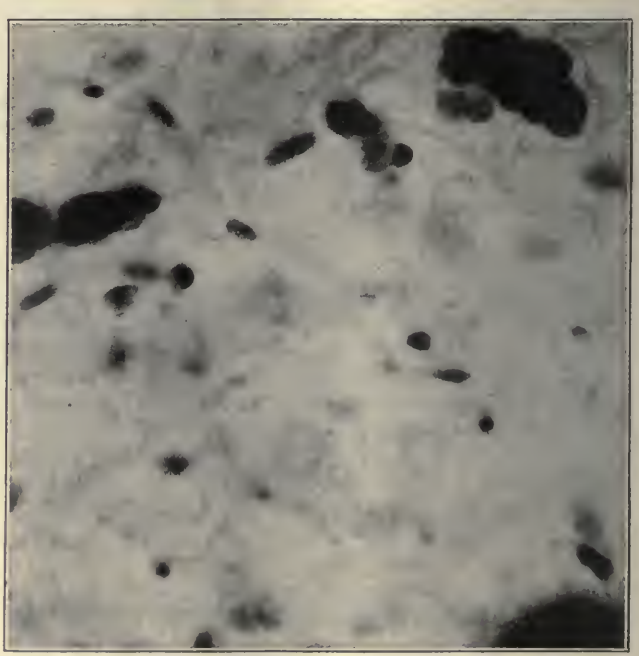


Fig. 4.—Edematous tumor tissue and groups of large irregular nuclei seen under the high power.

throughout the section among the fat cells were numerous small, irregular, deep staining nuclei (Fig. 2). Sections from other parts of the tumor showed areas which were very cellular and resembled a fibrosarcoma (Fig. 3). In other sections, the connective tissue stroma showed evidence of edema, with the collection of groups of irregular nuclei (Fig. 4). No mitotic figures were seen.

COMMENT

Adami [7] has classified retroperitoneal lipomas into three groups: (1) those arising from the perirenal fat; (2) those of doubtful origin, and (3) those arising from the mesenteric fat.

I shall confine my discussion in this report to a consideration of the first group, namely, perirenal lipomas, as the case reported falls into this group.

Etiology.—The etiology of perirenal lipomas is not known. It is an interesting fact that they are much more frequently seen in women than in men. Lecène,[12] in a recent report, has collected 113 instances from the literature. I shall quote from his figures.

Sex: Of the 113 cases, eighty-eight were in women, twenty-five in men; 70 per cent. of the tumors therefore occur in women.

Age: The age at which these tumors develop is variable. The youngest patient was reported by May,[13] in an infant, aged 1 year. Von Eiselsberg,[14] removed a lipoma, developing around the kidney, from a women, aged 70. The largest number occur between the ages of 40 and 50.

Site: The tumors develop from the fat of either kidney with equal frequency. Lecène gives forty-two arising from the region of the left kidney and forty-three from the region of the right kidney.

Symptoms.—It is very striking how few are the symptoms associated with the growth of these large tumors. The patients are first made aware of their condition by noticing an increase in the size of the abdomen. This swelling may be observed by the patient over a period of several months or years before a physician is consulted. It is because of this silent beginning that the tumors have usually attained enormous size when first seen by the surgeon. As the tumors increase in size, symptoms referable to pressure may develop. These pressure symptoms may be manifested by circulatory disturbances. The tumor may press on the vena cava, with edema of the extremities; on the portal system, with ascites and dilatation of the subcutaneous veins of the abdominal wall, or on the spermatic veins, with the formation of varicocele. With pressure developing on the nerve trunks, pain may become a prominent symptom. Shortness of breath may occur when the tumor acts mechanically by pressing on the diaphragm. Finally, certain digestive symptoms may be noted, loss of appetite, distention, diarrhea, or constipation. Intestinal obstruction is a rare complication which is readily understood when it is remembered that these tumors develop behind the peritoneum and not in direct contact with the intestinal viscera.

Diagnosis.—The diagnosis of perirenal lipomas is difficult and is made usually at necropsy or at the time of operation. The diagnosis rests on finding a large abdominal tumor with the history of slow growth, the tumor in character having a smooth, rounded surface, soft, or semifluctuant, without mobility, extending into the flanks in the region of one or both kidneys. On percussion, a strip of tympany corresponding to the distended colon running across the top of the mass, may suggest its retroperitoneal character. In the reported cases, the tumor has been most frequently mistaken for an ovarian cyst. The diagnosis, however, has been confused with practically all the tumors occurring in the abdomen, namely, malignant tumors of the kidneys, pancreatic cysts, hydatid cysts, abdominal pregnancy, myomata uteri, mesenteric cysts, etc. I should like to emphasize the importance of making a thorough cystoscopic study in all suspected cases of retroperitoneal lipoma. Aside from the valuable information obtained from examination of the urine and from pyelography in ruling out malignant tumors of the kidney, the data obtained as to the functional capacity of the kidneys may be of material help to the surgeon when, during the enucleation of the tumor, he finds it necessary to remove one of the kidneys. Nephrectomy was found necessary in forty-eight of the cases reported in the liteature.

Treatment.—The treatment of perirenal lipoma is surgical. Because of the size of these tumors and their intimate relationship to the colon, pancreas, kidneys and large vessels, the technical difficulties incident to their removal would at first thought seem insurmountable. However, there are certain anatomic considerations which make their enucleation less difficult. Reynolds and Wadsworth [11] reported careful anatomic studies of the fasciae surrounding the kidneys, and emphasized the importance of these structures in operations for the removal of renal tumors. Perirenal lipomas in their growth are limited by the perirenal fascia which normally surrounds the perirenal fat. This fascia is known as Gerota's capsule. Gerota [15] thus described the perirenal fascia:

> The prerenal and retrorenal layers are formed by the splitting of the subperitoneal fascia of the abdominal wall at the outer border of the kidney. The retrorenal layer passes inward between the perirenal fat in front and the fascia covering the anterior surfaces of the quadratus lumborum muscle behind. At the inner border of the psoas magnus it blends with the fascia covering the bodies of the lumbar vertebrae and the intervertebral disks. The anterior or prerenal layer passes in front of the perirenal fat between it and the peritoneum, and is continued inward just in front of the renal vessels, aorta and vena cava, to join the corresponding layer of the other side. Both the anterior and posterior layers are attached to the kidney capsule by fine fibrous bands which pass through the perirenal fat, but the fascia as such has no direct attachment to the kidney. The retrorenal layer extends upward in front of the diaphragm and hilum of the kidney and suprarenal capsule, at the upper border of which it is joined by the prerenal layer, the two becoming lost in the diaphragm. Below the kidney, the two layers approach each other but do not actually join and, becoming thinner and thinner, are lost in the loose areolar tissue of the iliac fossa.

From the description of the fasciae about the kidneys, it is obvious that a tumor arising from the perirenal fat would be enclosed within a fascial compartment, and that the enucleation of such tumor could be accomplished without danger of injury to important structures by a dissection carried out within this fascial compartment.

The approach to the tumor may be made through either a lumbar or an abdominal incision. Most authors advocate the abdominal route. The incision in the peritoneum should be made external and parallel to the colon. In this way, the colon may be mobilized as in operations for malignant tumors of the large bowel, and a ready approach to the tumor obtained without danger of injury to the blood supply of the intestine. If the tumor is very large, it may become necessary to remove it by morcellation. Drainage of the retro-

13. May: Arch. f. klin. Chir. **63**: 936.
14. Von Eiselsberg: Wien. klin. Wchnschr. **23**: 438, 1889.
15. Gerota: Beiträge zur Kenntniss des Befestigungsapparates der Niere, Arch. f. Anat. u. Entwicklungsgeschichte, 1895, p. 265.

peritoneal space is important and may be accomplished either transperitoneally or through a counter lumbar incision.

Prognosis.—The prognosis of retroperitoneal perirenal lipomas is grave. Benign in appearance, they become dangerous because of their great size. The intimate relationship of the tumors to important structures makes their removal difficult with a primary mortality of 20 per cent. in the cases reported in the literature. Recurrences after operation are frequent. These recurrent tumors have a tendency to undergo malignant degeneration.

SUMMARY

Retroperitoneal perirenal lipomas form a group of rare abdominal tumors, arising from the fat which normally surrounds the kidneys.

The etiology of these tumors is unknown. They occur most frequently between the ages of 40 and 50. In the reported cases, 70 per cent. occurred in women.

The symptoms of perirenal lipomas are those resulting from pressure of the tumor. Because of their silent beginning, the tumors have usually attained enormous size when first seen by the surgeon.

The diagnosis is difficult and is made usually at necropsy or at the time of operation.

The treatment is surgical. The intimate relationship of the tumor to important structures makes their removal difficult, with a primary mortality of 20 per cent. in the cases reported in the literature.

The prognosis is grave. Recurrences after operation are frequent. These recurrent tumors have a tendency to undergo malignant degeneration.

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TETANY FOLLOWING THYROIDECTOMY

PETER H. POPPENS, M.D.

CHICAGO

Tetany following thyroidectomy is rather uncommon. Through the researches of Sandstroem,[1] Gley[2] and Kohn[3] on the anatomy, and through the experiments of Gley, Vassale and Generali,[4] Biedl,[5] MacCallum and Voegtlin,[6] and others on the physiology of the parathyroid glands, surgeons have realized the importance of these bodies and are making every effort to avoid them. The treatment of tetany is not as yet uniform because, as Voegtlin[7] puts it, "the parathyroid gland has a definite function which is still incompletely understood." Although tetany is a manifestation of an increased irritability of the nervous system, it represents only a syndrome which may be very well controlled by calcium salts and is not necessarily the entire expression of the abnormality following parathyroidectomy.

Calcium and other nerve depressants, such as strontium, will prolong the life of parathyroidectomized animals a few days, but will not save them. Specific organotherapy, that is, treatment with parathyroid extract, has not lived up to expectations and has been virtually discarded. Parathyroid transplantation was shown by Halsted[8] to be of value only when isotransplants were used, although many investigators have reported transient and even permanent cures with homotransplants. Guleke,[9] in a careful review of the literature, states that those cases of parathyroid insufficiently reported cured by homotransplantation were probably of the transient variety. However, he believes that, although all homotransplants are eventually destroyed, the temporary success is of great importance in a practical way, for in many cases in which some of the individual's own parathyroid tissue is still present, the dangerous beginning stage of tetany can be bridged over; and when none of the individual's parathyroid tissue is left, it can, as a last resort, be replaced by continuously repeated homoplastic transplantation. Thyroid extract has produced results totally at variance with our present conception of the origin of tetany through injury of the parathyroids. Vassale, Kocher,[10] Biedl and many others report cessation of the attacks under this form of management.

While assisting Dr. Bevan I have recently had the opportunity to observe a case here reported in which thyroid gland extract apparently tided the patient over the critical period and enabled the parathyroids and any accessory parathyroids present to regain their functional activity.

REPORT OF CASE

History.—Mollie W., aged 25, was first admitted to the Presbyterian Hospital, Nov. 18, 1915. Thyroid enlargement had been noted for a year, while the marked toxic symptoms had been present for only three months. Nervousness and tachycardia were so extreme that the patient could scarcely get about. Badly diseased tonsils and seven teeth with partly decayed roots had been removed. The heart was slightly enlarged, and there was a systolic blow over the entire precordium. The rate was 140 a minute. Under rest in bed and the administration of bromids, the patient improved steadily. In the course of six weeks the pulse slowed down to between 90 and 100 a minute, and a partial thyroidectomy was considered advisable. December 30, the right lobe of the gland was removed with considerable difficulty, owing to the extreme vascularity of the goiter and its capsule. The patient made an uneventful recovery. She returned to work and seemed fully recovered. In 1917 she was married. A year later her husband was called to war. Owing to the worry incident to this and to business cares she became very nervous again, and all her former symptoms returned. She continued to work as a milliner up to March 20, 1920, at which time the strain of work and worry forced her to give up. She rested at home, though not in bed, for four weeks, but noticed no improvement in her condition and discovered that she had lost about 50 pounds in weight. On examination, April 20, she was found to be poorly nourished, with a pulse of 90 to 116 and with heart findings approximately as on her first admission. There was marked bulging of the left lobe of the thyroid.

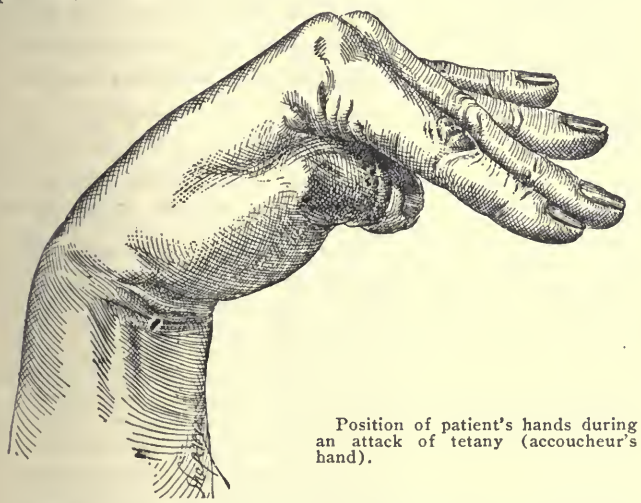
Operation and Result.—April 24, under ether anesthesia, a collar line incision was made, removing the old scar. The left lobe of the thyroid gland was freed with difficulty. The tissues were exceedingly vascular, and bled profusely. The superior vessels were caught in clamps and cut. The rest of the lobe was clamped and cut, leaving part of the inferior pole and isthmus. The patient left the operating room with a

1. Sandstroem, J.: Ueber eine neue Drüse beim Menchen und bei verschiedenen Säugetieren, cited in Schmidt's Jahrbuch, 1880.
2. Gley, E.: Note sur les fonctions de la glande thyroide chez le lapin et chez le chien, Compt. rend. Soc. de biol. **9**: 843, 1891; Effets de la thyroidectomie chez le lapin, Arch. de phys. norm. et path. **24**: 135, 1892.
3. Kohn, A.: Studien über die Schilddrüse, Arch. f. mikr. Anat. **44**:366, 1894-1895; **48**: 398, 1896.
4. Vassale and Generali: Sur les effets de l'extirpation de glandes parathyéoides, Arch. ital. de biol. **25**: 459, 1896; **26**: 61, 1896.
5. Biedl, Artur: Innere Sekretion, Vienna, 1913.
6. MacCallum and Voegtlin: On the Relation of Tetany to the Parathyroid Glands and to Calcium Metabolism, J. Exper. Med. **11**: 118, 1919.
7. Voegtlin, Carl: The Physiological and Pathological Importance of the Parathyroid Glands, Surg. Gynec. & Obst. **25**: 244, 1917.
8. Halsted, W. S.: Auto and Isotransplantation in Dogs of the Parathyroid Glandules. J. Exper. Med. **11**: 175, 1909.
9. Guleke: Chirurgie der Nebenschilddrüsen, Neue deutsche Chirurgie **9**: 128, 1913.
10. Kocher, Theodor: Die Pathologie der Schilddrüse, Tr. XXIII Kongress für innere Medizin, München, 1906.

pulse of 160 to 170, and of fair quality. Immediately after operation she was given 1,200 c.c. of physiologic sodium chlorid solution subcutaneously. Mental confusion, tremor and extreme restlessness began a few hours after the operation. She did not sleep during the night, and the toxic symptoms were much aggravated the following morning. Rectal saline was not retained. Fifteen hundred c.c. of physiologic sodium chlorid solution was again given by hypodermoclysis. The pulse gradually slowed down to about 100.

May 4, the pulse was of good quality, 88 to 110; temperature, 101 F. The general condition was good. Toxic symptoms were still somewhat marked. There was considerable infection beneath the skin flap. The patient was irrational during the night.

May 7, the mental symptoms cleared up. All night the patient complained of a "drawing" sensation and intensely painful spasms in her hands and feet. Her thumbs were sharply flexed and adducted. The two distal phalanges of the fingers were extended, the basal phalanges flexed (typical accoucheur's hand, Fig. 1). There was in addition some flexion at the wrist. The patient was unable to move her hands. The spasm was steady, tonic, and lasted nine hours. The following day she had a similar attack. Simultaneously with the spasm in the hands there was pain in the feet and legs. The great toes were both hyperextended and adducted in a tonic state of contraction. Chvostek's and Trousseau's signs were positive.



Position of patient's hands during an attack of tetany (accoucheur's hand).

Only lesser attacks were subsequently noted in the hands, but the patient continued to have two or three attacks a day in the feet, each lasting two or three hours. Between attacks there was a severe "drawing" sensation in the feet and legs, causing the patient extreme discomfort. The legs were so weak that the patient could scarcely move them. She was unable to leave her bed.

May 12, there were painful spasms in the feet, from two to ten hours' duration. There was also some blurring of vision.

May 15, two or three attacks of spasms in the feet had been noted each day. The patient was very exhausted. The administration of thyroid extract (Parke, Davis & Co.) was begun, in dosage of 1 grain by mouth, three times a day.

May 16, the patient was improved. She had no spasms. She said she felt very much better.

By May 20, there had been no spasms since the administration of thyroid extract was begun. The appetite was better. The patient still had occasional "drawing" sensation in the feet lasting ten minutes at a time. Her eyesight was much better. Chvostek's sign was present. No pain was felt. The pulse was from 78 to 90. There was still considerable discharge from the neck wound.

May 25, the patient was up and around. The general condition was much improved. She still occasionally had slight "drawing," but no pain.

By June 1, she had had four or five attacks a day of "drawing" in the feet, but no pain. The duration was one and one-half minutes. During this time the patient's toes were extended and adducted, and she was unable to move them. She walked with a slightly unsteady gait. Her hands still showed moderate tremor. Chvostek's and Trousseau's signs were still positive. Exophthalmos was markedly decreased.

June 5, a piece of necrotic tissue (4 by 1 cm.) extruded from the neck wound. No "drawing" sensation had been experienced for two days. There was still considerable tremor. Chvostek's and Trousseau's signs were present. Thyroid extract was stopped.

June 7, there were two slight attacks of "drawing." The neck wound had healed.

June 17, it was noted that there had been no attacks of "drawing" for the last ten days. The patient still had slight tremor of the hands. Chvostek's and Trousseau's signs were absent. She had gained 10 pounds in two weeks.

COMMENT

Owing to the fact that the tetany appeared and disappeared simultaneously with the infection, this was probably the principal etiologic factor. Thyroid extract apparently alleviated the acute symptoms and tided the patient over the critical period.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

SILVER PREPARATIONS (See New and Nonofficial Remedies, 1920, p. 306).

Proganol.—Silver Proteinate. Protein Silver. Argentum Proteinicum. A compound of silver and albumose containing not less than 8.3 per cent. of silver in organic combinaton.

Actions and Uses.—See general article, Silver Preparations, New and Nonofficial Remedies, 1920, p. 306.

Dosage.—From 0.25 to 1 per cent. solution in acute gonorrhea to 5 or 10 per cent. instillations in chronic cases; in cystitis and urethritis; in solutions of 1:1,000 to 1:2,000 as irrigations. Used also in form of bougies and tampons (from 5 to 10 per cent.). Its solutions in water are made by pouring a little *cold* water on the proganol, stirring into a thick paste, and gradually adding the remainder of the water with stirring; or by sprinkling the proganol on the surface of the whole of the water (cold) and setting the mixture aside until solution occurs.

Manufactured by the Heyden Chemical Works, New York. U. S. trademark No. 125,223.

BENZYL BENZOATE (See New and Nonofficial Remedies, 1920, p. 49).

The following dosage form has been accepted:

Twenty per cent. Aromatized Suspension made from Benzyl Benzoate (Van Dyk & Co.) (United Synthetic Chemical Corp.).—A mixture, each 100 Cc. containing benzyl benzoate for therapeutic use (Van Dyk & Co.), 20.32 Gm., acacia, 8.00 Gm., olive oil, 5.00 Gm., sugar, 12.00 Gm., flavors and water to make 100.00 Cc.

Dosage.—From 10 minims to 2 fluid drams three times a day.

Prepared by the United Synthetic Chemical Corporation, Jersey City, N. J., U. S. trademark.

Prenatal Care.—The days of prenatal care are in a very real sense days of preparation for labor. If we have won the patient's confidence during these days of preparation, we can conduct the labor in such a way as to prove to the patient, and to make her truly feel, that everything is being done to ease her suffering and to help her to bear the necessary pain with courage and endurance. We will then be able to make her readily understand why the time for anesthesia may have to be postponed, yes, even when necessary entirely omitted. All this we can do, if only the patient realizes that we are working absolutely for her best interest with the strength that comes from knowledge.—J. L. Huntington, *Am. Child Hyg. A. Tr.,* Nov. 11-13, 1919.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address : - - - "Medic, Chicago"

Subscription price : - - - - - Five dollars per annum in advance

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SATURDAY, OCTOBER 16, 1920

A NEW OBSERVATION ON THE MECHANISM OF HYPERSENSITIVENESS

The relation between the reactions of drug idiosyncrasy and of typical anaphylaxis is a problem of much practical importance, and one concerning which immunologists are not in agreement. For some time in the early stages of our knowledge of anaphylaxis all such reactions were assumed to represent the same sort of process as the skin and systemic reactions of serum sickness, which in turn were accepted as a manifestation of an anaphylactic reaction. It was soon realized, however, that serum sickness and drug hypersensitivity in many essential respects did not correspond to a true anaphylaxis reaction, although presenting many points of similarity, and it is now not agreed by all that these manifestations are even related to anaphylaxis. Especially is this true of the drug reactions, in which the exciting agent is not a protein, for it has not been established that typical anaphylaxis can be produced by anything besides proteins. The suggestion has been made that the drug reactions may depend on the formation of compounds between the drug and the body proteins, so that what amount to foreign proteins are formed and thus account for the resemblances to anaphylaxis which drug reactions may exhibit; but as yet this hypothesis has not been established. As the reactions of drug hypersensitivity have much in common with those of protein hypersensitivity as exhibited in hay-fever, asthma, eczema and many other conditions, the importance of any information on the nature of the processes concerned is apparent.

A new feature has recently been brought out by Auer [1] which may throw light on some of the manifestations of cutaneous hypersensitivity. Observing that operation wounds, made in sensitized dogs, at the time of reinjection showed a marked inflammatory reaction with a brawny edema, the suggestion was followed up, and these facts were observed: If the ear of a normal rabbit is rubbed gently with xylene, there occurs a moderate inflammatory reaction which disappears in a short time without serious injury to the skin. The effects are the same in a rabbit that has been sensitized to a foreign protein; but in rabbits that have been sensitized and then reinjected with the same protein, the xylene commonly produces a violent reaction, with exfoliative dermatitis followed by dry gangrene of the tip of the ears. That is, in normal rabbits the xylene acts as a rubefacient, while in sensitized and reinjected animals it acts as a vesicant and escharotic.

The explanation of this striking effect seems to be simple. The slight inflammation produced by the xylene leads to a certain amount of inflammatory exudate. In the sensitized animals that have been recently reinjected with the sensitizing protein, the blood contains more or less free antigen, which is poured out into the tissues with the exudate. Here it produces a local reaction with the sensitized tissues the same as if it had been locally injected. Presumably similar effects could occur in any other tissue or organ. The importance of this observation lies in the recognition of a hitherto unappreciated mechanism by which anaphylactic reactions may be caused, under certain conditions, by substances which themselves do not produce anaphylaxis.

To quote Auer's own comments:

> It is possible that this process of autoinoculation will aid in explaining the causation of a number of more or less temporary functional derangements of obscure origin in the human subject. In my opinion it is quite probable that sensitization to one or several alien proteins exists much more frequently in man than is suspected, the undenatured protein gaining access to the circulating juices by way of a permeable gastro-intestinal mucosa or the nasal and pharyngeal mucous membranes by inhalation; the uncritical use of serums and vaccines at the present time also undoubtedly adds to the number of those sensitized unnecessarily. Severe intoxication of the sensitized individual, however, occurs but rarely, since the amount of foreign protein necessary to cause obvious general symptoms on reinjection exceeds hundreds and thousands of times the amount which sensitizes. It is in such individuals that the mechanism described in this paper may come into action and produce a large variety of effects.

1. Auer, John: Local Autoinoculation of the Sensitized Organism with Foreign Protein as a Cause of Abnormal Reactions, J. Exper. Med. 32: 427 (Oct.) 1920.

THE TRANSPLANTATION OF GLANDULAR STRUCTURES

Those whose memory spans a considerable period of years will not manifest an exuberance of enthusiasm over the reports of the "latest successes" in the rejuvenation of man. The claims of Brown-Séquard with respect to testicular extracts and the misrepresentations made of them are still fresh in the minds of many now living. The pendulum of belief is easily swung too far by a minimum of evidence; but sooner or later it returns to its normal starting point. At present there seems to be a sort of international scrambling for priority recognition in the alleged discovery of the profound secret of restoring lost youth and youthful vigor. As one reads the reports of experiments and actual operative procedures on man, one must marvel at the ease with which fragmentary data are woven into a story of technical success.

As an educational preparation for some of these accounts, such as our Berlin correspondent recently reported,[1] certain facts should be recognized by the judicial reader. There is no question that in addition to forming and liberating the specific reproductive cells, the spermatozoa and ova, the sex glands also exert a profound influence on the development of the body and on certain psychic functions. Experimental evidence makes it clear, however, that the latter effects are negotiated not through direct nervous channels but by the intermediation of chemical products elaborated somewhere in the sex glands. This result is the expression of the action of what nowadays would be termed a hormone, or was designated a few years ago as an internal secretion. That chemical rather than nervous factors are concerned was recognized years ago in Berthold's experiment. Cockerels whose testicles had been transplanted to some distant part of the body nevertheless developed the vocal powers, the combativeness, the comb and the sexual instincts of normal cocks. In such cases the control exercised by the transplanted organs must be transmitted by way of the blood rather than the nervous system.

In addition to the reproductive cells proper, there are other cell groups in the sex glands. In the testes these are known as the interstitial cells of Leydig, while in the ovaries there are the lutein cells. The interstitial cells lie outside the seminal tubules. When a young animal is castrated, the secondary sexual characters do not develop. But by ligation of the vasa deferentia the sexual elements may be made to disappear, while the interstitial cells remain and may even increase in number. The action of the roentgen rays on the testes may likewise result in the loss of the sperm cells without disappearance of the interstitial cells or the sex characters and instincts. The experiments of Steinach,[2] reported in 1912, furnished the clearest proof of the importance of these cells. When the testes were transplanted in very young males from their normal position to other regions, the animals developed normally and showed the usual secondary sexual characteristics, although the sexual elements disappeared. Hence sexual puberty in such cases seems to be dependent on an internal secretion from the interstitial cells, wherefore Steinach designated them as "puberty glands."

There is an important and little recognized feature on which the success of transplantation and survival of these and other glandular structures hinges. Various investigators have pointed out as a result of their own experiments that the removal of the corresponding structure is a condition sine qua non for the ingrafting and efficiency of the comparable organs. Thus, castration or a loss of the sex organ concerned is essential for the successful grafting of the corresponding gonad; otherwise the transplant will die. It would thus seem as if there were a sort of immunity in the organism against the development of additional corresponding ingrafted glands. Sand,[3] of the University of Copenhagen, to explain the atrophy of the implant when its corresponding gland is still intact, has offered the hypothesis that in every organism are found certain substances which are necessary for the sexual glands; these substances the latter try to absorb to the greatest possible extent; the normally situated, nontransplanted gonads have the best chances of being able to absorb these substances, for which reason the foreign gonads, transplanted to normal organisms, cannot get enough of the necessary special pabulum and therefore perish. The "rejuvenation" of the aged or the impotent thus finds certain inherent possible limitations which the scientist must duly recognize, even if they are overlooked in the regularly reappearing flamboyant reports of the restoration of physiologic powers that are lost.

1. "The Puberty Glands," Foreign Letters, J. A. M. A. **75**: 755 (Sept. 11) 1920.
2. Steinach: Arch. f. d. ges. Physiol. (Pflüger's) **144**: 71, 1912.

REFINEMENTS IN THE USE OF CHAULMOOGRA OIL IN THE TREATMENT OF LEPROSY

In 1909, the Second International Conference on Leprosy, held at Bergen, Norway, declared by formal resolution that "the clinical study of leprosy induces the belief that it is not incurable." Today, scarcely more than a decade later, tangible evidence may be said to exist in justification of this optimistic outlook for the management of what has long been a "disheartening disease." In the therapy of leprosy, chaulmoogra oil has achieved a degree of success that has placed it in the forefront of all proposed remedies. It is at present unquestionably the therapeutic agent of first choice in use by those whose clinical experience entitles them to recognition as experts in the treatment of the disease. In 1916, members of the U. S. Public Health Service felt justified in stating publicly that chaulmoogra oil "is helpful to many cases of leprosy, perhaps the majority."[4]

To A. L. Dean, president and chemist of the University of Hawaii, is especially due the credit of inaugurating a vigorous search for the "active principles" that might account for the specific behavior of chaulmoogra oil in leprosy. It appeared possible that the distinctive action of chaulmoogra oil, as heretofore reported, may be due either to the glycerids of the unique fatty acids of chaulmoogra oil or to the presence of some other oil-soluble constituent not a glycerid. None of the early attempts to identify the active agents had led to success. Dean and his co-workers separated the oil into fractions of its fatty acids; they found, further, that the ethyl esters of the fatty acids

3. Sand, K.: Experiments on the Internal Secretion of the Sexual Glands, Especially on Experimental Hermaphroditism, J. Physiol. **53**: 257 (Dec.) 1919.
4. McCoy, G. W., and Hollman, H. T.: Bull. 75, U. S. P. H. S., January, 1916. This gives a review of the earlier literature covering the use of chaulmoogra oil.

are thin fluid oils lending themselves readily to intramuscular injection and are readily absorbed. The promising outcome of the earliest attempts to use such products therapeutically was reviewed not long ago in THE JOURNAL.[5] Continued trials made at the Leprosy Investigation Station of the U. S. Public Health Service and the Kalihi Hospital in Hawaii by McDonald and Dean [6] seem to justify more than ever before the statement that chaulmoogra oil contains one or more agents that exert a marked therapeutic action in many cases of leprosy. They found that the intramuscular injection of the soluble ethyl esters of the fatty acids of chaulmoogra oil usually leads to a rapid improvement in the clinical symptoms of leprosy. In many cases the lesions disappear, except for scars and permanent injuries, and the leprosy bacillus can no longer be demonstrated.

The use of iodin in treatment is not unknown, and this agent has been employed for several years. As some of the fatty acid radicals in the chaulmoogra oil are "unsaturated," in the chemical sense, so that they readily add iodin, which thereby becomes "masked" and has none of the irritating properties of the free element, McDonald and Dean have prepared mixed ethyl esters of the fatty acids carrying from 2 to 8 per cent. of iodin. The results with such products have been good, but there is no adequate experimental proof that this addition of iodin causes any increase in the effectiveness of the materials used. All of the available evidence obtained from the use of fractions of the fatty acids of chaulmoogra oil indicates that the therapeutic action is due to one or more of the fatty acids of the oil or to some associated substance as yet unidentified. The various methods of fractionation heretofore employed have failed to demonstrate the active agent. Although conclusive evidence is not at hand, it is probable that the oral administration of chaulmoogra oil derivatives is of minor importance compared with the injections.

Ideal management of leprosy demands not merely the specific treatment of the infection but also the maintenance of general bodily vigor and "building up" of the organism, precisely as in the therapy of tuberculosis. The ablation of necrotic tissues is an important detail. As an adjuvant measure, hypodermic injection of the ethyl esters of chaulmoogra oil into leprous nodules is reported to induce marked swelling with ultimate recession of the lesions, even when these are very resistant to the usual procedures. In the case of a malady like leprosy, a cheerful outlook is a blessing even when it is limited by much uncertainty and the recollection of past failures. The Public Health Service workers are not unmindful of the danger of false hopes. They frankly admit that it is too early to say that leprosy is cured by the newer therapy, because there is no adequate test to establish such a verdict. However, as McDonald and Dean circumspectly conclude, whether or not the apparent cures are real and permanent, it is evident that we have a valuable agent at our disposal in the control of the disease.

5. The Chemotherapy of Chaulmoogra Oil, editorial, J. A. M. A. **74**: 1579 (June 5) 1920.

6. McDonald, J. T., and Dean, A. L.: The Treatment of Leprosy, with Especial Reference to Some New Chaulmoogra Oil Derivatives, Pub. Health Rep. **35**: 1959 (Aug. 20) 1920.

Current Comment

TOXICITY OF ARSPHENAMIN

One of the factors in influencing the toxicity of arsphenamin and neo-arsphenamin is brought out in a recent report by Roth,[1] who has determined, by experimental methods, that shaking a solution of the drugs for even one minute brings about marked increase in toxicity. The presence of air is necessary to induce the added toxic action, as shaking in the absence of air is not accompanied by any increase of poisonous action. It is pointed out that preparations which are soluble with difficulty are likely to be shaken to aid in hurrying the drug into solution, with the risk that clinical reactions may occur. The paper illustrates strikingly the part that may be played by what may seem relatively insignificant factors in the technic of preparing the solutions of arsenicals of the arsphenamin group for use on patients.

THE BABIES' CHANCE

If the babies of the United States were to hold a vote as to their favorite cities, they would probably select Brookline, Mass.; Berkeley, Calif.; Aberdeen, Wash.; Marinette, Wis.; Everett, Mass.; Madison, Wis.; Piqua, Ohio, or Alameda, Calif.; for these eight cities, each with an infant mortality rate under 50, give the baby the best chance for its life. Of cities under 50,000 population, Burlington, Vt., Paducah, Ky., and Hannibal, Mo., have the highest death rates, varying from 145 to 150, giving the baby just one-third the chance that it would have in any of the eight cities mentioned above. Of cities from 50,000 to 100,000, Berkeley, Calif., with a rate of 44, Fort Wayne, Ind., 51, and Topeka, Kan., 59, lead, while El Paso, Texas, with 245, Knoxville, Tenn., 135, and Racine, Wis., 123, have the ignominy that goes with carelessness for the baby's health. Of cities from 100,000 to 250,000, Houston, Texas, with a rate of 61, Oakland, Calif., 62, and Cambridge, Mass., 64, compare with New Bedford, Mass., 124, Camden, N. J, 121, and Nashville, Tenn., 116. Of cities over 250,000, Seattle, with a rate of 54, Minneapolis, 61, and San Francisco, 65, compare with Pittsburgh, 115, Buffalo, 107, and Kansas City, 103. These figures were based on the reports of 520 health officers in cities of more than 100,000 population. The figures, of course, are obtained only when the number of reported births was furnished. Chicago, the second largest city in the United States, failed to give this information on three

1. Roth, G. B.: The Effect of Shaking Alkalinized Aqueous Solutions of Arsphenamine and Aqueous Solutions of Neoarsphenamine in the Presence of Air, Pub. Health Rep. **35**: 2205 (Sept. 17) 1920.

requests, and hence is omitted from the table. New York, with a population of 5,500,000, has a rate of 82, as compared with an average of 102.2 from 1911 to 1915. Philadelphia, with almost 2,000,000 population, had a rate of 90, as compared with an average of 117.4 for the period mentioned. The states of Alabama, Colorado, Florida, Georgia, Illinois, Louisiana, Missouri, Montana, Nebraska, New Jersey, Tennessee, Texas and West Virginia are not in the birth registration area. The American Child Hygiene Association, which has conducted this investigation, points out, in a footnote to the large statistical chart which it has published, the importance of registration of every birth. Citizenship and the right to inherit property, to mention only a few things, may depend on the fact of the baby's birth having been registered. The baby ought to have the best chance that his parents and the state can give him.

RAPID DISSEMINATION OF SPIROCHETES FROM INITIAL SYPHILITIC LESION

It has repeatedly been remarked that the initial lesion is the clinical expression of syphilis in its primary and localized form. The appearance of further obvious manifestations is usually delayed for a considerable time—the so-called second incubation period—in man. What happens with respect to the infectious agency during this interval? Does it remain confined to the primary focus of entry, the site of original inoculation or to lymphatic structures nearby, or is the delay in subsequent manifestation merely an expression of the inability to produce patent damage? Such questions have remained unanswered until recently. The advent of the methods of study by local inoculations of *Spirochaeta pallida* in rabbits, a technic so successfully pursued in the the researches at the Rockefeller Institute for Medical Research, have made it possible to pursue the inquiries in a scientific manner. Brown and Pearce [1] have attempted to ascertain suggestive data on these points by a systematic determination of the presence of spirochetes in the inguinal lymph nodes and the circulating blood of rabbits at various intervals after scrotal or testicular inoculation. The results, though representing an analogy with conditions in human cases rather than an exact reproduction of them, nevertheless have a distinct interest to syphilology. The New York pathologists conclude from them that, for practical purposes, there is probably no appreciable time during which a syphilitic infection can be regarded as confined to the focus of entry but that, as soon as infection takes place, the spirochetes begin to multiply and invade the surrounding tissues, gaining access to both the lymphatics and the blood stream, and are widely distributed over the body even before an initial lesion can be detected. In view of these facts it is possible to obtain a better conception of the significance of the delay in the development and appearance of generalized lesions. The latter are determined by the localization and concentration of spirochetes at given points rather than as indications of the time required for their dissemination.

1. Brown, W. H., and Pearce, Louise: A Note on the Dissemination of Spirochaeta Pallida from the Primary Focus of Infection, Arch. Dermatol. & Syphilol. 2: 470 (Oct.) 1920.

A VICTORY IN THE FIGHT AGAINST YELLOW FEVER

Nations are ungrateful and individuals have short memories: hence the existence of memorials and the need of reminders. In 1842 half of the population of Guayaquil in Ecuador was carried off by yellow fever. The menace continued there persistently until 1919. Since May of last year not a case of the disease has been reported. This outcome was the result of little more than six months' work in the campaign of the International Health Board of the Rockefeller Foundation to eradicate the dire disease in its endemic strongholds. There were scoffers and doubters—progress always has to deal with prejudice—there was indifference and inertia, but the demonstration of the control of a seemingly unmanageable calamity has been effectually made. The history of how success was achieved includes the chapter, now well known to medical readers, on the relation of the female Stegomyia mosquito to the transmission of the disease, with its story of the heroism of officers and enlisted men in our government service and the sacrifice of Lazear's life in the interests of science and humanity. There is the further chapter of the work of Gorgas, first at Havana and later in the Panama Zone, followed by the triumphs of Oswaldo Cruz at Rio de Janeiro and Licéaga at Vera Cruz. All this has been entertainingly reviewed in the latest report of President Vincent [1] of the Rockefeller Foundation. Today yellow fever is restricted to comparatively few endemic centers which remain seed-beds of the disease. It was under the leadership of Gorgas that the Rockefeller Foundation embarked in 1918 on the venture of eradicating these. In the words of Vincent, "General Gorgas' ambition to write 'The Last Chapter of Yellow Fever' seems no Utopian dream." Even though he himself can no longer complete the story, preventive medicine must not allow the great deserts of America's departed pioneer sanitarian to be forgotten.

FAKE ORANGE BEVERAGES

The orange and other citrus fruits have gained a dietary importance to which they are entitled not only in view of their valued palatability, but also because they possess nutritive potencies that cannot be expressed in terms of flavor or fuel value. Orange juice is relied on as an antiscorbutic in infant feeding by large numbers of persons who administer food mixtures so prepared for some reason as to be more or less deficient in this protective property. Heated milk, as well as many other conserved and dried food products of undeniable nutrient value, have lost their antiscorbutic potency in the process of preparation. Orange juice serves widely, where obtainable, to remedy the deficiency; oranges merit additional attention because they are relatively rich also in the water-soluble vitamin B, sometimes designated as antineuritic vitamin, which promotes well-being in as yet undetermined ways. The potency of orange juice in respect to this vitamin is even said to be similar to that of comparable

1. Vincent, G. E.: Public Health and Medical Education in Many Lands, A Review for 1919, New York, the Rockefeller Foundation, 1920.

volumes of cow's milk. In view of these facts, the government chemists have done well to sound a timely warning against the "fake" orange beverages that have lately come to their attention.[1] The officials state that in most cases the fraudulent products consist of sweetened carbonated water, flavored with a little oil from the peel of the orange and artificially colored to imitate orange juice. They do not run counter to the Food and Drugs Act to the extent of bearing the name orange juice, which would be a direct violation: usually a suggestive coined name supplemented by misleading pictured labels is depended on to win the way. We gladly reiterate the request of the Public Health Service: A word of warning by physicians when recommending orange juice will go a long way toward preventing mothers from being misled by these deceptive labels and advertisements. The best way to get orange juice for children is to buy the fruit and squeeze out the juice.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

City Hospital Under Construction.—The work of building the new City Hospital in Montgomery is nearing completion and it is expected that the institution will be opened for patients about Jan. 1, 1921.

State Employs Hotel Inspector.—The state health department has appointed a state hotel inspector whose sole duty will be to see that the health statutes regarding the management of hotels are enforced.

COLORADO

Personal.—Dr. Samuel A. Maxwell, Emporia, Kan., has been appointed assistant medical supervisor of the Myron Stratton Home, Colorado Springs.

Physicians Form Cancer Control Society.—A Colorado branch of the American Society for the Control of Cancer was formed at a recent meeting of physicians in Colorado Springs under the chairmanship of Dr. Charles F. Gardiner, Colorado Springs. An educational campaign to acquaint the public with the growing evils of cancer by a series of lectures and the distribution of pamphlets is planned.

FLORIDA

Free Treatment for Cancer Patients.—The Florida State Board of Health has made provision to furnish free treatment to indigent patients suffering from cancer in advanced stages. Every citizen of Florida afflicted with inoperable cancer and unable to pay for proper treatment may secure radium or roentgen-ray treatment, free of cost, at Jacksonville.

GEORGIA

Meeting of Health Association.—A conference of county health officers with the state and federal health officials was held at Augusta, October 7-8. While in Augusta the health officers inspected the new department of health which has just been organized by the University of Georgia Medical School, of which Dr. C. C. Applewhite is in charge.

Health News.—Marion County has adopted the Ellis Health Law. This makes the twenty-fifth county in the state to adopt this measure by which a full time commissioner of health will be employed.——The city of Griffin and Spalding County recently approved a $10,000 budget with which to begin the city and county health work. As yet, no commissioner of health has been selected.

ILLINOIS

Medical Society Disapproves Whisky Prescriptions.—Champaign County Medical Society, in session, September 21, adopted a formal resolution condemning the practice of giving prescriptions for whisky, on the ground that the practice was degrading to the medical profession.

State Conference of Charities.—The Illinois State Conference of Charities and Corrections will meet at Jacksonville, October 29-31, in its twenty-fourth annual session. The purpose of the meeting will be personal conference of community welfare workers; presentation of various state plans for institutions and social agencies, and visits to institutions near Jacksonville. Headquarters will be at Dunlap House.

Chicago

Hookworm Disease Reported.—A case of hookworm disease, rarely found north of the Ohio River, was reported to the Chicago Health Department in a police officer under treatment at the Jefferson Park Hospital. Another case of the disease was recently reported to the state health authorities from Williamson County.

Opium Smuggling Uncovered.—What is evidently an international opium smuggling ring with headquarters in New York and Chicago and other important cities of the United States was uncovered by federal authorities who seized a trunk containing 110 one-pound cans of opium, which had been shipped from San Francisco.

Loyola Mothercraft Lectures.—Loyola University School of Medicine initiated a series of popular lectures on mothercraft, Monday evening, October 4. The full series of twelve lectures will be given, one on each Monday evening from now until December 20, inclusive, at the school, 706 South Lincoln Street. The lectures are free, and interested persons are invited to attend.

INDIANA

School Medical Inspectors.—The school board of Evansville recently appointed a new inspection board consisting of Drs. Hobart Conway Ruddick, Paul Lynch, O. C. Stevens, John Hare and Herman Baker.

Venereal Disease Clinic at South Bend.—During the last year the South Bend venereal disease clinic, established with surplus funds from the community war chest, has treated upward of 1,100 patients at a cost of approximately $4,000. The war chest having been exhausted, the clinic has been taken over by the city council, which has promised an annual appropriation of $5,000 to carry on the work.

Health Day in Wabash County.—A "county health day," which is expected to become general in every county of the state, was held in Wabash, October 4, when the state board of health convened there for their thirty-first session. This is the first session that the state board of health ever held outside of Indianapolis. Special meetings for physicians and the public were held on the evenings of October 5 and 6.

LOUISIANA

Leper Home Ready for Government.—The Louisiana Leper Home, which has been purchased by the United States government, is ready to be turned over to the U. S. Public Health Service. The home will be under the charge of Dr. O. E. Denning and facilities for caring for as many as 500 patients will be provided.

Personal.—Dr. Clarence Pierson has resigned as superintendent of the Louisiana Hospital for Insane, Jackson. As soon as a successor is selected he will leave for Alexandria, where he will establish a sanatorium for mental and nervous diseases. It is planned that the new institution will have a capacity of from fifty to seventy-five beds.

MARYLAND

Personal.—Dr. Charles E. Simon, professor of clinical pathology at the University of Maryland, has resigned to accept the position of lecturer at the School of Hygiene and Public Health of Johns Hopkins University.

School Board Favors Medical Examination.—An ordinance making compulsory the medical examination of children attending public schools has been submitted to the city council at the request of the school board. As the law now stands,

1. "Fake" Orange Beverages, Pub. Health Rep. 35: 2204 (Sept. 17) 1920.

pupils are not required to submit to examination unless their parents consent.

Bay View Hospital Needs Increased Appropriation.—An acute situation has arisen at Bay View Hospital, due to resignations, and the board of estimates of Baltimore city has been called on to authorize a general increase in the salaries for nurses and attendants, effective October 1. The present salary schedule is inadequate to keep sufficient nurses and attendants in the institution, and the staff has become alarmingly short.

Hospital Site Rejected.—Following a conference of the hospital commission with the Baltimore city officials, the city has rejected the site of the Child's Nursery and Hospital for a municipal hospital. The hospital commission, of which Dr. J. M. T. Finney, Baltimore, is chairman, opposed the purchase of the institution because it is thought more land is needed, and it advocates a site large enough to develop a hospital plan that will take care of the future needs of the city.

Fort Transfer Awaits Removal of Patients.—Since the War Department has requested the return of Fort McHenry for use as headquarters for the Third Army Corps, the U. S. Public Health Service will have to find accommodations for approximately 400 ex-service men who are now in the hospital at the fort. Several rumors are current that a new and larger hospital will be built on the site of the Marine Hospital, which had been abandoned by the Public Health Service, as it will be necessary to provide for the treatment of sailors employed on ships coming to Baltimore, as well as War Risk Insurance beneficiaries in this zone.

MASSACHUSETTS

Cutter Lectures on Preventive Medicine.—The Cutter Lectures on Preventive Medicine and Hygiene, which are given annually under the terms of a bequest from John Clarence Cutter, will be delivered at the Harvard Medical School Amphitheater, October 19 and 20. Dr. Theobald Smith of the Rockefeller Institute of Medical Research will deliver the lectures this year on "Medical Research and the Conservation of Food-Producing Animals."

Infantile Paralysis Epidemic.—The Massachusetts State Department of Health has established a clinic in an attempt to check the epidemic of infantile paralysis, for the purpose of aiding physicians in an early diagnosis of doubtful cases. The clinic will be in charge of Dr. Arthur B. Lyon, representing the Harvard Infantile Paralysis Commission, which is cooperating with the state in the campaign. Up to September 16, 194 cases of the disease were reported, as against ninety-four cases during August. Dr. Wolfert G. Webber, Brookline, has been appointed epidemiologist to the Boston Health Department for a period of three months. A special ward for infantile paralysis victims has been opened at the Boston City Hospital, and this will allow complete isolation of patients.

MICHIGAN

Tuberculosis Survey Among Ex-Soldiers.—The Michigan State Department of Health under the direction of Dr. Richard M. Olin, commissioner, is making a search for all probable cases of tuberculosis among ex-soldiers. The movement is one of the many steps made by the department in an effort to get statistics regarding the prevalence of the disease in the state. Several months ago it was reported that 1,147 out of 142,297 former soldiers were known to be suffering from tuberculosis in some stage.

Success of Venereal Clinics.—The success of the venereal clinics conducted by the Detroit Department of Health is shown by the growth of attendance. The attendance records disclose that patients have increased within the last four years from a monthly average of 269 to 2,920. This attendance was purely voluntary. In addition to this there was a monthly attendance at the compulsory police court clinics within the last month of 363. This work now necessitates physicians' services of 294 hours, and nurses' service of 1,296 hours, each month. Less than 5 per cent. of the voluntary clinic attendants are repeaters.

MINNESOTA

School Medical Inspector Named.—Dr. Margaret Nickerson has been appointed full-time medical inspector of schools by the Minneapolis Board of Education.

Osler Society of Medical History.—A group of twelve physicians of the Mayo Foundation has organized the "Osler Society for the Study of Medical History." Dr. William C. MacCarty, associate professor of pathology, has been chosen president.

Liquor Permits Canceled.—It is reported that the permit to write prescriptions for intoxicating liquor of Dr. Harry A. Baker, Minneapolis, was revoked because it is alleged he wrote prescriptions for himself, and that of Henry Wuerzinger was canceled on the ground that, being a chiropractor, he is not entitled to a permit.

MISSISSIPPI

Superintendent of Home for Feebleminded.—The board of trustees of the Mississippi Home for the Feebleminded, to be built at Ellisville, has elected a superintendent, Dr. Byran E. Briggs, formerly assistant superintendent to the Michigan School for Feebleminded, Lapeer, Mich.

Hookworm Disease in Tippah County.—In a recent examination of residents of Tippah County conducted by Dr. A. D. Tisdale, director of the Tippah County health unit, about 30 per cent. of approximately 600 people examined were found infected with hookworm disease. Although this percentage is high, it is somewhat lower than the ratio in other counties of the state.

MONTANA

Anthrax Case in Butte.—A case of anthrax was discovered recently in a miner in Butte, and the infection was attributed to the use of a new shaving brush.

Public Clinic Organized.—For the purpose of advising and instructing mothers in the care and feeding of children, a child welfare station was recently established at Miles City. The county nurse will be in charge of the clinic.

NEW YORK

Personal.—Dr. J. L. Rice, Maysville, Ky., has been appointed a sanitary supervisor of the state department of health and assigned to the capital district.

New Hospital for Brooklyn.—The new Cumberland Street Hospital project which had been abandoned by the city of Brooklyn was recently revived. A contract for the new buildings, totaling $663,000, has been awarded.

Failure of Automatic Valves Causes Typhoid.—Seventy-nine cases of typhoid at Seneca Falls have apparently been due to the contamination of the village water supply from an infected private water supply through a leaky automatic check valve. Health officers have been urged to investigate all private industrial water supplies in their district where the water is of questionable quality. Where single automatic check valves are discovered the manufacturer in question is to be urged to sever completely all connection between the public and private supplies or to install a double check valve in accordance with the recommendations of the engineering division of the state department of health.

New York City

Harvey Society Lectures.—Dr. Jacques Loeb of the Rockefeller Institute for Medical Research will deliver the first of the Harvey Society Lectures at the New York Academy of Medicine, October 16, on "The Proteins and Colloidal Chemistry."

Typhus Patient Arrives in Port.—Discovery of a case of typhus fever in the steerage of the *Noordam*, Holland-American line, October 5, caused the detention of that vessel in quarantine. The 612 steerage passengers were taken to Swinburne and Hoffman Islands where they will be held in quarantine for twelve days.

New York Academy of Medicine Opens.—The first stated meeting of the New York Academy of Medicine for the season 1920-1921 was held, October 7. The program, arranged by the urologic section, consisted of a paper and motion picture demonstration of "Present Measures for Limiting Venereal Infection," by Col. C. C. Pierce, U. S. P. H. S.

Federal Agents Seize Drugs.—The largest seizure of habit-forming drugs ever made in this state occurred, October 1, when internal revenue agents raided the premises of the Aberdeen Chemical Co. and took possession of $250,000 worth of cocain and heroin, on the ground that they were acquired through processes in violation of the Harrison Narcotic Act.

NORTH CAROLINA

Lamar Lecturer Announced.—Dr. W. S. Rankin, secretary of the state board of health, has been invited to deliver the Lamar Lectures in Johns Hopkins Hospital early next year

Change of Health Officers.—Dr. Andrew J Warren has resigned as health officer of Charlotte to accept the appointment of director of county health bureau, Kansas State Board of Health. He will be succeeded by Dr. Wilbur A. McPhaul, lately city health officer of Birmingham, Ala.

Vaccination Campaign Against Typhoid.—The campaign conducted last month by health officers of Mecklenburg County to induce the public to submit to typhoid vaccination, proved highly successful and approximately 2,000 responded. Very few failed to take the full course of three treatments.

NORTH DAKOTA

Regulations of State Board of Health.—The revised edition of the rules and regulations of the state board of health has been printed and is ready for distribution. Physicians and others interested in health work may secure a copy by applying to the secretary of the board.

OHIO

Medical College Centennial.—The University of Cincinnati College of Medicine will celebrate its centennial anniversary, November 6. Sir Auckland Geddes, British ambassador to the United States, has accepted an invitation to deliver an address at the celebration.

Academy of Medicine Holds First Meeting.—The Cincinnati Academy of Medicine, which was organized in June, 1920, held its first meeting, September 27, at which Dr. Louis Ransohoff discussed the subject of tumors from the standpoint of the surgeon. The executive offices of the academy are at the Commercial-Tribune Building.

OKLAHOMA

New Health Officer in Pawnee.—Dr. Felix T. Gastineau has been appointed health officer of Pawnee County to succeed Dr. George K. Waters, resigned.

Shawnee Adopts Food Laws.—Shawnee City Council recently passed an ordinance making it a misdemeanor for any person having a communicable disease to work in any restaurant, candy manufacturing establishment, soda fountain, ice cream manufactory or other place where finished foods are served to the public. The ordinance requires the examination of all persons employed in any branch of these establishments and the expulsion of those found diseased.

OREGON

State Health Officer Resigns.—Dr. David N. Roberg, secretary of the state board of health, has tendered his resignation in order that he may have an opportunity to pursue postgraduate medical studies.

Proposed Constitutional Amendment.—The following proposed amendment to Article XV of the constitution of the state of Oregon will be submitted to the voters at the coming elections:

Sec. 9. No form of vaccination, inoculation, or other medication shall be made a condition in this state for admission to, or attendance in, any public school, college, university, or other educational institution; or for the employment of any person in any capacity, or for the exercise of any right, the performance of any duty, or the enjoyment of any privilege.

All provisions of the constitution and laws of this state and of the charters and ordinances of all cities, towns, municipalities or counties therein, in conflict with this amendment, are hereby repealed.

PENNSYLVANIA

New Hospital at Iron City.—A new hospital of fifteen beds with laboratory and roentgen-ray facilities, is under construction at Iron City.

Hospital Being Enlarged.—The Chambersburg Hospital, with a present capacity of sixty beds, is being enlarged to accommodate 100 patients.

License Revoked.—It is reported that the license to practice medicine in Pennsylvania of Dr. William Bricker, Sr., now in South America, has been revoked by the Bureau of Medical Education and Licensure. The licenses of Drs. H. Leslie Lantz, Wilkes-Barre, and V. L. Humphrey, Port Allegany, are said to have been suspended on account of drug addiction.

State Medical Association Meeting.—At the seventieth annual meeting of the Medical Society of Pennsylvania, held at Pittsburgh, October 4-7, under the presidency of Dr. Cyrus L. Stevens, Athens, the following officers were elected for the ensuing year: president, Dr. Henry R. Jump, Philadelphia; president-elect, Dr. Frank G. Hartman, Lancaster; vice presidents, Drs. Harold A. Miller, Pittsburgh, Spencer M. Free, Duboise, David Funk, Harrisburg, and Anthony F. Myers, Blooming Glen; secretary, Dr. Walter F. Donaldson, Pittsburgh (reelected); assistant secretary, Dr. Christian B. Longenecker, Philadelphia, and treasurer, Dr. John B. Lowman, Johnstown. A joint meeting with the Interstate Association of Anesthetists and the National Anesthesia Research Society constituted the closing meeting of the annual session.

Philadelphia

Medical Club Reception.—The Medical Club of Philadelphia at its first meeting of the season gave a reception at the Bellevue-Stratford Hotel in honor of Sir Auckland Geddes, British Ambassador to the United States.

Health Lectures.—A complete health program will be introduced in the colored organizations of the city during the winter by the Philadelphia Health Council and the tuberculosis committee. Physicians, dentists, nurses and other trained workers will deliver lectures in the series.

Honor to Dr. Keen.—The King of Belgium recently decorated with the Belgian Order of the Crown Dr. William W. Keen, Philadelphia, on the occasion of the latter's visit to Belgium following his attendance at the International Congress of Surgeons in Paris.

Children Give Health Play.—A health play, written and staged by members of the Philadelphia Health Council and tuberculosis committee as part of the committee's campaign to teach the children health habits, was recently given by children of the Odd Fellows Orphanage. The play is called "The Town of Promise," and portrays the disease-creating conditions as gnomes and the healthful habits as fairies.

Hospital Lacks Funds.—With $1,830,000 probably available for improvements to city hospital from two loans, Director of Public Health Furbush said that the funds will merely enable him to reduce the present overcrowded condition of the Philadelphia General Hospital and the Hospital for the Insane at Byberry, but it will be impossible to construct sufficient dormitories to give proper housing to all of the city's insane patients. With 2,750 insane patients now in the care of the city, both Blockley and Byberry hospitals are overcrowded to the extent of 1,500 patients.

SOUTH DAKOTA

Clinic Opens at Aberdeen.—The Aberdeen clinic was dedicated and formally opened, September 27.

Hospital Changes Hands.—The Huron Hospital has been closed and is succeeded by the Samaritan Hospital, under the management of Dr. John C. Shirley.

TEXAS

Bond Issue for Hospital.—Petitions for a bond issue of $450,000 by the city of Dallas and Dallas County for additions to the City Hospital have been circulated by the Dallas County Medical Society. Signatures of 10 per cent. of the voters of the county are necessary before the issue may be submitted at the November general election.

Vaccination Referendum to Be Submitted to Voters.—Petitions bearing 2,166 signatures have been filed by those who desire the compulsory vaccination ordinance for schoolchildren of Waco to be submitted to the vote of the people. The charter makes it mandatory on the city commissioners to submit an ordinance to the people for approval, if a petition bears signature of 15 per cent. of the qualified voters.

Welfare Workers Propose State Council.—A committee of the Texas Council of Social Welfare has recommended the formation of a state council of social agencies by which it is proposed to unite all institutional, educational, and social agencies of the state within one organization. The state board of health, the University of Texas, Social Hygiene Board, Children's Home Aid Society, and Texas Federation of Women's Clubs were among the organizations represented at the meeting.

UTAH

Free Radium Clinic.—Arrangements for free radium treatment, which have been made by the board of trustees of the Salt Lake County community clinic and dispensary, have received the endorsement of the Salt Lake County Medical Society.

University Plans Health Campaign.—Public health lectures stressing preventive measures in the control of infectious diseases are planned in a state-wide campaign under the direction of the University of Utah with the cooperation

of churches clubs and civic organizations. It is purposed to organize mothers' clubs and to reach every family in the state by means of bulletins and health letters.

VIRGINIA

Railroad Surgeon Honored.—Dr. George Ross, Richmond, first chief surgeon of the medical department of the Southern Railway, was presented with a loving cup by members of the Association of Surgeons of the Southern Railway System, after their recent annual meeting, as a token of the esteem in which he is held by his associates.

New Food Regulations in Norfolk.—Beginning September 1, new ordinances relating to meat and milk went into effect in Norfolk. In the future only standardized milk from tuberculin tested herds will be permitted to be placed on sale, and all fresh meats used in the city must be inspected and stamped by competent trained meat inspectors. All restaurants serving food to the public are required to get a permit and to submit to regular inspection and scoring. Soda fountains will be regularly inspected and scored and will be required to sterilize drinking glasses and other containers.

WEST VIRGINIA

New State Health Commissioner Appointed.—Dr. Richard T. Davis, Charleston, has been appointed state health commissioner to succeed Dr. Samuel L. Jepson, whose term expired over a year ago.

WISCONSIN

County Dispensary Increases Staff.—Increased patronage of Milwaukee County's free medical dispensary and demand for specialized work have necessitated additions to the staff. Dr. Alfred L. Kastner has been appointed as head of the department of children's diseases, Dr. Fred J. Gaenslen as chief of the department of orthopedics, with Dr. Jesse P. Snyder, as assistant. The dispensary is also planning to add an obstetric service.

Health Department Reorganizes School Clinics.—Reorganization of the school clinics of Milwaukee has been announced by the city health department. Arrangements have been made to open clinics in twenty-nine schools where children will be weighed and measured. Through the cooperation of the Red Cross a milk lunch will be served to the pupils in recess. Children will be organized into classes and will be given instructions in proper nutrition.

CANADA

Hospital News.—That all Toronto hospitals are badly overcrowded was indicated at a recent meeting of the Central Council of Ratepayers, Toronto, in a report on hospital accommodation by Dr. E. A. Macdonald. At the present time there is a serious lack of beds in all hospitals, and the only solution of the problem seemed to be municipal ownership and control of the hospitals and their revenues. ——The Methodist Church in Canada has decided to establish a hospital unit at Hafford, Sask., for the purpose of ministering to the people in the foreign settlements who have no physicians to attend them.

University News.—The registration of students at the University of Toronto totals 5,500 students in all departments. In the department of medicine there are 1,027 students in the six years of the course, and fifty more students are expected in the freshman class. This establishes a new attendance record in the medical school.——Dr. Norman Keith, Toronto, has resigned as clinician in the Faculty of Medicine, University of Toronto, to accept an appointment with the Mayo Foundation for Medical Research, Rochester, Minn.——It has been announced that Dr. A. B. Macallum, administrative chairman of the Research Council of Canada, is to be appointed to the new chair of biochemistry in McGill University, Montreal, to date from October 1. Dr. Macallum will continue his duties as chairman of the Research Council until a successor has been named.

GENERAL

Red Cross Aids Students.—The American Red Cross has made an appropriation of $10,000 to provide medical care and treatment for wounded World War veterans under training by the Federal Board for Vocational Education. The funds of the federal board cannot be expended to provide medical attention for disease or injury not directly traceable to military or naval service.

Safety Campaign Successful.—The success of the safety education in public schools was indicated at the annual Safety Congress, held in Milwaukee, September 29, by the report that twenty-nine cities and towns have adopted the plan of public school safety instruction fostered by the National Safety Council, and that 150 other cities and towns have promised to adopt it later.

Immigrants Ordered Vaccinated.—Orders have been issued to all U. S. Public Health officers in Europe not to permit any third class passengers to depart for the United States without having been vaccinated against smallpox. This precaution has been made necessary by the rapid spread of smallpox in the Central European countries, from which many emigrants are leaving for the United States.

Railway Surgeons Elect Officers.—At the seventeenth annual meeting of the American Association of Railway Surgeons, held in Chicago, October 6-8, the following officers were elected: president, Dr. Clarence W. Hopkins, Chicago; vice presidents, Drs. Edwin B. Shaw, Las Vegas, N. M., Joseph B. Wharton, Eldorado, Ark., and George W. Pirtle, Carlisle, Ind.; treasurer, Dr. Henry B. Jennings, Council Bluffs, Iowa (reelected), and secretary, Dr. Louis J. Mitchell, Chicago (reelected).

New Public Health Service Hospital.—A new general hospital, with a capacity of 200 beds, for the seventh district of the Public Health Service comprising the states of Ohio, Indiana and Kentucky, has just been established by the remodeling of the Altamont and Avenel hotels, in the suburbs of Newport, Ky. The Altamont will be occupied at once for nonsurgical cases only, pending the construction of an operating room. The Avenel, a small structure at a short distance from the Altamont, will be used as quarters by the hospital staff. The institution was already equipped for giving mineral and electric baths.

Anthrax from Shaving Brushes.—The U. S. Public Health Service has issued a warning against the use of horse-hair shaving brushes for the reason that several cases of anthrax have been traced to infected brushes. The public is urged not to buy horse-hair brushes and the medical profession and state health officers are requested to give the widest possible publicity to this campaign pending additional legislation to obviate the potential danger. Under existing laws and regulations there is nothing to prevent the use of anthrax infected horse hair in the manufacture of shaving brushes, and it is planned to ask Congress to prohibit its use by Federal statute. Many of these brushes are believed now to be in the channels of trade.

Bequests and Donations.—The following bequests and donations have recently been announced:

Montefiore Home, New York, $300,000; Henry Street Settlement, New York, $50,000; Solomon and Betty Loeb Memorial Home for Convalescents, West Chester County, $25,000; New York Association for the Blind, $10,000; Babies' Hospital of New York, $5,000, and Tuberculosis Preventorium for Children, $5,000, by the will of Jacob H. Schiff, New York.

Touro Infirmary, New Orleans, a donation of $10,000 in corporate bonds of the city of New York, by Mrs. Hertz Bonart, New Orleans, to be held in trust, the interest to be applied in the social service department of the infirmary; $2,000 to the Julius Weis Home, by the will of Mrs. Anna R. Meyer, Monroe, La., and $366.75 from miscellaneous donations.

Chicago Orphan Asylum, $10,000, by the will of Mrs. Edith Counselman Dudley, Chicago.

Georgia State Sanatorium, Milledgeville, the estate of the late W. H. Strangman, Augusta.

Jewish Hospital Association, $5,000, Jewish Foster Home, and Jewish Sanatorium, Eaglesville, Pa., each $2,500, by the will of Simon L. Bloch, Philadelphia.

LATIN AMERICA

School of Medicine of Guatemala.—The following physicians were recently designated to form the directing board of the School of Medicine of Guatemala: Dean, Dr. Julio Bianchi; members, Drs. Alberto Padilla, Rafael Pacheco Luna, Alberto Rubio, José Fernández de León, José Luis Asensio and Gonzalo de la Gerda, and secretary, Máximo Santa Cruz V.

Personal.—Dr. O. Montoro has been appointed to the post in the public health service of Cuba left vacant by the recent death of Dr. E. Aragón. His duties include the editorship of the large and handsome *Boletin* issued by the service.——Dr. M. Gómez Rubio of Havana has been placed in charge of the leprosy commission recently appointed by the government to study the newer methods of treatment for leprosy.

Increase of Medical Students in Cuba.—According to figures compiled by the School of Medicine of Havana, the number of students increased from 202 in 1908-1909, to 1,037 in the school year of 1919-1920—that is 500 per cent. In a report on this subject the school authorities state that the

quality of medical teaching has deteriorated considerably in the last few years and will keep on deteriorating because of the large number of pupils in proportion to the small number of professors. An increase in the number of the latter is therefore recommended as well as the appointment of an assistant for each fifty pupils.

FOREIGN

Cholera in Korea.—An official statement, said to have been issued at Seoul, reports that the number of cases in the cholera epidemic so far is more than 20,000, of which more than 9,000 have been fatal.

Opening of the French Institute Building at London.—The E. de Rothschild fund provides for the maintenance at London of the Maison de l'Institut de France. It offers accommodations for twenty persons sojourning in London to pursue scientific, literary or art studies.

Spanish Surgeon Visiting United States.—Dr. Luis Urrutia, eminent surgeon of Spain and editor of several Spanish surgical journals, arrived in this country, October 6, for an extensive tour. He intends to visit the surgical clinics of New York, Chicago, Rochester, Minn., Philadelphia, Cleveland, Baltimore and other important centers.

Plans for International Tuberculosis Organization.—The French National Anti-Tuberculosis Commission, under the presidency of Léon Bourgeois, has sent invitations to similar committees in the United States and the countries adhering to the League of Nations to send delegates to Paris for the purpose of creating an international organization for the prevention of tuberculosis.

Exportation of Malt Extract from Germany.—Our German medical exchanges have been commenting most disapprovingly on the action of the government in allowing the exportation "for business reasons" of 80,000 kg. of malt extract into Switzerland, to be used in bakeries and in the textile and other industries, when there is such dire need of malt extract in Germany for feeding of infants.

Cattle Plague in Belgium.—The *Deutsche medizinische Wochenschrift* states that the Prussian government has forbidden importation of cattle from Belgium, as cattle plague has broken out in that country. It was imported by some zebus from India which were landed at Antwerp on their way to South America, and spread from them to some American cattle destined for slaughter. By this means the cattle plague was scattered throughout several provinces in Belgium. It was not recognized at first, and an epizootic focus has developed at forty different points.

Typhus Research in Poland.—The Typhus Research Commission of the League of Red Cross Societies, consisting of Drs. Simeon Burt Wolbach, Boston, John L. Todd, Montreal, A. Bacot, London, Frank W. Palfrey, Boston, and a group of assistants, has finished its investigations in Poland. Some additional time will be required to complete the study of human pathologic material which the commission has collected. A summary of the findings of the commission will appear in the *International Journal of Public Health* and a complete report will be published later in book form.

Antimalaria Campaign in Spain.—As the result of a report submitted by Dr. Richard P. Strong, general medical director of the League of Red Cross Societies, in agreement with the Spanish government, the Spanish Red Cross has undertaken an antimalaria campaign in Spain. The execution of the plan has been greatly facilitated by the generosity of the American Red Cross, Madrid Chapter, the surplus war funds of which have been placed at the disposal of the League. The commission is under the direction of Dr. Massimo Sella, who was joined at Madrid by Professor Pittaluga.

Deaths in Other Countries

Dr. **Antonio Ceci,** probably the leading surgeon of Italy, professor of surgery at Pisa, and author of numerous works on pathology, bacteriology and surgical subjects, especially splenectomy and myomectomy, aged 67.——Dr. **G. Libertini,** instructor in psychiatry at the University of Naples, and for twenty years director of the insane asylum at Lecce, aged 53.——Dr. **H. Ulbrich,** privatdozent for ophthalmology at the University of Vienna, aged 44. He was taken prisoner by the Russians at the fall of Przemysl and was kept in Turkestan where he died recently. The order for his release had just been signed. He practiced as an ophthalmologist during his captivity.——Dr. **G. Damiani,** director of the insane asylum at Ventotene, Italy, attacked by two of the inmates.——Dr. **A. López Caula** of Guanajay, Cuba.

Government Services

Nurses for Neuropsychiatric Hospitals

A special course for the instruction and training of nurses in the care of mental and nervous cases has been established at General Hospital No. 49, Gray's Ferry Road, near Philadelphia, by the U. S. Public Health Service. There is an immediate need for 150 nurses for soldier patients with mental and nervous disorders, which class of patients constitutes about 38 per cent. of exsoldiers under the care of the Public Health Service.

Promotions in the Medical Reserve Corps

Surgeon-General Ireland has appointed a board to meet with him for the purpose of devising a plan of reorganization of the Medical Reserve Corps, in order to induce members of the medical profession now in private life, who served as officers of the Medical Corps during the war, to retain their commissions in the reserve corps. Among other things it is planned to draw up regulations governing promotions and to obviate the difficulty arising from the stipulation that no applicant may receive a higher grade than that held by him during the war, because of which there have been many declinations of commissions.

Decrease of Patients in Army Hospitals

There has been a tremendous decrease in soldier patients in the Army General Hospitals as a result of the successful application of reconstruction treatment, according to a recent announcement of Surgeon-General Ireland. From 6,751 patients in July, the number of patients has been reduced in September to 3,029 enlisted men and 457 officers; one third of these are overseas patients. The work of the War Department is, therefore, practically completed insofar as it affects the care of victims of the World War, as the duty of providing treatment for discharged soldiers now devolves on the Bureau of War Risk Insurance and the Public Health Service.

Examinations for Commissions in the Medical Corps

There are 200 vacancies in the Medical Corps of the Army to be filled by appointment of successful candidates in the examinations to be held, October 25. Only former reserve and emergency officers who served during the World War are eligible for appointment. Application blanks may be secured by applying to the Adjutant-General of the Army. As the Surgeon-General is anxious to secure the full quota of medical officers he has urged that all former officers who desire to enter the permanent service take advantage of this final opportunity to do so. As a result of the July examinations commissions were issued to 401 physicians, two as lieutenant-colonels, 118 as majors, and 281 as captains and lieutenants.

Institute on Venereal Disease Control

Arrangements have been completed for an Institute on Venereal Disease Control and Social Hygiene to be held in Washington, November 22 to December 4, under the auspices of the American Social Hygiene Association, the Interdepartmental Social Hygiene Board and the Public Health Service. A staff of instructors has been selected from among experts in subjects relating to the control of venereal diseases. Officers of state and city boards of health, clinicians, laboratory technicians, nurses, social workers, police matrons, policewomen, superintendents of eleemosynary institutions, judges and probation officers of courts of domestic relations and juvenile courts are invited to attend the lectures, for which no tuition fee will be charged. The Congressional Library, the Library of the Surgeon-General's Office and the Public Library of Washington are all within short distances from the lecture halls. The administrative officers of the institute are Surg.-Gen. Hugh S. Cumming, U. S. P. H. S., and Assistant Surg.-Gen. Claude C. Pierce.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Sept. 27, 1920.

The Colonial Medical Services

A committee which includes among its members Sir Humphry Rolleston, Sir William Leishman and Sir James Kingston Fowler, appointed by the government to report on the colonial medical services, has presented an important report. The ideal is declared to be a unified medical service recruited from men recently qualified and liable for service in any of the colonies; but the full attainment of this ideal is not possible at present. Heretofore a candidate has applied for an appointment in a special colony or group of colonies. In future, applications should be made for admission to the "Colonial Medical Service." This course would have certain advantages: The service would be recognized as a distinct branch of the public medical service of the empire, and its status would be enhanced. Questions at issue affecting a unit in the colonial service could be settled with much less display of feeling if those concerned knew that they had been submitted to a man of standing in their own profession, even should the decision go against them, and an adequate channel would be provided for the expression of discontent. An officer of standing in the medical profession, whose opinion would have weight with the secretary of state and whose name would create confidence in the profession, should be appointed a member of the colonial office staff with the title of director-general. His duties would be to advise the secretary of state and the permanent staff on all questions relating to personnel, as distinct from questions of medical and sanitary theory or practice. He should be accessible to medical officers who wished to see him; assist in interviewing candidates and possible candidates for appointment; keep in touch with the medical schools; be a member of the Advisory Medical Committee for Tropical Africa when questions of promotion are under consideration; keep in touch with the feeling of the service, and bring causes of discontent before the colonial office. Candidates should be attracted from among the best type of young men fresh from the medical schools. Recently qualified men should be seconded for a resident appointment, preferably at the hospital at which they were trained. Admission to the service should in future be by competitive or qualifying examination. It would be an advantage to have a single entrance examination for all the public medical services, and thus the colonial service would fall into line with the navy and army. The committee considered the possibility of forming into separate units the medical services of neighboring colonies. Having regard to the conditions in the different groups of tropical colonies, they concluded that beyond the existing West African medical staff, the only services that can with advantage be assimilated are the services of the Straits Settlements and the Malay States, and the services of the East African Protectorate and the Tanganyika Territory. The need for increased pay to attract young men of the right type is recognized. The initial salary for a whole-time appointment should be at least $3,000. Not only should full pay be given for earned leave, but a free passage both ways for wife and two children. Recommendations are made for study leave on full pay. Officers who have shown capacity in some branch should be appointed as specialists.

Struggle Between the Government and the Profession in Tasmania

The case of Victor Richard Ratten, a physician who obtained admission to the medical register of Tasmania by means of a diploma alleged to have been granted by a defunct American medical school, the Harvey Medical College of Chicago, has been referred to from time to time in THE JOURNAL. He incurred odium in the profession by remaining in government employ on a hospital staff, after all the other physicians had resigned, on terms which the Tasmanian branch of the British Medical Association declared to be unacceptable to the profession. An inquiry into his credentials was then begun by the medical council. This the government regarded as simply a move by the profession in its struggle against them, for it had an act passed depriving the council of the power to remove from the register physicians who have committed offenses or obtained registration by fraud (THE JOURNAL, June 5, 1920, p. 1588). The *Medical Journal of Australia* accused the government of passing this act with a view to the case of Ratten. This view is borne out by the sequel. In the legislative assembly of Tasmania a labor member has introduced this bill:

> Whereas Victor Richard Ratten was on May 27, 1907, duly admitted by the Medical Board of Tasmania as a duly qualified medical practitioner; and whereas supposed doubts have been raised as to the genuine nature of his diploma; and whereas on account of the great benefits conferred on the people of Tasmania by his preeminent skill as a surgeon, it is desirable in the interests of the country at large that such doubts shall be removed, be it therefore enacted: This act may be cited as the Ratten Doubts Removal Act, 1920. It is hereby declared that the diploma of Victor Richard Ratten is genuine and of full force and effect, and that the same shall not, directly or indirectly, be questioned in any court of law, or by Royal Commission, or by any process of law or otherwise, howsoever or whatsoever, and all such doubts are hereby removed and the operation of this act is retrospective.

At the inquiry, much information that had been collected in Chicago in support of the charge against Ratten was produced, but he did not appear to defend himself. Consequently the council found that a prima facie case had been made out, and applied to the supreme court to have his name removed from the register. When the case came before the court they applied for the issue of a commission to take evidence in Chicago. On this point the chief justice has not yet given his decision. The bill is an attempt to render further proceedings useless. Commenting on it, the *Medical Journal of Australia* (the organ of the British Medical Association in Australia) says that if Parliament does not desist from interfering in professional matters "we shall consider it to be our duty to warn our graduates against applying for positions in Hobart and Launceston."

PARIS

(From Our Regular Correspondent)

Oct. 1, 1920.

Physicians and the New Tax Regulations

Before the war a physician by no means was preoccupied in an attempt to arrive at the amount of his taxes: he regularly received an assessment statement, and it sufficed to pay the amount of his taxes at the collector's office. On the contrary, the new fiscal policy obliges the physician to assume an active rôle under penalty of being arbitrarily taxed under conditions that might prove much more onerous. Now the details of the new tax legislation are quite complex: besides the personal tax and license fees to which the physician was subjected before the war, he must also pay the tax imposed on noncommercial professions, the general revenue tax, and a tax on public and private practice, depending on circumstances.

So far as the tax on noncommercial professions is concerned, the physician must send a report during the first quarter of the year to the collector of direct taxes of his city, giving the net amount of his professional income during the preceding year, including all sums collected for consultations, visits, medical and surgical treatment, medicolegal testimony, laboratory services, editorial work, etc. From the gross income the following expenditures may be deducted: the office rent (including the cost of heat and light); the

wages of a servant employed for professional needs only; office furnishings; the cost of books and subscriptions for professional journals; the telephone charges; the expenses incurred by moving and by traveling necessitated by the practice of medicine; dues paid to medical and scientific societies and to medical relief organizations; the cost of repairing instruments and a depreciation allowance on professional equipment; the upkeep cost of an automobile; premiums on insurance against professional risks, and the professional taxes.

Finally, as has been mentioned before in these columns, under a decision of the Conseil d'Etat, dated Jan. 30, 1920, a physician is liable to the special tax on war profits if his income between Aug. 1, 1914, and June 30, 1920, was more than 5,000 francs in excess of the normal, as based on his income for 1912, 1913 and 1914.

Extermination of Rats

For some days official notices have been posted, requesting the residents of Paris to exterminate the rats and offering a bonus of 25 centimes for each dead rodent. It might readily be asked if this chase really accomplishes its purpose. In the *Revue générale des sciences,* Dr. Roubaud of the Pasteur Institute remarks that at the time of an epidemic an antirat campaign, far from being a rational prophylactic measure, on the contrary, might be the means of disseminating the flea. As a matter of fact, these insects leave the dead animals as soon as the bodies have grown cold, and seek a haven on other animals, notably the human species. Undoubtedly it may be objected that satisfactory results have been obtained from deratization of the holds of ships, a measure enforced against vessels from plague-stricken countries; but it should be pointed out that this is done by means of sulphurators, the fumes from which kill not only the rats but their parasitic insects as well. Ignoring the danger of the dissemination of fleas, Dr. Noir shows in the *Concours médical* how inefficacious a rat hunt with prizes will prove as a measure of extermination in a city such as Paris. Admitting that the hunters will succeed in killing from 2,000 to 3,000 rats a day, this would make about 1,000,000 victims in the course of a year. Estimating the rat population of Paris at 8,000,000, it would require eight years to accomplish total extermination by this process alone, even supposing that there has been no reproduction in the meantime. But as a pair of rats increases on the average to a colony of forty within a year, there would be some 160,000,000 young rats to offset the loss.

Gift of a Surgical Ambulance to Japan

The minister of war today made a solemn presentation to the representative of the Japanese government, on this nation's request, of an automobile surgical hospital established by the Service de santé. The unit will comprise 100 hospital beds, a surgical pavilion and the requisite technical equipment for radiologic, bacteriologic and toxicologic work, a section of personal hygiene, vehicles for the transport of wounded, all equipped with modern improvements. This equipment, to which will be added a certain number of sanitary units of recent models (surgical trucks, dental ambulances, aeroplanes for transport of wounded, and sanitary trains with pneumatic tires) will remain on exhibition at the Grand Palais, October 1-6, and all active and reserve officers of the medical corps, the personnel of Red Cross societies, officers of the army and navy, and all persons interested in the progress of the medical corps and the care of wounded have been invited to visit the exposition, which will this year replace the technical exercises of the medical corps. The exposition is to be prolonged to October 6 in order that the surgeons of France, who will meet on that date for a surgical congress, may have an opportunity of seeing the exhibit, which is of special interest to them.

MADRID

(From Our Regular Correspondent)

Sept. 15, 1920.

Honors to Dr. Cortezo

Dr. Carlos Cortezo, to whom we have often referred in these letters, recently celebrated the fiftieth anniversary of his entrance on medical practice. On this occasion he was the object of many honors, which began with the publication by his own journal, *El Siglo Médico,* of a special number with articles dedicated to him, and which ended at a solemn session of the National Academy of Medicine, of which he is president. Dr. Cortezo has been author, politician, public speaker, minister, but he has always considered himself a physician, and on this account has been regarded as a leader by the medical profession. Of late his activities have been curtailed because of impaired sight, and he has begun to promote the institution for indigent physicians' orphans. The municipal council of Madrid took part in the general honors to Dr. Cortezo, naming a street after him, and the king granted him the highest rank in the order of Charles III, a distinction conferred only on kings and a few other rulers. Dr. Cortezo recommended many years ago a formula similar to that of Dakin for the treatment of wounds, and was the first to call attention to the louse as a carrier of typhus fever.

Tribute to Dr. Gimeno

Dr. A. Gimeno Cabañas has retired as professor of general pathology in the School of Medicine of Madrid. He was able to teach his classes only occasionally, as his political activities prevented him from attending the school regularly. Dr. Gimeno has been a physician, professor, public speaker, newspaper man and politician, in all which fields he has shown his competence. His friends took advantage of the occasion, when he had to abandon teaching through his reaching the age of retirement, and organized a meeting in the university that began with an address by the former minister and physician, Dr. Francos Rodríguez, and ended with another address by the president of the university, Rodríguez Carracido, in praise of Dr. Gimeno. The real climax was Dr. Gimeno's own address, in which he presented a brief and brilliant summary of the condition of medical science when he began teaching, and its advance during the last fifty years. At the end of the session the representative of the government, the minister of education, stated that the king conferred on Dr. Gimeno the title of Count as a reward for the services he had performed.

Dr. Gimeno has written many popular articles, delivered addresses, and prepared many striking prefaces. He is widely read and has an enormous assimilating capacity. After being minister of education, he was made minister of the navy. "Comic writers," says Francos Rodríguez, "were just tickled at the splendid chance politics was offering them. A physician in the navy department! But in the long run the criticisms became praise. Gimeno had general knowledge, talent, capacity for studying. He shut himself in his office to consider books and official reports and consult experts. In a few days Gimeno showed his grasp of the subject in his daily interviews with politicians, reporters and the king." After being tried in a department so remote from his usual vocation, Gimeno has been at the head of every other department, now of the interior, next of state; and probably through the whims of fate he has made a deeper impression in those departments for which he seemed to be least trained. After having been minister eight different times and acting premier, Gimeno is still in politics, and apparently his work in this field will last even longer than the many years he devoted to medical teaching. Dr. Gimeno's political efforts have estranged him somewhat from the medical profession. His

course of general pathology, which he attended infrequently, seemed to be the only bond of union with the profession, and many now fear that with the medical *pretext* out of the way, he may be lost entirely to medicine. In the above mentioned meeting there were to be seen more diplomats and navy men than professors of medicine.

Continuance of the Scandal in the Appointment of Professors

The appointment of professors in the School of Medicine of Madrid continues to create a scandal, as the politicians either forget that there is such a thing as public opinion or else ignore it. I have referred before to the lecture given by Dr. Lafora on what he called "Scandals in the Faculty of the School of Medicine of Madrid," and to the unhappy defense made by the dean, Dr. S. Recasens. Once more the politicians have shown their disregard for all pretense at decency. A politician, in order to help out a friend, a professor of anatomy (appointed originally through the influence of the same politician), tried to be of use to his friend again, and in order to help him in his career, he could not think of anything better than the creation of a chair of urology to which the professor could be appointed. In order to legalize the proceedings, he asked the board of education, the Royal Academy of Medicine and the School of Medicine for suggestions as to the appointee; and although the committees to which the matter was referred by these three institutions recommended in their reports the appointment of the person who proved best qualified in competitive examinations, the three bodies, influenced by the politicians, disregarded entirely the recommendations of their committees and suggested for the position the individual the minister of the interior had in mind. During the whole of this disgraceful transaction two physicians were much to the fore who, having recently received national honors, should have remained away from such business. I am referring to Drs. Cortezo and Gimeno.

VIENNA

(From Our Regular Correspondent)

Sept. 20, 1920.

Attempted Restriction of Freedom of Students in the University

For a year, several feeble attempts have been made to "nationalize," so to speak, the University of Vienna by diminishing the number of foreign students and admitting first of all only native-born—read "German"—students. As it is undoubtedly difficult at present to accommodate all students desiring to continue their studies of medicine here, the endeavors are not unreasonable. It is true that the increasing numbers of medical students, along with the markedly diminished funds at the disposal of the laboratories, teaching institutes and libraries, would justify such a procedure. The attempted restriction, however, was not prompted by these reasons, but chiefly dictated by political and racial or religious motives. As the studies of jurisprudence, of philosophical subjects and of theology are not so overcrowded, the medical faculty was the chief object of these nationalizing experiments. Among the students of medicine, about 50 per cent. are not of German origin; they come from the eastern countries belonging formerly to the Austrian empire —Poland, Hungary and Jugoslavia—and a large proportion of them are Jewish. On the other hand, it is to be noted that at present German youths are not taking up the study of medicine in Austria in sufficient numbers to insure a regular supply of physicians; for instance, the Vienna hospitals are at a loss to get enough house physicians and interns of "pure" German nationality. Therefore the reactionary managing board of the Vienna University issued an order, a few days ago, stipulating that only 10 per cent. of foreign students would be admitted as regular pupils—a blow aimed chiefly at the medical students and among them against the Jewish proportion primarily, for the latter have not been given the privilege of becoming subjects of Austria. The board of education, however, which was not aware of the order before its publication, at once prohibited the putting in force of this clearly one-sided measure, and there is now a conflict between the government and the autonomous corporation of our university. Public feeling, so far as it is not prompted by racial sentiments, is against the anachronistic order. The fame of the Vienna medical faculty has been founded on its cosmopolitan structure, and the more students that flock from all countries here, the better are the expectations and the importance of this seat of teaching. The government has a clear insight into the actual conditions, and cannot permit to make the university a fighting place for political problems and destroy one of the few remaining treasures our poor country can boast of. The number of students will thus be restricted only by the limited means of the institutes, no attention being paid to the nationality. Only the comparative records of the students will have to be taken into consideration.

War and Mortality in Vienna

Acting on an order of the board of health, Rosenfeld investigated the mortality statistics of this city for the years 1912-1919. The following figures and conclusions drawn from his report to this board are worth recording even to a community not directly interested in the matter. In 1912, the number of deaths here was 32,141; it rose in 1915 to 37,018, and reached in 1918 the enormous figure of 51,497. One year later, it sank to 40,932. The increase of deaths was more marked in the female sex. The figures for the above mentioned years are: male, 16,603, 20,232 and 18,199; female, 15,355, 23,898 and 21,223, children not being regarded. Thus, in one year, there died 6,000 women and 1,500 men more than in peace time. Of the new-born babies, there were born dead in 1912, 13 per cent.; in 1918, 17.72 per cent.; in 1919, 30.46 per cent. The infant mortality (up to 12 months) was: in 1912, 5,922 cases; in 1918, 2,981; in 1919, 2,439 cases. The absolute figures show a marked drop, but the relative figures, taking the actual births into consideration, show on the contrary a distinct increase, owing to the drop of births, amounting to more than 50 per cent.; and the number of deaths of children between 1 and 5 years has even gone up absolutely in spite of the drop of births. In 1918, the mortality of this age period was more than in any other year on record. Also, aged persons suffered severely, especially the women. Beginning at the age of 50, a rapid increase in mortality set in. Thus, in 1912 there died 705 women aged between 50 and 55. In 1919, the figure was 1,184; between 55 and 60 the figures were 893 and 1,383; between 60 and 65, 1,647 and 1,748; from 65 to 70, 1,123 and 2,069 deaths; over 70, 3,120 and 5,511. Thus, the old women died at the rate of from one-third to two-thirds more than in time of peace. The greatest mortality figures were reported from the districts inhabited by state and municipal officials—the typical brain workers, a significant fact. As regards the cause of death, overwork and its stress on the heart, starvation and tuberculosis figure foremost. From 1912 to 1919, deaths from tuberculosis among females increased by 81 per cent.; from pulmonary tuberculosis, by 90 per cent. Among males, the increase was 26 and 30 per cent. In some age groups of females, the increase was more than 100 per cent. The fearful danger threatening the next generation, the one now growing up, is the enormous possibility of infection owing to parental weakness, parental illness and general debility of the population. The "struggle for life" and the "survival of the fittest" has been put here

to an easily visible test on a large scale in a manner that should be a warning to all those believing in war as an "iron bath" and a revival of the nation.

Regulation of the Relations between Dental Surgeons and Dentists

A source of frequent dispute and trouble between the dental surgeons and the technical dentists, including in its annoyance the public and the profession, has been done away with by a bill which the government has worked out recently. Heretofore the technical dentists formed a special "guild" and were in distinct opposition to the dental surgeons, who, in this country, must be fully qualified medical men with a medical training and graduation absolutely equivalent to those of any other practitioner in Austria. These surgeons claim that they alone are entitled to do all the work necessary in the process of repair or treatment of diseased teeth and the insertion of artificial plates; the dentists, however, wanted to restrict the medical men to purely medical work in the mouth of the patients, with the exclusion of dentures, crowns and technical regulative measures. But such limitation of the work of dental surgeons is not only awkward from the view of the patient: it is also hardly tenable in practical life. It resulted in trouble. Lately the guild of dentists attempted to exclude physicians from the membership of the guild, and on the other side, they demanded for the dentists the right to perform in the mouth of patients all kinds of work required in the substitution of teeth, including extractions. The constant friction prompted the promulgation of the bill mentioned above, the result of cooperation of dental surgeons and dentists. The surgeons have obtained an important concession in the chief point, in that the independent corporation of technical dentists will cease to exist. The dentist will in the near future be no more than an assistant to the physician, working under the supervision and responsibility of the surgeon. All technical dental practice will be done by the dental surgeons only. But the dentists now practicing will be entitled to continue their practice and to do certain minor medical work in the patient's mouth except the extraction of teeth. Also, filling teeth is permitted to them. No new license will be granted to a technical dentist, and the men not yet in independent practice will have to be in the employment of dental surgeons, who alone will be entitled in the future to treat diseased teeth and employ qualified dentists as secretary assistants. The guild of dentists will die out in twenty or thirty years, because all persons desiring to learn technical dentistry will have to do so in special schools attached to dental departments of hospitals, or in the office of a dental surgeon.

Marriages

Charles Rayson May, Bennettsville, S. C., to Miss Margaret Eloise Wright of Columbia, S. C., October 6.

Emmet Dewitt Moyers, Cairo, W. Va., to Miss Mildred R. Bentley of Elmira, N. Y., September 15.

Reuben J. Dice, Randlett, Okla., to Miss Burnice Throckmorton of Anderson, Iowa, September 21.

Patrick Michael McCrann to Miss Bessie Hunter, both of Cumberland, Wyo., recently.

Joseph H. Dunn to Miss Madeline E. Winsor, both of Rockland, Mass., September 6.

William Satterer to Miss Sarah Kathryn Banner, both of Newark, N. J., October 2.

Edmund Lennon Quinn to Miss Etta Anna Happel, both of Chicago, September 15.

Charles Terry Butler to Miss Dorothy Black, both of New York, October 12.

Deaths

Isadore Dyer ⊕ New Orleans; Tulane University, New Orleans, 1889; died of heart disease, at his home, October 12; aged 55. Dr. Dyer was born in Galveston, Texas, Nov. 2, 1865; he received the Ph.B. degree from the Sheffield Scientific School of Yale University in 1887, attended the University of Virginia from 1887 to 1888 and Tulane University from 1888 to 1889 where he received his M.D. degree. He then became an intern in the New York Skin and Cancer Hospital and following this a lecturer in the New York Postgraduate Medical School. In 1892 he went to New Orleans and associated himself with his alma mater, being lecturer on diseases of the skin from 1892 to 1905, associate professor, 1905 to 1908, and since 1908 professor of diseases of the skin. In 1907 he became associate dean and since 1908 has acted as dean of the medical school. He engaged also in postgraduate teaching, acting as professor of diseases of the skin in the New Orleans Polyclinic from 1893 to 1908, and secretary-treasurer of the same organization from 1895 to 1905. Dr. Dyer was active in many medical organizations. In 1894 he founded and was president of the first board of control of the Louisiana leper home, taking an active interest in work for lepers since that date and aiding in the attempt to secure legislation recently successful for the founding of a national leper home. At the time of his death he was vice president of the American Medical Association and a member of the Council on Medical Education and Hospitals. In 1903-1904, also, he was vice president of the Association. He was president of the Orleans Parish Medical Society, 1899-1900; of the Louisiana State Medical Society, 1902-1903; of the Southern Medical Association, 1910-1911; of the American Dermatological Association, 1912-1913; of the New Orleans Academy of Science, 1913-1914; of the Association of American Medical Colleges, 1915-1916. He was active as a member of the National Board of Medical Examiners since 1915 and also served as councilor of the American Society of Tropical Medicine. Dr. Dyer was commissioned lieutenant in the Medical Reserve Corps in 1908; during the war he served as major heading the local examining board for the Medical Reserve Corps during 1917-1918. He was discharged from the service with the rank of major and shortly afterward accepted a commission in the new reserve corps as colonel. He was the author of many articles in medical literature on the subject of dermatology and tropical diseases and served as editor of the *New Orleans Medical and Surgical Journal* since 1896. During his entire medical career he has been conspicuous as a leader among the medical profession.

John Williams Duke ⊕ Guthrie, Okla.; Memphis (Tenn) Hospital Medical College, 1891; aged 52; professor of mental diseases and medical jurisprudence in the University of Oklahoma, Oklahoma City; a specialist in neuropathology and director of a private hospital for nervous and mental diseases; president of the Oklahoma State Medical Association; for four years state health commissioner; sometime mayor of Guthrie; died, October 10, from uremia.

George Franklin Eames, Boston; Jefferson Medical College, 1882; aged 66; also a graduate in dentistry; a member of the Massachusetts Medical Society and at one time president of the Massachusetts Dental Society; chairman of the section of stomatology of the American Medical Association, 1903-1904; died at Scarboro Beach, Me., September 5.

Charles Howard Davies ⊕ Tecumseh, Neb.; Illinois Medical College, Chicago, 1905; aged 39; a member of the Nebraska State Medical Association; at one time assistant physician at the Nebraska State Hospital, Ingleside; died in a hospital in Omaha, September 9, following an operation for appendicitis.

John Cozar Cope ⊕ Greensburg, Pa.; University of Pennsylvania, Philadelphia, 1900; aged 43; a member of the American College of Surgeons; died in the Westmoreland Hospital, Greensburg, September 29, from septicemia following an infected wound received while performing an operation.

Edgar Morton Woolf, New York; Long Island College Hospital, Brooklyn, 1909; aged 32; a member of the Medical Society of the State of New York; assistant attending physician to Riverside Hospital and visiting surgeon to St. Elizabeth's Hospital; died, September 26, from pneumonia.

Walter Sydney Johnson ⊕ Los Angeles; Harvard University Medical School, 1898; aged 49; captain, M. C., U. S.

⊕ Indicates "Fellow" of the American Medical Association.

Army, and discharged, June 26, 1918; for eight years professor of obstetrics at the College of Physicians and Surgeons, Los Angeles; died, September 17.

Harry Burket Fetterhoof, Huntingdon, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1899; aged 49; a member of the Medical Society of the State of Pennsylvania; died at the Blair Memorial Hospital, Huntingdon, September 21, from infected embolism.

Woodford D. Miller, Ripley, Tenn.; Memphis (Tenn.) Hospital Medical College, 1902; aged 39; a member of the Tennessee State Medical Association, and at one time secretary of the Lauderdale County Medical Association; died, September 21, from malarial fever.

Harry Cleveland Preston, Hampstead, Md.; University of the South, Sewanee, Tenn., 1908; aged 33; resident physician of the Baltimore Eye, Ear and Throat Hospital; died at the Western Maryland Hotel, Baltimore, October 1, from accidental poisoning by chloroform.

Philip Schuyler Van Patten, Ohai, Calif.; College of Physicians and Surgeons in the City of New York, 1898; aged 48; at one time coroner of Westchester County, New York; died at a sanatorium in Pasadena, September 15.

Alonzo S. Larkey ⊕ Oakland, Calif.; Hahnemann Medical College and Hospital of Philadelphia, 1889; aged 55; died September 27, from knife wounds, self-inflicted, it is believed, while despondent over ill health.

John Pattison Riggs, Media, Ill.; College of Physicians and Surgeons, Chicago, 1895; aged 76; a member of the Illinois State Medical Society; died at the Burlington (Iowa) Hospital, September 23.

Levi Mulford McClain ⊕ Scottsburg, Ind.; Kentucky School of Medicine, Louisville, 1894; aged 49; secretary of the Scott County Board of Health; died, October 2, from cerebral hemorrhage.

William Edward Gibbons, Stockton, Calif.; Medical College of the Pacific, San Francisco, 1878; aged 79; a member of the Medical Society of the State of California; died, August 21.

John W. Howell, Bryan, Texas; Texas Medical College, Galveston, 1867; aged 72; a retired practitioner; died at the John Sealy Hospital, Galveston, August 5.

Morris J. Moth, Chicago; Hahnemann Medical College and Hospital, Chicago, 1890; aged 67; professor of materia medica in his alma mater; died, October 6.

Gerhard S. Seim ⊕ Blue Island, Ill.; College of Physicians and Surgeons, Chicago, 1892; aged 55; died, October 4, of pneumonia.

Harriet Phena Sanderson Maxson, Berkeley, Calif.; University of Michigan, Ann Arbor, 1885; aged 51; died, September 27.

James McDermott, Sunderland, Ont.; Victoria University, Cobourg, Ont., 1870; aged 75; died, June 30, from angina pectoris.

Charles T. Webb, Davenport, Iowa; Albany (N. Y.) Medical College, 1852; aged 94; died, September 8, from pneumonia.

Milton Moore Scott ⊕ Brownwood, Texas; Missouri Medical College, St. Louis, 1880; aged 68; died, September 25.

David Bell, Ponoka, Alberta; Manitoba Medical College, Winnipeg, 1900; aged 51; died, June 4, from diabetes.

Charles E. Doherty, New Westminster, B. C.; Trinity Medical College, Toronto, 1899; aged 48; died, August 14.

Albert E. Palmer, Chicago; Rush Medical College, 1885; aged 68; died, October 4, from cerebral hemorrhage.

Nellie Edmonds Murray, Springville, N. Y.; University of Buffalo, N. Y., 1892; aged 70; died, August 30.

John Albert Miller, Baltimore; Maryland Medical College, Baltimore, 1909; aged 33; died, September 20.

Loren F. Boies, East Aurora, N. Y.; University of Buffalo, N. Y., 1868; aged 84; died, September 17.

Albert Laurance Farr, Evanston, Ill.; Rush Medical College, 1880; aged 71; died, October 6.

John A. Merrick, Merrickville, Ont. (license, Ontario, 1871); aged 83; died, September 10.

Walter Scott James, Chicago; Rush Medical College, 1893; died, September 20.

Correction.—In the notice of the death of Dr. John W. Howell, Bryan, Texas, which appeared in THE JOURNAL, August 28, page 623, certain data were incorrect. The error is corrected in an obituary notice in this issue.

The Propaganda for Reform

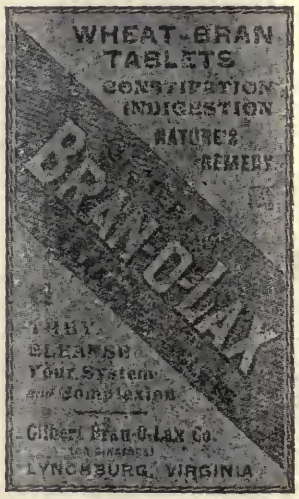
IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

BRAN-O-LAX

"Bran-O-Lax Tablets" are put on the market by the Gilbert Bran-O-Lax Company of Lynchburg, Va. The public is urged to purchase these "Laxative Wheat-Bran Tablets for constipation and indigestion instead of those severe and harmful drugs." The essential claim, either inferred or expressed, is to the effect that Bran-O-Lax Tablets are wheat bran in a condensed form and that they are free from "harmful drugs." In a booklet sent out by the concern and entitled "Vitamine Bran-O-Lax" the public is told that Vitamines are "subtile principals [sic!] in the foods absolutely necessary to life." The same leaflet tells us:

"Bran-O-Lax contains all essentials, such as 'Vitamines,' phosphates, bran, etc. . . ."

"Bran-O-Lax contains one heaping tablespoon of plain, nutritious Wheat-Bran condensed into a tablet form,. . . ."



"When you have taken into the stomach five or six Bran-O-Lax tablets, you have eaten more wheat-bran than you would get by eating a quarter loaf of graham or whole wheat bread.. . . ."

"Vitamine Bran-O-Lax is Nature's own remedy and way in Constipation, Indigestion and Intestinal troubles."

The Bran-O-Lax concern urges the druggist to stock the tablets as the company "will guarantee your sales" and "your profits are 50% net." On the trade package we read:

"Wheat-Bran Tablets Relieves Constipation, Indigestion, Stomach Troubles, Intestinal Troubles, Gassy and Fullness of Stomach."

"They Cleanse Your System and Complexion."

So much for the claims made by the manufacturers. Here is what was found by the chemists of the chemical laboratory of the A. M. A.:

CHEMISTS' REPORT

A package of Gilbert's Bran-O-Lax Laxative Tablets (the "Wheat Bran Tablets") was examined. To the unaided eye the tablets appeared to be composed of compressed bran. They had a sweet taste and the odor and flavor of peppermint oil. The only information regarding the composition of these tablets is that the tablets "contain one heaping tablespoon of wheat bran compressed into tablet form," that they "are vegetable in formation and harmless" and that they are "mint flavored."

The package examined contained 22 tablets. The average weight of a tablet was nearly 2.3 gm. (about 35½ grains). An average sized tablespoon was filled "heaping full" of wheat bran several times and the contents from each spoonful weighed separately. The average weight of the six tablespoonfuls was 10.77 gm. (about 166 grains). Microscopic examination of Bran-O-Lax Tablets revealed the presence of wheat bran. Reducing sugar (probably glucose) was present in large amounts. Considerable amounts of a gummy substance, probably acacia, were found. Saccharin was absent. Tests for phenolphthalein revealed the presence of about 0.066 gm. (about 1 gr.) of that substance in each tablet. No other medicinally active substance was found.

The analysis indicated that whatever medicinal value the "Wheat Bran Tablets" may possess is due largely to their phenolphthalein content, supplemented perhaps to a slight extent by the bran.

From the chemists' report it is obvious, first, that a Bran-O-Lax Tablet, which weighs only about 35½ grains, cannot contain a heaping tablespoonful of bran which weighs about

166 grains, especially when it is considered that, in addition to bran, there is also glucose and some gummy material to bind the bran together, as well as the laxative, phenolphthalein; second, the real laxative element in a Bran-O-Lax Tablet is not bran but phenolphthalein, a coal tar derivative, well known for its laxative properties; third, as phenolphthalein is a synthetic product, that is, one which does not occur in Nature, the statement that "Bran-O-Lax is Nature's own remedy" and is "vegetable in formation" is false and misleading.

Correspondence

"ALCOHOL, ARSPHENAMIN AND THE WASSERMANN TEST"

To the Editor:—In Queries and Minor Notes (THE JOURNAL, Oct. 2, 1920, p. 956) the statement is made that there is no evidence of a positive Wassermann test becoming negative under the influence of alcohol. C. F. Craig (The Wassermann Test, St. Louis, C. V. Mosby, 1918, p. 42) gives a table of nine instances in which he was able to obtain negative Wassermann tests by the administration of alcoholic beverages on persons previously giving positive Wassermann tests, and thus sums up:

From these experiments, which have been confirmed by many investigators since our original publication, it is evident that alcohol may render inert the substance or substances in the blood serum of syphilitics which react with lipoids in the antigenic extracts, and thus a strongly positive serum may give a negative result. For this to occur, the alcohol must be taken in considerable quantity and probably within twenty-four hours, or at most three days before the test is made, but it should be remembered that smaller amounts of alcohol may render weak reactions negative, so that cases which should present a single plus reaction will often react negatively after even moderate amounts of alcoholic liquors have been ingested.

THOMAS G. HULL, Springfield, Ill.
Chief of Diagnostic Laboratory, State Department of Public Health.

"TETANY FOLLOWING FORCED RESPIRATION IN MAN"

To the Editor:—In THE JOURNAL, Oct. 9, 1920, p. 1017, is a letter from J. B. Collip, in which he states that the work of Grant and Goldman on tetany following forced respiration confirms the results obtained by Collip and Backus. We are pleased to state that our work conforms largely with theirs. However, the results were obtained independently as our paper was in the hands of the editors before theirs appeared, and had previously been reported at the Washington University Medical Society on Feb. 16, 1920, an account of which may be found in the May issue of the *Journal of the Missouri State Medical Association.*

SAMUEL B. GRANT,
ALFRED GOLDMAN, St. Louis.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ENDOCRINE LITERATURE

To the Editor:—I am anxious to become acquainted with endocrine literature. I have not read on this subject and need advice as to what is advisable for me. Can you give me an outline that I may follow? I am especially interested in its relation to mental diseases. I shall be glad of any help you may give me.

E. B. SAUNDERS, M.D., Towson, Md.

ANSWER.—The following books and articles are on this subject:

Biedl, Artur: The Internal Secretory Organs: Their Physiology and Pathology, preface by Leonard Williams, translated by Linda Forster, William Wood & Co., New York, 1913.
Vincent, S.: Internal Secretion, Longmans, Green & Co., New York.
Schafer, E. A.: The Endocrine Organs, Longmans, Green & Co., New York, 1916.
Engelbach, William: Arterial Hypertension Associated with Endocrine Dyscrasia, THE JOURNAL, June 12, 1920, p. 1619.
Hewer, E. E.: Functional Connection Between Reproductive Organs and Other Glands of Internal Secretion, *Brit. M. J.* **1**: 293 (Feb. 28) 1920.
Bandler, S. W.: Introduction to Study of Endocrines in Gynecology, *New York M. J.* **111**: 221 (Feb. 7) 1920.
Lichty, J. A.: Treatment of Thyroid and Other Endocrine Disturbances as Viewed by Internist, *Am. J. M. Sc.* **159**: 800 (June) 1920.
Watkins, T. J.: Amenorrhea and Sterility Due to Functional Endocrine Disturbances, *Surgical Clinics*, Chicago **3**: 1477 (Dec.) 1919.
Loeb, Leo: Internal Secretion as Factor in Origin of Tumors, *J. M. Research* **40**: 477 (Sept.) 1919.
Garretson, W. V. P.: Dominance of Endocrines, *New York M. J.* **109**: 839 (May 17) 1919.
Jones, C. R.: Influence of Endocrine Functioning on Gastro-Intestinal Conditions, Tr. Sect. Gastro-Enterol. & Proctol., A. M. A., 1919, p. 168.
Wechsler, I. S.: Psychoneuroses and Internal Secretions, *Neurolog. Bull.* **2**: 199 (May) 1919.
Bandler, S. W.: Therapeutic Suggestion Concerning Endocrines, *Med. Rec.* **95**: 429 (March 15) 1919.
Falta: Ductless Glandular Diseases, P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia.
Gley, E.: The Internal Secretions: Their Physiology and Application to Pathology, translated and edited by Maurice Fishberg, Paul B. Hoeber, 69 East Fifty-Ninth Street, New York, 1917.
Schafer, Edward: An Introduction to the Endocrine Glands and Internal Secretions (Lane Medical Lectures, 1913), Leland Stanford Junior University Publications, 1914.
Cobb, Ivo Geikie: The Organs of Internal Secretion: Their Diseases and Therapeutic Application, William Wood & Co., New York, 1919.
Eppinger, von H.; Hirschfeld, R.; Leri, A., and Others: Innere Sekretion und Nervensystem, Julius Springer, Berlin, 1915, 24 marks.

REMOVAL OF SUPERFLUOUS HAIR

To the Editor:—Please give me a formula for a good depilatory.

J. F. GIBSON, M.D., Paris, Texas.

ANSWER.—A discussion of this subject, with a formula, appeared in THE JOURNAL, March 7, 1908, p. 790. In brief, it was stated that there is no application that will destroy superfluous hair. The hairs can be temporarily removed by depilatories, of which the following is a good example:

		Gm.	
℞	Fresh barium sulphid	8	3ii
	Zinc oxid Starch, ăâ	12	3iii

At the time of using, mix with a sufficient quantity of water to make a paste. Apply the paste thickly to the surface; leave for a few minutes until irritation begins; then remove with water or oil.

The paste destroys the hairs with little irritation if it is not allowed to remain on too long. Apply a dusting powder afterward. Of course this simply destroys the hairs as they project from the surface of the skin, and, as after shaving, the hairs become coarser, it is necessary to repeat the process about once a week. The hairs can be bleached until they have no color by using hydrogen peroxid and ammonia water. This makes them less conspicuous, but does not remove them.

The only radical way of destroying hairs is by electrolysis. This is a satisfactory method only if the hairs are rather coarse and not too numerous. In many cases the hairs can be destroyed by the roentgen ray. There is no satisfactory and simple way of treating hypertrichosis.

FRECKLES AND SMALLPOX

To the Editor:—I have observed in my practice that freckled patients have among their near ancestors persons with abundant smallpox scars on the face. I consider this important in the family history.

A. GARCÍA GÓMEZ, M.D., Matanzas, Cuba.

ANSWER.—Freckles are a congenital defect in pigment distribution. Smallpox scars are acquired deformities of connective tissues. Such acquired deformities are not transmitted. It would, therefore, be entirely contrary to established facts to assume that pigmentary disturbances had been transmitted by a connective tissue deformity. There is no available literature on the subject.

AGGLUTINATION IN WIDAL TEST

To the Editor:—Can you give me any data as to the average agglutinin content of the blood in typhoid fever: that is, the degree of dilution in which agglutination occurs in the average case? I am interested to know how high the titer runs.

READER, Pittsburgh.

ANSWER.—If the typhoid bacillus is agglutinated by the patient's serum in a dilution of 1:100 or at least 1:40, the Widal reaction may be considered positive. Normal serum rarely agglutinates bacilli in a dilution higher than 1:10, but, occasionally the serum of healthy persons may agglutinate *B. typhosus* in dilutions up to 1:30.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, Nov. 9-10. Sec. Reg. Bd., Dr. F. J. Stout, Brinkley. Sec. Electic Bd., Dr. C. E. Laws, Ft. Smith.

CALIFORNIA: Sacramento, Oct. 18-21. Sec., Dr. C. B. Pinkham, 529 Forum Bldg., Sacramento.

CONNECTICUT: Hartford, Nov. 9-10. Sec. Reg. Bd., Dr. Robert L. Rowley, Hartford.

CONNECTICUT: New Haven, Nov. 9. Sec. Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec. Eclectic Bd., Dr. James E. Hair, Bridgeport.

FLORIDA: Jacksonville, Nov. 4. Sec., Homeo. Board, Dr. George A. Davis, Sec., East Port.

LOUISIANA: New Orleans, Nov. 2. Sec., Homeo. Board, Dr. F. H. Hardenstein, 702 Macheca Bldg., New Orleans.

LOUISIANA New Orleans, Dec. 2-4. Sec., Dr. E. W. Mahler, 1551 Canal St., New Orleans.

MAINE: Portland, Nov. 9-10. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

NEBRASKA: Lincoln, Nov. 11-12. Sec., Mr. H. H. Antles, Lincoln.

NEVADA: Carson City, Nov. 1. Sec., Dr. Simeon L. Lee, Carson City.

NEW JERSEY: Trenton, Oct. 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.

SOUTH CAROLINA: Columbia, Nov. 9. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TEXAS: Dallas, Nov. 16-18. Sec., Dr. Thomas J. Crowe, 617-20 Trust Bldg., Dallas.

REPORT OF THE NINTH EXAMINATION OF THE NATIONAL BOARD OF MEDICAL EXAMINERS

The ninth examination of the National Board of Medical Examiners was held in Philadelphia, May 19-26, 1920. The written examinations were held in the University of Pennsylvania from 9 a. m. to 1 p. m., and the laboratory and clinical examinations in the afternoons from 2 to 5. The subjects of the examination and the relative value of each were: anatomy, 100; physiology, 75; chemistry, 75; pathology, 75; bacteriology, 50; materia medica, pharmacology and therapeutics, 75; medicine, 200; surgery, 200; obstetrics and gynecology, 75; hygiene and sanitation, 50; medical jurisprudence, 25. A percentage of 75 was required to pass. Falling below 65 per cent. in two subjects, or below 50 in one subject, constituted a failure.

There were seventy-one applicants who applied for examination. Sixty-five were found to have the essential preliminary and medical qualifications. Sixty appeared for examination, of whom forty-six passed and fourteen failed.

Name and College	PASSED	Year Grad.
John Porter Scott, University of Pennsylvania		1919
Carl Frederic Schmidt, University of Pennsylvania		1918
Francis Held Adler, University of Pennsylvania		1919
Arthur Bomberger Light, University of Pennsylvania		1918
Isidor Schwaner Ravdin, University of Pennsylvania		1918
William Parks Belk, University of Pennsylvania		1914
Harriett Elizabeth Glenn, University of Pennsylvania		1919
Elizabeth Dixon Wilson, Women's Medical College		1919
Samuel Paul Taylor, University of Pennsylvania		1919
Verne Gerard Burden, University of Pennsylvania		1919
Matthew White Perry, University of Pennsylvania		1919
Newton Samuel Stern, Harvard Medical College		1915
Karl Kornblum, University of Pennsylvania		1919
Minnie Jane Sands, Women's Medical College		1918
Francis Henry Eaton, University of Pennsylvania		1919
Thomas Murphy McMillan, University of Pennsylvania		1917
Harry Lyndon Brockman, University of Pennsylvania		1917
John DeWitt Denney, University of Pennsylvania		1919
John Rodman Paul, Johns Hopkins Medical School		1919
Elizabeth Woolston Ford, University of Pennsylvania		1919
James Hallard Berge, University of Pennsylvania		1919
Herbert William Taylor, University of Pennsylvania		1919
William Minster Kunkel, Johns Hopkins Medical School		1919
Charles Hunter Heacock, University of Pennsylvania		1917
Leslie Tillotson Webster, Johns Hopkins Medical School		1919
George Bevier, Leland Stanford University		1919
Aldin Bliss Jones, University of Pennsylvania		1919
Thomas Joseph Ryan, University of Pennsylvania		1919
Don Geate Lew, University of Pennsylvania		1919
John Goodwin Taylor, University of Pennsylvania		1919
Harold Hirshland, Jefferson Medical College		1919
Madison Hines Roberts, University of Georgia		1918
Arthur Horton Mann, University of Pennsylvania		1919
Graham Harden, University of Pennsylvania		1919
William Rodger Gilmour, University of Pennsylvania		1919
Ammon George Kershner, University of Pennsylvania		1919
Raymond Julian Aloysius Dalton, Marquette University		1919
Edward Hastings Campbell, University of Pennsylvania		1919
John Moore Schmoele, University of Pennsylvania		1919
Merrill Jenks King, University of Pennsylvania		1919
Charles Edgar Ervin, University of Pennsylvania		1918
Rowland Wilson Bachman, University of Pennsylvania		1919
James Ernest Wadsworth, University of Pennsylvania		1918
James Gillespie Dickson, University of Pennsylvania		1918
Kuang Hsun Li, University of Pennsylvania		1919
Hugh McCauley Miller, University of Pennsylvania		1918
	FAILED	
University of Minnesota		1917
University of Pennsylvania		1918
Vanderbilt University		1919
Vanderbilt University		1918
University of Fennsylvania		1919
Jefferson Medical College		1919
University of Virginia		1919
University of Fennsylvania		1919
Jefferson Medical College		1919
University of Fennsylvania		1919
University of Fennsylvania		1918
University of Fennsylvania		1919
University of Fennsylvania		1919
University of Fennsylvania		1900

AVERAGES OBTAINED

Candidate by Number	Anatomy; Value, 100	Chemistry; Value, 75	Mat. Med., Pharm. and Therapeutics; Value, 75	Obstetrics and Gynecology, Value, 75	Hygiene; Value, 50	Medicine; Value, 200	Surgery; Value, 200	Pathology; Value, 75	Bacteriology; Value, 50	Physiology; Value, 75	Medical Jurisprudence; Value, 25	Final Average
1	87	76	77.5	80	82.6	86.5	88	89.3	77	76	80	836
2	78	64	81	75	76.2	81.2	84.9	82.6	71	75	65	781
3	77.5	80	72	80	78.6	81.5	92.2	84	77	85	80	821.5
4	78.5	74	86	78	80.4	91.5	85.1	85.3	83	76.5	80	834 9
5	60.5	66	78	73	78.6	76	82.7	80	67	82.5	70	750
6	74	71	84	75	78.6	67.2	80	89.3	71	70	90	758
7	85.5	62	85	77	78.6	83.7	85.4	88	77	75	80	812.3
8	76.5	79	71.5	67	78.8	80.2	84.8	87	87	80.5	70	798
9	71.5	74	83	80	79.6	67	77.9	62.6	68	76.5	70	732.8
10	80	85	77.5	82	18.2	81.5	78.2	70	68	80	70	783.8
11	81	55	78	75	73.4	45.2	71.6	91.3	62	60.5	90	779
12	84	71	78.5	78	80.2	83.5	77.9	88.6	76	75.5	70	797
13	83	58	80	77	75.6	77.2	76.5	72	76	60	60	745.5
14	65.5	58	78.5	75	80	75	82.7	57.3	72	75.5	80	734.9
15	92	69	77.5	82	75.2	80	90.7	87	89	68.5	90	849.8
16	75.5	68	75	80	83.2	79.7	82.8	80	75	64	96	792
17	85.5	75	89.5	87	80	88.2	85.1	87	94	77	80	855.3
18	86	86	92	95	82	85.7	86.1	90	83	81	90	868.3
19	66	78	84	77	77	80.5	88.2	81.3	79	81.5	80	802.2
20	83.7	83	92.5	93	80.6	86	89	81.3	91	80.5	80	864.6
21	73.5	60	75	75	81.6	60.2	83.4	72	65	52.5	76	707.3
22	77	70	70	75	79.6	61.5	70.5	50	75	70	60	686.3
23	75	75	82	80	79.2	82	84	77.3	69	66	80	781.2
24	84.5	69	85	80	81.4	66.5	83.4	81.3	77	76.5	66	774.4
25	89	58	89.5	82	80.4	82	90.6	89.3	91	74.2	60	837.3
26	75.5	64	67	75	75	75.5	84	67.3	55	60	80	726 2
27	82	69	77	78	78.6	81	82	72	75	80.5	66	786.5
28	80	71	80	82	77	83.2	88.5	77.3	81	84	90	814
29	80.5	61	90.5	85	77	78	92.8	98.3	82	83	80	837.7
30	76	69	88.5	82	79.4	65	78.2	77.3	84	60	80	752.8
31	77	69	85.5	82	75	67.2	83.2	70	71	73	80	754.9
32	74	70	80.5	92	78.6	81	87	74.6	74	63.2	80	794.4
33	68.5	69	80	77	77.6	71	80.7	69.3	66	64	66	730.2
34	67	70	79	80	82.8	64.7	90.2	93.3	74	62.5	66	764
35	65	69	78	80	80.9	80	80	74.6	69	60	70	751.4
36	80.5	73	85	85	78.6	78.5	82.6	82.6	84	71	66	801.1
37	75	69	73.5	87	87.4	79.2	88.7	55.3	73	76	80	781.4
38	74	91	83.5	75	82.4	78.2	90	87	72	72	70	812.5
39	75.5	65	77.5	79	80	78.5	76	74.6	70	60	70	747.6
40	76	69	75	85	84.8	84.5	82.7	86.6	73	60	70	772.6
41	79	78	76	95	85	81	91	86.6	88	60	70	831.4
42	61	90	85.5	60	79	66.5	79	69.3	67	69	60	720
43	69.5	76	75	80	72.6	68	75.8	50	75	72	66	713.1
44	75.5	86	82	82	80.6	79.5	94.8	90	81	78.5	80	840
45	88	69	85	78	69.6	70.2	81.8	88	81	67	50	780
46	85.5	86	90	90	82	84.5	89.6	82.6	90	77.5	66	858.9
47	78	69	93	85	76.2	85.5	82.3	90	88	71	76	831.3
48	75.5	82	87	85	80.6	76.7	83.5	94.6	80	65	70	808
49	91	73	80	86	81.6	75	89	96.6	85	86.5	90	833.5
50	78	82	81	78	78	69.5	85.4	80	77	60	70	772.6
51	72	82	79	86	75.8	75	84.7	88	85	72.5	80	801.3
52	74	57	82.5	82	80.6	69.7	84.8	84.6	74	74.5	80	766.5
53	76	69	80.5	82	79.2	75	77.3	78.6	78	49	76	763.3
54	67	77	71	86	79	71.5	84	83.3	74	69	70	763.4
55	89	51	50.5	75	57	55	84.4	60	57	47.5	60	655.3
56	70	65	85	90	76	86	83.6	93.3	84	67.5	70	811.8
57	57.5	62	75	84	77.4	75	78.7	81.3	79	68	70	741 4
58	75.5	80	87.5	80	77.6	75.5	85.7	70.6	83	62	70	787.4
59	79	80	85	90	82.8	88.5	86.5	87	76	83.5	70	843.6
60	83	69	88.5	86	82	87	92.5	87	84	69.5	80	855
Gen'l Aver.	76.9	71.8	80.8	81.3	78.7	76.6	84.0	80.0	70.3	76.8	14.3	

Nebraska June Examination

Mr. H. H. Antles, secretary, Nebraska Department of Public Welfare, reports the written and practical examination held at Lincoln, June 9-11, 1920. The examination covered 9 subjects and included 90 questions. An average of 70 per cent. was required to pass. Twenty-two candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Johns Hopkins University Medical Department		(1920)	90
University of Nebraska College of Medicine		(1917)	85, 88
John A. Creighton Medical College		(1920)	82, 82, 82, 83, 84, 84, 84, 84, 85, 85, 85, 85, 86, 86, 86, 86, 87, 87, 88.

Book Notices

LEHRBUCH DER VOLKSERNÄHRUNG NACH DEM PIRQUET'SCHEN SYSTEM. Bearbeitet von J. Heussler, E. Mayerhofer, Frau R. Miari, E. Nobel, Fr. Oberleitner, Cl. Pirquet, R. Schneeweis, R. Wagner. Herausgegeben von Priv. Doz. Dr. E. Mayerhofer, Assistant der Universitäts-Kinderklinik, und Prof. Dr. C. Pirquet, Vorstand der Universitäts-Kinderklinik in Wien. Paper. Price, 60 marks. Pp. 299, with 32 illustrations. Vienna: Urban & Schwarzenberg, 1920.

This is a sort of vade mecum for those who wish to apply the so-called Pirquet system of nutrition, in which the calory is replaced as a unit of food values by the "nem," representing the physiologic equivalent of a unit of human milk. The fundamental features of the new "system," explained in detail in Pirquet's "System der Ernährung" and B. Schick's "Das Pirquet'sche System der Ernährung (Springer, Berlin), have been reviewed in the English language by H. K. Faber (Von Pirquet's Feeding System, *Am. J. Dis. Child.* **19**:478 [June] 1920) and by Spivak (THE JOURNAL, July 31, 1920. p. 332). The essential knowledge to be acquired for feeding purposes is that of the nutrient value of the foods as they are used and the measure of the needs of those to be fed. For the former, Pirquet proposed the new unit referred to; for the latter, an estimate based on the "sitting length" or height of the person. If this simple scheme is really dependable in the sense of giving an approximate idea of body needs, it will be an undeniable practical advantage. There is a new nutritional vocabulary to be learned, and many may not agree with the distinguished Vienna pediatrician that his system has superiority over the now familiar calory notation in this respect. Parts of the new volume consist of popular expositions of the make-up of foods. One chapter devoted to the physiology of nutrition is presented in conventional form. The story of the vitamins, to which American investigators have contributed so much, lacks an up-to-date character. Other parts of the book deal with the culinary art and with food evaluation in harmony with Pirquet's plan. After all, we need the same energy and protein and other dietary items, whether they be measured in nems or calories. What's in a name?

PATHOGENIC MICROÖRGANISMS. A Practical Manual for Students, Physicians and Health Officers. By William Hallock Park, M.D., Professor of Bacteriology and Hygiene, University and Bellevue Hospital Medical College, and Anna Wessels Williams, M.D., Assistant Director of the Bureau of Laboratories of the Department of Health. Assisted by Charles Krumwiede, Jr., M.D., Assistant Director of the Bureau of Laboratories. Seventh edition. Cloth. Price, $6. Pp. 786, with 223 illustrations. Philadelphia: Lea & Febiger, 1920.

This useful and well-known manual has been carefully revised to include the recent advances in the field of microbiology. The chapter on mediums has been virtually rewritten, and utilizes the recent work on hydrogen-ion concentration. The sections on streptococci, on yeasts and on influenza bacilli have also been extensively revised. Other important changes have been made. The result is a comprehensive treatise on pathogenic micro-organisms which is especially useful for reference by advanced and research workers. The successive revisions have led to an occasional repetition or contradiction of statement, as in the section on yellow fever, but these oversights of arrangement will rarely cause confusion. There are some misprints, however, that should have been caught by the proofreader, one of the most curious being on page 634, where the word Quayagnit, we take it, should have been Guayaquil. These are minor blemishes. The book as a whole is excellent, and is sure to be given a ready welcome by all bacteriologists.

A TREATISE ON QUALITATIVE ANALYSIS. Adapted for Use in the Laboratories of Colleges and Technical Institutes. By Frank Clowes, D.Sc., F.I.C., Emeritus Professor of Chemistry, University College, Nottingham, and J. Bernard Coleman, A.R.C.Sc., Head of the Chemical Department in the South Western Polytechnic, Chelsea, S.W. Ninth edition. Cloth. Price, $5 net. Pp. 400, with 84 illustrations. Philadelphia: P. Blakiston's Son & Co., 1920.

In past years this book was virtually an authority in its field. This revision, however, does not measure up to the requirements of a modern textbook; in fact, it seems that unless the authors can keep abreast with the present pace of chemistry, it would be better to allow the book to go out of print. The illustrations are peculiarly out of date. The reactions may be typified as those of "paper chemistry"; thus, the formula for the interaction of mercurous chlorid and ammonium hydroxid balances prettily in print, but the reaction in the test tube does not occur as given; the student is informed that silver chlorid dissolves in potassium cyanid solution; but as the reason is not explained, the young analyst has to grope in the dark. In one breath the authors state that "HCl and other acids prevent the precipitation" of nickel sulphid, yet in the next line the incompatible statement is made that nickel sulphid "is insoluble in cold HCl"; evidently what the writers are not aware of is that nickel sulphid is soluble in hydrochloric acid solution, but it is slow of solution. The ionic theory is conspicuous by its absence, and therefore no explanation at all is offered as to why magnesium hydroxid is not precipitated by ammonium hydroxid in the presence of certain ammonium salts—a most valuable piece of knowledge for use in analytic work. The symbol "Am" is used for the more scientific "NH_4." Students and teachers can find better American books for the same price—or less. Incidentally, while Americans are asked to pay $5 for this work, it retails in England at 12s 6d, or $2.25 at the present rate of exchange.

'L.-P.' THE TREATMENT OF INFLAMMATION AND SEPSIS BY LIPOID-PARAFFIN DRESSINGS. By A. White Robertson, Brevet Lt.-Colonel, R. A. M. C. Cloth. Price, $2 net. Pp. 83. New York: E. P. Dutton & Company, 1919.

The pseudoscientific explanations found in this "pamphlet de luxe" are strongly reminiscent of the artifices resorted to by writers of detective stories who are forced to give an atmosphere of plausibility to their plots. Indeed, the title of one chapter might have made an admirable text for Conan Doyle: "The Quest of the Natural Agents in the Healing of Wounds." It takes about twenty-nine small pages—the price of the book is $2—for this English author to tell the reader of his "wonderful" paraffin dressing, and even then he does not give the formula. The following is an example of the ambiguous orismology: "By virtue of the phosphorus in the lecithin-kephalin-sphingomyelin lipoid group, oxygen can be energized in the cells for the destruction of toxins; while in the phrenosin-kerasin lipoid group, galactose controls oxygen and oxidation. Lecithin was therefore added to the dressing which, so far, had contained only spermaceti—as a cheaper substitute for cholesterin—in addition to the liquid paraffin, and the results were striking." Then follow forty-one pages of tedious, unsatisfactory case reports. Thus is introduced a new semisecret proprietary, "Lipinol (L.-P.)," by name, exploited by the Hollister-Wilson Laboratories. The latter state that the evidence for its employment is based on the "extensive and clinical trial of Lieut.-Col. A. White Robinson, R. A. M. C. [sic]"! Any one who might possibly be interested in this subject and the proprietary would save money by requesting advertising rather than by paying tribute for this bound edition. As might be expected, the author does not refer to the American work with paraffin films wherein simple surgical paraffin was found to be an excellent dressing for burns and other wounds.

SYPHILIS IN GENERAL PRACTICE WITH SPECIAL REFERENCE TO THE TROPICS. By K. K. Chatterji, F.R.C.S.I., Surgeon and Dermatologist, Campbell Hospital. With an Introduction by W. D. Sutherland, C.I.E., M.D., I.M.S., Imperial Serologist. Cloth. Price, Rs. 15 net. Pp. 382, with 56 original illustrations. Calcutta: Butterworth & Co., 1920.

After a short review of the historical facts concerning syphilis, the author discusses the social and national aspects of the disease and the proper attitude of the physician toward them. These chapters are worth reading by virtue of their clear exposition and the convincing way in which the conclusions are presented. The microbiology, general pathology and serology are explained clearly, the author having avoided losing himself in tedious and lengthy theoretical discussions—a mistake which, committed in so many textbooks, makes the general practitioner omit entirely the perusal of these chapters. The diagnostic part of this textbook is enlivened by many illustrations, of which especially the colored plates are to be mentioned with appreciation. The chapters on therapy follow the usual outlines, but it should be mentioned that the causative discussion of the therapeutic measures and the complete presentation of the technical details rise above the usual level. In the treatment of ocular syphilis it may

be suggested that the intravenous administration of mercuric chlorid should have found the prominent place it deserves. The author reports that the administration of extracts from the margosa tree was of great use to him in treating tropical syphilis. It may be safely stated that this compendium should have a prominent place among the publications of its kind.

AN ATLAS OF DENTAL EXTRACTIONS WITH NOTES ON THE CAUSES AND RELIEF OF DENTAL PAIN. Designed for the Use of Medical Students and Practitioners. By C. Edward Wallis, M.R.C.S., L.R.C.P., L.D.S., Dental Surgeon and Lecturer on Dental Surgery, King's College Hospital. Second edition. Cloth, $1.50 net. Pp. 26, with illustrations. Philadelphia: P. Blakiston's Son & Co., 1919.

This is a small atlas with descriptive notes designed especially for the medical practitioner who may in emergency find it necessary to extract teeth or relieve dental pain. The anatomy of the tooth and adjacent parts is briefly described, and then the points in diagnosis between a hyperemic or inflamed pulp and an inflamed peridental membrane, with the treatment of each. Few physicians would care to undertake several of the methods advocated, such as the application of arsenous oxid to the tooth pulp. Directions are given for securing local anesthesia with procain; these are lacking in the detail that is generally necessary to success. A minimum set of five forceps and an "elevator" are recommended for extracting any or all of the teeth. The illustrations display the use of these instruments in the extraction of the various teeth. The various positions for the patient's head, of the operator in relation to the patient, and of the operator's hands, are well shown.

Miscellany

SICKNESS AND ABSENTEEISM IN LARGE INDUSTRIAL ESTABLISHMENT

A manufacturing company which investigated the causes of absence from work among its 6,700 employees has permitted D. K. Brundage (*Pub. Health Rep.* **35**:2143 [Sept. 10] 1920) the presentation of some of the facts that were uncovered, in the hope that the information may be helpful to organizations contemplating the collection and analysis of similar information. Cases of sickness which lasted longer than two consecutive days constituted 31.5 per cent. of all lost time. The working time lost for all causes of absence by the 6,748 employees (average number for the year) totaled more than 115,000 working days, the equivalent of 384 years of work. In terms of time lost per employee, this means 17.1 working days, of which 5.4 days were due to cases of sickness that disabled for more than two consecutive working days, one half of a day on account of industrial accidents, one fifth of a day due to nonindustrial injuries, and the balance, or eleven days, for personal reasons and for illnesses of less than three days' duration. The fact that the peak of absenteeism was reached in May when absence for personal reasons became nearly twice as great as in the two months which followed, indicates that there may be a distinct tendency for wage earners to take a vacation in the spring and to remain on the job more faithfully immediately afterward than at any other time throughout the year. In April occurred the highest percentage of working time lost on account of cases of sickness which lasted longer than two days. The percentage of working time lost on account of sickness in January and February was as low as it ever got during the year, except for the summer months, June, July and August. The amount of sickness was considerable in March, and it is therefore quite probable that the high percentage shown for April was due in part to cases that were contracted during the middle or latter part of March and extended well into April, thus causing more days of disability in April than in the month of onset. Women lost 78 per cent. more working time than men, and absented themselves to a greater extent than the males every day in the week. Monday was the day of poorest attendance by both sexes; but there was gradual improvement until Thursday in the case of the women, and until Friday with the men, when the curves took an upward turn.

Medicolegal

Liability of Roentgenologist

(Gross v. Robinson (Mo.), 218 S. W. R. 924)

The Kansas City (Mo.) Court of Appeals says that, according to his allegations, the plaintiff, having had one of his ribs fractured, applied to the defendant to have a roentgenogram of it made. The defendant exposed him to the roentgenographic rays twelve or fifteen times more or less within two weeks, or for approximately 375 seconds, at a target skin distance of about 10 inches, using about 30 milliamperes of current, and with a spark gap of not less than 2½ inches, causing severe and lasting injuries. The trial resulted in a verdict in the plaintiff's favor for $10,000 damages, of which $2,500 was remitted, and a judgment for $7,500 was rendered, which is here affirmed.

Complaint was made that the trial court allowed the plaintiff to introduce evidence tending to show a machine which lacked certain appliances, when such condition was not pleaded. The avowed object in such testimony was only for the purpose of providing the negligence charged; that is to say, if a machine was not equipped with a filter, it was negligence not to use it. There was no pretense that the absence of a filter was, itself, negligence. But a filter being absent, it was negligence to make a certain character of exposures for a certain time, without the protection of a filter. Such evidence was necessary for framing an intelligible hypothetic question to an expert. Furthermore, evidence tending to show that the sore made by the burn would probably become malignant was given and justified under the plaintiff's petition.

A salesman for the company that had sold the machine to the defendant was at the latter's office and, after the defendant had failed with one or more exposures, was asked to try whether he could take one, which he attempted to do, but failed. It further appeared that, after the defendant had made several failures, he telephoned, in the plaintiff's presence, to another physician, and asked him to come and take a picture. The physician came, made the attempt, but got no picture. The defendant contended that he was not liable for the acts of either of these persons, and that as their attempts to secure a picture may have been the exposures that caused, or substantially increased, the plaintiff's injury, a case was not made against the defendant. With regard to the responsibility of the defendant for the acts of the other physician, it seems that the relation of master and servant, or of principal and agent, does not exist between two physicians where one has been sent to treat the patient of the other with the consent of the patient. In such instance the rule of respondeat superior or let the master answer, does not apply. From this legal standpoint, should the defendant be held, as a matter of law, not liable, as regards the other physician, on account of the part the latter took in the case. The court thinks that it should not so rule. The defendant had already caused two or more exposures, when he had the other physician intervene and in his presence take another with the same machine, the defendant then resuming the same treatment with the same machine. The defendant's continuance of the exposure with knowledge of what the other physician had done tended to show an adoption of the latter's effort. Keeping in mind that it was the number of exposures, within a given time, made as these were, that may have been the cause of the plaintiff's injury, especially when considered with the defective machine and with the defendant's knowledge of these things and of his presence when the other physician acted, it would seem to be unrighteous and unreasonable to absolve the defendant from liability for the other physician's negligence as a matter of law. It was a question for the jury. As to the salesman's part, the court finds less excuse for the defendant's contention, for the salesman was not a physician and made no pretense to the experience and skill of an expert in the medical profession.

The defendant claimed that he warned the plaintiff of the danger in more than two or three exposures in a given time, and that if the plaintiff insisted on them it would be at his

risk. But while the plaintiff may have assented to more than the two or three exposures, yet, of course, he did not assent to a careless exposure, with a machine that was out of order. While there was evidence tending to show that he was warned against more than three exposures and assented to a greater number, he did not consent to negligent conduct in the manner of taking the exposures, or of the defects in the machine used by the defendant.

Must at Once Certify Names for Free Treatment

(State ex rel. Conway v. Nolte (Mo.), 218 S. W. R. 862)

The Supreme Court of Missouri holds that, under the statute of that state, the relator was entitled to a peremptory writ of mandamus to compel the respondent, as comptroller of the city of St. Louis, at once to certify the relator's name to the superintendent of the Missouri State Sanitarium, at Mount Vernon, for the treatment of incipient tuberculosis. The court says that the respondent argued that, since he, as comptroller, was charged with the responsibility of conserving the financial interests of the city, and was especially charged with the duty of preventing the expenditure of any public money except as authorized by law or ordinance, he was entitled to a reasonable time to make an investigation before certifying to a condition that would result in a substantial outlay of public money. But the language of the statute is peremptory. It names the comptroller of the city of St. Louis, and in terms provides that he "shall at once certify the said name of said applicant to the superintendent of said sanitarium for admission and treatment of such persons" whenever a proper verified application is made to him. The sufficiency of the application in this case was not questioned. It was the comptroller's duty to certify the relator's name "at once." It cannot be held that he was entitled to a reasonable time or any time to do a thing which the statute does not empower him, either expressly or by implication, to do at all, but which, it clearly appears, the legislature did not intend he should do. Nor does the court agree with the respondent's contention that, since the city of St. Louis maintains a hospital for the treatment of its citizens afflicted with incipient tuberculosis, it is unbelievable that the legislature should provide that residents of St. Louis could compel the city to transport them and maintain them at the Mount Vernon Sanitarium, when the Koch Hospital is provided for their treatment by the city. The policy or impolicy of the act is not for courts to determine.

Supplemental Awards for Medical Treatment

(McBride v. Industrial Accident Commission et al. (Calif.), 187 Pac. R. 1050)

The Supreme Court of California, in denying a petition for a rehearing after it had denied an application for a writ of review to review the acts of the industrial accident commission, says that the petition for the writ of review was denied on the theory that the commission had the power to reserve, as it expressly did, an award for medical, surgical and hospital treatment, to which it found the claimant entitled, pending the procuring of the necessary information and vouchers for a supplemental award. The practice is perhaps not one to be commended, as a single final judgment covering all matters involved is the orderly method. The commission certainly could not be expected to allow supplemental awards for the purpose of correcting errors in the original award.

Estate Not Liable for Medical Services for Widow

(Oster's Executor v. Ohlman et al. (Ky.), 219 S. W. R. 187)

The Court of Appeals of Kentucky holds that, while the husband is primarily liable for the physicians' bills of his wife, the liability extends, so far as his estate is afterward concerned, only to medical services rendered to her during his lifetime. In this case the medical services for which it was sought to hold the deceased husband's estate liable were rendered to his wife, or rather widow, after his death, and it followed that there was no error in the refusal of the executor to allow the claim against the estate.

Society Proceedings

COMING MEETINGS

Am. Acad. of Ophthal. and Otolaryng., Kansas City, Mo., Oct. 14-16.
District of Columbia, Medical Society of, Washington, Dec. 1.
Medical Association of the Southwest, Wichita, Kan., Nov. 22-24.
Mississippi Valley Medical Association, Chicago, Oct. 26-28.
New Mexico Medical Society, Roswell, Oct. 15-16.
Southern Medical Association, Louisville, Ky., Nov. 15-18.
Southern Minnesota Medical Association, Mankato, Nov. 29-30.
Virginia, Medical Society of, Petersburg, Oct. 26-29.
Western Surgical Association, Los Angeles, Calif., Dec. 3-4.

AMERICAN ASSOCIATION OF OBSTETRICIANS, GYNECOLOGISTS AND ABDOMINAL SURGEONS

Thirty-Third Annual Meeting, held at Atlantic City, N. J., Sept. 20-22, 1920

The President, DR. GEORGE W. CRILE, Cleveland, in the Chair

Some Interesting Surgical Conditions of the Liver and Biliary Tract

DR. JOSEPH H. BRANHAM, Baltimore: A healthy gallbladder should never be removed, nor should it be subjected to operation. When symptoms are severe enough to warrant operation, in most cases the organ is so diseased as to be of little or no value and is a menace to health. For several years I have removed the gallbladder by a method that is almost subperitoneal. After the abdomen is opened, the ducts and neighboring organs are examined carefully. If the disease is confined to the gallbladder, an oval incision is made over the lower anterior surface of the organ: the peritoneal coat is dissected from the deeper tissues. The duct can always be recognized by the well marked sphincter. A considerable margin of the peritoneal coat is left at the liver attachment; the duct is severed, and after being explored and emptied of stones, a large catheter is fastened to it by a twenty day catgut suture; the peritoneal coat from each side is sutured together, and then to the ventral peritoneum. This leaves the catheter outside the peritoneal cavity and gives a smooth, serous surface over the entire wound, thus preventing adhesions. By confining the incision to the accessible part of the organ, one makes the suturing easier. A small cigaret drain left in for one or two days is all that is needed in most cases. After operations are performed in this way, there are few adhesions, and the patients are left usually in good condition.

DISCUSSION

DR. ORANGE G. PFAFF, Indianapolis: The statement has been made that a gallbladder once diseased is always diseased, but that is not always the case. If the abdomen is opened on account of symptoms and no stones are found, and very little demonstrable disease, and if the gallbladder is not easily emptied by pressure, it ought to be drained.

Where the Rubber Glove Is Behind the Times

DR. ROBERT T. MORRIS, New York: The rubber glove represents one of the best advances of surgery in general. It interferes with the sense of touch in some kinds of work. In abdominal work it is not necessary if the hands of the operator are otherwise well prepared. It requires a longer incision, and consequently is not in accordance with the principles of the fourth era of surgery.

DISCUSSION

DR. HERMAN E. HAYD, Buffalo: Dr. Morris did the profession a good service when he taught us to perform surgery through small incisions and to develop tactile sense. I was rather surprised that a man with a judicial mind like Dr. Morris should have put before the association so strongly the results of the work of Kennedy without the use of rubber gloves. It is hard to believe that of the patients operated on by surgeons who wore gloves 99 per cent. had adhesions, while those operators who did not wear gloves had only 7 per cent. adhesions. This is ridiculous.

DR. CHARLES L. BONIFIELD, Cincinnati: I cannot believe that the rubber glove in and of itself causes adhesions. I can conceive of a man who wears rubber gloves being rough, and a man without rubber gloves scratching tissues with his finger nails. One thing that induced me at an early age to wear rubber gloves was the fact that my finger nails were very hard to keep clean, and I seldom knew whether I had them clean or not, and I felt it was better to cover them up with something that I could boil. While rubber gloves may impair tactile sense a little, still they should be used in operating.

DR. GORDON K. DICKINSON, Jersey City, N. J.: Dr. Morris wants us to standardize operating by eliminating gloves. Why do we use gloves? Because otherwise we get infection. If you go the rounds of the clinics you will see the most incongruous things perpetrated, such as putting on soap and washing it off again. If you want to free your hands of germs, you must not wash the soap off and you must not scrape it off. Put soap on, rub it in, and you kill the germs. There is no germicide more potent than potassium soap.

DR. JOHN W. KEEFE, Providence, R. I.: A surgeon's tactile sense is not as acute with a rubber glove on as it is without it. When rubber gloves first came into use I employed them in nearly all the cases in which I operated. Now and then I slip the rubber gloves off because I think I can feel better without them.

DR. JAMES N. WEST, New York: Standardization stifles originality. There are times when the surgeon can operate to greater advantage without the use of gloves than with them, particularly if he is very careful in the preparation of his hands.

DR. ABRAHAM J. RONGY, New York: In a large city it is not only unsafe to operate without gloves, but unsafe to examine patients in the office without gloves. As a measure of personal protection, the use of gloves is one of the best things for the physician.

Hernia of Ileum Through Rent in Mesentery

DR. WILLIAM EDGAR DARNALL, Atlantic City, N. J.: A woman, aged 46, weighing 200 pounds, married, with one child, had never been seriously ill. Recently she noticed a "lump" in the abdomen and began to suffer with menorrhagia. Examination revealed a fibroid tumor of some size, freely movable and uncomplicated, and a very slight laceration of the cervix. July 18, 1918, a supravaginal hysterectomy was performed. She made a perfect recovery. August 12, she ate a large dinner. The next morning about 6 o'clock she was seized with a most agonizing pain in the epigastrium, and vomited. The pain was so severe that morphin was administered. Her bowels were irrigated, producing a copious stool. The next day her pains were considerably improved, but distention and signs of intestinal obstruction appeared. Operation was performed at 5 p. m. Through an opening in the mesentery of the second convolution of the ileum there had slipped a loop of the ileum belonging to the first convolution high up on the left side under the spleen. There was a volvulus of this loop, and it was gangrenous and perforated. There was an abscess in the left kidney pouch, and foci of pus were found at various locations in the upper abdomen. The whole abdominal cavity was filled with fluid and intestinal contents. The hernia was released, and the rent in the mesentery was closed. Twelve inches of ileum was resected, and a button for anastomosis was employed. Drainage and counterdrainage were used. Proctoclysis with Locke-Ringer solution was instituted, and the patient placed in the Fowler position. She died from shock about five hours later.

Unusual Abdominal Cyst

DR. ORANGE G. PFAFF, Indianapolis: A young married woman consulted me on account of a large abdominal cyst that had been tapped ten days previously. Her history was negative. She had passed through three normal pregnancies, the last one three years before, which was followed by phlebitis affecting both legs. This, however, had virtually disappeared. The abdominal swelling had not given her much trouble until about six months before she consulted me, when she began to suffer severely from pressure. Her appetite was impaired and she lost a few pounds in weight. The abdomen was greatly distended, and fluctuation was readily elicited in every part. Dulness on percussion was general, with the exception of a slight, indistinct resonance at the epigastrium. The case was considered one of large ovarian cyst, and I operated. The sac was densely adherent to the parietal peritoneum across the brim of the pelvis, in front of the uterus on a line corresponding to the vesicouterine fold. When the sac was separated along this line, a gush of several quarts of water occurred. The anterior wall of the cyst was now recognized as greatly thickened omentum, being in places more than half an inch thick. Peritoneal cysts varying in size from a walnut to a large grapefruit filled up the pelvis on both sides. The intestines were held down and away from the anterior abdominal wall by innumerable strands of adhesions, so that even when distended by gas there would be no note of tympany elicited on percussion. This was one of the puzzling elements in diagnosis. The laboratory reported proliferating tuberculosis with much newly formed fibrous tissue.

Obstruction of Superior Mesenteric Vessels from Bands, with Threatened Gangrene of Greater Part of Small Intestine; Recovery

DR. JAMES N. WEST, New York: A woman, aged 20, had a general abdominal pain for three days, and then suddenly developed violent and uncontrollable pain, with elevation of temperature, increase of pulse rate, and moderate distention. Abdominal section revealed the small intestinal tract in a state approaching gangrene, and a firm band, which proved to be a cecal mesentery, extended across the superior mesenteric vessels. In the inflammatory process of the appendix the cecal mesentery undoubtedly became tightly constricted across the superior mesenteric vessels, obstructing them completely, and resulting in swelling, edema and bloody effusion in the mesentery of the small intestines. Appendectomy was performed. Protracted recovery ensued.

The Toxic Thyroid: Its Treatment by Ether-Oil Colonic Anesthesia

DR. GORDON K. DICKINSON, Jersey City, N. J.: Excessive action of the thyroid is always associated with an overactivity of the suprarenals and glycogenic function of the liver, and a mental state analogous to fright. Surgery of the thyroid under these conditions demands recognition of component states. In ether-oil colonic anesthesia we have the ability to anesthetize patients safely and without their knowledge.

Gehrung Pessary

DR. EDWARD J. ILL, Newark, N. J.: In the mechanical treatment of cystocele, I urge the use of the pessary in those who are old and decrepit, for those with decompensated heart disease, diabetes and extreme renal affection; also for those with pulmonary disease that contraindicates anesthesia, and lastly the timid ones. It is by no means to take the place of the Watkins operation.

Pathologic Leukorrhea and Its Treatment

DR. FRANCIS REDER, St. Louis: A leukorrhea that is physiologic must be differentiated from one that is pathologic. The character of the discharge, and the various states on which the discharge depends, may reveal the seat of the disorder. The term "leukorrhea" groups together a large number of lesions, and although it is the most common and prominent symptom in the majority of uterovaginal cases, the fact that certain constitutional disorders have important relations with the different forms of leukorrhea must not be overlooked. Under such conditions it is the expression not merely of a symptom, but of the disease itself. Different periods of female life present different kinds of leukorrhea. Forms of leukorrhea that are not pathologic are easy to diagnose and readily yield to proper treatment. A pathologic leukorrhea often presents great diagnostic difficulties. Its response to treatment is frequently unsatisfactory.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

Sept. 15, 1920, **27**, No. 4

Absence of Vena Cava Inferior in 12 mm. Pig Embryo; Drainage of Portal System into Cardinal System. A. S. Begg, Boston.—p. 395.
Postnatal Development of Ovary (Albino Rat); Number of Ova. H. Arai, Philadelphia.—p. 405.
Micrologic Investigation of Hair Structure of Monotremata. L. A. Hausman, Ithaca, N. Y.—p. 463.

American Journal of Physiology, Baltimore

September, 1920, **103**, No. 2

*Blood Regeneration Following Simple Anemia. G. H. Whipple, C. W. Hooper and F. S. Robscheit, San Francisco.
I. Mixed Diet Reaction.—p. 151.
II. Fasting Compared with Sugar Feeding.—p. 167.
III. Influence of Bread and Milk, Crackermeal, Rice and Potato, Casein and Gliadin in Varying Amounts and Combinations. —p. 206.
IV. Influence of Meat, Liver and Various Extractives, Alone or Combined with Standard Diets.—p. 236.
V. Influence of Blaud's Pills and Hemoglobin.—p. 263.
Physiologic Changes Produced by Variations in Lung Distention. III. Impairment of Coronary Circulation of Right Ventricle. R. Hopkins and F. P. Chillingworth, New Orleans.—p. 283.
Vagus and Splanchnic Influence on Gastric Hunger Movements of Frog. Comparative Studies III. T. L. Patterson, Kingston, Ontario, Canada.—p. 293.
Relation Between Emotional and Metabolic Stability. F. S. Hammett, Philadelphia.—p. 307.
Four Factors Causing Changes in Type of Response of Isolated Intestinal Segment of Albino Rat (Mus Norwegicus Albinus) to Sodium Carbonate. S. Hatai and F. S. Hammett, Philadelphia.—p. 312.
Adjustment of Blood Volume After Injection of Isotonic Solutions of Varied Composition. A. H. Smith and L. B. Mendel, New Haven, Conn.—p. 323.

Blood Regeneration Following Simple Anemia.—This series of papers deals with the regeneration of red cells and hemoglobin following simple anemia and the influence of diet factors on this reconstruction. It is shown that the curve of hemoglobin regeneration can be influenced at will by various diet factors. A diet of dried white bread and skim milk may cause a slow, steady gain in blood pigment volume from week to week. A liberal diet of this type sufficient to maintain or increase body weight will often suffice for complete blood regeneration. A restricted diet of bread and milk barely sufficient for body maintenance will rarely permit of complete blood regeneration following simple secondary anemia. Crackermeal (a mixture of wheat flour, barley flour and rice flour) with milk or lard and butter, gives a blood pigment reaction following anemia which is similar to the familiar bread and milk reaction. Rice, potatoes and skim milk make up a diet which may be classed with bread and milk as regards its influence on red blood cell regeneration following the unit hemorrhages. If anything, this diet is slightly more efficient than bread and milk in promoting blood regeneration. Casein and gliadin by themselves are not efficient factors in promoting red cell regeneration but casein appears to be more efficient in the amounts used and under the conditions of these experiments. Cooked lean beef and beef heart alone or in combination with other foods will give a rapid blood regeneration after anemia. Cooked liver is as sufficient as meat and may be even more efficient in promoting complete blood regeneration subsequent to a standard anemia. Blood regeneration may be completed in from two to four weeks. Commercial meat extract is inert and watery liver extract has but little influence on blood regeneration. Blaud's pills are inert when added to various diets which do or do not favor rapid blood regeneration. Hemoglobin (by mouth, intravenously or intraperitoneally) exerts a distinctly favorable influence on subsequent blood regeneration.

American Journal of Roentgenology, New York

August, 1920, **7**, No. 8

*Case of Infantile Scurvy. W. A. Newell, Philadelphia.—p. 371.
Combination of Roentgen Rays and Radium in Uterine Carcinoma. E. H. Skinner, Kansas City, Mo.—p. 376.
*Radium Treatment of Menorrhagia. L. J. Stacy, Rochester, Minn.—p. 379.
Classification of Uterine Carcinoma for Study of Efficacy of Radium Therapy. H. Schmitz, Chicago.—p. 383.
*Occurrence of Intestinal Tuberculosis in Patients with Pulmonary Tuberculosis at Trudeau Sanatorium. L. Brown, H. L. Sampson and F. H. Heise. Trudeau, N. Y.—p. 395.
Lethal and Erythema Dosage of Radium in Malignancy. R. H. Boggs, Pittsburgh.—p. 398.
Value of Roentgen Ray in Diagnosis of Bladder Calculus. G. F. Lydston, Chicago.—p. 403.
*Radium in Toxic Goiter. W. H. B. Aikins.—p. 404.

Roentgenoscopy in Scurvy.—The roentgen-ray findings in a case of infantile scurvy are detailed by Newell. The diagnosis was based on the line of decreased density in the lower portion of the right femur, with increased density distal to it. There was also a suggestion of this appearance in the right tibia, and evidence of some abnormal change was noted in the same locality in the left extremity and at both angles, but the appearance here was not typical and somewhat suggested rickets. There was no evidence of hemorrhage. At a second examination, made one week after the first, the roentgenogram showed enormous subperiosteal effusions extending the entire lengths of the shafts of both femurs. The hemorrhages had stopped abruptly at the lines of absorption. This phenomenon is apparently due to the fact that the periosteum in childhood is loosely attached to the shaft of the bone, but firmly attached at the epiphyseal line; consequently the hemorrhages raise the periosteum very easily but meet with a barrier at the epiphyseal junction. The findings at subsequent examinations are noted.

Radiumtherapy of Menorrhagia.—Stacy reports the results obtained from radium treatment in 600 cases of menorrhagia and states that in young women with fibroids causing menorrhagia, radium should be used only in carefully selected cases, and in small amounts in the initial treatment. Pregnancy may occur after the application of radium, but in a small percentage of cases only. Abdominal myomectomy is preferable to radium in the treatment of women under 35 who have definite fibroids causing menorrhagia. Radium is the ideal treatment for menorrhagia in patients over 35 who have a fibrous type of uterus, and for patients who have small fibroids and menorrhagia. In cases in which the history is suggestive of carcinoma of the fundus an abdominal hysterectomy is the safer procedure, and should be advised even if the diagnostic curettement is negative for malignancy. Unless there is a definite contraindication large fibroids should be treated surgically because of the possibility that degenerative changes may occur in a tumor in which the blood supply has been interfered with, and because of the possibility of a mistaken diagnosis.

Tuberculous Colitis.—In a series of eighty consecutive routine examinations tuberculous colitis was diagnosed as positive in four and as doubtfully positive in two. According to the authors the use of carmin is a help in determining the presence of hypermotility in tuberculous colitis.

Radium in Toxic Goiter.—An experience of twelve years has convinced Aikins of the value of radium treatment in toxic goiter. He reports his experience with about 100 cases of this disease.

Archives of Neurology and Psychiatry, Chicago

September, 1920, **4**, No. 3

*Elements of Predisposition and Determining Causes of Secondary Disorders in Psychoneurotic Acroparalysis Resulting from War: "The Dyskinetic Syndrome." G. Roussy, Paris.—p. 247.
*Peripheral Nerve Topography. Seventy-Seven Observations of Electrical Stimulation of Normal and Diseased Peripheral Nerves. W. M. Kraus, New York, and S. D. Ingham, Philadelphia.—p. 259.
*Observations on Epileptics and on Epilepsy, Chiefly from a Roentgen-Ray Standpoint. T. M. T. McKennan, Pittsburgh.—p. 297.
*Colloidal Mastic Test. J. M. Stanton, St. Louis.—p. 301.
Physiologic Significance of Babinski Toe Response. I. L. Meyers, Chicago.—p. 309.
Motofacient and Nonmotofacient Cycles in Elevation of Humerus. B. Stookey, New York.—p. 323.

Secondary Disorders in Psychoneurotic Acroparalysis.—After an investigation of more than 2,000 psychoneurotic disorders these conclusions appear to Roussy to be justifiable: 1. To enable the appearance of vasomotor and trophic disorders, during the course of acrocontractural and acroparalytic manifestations, three conditions are necessary: (*a*) elements of predisposition and among them circulatory troubles, (*b*) immobility or defective function, and, (*c*) a

special mental state. 2. The circulatory caloric and trophic troubles are only manifestations of a secondary class arising from a primary condition of neuropathic nature, paralysis or contracture. Roussy proposes to designate the whole series of disorders constituting this syndrome "the dyskinetic syndrome, or syndrome of defective function."

Peripheral Nerve Topography.—This article is based on work done on nerves, normal and abnormal, exposed at operation in the U. S. Army hospitals at Cape May, N. J., and Fox Hill, N. Y., in 1919. Of the cases in which an attempt was made to localize bundles, only those that gave a positive result are included. Approximately 25 per cent. of the cases tried gave a negative result, due to complete functional interruption of the entire nerve. The positive cases numbered fifty-eight and, in these seventy-seven observations were made. They are analyzed. The patients in this series had been injured at least six months prior to examinations so that degeneration was completed long before they presented themselves. Most of the cases had been at a standstill for a considerable period, and were therefore deemed ready for operative interference.

Roentgen-Ray Findings in Epilepsy.—Ninety cases were examined by McKennan. The results of the roentgen-ray findings were: Tumors or evidence of pressure in the interpituitary area, 9 cases; bony deposits, 52 cases; small area, 10 cases; calcareous degeneration, 2 cases; cerebropathy (this is not shown by the roentgen ray), 9 cases; no changes, 8 cases; total, 90 cases. Twenty-four cases occurred in persons over 35 years of age. More than 50 per cent. of these cases being known to be due to an organic affection of the gland, causing it to be inefficient, would be a strong argument in itself for the conclusion that the other cases must have inefficient pituitary glands for some cause or causes. In some cases in which there was evidence of pressure in the pituitary area, McKennan has been able to have a roentgenogram made again in one or more years and has, in some instances, found that there was no progression. It would seem that if these cases are struma or other tumor growths the process of enlargement had ceased. It is possible that some of them may be simple hypertrophy. The question of pituitary feeding in epileptics, in the author's opinion, is an important one. McKennan has found that the extract of the whole pituitary gland in 2 grain doses, three times a day, and given four hours after eating, is the most satisfactory treatment. Bromids should always be used in conjunction with the pituitary extract. He is in the habit of using from 45 to 60 grains of bromid daily. After one year less bromid can be used, but the pituitary feeding must be kept up indefinitely, probably during the life of the patient.

Colloidal Mastic Test.—The examination of fluids by Stanton by both the colloidal gold and mastic tests has indicated that the information gained from the mastic test is in close agreement with that obtained from the gold test.

Archives of Ophthalmology, New York

July, 1920, **49**, No. 4

Refraction. A. Duane, New York.—p. 349.
Affections of Eye from Diseased Teeth in Their Relation to Lymphatic System. K. W. Dewey. Chicago.—p. 367.
Tenotomy of Inferior Oblique. H. H. Howard, Peking, China.—p. 381.
One Hundred Cases of Primary Acute Congestive and Subacute Glaucoma Under Treatment at Royal London Ophthalmic (Moorfields) Hospital During Past Four Years. C. Maghy, Chicago.—p. 390.
Optics of Cornea. G. W. Vandergrift, New York.—p. 421.
Case of Recurrent Chorioretinitis Brought About by Series of Different Etiologic Factors. C. E. Finlay, Havana.—p. 430.
Ocular Orientation: Function of Eyes. Importance in Ophthalmology; Dependence on Muscular System. E. H. Hazen, Oakland, Calif.—p. 434.

Boston Medical and Surgical Journal

Sept. 30, 1920, **183**, No. 14

Therapeutics of Essential Epilepsy. L. P. Clark, New York.—p. 397.
Plea for Early Diagnosis of Epilepsy. E. A. Tracy, Boston.—p. 401.
Prostatic Obstruction. A. H. Crosbie, Boston.—p. 403.
*Enlarged Mesenteric Lymph Nodes. H. M. Clute, Boston.—p. 409.
Treatment of Vascular Nevi with Radium. D. W. Montgomery and G. D. Culver, San Francisco.—p. 412.
Medical Judgments. H. W. Marshall, Boston.—p. 414.

Enlarged Mesenteric Lymph Nodes.—One of Clute's patients was 2½ years of age. The child was breast fed one year. Since a few weeks old it had had frequent attacks of abdominal pain occurring mostly at night. The child never vomited and had no fever. A sudden attack of abdominal pain, more severe than usual, awoke the child. The pain persisted for three or four days and was accompanied by diarrhea, but no vomiting or fever. The abdomen showed a movable mass just below the right hypochondrium. This mass was chiefly movable from side to side and was about 4 centimeters in diameter. It was hard, nodular and not particularly tender. At operation the ileum was found adherent to the transverse colon near the hepatic flexure and the ascending colon was almost completely obstructed. There was a caseous lymph node in the ileocecal mesentery which was the basis for the condition. The history of the second case, a child of 16 months old, was similar to that of the first. In the mesentery at the ileocecal junction was a small mass of enlarged glands. These were dissected from the mesentery and removed. Microscopic examination showed the nodes to be tubercular.

Colorado Medicine, Denver

September, 1920, **17**, No. 9

Group Medicine of the Past, Present and Future. F. R. Spencer, Boulder.—p. 232.
Radium Therapy in Diseases of Nose, Ear and Throat. Z. Von Dworzak, Denver.—p. 238.
*Hereditary Appendicitis. S. D. Van Meter, Denver.—p. 241.
Pulse, Temperature and Respiration in Influenza. C. Markel, Denver.—p. 244.
Clinical Evidence of Postinfluenzal Immunity. R. J. McDonald, Jr., Denver.—p. 247.

Hereditary Appendicitis.—Two series of cases in support of the hereditary theory of appendicitis are cited by Van Meter. In one family, during a period of six years, five of six children and the mother came to operation for acute appendicitis. One daughter, in addition to appendectomy, had duodenal ulcer and the mother had cholelithiasis. All had large edematous appendices, with a strikingly similar buried condition of the first 1 or 2 inches of the organ from the base, with angulation at the point where it became free, due to shortness of the meso-appendix. In the second family with ten children, the mother gave a history of chronic appendicitis covering a period of more than twenty years. Six of her children had appendicitis. In each case, in which an operation was performed, a corkscrew appendix was found.

Johns Hopkins Hospital Bulletin, Baltimore

September, 1920, **31**, No. 355

*Healing of End-to-End Intestinal Anastomoses with Especial Reference to Regeneration of Blood Vessels. F. R. Sabin, Baltimore.—p. 289.
*End-to-End Anastomosis of Intestine by Presection Sutures. An Experimental Study. E. Holman, Baltimore.—p. 300.
*Voluntary Acceleration of Pulse. J. T. King, Jr., Baltimore.—p. 303.
*Innervation of Tensor Veli Palatini and Levator Veli Palatini Muscles. A. R. Rich, Baltimore.—p. 305.
*Anaphylaxis. H. H. Dale, London.—p. 310
*Natural History of Typhoid Fever in Baltimore, 1851-1919 W. T. Howard, Jr., Baltimore.—p. 319.

Microscopic Study of Intestinal Anastomosis.—It is shown by Sabin that in the end-to-end anastomosis of the intestine the infolding of the wall does not produce any blocking of the lumen, that the infolded parts are viable, and that the mucosa continues to function in absorption, but that there is a very great increase in the number of cells secreting mucus. Ultimately this change in functional adaptation is brought back to the normal by the death of the mucus cells and the regeneration of the mucosa. Wherever the muscularis mucosae is cut or ruptured without the occurrence of an infection, the glands of the mucosa invade the submucosa, often forming cysts there, but these glands are subsequently restored to the mucosa by the regeneration of the muscularis mucosae which makes a barrier for the glands. Smooth muscle cells are very sensitive to injury and it is hardly possible to put a clamp on smooth muscle without producing changes that can be recognized under the microscope. The regeneration of the vessels is limited to specific areas where the growth of new vessels is preceded by a change in the endothelium of the old vessels which may be characterized as a return of the endothelium to the original angioblastic type involving a very great multiplication of the endothelial nuclei, and from these transformed vessels solid masses of angioblasts like those of

the embryo grow out, acquire a lumen, as in the embryo, through liquefaction of the cytoplasm and become new vessels, first capillaries, then arteries and veins.

Presection Sutures in Intestinal Anastomosis.—In the procedure employed by Holman in the presection suture method the two points of proposed division of the bowel are selected at any distance apart, preferably where the vessels of supply are easily seen. The loop to be resected is milked free of intestinal contents, and rubber-covered clamps are applied very gently and with but just sufficient pressure to prevent the passage of intestinal contents. The clamps are applied on each side of the two lines of division about 1 inch removed from the line of division. The loop arteries paralleling the bowel are ligated exactly on the proposed lines of division. The points of importance to be noted in connection with the suture used are: 1. All sutures are applied before incision into the bowel, regardless of the amount of bowel to be resected. 2. All sutures are applied without entering the lumen and without handling the septic mucosa at any time. 3. The sutures are applied at right angles to the lumen of the bowel and therefore parallel to the large vessels coursing through the bowel wall. Accordingly, none of the larger vessels are constricted when these sutures are tied and, as shown by injections, there is not the slightest impairment of circulation to the severed end of the various intestinal layers. 4. Furthermore, the villi of the mucosa continue to function to the very edge of the divided bowel. 5. There is a minimum of trauma such as accompanies the use of mechanical devices, or the handling of the bowel edges with forceps as in the plain end-to-end and Connell sutures, in all of which injury to the mucosa is quite unavoidable.

Voluntary Acceleration of Pulse.—The patient whose case is cited by King could accelerate the pulse rate by "thinking about it." Almost immediately on command to accelerate, the rise in rate set in sharply. The pupils dilated slightly, the respirations became somewhat irregular and seemed a little more shallow. However, the acceleration was equally marked when the subject held his breath as it was under the usual conditions.

Paralysis of Palate: Its Nerve Supply.—It was determined by Rich that the fifth nerve is the only cranial nerve which supplies motor fibers to the tensor veli palatini muscle. The failure of most clinical observers to detect paralysis of the palate in cases of disease of the fifth nerve arises from the fact that the tensor veli palatini exerts, ordinarily, no effect on the soft palate that can be detected by oral examination. The method of intracranial stimulation, combined with experimental paralysis of the muscle produced by nerve section, places the motor supply of the levator veli palatini muscle in the so-called bulbar portion of the eleventh nerve (more properly speaking, in the inferior rootlets of the tenth nerve, since the bulbar portion of the eleventh has been shown to be, in reality, an integral part of the vagus).

Anaphylaxis.—It seems to Dale that the logical procedure is to interpret the unknown mode of action of the poisonous products from proteins in the light of what we do know concerning the mode of action of the specific antigen on the anaphylactic tissue; to suppose that histamin and the other substances having this type of action also produce their action by initiating a change in the state of dispersion of the protoplasmic colloids; that it is a change of this kind, which, in terms of the different physiology of the different types of cell, causes contraction of the plain muscle, slackness and permeability of the capillary walls, and the whole group of phenomena which, with varying prominence in different species, constitute the complex which we know as the anaphylactic shock, and which histamin and the poisonous protein derivatives so faithfully reproduce. This is the concepton of the nature of the anaphylactic shock, and of its relation to the action of a group of natural proteinogenous poisons, which seems to Dale at present to be at once the most economical of hypothesis, and the most fruitful of suggestion for further investigation.

Typhoid in Baltimore.—Howard made a complete study of all factors connected or associated with typhoid as noted in Baltimore for a period of sixty years.

Journal of Experimental Medicine, Baltimore

Sept. 1, 1920, **32**, No. 3

*Influence of Variations of Mediums on Acid Production by Streptococci. F. S. Jones, Princeton, N. J.—p. 273.
Enchancement of Opsonizing and Agglutinating Powers of Antipneumococcus Serum by Specific Precipitating Serum. I. W. Pritchett, Baltimore.—p. 283.
Use of Single Cell Method in Obtaining Pure Cultures of Anaerobes. M. A. Barber, New York.—p. 295.
*Experimental Inoculation of Malaria by Means of Anopheles Ludlowi. S. T. Darling, Kuala Lumpur, Federated Malay States.—p. 313.
Studies of Bacillus Murisepticus, or Rotlauf Bacillus, Isolated from Swine in United States. C. Tenbroeck, Princeton, N. J.—p. 331.
Effects of Enzymes in Serum on Carbohydrates and Their Relation to Bacteriologic Technic. C. Tenbroeck, Princeton, N. J.—p. 345.
Modification of Van Leersum's Bloodless Method for Recording Blood Pressures in Animals. A. E. Cohn and Robert L. Levy, New York.—p. 351.
Production in Vitro of Enameba Tetragena and Enameba Coli from Their Cysts. K. Yoshida, Kyushu, Japan.—p. 357.

Culture Medium and Acid Production by Streptococci.—The results obtained by Jones show that the limiting hydrogen ion concentration may be influenced by differences in the medium, therefore, he points out that the limiting hydrogen ion concentration of an organism should be defined in terms of medium composition, the initial reaction and other conditions which may favor or hinder abundant growth.

Experimental Malaria in Man.—Three persons were experimentally inoculated with malaria by means of *Anopheles ludlowi* reared from larvae and infected with a pure strain of subtertian plasmodium (*Plasmodium falciparum*) thus proving, in Darling's opinion, that there exists no mechanical impediment or obstacle to the free exit of sporozoites from the salivary ducts or proboscis. In the dissection of infected mosquitoes there were no evidences of degenerated zygotes. Sporozoites appeared promptly in the salivary glands in from nine to twelve days. Inoculation occurred with ease either in an interrupted feeding or after mosquitoes had been fed. The period of incubation was fourteen and eighteen days. The clinical manifestations were more severe in the subject that had never been infected with malaria previously, while the splenic enlargement was most pronounced in the subject infected after a long interval of freedom from malaria. In a third subject already suffering from tertian malaria there was only the slightest evidence of physical illness elicited by the superimposed subtertian infection; the temperature, however, became duly elevated. Darling states that in consideration of the facility with which this species can be infected and man inoculated experimentally, the occurrence of naturally infected wild specimens, and the positive epidemiological evidence, there should no longer exist in the minds of sanitarians any doubt as to its being a malarial carrier. Operations against this species can therefore be recommended without reservation and should be carried out without delay.

Journal of Infectious Diseases, Chicago

September, 1920, **27**, No. 3

*Comparison of Morphologic, Cultural and Biochemical Characteristics of B. Abortus and B. Melitenis. K. F. Meyer and E. B. Shaw, San Francisco.—p. 173.
*Principles in Serologic Grouping of B. Abortus and B. Melitensis. Correlation Between Absorption and Agglutination Tests. M. L. Feusier and K. F. Meyer, San Francisco.—p. 185.
"Blackhead" in Turkeys, with Special Reference to Transmission by Inoculation. E. E. Tyzzer and M. Fabyan, Boston.—p. 207.
*Advantages of Solid Paraffin for Sealing Anaerobic Fluid Cultures. L. R. Thompson, San Francisco.—p. 240.
Pathogenic Bacteria in Hog Cholera Blood. L. P. Doyle and R. B. Spray, Lafayette, Ind.—p. 245.
*Studies in Epidemic (Lethargic) Encephalitis. L. Loewe and I. Strauss, New York.—p. 251.
*Changes in Virulence of Hemolytic Streptococci, with Special Reference to Immune Reactions. Y. Nakayama, Chicago.—p. 270.

Bacterium Melitensis.—A comparative study of twenty-one cultures of so-called *Micrococcus melitensis* obtained from various sections of the world and of thirty-two cultures of *B. abortus* (Bang) isolated in this country and in England, Meyer and Shaw believe justifies the following conclusions: The causative organism of undulant fever of man and of malta fever of goats cannot be distinguished morphologically or biochemically from the organism responsible for infectious abortion in demesticated animals. So-called *M. melitensis*

appears in young cultures as a short rod and should therefore be designated as *Bacterium melitensis*. The pigment production of the majority of actively growing *B. melitensis* strains on glycerol peptic digest agar and on alkaline potato cylinders after 5 days' incubation is more intense than with the strains of *B. abortus*. Both *B. melitensis* and *B. abortus* cultures produce after twenty days' incubation in glucose and lactose broth an alkaline reaction and a characteristic reduction of the H-ion concentration equal to about 0.6 or 1.0 p_H.

Serologic Grouping of B. Abortus and B. Melitensis.—In conforming to the main classification adopted by the Society of American Bacteriologists, Feusier and Meyer suggest that *B. abortus* and *B. melitensis* group be given generic rank in the Bacteriacae family as the genus "Brucella." A series of agglutination tests with *B. abortus* and *B. melitensis* antiserums disclosed gradation in titer limits for the different strains, and the gradations were constant for the same strains in the various antiserums. It was found that the sets so formed correlated with the groups resulting from the absorption tests. The serums of cows and hogs suffering from natural abortion disease may also react to both *B. abortus* and *B. melitensis* organisms.

Paraffin Sealed Anaerobic Culture Tubes.—Tubes sealed with solid paraffin, by the method described by Thompson are said to give a greater percentage of positive growths with stock anaerobic cultures than parallel tubes sealed with liquid paraffin. This advantage is due to the prevention of the downward diffusion of oxygen by convection currents in the tubes sealed by the solid paraffin method.

Studies on Epidemic Encephalitis.—In their reported investigations Loewe and Strauss have brought forward this evidence: Berkefeld filtrates of brain material, nasopharyngeal mucous membrane and nasal washings from cases of epidemic encephalitis have produced in rabbits and monkeys lesions typical of this disease. Spinal fluid and blood have also produced the disease experimentally in these animals. Many of these animals have succumbed with the typical picture of epidemic encephalitis. The virus has been passed through many series of animals. It can be preserved for many months in 50 per cent. glycerol. Cultures made on ordinary mediums and by Rosenow's technic have proved negative. By means of the ascitic-tissue culture methods perfected by Noguchi, the authors have been able to cultivate a minute, filtrable organism from cases of epidemic encephalitis: brain, nasopharyngeal mucous membrane, nasopharyngeal washings, spinal fluid and blood. The same organism has been recovered from the brain and nasopharyngeal mucous membrane of animals that have been inoculated with virus and cultures and which have succumbed to the experimental disease. The cultures thus recovered from these animals have produced the disease when injected into other animals and the organism has again been recovered. Positive animal inoculations have been obtained with the eleventh generation of this organism. Isolated colonies of the organism grown on solid Noguchi medium have been picked and pure fluid cultures secured. These fluid cultures have also produced encephalitis in animals. These results indicate that epidemic encephalitis can be differentiated from epidemic poliomyelitis for these reasons: Rabbits are susceptible to infectious material from epidemic encephalitis and not from poliomyelitis. Monkeys are very susceptible to poliomyelitis and relatively refractory to material from epidemic encephalitis. Spinal fluid from poliomyelitis is innocuous when injected into rabbits and monkeys, whereas spinal fluid from cases of epidemic encephalitis produces in both of these animals lesions typical of the disease. Control studies have been uniformly negative with material obtained from human patients suffering from or dead of, conditions other than epidemic encephalitis.

Changing Virulence of Hemolytic Streptococci. — The results of observations on changes in virulence of hemolytic streptococci produced by animal passage, growth in artificial culture, and certain other conditions are recorded by Nakayama. At the same time the reactions with immune serums of streptococcal strains of varying degrees of virulence were studied and the results thus obtained are stated.

Journal of Nervous and Mental Diseases, New York and Lancaster, Pa.

July, 1920, **52**, No. 1

*Rupture of Spinal Cord in Dystocia. F. H. Kooy, Groningen, Holland. —p. 1.
Facial Pontine Diplegia (Traumatic). G. B. Hassin, D. M. Levy and W. E. Tupper, Chicago.—p. 25.

Rupture of Spinal Cord in Dystocia.—Kooy reports the case of a child born by version and extraction. Three days after birth, the mother noticed three ulcers on the child's rump which grew rapidly larger and deeper. The child' grew, except for the lower extremities, and appeared to be intelligent. At the age of 2 years, the child's legs were spastic and paretic, but could be moved weakly. The reflexes were greatly exaggerated, with a double positive Babinski. Pain sense was decreased and thermal sense was lost. No visible or palpable abnormalities of the vertebral column were noted. At the age of 7 years, the legs were completely paralyzed; knee jerks were diminished, the ankle jerks and the Babinski were abolished. Pain sense was greatly diminished. There was incontinence of the bladder and bowel. The patient died at the age of 8½ years from pyemia. The diagnosis was a lesion of the spinal cord probably in consequence of dystocia. At the postmortem it was found that the cord was almost completely ruptured at the level of the ninth and tenth thoracic segments.

August, 1920, **52**, No. 2

Psychiatry Before Hippocrates. J. Wright.—p. 97.
*Pupillary and Reflex Disturbances in Two Hundred and Seventy-Five Cases of Neurosyphilis. L. G. Lowery and M. K. Benedict, Boston. —p. 106.
*Trauma and Other Nonsyphilitic Influences in Paresis. M. Osnato, New York.—p. 112.
Dystocia Musculorum Deformans; Report of Case. H. W. Frauenthal and C. Rosenbeck, New York.—p. 134.

Pupillary Disturbances in Neurosyphilis.—In 70 per cent. of 275 cases of neurosyphilis, Lowery and Benedict found some type of abnormal pupillary reaction, in 50 per cent. a stiff pupil and in 40 per cent. the Argyl Robertson pupil. The latter occurs more often in tabes and in taboparesis than in paresis. In 70 per cent. of all cases some abnormality of the tendon jerks is present, rather more than half showing diminished or absent jerks. These are said to be the most accurate clinical signs of neurosyphilis. They are often equivocal, hence the importance of lumbar puncture in the diagnosis of nervous and mental disease.

Influence of Trauma in Paresis.—Evidence is submitted by Osnata that cerebral syphilis of the paretic type develops when something happens to change the permeability of the blood vessels of the brain, thus allowing the spirochetes and their toxins access to brain tissue. Trauma of the brain may, therefore, be causing vascular injury or brain destruction, to be followed later by gliosis and nerve cell sclerosis allowing first the spirochetal invasion and later adding to the gliosis and sclerosis of nerve cells which are also an integral part of the paretic brain pathology. From the clinical evidence submitted it was apparent that certain cases of paresis have been acutely precipitated and others adversely influenced by craniocentral injury. Cognizance of this should be taken in the treatment of such patients.

Kansas Medical Society Journal, Topeka

September, 1920, **20**, No. 9

Chorea of Childhood; Sydenham's Chorea; St. Vitus' Dance. L. C. Axlell, Newton.—p. 251.
Tubercular Peritonitis with Special Reference to Cases Involving Pancreas. R. C. Dugan, Ottawa.—p. 254.
Hypodermic Therapy of Chronic Constipation. J. W. Ousley, Kansas City, Mo.—p. 256.
Bacterin Treatment of Infections. F. J. Champney, Cleveland.—p. 257.

Medical Record, New York

Sept. 25, 1920, **98**, No. 13

"Subconsciousness" and Dreams. H. R. Marshall, New York.—p. 505.
*Report of One Thousand Heart Patients Subjected to Complete Cardiac Examination with Account of Therapeutic Results. L. F. Bishop, New York.—p. 508.
Endocrinology and Heart. T. E. Satterthwaite, New York.—p. 510.
Treatment of Cardiac Arrhythmia. J. M. Anders, Philadelphia.—p. 512.
Problem of Ailing Medical Profession and Its Solution. J. Byrne, New York.—p. 514.

Hemangioma and Lymphangioma: Their Response to Injection of Boiling Water. F. Reder, St. Louis.—p. 519.
Pharmaceutic Aspects of National Health Insurance. F. L. Hoffman, Newark, N. J.—p. 521.
Status of Luetin Test. L. Hannah, Sylvania, Ga.—p. 522.

Therapy of Heart Disease.—Bishop's study emphasizes: first, the extreme value of digitalis as a remedy in cardiac disease with the conclusion that there is no necessity for a particular attempt to go outside of digitalis in the use of analogous drugs. The second conclusion is the vast superiority of hygienic treatment, including hydrotherapy, graduated exercises, and psychotherapy, over an attempt at specific medication. The third conclusion is that at the time when heart patients reach the heart specialist it is usually too late to expect any special result from the so-called removal of specific causes as of focal infections.

Modern Hospital, Chicago

June, 1920, **14**, No. 6

New York's New State Hospital. E. S. Ellwood, Albany, N. Y.—p. 421.
Visualization of What Hospital Standardization Means to a Community. F. E. Chapman, Cleveland.—p. 428.
Relation of Library to Hospital. J. E. Elliott. Chicago.—p. 432.
What Should Private Patients Pay? S. S. Goldwater, New York.—p. 436.
Health Center for Norfolk, Virginia. M. Hyde, New York.—p. 439.
Creating a Miniature World. M. H. Barker, Worcester, Mass.—p. 446.
Standardization of Hospital Records. G. Clark, San Francisco.—p. 449.
Psychologic Essential in Good Hospital Management. B. B. Lyons, Chicago.—p. 454.

July, 1920, **15**, No. 1

Stevens Clinic—Fall River, Mass. W. S. Hill, Boston.—p. 1.
Carney Hospital Obstetric Department. F. W. Johnson, Boston.—p. 9.
Board of Trustees; Its Personnel and Organization. F. E. Chapman, Cleveland.—p. 11.
Rôle of Hospital in Public Health Campaign. J. J. Weber.—p. 15.
New Pathological Laboratory of Mercy Hospital of Springfield, Mass. J. E. Dwyer, Jr.—p. 19.
Hospital Ventilation and Heating. J. R. Allen.—p. 22.
School in Modern Hospital. M. B. Haynes.—p. 24.
Fire Protection; Trustees' Responsibility. H. W. Forster.—p. 27.

New York Medical Journal

Oct. 2, 1920, **112**, No. 14

*Influence of Color of Urine on Readings of Phenolsulphonephthalein Test. V. C. Pedersen, New York.—p. 477.
*Urea Output as a Practical Kidney Function Test. S. H. Blodgett, Boston.—p. 483.
Surgery of Prostate. J. F. X. Jones, Philadelphia.—p. 486.
*Treatment of Specific Urethritis. R. H. McNair, Springfield, Mass.—p. 490.
Clinical Status of Gonorrhea. J. M. Cadwallader and A. A. Brown, San Antonio, Texas.—p. 491.
"When is Gonorrhea Cured?" M. Meltzer, New York.—p. 492.
*Intensive Administration of Arsphenamin. H. Goodman, New York.—p. 494.
Fatal Postarsphenamin Jaundice. A. S. Hyman, Boston.—p. 496.
*Reactions Following Intravenous Administration of Arsphenamin. A. A. Strickler, Philadelphia.—p. 498.
Venereal Disease Problem. W. R. Riddell, Toronto, Can.—p. 500.
Medical Men in American Revolution. L. C. Duncan, Washington, D. C.—p. 501.

Influence of Color of Urine on Phenolsulphonephthalein Test.—Pedersen tries to account for the 15 per cent. apparent loss of dye, indicated by the readings of the scale, between the usual maximum of 85 per cent. of the material excreted by the patient in two hours and the 100 per cent. of the phenolsulphonephthalein that has been injected. The factor responsible is that of the color alteration or combination, so that one cannot really match the beautiful reddish purple of the alkalized phenolsulphonephthalein test solution with the same quality of reddish purple in the urine, because the latter is materially altered by the urinary pigments. In fact, therefore, the test is in very large degree one of judging the intensity of two colors nearly alike but never absolutely alike in tone or quality. The possible sources of destruction of a portion of the dye are metabolism, excretion, technic and vision. Each of these factors is discussed. Pedersen maintains that in all the ordinary scale readings 10 per cent. should be deducted for pale yellow, 15 per cent. for positive yellow and 20 per cent. for urines with a reddish or orange tinge, in order to arrive at the absolute excretion, and thereafter decide in favor of or against operation.

Diet a Kidney Function Test.—Blodgett is convinced that the ability of the kidney to pass off the waste products of metabolism is not, in many cases, shown by any of the so-called kidney function tests. The ability of the kidney to pass off the dangerous waste products of metabolism is easily discovered by means of feeding definite amounts of nitrogenous food to a person previously put on a so-called basic diet and watching the output of urea. Having this knowledge, the diet can then be built up so that the person takes the maximum amount of nitrogenous food, the waste from which his kidneys can get rid of, and then his exercise must be limited to correspond to his prescribed diet.

Treatment of Syphilitic Urethritis.—McNair uses silver nitrate solutions in gradually increasing strength and in small quantity at a time.

Intensive Arsphenamin Administration.—Goodman reports on the results of intensive specific therapy in eighty hospitalized syphilitic negro patients. The intensive method consists of the daily administration intravenously of arsphenamin for three doses. Each dose consists of 4 dg. dissolved in 50 c.c. of freshly distilled and boiled water, and then alkalinized to comparative neutrality with 15 per cent. sodium hydroxid. The clinical results were immediate in all uncomplicated syphilitic manifestations. The infectiousness of the patient was reduced thereby much quicker than with the same amount of the arsphenamin introduced intravenously by the so-called intermittent method. The changes in serology were most encouraging. The public health value of this method of therapy is emphasized since the period of hospitalization of infectious syphilitic persons is much reduced. This is an important consideration in the prophylaxis of syphilis by treatment.

Arsphenamin Reactions Cannot Be Prevented.—As a result of investigation, Strickler concludes that the injections of either atropin sulphate, in the dose of 1/75 grain, or epinephrin chlorid, in the dose of 0.5 c.c., previous to arsphenamin injections, in no wise influence the occurrence of early reactive phenomena.

New York State Journal of Medicine

September, 1920, **20**, No. 9

Relationship of External Appearance of Body to Disease. George Draper, New York.—p. 273.
Disturbances of Endocrine Function of Gonads. W. C. Quinby, Boston, Mass.—p. 279.
*Diagnosis and Treatment of Thyroid Disease Based on Use of Epinephrin Hypersensitiveness Test. Emil Goetsch, Brooklyn, N. Y.—p. 282.
Results of Surgical Treatment of Exophthalmic Goiter. E. S. Judd, Rochester, Minn.—p. 287.
Practical Points in Goiter Surgery. G. W. Cottis, Jamestown, N. Y.—p. 290.
Some Surgical and Neurological Aspects of Peripheral Nerve Injuries. B. Stookey, New York.—p. 294.
Recognition and Management of Bladder Symptoms in Spinal Cord Disease. E. M. Watson, Buffalo, N. Y.—p. 298.

Diagnosis and Treatment of Hyperthyroidism.—Goetsch emphasizes the importance of recognizing hyperthyroidism among a large group of obscure cases symptomatically simulating one another and of which tuberculosis is one of the most important, and also the diagnostic value of the epinephrin test in recognizing hyperthyroidism, in which case there is a constitutional hypersensitiveness to this drug. He claims that as far as the pathology of the gland is concerned in these clinical cases, which were regarded as tuberculosis by many physicians who saw them previous to their appearance at Saranac Lake, Goetsch draws attention particularly to that condition to which he has given the name of "diffuse adenomatosis" because it is in this condition that the diagnosis is so difficult to make. However, he claims that the most expert clinical diagnostician, is often at a loss in recognizing cases of mild hyperthyroidism due to diffuse adenomatosis of the thyroid gland. In this latter condition there are neither the well known eye signs and vascular features of exophthalmic goiter, nor are there the discrete nodules of adenoma. The gland is usually mildly to moderately enlarged, fairly uniformly; it has an elastic, firm feel and at operation is seen to be more or less adherent to the surrounding structures. The capsule is thickened, there is some increased circulation particularly, it seems, of venous nature, and the characteristic features are more particularly seen in the microscope. There is an increase of the interstitial so-called "fetal cells." There

are numerous nests of very small newly formed acini. The remaining larger acini vary greatly in size. The alveolar walls are often wavy; the cells are cuboidal to low columnar and oftentimes aggregations of lymphoid cells are characteristically seen. Goetsch is almost of the opinion that this is a new clinical entity which heretofore has very often escaped notice, and in which hyperthyroidism is produced principally by an increase in amount of the so-called fetal tissue in the thyroid, with also some increased activity of the thyroid alveolar cells. This, in a number of cases, was recognized by the increased concentration of mitochondria in the cells. When a positive epinephrin response is elicited after a reasonable trial at rest cure, and in the absence of any other recognizable pathology, the physician should think of a possible hyperthyroidism and then of the benefit which in many of these cases follows resection of the gland. The results thus far obtained are sufficiently encouraging to warrant further trial of this kind.

Philippine Journal of Science, Manila

April, 1920, **16**, No. 4

Some Features of Philippine Ornis. R. C. McGregor, Manila.—p. 361.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Sept. 11, 1920, **2**, No. 3115

War Physical Census. J. Galloway.—p. 381.
Place of Radiologist in Medicine. A. E. Barclay.—p. 385.
*Place of Electricity in Diagnosis and Treatment of Nerve Injuries. H. S. Souttar.—p. 387.
*Value of Electrical Testing of Nerves at Operation. N. H. M. Burke.—p. 388.
*Condenser Tests in Diagnosis and Prognosis of Nerve Injuries. C. Worster-Drought.—p. 389.
Roentgen Rays in Diagnosis of Tumors of Thorax. R. Knox.—p. 392.
Diagnostic Value of Renal Outlines. S. G. Scott.—p. 395.
*Roentgen Ray Therapy in "Oriental Sore." J. G. Tomkinson.—p. 397.
Melted Paraffin Wax Bath. P. H. Humphris.—p. 397.

Electricity in Diagnosis of Nerve Injuries.—In the case of an injury of a peripheral nerve Souttar says the use of electrical methods, merely to discover whether the nerve is divided or not, is of no great interest. It is when approaching the period of recovery that the importance of refined methods becomes pronounced; but even here the eye and hand of the expert rather than the actual method which he employs counts. After all the work that has been done, and all that has been written on the subject, it still remains true that the subtle change from slow to quick response, with all that it means of recoverd nerve and awakening muscle, is as evident to the trained eye, whether it be produced by a simple galvanic set or by some elaborate electrical device. This change in Souttar's opinion is by far the most important index of recovery. It precedes the return of voluntary power and of faradic response by a period which may vary from two or three weeks to several months; it invariably appears if recovery of function is ultimately to occur, and is a sure indication that a certain degree of recovery has already taken place. The actual response may be observed either in the muscle itself or in its tendon. If the presence of a quickened response is an encouragement to be eagerly looked for, its absence should be a check to the undue optimism which has done so much to darken knowledge of the results of nerve suture. The primary object of the application of electricity to a paralyzed limb should be the production of contractions in the paralyzed muscles, and the surest direction of progress lies in the development of special forms of current for this purpose. The faradic current can be used to exercise the normal muscles, to free them from adhesions, and to restore them to their full vigor

Electrical Reactions of Nerves.—Burke agrees with others that conductivity is conclusive evidence of physiologic continuity of nerve fibers. Excitability is also conclusive evidence of physiologic continuity of nerve fibers. An immediate improvement in conductivity or excitability after neurolysis is suggestive of very slight compression, possibly chemical nerve block, and justifies a very good prognosis. Absence of conductivity and excitability even after neurolysis, indicates a fairly severe nerve disturbance but is not proof of complete division.

Condenser Tests in Nerve Injuries.—Drought relates his experiences with about 2,000 cases of injury to nerves of the upper and lower limbs. The condenser he used was the modification of the Lewis Jones set suggested by J. Purves Stewart. The condensers are changed from a direct current and by means of a rheostate and voltmeter.

Roentgen-Ray Therapy in Oriental Sore.—Other treatment having failed in four cases Tomkinson resorted to the roentgen ray. Three half Sabouraud pastille doses of unfiltered rays were given, fourteen days intervening between the first and second and thirty-three days between the second and third exposures. After six weeks the lesion had so much improved that the protective dressing was finally discarded. Two more half pastille unfiltered doses were given, the last one as a precautionary measure. The result was in every way successful.

Sept. 18, 1920, **2**, No. 3116

Bacteriology of Cerebrospinal Meningitis. J. A. Arkwright.—p. 420.
Bacteriologic Studies of Cerebrospinal Fever Among Troops (1914-1918). M. H. Gordon.—p. 423.
*Results of Serum Treatment of 267 Cases of Cerebrospinal Fever. T. G. M. Hine.—p. 426.
*Meningococcus "Carrier" Question. C. W. Ponder.—p. 427.
*Meningococcus Carrier Rate: Its Relation to Prophylaxis Against Cerebrospinal Fever. J. A. Glover.—p. 428.
Paths of Infection. W. E. C. Dickson.—p. 430.
*Diplococcus Crassus and Meningitis. J. G. Forbes.—p. 430.
Physical Therapeutic Center: An Experiment by the North Staffordshire Coal and Iron Masters Along Suggested Lines of Future Medical Service. T. L. Llewellyn.—p. 434.
Neurological Jottings. II. J. Taylor.—p. 436.
Simple Method of Combining Ether Administration with Vernon Harcourt Inhaler. H. P. Fairlie.—p. 438.

Serotherapy of Cerebrospinal Fever.—These points are emphasized by Hine: (1) the serum must be administered reasonably promptly to be of value; (2) it is of the utmost importance for proper treatment to ascertain the type of coccus at the earliest moment possible, as therein lies the only chance of applying curative serum scientifically; (3) the importance of giving the serum in adequate quantities and resolutely sticking to the treatment.

Meningococcus Carriers.—Working with the best possible mediums under ideal conditions, Ponder was able to detect a much larger proportion of carriers where there had been no case of cerebrospinal fever than most observers, working under more difficult conditions, generally obtain among actual contacts. He asks whether this result is not sufficient to show that the finding of a few positive contacts in the usual circumstances has no meaning, and their isolation consequently no value.

Meningococcus Prophylaxis.—Summarizing the points of prophylaxis against cerebrospinal fever, the prevention of overcrowding is emphasized by Glover as being of paramount importance. Ventilation and distance between beds are of much greater importance than mere floor or cubic space. Wall space is essential. The early isolation of cases of catarrhal disorder is of great importance in preventing the increase of the carrier rate. From one point of view it is almost of more importance to isolate a coryza patient who is not a carrier, than a carrier who has not a catarrh. The former can spray the carrier at 4 or 5 feet, and if the carrier succumb to the coryza, he in his turn spray the meningococcus with his catarrhal sneeze to a like distance. In exceptional circumstances steam spray treatment may be of great assistance. The peace standard of the British army of 3 feet between beds, 60 square feet of floor space and 600 cubic feet is adequate, and will probably render other prophylactic measures unnecessary.

Diplococcus Crassus Meningitis.—Examination of the cerebrospinal fluid in a case of traumatic meningitis, following on fracture of the base of the skull, resulted in the isolation of two strains of cocci, one of which Forbes regards as conforming with *Diplococcus crassus* in its morphologic and cultural characters. The case was of brief duration. The

patient died, without regaining consciousness just twelve weeks after the accident. Meaningitis, following on fractures of the middle fossa of the skull base which do not prove rapidly fatal, is regarded as one of the serious infective complications most likely to occur. The changes found in the cerebrospinal fluid in the case of Forbes' patient pointed, in the absence of any history, to a chronic form of meningitis, particularly the character of the cell deposit, largely composed of lymphocytes. Although open to question on the score of possible contamination, the discovery of gram-positive cocci in direct film preparations from the cell deposit within four hours of withdrawal of the fluid, and the subsequent appearance in culture of two strains of cocci, seemed to justify the conclusion that these organisms, originally saprophytic and of low virulence, gained access directly from the external auditory meatus to the cerebral membranes. It is possible, Forbes says, that the recovery of such saprophytic organisms—notably *Diplococcus crassus*—from recorded cases of cerebrospinal meningitis may be due to primary or secondary invasion of the meninges from the nasopharynx or auditory meatus.

Dublin Journal of Medical Science

September, 1920, **4**, No. 7

Modern Cardiology. M. Thomson.—p. 313.
Effects of Radium Treatment on War Injuries in Neighborhood of Nerves and Blood Vessels. W. C. Stevenson.—p. 319.
Case of Rupture of Uterus Through Cesarean Scar. G. Fitzgibbon.—p. 326.

Lancet, London

Sept. 4, 1920, **2**, No. 5062

*Anoxemia. J. Barcroft.—p. 485.
Investigation of Gastric Function by Means of Fractional Test Meal. J. A. Ryle.—p. 490.
Antisyphilitic Prophylaxis: Its Use, Nonuse and Misuse. G. R. Hamilton.—p. 492.
*Principles Underlying Standardization of Agglutinable Cultures. A. D. Gardner.—p. 494.
*Cessation of Respiration. H. W. Jones.—p. 501.
Primary Diffuse Alveolar Carcinoma of Lung. A. K. Gordon.—p. 501.
Congenital Suprapubic Hernia. F. M. Neild.—p. 501.
Case of Mikulicz's Disease. S. G. Askey.—p. 502.

Anoxemia.—Speaking of the permanent damage caused by acute anoxemia, Bancroft says that no degree of anoxemia which produces a less effect than that of complete unconsciousness leaves anything more than the most transient effects; if the anoxemia be pushed to the point at which the subject is within a measurable distance of death the results may take days or weeks to get over, but only in the case of elderly or unsound persons is the machine wrecked beyond repair. Just as acute anoxemia simulates drunkeness chronic anoxemia simulates fatigue. Another symptom frequently associated with mental fatigue is irritability. The obvious types of anoxemia are classed by Bancroft: anoxic type; anemic type and stagnant type. Anoxic anoxemia is essentially a general as opposed to a local condition. Not only is the pressure of oxygen in the blood too low, but the lowness of the pressure and not the deficiency in the quantity is the cause of the symptoms observed. The anemic type of anoxemia is gaged by the quantity of oxyhemoglobin in the blood. In the stagnant type of anoxemia the principal change which is seen to take place is an increase in the quanity of hemoglobin per millimeter of blood.

Serologic Uniformity of Species.—In attempting to form a true estimate of the value of Dreyer's system of standardization, Gardner points out that it is important to give separate consideration to its two aspects: (1) the general principles on which it is based; (2) the particular applications of the principles to serologic practice that have been made or proposed. In this paper an attempt is made to state these principles and their working in general terms without reference to the various published criticisms of Dreyer's method, for these have dealt almost entirely with standardization in clinical practice. Evidence is brought forward of the serologic uniformity of a number of strains of *B. paratyphosus* A of widely different origins. Gardner says this constitutes prima facie evidence of the serologic uniformity of the species. Certain irregularities in the behavior of some of the cultures are shown to be due to the variable rate of flocculation of inferior suspensions. The greater sensitiveness of certain cultures to homologous strain serums is shown to be at least partly a reaction time phenomenon, for which the term "superspecific acceleration" is suggested.

Cessation of Respiration.—The chief interest of Jones' case of cerebral hemorrhage lies in the length of time, fifteen hours, during which the heart went on beating after spontaneous respiration had ceased and in the opportunity afforded of obtaining an electrocardiograph of the heart. The patient suddenly became dizzy and fell to the ground. On admission she was markedly cyanosed and respiration had ceased. Her heart, however, was beating regularly and with considerable force at the rate of 120 per minute. Corneal reflexes were absent and no knee jerks could be elicited. The pupils were equal and widely dilated. Artificial respiration was commenced at once and her color rapidly became normal, the pulse rate falling from 120 to 72 per minute; this was continued for two hours, during which time she made no respiratory effort. It was then decided to use intratracheal insufflation of air, which kept the patient's color normal, the heart continuing to beat strongly as before. Lumbar puncture revealed normal cerebrospinal fluid under slightly increased tension; the optic disks were normal, and the urine contained a slight trace of albumin but no casts. The insufflation was continued until the heart ceased to beat, fifteen hours after admission. An electrocardiograph taken twelve hours after spontaneous respiration has ceased shows normal rhythm with some lengthening of the ventricular complex which occasionally exceeds half a second in duration. Postmortem examination showed a recent hemorrhage in the right cerebral hemisphere destroying the internal capsule; both the lateral ventricles were filled with blood, and there was some flattening of the convolutions. The medulla and pons were normal; signs of general arteriosclerosis and chronic interstitial nephritis were present.

Sept. 11, 1920, **2**, No. 5063

Clinical Experiences of a Physician During Campaign in France and Flanders, 1914-1919. J. R. Bradford.—p. 535.
Hospital Treatment of Psychoses and Psychoneuroses. E. Goodall.—p. 541.
*Lobar Pneumonia. A. Abrahams.—p. 543.
*Idiopathic Nephritis. H. B. Day.—p. 546.
Uselessness of Antimony in Treatment of Filariasis. G. C. Low and A. L. Gregg.—p. 551.
Case of Acute Lethargic Encephalitis. A. C. Alport.—p. 553.
*Case of Purpura Factitia. K. M. McKeon.—p. 555.
Case of Blackwater Fever; Recovery. E. F. Greene.—p. 555.

Lobar Pneumonia.—A clinical analysis of 558 consecutive cases is made by Abrahams. Empyema occurred in 116 cases. Thirty cases required resection. In the remaining eighty-six cases aspiration only on one or two and rarely three occasions was found to be sufficient to cause complete resolution. Among the 116 cases of empyema twenty-three fatalities occurred, i. e., practically a mortality of 20 per cent. Meningitis occurred in six cases, approximately 1 per cent. The infection in all was pneumococcal and a fatal result ensued in all. Pericarditis was discovered in eleven cases only (2 per cent.). Four patients died. Infective endocarditis was encountered in four cases (0.72 per cent.). All four patients died. Of less serious complications or accompaniments jaundice was prominent in seven cases, arthritis in two cases, nephritis in two cases, colitis in one case and extensive venous thrombosis in one case. Delirium was a very prominent feature in twenty-two cases (4 per cent.) and three cases were admitted as cases of acute mania.

Bacilli Found in Idiopathic Nephritis.—Day incubated urine from a series of cases of nephritis and injected it into animals in the hope of reproducing the disease. This mode of experimentation was based on the assumption that cases of idiopathic nephritis are due to some unrecognized infection of the kidney and that the causative organisms are present with the products of inflammation in the urine and in the kidney itself. A patient died of acute nephritis complicated by pleurisy with effusion. Portions of his kidney were at once placed in tubes of sterile liquid serum, while another piece was ground up with physiologic sodium chlorid solution. The features of the disease in the human patient were successfully reproduced in animals. The causative organism was

obtained in pure culture and recovered after passage through two sets of animals. The toxic effect of nephritic urine was shown to depend chiefly on the presence or absence of bacteria. In view of the precautions taken in the collection of the specimens and the absence of the usual contaminating organisms such as cocci and yeasts, the frequency with which pure cultures of gram-negative bacilli were obtained was significant. Further, these results corroborated those obtained from the experiments with actual kidney tissue and indicated that further study of the bacilli isolated was necessary. The organisms are all short, plump, gram-negative bacilli, and their cultural characteristics are those of the coli-typhoid group. Injection of cultures and subcultures of these organisms into animals provoked an acute nephritis. From the kidneys of these animals in the earlier stages of nephritis the bacilli injected were recovered in pure culture. Injections of cultures obtained from animals infected with these bacilli reproduced the disease in other animals. The nephritis induced runs a somewhat prolonged course, and is accompanied by acute degenerations of liver cells and an enlargement of the spleen in the early stage. In human cases of nephritis treatment with appropriate vaccines has caused rapid amelioration. In some cases of nephritis a secondary or an independent infection of the urinary system may be present and obscure the original cause.

Purpura Factitia.—McKeown cites a case of typical instance of hysterical deception, confirmed by the confession of the patient. At a first glance purpura was suggested, but a suspicion of self-infliction was aroused by the similarity in shape and size of the majority of the patches, the curious shape, the position and distribution and lastly the absence of any purpuric manifestation elsewhere.

Medical Journal of Australia, Sidney

July 24, 1920, **2**, No. 4

Treatment of Gonorrhea by General Practitioner. J. G. Avery.—p. 71.
Psychic Factor in Medical Practice. T. H. R. Mathewson.—p. 73.

July 31, 1920, **2**, No. 5

Ductless Glands. George E. Renie.—p. 93.

Practitioner, London

September, 1920, **105**, No. 3

Modern Therapeutics. C. Allbutt.—p. 157.
Position of General Physician in Medicine. J. P. Stewart.—p. 164.
Lumps in Breast. J. E. Adams.—p. 166.
*Diagnosis of Suprarenal Tumors, Especially in Regard to Blood Pressure. F. P. Weber.—p. 181.
Uterine Prolapse; Treatment. D. W. Roy.—p. 186.
Psychotherapy in Civil Practice. R. G. M. Ladell.—p. 203.
Familial Jaundice of Newborn. A. G. Agnew.—p. 217.
Balearic Islands as Health Resort. L. M. Chesney.—p. 218.

Blood Pressure in Case of Suprarenal Tumor.—In the case of a child referred to by Weber, the brachial systolic blood pressure was 108 mm. Hg—rather high for a child of 5 years. Another patient, a woman, aged 40 years, who had a tumor on the right side of the abdomen about the size of a kidney, and above it another tumor, which seemed to be connected with (or part of) the liver, had a brachial systolic blood pressure of from 205 to 220 mm. of mercury. Weber believes that this was a case of medullary suprarenal tumor.

Journal de Médecine de Bordeaux

July 25, 1920, **91**, No. 14

*Dry Friction Sign of Effusion in the Chest. P. Mauriac.—p. 375.
Fracture of Radius plus Luxation of Head of Ulna. H. Lefèvre and Leuret.—p. 376.
*Wassermann Reaction in Deaf-Mutes. Ardenne.—p. 379.
Acute Neuritis of Cardiac Plexus. A. Chabé.—p. 381.

Dry Friction Sign of Pleural Effusion.—Auscultation from the back while the fingers are drawn across the epigastrium over the interposed night gown, stretched tight over the region, reveals a friction sound on that side in case of a pleural effusion. Otherwise the rubbing of the fingers is inaudible. Mauriac applies the friction with the whole of the terminal and middle phalanges of the forefinger or middle finger.

The Wassermann Test in Deafmutes.—Ardenne obtained a positive response to the Wassermann test in 8 of 11 children who were congenital deafmutes and in 5 of 12 in whom some disease was responsible for the deafness. Thus he obtained a total of 13 positive Wassermann reactions in 23 deafmutes, that is, in nearly 60 per cent.

Paris Médical

Aug. 7, 1920, **10**, No. 32

*Gynecology in 1919. L. Sauvé.—p. 97.
*Choice of Anesthesia in Gynecology. E. Forgue.—p. 103.
*Retention of Scraps of Placenta. G. Schickelé.—p. 109.
*The Douglas Sign of Ruptured Tubal Pregnancy. R. Proust.—p. 113.
Obstetrics in 1920. H. Vignes.—p. 115.
Pathogenesis of Obstetric Hemorrhages. Demelin.—p. 123.

Gynecology in 1919.—Sauvé remarks that extra-uterine pregnancy is one of the few gynecologic subjects that received attention during the war years, and he comments on the enormous proportion of hematoceles and extra-uterine pregnancies now encountered in the Paris hospitals. Hartmann found a history of preceding miscarriage in forty-eight of 114 cases. Recent discussions in England and elsewhere confirm the necessity for operative intervention on the diagnosis of extra-uterine pregnancy, even when advanced, on account of the small chance of the fetus' survival to term and the dangers to the mother. Launay and others, however, assert that after the death of the fetus conditions grow constantly more favorable for the operation as time passes. The frequency of an insidious onset of the hemorrhage has recently been reiterated anew. The operation for genital prolapse most discussed in 1919 was the Müller colpectomy, without hysterectomy, suppressing the vaginal cavity by replacing it with a column of cicatricial tissue which holds back the bladder and rectum. Savariaud has been most urgent in advocating this technic.

The Anesthesia for Gynecologic Operations. — Forgue reviews the advantages and the disadvantages of various methods and says that his own experience has confirmed the superiority of "rachianalgesia" for gynecologic operations. In his 625 cases, major in the majority, he never had a grave mishap.

Prolonged Retention of Scraps of the Placenta.—Schickelé relates that for twelve years he has been making a special study of long retained débris of the placenta and placental polyps, and has never discovered any tendency to malignant degeneration and never an instance in which a chorio-epithelioma developed later.

The "Douglas" Sign of Tubal Pregnancy.—Proust remarks that after rupture of a pregnant tube it may be impossible to palpate any accumulation of blood in the pouch of Douglas, but deep palpation will often elicit sharp sudden pain, so severe that even when the patient is half swooning, the pain makes her cry out. The contrast between the soft depressibility of the pouch and this severe pain on deep palpation is very instructive, especially when the rectus muscles show no signs of contracture. He attributes it to the congestion of the peritoneum extending down into the pouch of Douglas; this may occur with even slight hemorrhage. This sign has always been pronounced in all his cases of ruptured extra-uterine pregnancy in the last ten or more years, and in many instances has given the first clue to the nature of the disturbances. Several typical cases are described in which the rupture had occurred before any arrest of menstruation had been noticed.

Presse Médicale, Paris

Aug. 18, 1920, **28**, No. 58

Raynaud's Disease Not a Morbid Entity. A. Martinet.—p. 565.
Hemigastrectomy for Hour-Glass Stomach. Goullioud.—p. 566.

Schweizerische medizinische Wochenschrift, Basel

Aug. 12, 1920, **50**, No. 33

The Hysteria Problem. O. Binswanger.—p. 713.
Placenta Adherent to Uterus Diverticulum. Meyer-Rüegg.—p. 726.
Vaginal Cesarean Section in Influenzal Pneumonia. P. Jung.—p. 728.

Sept. 2, 1920, **50**, No. 36

*Senile Cataract. A. Vogt.—p. 785.
*Roentgen-Ray Treatment of Myomas. M. Steiger.—p. 792.
Spirochaeta Pallida and the Ultramicroscope. A. Marmorek.—p. 797.
Foot-and-Mouth Disease in Man and Animals. B. Margulis.—p. 799.

Senile Cataract.—Vogt reviews what has been learned in regard to the structure and course of senile cataract since the introduction of the Gullstrand light, and emphasizes that there is an essential difference between the findings in old age and those which result from exogenous disease. Natural senile changes are as much of a mystery as life itself, and they are inherent in matter and cannot be warded off. The different parts of the lens develop senile changes independently of each other and in different degrees.

Roentgen-Ray Treatment of Uterine Myomas.—Steiger includes climacteric hemorrhagic metropathies as well as uterine myomas in this review of his experience, saying that under roentgen radiation, fully 97 per cent. of the myomas in his 121 cases retrogressed. Excision of the myomas could show scarcely better results. Among the 101 traced to date, there was complete amenorrhea and the tumor disappeared in 42 and grew much smaller in 38. From the failure in his 3 cases complicated with hyperthyroidism, this seems to contraindicate radiotherapy. In his 100 cases of hemorrhagic metropathies at the menopause there was only one failure. In 89 per cent. complete amenorrhea was realized. The improvement in one case was so pronounced that a pulmonary tuberculous process showed improvement likewise.

Annali d'Igiene, Rome

March-April, 1920, **30**, No. 3-4

Water-Borne Typhoid. P. Bastai.—p. 145.
Bacteriologic Diagnosis of Cholera. M. Pergola.—p. 153.
*Streptococcus Antiserums. M. Carpano.—p. 164.
Etiology of Ozena. C. Caldera.—p. 168.
Proteus Epizootic in Cold-Blooded Animals. C. Sarti.—p. 171.
History of Typhus. A. Ilvento.—p. 175. Cont'd.
*Nonspecific Protein Therapy. G. Sampietro.—p 187

Antistreptococcus Serums.—Carpano reports as the results of extensive research at the army veterinary laboratory at Milan that the bacteriotropic action of antistreptococcus serums seems to be about equal whether the serums are prepared with living or killed streptococci. But the anti-infectious potency is much greater when the animals producing the serum are immunized with living streptococci.

Nonspecific Protein Therapy.—Sampietro reviews the whole field of protein-shock treatment, and discusses whether it is better to use a homologous or heterologous vaccine. Many of his citations are from The Journal, and he warns that the mechanism of action of the parenteral proteins is still a mystery. The homologous vaccines seem to have greater advantages and less toxicity. One of the later applications of the protein shock method is to drive the parasites into the blood in dubious cases of malaria.

Pediatria, Naples

June 15, 1920, **28**, No. 12

*Changes in the Blood Under Tuberculin. G. Milio.—p. 545.
*Convulsions from Alimentary Poisoning. I. Nasso.—p. 557.
*Blocked Meningitis in Infant; Recovery. F. de Angelis.—p. 561.

Changes in the Blood Picture Under Tuberculin Treatment.—Milio tabulates the findings in eight children from 4 to 10 years old receiving tuberculin by the vein. The specific gravity, the viscosity, coagulability, and the differential count showed no appreciable change, but the leukocytes increased in numbers at first to moderate leukocytosis, polynuclear neutrophils predominating. As the treatment progressed, the leukocytes grew less numerous until there was actual leukopeny, the polynuclear neutrophils declining to correspond. The facts observed suggest that there is some element in the tuberculin which has a destructive action on leukocytes. The conclusion seems inevitable that tuberculin should be given in doses too small to induce this leukolytic action, but large enough to exert a stimulating action on the blood-producing apparatus as occurs when the tuberculin treatment is tentatively begun with minute doses.

Convulsions of Alimentary Origin.—In Nasso's case in a babe of 2 months, the convulsions, strabismus, bradycardia, exaggerated reflexes, fever and vomiting suggested tuberculous meningitis, but the lumbar puncture fluid was normal, and under restriction to water for twenty-four hours and then breast milk, recovery was prompt and complete. The infant before this had been fed asses' and cow's milk, with considerable sugar at each feeding.

Blocked Meningitis.—De Angelis adds another to the five cases he has found on record in which the symptoms indicated that the communication between the brain and the spinal cavity had been obstructed and the antiserum was injected directly into the ventricle, with the recovery of the child. The 7 months babe was first seen fifteen days after the first symptoms. There was no fever, but the symptoms from the nervous system were severe. Intraspinal injection of the antiserum was repeated for four days but then no fluid could be obtained at lumbar puncture. The antiserum was then injected into the ventricle, very slowly, and this was repeated until a total of 140 c.c. had thus been injected, when urticaria developed. The antiserum was dropped, and a vaccine injected by the vein instead, on alternate days, a total of four injections. The lumbar puncture fluid was found normal again by the end of the month after the first symptoms.

Policlinico, Rome

July 15, 1920, **27**, Surgical Section No. 7

Abnormal Tetanus. J. Aboularage.—p. 201. Cont'd.
Resection of Incarcerated Hernia; Fifteen Cases. O. Cignozzi.—p. 221.
*Foreign Bodies and Calculi Formation. G. V. Tardo.—p. 225.

Mechanism of Formation of Calculi.—Tardo relates that there was no increase in the size of urinary calculi of human origin introduced into the kidney pelvis of dogs.

August, 1920, **27**, Medical Section No. 8

Injury of Last Four Cranial Nerves. A. Roccavilla.—p. 273.
Ocular Symptoms with Lethargic Encephalitis. G. Ferrari.—p. 301.
*Charcoal in Therapeutics. P. Bosi.—p. 306.

Charcoal in Therapeutics.—Bosi's research has apparently demonstrated that when nux vomica is given in pulverized form, along with charcoal, the absorbing power of the charcoal seems to become exhausted before the alkaloids dissolve out of the powder. Consequently the presence of the charcoal in the stomach and bowel does not modify the action of the drug given in this way. But when the nux vomica is given in the form of the extract or tincture, the charcoal absorbs it at once and it passes off through the bowel without displaying any pharmacologic action. Bosi suggests that probably the same mechanism prevails with all drugs that act by their alkaloid content.

Riforma Medica, Naples

July 3, 1920, **34**, No. 27

Vaccination Against Tuberculosis. G. Martinotti.—p. 602.
*Diagnostic Reactions in Typhus. P. Bruno and A. Bizzarri.—p. 606.
Appendicitis: 357 Operative Cases. O. Cignozzi.—p. 607.
Criteria for Operation in Appendicitis. R. T. Morris (New York).—p. 612.

Diagnostic Reactions in Typhus.—Bruno and Bizzarri found agglutination of *Proteus* X_{19} in 100 per cent. of all their thirty-one cases, early and specific. The Welman reaction did not occur early, and it is not strictly specific. This reaction is the turbidity noted when typhus serum is diluted with ten times its volume of distilled water. The reaction is complete in five or ten minutes; turbidity later than this has no significance. The Wiener urine color test gives nearly constantly a positive reaction, but positive findings were obtained also in typhoid, in pneumonia and in a number of other diseases.

Rivista di Clinica Pediatrica, Florence

July, 1920, **18**, No. 7

*Physiologic Weaning. A. Borrino.—p. 385.
*Malignant Hemorrhagic Scarlet Fever. G. Tron.—p. 405.
*Herpes Zoster and Varicella. M. Pincherle.—p. 420.

Infant Feeding in the Second Half of the First Year.—Borrino's study of 113 breast-fed infants who did not seem to thrive after reaching their sixth month, emphasizes the necessity for supplementary food for infants, as the breast milk grows less nourishing in comparison to the increasing needs of the child. This represents a kind of physiologic weaning, and allowance should be made for this. The experiences related demonstrate anew that more than mere breast milk or cow's milk is needed after the first six months.

Malignant Scarlet Fever.—In Tron's three cases of malignant hemorrhagic scarlet fever the patients were women under 33, and the exceptional virulence of the streptococci found in their blood explained the failures in treatment. In one boy of 15 with hematuria and bleeding from the gums, the third week of scarlet fever, these symptoms were arrested in less than six hours by injection of 30 c.c. of normal horse serum.

Herpes Zoster and Varicella.—Pincherle describes a ward epidemic of chickenpox which followed development of herpes zoster in one child and of chickenpox in another.

Anales de la Facultad de Medicina, Montevideo

May-June, 1920, **5**, No. 5-6

Multilocular Echinococcus Disease in Cattle. J. Llambias.—p. 197.
*Reactions in Upper Abdomen. E. Pouey and C. Stajano.—p. 202.
*Radium Therapy During Pregnancy. L. P. Bottaro and M. Becerro de Bengoa.—p. 209.
Can the Flea Transmit Influenza? A. Gaminara.—p. 215.
Necropsy Findings in Influenzal Pneumonia. E. P. Lasnier.—p. 227.
*Oxycephalia and Dwarf Growth. A. Isola, C. Butler and J. C. Mussio Fournier.—p. 255.

Reactions in Upper Abdomen to Incipient Genital Disease.—Pouey and Stajano describe three cases in which a gonococcus or streptococcus or colon bacillus ovaritis or salpingitis induced, as the first sign of the incipient pathologic conditions, a set of symptoms suggesting a subphrenic abscess in one, diaphragmatic peritonitis in the second, and cholecystitis in the third, before there was any pain or tenderness in the actual site of the lesion. Application of wet cups or moist heat arrested these supraceliac disturbances; the genital disease continued its course and soon made its presence unmistakably felt at its proper site. With any clinical picture suggesting an abscess in the gastrosplenic space or acute pericolitis of the splenic angle; diaphragmatic peritonitis, cholecystitis, pericholecystitis or subphrenic abscess, the adnexa should be examined as almost the first step in the diagnosis.

Radium Treatment of the Pregnant.—This communication reports the ultimate outcome in a case previously published in which the woman, five months pregnant, was given radium treatment by the vagina, for a cancer of the posterior cervix, to a total of 6,000 milligram hours. She was delivered at the eighth month by cesarean section of a well formed child that died ten hours after birth. The premature delivery, the cesarean section, and the lack of care for the infant during the night are accepted as explaining its death without incriminating the radium. The case shows that cancer of the cervix yields to radium treatment during pregnancy as well as at other times. The woman died two years later.

Oxycephalia and Nanism.—The woman in the case illustrated is 21 years old and 1.3 m. tall, totally blind, with reducible exophthalmos and horizontal nystagmus. The skull shows scattered depressions where the convolutions of the brain have exerted abnormal pressure on the inner table, inducing rarefaction. At the age of 2 years, vomiting and headache were followed by progressive loss of vision. The retrospective diagnosis is that an attack of hydrocephalus injured the pituitary early in life, and the dwarf growth was secondary to this.

Archivos Latino-Amer. de Pediatría, Buenos Aires

May-June, 1920, **14**, No. 3

*Pseudotuberculous Meningitis. G. Aráoz Alfaro.—p. 193.
Children's Bureau in the United States. Alicia Armand Ugón.—p. 214.
*Hysteric Amaurosis in Girl of Fourteen. J. de Salterain.—p. 237.
*Syphilitic Chancres on the Breast. M. Armand Ugón.—p. 241.
Case of Influenzal Meningitis. A. Caprario.—p. 246.
Maculopapular Eruption with Desquamation. J. A. Bauzá.—p. 251.
Congenital Myxedema; Two Cases. J. A. Bauzá.—p. 255.
*Gallop Sound Revealing Acute Nephritis. Ponce de Leon.—p. 266.
Hydatid Cyst of Lung. C. Pelfort.—p. 272.

Meningitis of Dubious Origin.—Aráoz remarks that most of the cases that have been published of recovery from tuberculous meningitis were in reality of other origin. He makes an invariable practice of seeking for tubercle bacilli in the lumbar puncture fluid; many assert that if sought repeatedly and patiently for hours, they can be found in 90 to 100 per cent. of all cases of tuberculous meningitis. With negative findings he inoculates animals and begins mercurial treatment at once, as he is convinced that the meningitis with inherited syphilis, in infants or older children, and in the acute phases of the third stage of syphilis presents a clinical picture and lymphocytosis which deceptively simulate true tuberculous meningitis. Even with a history of syphilis, the meningitis may be a superposed tuberculous infection. The onset of syphilitic meningitis is usually more abrupt and stormy than with the tuberculous type; there is fever and there may be convulsions and a semicomatose state. The meningitis may be secondary to a vicinity reaction to otitis or secondary to mumps. The fluid cell count is predominantly polynuclear or mixed, and the high fever and intensity of other symptoms resemble more those with epidemic meningitis. Examination of the salivary glands may give the clue. One case is on record in which mumps meningitis merged into the tuberculous form. Meningeal reactions to alimentary intoxication in infants may prove misleading, but the lymphocytes are few in number and the glucose content is high; in one case it reached 1.1 per thousand. Leukocytosis is common, and the rapid improvement under restriction to water confirms the alimentary intoxication. The urea content of the spinal fluid runs up high. Retention of urea in spinal fluid and blood from kidney disease may simulate tuberculous meningitis until laboratory tests have been made. Morquio has reported a case in which by exclusion tuberculous meningitis seemed the only diagnosis in spite of the absence of tubercle bacilli, but the child recovered after all.

Hysteric Amaurosis.—The patient was a girl of 14 and the total amaurosis gradually subsided under treatment for hysteria.

Multiple Mammary Chancres.—Armand relates that three women at the institution developed multiple mammary chancres while nursing children who were not suspected of syphilis. One of the women infected another child she was nursing. Out of the total 1,032 women that have given the breast to children at the Cuna institution at Montevideo only four have been thus infected by syphilitic nurslings.

Gallop Sound Reveals Acute Nephritis.—In Ponce de Leon's case, as in some reported by Morquio, the discovery of a gallop sound was the first sign to call attention to the acute nephritis. The girl of 12 was in complete asystoly when first seen, cyanotic, almost pulseless. The gallop sound gave the clue to the acute nephritis responsible for the enormous dilatation of the heart, and permitted effectual treatment. The nephritis was accompanied by bronchopneumonia and the child seemed to be convalescing smoothly when purulent pleurisy developed and complications proved fatal.

Brazil-Medico, Rio de Janeiro

July 3, 1920, **34**, No. 27

*Protein Treatment of Psoriasis. Cassio de Rezende.—p. 425.
*First Cases of Epidemic Encephalitis in France. R. Cruchet.—p. 427.
Pain from Medicolegal Standpoint. L. Ribeiro, Jr.—p. 429.
Warts in Cattle. O. Magalhães.—p. 430.
Research on Oïdium. A. Magalhães.—p. 431.

Psoriasis.—De Rezende's photographs "before and after" of the case he reports show the prompt and radical cure of extensive psoriasis under "protein shock" treatment. It was in the form of 20 c.c. of normal horse serum, injected into the abdominal wall. An injection of 10 c.c. two days before had not induced an appreciable reaction, but the 20 c.c. caused fever for five days, reaching 39.6 C. (103.5 F.) the third day. By the eighth or tenth day the eruption had practically subsided.

Epidemic Encephalitis.—Cruchet relates that he published in April, 1917, forty cases of what he called subacute diffuse encephalomyelitis; what is now called lethargic encephalitis is probably the same thing. A special feature of it is the rhythmic character of the myoclonic movements and their persistence during sleep and coma.

July 10, 1920, **34**, No. 28

Case of Exstrophy of the Bladder. J. Adeodato.—p. 441.
Associated Reflexes. Teixeira Mendes.—p. 442.
Definition of Cenesthesia and Cinesthesia. Vieira de Moraes.—p. 443.
*Eye Sign of Facial Paralysis. J. Santa Cecilia.—p. 444.
Case of Aortic Insufficiency with Murmur on the Left Side. A. Costa.—p. 445.

Sign of Facial Paralysis.—Santa Cecilia calls attention to the high position of the cornea, on the side affected with facial paralysis, when the patient looks down.

Crónica Médica, Lima

May, 1920, **37**, No. 683

Hamlet as a Puzzle in Psychology. H. F. Delgado.—p. 158.
Treatment of Cirrhosis of Liver. E. Odriozola.—p. 162.
*Arsenic in Treatment of Relapsing Fever. E. del Prado.—p. 165.
*Quantitative Test for Urine Proteins. J. Lanfranco.—p. 168.
Epidemic Lethargic Encephalitis at Paris. M. A. Schreiber.—p. 172.
Care of the Insane. H. F. Delgado.—p. 175. Conc'n.

Arsphenamin in Relapsing Fever.—Del Prado confirms the remarkable efficacy of neo-arsphenamin in treatment of relapsing fever, only two of the 362 cases in his service failing to show a complete cure under it, and these two patients left the hospital too early. The parasites seem to all die off within a few hours. He never had occasion to repeat the injection of 35 or 45 cg. of the neo-arsphenamin in 10 c.c. of distilled water. He found it useful also in prophylaxis.

Quantitative Test of Urine Proteins.—Lanfranco adds enough sodium chlorid to 10 c.c. of the urine to bring the specific gravity up to 1.030 at 15 C., and then adds a 25 per cent. solution of trichloracetic acid and agitates the tube for ten minutes and centrifuges for ten. The height of the precipitate indicates the protein content. He gives a table showing the exact amount for a given height of the precipitate.

Semana Médica, Buenos Aires

April 1, 1920, **27**, No. 14

*Subcutaneous Symphyseotomy in Argentina. E. Zarate.—p. 449.
Disease of the Conjunctiva. R. Argañaraz.—p. 456.
*Metrorrhagia of Appendicular Origin. G. Giacobini.—p. 466.
Pulmonary Complications of Influenza. Vergnoux.—p. 466.

Subcutaneous Symphyseotomy in Argentina.—This article was summarized on page 965 when it appeared elsewhere.

Metrorrhagia from Appendicitis.—Giacobini remarks that metrorrhagia in virgins from thyroid deficiency is well known, but he calls attention to the same clinical picture in otherwise healthy and normal virgins for which inflammation in the appendix is responsible. The appendix lies low and deep, and the inflammation spreads to the adnexa and entails congestion which may induce profuse hemorrhage in the uterus.

Archiv für klinische Chirurgie, Berlin

Dec. 12, 1919, **113**, No. 1

*Regeneration of Long Bones. B. Martin.—p. 1.
Experimental Research on Disinfection of Skin. H. Landau.—p. 43.
*Regeneration of Large Tendon Defects. A. Salomon.—p. 50.
*Transplantability of Abdominal Mucosa. K. Reschke.—p. 88.
Cyst of Common Bile Duct. J. Kremer.—p. 99.
*Bile Peritonitis. J. Schoemaker.—p. 126.
*Prolapse of Ureter. V. Blum.—p. 131.
*Bioscopic Findings in Epileptics. O. Marburg and E. Ranzi.—p. 169.
Antiseptic Treatment of Wounds. G. Schone.—p. 177. Conc'n in No. 2, p. 249.
Gunshot Wounds of Base of Skull. P. Kanzow.—p. 221.
Necropsy of Sarcoma of Thyroid. Ribbert.—p. 248.

Regeneration of Long Bones.—Martin's profusely illustrated account of his experimental research and clinical experience confirms that a tubular bone may regenerate practically completely. The endostium is the decisive factor in this; if this is destroyed or lost regeneration does not occur. All his experiences testify further that local extravasation of blood is a further favorable factor.

Regeneration of Tendons.—Salomon excised the Achilles tendon in dogs and found that the tendon regenerated as perfectly and function was restored as perfect as after tendon grafting. He declares that we have never appreciated the regenerating powers of the organism to the full, and a new era is opening in this line. A blood effusion in the region is extremely useful not only to stimulate production of new tissue and supply nourishment but chiefly because it helps, with the serous effusion, to hold the space open for the tendon to develop in. This maintenance of the open space is so important that if the tendon sheath is lacking or for other reason it is a question whether the space will be kept open, he advises to use the tendon sheath of the Achilles tendon to wrap around the stump and keep the space open between them. This, he says, is a material which, like periostium, stimulates production of specific tissue.

Transplantability of Abdominal Mucosa.—Not a trace of living epithelium could be found in the experiments unless there was some omentum in the transplant, but all the transplants with omentum lived and grew more or less. This peculiar transplantability of omentum tissue confirms that a pocket in the omentum offers by far the best chances for successful transplantation of an organ, thyroid tissue, for example.

Bile Peritonitis.—Schoemaker reports two cases in which peritonitis developed which could be traced only to abnormal permeability of the walls of the gallbladder. One patient was a woman of 72, the other a man of 28. The droplets of blood could be seen oozing through his gallbladder walls, and after its removal it was found to contain the same dark blood mixed with bile as had been found in the peritoneum. No calculi. The abdominal cavity was sponged dry and speedy recovery followed.

Intravesical Dilatation of Lower End of Ureter.—Blum gives illustrations of ten cases of this kind with actual prolapse of the ureter in some, and cites over three pages of literature on malformations of the ureters.

Bioscopy of Epileptics.—Marburg and Ranzi report that during an epileptic seizure the brain swells. There is intense hyperemia and fluid passes into the meninges.

Jahrbuch für Kinderheilkunde, Berlin

1920, **92**, Second Half.

Fluids in Treatment of Nephritis. H. Aron and L. Mendel.—p. 244.
*Calcium Content of Blood in Tetany. Sophie Jacobowitz.—p. 256.
*Herpes Zoster and Varicella. Magda Frei.—p. 281.
*Whey and Intestine Epithelium. Freudenberg and Mammele.—p. 287.
*Fate of Children with Spasmophilia. K. Blühdorn.—p. 294.
*Bacteriology of Stomach and Duodenum. K. Scheer.—p. 328.
*Chronic Large Parotid Glands in Children. H. Hochschild.—p. 360.
*Butter-Flour Mixture in Infant Feeding. B. P. B. Plantenga.—p. 375.
*Multiple Cartilaginous Exostoses. A. Resch.—p. 392.
*Size of Heart in Young Children. K. Preisich.—p. 400.

Tetany and Calcium Content.—Jacobowitz determined the calcium content of the blood by the micromethod in twenty-one children free from signs of tetany and in a number of others with tetany, and found it decidedly lower in the latter group. No influence on the calcium level in the blood could be detected on administration of calcium by the mouth either in the tetany cases or the others, not even when the therapeutic results were excellent.

Varicella and Herpes Zoster.—Frei describes a small epidemic in the children's clinic in which one case of herpes zoster was followed by a second case about two weeks later in another child in the same ward, and two weeks after this other children in the ward developed chickenpox.

Influence of Whey on Intestinal Epithelium.—Freudenberg and Mammele in this eighth communication compare the effect of cow's milk whey and breast milk whey on the consumption of oxygen by calf intestine cells.

Spasmophilia.—Blühdorn asserts that a "preparedness" for pathologic conditions in the central nervous system may be observed in children at all ages. The neuropathic predisposition is the main factor, but alimentary disturbance, lack of hygiene or infections usually cooperate. Latent spasmophilia may be roused by intercurrent disease and be cured by calcium treatment while the intercurrent disease persists unmodified. He found evidences of latent spasmophilia in 57 per cent. of 65 small children in a crèche and asylum, but on reexamination, six months later, only in 28 per cent. Of 657 schoolchildren, almost 45 per cent. showed hyperexcitability on mechanical and electric tests, and only about 25 per cent. seemed to be absolutely free from latent spasmophilia. In 147 clinical cases of manifest spasmophilia only one of the children has died since. But in a group of 53 cases of severe spasmophilia, long under observation, 34 per cent. are mentally backward, including one with enuresis and 4 with other signs of a nervous disease. In a further 30 per cent. the children are morally abnormal. Thus 64 per cent. of the 53 children with severe spasmophilia in early life are now substandard. The parents or other children in the same families

show a neuropathic disposition in 15 per cent.; epilepsy in 4 and imbecility in 4 per cent. The details of each of the 53 cases reexamined several years later are given in full.

Bacteriology of Stomach and Intestines in Healthy and Sick Infants.—Scheer's tables embrace forty-three infants that had the duodenal and stomach contents examined. No bacteria were found in the healthy infants, or only enterococci. In eight cases of parenteral dyspepsia, colon bacilli were found in the duodenum in 50 per cent., but in the others no connection between the dyspepsia and the bacterial flora could be discovered. With enteral dyspepsia there was always a luxuriant flora, the colon bacillus predominant.

Familial Chronic Enlargement of Parotid Glands in Children.—Hochschild describes a family in which in three generations there have been seven members with chronic, symmetrical enlargement of the parotid glands. In one case the glands enlarge occasionally. No reduction or exaggeration of production of saliva was evident in any instance. In most of the children the other salivary glands are somewhat enlarged as also certain lymph glands, and, in all, the teeth are defectively developed.

The Butter-Flour Mixture in Infant Feeding.—Plantenga writes from the Hague to report favorable experience with the Czerny-Kleinschmidt flour and butter mixture of 7 gm. butter to 7 gm. wheat flour and 5 gm. sugar in 100 gm. warm water. The butter is stirred over the fire until it foams and all the odor of butyric acid has disappeared; then the flour is cooked in with it on an asbestos plate until the whole mass is a light brown. The warm water and sugar are added, and the whole boiled up and strained and added, while still warm, to the milk, 33:66, or 40:60, according to the case. The infant is never fed more than 200 c.c. to the kilogram of weight, and usually less. The weight curve resembles that of the breast-fed. Neuropathic infants with the exudative diathesis and eczema thrive on this, while it does not suit infants with the exudative diathesis and eczema alone. The driving off of the fatty acids by the heat is a very important factor in the effect. The details of the thirty-one babes thus treated are appended.

Multiple Cartilaginous Exostoses.—The girl of 9 in Resch's case presented, besides the irregular exostoses, atrophy of the bone substance and defects in the development of the ends of the diaphyses. The physical development otherwise was normal, except that the child was 8 cm. taller than the average height for her age.

Size of the Heart in Infants and Children.—Preisich gives the figures from thirty-five child cadavers.

Münchener medizinische Wochenschrift, Munich

July 9, 1920, **67**, No. 28

*Carcinoma of the Rectum. H. Küttner.—p. 799.
Deep Roentgen Therapy in Internal Medicine. H. Schlecht.—p. 800.
*Serotherapy in Complications of Gonorrhea. J. Reenstierna.—p. 803.
Changes in the Clinical Behavior of Syphilis. G. Stümpke.—p. 804.
Intramuscular Injections of Silver Arsphenamin. C. Stern.—p. 805.
Silver Arsphenamin Therapy. H. Toepffer.—p. 807.
Deep Thermometry. IV. B. Zondek.—p. 810.
*Adulteration of Human Milk. Kappeller and Gottfried.—p. 813.
A Local Epidemic of Paratyphoid B. Federschmidt.—p. 814.
Dispersion and Effective Radiation in Deep Roentgenotherapy. L. Baumeister.—p. 814.
Spring Extension Splints for Finger and Forearm. F. Duncker.—p. 816.

Carcinoma of the Rectum.—Küttner's report covers more particularly 800 cases from the surgical clinic at Breslau, besides which 221 further cases are drawn on for certain statistical data. Rectal carcinoma is more frequent in men, his record standing at 62 per cent. for men and 38 per cent. for women. Men between the ages of 50 and 70 were chiefly affected, and women between 40 and 60. Eight cases occurred between the ages 17 and 19, and 37 between 20 and 29, the cases found early in life being more frequently in women. Of the total, only 32 per cent. were suitable for radical and 17 per cent. for a palliative intervention. The high percentage of inoperable cases is especially regrettable because with carcinoma of the rectum early diagnosis is so readily made. Küttner estimates that in from 60 to 70 per cent. of the inoperable cases, although the patients had consulted a physician in time, a thorough rectoscopic examination had not been made, the patients having been treated conservatively for hemorrhoids, chronic catarrh of the rectum, etc. Following radical operation, 32.5 per cent. survived three years and longer; 21.6 per cent. lived over five years; 16.4 per cent. more than eight years and 12.8 per cent. more than ten years. Of the patients who survived the operation for three years or more, 21 died from recurrence in the fourth or fifth year; 8 more in the sixth to eighth years, and 3 in the ninth and tenth years. Küttner argues that the advantages of the radical operation lie not so much in the fact that the lives of the patients may be somewhat prolonged as in the relief from pain and discomfort that is afforded. The results from roentgen-ray treatment in the inoperable cases were less favorable than with an artificial anus, but he feels that here we stand merely on the threshold of what may be therapeutically possible.

Gonococcus Antiserum Plus Febrifacients in Treatment of Complications of Gonorrhea.—Reenstierna's article was reviewed, page 578 of current volume, when it appeared elsewhere.

The Demonstration of Cow's Milk in Adulteration of Human Milk.—Kappeller and Gottfried state that the utilization of surplus mother's milk in hospitals has brought the danger of adulteration with cow's milk or dilution with water, as the women furnishing such milk are paid a good price for it. If as much as 20 per cent. of cow's milk or 10 per cent. of water has been added such adulteration can be readily detected by the changes in the Umikoff reaction, in the refraction of light, and in the precipitation of casein.

Wiener Archiv für innere Medizin, Vienna

Aug. 1, 1920, **1**, No. 3

*Bladder Function. O. Schwarz.—p. 455.
*Aneurysm of Hepatic Artery. F. Högler.—p. 509.
*Aneurysm of Splenic Artery. F. Högler.—p. 543.
*Origin of Hemolytic Jaundice. P. Kaznelson.—p. 563.
*Residual Nitrogen in Infectious Diseases. F. Wagner.—p. 575.
*Calcium Metabolism. H. Eppinger and E. V. Ullmann.—p. 639.

Mechanism of Bladder Functioning.—Schwarz devotes fifty-five pages to experimental and clinical analysis of automatic miction. He explains that the opening of the sphincter is reflex, secondary to contraction of the detrusor, and the contraction of the detrusor is also reflex, secondary to accumulation of urine in the bladder. The healthy adult can influence each one of these reflexes by cerebral control.

Aneurysm in Hepatic Artery.—Högler emphasizes the decisive auscultation findings with aneurysm in the hepatic or splenic artery. He adds another to the forty-seven cases of the former on record. Ligation of the artery is the only means to ward off a fatal termination, and Kehr has reported a successful case. Three other operative cases have been published, but the aneurysm was not discovered. Högler's summaries show that an early diagnosis is possible from the difference between the pains and those from gastric ulcer or gallstones, and the character of the hematemesis. Intervals of two or three weeks free from pain in his case alternated with periods of intense pains. They began under the right costal arch and spread first to the pubic and sacrum regions, and there was more or less bleeding from the stomach. Even morphin did not arrest all the pains and the tenderness in the upper right abdomen. There was never acid eructation or jaundice. The appearance of the murmur in the gallbladder region at the time of the gastric hemorrhages suggested aneurysm, and necropsy revealed an aneurysm of the right branch of the hepatic artery. It had perforated into the cystic duct. No evidence of a syphilitic origin was detected although the man of 51 had a history of old syphilis. In over 50 per cent. of the cases on record embolism from mycosis was involved. Bed rest is imperative as the slightest movement is liable to bring on the agonizing pains, and the anemia entails secondary disturbances. The course was nine months in his case.

Aneurysm in Splenic Artery.—Högler reports what he says is the first case in which an aneurysm in the splenic artery was diagnosed during life although he has found records of sixteen cases discovered at necropsy. His patient was a woman of 61, and the agonizing pains started in the lower

spine and spread like a girdle and down into the sacrum region. They never subsided completely and were worse at night, but there were periods of comparative relief and they were somewhat mitigated by lying crouched on the right side. Auscultation revealed a systolic murmur above the pulsating tumor in the left upper abdomen, and roentgenoscopy was also instructive. The course was up to seven years in some of the cases; his patient succumbed to gastric hemorrhage from an invading cancer in the pancreas.

Hemolytic Jaundice.—Kaznelson reports two cases which sustain the assumption that the spleen produces bilirubin out of destroyed hemoglobin, and that the liver itself is not necessarily pathologic in hemolytic jaundice. The fact that it is not able to take care of the excessive amounts of hemoglobin derivatives imposed on it, by no means proves that it is functionally deficient. The hemolytic jaundice in his first case dated from childhood, and splenectomy put an end to all the symptoms although it did not eradicate the disease. In the second case the jaundice had been noted for about seven years but the blood findings were normal. Tests of the bilirubin in the serum showed remarkable delay in the diazo reaction, as with pronounced hemolytic jaundice, and the precipitation of bilirubin with the albumin in the serum was also remarkably sluggsh confirming the nonmechanical origin of the icterus. The case therefore belongs in the group of familial cholemias, the question as to its hemolytic nature remaining unsolved. Hijmans van den Bergh has reported finding much more bilirubin in blood from the splenic vein than from peripheral veins, and this was confirmed in the splenectomy case here reported. This can mean only, Kaznelson says, that the spleen forms bilirubin out of the destroyed hemoglobin.

The Residual Nitrogen with Infectious Diseases.—Wagner tabulates the findings in 347 cases, including only seventeen with actual kidney disease, and reviews extensive literature on this subject. The uremia seems to depend on the degree of toxic action rather than on the fever, condition of the kidneys, or loss of fluids. In the majority, the output of urea in the urine paralleled the urea content of the blood. The residual urea increases as more nitrogen passes into the blood from increased ingestion or from toxic or other destruction of protein (fever, toxic action, starvation, muscular exertion), but more especially from breaking down of the body protein. Renal and extrarenal factors may cooperate to raise the nitrogen content of the blood, but exaggerated destruction of protein is mainly responsible for it.

Pathology of Calcium Metabolism.—Eppinger and Ullmann gave 30 gm. of sodium bicarbonate, fractioned, for two days to six persons between 45 and 64. The metabolic findings demonstrated that about twice as much calcium and magnesium were eliminated thereafter as in the preceding period. The balance in the healthy was hard to upset, but in pathologic conditions the losses of calcium and magnesium reached a high figure.

Wiener klinische Wochenschrift, Vienna

July 1, 1920, **33**, No. 27

Pathology and Clinical Aspects of Paratyphoid B. Bauer.—p. 575.
*Chemism of the Fasting Stomach. L. Jarno and M. Heks.—p. 578.
Treatment of Febrile Abortion. B. Zelnik.—p. 580.
Two Cases of Bromoderma. E. Klehelsberg.—p. 582.
Treatment of Recent Syphilis. Brandweiner.—p. 583. Cont'd.

Secretion in the Fasting Stomach.—Jarno and Heks examined thirteen subjects to ascertain conditions in the fasting stomach. Older physiologists and clinicians assumed that the healthy fasting stomach is empty, but others showed that the healthy fasting stomach often contains hydrochloric acid. Some regard the presence of gastric secretion in the fasting stomach as pathologic. Jarno and Heks conclude from their research that the healthy gastro-intestinal tract does not rest when empty. This is evidenced by the sound of flatus being forced along in the bowel during the fasting period, and they found that after the borborygmus the previously empty stomach often contained a hydrochloric secretion due to an as yet unknown stimulation. Hydrochloric acid in the fasting stomach may therefore be an entirely normal finding. With gastrosuccorrhea the stomach is never empty, and they assert that the absence of borborygmus during the fasting period is a sign that the normal *leertätigkeit* is unable to occur, and hence the lack of borborygmus during the fasting period points to an anomaly in gastric secretion.

Zeitschrift für Kinderheilkunde, Berlin

July 28, 1920, **26**, No. 1-2

Skin Phenomenon in Infants. E. Slawik.—p. 1.
Unusual Forms of Measles. R. Benzing.—p. 12.
*Water Content of Infants' Blood. E. Rominger.—p. 23.
*Chondrodystrophy. J. Duken.—p. 65.
*Helminths in Infants. M. Neumann.—p. 85.
*Preventive Vaccination Against Chickenpox. E. Steinert.—p. 94.

Water Content of Infants' Blood.—Applying the micromethod, Rominger found the water content of the blood remarkably stable in infants. He tabulates the findings by the age in 64 healthy infants, in 21 with acute and 11 with chronic gastro-intestinal derangement, and in 17 in the "decomposition" stage. Water poured into the stomach in an amount to correspond to the usual feeding passed rapidly into the blood, but this hydremia was transient, testifying to the need of the tissues for fluids. The only exception was in the "decomposition" cases; here the reaction was sluggish.

Chondrodystrophy.—Duken accepts Jansen's mechanical theory of the origin of chondystrophy as the result of three compressing forces acting on the head, the neck and the tail-bend of the embryo, rolling it up on its long axis. Hydramnion may be the primary factor, but the rolling up may entail ischemia of the pituitary and other endocrine glands, with malformation and defective functioning in consequence. He reproduces the roentgenograms from a typical case in a boy of nearly 5 with hydrocephalus. Rachitis seems to be rare with chrondrodystrophy. Duken adds that pituitary treatment might aid in promoting further development.

Helminths in Infants.—Neumann brings the literature on this subject down to date, and reports discovery of pinworms in three very young infants and the ascaris in a fourth. The helminths were not numerous.

Vaccination Against Varicella.—Steinert applied a preventive vaccine according to Kling's method to stamp out a ward endemic of chickenpox. It proved successful, and demonstrated that the vaccine pustule can serve as a source for further vaccinations, but he never was successful with pustules of the third generation.

Zeitschrift für klinische Medizin, Berlin

1920, **89**, No. 1-2

*Nuclear Lobes in Neutrophil Leukocytes. V. Schilling.—p. 1.
Comparative Histologic Action of Roentgen and Radium Rays. Margarete Levy.—p. 42.
Origin and Importance of the Fat-Splitting Ferments of Human Blood. L. Caro.—p. 49.
Klinger's Research on Hemophilia. A. Fonio.—p. 77.
*Sterilization of Typhoid Bacillus Carriers. F. Kach.—p. 87.
*Cholesterinemia. E. Arning and A. Lippmann.—p. 107.
Flapping of Chest Wall. J. Schreiber.—p. 120.
*Pus Cells in Feces. A. Norgaard (Copenhagen).—p. 143.
*Constitutional Eosinophilia. D. Klinkert (Rotterdam).—p. 156.
*Convalescence Eosinophilia. D. Klinkert.—p. 172.
*Menstruation Eosinophilia. D. Klinkert.—p. 177.

The Number of Nuclear Lobes in the Neutrophil Polynuclears.—Schilling writes from His' service to emphasize the clinical importance for both diagnosis and prognosis of the shifting to another class of the neutrophil polynuclears. The omission of this from the record, he says, is as serious as to omit mention of the pulse in examining the heart. The displacement to the left in the Arneth classification is a constant clinical symptom of certain infectious diseases. Although the blood picture examined by ordinary methods may seem normal, this will reveal profound changes which present the facts observed in an entirely different light. He has much simplified the technic to determine it, the findings harmonizing with those of parallel examination by the complicated Arneth method.

Treatment of Typhoid Bacillus Carriers.—Kach reports that two chronic bacillus carriers seemed to be permanently freed from the bacilli by an autogenous vaccine. One was given hexamethylenamin at the same time, but no benefit had been apparent from this given for several weeks before the

vaccine treatment was started. The bacilli were still found in the urine of a third carrier after a series of twenty-two injections. Kach reports further the changes in the blood picture under the influence of antityphoid vaccination in these and other patients.

Essential Cholesterinemia.—A man of 37 presented numerous xanthomas, and his blood showed permanent intense cholesterinemia from unknown cause. The xanthomas occurred exclusively in tissues which have an affinity for cholesterin (mesoderma, tendon sheaths and periosteum).

Catalase Reaction of Pus Cells in the Feces.—Norgaard describes a stain he has found useful for microscopic examination of pus cells in the stools. When this is not feasible, he shows up the pus cells by their catalase content. This is estimated by the amount of oxygen liberated from hydrogen dioxid dropped on a specimen of the stools. Erythrocytes, epithelial cells, and bacteria give the catalase reaction also, but sluggishly and less intense. With a little practice it is easy to discriminate between the normal amount of foam and the foam from pus cells, and thus differentiate a suppurative process in the bowel.

Constitutional Eosinophilia.—Klinkert regards eosinophilia as a sign of a special condition of the autonomic nervous system. It may be familial, and it entails a predisposition to asthma, gout, urticaria and migraine. Children with the exudative diathesis are liable to develop gout or these other equivalents as they grow up. The acute attack of gout is a neurosis of the joint, a uric neurarthritis. The hyperemia, eosinophilia and production of uric acid must be regarded as the consequences of an explosion from an overcharge of the autonomic nervous system. A similar explosion from overcharge occurs in the epileptic seizure, and this also is followed by an increased output of uric acid. The eosinophilia is the expression of a constitutionally inferior autonomic nervous system whether or not there are other clinical manifestations of this. The most important localization of chronic gout, he says, is in the kidneys, and the substandard kidney entails retention of uric acid which adds another element to the clinical picture. He ascribes the greater prevalence of gout, asthma and hay-fever in men, and after the menopause in women, to the less intense functioning of the thyroid gland. The benefit from fresh thyroid extract in idiopathic epilepsy, such as Bolten has reported, may be due to its stimulation of the antagonist nervous system to overcome vagus functioning. This mechanism may likewise explain the occasional cure of asthma and enuresis nocturna by an intercurrent febrile disease. Research on eosinophilia thus confirms the assumption of the neuro-arthritic diathesis and of vagotonia, and places gout on a general physiologic basis.

Convalescence Eosinophilia.—Klinkert compares the eosinophilia of convalescence to the local eosinophilia which accompanies the secretion of the digestive ferments through the mucosa of the stomach and bowel. The general eosinophilia accompanies the secretion of the specific immune ferments. Both are under the dominion of the vagus system, and the eosinophilia which accompanies the anaphylactic shock and the crisis of an infectious disease is an indicator of the influence of secretion by the autonomic nervous system. From this point of view the anaphylactic shock may be regarded as an artificial injurious caricature of the normal beneficent crisis. Postfebrile bradycardia is another argument for the connection between the immunity process and the autonomic nervous system, and also the increased output of uric acid at defervescence in typhoid and pneumonia. There is scarcely any uric acid in the blood during the preceding febrile stage in these diseases.

Menstruation Eosinophilia.—Klinkert asserts that the study of menstruation neuroses brings further confirmatory evidence to sustain his assumptions as to the close connection between eosinophilia, the autonomic nervous system and the production of uric acid, and his assumption that gout is a neurosis of the autonomic nervous system.

Zentralblatt für Gewerbehygiene, etc., Berlin

February, 1920, 8, No. 2

Training Factory Inspectors. Jacobi.—p. 25.
*Methyl Bromid Poisoning. E. Goldschmidt.—p. 28.

Fatal Poisoning with Methyl Bromid.—Goldschmid and Kuhn relate that after a kettle containing 178 kg. of methyl bromid had exploded, the men resumed work in the room, noticing merely a transient aromatic odor. There were absolutely no symptoms at first, but the second day afterward two or three of the men complained of dizziness or unstable balance, and the room was evacuated for twelve days. Then work was resumed and the men left that evening in apparent health, but one was found dying on the street, and two others presented similar symptoms in a day or two; with only a brief prodrome, epileptiform convulsions developed suddenly, with loss of consciousness and pulmonary edema, fatal in a few hours. Six others were treated in the hospital for dizziness, headache, loss of balance and general depression, but there was no disturbance in vision, no nausea, no vomiting, and the blood findings were normal. The men regained their earning capacity, but still showed, eight months later, occasional tremor of the hands and tongue, and the Romberg sign was weakly positive. The clinical picture thus differed from that of the few cases of methyl bromid poisoning on record. Necropsy revealed acute changes in the ganglion cells of the cortex in each fatal case. Pulmonary edema and suppurative bronchitis were found also in the one case examined.

Zentralblatt für Chirurgie, Leipzig

July 10, 1920, 47, No. 28

*Operation for Oblique Inguinal Hernia. Mermingas (Athens).—p. 850.
*Operation for Inguinal Hernia in Men. K. Vogel.—p. 852.
*Epigastric Hernia and Fat Hernia. T. Naegeli.—p. 855.
*Incarceration of Excluded Intestinal Loop. A. Hofmann.—p. 857.

Operation for Oblique Inguinal Hernia.—The characteristic feature of Mermingas' method consists in the exposure of the inner inguinal ring, through a perpendicular incision, without opening the inguinal canal. He claims for it greater simplicity, less danger from infection, shorter confinement to bed, and the possibility of combining radical herniotomy with appendectomy, the two operations requiring but the one incision. It is designed for reducible hernia with narrow opening.

Operation for Inguinal Hernia in Men.—Vogel runs a stout silk around the tissues surrounding the spermatic cord at the internal inguinal ring, in concluding the ordinary herniotomy, and ties the silk to bind the parts loosely together. The procedure is similar to the wire ring at the anus in prolapse operations. The result has been perfect in his twenty-five cases to date, but the longest interval since has been only nine months.

Epigastric Hernia and Properitoneal Lipoma.—Naegeli reports a series of 71 cases, 94.4 per cent., in men, and 5.6 per cent. in women; 33.8 per cent., occurred in the 20-30 age period, and 22.5 per cent., in the 30-40 age period. Of the 67 cases coming to operation, 61.2 per cent., presented a properitoneal lipoma without a hernial sac; 38.8 per cent., presented a hernial sac, 16.8 per cent. being without and 11.9 per cent. with content. When we consider that of these 67 cases only 8 presented adhesions, it is evident that the adherent omentum that has been supposed to be the cause of the pain plays in reality a very subordinate part and that other factors must be responsible for the clinical picture. Besides the epigastric or fat hernia 6 patients had perigastric adhesions, requiring gastro-enterostomy in 2 cases; one, chronic cholecystitis requiring cholecystectomy; one, inflamed and enlarged lymph glands on the greater curvature, and one, a serious gastroptosis. Naegeli concludes that the relative rarity of adhesions and of a peritoneal hernial sac in epigastric hernia, together with the proved frequency of intra-abdominal changes, point very plainly to the importance of epigastric hernia. He advises an exploratory laparotomy in every case.

Inguinal Incarceration and Intra-Abdominal Perforation of an Excluded Intestinal Loop.—Hofmann reports a case of incarceration of an excluded portion of the small intestine after a resection operation. The case teaches that an excluded intestinal loop, owing to its normal glandular secretion, may simulate a cystic tumor. The case did not show the characteristic picture of intestinal obstruction but resembled more torsion of an abdominal tumor.

Zentralblatt für Gynäkologie, Leipzig

July 10, 1920, **44**, No. 28

Etiology of Inversion of the Uterus. T. Micholitsch.—p. 758.
*Turpentine Treatment of the Adnexa. P. Hinze.—p. 762; Idem, H. Hellendall.—p. 767.
Prophylaxis of Congenital Syphilis. J. Stangenberg.—p. 768.

Turpentine Therapy in Disease of the Adnexa.—Hinze reports 205 cases, 35 of which came to operation; 65 were treated by the usual conservative methods and 105 with turpentine. He injected 0.5 c.c. of a mixture of 0.1 gm. of turpentine oil and 0.4 gm. of olive oil, in the posterior axillary line from two to three fingerbreadths below the crest of the ilium. The long cannula prevents the fluid being injected into muscle or subcutaneous tissue, which increases the pain unnecessarily. In addition, in most cases, moist heat and hot air or hot-water treatment were employed. The discomfort following the injections was not severe and usually subsided in from four to five hours, but in several cases the pain lasted from three to four days, sometimes radiating into the leg on the same side. In 8 of the cases of pyosalpinx either a cure or marked improvement was effected. The results were very favorable in the 52 mild cases. As a rule these cases could be dismissed as cured in from two to three weeks. In the chronic cases, the pains usually disappeared after a few injections, and when the patients were dismissed in three or four weeks the tumors had decreased considerably in size. Hinze's judgment, therefore, is that turpentine injections constitute progress in conservative treatment of affections of the adnexa. However, that recurrences are not uncommon goes without saying.

Treatment of Diseased Adnexa with Turpentine Injections.—Hellendall says that when on the basis of thirty cases Zöppritz demonstrated this method recently before the Verein der Aerzte at Düsseldorf, no adherents championed it during the discussion that followed, while Pankow presented two series of cases, one treated with and one without turpentine, and emphasized that the results indicated that there was no difference between the old conservative treatment and the turpentine treatment so far as the final effect was concerned. In Hellendall's own case, that of a young woman of 19, the ineffectiveness of turpentine injections was shown by a later operation, although it was a case in which good effects should have been apparent, if ever.

Zentralblatt für innere Medizin, Leipzig

May 8, 1920, **41**, No. 19

*Determination of Total Blood Volume. J. Löwy.—p. 337.

Determination of the Total Blood Volume in Living Subjects.—With Bang's micromethod, Löwy determines the sodium chlorid content of the capillary blood; then he injects intravenously 400 c.c. of isotonic glucose solution. Immediately after this infusion, and in some cases again from five to ten minutes later, he determines the sodium chlorid content anew, and from the dilution he figures out the total blood value. In his tests of the method the percentage of error did not exceed 5 per cent., so that it compares favorably with the best of other methods, even analysis of the gaseous interchanges. His equation is obtained by multiplying the figure representing the sodium chlorid content after the infusion (a_2) by the figure representing the amount infused (b), and dividing by the difference between the salt content before (a_1) and after the infusion (a_2): $x = \frac{a_2\, b}{a_1 - a_2}$. In four cases the total amount of blood was thus estimated at 1/18 to 1/21 of the total weight.

July 24, 1920, **41**, No. 30

*The Blood Sugar in Narcosis and in Nervous Diseases. H. Chantraine.—p. 521.

The Blood Sugar in Narcosis and in Nervous Diseases.—As the results of animal experimentation and of observations on man by the Bang micromethod, Chantraine states that in ether narcosis there is an increase of blood sugar amounting to from one third to one half. In ethyl chlorid anesthesia there is no hyperglycemia. After severe cerebral shock no hyperglycemia was manifest in animal experimentation. In diseases of the nervous system there was usually no evidence of hyperglycemia.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

July 17, 1920, **2**, No. 3

Hygiene of Milk Production. H. M. Kroon.—p. 204.
*Infant Welfare Work. B. P. B. Plantenga.—p. 214.
*Automatic Movements of Esophagus. J. R. Prakken.—p. 222.
Genealogic Tree of Polydactylic Family. G. A. Prins.—p. 227.
*Case of Molluscum Fibrosum. L. Bayer.—p. 230.

Welfare Work for Infants.—Plantenga includes among the five main causes for infant mortality the inadequate care and feeding of the prematurely born, and tuberculosis, and emphasizes that the provisions for welfare work for infants differ from those for older children above all in the necessity for individual work. Older children can be handled in groups, in classes, but to give infants a chance to thrive requires individualization. They do not thrive so well when grouped in institutions or elsewhere. Hence welfare work for infants has to be a different organization from that for older children.

Automatic Movements of the Esophagus in Mammals.—Prakken reports from the physiology laboratory of the University of Amsterdam that unmistakable automatic contractions were manifest in the surviving cat esophagus, the smooth and the striated muscle behaving differently. Not only horizontal contractions but also changes in length were evident.

Pendulous Molluscum of the Nose.—The acrochordon in Bayer's case in a young African woman hung from the nose down on the chest. It was almost as large as her head. She refused an operation.

Hospitalstidende, Copenhagen

Aug. 18, 1920, **63**, No. 33

*Standardization of Thyroid Preparations. C. O. Jensen.—p. 505.

Standardization of Thyroid Preparations with Mexican Salamander.—Jensen refers to the axolotl, the larva of *Ambystoma mexicanum*, which is being used more and more in laboratory research. It does not undergo the metamorphosis usual in such amphibians, but persists and breeds in the larval stage, without the transformation process which changes it—like the tadpole—from a water to a land animal. He has found that treating the axolotl with thyroid preparations is promptly followed by the natural metamorphosis. This occurs so invariably that he suggests that this may be utilized for standardizing thyroid preparations. He explains the phenomenon as due to an inherited substandard condition of the animal's own thyroid gland, reducing its functional capacity below the level required for the physiologic metamorphosis. The effect of the thyroid preparations did not parallel their iodin content.

Hygiea, Stockholm

July 31, 1920, **82**, No. 14

*Recent Research on the Vitamins. A. Höjer.—p. 449.

The Vitamins.—Höjer summarizes the results of recent research on the importance of the vitamins, and endorses Jundell's conception of rachitis as a deficiency disease. This has been confirmed, he adds, by the efficacy of treatment on this basis.

Ugeskrift for Læger, Copenhagen

July 22, 1920, **82**, No. 30

*Roentgen-Ray Treatment of Sarcomas. P. Blume.—p. 943.
Prostitution and Venereal Disease. S. Lomholt.—p. 950.
Desiccated Milk. C. Lind.—p. 954.

Roentgen-Ray Treatment of Sarcomas.—Blume states that several of Nordentoft's 28 patients have shown no signs of recurrence during the four or five years to date since their sarcoma retrogressed under exposures to the roentgen rays. In 7 other cases the tumors did not seem to be influenced by the raying. Of the others, 2 have died from intercurrent disease and 12 from recurrence of the malignant disease, but 37.1 per cent. have been free from all symptoms for from eighteen months to five years. As recurrence of sarcoma usually develops early, there is reason to assume that the cure is permanent in these cases. Even in the cases with recurrence, it was never at the site of the tumor. The minute details of the total 35 cases are tabulated. From one to five exposures were given, but in the majority only one exposure, including a case of sarcoma of the tonsil and one of the foot cured for over four and five years to date.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, NO. 17 CHICAGO, ILLINOIS OCTOBER 23, 1920

HINTS FOR DIAGNOSIS OF DISEASE OF GALLBLADDER AND OF BILIARY PASSAGES*

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BALTIMORE

When certain typical syndromes present themselves, diagnosis of diseases of the gallbladder and of the biliary passages is one of the easiest of the internist's tasks; but in the absence of these, disease of the biliary tract may nevertheless exist, and its detection, so important for the patient, may tax to the utmost the skill of most experienced clinicians.

In the time allotted, the subject chosen must be dealt with in summary fashion, and I shall therefore dispense with any detailed elaboration, confining myself to brief mention of the points in the anamnesis, the physical examination, the roentgen-ray reports and the laboratory findings that I regard as most helpful in making a general diagnosis in the domain under consideration. At the end of the paper, I shall epitomize the combined findings that characterize the more important special biliary disorders.

ANAMNESTIC DATA

In the anamnesis the points to be considered when one suspects a disease of the gallbladder or of the biliary passages are: (1) the age, sex, occupation and habits of the patient; (2) a history of gallbladder disease or of gallstones in the family; (3) a history in the patient of one or more infections believed to predispose to the development of gallbladder disease; (4) a history of digestive disturbances, or of general impairment of health, common in gallbladder disease; (5) a history of typical attacks of biliary colic, or of atypical pains in the right hypochondrium, and (6) a history of jaundice, or of chills and fever.

Age, Sex, Occupation and Habits.—Diseases of the gallbladder occur predominantly in middle and later life. Cholelithiasis and cholecystitis may, it is true, occur in early life and even in childhood; but they are relatively rare before middle life. Indeed, as far as gallstones are concerned, the incidence increases steadily as life advances.

Statistics show that in one of every ten or twelve adults who come to necropsy, gallstones are found in the gallbladder, though only about 10 per cent. of those who carry gallstones suffer from marked symptoms due to them. On the basis of these statistics, one can roughly estimate the total number of gallstone carriers in a given country, and also the approximate number of those whose health is seriously affected by them.

Women, as is well known, are definitely more disposed to gallstones than are men, the ratio of incidence in the two sexes being as three or four to one. It is believed that the tendency to sedentary life, the wearing of corsets, and the occurrence of pregnancy, are the factors that predispose women strongly to gallbladder stasis, to gallbladder infection, and to the development of gallstones.

Occupation and habits are, doubtless, contributory factors in the etiology in both sexes. A sedentary mode of life, overindulgence in food, insufficient regular exercise, obesity, and especially chronic constipation all favor stagnation of the bile and its sequels.

Heredity and Familial Factors.—The proof has not yet been brought that heredity plays a definite part in the etiology of gallbladder disease. Despite this lack of actual proof, however, many clinicians have gained the impression that gallbladder disease is much more common in some families than in others. It has been suggested that a congenital disturbance of the cholesterin metabolism may be responsible and that this, perhaps, is the reason why gallbladder disease seems to be common in families disposed to migraine, diabetes, obesity and arteriosclerosis. More work on the subject must be done before the view that hereditary and familial factors are responsible dare be accepted.

Infections that Predispose to Gallbladder Disease.—Biliary stasis usually precedes gallbladder infection and the development of gallstones, but actual inflammation of the gallbladder and gallducts is nearly always due to a complicating infection. It is a matter of common knowledge that certain general and local infections often precede the outbreak of attacks of biliary colic, and it seems probable that the excretion of bacteria into the bile as the result of such infections is the common cause of the development of cholecystitis in a gallbladder in which stasis exists.

Typhoid fever seems especially to predispose to the development of gallstones and to cholecystitis. From the writer's own person, four large gallstones were removed by Dr. Finney thirty-five years after a typhoid infection in the eighth year of life, and Dr. Charles R. Austrian, who at the time of operation was our clinical bacteriologist, demonstrated by cultural methods the presence of living typhoid bacilli within the interior of one of the gallstones!

Other infections, believed to be sometimes responsible, are puerperal fever, influenza, appendicitis, colon bacillus infections, tonsillitis, paranasal sinusitis, chronic oral sepsis, infectious arthritis, chronic ulcerative enteritis, and postoperative pyogenic infections.

* Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

History of Digestive Disturbances, or of Impairment of the General Health.—In most gallstone carriers, outspoken symptoms are not manifest, attacks of biliary colic, especially, often being absent for many years. But so-called "latency" rarely means entire absence of symptoms. As one of the wisest of our American surgeons has put it, "Innocent gallstones are a myth."

Patients with chronic cholecystitis, or with gallstones, are prone to complain of certain digestive disturbances, often lasting many years before their true origin is discovered or even suspected. These digestive disturbances have been described by many writers, notably by B. G. A. Moynihan (1908), A. W. Mayo-Robson, and John Bland-Sutton in England, and by W. J. Mayo, J. B. Deaver, A. O. J. Kelly, J. B. Murphy, H. C. Moffitt, J. B. Elliott, W. F. Cheney, A. Bassler, J. A. Lichty, G. A. Henderson and others in this country, under the name "gallbladder dyspepsias" or "the inaugural symptoms of gallbladder disease." At present, the careful clinician, confronted by a patient who complains of recurring attacks of "indigestion" but in whom he cannot by a thorough diagnostic study find further evidence definitely incriminating stomach, duodenum, gallbladder or appendix, does well to make the note "Suspect right abdomen, to be watched," in order to make sure that the patient shall be checked up from time to time until the true explanation of the condition is arrived at.

Among the symptoms of "indigestion" referred to, gaseous eructations, flatulence, epigastric pains of variable intensity, heaviness, a sense of constriction, or a "dragging feeling" under the right rib margin, heartburn, persistent constipation, and attacks of mucous colitis may be especially mentioned. Such symptoms often follow indiscretions in diet, alcoholic indulgence, railway travel, horseback riding, or automobile riding over rough roads. They often become prominent also during menstruation, or after emotional disturbances of any sort (anger, excitement, worry or sexual intercourse).

It cannot be too strongly emphasized that a large proportion of symptoms referable to the stomach are of reflex origin, due to lesions in or about the gallbladder, in the appendix, in the duodenum, or elsewhere in the abdomen. A distinguished Philadelphia surgeon is, I believe, responsible for the diagnostic aphorism, "Woman, fat, 40, belches gas—gallstones!"

In persons in middle life, whose general health is impaired without easily discernible cause, the possibility of the existence of an obscure disease of the gallbladder should always be kept in mind, and the right upper quadrant of the abdomen from time to time investigated. Who of us does not recall more than one such case in which the chronic invalidism has quickly disappeared after the discovery and removal of a biliary infection?

History of Typical Attacks of Biliary Colic or of Atypical Pains in the Right Hypochondrium.—In typical biliary colic, there is sudden pain in the right hypochondrium or in the epigastrium, a pain that often radiates to the back or to the right shoulder, neck or arm. It is usually accompanied or followed by nausea, vomiting and symptoms of shock, sometimes by fever and chilly sensations. The attack lasting from a few minutes to a few hours, is followed, for a few days, by aching and soreness beneath the right costal margin. Not infrequently a tinge of jaundice can be made out in the sclerae, or a trace of bile can be discovered in the urine, by Gmelin's test, after the attack. Such an attack is more than a "hint"; when it occurs one can be very sure that gallbladder disease exists, and that, in all probability, both cholecystitis and gallstones are present, though typical hepatic colic may occur in the absence of gallstones.

Less typical pains in the right hypochondrium or epigastrium may, however, be puzzling to the practitioner; for though they may be due to spasm of the gallbladder or of the bile ducts, they may depend on increased gastric tension, on pylorospasm or on spasm of the wall of the intestine, and the causes of such conditions must be sought with the aid of a general diagnostic survey. It should be borne in mind, too, as has been emphasized above, that even when the pain is due to gastrospasm or to enterospasm, the primary cause may lie (1) in a gallbladder exerting a reflex influence, or (2) in pericholecystitic adhesions.

History of Jaundice, or of the Occurrence of Chills and Fever.—A history of jaundice should make one keep the gallbladder and the bile ducts in mind. By far the majority of cases of disease of the gallbladder are not accompanied by jaundice. When gallstones and cholecystitis are present, jaundice is encountered in only 10 or 20 per cent. of the instances (Kehr), and it may be absent even when there are stones in the ductus choledochus, though it is present in 70 per cent. of the cases of choledochitis. Jaundice associated with biliary colic usually points to stones, but this association also occurs in the entire absence of gallstones. A steadily deepening jaundice, without remissions and unassociated with pain, points to the head of the pancreas (carcinoma; pancreatitis); it is believed by some that "catarrhal jaundice" depends on obstruction to the ductus choledochus from an associated pancreatitis. Jaundice after middle life along with palpable nodular mass in the right hypochondrium usually means carcinoma of the gallbladder. Marked jaundice with a large, soft liver points to some form of hepatitis, and if the liver is painful and the patient has chills, fever and leukocytosis, one must think of (1) infectious cholangitis associated with stones in the ductus choledochus or in the hepatic ducts, or (2) hepatic abscess. The "intermittent fever of hepatic origin" described by Charcot and by Osler usually means stone in the common duct with choledochitis. Even when there is no jaundice, if a patient continues to have chills and fever and no other adequate explanation can be found, the possibility of the existence of a pyogenic infection of the biliary passages should not be forgotten.

PHYSICAL EXAMINATION OF THE ABDOMEN

If one analyzes a large series of reports of the general physical examinations made in patients in whom he has finally arrived at a diagnosis of disease of the gallbladder or bile ducts, he may be surprised to find how few, in the obscure cases, the positive findings referable to the gallbladder and the liver have been. In the easily recognizable cases, palpation, percussion and even inspection may give the necessary clues.

When one can palpate, or see, an enlarged gallbladder, or a Riedel's lobe, or when palpation in the right hypochondriac region elicits outspoken tenderness or muscle spasm, one can feel fairly sure at once that he is dealing with stasis, with infection, or with both. It is exceedingly rare that one can actually palpate gallstones; a nodular mass in the region of the gallbladder most often proves to be carcinoma.

But in obscure gallbladder disease, especially in mild cholecystitis, it may be difficult to secure any positive abnormal findings by inspection, palpation or percussion of the gallbladder area. Sometimes, by careful palpation, an overfull gallbladder may be felt, or a little tenderness may be elicited.

It is well to palpate first with the patient in the recumbent position, his head and shoulders slightly elevated, his thighs and knees flexed, his mouth open, and his attention diverted by conversation. The examiner's left hand is placed behind the patient while gentle superficial and, later, deeper palpation is performed with the right hand in front. Afterward, the examiner may sit behind the patient, encircle his waist with both arms as he reclines against the examiner's body, and then, during both inspiration and expiration, make gentle but deep pressure alternately in the right and in the left hypochondrium to determine whether more tenderness is elicitable on one side than on the other.

The method of vertical percussion over the gallbladder, devised by the late J. B. Murphy, is also helpful sometimes in eliciting local tenderness.

ROENTGEN-RAY EXAMINATIONS

Much misunderstanding still exists, both among laymen and among physicians, regarding the information that the roentgen ray can give us as an aid in the diagnosis of obscure gallbladder disease. In roentgen-ray plates or films as ordinarily exposed, gallstones themselves appear in only a small percentage of the cases in which they exist. It is only when the stones contain enough lime to throw a shadow that they become visible in the roentgen-ray plate. Pure cholesterin stones throw no distinguishable shadows.

Recently, it has been possible, by special preparation and by the help of oblique lighting, to demonstrate the presence of gallstones in a larger percentage of cases than formerly, some asserting that in from 45 to 50 per cent. of the patients harboring biliary calculi, there is enough lime in the stones to throw a shadow (Case, 1919). In certain instances it has been possible to secure shadows of stones in the ductus choledochus, as well as in the gallbladder (Arcelin, 1913; Béclère and Duval, 1919).

If a pericholecystitis causing adhesions to the pylorus, duodenum or hepatic flexure of the colon exists, characteristic roentgen-ray findings may sometimes be obtained; the anchorage of the pyloric end of the stomach to the right and upward, the immobility of the hepatic flexure, or the distortion of the duodenal cap due to the adhesions, may help the roentgenologist to the belief that a cholecystitis and a pericholecystitis causing adhesions have earlier been present. In many such cases, though by no means in all, there are also stones in the gallbladder. It is not, however, the diagnosis of gallstones that is most important; what we desire most to know is whether or not stagnation and infection exist anywhere in the biliary tract.

When adhesions are present in the right upper quadrant of the abdomen in the roentgen-ray plate, one must not forget that they may not necessarily be secondary to cholecystitis and pericholecystitis, but may rather arise from an adhesive peritonitis due to a duodenal ulcer or to an ulcer at the pylorus. Usually, however, the roentgen-ray examination, together with the anamnesis and the laboratory findings, will permit one to decide whether or not a pyloric ulcer or a duodenal ulcer is present.

STUDIES OF THE BLOOD, THE STOMACH CONTENTS, THE DUODENAL CONTENTS, AND THE FECES

A white blood count and a differential count of the white cells in a stained smear may be helpful in determining the degree of acuity of an inflammatory disease of a gallbladder or of the bile ducts. A positive Wassermann reaction may call the clinician's attention to an unsuspected syphilis of the liver that may sometimes simulate disease of the biliary passages. The demonstration of hypercholesterinemia favors the diagnosis of gallstones rather than of ulcer of the stomach or duodenum.

Patients with mild chronic cholecystitis early in their disease often have a gastric hyperacidity with heartburn and with epigastralgia due to the pylorospasm common in hyperacid states (Moynihan; Lichty; Kehr). In the later stages of chronic gallbladder disease, however, it is much more common to have a hypo-acidity than a hyperacidity. It has been common in my experience with patients suffering from the gallbladder diseases to find 10 acidity per cent. of free hydrochloric acid with a total acidity percentage of 15 to 30 in the stomach contents. Even a complete achylia gastrica is by no means uncommon in long-standing cholecystitis. The frequency of gastric hypoacidity in gallbladder disease has of late years been recognized by many observers, notably by Wohl (1912), Hohlweg (1912), von Aldor (1914), Hermando (1914), Ohly (1915), Hamburger (1917) and Fravel (1920). Rehfuss (1920) has observed hypersecretory phenomena in more than one half of his cases, and thinks that the low findings when present are due to long-standing duodenitis or gastric catarrh.

There seems to be some relationship between the function of the gallbladder and the secretion of hydrochloric acid by the stomach. After cholecystectomy, as is well known, it is common to have achylia gastrica and paroxysmal attacks of gastrogenous diarrhea. I have often wondered whether this relationship depended on a neuroregulatory mechanism, or on a hormone secreted by the gallbladder wall, as has been suggested by Leede. Here would seem to me to be a good opportunity for experimental investigation.

Examination of the duodenal contents (Einhorn, Schneider) may be helpful in the differential diagnosis of diseases of the right upper quadrant of the abdomen, particularly when there is obstruction to the outflow of bile into the duodenum, either from gallstones, on the one hand, or from disease of the head of the pancreas, on the other. Entire absence of bile from the duodenal contents in jaundice favors the diagnosis of obstruction due to disease in the head of the pancreas, whereas the presence of a little bile is more common in obstruction of the bile duct or papilla by stone.

Recently, a new method of utilizing the duodenal contents for the study of conditions within the biliary passages has been introduced by Lyon of the Medical Clinic at Jefferson Hospital, Philadelphia. Lyon's method is based on Meltzer's discovery that the introduction of magnesium sulphate solution into the duodenum is followed by relaxation of the sphincter of the bileduct and by outflow of bile into the duodenum. By means of the duodenal pump, Lyon is able successively to secure (1) duodenal contents (mixed with magnesium sulphate solution), (2) contents of the ductus choledochus, (3) contents of the gallbladder, and (4) contents of the hepatic duct. Chemical and

bacteriologic studies can then be made of these several bile fractions. The method promises to be useful, not only in the diagnosis of diseases of the gallbladder and of the biliary passages, but also, perhaps, in therapy.

Examination of the feces may be helpful for the differential diagnosis of the biliary passages. Occasionally a smaller or a larger gallstone may be found in the feces, but the method of looking for gallstones in the feces is so time-robbing that one is scarcely repaid for one's trouble in undertaking the search. Occult blood may sometimes be found in the feces in gallbladder disease; indeed, sometimes quite extensive hemorrhages occur into the intestines in these cases, though their origin is not as yet satisfactorily explained. The presence of occult blood, therefore, does not, in differential diagnosis, necessarily mean that a duodenal ulcer or a gastric ulcer is present to the exclusion of gallbladder disease. Chemical examinations of the feces for neutral fat and for free and combined fatty acids have been used for differentiating between the pancreatic disease and disease of the biliary passages in cases of intestinal acholia.

DIFFERENTIATION OF DISEASES OF THE BILIARY TRACT FROM OTHER DISEASES

Diseases of other parts of the body may yield symptoms that simulate those of the biliary tract. It is not surprising, therefore, that mistakes in diagnosis should be made in either one of two directions, namely, (1) in mistaking biliary disease for one of the diseases yielding symptoms that resemble it, and (2) in mistaking one of these simulators for biliary disease.

I need only mention (1) renal colic, (2) Dietl's crises, (3) intestinal colic, including lead colic and mucous colitis, (4) angina abdominis, (5) gastric crises of tabes and the pains in (6) atypical appendicitis, (7) gastric ulcer, (8) gastric cancer, (9) duodenal ulcer and (10) pancreatitis to remind you of conditions that may be confused with biliary colic.

Infectious choledochitis with chills and fever may also be easily mistaken for other infectious processes, especially if jaundice is absent or slight. Malarial fever, suppurative pyelitis, endocarditis lenta, unrecognized tuberculosis or syphilis, and obscure septic processes of various sorts (pylephlebitis, cryptogenetic sepsis, etc.) are examples of such processes.

In nearly all cases, if a careful anamnesis is recorded, a thorough general physical examination made, and suitable laboratory and roentgen-ray tests undertaken, sufficient data will be collected to yield, on reflection, the clues to a correct diagnosis.

THE MORE CHARACTERISTIC BILIARY TRACT SYNDROMES

In conclusion, a summary of the principal findings (anamnestic, physical, roentgenologic and chemical) that pertain to certain of the more typical syndromes of diseases affecting the biliary passages may be found convenient.

1. *Acute Cholecystitis (Mild).*—Mild "indigestion"; slight pain and tenderness in the right hypochondrium; sometimes, a palpable gallbladder; slight fever and slight polymorphonuclear leukocytosis; symptoms often subsiding in a few days on rest in bed, light diet and local thermotherapy.

2. *Acute Cholecystitis (Severe).*—Symptoms more severe than in the preceding; nausea and vomiting common; gallbladder distended and very painful on palpation as a rule; upper right rectus rigid; leukocytosis of from 12,000 to 20,000; fever; sometimes chills, especially if exudate is seropurulent; signs of peritoneal irrigation; need of immediate operation. If the patient is very toxic, the gallbladder may be gangrenous. The condition may be mistaken for acute appendicitis or for acute peritonitis due to perforation of a gastric or a duodenal ulcer.

3. *Chronic Cholecystitis, With or Without Gallstones.*—Attacks of "indigestion" or "biliousness" ("gallbladder dyspepsia", "inaugural symptoms") with fulness, weight and distention after meals, relieved by belching, but often followed by soreness and stiffness in the right hypochondrium lasting a few days. Sometimes there are characteristic attacks of biliary colic, most often nocturnal, with severe pain in the epigastrium and in the right hypochondrium, radiating to the back and often to the right shoulder, accompanied by gaseous distention and often by vomiting, and not infrequently requiring morphin for relief. The gallbladder may or may not be palpable (it is often shrunken). Tenderness on pressure in the gallbladder area is usually present. Roentgenograms may, or may not, show the presence of gallstones; they may reveal displacement of the pylorus upward and to the right, and distortion of the duodenal cap or of the pyloric and of the stomach, especially if there is a complicating adhesive pericholecystitis. Impairment of the general health is common.

4. *Acute Infectious Choledochitis.*—After an attack of biliary colic, jaundice develops with enlargement of the liver, tenderness in the midepigastrium and to the right of this, with fever and leukocytosis. If a stone is passed, the infection may subside quickly. Colic may or may not occur.

Recurring pyrexia with chills and sweats (intermittent fever of hepatic origin) points to purulent cholangeitis. There is persistent jaundice with bilirubinaria. The gallbladder is rarely palpable because usually small and shrunken from coexistent chronic cholecystitis. Operation is indicated.

5. *Chronic Catarrhal Cholangeitis (Calculous or Noncalculous).*—Chronic intermittent jaundice; sometimes, attacks of biliary colic; fever may be absent, or temporarily present; slight leukocytosis in exacerbations; may be confused with (1) carcinoma compressing the ductus choledochus or (2) hypertrophic biliary cirrhosis.

6. *Biliary Obstruction with Distention of Gallbladder Due to Chronic Pancreatitis or to Carcinoma of the Head of the Pancreas.*—Maximal jaundice (after gradual onset and steady increase without recession) with complete intestinal acholia, bilirubinuria and pruritus; usually entire absence of pain and fever; large, easily palpable gallbladder. Sometimes, a tumor is palpable in the epigastrium. Tendency to emaciation and cachexia greater in carcinoma than in pancreatitis. Glycosuria present in 25 per cent. of the cases. Operation indicated, and often too long delayed in the hope that only catarrhal jaundice exists.

7. *Hydrocholecystosis or Chronic Remittent Cholecystosis (With or Without Stones in the Gallbladder).*—Brief attacks of pain without fever, recurring for months or years in the right hypochondrium, synchronous with recurring distention of the gallbladder, but without signs of local or general infection (Berg). A Riedel's lobe may be palpable, and, if so, may be mistaken for a mobile kidney, a hydronephrosis or a neoplasm.

8. *Carcinoma of the Gallbladder.*—Nodular mass palpable in gallbladder region, appearing in a patient who has earlier shown signs of cholecystitis or of gallstones; jaundice in 75 per cent. of the cases; ascites in 25 per cent; metastases in the liver may occur early; cachexia common. Operation, unless performed very early, rarely saves the patient. Death usually occurs within a few months.

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TRACHOMA

A PUBLIC HEALTH PROBLEM OF THE STATES *

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Trachoma is an inflammation of the conjunctiva which originates in infection from a trachomatous to a nontrachomatous eye, through the medium of the secretion, lasting, without interference, months and years, causing serious and permanent impairment of vision, and resulting too often in total blindness from its cicatricial and mutilating effects.

The condition is more or less a hypertrophy of the conjunctiva, plus the trachoma follicles or granules, and is described by some authors as "papillary trachoma" and "follicular trachoma," according to whether the hypertrophy or the follicles or granules predominate. When the follicles can be seen in the much hypertrophied and inflamed tissue, it is at times referred to as "mixed trachoma," while the terminal stage is classed as "cicatricial trachoma." The disease occurs under varying clinical aspects, which has caused some observers to describe several varieties of trachoma. It would seem, however, that these are merely various stages of trachoma, rather than varieties.

It is realized that some cases respond more readily to treatment than do others, as is the case in many diseases; then again, the subjective symptoms in one patient may be comparatively mild and, even though the trachoma has existed for years, there will be but little discomfort or corneal damage. In fact, a case is occasionally seen in which the disease has been of long standing and reached the cured or cicatricial stage with practically no damage to the cornea. This is probably the reason why one observer [1] describes trachoma clinically in two forms: fulminating and slow trachoma.

DIAGNOSIS

Like smallpox and some other communicable diseases of which the etiology is unknown, the diagnosis is a matter of personal opinion, based on the character and amount of experience which the observer may have enjoyed with respect to the disease.

According to my observation, decidedly more errors are made in diagnosing cases as trachoma which should be classed as benign conjunctivitis. This was evident during the World War, when many men were rejected for service as having trachoma who probably suffered from no communicable eye disease whatever. One instance in particular was noted in a Western state where about sixty drafted men were examined in one day by the medical board, and 25 per cent. of them were rejected as having trachoma. I examined these men at the request of the chairman of the board and found them quite free from any affliction of the eyelids which would bar them from service. The same thing is continually seen when a routine examination of schoolchildren has been made.

Reports are frequently received from communities that medical examination of the schools showed many hundreds of cases of trachoma. At times the schools had been closed because of a supposed epidemic of trachoma. Subsequent investigations showed that the great majority of the cases were only benign conditions.

On the other hand, there are apparently a few specialists who are loath to admit that trachoma exists unless the conjunctiva shows cicatricial tissue and possibly other sequels of the disease. This failure to recognize early the nature of the disease, and apply the appropriate remedy which is demanded by the truly serious condition, not only dooms the individual patient to unnecessarily prolonged suffering and the mutilating effects of trachoma with the resultant impairment of vision and frequently total blindness, but constantly subjects his family and associates to a dangerous communicable disease.

In order to be able to determine intelligently whether trachoma is or is not present in any given case, it is essential that the entire conjunctival surface be inspected, particularly in the upper lid and culdesac. It is therefore imperative that the examiner be able to evert the lids correctly and expose these parts. This may at first thought seem to be a small matter; but to evert properly the upper lid, so as to expose and examine all portions of the culdesac, is rather an art that requires no little practice. It is possible to evert the upper lids quickly and effectively without discomfort to the patient. A knowledge of the appearance of the normal conjunctiva, as well as diseased conditions, of course, is essential in diagnosing trachoma.

The small glove buttoner with a wire loop makes an excellent instrument for everting the lids. To examine the upper lid, the patient is requested to look downward with the head well back. The lashes of the upper lid are held between the thumb and forefinger of the left hand, and the lid is drawn gently downward and outward, while the wire loop of the glove buttoner is held with the right hand and placed well up on the skin of the eyelid, and the lid everted over the instrument. By properly manipulating the point of the instrument, one may inspect all portions of the culdesac under varying degrees of pressure.

Trachoma usually commences with an irritation and inflammatory symptoms. Soon there are photophobia, pain, and more or less watery secretion. In the beginning it is often difficult or impossible to differentiate it from a simple catarrhal conjunctivitis. The latter, however, with the use of simple remedies, will clear up rather easily. On the other hand, there will be no appreciable effect on the trachoma, and the thickening of the conjunctiva will gradually take place with obliteration of the continuity of the vessels and the appearance of the granulations. The patient complains of sensitiveness to light, lacrimation, more or less pain, disturbance of vision and sticking together of the lids in the early morning. The palpebral fissure is narrower than normal, and there is a frowning expression

* Read before the Section on Preventive Medicine and Public Health at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Foster: Clinical Course and Diagnosis of Trahhoma.

or wrinkling of the skin of the forehead, due to photophobia. The upper lid often droops, and the distance between the cilia and fold of the skin of the upper lid is more marked. Secretion is noted, especially at the internal canthus, and a granular appearance is observed at the inner angle of the eye, the color of which is darker than normal. These conditions cause a suspicion of trachoma even when viewed at a distance. When the lid is everted, the conjunctiva over the tarsus and in the culdesac is red and thickened, and the surface is uneven and readily bleeds. The blood vessels of the conjunctiva are more or less obscured, and it is not possible to trace them uninterruptedly from the ciliary border to the culdesac, which would be possible in the absence of hypertrophy. The appearance of the blood vessels is considered very important, as this indicates the degree of conjunctival hypertrophy, a very essential feature in trachoma. The conjunctiva may appear velvety, or even raspberry-like in appearance, or it may present the gray, translucent, roundish granules in accordance with whether the papillary or granular form predominates. The former is always more pronounced on the upper lid, while the latter is principally in the retrotarsal folds.

The course of trachoma, when unmolested, is a gradual increase of hypertrophy of the conjunctiva, which varies in different cases. Finally, the hypertrophy gradually disappears and is replaced by a slowly forming cicatricial state. This is usually, however, when not given proper treatment, a question of years—and the intervening years mean untold misery to the unfortunate victim while the sequels develop and his vision grows less and less, and too often he is blinded and compelled to pass the remainder of his days in total darkness.

With the cicatricial stage, the trachoma is cured in that the specific morbid process has come to an end; but the entropion, trichiasis, pannus and xerophthalmus too often remain as sequels to harass the blind and to add to their misery.

Even total blindness is not the worst result to be feared in trachoma. When the disease attacks little children, they are, untreated, too often the victims of a life of untold misery. With the pannus, corneal ulcer and photophobia, they pass their dismal days, endeavoring to shield their eyes from light. So constant and excruciating is the pain in many cases that this one thought and aim occupies them to the exclusion of all else in life. The child therefore finally reaches adult life, wrecked mentally and physically, veritably a human derelict—so dwarfed in mind and warped in body that were it humanly possible at this late day to give him good sight, he would find it impossible to take his rightful place in society.

In many cases the disease remains dormant for indefinite periods, and is found only in routine examinations of schools, etc. Either these cases develop insidiously, or the original acute onset has been forgotten. They are often dormant until some irritant causes an exacerbation.

When schools, institutions, etc., are examined in a routine manner, cases of trachoma are found among people who are apparently surprised that any abnormal condition exists. On close questioning, however, some of them will remember having had an inflammation of their eyes at some previous period. Others will insist that they have never experienced any trouble with their eyes. According to Fuchs, these cases belong to the granular form of trachoma; and examination shows, in the retrotarsal folds, a considerable development of trachoma granules. Fuchs says, in connection with these dormant cases: "This was eminently the case in New York when systematic inspection of the public schools for eye disease was first taken up; and, because so many of these latent cases were unearthed, the idea got abroad that there was an alarming increase—a veritable epidemic—of trachoma, in the city. The truth is that there were no more cases than before, only more were discovered." The importance of a rigid, routine and thorough examination of schools is therefore emphasized.

The patients often deny any subjective symptoms until the pannus has developed sufficiently to interfere with the sight. At a recent field clinic, a girl, aged about 19, insisted that she did not know there was any trouble with her eyes until told so in a routine school examination, although there was a very marked hypertrophy of the conjunctiva, granulations, and a distinct pannus in the right eye.

When we consider that the diagnostic signs of a comparatively recent case of trachoma are the trachoma follicles and hypertrophy of the conjunctiva (neither of which occurs in those diseases with which it is confounded), there should be, theoretically at least, no trouble about making a diagnosis.

DIFFERENTIAL DIAGNOSIS

Practically, however, we realize that there are cases in which follicular conjunctivitis and trachoma are at times difficult or impossible to differentate. When it is not possible to do so, or when there is division of opinion of observers of equal experience and opportunity for observing and treating trachoma under the various conditions, then it must be admitted that the case is at least suspicious; and suspicious cases are to be treated in public health work as positive until the doubt has been removed.

On this point Fuchs says:

> If a physician in any case is doubtful whether he is dealing with trachoma or follicular catarrh—a distinction which often cannot be made in the first examination, especially in cases of acute onset—he must denote the case as suspected trachoma, and must take the steps necessary to avoid the spread of the disease, and must begin the treatment.

The potentialities of trachoma are far too great to take chances on infecting the healthy while the discussion continues as to whether the case is one of trachoma or follicular conjunctivitis. When an abnormal and curable condition exists, it should be cured.

In the opinion of one of the leading ophthalmologists of this country, children with decided folliculosis, sometimes called "school folliculosis," should be kept from school until the condition is cured; this is best treated surgically. Withholding proper surgical treatment and temporizing with the various astringent lotions in order to observe the course of the disease is unjustified and unfair alike to the patient and to his associates.

Follicular conjunctivitis is characterized by follicles, superficially placed, that appear to be on the conjunctiva rather than in the conjunctiva. There is no hypertrophy of the conjunctiva, and the course of the blood vessels can be traced from the ciliary border to the culdesac. De Schweinitz says:

> The follicles are benign; they are smaller, by more than one half, than the follicles of trachoma; they are in large measure confined to the fornices; they are never seen on the plica or the bulba conjunctiva. . . . If the follicles are

irregularly present and not disposed in typical parallel rows, and especially if they are deeply set, and beginning induration of the tarsus is evident, the presence of trachoma becomes more than a suspicion. Moreover, even in its very earliest steps, as has been recently pointed out by Stieven and Van Kirk, in their "Search for Trachoma Among Mill Workers," loupe investigation of the upper portion of the cornea will not infrequently detect a very delicate ingrowth of vessels, the first beginning of a pannus, not discoverable by the naked eye examination. This sign is an important one, and is not present if the follicles are benign.

Cases of vernal catarrh usually can be diagnosed by the peculiar pavement-like appearance and the subjective symptoms, more pronounced during the first warm days of spring. When the upper lid is everted, there is seen across the surface an appearance as though a thin layer of milk had been spread. Parinaud's conjunctivitis is an acute disease accompanied by fever and glandular enlargement, and usually occurs in one eye. Tubercular conditions of the eyelid simulating trachoma are comparatively rare.

PREVENTION AND CONTROL

Trachoma is a reportable disease in many states. Surveys in numbers of states have been made by the Public Health Service, and trachoma has been found to be prevalent in many. A number of states have taken up the trachoma problem and appropriated money to combat the disease. The health officer of a state where trachoma is prevalent says:

> Trachoma presents a problem more largely economic than any other in the whole field of preventive medicine. No one dies with this disease. Many of those who have it are eventually made blind. The economic usefulness of every patient is greatly decreased. It would be conservative to say that the average earning capacity of persons having trachoma is less than one fourth of the average earning capacity of well individuals. It is slowly but surely contagious and spreads through families, schools, institutions and communities when an initial case is introduced.

Some years ago we began to realize that trachoma was not purely an exotic disease, and that it was a public health problem to be dealt with in the states. In cooperation with the several states, therefore, free trachoma hospitals have been established in Kentucky, Virginia, West Virginia, Tennessee and North Dakota. An eye specialist is in charge, and a corps of trained nurses are on duty in each of these hospitals. In addition to these hospitals, field clinics have been conducted in these and a number of other states. The results have been exceedingly satisfactory.

Adults who for years have been burdens to themselves and their friends, and often charges on the county, have been cured and enabled to earn a livelihood for themselves and family. Children who have been compelled to remain out of school on account of the constant pain and failing vision have been permitted to resume their studies without further interruption. Patients have come many hundreds of miles seeking relief, and the capacity of the small government hospitals has been taxed to accommodate these sufferers.

About 9,000 cases of trachoma have been treated at these hospitals, the ages of the patients varying from infancy to old age. About 50 per cent. of all patients had impaired vision from trachoma; 1 per cent. were blinded in both eyes; 3 per cent. blinded in one eye, or 4 per cent. of the patients had suffered the loss of either one or both eyes as the result of trachoma; 10 per cent. showed active ulcers of the cornea; 35 per cent. had pannus; 10 per cent. had entropion; 7 per cent. trichiasis, and 50 per cent. had photophobia, and about 25 per cent. had corneal opacity.

It is impossible to know anything like the exact number of cures that have been effected, because many of the patients live long distances from the hospitals and in isolated neighborhoods, and, once relieved of their subjective symptoms, they do not return for final inspection, so that the hospital cards fail to show what result has been obtained. A case is recorded "cured" only when the ophthalmologist in charge has examined the lids and found them entirely free from trachoma.

CASES OF WHICH A COMPLETE RECORD HAS BEEN POSSIBLE *

	Duration								Sequels								Time to Cure					
Ages	0-1 Month	1-6 Months	6-12 Months	1-2 Years	2-5 Years	5-10 Years	10 Years Up	Total Cases	Pannus	Corneal opacity	Ulcer	Entropion	Trichiasis	Impaired Vision	Photophobia	Blind One Eye	Blind Both Eyes	1-4 Weeks	1-2 Months	2-5 Months	5-12 Months	1-2 Years	Total Cures
0- 5	1	7	8	6	4	...	...	26	2	2	..	...	...	9	2	1	..	5	11	9	1	0	26
5-10	6	33	36	24	24	11	...	134	25	3	5	6	...	70	29	1	1	14	44	55	13	8	134
10-20	2	37	47	71	80	58	54	349	138	86	43	46	24	242	141	31	1	36	89	147	54	23	349
20-30	6	12	1	16	23	23	21	102	57	37	17	27	15	100	60	10	4	11	35	21	19	16	102
30-50	7	8	3	7	21	16	30	92	48	33	20	27	17	93	56	10	2	7	21	36	17	11	92
50 up	2	6	1	8	17	16	21	71	39	30	13	23	10	71	41	5	7	11	21	20	11	8	71
All ages	24	103	96	132	169	124	126	774	309	191	98	129	66	585	329	58	15	84	221	288	115	66	774

* Prepared by Dr. R. W. Raynor, medical officer in charge of the Pikeville, Ky., Trachoma Hospital.

The number of hospital cases does not include the field clinics that are being conducted in various states. Eighteen field clinics have been held during the last seven months; 825 operations were performed, 559 under general, and 266 under local anesthesia.

TREATMENT

Treatment of trachoma is surgical. Nothing particularly new is claimed in the treatment of trachoma, but it is believed that the grattage method has been so systematized that each case is carefully studied, so that the operation best suited to the individual case may be done, or a "selective" grattage performed.

The amount of traumatism necessary in one case may be inexcusable in another. The object is to remove the abnormal tissue, but to stop as soon as this has been accomplished. In the average case this can be judged principally by the reappearance of the blood vessels of the conjunctiva. Some experience, however, is required to know just when to stop.

The operation as performed in the Public Health Service trachoma prevention work is as follows: The eyelid is everted and held in position by special forceps that at

once hold the lid firmly and afford a supporting surface for the eyelid which is to be operated on. With two dull scalpels, one in each hand, the operator gradually raises the conjunctiva until the entire culdesac is exposed, an assistant holding the forceps in position. In marked cases, superficial scarification of the surface is done from below upward, and then brushed with a mercuric chlorid solution, 1:2,000. This is followed by using small sponges of fine mesh gauze, wrung out of the 1:2,000 mercuric chlorid solution. This is applied with the finger in smoothing the conjunctiva, and is continued until the vessels are seen clearly when pressure is relaxed on the forceps. Care should be exercised to reach all parts, for it is essential that the hypertrophy and granules be thoroughly removed. This is facilitated by manipulating the forceps and pulling forward the conjunctiva and holding it while the culdesac is smoothed out. After the forceps are removed there remains to be gone over the small place at the edge of the eyelid where the teeth have held. This is accomplished by the use of Demarres forceps. After the operation, the eyelids are everted and thoroughly cleansed of all blood clots by washing with boric acid solution, after which 2 drops of a 20 per cent. solution of argyrol is put in each eye. When this operation has been properly done, there is usually but little reaction, and it is seldom necessary to make cold applications. The eyes should not be bandaged. Some of the milder cases of the disease will require only the application of the gauze. The after-treatment consists in washing out the eyes every three hours with boric acid solution, followed by 20 per cent. solution of argyrol. During the twenty-four to forty-eight hours immediately following the operation, the eyes should be examined carefully by the surgeon or a competent assistant for any adhesions and, if found, these should be broken up. At the expiration of about one week, when the slough has come away, if there are rough surfaces left, they should be brushed lightly with a 2 per cent. solution of silver nitrate and repeated if necessary.

In the old long standing or deeply seated cases, one operation may not suffice to effect a cure. In this event, the operation should be repeated as soon as it is determined that it is necessary.

With the smoothing off of the lids the pannus will gradually disappear and the corneal ulcers heal. Deep ulcers should, of course, receive appropriate treatment, but should not be bandaged.

In those cases in which the palpebral fissure is too limited, a canthoplasty should be done. In the old cicatrical cases in which entropion and trichiasis are present, appropriate surgical methods are to be resorted to. When these conditions are very marked and the eyelashes are directly on the eyeball, the patients suffer greatly at times. These patients are marvelously benefited by an effective entropion operation.

When the infection appears to be in the tarsal plate and recurrences of the trouble take place, the plate should be removed. This usually gives excellent results.

Better Hospital Facilities in England.—It seems certain that the policy of the ministry of health contemplates a critical review of the hospital accommodation all over the country and, if necessary, its reorganization, so that there shall be no overlapping or waste, and that beds may be available so far as possible for all varieties of disease.—*Lancet*, Dec. 13, 1919.

THE DIFFERENTIAL DIAGNOSIS OF CONJUNCTIVAL FOLLICULOSIS AND TRACHOMA*

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The old controversy over the differential diagnosis of conjunctival folliculosis and trachoma must once more be haled before the assembled intellect of a great profession. The excuse for its precipitation at this time is a good one, for the issue has erupted in a territory where the character of the population is such as to lend material aid to its proper settlement, there being practically no foreign element to becloud the condition. It goes without saying that a correct solution of the problem is of transcendent importance to the welfare of hundreds of thousands of children, and therefore of the entire people of the affected area.

The Mississippi and Ohio valley states and the region south of Mason and Dixon's line appear to be the scene of a more or less active trachoma campaign. So far as one can determine from a survey of the literature and professional activities of the last ten years or so, it would appear that the U. S. Public Health Service is very kindly furnishing the fuel for this campaign by discovering considerable numbers of trachomatous children in various schools in various localities throughout this area, where it is asked that a survey be made.

I must request that it be clearly understood that in this paper I am not discussing conditions in the mountains of Kentucky and East Tennessee, or in certain Indian reservations, or in certain small communities where foreigners predominate. We all know, of course, that real malignant trachoma is epidemic, even endemic in these places. Leaving these out of the discussion, I have reference, then, to all the rest of the great area just outlined, comprising all of the Southern and many of the Middle Western states, where the population for the most part is native-born American, and where society is in a state of enlightened civilization. I can speak with first-hand knowledge only of the situation in South Carolina, but I am reliably informed that similar conditions have recently existed or now exist in many other states and localities in this great area.

Briefly stated, the facts as to the discovery and management of alleged trachoma in South Carolina are as follows:

Two representatives of the U. S. Public Health Service, who were designated as trachoma experts, were requested by the state board of health to make a survey of the schools of Newberry. They reported sixty-six cases of positive trachoma out of approximately 1,000 children examined, and these were distributed among fifty-five different families. One adult, about 30 years of age, was alleged by the same investigators to have trachoma and was operated on by them. So far as can be determined, there are not now and never have been any other adult cases of trachoma even suspected in Newberry. I saw forty of these alleged trachomatous children and the one adult, and in my opinion none of them had trachoma. Some of these children, and others under precisely similar conditions in other parts of the state, have been seen by

* Read before the Section on Preventive Medicine and Public Health at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

various ophthalmologists in South Carolina, in Atlanta and in Augusta. So far as I am informed, all but three of these ophthalmologists—one in Atlanta and two in Columbia—are of the opinion that these are not cases of trachoma; and these three ophthalmologists have all, I am told, in recent years been diagnosing similar cases and operating on these patients for trachoma. Other men and I have shown that similar conditions exist in various other parts of the state, and indeed will be found among children everywhere in slightly varying proportion.

Unfortunately, boards of health are as a rule confessedly unfamiliar with problems of this nature, and the South Carolina board was no exception. It accepted the recommendations of the Public Health Service representatives as ex cathedra, and excluded the condemned children from the schools, refusing to readmit them until they had submitted to operation, after which they were permitted to return to their classes within a few days—a course which might well be characterized as the acme of the *reductio ad absurdum* if the cases were really instances of malignant trachoma.

The serious aspect of the affair is this: If, as may be readily anticipated, this policy is to be continued throughout the state, about 20,000 schoolchildren in South Carolina will be stigmatized as having a disease, notoriously of uncleanliness, and will be practically compelled to submit to an operation that alone could not possibly cure them if they have malignant trachoma, and which if they have not trachoma is obviously useless and certainly not without danger to the integrity of their eyes. Truly this is a lamentably apt illustration of what the late Nicholas Senn characterized as "the furor operativus."

As an instance of the hypnotizing effect which this growing trachoma fallacy has on the minds of some of our public health officials, I may be permitted to relate an occurrence in one of our Southern states. The director of public health of the state wrote me that about two years before a number of cases of trachoma were "discovered" in a certain locality in his state by representatives of the U. S. Public Health Service. Fifty of these patients, he said, were at once operated on and immediately got well! However, a number refused operation, and every one of these subsequently went blind, according to my informant. The cure of the fifty was not only a professional achievement—it was a modern miracle! But how shall we characterize the subsequent blindness of all the unbelievers? It must, indeed, have been a fulminating type of the disease—ordinary trachoma is not so precipitate. When I asked for particulars concerning these blind children, I found that fortuitous circumstances had destroyed all trace of them. One of the condemned children, who had declined operation and had been excluded from school, later happened to come under my care. She was far from blind, having a simple folliculosis, and she fully recovered, with perfectly normal conjunctiva, under the simplest of treatment. Yet this health official insists that such overwhelming evidence convinces him that they were dealing with real trachoma!

Nothing has been heard of this epidemic since. It vanished, by the hand of God and enthusiastic surgeons, determined and exterminated at one fell swoop! This is only one of several somewhat similar instances that have occurred in various places in connection with this trachoma propaganda.

Believe me when I say that I gladly and in full meed accord all praise and gratitude to the U. S. Public Health Service for the several great achievements which must forever redound to its credit and good fame. But because a man saves my house from conflagration once, or a hundred times, that does not give him the right, no matter how exalted his motive, to enter my home and assault my people.

It is in an effort to save the children of my own people and others from what I believe to be an utterly unjustifiable assault that I take up the gauntlet thrown down by the U. S. Public Health Service in the very heart of my native state.

I regret that I may not here deal exhaustively with the subject, but of this neither time nor your patience will permit. Hence, what follows must be as brief and as practical as it is possible to make it.

DIFFERENCES BETWEEN FOLLICULOSIS AND TRACHOMA

Strictly speaking, conjunctival folliculosis is not a disease entity. It is a symptom, pure and simple—an expression of various causative factors.

Trachoma, on the other hand, is a syndrome, complete in itself, and due to a single specific cause, in the belief of the world's best authorities, and is, therefore, a disease entity.

For the purpose of this discussion, however, it is convenient to regard folliculosis as a manifestation of a syndrome, and a manifestation so important in this connection as to warrant our tentative consideration of it as a unit of morbidity. The two conditions will be discussed here in brief consecutive paragraphs so as to contrast them as clearly as possible in the mind's eye.

Definition.—Folliculosis is a subacute or chronic affection of the conjunctiva, with little or no inflammatory reaction; occurring in children and young adults of lymphatic temperament, without regard to present social or physical conditions; caused by any one or more of a variety of irritant factors; characterized by a varying degree of adenoid hypertrophy of the subepithelial lymphoid elements of the conjunctiva, of an essentially benign nature; manifesting but slight subjective symptoms or none at all, and invariably tending, after a longer or shorter period, to spontaneous and complete recovery.

Trachoma is a chronic inflammatory disease, with acute exacerbations, primarily of the conjunctiva, of specifically infectious origin, of acute or insidious onset, occurring in epidemic form only in surroundings of personal and community uncleanliness, and characterized in its course by three stages of conjunctival changes, namely: first, the so-called granular or follicular stage; second, the papillary, or hyperplastic stage, and third, the cicatricial or connective tissue stage, to which must be added certain frequent corneal changes marked by ulceration, opacification and pannus.

Incidence.—Wherever that greatest of all industries and endeavors, the propagation of the species, is found among mankind, there will be found folliculosis among the youthful products of the great mill of humanity. In varying degrees, from the faintest and mildest to the most pronounced and even startling phases of development, it will be found in at least 75 per cent. of all children, mostly between the ages of 6 and 18 years. It is not confined to schoolchildren. I have seen it in children from the farms who had never seen the inside of a school. It is seen in the scions of paladin and pinchbeck, of plutocrat and pauper—in a word, in

children of all sorts and conditions, though perhaps in varying proportion. In marked degree—the condition that is so often and so unfortunately mistaken for trachoma—it occurs in from 2 to 10 per cent. of all children. When large numbers of children are examined, as in the public schools, it is invariably found most frequently among those from 6 to 10 or 12 years of age, gradually diminishing in incidence as the older children are inspected, until when the age of 17 or 18 years is reached, little or no folliculosis will be encountered. It is rarely seen in adults, except in the mildest residual form. The history of the incidence of folliculosis is therefore characteristic, and when any considerable numbers of children are suspected of trachoma, the demonstration of such a history of incidence should be a powerful, even an unanswerable argument in the negation of a positive trachoma diagnosis.

Trachoma, on the other hand, is endemic and epidemic only in certain areas. In the United States, outside some communities of foreigners, it can be shown to exist endemically only in the mountains of Kentucky and East Tennessee (where Stucky [1] found and heralded it twelve or fifteen years ago—though Norris and Oliver [2] refer to its presence there thirty years ago—and there it has stayed), and among certain Indian reservations. In these localities hygiene and sanitation, both of person and community, are notoriously lacking. I have never heard of an epidemic of real trachoma in any other community of native-born Americans, where decent habits and surroundings prevail. Furthermore, trachoma is preferentially a disease of adult life, according to Fuchs [3] and others, though it is by no means a respecter of any age. When it occurs epidemically, however, it invariably attacks persons of all ages, and is *never* confined either to children or to adults. The history of incidence alone, therefore, is sufficient to differentiate it from folliculosis.

Etiology.—In folliculosis, first and foremost as an essential predisposing factor, especially in the well marked cases, is the existence in the child of the lymphatic temperament, as evidenced by the presence of hypertrophied tonsils and adenoids and other lymphatic tissues. Given this, and the addition of any irritant factor in the eyes, whether it be physical (foreign bodies, wind, smoke, etc.) chemical (acids, alkalis, various drugs), or bacteria (any one of a score or more of varieties of micro-organisms), or, which I believe to be an almost constant factor, the eyestrain of refractive errors, and folliculosis will appear. The condition is therefore merely the diathetic expression of a symptom which has no specific causation. From the foregoing, it is evident that folliculosis may and does at times occur in suitable types of individuals as a result of irritation from trachomatous infection, and in this coincidence lie the crux and casus belli of our polemic diagnostics.

The close relationship between folliculosis and the lymphatic diathesis was first emphasized, I believe, by Alger [4] in 1910 ("conjunctival adenoids"), and by Oertel [5] in 1912 ("eye adenoids"). In more than 300 cases of marked type that I have examined in the last few months every single patient—100 per cent.—had, or had had, hypertrophied tonsils and adenoids. Oertel has made the same observation in several hundred cases. Nardin [6] testifies to the same occurrences. This could hardly be a coincidence. No such association of conditions can be shown in true trachoma.

There is one, and only one, exciting cause of trachoma, and that is a specific infective agent. The world of ophthalmology is practically a unit on this point. Authorities do not agree that the particular micro-organism has been discovered and isolated, though many, among whom Lindner,[7] Weeks,[8] and Edmondson [9] are prophets, are inclined to accept the trachoma inclusion bodies of Halberstädter and von Prowazek as the specific agent. The admittedly extreme difficulty in the technic for their demonstration has no doubt militated against their general acceptance.

It appears to be a universally accepted view, as is emphasized by Wilder,[10] Ellis [11] and many others, that the essential predisposing cause of trachoma in epidemic form is personal uncleanliness and lack of hygiene and sanitary surroundings. It is therefore a disease of filth and sloth and its epidemic presence is a reproach to the community in which it exists.

PATHOLOGY

The pathology of folliculosis, as summed up by Collins and Mayou,[12] is simply and only in the hypertrophy of the subepithelial lymphoid elements of the conjunctiva. It is a true adenoid hypertrophy and is histologically indistinguishable from the adenoid hypertrophy of the nasopharnyx. In the most pronounced cases, this development, as mentioned by Wootton [13] in 1914, is invariably found not only throughout the palpebral conjunctiva but also in varying degree in the upper nasal quadrant of the bulbar conjunctiva, sometimes extending half way from the fornix to the corneal limbus, and it is also often to be found on the semilunar fould. This bulbar development has been described by some observers as being characteristic of trachoma. It is not.

The pathology of trachoma is much more extensive. In the follicular stage the trachomatous conjunctiva is histologically identical with that of simple folliculosis. In the words of Fuchs: "The papillary growths which (in trachoma) impart to the conjunctiva its velvety or raspberry-like appearance are caused by an increase in size of the surface of the hypertrophic conjunctiva. The latter is thrown into folds, between which correspondingly deep clefts are formed; then on cross section the folds appear under the form of papillae." Later there is a gradual increase of the connective tissue elements of the papillae, which crowd out and destroy by slow advancing process the natural conjunctiva of the lids. Thus little by little, and more and more after the stimulus of each acute exacerbation of the disease, the connective tissue increases at the expense of the palpebral conjunctiva, until finally the entire inner surface of the lid is covered with scar tissue, and the conjunctiva proper has undergone complete destruction and disappearance. The pannus of

1. Stucky, J. A.: Mod. Hosp. **5**: 51, 1915.
2. Norris and Oliver: System of Diseases of the Eye, Philadelphia, J. B. Lippincott Company.
3. Fuchs: Text-Book of Ophthalmology, Ed. 5, Philadelphia, J. B. Lippincott Company, 1917.
4. Alger, E. M.: Post Graduate **25**: 49, 1910.
5. Oertel, T. E.: Follicular Conjunctivitis, Its Relation to Adenoids, J. M. A. Georgia, 1912.
6. Personal communication to the author.
7. Lindner, K.: Arch. Ophth. **41**: 333, 1912.
8. Weeks, J. E.: Diseases of the Eye, Philadelphia, Lea & Febiger, 1910.
9. Edmondson, E. E.: Ophthalmology **12**: 41, 1915-1916.
10. Wilder, W. H.: Ophth. Rec. **10**, November, 1901.
11. Ellis, H. B.: South. Calif. Pract. **21**: 3, 1906.
12. Collins and Mayou in Pyle's System of Ophthalmic Practice, Pathology and Bacteriology.
13. Wootton, H. W.: New York M. J. **99**: 580, 1914.

trachoma is, according to Fuchs, a soft, new-formed tissue, rich in cells, and abounding in blood vessels, and greatly resembling the infiltrated trachomatous conjunctiva. It insinuates itself between the corneal epithelium and Bowman's membrane, sometimes destroying the latter. In mild cases, it undergoes resorption under appropriate treatment, leaving the cornea with little or no permanent damage.

Semeiology.—Folliculosis is often absolutely without subjective symptoms. When there is a marked refractive error, relief is sought for the accompanying asthenopia, and the follicular condition is discovered in the course of routine examination. Sometimes slight photophobia, itching or gritty sensations leading to rubbing of the eyes, and a slight purulent discharge are present; and these symptoms are due to the presence of an infection which may itself have been the exciting cause of the folliculosis. In the vast majority of cases, the condition is found only on routine examination of the eyes of schoolchildren, and not because of any complaint on the part of the individual affected.

Objectively, on eversion of the lids, the typical follicular development is at once recognizable. Masses of soft, semitranslucent nodules are seen usually in somewhat irregular rows, hemispherical or ovoid in shape, varying in size from 0.5 to 3 mm. in diameter. In color, the whole surface may range in different cases from apparent anemia to a deep, dull red. The conjunctival vascular distribution can always be traced with the use of the loupe, in and about these formations, and between the follicles at intervals can be seen tiny patches of normal conjunctiva. The follicles on the upper tarsus are always less numerous and smaller than elsewhere. In the marked cases, the retrotarsal fold of the upper lid is heavily involved and the lymphoid hypertrophy may be seen extending well into the bulbar conjunctiva in the upper nasal quadrant. The semilunar fold often participates in the phenomenon. There is never a sign of the deep papillary hyperplasia of the mucosa proper as is seen in diphtheritic, vernal and Parinaud's conjunctivitis, trachoma, the exposed mucosa of ectropion and late stages of gonorrheal ophthalmia. There is no evidence of cicatricial tissue, and the cornea is never involved in any way.

I have occasionally seen a marked folliculosis of the upper and lower lid of one eye, and no sign of the condition in the other eye. As Alger has remarked, foregin bodies (eyelashes, cinders, etc.) are often found lying in the conjunctival sac, surrounded with a mucoid film and evidently having been in situ for a considerable length of time. Occasionally there is a slight ptosis, probably due to the crowding and weight of the follicular formations in the retrotarsal fold.

These phenomena may and do often persist for months and even years without harm to the patient or others, and eventually, even without any treatment whatever, disappear, just as the nasopharyngeal adenoid atrophies, in early adult life, leaving the conjunctiva sound and normal, organically and functionally.

Trachoma may have an insidious onset according to some observers; but such men as Fuchs, Weeks and most other authorities distinctly agree that the usual initial symptoms are similar to those of other acute infections of the eye—lacrimation, inflammation, purulent discharge, pain, etc. In children of the lymphatic type it may well be, and, indeed, logically must be true that the specific trachoma irritant sets up a follicular hypertrophy just as any other irritant would do; but it is very certain that not all trachoma cases begin in this way. Acute exacerbations occur accompanied by watery and purulent secretions. In the course of a few weeks usually, though varying widely in point of time in different cases, but always eventually, the characteristic papillary hyperplasia of the mucosa proper appears, transforming the palpebral conjunctiva into a more or less indurated, thick, homogeneous, deep red, velvety looking structure, irregularly cut up by cracks and crevices formed by the inverted epithelium. All trace of the vascular supply is lost, swallowed up in the extensive hyperplasia. Then a little later, tiny spots and streaks of connective tissue deposits appear, and, as Axenfeld [14] has pointed out, these cicatricial areas are exclusively lesions of trachoma and therefore pathognomonic. In many cases, the cornea becomes infiltrated and cloudy (always, in the early stages of true trachoma according to MacCallan [15]); ulcers appear, and when they heal they leave opaque scars in the corneal tissue; a subepithelial film appears at the upper limbus, gradually extending downward across the cornea, thickly streaked with blood vessels—the pannus of trachoma; the upper lids droop heavily, and seem partly paralyzed; and in many cases, vision is almost or quite destroyed. In the course of this sequence of events, which may cover a period of years, intervals of amelioration occur, only to be followed by renewed exacerbations; more and more cicatricial tissue forms in the lids, until the whole hyperplastic conjunctiva is replaced by scar tissue.

The inflammation ceases; the damage done is permanent. This is the so-called cure of trachoma, whether brought about by medical or surgical interference, or in the course of natural events. Contractions may occur which deform the lids by inversion or eversion, and add to the misery of the victim.

Course.—The course of folliculosis is variable. Under appropriate treatment, it may disappear entirely in a few weeks, or even a few days, while other, perhaps most, cases, whether treated or untreated, persist for several years. But the rule of recovery with complete restoration of normal conjunctiva is invariable, whether properly treated or not treated at all. As Parsons [16] and others have said, it never develops into trachoma. Improper interference may, of course, produce complications.

True trachoma is never cured in a short time. This point is emphasized by Edward Jackson and Theobald, quoted by T. W. Moore; [17] by Allport, [18] W. T. Lister [19] and a host of other well-known observers; while Ray [20] quotes Axenfeld as questioning whether trachoma is ever cured in the true sense of the term—a feeling probably shared by most ophthalmologists. The infection invades every nook and corner of the papillary structure of the conjunctival mucosa, and can be eliminated only by the destruction of the mucosa and its replacement by cicatricial tissue. An eye once infected, while subject to periods of quiescence, is therefore never free from recurrent acute attacks until the process of cicatrization has become complete,

14. Axenfeld, Theodor: Bacteriology of the Eye, 1908.
15. MacCallan, J. F.: Trachoma and Its Complications in Egypt, New York, G. P. Putnam's Sons, 1913.
16. Parsons, J. H.: Diseases of the Eye, Philadelphia, P. Blakiston's Son & Co., 1907.
17. Moore, T. W.: West Virginia M. J. **5**: 49, 1910-1911.
18. Allport, Frank: Ophthalmology **12**: 494, 1915-1916.
19. Lister, W. T.: J. Roy. Army Med. Corps **32**: 487 (June) 1919.
20. Ray, J. M.: Louisville Month. J. M. & S. **21**: 362, 1914-1915.

whether through surgical interference or in the course of natural events. Most cases drag on for years, and ophthalmologists of the widest experience declare that under most favorable conditions and most vigorous treatment it is too much to expect a cure in any case of trachoma under one or two years. Even so, the cure is not a cure in the sense of a restoration of normal forms and functions, but is merely a subsidence of inflammation following the complete substitution of the infected palpebral conjunctiva with nonfunctioning connective tissue.

Communicability.—There are writers who declare that folliculosis is infectious. No unquestionable evidence has been introduced to prove the statement, which is apparently a "hand-me-down" opinion. The fact that it appears in large numbers of schoolchildren is the sole argument offered in support of the theory. It is an imponderable argument. One might as well say that hypertrophied tonsils and adenoids, or errors of refraction are infectious for the same reason. Greef and Mayweg, cited by Axenfeld, and others, have made repeated efforts to transfer the disease from one individual to another and have invariably failed. The multiple occurrence of well-marked cases in the same family is undoubtedly far less than the occurrence of familial multiple cases of pathologic tonsils and adenoids, or refractive errors of the vision.

A coincident or causative infection in a case of folliculosis is, of course, transferable, and this may or may not set up a folliculosis, according as the recipient is or is not himself of the lymphatic type. In the observation of hundreds of cases, I have particularly noted that familial occurrences are not the rule, and it is seldom, and evidently only incidental, that any two of those affected are deskmates, or otherwise in close personal contact.

Trachoma in its acute form is infectious and contagious—highly so. Addario and Greef, cited by Axenfeld, have proved its contagiousness by direct experiment on blind human eyes. This much is certain: A nontrachomatous eye can be made trachomatous only by inoculation with the discharge from an eye infected with trachoma.

In its chronic form it is only slightly contagious; and in the present-day environments of good sanitation and hygiene, and the exclusion of trachomatous immigration, the acute variety is seldom encountered, at least in this country. That is undoubtedly the consensus of best opinion in the world of ophthalmology. There is, therefore, as Brav [21] has tersely stated, no "trachoma problem" among us; certainly not to the extent that would warrant a wholesale surgical attack on the eyes of our children.

The city of New York has been through this agony, but several years ago saw the light; not, however, until, according to Alger, 50,000 schoolchildren had been operated on. Most of the cases they used to call trachoma are now recognized as folliculosis. These patients are not excluded from school, and are given only the simplest of treatment. The incidence of the cases now is in the same proportion as it has always been and always will be.

It is ill conceived and wholly useless to declare trachoma a quarantinable disease, unless "acute trachoma" is specified, since the unmodified term "trachoma" gives opportunity for too wide a margin of error and dispute in diagnosis. As a matter of fact, all boards of health would do wisely and well to avoid all specific reference to trachoma. The phrase "any eye disease accompanied by purulent discharge" should be used as a basis for quarantine, and this would cover all contagious eye diseases, for it can be accepted as a fact that no disease of the eye is contagious except such as is transferred through the medium of a discharge.

Coincident Phenomena.—The outstanding feature in the accompaniments of folliculosis is the constant presence, in the marked cases, of hypertrophied tonsils and adenoids, and the frequent coexistence of adenopathy in other tissues, as has been repeatedly pointed out by various observers in the last twenty-five or thirty years. This is not strange, for it must and will eventually be universally recognized that folliculosis is itself merely an ocular expression of adenopathy. Next is the almost, if not quite, constant presence of refractive errors. Parsons directed attention to this in 1907. Eyestrain has a direct bearing, as a low-grade irritant, on the development of "eye adenoid" hypertrophy. Not infrequently a superimposed infection of mild type is recognized by the presence of a slight discharge.

So far as I am aware, trachoma is not associated with any diathesis, dyscrasia, organic insufficiency or peculiarity, or systemic pathogenesis of any kind. It is strictly and wholly a localized infection. It is generally accepted that coincident infections are of frequent occurrence. But it is well to note here for emphasis that trachoma in epidemic form is inseparably related to personal and community uncleanliness—lack of bathing facilities; lack of clean clothes, utensils and individual toilet articles; absence of sewerage and proper drainage; inadequate ventilation—in a word, bad living conditions. Only in such a field could an epidemic of trachoma exist; none, I believe, has ever existed otherwise; and hence, the fear of such a possibility in our civilized society today can justly fade from the minds of thoughtful men.

Diagnosis.—In many cases of the very early stage of trachoma in individuals of the lymphatic type, it is impossible by any known clinical sign or laboratory test to distinguish between trachoma and folliculosis. In such individual instances, time alone can establish the diagnosis. This, however, as Allport has emphasized, is the one and only condition and phase in which there is the slightest excuse for the mistaking of the one disease for the other. And even here the mistake could be excusably made only in the consideration of individual cases. When large numbers of cases are encountered and the history of incidence, as heretofore described, is properly considered and logically administered, there is no justifiable reason why school folliculosis should ever be mistaken for a trachoma epidemic.

But the great point to be stressed is that every case of trachoma necessarily progresses to the stage of true papillary hyperplasia (as clearly distinguished from simple follicular hypertrophy), with vascular obscuration, some degree of induration and thickening of the entire lid structure, and the formation of cicatricial tissue; and unless, and until, this stage has been reached and demonstrated, the disease known as trachoma is not and cannot be diagnosed. And when it is reached, there can be no argument, for this sign is pathognomonic.

Treatment—In folliculosis, nature, unaided, will eventually bring about a cure even in the severest

21. Brav, A.: New York M. J. 93: 407, 1911.

cases. She may be hurried and helped by simple measures, such as mild antiseptic and soothing lotions. Coincident infections are managed in the usual ways. Refractive errors should always be corrected and hypertrophied tonsils and adenoids should be removed. These are matters of general principles whose beneficial effects are sometimes startling. Such procedures as the various methods of grattage and expression should be avoided except in the severest manifestations of the disease, and then only with the understanding of the possible injurious effects which may follow the interference. Even so, recurrences are very frequent after an interval of a few months, so that little or nothing is gained by the procedure, while permanent damage has been done the conjunctiva. Fuchs, cited by Alger, says, "Cases in which follicles exist without causing any annoyance are best left without treatment."

It logically follows, then, that no surgery should be countenanced in suspected trachoma. Only when the disease has shown its characteristic signs should operative measures be considered. Even then, many competent ophthalmologists deny the efficacy of surgery in the early stages. Repeated operations must invariably be performed before all of the diseased conjunctiva is transformed into cicatricial tissue, though this will admittedly hasten this outcome. Operation must always be reinforced by prolonged and faithful treatment. Cleanliness, antiseptics and astringents for the pathologic condition of the conjunctiva, and heat and mydriatics for corneal involvements are indicated under the usual principles governing the care of eye inflammations. But whether surgical or medical attacks are instituted, or whether Nature is left to her own means and devices, the cure, so called, of trachoma is simply and evidently only in the substitution of scar tissue for conjunctiva. It is an absolute fact that this is the inevitable result in any eye once infected with trachoma. If this be a cure, make the most of it.

In certain old advanced cases, the surgical removal of the upper tarsal cartilage is of admitted benefit often attended with brilliant results, as Cary [22] and others have shown. But this is done only for the purpose of mechanical relief, and usually after the active infection has burned itself out.

Prognosis.—If it has not been improperly treated or surgically interfered with, the outcome of follicular losis is invariably complete recovery, sooner or later.

The last state of trachoma, no matter how treated, is an eye permanently damaged in structure and function. As Allport has said, "There is no royal road to cure."

CONCLUSIONS

The contrast has been drawn. Whether my argument, per se, is valid or invalid in this connection is a matter of no importance. But a proper solution of the question at issue is a matter of the very highest importance to the people of this country.

If a malignant and dangerous form of trachoma is virtually pandemic among the schoolchildren of our country, as some would appear to have us believe, a quick and authoritative recognition of the fact is, for obvious reasons, of the very quintessence of necessity.

If, on the other hand, we have, of ubiquitous incidence among our schoolchildren, not trachoma, but a simple and harmless affection that is being widely mistaken for trachoma, and by virtue of this mistake our children are being surgically attacked wholesale and not without danger to the integrity of the eyes, it is equally important, for equally obvious reasons, that this should be definitely known.

But how are we to decide the issue? Few, if any, of us who practice preventive medicine and are guardians of the public health in our respective states are trained ophthalmologists.

Perhaps every state board of health should have in its membership a competent ophthalmologist; but have they?

May I offer a suggestion? Why not have every state board adopt a rule that the solution of all questions of serious importance in connection with the eyes of schoolchildren shall be entrusted only to such men as hold the certificate of the American Board for Ophthalmic Examinations? Here is one of the real purposes for which this board exists—the protection of the people. It was created out of the combined wisdom and efforts of the American Ophthalmological Society, the Section on Ophthalmology of the American Medical Association, and the American Academy of Ophthalmology, for the purpose of establishing and maintaining a high standard for the practice of ophthalmology. At the present time, application for its certificate is voluntary, but the day is at hand when the holding of such certificate will be obligatory, by law and popular demand, on all who would practice this specialty. Whoever else may or may not be competent to practice this branch of medicine and surgery, it is at least certain that the holder of such a certificate from this time forward is backed by the guarantee of the nation's best thought as being properly qualified and equipped to practice ophthalmology.

22. Cary, E. H.: Histology and Pathology of the Superstructures of the Lid in Trachoma and Treatment, J. A. M. A. **71**: 1647 (Nov. 16) 1918.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. MCMULLEN AND JERVEY

DR. ARTHUR T. MCCORMACK, Louisville, Ky.: The campaign which has been conducted in Kentucky under the direction of Dr. McMullen is one of the greatest triumphs of medicine in the real solution of a tremendous practical problem. Discussion of the subject divides itself into two parts: the differential diagnosis of the disease and the relief of sufferers from a disease which has filled poor houses and asylums for the blind with its victims, a disease which has kept a considerable percentage of children from school or from making progress in school and which has pauperized whole precincts in certain counties. From very early times there have been nests of trachoma in certain definite geographic sections of Kentucky. These sections formerly were quite isolated; they had practically no schools, no railroads, and no roads. With the invasion of these districts by commercial enterprises and by people with means, the opening of schools, building of roads, etc., the trachoma problem was no longer a local one. The disease spread, invading many sections of the state. The new order of things is gradually overcoming these conditions. In many sections in Kentucky we are holding clinics. The legislature made an appropriation for a traveling clinic, making it possible to get at the disease in places too remote for government hospitals to reach. The work Dr. McMullen and his associates have inaugurated in Kentucky at first met with the opposition that is bound to arise, but today the profession is cooperating in every way. There is no step in medical progress, in typhoid fever, yellow fever or in malaria, or in any other line of work in which the medical profession of the United States can take more pride than in the campaign against trachoma.

DR. HENRY DICKSON BRUNS, New Orleans: There are great endemic trachoma centers in the United States, and nobody

can sufficiently praise the work that has been done in the hospitals and stations of the Public Health Service in these regions. Then, we must postulate this: Trachoma always leaves scars. Unless the disease endemic among the children has been of brief duration, or unless extraordinary precautions have been taken, examination of the adults of such a community must show the scars and lesions of trachoma, if that were the disease; and that is the point on which all testimony ought to be brought, and not on the almost impossible question of the differential diagnosis.

DR. THEODORE OERTEL, Augusta, Ga.: Some members of the profession have overlooked a few vital points in relation to folliculosis as it is generally understood. I am quite sure that those who claim that follicles on the globe and on the tarsus indicate that this is not simply folliculosis but trachoma, are in error. I have several times examined the school children of Augusta. In my private and clinical practice I have seen three cases that I called trachoma in twenty-two years. On the other hand, I have seen a great many children with folliculosis, and in a large proportion of them the follicles were on the conjunctiva. In many there were masses on the tarsus. My recent examination of school children, including those in the high schools, failed to disclose any scar tissue in any lids that I could feel might have been caused by trachoma. I saw no case of pannus or other corneal involvement which I could attribute to trachoma, which I believe proved that these children did not have trachoma in their younger years. I have been teaching for many years that in every case of marked simple folliculosis the same tissue is found in the throat as a reaction to some kind of irritant. This is a very valuable diagnostic symptom in the differentiation between these two maladies.

DR. JAMES A. HAYNE, Columbia, S. C.: Children were brought to Columbia by their parents for a disease of the eye which was diagnosed by the ophthalmologists of Columbia as trachoma, and ten or twelve were subjected to operation. They came from one section of the state. These cases were not reported by physicians, but by the mothers and fathers of the children because they could not pursue their studies in school. I sent two ophthalmologists to this district and they reported thirty or forty cases of trachoma. I then called on the United States Public Health Service for help. They sent a man who was skilled in those operations, and he held a clinic in one town to the satisfaction of all parties. Then he went to the next town and there was some difference of opinion as to the nature of the disease. Dr. Calhoun of Atlanta made a positive diagnosis. Dr. de Schweinitz of Philadelphia called one of these cases that he saw suspicious. Dr. Jervey of Greenville said it was folliculosis. I called a committee of three physicians of South Carolina to determine whether it was folliculosis or trachoma. Two of those physicians responded and served; one was detained for various reasons and did not serve. These two who served differed absolutely and positively on the subject. One said it was trachoma, and the other said it was folliculosis. Then I called on the Public Health Service to determine what it was. The Public Health Service did not come into South Carolina and stir up trouble, but came because the ophthalmologists of the state did not know the difference between trachoma and folliculosis. They made a diagnosis positively and distinctly, and were begged by the physicians of one town to hold a clinic, which they did. They operated on those children, and the children are now attending school. The disease seems to have stopped in that community.

DR. THEODORE OERTEL, Augusta, Ga.: I am quite sure that the three cases I saw were not trachoma.

DR. WALTER H. BROWN, Washington, D. C.: I wish these gentlemen would tell me how they are going to erect a barrier that will keep trachoma localized in Tennessee or in Kentucky, which according to Dr. Jervey's statement seem to be the only places where it is prevalent. We who have been trying to study the transmission of diseases have learned that transmissible diseases or germs do not know boundary lines between states or countries; that they do not even respect the great barriers of the waters of the Atlantic and the Pacific. Just before I came here word was received at the office that there was in the port of New York a ship loaded with 1,500 Polish troops. Typhus fever has moved very close to the United States. And so I fear that Kentucky has moved very close to South Carolina and many other parts of the country. I am not concerned particularly with the discussion of differential diagnosis, but I am concerned with the sowing of endemic centers—not "epidemic," but endemic centers—of trachoma all over the United States. New Orleans many years ago did not want it known that they had yellow fever. It was a terrible disgrace. It interfered with trade. But New Orleans does not think that now. Kentucky does not think now that it is a disgrace to have trachoma. She knows her problem, and she is going ahead to solve it. This thing shall be looked at squarely from the standpoint of transmission of disease.

DR. S. W. WELCH, Montgomery, Ala.: I have been told that we have trachoma in the low country where the sawmill men have been getting a labor turn-over from all parts of the United States, and sometimes from southern Europe. Beyond doubt we have trachoma in the southern part of Alabama. This discussion has been purely academic, and to a practical man engaged in a practical work of controlling disease it is uninteresting. A country doctor in Alabama not long ago diagnosed some cases seen in the public schools as trachoma. I asked the United States Public Health Service to send some one to look these cases over. He found about fifteen cases of trachoma, operated, and the children were relieved. There have been no further cases of folliculosis or trachoma in that institution.

DR. GUSTAVE GOLSETH, Jamestown, N. D.: A number of years ago, in a neighboring county a school nurse made a survey of the school children and found that a large percentage had pimples on their eyes. The health officer made a diagnosis of trachoma, and sent out orders that these children must be treated in order to enter the schools. There was no difference of opinion among the ophthalmologists; every one of them said that it was folliculosis or follicular conjunctivitis. The health officer called on the United States Public Health Service for help. After making the survey the Service man reported 132 positive cases and 350 suspected or suspicious cases. Some of us who believed in justice and in helping the children immediately asked this man, Major Oakley, to appear before the State Medical Association and read a paper on trachoma. He did so, and it was a very excellent paper. (I appreciate Dr. McMullen's paper very much, and I have nothing to say against his paper, but I have a very serious objection to his treatment for folliculosis.) After the paper had been read, a number of men discussed it, all condemning the diagnosis, stating that these were cases of folliculosis and follicular conjunctivitis. I agree that the condition should be treated, but to treat follicular conjunctivitis or folliculosis with the treatment used for trachoma is the most damnable thing we can do. We have one school for the blind in our state, and not one of the inmates is blind on account of trachoma. The county that was selected for this survey has fewer cases of trachoma than any other in the state. It is not my own county. If they had examined my own county, where we have quite a large number of Russian immigrants, I would expect to find quite a number of such cases, but this is the best county we have, and there was not one case of trachoma in the entire survey.

DR. J. G. SOUTH, Frankfort, Ky.: Dr. McMullen is wiping out a terrible disease, one that has done great damage to the great state of Kentucky. Whether it be folliculosis or trachoma matters little to us. We are getting practical results through his wonderful work. I believe it is admitted by all that we have trachoma in Kentucky. Dr. McMullen is relieving all of these patients, practically all on whom he has operated. Absolutely no harm is being done. We see only wonderful results.

DR. J. F. HOGAN, Baltimore: About three months ago a child was found in a school in Baltimore with a case of suspected trachoma. I directed a member of the health department, Dr. Herbert Laroque, an ophthalmologist, to see this patient and he verified the diagnosis. It was in a Polish child. Dr. Laroque conducted an investigation through this school, which was a very large one, where nearly all of the pupils were of Polish extraction, and found eight or ten cases which

he diagnosed as trachoma. He then searched every school in the Polish quarter of the city, and found, among eight or nine thousand school children, thirty cases of trachoma. The diagnoses in these cases were verified by our best ophthalmologists. The same ophthalmologist examined a school, as a control, in the northwestern section which is attended by American children—the children of parents who have been here two or three generations—and found no cases of trachoma.

DR. HIRAM WOODS, Baltimore: Somebody said that this discussion is simply academic. I do not think so. There is a class of cases which we see in everyday practice which is very, very common. This class fits into the description, given by Fuchs, of follicular conjunctivitis. The description of follicular conjunctivitis is this: children—usually children from American families, from our own country—present on the lower lid a number of tiny little elevations; a few may be on the upper lid; there is absolutely no irritation, vision is unaffected; no thickening of the lids; no scar tissue. A point I got from Drs. McMullen and Schereschewsky is most valuable in diagnosis. The capillaries of the conjunctiva are not hidden but can distinctly be traced up around the edge of the follicle. That is what we mean by follicular conjunctivitis. From that on up to trachoma, the condition Drs. Schereschewsky and McMullen have been finding in various states, there are certain borderland cases. Where this question fails to be academic is here: Physicians not connected with the Public Health Service watch those children and let them go to school. I do not think that we are making a mistake. Some men seem to think we are. Are these borderland cases really cases of trachoma? That is only a question that can be decided by results: Treatment and time. I operated on a child presenting the type of disease I have tried to describe, and I would not hesitate a moment to let that child go to school. But, on the other hand, there is undoubtedly a type presenting the symptoms I have outlined that goes on for months and months and the patients get well. They do not give the disease to others. If these children, the borderland cases, have real trachoma, they ought to be operated on, but if they are operated on and in two or three days are perfectly well, and do not show any scar formation afterward, how about the original diagnosis?

DR. JOHN MCMULLEN, Louisville: Apparently two points have been made: One would seem to be that the man who sees the most trachoma cases appears to be the least competent to diagnose the condition, and the other is that those of us who are operating for trachoma have been guilty of mistreating the patients. Several leading ophthalmologists of the United States have visited with us, observed what we do for these patients and agreed with us to the extent of following similar treatment in their practice. As to whether we are dealing with trachoma or some allied condition—I can see no objection to curing these abnormal conditions. No valid objection has been put forward as to why this should not be done. As to the South Carolina cases, I am exceedingly sorry that there was not more cooperation from all the local ophthalmologists. I had not the pleasure of knowing Dr. Jervey at that time and his opposition to this public health work was brought to my attention in some newspaper articles. In one of these Dr. Jervey was exceedingly condemnatory of the Service work.

DR. HIRAM WOODS, Baltimore: It has been stated that absence from school for only three or four days is needed for the operative cure; but trachoma does not get well that way; follicular conjunctivitis—a perfectly harmless disease—does. Operation for the latter is rarely necessary. To my mind, the large percentage of quick cures is very suggestive of a large number of errors in diagnosis of trachoma. I am entirely willing to admit that in suspicious cases it may be right to err on the safe side. I doubt if expression does harm, but there is nothing gained in not admitting to ourselves that we have a very practical therapeutic proof of frequently mistaken diagnosis: nor do we know at present how to avoid it save through painstaking observation of the lesions in the two classes.

DR. JOHN MCMULLEN, Louisville, Ky.: A survey of the schools of Cincinnati has just been completed by the state of Ohio and the city of Cincinnati. So far as I know, the ophthalmologists of Cincinnati agree with the findings in the 52,000 children examined. There were 139 cases of positive trachoma. A considerable number of the ophthalmologists of Cincinnati examined some of these cases in the city hospital, and the diagnosis of those cases recorded as trachoma was concurred in by all present. A recent survey in Texas of probably ten or fifteen thousand school children showed about the same percentage of trachoma in one section of that state. The word "assault" on the children was used by Dr. Jervey in referring to the operation for the eradication of trachoma and allied conditions without having seen the operation. Parents voluntarily brought their children to the clinic to be cured. The treatment was witnessed by the parents, local physicians, officials, etc., many of whom have since assured me of their heartfelt appreciation for the relief afforded the patients. Some very good men concurred in some of those diagnoses in Newberry, as Dr. Hayne has said. There appears to be no consensus of opinion in diagnosing trachoma, but this is true in many other diseases and conditions. Three cases of suspected trachoma in Baltimore were recently examined by Dr. Herbert Harlan, Dr. Woods and myself. These cases were exactly the type as seen in South Carolina. Dr. Woods, Dr. Harlan and I agreed that one of those was a positive case of trachoma, while the other two were very suspicious. In reply to Dr. Woods as to whether trachoma could be cured in two or three days: Operative procedure removes at once all abnormal tissue and very decidedly shortens treatment. Many patients require only the one operation, followed by the necessary after-treatment, and can return to school in a few weeks. This is true of the three cases seen recently with him in Baltimore, provided they are given proper treatment.

DR. J. WILKINSON JERVEY, Greenville, S. C.: I have never believed that the United States Public Health Service was composed of men who are autocratic or unreasonable. They must expect to be criticized for they are public servants. If I choose to disagree with their methods, that is my privilege. If I can convince you that my methods are right and theirs are wrong, that is my privilege also. I am very sorry that Dr. McMullen has labored under the very serious misapprehension that I rushed to the newspapers with my troubles. The facts and the record prove otherwise. Dr. McMullen has mentioned the appearance of a faint pannus at the upper limbus which can be found often only by close inspection. You can find that in 95 per cent. of all eyes. In response to Dr. Welch, who is of the opinion that this discussion has been academic and uninteresting and not practical, I will relate a practical illustration which will, perhaps, come close to his heart. In Alabama, in the city of Montgomery, within the past few months, the United States Public Health Service diagnosed one hundred cases of trachoma among the school children. The same procedure was suggested there as in South Carolina, namely, excluding the children from school unless and until operated on. Some of the ophthalmologists of Montgomery protested against it. A committee of three ophthalmologists was appointed. That committee examined the 100 cases. And in a letter to me Dr. Thigpen, one of the examiners, said, "Much to the committee's surprise they found not a single case of trachoma." That seems very far from academic. A similar situation arose in Charlotte, N. C., in North Dakota and in various other places. Therefore there necessarily is a question whether or not these cases that are being dealt with as trachoma are really trachoma. I have seen many cases where harm has been done by the substitution of cicatricial tissue and adhesions for normal conjunctiva, and I defy any one to break the conjunctiva without getting a certain amount of scar tissue.

Measles and Whooping Cough.—It is hard for people to realize that there are more deaths from measles and whooping cough than from scarlet fever. Greater efforts in school hygiene would seem to be the only way in which this problem can be coped with successfully, combined with the education of parents in the necessity for the observation of quarantine and isolation procedures.—S. H. Osborn, *Commonhealth*, March-April, 1920.

SYNTHETIC DRUGS—III

THE DIGESTION OF THE TANNIN COMPOUNDS USED AS INTESTINAL ASTRINGENTS BY ARTIFICIAL DIGESTIVE MIXTURES *

PAUL NICHOLAS LEECH, PH.D.
CHICAGO

The term "tannin" is applied to a large number of vegetable constituents of indefinite composition which give blue or green compounds with iron salts; these vegetable constituents also precipitate proteins to a greater or less degree and therefore are considered astringents.

The pharmacologic actions of tannic acid are due to their properties of precipitating albumins and other proetins. In the mouth a solution of tannic acid has a typically astringent taste, owing to precipitation of the protein in the tissue, and produces a feeling of constriction and roughness. If the solution is swallowed, the astringent feeling in the throat is continued, and occasionally it causes some discomfort or even nausea and vomiting.[1] The chief internal use of tannic acid is in the treatment of diarrhea; it is employed "not as the principal curative agent but as an occasional adjunct to proper dietetic and physical remedies when the discharges are unduly profuse." [2]

On account of the too irritant properties of free tannic acid in the stomach, it is desirable to slow the action. With this in view a series of compounds of tannic acid have been proposed. Thus there has been evolved (1) the combination of tannic acid with various proteins, such as "Albutannin," "Tannalbin" and "Protan"; (2) organic esters of tannic acid—"Acetannin," "Tannigen," "Tannopin" and "Tannoform"; (3) a heterogeneous group of other compounds—"Tannismuth" and "Gallogen." Theoretically, these substances are presumed to be insoluble in and largely unchanged by the gastric juice, but to be broken up in the intestine in order to allow the tannic acid to exert its influence. As there are quite a number of such preparations on the market, and all are recommended in the treatment of diarrhea, it was suggested by Dr. Sollmann that a study be made of them in order to determine among other things whether they are largely unchanged by gastric juice, and if so whether or not they are capable of decomposition by intestinal juice. Consequently, samples were purchased from retailers in different parts of the country and also directly from the manufacturers or distributors. One half of each respective specimen was sent to Dr. Sollmann for making pharmacologic observations. The remainder was used for the examination conducted in the Chemical Laboratory of the American Medical Association herewith.

* From the Chemical Laboratory of the American Medical Association.

* The pharmacologic study has been made by Dr. Torald Sollmann, Western Reserve University. This paper is preliminary to Dr. Sollmann's report.

* The first article of the series was: Leech, P. N.: Examination of American-made Acetylsalicylic Acid, J. Indust. & Engin. Chem., April, 1918, p. 228. (See also editorial, ibid., April 13, 1918, p. 255.) The second article was: Leech, P. N.; Rabak, William, and Clark, A. H.: American-made Synthetic Drugs—II: Examination of Procain (Novocain), Barbital (Veronal), Phenetidyl-Acetphenetidin (Holocain), Cinchophen or Phenylcinchoninic Acid (Atophan), Manufactured Under Federal Trade Commission Licenses, J. A. M. A. **73**: 754 (Sept. 6) 1919.

1. Cushny, A. R.: Textbook of Pharmacology and Therapeutics, Ed. 6, Philadelphia, Lea & Febiger, 1915, p. 110.

2. Useful Drugs, Ed. 4, Chicago, American Medical Association, 1920, p. 14.

OUTLINE OF METHOD OF DIGESTION

Numerous references appear in the literature on the digestion or stability of the various tannin compounds; but as the methods detailed were different, the reports were not suitable for comparisons. It was therefore decided to make a comparative study of the tannic acid compounds which have been included in New and Nonofficial Remedies, and also the recently American-made compounds.

The work was of two phases: 1. To determine during a specified length of time the solubility of the respective compounds in water, hydrochloric acid solution, acid and pepsin solution, sodium bicarbonate and pancreatic extract solutions.[3] 2. To determine the percentage decomposition at various intervals during the digestion. In the latter phase the nitrogen content of the protein-like compounds was sometimes determined. The methods were chosen so as to approximate as closely as possible the conditions in the body as to reaction, duration, temperature, shaking.

A. *Pepsin-Acid.*—Place from 1 to 2 gm. of the tannin preparation, accurately weighed, into a 500 c.c. glass stoppered flask. Mix 20 c.c. of normal hydrochloric acid solution with 230 c.c. of water, and warm the resulting liquid to a temperature of 40 c.c. Gradually add the warm liquid to the flask with some agitation. Then add 5 c.c. of pepsin solution containing 0.25 gm. of pepsin U. S. P.[4] Place the flask in a constant temperature bath[5] maintained at 40 C.; every ten minutes (as controlled by an automatic alarm), invert the flask during a period of three hours, after which allow it to remain quiet for one-half hour; then filter through a large size tared gooch crucible; wash with three 20 c.c. portions of cold water. Dry at 100 to 110 C. for from ten to twelve hours and weigh.

B. *Acid.*—Proceed as in "A," omitting pepsin.

C. *Water.*—Proceed in general as above, using only water (250 c.c.).

D. *Alkaline Pancreas.*—Place from 1 to 2 gm. of the tannin preparation accurately weighed in a 500 c.c. glass stoppered flask. Dissolve 2.5 gm. (in some cases 5 gm.) of sodium bicarbonate in 250 c.c. of water, and warm the solution to 40 C. Gradually add, with agitation, the warm liquid to the flask. Add 5 c.c. of an aqueous mixture of holadin (containing 0.12 gm. of holadin)[6] to the flask. Place the flask in the constant temperature bath maintained at 40 C.; every ten minutes invert the flask during a period of two hours, after which allow it to remain quiet in the bath for an additional half hour. Then filter through a large size tared grooch crucible. Wash the precipitate with three 20 c.c. portions of cold water. Dry at 100 to 110 C. for from ten to twelve hours and weigh.

E. *Bicarbonate.*—Proceed as in "D," omitting holadin.

TANNIN PREPARATIONS

TANNALBIN

Tannalbin is a compound of tannic acid and egg-albumin, thoroughly exsiccated for six hours at 126 C. It is manufactured by Knoll & Co., Ludwigshafen, Germany, and was formerly sold in this country by Merck & Co. According to the claims, "it is a light brown, odorless powder, containing about 50 per cent. of tannin." "Tannalbin passes *unchanged* [italics ours] through the stomach, and only when exposed to the alkaline intestinal secretions is it gradually split up into its component parts." The experiments conducted in the A. M. A. Chemical Laboratory do *not* substantiate these claims.[7] The three specimens of Tannalbin examined all were partially soluble in water (about one part of *dried* substance in eight parts of water). In acid alone without the addition of pepsin, "Tannalbin" was dissolved to the extent of 33 per cent. in three and one-half hours. In the acid pepsin mixture, however, the product was digested to a considerable extent, averaging 75 per cent. decomposition; in these experiments the solutions (after digestion) responded strongly to the ferric chlorid reaction for tannic acid and soluble tannates, which rules out the theory of soluble compounds of tannic acid which do not have reactions of free tannic acid. In alkaline mediums the digestion, as would be expected, proceeded further when the pancreatic

3. Holadin, Fairchild (see N. N. R., 1920) was used in these experiments, as it represented an extract from the entire pancreas.

4. Five-tenths gram of pepsin was dissolved in 10 c.c. of water, and exactly 5 c.c. of this solution was used. The enzyme used was "pepsin (spongy granular, soluble) U. S. P. Hollister-Wilson."

5. A de Khotinsky constant temperature bath was used. The temperature did not vary more than 0.1 degree C.

6. Five-tenths gm. of holadin was treated with 20 c.c. of water and well shaken. Five c.c. of this mixture was delivered by means of a pipet in the flask.

7. In the 1909 edition of "Prüfungs-Vorschriften für die pharmazeutische Spezialpräparate von Knoll & Co." the manufacturers themselves specify a solubility of almost 50 per cent. in acid-pepsin under less favorable conditions than described in this paper.

TABLE 1.—COMPARATIVE DIGESTIONS

No	Name	Loss in Weight at 100 C. for 10 Hrs.	Weight of Sample	Amount Dissolved in 250 C.c. H_2O at 40 C., 3½ Hrs.		Weight of Sample	Amount Dissolved in 250 C.c. HCl (0.2%) Without Pepsin, 3½ Hrs.		Weight of Sample	Amount Dissolved in 250 C.c. HCl Plus Pepsin (0.25 gm.) 3½ Hrs.		Weight of Sample	Amount Dissolved in 250 C.c. of 1% $NaHCO_3$ Sol., 2½ Hrs.		Weight of Sample	Amount Dissolved in 250 C.c. of 2% $NaHCO_3$, 2½ Hrs.		Weight of Sample	Amount Dissolved in 250 C.c. of 1% $NaHCO_3$ plus Holadin (0.12 gm.)		Weight of Sample	Amount Dissolved in 250 C.c. 2% $NaHCO_3$ plus Holadin	
				Gm.	%		Gm.	%		Gm.	%		Gm.	%		Gm.	%		Gm.	%		Gm.	%
1	Tannigen.....	5.3	1.0297	0.0891	8.6	.....	.....	....	1.3897	0.0797	5.6	1.0204	0.7713	75.5	.....	.....	....	1.1761	0.8147	69.2			
	(Chicago)		1.0878	0.0902	8.4	.....	.....	....	2.2500	0.0440	1.9	1.0175	0.7518	73.9	.....	.....	....	1.4793	0.9294	63.0			
6	Tannigen.....	5.6	1.1420	0.0684	5.9	.....	.....	....	1.0817	0.0644	5.9	1.2905	0.3923	30.4	.....	.....	....	1.0752	0.3411	31.7			
	(Baltimore)		1.2068	0.0764	6.3	.....	.....	....	1.3694	0.0890	6.4	1.0468	0.3305	31.5	.....	.....	....	1.4286	0.4546	31.7			
13	Tannigen.....	8.6	1.2508	0.2067	16.5	.....	.....	....	0.8137	0.1458	17.7	1.4357	Dissolved readily		.....	.....	....	1.0980	Very slight ppt.				
	(New York)		1.0564	0.1910	18.0	.....	.....	....	1.0714	0.1848	17.2	.....			1.0976	Dissolv'd readily		0.9891					
11	Gallogen.....	....	1.0847	0.1821	16.8	.....	.....	....	1.1847	0.1756	14.8	1.1988	0.1825	15.1	.....	.....	....	1.0124	0.1751	17.2			
	(Baltimore)		1.0185	0.1974	19.3	.....	.....	....	0.8594	0.1477	17.1	0.9559	0.1425	14.8									
29	Acetannin.....	3.7	1.1675	0.0858	7.3	0.8702	0.0533	6.1	1.3292	0.0668	5.0	1.0327	0.9345	90.5	.....	.....	....	1.0380	0.9021	86.8			
	(Calco)		1.0448	0.0660	6.3	1.0781	0.0700	6.4	0.5160	0.0315	6.1	.....	.....	....	1.1688	1.1539	98.7	.....	.....	....	2.4407	2.2189	90.9
2	Tannalbin.....	6.5	1.2369	0.2223	17.7	.....	.....	....	1.0656	0.6866	64.4	1.0668	0.4444	41.6	.....	.....	....	1.0013	0.5850	58.4			
	(Chicago)		0.9230	0.1711	18.5	.....	.....	....	1.1866	0.6581	55.5	1.0954	0.4620	42.1	.....	.....	....	1.0913	0.6192	56.6			
9	Tannalbin.....	8.2	1.3602	0.2837	20.8	.....	.....	....	1.1369	0.9079	78.9	1.0360	0.5289	52.0	.....	.....	....	1.3428	0.7898	58.7			
	(Baltimore)		1.1276	0.2426	21.5	.....	.....	....	0.9992	0.7880	78.8	.....	.....	....	.....	.....	....	1.4252	0.8324	58.4			
14	Tannalbin.....	5.9	1.0084	0.2159	21.3	1.2652	0.4288	33.9	1.1125	0.9434	84.8	.....	.....	....	0.8667	0.4620	53.3						
	(New York)		1.0163	0.2127	20.9	1.3313	0.4563	34.2	1.3103	1.1400	87.0	1.4727	0.7198	48.8	.....	.....	....	1.0304	0.8034	68.2			
17	Tannin albuminate exsiccated.....	5.4	1.3540	0.2812	20.8	0.8433	0.2986	31.7	1.0910	0.7782	71.3	.....	.....	....	1.0963	0.4602	42.0	.....	.....	....	1.4077	0.7463	53.0
	(San Francisco)		1.1356	0.2365	20.8	1.3684	0.3906	31.7	1.3399	1.0042	74.9	1.0158	0.4163	40.9	.....	.....	....	1.0284	0.5287	51.4			
24	Tannin albuminate exsiccated (Merck)	9.0	.....	.....	....	.....	.....	....	0.7698	0.5528	71.8	.....	.....	....	.....	.....	....	1.1079	0.4967	44.9			
27	Albutannin.....	7.9	1.3119	0.2007	15.2	.....	.....	....	1.0098	0.9635	95.5	1.1515	0.3652	30.9	.....	.....	....	1.1952	0.9200	77.0			
	(M. C. W.)		1.1436	0.1699	14.8	.....	.....	....	1.3893	1.3289	97.8	0.8827	0.2901	32.8									
28	Albutannin.....	10.2	1.1482	0.1862	16.2	.....	.....	....	1.0387	0.9919	95.5	0.7592	0.2610	34.1	.....	.. ..		0.9925	0.8535	85.9			
	(Calco)		0.9071	0.1470	16.2	.....	.....	....	1.0901	1.0391	95.2												
5	Protan.....	8.3	1.2472	0.1875	15.0																		
	(Chicago)		1.0045	0.1358	13.5																		
16	Protan.....	7.8	1.3688	0.2167	15.8	1.0211	0.3591	35.1	0.8625	0.7005	81.2	.....	.....	....	.....	.....	....	1.4020	1.1334	80.8*			
	(San Francisco)		1.2123	0.1955	16.1	0.8695	0.3317	38.1	1.3393	1.0391	77.6	1.3100	1.1840	90.3	.....	.....	....	0.7495	0.7019	93.5			
23	Protan.....	8.6	1.1903	0.1959	16.3	1.0284	0.3116	30.3	1.2328	0.3364	72.7	.....	.....	....	.....	.....	....	1.1917	1.1717	98.3			
	(Mulford)		0.9024	0.9024	16.1																		
3	Tannoform.....	8.5	0.9832	0.2142	21.6	.....	.....	....	1.1145	0.1304	11.7	1.0770	0.8685	80.6	.....	.....	....	1.2007	0.9447	78.6			
	(Chicago)		0.9889	0.1932	19.5	.....	.....	....	1.0125	0.1223	12.0	1.1760	0.9588	81.5	.....	.....	....	1.0664	0.8570	80.3			
8	Tannoform.....	7.8	1.0219	0.2403	23.7	.....	.....	....	.....	.....	....	1.1411	0.9424	82.5	.....	.....	....	1.1243	0.8745	77.9			
	(Baltimore)		1.0757	0.2263	21.0	.....	.....	....	1.2241	0.1445	11.8	1.3273	1.0685	80.5	.....	.....	....	1.0933	0.8467	77.4			
15	Tannoform.....	10.5	0.9534	0.4458	46.7	1.1311	0.4849	42.8	1.2292	0.2381	19.3	.....	.....	....	0.6418	Dissolved in a few minutes		.....	.....	....	0.6219	0.5925	95.3
	(New York)		0.9510	0.4453	46.8	0.9608	0.4051	41.8	1.0772	0.1958	18.0	1.1386	1.0856	95.3	.....			0.6378	0.6105	95.7			
18	Tannoform.....	10.9	1.1709	0.4769	40.7	1.0340	0.3283	31.7	0.9534	0.2001	20.9	.....	.....	....	1.1173	1.0431	93.3	.....	.....	....	1.0284	0.9553	92.8
	(San Francisco)		0.9900	0.4200	42.7	1.1020	0.3458	31.3	1.0999	0.2219	20.5	1.0752	0.9902	92.0	.....	.....	....	0.7990	0.7145	89.3			
12	Tannopine.....	11.1	1.0881	0.1973	18.1	.....	.....	....	.....	.....	....	1.0541	0.2593	24.6	.....	.....	....	1.3374	0.2902	21.7			
	(Baltimore)		1.1007	0.1837	16.8	.....	... ..	....	0.9819	0.1977	20.1	1.0063	0.2834	28.1	.....	.....	....	1.5370	0.4041	26.2			
20	Tannismuth.....	10.3	1.1381	0.2051	18.0	1.1645	0.2870	24.6	1.2863	0.2056	15.9	.....	.....	....	1.4249	0.1962	13.7	.....	.....	....	1.3775	0.1762	12.8
	(San Francisco)		1.1119	0.2046	18.4	1.1399	0.2910	25.5	1.0094	0.1384	13.7	1.1862	0.1742	14.6	.....	.....	....	1.2777	0.0744	5.8?			

* Washing was not complete.

enzymes were present, *but* the decomposition of Tannalbin did not proceed to as great degree as in the acid pepsin mixture, which is contrary to expectations. The amount of protein in the dried substance in the case of one specimen was 64.1 per cent.

ALBUTANNIN; TANNIN ALBUMINATED EXSICCATED

About two years ago, Merck & Co., New York, presented for the consideration of the Council on Pharmacy and Chemistry "Tannin Albuminated Exsiccated-Merck." The claims and composition for this product were essentially the same as for the German proprietary "Tannalbin." "Tannin Albuminate Exsiccated" was accepted for New and Nonofficial Remedies under that name. Later, other American firms also prepared Tannin Albuminate, and following its custom, the Council coined the nonproprietary name "Albutannin" to describe the products. All the firms have now accepted this name. However, whenever the term "Tannin Albuminated Exsiccated" appears in this paper, it applies to the Merck product purchased *before* the name "Albutannin" was adopted by Merck & Co. The digestion experiments showed little variation between "Tannin Albuminate Exsiccated" and "Tannalbin."

In the case of "Albutannin Calco" and "Albutannin M. C. W.," both products looked much superior physically to "Tannalbin" or the Merck product; the two albutannin products were exceedingly similar in all their characteristics. However, they were digested practically completely (95 per cent.) in the artificial gastric medium, and from that standpoint comply least with the supposed therapeutic requirements for the protein-tannic acid compounds.

PROTAN

"Protan" has been stated to be a "synthetic compound of tannic acid with Nucleo-proteid, containing 50 per cent. of tannin." The manufacturers, H. K. Mulford & Co., have stated that "the Nucleo-proteid employed in the production of Protan is milk-casein. No definite chemical formula can be assigned to the product." The claims made for the product are that it "is insoluble in the gastric juice and therefore does not disturb the stomach; when it reaches the alkaline secretions of the intestines, it is dissolved and the tannin set free to act as an astringent on the intestinal walls and the contents of the intestines."

The experiments reported herewith contradict the foregoing claims. "Protan" is quite appreciably soluble in water, and is about 75 per cent. dissolved by artificial gastric digestion.[8] In the alkaline mediums, "Protan" is quite soluble, almost 100 per cent.; in this respect "Protan" differs considerably from Tannalbin, but agrees with the Calco and M. C. W. Albutannin, which may or may not be a commendable feature.

THE RATE OF DIGESTION

In Table 2 is given the amount of "Tannin Albuminated Exsiccated" (24), "Tannalbin" (2 B) and "Protan" dissolved by gastric and intestinal mediums in stated time intervals. In certain cases the amount of protein in the undissolved substance was determined.

"Tannin Albuminate Exsiccated" is dissolved to the extent of 45 per cent. in artificial gastric juice in the first half hour; the amount increases with increased length of time up to two and one-half hours (69.4 per cent.); digestion for another hour had practically no effect. In the sodium bicarbonate-holadin medium, 32 per cent. was dissolved in the first half hour; after one and one-half hours, 44.9 per cent. was dissolved but another hour of digestion did not change the amount dissolved. This observation is important, as it indicates that the tannic acid effect will be exerted in the upper part of the intestine and probably not liberated slowly along the middle and lower tracts.

In acid pepsin mixture, the composition of the undissolved "Tannin Albuminate Exsiccated" was essentially the same in the respective time periods, as was determined by the protein content.[9] It is rather interesting to note that in case of the bicarbonate-holadin digestion of "Tannin Albuminate Exsiccated," the undissolved portion contained about 81 per cent. protein (the original substance assayed 67.9 per cent. protein);[10] the amount of tannic acid which was split off, nevertheless, does not materially increase the available amount in the intestine.

"Tannalbin (2 B)" and "Tannin Albuminate Exsiccated." as would be expected, acted similarly in the period digestion determinations.

Protan.—In the first hour and one-half of the acid-pepsin digestion, "Protan" (23) seemed to be somewhat more easily attacked, but the difference was not so large as to be practically important; but after two and one-half and three and one-half hours, the results were essentially the same as those of "Tannin Albuminate Exsiccated" (24), namely, 72 per cent. dissolved; the amount of protein remained practically constant (the product contains about 15 per cent. less protein than "Tannin Albuminate Exsiccated"). In the alkaline medium "Protan" was dissolved almost immediately, there being no difference between the one-half hour and two and one-half hour treatment. When the filtrate from the bicarbonate-holadin treatment was rendered acid with hydrochloric acid, a substance was precipitated out. In case of the one-half hour of bicarbonate-holadin treatment, the amount of precipitate recovered was 40.2 per cent.; a protein determination (50.5 per cent.) showed the product to have essentially the same composition as "Protan." In other

TABLE 2.—PROGRESSIVE DIGESTION TABLE*

Number	Name	Moisture	Soluble in Water	Acid-Pepsin Treatment					Alkaline-Holadin Treatment			
				½ Hour	1 Hour	1½ Hours	2½ Hours	3½ Hours	½ Hour	1 Hour	1½ Hours	2½ Hours
24	Tanin albuminate **67.9**	9.0	....	45.1 **66.5**	54.2 **65.9**	60.1 **66.7**	69.4 **67.1**	71.8 **65.5**	32.0 **69.6**	39.9 **63.6**	44.9 **81.7**	44 9 **81.1**
2B	Tannalbin **64.1**	7.0	20.3	48.2	56.0	61.4	66.7	68.8	43.3	47.4	47.2	48.7
23	Protan **51.9**	8.6	16.2	59.4 **52.3**	66.8 **54.3**	71.1 **51.8**	72.3 **51.0**	72.7 **53.1**	98.4	....	....	98.3
22	Gallogen	...	16.8	....	....	....	....	24.3	18.4	16.0	....	32.4

* Figures in bold face give the amount of protein in the dried substance.

8. In the presentation to the Council, the H. K. Mulford Company gave the following test: "The resistance of Protan to the action of gastric juice may be shown by mixing 2 grams (dried at 100 C.) with 40 c.c. of 0.2 per cent. hydrochloric acid containing ten times the theoretical amount of 1:3,000 pepsin necessary to digest the protein present; warming to 40 C. for six hours, filtering off the residue, drying and weighing; from 75 to 80 per cent. of the amount taken may be thus recovered." (See N. N. R., 1920, p. 328.) In 1907, the referee for Protan reported: "Examination of Protan shows that it complies fairly well with the claims made for it. While the test to determine the resistance of Protan to the action of peptic digestion indicated that 65 to 70 per cent., instead of 75 to 80 per cent., resisted digestion, the referee is inclined to believe that this difference may be due to the difficulty of carrying out of the test." The results of the 1907 sample are indeed strikingly different from the three samples tested recently, wherein only about 25 per cent. was recovered; of course, the two methods are somewhat different.

9. The gooch containing the residue and asbestos was allowed to "soak" in slightly acidulated water. The contents were then dislodged easily and transferred, with washings, to a Kjeldahl flask. The protein was calculated from the nitrogen content.

10. A very small amount of ferment which may have been precipitated was not deducted in the nitrogen determinations. However, even allowing a maximum possible amount, the results would not be changed materially, as was attested by experiments.

words, the sodium-bicarbonate seemingly dissolved "Protan" as a "sodium 'Nucleo-protein tannate.'" When it is remembered that hydrochloric acid solution (0.2) holds about 36 per cent. in solution, this would indicate that most of the "Protan" was not broken up so as to yield free tannic acid. When "Protan" had been treated for two and one-half hours, the amount recovered was 32.4 per cent.; the protein determination (50.2 per cent.) likewise showed the recovered product to have been unchanged.[11]

THE "ORGANIC RADICAL-TANNIN" COMPOUNDS

TANNIGEN; ACETANNIN

Tannigen was introduced in medicine by Farbenfabriken, vorm. Fredr. Bayer & Co., Leverkusen, Germany; the American proprietary rights are now owned by the Winthrop Chemical Company. "Tannigen" is stated to be a "diacetyltannin" prepared by treating tannin with acetic anhydrid, in the presence of glacial acetic acid. It is claimed to be insoluble in dilute acids or cold water, and to pass "unchanged through the stomach." On reaching the intestine, "Tannigen is decomposed with the liberation of tannic acid."

All the "Tannigen" samples had a strong odor of acetic acid, and gave a reaction for tannic acid. The solubility in water varied. When treated with the bicarbonate mediums (Table 1) the results varied widely. In the case of one sample, only about 30 per cent. was dissolved; in another, 69 per cent. was dissolved, while in two others the solution was practically complete in from five to fifteen minutes. In the case of Specimen 13, although it dissolved readily in sodium bicarbonate solution, yet after two and one-half hours' treatment at 40 C. it still yielded a precipitate on acidulation which showed that it had not been hydrolyzed completely into sodium acetate and sodium tannate, but very likely was present in part as sodium acetyltannate. A sample submitted to the Council by the Winthrop Chemical Company (Tannigen 32), when treated with 1 per cent. sodium bicarbonate solution at 40 C., was dissolved in one-half hour 15.7 per cent.; in one hour, 19.9 per cent.; in two hours, 34.7 per cent.; in three hours, 38.4 per cent.; and after twenty-four hours, 84.7 per cent. had dissolved. The remainder could not be dissolved by 10 per cent. sodium hydroxid solution. Another sample (Tannigen 21) was exceedingly dark in color and almost entirely soluble (1.2 gm.) in 250 c.c. of warm water; the insoluble portion acted much like a gum, sticking to the sides of the flask. It was immediately soluble in sodium bicarbonate solution.

Acetannin.—When the Calco Chemical Company presented its "Tannigen-like" compound to the Council for consideration, the Council coined the nonproprietary name "Acetannin." "Acetannin Calco" is claimed to be the same chemical product as "Tannigen." Only one specimen of "Acetannin Calco" was examined in this series. However, the product was much superior to the Tannigen samples in its physical characteristics. It was practically insoluble in water and acid solution, but decomposed by sodium bicarbonate. It dissolved immediately in sodium bicarbonate at 40 C., but some could be recovered after one hour by acidulation, while after two and one-half hours none was recovered, indicating a complete hydrolysis. In all particulars, acetannin behaved according to theory However, market specimens have not been analyzed as yet to determine whether or not the product is uniform in this respect

The Rate of Hydrolysis of Acetannin Calco and Tannigen and the Variation in Astringency.—As may be noted in Table 1, the degree of solubility of the Tannigen preparations in sodium bicarbonate solutions varied, while Acetannin Calco was almost immediately soluble. Hence it was of value to obtain some idea as to the rate of decomposition as well as the solubility at certain intervals and also to observe the degree of astringency. The preparations were treated with 1 per cent. sodium bicarbonate solution at 40 C. for a definite period, and then titrated at 40 C. with normal volumetric hydrochloric acid solution to an approximate end-point, alizarin red being used as the indicator. (It was realized that the method was not accurate, owing to the coloration of the solutions, but it was sufficiently approximate to yield interpretative findings.) The astringency, after the titration, was determined according to the method of Sollmann, the effect of 10 c.c. of the solution on 10 c.c. of a 10 per cent. egg albumin solution being noted. The results are recorded in Table 3, employing such relative terms as turbidity, moderate precipitate, heavy precipitate, etc.

From this table it will be seen that the hydrolysis of the acetyl tannic acid type of compound is not immediate even when quite soluble in sodium bicarbonate solution; that the astringency increases with hydrolysis; that the composition of tannigen is so variable (owing very probably to lack of sufficient purification) that different specimens act like different compounds. The results indicate that practically the maximum astringent effect of Acetannin Calco would be exercised after one hour; in the case of Tannigen, the samples examined varies so widely that no general deduction can be drawn.

TABLE 3.—HYDROLYSIS AND ALBUMIN TEST

	C.c. of Normal $NaHCO_3$ Solution Used by 1 Gram				
	½ Hour	1 Hour	2 Hours	3 Hours	24 Hours
Acetannin Calco	3.18 Mod. ppt. dissolved readily	6.32 Heavy ppt.	6.99 Heavy ppt.	7.17 Heavy ppt.	7.5 (?) Heavy ppt.
Tannigen 13	4.7 Mod. ppt. dissolved readily	5.7 Heavy ppt.		6.0 Heavy ppt.	
Tannigen 32	1.5 Slight turbidity 15.7%* dissolved	1.6 Slight turbidity 19.9% dissolved	3.3 Heavy turbidity 34.7% dissolved	3.4 Heavy turbidity 38.4% dissolved	Not titratable, heavy ppt. 84.7% dissolved

* The undissolved precipitate was filtered off, dried, weighed and the dissolved portion calculated.

Tannigen 21 dissolved immediately yielding a solution too dark for titration but giving heavy precipitate with albumin. Only a small amount of Tannigen 6 was left after making the determinations in Table 1; although about one-third soluble then, after standing six months not carefully protected from moisture, it was almost entirely soluble in sodium bicarbonate solution.

Tannoform was originally manufactured by E. Merck & Co., Darmstadt, Germany, and sold in the United States by Merck & Co., New York. It is stated to be "tanninformaldehyde," a "condensation product of formaldehyde and tannic acid." Similar to other products of this class, "Tannoform is claimed to be insoluble in water or gastric juice, but in the intestines to be split into free tannic acid and formaldehyde."

Four specimens of "tannoform" were examined. They varied greatly in solubility in water. Acid solution alone renders "tannoform" slightly less soluble, while in the pepsin-acid medium the solubility is reduced considerable, owing probably to a precipitant action of the protein. Tannoform is soluble in sodium-bicarbonate mediums to the extent of from 65 to 95 per cent.; the solution was effected almost immediately at 40 C. The product which did *not* dissolve could not be decomposed by either steam distillation or hot sodium hydroxid solution (10 per cent.). In case of Tannoform 4, when the filtrate from the sodium bicarbonate mixture after remaining three and one-half hours at 40 C. was acidified with dilute hydrochloric acid, about 26 per cent. was recovered from the solution, while 32 per cent. had not been dissolved by the sodium bicarbonate and was removed previous to acidification. Bearing in mind that the solubility of this specimen "tannoform" in hydrochloric acid solution is about 20 per cent., the deductions are that at least 80 per cent. of "Tannoform 4" was not decomposed to formaldehyd and tannic acid.[12] I am inclined to believe that such quanti-

11. In a personal communication to the author, Dr. Sollmann stated that the amount of precipitate depends on the degree of acidity; the figures as to the amount of precipitate therefore have little quantitative meaning. However, the constant nitrogen percentage in the precipitate shows that this part of the tannin is still combined. As a matter of fact, the tannin-protein compound is probably not broken up until the protein is reduced to amino-acid and absorbed.

12. A mixture of formaldehyd and tannic acid in such concentrations as would be comparable for the experiment did not form a precipitate on the addition of dilute hydrochloric acid.

ties of formaldehyd as were liberated in both acid and alkaline mediums were due to either (*a*) some mechanically enclosed formaldehyd or (*b*) to a small amount of a compound which was capable of hydrolysis; but that the major portion of "tannoform" was a mixture of condensation products, resistant, as are the formaldehyd-hydroxy compounds, to the actions of hydrolitic agents. Also "tannoform" is not the definite chemical substance as claimed. From a therapeutic standpoint, the question to be settled then is whether or not the so-called soluble "sodium formal-tannate" is of value.

Tannopin is another product of the Bayer concern of Leverkusen, Germany. It is not at present on the American market. "Tannopin is also claimed to be a definite chemical substance "Hexamethylene-Tetramine-Tannin," which, as the name indicates, is a condensation product of hexamethylenamin and tannic acid. It is presumed to pass through the stomach unchanged but to liberate tannic acid in the intestine. The experiments show it to be about equally soluble in acid and alkaline medium—20 and 24 per cent., respectively. It does not seem to be very promising for therapeutic use.

MISCELLANEOUS COMPOUNDS

Tannismuth is a product of the Chemische Fabrik von Heyden, Germany. It is stated to be a bitannate of bismuth, and that "one molecule of the tannic acid becomes operative immediately after digestion, while the other is slowly separated." One specimen of tannismuth was all that could be obtained for the experiments, but this specimen showed the product to be more soluble in the acid medium (24 per cent. dissolved) than in the alkaline medium (14 per cent. dissolved in 2 per cent. sodium bicarbonate solution). This condition, of course, means that more tannic acid can be liberated in the stomach than in the intestine, which is not the desideratum.

Gallogen is described as "anhydrous ellagic acid prepared from divi-divi, the pods of *Caesalpinacoriaria*." It is supposed to be insoluble in water and acid mediums, but very slowly decomposed in the intestine. It is sold in the United States by Bischoff & Co., New York. I examined two specimens. Gallogen is somewhat soluble in acid medium (from 16 to 24 per cent.), but is not rendered very soluble by sodium bicarbonate, even after two and one-half hours' treatment at 40 C. The alkaline filtrate resembles a colloidal solution, so that other factors may enter in its action in the intestine. The chemical data given in this paper are not sufficient to draw a conclusion as to the usefulness of gallogen.

COMMENT

Solubility in Water.[13]—"Acetannin" is practically insoluble in water; the majority of the products are dissolved to the extent of 20 per cent., while in the case of two of the "Tannoform" specimens about 40 per cent. could be dissolved.

Acid Alone and Acid Plus Pepsin.—"Tannaform" and "Tannismuth" are more soluble in acid alone (0.2 per cent.) than acid plus pepsin. The solubility of the protein tannic acid compounds are increased greatly by the addition of pepsin. The solubility in acid-pepsin solution varies widely for the different compounds. The least soluble is "acetannin (Tannigen)"; this is followed by "Gallogen," "Tannopin," "Tannismuth" and "Tannoform" (from 11 to 24 per cent.). "Tannalbin" and "Albumin Tannate Exsiccated" are broken down to an excessive extent, while "Albutannin Calco" and "Albutannin M. C. W." are decomposed almost completely and are least desirable.

Solubility in Sodium Bicarbonate and Sodium Bicarbonate Plus Holadin Solutions.—The employment of 1 or 2 per cent. sodium bicarbonate solution made practically no difference. In the case of "Acetannin," "Tannigen" and "Tannoform," the presence of holadin did not alter the result. "Tannoform" was very soluble in the alkaline mediums, but it is doubtful whether it is decomposed at all in the intestine. "Acetannin Calco" was dissolved readily by sodium bicarbonate and apparently completely hydrolyzed. In the case of the protein compounds, "Tannalbin" and "Tannin Albuminate Exsiccated" may be made very much more soluble by addition of holadin. Protan, however, which is the most soluble protein compound in alkaline-holadin mixture, probably forms a sodium salt in which the tannic acid is bound.

Variability.—"Tannigen," as on the market, is not a uniform product, and in some cases seems to be in a very impure condition. "Tannoform" also is not of reliable composition.

13. In referring to the table under solubility in water, it should be borne in mind that the moisture per cent. should be subtracted. As the reactions described are those of hydrolysis in the main, it necessitates that close analytic results may not be obtained, in consideration of the law of mass action; this, however, is only one of a number of complicating technical factors.

Standards.—There is great need for standards. The method for all the products should be the same, and the one used in this series seems eminently satisfactory. It remains simply to set limits for the individual products. This can best be done after consultation with the manufacturers.

CONCLUSION

1. Only one type of the tannic acid compounds studied completely resists the action of the gastric juice and is broken down in the intestine according to theory. i. e., the diacetyl tannic acid compound. "Acetannin Calco" is satisfactory (however, only one specimen of this product was available when the study was made). "Tannigen" is fairly satisfactory in some instances; in others it is not; certain it is that the market supply of "Tannigen" is not of reliable composition.

2. "Protan" and "Tannoform" are both readily soluble in sodium bicarbonate mediums. They are probably not broken up to a great extent in the intestine.

3. "Albutannin Calco" and "Albutannin M. C. W." are not nearly so resistant to the acid-pepsin digestion as "Tannalbin" and "Tannin Albuminate Exsiccated." Both "Tannalbin" and "Tannin Albuminate Exsiccated" (the latter now sold as Albutannin Merck) are themselves not sufficiently resistant to the acid-pepsin medium, but they do liberate free tannic acid in the alkaline-pancreatic medium.

4. With the exception of the specimen of Acetannin, none of the products which were examined according to the methods described in this paper conformed strictly to the claims made for them.

METHODS OF CULTIVATING THE GONOCOCCUS AND OF TESTING GERMICIDAL AGENTS AGAINST IT

PRELIMINARY NOTE *

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In the course of a series of studies on venereal diseases, undertaken with the assistance of a grant from the United States Interdepartmental Social Hygiene Board, it was thought desirable to develop improved methods of handling and experimenting with the gonococcus in the laboratory. The gonococcus is usually considered difficult to cultivate. Its growth is described as scanty, and its susceptibility to heat, light and manipulation is great. Numerous culture methods have been described, each being used with greatest success only by its originator. Studies of the germicidal action of drugs on the gonococcus are rare and incomplete. We have attempted, therefore, to devise a standardized, simple method of growing the gonococcus, and a standardized, practicable method of testing the activity of drugs against it.

It will readily be seen how important to all workers interested in gonorrhea, a simple method of cultivating the gonococcus would be. The distribution of gonococci in the body could be accurately worked out. Many useful applications to urologic and gynecologic

* From the James Buchanan Brady Urological Institute, Johns Hopkins Hospital, with the aid of funds granted by the United States Interdepartmental Social Hygiene Board for research in the prevention and cure of venereal diseases.

diagnosis could be made. Serologic and immunologic studies could be greatly amplified and extended.

The present day treatment of gonorrhea is entirely empiric. No studies of value have been made on the power to kill gonococci of the various drugs used in this treatment. Yet the conception on which most of the methods have been founded is that of the germicidal value of some substance. The collection of clinical data bearing on the treatment of gonorrhea is an extremely difficult task. As a result of this fact, many worthless treatments have been tried over long periods of time on large numbers of patients. If one were able to determine directly the gonococcidal power of any desired substance, it is clear, even from the most conservative point of view, that comparative values so obtained would enable an intelligent selection to be made of those drugs deserving of the difficult and extended clinical trials, when other factors, such as penetration, absorbability and rapidity of action, come into play. Such studies have a further field in the problem of prophylaxis, when the infecting organism is still presumably on the surface and therefore more readily accessible. The most powerful gonococcide should be the best prophylactic.

CULTURE METHODS FOR GONOCOCCI

The fact that so many mediums have been proposed for use in cultivating the gonococcus is itself an evidence that none of them has been entirely satisfactory. Numerous unsuccessful attempts have been made to grow the gonococcus on the ordinary agar mediums. Some of the mediums recommended are acid and some alkaline in reaction. Many of them are very complicated to prepare. The gonococcus was first successfully cultivated on mediums enriched by the addition of coagulated human placental serum.[1] Later the value of the addition of ascitic or hydrocele fluid was demonstrated by Wertheim.[2] Young,[3] in his work on gonococcal infections, developed a medium which he used with success. This was made by the addition of hydrocele or ascitic fluid, obtained under strictly aseptic conditions, to ordinary agar medium.

Wherry and Oliver[4] called attention to the fact that the gonococcus grows best at a lowered oxygen tension. They reduced the oxygen tension in a manner which cannot be applied satisfactorily to large numbers of cultures, so that we set about to find a simpler technic. A number of methods to accomplish this were tried, and the method described below developed. It is extremely simple and very efficient, and can be used without any elaborate apparatus. It has given us satisfactory results, and by following this procedure, the organisms can be grown with ease and great profusion.

AUTHORS' METHOD

The medium is a 2 per cent. beef or veal infusion agar, prepared in quite the ordinary manner, which is brought to a reaction of p_H 7.6, phenolsulphonephthalein being used as an indicator. After autoclaving, the reaction comes to about p_H 7.4. Sterile ascitic, pleuritic or hydrocele fluid is added to the melted agar in the proportion of one part of fluid to two parts of agar. The tubes are then corked with sterile rubber stoppers and slanted. This corking prevents evaporation, and allows the medium to be kept in the incubator, which detects any contamination and keeps the medium warm for inoculation at any time. The rubber stopper has the further advantage that it prevents contamination much more surely than the ordinary cotton stopper.

The inoculation is made as plentifully as possible. It is important to have the medium at body temperature when inoculation is made, to keep it so thereafter, and to prevent cooling of the material before inoculation. Immediately after inoculation, the tube, held horizontally, is turned so that the agar slant is uppermost. Held by the butt, it is then passed longitudinally through the Bunsen flame about three times and quickly corked. Experiments with suitable apparatus show that this procedure heats the air in the tube sufficiently to cause the pressure within to be lowered from 70 to 100 mm. of mercury (about 10 per cent. of atmospheric pressure) when the tube is again cooled to 37.5 C. Yet the medium is not coagulated nor are the gonococci harmed. By following this simple technic, we obtain with perfect regularity visible colonies in from twelve to fifteen hours, and profuse growths in twenty-four hours. The viability of the gonococcus on this medium is about seven days. Pure cultures can usually be made from acute urethritis cases directly, if the meatus is carefully cleaned beforehand and the cultures are made from well within the urethra. If other organisms are present, plates may be made from the same medium, and placed in the incubator in vacuum desiccators, in which the pressure is lowered 10 per cent. Good growth may be obtained on fluid mediums prepared as above except for the agar, and with or without sugar. The agar tubes should have, after hardening, a small quantity, about 0.5 c.c., of water of condensation in the lower angle of the slant. This assures the best growth.

In this laboratory, we have made thousands of cultures, using this technic, and have never failed to obtain growth. Primary cultures have been successful in every case in which gonococci were clearly demonstrated in smears. We feel that the method is so simple that it should be practicable for almost every worker and in almost every laboratory, even if not extensively equipped. In well equipped laboratories, it enables large numbers of cultures to be handled with a great saving in time, space and apparatus.

Details of the method, the results, and of newly observed cultural characteristics of the gonococcus on this medium will be published in the near future.

METHODS OF TESTING ANTISEPTICS

Two general methods of testing drugs against the gonococcus have been followed in the past. They may be designated as the inhibition method and the germicidal method. The first of these has been utilized by a number of investigators, because of its simplicity and of the difficulties connected with growing and handling the gonococcus. With this method, varying concentrations of the drug to be tested are mixed with the culture medium, on which the gonococci are then implanted. The organisms thus remain constantly in contact with the same concentration of drug, and when no growth occurs, it may be due, not to the death of the gonococci, but to the presence of sufficient of the drug to inhibit their growth. The usefulness of this method is therefore limited.

In the second, or germicidal method, the organisms are exposed for a definite length of time to the action of the drug chosen. At the end of this time a sample is removed and planted on fresh medium. Failure to grow indicates that all the organisms have been killed by the drug. This transfer in the case of ordinary organisms is usually made with a platinum loop, carrying over a small quantity of the germicidal substance with it. It has generally been found unsatisfactory for use with the gonococcus, owing to the difficulty of culture and the difficulty in obtaining growth after transfer with the small quantity carried

1. Bumm: Beitrag zur Kenntniss des Gonococcus, Wiesbaden, 1885.
2. Wertheim: Arch f. Gynäk., 1892.
3. Young, H. H.: Johns Hopkins Hosp. Rep. **9**: 677, 1900.
4. Wherry, W. B., and Oliver, W. W.: J. Infect. Dis. **19**: 288 (Sept.) 1916.

by a platinum loop. Such a technic used for the gonococcus is in our opinion unsuitable and gives values that are much too high.

The researches of Chick,[5] Norton and Hsu,[6] and others have thrown much light on the laws governing germicidal action. Keeping in mind these considerations, we concluded that a suitable test for the gonococcus required the following essential points: 1. The time of the test must correspond to the time during which a drug might act in the urethra. 2. The number of gonococci in the test emulsion must be large, to correspond to clinical conditions. 3. The number of gonococci transferred to the medium after contact with the drug must be large, and they must be freed in some way of excess of drug. 4. Only those concentrations that kill completely must be considered. 5. The test temperature must be that of the body. 6. Some organic matter must be present. A full discussion of these points will be published in later papers.

In our researches, all other conditions were kept as constant as possible. The medium was always prepared in exactly the same way, except for variations between different samples of body fluid. The cultures were twenty-four hour growths of strains that had been transferred frequently in the laboratory. The final technic, which has been used in a large number of tests, is as follows:

FINAL TECHNIC

1. *Emulsion.*—The emulsion of gonococci is prepared immediately before the test by stirring up the growth covering the surface of a hydrocele or ascitic agar slant with 7.5 c.c. of sterile 0.85 per cent. salt solution. This gives a small quantity of serum in the emulsion, which is then poured into a tube fitted with a pipet passing through a cotton stopper, shaken with glass balls, and placed in the water bath 37.5 C.

2. *Dilutions of Drug.*—Dilutions of the drug to be used are made up with aseptic precautions, in such a manner that the addition of 1 c.c. of emulsion will bring them to the desired concentration for the test. Each dilution is then placed in a sterile cotton-stoppered centrifuge tube. The tubes are kept in the incubator until they are to be inoculated.

3. *Procedure.*—One c.c. of the emulsion is pipetted into a centrifuge tube of diluted drug. The tube is placed in the water bath at 37.5 C. for eighteen minutes. At the end of this time, it is centrifuged at high speed for two minutes. The supernatant fluid is poured off, and 2 c.c. of sterile 0.85 per cent. salt solution pipetted in. This makes the complete time of action of the drug twenty minutes The tube is then centrifuged a second time, and the wash fluid poured off. The gonococci settle readily in the centrifuge, and form a compact mass at the tip of the tube. They can be transferred, almost *en masse*, to a tube of fresh medium, which is corked and incubated, as described in the paragraph on culture methods. It is our custom to inoculate, after seven days, all tubes on which no growth has occurred, with fresh cultures of gonococci. If they develop, we assume that enough of the drug has not been carried over to the test medium to prevent growth.

Using this standard method, we have tested a large series of drugs used in the treatment of gonorrhea, as well as a number of new substances of the mercurochrome series developed in this laboratory,[7] and others not hitherto used in urologic practice. Our results show that some of these new mercurochrome drugs are more effective than any others yet tested, and superior to mercurochrome-220. We have also made comparative tests, using *B. coli* and *S. aureus*, which show a somewhat lower germicidal value than by the commonly used technics. The comparative tests afford a basis on which the relative susceptibility of the gonococcus and other organisms can be calculated.

Full details of the results of these tests will be published shortly.

5. Chick: J. Hyg. **8**: 92, 1908. Chick and Martin: Ibid. **8**: 654, 1908.

6. Norton, J. F., and Hsu, P. H.: J. Infect. Dis. **18**: 180 (Feb.) 1916.

7. Young, H. H.; White, E. C., and Swartz, E. O.: A New Germicide for Use in the Genito-Urinary Tract: "Mercurochrome-220," J. A. M. A. **73**: 1483 (Nov. 15) 1919.

SYMPTOMATOLOGY OF SPINAL CORD TUMORS *

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Since 1888, when Sir Victor Horsley showed that spinal cord tumors can be successfully removed, neurologists the world over have attempted to establish criteria by which an early diagnosis may be made. Classical works on the subject have been written, and still the fact remains that spinal cord tumors are frequently overlooked and often not found till late in the course of the disease or only postmortem. It has been our motto to regard with suspicion any transverse myelitis of progressive character. In these cases very careful anamnesis and painstaking examinations have done much to solve some of the problems. We have therefore elaborated the following rather terse and compact scheme which we trust may be of as much assistance to others as it has been to us. Our percentage of correct diagnosis and correct localization has risen considerably. Tumors of the spinal cord, in brief, are extradural, extramedullary and intramedullary. In this communication, we will deal only with the latter two varieties.

By far the most frequent and the most important, from a diagnostic and therapeutic point of view, are the intradural and extramedullary tumors. The symptomatology of this class of tumors divides itself into two main groups: (1) early, or root symptoms, and (2) cord compression, or later symptoms. A third group of symptoms may be mentioned, namely, those signs referable to bony, vertebral involvement.

In extramedullary tumors, we differentiate signs of tumors whose density is greater than that of the cord from those whose density is equal to or less than that of the cord.

This distinction has not hitherto been sufficiently accentuated. To our mind, this difference is of vital importance in recognition of tumors of the cord. It is especially true of cases of the softer tumors, in which most of the errors of diagnosis and localization have been made.

Extramedullary tumors whose density is greater than that of the cord show, in brief, these signs:

1. Root signs:
   (*a*) Muscular spasms and twitchings.
   (*b*) Pains.
   (*c*) Paresthesia.
   (*d*) Hyperesthesia.
   (*e*) Changes of reflex, both deep and superficial, at the seat of the tumor.

* Read before the Section on Nervous and Mental Diseases at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

2. Signs of moderate compression:
   (*a*) Homolateral paresis below the seat of the lesion.
   (*b*) Homolateral hyperflexia and hypertonia below the lesion.
   (*c*) Alterations of superficial reflexes of the homolateral side below the lesion.

3. As the compression increases, further and marked evidences of tract interferences:
   (*a*) Paralysis of the same side.
   (*b*) Marked spasticity, with exaggeration of tendon reflexes and clonus; Babinski and other pathologic plantar reflexes on the same side.
   (*c*) Beginning hyperreflexia and hypertonia of the opposite side below the level of the lesion.
   (*d*) Beginning disturbances of pain and temperature sense on the heterolateral side, beginning at the lowest segment and slowly climbing upward.
   (*e*) Impairment of the vibratory, postural and localization sense homolaterally.
   (*f*) Difficult, delayed and interrupted micturition and constipation.

4. With still greater cord compression:
   (*a*) Paralysis of both sides below the level of the lesion and more marked at the homolateral site.
   (*b*) Tract sensory disturbances (pain and temperature) on both sides, but more marked on heterolateral side and reaching its maximum over the sacral and lower lumbar distribution.
   (*c*) Retention of urine and feces.
   (*d*) Bilateral loss of superficial reflexes, bilateral, Babinski, etc.

5. With very marked cord compression, signs of a transverse myelitis:
   (*a*) Pain and temperature disturbances now at their highest level, corresponding physiologically to the seat of the lesion (from two to three segments below the actual seat).
   (*b*) Complete bilateral spastic paralysis.
   (*c*) Complete retention of urine and feces, with overflow incontinence.
   (*d*) Beginning disturbance of the tactile sense.

6. Lastly, signs of complete transection of the cord:
   Complete bilateral flaccid paralysis with abolition of all the deep and superficial reflexes; incontinence of urine and feces; complete anesthesia, analgesia and thermesthesia; marked trophic changes.

The level remains practically unchanged throughout the course of the disease.

A tumor with density equal to or less than that of the cord causes little interference of the cord by pressure.

Early anterior or posterior root signs with a belt of hyperesthesia are rarely as marked as in hard tumors. This hyperesthesia is frequently transient and may be easily overlooked. The root symptoms frequently appear earliest over the distal distribution of the nerve.

Cord signs are due to interference by the tumor mass with the lymphatic and venous circulation of the cord and result in secondary edema. A soft tumor can reach a considerable size and slowly mold itself around the cord without causing any marked signs of tract involvement.

All the motor tract signs enumerated in the hard cord tumors are also present here, only to a milder degree. Both the tract motor and sensory signs, though less in degree, are most marked at the site or just above and below the lesion, and spread downward with diminishing intensity. In hard tumors, it will be remembered, the tract sensory disturbances are greatest in the lowest spinal segments. In soft tumors the tract disturbances are just above, at and below the seat of the tumor. The spread of signs and symptoms is very suggestive of intramedullary growths and syringomyelia.

In the soft tumor group, there is a considerable parallelism between the motor and sensory signs in contrast to the more marked and earlier motor tract involvement seen in cases with hard tumors.

In contradistinction to hard tumors, the level symptoms are not stationary. The upper edge of the level may move for about two or three segments higher.

The presence of xanthochromia in the cerebrospinal fluid is more common in soft tumors.

It is in soft tumors, especially with few signs of cord compression, that a lumbar puncture is likely to be followed by the first absolute evidences pointing to a level of cord compression. Another peculiarity is that in the soft tumor, the root signs are not infrequently bilateral as in contrast to hard tumors, in which until late in the disease they remain unilateral. There is also found in the soft tumors, before operations, remarkable remissions and exacerbations in the course of the disease. A resemblance to multiple sclerosis and syphilis must be borne in mind.

DIFFERENTIAL DIAGNOSIS BETWEEN EXTRAMEDULLARY SOFT TUMORS AND INTRAMEDULLARY TUMORS

1. Pain is present from the beginning in all soft tumors, but only in those intramedullary tumors in which the tumor reaches the posterior roots or surface of the cord. Pain in intramedullary tumors is, therefore, usually a late phenomenon, or may not occur at all if posterior roots or the meninges are not affected.

2. In the vast majority of cases, the symptoms develop more rapidly in extramedullary soft tumors.

3. Tract sensory signs and symptoms are more intense and more widespread in intramedullary tumors.

4. Trophic changes are greater in intramedullary tumors.

5. Intramedullary tumors show less rectal and vesical signs.

6. Xanthochromia is rare in intramedullary tumors. It appears only when the tumor reaches the surface of the cord.

7. Deep spinal column tenderness indicates rather an extramedullary tumor.

REPORT OF CASES

In the brief space at our disposal, it was impossible to deal with all the details of our histories of cases of spinal cord tumors. It has been our object, therefore, to condense the records as far as possible, the histories of all our cases, giving only their salient features, their chronological succession of symptoms and signs. Other cases and further studies have been reserved for a later publication.

CASE 1.—H. R., man, aged 38, widower, salesman, admitted, Nov. 24, 1913, discharged, July 1, 1914 who presented a negative family history, and who had had gonorrhea several times, had noticed a tickling sensation over the right leg, three years prior to entrance and two months later, "soreness" over the right leg. At about the same time he noticed that while taking a bath the upper part of the body was more sensitive to heat than the lower. Four months later, his right knee became stiff and he experienced twitchings in the right leg. Two months later, the left knee became stiff. Still later, urination became frequent and there was difficulty in locomotion.

At this time the patient was admitted into a hospital, where he was carefully examined. The findings there in brief were: absence of both lower abdominal and cremasteric reflexes; a

spastic paraplegia with signs more marked on the right than on the left side; a broad belt of hyperesthesia between the seventh and the tenth dorsal segments, and a line hypalgesia down to the twelfth dorsal segment. Spinal cord tumor was diagnosed. The operation performed extended from the tenth to the twelfth dorsal lamina. No tumor was found at the site.

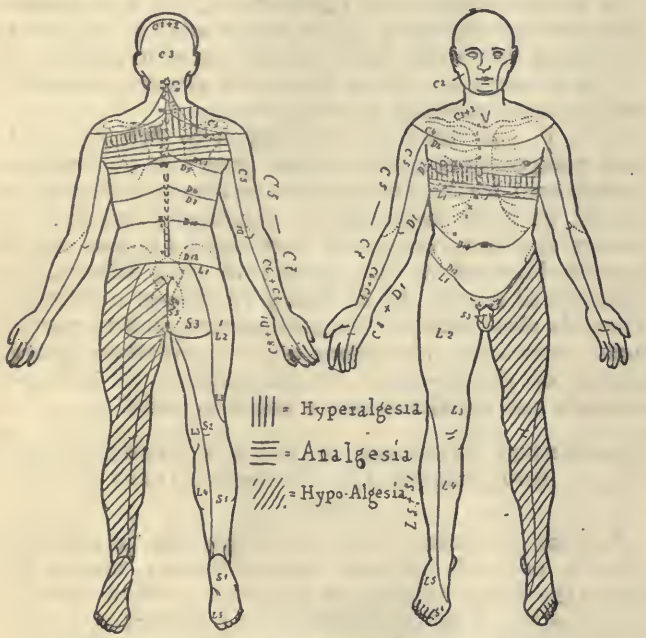


Chart 1.—Sensory disturbances in Case 1.

Nov. 24, 1913, the patient was admitted to the Montefiore Home with a diagnosis of syringomyelia. Here painstaking and careful examination revealed a level of hyperalgesia corresponding to the fourth dorsal segment on the left and to the fifth on the right. This was followed by an area of analgesia ending at the seventh dorsal; also distinct tract sensory changes confined to the left thigh. There were also inconstant sensory disturbances along the anterior surface of the thighs from below Poupart's ligaments. There was a marked spastic paraplegia, and the patient was confined to a chair. Impotence and urinary incontinence were present. There were some slight trophic changes over the skin of both feet. The upper extremities, as well as the cranial nerves, were normal.

While at the Montefiore Home, the patient developed a sense of painful constriction around the chest. Coughing and sneezing increased the pain. The sensory disturbances are indicated in Chart 1. A diagnosis of spinal cord tumor somewhere between the fourth and sixth dorsal segments, situated at the right side of the cord, was made. Under these circumstances, another laminectomy was advised.

Jan. 2, 1914, Dr. Elsberg performed the operation. Following is his report:

Laminectomy and removal of extramedullary tumor at the fifth cervical segment. Typical removal of spinous processes and laminae of sixth and seventh dorsal and first dorsal vertebrae. Incision of dura. Small amount of cerebrospinal fluid escaped. No evidence of a new growth. With a probe, a resistance was felt about 2 inches higher up. The fourth and fifth arches were therefore removed and the dural incision; lying on the posterior surface of the cord a little to the right was a small brownish-red tumor about the size of an almond. The growth was adherent to the inner surface of the dura by a few line adhesions; after the division of which, the tumor was lifted out of its bed and removed. Closure of dura, muscles, fascia and skin. Pathologic report of tumor: Psammoma.

July 1, 1914, the patient was discharged from the Montefiore Home practically well.

Case 2.—J. B., admitted, July 22, 1919, discharged, Nov. 13, 1919, whose family and personal histories were negative, felt sharp, needle-like pains in the three inner fingers of the left hand eight months prior to entrance to Montefiore Hospital. There was loss of dexterity in these fingers. Two months later there was paresthesia in the left hip and then in the left leg. Stiffness and numbness of the left leg interfered with walking. The pain in the fingers ceased with the appearance of stiffness in the left upper extremity all through the disease. The last symptom to develop was difficulty in starting the urinary stream.

Examination revealed: nystagmus to the right and upward; convergent strabismus in the right eye; angulation of both hands; wasting of the musculature of the left upper extremity, most marked in those muscles supplied by the ulnar nerve; brachialis anticus not affected; sagging of the left shoulder; von Grafe's sign of the left eye; the left pupil smaller than the right; reflex of upper extremities increased, left more than right; twitchings of the muscles of the left lower extremity; spasticity with ankle clonus of the left lower extremity; no Babinski reflex; xanthochromia with massive coagulation present.

Following the lumbar puncture, the level signs became more pronounced. The sensory disturbances are indicated in Chart 2. A diagnosis of a cervical cord tumor of the soft, giant variety was made. The highest level of the tumor was placed at the third cervical segment.

Sept. 18, 1919, Dr. Harold Neuhof performed the operation. Following is his report:

Typical laminectomy incision. Spines and arches of fourth, fifth and sixth cervical and subsequently third and seventh; dura opened between traction sutures. There extruded at once, with an escape of some fluid, the upper cystic pole of the tumor. Posterior roots could not be found, and for some time it was impossible to determine whether or not the tumor was an intramedullary one which had broken through, and finally by carefully lifting the cystic cap the extreme upper pole slipped out from under the area of the second cervical and immediately after the lower pole, and then the whole tumor slipped free. Its attachments were two left posterior roots (left). Tumor arose from pia-arachnoid. The cord was extensively flattened, more so on the left than on the right side.

Case 3.—F. G., a woman aged 20, who entered the Montefiore Home, April 18, 1919, and who is at present in the hospital, presented negative personal and family histories, and gave the following chronological record of her symptoms, which began ten months prior to entrance: (1) diplopia; (2) weakness of the left upper extremity; (3) sudden pain in the back of the neck, radiating into the back of the head;

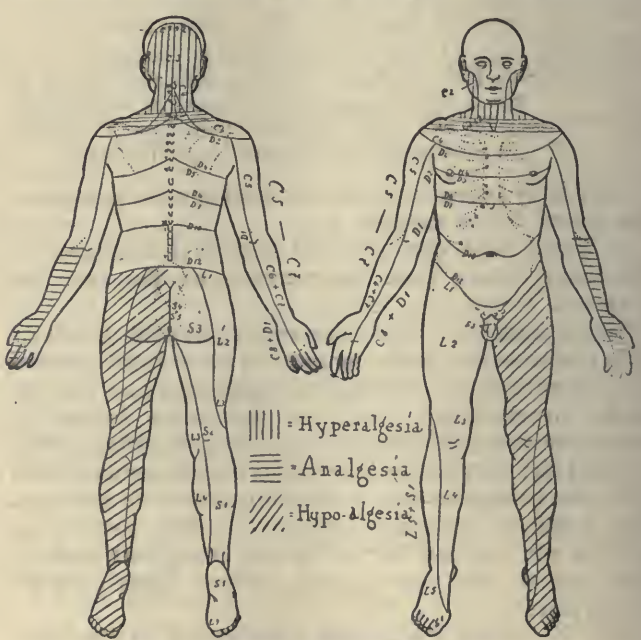


Chart 2.—Sensory disturbances in Case 2.

(4) evidence of thermesthesia over the left shoulder; (5) weakness of the right upper extremity; (6) weakness of the right lower extremity; (7) loss of bladder control, and (8) quadriplegia.

It took ten months for these symptoms to develop. April 20, the right pupil was larger than the left. There was nystagmus to the right. The third and fourth cervical vertebrae were prominent and tender. There was marked

atrophy of the entire musculature of both upper extremities, the left more than the right. There was reaction of degeneration in the intrinsic muscles of both hands. The hands were cold and cyanosed. The muscles of the back were weak. The abdominal reflexes were absent. There was spastic paraplegia with double Babinski reflex and double clonus. There was bladder incontinence. Marked trophic

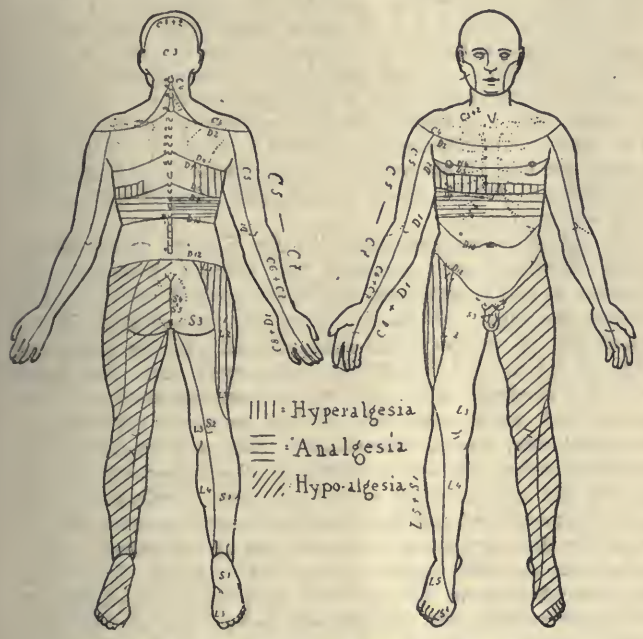


Chart 3.—Sensory disturbances in Case 5.

changes of the skin of both lower extremities had occurred. There was a decubitus ulcer over the sacrum. No disturbances of the thoracic and abdominal viscera were observed. Xanthochromia with massive coagulation was present. All the other laboratory examinations were negative. In view of the marked sensory and motor tract changes, as well as the rapidity of development of bilateral symptoms, a diagnosis of an intramedullary disturbance was made. Dr. Elsberg performed laminectomy of the third to the fifth cervical laminae. Evidence of diffuse intramedullary growth was presented.

CASE 4.—R. S., aged 22, single, no occupation, admitted Oct. 23, 1919, died Jan. 1, 1919, whose family history was negative and whose personal history showed some traumatism of an indefinite nature, dated the present illness four years prior to examination. There was a pain in the back radiating into both lower extremities. Three years later thermesthesia was evidenced by a painless burn. There was progressive weakness of both lower extremities, and paralysis of both lower extremities. There were bedsores and urinary incontinence. (The exact condition at this time is not known, as the patient was in a different hospital.) Operation was performed at a different hospital. The report of the operation was: Lower dorsal and lumbar cord distended by an intramedullary cyst which, on operation, showed yellow fluid.

On entrance to the Montefiore Home, the patient showed a complete paraplegia with loss of reflexes and loss of all sensation from the umbilicus downward. There was an enormous bedsore all over the buttocks, with profuse purulent discharge of a very bad odor. The patient died, January 1, from general sepsis.

CASE 5.—R. B., a woman, aged 37, married, admitted, May 12, 1916, left, Nov. 16, 1916 whose family and personal histories were negative, reported that the present illness began fifteen years prior with pain in the upper quadrant of the right abdomen. A diagnosis of gallstones was made, for which the patient was operated on without relief. Two years later an operation for appendicitis was performed, but no relief followed. She was next told that she had a femoral hernia and should be operated on. This time one of us was consulted. Evidence was found of level signs as well as motor tract interference affecting the right lower extremity. This disturbance, although not fully developed, yet showed evidence of a lateral tract involvement. The sensory disturbances are shown in Chart 3.

A diagnosis of an extramedullary spinal cord tumor on the right side of the cord and situated at the seventh dorsal segment was made.

Laminectomy for the removal of extramedullary tumors at the level of the seventh and eighth dorsal segments was performed at Mount Sinai Hospital, by Dr. Elsberg. Oct. 8, 1915. The arches of the fifth, sixth, seventh, eighth and ninth dorsal vertebrae were removed. The dura was incised. Considerable cerebrospinal fluid escaped. In front of the seventh and eighth dorsal roots on the right side were two small tumors connected by a fibrous band. Each tumor was the size of a hazelnut, and lay under but was not adherent to the posterior nerve root. The spinal cord was pushed backward to the left. The lower tumor was easily pulled out from underneath the eighth root, but the seventh dorsal root had to be divided before the upper tumor could be removed. The dura, muscles, fascia and skin were sutured. The tumors measured 1 by 1 cm. in size. The pathologic report was: fibroma.

Five months later the patient returned to the Montefiore Home with the history that for all this time she had felt comparatively free of all the symptoms. For the last week a complete spastic paraplegia developed with symptoms more marked on the right side than on the left. The sensory disturbances were more severe than before the operation; the level was higher than the site of the operation. Possibly another tumor higher up was developed. The patient refused another operation, and left the institution shortly afterward with the condition unchanged.

CASE 6.—G. W., a woman, aged 45, widow, admitted, Aug. 21, 1919, and at present still in the hospital, dated her illness from one year prior to her entrance to the Montefiore Home. The chronology of symptoms was: (1) pain in back of the right chest; (2) pain and burning sensation in the epigas-

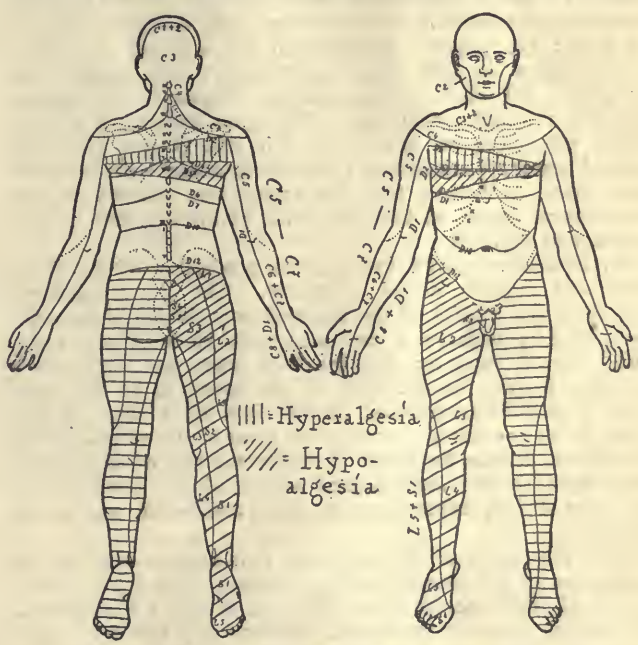


Chart 4.—Sensory disturbances in Case 6.

trium; (3) increase of pain by coughing and sneezing; (4) weakness of the right lower extremity; (5) disturbance of gait, and (6) difficulty in starting the urinary stream.

Examination revealed a spastic paraplegia with symptoms more marked on the right side. There was a right Babinski reflex, right ankle clonus, etc. Both abdominal and cremasteric reflexes were absent. Xanthochromia with massive coagulation was present.

Following the lumbar puncture, the Brown-Séquard syndrome became more pronounced, and the level signs more marked. The sensory disturbances are shown in Chart 4. A diagnosis was made of an extramedullary soft tumor situated on the right side of the cord with its highest level at the third dorsal segment.

Operation by Dr. Elsberg revealed an endothelioma on the right side of the cord between the third and fifth dorsal segments.

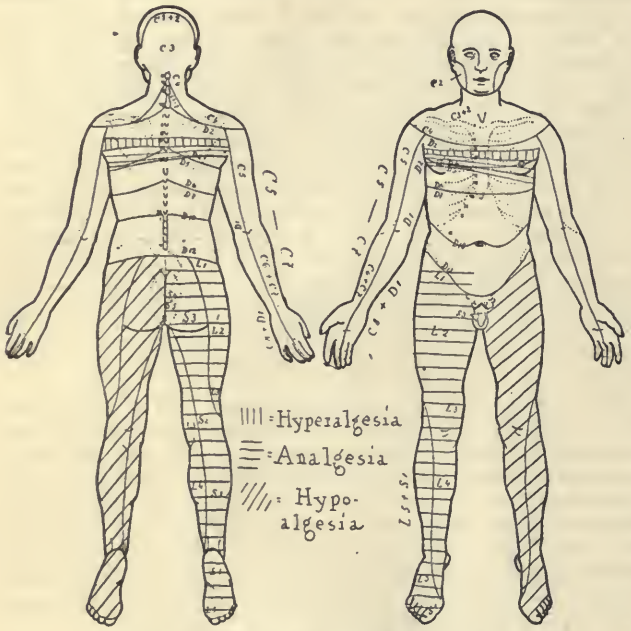


Chart 5.—Sensory disturbances in Case 7.

CASE 7.—G. G., aged 62, married, who was admitted, April 10, 1917, and died, Dec. 25, 1918, and whose family and personal histories were negative, gave this chronology of symptoms: (1) painful cramps in both legs; (2) severe burning pain along the right lower extremity; (3) dragging pain in the back; (4) tingling sensation in the soles of the feet; (5) weakness in both lower extremities; (6) inability to walk, and (7) bladder incontinence. Physical examination revealed a spastic paraplegia with signs, such as Babinski, clonus, etc., more marked on the left side (Chart 5). The marked sensory disturbances referable to dorsal tract involvement made us believe that the tumor was situated at the anterolateral aspect of the cord, with its highest level at the fifth dorsal vertebra.

Dr. Elsberg removed the spinous processes of the fifth, sixth and seventh dorsal vertebrae. The dura appeared whitish in the middle of the exposed part, bluish above and below, and by palpation a hard area could be felt through the dura. It was supposed that the hard mass was the tumor; but after incision of the dura, it was found to be the cord itself pushed backward and to the right by a small tumor which lay on the left side and on the front of the cord anterior to a slip of dentate ligament. A tumor the size of an almond was found on the anterolateral aspect of the cord, which was very slightly adherent to the dura and which was easily removed.

From the report of the operation, it is easy to explain the occurrence of the dorsal tract symptoms. Pathologic examination of the tumor demonstrated that it was a fibrolipoma. The patient made an uneventful recovery and was free from symptoms for about a year. At the end of two years the patient returned with these symptoms: (1) severe pains in both legs; (2) weakness of the lower extremities; (3) inability to walk; (4) severe girdle pains, and (5) urinary incontinence. There was complete spastic paraplegia with large decubitus ulcers. Gangrene of both lower extremities soon set in, and was followed by death from general sepsis. No necropsy was performed.

CASE 8.—L. B., a man, aged 24, single, tailor, admitted, June 15, 1915, discharged, May 1, 1919, much improved—practically well—whose family and personal histories were negative, had been ill fifteen months. The illness began with pain in the right shoulder radiating into the neck and right upper extremity. There were cramps in the right upper extremities, and pain in the left upper extremity. Paralysis of the right upper extremity was followed by paralysis of the left upper extremity. There was gradual paralysis of both lower extremities, preceded by retention of urine. Twitchings occurred in both lower extremities. Roentgenoscopy revealed a moderate degree of arthritis of the third, fourth and fifth cervical vertebrae. Physical examination revealed spastic paraplegia with symptoms more marked on the right side and flaccid paralysis of the upper extremities. The sensory disturbances are shown in Chart 6. After prolonged and careful observation at the Mount Sinai Hospital, a diagnosis of cervical spinal cord tumor situated high in the cord was made.

An operation was performed by Dr. Elsberg at the Mount Sinai Hospital, who removed the spinous processes and laminae of the fourth, fifth and sixth cervical vertebrae, and incised the dura. When the dural sac was opened, it was noted that no cerebrospinal fluid escaped. In the uppermost part of the wound, inside the dura, was seen the lower end of a neoplasm which lay on the posterior surface of the cord a little to the right side. Below the tumor especially on the right side, the pia covering the cord was thickened and reddish-brown. In order to expose the upper end of the growth the arches of the second and third cervical vertebrae were removed and the dural incision extended upward; but even this did not expose the upper end of the growth, which must have extended up to the foramen magnum. The tumor was not adherent to the pia. The lower end was raised, and by gentle traction the growth was pulled out of the spinal column and removed. From the length of the tumor, it had evidently extended up into the foramen magnum. The exposed cord was much flattened. The pathologic report was spindle cell sarcoma.

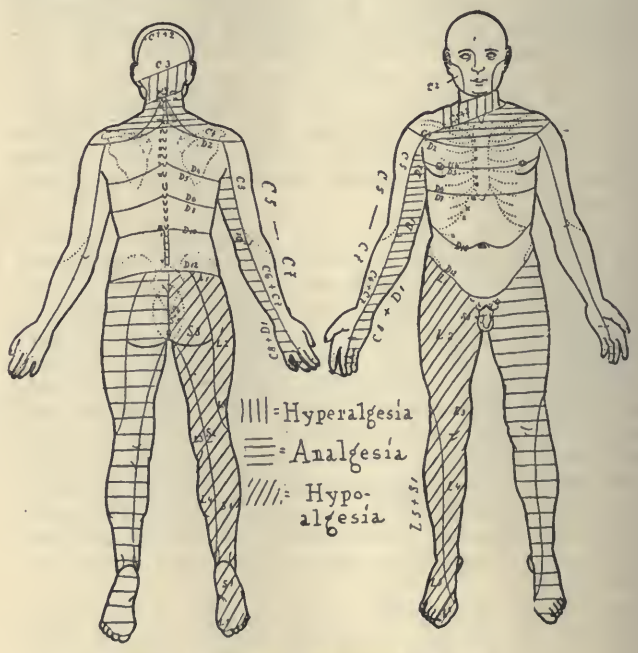


Chart 6.—Sensory disturbances in Case 8.

CASE 9.—E. G., a woman, aged 52, married, who entered, March 31, 1913, and died, June 6, 1914, and whose family and personal histories were negative, dated her present illness thirteen months prior to entrance. It began with severe bitemporal headaches. Eight months later there was weakness in the right arm. Ten months later there was weakness of the lower right extremity. Twelve months later there was weakness in the left upper extremity. There followed severe precordial pains, fainting spells, distention and swelling of the right lower extremity, and urinary incontinence.

The heart was enlarged to the left. There was right ankle clonus. The left plantar reflex consisted of an extension of the four outer toes, and flexion of the great toe. There was flaccid paralysis of the right upper extremity. There was no reaction of degeneration. The left upper extremity was weak, but not to such an extent as the right. There was marked hypertonia in the right lower extremity, with Babinski reflex. There were trophic changes of the skin in both lower extremities. The sensory changes are shown in Chart 7. A diagnosis of an intramedullary cervical tumor was made. Owing to the marked cardiac trouble, exploratory operative procedure was not undertaken.

At the necropsy, the brain and coverings were found to be negative.

Spinal Cord: The cervical cord was enlarged throughout its entire length to about twice its normal thickness, the enlargement being caused by the growth which occupied the posterior half of the cord and replaced the commissures, central canal part of the anterior horns, and the posterior horns and columns, more so toward the right side. The growth was grayish, soft and well defined from the surrounding structures, and there was no evidence of cavity formation. The growth extended throughout the entire cervical cord, but was more centrally located in the segments.

Histology: The mass of what corresponded to the new growth seen microscopically was merely broken down material and was structureless. Peripherally, especially posteriorly, a narrow strip was found containing peculiar darkly staining cells of varying sizes and shapes showing mitoses and frequently arranged in columns. Here and there were giant multinuclear cells. The pia was much thickened posteriorly and laterally, and the cells described also were found in the pia, which was intimately connected with the cord. The blood vessels were much sclerosed, and many ganglion cells of the anterior horns showed various stages of degeneration.

The diagnosis was gliosarcoma.

SIGNS POINTING TO SITE OF TUMOR

From our study of spinal cord tumors, we could deduce the following signs as a guide for the establishment of the actual site of the tumor:

1. *Valuable Signs.*—(*a*) Root signs; which consist of neuralgic pains with symptoms pointing to a distal distribution of an affected nerve.

(*b*) Zones of hyperesthesia immediately above the seat of the tumor and more marked at the homolateral site.

(*c*) Level abolition of skin and tendon reflexes.

(*d*) Deep spinal tenderness.

(*e*) Alteration in vibratory sense.

(*f*) No sweating below the level after injection.

(*g*) Ocular symptoms, such as lateral nystagmus and difference in the pupillary size as well as the palpebral fissure, which may all be present in high cervical tumors.

2. *Less Reliable.*—(*a*) Homolateral paralysis.

(*b*) Heterolateral distribution of pain and temperature sense, which reach their highest level only after considerable cord compression, late in the disease.

(*c*) This sensory loss, when complete, is usually three segments below the actual level of the tumor.

Greatest attention in tumors of the cord must be given to the area that marks the transition between the normal and the pathologic; this area merits a most careful study, as the nature and extent of the tumor can frequently be determined.

What has taken place below the level of the lesion where the compression is at all marked can only be surmised in the rarest of cases. In one case of multiple tumors of the cord, two affecting successive roots could by post facto study have been determined. These were two successive root zones involved according to the history of the case. As to the occurrence of xanthochromia, we have nothing to add to what has already been said. In our experience, the Froin reaction was of great diagnostic value, indicating interference with the free circulation of the cerebrospinal fluid.

As to the results of the operation: In two cases, the tumors recurred; in one case, multiple fibromas after five months of comparative well being; in the other

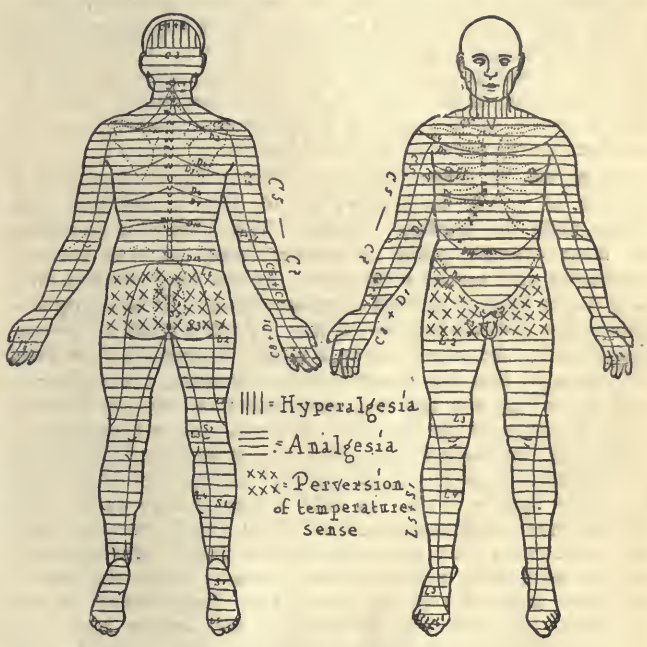


Chart 7.—Sensory disturbances in Case 9.

case, a fibrolipoma after two years of comparative well being. In only one case, the intramedullary cyst, do we believe that the condition was possibly aggravated by the operation. In other cases, gratifying results were obtained. Of course, the best results were obtained in the soft tumors. In one case, the patient was up and about three weeks after operation, and within four months was able to return to work.

CONCLUSIONS

1. Progressive spinal cord diseases giving level signs and symptoms should be carefully observed and studied.

2. When no distinct level can be established, the effect of lumbar puncture should be carefully watched.

3. Xanthochromia of the spinal fluid in level spinal cord progressive affections usually means spinal cord tumors.

4. One should operate only when a level has been established. Probing above and below the suspected site, while useful in many cases, often fails.

5. Operations, frequently by their decompressive effects, help even in intramedullary tumors.

6. The possibility of a soft tumor in atypical level cord lesions must be borne in mind, as these are most frequently overlooked.

ABSTRACT OF DISCUSSION

DR. JULIUS GRINKER, Chicago: Dr. Climenko has fallen into the error of giving us only classical descriptions, though I am sure he must have had cases that did not comply with the classical types and their differentiation into the so-called extramyeline and intramyeline symptom complexes. I have seen cases of extramyeline tumor without pain, and I am sure every one has at least, not early, when we expect neuralgiform

pains. On the other hand, I have seen cases of intramedullary tumor in which there was pain. I am somewhat disappointed that Dr. Climenko did not tell us something about the syndrome of circumscribed serous meningitis. Circumscribed collections of serum in the soft membrane are capable of giving symptoms of spinal cord tumor, but there is a differential point in these cases worthy of emphasis, and that is, that the level of anesthesia is apt to vary from time to time. Dr. Climenko emphasized the point that after operation for spinal cord tumor we must not expect immediate results; a year may elapse before the first signs of improvement are noted. Whenever you have the feeling that your case is not one of multiple sclerosis, nor syphilis, advise an exploratory operation at the level of anesthesia, because if you only find a tumor in one out of a hundred suspected cases it has been worth while to do the operation.

DR. ALFRED W. ADSON, Rochester, Minn.: I have seen quite a number of spinal cord tumors, and have found that one rarely finds the textbook picture. The history is probably the most valuable point in differentiating between chronic meningitis and serous meningitis. Spinal cord disease may have had a long or a short symptomatology. It has progressive motor disturbance, which may be more marked on one side than on the other, but it is slowly progressive. A man will discover that his sensations are changing, his ability to walk is getting less and less, and sooner or later, unless the cause is removed, he becomes helpless. Serous meningitis is the most confusing of all spinal cord lesions to differentiate from tumor. If in doubt, do an exploratory operation. But you must have a level. In 1917 I had sixteen cases with thirteen tumors demonstrated of which eight were removed, and three cases were serous meningitis due to arachnoiditis. As far as results are concerned, usually after the tumor has been removed one very soon sees improvement in the condition, provided the duration of the tumor has been short. Patients with a history covering a year or less usually recover completely, provided the tumor has been removed intact. But when complete paralysis has existed for more than one year much improvement cannot be expected.

DR. ANDREW L. SKOOG, Kansas City, Mo.: I have never been able to differentiate the soft from the hard types of tumors. I doubt whether this can be done very often. The consistency of the tumor does not matter anyway, but it does matter whether it is a malignant tumor, and especially an intramedullary tumor, or a nonmalignant tumor. Most of the malignant tumors involving the medullary substance are inoperable from the standpoint of cure but the patient may be benefited. The extramedullary tumors should have a very high recovery rate. In view of the fact that we cannot always distinguish between intramedullary and extramedullary tumors, and malignant and nonmalignant tumors, it is necessary to operate in all these cases, and it is important to have a level. Undoubtedly a number of operations have been performed at too low a level. Sir William Gowers said: "When in doubt go even one or two levels higher." I have noticed xanthochromia in a number of cases of spinal cord tumors. It is an important part of the spinal cord tumor syndrome. However, xanthochromia can occur in other diseases.

DR. KARL A. MENNINGER, Topeka, Kan.: What changes were observed in the colloidal gold chlorid curves in spinal cord tumor?

DR. M. A. BLISS, St. Louis: The marked variability of symptoms in the solid tumors would lead one to believe that after a time the cord acquires a tolerance that enables it to resume its conductivity even in the case of a solid growth. We have demonstrated this more than once. Serous meningitis may involve a considerable length of the cord, therefore you may have a fairly well established level and evacuate a considerable accumulation of fluid, and then, even with a marked degree of recovery almost immediately after that evacuation, the condition recurs. Then, again, it may be associated with tumors in other places in the cord.

DR. GEORGE A. MOLEEN, Denver: Was your case one of psammoma or was it a case of multiple tumor which probably developed from a process originating in the pineal body from which such tumors nearly always orignate and with which they are closely associated?

DR. TOM A. WILLIAMS, Washington, D. C.: The diagnosis is usually very easy, but we try to avoid waiting until there is a well established syndrome. Early diagnosis in cases of extramedullary growth is based largely on root signs. Root signs depend to a great degree on the stem localization and on a very delicate examination of the sensibility, which can be confused very easily with the signs noted in the rather rare cases of gliosis leading to syringomyelia in the posterior root zone. The hypalgesia and the hypothermy in the arms noted by Dr. Climenko must be dependent on group symptoms alone because the thermal conductivity crosses the cord only from six to eight segments above its entry to the root, and an interruption of thermal conductivity, therefore, denotes a growth six to eight segments above the region where it seems to be interrupted, unless the growth is on one side interrupting only the thermal conductivity fibers, in which case there are certain to be other symptoms referable to that lateral column of the spinal cord. The difficulty of diagnosing the early case is very great. The cases we have seen are all late cases, and the difficulties presented are those arising from differential diagnosis between a tumor and serous meningitis. Severe mental symptoms are quite uncommon as the result merely of stasis in the spinal fluid. In a protracted case with spinal cord symptoms and delirium, we should think of serous meningitis. Improvement in these cases is an important point to consider. I would like to know why these improvements occur. We have all seen remarkable improvement in cases of trauma in which the functions were completely suspended and actual injury of the cord producing Brown-Séquard syndrome has occurred, recovery taking place after several months. So we must seek more satisfactory solution of the question.

DR. HYMAN CLIMENKO, New York: Dr. Grinker referred to spinal cord tumors in which pain is absent. We had no case without pain, therefore the point was not mentioned. The most difficult part of the examination is establishing a level, particularly when with a neurotic patient, and people of low intellectuality who cannot distinguish between hyperalgesia and hyperanalgesia; people who scream when suffering pain and keep on screaming when you get to an analgesic area. Therefore, you do not know whether you have passed a hyperanalgesic area or an area of normal sensibility. The establishment of a level is also difficult in tumors of the soft variety and in multiple sclerosis. But there is a differentiation between the two. The level of multiple sclerosis never remains permanent for any length of time. There is also a change of level in the soft tumor, but the change is not as marked as it might be in the other condition. As to the length of time necessary for recovery after operation: In our cases the time varied from four months to six years. In one case of the soft tumor variety, the patient was out of bed and comfortable within three weeks after the operation. Another point which should be emphasized is that pain after operation is usually greater than pain before operation. Of course we attempted to exclude syphilis, in all cases, but syphilis and spinal cord tumors may coexist. When there is a persistent level and there is no improvement in symptoms after specific treatment, operate in spite of the positive Wassermann. I agree with Dr. Adson that the history is very important. You do not always get a classical level or a classical picture, but it is the history of a slow and constant progression of symptoms that helps to make the diagnosis. As to distinguishing between the soft and hard tumors, so far as the results of operation are concerned it is not of much importance, but in diagnosis it is of great importance. It was the soft type that always gave us trouble in attempting to differentiate these cases from other spinal cord disease. We did not employ the colloidal gold test. The psammona patient has been entirely well since 1913. I do not believe the pineal gland was involved. From first reported the existence of xanthrochromia, not in connection with spinal cord tumors, but as related to inflammatory disease. I spoke of xanthrochromia as an important symptom in diagnosis, for whenever xanthrochromia coexists with a slowly progressive lesion of the spinal cord, a tumor should be suspected.

IPECAC SENSITIZATION AND BRONCHIAL ASTHMA

REPORT OF CASE

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NEW YORK

This case will be of interest on account of the unusually rare type of protein hypersensitization causing anaphylactic bronchial spasm. It also emphasizes the importance of careful history taking, with the view of searching for a possible clue in the etiology of the existing bronchial asthma.

REPORT OF CASE

J. M., a white man, aged 29, pharmacist for the last six years, referred by Dr. Robert Kahn, New York, twelve years before contracted an acute bronchitis, which persisted throughout the winter and early spring. With the return of the cold weather each year, he would be again subjected to the bronchitic symptoms of previous winters, consisting of occasional wheezing, dry cough and slight dyspnea, with intervals of relief from one to seven days. In the fall of 1919, bronchitis set in as usual. In December, the patient first complained of much running of the nose, followed by an irritating and distressing dry cough, and respiratory oppression. Soon after, he experienced for the first time a typical bronchial spasm. These symptoms would come on when he was working in the drug store, and especially when compounding powders. Past and family histories were negative.

Previous to coming under my observation, several nose and throat and general physical examinations were conducted by various specialists, who found him to be of excellent physique, and were unable to account for his present symptoms. Several roentgen-ray examinations of the nasal accessory sinuses revealed a rudimentary right frontal sinus. The sella turcica was normal. The nasal drippings plated shortly after their collection showed diphtheroid and Friedländer bacilli, the former predominating. Skin tests performed with the many drugs in powder form commonly employed during the recent influenza epidemic were negative, except pulvis ipecacuanhae et opii (Dover's powder), which gave positive reaction; the wheal measured 1 cm., and was surrounded by an intense erythema of 3 cm. diameter. Powdered opium, ipecac, and lactose—the constituents of Dover's powder—were then tried, giving a positive reaction only to ipecac, presenting a wheal of 1.5 cm. with an intense erythema of 3.5 cm. and reacting to a 1:100,000 dilution. Powdered ipecac was administered internally without any ill effects referable to the respiratory system. Inhalation, however, resulted in the immediate return of the usual nasal symptoms and respiratory oppression, ending in bronchial spasm.

I employed cutaneous tests against eighty-seven food, bacterial and epidermal proteins, obtaining positive reactions to cucumber, peas, tomatoes, chestnuts, grapefruit, herring and goose. A positive reaction constitutes a definite wheal with distinctly raised edges measuring not less than 0.5 cm. and appearing within a half hour. Sweet potatoes, beans, lima beans and strawberries gave doubtful reactions, being less than 0.5 cm. wheal and larger than the controls. The patient infrequently indulged in these types of food, and when doing so did not observe any untoward effects. A strict diet, excluding the foods giving positive and doubtful skin reactions was maintained for seven weeks without any improvement on the symptoms; during this period he pursued his usual vocation. These foods were therefore not considered as contributory etiologic factors to the existing asthma, but as sensitizations to be well borne in mind as possible sources of future trouble. Several weeks prior to going abroad, June 5, he gave up his occupation and complained only of his usual bronchitic symptoms.

COMMENT

1. We have a true anaphylactic bronchial asthma due to inhalation of powdered ipecac, engrafted on a recurrent seasonal bronchitis.

2. There were seven types of food with which there were positive cutaneous reactions having no bearing on the existing complaint.

3. This case demonstrates the importance of making inquiry into the occupation of asthmatics.

1864 Seventh Avenue.

LESSONS TAUGHT BY MEASURES FOR CONTROL OF VENEREAL DISEASES

SUGGESTIONS FOR THE FUTURE *

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Passed Assistant Surgeon
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A little more than two years ago, the Public Health Service actively entered on a program of cooperating with state boards of health to control the spread of venereal diseases, an important phase of public health work. Many papers by various health officers have discussed the measures now actually in operation in forty-seven states cooperating with the Public Health Service in this work, and therefore no attempt will be made to outline again the methods.

After trying to prevent the spread of gonorrhea and syphilis according to a prearranged plan, many lessons have been learned from experience, and as a result of this experience suggestions for the future have been impressed on those responsible for the inauguration and continuation of venereal disease control measures.

From a study of the work during the last two years, certain lessons may be briefly stated. Each of these separate lessons, however, includes many subdivisions, and the principal ones will be mentioned for the purpose of inviting consideration, comment and criticism.

1. It is absolutely essential that a three-phase program be carried on for the successful control of venereal diseases. The three phases of the work are: medical, legal and educational.

2. More attention must be paid to *preventing* infection.

3. There must be devised and inaugurated a comprehensive, constructive, practical plan for sex education so that the method can be applied in schools, beginning in the early grades and continuing through high school and college.

In discussing the details of these statements it is impossible to separate the discussion of the various phases of the work into clearly defined classifications, as each of the topics mentioned is intimately related to the general problem.

MEDICAL MEASURES

Every phase of public health work is primarily a medical question; but to carry out any plan for increasing health efficiency, much work of a nonmedical character must be done. In the case of venereal diseases we are dealing with a group of dangerous, communicable diseases, the causative organisms of which are known. The method of spread is well defined; and for syphilis, treatment is practically specific medica-

* Read before the Section on Preventive Medicine and Public Health at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

tion. Therefore, if it were possible to bring every infected person promptly under efficient treatment, continued until patients were cured, it would be possible entirely to eliminate these diseases in the course of a comparatively brief period. It is obvious, however, that such an accomplishment is impossible, and therefore the prevention of venereal disease must necessarily include measures other than medical.

LEGAL MEASURES

At the present time legal measures are of paramount importance. The term "legal measures" is used in a very comprehensive way, and includes many phases of the work now being undertaken by the Public Health Service and state boards of health for venereal disease control. Legal measures are of two separate types: legislative and administrative. The state legislatures and city councils should be asked to make appropriations for venereal disease control work; to declare it unlawful for infected persons to expose others to infection; to require the reporting of venereal diseases by physicians and others to the state health authorities; to require physicians to give venereal disease patients printed instructions setting forth proper procedure to avoid the spread of infection, and to prohibit the advertisement and sale of nostrums for the self-treatment of venereal diseases. The passage of such laws is only the first step in the program. The administration of the law, requiring that laws be observed, is the work that accomplishes results.

Almost all states now have some of these laws, but the enforcement of the laws is not usually carried on in an energetic manner. Much could be accomplished toward obtaining an accurate knowledge of the number of persons infected with venereal diseases and of the precautions that are being taken to prevent the spread of infection if the law requiring the reporting of venereal diseases was energetically enforced.

Many states are making an earnest effort to secure complete reports from physicians treating venereal diseases, while great laxity exists in other communities. This laxity and the indifference assumed by many physicians is a matter of much concern to health officers interested in preventing the spread of venereal diseases. If the state board of health has knowledge of the venereal disease rates, it becomes possible to interest officials responsible for appropriations by making known the actual facts. Reporting venereal diseases has not caused the objections predicted by opponents of laws requiring reporting. There is no evidence to show that infected persons neglect treatment because a report of their case is required. Reporting provides a stimulus for the patient to continue under treatment until danger of infection is over. Another useful result of reporting has been that in many instances the sources of infection become known; and by proper action such sources can be prevented from further spreading disease, and infected persons thus discovered can be required to undergo proper care and treatment.

Laws in regard to the control of conditions that favor the spread of venereal disease are essential and, as in the case of the law requiring the reporting of venereal diseases, the enforcement of the law is of vastly more importance than its passage.

This phase of venereal disease control work is the one that usually provokes much discussion, for the reason that many believe that to suppress conditions favorable to the spread of venereal diseases is a moral, economic and social problem rather than a problem for the health officer. A health official, however, must adopt measures to eliminate potential foci of disease. No progress would have been made in the control of yellow fever and malaria if the efforts of sanitarians had been limited to isolating and treating infected persons. When the breeding places of the carriers of these diseases were destroyed, control measures were successful.

This comparison is promptly answered with the statement that insect carriers of disease transmit malaria and yellow fever, but that only the human host spreads venereal disease. Correcting the environment of the human foci of venereal disease spread is avoiding disease at its source. It is not necessary to destroy the carriers of venereal disease; but they certainly should be kept under observation and their conduct regulated. All precautionary measures must fail unless adequate control regulations are consistently enforced.

Early in the development of routine venereal disease control work, practically all officials agreed that health officers had a definite responsibility for setting in motion the usual legal procedure of the state to suppress conditions that favor the spread of venereal infections. In the "Suggestions for State Board of Health Regulations for the Prevention of Venereal Diseases," issued March 29, 1918, Rule 8 reads as follows:

> Prostitution to be repressed.—Prostitution is hereby declared to be a prolific source of syphilis, gonorrhea and chancroid, and the repression of prostitution is declared to be a *public health measure.* All local and state health officers should, therefore, cooperate with the proper officials whose duty it is to enforce laws directed against prostitution, and otherwise to use every proper means for the repression of prostitution.

Repression of prostitution was thereby recognized primarily as a *public health measure,* and not as a social and moral problem in which the health officer had only an academic interest.

The legal program for venereal disease control must, however, give equal treatment to the two sexes. Laws enforced to control only infected females justly cause opposition if the male carrier of venereal disease is entirely neglected. It is not impossible to require that all infected persons conduct themselves so as to lessen the danger of the spread of their infection to others. This can often be accomplished by the physician in charge of cases explaining the necessity for care and requiring that certain precautions be observed. For this method of control to become effective, the indifference of many physicians must be overcome. Every physician has a very definite civic duty to perform in addition to his professional duty toward a patient infected with a dangerous communicable disease. No physician has met his responsibilities for the protection of the public health when he dismisses with a prescription a patient suffering with gonorrhea or syphilis. He must insist that such patients report frequently for continued observation and treatment. Unless he makes some effort to see that precautions are being observed to prevent others from acquiring the infection, he has failed to meet his responsibility as a citizen.

In fact, physicians should regard venereal disease control regulations as a special opportunity for the promotion of preventive medicine. Without these

regulations the conscientious physician is helpless when he knows that one of his patients is spreading venereal disease. He can only warn the patient that indulging in sex relations will delay successful treatment. He has no authority to direct the infected person to conduct himself so as not to menace his associates. Under existing laws in almost all states it is now possible for a physician to compel his patient to remain under treatment and to refrain from exposing others to infection, by citing the authority of the state board of health to isolate or quarantine infected persons who do not observe precautions to prevent the spread of their infection to others.

More attention must also be given to the control of travel of venereal disease patients. There is ample legal authority for this procedure, it being specifically stated in the Chamberlain-Kahn bill that one of the duties of the Division of Venereal Diseases of the Public Health Service was "to control and prevent the spread of these diseases in interstate traffic."

To carry out this duty the secretary of the treasury promulgated Amendment 7 to the interstate quarantine regulations, prohibiting the travel of persons infected with venereal diseases, except under certain restrictions that are described. Moreover, the state boards of health in forty-seven states have specifically agreed that "the travel of venereally infected persons within the state is to be controlled by state boards of health by definite regulations that will conform in general to the interstate regulations." Enforcement of the interstate and intrastate requirements for travel of infective patients will lessen the dangers of spread of gonorrhea and syphilis.

Interest in these phases of the work—reporting, control of cases, and regulating travel—will develop more effective measures for *preventing* the spread of venereal infections.

There is another part of the present program that requires much thought, definite agreement and appropriate action, and that is the treatment of prostitutes. In many cities it has been customary to apprehend women guilty of commercialized sex offenses, and punish them with a small fine or warn them to leave the city. Women so treated almost invariably return to their former avocation and continue to be sources from which venereal infections are acquired.

The remedy for this condition is to apply mental hygiene measures. All psychiatrists that have made studies of groups of prostitutes have shown by their reports that a very high percentage of such women are feebleminded or of abnormal mentality. If women practicing frequent promiscuous sex relations and spreading venereal infections are usually mentally deficient, might we not find that men who habitually and frequently indulge in sex relations, acquire venereal infections and spread the infection to others through careless and criminal negligence are also below par mentally? Male carriers of venereal infections should not be relieved of the acute symptoms and permitted to resume relations which tend to create additional foci of venereal infections just because they are men and not women. Mentally deficient men and women infected with venereal diseases should be committed to institutional care, and their physical rehabilitation accomplished. If their mental condition is such that they cannot safely be returned to society, they should be kept under supervision. The objection made to this procedure is that large appropriations would be required to provide for the care, treatment and rehabilitation of infected persons that are exposing others to infection. The amount it would cost to provide such institutional care is very much less than the loss now caused by venereal disease spread through neglecting the responsibility of caring for such persons.

EDUCATIONAL MEASURES

The educational measures contemplated by the present program are intended to reduce the problem in the future. It is illogical to continue indefinitely giving information to adults which will enable them to avoid infections, when the same result can best be accomplished by training children to live by rules of conduct that are designed to increase physical fitness and to enable them later on to control their exposure to infection.

The need for a well planned, constructive method of giving sex education is obvious to all who have given consideration to this subject. To discuss the question of sex education for children usually invites criticism; but the only way this question can be clarified is by discussion and the forming of definite conclusions.

There is a growing realization of the necessity for deciding on a plan that can be safely followed in the schools, whereby the next generation will be better prepared to meet the problems of sex relations than have adults of this age. The former policy of omission of all reference to reproduction of the species has proved to be fallacious and vicious. Parents should realize that they have not the choice of whether or not their children shall receive knowledge of sexual matters, but have only the choice of whether this knowledge shall come through proper channels or whether it shall be gained surreptitiously through information, often demoralizing, proffered by companions.

This question has been given a great deal of thought by educators, and it is believed that the consensus at present is that sex education should begin early and that the child should be led gradually through facts of reproduction in lower forms of life to an understanding of reproduction in human beings. Then would naturally follow instruction in regard to the nature of venereal diseases and methods of avoiding exposure to these dangerous communicable diseases.

Sex instruction in schools should never be given as a separate series of lectures or courses, but should be made a part of other studies. Sex knowledge should be part of physiology, biology, physical education, sociology, domestic sciences, even of history and literature, so that children will acquire the right attitude toward sex problems in an unconscious manner. There is certainly no short cut to knowledge in this field, and more harm than good will result from talks on sex matters given by poorly equipped teachers or lecturers as a special feature of class work.

It should be possible and practicable to devise a method of sex instruction whereby the ideas of the most advanced psychologists and educators could be presented by means of motion pictures. This visual method approaches as nearly as possible the natural way in which a child absorbs knowledge, and removes largely the difficult question of the qualification of a teacher. Material for the films for this purpose should, of course, be very carefully selected by a group of psychologists, educators, physicians and parents; and the entire series of films dealing with this subject should be reduced to scenario form and approved by authorities in the field of medicine and education before the preparation of the series is commenced.

This of necessity will take much time, and is not a part of the program that should be rushed to an unhappy result. The series should form a sequence of instruction from the time the child enters kindergarten until he leaves high school. Subsequent instruction in colleges and universities may be given by lectures and conferences, and after leaving college the educational facilities of the various state bureaus of venereal disease would be available to meet arising needs.

SUGGESTIONS FOR THE FUTURE

1. Closer cooperation should be developed between the state boards of health and the Public Health Service, and between state boards of health and local health officers to encourage a uniform method of venereal disease control throughout the United States. It adds much to the effectiveness of any public health work to adopt and put into practice a uniform procedure. Uniformity impresses the fact on those that come into contact with the work that definite knowledge is possessed by health authorities.

2. Health authorities should recognize the important part unofficial agencies may take in venereal disease control work if the activities of voluntary organizations are properly supervised.

The moral, social and economic phases of venereal disease control work can be materially advanced by organizations and citizens interested in these particular problems. The results so secured will reduce the burden of the control of venereal diseases now largely borne by health officials. This was the thought that prompted the inclusion in the agreement with state boards of health that they would "exert their efforts and influence for the organization of a state venereal disease committee that will be unofficial in character but a valuable cooperative agency for furthering the comprehensive plan for nation-wide venereal disease control." This plan has been utilized to some extent by certain state boards, but the full possibilities of these agencies have not been developed. Thought given to this particular question, followed by action, will greatly advance venereal disease control.

3. Progress will be materially advanced when the medical profession takes more interest in control of venereal diseases than it does at the present time. Members of the medical profession should naturally assume leadership in all plans for promoting public health, and there certainly is urgent need for every physician to renew and maintain his interest in all phases of the present program for venereal disease control. Every medical college should provide better facilities for preparing future physicians to have a greater knowledge of the venereal diseases. Instruction given in medical colleges should not be confined to clinical medicine, diagnosis and treatment, but should include instruction in sociological and psychologic conditions affecting the spread of venereal disease.

4. There is need for a wider development of follow-up work in connection with treating persons infected with venereal diseases. Follow-up staffs should be a part of the personnel of every venereal disease clinic, and of the office of every venereal disease specialist. The duties of such a staff are to keep track of patients needing further treatment; to determine sources of infection; to see that precautions to prevent the spread of infections are being observed by patients; to discover other cases among the associates and members of the family of infected persons, and to carry on sociological and psychologic observations that will be of value in limiting the further spread of venereal infections.

5. The question of equal treatment of both male and female infected persons must be placed on a scientific and equitable basis. Nothing can be gained by a controversy as to whether or not infected women are a greater menace to the community than are infected men. *All* persons of either sex infected with either gonorrhea or syphilis are a very definite menace to the health of the community in which they reside; and unless infected individuals can be depended on to observe precautions to prevent the spread of their infection to others, they should be placed under either modified or absolute quarantine restrictions.

This does not mean that every young man who has gonorrhea must be withdrawn from employment and sent to a hospital for treatment; but it does mean that the physician in charge of every venereal disease case should impress on his patient the absolute necessity of following certain rules of conduct which will render it unlikely that the infection will spread to others. If proper precautions are then not observed, the careless or criminal individual should be promptly reported by name to the state board of health. It then becomes the duty of the state health department to provide facilities for controlling such cases.

6. Careful and thoughtful consideration must be given by physicians, teachers, psychologists and intelligent parents to the question of deciding on the material to be used and the methods of applying instruction to questions of sex and venereal disease prevention.

CONCLUSION

There is no phase of public health work which is attended by greater difficulties and which presents so many various phases for consideration as does the problem of venereal disease control. Every one who has had actual experience in carrying on any part of the program has been greatly impressed with the tremendous scope and possibilities of the work and deeply realizes the necessity for not only continuing, but for greatly expanding the present plan of action.

It can be stated without qualification or doubt that the great mass of intelligent citizens of the United States are deeply interested in this problem and will give their unqualified support to health officers, physicians and others attempting to meet their responsibilities for preventing the spread of venereal diseases.

Varieties of Syphilis.—Recent observations have raised the question whether there are not at least two kinds of spirochete responsible for syphilitic manifestations. These may be roughly divided into a dermotropic and a neurotropic group. In the latter the cutaneous manifestations are often slight, and certain cases are on record where a syphilitic has transmitted the disease repeatedly in its neurotropic form. Conjugal syphilis also is said to be transmitted true to type. Levaditi and Marie find that experiment supports their clinical observations. The incubation period of the neurotropic virus is longer than that of the dermotropic variety, and the latter remains virulent for the monkey after repeated passages through rabbits, while the former loses its virulence after a single passage. Finally the inoculation of each variety of virus gives rise to an immunity which is specific for that variety. Against the existence of two distinct syphilitic spirochetes, it may be objected that intense cutaneous syphilis occasionally culminates in tabes dorsalis or in general paralysis, and Pagniez believes that the distinguishing characters of the neurotropic spirochete are due in part to the influence of the tissues which it infects.—*Med. Press*, Sept. 1, 1920

Clinical Notes, Suggestions, and New Instruments

STRONGYLOIDES INTESTINALIS INFESTATION

REPORT OF A CASE

LOUIS GINSBURG, B.S., M.D., JOHNSTOWN, PA.

A case of *Strongyloides intestinalis* infestation studied at the Johnstown City Hospital may be of sufficient importance and interest to report in detail.

Strongyloides intestinalis or *stercoralis* infestation occurs rarely in the northern part of the United States. It has been found near the Gulf of Mexico by Allen J. Smith and others. Its geographic distribution closely follows that of hookworm disease. In subtropical and tropical countries it is very common, notably in southern China and Italy.

In the development of this worm there are two generations. One is the parasitic generation in which the adult female, which reproduces by pathogenesis and is about 2.2 by 0.034 mm., in size, inhabits the upper portion of the small intestine. Its mouth has four lips; the esophagus is cylindric, and about one-third the length of the body. Neither the worm nor its ova appear in the stool unless an active diarrhea exists. The other is the free living generation. Ordinarily the ova hatch in the intestine, and when infection is severe the larvae can be found in the feces in large numbers. These are the "rhabditiform larvae," which are actively motile and measure about 0.5 by 0.02 mm. Outside the body they develop into a free, living, sexually differentiated generation. The young of this generation are the more slender "filariform larvae" that constitute the infective form. These larvae have smooth bodies and the mouth has four lips. The females are about 0.7 by 0.035 mm., the males 1 by 0.05 mm. The ova measure 0.07 by 0.045 mm. The eggs may appear after purgation, and then are strung out in a chain. The worms bore into the mucous membrane of the intestine. The eggs develop in the wall of the intestine and therefore only exceptionally appear in the feces. Infestation takes place by indigestion or by way of the skin. The chief symptom is diarrhea. The treatment is small doses of thymol long continued.

REPORT OF CASE

Mrs. R. T., married, aged 47, American born, white, housewife, was admitted to the Johnstown City Hospital, Dec. 25, 1919, with the diagnosis of bronchopneumonia. The patient had been ill about three weeks before admission to the hospital. The illness began with swelling of the feet, followed by headache. Later there developed swelling of the hands. There was a diarrhea from the very beginning. The temperature was about 101 or 102 F.; pulse, rapid and feeble; respirations, rapid and labored. The expression was anxious, and an annoying bronchial cough was present, accompanied by a red-streaked sputum. The patient "felt bad all over." The region of the gallbladder and duodenum was tender. The hygienic surroundings and sanitation were bad. The patient was native born, and had lived all her life in the western part of Pennsylvania. The stool was dark green and fluid. There were from six to twelve evacuations in a day. The urine was dark, scanty and foul smelling. A few days before death, defecation and urination became involuntary.

Physical Examination.—The patient, Jan. 16, 1920, was emaciated and of a sallow complexion. The skin had a peculiar dirty tan color, as if it had been accustomed to filth. The patient complained constantly of abdominal pain, and made strenuous straining efforts. Most of the time there was some mental aberration. The skin was cold to the touch.

Examination of the head was negative, except that the sclerae were yellow tinted. The teeth were in a deplorable condition, a few dirty roots and snags being all that were left. The pupils reacted to light and accommodation.

The chest was thin, the ribs being prominently visible. The respirations were about normal in frequency. Vocal fremitus was normal. The percussion note was a little hyperresonant anteriorly and posteriorly. On auscultation the respiratory murmur was coarse and expiration prolonged. There were no râles. No evidence of pneumonia was found.

The abdomen was scaphoid; the liver, enlarged, extending a hand's breadth below the costal margin. The hepatic surface appeared smooth. On auscultation, active intestinal movement was heard.

The arms were thin; the feet and lower part of the legs, markedly edematous.

The inguinal glands were palpable. On the buttocks and over the sacrum were bedsores.

All the tendon reflexes were tardy. The Babinski reflex was absent. There was a spontaneous ankle clonus on attempting to elicit the Babinski reflex.

The temperature was almost constantly subnormal, ranging between 95 and 97.6 F. Once it rose to 99.8. The pulse rate ranged between 76 and 150; respirations, from 16 to 36.

The stool, January 14, was greenish black; the consistency, liquid; the odor, foul. There was no blood, mucus or fermentation on gross inspection. Occult blood was present. Microscopically, no undigested meat fibers, red cells or starch were found. No ova were discovered. On low power microscopic examination, actively motile worms were seen. These larvae were smooth-bodied and cylindric, with pointed tail end. The mouth had four lips; the esophagus was short with a double dilatation and about one-third the length of the body; there were three small curved spicules at the base of the tail. These worms measured from 0.7 to 1 mm. in length, and 0.035 to 0.05 mm. in breadth.

January 15, a blood count revealed 4,560,000 erythrocytes, 8,320 leukocytes, and 75 per cent. hemoglobin. Differential count: polymorphonuclears, 95 per cent.; lymphocytes, 4 per cent.; mononuclears, 2 per cent.; transitionals, 1 per cent.; no eosinophilia.

Urinalysis, January 16, disclosed a urine of reddish color, foul odor, excessive turbidity, much sediment, acid reaction, specific gravity 1.020, cloud of albumin, and no sugar. Microscopically amorphous urates, and numerous hyaline and light granular casts were found. A specimen of sputum for examination could not be obtained.

Up to the time of the making of the laboratory diagnosis, the patient received only stimulating therapy. As soon as the laboratory findings were reported, dram doses of glycerin four times a day were administered, followed by thymol.

The patient died, January 19. She was conscious to the end, at which time she spat a bright red, frothy fluid, and complained of shortness of breath. A necropsy was refused.

SOLITARY INGUINAL HERNIA OF AN OVARY

JOSEPH M. CADWALLADER, M.D., SAN ANTONIO, TEXAS

Ovariocele of the inguinal type is a condition of infrequent occurrence, but of clinical interest and importance.

REPORT OF CASE

An unmarried woman, approximately 28 years of age, who consulted my colleague, Dr. A. A. Brown, because of a painful lump or enlargement in the left inguinal region, stated that the protuberance had been there for two years, but no longer, and that it had always been tender, had never subsided, and had never enlarged beyond the original size. There was no increase of pain with the menses. On digital examination the lump was clearly definable as a firm, tender, immovable body occupying the inguinal canal about midway between the deep abdominal ring and the symphysis pubis. It was absolutely irreducible. The young woman was physically below par, and inclined to be nervous.

The patient was admitted to the Baylor hospital, and operation performed, July 27. A short, straight incision was made over the mass, about three-quarters inch above, and parallel to, the iliopubic (Poupart's) ligament. The coverings were dissected away, and the sac, which showed decided inflammatory thickening, opened, disclosing a practically normal ovary. There was no trace of any other viscus in the sac or in the canal, nor was there a possibility of such a presence having ever existed, as the sac intimately encased the ovary. The inferior and posterior aspects of the organ were, through the exudate covering, firmly adherent to the round ligament and the inguinal canal. I increased the length of the incision, completely freed the ovary, the condition of which was very good, returned it to the abdominal cavity, and completed the procedure with the repair for the radical cure of inguinal hernia. The patient made a prompt recovery and has remained free from pain.

219 Moore Building.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Five dollars per annum in advance

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SATURDAY, OCTOBER 23, 1920

WHAT FASTING MEANS

The subject of complete and partial inanition has long been of interest alike to the physiologist and to the clinician. At one time the metabolism of starvation was believed to have a special significance as an indicator of the lowest maintenance requirement of the body. The building-up or anabolic processes of the organism are ordinarily assumed to be dependent on the ingestion of food. It is not easy to dissociate them from the simultaneously occurring disintegrative processes. Starvation, however, has been believed to furnish an uncomplicated opportunity to learn the extent and character of the catabolic or destructive changes on which continuation of life depends. This belief has furnished one of the reasons for the scientific investigation of inanition.

Lately, the phenomena of starvation have come into widespread prominence by the daily publication of items in the newspapers and other periodicals in regard to prolonged fasting. We venture to believe that not a few members of the medical profession have been interviewed on the questions which relate to this front-page "news item." What is the longest possible period of endurance of absolute withdrawal of food? Many persons are known to have lived without food for periods as long as fifty days without permanent detriment. In his elaborate monograph on inanition, Benedict [1] emphasized the importance of distinguishing between complete abstinence from both food and water, and abstinence from food alone. Experiments have shown that life cannot be sustained for any considerable period when both food and drink are withheld. Dogs have gone without food for 117 days, one individual exhibiting a loss of 63 per cent. in weight.[2] The "professional" fasters have frequently fasted more than thirty days under conditions of strictest scientific control, the latest carefully investigated "subject" being Levanzin, whose performance was under the supervision of the Boston nutrition laboratory of the Carnegie Institution of Washington.[3] In thirty-one days his body weight decreased from 60 kg. (132 pounds) to 47 kg. (103½ pounds). This affords an illustration of the extent of tissue loss which an adult may experience without restitution in the course of a month and without untoward outcome.

Starvation is an enforced condition in a variety of pathologic cases involving disturbances of the alimentary tract which preclude the ingestion of food. Usually, however, the deprivation of the latter is not complete, so that the accounts of the experiences of the persons involved are, in truth, records of only partial inanition. There are on record many authentic cases of persons who have been deprived of food (but not of drinking water) for twenty-five days, owing to accidents by which they have been imprisoned or otherwise prevented from securing nutriment. Physicians are familiar with the refusal of insane persons to take food or drink, and Desportes [4] has described a patient who lived two months, consuming only a little water. Prolonged fasting has often been hailed as a religious rite. The accounts of such fasts, Benedict writes, are so clouded by superstition and show such a lack of accurate observation that they are without value to science. They served only to maintain popular belief in the ability of some religious ascetics to subsist solely on the eucharist, and of some possessed of devils to abstain from food altogether. In addition to all these "categories" of starvation belong the instances of fasting in hypnotic sleep.[5]

Almost all cases of prolonged fasting indicate a tendency, before the lapse of many days, to avoid muscular effort. In general, the published accounts indicate a noticeable falling off in strength as the fasts progress. The metabolism reaches a relatively low plane, indicated not only in the decreased energy exchange but also in the low pulse rate. It is not uncommon for the latter to drop below 50 beats a minute when suitable opportunity for complete rest is afforded. Physiologic chemists have long recognized certain striking abnormalities of metabolism in starvation, foremost among which is, perhaps, the commonly observed ketosis. Beta-oxybutyric acid and related compounds have been estimated in amounts increasing in the urine with the progress of the fast, and the proportion of the acetone substances may at times be considerable. Accompanying them is an increased elimination of ammonia. Creatin also is a characteristic constituent of the urine of starvation. These facts emphasize the contention that the metabolism of starvation, involving as it does largely the breakdown of proteins and fats, is abnormal in character.

At the present moment a widespread interest is centered on the sensations of fasters. Psychic factors

1. Benedict, F. G.: The Influence of Inanition on Metabolism, Pub. 77, Carnegie Institution of Washington, Washington, D. C., 1907.

2. Howe, P. E.; Mattill, H. A., and Hawk, P. B.: Fasting Studies, VI, Distribution of Nitrogen During a Fast of One Hundred and Seventeen Days, J. Biol. Chem. **11**: 103, 1912.

3. Benedict, F. G.: Chemical and Physiological Studies of a Man Fasting Thirty-One Days, Proc. Nat. Acad. Sc. **1**: 228 (April) 1915; Pub. 203, Carnegie Institution of Washington.

4. Desportes: Du refus de manger chez les aliénés, Thèse de Paris, 1864.

5. Hoover, C. F., and Sollmann, Torald: J. Exper. Med. **2**: 403, 1897.

unquestionably tend to produce much uncertainty as to the symptoms attending the withdrawal of food. The reporters are rarely trained observers. In the popular mind, Carlson [6] writes, prolonged starvation is associated with great pain and distress, despite reliable reports to the contrary from many persons who have undertaken voluntary starvation. Such persons state, almost without exception, that after the first three or four days the sensation of hunger is no longer felt, or at least is not excessively painful or uncomfortable.

It is now well recognized that the feeling of hunger is accompanied by vigorous contractions of the stomach, if not actually dependent on them. Carlson and his collaborators have made careful observations on the continuance of these hunger contractions and found them to be undiminished during at least five days of fasting. Whether they persist a month or longer has never been ascertained. The sensation of hunger in the case of the starving physiologists was not lost during the first five days, though there was apparently some decrease in its intensity. Carlson insists that the absence of the sensation reported by so many fasters is due to a depression of the central nervous system. That starvation in man will ultimately lead to marked weakening and eventual absence of the sensation of hunger, owing to the depression of the central nervous system and asthenia of the gastric motor mechanism, is not denied. According to Carlson, however, it is inherently improbable that prolonged starvation in the case of healthy individuals should completely abolish the sensation of hunger and appetite while the organism is still in a fair state of integrity. The complete absence of this sensation may be regarded as due to pathologic complications. As observers agree that the hunger discomfort is greatest during the first few days of starvation, accounts of intense suffering from mere fasting where water is available must be accepted with reserve. Extreme emotion may, of course, alter the aspect of bodily sensations. "Voluntary starvation," says Carlson, "is in no sense a heroic act."

THE NATURE AND FUNCTION OF ADIPOSE TISSUE

From time to time, for many years, anatomists, embryologists and pathologists have been discovering and rediscovering the fact that fatty adipose tissue is not merely a common connective tissue loaded with stored simple fats, but, to a large extent, is structurally, developmentally and functionally an independent special tissue more after the order of the true ductless glands.[7] Neverthelelss, this view of the nature of fat tissue does not seem to become widespread, as witness the rediscoveries and the enthusiasm with which they are attended. Possibly the persistence of the older idea lies in the historical fact that this was the teaching of Virchow in his "Cellular Pathology," and hence entered into the basic principles of modern medicine. This teaching was unchallenged from 1853 until 1870, when Toldt first stated that the fatty tissue of mammals is a specific organ, entirely distinct from the connective tissues. He recognized that besides the usual fat depots, the cells of which are derived from the primitive fat organ of the early fetus and which form lobulated structures with an independent and characteristically glandular type of blood supply, there occur also irregular deposits of fat in connective tissues not possessing these features and returning to their original connective tissue structure and function when the fat is reabsorbed. Since that time there has been considerable discussion as to whether all the fat tissues represent simple connective tissue cells loaded with fat, as Virchow had believed, or whether all the fat tissue is of the specific glandular type; but it seems now that Toldt was correct in his view that both sorts of fatty tissue exist, the glandular type probably being the more abundant and important.

In certain localities the glandular character of the fatty tissue is particularly easy to discern. In man the fat about the kidneys and suprarenals, and also the masses lying above the clavicles and spreading widely in the neck, show especially the glandular character. This is most readily seen in emaciated persons, when the removal of the fat makes conspicuous the abundant blood supply of these exhausted fat organs, so that they may appear as distinctly glandular as the pancreas. Microscopically, such emaciated fat glands are seen to be composed of polygonal cells of typically glandular character, lying in a rich vascular network, and often closely resembling the parathyroid gland in appearance. In emaciated infants all the fat depots may exhibit this glandular character, and because of the abundant blood supply present a startling appearance when exposed at necropsy. Hibernating animals possess in their specialized fat organs quite the same peculiarities, only more strikingly developed.

Recently Cramer [8] of London has made some important observations concerning the functional properties of glandular adipose tissue, especially in those localities in which this specific structure is most conspicuously shown, and in the laboratory rodents in which the differentiation is particularly marked. He finds that the fat in these places differs from that of the subcutaneous and many other fat depots in its high content of lipoidal material, and, as has long been known, on the persistence with which the tissue holds to at least part of the fat during emaciation. When animals are fed sufficiently long on a diet with an abundance of protein, carbohydrate and olive oil, but lacking in vitamins, this adipose gland tissue loses its fat completely and comes to look like a typical gland with a

6. Carlson, A. J.: The Control of Hunger in Health and Disease, Chicago, University of Chicago Press, 1916, p. 125.

7. An excellent review of this subject is given by Chiari, Hans: Die Selbstständigkeit des Fettgewebes vom pathologisch-anatomischen Standpunkte, Tr. Chicago Path. Soc. 8: 65, 1910.

8. Cramer, W.: On Glandular Adipose Tissue and Its Relation to Other Endocrine Organs and to the Vitamine Problem, Brit. J. Exper. Path. 1: 184, 1920.

very rich blood supply. By contrast, the nonglandular type of adipose tissue reverts to connective tissue without any trace of glandular structure. As the death of animals on a vitamin-free diet seems to coincide with an exhaustion of the lipoidal contents of the glandular adipose tissue, the conclusion is drawn that this tissue is a storehouse for at least one of the vitamins, presumably the fat-soluble food accessory.

The coincidence that the suprarenal, with its lipoid-rich cortex, lies embedded in a mass of glandular adipose tissue full of lipoids, and that in vitamin starvation the lipoids disappear completely from the latter while the suprarenal cortex contains still a little lipoidal material, suggests that these structures are related. Other evidences of relationship between the glandular adipose tissue and the ductless glands are abundant, such as the lobular hypertrophy of the adipose tissue in cretinism, myxedema, adiposis dolorosa, and hypophysial deficiency (Fröhlich's syndrome). We therefore must recognize that there are at least two, and probably three types of adipose tissue, namely, ordinary connective tissue storing surplus simple fats, glandular adipose tissue storing lipoids with varying amounts of simple nutritive fats, and glandular adipose tissue with close functional relationship to the endocrine glands. Whether there are two types of glandular adipose tissue or only one is not yet altogether clear, but in any case the functional activity of adipose tissue must be recognized to be something more than simply as a storehouse of calories in the form of fat.

THE ORIGIN OF SOME MILK CONSTITUENTS

Milk contains certain highly characteristic substances not present elsewhere in the body. Most conspicuous among them are the phosphorized protein, casein, and the milk sugar, lactose. As these are not found circulating in the blood of the female under ordinary circumstances, it is logical to assume that they are literally manufactured in the active mammary glands. From both a qualitative and a quantitative point of view the question as to the precursors of the milk components is an important one. When it is recalled that many cows secrete more than a quart of milk every hour, day after day, and that the daily yield from the lactating human glands is not inconsiderable, the provision of suitable nutrient material to furnish the characteristic secretory output becomes a significant physiologic consideration. The food may be varied within fairly wide limits without altering essentially the composition or amount of milk secreted, provided sufficient nutrients are ingested. Only in the case of the milk fats are significant changes produced by the nature of the diet.

For the milk sugar, with its somewhat unique galactose component, the assumption that the circulating glucose of the blood forms the immediate forerunner seems now generally accepted. Porcher of Lyons long ago advocated this view. It has been fortified by the experiments of Kaufmann and Magne,[1] who compared blood samples, obtained at approximately the same moment from the jugular and from the mammary (abdominal subcutaneous) veins of milking cows, and have found that the concentration of glucose in the mammary blood is less than that in the jugular blood. They conclude that this difference is due to the utilization of glucose by the mammary glands as the precursor of lactose.

As Cary [2] has recently pointed out, the formation of milk in the mammary glands of lactating cows is so rapid that a determinable reduction of the precursors of milk constituents in the blood that have passed through the glands may reasonably be expected. This occurs, as Meigs [3] and his collaborators have shown, in the case of the phosphatid content of mammary blood, which is lower than that of the systemic (jugular) blood. One may therefore assume that blood phosphatids are the precursors of milk fat and the phosphorized compounds in milk.

And now the evidence for the precursors of the milk proteins has been secured by Cary,[2] in the same bureau of the Department of Agriculture. Whereas the amino-acid nitrogen of the blood and blood plasma obtained from the mammary vein in nonlactating cows is virtually the same as that obtained from the jugular vein, the content in the mammary vein blood of milking cows is decidedly lower than that circulating elsewhere. Cary asserts that the amino-acids thus picked up by the mammary gland from the plasma of the blood perfusing it are sufficient to account for the proteins of the milk and are undoubtedly the precursors of these milk constituents. Here again the physiologic rôle of circulating amino-acids, the "building stones" from which animal proteins are constructed, is brought into prominence.

COMMERCIALIZED PROPAGANDA IN THE GUISE OF SCIENCE

Under the title "Vaccines in Toxic Conditions," what purports to be a scientific contribution appears in the original department of the official organ of a state medical society.[4] The apparent purpose of the article is to overcome any hesitancy on the part of practitioners to use vaccines in toxic infectious conditions for fear that they might thereby cause harm. Such a thesis is interesting and might be important—if true. Two outstanding facts, however, give pause. First, the theory promulgated is contrary to the experience of those who have studied the subject; second, the man who writes

1. Kaufmann, M., and Magne, H.: Sur la consommation de glucose du sang par le tissu de la glande mammaire, Compt. rend. Acad. d. sc. **143**: 779, 1906.
2. Cary, C. A.: Amino-Acids of the Blood as the Precursors of Milk Proteins, J. Biol. Chem. **43**: 477 (Sept.) 1920.
3. Meigs, E. B.; Blatherwick, N. R., and Cary, C. A.: Contributions to the Physiology of Phosphorus and Calcium Metabolism as Related to Milk Secretion, J. Biol. Chem. **37**: 1 (Jan.) 1919.
4. Sherman, G. H.: Vaccines in Toxic Conditions, Illinois M. J. **38**: 314 (Oct.) 1920.

the article is in the business of making and selling vaccines! The former fact is a matter of fairly general knowledge among the better informed members of the medical profession; the latter fact is nowhere made evident in the article, which the reader might infer came from a disinterested investigator in the realms of immunology.

The article purports to prove that the special investigations carried on by its author show that there is no basis for the well-grounded fear that vaccines might be harmful to a patient suffering from toxic infectious conditions. Thus:

> From a closer study of these infective processes we find that this toxic condition is due to the rapid multiplication of the infecting organisms with the incidental production of ferments which the germs secrete to digest the food on which they live. These toxic ferments have a distinct destructive tendency on tissue cells, without any marked influence in stimulating tissue cells for antibody production. The crying need, however, in these extensive acute infections is rapid antibody formation to neutralize these germ-produced poisons and to eliminate the germs.

Now vaccines, we are informed, are not toxic and so stimulate the production of antibodies. In other words, the same organism that in the body is toxic and without marked antigenic properties becomes nontoxic and actively antigenic when converted into a vaccine. The details of the experiments of the "closer study" made by the author of this paper (and the manufacturer of vaccines) which give such definite and convincing results are not published. Possibly the article is a preliminary contribution, and future issues of the same publication will carry further articles on the same subject. The follow-up system is well recognized in the advertising world. At all events, this "closer study" has convinced the author of the article that:

> . . . even in extreme toxic conditions, in acute infections, bacterial vaccines may be employed without the least fear of doing any harm. In fact, we find that in extreme acute infections, bacterial vaccines not only give the best clinical results but they may also be given in larger doses at shorter intervals with less reactions than in minor or chronic infections and the earlier they are given the better the results.

Here again no details are given; there are no comparative results of the careful study of a series of cases. The sum and substance of this remarkable contribution to a scientific publication is to the effect (1) that the organism that in the body is toxic becomes nontoxic when introduced in vaccine form; (2) that the organism that in the body is but little antigenic becomes when introduced in vaccine form actively antigenic, and (3) that "in extreme acute infections" when the body is affected profoundly by the infectious agent and its products, the oftener and the more one injects of these very materials, the better the results!

And this astounding plea for the use of vaccines in conditions in which vaccines are generally held to be contraindicated, or even injurious, is made by one whose business is the manufacture of vaccines and selling them to the medical profession!

Current Comment

NEWSPAPER COMMENT ON THE PHYSIOLOGY OF STARVATION

It is interesting, amusing—and also discouraging—to read the ridiculous pap which is being fed to the public on medical matters in general, but especially on fasting in connection with the hunger strike. A writer, heralded as the "world's greatest" writer of editorials, has this to say:

> Lord Mayor MacSwiney, courageous man, slowly dying for the cause in which he believes, has struggled against death by starvation for sixty-eight days . . . he could not now live even if he consented to eat. . . . Because of malnutrition MacSwiney's memory is fading. In our public schools tens of thousands of badly nourished children are punished every day for "not remembering," when it is impossible for the half-starved brain to remember. MacSwiney suffers from scurvy, so much dreaded by the sailors on their long journeys in ancient days. Sailors were fed; MacSwiney is not. Scurvy attacks MacSwiney as it attacked the sailors, because vitamins are utterly lacking in the pure water that MacSwiney drinks as they were lacking in the imperfect diet of the sailors.

Thousands of readers have implicit confidence in what this writer says. His method of presentation, the cock-sureness, carries conviction to the uninformed. They consider him a fount and source of knowledge. What a pity!

THE GALLBLADDER AND BILIARY STASIS

An interesting sidelight has recently been thrown on the often arising question as to the desirability of performing cholecystectomy in cases of gallstone disease. Rous and McMaster[1] of the Rockefeller Institute have pointed out that even under conditions of stasis the gallbladder continues to exercise its usual function of concentrating the bile and incidentally adding mucus in quantity to it. This is quite different from the behavior of the bile ducts. Consequently, when an obstruction is produced below the entrance of the cystic duct, all of the extralobular biliary channels come at length to be filled with a thick, greenish black fluid. On the other hand, since the mucosa of the ducts themselves secretes little, if any, mucus and they do not facilitate concentration of their contents by absorption of water, in an obstructed duct system blocked off from the gallbladder, or connecting with one so changed as to be incapable of functioning, there regularly accumulates a limpid, watery fluid devoid of pigment and bile salts even when the animal is heavily jaundiced. This is the "white bile" of the surgeons. The passages soon become so distended with it that true bile ceases to enter them. Although it has been maintained that stagnation and inspissation of the bile do not give rise to the increased formation of cholesterol or to the precipitation of insoluble compounds of the bile pigments,[2] concentration is at least a concomitant and probably a contributory factor in the production of gallstones. As Rous and McMaster point out, even in

1. Rous, Peyton, and McMaster, P. D.: A, Vicious Activity of the Gall Bladder During Biliary Stasis; B, The Determining Factor in the Causation of White Stasis Bile, Proc. Soc. Exper. Biol. & Med. **17**: 159, 1920.
2. Kelly, A. O. J.: Osler's Modern Medicine **5**: 831.

uninfected and uninflamed bile passages an abnormal concentration and thickening of the bile, such as the gallbladder can effect, must act both to promote the formation of stones and to render obstruction by them more complete. The frequent rapid increase in size of stones partially obstructing the common duct is attributable to the concentration of stasis bile by the gallbladder. Absence of the bladder thus averts at least one phase of a possible cholelithiasis.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Health Officers to Hold Annual Meeting.—The annual conference of state, county and municipal health officers of California will be held in Chico, November 8-11, under the presidency of Dr. Ernest H. Pape, Berkeley.

Humane Treatment of Drug Addicts.—In an effort to find a humane plan for handling drug addicts in the police courts of San Francisco, Police Judge Timothy I. Fitzpatrick has issued a call for physicians and hospitals to volunteer to treat free of charge victims of the drug habit who fall into the police net.

University Builds Nurses' School.—Contract for the construction in San Francisco of the School of Nurses has been awarded by the comptroller of Stanford University. The new building, the site for which is on Clay between Buchanan and Webster streets, opposite Stanford University Hospital, will have accommodations for more than 200 pupil nurses.

ILLINOIS

Smallpox at Bloomington.—Orders for a general vaccination of schoolchildren in the Hawthorne School District of Bloomington were issued, October 4, following discovery of seven cases of smallpox among the schoolchildren. In addition two other cases were reported in the adult population of the district.

County Tuberculosis Sanatorium Proposed.—The voters of Lake County will be called on at the November election to decide whether or not a tax shall be levied for the establishment and maintenance of a tuberculosis sanatorium, according to a decision recently reached by the board of supervisors. The county already owns the Lake Breeze Sanatorium, but very little use has been made of the facilities there.

Society Honors Dr. Scott.—The Tri-City Medical Society gave a banquet, September 30, at the Masonic Temple, Granite City, in honor of Dr. Julien W. Scott, Venice, one of the oldest members of the society. Practically all members of the medical profession of the surrounding towns were present at the banquet, including Dr. Edward W. Fiegenbaum, Edwardsville, past president of the Illinois State Medical Association.

Chicago

Personal.—Dr. and Mrs. Casey A. Wood have gone to British Guiana for the winter. Dr. Wood plans to conduct some researches on the comparative anatomy of the eye, with special reference to birds.——Dr. and Mrs. Charles Adams and Dr. Charles Gordon Fuller have sailed for Honolulu.——Dr. John J. Killeen has returned to Chicago following an extensive tour of the hospitals in Europe.

Annual Meeting of Chicago Gynecological Society.—At the annual banquet and election of officers of the Chicago Gynecological Society, held October 15, at the Illinois Athletic Club, the following officers were elected: president, Arthur H. Curtis; vice presidents, W. C. Danforth and Carey Culbertson; treasurer, Charles B. Reed; editor, W. A. N. Dorland; pathologist, S. S. Schochet, and secretary, Joseph L. Baer. The annual award of the society in the form of a check for $100 for the best paper presented during the year was voted to Dr. S. S. Schochet for his very exceptional piece of original research presented before the society at its March meeting and entitled "The Physiology of Ovulation." The chairman of the committee on award, Dr. Emil Ries, in announcing the decision, laid emphasis on the permanent value of this article as a real contribution to the subject.

IOWA

Infantile Paralysis at Davenport.—Two cases of infantile paralysis were reported to the board of health of Davenport and the homes where the cases originated have been rigidly quarantined in an effort to avert a spread of the disease.

Medical Society Reorganized.—The old Upper Des Moines Medical Society, including physicians from Spirit Lake, Ruthven, Langdon, Spencer, Milford and Emmetsburg, recently reorganized and elected the following officers for the ensuing year: president, Dr. Edsil W. Bachman, Estherville; vice president, Dr. Quintus C. Fuller, Milford, and secretary, Dr. Harold L. Brereton, Emmetsburg.

KANSAS

Health Campaign Contest.—Dr. Charles H. Lerrigo, executive secretary of the Kansas State Tuberculosis Association, has announced plans for an editorial and news writing contest in furtherance of a fall and winter health campaign. The contest is open to all, including editors, publishers and special writers, and a bond of $100 will be awarded as the prize for the best health article. The prize also entitles the community or county in which the prize is won to a tuberculosis clinic, all the expenses of which, including nursing and medical service, will be borne by the state. The contest closes December 15.

KENTUCKY

New Health Officer for Scott County.—Dr. R. T. Lipscomb, Cincinnati, has been appointed to fill a vacancy as full-time health officer for Scott County to succeed Dr. Norris Caldwell, resigned.

New Operating Clinic Opens.—The operating clinic for eye, ear, nose and throat surgery of the Department of Public Health Nursing Association at Lexington, reopened, October 6, after extensive remodeling through the summer. New equipment which has been provided throughout will enable the clinic to give more efficient service to all applicants. Under a new policy to be adopted precautions will be taken to see that all patients who are able to pay for private treatment shall no longer be treated at the clinic, but will be referred to private practitioners.

MAINE

Health Association Publishes Journal.—The first number of the *Maine Public Health Association News* made its appearance in September. It contains news articles on health work all over the state, records of appointments of health workers, reports of conferences and plans for growth of the association, editorials, pictures and cartoons. It is circulated chiefly among members of the association and will be issued monthly.

Infantile Paralysis.—Up to October 11 twelve cases of infantile paralysis have been reported from ten towns to the state department of health since September 1, eight during September and four new cases in October. These are practically the first reports of the disease in Maine in 1920 and have put the health authorities on guard in view of the fact that the disease is now prevalent in alarming proportions in adjoining states. Three cases, one fatal, have been reported from Cranberry Isle, and one each from Eastport, Bangor, Waterville, Ellsworth, Rumford, Wiscasset, Winslow, Scarborough and Bowdoin. Reports show that the coast towns are most seriously affected, and it is possible that infantile paralysis was brought to Maine by summer visitors.

MARYLAND

Public Health Service Retains Fort McHenry.—The Public Health Service will retain Fort McHenry until completion of the new $1,000,000 hospital which will replace the old Marine Hospital. The Third Army Corps will take over Fort Howard as its headquarters until the Public Health Service no longer requires Fort McHenry, which is to be remodeled for use of the Army during the occupany by the Public Health Service, if practicable.

Personal.—Dr. Thomas R. Brown, associate professor of clinical medicine at the Johns Hopkins University, has returned to Baltimore after having spent a year in Europe as

director of the department of medical information for the League of Red Cross Societies, with headquarters in Geneva, Switzerland.——Dr. William Burgess Cornell, diagnostician of the New York State Department of Education, is in Baltimore undertaking a survey of mental deficiency in Maryland, under the direction of the National Committee for Mental Hygiene.

Final Transfer of Quarantine.—Baltimore city has accepted the offer of $176,000 for the transfer of Quarantine to the U. S. Public Health Service. It was understood that the federal government planned to establish a large immigration station on the grounds, but this was denied by officials of the Labor Department. The Public Health Service has been occupying the station for several years and has been caring for the city's smallpox patients. It will continue this service until other arrangements for the care of patients can be made by the health department.

New Health Program for Schools.—Announcement has been made by Dr. C. Hampson Jones, Commissioner of Health of Baltimore, of the reorganization of the work of medical inspection of schools, with a view to more satisfactory results. All of the health officers, school inspectors, school nurses and nurses from the communicable diseases division of the department are engaged in the work under the direction of Dr. John F. Hogan. The proper feeding of children and the instruction of parents as to the character and preparation of food is to be a feature of the work, in which Dr. E. V. McCollum of Johns Hopkins University will assist. The city has been divided into thirty-four sections, with a physician and a nurse in charge of each, the number of schools to each physician and nurse being determined by the number of children in the first four grades.

Increased Entrance Requirements at Johns Hopkins.—A report from the medical department of Johns Hopkins University states that beginning in September, 1921, at least two years of college work in chemistry will be required, of which one and one-third years must be devoted to inorganic and two thirds to organic chemistry. Each year's work should consist of three didactic periods per week and five or six hours of laboratory work. This is the minimum requirement and three full years in chemistry are advised, including lectures and demonstrations in elementary physical chemistry. After 1923, the three years' course will be required, consisting of 240 hours of class work and 500 hours of laboratory work. The former must include 60 hours in organic chemistry and a short course in physical chemistry. The latter must include one year's work in quantitative analysis and 120 hours in organic chemistry.

MASSACHUSETTS

Berkshire Association Elects Officers.—At the annual meeting of the North Berkshire Medical Association, held at Richmond Hotel, Springfield, September 22, the following officers were elected: president, Dr. George L. Curran; vice president, Dr. George H. Thompson, and treasurer, Dr. Esmond Sullivan, all of North Adams.

Leprosy in Boston.—The Boston City Health Department has discovered another case of leprosy in Joaquim de Costa, a 22 year old mill worker, who is being held at South Hampton Street Detention Hospital for transfer to Penikese Island. This is the first case coming to the attention of the Boston health authorities within the last six months and will make seventeen lepers under treatment at Penikese Island.

MICHIGAN

Summer Typhoid Below Normal.—There has been less typhoid fever in Detroit this summer than for any year since 1914; in all probability the rate is the lowest in the history of the city. In the four months ending September 30, 110 cases were reported.

Anthrax in Chassell.—A case of anthrax was recently discovered in a patient from Chassell at Hancock Public Hospital under the care of Dr. Will H. Dodge, Hancock. The case has resulted in health authorities of Houghton County issuing a warning against certain new shaving brushes to which the disease has been traced.

Honor to Dr. Lawbaugh.—A banquet was given by the Houghton County Medical Society, September 28, in honor of the fiftieth anniversary of the entry into the medical profession of Dr. Albert I. Lawbaugh, nestor of the upper peninsular medical fraternity. Dr. Joseph E. Scallon, Hancock, acted as toastmaster at the banquet which was attended by thirty-three members of the society and a host of other guests.

MINNESOTA

State Medical Association Elects Officers.—At the annual meeting of the Minnesota State Medical Association, held in Minneapolis, the following officers were elected: president, Dr. Charles Eugene Riggs, St. Paul; vice presidents, Drs. Arthur N. Collins, Duluth, Fred P. Strathern, St. Peter, and William A. Hunt, Northfield; secretary, Dr. Carl B. Drake, St. Paul, and treasurer, Dr. Frederick L. Beckley, St. Paul. Duluth has been selected for the next annual meeting, to be held August 24-26, 1921.

New Society Formed.—At the joint meeting of the members of the Park Region, Red River Valley and Clay-Becker medical societies held at Fergus Falls, September 29, the Northwestern Minnesota Medical Society was temporarily organized, with the following officers: president, Dr. Theodore Bratrud, Warren; vice president, Dr. Victor E. Verne, Moorhead, and secretary-treasurer, Dr. Willard L. Burnap, Fergus Falls. The first meeting of the new society will be held at Detroit, Minn., June, 1921.

MISSISSIPPI

Meeting of County Health Officers.—A conference of county health officers of Mississippi has been called to meet in Jackson, October 21-22, during the state fair.

New Professor of Hygiene.—Dr. Bowman L. Robinson of the University of Wisconsin has been appointed professor of hygiene in the University of Mississippi. Dr. Robinson was at the University of Mississippi during the session of 1916-1917 as professor of anatomy.

MISSOURI

Personal.—Dr. Charles W. Burrill, Kansas City, was elected surgeon-general of the Grand Army of the Republic, at its fifty-fourth annual encampment recently held in Indianapolis. ——Dr. Walter J. Hansen, St. Joseph, has been appointed assistant collaborating epidemiologist in the Public Health Service and field investigator for Buchanan County.

Caucus Selects Society Officers.—At the regular meeting of the St. Louis Medical Society, September 21, a resolution was unanimously adopted to hold a caucus of the members of the society for the purpose of nominating officers for the ensuing year. The caucus chose the following list to be presented for approval by the society: president, Dr. Emmet P. North; vice presidents, Drs. Charles S. Rehfeldt and Charles E. Hyndman, and secretary, Dr. John W. Stewart.

Survey of Water and Sewage Systems.—Representatives of the U. S. Public Health Service in cooperation with the state board of health have started investigations of water and sewage systems throughout the state with a view to improving sanitary conditions. The survey was initiated by the federal government to insure a safe water supply for railroads, and it is hoped that the state may be induced to appoint a sanitary engineer through whose efforts more uniform sanitary regulations may be obtained.

MONTANA

State Health Week Proposed.—The Butte Chamber of Commerce and Butte Rotary Club have tentatively announced the observation of Health Week throughout the state, beginning December 5. Officials of the state board of health and allied organizations are cooperating, and plans and particulars for the various cities will be determined on at the general meeting of the representatives to be held at Helena shortly.

Medical Society Aids Health Department Clinics.—Cascade County Medical Society has offered to support the work of the health department in cooperation with Drs. Aloysius Dolan and Frederick T. Foard by establishing a rotary service in the baby clinic and other clinics conducted by the health department. The medical society will assign physicians to take charge of the clinics and will determine the length of time to be served by each. Two other clinics will shortly be established in Great Falls, one for tuberculosis and the other for venereal diseases.

NEBRASKA

Lincoln Public Clinic Proves Successful.—The clinic for infants and children of preschool age established in Lincoln over two months ago has proved so successful that it is found necessary to add another hour to the work. The clinics will henceforth be held on Tuesdays and Fridays from 2 to 3 p. m.

NEW JERSEY

Osteopaths Seek Unrestricted Permit.—It has been reported that the New Jersey Osteopathic Society recently drafted a bill for introduction in the legislature by which osteopathic practitioners will be permitted to practice surgery or to prescribe narcotics and drugs without restriction.

County Society Meeting.—At the annual meeting of the Essex County Medical Society held at Newark, October 5, there was a lively discussion of the economic policies of the society, especially in connection with medical legislation. The following officers were elected for the ensuing year: president, Dr. Harrison S. Martland; vice president, Dr. Francis R. Haussling; secretary, Dr. Frank W. Pinneo, and treasurer, Dr. Robert H. Rogers.

NEW YORK

Health Notes.—Dr. Charles T. Graney has been appointed health officer of the consolidated health district of the town and village of Le Roy.—Dr. Frederick Carpenter has been appointed physician for the schools of Waverly.——Dr. Arthur M. Johnson has been appointed second deputy health officer, and Drs. Harold L. St. John and Harry Nievert, city physicians of Rochester.

Failure to Report Communicable Disease.—A recent comparison of records of deaths from communicable diseases with cases reported in New York State, outside of New York City, showed an average of 52 per cent. unreported to health authorities, the failures varying from 20 per cent. for diphtheria to 84 per cent. for puerperal septicemia. Steps are being taken by the state department of health to bring to the attention of the public and the physician the duty of the individual citizen in preventing the spread of infectious diseases by proper notification to health authorities.

State Hospital for Ex-Service Men.—Governor Smith, on September 29, signed the bill appropriating $3,000,000 for a hospital for the treatment of ex-soldiers suffering from nervous and mental diseases, to be erected on the site in Queens County intended for the Long Island State Hospital. The bill provides that an agreement may be entered into with the United States government for a term of not more than ten years whereby the United States is to equip and maintain the hospital exclusively for the treatment of discharged soldiers, sailors and marines from this state who became mentally defective from their service in the war. Dr. Thomas W. Salmon is the medical representative of the commission charged with construction of the hospital.

New York City

Harvey Society Lecture.—Prof. Jules Bordet, director of the Pasteur Institute of Brussels, will deliver the second Harvey Society Lecture at the New York Academy of Medicine, October 30, 1920, on the "Coagulation of the Blood."

New Health Department Budget.—The budget estimates for the Department of Health for 1921 total $8,821,027.23, as compared with $4,758,951 for 1920. Of this amount, $7,551,798 is to defray the expenses of the department and the remainder for new buildings.

Hospital Funds.—The trustees of the United Hospital Fund announce that nine additional hospitals have joined the cooperative movement for securing financial aid for hospitals. ——A committee of the New York Stock Exchange, which is soliciting funds for the Broad Street Hospital, in recognition of the valuable service rendered by the hospital after the recent explosion in the financial district, has secured a fund of $11,710 from 103 subscribers.

Personal.—Dr. Louis Fischer and family have returned from Europe.——Dr. Walter N. Thayer has been appointed warden of the Eastern New York State Reformatory, at Napanoch.——Dr. Charles H. Cole, deputy medical superintendent of Sea View Hospital, New York, has been appointed medical director of Pawling Sanatorium, the Rensselaer County Tuberculosis Hospital, at Wynaneskiee.——Dr. Julius Lewis Amster has been appointed consulting surgeon to the Penitentiary and Correctional Hospitals of New York City.

NORTH CAROLINA

District Medical Society Meetings.—At the annual session of the Tenth District Medical Society, held at Asheville, October 14, under the presidency of Dr. Clyde E. Cotton, Asheville, it was decided to hold three sessions annually hereafter, the next being scheduled at Canton, April, 1921. The following officers were elected for the ensuing year: president, Dr. Fred L. Siler, Franklin; vice presidents, Drs. Guy S. Kirby, Marion, Guy E. Dixon, Hendersonville, and Charles Z. Candler, Sylvia, and secretary, Dr. William J. Hunnicutt, Asheville.——At the annual meeting of the Seventh District Medical Society held in Lincolnton, October 4-5, the following officers were elected: president, Dr. John R. Gamble, Lincolnton; vice president, Dr. P. R. McFadyan, Concord, and secretary, Dr. Raymond Thompson, Charlotte. The next meeting of the society will be held at Concord, October, 1921.

NORTH DAKOTA

New Infirmary to Be Completed.—The state board of administration has decided to complete the new infirmary under construction at the State Tuberculosis Sanatorium, Dunseith, by appropriating $17,000 additional to furnish the necessary equipment. Dr. John G. Lamont is superintendent of the sanatorium.

OHIO

Medical Association to Hold Meeting.—The Northwestern Ohio Medical Association will meet at Tiffin, October 26, as the guest of the Seneca County Medical Society. Headquarters will be at the Masonic Temple.

Federation for Social Health.—At a conference attended by most of the important women's organizations of Ohio, the Ohio Women's Federation for Social Health was recently organized at Columbus. The activities of the federation will be closely coordinated with the state department of health, and direct contact will be maintained with the federal agencies.

Vaccination of Schoolchildren Compulsory.—Following the expulsion of several hundred children and five teachers for failure to be vaccinated, the Akron board of education adopted resolutions declaring vaccination compulsory for all pupils and teachers of the Perkins and Miller public schools; a number of smallpox cases have been found in the immediate neighborhood of the schools.

OKLAHOMA

Change in Health Officers.—Dr. Daniel S. Lee, Guymon, has been appointed health officer of Texas County to succeed Dr. David E. McCarty, resigned.——Dr. John C. Taylor, health officer of Rogers County, has tendered his resignation to the state department of health.

Public Health Conference.—A public health conference was held in Oklahoma City, October 12 and 13, under the joint auspices of the Oklahoma Tuberculosis Association, and the state department of health. Special consideration was given to the subject of industrial health service, workmen's compensation and accident prevention. A large tuberculosis exhibit and special displays of health information and literature were a feature of the conference. Dr. Mazyck P. Ravenel, professor of preventive medicine in the University of Missouri, delivered the principal address on endemic disease.

OREGON

Results of Tuberculosis Survey.—A special tuberculosis survey was recently conducted under the auspices of the Oregon Tuberculosis Association covering the eastern part of the state. Statistics for the counties of Union, Baker and Wallowa show a total of 134 cases, seventy-two of which were active or advanced, and forty-eight in the incipient stage; twenty-six were in children under 16 years. The survey was made in order to interest the citizens of eastern Oregon in a special tuberculosis hospital, the need of which is becoming quite apparent.

PENNSYLVANIA

Typhoid Fever at Bentleyville.—A serious epidemic of typhoid fever, totaling approximately 100 cases, has been reported from Bentleyville. The state department of health has sent physicians and nurses to the town to cope with the situation. Twenty-seven cases have been traced to water from one single spring.

Soldiers' Memorial Hospital Under Way.—Construction work has been begun on a new building at the Butler County General Hospital, Butler. A fund of $500,000 was provided for the purpose. When the new addition is completed the hospital will have a capacity of 200 beds, and the institution will then be named the "Butler County Soldiers' Memorial Hospital."

Hospital Notes.—Ground has been broken for an addition to the McKeesport Hospital as part of the improvements for

which $300,000 was raised by popular subscription a year ago. The addition will consist of a 100 bed private pavilion and will bring the capacity of the hospital to 350 beds.——The Shockey site, comprising 4 acres on the eastern border of Waynesboro on the state highway, has been chosen by the board of managers for the new hospital, plans for the building of which will shortly be announced. The sum of $327,000 has been raised for the building fund and endowment.

Philadelphia

College Buys Property.—The four-story store and dwelling property, 1029 Walnut Street, including a three-story building in the rear on Moravian Street, has been purchased by the Jefferson Medical College.

Nutrition Clinic Opens.—A nutrition clinic was opened at the Shippen School, Nineteenth and Cherry streets, October 13, by the Philadelphia Health Council and Tuberculosis Committee in cooperation with the White Williams Foundation. This is the first of four clinics to be opened in the city by the council this month.

SOUTH CAROLINA

Hospital Appointment.—Dr. Mary R. Fleming has been appointed director of the clinical diagnosis laboratory and pathologic and roentgen-ray technician in St. Mary's Hospital, Anderson.

School Medical Inspections Mandatory.—According to a decision of the state attorney-general, sent to Dr. James A. Hayne, state health officer, schoolchildren must submit to physical examination during the first month of attendance to be legally entitled to attend the public schools of South Carolina.

TEXAS

Welfare Council Increases Membership.—The Dallas Tuberculosis Association and Cumberland Hill Nursery have joined the Welfare Council of Texas, an action which makes it possible to present to the people of Dallas a budget covering all the important charities in one campaign.

New Health Officials.—The city commission of Dallas has appointed Dr. William L. Robinson, Austin, as city visiting physician to attend persons who are unable to pay a private physician. The physician's headquarters will be at the City Hospital.——Dr. Orvel A. Suttle, Mount Vernon, Ill., has been appointed director of the bureau of venereal diseases of the state department of health.

WEST VIRGINIA

Miners' Hospital Planned for Charlestown.—Plans for the erection of a $200,000 hospital at Charlestown, for the exclusive use of coal miners, have been announced by officials of the United Mine Workers of America. The hospital project was authorized at a recent convention of miners held in Charlestown.

State Will Distribute Diphtheria Antitoxin.—The state department of health has made arrangements for the free distribution of diphtheria antitoxin to physicians for use in the treatment of and immunization against diphtheria. The district health commissioners and county health boards will cooperate with the state health authorities in the distribution of the antitoxin.

CANADA

Personal.—Dr. Dugald Christie, who for the last thirty-eight years has been a medical missionary in Mukden, Manchuria, is now in Toronto.——Dr. W. T. Grenfell of the Labrador mission to Deep Sea Fishermen, gave a lantern demonstration before the Academy of Medicine, Toronto, October 13. He was accompanied by Dr. Paden, one of his assistants.

Clinical Congress of Surgeons.—At the Clinical Congress of the American College of Surgeons, which opened in Montreal, October 11, Sir Berkeley Moynihan, for the consulting surgeons in Great Britain during the World War, presented a mace to the American College of Surgeons. The gift was accepted for the college by Dr. George E. Armstrong, Montreal, president of the congress. In the report on hospital standardization, approval is given to six hospitals in Quebec, five being in Montreal; to two in Ontario, both in Toronto; five in British Columbia; three in Manitoba; two in Alberta and Saskatchewan, and one in Nova Scotia.

University News.—Sir Arthur Currie, principal of McGill University, inaugurated a campaign for $5,000,000 for McGill in an address to a meeting of McGill graduates and others in Toronto, October 14. He will speak in London, Detroit and Chicago later.——In an address before the educational conference in connection with the inauguration of President M. L. Murton of the University of Michigan Sir Robert Falconer, president of the University of Toronto, referred to the mediating influence of the world's universities as one of the chief hopes for the peace of the world.——The registration of students in medicine at the University of Toronto will probably be considerably reduced in numbers, through new regulations governing the standards of entrance for the session 1921-1922. Priority is to be given to returned soldiers who have met the entrance requirements and next to those holding certificates of higher value than the junior matriculation. Preference will also be given to citizens of Ontario. Senior matriculation will shortly be required for registration.——The government of the province of Quebec has granted $1,000,000 as a subscription to the University of Laval, Quebec City; another million had already been collected by private subscription.

GENERAL

College of Surgeons Elects Officers.—At the annual meeting of the American College of Surgeons, held at Montreal, October 11-15, under the presidency of Dr. George E. Armstrong, Montreal, the following were elected to office: president, Dr. John B. Deaver, Philadelphia; and vice presidents, Drs. Harvey G. Mudd, St. Louis, and Charles E. Sawyer, Marion, Ohio. The secretary and treasurer were reelected.

Hospital Association Holds Meeting.—At the annual meeting of the American Hospital Association, held in Montreal, October 4-8, the following officers were elected: president, Dr. Louis B. Baldwin, Minneapolis; president elect, Dr. George O'Hanlon, New York; vice presidents. Dr. Malcolm T. MacEachern, Vancouver, B. C., Mr. S. G. Davidson, Memphis, and Miss Alice M. Gaggs, Louisville, Ky.; secretary, Dr. A. R. Warner, Chicago, and treasurer, Mr. Asa Bacon, Chicago.

Gift to California Institute of Technology.—This institution of Pasadena, Calif., until April of this year known as the Throop College of Technology, has begun its present session with an attendance of 400 students and under the administration of a faculty committee. Dr. J. A. B. Shearer, president of the institute, resigned in September because of ill health. The institute has just received from Dr. Norman Bridge an additional gift of $100,000. Some years ago he gave the institute $150,000. The entire sum is being applied toward the construction of the Norman Bridge Physical Laboratory.

Marine Hospital for Middle West.—The U. S. Public Health Service opened its Marine Hospital in Chicago, September 30, as a general clearing house for soldiers and sailors residing in the states comprising the eighth district, namely, Illinois, Wisconsin and Michigan, who are suffering from nervous and mental diseases. Dr. L. M. Wilbor, surgeon, will be in charge. Any member of the military or naval forces of the United States of these states who needs such attention may be sent to the hospital for observation and diagnosis and will receive the benefit of all the facilities for diagnosis afforded by the neuropsychiatric centers of Chicago. The hospital, which will start with 130 beds, has an allowance of $85,000 for remodeling and other purposes.

LATIN AMERICA

Site Donated for Home of Academia de Medicina.—Our Buenos Aires exchanges record that Drs. R. and M. Herrera Vegas have recently presented the Academia de medicina with a central plot of ground on which it can proceed to build its own home.

Cuban Physician Comes to United States.—Dr. Carlos Desvernine, a well known Cuban physician, has just left for the United States and Europe to submit his preparation for the treatment of tuberculosis to the Rockefeller Institute and the Pasteur Institute. Dr. Desvernine has designed an apparatus called the stethograph.

Personal.—Dr. A. Pacifico Pereira has resigned his charge of the *Gazeta Medica da Bahia,* on account of poor health, and Prof. Clementino Fraga becomes director of this well known medical monthly, now in its fifty-first year.——Dr. Calderón Muñóz has returned to Costa Rica from Belgium.——Dr. Amable Jones, professor of psychiatry at Buenos Aires, has been elected governor of the province of San Juan by the radical party.

Reenstierna's Mission to Brazil.—The Swedish dermatologist, Dr. J. Reenstierna, whose arrival in Brazil has already

been chronicled, is on an official mission for the study of leprosy. At the September 2 meeting of the Academia nacional de medicina he described his own extensive research on leprosy, speaking in Portuguese. His research was interrupted by the war as he was unable to obtain monkeys further for the work which he had begun in 1912.

FOREIGN

Plague at Black Sea Port.—Because of the prevalence of bubonic plague, the port of Batum, on the Black Sea, has been closed to all trade.

Another Medical Mayor.—Dr. A. Calama Sanz of Salamanca, Spain, director of the *Regeneración médica,* has been appointed alcalde of the city.

Society of Medical Radiology in the Northland.—This society was founded at Christiania in 1919, and the next meeting is to be held at Copenhagen in the summer of 1921. The secretary of the Danish group is Dr. C. I. Baastrup, St. Kongensgade 68, Copenhagen.

Centennial of Cod Liver Oil.—Our French exchanges state that it was in 1822 that cod liver oil was officially adopted into the materia medica, but it had been taken as a household remedy for rheumatism, rickets and sciatica for some time before that in Holland and England.

American Physicians Elected Members of Swedish Medical Association.—At the meeting of the Swedish Medical Association, May 18, five American foreign associate members were elected, namely, Drs. Ludvig Hektoen and Peter Bassoe, Chicago; Dr. Lewellys F. Barker, Baltimore, and Drs. Warfield T. Longcope and Rufus Cole, New York.

Monument to Magnan.—The friends and pupils of the late Dr. V. Magnan, for so many years chief of the admittance service at the Sainte-Anne asylum near Paris, are planning to erect a memorial to him. A large committee of alienists and others have the matter in charge, and P. Masson, the publisher, 120 Saint-Germain, is now receiving subscriptions.

International Office for Physical Hygiene.—At the close of the recent Congress for Physiotherapy, held in Antwerp at about the same time as the Olympian games, a group of physicians, impressed with the value of physical agents in preventive hygiene and the advantages of early training in physical exercise, organized the Bureau International de l'hygiène physique to promote in every way out-of-door life, sports and exercise of all kinds. The international board includes Dr. Gommaerts of Ghent, as president; Dr. Tissié of France; Dr. Cyriax of England; Dr. van Breemen of Holland, and Dr. R. Ledent, rue Sainte Marie 24, Liége, as secretary. Physicians everywhere are invited to join the association.

The Italian Institute for Research at High Altitudes.—The Istituto Angelo Mosso is on Monte Rosa in northern Italy at a height of 2,901 meters, over 8,703 feet. It is equipped for research on physiology, physiopathology, zoology, botany, terrestrial chemistry and physics. There is an annex on one of the peaks, 4,561 meters, over 13,683 feet high, for those who wish to study the effects of high altitudes. Different governments contribute to the support of this scientific institution, and each is entitled to one or more posts among the research workers. There are accommodations for twenty at a time. Prof. A. Aggazzotti of Turin is in charge this year. The institution opened July 20, and among the workers this year was E. F. Adolph from Harvard, who is said to have been studying the relations between the oxygen of the blood and the acidity of the urine under varying exercise and varying diets at high altitudes. The *Riforma Medica* states that more contributions would be welcomed. A single payment of 10,000 lire gives title to one post.

Deaths in Other Countries

Dr. **E. Garciadiego,** professor of obstetrics at the School of Medicine and Pharmacy of Guadalajara, Mexico.——Dr. **Manuel C. Barrios,** professor of physiology and then of legal medicine at the University of Lima, Peru. While a member of the national cabinet he created and organized the public health service and founded the Academia Nacional de Medicina and its journal, the *Monitor Médico.* His death occurred while on his way to New York.——Dr. **J. P. Morat,** formerly professor of physiology at the University of Lyons, aged 75. ——Dr. **E. Palacio** of Argentina who has been residing at Berne since 1914.——Dr. **M. de Souza Avides** of Porto, Portugal, formerly of Rio de Janeiro.——Dr. **F. Hofmann,** formerly professor of hygiene at the University of Leipzig, aged 77.

Government Services

Legislation for the Improvement of the Army Medical Corps

Among important legislation for the improvement of the Army Medical Corps to be presented at the coming session of Congress is a proposed measure to increase the enlisted strength of the Medical Corps. Under the army reorganization bill passed in June, the enlisted strength is limited to approximately 5 per cent. of the total strength of the Army. As this number is entirely insufficient to meet the ordinary needs of the Army in maintaining the necessary care of the sick, the Surgeon General will request Congress to increase the enlistment strength to 6 per cent. of the total strength of the Army. The measure providing for the retirement of members of the Army Nurse Corps after twenty years of service, which passed the Senate at the last session but failed in the House of Representatives, will again be submitted.

Control of Venereal Diseases in the Army

Some interesting facts regarding the control of venereal diseases are disclosed in a report on the venereal disease situation in the American forces in Germany. In the early period of occupation of German territory, when antifraternization orders were enforced among the troops, the weekly admission rate for all venereal diseases varied from 8 to 76 per thousand per annum. Later, after there had been a relaxation of the antifraternization orders, the weekly admission rates rose, ranging between 156 and 422. When the rate became alarmingly high in October, 1919, a vagrancy court was established by the German authorities, and 2,033 women were arrested, of whom 35 per cent. were found diseased. In the next period, including the year 1920, soldiers who contracted venereal diseases were prosecuted before courts martial. This resulted in a reduction of the incidence, but when a "good conduct" system was inaugurated, by which soldiers were permitted to leave camp and to remain away overnight, the admission rate immediately began to rise again, and reached as high as 200, an increase of practically 100 per cent. in three months.

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

INDIANA
Wheatland—Wood, R. S.

LOUISIANA
Ansley—McBride, D. C.

NEW YORK
Amsterdam—Sarno, A. H.

NORTH CAROLINA
Raleigh—Morgan, W. A.

VIRGINIA
South Boston—Armstrong, T. E.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

Note.—In the following list L. signifies lieutenant; C., captain; M., major; L. C., lieutenant colonel, and Col., colonel.

CALIFORNIA
Huntington Beach — McKillop, J. E. (M.)

COLORADO
Victor—Thomas, H. G. (M.)

DISTRICT OF COLUMBIA
Washington—Bryson, H. J. (M.)
Miller, W. C. (L.)

ILLINOIS
Chicago—Gallagher, M. L. (C.)
Peterson, P. G. (L.)
Cropsey—DeMoss, G. O. (C.)

INDIANA
LaFayette—Schultz, A. F. (C.)

IOWA
Cherokee—Howard, W. A. (M.)
Keokuk—Narrley, G. R. (L.)

MARYLAND
Baltimore—Hoffman, C. W. (M.)
May, W. T. (C.)

MICHIGAN
Detroit—Harm, W. B. (C.)

MINNESOTA
St. Peter—Covey, H. W. (L.)

MISSOURI
Denver—Long, L. H. (L.)
Kansas City — Brown, A. C. F. (L.)
Cary, W. E. (C.)
St. Louis—Sippy, A. H. (C.)

MONTANA
Great Falls—David, S. D. (C.)

NEW JERSEY
Atlantic City—Surran, C. (C.)
Summit—Thurston, J. A. (C.)

OREGON
Portland—Benyas, N. M. (M.)

PENNSYLVANIA
Pittsburgh—Anderson, J. K. (L.)

SOUTH DAKOTA
Platte—Anderson, E. T. (C.)

TEXAS
Dew—Lowry, D. L. (L.)
Otto—Dix, I. A. (C.)
San Antonio—Burnet, E. J. (C.)
White Wright — Bauguss, J. B. (L.)

WASHINGTON
Kettle Falls — Greenwald, H. A. (L.)

Foreign Letters

PARIS

(From Our Regular Correspondent)

Oct. 8, 1920.

The Color of the Eyes and Hair Among the French People

The mixture of races that have constituted the French people of today by the process of fusion, ascertained from the median characteristics based on a great number of observations made by certain anthropologists, those of A. Bertillon being the most extensive, has determined the principal physical characteristics of our people. Thus, it has been found that the average height for men is 165 cm. (5 feet, 5 inches) and for women 157 cm. (5 feet, 2 inches) the median cephalic index fluctuates between 82.35 and 85.75, and the bizygomatic diameter is 139 mm. (5½ inches). On their own initiative Edmond Bayle, assistant chief of the legal identification service, and Dr. Léon MacAuliffe, associate director of the Ecole pratique des Hautes-Etudes, have sought to determine the distribution of the color of the hair and eyes among the French population. Their statistics, based on 6,652 subjects, bring out some new facts, which are of interest not only to anthropologists and ethnologists, but also to anatomists and clinicians. In the scale of classification introduced by Bertillon the different shades of hair color are arranged in a series, the extremes of which are light blond and pure black. The complete series is blond (albino, very light blond, medium blond, dark blond); chestnut (auburn, medium chestnut, dark chestnut, black chestnut) and black. Red hair constitutes a distinct series which has no ethnic significance but seems to be of abnormal origin.

The observations of Bayle and MacAuliffe indicate that 85.10 per cent. of the French people have chestnut hair. The blonds are next in order, forming only 12.32 per cent. of the population. Pure black hair is found in 1.83 per cent., that is, slightly more frequently than red hair, which altogether was found in only 0.72 per cent. of cases.

Pure black hair, so rare in France, is the rule in certain Mediterranean countries (for instance, in definite regions of Spain). Very light blonds form the majority of the population of northern Europe. Now, the French are precisely a racial mixture in which two great influences have been constantly counterbalanced: the Mediterranean races (the Arabian invasion, etc.) and the Germanic races of the North. This has resulted in the relative and sometimes absolute predominance of blond and light chestnut hair in the North and East, of brown (dark chestnut) in the South, and chestnut hair in the whole country. Certain precise observations remind one that beyond the Loire the average still shows a predominance of blonds at the present time.

Among the 6,652 subjects observed by Bayle and MacAuliffe, the distribution of eye color was: unpigmented, 18.58 per cent.; slightly pigmented, 42.52 per cent., and strongly pigmented, 38.87 per cent. Chestnut eyes, as chestnut hair, are predominant among our population, because our people are a mixture of the races of the North and the South. There is, in fact, a parallelism, if not absolute, at least considerable, between the development of the pigment of the hair and iris; the more accentuated the pigmentation of the eyes, the darker the hair, and inversely.

Foundation of an Institute of Psychology

The University of Paris recently decided on the foundation of an institute of psychology, to be administered by a board of directors composed of Profs. H. Delacroix, G. Dumas, J. Janet, H. Piéron, Etienne Rabaud and the deans of the faculties of letters and sciences, Ferdinand Brunot and François Houssay. The institute will offer theoretical and practical courses in general, physiologic, experimental, pathologic and comparative psychology. The Institute of Pedagogy, established last year, will be attached to the new institute as the section of pedagogy, and two new sections of applied psychology will be organized: a section of applied industrial psychology and a section of vocational orientation and selection.

The Dejerine Neurologic Museum

The dean of the medical faculty of the University of Paris has been authorized in the name of the university to accept from Mme. Auguste Klumpke, widow of Professor Dejerine, the gift of the pathologico-anatomic and iconographic collection of Dr. Dejerine, as well as an annuity of 100,000 francs. The arrears of the annuity will be used for the establishment of a museum of neurology, including a laboratory, which shall bear the name of "the J. Dejerine Museum (or Foundation)."

University News

The necessary appropriations having been granted for the purpose, the several faculties have created these new chairs:

The Faculty of Medicine and Pharmacy of Bordeaux, a chair of toxicology.

The Faculty of Medicine and Pharmacy of Lyons, a chair of clinical urology and a chair of otorhinolaryngology.

The Faculty of Medicine of Montpellier, a chair of gynecology and a chair of otorhinolaryngology.

The Faculty of Medicine of Nancy, a chair of clinical urology and a chair of otorhinolaryngology.

Foundation of Institute of Hygiene

The president of France having decreed that the public welfare demands the creation of certain institutes, notably an institute of hygiene, in affiliation with the University of Paris, on grounds accruing from liquidation of the congregation of Jesuits, the minister of public instruction has been authorized to acquire this property by expropriation in the name of the state.

Distinguished Honor to Dr. Roux

Dr. Emile Roux, director of the Pasteur Institute, has been awarded the Grand Cross of the Legion of Honor, with the citation:

"Principal collaborator and disciple of Pasteur, throughout an admirable life of simplicity, modesty, labor and devotion he has continued the great work of his master, notably by his researches on diphtheria; by his discovery of antidiphtheritic serum he has conquered this formidable disease and has saved a great number of lives. President of the Conseil supérieur d'hygiène, director of the Pasteur Institute for which he has gained universal renown. A noble and great figure in the world of science."

BUENOS AIRES

(From Our Regular Correspondent)

Sept. 15, 1920.

Second National Medical Congress

At the first medical congress, held in 1916, it was decided to hold future meetings every other year and omit them entirely when they coincided with international meetings. As the meeting scheduled for 1918 was postponed on account of the war, it was decided that the next congress should be held at Córdoba in 1920. Unfortunately, the organizing committee could not carry out its duties, especially in view of the recent disturbances at the University of Córdoba, and ended by presenting its resignation to the Argentine Medical Association. This organization has therefore decided to hold its second congress in the city of Buenos Aires and has already appointed another organizing committee for this purpose. Dr. Pedro Escudero has been appointed chairman of the committee.

International Congress on Foot and Mouth Disease

The meetings of the International Congress on Foot and Mouth Disease have just come to an end. Everything con-

nected with its work has received a great deal of publicity, but the results of the discussions have been meager. So far as etiology is concerned, nothing new was brought out. Numerous resolutions were adopted, advising the creation of special chairs, commissions, etc. Germany, France, Spain, Chile, Brazil, Uruguay and Paraguay were represented at the congress.

Academy of Medicine

Drs. Rafael and Marcelino de la Vegas have donated the ground for the building the Academy of Medicine is planning.

Intracranial Hypertension

Intracranial hypertension has been selected as the subject of discussion at the special meetings that will be held by the Argentine Medical Association in October. In this symposium, Drs. B. A. Houssay, R. H. Chiappori, A. Natale, H. H. Carelli and E. Finochietto will participate.

Goiter

Goiter is endemic in important zones of South America, especially the Andes region and certain mountainous territory in tropical South America. The cause of this disease has attracted much attention. In Brazil it was accepted unquestionably until recently that endemic goiter was caused by *Trypanosoma cruzi,* discovered by Chagas. Kraus and his co-workers pointed out that in Argentina goiter was found in places where *Triatoma infestans,* the insect carrier of *Trypanosoma,* prevailed; but at the same time and in nearby places would be found the insect infested by *Trypanosoma* without, however, any signs of the human disease. He concluded from these and other investigations that Chagas probably had made his investigation in a region where two different diseases prevailed at the same time, namely, trypanosomiasis and goiter. This opinion of Kraus has been accepted by several of the most brilliant of Oswaldo Cruz' pupils in Brazil. Up to the present, no investigations had been made of the water from goiter-infested regions; but recently Houssay has succeeded in producing experimental goiter in white rats after feeding them with water from the province of Salta. These investigations should be repeated on a large scale on account of their great theoretical and practical importance. They tend to confirm the theory that water is one of the transmitting agencies of goiter, as shown elsewhere.

Tribute to Dr. Fernando Pérez

Dr. Fernando Pérez is an Argentine physician who is now filling the position of Argentine minister to Vienna. He recently had the opportunity to carry out in the Vienna Medical School some research on the causative germ of ozena. Even in the present sad conditions under which the physicians and citizens of Vienna are struggling, Dr. Pérez' work has obtained assistance from the government and from private institutions. As a tribute to his endeavors, a formal session was held recently in his honor at the University of Vienna.

Scientific Interchange

Dr. F. Krause, a surgeon and specialist in the surgery of the nervous system, has arrived from Berlin. He has given an elementary lecture on cerebral physiology, and has devoted himself energetically to surgical work, accompanied by an unusual amount of newspaper publicity.

Professors Leotta of Rome, Dumas of Paris and S. Rossi of Montevideo have arrived in this city to deliver scientific lectures.

Branch of Biologic Societies

The Society of Biology of Buenos Aires has just become a branch of the Society of Biology of Paris. This incorporation will permit a more rapid dissemination of South American work on physiology.

BERLIN

(From Our Regular Correspondent)

Sep. 17, 1920.

Difficulties of Infant Feeding

The fact that undernourishment was of common prevalence in Germany throughout the war, and that the food condition grew progressively worse after the war, has been repeatedly brought to the attention of readers of The Journal. It is well known that the infant population suffered most from the consequences of the food shortage. The difficulties of infant feeding were greatly increased by the enforced restitution of 140,000 milch cows to Belgium. This circumstance, however, had the indirect advantage that it gave additional force to the arguments in favor of breast feeding, and not a few mothers were impelled to nurse their infants by consideration of the prevailing scarcity of cow's milk, whereas they subjected their earlier children to artificial feeding. An assistant at the gynecologic clinic of Freiburg University has attempted to solve the interesting problem whether the nursing ability of mothers and the chemistry of human milk had been unfavorably affected by the exigencies of the war. An analysis of the milk of fifty women led to the conclusion that the constitution of human milk was not affected, but the amount had been considerably reduced. In order to counteract the influence of this deficiency of cow's milk and human milk on the feeding of infants, the proposal was made to utilize the surplus milk of a few mothers for the nursing of other infants. In some cities this became an organized business, and human milk could be regularly purchased; in Wittenberg, for instance, human milk sold for from 5 to 10 marks per liter. As a result of an educational campaign on the feeding and care of infants and on the necessity of an unobjectionable milk supply, the number of women producing a surplus of breast milk gradually increased. It goes without saying that every precaution was exercised to guard against transmission of infectious diseases. At the present time, the necessity for this unusual measure no longer exists.

The Exigencies of the Privatdocent

In order to demonstrate statistically the needs of the privatdocents, the society of docents at the University of Halle early in the year sent out questionnaires designed to obtain information regarding the economic status of its members. Forty-three out of sixty-four docents answered the questions; of these, twenty-two were medical men, the majority of whom also practice medicine. The average age was 41.8 years for the medical group and 36.8 for the non-medical group, and the average period of teaching was 8.2 and 7.7 years, respectively. The average annual income of all docents was 1,071 marks; the highest was 5,000 marks, next in order 3,327 marks, and the lowest 50 marks. Two had a definite income of 1,200 and 1,500 marks for stated teaching assignments, six had stipends ranging from 240 to 1,500 marks, and four held appointments as assistants. Only four of the docents had an income in excess of 10,000 above their fees for teaching, while eight of the twenty-two medical docents had a total annual income of less than 10,000 marks.

Retirement of College Professors

Whereas, in Austria, college professors are forced to retire when they reach the age of 69 (as a mark of distinction they may be continued in office for one year longer by official sanction only), the active career of university professors in Germany has heretofore been unrestricted. With due regard to the patent fact that not a small number of elderly teachers no longer meet the demands of education, as well as in consideration of the influence of an inordinate period of service in keeping the younger teachers from appointment unreasonably long, a factor that receives special emphasis by the

present urgent needs of the privatdocents, the governments of several German states have introduced a retirement system, not only for college professors, but also for all government officials. The Prussian law stipulates that the college teacher shall be retired from his official position at the age of 65, though he shall retain the right to deliver lectures and his membership and vote in the faculty on full pay. The far reaching effect of this legislative provision may be glimpsed from the results of its application to the University of Berlin:

In the theologic faculty, five out of eight professors in ordinary are over 65 years of age and only three are under 60, the youngest being 53 years old. On the faculty of law, three out of twelve professors have passed the stated limit, one is between 60 and 65, and the youngest of the remaining eight professors is 40 years old. Seven out of twenty-two professors in ordinary of the medical faculty are over 65 years old, seven more are over 60, while the youngest member of the whole group is 46. The faculty of philosophy has thirty-two professors over 65, four more over 60, and twenty-four under 60, the youngest being 41 years old. In Berlin alone, therefore, thirty-seven chairs would be immediately vacated under the terms of the compulsory retirement law.

Deaths

Frank Wood Spaulding, Clifton Springs, N. Y.; University of the City of New York, 1875; aged 76; a member of the Medical Society of the State of New York and of the New Hampshire Medical Society; at one time president of the Ontario County Medical Society; assistant physician Rockingham (N. H.), Hospital for the Insane, from 1877 to 1893; a member of the staff of the Clifton Springs (N. Y.) Sanatorium; died, October 7, from angina pectoris.

Henry Stewart, Canandaigua, N. Y.; New Orleans, (La.) School of Medicine, 1868; aged 73; who was commissioned Surgeon, Lieutenant, M. C., U. S. Navy, Oct. 6, 1878, and retired April 10, 1884, for incapacity resulting from an incident of service; died, October 4.

Richard Samuel Thompson, Tucson, Ariz.; Northwestern University Medical School, Chicago, 1905; aged 45; at one time health officer of Vancouver, Wash.; died on the Salt River Indian reservation, near Phoenix, September 18, from tuberculosis.

Frederick E. Clark, New Brighton, Staten Island, N. Y.; College of Physicians and Surgeons in the City of New York, 1873; aged 72; a member of the Medical Society of the State of New York; died in the Staten Island Hospital, October 5.

William Muirhead Howell, Williamsport, Pa.; Bellevue Hospital Medical College, 1869; aged 73; was killed instantly, October 5, when the automobile in which he was riding was struck by a train at a grade crossing near his home.

Richard Whitfield Large, Port Simpson, B. C.; Trinity Medical College, Toronto, 1897; aged 47; superintendent of the Port Simpson (B. C.) General Hospital; died, about August 27.

James Sneed Adkerson, Newbern, Tenn.; Vanderbilt University, Nashville, Tenn., 1891; aged 48; died in Baird-Dulaney Hospital, Dyersburg, Tenn., September 16, from uremia.

Walter A. Camp, Springfield, Mo.; Atlanta (Ga.) Medical College, 1878; aged 66; a member of the Missouri State Medical Association; died, September 24, from cerebral hemorrhage.

Mabel Beecher King, Flint, Mich.; University of Michigan, Ann Arbor, 1876; aged 82; a member of the Michigan State Medical Society; died, about October 5, from heart disease.

Edith V. Anderson Lamoree, Ventura, Calif.; Cooper Medical College, San Francisco, 1894; aged 50; physician at the State Normal School for Girls; died, September 18.

James E. Sullivan, Providence, R. I.; Bellevue Hospital Medical College, 1879; a member of the Rhode Island and Massachusetts Medical Societies; died, October 8.

⊕ Indicates "Fellow" of the American Medical Association.

Hermann Harry Hanstein, Chicago; Rush Medical College, Chicago, 1898; aged 44; died in St. Paul, Minn., September 29, from cerebral hemorrhage.

Charles M. Mickle, El Paso, Texas (license, Texas, 1894); aged 63; died in San Antonio, Texas, September 12, from cerebral hemorrhage.

Charles Frederick Mitchell ⊕ Cleveland; Queens University, Kingston, Ont., 1890; aged 53; died, September 26, from cerebral hemorrhage.

Annie May Robinson ⊕ Birmingham, Ala.; Woman's Medical College of Pennsylvania, Philadelphia, 1905; aged 55; died, October 1.

J. Edward Cox ⊕ Quinnimont, W. Va.; Medical College of Virginia, Richmond, 1895; aged 51; died in Stanaford, W. Va., August 23.

Howard James, New York; George Washington University, Washington, D. C., 1893; aged 54; died, September 29, from pneumonia.

John Neely Barber, Atlanta, Ga.; Meharry Medical College, Nashville, 1905; aged 42; a colored practitioner; died, October 4.

V. Eugenia Metzger, Washington, D. C.; University Medical College of Kansas City, Mo., 1896; aged 48; died, September 1.

John D. Cole, New York; Hahnemann Medical College and Hospital, Chicago, 1882; aged 63; died, September 25.

Malone M. Cooley, Paducah, Ky.; University of Nashville, Tenn., 1896; aged 47; died, September 24, from nephritis.

Jacob Swartley Mancha, Los Angeles; University of the City of New York, 1884; aged 81; died September 24.

William H. Simmons ⊕ Bangor, Maine; University of Wurtzburg, Germany, 1872; aged 72; died, October 4.

Chambers A. McLean, Decatur, Ill.; Eclectic Medical Institute, Cincinnati, 1871; aged 88; died, September 16.

Charles Forrester Roberts, New York; Bellevue Hospital Medical College, 1867; aged 78; died, September 27.

George Koons, Indianapolis; Medical College of Indiana, Indianapolis, 1902; died, September 28.

Edward Joseph Carroll, Brooklyn; University of the City of New York, 1882; died, October 2.

Richard H. Angell, New Orleans; Tulane University, New Orleans, 1890; died, September 30.

Correction.—In the notice of the death of Dr. Adolph Gehrmann, Chicago, which appeared in THE JOURNAL, October 9, page 1015, the cause of death was erroneously given as cancer of the larynx. Dr. Gehrmann died from sarcoma of the mediastinum.

Marriages

EDWIN STANLEY BRIDGES, St. John, N. B., to Miss Alison Marguerite Alexander of Campobello, N. B., September 16.

JOEL MILLER MELICK, Worcester, Mass., to Miss Bertha McDonough of Brookline, Mass., October 2.

FRANK JUDSON MOORE, Affinity, W. Va., to Miss Maurnetia Livingston of Cold Springs, Ky., October 1.

JAMES RISLING REULING, Davenport, Iowa, to Miss Dorothy Elmendorf Teel of New York, October 5.

SAMUEL RUSH MILLER, Knoxville, to Miss Victoria Lucretia Jordan of Wabash, Ind., September 29.

HENRY AUGUSTINE LATANE, Alexandria, Va., to Miss Polly Graham of New York, September 22.

ALFRED HENRY A. MAYER, Baltimore, to Mrs. Grace E. Whitney, at Philadelphia, recently.

RALPH GOLDSMITH CAROTHERS to Miss Helen B. Holmes, both of Cincinnati, September 28.

CHARLES TERRY BUTLER to Miss Dorothy Powell Black, both of New York, October 12.

SAMUEL DURFEY SWOPE, Deming, N. M., to Miss Margaret Maule of New York, recently.

DAVID NYE BARROWS to Miss Frances L. Scoville, both of New York, October 10.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

MORE MISBRANDED PRODUCTS

Salubrin.—A quantity of this nostrum shipped in February and May, 1919, by the Salubrin Laboratory, Grand Crossing, Chicago, was declared misbranded. The stuff was analyzed by the federal chemists, who reported that it contained alcohol, ethyl acetate, acetic acid, and traces of aldehyd. The preparation was represented as a remedy for ringworm, dandruff, diarrhea, dyspepsia, piles, sore throat, blood poisoning, tuberculous ulcers, consumption, diphtheria, barbers' itch and falling of the womb. These and many other claims were declared false and fraudulent; and, no claimant having appeared for the property, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 7404; issued Sept. 13, 1920.*]

Dolomol-Calomel and Dolomol-Iodoform.—The Pulvola Chemical Company, Jersey City, N. J., shipped in February, 1918, quantities of Dolomol-Calomel and Dolomol-Iodoform which were adulterated and misbranded. The Dolomol-Calomel bore on the label the statement "Calomel 25 Per Cent."; as a matter of fact, it contained less than 11 (10.99) per cent. The Dolomol-Iodoform was labeled as "Iodoform 10 Per Cent."; as a matter of fact, it contained approximately only 7.09 per cent. of iodoform. In December, 1918, the Pulvola Chemical Co. pleaded guilty and was fined $25.—[*Notice of Judgment No. 6875; issued May 4, 1920.*]

Influenza Special (Senoret).—A quantity of this product, shipped in October, 1918, by the Senoret Chemical Co., St. Louis, was declared misbranded. When analyzed by the federal chemists it was found to consist essentially of a sugar-coated tablet containing aloin, mydriatic alkaloids and cinchonin, with little or no quinin and with indications of aconite. The therapeutic claims made for the preparation were declared to be false and fraudulent. In June, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product should be destroyed.—[*Notice of Judgment No. 7452; issued Sept. 24, 1920.*]

Gray's Ointment.—A number of packages of this preparation shipped in August, 1919, by Dr. W. F. Gray & Co., Nashville, Tenn., were declared misbranded. Analysis of a sample made in the Bureau of Chemistry showed it to consist essentially of a compound of lead, linseed oil, wax and turpentine. Some of the conditions for which the ointment was recommended were: mercurial and other ulcers, rheumatic and other pains, cancerous affections, snake bites, sore nipples, weak muscles, sore eyes, sore throat, sore back and "in fact, almost every other external disease that afflicts man or brute." The therapeutic claims were declared false and fraudulent. In October, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product should be destroyed.—[*Notice of Judgment No. 7469; issued Sept. 24, 1920.*]

Vegetable Blood Purifier.—In April, 1918, fifty-seven bottles of this product, that had been consigned by the Gibson-Howell Co. of Jersey City, N. J., were seized on the charge of misbranding. The product was recommended, among other things, "for the relief of scrofula, cancerous or indolent tumors, eruptive diseases, erysipelas, syphilitic affections, rheumatism, ulcers, catarrh, boils, pimples, ringworms, and all disorders due to a depraved condition of the blood." Analysis showed the "Vegetable Blood Purifier" to consist essentially of Epsom salt, a laxative vegetable drug, some plant extractives, glycerin, alcohol and water. The therapeutic claims were declared false and fraudulent and applied with a knowledge of their falsity for the purpose of defrauding purchasers. In July, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product should be destroyed.—[*Notice of Judgment No. 7489; issued Sept. 24, 1920.*]

Renovine.—In May, 1918, the Van Vleet-Mansfield Drug Company, Memphis, Tenn., shipped a quantity of "Renovine" which was misbranded. Analysis by the federal chemists showed the product to consist essentially of potassium bromid, salicylic acid, laxative plant material, alcohol and water. The product was falsely and fraudulently represented as a treatment, remedy and cure for diseases of the heart and nerves, epilepsy, melancholia, change of life, stomach trouble, kidney disease, pneumonia, malaria, apoplexy, paralysis and several other things. In November, 1919, the Van Vleet-Mansfield Drug Co. pleaded guilty and was fined $50 and costs.—[*Notice of Judgment No. 7497; issued Sept. 24, 1920.*]

Cin-Ko-Na and Iron.—A quantity of this product shipped in March, 1919, by the De Lacy Chemical Company, St. Louis, was declared misbranded. It was sold under the claim that it was a "Valuable Remedy for all Blood Diseases, Rheumatism, Catarrh and all Nervous Diseases" and was "Of Great Benefit and Most Useful for Consumption . . . and Bright's Disease." Also that it was "a perfect Remedy in all Chronic Diseases peculiar to Women" and a "Positive Guaranteed Cure for Catarrh, Coughs, Colds, Grip, Bronchitis and Catarrh of the Stomach." Analysis showed the preparation to consist essentially of a laxative plant drug, small amounts of quinin, strychnin, iron salts, glycerin, alcohol and water. The claims quoted above and many others were declared false and fraudulent. In December, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product should be destroyed.—[*Notice of Judgment No. 7506; issued Sept. 24, 1920.*]

Craig Healing Springs Mineral Water.—In May, 1919, the Craig Healing Springs Hotels, New Castle, Va., shipped 252 gallons of this water which the government seized on the charge of misbranding. The label declared that the water "Relieves and Cures Diseases of the skin, Eczema, Scrofulous Sores, Cutaneous and Dermatic Eruptions . . . Dyspepsia, Constipation, Bilious Diarrhea, Catarrhal Troubles and other derangements of the stomach, Leucorrhea and Hemorrhoids." It was further recommended as a cure for diabetes and Bright's disease. These and similar claims were declared false and fraudulent. In September, 1919, judgment of condemnation and forfeiture was entered and it was ordered by the court that the product be destroyed.—[*Notice of Judgment No. 7519; issued Sept. 24, 1920.*]

Laxa-Cura Water.—The Laxa-Cura Water Co. shipped in October, 1918, a quantity of Laxa-Cura Water, which was adulterated and misbranded. It was held adulterated because it consisted in part of a filthy, decomposed and putrid animal and vegetable substance. It was misbranded because an alleged analysis published on the label was shown to be incorrect, the water containing less of certain ingredients than the label showed. It was also declared misbranded because it was falsely and fraudulently represented as a remedy and cure for diseases of the kidneys, liver and stomach, etc. In October, 1919, the defendant company pleaded guilty and was fined $100.—[*Notice of Judgment No. 7535; issued Sept. 24, 1920.*]

Reuter's Little Pills for the Liver.—Barclay & Co., New York, shipped in June, 1918, a quantity of this product which was misbranded. Analysis showed the pills to contain aloin, strychnin, atropin, and emetin. The pills were falsely and fraudulently represented as a treatment, remedy and cure for dyspepsia, headache, flatulence, yellow jaundice, enlarged liver, cold feet, tape worm, sore eyes, nightmare diabetes and several other things. In January, 1920, the defendant company pleaded guilty and was fined $25.—[*Notice of Judgment No. 7536; issued Sept. 24, 1920.*]

Correspondence

"THE STRUCTURE OF MUSCLES"

To the Editor:—In your editorial on "The Structure of Muscles," September 11, which has but recently come to my attention, I am afraid you impute more sweeping deductions than I intended in the original article on which your comment was based. The article did not show "that the muscles can store an enormous amount of material both intercellularly and intracellularly" but did deduce that the shrinkage of the muscle fibers "must be due to a resorption of inter- and intra-cellular substances of a stored nature." That such substances exist—glycogen and fat, for example—has long been known.

It is greatly to be regretted that your review should impute to me the credit for a protein storage theory. This may be due to your failing to read the short introduction to the article in question. I might have prevented the error by quoting the original promulgator in my summary. This theory was first advanced by C. W. Greene (*J. Biol. Chem.* **33**:xiii) before the twelfth annual meeting of the Society of Biological Chemists in a paper entitled "The Composition of the Ovaries of the Salmon during Migration." The following is quoted from this article: "So it is obvious that this great excess of protein must exist in the muscle in the form of stored protein. There is a protein storage in the salmon comparable to the similar storage of fat. This stored protein is available during the migration for the synthesis of new-protein tissue in the developing ovaries." My paper gave credit to a later paper by Greene (*J. Biol. Chem.* **39**:435) which reaffirmed the theory. The evidence I submitted confirms the theory of Greene.

C. ROBERT MOULTON, Columbia, Mo.
Professor of Agricultural Chemistry,
University of Missouri.

"THE VIABILITY OF RED BLOOD CELLS"

To the Editor:—In an editorial discussion in THE JOURNAL (Sept. 25, 1920, p. 878) on the preservation of red cells for transfusion purposes, a hope is expressed that the experimental findings may ultimately be rendered applicable to man. It will not perhaps be out of place to draw attention to a recent instance of such application on an extensive scale, and under conditions of much self-devotion on the part of the worker principally concerned. I refer to the use of "canned blood" by Major Oswald H. Robertson, D.S.O., and others on the British front during the years of trench warfare.

For his work with preserved cells, Robertson employed only the blood of men belonging to Group IV (Moss), the universal donor group. Rear area men and sturdy convalescents were the donors, and blood was never difficult to obtain. It was taken directly into a glucose-citrate mixture, preserved in the cold, and used at casualty clearing stations and regimental aid posts during rush periods. Details of the technic will be found in Robertson's brief article in the *British Medical Journal* (**1**:691 [June 22] 1918; Memo. 4, British Medical Research Committee). The cells preserved for periods up to twenty-six days served the purpose of transfusion excellently, and the use of the method soon spread. During the German drive of March, 1918, much "canned blood" fell into the enemy's hands.

It is an interesting fact that Dr. Robertson, native-born, Harvard '13, and a member of the Peter Bent Brigham Unit of Boston, was the author of the British memorandum on transfusion for army use (Report No. 4 of the British Medical Research Committee, Memorandum on Blood Transfusion, 1918) and devised the transfusion apparatus (*Brit. M. J.* **1**:477 [April 27] 1918; also memorandum cited above) officially adopted by the British and manufactured for them in quantity toward the close of the war. His more recent papers with Captain Bock on the treatment of depletion from hemorrhage by indirect methods deserve special mention, since they show that water by the mouth and the rectum can, in many grave instances of depletion, be used to replace transfusion (*J. Exper. Med.* **29**:139, 155 [Feb.] 1919).

His work has proved conclusively that human red cells are valuable for transfusion after several weeks of preservation. But there is a drawback to blood as at present preserved in the fact that its plasma, being mixed with sodium citrate and dextrose, must be in large part discarded. The mere fluid bulk thus lost can be made up with gelatin solution, as was Robertson's practice, but one will scarcely contend that this is as valuable as plasma. Whether central depots of preserved blood in large cities, such as Burmeister has suggested (THE JOURNAL, Jan. 15, 1916, p. 164), are practical, remains to be seen. The gradual improvement in fluid blood substitutes, and the increased use of simple transfusion methods will tend largely to decrease the number of cases in which a flask of preserved blood would prove life-saving. Corpuscular incompatibilities, though, will remain; and times and circumstances will still arise in which the period of search for a donor cannot but prove critical to the patient.

PEYTON ROUS, M.D., New York.
Rockefeller Institute for Medical Research.

"THE PHYSICIAN'S OFFICE"

To the Editor:—Your editorial comment (THE JOURNAL, Aug. 21, 1920, p. 545) on the necessity of maintaining a respectable appearing office brings to mind a certain piece of writing from a physician of several centuries ago. Here are the requisites necessary for success in medicine, as quoted by Crabtre ("Funny Side of Physic: or, the Mysteries of Medicine," Hartford, Conn., J. B. Burr and Hyde, 1872):

First. A decent black suit, and (if your credit will stretch so far), a plush jacket, not a pin the worse if threadbare as a tailor's cloak—it shows the more reverend antiquity.

Second. You must carry a caduceus, or cane, like Mercury, capped with a civet-box (or snuff-box like Sir Richard's), and must walk with becoming gravity, as if in deep contemplation upon an arbitrament between life and death.

Third. You must hire convenient lodgings in a respectable neighborhood, with a hood (small door or window, through which to receive night calls, etc.) at the door; have your reception-room hung with pictures of some celebrated physicians, ancient historical scenes, and anatomical plates, and the floor belittered with gallipots and half-empty bottles. Any sexton will furnish your window with a skull, in hope of your custom.

Fourth. Let your desk never be without some musty old Greek and Arabic authors, and on your table some work on anatomy, open at a picture page, to amuse, if not astonish spectators, and carelessly thrown on the same a few gilt shillings, to represent so many guineas received that morning as fees.

Fifth. Fail not to patronize neighboring alehouses which may, in turn, recommend you to inquirers; and hold correspondence with all the nurses and midwives whose address you may obtain, to applaud your skill at gossiping.

Sixth. Be not over modest in airy pretensions, not forgetting that loquaciousness and impudence are essential in gaining a fool's confidence. In case you are naturally backward in language, or have an impediment of speech, you are recommended to persevere in a habit of mysterious and profound silence before patients, rendered impressive by grave nods and ahems.

EDWARD PODOLSKY, New York.

COAGULATION TIME OF BLOOD

To the Editor:—The capillary tube method for testing the coagulation time of blood, we have long used. But the technic abstracted in THE JOURNAL, Oct. 2, 1920, page 962, is unnecessarily cumbersome, and, also unnecessarily, as painful to the patient as taking a blood specimen for a Wassermann test.

A simple prick of the lower edge of the ear lobe, as for making a blood count, furnishes ample flow of blood for

filling a single capillary tube of about 15 cm. length, one end of the tube being held to the puncture site, and the tube inclined downward, gravity and capillarity sufficing to fill it.

A glance at a time-piece at the start of filling fixes the initial time, and, where the flow, as occasionally happens, is slightly sluggish, a second glance shows the half minute or so required for filling, and makes possible a slight allowance for the difference in time between the two ends.

One cm. sections may then be carefully broken at 15 or 30 second intervals for determination of the beginning of threading, or coagulation.

What seems to be an improvement to take the place of breaking has lately been hit upon in the laboratory and has checked in accuracy so far as compared.

When letting the blood run into the capillary, the tube is removed from the ear when the flow is 2 or 3 cm. from the lower end. The column of blood is then allowed to run nearly to the lower end, when the tube is inverted and the blood allowed to run nearly to the other end. The tube is then again inverted and the process continued till flow ceases, when, as can be checked by breaking, coagulation has occurred.

Simultaneous use of break and flow methods has failed to show any stringing before flow stoppage.

GME. W. DE LA MOTTE, M.S., San Francisco.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MEDICATED ALCOHOL

To the Editor:—One of our local druggists uses this formula for alcohol for bathing purposes: carbolic acid and tannic acid, 1 dram each to 4 ounces each of alcohol and water. Is this mixture thus rendered nontoxic? Please omit my name.

G. E., Colorado.

ANSWER.—It is stated in Section 61, Regulations 60 of the National Prohibition Act, that wholesale and retail druggists or pharmacists may medicate alcohol in accordance with any one of the seven formulas listed below:

1. Bichloride of mercury, 1 part; alcohol, 2,000 parts.
2. Bichloride of mercury, 0.8 gm.; hydrochloric acid, 60 c.c.; alcohol, 64 c.c.; water, 300 c.c.
3. Bichloride of mercury, 1½ grains; hydrochloric acid, 2 drams; alcohol, 4 ounces.
4. Formaldehyde, 2 parts; glycerin, 2 parts; alcohol, 96 parts.
5. Carbolic acid, 1 dram; tannic acid, 1 dram; alcohol, 1 pint; water, 1 pint.
6. Alum, ½ ounce; formaldehyde, 2 drams; camphor, 1 ounce; alcohol and water, each 1 pint.
7. Liquor cresolis comp. (U. S. P.), 10 c.c.; alcohol, 1,000 c.c.

The formula mentioned in our correspondent's letter presumably is intended to be in accordance with No. 5 in the list. As all alcohol medicated in accordance with any one of the foregoing formulas is regarded as unfit for beverage purposes, it is obvious that none is "nontoxic." Such medicated alcohol may be sold by pharmacists in quantities not to exceed 1 pint to persons who do not hold permits to sell or use intoxicating liquor; in each case the container of such medicated alcohol must bear a "poison" label.

Closing Schools as a Means of Controlling Epidemics.—Closing schools as a means of controlling epidemics of measles, whooping cough, scarlet fever, diphtheria, smallpox and poliomyelitis should be considered as a last resort to be used only when thorough and systematic application of other measures fails to effect control. As a method it is clumsy, unscientific, and unsatisfactory, for it fails to control and results in the loss of school time and money. The modern method of careful daily inspection of infected schools, isolation of sick children and quarantine of contacts, is both more effective and economical.—*Pub. Health Rep.*, Nov. 21, 1919.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, Nov. 9-10. Sec. Reg. Bd., Dr. F. J. Stout, Brinkley. Sec. Eclectic Bd., Dr. C. E. Laws, Ft. Smith.

CONNECTICUT: Hartford, Nov. 9-10. Sec. Reg. Bd., Dr. Robert L. Rowley, Hartford.

CONNECTICUT: New Haven, Nov. 9. Sec. Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec. Eclectic Bd., Dr. James E. Hair, Bridgeport.

FLORIDA: Gainsville, Dec. 6-7. Sec. Reg. Board, Dr. W. M. Rowlett, 812 Citizens Bank Bldg., Tampa.

FLORIDA: Jacksonville, Nov. 4. Sec., Homeo. Board, Dr. George A. Davis, Sec., East Port.

LOUISIANA New Orleans, Dec. 2-4. Sec., Dr. E. W. Mahler, 1551 Canal St., New Orleans.

LOUISIANA: New Orleans, Nov. 2. Sec., Homeo. Board, Dr. F. H. Hardenstein, 702 Macheca Bldg., New Orleans.

MAINE: Portland, Nov. 9-10. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

NEBRASKA: Lincoln, Nov. 11-12. Sec., Mr. H. H. Antles, Lincoln.

NEVADA: Carson City, Nov. 1. Sec., Dr. Simeon L. Lee, Carson City.

OHIO: Columbus, Dec. 1-3. Sec., H. M. Platter, State House, Columbus.

SOUTH CAROLINA: Columbia, Nov. 9. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TEXAS: Dallas, Nov. 16-18. Sec., Dr. Thomas J. Crowe, 617-20 Trust Bldg., Dallas.

Minnesota June Examination

Dr. Thomas S. McDavitt, secretary, Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis, June 1-4, 1920. The examination covered 15 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 15 candidates examined 14 passed and 1 failed. Eight candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Kansas		(1916)	90.6
Johns Hopkins University		(1917)	90.5
Harvard University		(1919)*	84
Univ. of Minn. (1920) 81.7, 86, 86.1, 87, 87.8, 87.9, 89.8, 90, 90.5, 92.3.*			
University of Louisville		(1916)	90.7
	FAILED		
University of Louisville		(1911)	**

College	LICENSED BY EXAMINATION	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago		(1901)	Iowa
Northwestern University		(1918)	Illinois
State University of Iowa College of Homeo. Med.		(1902)	Iowa
State University of Iowa College of Medicine		(1919)	Iowa
University of Michigan Medical School		(1918)	Michigan
St Louis University		(1903)	Illinois
Pulte Medical College		(1888)	Nebraska
Wisconsin College of Physicians and Surgeons		(1906)	Wisconsin

* These candidates have finished the medical course and will obtain the M.D. degree after they have completed a year's internship in a hospital.

** No grade given.

Mississippi June Examination

Dr. W. S. Leathers, secretary, Mississippi State Board of Health, reports the written examination held at Jackson, June 21-22, 1920. The examination covered 12 subjects and included 96 questions. An average of 75 per cent. was required to pass. Of the 34 candidates examined, 32, including 2 osteopaths, passed and 2, including one chiropractic, failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Atlanta College of Physicians and Surgeons		(1902)	92
Northwestern University		(1919) 80, (1920)	89*
Tulane Uniyersity of Louisiana School of Medicine (1920) 76, 78, 78, 81, 83, 84, 84, 86, 87, 88, 90.		(1919)	89
Medical School of Maine		(1913)	91
Mississippi Medical College		(1911)	85
University of Oklahoma School of Medicine		(1920)	91
Jefferson Medical College of Philadelphia		(1920)	93
University of Pennsylvania		(1920)	91
Meharry Medical College		(1920) 75, 83,	83
Memphis Hospital Medical College		(1911)	78
University of Virginia Department of Medicine (1920) 85, 85, 87, 88.		(1919)	86
University of Toronto Faculty of Medicine		(1919)	87
	FAILED		
Louisville National Medical College		(1916)	36

* Official information says this man failed to complete his fourth year.

Book Notices

ITALIAN SOCIAL CUSTOMS OF THE SIXTEENTH CENTURY AND THEIR INFLUENCE ON THE LITERATURE OF EUROPE. By Thomas Frederick Crane. Cloth. Price, $5. Pp. 689. New Haven: Yale University Press, 1920.

This book was prepared to show the effect of the customs and literature of Italy on all the literature of Europe. The chief sources of information concerning the customs are the discussions in the literature of the period, such as the Decameron, and the novels and short stories of the times. Above all, the book reveals the importance of what the modern Freudians call the "libido" in the life of the people at that time. This was not repressed, as is our modern custom, but was the chief subject of conversation and interest. There are numerous quotations of Italian proverbs and sayings. The philosophy of that period was the living of physical life to the utmost. The book is not medical or near medical, but it is one that the majority of medical men will find both interesting and enlightening.

A SHORT HISTORY OF NURSING FROM THE EARLIEST TIMES TO THE PRESENT DAY. By Lavinia L. Dock, R.N., Secretary, International Council of Nurses, in Collaboration with Isabel Maitland Stewart, A.M., R.N., Assistant Professor, Department of Nursing and Health, Teachers College, Columbia University, New York. Cloth. Price, $3.50. Pp. 392. New York: G. P. Putnam's Sons, 1920.

This book should appeal to all who are directly or indirectly interested in nursing. Especially does this statement apply to those who follow nursing as a profession. As the authors say, no occupation can be intelligently followed or understood unless it is illumined and interpreted by the light of history. While most of us look on nursing as quite modern, it is almost as old as humanity. Modern nursing—that is, nursing as a profession—may be regarded as having its origin in the Crimean War, through the personality of Florence Nightingale. But nursing—the care of the sick—was a calling long before that war or before Miss Nightingale's time. This book is an abridgment of the authors' four volume History of Nursing. For all practical purposes, it is better for the average person than the larger work; it contains all that is important. Being more compact and cheaper, it is within the reach of a larger number and, therefore, will be more effective for the general good. The book is one to be commended to all who are interested in the subject.

THE CARE AND FEEDING OF SOUTHERN BABIES. A Guide for Mothers, Nurses and Baby Welfare Workers of the South. By Owen H. Wilson, M.D., Professor of Diseases of Children, Vanderbilt University. Cloth. Price $1.25. Pp. 131. Nashville: Baird-Ward Printing Company, 1920.

This small volume should prove an excellent guide to mothers, nurses and baby welfare workers of the South. It goes a long way toward combating many popular superstitions, and yet does not attempt to go into all the details and, therefore, accomplish an impossibility. The book is filled with much hard common sense, and carries with it the personality of the author. While one may disagree with him on certain things, one will yet feel that the book is safe and sane.

HEART TROUBLES: THEIR PREVENTION AND RELIEF. By Louis Faugères Bishop, M.A., M.D., Sc.D., Professor of the Heart and Circulatory Diseases, Fordham University. Cloth. Price, $3.50. Pp. 422, with illustrations. New York: Funk & Wagnalls Company, 1920.

We quote from the publishers' letter to the literary editor of THE JOURNAL:

It is designed for the guidance and help of the layman who suffers from heart trouble or for the family or immediate relatives of such sufferers, and especially for the nurses in charge of these cases. It describes the various types of heart diseases in a most lucid and informing way and tells exactly what should be done in each case, the mode of life best suited to the trouble, the most beneficial diet, etc. Its cheery optimism and sane counsel should prove of real service not only to all heart patients, but also physicians, who can obtain much valuable information from the instructions it gives.

The statements are in large measure true. But we detect, as we read the book, a flavor that reminds us of the circular of the advertising doctor. For the layman, a discussion of electrocardiography with numerous plates and diagrams can do little except to bewilder and lead the reader to consult a physician—presumably the one who writes so learnedly about the subject. The fact that some of the author's success and greatness has been due to the influence of such masters as Osler and Mackenzie may be true—we are glad it is so. But to force into the volume their pictures, and to comment on the author's personal relations and acquaintance with these men is, to put it mildly, in bad taste.

PHYSIOLOGICAL PRINCIPLES IN TREATMENT. By W. Langdon Brown, M.A., M.D., F.R.C.P., Physician, with Charge of Out-Patients, St. Bartholomew's Hospital. Fourth edition. Cloth. Price, $3. Pp. 427. New York: William Wood & Co., 1920.

The scope of this work may be gathered from its table of contents: principles of organotherapy; rational treatment of gastric disorders; mechanical factors in digestion and indigestion; work of the pancreas; uric acid and the purin bodies; oxaluria, phosphaturia and urinary calculi; albuminuria and the treatment of nephritis; glycosuria and diabetes; acidosis and acid intoxications; intestinal intoxications; irregular action of the heart; the vasomotor system in disease; cyanosis, and vitamins and calcium salts. The aim is to discuss the physiologic principles at the basis of these different conditions and to show how the deviation from their normal working may best be prevented or restored. The author is fairly successful, though often the handling of the topic is rather incomplete and not up to date.

Medicolegal

Disclosure of Confidential Information as to Contagious Disease

(Simonsen v. Swenson (Neb.), 177 N. W. R. 831)

The Supreme Court of Nebraska, in affirming a judgment on a verdict that the jury was directed to render for the defendant, says that this was an action for damages for an alleged breach of duty arising from the confidential relationship between the defendant, who was a physician, and the plaintiff, who was his patient. The case is a novel one. No other cases bearing directly on the question were cited by counsel, and this court's search for them was unsuccessful. The plaintiff, with other employees of a telephone company, was stopping at a small hotel operated by a Mrs. Bristol. He was a stranger in the town. He became afflicted with sores on his body, and went to the defendant, who took the history of his trouble, gave him a physical examination, and informed him that he believed his disease to be syphilis. He further stated, however, that it was impossible to be positive without making certain Wassermann tests, for which he had no equipment. The defendant was the physician of the Bristol family, and acted as their hotel physician when one was needed. He told the plaintiff that there would be much danger of his communicating the disease to others in the hotel if he remained there, and requested that he leave the next day, which the plaintiff promised to do. On the following day the defendant, while making a professional call on Mr. Bristol, who was ill, learned that the plaintiff had not moved from the hotel. He therefore warned Mrs. Bristol that he thought the plaintiff was afflicted with a "contagious disease," and for her to be careful, to disinfect his bedclothing, and to wash her hands in alcohol afterward. Mrs. Bristol, acting on this warning, placed all of the plaintiff's belongings in the hallway, and fumigated his room. The plaintiff was forced to leave. After leaving the town, he consulted another physician, and one Wassermann test was made, which proved negative; and that physician could not say whether the plaintiff had syphilis or not.

The plaintiff contended that, having shown the relationship of physician and patient, the law prohibits absolutely a disclosure of any confidential communication, at any time, or under any circumstances, and that a breach of this duty of secrecy, on the part of the physician, gives rise to a cause of action in damages in favor of the patient. At common law there was no privilege between physician and patient, and this rule still prevails when not changed by statute. Section

7898 of the Revised Statutes of Nebraska of 1913 provides that a physician shall not be allowed to disclose, on the witness stand, any confidential communication entrusted to him in his professional capacity. The disclosure of confidences in this case was not by the defendant as a sworn witness, and this statute, therefore, obviously did not apply and had no bearing on this case. Section 2721, however, provides that no physician shall practice medicine without a license from the board of health, and that such a license may be revoked when a physician is found guilty of "unprofessional or dishonorable conduct." Among the acts of such misconduct, defined by the statute, is the "betrayal of a professional secret to the detriment of a patient."

By the latter statute a positive duty is imposed on the physician, both for the benefit and advantage of the patient as well as in the interest of general public policy. The relation of physician and patient is necessarily a highly confidential one. It is often necessary for the patient to give information about himself which would be most embarrassing or harmful to him if given general circulation. This information the physician is bound, not only on his own professional honor and the ethics of his high profession, to keep secret, but by reason of the affirmative mandate of the statute itself. A wrongful breach of such confidence, and a betrayal of such trust, would give rise to a civil action for the damages naturally flowing from such wrong. Is such a rule of secrecy, then, subject to any qualifications or exceptions? The physician's duty does not necessarily end with the patient, for, on the other hand, the malady of his patient may be such that a duty may be owing to the public and, in some cases, to other particular individuals. Recognition of that fact is given by the statutes in Nebraska, which delegate power to the state board of health, and to municipalities generally, to require reports of, and provide rules of quarantine for, diseases which are contagious and dangerous. An ordinance in Omaha enacted under such power, providing quarantine of communicable venereal diseases, was sustained by this court in *Brown* v. *Manning,* 103 Neb. 540, 172 N. W. 522.

When a physician, in response to a duty imposed by statute, makes disclosure to public authorities of private confidences of his patient, to the extent only of what is necessary to a strict compliance with the statute on his part, and when his report is made in the manner prescribed by law, he of course has committed no breach of duty toward his patient, and has betrayed no confidence, and no liability can result. Can the same privilege be extended to him in any instance in the absence of an express legal enactment imposing on him a strict duty to report? The statute making the "betrayal of a professional secret" misconduct on the part of a physician is in derogation of the common law, and should be strictly construed. The court believes the word "betrayal" is used to signify a wrongful disclosure of a professional secret in violation of the trust imposed by the patient. No patient can expect that if his malady is found to be of a dangerously contagious nature he can still require it to be kept secret from those to whom, if there was no disclosure, such disease would be transmitted. The information given to a physician by his patient, though confidential, must, it seems to the court, be given and received subject to the qualification that if the patient's disease is found to be of a dangerous and so highly contagious or infectious a nature that it will necessarily be transmitted to others unless the danger of contagion is disclosed to them, then the physician should, in that event, if no other means of protection is possible, be privileged to make so much of a disclosure to such persons as is necessary to prevent the spread of the disease. A disclosure in such case would, it follows, not be a betrayal of the confidence of the patient, since the patient must know, when he imparts the information or subjects himself to the examination, that, in the exception stated, his disease may be disclosed.

In order that such a privilege of making a disclosure may be available to a physician, however, he must have had the ordinary skill and learning of a physician, and must have exercised ordinary diligence and care in making his diagnosis; otherwise he could be subjected to an action for negligence in making a wrongful report. In making such disclosure a physician must also be governed by the rules as to qualifiedly privileged communications in slander and libel cases. He must prove that a disclosure was necessary to prevent spread of disease, that the communication was to one who, it was reasonable to suppose, might otherwise be exposed, and that he himself acted in entire good faith, with reasonable grounds for his diagnosis, and without malice.

It appears to the court that the facts disclosed by the record in this case showed that the occasion was privileged; that the defendant had reasonable grounds for his belief; that he made no further disclosure than was reasonably necessary under the circumstances, and that he acted in good faith and without malice. Had the plaintiff put in issue any of these facts, the case should have gone to the jury; but the testimony introduced raised no issues on those questions.

The syllabus by the court summarizes what is decided in this case as being that:

The information given to a physician by his patient, though confidential, is given subject to the understanding, conclusively presumed in law, that, if the patient's disease is found to be of a dangerous and so highly contagious or infectious a nature that it may be transmitted to others unless the danger of transmission is disclosed to them, the physician is then privileged to make so much of a disclosure to such persons as is reasonable and necessary to prevent the spread of the disease.

Where a physician makes such a disclosure, believing that a disclosure was necessary to prevent the spread of the disease, and when the disclosure is made to one who, it is reasonable to believe, might otherwise be exposed, and when the physician acts in entire good faith, with reasonable grounds for his diagnosis and without malice, he cannot be held liable in damages by his patient, even though he is mistaken in his diagnosis and has reported that his patient was afflicted with a disease which in fact he did not have.

Society Proceedings

COMING MEETINGS

District of Columbia, Medical Society of, Washington, Dec. 7.
Hawaii, Medical Society of, Honolulu, Nov. 18-20.
Medical Association of the Southwest, Wichita, Kan., Nov. 22-24.
Mississippi Valley Medical Association, Chicago, Oct. 26-28.
Southern Medical Association, Louisville, Ky., Nov. 15-18.
Southern Minnesota Medical Association, Mankato, Nov. 29-30.
Virginia, Medical Society of, Petersburg, Oct. 26-29.
Western Surgical Association, Los Angeles, Calif., Dec. 3-4.

AMERICAN ASSOCIATION OF OBSTETRICIANS, GYNECOLOGISTS AND ABDOMINAL SURGEONS

Thirty-Third Annual Meeting, held at Atlantic City, N. J., Sept. 20-22, 1920

(Concluded from page 1089)

Enuresis

DR. JOHN W. KEEFE, Providence, R. I.: Enuresis is a psychophysiologic impression made on the brain. Heredity undoubtedly plays an important rôle. These patients have a neurotic, unstable nervous system accompanied many times by mental retardation. Psychotherapy, mental suggestion and education of the subconscious mind should supplement any other form of treatment. In a word, the cure is the result of the mental awakening and stabilizing of the brain cells that control the act of micturition.

The Female Pelvic Ureters

DR. DAVID W. TOVEY, New York: Palpation of the ureters should be a part of every vaginal examination. Ureteritis, because of the nerves irritated, may simulate disease of any of the abdominal organs. Palpation will make the diagnosis.

Pseudocholecystitis

DR. HAROLD D. MEEKER, New York: The occurrence of adventitious bands in the upper abdomen has been estab-

lished beyond question. These bands give rise to definite symptoms. The gallbladder is the viscus most frequently involved; the resulting symptoms simulate a cholecystitis. Plastic surgery has given definite relief. The frequency with which adventitious bands in other parts of the abdomen coexist with those of the upper abdomen emphasizes the importance of a thorough search of the entire gastro-intestinal tract for abnormal bands and fixed points.

Double Flap Low Cesarean Section Results

DR. THURSTON SCOTT WELTON, Brooklyn: As a result of the findings in a series of fifty-five cases, I have concluded that the double flaps and low incision offer great protection against extension of infection to the peritoneum from an infected uterus. This should be the operation of choice in all potentially infected cases. This fact, also, should extend the field for cesarean section to include cases of long labor with the membranes ruptured and potentially infected from frequent vaginal manipulation in which most men would elect to perform a craniotomy on a living child rather than a classical section. The double flaps, likewise, so completely peritonealize the uterine wound that adhesions and postoperative disturbances are greatly minimized.

Pyelitis in Pregnancy

DR. GREER BAUGHMAN, Richmond, Va.: Three cases of pyelitis complicating pregnancy were treated with pelvic lavage. Living babies were born in two cases in which labor was induced at a selected time, while in the case in which labor began before the time set for its induction, the child died. With the exception of a few treatments, the patients after the first reaction showed marked improvement in symptoms. In all of the cases the right pelvis was primarily involved. In two the bladder was early involved; in one the bladder signs were not prominent. *Bacillus coli* was the exciting cause of two, *Staphylococcus albus* of the third. It was found possible to irrigate these patients within two weeks after the time of their delivery. None had any rise of temperature during the puerperium.

Borderline Carcinoma of Cervix and Its Treatment

DR. EDWARD A. WEISS, Pittsburgh: We have found that preliminary preoperative rest in bed for several days results in a marked diminution in the size of the diseased cervix, and a decidedly less thickening and fixation of the broad ligaments, proving that the fixation was inflammatory rather than malignant invasion of the lymphatics of the broad ligaments. We have frequently found that the supposedly inoperable case is really operable or on the borderline. During the period of rest in bed, more careful study of the patient's resistance can be made; and, should radical treatment follow, the condition of the patient is greatly improved and offers a better operative risk. In the borderline cases, the improved Byrne cautery technic, which is virtually the first stage of the Werder radical igni-extirpation, has given the best results; and while only a few so-called permanent or five year cures were obtained, yet we have had several instances of complete freedom from symptoms for periods of from three to five years. In a small series of cases, radium has proved to be a most valuable adjunct, both as to immediate and remote results. To say that radium used in the cervix is harmless is not in accordance with facts. Cancer of the cervix is still to be classed as an operative condition when discovered early and while the patient is a good risk. When a doubtful borderline condition is presented, treatment by radium is advisable, and the question of subsequent operation should be decided by the reaction obtained; but if operation is contraindicated by age, general condition, heart, kidney or blood vessels, radium alone should be used.

Splenic Leukemia Associated with Pregnancy

DR. GEORGE W. KOSMAK, New York: Leukemia complicating pregnancy has been reported in twelve cases, including two of my own, in which a fairly definite diagnosis from the blood picture was made. With the exception of Paterson's patient, all were multiparas. A possible hereditary history is mentioned in only one case. In the majority of cases the woman survived only a short time after labor. In every instance but one (my case) in which the definite diagnosis is presented the splenomedullary type of the disease was observed. The leukemia itself does not therefore appear to be a deterrent factor to conception. Probably a considerable number of cases of marked anemia in which no satisfactory blood count has been made may have been true instances of this disease. The occurrence of pregnancy in this disease indicates a most unfavorable outlook for the mother, and conception must, therefore, not be allowed to take place when the condition is suspected. The prognosis is undoubtedly worse in the pregnant than in the nonpregnant, and whether the association is accidental or not is immaterial. When the disease is already present, abortion seems to be the rule, with a rapidly progressing course and a fatal issue. It is necessary to distinguish between the acute and chronic forms of leukemia. Pregnant women may contract a rapidly fatal leukemia, although it seems possible that the disease was present in a milder form in many of these patients before their last and usually fatal pregnancy occurred.

Benign Mammary Tumors and Intestinal Toxemia

DR. WILLIAM SEAMAN BAINBRIDGE, New York: There are definite abnormal conditions of the breast tissue due to intestinal toxemia. Under medical treatment an appreciable number of these patients are cured. A preliminary lessening of the general toxic condition of the patient materially aids the surgeon in determining the true benign neoplasm, and saves a considerable amount of recoverable breast tissue too often unnecessarily sacrificed. Surgical procedure frequently is required for the correction of the intestinal stasis and the removal of the cystoma or the adenoma before the indurated, lobulated tissue resumes a healthy gland condition and the breast is brought back to normal.

Fibroma of Ovary

DRS. EDMUND D. CLARK and WILLIAM E. GABE, Indianapolis: The diagnosis is dependent solely on microscopic examination. In the presence of a hard, unilateral, movable tumor with ascites, when the more common causes of ascites can be ruled out, ovarian fibroma is highly probable. The treatment is operation; the prognosis, good.

Some Indications for Hysterectomy

DR. JAMES F. BALDWIN, Columbus, Ohio: Many women suffer from chronic uterine hyperplasia, frequently complicated with laceration of the cervix, retroversion, a tendency to procidentia, with leukorrhea, dyspareunia, sterility, backache and general ill health. In this type of disease no treatment effects a cure, and little can be accomplished in palliation. Other women suffer from imperfect development of the uterus, with sterility, painful menstruation, and other disturbances. A radical cure may be effected in these cases by hysterectomy, but saving the appendages so as to obviate the symptoms of the menopause, except as to the absence of menstruation.

Preparation of Skin for Operation, with Special Reference to Use of Picric Acid

DR. H. W. HEWITT, Detroit: Picric acid is astringent, and deeply penetrates the corneous layer of the skin. Its only disadvantage has been in staining the skin, an effect that will last from twelve to eighteen days, but may be removed by the application of a 5 per cent. solution of sodium carbonate, or a 25 per cent. solution of ammonia in ethyl alcohol, provided this is done immediately after the operation is finished. The picric acid solution used in our clinic was made by saturating a 70 per cent. ethyl alcohol solution with picric acid, which made a 6 per cent. solution. The merits of this method of preparation are many, namely, it is simple; it is cheap; it is efficient; it does not injure the skin in any way, and may be used on any part of the body; it does not injure the peritoneal coat of the intestine; it contains no proprietary preparation, and its antiseptic strength may be standardized.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

September, 1920, **160**, No. 3

*Blood Sugar Tolerance Test as Aid in Diagnosis of Gastro-Intestinal Cancer. J. Friedenwald and G. H. Grove, Baltimore.—p. 313.
*Diagnosis and Treatment of Pulmonary Tuberculosis. L. Brown, Saranac Lake, N. Y.—p. 324.
*Endothelial Leukocytes in Urine Suggesting Typhoid Infection. O. H. P. Pepper, Philadelphia.—p. 336.
*Protein Hypersensitveness in Children. K. D. Blackfan, Baltimore. —p. 341.
*Colon in Connection with Chronic Arthritis (Arthritis Deformans). A. Bassler, New York.—p. 351.
*Improvement in Exophthalmic Goiter Subsequent to Severe Focal Infection. T. L. Squier, Ann Arbor, Mich.—p. 358.
*Glucose Tolerance Test in Chronic Vascular Hypertension. J. P. O'Hare, Boston.—p. 366.
*Chronic Arthritis. G. Draper, New York.—p. 370.
*Interperitoneal Adhesions; Origin and Prevention. R. J. Behan, Pittsburgh.—p. 375.
Present Status of Empyema. A. O. Wilensky, New York.—p. 384.
*Substernal Goiter, with Pressure Symptoms. B. K. Rachford, Cincinnati.—p. 410.
*Case Showing Relation Between Occupation and Certain Case of Bronchial Asthma. J. Rosenbloom, New York.—p. 414.
*Experimental Chronic Suppurative Arthritis. J. W. McMeans, Pittsburgh.—p. 417.
*Blood Cholesterol in Gastro-Enterologic Cases. T. G. Schnabel, Philadelphia.—p. 423.
*Hyperacidity. M. E. Rehfuss and P. Hawk, Philadelphia.—p. 428.

Blood Sugar Test in Cancer.—The blood sugar tolerance was studied by Friedenwald and Grove in thirtytwo cases of carcinoma of the gastro-intestinal tract. All of the cases were typical of this disease. Seventeen patients were operated on and the diagnosis was thus confirmed, and in the remaining cases there were definite palpable abdominal masses in addition to the usual physical signs present in this affection; and the examination of the gastric contents as well as roentgenoscopy and final outcome presented confirmatory evidence in every instance. In addition, blood sugar tolerance tests were made in 3 cases of uterine carcinoma; 1 case each of breast cancer, carcinoma of the prostate and spine and uterine fibroid; 2 cases each of sarcoma, syphilis of the stomach and chronic appendicitis; 8 cases of peptic ulcer; 3 cases of diarrhea and dysentery; 8 cases of achylia gastrica and chronic gastritis; 4 cases of cholelithiasis; 11 cases of enteroptosis; 5 cases each of nervous dyspepsia and of intestinal stasis and mucous colitis, making 88 cases in addition to 4 perfectly normal individuals studied for purposes of comparison. In carcinoma of the gastro-intestinal tract a rather characteristic curve of sugar tolerance which differs somewhat from that observed in carcinoma of other regions of the body was present. The curve of this affection usually presents a high sugar content even in the fasting state, followed by an initial rise up to 0.24 per cent. or higher within forty-five minutes after the ingestion of the dextrose remaining at this level for at least 120 minutes, and at no time during this period falling below 0.20 per cent. The test is rather distinctive, so that it may render valuable assistance in a large proportion of cases as a means of differential diagnosis between carcinoma and other diseases of the gastro-intestinal tract. As positive curves occur equally whether cachexia exists or not, or whether the extent of the involvement be slight or great, the authors are under the impression that the results may be quite definite even in the early cases of the disease.

Food in Pulmonary Tuberculosis.—Speaking of the food requirements in the treatment of pulmonary tuberculosis, Brown says that it seems that extra meat is necessary until the patient has a proper amount of protein in his body. If excess of calcium salts are necessary no food furnishes such an amount of the dietary essential as milk, combined, too, probably in such a way that it can be used at once by the body. The fact that the calcium content of the blood serum does not vary in pulmonary tuberculosis is no argument against its use. Is it not possible that with an increased amount of calcium in food the blood may pass on to the tissues or scar formation an increased amount of calcium? With a judicious use of milk there is no call for any anxiety about a lack of fat-soluble in the diet of these patients. Cod liver oil and butter fats contain it in large quantities, while all vegetable oils and fats are deficient in it or lack it entirely. The water-soluble B is practically always supplied in sufficient quanities.

Endothelial Leukocytes in Urine in Typhoid.—In a case reported by Pepper the diagnosis of infection with the typhoid bacillus was reached as a result of the finding in the urine of numerous cells which closely resembled the endothelial leukocytes so regularly seen in the various lesions of typhoid fever. Pepper suggests that this observation may be additional evidence of the universality of the reaction to the typhoid bacillus and of its possible value in the recognition of unsuspected infection with this organism.

Protein Hypersensitiveness in Children.—According to Blackfan, successful therapeutic results may be expected in patients who are unable to take various foods without the development of eczema, urticaria, asthma, etc., if the patients are hypersensitive to protein and if the treatment is consistently and thoroughly carried out. The treatment may be carried out by absolutely omitting the protein from the diet or by the process of desensitization. In certain cases a combination of these methods may be used.

Colon Infection in Arthritis.—Having found that colon infection often is responsible for polyarthritis, Bassler has treated patients by a diet high in calories, but low in calcium, and by strains of viable *Bacillus coli* administered by rectum.

Complicating Infections of Thyroid and Hyperthyroidism.—Two cases of hyperthyroidism are cited by Squier in which complicating infections first caused a marked increase in the severity of the thyroid symptoms later followed, after the acute infection had subsided, by striking improvement, if not cure. He suggests that the improvement is due to actual loss of secretory tissue through postinfectious sclerosis of the gland.

Glucose Tolerance Test in Vascular Hypertension.—The results of twenty-five glucose tolerance tests done in twenty-three cases of chronic vascular hypertension are recorded by O'Hare. The results suggest that patients with chronic vascular hypertension are potential nephritics and potential diabetics.

Chronic Arthritis.—Draper is of the opinion that chronic arthritis represents a very profound constitutional disturbance in which forces analogous to those concerned in acromegaly and thyroid insufficiency are concerned. The family and personal history which arthritic patients give of hives, angioneurotic edema (bee string effects) and asthma, and, in addition, the well known feature of joint involvement seen in serum disease, all seem to indicate that there is a relationship between this whole group of phenomena and chronic arthritis.

Boric Acid and Lanolin Paste to Prevent Interperitoneal Adhesions.—Behan has used a heated paste of 5 per cent. pure boric acid in lanolin in more than 300 abdominal sections and has noted no bad results from its use. In fact, after its use patients claim they have very little pain. He has also found it very beneficial in those patients who have developed adhesions around the cecum and ascending colon, either from a chronic appendicitis or as the results of some congenital defect by which stasis is present in the colon, and has resulted in a perityphlitis and pericolonic adhesive formation. In such patients he uses it very liberally and has had uniformly good results. He has also used it in several cases of recurring interperitoneal adhesions with gratifying absence of the former symptoms. The presence of adhesions between the omentum and adjacent viscera or the omentum and the abdominal wall, where a previous operation has been done, is also a suitable indication for the use of lanolin and boric acid. In using lanolin and boric acid, however, precaution must be taken that the lanolin secured is as nearly pure as possible. It should also be sterilized three times on three different days, each time for a half hour at a temperature of over 212 F. Before being used it should be heated so that it is absolutely fluid; in fact, it should be applied very hot to

the peritoneal surface. In this way it dries out the moisture of the peritoneum and at the same time sticks very firmly to it. It should not be applied on a moist surface. The bowel should be dry before its application. Behan has also used lanolin and boric acid rather successfully in tendon implantation and transference, also in cases in which it was necessary to liberate tendons from adjacent strictures, the adhesions being due either to traumatism or to tenosynovitis. In the presence of inflammation it does not act, nor does it absolutely inhibit adhesions between two adjacent surfaces, which are denuded of their serosa and are held in contact. Therefore, it should be the attempt of the surgeon to see that no two surfaces denuded of serosa come into and remain in permanent contact. Drugs which have an active peristaltic action, either strychnin or eserin salicylate, should be exhibited in quantities sufficient to produce active peristalsis. Magnesium sulphate is also very useful for this purpose. Any cathartic, stimulating intestinal peristalsis may be exhibited with profit. As a further aid to peristalsis, where there is no danger of spreading an inflammation, apply heat to the abdomen in the form of hot-water bottles, electric pads, etc., which are very beneficial in sluggish peristalsis. Diathermia is one of the most recent but perhaps one of the best means of stimulating peristalsis after operation.

Substernal Goiter with Pressure Symptoms.—Rachford's patient was treated successfully, so far as relief of symptoms was concerned, by rest, roentgen ray, 15 drops of tincture of digitalis, three times a day, and a capsule containing 2½ grains of the neutral bromid of quinin, 1 grain extract of ergot and 1/30 grain extract of belladonna, three times a day, for a long period of time. At rare intervals this treatment has been interrupted for a period of a few weeks.

Occupation and Bronchial Asthma.—Rosenbloom reports the case of a baker sensitive only to proteins of the rye and to wheat globulin, the other proteins of wheat not causing any reaction.

Chronic Suppurative Arthritis.—A streptococcus of fairly low pathogenicity but of rather high invasive quality, which possesses the ability to attack the joints of rabbits and produce in them a chronic suppurative arthritis was used by McMeans. This quality of attacking the joints was not lost after a period of three months' artificial cultivation. Although joints were mainly attacked, certain other tissues were involved an appreciable number of times. The organism was of human source, isolated from the submaxillary gland.

Blood Cholesterol in Gastro-Intestinal Cases.—Sixty cases presenting gastro-enterologic aspects were studied by Schnabel for their blood cholesterol content. It seems to offer little diagnostic help in gastro-enterologic cases.

Hyperacidity.—Evidence is deduced by Rehfuss and Hawk to prove that the normal individual elaborates acid figures as high as those commonly associated with pathologic syndromes. There are normal individuals, approximately 40 per cent., who constantly show the acid titration findings of so-called hyperacidity. The introduction of very high acidities (0.5 per cent. hydrochloric acid) is followed by the activity of the autoregulatory mechanism which brings about a gastric optimum.

American Journal of Ophthalmology, Chicago

September, 1920, **3**, No. 9

Multiple Aneurysms of Retinal Arteries. F. M. Fernandez, Havana.—p. 641.
Radium for Cataract. W. S. Franklin and F. C. Cordes, San Francisco.—p. 643.
Three Cases of Foreign Bodies in and About the Eyeball. F. T. Tooke, Montreal.—p. 648.
Recurrent Retinal Hemorrhages. W. Zentmayer, Philadelphia.—. 652.
Recurrent Retinal Hemorrhage of Adolescence. A. E. Davis, New York.—p. 657.
Ocular Tuberculosis. F. B. Bogardus, Rugby, N. D.—p. 661.
Intradural Tumors of Optic Nerve; Report of Case. E. Scott and F. F. Schmidt, Columbus, Ohio.—p. 665.
Tonometry and Prevention of Glaucoma. E. J. Brown, Minneapolis.—p. 669.
Etiology of Glaucoma. H. E. Smith, New York.—p. 673.
Glaucoma Question. M. Goldenburg, Chicago.—p. 678.
Basal Celled Epithelioma of Conjunctiva. D. H. Coover, Denver.—p. 683.
Case of Cryptophthalmia. S. N. Key, Austin, Texas.—p. 684.
Canthotomy. F. A. Morrison, Indianapolis.—p. 685.
Toric Trial Lenses. R. W. Place, Somerville, Mass.—p. 686.

Archives of Dermatology and Syphilology, Chicago

October, 1920, **2**, No. 4

*Etiology of Xanthoma Multiplex. F. S. Burns, Boston.—p. 415.
Two Unusual Cases of Darier's Disease. F. Wise and H. J. Parkhurst, New York.—p. 430.
*Lupus Erythematosus and Focal Infection. M. B. Hartzell, Philadelphia.—p. 441.
Treatment of Generalized Psoriasis. W. H. Mook, St. Louis.—p. 447.
*Menace in Low Protein Diet. J. C. Michael, Houston, Texas.—p. 455.
*Use of Gentian Violet as Restrainer in Isolation of Pathogenic Molds. D. L. Farley, Philadelphia.—p. 459.
Cultivation of Epidermophyton Inguinale. D. L. Farley, Philadelphia.—p. 466.
*Dissemination of Spirochaeta Pallida from Primary Focus of Infection. W. H. Brown and L. Pearce, New York.—p. 470.
Clinical Approach to Syphilis; Suggestions for Its Revival and Development. J. H. Stokes, Rochester, Minn.—p. 473.
*Reinfection and Curability in Syphilis. L. Jacobi, New York.—p. 493.
Experience with Sodium Diarsenol. F. R. Wright and H. E. Michelson, Minneapolis.—p. 499.
*Action of Radium on Variety of Cutaneous Conditions. D. W. Montgomery and G. D. Culver, San Francisco.—p. 500.

Increased Cholesterol Cause of Xanthoma Multiplex.—It seems to Burns that xanthoma multiplex is a dermatosis whose origin lies in the increased amount of cholesterol in the blood, the skin lesions of which are caused by its deposition in this tissue where it induces a peculiar secondary connective tissue hyperplasia. In a case cited the cholesterol content in this case was found to be considerably increased under normal mixed diet, under low fat diet and under high fat diet. Under a high fat diet the increase was excessive. Cholesterol was also found in large quantities in all xanthoma lesions examined.

Lupus Erythematosus and Tooth Abscess.—A case is cited by Hartzell which suggested to a considerable degree the possibility of a relationship between the skin lesion and an abscessed tooth.

Danger of Low Protein Diet.—Michael cited a case which exemplifies three important facts: (1) the inadvisability of instituting a diet rich in carbohydrates without previous knowledge of the patient's ability to take care of it; (2) that absence of glycosuria is not always an index of safety; and (3) that a glucose tolerance test may indicate a state of grave danger to the patient, which may be aggravated unwittingly by a rich carbohydrate diet, such as is usually instituted when psoriatics are placed on low protein intakes. Most patients on a low protein diet, receive an increased carbohydrate ration. A diet rich in carbohydrates is contraindicated in patients who present a prediabetic condition. Patients who have psoriasis or other dermatoses, in which a low protein diet is often resorted to, may also be prediabetics. Therefore, before a special diet, low in protein and rich in carbohydrates, is instituted, the sugar tolerance of the patient should be ascertained.

Isolation of Molds with Gentian Violet.—A dilution of gentian violet of 1:500,000 in solid (Sabouraud's proof) mediums will inhibit the growth of the gram-positive bacteria. Farley has used a gentian violet maltose medium (1:250,000 and 1:500,000) in the isolation of approximately twenty strains of pathogenic molds with apparently good results.

Dissemination of Spirochetes from Primary Lesions.—Systematic determination of the presence of spirochetes in the inguinal lymph nodes and the circulating blood of rabbits at various intervals after scrotal or testicular inoculation was made by Brown and Pearce. It would appear, that there is probably no appreciable time during which a syphilitic infection can be regarded as confined to the focus of entry but that, immediately infection takes place, the spirochetes begin to multiply and invade the surrounding tissues, gaining access to both the lymphatics and the blood stream, and are widely distributed over the body even before an initial lesion can be detected. The early appearance of a distinctive lesion at the site of infection and the lapse of time required for the development of generalized lesions are a sequence in localization and concentration of spirochetes at given points rather than indications of the time required for their dissemination.

Reinfection in Syphilis.—Jacobi maintains that the occurrence of reinfection in syphilis may be accepted as an established fact. Reinfection, however, is by no means evidence of curability.

Radium Therapy in Diseases of Skin.—Cases are cited by Montgomery and Culver to give some idea of the wide application of this remedial agent in diseases of the skin.

Archives of Internal Medicine, Chicago

Sept. 15, 1920, **26**, No. 3

*Clinical and Anatomic Relations in Chronic Nephritis. E. Moschcowitz, New York.—p. 259.
*Case of Massive Lipoma of Mediastinum. R. S. Leopold, Philadelphia.—p. 274.
*Narcotic Drug Addiction. Formation of Profective Substances Against Morphin. E. J. Pellini and A. D. Greenfield, New York.—p. 279.
*Margin of Safety of Intravenous Digitalis in Cats. S. A. Levine and T. D. Cunningham, Boston.—p. 293.
*Diagnosis and Treatment of Hypothyroidism. N. W. Janney and H. E. Henderson, Santa Barbara, Calif.—p. 297.
*Effect of Ether Anesthesia on Alkali Reserve. W. S. Carter, Galveston, Texas.—p. 319.
*Studies on Blood Sugar; Effect of Blood Constituents on Picrate Solutions. D. M. Cowie and J. P. Parsons, Ann Arbor, Mich.—p. 333.
*Paralysis of Left Recurrent Laryngeal Nerve Associated with Mitral Stenosis. J. Garland and P. D. White, Boston.—p. 343.
*Blood Picture Before and After Goetsch Epinephrin Test. R. M. Trott, Baltimore.
Possible Pathogenicity of Bacillus Botulinus. R. B. Edmondson, L. T. Giltner and C. Thom, Washington, D. C.—p. 357.
*Study of Renal Concentration Power for Uric Acid in Early Chronic Interstitial Nephritis. H. A. Higley and R. Upham, Brooklyn.—p. 367.
Hymenolepsis Nana; Possible Cercocystis Stage. A. Goldman, St. Louis.—p. 373.

Chronic Nephritis Is Arteriosclerosis.—The conception is set forth by Moschcowitz that chronic nephritis is essentially a vascular disease, beginning in the capillaries (glomeruli) and extending therefrom to the larger blood vessels. In this light chronic nephritis and arteriosclerosis are one and the same lesion. The lesions in albuminuric retinitis are analogous morphologically with those of chronic nephritis. The presence or extent of albuminuria, the presence or degree of hypertension bears no consistent relationship to the degree or variety of anatomic destruction of the kidney. The probability is very strong that clinically cases of chronic nephritis begin as cases of "essential hypertension." The only variety of chronic nephritis that can reasonably be termed an end result is the so-called "contracted" kidney. The most important extrarenal factor in modifying renal insufficiency in "arteriocapillary fibrosis" is circulatory insufficiency. Other things being equal, improvement in circulatory insufficiency is coordinate with improvement in renal insufficiency, and vice versa. There is a striking parallelism between the signs of renal insufficiency in arteriocapillary fibrosis associated with hypertension and those noted in frank valvular lesions of the heart. Decompensated phases of valvular heart disease may show evidences of renal insufficiency indistinguishable from those witnessed in chronic nephritis. As a consequence of his studies the following clinical pathologic classification of chronic nephritis is submitted by Moschcowitz: 1. Arteriocapillary fibrosis. 2. Chronic glomerulonephritis of subacute bacterial endocarditis. 3. Amyloid kidney. 4. "Chronic parenchymatous nephritis" or nephrosis (Epstein).

Lipoma of Mediastinum.—The lipoma in Leopold's case weighed 17 pounds 6 ounces. A persistent hollow cough, increasing in severity and accompanied by an occasional shortness of breath, and later a pronounced dyspnea, constituted the earliest referable symptoms. Yet at nine months, physical examination and roentgen-ray examination demonstrated a tumor filling about four-fifths of the chest. There was no pain, no positive emaciation or cachexia, no metastasis, no dysphagia, no aphonia.

Formation of Protective Substances Against Morphin.—The definite conclusion drawn by Pellini and Greenfield from their work, which they believe is the only work of this nature directly testing the question of immunity acquired by the human morphin addict, is that no substance is formed in the blood serum of a human being who has acquired a high tolerance to morphin which is capable of conferring any degree of immunity to the toxic action of morphin on an animal into which it is injected. Likewise they have been able to show that the blood of a tolerant animal does not contain any protective substance against morphin.

Intravenous Digitalis Therapy.—The average margin of safety (the difference between the minimum lethal dose and the minimum toxic dose) of various digitalis preparations when given intravenously to cats Levine and Cunningham found was 48 per cent. The rapidity with which intravenous digitalis acts is similar to strophanthin, and does not differ appreciably no matter what preparation is employed. The risk in intravenous digitalis therapy appears from these experiments to be as great as intravenous strophanthin.

Hypothyroidism.—Janney and Henderson are of the opinion that latent hypothyroidism is more frequent than generally supposed, as among eighteen consecutive thyroid cases, it was present in twelve, four being cases of dysthyroidism and only one case presenting classical myxedematous symptoms. Analysis of clinical data shows the following to be present in more than 50 per cent. of the cases: history of obesity, particularly in early life, mental symptoms, marked liability to contract infections, hair anomalies, dry, harsh skin with pigmentation and atrophy, cold extremities and cold skin generally, obesity, descreased size of thyroid, subnormal temperature, pulse and respiration occur most frequently, being found in 81 per cent. of the authors' cases. Attention is called to the diagnostic value of lymphocytosis and mononucleosis in obscure thyroid cases. The basal metabolic rate is of great value in diagnosis and treatment of hypothyroidism, but cannot be considered an absolute criterion. The blood glucose tolerance test is abnormal in respect to the height of the curve and delayed return to normal level in the majority of cases of thyroid disease, but is only diagnostic of endocrine disease in general. There is no constant relation demonstrable between the blood sugar curve and the metabolic rate in thyroid disease. The blood glucose curve is, however, of confirmatory value in the diagnosis of obscure thyroid cases. Estimation of the nitrogen balance in two cases of obscure hypothyroidism showed an inability to retain nitrogen, this being further evidence of the synthetic function of the thyroid gland, as further developed in the theoretical consideration. Treatment of hypothyroidism the authors claim is best carried out with Kendall's thyroxin and controlled by estimation of the basal metabolic rate.

Effect of Ether on Alkali Reserve.—Carter found that ordinary ether anesthesia, without any of the contributing conditions that attend surgical operations, causes a distinct decrease in the alkali reserve. The decrease in carbon dioxid combining capacity of the blood of dogs is usually from 6 to 10 volumes per cent. There is comparatively little diminution during the first hour but it occurs almost entirely after that time and is in direct proportion to the duration of the anesthetic. There is an actual decrease in the alkali reserve and not an apparent condition due to hyperpnea. The latter is most marked early in the anesthesia but there is little or no dealkalization during the first hour. The usual decrease occurs when anesthesia is maintained by artificial respiration which provides a uniform respiratory volume; also when an animal breathes an atmosphere containing 3 per cent. of carbon dioxid in which ether has been vaporized. Breathing an atmosphere containing 16 per cent. of oxygen and 3.5 per cent. of carbon dioxid for three hours does not diminish the alkali reserve. The greatest decrease in the alkali reserve produced by ether anesthesia occurs at the end of the anesthesia and remains at that level for from one-half to one hour after the anesthesia, at a time when there is decreased respiratory activity. Following this brief after effect, there is a rapid increase in the alkali reserve and it returns to the normal in from one to two hours after the anesthesia. Carter's experiments were made on dogs. He describes the apparatus used.

Effect of Blood Constituents on Picrate Solutions.—The experiments detailed by Cowie and Parsons tend to show that blood contains substances other than sugar which induce a color change in the picrate solution employed in the modified Lewis-Benedict blood sugar method. Under normal conditions, these substances may not interfere with the established normal range for this method. Under pathologic conditions several of these substances may interfere. Those which show the most marked influence are: epinephrin, acetone and diacetic acid. Creatinin may interfere, but does so in a less marked degree if the comparative sensitiveness of the picrate solution to these substances is considered.

Paralysis of Recurrent Laryngeal Nerve.—A series of nine cases of paralysis of the left recurrent laryngeal nerve associated with mitral stenosis is analyzed by Garland and White. The record of but sixty-one cases in the literature, not including these nine cases, indicates that the condition is probably frequently overlooked.

Effect of Epinephrin Test on Blood Picture.—The administration subcutaneously of from 4 to 8 minims of epinephrin Trott claims will quickly produce a rise in the leukocyte count and cause an absolute lymphocytosis in hyperthyroid individuals. From this experiment, it is concluded that in toxic goiter an increase in the lymphocytes is not always present, especially in the borderline cases. A normal differential count is often found and in some cases a polymorphonuclear leukocytosis exists.

Reduced Renal Function.—In studying the results of their investigation, Higley and Upham found that many cases of reduced renal function for uric acid cannot be accounted for from a clinical standpoint by a diagnosis of nephritis. Thus many cases in which a clinical diagnosis of nephritis is not possble, show such a reducton. It is an early sign of kidney damage, often occurring before a clinical diagnosis of an anatomic nephritis can be made, hence from the standpoint of treatment and prognosis, the cases of the reduced renal function must be ascertained and corrected.

Archives of Ophthalmology, New York

September, 1920, **49**, No. 5

Effects of Various Toxemias on Eye. W. H. Wilmer, Washington, D. C.—p. 461.
Fusiform Bacilli on Conjunctiva and in Meibomian Glands. S. R. Gifford, Omaha.—p. 477.
Eye and Endocrine System. P. Fridenberg, New York.—p. 485.
Medical Social Service and Follow-Up Work in Eye Hospital. G. S. Derby, Boston.—p. 495.
Uveitis Dependent on Focal Infection in Appendix. H. H. McGuire, Winchester, Va.—p. 500.
Results Obtained with Müller's Resection of Sclera in Detachment of Retina Due to High Myopia. E. Török, New York.—p. 506.
Successful Removal of Orbital Portion of Optic Nerve for Primary Intradural Tumor, with Preservation of Eyeball and Motility by Krönlein Method. R. G. Reese, New York.—p. 515.
Case of Cavernous Lymphangioma of Orbit. H. S. Gradle, Chicago. —p. 520.
Capsulatomy by New Procedure. A. E. Ewing, St. Louis.—p. 522.

Arkansas Medical Society Journal, Little Rock

September, 1920, **17**, No. 4

"The Base Hospital." F. Vinsonhaler, Little Rock.—p. 85.
Field Hospital Work. W. A. Snodgrass, Little Rock.—p. 90.
Evacuation Hospital. M. D. Ogden, Little Rock.—p. 94.
Experiences of a Naval Medical Officer. L. Humphreys, Washington, D. C.—p. 98.

Journal of Cancer Research, Baltimore

April, 1920, **5**, No. 2

*Lymphocytes and Cancer Immunity. F. Prime, New York.—p. 105.
*Fluctuations in Induced Immunity to Transplanted Tumors. F. D. Bullock and G. L. Rohdenburg, New York.—p. 119.
*Fluctuations in Concomitant Immunity. F. D. Bullock and G. L. Rohdenburg, New York.—p. 129.
*Basal Cell Epithelioma of Rat. D. H. Morris, New York.—p. 147.
Four Cases of Beginning Squamous Cell Carcinoma of Cornifying Type. R. C. Whitman, Boulder, Colo.—p. 155.
*Calcium Content of Blood with Special Reference to Cancer. O. Krehbiel, New York.—p. 199.

Lymphocytes and Immunity to Tumor.—Prime found that in animals which are naturally resistant or artificially immune to certain strains of rat carcinoma and sarcoma, a marked reducation in the circulating lymphocytes produced by roentgen-ray treatment is not followed by an appreciable decrease in immunity to tumor inoculation.

Fluctuations in Induced Immunity to Tumors.—The object of the experiments reported on by Bullock and Rohdenburg was to establish the fact that fluctuations in induced immunity are a frequent occurrence, and to determine, if possible, the factors responsible for them so that in the future they might be eliminated. It is evident from the data presented that variations of marked degree do occur in the percentages of induced immunity obtained after the commonly accepted methods of procedure. The factor responsible for these variations is at first glance not quite evident. Variations in technic, particularly in minor alterations in the dosage of the immunizing material, have been eliminated. Bacterial contamination, with a possible destruction of the inoculated fragments of tumor, is also not sufficient to explain the variations noted, since fluctuations occurred when both immunizing tissue and tumor were sterile. The type of tissue used for immunization cannot be held responsible, for the variations were noted with blood cells, spleen emulsion, and fetal skin emulsion. Epithelial and connective tissue tumors of both the rat and the mouse showed the variations. However, when the purity of breed of the experimental animals was assured then the variations were of such minor type that they could be disregarded. The most plausible explanation, therefore, is that the biologic relationship between tumor, immunizing material, and host is a very delicate one and that unrecognizable differences between different strains of animals are sufficient to create the wide variations noted.

Concomitant Immunity to Tumors.—Fluctuations in concomitant immunity do occur. The experiments recorded in this paper were planned to determine the frequency of this occurrence and to discover, if possible, the factor or factors which are responsible for these variations. It is evident that fluctuations in concomitant immunity frequently occur with both epithelial and connective tissue neoplasms in mice and rats. Analogous variations in induced immunity were found to be due to differences in the host strain. This, however, is not true of concomitant immunity. Neither can the variations be connected with similar fluctuations in either induced or natural immunity, apparently somewhat different forces being operative in each instance. Variations in technic have been eliminated. By exclusion, therefore, the vacillations must be due to differences in the tumor itself. Concomitant immunity occurred in these experiments most often when the individual tumor grew slowly but steadily, and least often when the tumor grew rapidly. Whatever the cause of the variations noted, their presence is proof of the inconstancy of tumors as immunizing agents.

Basal Cell Epithelioma.—The tumor described by Morris arose spontaneously in a young male rat, about 5 months old, weighing 60 gm. This tumor is the only basal cell epithelioma that has been found in an animal. Its sluggish growth rate and ability to lie dormant for long periods is quite analogous to the behavior of the same type of tumor in man.

Blood Calcium Values in Various Diseases.—The blood plasma calcium content was determined by Krehbiel in thirty-four cases of malignant disease, in six of benign tumors, in eleven of thromboangiitis obliterans, and in twenty-six miscellaneous cases. In cancer the average calcium values were within the figures generally accepted as normal, and no characteristic concentration accompanied any given type or location of neoplasm. In benign tumors the results were similar. The average calcium figure for thromboangiitis was within normal limits, while the variations in individual cases would indicate that calcium metabolism has no connection with this disease. In accordance with the results of other authors, low calcium values were obtained in severe nephritis, in eclampsia, and in tetany.

Journal of General Physiology, Baltimore

Sept. 20, 1920, **3**, No. 1

Photochemistry of Visual Purple. Kinetics of Decomposition of Visual Purple by Light. S. Hecht, Omaha.—p. 2.
Mechanism of Injury and Recovery. W. J. V. Osterhout, Cambridge, Mass.—p. 15.
*Inhibitory Action of Paratyphoid Bacilli on Fermentation of Lactose by Bacillus Coli. I. T. Smith and D. E. Smith, Princeton, N. J.— p. 21.
*Comparative Studies on Respiration. Comparison of Production of Carbon Dioxid by Penicillium and by Solution of Dextrose and Hydrogen Peroxid. F. G. Gustafson, Cambridge, Mass.—p. 35.
*Dynamics of Nerve Cells. I. Temperature Coefficient of Neurogenic Rhythm of Heart of Limulus Polyphemus. W. E. Garrey, New Orleans.—p. 41.
*Dynamics of Nerve Cells. II. Temperature Coefficients of Carbon Dioxid Production by Heart Ganglion of Limulus Polyphemus. W. A. Garrey, New Orleans.—p. 49.
Rôle of Integumentary Pigment in Photoreception in Holothuria. W. J. Crozier, Chicago.—p. 57.
Studies in Dynamics of Histogenesis. Tension of Differential Growth as Stimulus to Myogenesis in Esophagus. E. J. Carey, Milwaukee. p. 61.
Ion Series and Physical Properties of Proteins. I. J. Loeb, New York. —p. 85.

Recovery of Transmissivity in Passive Ion Wires as Model of Recovery Processes in Irritable Living Systems. R. S. Lillie, Worcester, Mass.—p. 107.

Inhibitory Action of Paratyphoid Bacilli.—The experiments reported on by the Smiths support current theories which hold that the acid-producing and gas-producing entities in cultures are distinct.

Studies on Respiration.—Gustafson found that a neutral solution of dextrose and hydrogen peroxid acts like *Penicillium chrysogenum* in producing an increased amount of carbon dioxid on the addition of acid, but not on the addition of alkali.

Dynamics of Nerve Cells.—From the magnitude of the temperature coefficients and their variation with changes of temperature Garrey says it may be concluded that the rate of the heart beat is determined by alteration of chemical processes in the ganglion cells. Carbon dioxid formation in the cardiac ganglion was found by Garrey to run parallel to the rate of heart beat for different temperatures. The conclusion seems justified that the rate of cardiac rhythm depends on a chemical reaction in the nerve cells of the cardiac ganglion and that this reaction is associated with the production of carbon dioxid since the rate of beat and the rate of carbon dioxid production are similarly affected by changes in temperature.

Journal of Nervous and Mental Diseases, New York and Lancaster, Pa.

September, 1920, **52**, No. 3

*Mental Disturbances in Lethargic Encephalitis. I. Abrahamson, New York.—p. 193.
*Epileptic Seizures, Transient Hemiplegias and Papilledema in a Case of Doubtful Etiology. T. K. Davis, New York.—p. 233.
Anatomic Implications of the Introspective Psychology. H. I. Gosline, Boston.—p. 202.

Mental Disturbances in Lethargic Encephalitis.—The persistent sequence of severe intoxications and psychoses, the Korsakoff phenomenon and even the protracted recovery in lethargic encephalitis Abrahamson believes show that in addition to nutritive changes actual structural disturbances may also occur, a true inflammation of the brain cells, with destruction of the cellular processes.

Idiopathic Epilepsy.—Davis cites a case of idiopathic epilepsy in which numerous endocrine symptoms and signs were present.

Journal of Parasitology, Urbana, Ill.

September, 1920, **7**, No. 1

Wohlfahrtia Vigil (Walker) as a Human Parasite (Diptera-Sarcophagidae). E. M. Walker, Toronto.—p. 1.
New Cystophorous Cercaria from California. W. W. Cort, Baltimore, and Elinor B. Nichols, Berkeley, Calif.—p. 8.
Natural Occurrence of Herpetomonads (Leptomonads) in Blood of a Fish, Dentex Argyrozona, and Its Significance. H. B. Fantham and Annie Porter, Johannesburg.—p. 16.
Development of Gregarines and Their Relation to Host Tissues (III) in Gregarina Rigida (Hall) Ellis. M. W. Kamm.—p. 23.
New Nematode from Rat. S. Yokogawa, Formosa.—p. 30.
New Record of Taenia Confusa with Additional Notes on Its Morphology. A. C. Chandler.—p. 34.
Possible Intermediate Host of Fasciola Hepatica L. 1758 in North America. M. F. Body.—p. 39.
Dibothriocephalus Taenioides Leon. New Case in Roumania. N. Leon.—p. 43.
New Course for Migrating Ancylostoma and Strongyloides Larvae after Oral Infection. S. Yoshida, Osaka.—p. 46.

Journal of Urology, Baltimore

August, 1920, **4**, No. 4

*New Culture Method for Gonococcus. E. O. Swartz, Baltimore.—p. 325.
*Antiseptic Action of Local Anesthetics Against Staphylococcus Aureus and B. Coli. D. I. Macht and Y. Santani, Baltimore.—p. 347.
*Antiseptic Action of Benzyl Alcohol and Other Local Anesthetics Against Gonococcus. E. O. Swartz, Baltimore.—p. 355.
*Simplified Technic for Epididymectomy. D. N. Eisendrath, Chicago.—p. 363.
Changes in Acidity or Alkalinity of Urine Produced by B. Coli as Measured by Final Hydrogen Ion Concentration. A. T. Shohl, Baltimore.—p. 371.
*Passage of Bacteria from Urinary Bladder into Blood Stream. J. A. H. Magoun, Jr., Rochester, Minn.—p. 379.
Venereal Prophylaxis in Civilian Life. H. L. Sanford, Cleveland.—p. 383.
Case of Renal Tuberculosis Complicated by Inguinal Renal Fistula, Transverse Myelitis and Renal Calculus. J. D. Barney and W. J. Mixter, Boston.—p. 391.

Cultivating the Gonococcus.—As a result of his study, Swartz feels that in cultivating the gonococcus a very important factor is usually overlooked, not in compounding the medium, but in the method of growing the organism. This factor is the oxygen tension under which the organism is grown. Using the principle of reduced oxygen tension, Swartz has been able to grow very luxuriant gonococcus cultures on meat infusion hydrocele agar slants and on meat broth hydrocele mediums. The medium used was but a slight modification of that used by Wertheim in 1892 and a similar medium advocated by Young in 1900. The presence of reduced oxygen tension is essential to the profuse growth of the gonococcus. A reduction of 10 per cent. of normal atmospheric pressure is sufficient. Moisture is essential. A luxuriant growth of gonococcus can be obtained on a medium the reaction of which varies between p_H 6.6 in the acid range and p_H 8.0 in the alkaline range, of the hydrogen ion scale, if grown in partial oxygen tension. Full details of the methods employed are given by Swartz.

Antiseptic Action of Local Anesthetics.—The effects of a number of local anesthetics were studied by Macht and others on *Staphylococcus aureus* and *Bacterium coli* by three different methods. It was found that some of the drugs, notably cocain and novocain, possess no antiseptic powers whatever, while others, notably apothesin and benzyl alcohol, exhibit distinct antiseptic effects. These findings are deemed to be of interest not only in relation to healing of wounds, but also in respect to a direct effect on the flora of certain organs, notably the bladder and urethra.

Effect of Local Anesthetics on Gonococcus.—The germicidal value of certain concentrations of a number of local anesthetics against the gonococcus was determined by Macht and others. The solutions were of the same strength as those commonly used in clinical work. Solutions of beta eucain were found to have no antiseptic or germicidal action against the gonococcus. Alpha eucain solutions are antiseptic but not germicidal for the gonococcus. Holocain, alypin, apothesin and benzyl alcohol are both antiseptic and germicidal for the gonococcus.

Epididymectomy.—Eisendrath found that if one begins the isolation of the spermatic vessels at some point higher up where they are very accessible it is possible to perform the remainder of the operation (no matter how many adhesions to the scrotal tissue are present) with the blood supply of the body constantly in view, thus avoiding all danger of injury to the same. The operation of epididymectomy can be simplified and in addition it is possible to divide the vas deferens high up without opening the inguinal canal.

Bladder Mucosa Absorbs Dyes But Stops Bacteria.—The experiments made by Magoun showed that bacteria do not readily pass through the mucosa of the bladder; nevertheless this mucosa has the power of absorption of certain dyes such as phenolsulphonephthalein and indigo carmine. Absorption of bacteria through the normal bladder mucosa or the acute inflamed mucosa must be relatively slight, if it occurs at all. This selective absorption of the bladder mucosa is under further investigation.

Kentucky Medical Journal, Bowling Green

September, 1920, **18**, No. 9

Dividends of Decency. E. L. Gowdy, Campbellsville.—p. 331.
Syphilis Bones and Joints. W. P. Sights, Paducah.—p. 336.
Necessity of Education in Regard to Some New Health Laws. F. A. Stine, Newport.—p. 338.
Obstetrics from General Practitioner's Standpoint. G. G. Thornton, Lebanon.—p. 339.
How to Lower Cancer Rate. G. Aud, Louisville.—p. 343.

Medical Record, New York

Oct. 2, 1920, **98**, No. 14

Psychology of Ouija Board. J. A. Gilbert, Portland, Ore.—p. 547.
Pathogenesis of Dementia Praecox. B. Holmes, Chicago.—p. 550.
Epidemic of Kaffirpox in Jamaica. H. D. Chapin, New York.—p. 553.
Common Motor Disorders, Disuse Cripplings, Neuroses, Postinfective and Others. J. M. Taylor, Philadelphia.—p. 554.
Cash Premium on Health. F. Wehle, Buffalo, N. Y.—p. 557.
Venereal Disease Control. H. Goodman, New York.—p. 559.
Rabelais' Remarks on Throat. D. W. Montgomery, San Francisco.—p. 561.

Nebraska State Medical Journal, Norfolk

September, 1920, 5, No. 9

Acidosis in Infants and Children. H. M. McClanahan, Omaha.—p. 249.
Practical Infant Feeding Without Breast Milk. F. Clarke, Omaha.—p. 253.
Roentgen Ray Treatment of Goiter. A. P. Overgaard, Omaha.—p. 256.
Education of Deaf. F. W. Booth.—p. 261.
What the State is Doing for Its Tubercular. L. T. Sidwell, Kearney. —p. 265.

Pennsylvania Medical Journal, Harrisburg

September, 1920, 23, No. 12

Diagnosis of Empyema in Children. A. Hand, Philadelphia.—p. 697.
Bacteriology of Empyema. E. Steinfield, Philadelphia.—p. 699.
Ultimate Results Following Operations for Empyema Complicating Epidemic Influenza. M. Behrend, Philadelphia.—p. 701.
Fundus Oculi in War. G. H. Cross, Chester.—p. 707.
Sloughing in Local Anesthesia — Its Causes and Prevention. J. A. Ruben, Pittsburgh.—p. 713.
Self Retaining Slide Bone Graft. H. C. Masland, Philadelphia.—p. 713.
Quinin as Prophylactic and Specific for Influenza. A. Sterling, Philadelphia.—p. 719.
Supernumerary Distal Phalanx of Right Thumb. R. S. Reeves, Philadelphia.—p. 720.
Six Months' Work in Postnatal Clinic. J. D. Donnelly, Philadelphia. —p. 721.
Etiologic Factors and Differential Diagnosis of Mental Diseases. H. V. Pike, Danville, Pa.—p. 723.

Southern Medical Journal, Birmingham, Ala.

October, 1920, 13, No. 10

Responsibility of Physicians who Treat Malaria Cases. C. C. Bass, New Orleans.—p. 693.
Effect and Maintenance of Intra-Abdominal Pressure. J. B. Fitts, Atlanta, Ga.—p. 695.
*Occurrence of Gallstones in Young Individuals. J. Friedenwald and A. Ullman, Baltimore.—p. 700.
What Are We Doing for the Mentally Backward Child? C. E. Boynton, Atlanta, Ga.—p. 704.
Co-Operative County Health Work in North Carolina. B. E. Washburn, Raleigh, N. C.—p. 710.
State Law Regulating Construction and Maintenance of Privies. K. E. Miller, Raleigh, N. C.—p. 712.
Cranioplasty: Indications, Operation and Results. J. E. J. King and G. C. Anderson, New York.—p. 719.
Reminiscences in Bone Surgery with Special Reference to Pott's Disease. R. T. Taylor, Baltimore.—p. 733.
Nonhypertrophic Forms of Prostatic Obstructions. B. Lewis and N. S. Moore, St. Louis.—p. 740.
*Abdominal Pregnancy: Case Report. E. B. Wren, Talladega, Ala.—p. 746.
General vs. Local Faucial Tonsil Removal. F. D. Boyd, Fort Worth, Texas.—p. 748.
Simplified Technic for Local Anesthesia of Tonsils — Intranasal Surgery without Packing. W. T. Patton, New Orleans.—p. 750.
Medical Education from Viewpoint of Fifth-Year Graduate. G. A. Caldwell, Atlanta, Ga.—p. 759.
Medical Education by a Fourth Year Student. D. C. Elkin, Atlanta, Ga.—p. 766.

Cholelithiasis in the Young.—Gallstones, according to Friedenwald and Ullman, are rarely observed before the twentieth year, though youth affords no absolute immunity. In their five cases the ages varied between 15 and 18 years. As in older individuals, in the young the condition is found more commonly in females than males. The clinical picture in the young is quite similar to that observed in adults. Pain and tenderness under the right costal arch are constant symptoms and were present in all of our cases. Jaundice is common and was present in three of the authors' cases. In none of their cases was there evidence of any focal or general infection which could be considered as a causal factor.

Abdominal Pregnancy.—Wren cites the case of a colored woman, aged 21, who became pregnant in December. In April she had cramplike pains all over the abdomen. She would not try to move, as all efforts to do so caused great pain. The abdominal muscles were rigid. All change of position had to be done by the attendants. Late in July a fibroid (?) tumor was located in the pelvis, with a pregnant uterus high up in the abdomen. Thinking it doubtful that she could give birth to a child at term on account of the tumor, as well as on account of the bad condition she was in, it was decided to induce labor. Accordingly, the cervix was dilated and packed with gauze without any results whatever. A second attempt was made. There was considerable shock following this procedure, but still no evidence of labor. The patient's condition was so serious that an immediate operation was advised in an effort to save her life. A large cystlike tumor was found lying well up above the umbilicus and transversely under the diaphragm. This proved to be the membranes containing a living male child. The membrane was quickly opened and the child delivered. Before opening the sack there was no fluid in the abdominal cavity. The uterus was about the size of a large orange with a large opening in the fundus. The membranes were attached all around the opening at the top of the uterus and had the appearance of having been growing on this surface for months, as the membranes were continuous from the outer surface of the uterus. The placenta was attached all around the opening in the fundus. A supravaginal hysterectomy was done, removing one tube and ovary. The patient recovered and the child is alive.

Tennessee State Medical Ass'n Journal, Nashville

September, 1920, 13, No. 5

Tincture of Digitalis. S. P. Bailey, Nashville.—p. 161.
Ectopic Pregnancy — Case Records. E. H. Baird, Dyersburg.—p. 167.
Disorders of Sexual Function in Male. P. G. Morrissey, Nashville.—p. 172.
Chronic Atonic Constipation; Treatment with Internal Massage of Rectum and Sigmoid. D. R. Pickens, Nashville.—p. 175.
Plea for Better Clinical Diagnosis. A. L. Rule, Knoxville.—p. 178.
Plea for More Modern Treatment of Acute Gonorrhea. G. M. Roberts, Chattanooga.—p. 184.
Cesarean Section. W. P. Watson, Dyersburg.—p. 188.
Case of Lethargic Encephalitis. C. C. Turner, Memphis.—p. 189.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Glasgow Medical Journal

September, 1920, 114, No. 3

*Practical Points in Diagnosis of Pulmonary Tuberculosis. J. Crockett. —p. 129.
Medicine in Scotland in Early Part of Eighteenth Century. G. A. Allan.—p. 148.

Value of Inspection in Diagnosis of Tuberculosis.—The importance of inspection in the diagnosis of pulmonary tuberculosis is emphasized by Crockett inasmuch as the findings so obtained often will lead to a diagnosis. However, other aids should not be neglected. In tuberculosis, although the lesion may be localized, it manifests itself by secondary changes in every organ of the body; in fact, in every tissue, and these changes may be perceived by inspection. Take for example, the hands. Two types are found in tuberculosis, the one where the ends of the fingers are clubbed, the other where they are long and thin and tapering. The curvature of the nails is accentuated, not only laterally but longitudinally. The color of the nails is interesting and important. Attention should be directed to the arms, the axillae, the head and the neck; the hair, the facies, the ears, the eyes, the color of the cheeks, the chin and the jaw; the mouth, the tongue and the chest. Much information may be obtained in this way and serve as a basis for a diagnosis, when accessory aids to diagnosis have failed.

International Journal of Public Health, Geneva, Switzerland

September, 1920, 1, No. 2

*Tuberculosis in Primitive Tribes and Its Bearing on Tuberculosis of Civilized Communities. S. L. Cummins.—p. 137.
Saprophytism of Venereal Organisms and Its Dangers. H. Gougerot. —p. 172.
Science and Practice in Fight Against Malaria. B. Gosio.—p. 178.
Anti-typhus Campaign in 1915 in Serbia Considered in Connection with Present Typhus Epidemic in Poland. R. P. Strong.—p. 188.

Tuberculosis in Primitive Tribes.—A study of the geographic distribution of tuberculosis, Cummins says, shows that there are still many large tracts of the earth's surface where this disease is rare or absent. Members of isolated communities, where tuberculous disease is rare or absent, show, in comparison with members of infected communities, a marked susceptibility to the disease. The relatively high resistance to tubercular infection manifested by the majority of individuals in infected communities is attributable to acquired immunity resulting from previous contact with the disease. The susceptibility of African and other primitive

races to tuberculosis is the susceptibility of "virgin soil." A theory of "infection and resistance in mutual interaction" is capable of explaining the statistical correlations that have been adduced to support the theory of "inherited disposition." All the phenomena of variation in clinical type, comparative mortality, distribution according to age, sex, locality and occupation noted as characteristic of tuberculosis in a highly organized community, Cummins says, are explicable in terms of infection and resistance. Recent statistical investigations support the assumption that mild infections with bovine bacilli may play an important part in raising the general resistance to the human type of tuberculous disease. One of the results of this increased resistance may be the production of greater chronicity of phthisis pulmonalis, a lengthening of the life of "bacillus carriers" and "excreters" in the parental period, and a consequent increase of danger to infants and children. These considerations indicate that exhaustive research is still necessary in order that efforts at the control of tuberculosis may be directed along effective lines.

Japan Medical World, Tokyo

Sept. 4, 1920, **10**, No. 36

Operative Treatment of Pulmonary Necrosis. S. Sato.
Treatment of Cholera Before Conveyance to Isolation Hospital. K. Ohno.

Journal of Laryngology, Rhinology, and Otology, London

September, 1920, **35**, No. 9

Total Laryngectomy: Indications for and Results of Operation. C. J. Symonds.—p. 257.
*Origin of Sporadic Congenital Deafness. J. K. Love.—p. 263.
*Can Acquired Deafness Lead to Congenital Deafness? M. Yearsley.—p. 270.
Aqueduct of Fallopius and Facial Paralysis. D. McKenzie.—p. 271.

Sporadic Congenital Deafness.—Love maintains that sporadic cases of deafness are not only clinically but genetically identical with the hereditary cases; that sporadic congenital deafness is hereditary and that such heredity is mendelian.

Hereditary Deafness.—Yearsley cites the history of a family with acquired deafness, i. e., deafness appearing after birth which produced offspring that were born deaf. It is important to note that the deafness was probably otosclerosis and, therefore, of hereditary character.

Lancet, London

Sept. 18, 1920, **2**, No. 5064

*Clinical Experiences of a Physician During the Campaign in France and Flanders, 1914-1919. J. R. Bradford.—p. 583.
*Diurnal Variations in Hemoglobin Content of Blood. G. Dreyer, H. C. Bazett and H. F. Pierce.—p. 588.
*Rupture of Cesarean Scar in Subsequent Pregnancy or Labor. E. Holland.—p. 591.
*Case of Traumatic Displacement of Lumbar Vertebra. C. Westman.—p. 598.
Case of Idiopathic Atony of Bladder. S. M. Vassalo.—p. 599.
Moth in Ear. A. Wood.—p. 600.

Acute Infectious Polyneuritis.—Jaundice, nephritis and acute infectious polyneuritis are discussed by Bradford. With regard to the latter, Bradford says the disease is a very definite clinical entity, although both on clinical grounds and from the results of the study of the morbid anatomy it is probable that it is not a neuritis but really a diffuse affection of the nervous system affecting both nerve cells and nerve fibers in the spinal cord, spinal ganglia, peripheral nerves, and to a slight degree the cerebral cortex. It probably has affinities both to poliomyelitis and to lethargic encephalitis, and possibly to other varieties of encephalitis.

Variations in Hemoglobin Content.—The observations recorded by Dreyer, Bazett and Pierce were carried out on goats and men. To exclude as far as possible the effects of feeding and rest, etc., on the curves, these conditions have been varied in different experiments, with the result that similar curves have been obtained under very diverse conditions. The diurnal variations in hemoglobin percentage met with are very considerable and may even reach as much as 30 per cent., while 10 per cent. changes are of more or less common occurrence. On the average, the excursions seem to be more marked in individuals or animals with a low hemoglobin content of the blood. The authors do not offer any rational explanation of these diurnal variations, though there is strong evidence that they are closely connected with variations in the pulse rate, blood pressure, rate and volume of respiration, and possibly with fluid absorption or kidney secretion.

Rupture of Cesarean Section Scar.—Five cases are put on record by Holland. The etiology and anatomy of ruptured scars is discussed and an analysis made of the literature. The results of a follow-up inquiry into the subsequent obstetric history of a large number of cesarean section patients operated on between 1912 and 1918 are also detailed. It appeared that the frequency of rupture of the cesarean section scar in subsequent pregnancy or labor (abortions excluded) is 4 per cent. The cause of ruptured scar is imperfect healing, leading to a thin scar in which muscular union has failed, and which consists of little more than peritoneum and decidua with a varying amount of intervening fibrous tissue. All thin scars stretch during pregnancy; rupture of a thin scar may be determined solely by the intrauterine tension of normal pregnancy or by the uterine contractions of normal labor; or it may be favored by various accidental factors, of which the chief is insertion of the placenta over the scar, with partial separation of the placenta and retroplacental hemorrhage. Other accidental factors are overdistension of the uterus, prolonged or obstructed labor, operative interference, such as internal version, the insertion of hydrostatic bags, and the administration of such drugs as pituitary extract. In the reported cases, rupture occurred almost as often during pregnancy as during labor (in the proportion of three to four); and many cases have been reported occurring as early as the seventh month of pregnancy. The chief cause of imperfect healing is infection of the uterine wound; other causes are imperfect methods of suture and the employment of unsuitable suture material. As regards the suture material, catgut should not be used, for the liability to rupture after catgut is two and a half times as great as when silk is used. For theoretical reasons, silkworm gut is the most suitable material. As regards the incision, the scar of the transverse fundal incision is especially liable to rupture. Only one case of rupture of the scar of the cervical incision has so far been reported.

Traumatic Displacement of Vertebra.—The case cited by Westman indicates the value of roentgen-ray examination in cases of obscure backaches before resort to manipulative treatment. Treatment can then be directed to the lesion at fault, and valuable time saved. A traumatic malposition of the third lumbar vertebra was corrected after twelve years by mobilizing movements and massage.

Sept. 25, 1920, **2**, No. 13

*Gall Stones. A. J. Hall.—p. 633.
*Clinical Experiences of a Physician During Campaign in France and Flanders, 1914-19. J. R. Bradford.—p. 636.
*End Results of Peripheral Nerve Injuries Treated by Operation. W. Thorburn.—p. 640.
*Prognosis in Certain Affections of Heart. W. T. Ritchie.—p. 643.
*Effects of Hot and Cold Applications on Superficial and Deep Temperatures. J. J. R. MacLeod, A. R. Self and N. B. Taylor.—p. 645.
*Complement Fixation Test in Pulmonary Tuberculosis: Its Use as a Means of Diagnosis. A. L. Punch.—p. 647.
Medical, Surgical, Obstetrical and Therapeutical. A Case of Defective Sleep-Shunt. E. W. Scripture.—p. 652.
Case of Eclampsia in Middle Pregnancy, Treated by Vaginal Hysterotomy; Recovery. A. W. Bourne.—p. 652.

Urges Operation for Cholelithiasis.—Hall maintains that it is the physician's duty to urge all those in whom the existence of gallstones is fairly certain to undergo operation, unless there is some strong contraindication. Although the pain may be tolerable, and perhaps only intermittent, yet it is impossible to judge how far dangerous inflammatory complications already exist, or how soon they may arise, while the possibility of malignant disease ending the scene is a very real one, although this may be delayed for many years.

Massive Collapse of Lung Following Gunshot Wounds.—Bradford's study of cases of massive collapse of the lung as the result of gunshot wounds suggests that collapse of the lung is a very common, perhaps the most common, result of a gunshot wound of the chest, although in a very large pro-

portion of cases its presence is masked by the development of a hemothorax. He is of opinion that this is the reason why the physical signs of a simple sterile hemothorax are so often different from those of a pleural effusion. In the latter the collapse of the lung is produced gradually in association with the pleural exudate; in the former massive collapse of greater or less extent is produced more or less suddenly, and the hemorrhagic effusion of the hemothorax is only in part responsible for the collapse of the lung present.

End-Results of Secondary Nerve Suture.—Thorburn states that if a surgeon obtains 50 per cent. of really good economic recoveries after secondary nerve suture he is doing well; if he obtains 75 per cent. of such recoveries, which will bear investigation, his work is both brilliant and fortunate.

Prognosis in Heart Disease.—Prognosis in heart disease is notoriously speculative and uncertain. Ritchie says prognosis is primarily always dependent on accuracy of diagnosis. The precise data furnished by radiograms, the sphygmomanometer, the polygraph, and the electrocardiograph have placed diagnosis on a firm basis, and the corelation of this knowledge with symptoms and physical signs has now become so well established that in practice we can usually dispense with the electrocardiograph and other elaborate instrumental methods.

Deep Effects of Hot and Cold Applications.—The results obtained by Macleod and others, in general, show that when heat which is about 15 C. above that of the body is applied over approximately one-fourth of the surface of the abdomen a change in temperature may occur which may penetrate the abdominal viscera for a distance of about 75 mm., although it can only spread laterally for somewhat less than 20 mm. the effects of cold are equally as definite as those for heat, temperature change being, of course, in the opposite direction.

Value of Complement Fixation Test in Diagnosis of Tuberculosis.—Punch is of the opinion that the complement fixation test is a specific means of diagnosis of the presence of an active or recently active tuberculous lesion. A negative reaction is as reliable an indication of the absence of such a lesion as a positive reaction is of its presence. A positive reaction in the highest dilution only of complement is just as reliable an indication of the presence of such a lesion as a positive reaction in all three dilutions.

Medical Journal of Australia, Sydney

Aug. 21, 1920, **2**, No. 8

Charles Hastings; Founder of the British Medical Association; His Life and Aims. H. Simpson Newland.—p. 165.
Use of Roentgen Rays in Diagnosis of Thoracic Acections. S. Argyle. —p. 169.

Medical Journal of Siamese Red Cross, Bangkok

April, 1920, **3**, No. 1

Clinical Diagnosis of Chancre. H. S. H. P. Thavara.

Tubercle, London

September, 1920, **1**, No. 12

*Basal Pneumonic Residues in Children. W. Overend.—p. 547.
Cooperative Tuberculosis Work in Italy. Wm. C. White.—p. 550.
Expectation of Life in Dispensary Tuberculous Patients. L. T. Burra. —p. 554.

Unresolved Pneumonia.—Overend pleads for the more frequent radiologic examination of the chest in children, and particularly in those who fail to recover completely after pneumococcal infections of the lung. Many cases of ill health after pneumonia and infectious disease among children are due to unresolved pneumonia produced by a chronic pneumococcal infection, and are not tuberculous. Bronchiectasis of the internal moiety of the lower lobe, or of the whole lobe, is more likely to follow attacks of chronic or indurative basal pneumonia; disseminated patches of bronchopneumonia are more liable to produce areas of diffuse bronchial dilatation. After removal of enlarged tonsils and adenoids, the expediency of surgical interference should again be discussed if the lower lobe alone is solid, honeycombed with bronchiectatic abscesses and dilated bronchi, and also accompanied by symptoms of septic absorption.

Annales de Médecine, Paris

1920, **7**, No. 6

*Reaction of the Optic Nerve in Meningitis. F. Terrien.—p. 393.
*Parathyroids in the Insane. Laignel-Lavastine and P. Duhem.—p. 409.
*Digestion of Fats. M. Labbé and H. Labbé.—p. 424.
*Typhus in Children. M. Ciuca and Lucie Bancheriu.—p. 436.
*Continuous Fever of Sympathetic Origin. A. Cawadias.—p. 450.

Reactions of Optic Nerve with Pathologic Conditions in the Meninges.—Terrien emphasizes that the optic nerve is actually an expansion of the brain, protected by the same coverings and laved by the same fluid, and what affects the meninges elsewhere generally affects simultaneously the meninges surrounding the optic nerve. Lumbar puncture relieving the meninges elsewhere relieves also the optic nerve, and antimeningococcus serum aids in combating the perineuritis. Epidemic meningitis does not seem to entail the grave ocular complications of former years since these measures have been made the routine practice. Syphilitic retrobulbar neuritis and perineuritis also yield to modern treatment. A single lumbar puncture in treatment of postmeningitic visual disturbance has improved vision from 1/6 to 2/3, and cured auditory postmeningitis lesions. Choked disk is an entirely different matter. This should be sought with special care in incipient tabes; he reiterates that *hyperhémie papillaire* is the warning signal.

The Parathyroids in the Insane.—The minute details of sixty-four cases are tabulated. Great variability was evident in number, shape and structure not only in different subjects but in the same subject. There was only one parathyroid in seventeen, and none in one case of myxedema.

Digestion of Fat.—Labbé and Labbé state that the estimation of fat digestion by the fat found in the blood is liable to be misleading, but the fat in the stools gives a reliable oversight of the functional capacity of the pancreas. A technic is described with which it is possible to determine the coefficient of absorption of the total fats and of the neutral fats, with the percentages of the different forms of fat excreted. A test diet has to be given for three days beforehand. Estimation of fat digestion may aid in differential diagnosis and locate the lesion.

Typhus in Children.—Thirty-seven cases were studied in detail out of 110 cases of typhus in children. The disease is mild in children and does not affect the nervous system; the incubation is not over twelve or fourteen days. There does not seem to be any natural immunity.

Continuous Fever of Sympathetic Origin.—Cawadias writes from Athens to explain slight prolonged fever as a phenomenon of overactivity of the sympathetic nervous system. The temperature always ran up higher in his cases of the kind after injection of epinephrin. The slight continuous fever is probably of endocrine origin, and the patient can be reassured that it will do no harm even though it may persist indefinitely. Repose for body and mind and a trip to the mountains may be advised. A typical case is described in detail. The temperature of the woman of 25 has ranged from 37.5 to 38 C. (99 to 100.4 F.) for ten years, with unstable pulse and vasomotor disturbances but no reaction to atropin. Nothing can be found to explain the fever otherwise, and its prolonged course excludes tuberculosis. The thyroid and blood pressure are apparently normal, and there is no oculocardiac reaction, but epinephrin elicits an intense reaction.

Archives des Maladies de l'Appareil Digestif, Paris

August, 1920, **10**, No. 9

*Septicemic Plastic Linitis. Le Noir, C. Richet, Jr. and Langle.—p. 513.
*Diverticulum of Appendix. E. Grynfeltt and E. Chauvin.—p. 520.
*Neuralgia from Intestinal Erethism. J. J. Matignon.—p. 543.

Fulminating Gastric Cancer of Plastic Linitis Type.—Le Noir and his co-workers report a case of plastic linitis, fatal in three and a half months, with involvement by way of both lymphatics and blood vessels of the liver, mesentery, spleen, suprarenals, kidneys, lungs and numerous ganglia. The patient was a man of 30. This is the second case of this septicemic form of plastic linitis that Le Noir has encountered. They form a fourth group of plastic linitis cases.

Inflammatory Diverticulum of the Appendix.—Grynfeltt and Chauvin devote twenty-two pages to description of a case of this kind. Four plates show the healing process in various stages.

Neuralgic Pains for which the Intestines are Responsible.—Matignon apologizes for calling attention to pain from flatus, but describes a number of cases in which the unusual localization of the pain at a distance led to erroneous treatment. The colon at the hepatic or splenic bend is abnormally sensitive as can be determined by palpation, and distention from flatus causes a train of distant painful sensations which by their location may simulate liver, pleural or other disease, sciatica in particular. The absence of fever may be the only clue to exclude actual disease of the liver when there is intense right subcostal and subscapular pain with stiffening of the right hypochondrium. Exaggeration of the erethism of the intestines during a course of mineral waters may bring on puzzling attacks, pains in the side sometimes suggesting incipient tuberculosis or pleurisy. In some persons pain and dyspnea with palpitation or arrhythmia develop on horseback or on reclining three or four hours after a meal. Some obtain relief by contortions of the trunk, forcing flatus along, but all are benefited by treatment to reduce the irritability of the intestines, especially at the bend of the colon.

Bulletin Médical, Paris

Aug. 21, 1920, **34**, No. 41

*Choked Disk. A. Cantonnet.—p. 747.
*Necessity for Public Cuspidors. E. Escomel (Peru).—p. 749.

Choked Disk.—Cantonnet expatiates on the diagnostic importance of edema in the optic disk, and the imperative necessity for reducing intracranial pressure when it is discovered. As there are no functional signs from it until in an advanced stage, it is apt to be neglected or overlooked, and the vitally important lumbar puncture omitted. Thanks to the transparency of the eye we are enabled to inspect the actual nerve centers here.

Public Cuspidors.—Escomel pleads for the installation in public places of cuspidors with running water like the cuspidors of the dentists, affirming that the defense of society against this most dangerous of all human excreta should not be postponed another day. The sputum is by far the most dangerous as it is capable of transmitting a number of fatal diseases, and the public should be trained to regard it as more of a disgrace to expectorate promiscuously than to void any other excreta in public.

Aug. 28, 1920, **34**, No. 42

*Physiopathology of Jaundice. M. Brulé.—p. 765.
Clinical Examination in Jaundice. M. Villaret and F. Saint Girons.—p. 769.
Laboratory Examination in Jaundice. P. Ameuille and R. Huguenin.—p. 773.
Spirochetal Jaundice. P. Pagniez.—p. 776.

Jaundice Number.—This is a republication of last year's special issue of the *Bulletin* devoted to jaundice. The authors have revised their articles to bring them down to date. The issue was reviewed in The Journal, Jan. 17, 1920, p. 209.

Journal de Médecine de Bordeaux

Aug. 10, 1920, **91**, No. 15

*Atypical Mikulicz' Disease. G. Portmann.—p. 403.
Jacksonian Epilepsy from War Skull Wound. Recovery after Removal of Cystic and Cicatricial Tissue. J. Brau-Tapie.—p. 406.

Sclerosis of the Glands of the Face.—Portmann reports two cases of this kind. The first patient was a young woman who from the age of 10 had had occasional attacks of fever and congestion in the parotid region. After the age of 14, the parotids were constantly enlarged while the submaxillary, sublingual and lacrimal glands were atrophied. There was not a trace of saliva or lacrimal secretion. The other patient was a woman of 58. The parotid and the nasal glands were enlarged, but the sublingual and submaxillary and also the nasal glands showed pronounced atrophy. The aspect in both was that of Mikulicz' disease, but the localization and nature of the process were different in part, and Portmann records the cases as the *syndrome de sclérose des glandes de la face.*

Lyon Médical

Aug. 10, 1920, **129**, No. 15

The Fundamental Indications for Digitalis. L. Gallavardin.—p. 649.

Paris Médical

July 24, 1920, **10**, No. 30

*Clinical Aspects of Epidemic Encephalitis. C. Achard.—p. 69.
*Exophthalmic Goiter Mistaken for Tuberculosis. E. Sergent.—p. 80.

Lethargic Encephalitis.—Achard comments on the multiple, shifting, acyclic symptomatology of this disease, its variability and lack of resemblance to other diseases and to other cases of the same disease. He insists that we cannot speak of a lethargic form, a neuralgic or myoclonic form, but can speak only of different types, and these types may develop in turn in the single case, the ophthalmoplegic type, the acute delirium type, the profound sleep type, the dazed or frozen type, the confusional, meningitic, myoclonic, choreic, athetosic and painful types, and the typhoidal type. Besides the acute, subacute, slow and protracted forms there may be abortive forms with complete recovery in three or five days. The shifting site of the lesions responsible for the disease can be traced by the symptoms at the moment.

Exophthalmic Goiter and Tuberculosis.—Sergent is inclined to accept a causal relation when symptoms of exophthalmic goiter develop in the course of tuberculosis but the great danger is that persons with merely exophthalmic goiter may be classed as tuberculous and sent to a sanatorium, where they acquire tuberculosis and the mistake is never discovered. He warns that many of the symptoms are common to both, the unstable temperature and pulse, variable blood pressure, menstrual irregularities, the bright eye, burning cheeks, sweats, emaciation, early fatigue, asthenia, diarrhea, and pain in the celiac plexus and in the intestines, but the most misleading symptoms here of hyperthyroidism are the small dry, spasmodic cough and the tendency to shortness of breath on exertion. The rhythm of breathing is staccato, spasmodic. Differentiation is possible only by recognizing the clinical picture of thyroid overactivity on the one hand and absolutely excluding active tuberculous lesions on the other hand. Especially at the two extremes of the genital life of women, at puberty and the menopause, we should be on the alert to detect hyperthyroidism. The instructive examples reported are all in women, but he knows of men whose overactive thyroid led to erroneous treatment for tuberculosis.

Presse Médicale, Paris

Aug. 28, 1920, **28**, No. 61

*Pneumococcus Infection in Infants. P. Nobécourt and Paraf.—p. 593.
General Laws for Intraspinal Anesthesia. P. Delmas.—p. 596.
*Phenylethylbarbituric Acid (Luminal) in Epilepsy. L. Cheinisse.—p. 598.

Pneumococcus Infection in Infants.—Nobécourt and Paraf found several healthy carriers among the infants from 4 to 10 months old at the Maternité where pneumococcus infection was common last winter. It induced rhinopharyngitis, tracheobronchitis, pneumonia or pleurisy as a rule, but only a few of the infants presented evidence of septicemia, purpura in two, with complicating meningitis in one of the two. None of the otitis cases progressed to mastoiditis. The local measures found effectual were instillation in each nostril three or four times a day of 8 or 10 drops of a 3 per cent. solution of sodium borate with 0.75 per cent. sodium chlorid, or a 1 per cent. oil solution of camphor. But the main reliance was on antipneumococcus serum; 5 or 10 c.c. of this antiserum was injected with a fine needle directly into the focus of hepatization in the lung or into the pleura. Aspiration through the needle yielded a drop of serous fluid abounding in pneumococci. A little coughing aids in spreading the antiserum through the focus, but the antiserum does not spread over an area broader than 10 or 12 cm. and hence the injection has to be repeated at another point if the focus is extensive. The twenty-one graver pneumonia cases were given this antiserum treatment, and 60 per cent. recovered, while four recovered of the six with purulent pleurisy, and complications elsewhere were responsible for the death of one of these two, the pleurisy having healed. The antiserum was well borne and encourages a trial of preventive vaccination when the

pneumococcus is prevailing. Type II was generally encountered in the cases here discussed.

Phenylethylbarbituric Acid in Epilepsy. — Cheinisse compares recent European publications on the use of luminal in epilepsy, from Pécheux' favorable experiences in ten cases in 1913 to Maillard's communication which was summarized in these columns Sept. 25, 1920, p. 902. He used a French preparation of the drug. Raffegau emphasizes that the drug merely suspends the epilepsy but does not seem to attack the cause. His dose is 5 or 10 cg., never over 20, and he never witnessed any untoward incident in his seventy cases thus treated over long periods except an urticaria-like eruption on the hands in one case. The drug has to be given in two doses. Stein has published recently a case of poisoning from a single dose of 30 cg. taken by a man of 48 with kidney stone. Several writers contend that this treatment should not be undertaken unless the patient can be under close medical supervision. The consensus of opinion seems to be that this drug deserves the leading place in the treatment of epilepsy.

Revue Médicale de la Suisse Romande, Geneva

August, 1920, **40**, No. 8

*Pathogenesis of Round Gastric Ulcer. M. Askanazy.—p. 477.
Injection of Petrolatum in Chancroids. J. Golay.—p. 485.
Disordered Heart Action in Soldiers. E. Thomas.—p. 493. Cont'n.
Rubeola Epidemic. T. Reh.—p. 506.
Sodium Nucleinate by the Vein in Influenza. G. Turrettini.—p. 510.

Gastric Ulcer.—Askanazy has found *Oïdium albicans* practically constantly in gastric ulcers in the stomach and duodenum, and has noted that this fungus thrives best in media containing hydrochloric acid. He presents further data to sustain his assumption of the inflammatory and infectious nature of these ulcers. In a recent series of twenty-eight resected gastric ulcers he found *Oïdium* in all but four, as also in a number of duodenal and esophageal ulcers. His practical conclusions are that hyperacidity should be combated and, perhaps, even normal acidity. It is possible that vaccine or serotherapy might prove effectual against the oïdium. He warns further that a "peptic" duodenal ulcer may be merely secondary to infection in the stomach, and that we must abandon the assumption that the gastric juice has a sterilizing action on an ulcer. His statements are the outcome of fifteen years of research.

Schweizerische medizinische Wochenschrift, Basel

Sept. 9, 1920, **50**, No. 37

*Roentgen-Ray Treatment of Genital Cancer in the Female. M. Steiger.—p. 809.
*Technic for Radium Treatment of Uterine Cancer. M. A. Bétrix.—p. 818.
Axial Torsion of Sarcomatous Uterus. F. Chatillon.—p. 823.
Long Blade of Rye Coughed Up by Boy of Nine. E. Opprecht.—p. 825.
*Hyperpyrexia. L. Gelpke.—p. 825.

Roentgen-Ray Treatment of Cancer of Female Genital Organs.—Steiger's address, prepared for the annual meeting of the Swiss Gynecologic Society, after analyzing the literature and his own experience in 115 cases, concludes with the remark that radiotherapy is undoubtedly destined to play a more and more important rôle in treatment of genital cancer. He adds that it should not be left in nonmedical hands as it requires the strictest estimation of indications, in the narrowest sense of the word, and strict supervision. The physician doing roentgen work must be not only a physicist and mechanic but a biologist as well. In his service at Bern the survivals after operative measures averaged sixteen months and after operation plus postoperative raying, thirty months. This survival of over two years in the rayed cases testifies in favor of postoperative exposures. He discusses the technic and outcome in detail, adding that in a certain number of cases he applied diathermy preliminary to the irradiation.

Technic for Radium Treatment of Uterine Cancer. — In concluding his description of the technic for crossfire curietherapy of uterine cancer, as applied in his service at Geneva, Bétrix remarks that the immediate results of radium treatment surpass all expectations. In many cases the clinical and even histologic cure are apparently complete; in others inoperable neoplasms are modified to allow radical excision after one or two sittings, that is, in from three to eleven weeks after the treatment is begun. The patients remain well after the radium treatment for from eighteen months to two years. They feel so completely cured that it is rare for one to return for supervision to allow resumption of treatment at the first sign of recurrence. But the remote results are less favorable. Several of his patients have returned years later with deep recurrence of the malignant disease, which had spread by the same mechanism as with postoperative recurrence. But, for inoperable cancers, the benefit from radium treatment is enormous, putting an end to the hemorrhages, the discharges and the pains. The treatment should be individualized for each case and modified in each case from exposure to exposure, to correspond to the indications.

Hyperpyrexia.—The temperature ran up to 44.2 C. (111.5 F.) in the man of 29 during epidemic encephalitis with recovery.

Pediatria, Naples

Aug. 15, 1920, **28**, No. 16

Variations in Opsonic Index During Vaccine Therapy of Tuberculosis. A. Corica.—p. 729.
Congenital Megacolon. A. Dalla Valle.—p. 740.
*Anatomy and Pathology of the Thymus in Young Children. A. F. Canelli.—p. 753.

The Thymus in Young Children.—Canelli found the thymus in two lobes in 78.25 per cent. of the 115 cadavers examined. In 74.77 per cent. the thymus was in the thorax, and he advises never to disturb the sternum until the location of the thymus has been ascertained. The water content seemed to be in inverse proportion to the age, while the weight after desiccation increased with the age.

Policlinico, Rome

August-September, 1920, **27**, Surgical Section No. 8-9

Treatment of Wounds of the Rectum. P. Bastianelli.—p. 241.
*Pyoculture and Seroculture. A. Cassuto.—p. 255. Begun in No. 6 p. 174.
*Outcome with Exophthalmic Goiter. B. Schiassi.—p. 285.

Pyoculture and Seroculture.—Cassuto devotes eleven pages to tabulation of the details of the course of twenty-seven cases of osteomyelitis, phlegmons, empyema, mastoiditis or other surgical condition as followed and controlled by repeated cultivation of the pus from the lesion and by seroculture, that is, repeated testing whether the bacteria in the patient's pus are modified by his serum. He compares the action of the patient's serum on the pus bacteria with that of normal serum on the same bacteria. With this seroculture he obtained 100 per cent. correct findings in the positive cases, but it proved misleading in 50 per cent. of the few negative findings. Pyoculture proved misleading under the same circumstances in 75 per cent. The response to intradermal injection of an autogenous vaccine might usefully supplement these biologic tests.

Exophthalmic Goiter.—Schiassi reviews the ultimate outcome in 3 cases treated by sympathectomy at the Bologna Policlinic, with recovery of only one; in 6 treated by ligation of the thyroid arteries with recovery of only 50 per cent. and of 28 treated by thyroidectomy with complete and permanent recovery in 100 per cent. He adds that from 35 to 40 per cent. have died of those treated by medical measures alone during the last fifteen years. In a few of these, roentgen-ray treatment was tried after failure of other nonoperative measures, but few showed any benefit and one patient complained of aggravation. Various forms of organotherapy proved disappointing also. He styles the exophthalmic goiter patient a *tetanico psichico-morale,* and insists on long preparation for thyroidectomy, keeping the patient isolated and in bed for eight or ten weeks at least. In several cases he has witnessed the tipping over of a chair or the breaking of a tumbler bring back the tachycardia. Just before the operation he has the patient drink freely or gives fluid by proctoclysis. General anesthesia is preferable; afterward, strict isolation is as imperative as before, and the family are warned that emotional stress must be warded off at all times. Repose of heart, body and mind is the main thing, and country life should be recommended.

Riforma Medica, Naples

July 31, 1920, **36**, No. 31

Comparison of Digitalis and Ouabain. H. Vaquez.—p. 685.
*Urine Reactions Under Arsphenamin. M. Trossarello.—p. 687.
*Serologic Research in Cancer Patients. E. Pesci.—p. 689.
Immunity to Influenza. D. Falcioni.—p. 692.
Sexual Impotence and Artificial Fecundation from Medicolegal Standpoint. M. Carrara.—p. 694.

Modification of Urine Reactions After Arsphenamin Treatment.—Trossarello found the Almen-Nylander test for glucose in the urine strongly positive in over fifty syphilitics tested during or after arsphenamin treatment. Neither before nor later was there any indication of glycosuria.

Serologic Research in Cancer.—Most of Pesci's research gave only negative results, but he noted that the Wassermann reaction veered to negative in patients with cancer taking radium-ray treatment, when it had been positive before.

Brazil-Medico, Rio de Janeiro

July 17, 1920, **34**, No. 29

The Ear and the Hearing. E. Moraes.—p. 457.
Cataphrenia and Dementia Praecox. Alvaro de Carvalho.—p. 460.
Spondylotherapy and Abrams' Percussion. O. Clark.—p. 461.
*To Distinguish Between Wounds Made Before and After Death. Flaminio Favero.—p. 462.

To Distinguish Between Wounds Made During Life and After Death.—The eight tests applied confirmed the correctness of Verderau's assertion in 1910 that when white corpuscles are found in abnormally large numbers in a wound, this is presumptive evidence that the wound must have been inflicted during life. With a wound inflicted after death, the local blood count here would be the same as at other points. The findings may be misleading, however, when the interval has been very long or putrefaction has materially modified conditions, or when the wound involves one of the larger vessels.

Crónica Médica, Lima

June 1920, **37**, No. 684

*The Superficial Tension of Urine. M. A. Velásquez.—p. 193.
The Thyroid and Production of Antibodies. A. Garibaldi.—p. 200.
Bromids in Epilepsy. C. A. Bambarén.—p. 202.
*Dysenteric Abscess in Infant. C. J. Carvallo.—p. 208.
Hydatid Cyst in Orbit. C. Villarán.—p. 210.
The Endocrine Glands in Relation to Epilepsy. A. Guardia Abadal.—p. 213.
Morales Macedo's Finger Hammer-Stroke Percussion of the Kidneys. I. Castellanos.—p. 218.

The Superficial Tension of the Urine.—Velásquez' experience has confirmed that the superficial tension of the urine is an index of the presence and the proportions of certain substances in the urine which frequently escape chemical analysis. They can be demonstrated by the reduction in the superficial tension; for example, the tension is reduced when the urine contains bile salts. The superficial tension of the urine, he continues, is inversely proportional to the toxicity of the urine. In typhoid, etc., a reduction in the superficial tension is a sign that toxins are being thrown off through the kidneys.

Liver Abscess in an Infant.—The infant a year and a half old had symptoms which suggested chronic dysentery, and also a large shirt-stud abscess in the liver and right lower lobe. The abscess was evacuated after resection of two costal cartilages, and under emetin recovery ensued in forty days. Carvallo cites the other cases in infants on record, but he could find no previous instance in an infant in Peru although amebic and protozoan colitis is common there.

Semana Médica, Buenos Aires

April 8, 1920, **27**, No. 15

*Correction of Deformity Left by Epidemic Poliomyelitis. M. Herrera Vegas and J. M. Jorge.—p. 481.
*Surgical Knots. O. Ivanissevich and I. Prini.—p. 493.
*Serologic Reactions in Different Diseases. A. Ariazzi and C. E. Pico.—p. 500.
Modern Treatments of Tuberculosis. Tiburcio Padilla.—p. 503.
High Frequency Currents in Treatment of Syphilis, M. Fernández-Corredor y Chicote.—p. 504.
Exophthalmic Goiter in the Tuberculous. J. F. Mieres.—p. 507.

Treatment of Crippling from Poliomyelitis.—Herrera Vegas and Jorge have operated on the arm in thirteen cases of deformity consecutive to epidemic poliomyelitis and on the leg in 137 cases, and they describe the details of this extensive experience. They state that they were the "first in America" to apply tendon grafts and transplantation for this purpose, and their success from the first has made them enthusiastically commend these operations. They insist on the necessity for careful individualization as the outcome depends on what the individual muscles are still capable of. If many of the muscles are paralyzed it is useless to attempt to restore function, and arthrodesis should be preferred. The postoperative treatment has to be long and carefully directed, and the limb must be always in hypercorrection in the cast. Months of training are necessary after its removal.

Surgical Knots.—Ivanissevich and Prini give twenty-six illustrations of surgical knots, and advocate in particular the "Prini knot." With this the short end is knotted twice on the long end, thus forming a stout slip-noose. By pulling on the long end, the knot is drawn extremely tight even in the depths. The long end is then knotted over the short end, which fastens the whole securely.

Serologic Tests in Various Diseases.—Ariazzi and Pico found the Sachs-Georgi test harmonize with the Wassermann in nearly 97 per cent. of the cases tested. In the few conflicting findings, the Sachs-Georgi proved correctly positive when the Wassermann was negative. In sixty-three cases of leprosy the two tests harmonized in all but two cases, a positive reaction being obtained with both in nineteen. Their conclusions are thus highly favorable as to the reliability of the Sachs-Georgi test.

Archiv für klinische Chirurgie, Berlin

Jan. 28, 1920, **113**, No. 2

Antiseptic Treatment of Wounds. G. Schöne.—p. 249. Conc'n.
*Arthrodesis of All Joints in Foot. W. Block.—p. 329.
Epidermoid Cyst on Penis. E. König.—p. 341.
Experiences with Infected War Wounds of Knee. D. Eberle.—p. 353.
*Malformations of Face. H. Zacherl.—p. 374.
Coincidence of Gallstones and Kidney Stones. Lukas.—p. 386.
Partial Antigen Treatment of Surgical Tuberculosis. H. Landau.—p. 397.
*Inguinal Hernia in Children. H. Wendriner.—p. 419.
*Instrumental Arrest of Circulation. E. Sehrt.—p. 428.
Three Unusual Tumors and Genesis of Tumors. P. Klemm.—p. 447.
*Tendovaginitis with Stenosis. K. Reschke.—p. 464.
*Cerebral Bladder Disturbances. F. Brüning.—p. 470.
Roentgen Ray Pictures of Lung. C. H. Grüder.—p. 493.

Arthrodesis of All Joints of the Foot with a Single Intervention.—Block slit the foot horizontally lengthwise and brought up the foot from the equinus deformity to a right angle. The upper and lower halves then fitted each other without coaptation of bones and joints, raw bone surfaces fitting over joints, etc., and they grew firmly together.

Malformations of the Face.—In connection with a snout, 2 5 cm. long, growing from the nose of a girl of 10, Zacherl discusses the literature on such congenital malformations.

Inguinal Hernia in Children.—Wendriner has been reexamining lately 43 adults treated for inguinal hernia in childhood. Of the 12 treated with truss alone, none are entirely free from their hernia and 2 are still wearing a truss. There has been no recurrence among the 31 herniotomy cases. In Körte's service herniotomy has been done on 54 infants, and there has been no recurrence. The earlier the herniotomy is done the better, Wendriner says. Children compelled to wear a truss do not develop normally in body or spirits.

Instrumental Arrest of Circulation.—Sehrt gives the history of efforts to control the flow of blood by compression, and illustrates the two instruments he has devised for limbs and to arrest obstetric hemorrhage. His instrument for the latter purpose was illustrated in The Journal, Feb. 28, 1920, p. 640.

Tendovaginitis with Stenosis.—Reschke has encountered twenty cases of de Quervain's stenosing tendovaginitis of the thumb tendons, and describes ten of them; the patients were all women with one exception. Many had long been treated conservatively without benefit, but slitting the tendon sheath cured at once the annoying and painful condition.

Cerebral Bladder Disturbances.—Brüning's two cases confirm the assumption of a cortical bladder center, injury of which entails retention of urine, and also of a center in the thalamus, injury of which entails incontinence. The cortical disturbances are transient. He adds that no instance is known of cerebral disturbance in anus functioning.

Deutsche medizinische Wochenschrift, Berlin

July 29, 1920, **46**, No. 31

The Solution of the Tuberculin Mystery. H. Much.—p. 845.
Treatment of Surgical Tuberculosis with Partial Antigens. J. E. Schmidt.—p. 846.
Criticism of Prophylactic Measures Against Syphilis. Papamarku.—p. 847.
Indications for Evacuation in Pleuritic Exudates and in Empyemas. A. Bacmeister.—p. 849.
Atypical Conditions in Infectious Diseases. II. H. Oeller.—p. 850.
Relation of Esophylaxia to Physiotherapy. W. Krebs.—p. 852.
Investigations with the Meinicke Syphilis Tests. Blasius.—p. 854.
Extensive Injuries to the Diaphragm. Unger and Weski.—p. 856.
Covering of Poor Amputation Stumps with Skin and the Technic of the Immunization of the Skin. M. Katzenstein.—p. 858.
*Roentgenoscopy of the Digestive Tract. O. Strauss.—p. 859.
Otologic Hints for the General Practitioner. G. Brühl.—p. 861.
The Reform Movement in Medical Education. J. Schwalbe.—p. 863. Cont'd.

Present-Day Roentgen Diagnosis in Diseases of the Digestive Tract.—Strauss discusses what roentgenoscopy has accomplished to date in the diagnosis of various diseases. Among the diseases of the digestive tract, it is in duodenal ulcer that roentgenoscopy accomplishes the most. To be sure, even here it is seldom possible to secure direct signs for the presence of an ulcer, but the indirect symptoms are very numerous, among which he mentions more particularly seven: ptosis, markedly exaggerated peristalsis, open pylorus, unduly rapid passage of the stomach contents into the duodenum and jejunum, presence of a permanent gray duodenal shadow next to the deep black stomach shadow, palpation with the aid of roentgenoscopy of a painful spot in the duodenum, and small residues in the stomach six hours after the ingestion of food. The ordinary duodenal ulcer attacks mostly the proximal portion of the duodenum, while stenosing ulcers appear more frequently in the distal portion. In stenosis the duodenum presents dentate filling defects, which is a sign of great diagnostic value.

Jahrbuch für Kinderheilkunde, Berlin

1920, **93**, No. 1

*Lymphatism as a Morbid Entity. K. Löwenthal.—p. 1.
Flour-Butter Mixture in Infant Feeding. E. Friedberg.—p. 16.
*Serotherapy of Alimentary Intoxication in Infants. R. Hamburger.—p. 25.
*Neurogenous Dermatoses in Children. B. Epstein and W. Neuland.—p. 33.
Scarlet Fever and Mixed Infection. A. Balint.—p. 44.
Grave Diphtheria in Children. A. Lohrig.—p. 49.

Lymphatism as a Morbid Entity.—Löwenthal argues that the overproduction of lymphoid tissue in the status thymicolymphaticus is merely a somewhat exaggerated reaction to the ordinary physiologic stimuli. It is nothing more than a morphologic deviation from the strictly normal and is not a constitutional anomaly. But if the overproduction happens to occur in a vital region, the mechanical disturbance may confer the status of morbid entity on the condition. In a case described in an infant of 16 months, the overproduction had occurred in the central nervous system. The purely local hyperplasia found in the corpus striatum was probably responsible for the febrile temperature by irritation of the heat center, just as any mechanical, electric, thermic or toxic influence is liable to affect adjacent ganglion cells.

Colon Bacillus Antiserum for Infants.—Hamburger used a commercial polyvalent colon bacillus antiserum prepared for cattle, and reports that he gave this treatment to thirty-one infants with alimentary intoxication. Over 31 per cent. of the children recovered, while only 4.8 per cent. recovered in a corresponding group of twenty-one treated by the ordinary measures without the antiserum. Plantenga used an autogenous antiserum, and has reported good results from this while no benefit was apparent from normal horse serum.

Neurogenous Dermatoses in Young Children.—Epstein and Neuland comment on the vital importance of distinguishing between the neurogenous dermatoses and those for which the exudative diathesis is responsible, as the treatment required is diametrically opposite. The neurogenous are distinguished by their localization especially at the bend of elbow or knee, their symmetry, dryness, lack of discharge, extremely chronic course, and itching. These features call for tests for overexcitability of the nervous system. We must not assume an ordinary dermatosis that happens to affect a neuropathic child, but proceed to link the dermatosis to the neuropathy. A few typical cases are described, among them that of a boy of 11 who since infancy has had a recurring skin affection on the cheeks, back of the neck or bend of the knees or elbows but never any manifestations indicating the exudative diathesis. He occasionally has headaches, diarrhea and umbilical colic, and at the age of 7 suddenly lost for three weeks the ability to speak. The dermatosis flared up anew after a hard examination in arithmetic. In some cases a change of scene cured the dermatosis which had resisted specialist dermatologic treatment for years; in one case merely the change of governess. One child lived alternately with its parents, who were separated, and its dermatosis recurred regularly when it was with the mother and subsided when with the father who let him play with other children. Scabies and pediculosis may be complicated with a neurogenous "eczema" in regions beyond. Cerebral reflexes from emotional stress are common; cases of herpes zoster, urticaria and Quincke's edema developing after a fright or excitement have been frequently published. They report some further cases where herpes of the lip or cheeks developed suddenly a few hours after a fright or sensation of disgust. Differentiation is most difficult in infants, and grows easier with the age, as the skin manifestations of the exudative diathesis improve under proper dieting, and decline as a rule with the first year. Changing the mode of life is the most effectual way—even in infants—to combat the neurogenous dermatoses, guarding against causal factors such as vermin, woolen underclothing, too heavy bed clothing and too warm sleeping room. The child should be kept out of doors as much as possible, in cool, shady places, with psychotherapy and local applications to relieve the inching. Even after the neurogenous dermatosis has been cured, it is liable to return at any time as the tendency may persist.

Monatsschrift für Geb. und Gynäkologie, Berlin

July 5, 1920, **53**. Döderlein Festschrift. Second Half

*Duplex Uterus with Atresia of One Side. F. Binz.—p. 176.
*Embolism After Gynecologic Operations. O. Eisenreich.—p. 190.
*Acute Gonorrhea in the Female. H. Saenger.—p. 197.
*Anomalies in Menstruation. R. Schröder.—p. 207.
Mechanism of Twisting of Child During Birth. A. v. Fekete.—p. 252.
The Food and Lactation. D. Grumme.—p. 271.
*Radiotherapy of Uterine Hemorrhage and Myoma. W. Kolde.—p. 283.
Statistics of Abortion. H. Lorenzen.—p. 291.
Treatment of Sterility by Slitting the Cervix. W. Nagel.—p. 305.
Influenza from Obstetric and Gynecologic Standpoints. F. Flury.—p. 314.
Antipyrin in Treatment of Puerperal Sepsis. T. Gottron-Killian.—p. 330.
*Septic Pleuropneumonia in the Newly Born. H. Rummel.—p. 336.
*Paravertebral and Parasacral Anesthesia. F. Rick.—p. 357.

Duplex Uterus with Atresia of One Side.—The girl of 19 in the case reported by Binz had been subject to dysmenorrhea with pain which had become continuous in the right side. Appendicectomy brought no relief. A supposed ovarian tumor had been noted at the operation, and this proved to be the blood-filled right half of the duplex uterus and right tube. Comparison of this case with others on record teaches the importance of a prompt abdominal operation with atresia of half of a uterus bicornis. The hematosalpinx should be removed and the two cornua joined into one cavity. One case has been reported by Küstner in which two years after hemihysterectomy a pregnancy was carried to term.

Embolism After Gynecologic Operations. — Eisenreich relates that at the gynecologic clinic at Munich there have been 12 cases of postoperative pulmonary embolism since 1907 in a total of 3,981 operations, including 2,500 laparotomies. Embolism was never observed after operations on the adnexa or for cancer, and there was nothing to suggest infection in 11 of the total 12 cases so that mechanical factors

must be incriminated: slowing of the blood stream or changes in the blood or in the vessel walls from compression. In 5 of the cases a large ovarian cyst had been removed. Getting the patient up early after the operation does not guarantee against embolism from mechanical causes. In one of the embolism cases the woman had been sitting up from the second day and had begun to try to walk.

Acute Gonorrhea in the Female.—Saenger stresses the importance of warding off infection of the cervix, stating that the gonococci are usually limited to the urethra at first. In ninety-six of ninety-eight cases he found gonococci in the urethra, but in the cervix only in seventy-eight. His description of two cases shows that it is possible to abort gonorrhea by active means to save the cervix from infection. In one of these cases the infection had been acquired in both mouth and urethra. The pelvis is kept quiet; no vaginal douches are allowed; the external genitals are washed with an antiseptic, and the urethra and para-urethral passages are treated vigorously by the physician himself at least once a day, and the woman has to stay in bed during menstruation. When a married man presents acute gonorrhea, Saenger insists on the wife's coming for examination and treatment, and by this means has often succeeded in aborting the infection.

Anomalies in Menstruation.—This forty-six page article is a critical review of the literature on this subject in the years 1915 to 1918. Schröder discriminates carefully between menorrhagia and metrorrhagia and says that radiotherapy is the sovereign remedy for menorrhagia but only as the last resort unless the menopause is close at hand. Even then it should be preceded by curetting, and this alone will cure in about 50 per cent. of the cases. The effect of the curetting should be awaited before proceeding further.

Roentgen-Ray Treatment of Uterine Hemorrhages and Myomas.—Kolde relates that he has had no mishaps and no injury of the skin in nearly seven years of radiotherapy in a total of 275 cases of hemorrhagic uterine disturbance and 220 of cancer. On suspicion of cancer, the sarcoma dose instead of the castration dose should be given. With the progress in technic that has been realized, he says that operative measures need no longer be given the preference in this group.

Septic Pleuropneumonia in the Newly Born.—Rummel analyzes the publications on this subject, and compares them with a personal case. The vigorous child of a healthy woman developed cyanosis and dyspnea four days after birth, and puncture three days later showed a left streptococcus pleural empyema. The child died two days later. Only three cases are on record showing similar pathologic findings. The woman had been healthy throughout the pregnancy, and the presumption is in favor of inhalation or aspiration of streptococci during the first days after birth.

Combined Nerve-Blocking Anesthesia.—Rick advocates a combination of paravertebral or parasacral anesthesia with the "twilight sleep" technic. He says that in 83 per cent. of his 100 cases the results were perfect. The method failed totally in five cases.

Münchener medizinische Wochenschrift, Munich

Feb. 27. 1920. **67**, No. 9

Use of Physiologic Sodium Chlorid Solution. Straub.—p. 249.
Recent Flocculation Tests for Syphilis. Huebschmann.—p. 251.
Treatment of Pulmonary Tuberculosis with Silicic Acid. Kühn.—p. 253.
Deep Thermometry. III. B. Zondek.—p. 255.
Vital Statistics of Nuremberg During the War. Von Ebner.—p. 257.
*Case of Syphilitic Periaortitis. G. Hubert.—p. 261.
Surgical Diphtheria and Hospital Gangrene. Wieting.—p. 262.
Prophylaxis of Syphilitic Infection in Midwives and Parturients. L. Hauck.—p. 262.
*The Abuse of Phenolphthalein. P. Rosenstein.—p. 263.
William Osler; a Character Sketch. F. Müller.—p. 263.

Sign of Syphilitic Periaortitis.—Hubert reports a case of syphilitic aortitis with aortic insufficiency in which a systolic and diastolic friction sound in the area of the aorta was noted. The intensity of the sound was dependent on respiration. It could be distinctly heard synchronously with the heart's action when the patient held his breath. Hubert regards this friction sound as a sign of syphilitic periaortitis, for which no absolutely conclusive symptom has heretofore been known. While the symptom is doubtless very rare, it may have great practical value, for in arteriosclerosis an extensive involvement of the adventitia is virtually unknown, so that the demonstration of the above described symptom may possibly furnish us with a practical means of differentiating arteriosclerosis of the aorta from syphilitic aortitis, which is otherwise exceedingly difficult.

The Abuse of Phenolphthalein.—Rosenstein states that a few months previously, during his office hour, a lady called on him who had been taking Boxberger's Kissingen Pills for the past several weeks as an antifat preparation. She had lost weight, she said, but it was at the expense of her general health. She could not get rid of her diarrhea, and on examination it became evident that she was suffering from severe hemorrhagic nephritis. Urinanalysis revealed 0.1 per cent. albumin in the urine, and in the sediment there were many granular and waxy casts. After a week's illness the patient recovered completely. The pills in question were found to contain phenolphthalein, although on the label only rhubarb and extract of cascara sagrada were mentioned as ingredients. Rosenstein expresses the wish that the authorities might take such action as would prevent the indiscriminate sale of such remedies.

Therapeutische Halbmonatshefte, Berlin

June 15, 1920, **34**, No. 12

Vitamins. G. Gaertner.—p. 321.
Operations for Pelvic Inflammations of Women. Meyer.—p. 329.
Treatment of Lupus by a Modification of the Landerer Tuberculosis Cinnamic Acid Method. A. Philippson.—p. 331.
*Argyria Following Injections of Silver Arsphenamin. Lochte—p. 334.

Argyria Following Injections of Silver Arsphenamin.—Lochte reports a case in which a young woman of 21, who had contracted syphilis for the first time, received seven injections of neo-arsphenamin, whereupon all manifestations disappeared within eight weeks. A relapse occurred ten months later, at which time the diagnosis was: syphilis nodosa of the scalp; gummatous periostitis of the tibia; syphilitic ulcer on the right arm. Some of the ulcers were fresh, some were scarred over, with distinct marginal infiltration. She was referred to a specialist. A month later she reappeared and stated that she had consulted a specialist, who gave her twelve injections of silver arsphenamin. The first injection was given intramuscularly, simultaneously into the right and left buttocks (0.2 gm.). There was no special pain. Five days later icterus appeared, which lasted fourteen days. Treatment was, however, not discontinued, as the patient felt well. A few days later, the patient noticed for the first time an ashen gray discoloration of the skin, which rapidly became more marked. When last seen the skin of the face and body presented a steel-gray color, which gave a peculiar impression. Even the eyes showed the same color. There were no outward manifestations of syphilis. Lochte did not see the case himself. Sweating treatment and homeopathic remedies, self-prescribed, were of no avail.

Wiener klinische Wochenschrift, Vienna

July 15, 1920, **33**, No. 29

Local Anesthesia and General Narcosis. H. Finsterer.—p. 623.
*Dangers of Local and Conduction Anesthesia. W. Denk.—p. 630.
The Combined Method of Anesthesia. A. Fraenkel.—p. 636.

July 22, 1920, **33**, No. 30

Action of Decomposition Products of Tissues and Bacteria Obtained by a Process of Fermentation. G. Joannovics.—p. 649.
Therapeutic Action of a Preparation Obtained by Digestion of Trichophyton Cultures. H. Fuhs.—p. 653.
Effect on Carcinomas of Decomposition Products Obtained by Fermentation Process. G. Scherber.—p. 654.
Conditions for Agglutination in Typhus. Weil and Felix.—p. 655.
Modification of the Schloffer Operative Method in a Frequent Form of Phimosis. F. Kazda.—p. 657.

The Dangers and By-Effects of Local and Conduction Anesthesia.—Through the columns of medical journals, Denk requested all colleagues to send him reports of their experiences in this field, with which request many complied. He emphasizes that he should not be regarded as an opponent of these methods, since he fully recognizes their advantages; only he wishes to point out the dangers resulting from too

exclusive use of local and regional methods without considering the constitutional peculiarities and the individual needs of the patient. He has sifted the material thus secured and collated the general experience of his correspondents, reviewing the toxic effects, fatal and otherwise, the tissue injuries, the after-pains, and some of the advantages and disadvantages of lumbar, sacral, paravertebral and splanchnic anesthesia and plexus anesthesia. On the whole, he regards the number of accidents as infinitely small compared with the total number of cases, but nevertheless they tower as warnings and prevent us from coming to regard local anesthesia as absolutely free from danger.

Zeitschrift für klinische Medizin, Berlin

1920, **89**, No. 3-4

*War Nephritis. S. J. Thannhauser.—p. 181.
Physical Factors Influencing Tests for Viscosity of Blood. E. Rothlin. —p. 233.
*The Children of Syphilitics. Marie Kaufmann-Wolf and Emmy Abrahamson.—p. 274.
Functional Capacity of Liver in Malaria. A. Mayer.—p. 282.
Behavior of Lymphocytes in Blood with Cancer. C. Moewes.—p. 298.
*Nucleus Relics in Erythrocytes. M. Bockhorn.—p. 304.
By-Effects of Subcutaneous Injections of Quinin in Pneumonia. A. Neumann.—p. 312.

War Nephritis.—Thannhauser arranged the war nephritis hospital in his charge so that the 800 patients passed in turn through the six wards, those in the first ward being fed only with 200 c.c. fluid (milk) and three rolls; in the third ward gruels were allowed, with 500 c.c. of fluid, and in the sixth ward the full diet but never over 1,500 c.c. of fluid. The patient was kept in the first two, "starvation and thirst" wards until diuresis set in; in the third ward until the edema had subsided. The fact that all in the ward were getting the same diet made it easier for the men to stand the restrictions. After the salt balance had been ascertained, a test addition of 10 gm. of salt to the diet was made. From 70 to 100 per cent. are excreted by the healthy. He gives the findings after this salt test in the various groups of patients, and emphasizes that they demonstrate that the organ which regulates the interchange of salt and water between the blood and the tissues is suffering from the action of the same noxious influence that is injuring the kidneys. By the summation of this injury, both water and salt are retained in the intercellular spaces. The salt test and the water test are a guide for the rational regulation of the intake of salt and of fluids in any kidney disease with a tendency to dropsy. The response shows how much fluid to allow to keep down the edema.

Fate of Children of Syphilitics.—This article reports the fifth series of the kind, including 213 living children of syphilitic parents. The total mortality for the entire five series was at least 70 per cent. when the mother was infected, and under all conditions it was about 50 per cent. The morbidity of the living averaged 50 per cent., so that only 25 per cent. of the children in the 134 families grew up healthy.

Nucleus Relics in Erythrocytes.—The man of 48 had presented constantly basophil inclusions in the erythrocytes which Bockhorn thinks must be nucleus relics, and must be regarded as a sign of grave import. He compares with it the few similar cases on record, and discusses whether the spleen or bone marrow is responsible.

Zentralblatt für Chirurgie, Leipzig

July 24, 1920, **47**, No. 30

Etiology of Dupuytren's Contracture. A. Krogius.—p. 914.
Plastic Nerve Sheaths. W. Goldschmidt.—p. 918.
Treatment of Cicatricial Contractures. A. Horwitz.—p. 920.

Zentralblatt für Gewerbehygiene, etc., Berlin

August, 1920, **8**, No. 8. Only medical articles listed

*Toxicity of Anilin Dyes. Bachfield.—p. 149. Begun in No. 7, p. 113.
*Artificial Respiration with and Without Supply of Oxygen Under Pressure. Wauer.—p. 159.

Toxicity of the Anilin Dyes.—Already reviewed, Aug. 31, 1920, p. 576.

Artificial Respiration Plus Oxygen.—Wauer has been experimenting with different methods for artificial respiration and different technic for administering oxygen in connection therewith. His conclusions are that it is just as practicable to give the oxygen straight from the tank, without the mediation of any pulmotor or apparatus. The Silvester method of artificial respiration can be rendered much more effectual by drawing the arms back past the head till they lie along the floor to the elbow. Roentgenoscopy of living subjects and cadavers has shown that turning the head sharply to the side generally opens the space between the base of the tongue and the spine, thus spreading the opening to the air passages. Giving oxygen materially promotes resuscitation.

Zentralblatt für Gynäkologie, Leipzig

Sept. 4, 1920, **44**, No. 36

*Eclampsia: A Symposium.—p. 986.
*Radiotherapy in Adnexitis. T. H. Van de Velde.—p. 994.
*Sutureless Method of Wound Closure. G. Schubert.—p. 998.

Eclampsia.—Stursberg recalls the assumption that eclampsia is connected with an increase of blood pressure, and reports findings which he thinks justify further investigation of the relation of the blood circulation to eclampsia. In two cases in which convulsions were no longer occurring but in which there was still stupor, he noted as marked an accentuation of the second pulmonary sound, as with severe mitral stenosis, but there was no valvular disease. The snapping character of the sound was very pronounced. There were no signs of marked disturbance of circulation, though one patient had slight cyanosis. The heart sounds gradually returned to normal in five days.

Hinselman followed Weiss' method in observations on the capillaries in four eclamptics, and found that the circulation in the capillaries of the leg showed marked variations in velocity within very short intervals. Sometimes the circulation was very rapid, sometimes jerky, and often stasis for from fifteen seconds to two minutes would occur. This behavior of the circulation in the capillaries is not confined to eclamptics. It occurs also in the healthy pregnant.

Denecke found in five cases of eclampsia a marked paucity of blood platelets, whereas in the healthy pregnant the thrombocytes are normal or moderately increased. In view of the recent opinions advanced that even uninjured vessels become permeable if the number of blood platelets falls below a certain limit (30,000 Frank), Denecke thinks that this finding has a certain importance.

Fahr describes the changes in the kidneys of twenty-eight eclamptic patients. The most important and the most common pathologic change affected the walls of the capillaries of the glomeruli, and was characterized by a spreading and thickening of the capillary wall, of varying intensity. Another rather frequent finding in the kidney was the presence of hemoglobin casts. The eclampsia toxin acts on the blood and the blood vessels; in the kidney this action is most noticeable in the glomeruli.

Sioli examined the brains of four eclampsia patients. The changes were in all four cases quite similar. Besides the well known manifestations of thrombosis and hemorrhage, lipoid droplets were found in the vessel contents and considerable accumulations of lipoids in the vessel walls. The changes in the vessels were not uniformly distributed but were localized in many small spots. In all cases the most noticeable change was the rather uniform occurrence of very numerous "ameboid" glia-cells and decomposition products in ganglion cells and in glia-cells.

Radiotherapy in Oophoritis.—Van de Velde contends that in every case of oophoritis, as soon as it appears that it will not run a light course, temporary sterilization of the ovaries by graduated irradiation is indicated. Roentgen rays and radium influence menstruation in much the same manner; radium, however, does not cause hemorrhages through irritation, and it seems to stay hemorrhage more quickly than the roentgen rays. Experience shows that irradiation does not exert a harmful effect on *later* conceptions. Injury to the surrounding organs and tissues occurs only through overdosage. For combating hemorrhage in cases of oophoritis with menorrhagia or metrorrhagia that do not yield to medical treatment Van de Velde applies 50 mg. of radium in an oblong tube; filter 1 mm. of silver, 1.5 mm. of nickeled brass, 1 cm. of

cotton, and a thin rubber covering. The tube is inserted with great care across the posterior fornix or is placed against the os, packed around with tampons. No inflamed and sensitive spot should be irritated, and the radium should be kept as far away from the rectum as possible. The patient must lie as quiet as possible during the treatment. The radium remains in place for twelve hours. Three or four applications are given, always followed by twelve hour intervals. Thus from 1,800 to 2,400 milligram hours are applied. He advises this temporary ray castration without waiting too long, and lauds the benefit in many cases from this suspension of ovarian functioning for several months to a year and a half, restoring the woman to active life, with the gradual return of normal menstruation without injurious by-effects.

Sutureless Method of Wound Closure.—Schubert describes a knitting needle method of closing an incision which he has been using for some time. On each side of the wound, a knitting needle, about 1 mm. in diameter, is inserted and pushed through parallel under the skin to the other end of the incision about 5 to 10 mm. from the edges of the straight incision. The skin is punctured for them as the tips of the knitting needles should not be sharp. They pierce the skin from 0.5 to 1.0 cm. beyond each end of the incision. The projecting ends of both needles at one end of the incision are then raised a little by an assistant and the ends are tied together over a pad of gauze. This is repeated with the other ends of the needles, thus coapting the lips of the incision without stitches or clips. The needles are easily removed by twisting them a little. A third needle may be useful in the depths of the incision, and if infection is feared the tips of the needles might be tied together under the skin. The article is illustrated.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Aug. 14, 1920, **2**, No. 7

Our Knowledge of Actuality. J. D. C. Koch.—p. 571.
*Import of Hyperindicanemia. W. J. van B. van Vloten.—p. 585.
*Diagnosis of Renal Tuberculosis. E. C. van Rijssel.—p. 590.
*Choosing a Vocation. T. Meinema.—p. 596.

Indican in Serum as Test of Kidney Functioning.—The indican content and urea content of the blood serum of forty patients with different diseases are tabulated to show the variations with dieting and other factors, and the importance of hyperindicanemia for the prognosis. With the simple test described, it is possible in every case of uremia to obtain deeper insight into conditions and foresee the outcome. Haas accepts 1.4 mg. per liter as the limit of the normal range; Rosenberg's limit is from 1.5 to 1.8 mg. The urea and the indican content do not run parallel although when there is uremia there is usually indicanemia, and in one case hyperindicanemia was found before the uremia developed. In one case of contracted kidney the urea was at first 1.17 per thousand, the indican, 1.7 mg. per liter; the figures on repeating the tests were 1.06 and 1.08 urea and 6.4 and 21.3 mg. indican. This patient had been kept on a protein poor diet. In another similar case the urea figures were 1.46, 1.04 and 0.52 per thousand on repeated tests, while the indican figure kept persistently at 4.27 mg. thus testifying that the condition was grave although the urea content was normal. Both of these patients died within a short time with uremic symptoms. The protein-poor diet reduced the uremia but did not modify the hyperindicanemia, and the latter was thus the true basis for the prognosis.

Diagnosis of Renal Tuberculosis.—Van Rijssel is prosector at Rotterdam and he relates that in a comparatively short period recently he had four kidneys sent in for examination which had been removed on the diagnosis of tuberculosis but the microscope failed to reveal a trace of tuberculosis. In two of the cases nonmalignant tumors had been responsible for the symptoms. In both these cases the diagnosis had been based on inoculation of guinea-pigs. The animals may have been already tuberculous when inoculated; care in selecting healthy animals for the test is indispensable. In the two other cases the kidney was apparently normal, although there was a slight apical tuberculous process, in one, and acid-fast bacilli were found in the urine. Even the most experienced bacteriologists are sometimes misled by acid-fast bacilli. The cases teach further that in inoculation of animals the microscope must be used; the unaided eye cannot be depended on. Van Rijssel's recent experience shows that such warnings cannot be reiterated too often.

Choosing a Vocation.—This is a critical review of a number of recent publications bearing on applied psychology and physiology in the choice of a trade or profession, all but one in German or Dutch.

Hospitalstidende, Copenhagen

July 14, 1920, **63**, No. 28

*Vestibule Phenomena with Ocular Paralysis. G. V. T. Borries.—p. 433

Research on the Vestibule with Ocular Paralysis.—Borries expatiates on the theoretical importance of the case he describes in which, with complete paralysis of the voluntary movements of the eyeball toward the left, the nystagmus elicited by way of the vestibule was absolutely normal both to right and left. He discusses the literature on the subject, saying that his case seems to belong to the subcortical group of ocular paralyses according to Bárány's classification.

Hygiea, Stockholm

Aug. 16, 1920, **82**, No. 15

*Mentally Backward Children. H. Kjerrulf.—p. 481.
Epidemic of Typhoid at Sundbyberg, 1919. E. Bolin.—p. 496.

Physical Condition of Mentally Backward Children.—Kjerrulf compares the data from 1,893 children in a regular school with those from 365 in a school for the mentally backward. There was a history of premature birth in 6.2 per cent. of the former and in 16.2 per cent. in the latter group; there were 137 first born and 3.4 per cent. twins among the mentally backward; undescended testicles in 5.6 per cent. of the 215 boys, but the thyroid was of normal size in all but 0.54 per cent. of the mentally backward while it was distinctly enlarged in 4.7 per cent. of the children in the regular school. Ylppö has recently published a protest against classifying cases as congenital debility when in fact premature birth or hemorrhage from birth injury or both are responsible for the abnormal condition. He accepts a weight of 2,500 gm. as the limit below which the birth should be regarded as premature, but Kjerrulf thinks a length of 47 cm. is a better criterion.

Ugeskrift for Læger, Copenhagen

July 29, 1920, **82**, No. 31

*Hemoptysis. I. Rosenthal.—p. 973.

Hemoptysis.—Rosenthal reports that in 85 per cent. of his total 157 hemoptysis patients the course of the tuberculosis was comparatively mild. In 50 per cent. there had been an acute exacerbation before the hemoptysis, and in 37 cases with recurring hemoptysis the mild character of the disease had not been modified. In 46 cases there was no fever at any time while under observation. Hence, he remarks, the hemoptysis in itself cannot be incriminated for the acute exacerbations in the graver cases. Under strict bed rest and morphin, the tendency to hemorrhage rapidly subsided. Visiting and loud speaking are forbidden; only cool, fluid food is allowed, and the bed linen and clothing are not changed during the first few days, merely covered with clean if spotted. An ice bag to the chest helps to immobilize the patient. In the rebellious cases, he gave a mixture of 0.10 gm. each of lead acetate and pulverized digitalis leaves five times a day, stopping if this induced nausea. He never gave it for more than a week and usually only for four or five days at most. Only in 8 of his 157 cases was this called for either by the tenacity of the hemorrhage or its increasing intensity.

Correction: Dog's Milk in Infant Feeding.—In the abstract with this title on page 1029 it is stated that lactation had been kept up for five or six months. The words of the original are: "The boy (*gamin*) said that he had been sucking milk from his dog daily, and that three months had elapsed since its puppy had been taken away. The puppy had been weaned at 2½ months. Feeding with dog's milk could thus be kept up for five or six months."

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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, NO. 18 CHICAGO, ILLINOIS OCTOBER 30, 1920

THE ETIOLOGY OF DENGUE FEVER*

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The recent discovery by Noguchi[1] of the probable cause of yellow fever, a spirochete which he has named *Leptospira icteroides,* renews interest in the etiology of dengue fever, an infection that is apparently very closely related to yellow fever in many of its etiologic aspects; and it is not at all improbable that the application of the cultural methods used by Noguchi in the discovery of *Leptospira icteroides* in the study of this disease will result in the demonstration of a similar causative organism.

In view of the reported prevalence of dengue fever in epidemic form in Alabama, I believe that a summary of what is at present known regarding its etiology will prove of interest to the medical profession, especially to physicians in regions where the disease occurs and to workers in tropical medicine. The more recent contributions to our knowledge of the subject have been published in medical journals that are not readily accessible to most practitioners, and the fact that some of the most valuable work on the subject was reported during the busy days of the World War and the period of reconstruction has resulted in failure to appreciate its importance in the scientific study of the disease.

Dengue fever, while a disease attended with practically no mortality in the young and healthy, is of considerable military importance, in that it spreads rapidly through a command, incapacitating large numbers of soldiers for periods of between two and four weeks, while in civil life the large percentage of those contracting the disease among those exposed renders it of much economic importance.

Prior to the researches of Graham, and of Ashburn and myself, but little was known regarding the etiology of dengue. It was generally considered a highly contagious disease which spread rapidly by direct contact, and its clinical resemblance to mild cases of yellow fever, as well as its seasonal occurrence, which coincided with that of the latter disease, gave rise to confusion in diagnosis and to the opinion that, in some way, these infections were related.

Although Graham was the first to present experimental evidence that dengue is transmitted by mosquitoes, the idea that it might be so transmitted was hinted at in some descriptions of the disease published prior to Graham's work, and almost all writers called attention to its occurrence at the same time as yellow fever in regions where the latter disease occurred in endemic or epidemic form, while many investigators mentioned the great resemblance in the manner of spread of the two infections, during an epidemic. Furthermore, a perusal of the writings of medical men well acquainted with the disease, prior to the more recent work on the subject, will convince the most skeptical that while dengue was considered by all as an infectious disease, there were many who doubted its contagiousness, and who were inclined to believe that some peculiar method of transmission was involved in its causation.

Our present knowledge regarding the etiology of dengue we owe to the work of Graham, Bancroft, Ashburn and Craig, and Cleland, Bradley and McDonald, and the result of their work will be considered somewhat in extenso.

GRAHAM'S RESEARCHES

In 1903, Graham[2] published the results of his researches regarding the etiology of dengue fever, and this publication had the effect of stimulating considerable work on the subject, owing to the importance of his conclusions. Graham's work was done at Beirut, Syria, and he claimed that he had discovered the parasite causing the disease, and had proved that it is transmitted by *Culex fatigans,* a common species of mosquito.

Graham examined the blood in more than 100 cases of dengue, but in his report he does not state in how many he found the supposed parasite, although he does state that he was not successful in finding it in stained preparations of blood. In fresh preparations he states that he found an unpigmented, plasmodium-like organism within the red blood corpuscles, which he regarded as belonging to the Protozoa. According to his description the parasite appears at first within the red blood corpuscle as a small hyaline dot or rod, actively motile, and constantly changing its position within the infected cell. It gradually increases in size and finally fills the cell, which may rupture, when the parasite may be found in the blood plasma, where it rapidly degenerates. Graham did not describe any method of reproduction nor did he observe any sporulating forms of the parasite in the blood. At no stage in the growth of the organism was pigment observed.

Believing that mosquitoes were responsible for the transmission of the disease, Graham endeavored to find developmental stages of this organism in mosquitoes that had bitten infected individuals. He examined mosquitoes, which he identified as *Culex fatigans* and which had bitten dengue patients, and in the blood contained in the stomach of the insects he reported that

* From the Division of Laboratories, Army Medical School.

1. Noguchi, Hideyo: J. Exper. Med. **19**: 565 (June) 1919.

2. Graham, H.: J. Trop. Med. **6**: 209, 1903.

he found the same parasite as in the blood of infected individuals, as long as five days after the insects had bitten. Developmental changes similar to those occurring in the blood of man were noted, but he did not find any evidence of sexual forms. In the salivary glands of mosquitoes forty-eight hours after biting dengue patients, Graham states that he found the spores of this parasite, and he asserts that in one experiment he produced a very severe case of dengue by the subcutaneous inoculation of a healthy man with a peptonized saline suspension of the salivary glands of a mosquito that had bitten a dengue patient twenty-four hours previously.

In his first experiments regarding the mosquito transmission of dengue, Graham used four volunteers, who slept night after night beneath mosquito-nets containing mosquitoes that had bitten dengue patients. In one of these volunteers the disease developed in four days from the date of the first exposure to the insects; in one, in five days, and in one in six days after exposure, while the remaining volunteer escaped infection. During the experiments the men remained at their homes, where no other cases of dengue occurred either before or after the experiments. However, as a very severe epidemic of dengue was present in Beirut at the time, the possibility of the infection of these volunteers in some other way could not be entirely eliminated, and in order to remove this source of criticism, Graham performed his second series of experiments.

In these experiments he allowed mosquitoes, which were identified as *Culex fatigans,* to bite infected individuals, and then took them to a mountain village where no cases of dengue had occurred. Here he allowed them to bite two volunteers living in different localities, who were not permitted to leave the mosquito-nets containing the infected insects until sufficient time had elapsed to decide the experiment. One of these men developed dengue in a severe form four days after being bitten, and the other in five days. The infected insects were then killed, and the men liberated from the mosquito-nets; no further cases occurred in the village. Graham states that the mosquitoes he experimented with were *Culex fatigans* and that, at the time of the epidemic in Beirut, great numbers of this species were noted. He also stated that the insects were allowed to bite the healthy volunteers within a short time after biting infected individuals.

The results of Graham's researches may be thus summarized: He described a parasite, belonging apparently to the Protozoa, which he stated he found in the red blood corpuscles of dengue patients; this parasite he found also in the stomach of mosquitoes that had bitten dengue patients, and spores of the parasite in the salivary glands of such mosquitoes; the disease was produced in one instance in man by the subcutaneous injection of a suspension of the salivary glands of an infected mosquito; typical attacks of dengue were produced in man by the bites of mosquitoes that had fed on dengue patients, the species of mosquito used being identified as *Culex fatigans.* Of the six healthy men bitten, five developed the disease, two of them in a region where no other cases had occurred; the period of incubation in these cases varied from four to six days, two of the experimental subjects developing the disease in four days, two in five days, and one in six days. That no developmental cycle of the causative parasite occurred in the infected mosquitoes, similar to that of the malaria plasmodia in these insects, was evidenced by the fact that the mosquitoes were allowed to bite the experimental subjects within a few hours, at most, after biting dengue patients, and that such insects were capable of transmitting the infection.

BANCROFT'S RESEARCHES

In 1906, Bancroft [3] performed some experiments regarding the mosquito transmission of dengue, using instead of *Culex fatigans,* the yellow fever mosquito, *Stegomyia fasciata.* In his first experiment he used a number of mosquitoes captured in a room in which there was a patient suffering from dengue which had bitten the patients, as evidenced by the presence of blood in the insects. These mosquitoes were kept for twelve days, at the end of which time twenty-five of them were allowed to bite a volunteer. On the sixth day after being bitten a typical attack of dengue developed, the patient being taken suddenly ill with a severe chill and pains in the back and limbs, the disease lasting for several days.

Bancroft then reared mosquitoes of this species and allowed them to bite a person with dengue on the third day of the disease. After keeping these insects fifteen days he allowed them to bite two volunteers, but both of these experiments resulted negatively.

In a fourth experiment, Bancroft used fifteen mosquitoes of this species that had bitten a dengue patient in the second day of the disease. After a period of ten days these mosquitoes were allowed to bite a volunteer, who developed a mild attack of the disease, five days after being bitten.

In his final experiment, Bancroft allowed fifteen stegomyiae that had bitten a dengue patient in the second day of the disease, seventeen days previously, to bite a healthy volunteer, but this experiment gave a negative result.

Although a careful search was made by Bancroft for the parasite described by Graham as occurring in the stomach and salivary glands of infected mosquitoes in the mosquitoes that were used in his experiments, he was unable to demonstrate its presence.

Bancroft's researches may be thus summarized: Typical attacks of dengue fever were apparently produced in two of five healthy volunteers by the bites of infected mosquitoes identified as *Stegomyia fasciata;* in both successful cases the mosquitoes were infected by biting dengue patients during the second day of the disease; in one successful experiment the mosquitoes had been kept for twelve days after biting the dengue patient, and in the other, for fifteen days; the period of incubation in one successful case was five days, and in the other, six days; he was unable to confirm the presence of the parasite described by Graham in his infected mosquitoes or in the blood of dengue patients.

Bancroft's work is especially important because of his demonstration that the yellow fever mosquito, *Stegomyia fasciata,* apparently transmits dengue fever. He did not investigate the transmission of the disease by *Culex fatigans,* as claimed by Graham.

ASHBURN AND CRAIG'S RESEARCHES

The occurrence of an extensive epidemic of dengue fever at Fort William McKinley, Rizal, Philippine Islands, in 1908, enabled Colonel (then Captain) P. M. Ashburn, Medical Corps, U. S. Army, and myself [4] to make some experimental observations on the etiology

3. Bancroft, T. L.: Australasian M. Gaz. **25**: 17, 1906.
4. Ashburn, P. M., and Craig, C. F.: Philippine J. Sc., Sec. B **2**: 71, 1907. J. Infect. Dis. **4**: 440, 1907.

of this disease. During this epidemic more than 800 cases of dengue occurred among the commands stationed at Fort McKinley, and 128 of these patients were transferred to our dengue hospital at Manila, in which city the disease was not present at the time we made our experiments.

We first examined the blood of a large number of our patients microscopically, in order to prove or disprove the claims of Graham regarding the presence of a causative parasite in this fluid. Both fresh and stained preparations of blood were examined, special attention being paid to the possible presence of a spirochete, as we were inclined to believe that the disease might be caused by such an organism. Despite the most careful examinations, using the best methods of staining and studying the blood at that time available, and examining preparations taken at every stage of the disease, especially during the first two days and during the terminal rise in the fever, we were forced to the conclusion that there does not occur in the blood of patients suffering from dengue fever any organism demonstrable by the methods used that could be considered as the cause of the disease. We were therefore unable to confirm Graham's work regarding the presence of a causative parasite in the blood. We determined that dengue is not accompanied by anemia and that the characteristic change in the blood appears to be a leukopenia, the polymorphonuclear leukocytes being reduced in number, while the small mononuclear leukocytes are markedly increased.

In addition to the microscopic examination of the blood, we made blood cultures in twenty cases, in eight in citrated blood obtained at various periods of the disease, and in twelve in nutrient broth; but in no instance was any organism recovered that could be regarded as bearing a causative relation to the disease.

Having demonstrated that, with the methods available, no parasite could be found in the blood of dengue patients, either microscopically or culturally, and as the disease is not dangerous to life in young, healthy subjects, we determined, if possible, to prove the presence or absence of the infective agent in the blood by inoculating healthy volunteers with the blood of dengue patients. A call for volunteers was issued, and no difficulty was experienced in securing all the volunteers we could use from among the soldiers of the U. S. Army stationed in Manila.

We inoculated eleven of the fourteen volunteers we used with unfiltered blood from dengue patients, in the third and fourth days of the disease, and of these, seven developed typical attacks of the disease, the longest incubation period being seven days, and the shortest two and a half days, the average period of incubation being approximately four days. Fifteen minims (1 c.c.) of the unfiltered blood was injected intravenously in all of the successful experimental cases. In one case, in which one-half minim (0.0325 c.c.) of the blood was injected intravenously, the result was doubtful. We concluded from these experiments that the cause of dengue is present in the blood during the first three or four days of the disease, and that the intravenous injection of the blood produces the disease in susceptible individuals.

Having proved that the unfiltered blood of dengue patients was capable of producing dengue when injected intravenously, we turned our attention to the possible filtrability of the virus. Blood from patients suffering from the disease was rapidly defibrinated, diluted with an equal amount of physiologic sodium chlorid solution, and filtered through a Lilliput diatomaceous filter candle which retained *M. melitensis* and *S. cholerae*. Two volunteers were injected intravenously with sufficient of the filtrate to contain fifteen minims (1 c.c.) of the blood and both developed typical attacks of dengue, one in three days and eleven hours, the other in approximately three days and twelve hours. We regarded these two cases of dengue fever produced by the intravenous injection of filtered blood from dengue patients as the most typical cases of the severe type of the disease that we saw during the epidemic. The blood injected was obtained in one instance from a patient suffering from dengue produced by the intravenous injection of unfiltered dengue blood, thus proving that the experimental disease could be transmitted in this manner, as well as the naturally acquired disease. The results of these experiments justified us in concluding that the virus of dengue fever is filtrable and that the intravenous injection of filtered blood from dengue cases produces the disease.

We then endeavored to produce the disease by allowing mosquitoes that had bitten dengue patients to bite healthy individuals. At that time we were ignorant of Bancroft's successful results with *Stegomyia fasciata* and in our work we used *Culex fatigans,* as this species of mosquito was very prevalent during the epidemic that we studied, and had been stated by Graham to be the transmitting agent in the disease. Unfortunately for the success of our experiments, we were forced to use volunteers who had passed through the epidemic at Fort McKinley without contracting the disease, and of the nine men with whom we experimented, three were afterward proved to be absolutely immune, while three others were relatively immune, as shown by the mild character of the attacks of dengue produced by relatively large doses of dengue blood injected intravenously. In only one instance were we able to produce the disease through the bites of infected mosquitoes; but the results in this case were so clean-cut and definite that we considered that the experiment confirmed Graham's assertion that dengue is transmitted by *Culex fatigans*. The volunteer had not been exposed to dengue, as no cases of this disease had occurred at the hospital where he had been on duty. He was exposed to the bites of mosquitoes that had bitten a dengue patient in the third day of the disease, two days previously, and in four days he developed a typical attack of the disease.

We were able to prove that dengue is not contagious, as we exposed healthy men by allowing them to live in mosquito-proof tents with patients suffering from dengue, throughout the entire course of the disease. These men slept in the patients' beds, wore their underclothes and pajamas, and ate and drank from the same table utensils. In this way eight men were experimented with, and in no instance did dengue fever develop. As these men had not been exposed to dengue prior to the experiments, there is no reason for believing that they were all immune, and we believed that the results obtained proved beyond question that dengue is not contagious.

Summing up the results of the researches of Ashburn and myself, it is evident that we proved that the cause of dengue fever is present in the peripheral blood; that the injection of such blood intravenously produces the disease; that the intravenous injection of such blood filtered through a filter capable of retaining organisms as small as *M. melitensis* produces the disease and that, therefore, the virus of dengue belongs

to the group of filtrable viruses; that the intravenous injection of filtered blood from experimental dengue fever reproduces the disease, and that dengue is not contagious. In addition we obtained what we regarded as conclusive evidence that the disease is transmitted by *Culex fatigans,* and showed that, so far as the methods we employed were concerned, it was impossible to demonstrate any visible organism in the blood, either microscopically or culturally, thus disproving Graham's assertion that a visible causative organism existed in the blood of dengue patients. Our experiments also proved that certain individuals are absolutely immune to dengue fever; that the average period of incubation, when the disease is produced by the intravenous injection of infective blood, is from three and a half to four days, being actually three days and fourteen hours, and that a leukopenia, accompanied by an increase in the small mononuclear leukocytes, is a characteristic blood condition. As a result of our experiments we stated that "dengue is not a contagious disease, but is infectious in the same manner as is yellow fever and the malarial fevers."

CLELAND, BRADLEY AND MCDONALD'S RESEARCHES

Since the work of Ashburn and myself, numerous investigators have demonstrated that no visible parasite can be found in the blood of dengue patients, using the ordinary microscopic and cultural methods; but the only experimental work that has been accomplished since the publication of our work is that of Cleland, Bradley and McDonald, and their results will now be reviewed.

In their first series of experiments,[5] reported in 1916, these investigators used *Stegomyia fasciata* mosquitoes caught in rooms occupied by dengue patients in an infected district in Australia, some of the insects being allowed to bite a dengue patient on the first and second days of his illness. These mosquitoes were brought to Sydney, where dengue fever does not occur, and were allowed to bite seven healthy volunteers, four of whom contracted the disease, the incubation period varying from five to nine days. In two instances, healthy volunteers bitten by *Culex fatigans* mosquitoes that had bitten dengue patients failed to develop the disease.

The subcutaneous injection of 1 c.c. of blood from three of the four experimental cases of dengue produced by the bites of infected mosquitoes in turn produced the disease in three of four healthy volunteers, the incubation period again varying between five and nine days, approximately.

In this series of experiments it will be seen that Cleland, Bradley and McDonald confirmed the observations of Ashburn and myself that the injection of blood from dengue patients into healthy adults produced the disease, and that they also confirmed the observations of Bancroft regarding the possibility of the transmission of dengue fever by *Stegomyia fasciata.*

In a second series of experiments,[6] reported in 1917, these observers obtained successful results in thirteen of twenty-eight volunteers by the subcutaneous injection of the whole blood or constituents of the blood from dengue patients, while in seven instances the results were doubtful. Of five healthy volunteers injected subcutaneously with a mixture of serum and corpuscles from clotted infected blood, four gave positive results; in one case the citrated whole blood gave a positive result; in three of four cases the serum derived from clotted blood gave a positive result; in one of two cases the fluid portion of citrated blood gave a positive result, while in three cases in which a suspension of washed corpuscles from infective blood was injected, one gave a doubtful positive result.

As regards the filtrability of the dengue virus, these observers injected a filtrate of the clot and of the serum of blood taken from dengue patients on the second day of the disease in five volunteers, and secured a positive result in one case. The filter used is stated to have been a Pasteur-Chamberland, but it was not properly controlled.

In this series of experiments, the investigators mentioned proved that the dengue virus is present in the blood during the second and third days of the disease, and perhaps still present on the eighth day. They also proved that the blood retains its infectivity outside the body for a period of four days, and, in some instances, for as long as seven days.

In a third series of experiments,[7] reported in 1919, Cleland, Bradley and McDonald injected twenty-one healthy volunteers with dengue blood, in various forms, and secured eleven positive results and one doubtful result. They confirmed their previous findings that the subcutaneous injection of unfiltered blood from dengue patients produces the disease in healthy adults, and that carefully washed blood corpuscles, citrated blood plasma, and the blood serum free from blood corpuscles, are all capable of producing the disease. They determined that the dengue virus is resistant to external conditions for as long as ninety-nine hours after it is removed from the body; that it was present in the blood of patients for eighteen, fifty-seven, sixty-seven and ninety hours after the onset of the disease, and that in one case the blood was apparently noninfective 130 hours after the beginning of the disease.

The further experiments of these investigators with filtered dengue blood are of interest, as they confirm the work of Ashburn and myself, who first proved that the dengue virus is filtrable. They injected seven volunteers with about 2 c.c. of dengue blood subcutaneously, the blood having been filtered through a Pasteur-Chamberland Candle F, which retained ordinary bacteria, as staphylococci and colon bacilli. Of the seven volunteers so injected, three developed typical attacks of dengue fever. In one case the incubation period was seven days; in one, eight days, and in one the period of incubation was doubtful. In one case the blood injected was obtained during the first day of the disease; in one case, during the second day, and in one case, during the third day of the disease; while the virus was outside the body before injection in one case for twenty-two hours, in one case for forty-eight hours, and in one case for forty-nine hours.

In this series they record one more negative mosquito experiment, using *Culex fatigans,* and a few experiments in which they made an effort to transmit dengue to guinea-pigs and rabbits, which resulted negatively.

Briefly summarizing the results of their work, it may be stated that Cleland, Bradley and McDonald confirmed the work of Ashburn and myself as regards the infectivity of unfiltered blood from dengue patients, and the fact that the dengue virus belongs to the group of filtrable viruses, and the observations of Bancroft

5. Cleland, J. B.; Bradley, B., and McDonald, W.: M. J. Australia **4**: 204, 1916.

6. Cleland, J. B.; Bradley, B., and McDonald, W.: J. Hyg. **16**: 367, 1917-1918.

7. Cleland, J. B.; Bradley, B., and McDonald, W.: J. Hyg. **18**: 217, 1919.

that the disease may be transmitted by the yellow fever mosquito, *Stegomyia fasciata.* As regards the transmission of the disease by *Culex fatigans,* their three negative experiments are too few to be valuable as evidence against the transmission of the disease by this insect in view of the positive results of other investigators. In addition, these observers extended our knowledge of the virus by demonstrating that it is present both in the blood serum and in washed blood corpuscles, and that it is resistant to external conditions for several days.

In their last series of experiments, Cleland, Bradley and McDonald obtained a shorter period of incubation in some of their experimental cases than in their previous experiments, but they state that the period of incubation was extremely variable, but not shorter than four and one-half days, nor longer than fifteen days, the average being between six and eight days.

CRITICAL COMMENT

At the present time it may be stated that it is proved that dengue fever is due to a filtrable virus, present in the peripheral blood of those suffering from the disease during the first four days of the fever, and probably for a longer period, and that it is not contagious but is transmitted by mosquitos. The exact nature of the parasite, the period of incubation in experimental cases, the exact species of mosquitoes capable of transmitting the disease and how soon after biting infected individuals they become infective are all subjects deserving of critical consideration and further experimentation.

Nature of the Parasite.—Beyond the fact that the parasite is present in the peripheral blood of dengue patients, is filtrable, and resists external conditions for several days, we have no knowledge of its exact nature. It is evident that the plasmodium-like organism described by Graham does not exist in the blood of dengue patients, as the methods that have been employed in efforts to demostrate it by numerous investigators are amply sufficient to have resulted in its discovery; but, in view of the results of Noguchi in his work on *Leptospira icteroides,* it is evident that the methods so far employed in the search for the parasite of dengue fever have not been of such a nature as to lead one to expect its demonstration, if the disease is due to a similar spirochete. *Leptospira icteroides* occurs in such small numbers in the blood of those suffering from yellow fever that Noguchi was able to find it under the dark field in only three of twenty-seven cases of the disease and then only after very prolonged search, while in stained preparations of blood it was very seldom demonstrated. If it be remembered that at the time of the work of Ashburn and myself the dark field method of examination was in its infancy, it can be readily understood why an organism of this character might easily have been overlooked, and it should also be remembered that Noguchi's first successful demonstration of *Leptospira icteroides* was made, under the dark field, in the blood of guinea-pigs that had been inoculated with blood from yellow fever patients, the guinea-pig serving as a culture tube for the parasite. This manner of examining the blood in cases of dengue fever has not been utilized, but it is not improbable that it might result in success.

The filtrability of the parasite is in favor of the disease being due to a spirochete, as Noguchi has proved that *Leptospira icteroides* is filtrable, and in a personal communication, Major Nichols has informed me that this organism can pass through filters that retain all ordinary bacteria in the spirochetal stage; so that, while it is not proved that a granular stage of the parasite does not occur, such a stage is not necessary in explaining the filtrability of the virus. In view of these results, if the cause of dengue is a spirochete, the filtrability of the virus is easily explained.

The similarity of dengue and yellow fever, both clinically and etiologically, speaks strongly in favor of the spirochetal nature of dengue. Clinically, both diseases have a sudden onset, run a comparatively rapid course, and terminate by crisis rather than by lysis. In a previous communication I [8] have called attention to the similarity of the two diseases, and it is a point that is worthy of serious consideration.

In both diseases the cause is present in the blood, but only during certain periods; in both, the injection of unfiltered blood from patients suffering from the disease results positively, the incubation period in yellow fever being usually three and a half days, while, in our experiments, the incubation period in dengue averaged three days, fourteen hours; in both, the injection of filtered blood produces the disease, thus proving that both are due to a filtrable virus; in both, the transmitting agent is a mosquito; and both have been proved to be noncontagious.

The Period of Incubation.—The period of incubation, after the injection of dengue blood, varies considerably in different cases. Thus, Ashburn and myself found that it varies between two and one half and seven days, while Cleland, Bradley and McDonald obtained variations all the way from four and one-half to nine days, and in one instance the period of incubation appeared to be fifteen days. The latter authors call attention to their uniformly longer periods of incubation compared with those obtained by Ashburn and myself, but this difference is easily explained, I believe, by the fact that our injections were made intravenously, while theirs were made subcutaneously. It is reasonable to believe that the cause of the disease, which obviously lives in the blood stream, will produce the disease more rapidly if injected directly into the blood vessels, and thus the period of incubation will be shorter, than when it is injected subcutaneously.

However, there is nothing mysterious in the variations in the period of incubation of a disease following such experiments, for the dose of the virus administered probably explains such variations when the method of administration is the same.

Transmission by Mosquitoes.—I believe that the work of Bancroft, and of Cleland, Bradley and McDonald, proves beyond question that in Australia dengue fever is transmitted by the yellow fever mosquito, *Stegomyia fasciata;* but I am also of the opinion that it has not yet been proved that *Culex fatigans* cannot transmit the infection. The three experiments with this species of mosquito performed by Cleland, Bradley and McDonald, while resulting negatively, are altogether too few in number to have much weight in answering the question, in view of the apparently positive results of Graham, and of Ashburn and myself. Unfortunately, according to Cleland, Bradley and McDonald, Graham has stated that he could not be sure that there were no *Stegomyia fasciata* mosquitoes among those he used, so that some doubt must attach to his results. As regards the single successful case

8. Craig, C. F.: New York M. J. **93**: 360, 1911.

of the transmission of the disease by *Culex fatigans* secured by Ashburn and myself, it is our opinion that this infection was undoubtedly produced by the bites of infected *Culex fatigans* mosquitoes, as in no other way could the infection have been contracted under the conditions surrounding the experiment; but it still remains to be decided whether this successful result was in the nature of an accident, the insects having bitten the dengue patients within two days before biting the experimental patient. It is possible that the successful result was due to the regurgitation of infective blood remaining in the insect's stomach into the wound made while biting, but it is more reasonable to believe that this species regularly transmits the disease, although there may be no sexual cycle of development of the parasite within the mosquito.

The question of how soon a mosquito becomes infective after biting a dengue patient, or how long the insect remains infective, has not been answered by any work recorded to date, nor have the exact limits of the infectiveness of the dengue patient to the mosquito been determined.

CONCLUSION

I believe that dengue fever is caused by a parasite very closely related to that causing yellow fever. As it is practically proved that the latter disease is caused by a spirochete, *Leptospira icteroides,* the search for a similar organism in the blood of dengue patients, using the cultural and animal experimentation methods followed by Noguchi in his demonstration of *Leptospira icteroides,* is believed to offer the most promising chance of demonstrating the causative parasite of dengue. As long ago as 1906, Ashburn and I believed that this disease might be caused by a spirochete, and in our work we used every method at that time available in our endeavors to find such an organism in the blood of dengue patients, but without success. The anaerobic culture methods devised by Noguchi, so successful in cultivating spirochetes, together with improved methods relating to animal experimentation, are powerful aids to the investigation of disease; and it is believed that if properly applied in the study of the etiology of dengue fever it will be only a question of time before the causative parasite is discovered, and another victory will be added to those already secured through the adoption of scientific laboratory methods in the study of the etiology of disease.

Traumatic Conjunctivitis Caused by Ultraviolet Rays.—The effect of ultraviolet rays on the eye was recently noted by C. R. Kindall, a surgeon for the Bureau of Mines. Of thirty men who viewed the demonstration of a new portable electric arc welding outfit, seventeen reported a few hours later for treatment, suffering from traumatic conjunctivitis. In two cases the pain was severe and the symptoms were similar to those of iritis. Morphin had to be administered. Only two of the thirty were not affected in some way. These two wore thick-lensed orange colored glasses. Several wore orange glasses with thin lenses, but the latter were not heavy enough to afford protection. The inflammation was due to the ultraviolet rays. Kindall urges that at every plant where electric arc welding outfits are used, there should be an adequate supply of glasses with lenses made of alternate layers of red and blue glass or orange glass of sufficient thickness to protect the eyes from the effects of ultraviolet rays. There should also be on hand a supply of boric acid, sterilized water, ordinary table salt, and silver protein preparation for immediate use. All cases of traumatic conjunctivitis caused by exposure to bright light or ultraviolet rays should be treated under the direction of a physician.

ADENOMA OF MUCOUS GLANDS OF MOUTH, AND MACROCHEILIA*

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Enlargements of the lips produced by disease of the mucous glands are uncommon, and are either inflammatory or neoplastic in character. Volkmann,[1] in 1870, under the name of myxadenitis labialis, or cheilitis glandularis apostematosa, described five cases of a chronic inflammation of the lip mucous glands; all the patients were adults, three had syphilis, and the process was long drawn out with frequent exacerbations. These mucous glands were palpable, the gland ducts frequently dilated, and small cysts or abscesses common. Stomatitis or gingivitis was present to a noteworthy degree in every case, and Volkmann believed that the gland involvement was due to the mouth infection and that syphilis, when present, was a factor of only secondary importance.

Eichhorst,[2] in 1893, under the title of "Elephantiasis Syphilitica der Lippen," described an enlargement of both lips in a man involving the mucous glands with the other lip tissue. Thimm[3] had a case of machrocheila caused by a syphilitic involvement of the lip mucous glands in an adult which he believed to be purely syphilitic. It is unique not only because of this, but also because it concerns a woman and that it is the first time the term macrocheilia was used to describe syphilis of the lips. The lips were uniformly swollen, the mucous membrane intact, and even considerable pressure was not painful. The enlarged mucous glands were readily palpated, and the dilated gland ducts could be probed for short distances. There was no inflammation of the mouth mucous membrane except for a slight gingivitis. Complete disappearance of these conditions followed treatment for syphilis. Rousel's[4] case of cheilitis glandularis, the name and identity of which he obtained from Stelwagon's Diseases of the Skin,[5] is like Thimm's. It occurred in a white man, aged 36, with bad teeth, syphilis and enlarged lip mucous glands, with occasional small ulcers. This likewise cleaned up under antisyphilitic management and the use of the electrolytic needle. Aside from the part played by syphilis and mouth infections in the production of these inflammations of the lip mucous glands, it was assumed by the earlier authors that the so-called scrofulous constitution was an important factor. Nowhere is there any mention of tuberculosis.

A more frequent enlargement is that described as "double lip" by the European writers, especially the French and English, sometimes called hypertrophy of the mucous or labial glands. The enlarged soft lip is covered by smooth mucous membrane, with palpable nodules beneath it. The fold formed by the projecting red portion is more conspicuous when the person is laughing or talking. In the upper lip the fold is divided by the frenum, and the lower is always single.

* From the Department of Oral Surgery, Northwestern University Dental School.

* Read before the Section on Stomatology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Volkmann: Virchows Arch. f. path. Anat. **50**: 142, 1870.
2. Eichhorst: Virchows Arch. f. path. Anat. **131**: 568, 1893.
3. Thimm: Deutsche med. Wchnschr. **21**: 389, 1895.
4. Rousel: New Orleans M. & S. J. **58**: 739, 1906.
5. In the seventh edition of Stelwagon's text (Philadelphia, 1914) there is a summary of seven cases reported by Purdon, Sutton, Howard Fox, Schamberg and Wise, like those described by Volkmann.

Edington [6] described two cases and knew of a third, all in young men, first noticed in early childhood. The excised tissue of one such lip was examined microscopically and consisted of mucous glands embedded in a scanty connective tissue without any inflammatory infiltration. Operation yielded very satisfactory results in two cases, in one only after a second excision of glands apparently missed the first time.

Boissen [7] called this condition polyadenoma, and mentioned the occasional occurrence of an inflammatory process, which sometimes went to the length of ulceration.

Miles [8] and Sick [9] each described similar cases involving the upper lip in men.

Wright's [10] case belongs to this group. An enlargement of both lips in a young man, aged 18, had been in existence since birth, and the small tumor masses were distinctly palpable beneath the intact mucous lining. Removal was successfully accomplished after two operations. No microscopic examination was made, and infection was apparently not present.

Fraenkel,[11] in 1892, seems to have been the first to attach the name macrocheilia to lip enlargements resulting from adenoma of the mucous glands, in reporting a case of a man, aged 18, with a marked protrusion of the lower jaw, and a slowly growing tumor of the lower lip first noted by his parents during his fourth year. Some points in his description are important. The lip hung down so as to expose the incisors entirely. The mucous membrane was smooth, intact, without folds, furrows or elevations, and was normally soft without any evidence of inflammation such as pain on pressure and redness. Mucus appeared in small globules on the lining and ran in long strings down the exposed surface. It was diagnosed as lymphangioma, operation advised and accepted, and then in Fraenkel's words, "there occurred an astonishing discovery: At section of the mucous membrane there sprang forth between the incised borders a conglomerate tumor mass stretching from corner to corner, and consisting of a multitude of small lipoma-like masses with delicate lobulations up to the size of a cherry pit." The histology was in complete accord with that of unaltered mucous gland tissue. "The single acini are not hypertrophied, mostly devoid of secretion, none are cystic, the interacinous tissue is not broadened, and the walls of the blood vessels are thin."

Fraenkel was unable to find another case in the literature with the possible exception of Wright's, which he read in abstract. He believed that the mucous gland tumor was associated with and possibly due to the jaw deformity.

Eisendrath,[12] in 1904, described a very similar case in a 16 year old boy involving both lips, most marked in the upper; this lip was divided into two parts, soft, not painful, the lining smooth and without vesicles or dilated vessels. The true nature of the tumor was recognized only after microscopic examination, and consisted of normal lip mucous gland substance without cysts, infiltration, or connective tissue proliferation. This lip malformation was first noticed at 10 years, and was associated with a double ptosis of the eyelids.

Lindenberger,[13] Donati [14] and Masera [15] have reported cases of upper lip tumors under the term of macrocheilia, the result of hyperplasia or hypertrophy of the mucous glands.

D. B., a dentist, aged 26, came to the oral surgery clinic of the Northwestern University Dental School with a smooth, soft enlargement of the upper lip. The mucous membrane was intact, the swelling divided into two parts by the frenum, not tender, and without redness of the adjacent skin. There was no history of previous illness, and the condition had existed as long as the patient could remember. He believed it was gradually increasing in size because of his constantly biting the swollen lip. No history of syphilis was obtained, and a Wassermann test was not made. It was diagnosed as lymphangioma and the tumor mass removed under local anesthesia by Dr. Thomas L. Gilmer.

Paraffin sections of the excised tissues stained with hematoxylin and eosin were bordered by an unchanged lining, beneath which were embedded numerous mucous glands. Some of these were without change, others were the site of inflammatory alterations. One had a markedly dilated duct with thickened wall surrounded by a marked small round cell infiltration. The attached gland contained acini varying from perfectly formed tubules to those with dilated walls, and the absence of functioning gland cells. The interacinous connective tissue was increased in amount and contained many inflammatory cells, many round, occasional plasma and eosinophil cells. There were no abscesses and no polymorphonuclear leukocytes.

According to the requirements of Fraenkel, this is not a genuine mucous gland macrocheilia, nor does it conform to the purely inflammatory type of lip enlargement. It readily falls into the group of so-called "double lip," with some secondary infection probably resulting from the habit of biting the lip.

Of these nineteen cases, only one was in a female, thirteen involved the upper lip, nine the lower (this included three of both), five of the lower lip class were in syphilitic individuals, and two were of supposed inflammatory origin. Two were associated with trauma, one patient had misplaced teeth, two had other deformities, and six had syphilis. The neoplastic form was found in the upper lip twelve times and the lower three, and began in childhood, if not earlier, almost without exception. There is no statement anywhere connecting these tumors with malignancy. Excision, if extended to include all of the involved glands of this form, has been uniformly successful.

The term macrocheilia, therefore, has been used to name not only the better known lymphangioma but also these unrelated mucous gland enlargements. It is difficult, if not impossible, to classify these conditions on the basis of any such terminology, and it would therefore seem wise to abandon such descriptive terms as macrocheilia and double lip for the more exact names associated with the actual pathologic condition that does exist.

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6. Edington: Glasgow M. J. **64**: 81-86, 1906.
7. Boissen in Dechambre: Dictionnaire encyclopédique, 1869, article on "Levres."
8. Miles: Lancet **2**: 717, 1892.
9. Sick: München. med. Wchnschr. **46**: 680, 1899.
10. Wright: New York M. J. **56**: 152, 1884.
11. Fraenkel: Arch. f. Chir. **44**: 95-101, 1892.
12. Eisendrath: Ann. Surg. **40**: 320, 1904.
13. Lindenberger, Irvin: A Case of Macrocheilia, J. A. M. A. **44**: 959 (March 25) 1905.
14. Donati: Gaz. med. Ital. **56**: 71-74, 1905.
15. Masera: Morgagni **53**: 151-160, 1911.

Mosquitoes in California.—A total of seventy-one mosquito collections were made in southern California (eight counties), consisting of 814 mosquitoes, of which 49.6 per cent. were anophelines (30.5 per cent. *A. quadrimaculatus;* 0.2 per cent. *A. punctipennis* and 69.3 per cent. *A. pseudopunctipennis*). The average annual death rate from malaria for the ten-year period, 1909-1918, for that portion of the state was 0.9 per hundred thousand population.—*Pub. Health Rep.* **35**:276 (Feb. 6) 1920.

TREATMENT OF COMMINUTED FRACTURES OF THE MANDIBLE*

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In dealing with this phase of the subject it must be conceded that the comminuted fracture is but one form of fracture, and that, according to its location or extent, it may be considered as the principal object of study, or as a complication of a fracture of less severity.

The general plan of treatment of mandibular fractures must be kept in mind, namely, the reduction of all viable fragments, the retention of all teeth, if they are not detrimental to repair, in their normal occlusion, and the retention of all bone fragments and osteogenic tissues in as nearly normal positions as possible.

As each case presents a different picture, many methods and devices must be brought into play in order to meet the indications mentioned.

Efficient drainage, as indicated either before or after reduction and retention, is all important, as these cases are almost invariably infected. One should anticipate the needs of the case rather than wait until pus has formed and the vitality of many fragments has been lost.

If the patient has been seen early and presents an open wound, all dead soft tissues and detached bone fragments and foreign bodies should be removed. Small attached fragments may be temporarily wired to larger ones or to a splint used to immobilize them. Circumferential wiring may be employed to draw into place and retain larger fragments, the wire being passed around the bone and twisted over a splint.

When the bone is badly minced, the parts may be molded and held more or less satisfactorily in place by modeling composition beneath the chin, at least until, by plastic exudate, the parts become a little more stable, when they may be better retained by other appliances. When external appliances are used they should be broad enough beneath the chin to prevent compression (by bandages) of the fragments toward the median line.

It is desirable, when teeth and much bone have been lost, to hold the remaining periosteum in its normal relationship as, in many cases, by regeneration of bone in its proper place, bone grafting may be facilitated and in some cases their necessity avoided. Fragments of teeth, fillings and roots should be sought for in the soft tissues, as many times they have been found quite distant from the site of fracture. Tooth roots exposed in the line of fracture should be removed, although at times they may be utilized temporarily for the retention of a fragment; but their retention may be at the expense of union, as they are frequently the sole cause of nonunion.

Retarded union is often due to the presence of a devitalized tooth whose root, even though it may be some distance from the line of fracture, exhibits a restraining influence due, no doubt, to bacteria or toxins retained within the canal; and in such a case the roentgenogram may be negative. At times one encounters a persistent discharge of pus due to a piece of dead bone: Six weeks is ample time for the dead bone to be separated from the living, and one should not longer delay its removal.

A cavity between the plates of bone should not be allowed to remain, as it fills with fibrous tissue, which either fails to calcify or by its slow process retards healing to a marked degre. Such cavities should be obliterated by cutting one or the other plate away, allowing the periosteum to fall into the concavity, which readily heals.

Sometimes one sees a bony growth extending from the body of the bone toward the floor of the mouth. Such growths may become quite extensive, but they seldom cause distressing symptoms. The theories advanced by Girard and Maurel are that they develop from osteoperiosteal tissues carried into the depths at the time of injury, or that they spring from bony spicules pulled away from the symphysis by the geniohyoglossus in its retraction at the time of injury or later. Infection also plays its rôle in all probability in these hyperostoses.

At times we may be justified in retaining a large sequestrum involving the diameter of the bone, provided the wound is draining freely and it is frequently irrigated, in order that the periosteum may mold the new bone supplying the lost part, when, if the sequestrum were removed, the periosteum would collapse and the space become shortened. The prototype of this is seen in involucrum formation and restoration following phosphorus necrosis.

The avoidance of extensive scar formation about the jaws and face is very important, and a great deal can be accomplished in this direction by drawing the skin over the granulating surface by means of laces, or even Thiersch grafts, until a plastic operation may be attempted.

One should anticipate difficulties of respiration, when by loss of tissue or comminution, the anterior attachments of the tongue and hyoid muscles are broken; a ligature through the tongue looped around its tip may avoid a tracheotomy, the facilities for which should always be at hand.

If an infection assumes the character of a Ludwig's angina, it should be incised, a T-shaped incision being made use of preferably.

It is extremely important that these patients be made ambulatory as soon as possible. It seems to stimulate their vital forces, create an appetite, and contribute to the relief of their depressed mental state.

The employment of eusol, surgical solution of chlorinated soda (Carrel-Dakin solution) and dichloramin-T has not proved so useful in wounds communicating with the oral cavity as in wounds of other parts of the body.

Potassium permanganate, 1 : 1,000 or even stronger, is one of the best medicaments to control the fetid odor, which is very marked in most of these cases. The use of the douche-can irrigator three or four times daily is essential, and the patient should have a supply of his own which he should use every hour as a mouth-wash.

When, after the body of the bone has been restored, there is still a falling-in of the soft parts due to loss of the teeth and alveolar process, the contour of the face may be restored by a suitable dental prosthesis.

At times there are pernicious attachments of the mucous membrane of the cheeks and lips to the bone which preclude the possibility of dental appliances. In such cases the sulcus may be restored by incision and a Thiersch graft retained on modeling composition held in place by bands and wires fastened to the remaining teeth.

* Read before the Section on Stomatology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

The problem of feeding is an important one and should be forced as much as possible (some form of food every four hours), malted milk and other infant foods, ice cream, fruit juices and meats which have been passed through a meat grinder being used. These should be alternated with the other liquid foods in order that the patient does not tire of them.

When, on account of the injury, the patient cannot swallow except with difficulty, a nasal tube may be employed.

In general, each case should be considered from three standpoints: (1) the restoration of the bony jaw; (2) the restoration of mastication; (3) the cosmetic result.

EPITHELIAL INLAYS VERSUS SKIN OR MUCOUS MEMBRANE FLAPS

FOR REPLACING LOST MUCOUS MEMBRANE IN THE MOUTH *

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The title of my paper is misleading. I have no desire to start a controversy over the methods employed in restoring lost mucous membrane in the mouth, but I wish to point out some of the reasons why epithelial inlays are indicated in the treatment of injuries and disease.

As a preface to my remarks I would say that almost every case requires modification of any method adopted. In the early days of the war, the epithelial inlay was not used. As a matter of fact, the method was not described until the year 1917; hence the skin flaps and mucous membrane flaps were used in every case for the restoration of lost mucous membrane. Many surgeons, having success with this method, continued to use it, but it is interesting to note that the surgeons attached to the English centers were quick to adopt the epithelial inlay as part of their armamentarium for replacing mucous membrane.

The surgical textbooks describe in detail the indications and technic for the restoration of the mucous membrane in the mouth by the use of skin flaps and mucous membrane flaps. Some of the contraindications to their use are not sufficiently emphasized. There is no question that in restoring mucous membrane when the area involved is so situated that it has sufficient adjacent mucous membrane for the making of the mucous membrane flap, this method is the one of choice. In cases in which there is not a sufficient amount of mucous membrane, one may increase it by freeing the mucous membrane at the site of the scar tissue.

It will be observed that there is a slight proliferation of the mucous membrane for weeks or months following, because of the tendency of the membrane to roll out. This process may be aided by the use of Bier's hyperemia cups.

In mucous membrane flaps, it is essential that the mouth be placed at rest in the open bite splint, the latter having a movable bar to which modeling compound can be attached. After freeing the area to which the flap is to be applied, a model is taken in the compound and attached to the rod in order to hold the flap under pressure and in perfect apposition with all parts of the cavity. It is the same surgical principle as that employed in the case of the Wolf graft. The flap must be kept in apposition to the area that is to be covered. The flap or graft will always take if held under pressure.

It is difficult at times to estimate just how much contracture may occur in the site from which the flap is taken. If the surgeon feels that there is a possibility that contracture will occur in the area on which the flap is to be taken, I would say that the epithelial inlay should be used in preference.

Skin flaps unquestionably have considerable value in restoring great defects. The objection to them, however, is that they are all bulky and do not make the perfect mucous membrane. The skin flaps as a rule must be selected from a hair-bearing area. The tendency for the hair to continue growing in the mouth is a source of great annoyance to the patient. The use of the roentgen ray to destroy the hair follicles is of some value, but is not a sure method. If it is necessary to use a flap from a hair-bearing area, the hair should be destroyed before the flap is made.

The epithelial inlay differs from the mucous membrane flap in that it has a tendency to contract. There is no way of preventing this except by keeping up the pressure for a long period of time. I have described the technic of the epithelial inlay heretofore.[1]

METHOD ADOPTED

In the Maxillofacial Service of U. S. Army Hospital No. 11, at Cape May, N. J., I used the method employed at the Queen's Hospital, Sidcup, England, but found it necessary to introduce several minor modifications:

1. We dissected out the scar tissue, enlarged the cavity much beyond what was desired, and then put the jaws in an open bite splint. The advantage of the open bite splint is that it keeps the mouth in one position—in the overcorrected one—preventing interference with the final result by subsequent contracture.

2. We retained the original compound in place for from fourteen to twenty-one days, and followed its removal by the insertion of a vulcanite model which was held in position for several weeks. The graft should never be sutured over the compound, as it defeats the object desired; that is, the compound is only supposed to hold the graft intact under pressure against the raw surface. The point to be remembered is that the compound should be held in place under pressure. If any of the graft extends over the normal mucous membrane, it does not do any harm.

While most of my experience with the use of the epithelial inlay has been in cases following war injuries, I am fully convinced that it holds a very important place in civil surgery.

CONCLUSIONS

The mucous membrane flap is indicated when it is possible to obtain such a flap without producing subsequent contracture over the point from which the flap is taken.

Epithelial inlay should be used in restoring mucous membrane when it is difficult to obtain a mucous membrane flap.

Skin flaps can be used to advantage in covering large defects.

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* Read before the Section on Stomatology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Dorrance, G. M.: Ann. Surgery **65**: 297, 1917.

PROGRESS IN NEPHRECTOMY

A STUDY BASED ON A SERIES OF TWO HUNDRED AND SEVEN CASES *

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AND
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This paper is based on a series of 207 nephrectomies, the majority of which have been performed since the reorganization of the surgical services at the Mount Sinai Hospital in 1914. In that year, the surgical services were placed on an entirely different footing, each selecting a definite group of ten cases, which were segregated for special study. In almost all of the kidney and ureter cases, the patients who applied for admission to the hospital wards were assigned to the service with which we are connected. This arrangement permitted intensive investigation, and has led to improvements, which have resulted in a marked reduction in the operative mortality.

In 1912, Gerster,[1] in a review of the nephrectomy work at Mount Sinai Hospital, collected 112 instances in which this operation has been performed in the preceding sixteen years, with a mortality of 21.22 per cent. Following 1912, very much the same material entered our wards, and in 207 nephrectomies, the mortality declined to 3.8 per cent. The patients in the first series were operated on by a number of surgeons. In the second series, virtually every case was operated on by either Dr. Beer or his associates Dr Leo Buerger or Dr. Hyman. The preoperative, operative and postoperative work was carefully standardized. This marked lowering of mortality is strong testimony in favor of group segregation. With a large amount of material along one line, the surgeon will naturally develop greater efficiency, provided he works with open mind and in no predetermined groove. It might be claimed that this decrease in mortality was due solely to the gradual and general development in urology. That such is not so, however, is shown by a parallel series of nephrectomies performed during the same years, by the occasional operator. Their figures, though much better than the mortality rate reported in 1912, are still more than three times as high as that of the special kidney service.

Why this marked reduction in mortality? A number of factors no doubt are responsible; the most important of all, the careful and exacting preoperative study to which every urologic case is subjected. Cystoscopy, pyelography and functional tests are routine procedures, and their constant daily application develops a certain familiarity that the occasional observer may not hope to attain. The ordinary type case is readily recognized, and is interpreted by most surgeons having some experience in urology. In the complicated cases, however, the judgment of large experience proves invaluable. Debatable points force themselves, some, for immediate decision, upon the surgeon. Is the diminished function of the opposite kidney due to a reflex inhibition, to a toxic nephritis, or disease of the organ itself? Is it advisable, in a specific instance, to perform a two stage nephrectomy, or to attempt removal of the kidney in one operation? Should the nephrectomy be subcapsular or should the kidney be extirpated in the usual method? Should a stone kidney be drained or removed? Will a decapsulation with nephrotomy suffice in pyelonephritis, or is a nephrectomy advisable? Questions like these frequently present themselves, and, naturally, the judgment of the surgeon with wide experience in urology can better solve them. Standardized postoperative treatment also is a factor. The continuous rectal drip with glucose, the avoidance of morphin in diminished renal function, transfusion to combat loss of blood and shock; all these measures play their part in effecting better operative results. Anesthesia is also of importance. Gas and ether are used in the average case; when the function of the opposite kidney is seriously impaired, gas and oxygen are preferred, as this combination is the least injurious of all anesthetics to the renal parenchyma.

The preoperative examinations previously referred to include urinalysis, roentgenography, "red test," cystoscopy and ureteral catheterization, combined with indigocarmine as a test of individual renal function, wax tipped bougies, pyelography, blood chemistry and blood pressure estimations. We all realize that advances in operative technic have helped to reduce mortality, but the factors mentioned above are far more important. Earlier recognition of serious renal disturbance by the general practitioner has also been of value. One rarely sees the large pyonephroses, or kidney tumors, which in years past were not recognized or often neglected. The significance of hematuria and pyuria are more readily appreciated by the physician and patient alike, and today, renal diseases requiring nephrectomy are seen earlier in their course than formerly.

TABLE 1.—INDICATIONS FOR NEPHRECTOMY ACCORDING TO PATHOLOGIC CONDITIONS

	Cases	Deaths	Percentage of Mortality
1. Tuberculosis	92	2 *	2.1
2. Extensive destruction of kidney due to suppuration with or without stone (a) Calculus pyonephrosis (b) Calculus pyelonephritis (c) Suppurative nephritis Pyelonephritis, multiple abscesses	49	1 †	2.03
3. Extensive destruction of kidney as in hydronephrosis, with or without secondary infection (a) Hydronephrosis (b) Pyenephrosis	36	3 ‡	8.3
4. Neoplasms	27	2 §	7.4
5. Rupture	1	0	0.
6. Persistant ureteral fistula	1	0	0.
7. Gunshot wound	1	0	0.
Total	207	8	3.86

* Hemorrhage, sepsis.
† Suprarenal shock.
‡ Pyelonephritis; hemorrhage; tetanus.
§ Uremia; general debility.

In a recent paper on "The Significance of Specialism in Surgery, with Reference Especially to Genito-Urinary Surgery," Thomas [2] points out the marked difference in mortality statistics between the occasional operator and the surgeon experienced in urology. He quotes two sets of figures in support of his argument:

> Investigation recently revealed the alarming statistics that in twenty-six hospitals, in this and neighboring states, the mortality for nephrectomy and prostatectomy at the hands of general surgeons was 25.9 and 22.5 per cent., respectively, as contrasted with 7.7 and 4.33 per cent. in seven times the number of operations, by eight of the world's most noted

* From the Surgical Service of Dr. Beer, Mount Sinai Hospital.
* Read before the Section on Urology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Gerster, A. G.: Ann. Surg., August, 1912.

2. Thomas, B. A.: Pennsylvania M. J. **20**: 101 (Nov.) 1916.

urologists. In other words, this means that in a large majority of such operations, from 75 to 80 per cent. of deaths were avoidable.

INDICATIONS FOR NEPHRECTOMY

The indications for nephrectomy in our series are classified according to the pathologic conditions given in Table 1.

It may be of interest and value, before proceding further, to take up the question of mortality statistics for nephrectomy in general, the figures for the special groups being considered under their respective headings. For a number of years uremia was considered the most frequent cause of death following nephrectomy. This complication now accounts for the minority of such deaths, undoubtedly demonstrating the value of modern urologic examinations. Schmieden,[3] in 1902, reported the statistics of nephrectomies reproduced in Table 2, showing the gradual decline in mortality from decade to decade.

TABLE 2.—GRADUAL DECLINE IN MORTALITY IN 1,118 NEPHRECTOMIES

	Mortality Per cent.
Lumbar Nephrectomy	
First decade	43.9
Second decade	26.9
Third decade	17.0
Abdominal Nephrectomy	
First decade	55.0
Second decade	48.0
Third decade	19.4

It may be remarked that, even at the present day, the mortality following removal of the kidney through an abdominal incision is higher than in lumbar nephrectomy.

CAUSES OF DEATH FOLLOWING NEPHRECTOMY

The principal causes, reported by Schmieden [3] in 1902, are given in Table 3.

TABLE 3.—PRINCIPAL CAUSES OF DEATH

	Total Deaths	Lumbar Nephrectomy (722 Cases)	Abdominal Nephrectomy (365 Cases)
1. Anuria, uremia, disease of other kidney	56	45	11
2. Collapse, shock	91	42	49
3. Peritonitis	30	3	27
4. Sepsis, pyemia	15	11	4
5. Hemorrhage	8	2	6

Recapitulation: Deaths due to collapse..... 19.2%
Deaths due to uremia 9.2%
Deaths due to peritonitis 7.5%
Deaths due to hemorrhage ... 1.9%

Total nephrectomies, 1,087 Deaths, 301 Mortality, 27.23%

Küster [4] collected statistics of 1,521 nephrectomies by different surgeons (including Schmieden's statistics), with a mortality of 25.31 per cent. A study of more recent records give as the causes of death, in their order of frequency, pneumonia, shock, cardiac failure, hemorrhage, peritonitis and, last of all, renal insufficiency.

Of the 207 nephrectomies in our series, 189 were primary, 18 secondary; 199 were lumbar extirpations, 8 transperitoneal. Subcapsular nephrectomy was performed twelve times. Two of the eight deaths occurred after secondary nephrectomy. The deaths were in the conditions named in Table 4.

Analyzing the causes of death, it becomes apparent that some of them may be classed as avoidable, such as the two from hemorrhage. The patients who succumbed from hemorrhage had had previous nephrotomies; as a result in both instances, the kidney was found densely adherent. The fatality from renal insufficiency was unavoidable, and occurred in a patient who had a large hypernephroma. At operation it was found that the right renal vein was occluded by a tumor thrombus which extended into the vena cava and then across to the opposite renal vein. The death from pyelonephritis occurred in a patient who had a horseshoe kidney with both halves hydronephrotic. The left half of the kidney was extirpated transperitoneally, and pyelonephritis developed, with death ten days later. The fatality from sepsis followed a long-standing suppurative process, due to perinephric and subphrenic abscesses which had been drained. Subsequently it was discovered that the origin of the infection was an old tuberculous pyonephrosis which had ruptured through the capsule. The death from shock occurred within twenty-four hours, following a nephrectomy for a calculous pyonephrosis. The adherent suprarenal was removed at the same time. Whether or not this contributed to the shock cannot be stated. The child who died from general debility had a large, mixed tumor of the kidney. At operation a very friable growth was found which was literally scooped away in handfuls. Death took place a few days later. The death from tetanus occurred ten days after operation. This patient received an injury of the kidney, resulting in the formation of a hematohydronephrosis. Tetanus, the source of which could not be determined, developed eight days after nephrectomy.

TABLE 4.—CONDITIONS IN WHICH DEATHS OCCURRED, AND CAUSES

Conditions:	
Tuberculosis	2
Neoplasms	2
Pyonephrosis	2
Hydronephrosis	1
Hematohydronephrosis (traumatic)	1
Causes of death:	
Hemorrhage	2
Renal insufficiency	1
Pyelonephritis	1
Sepsis	1
Shock (suprarenal)	1
General debility	1
Tetanus	1

Anesthesia.—The majority of patients were operated on under gas and ether; gas-oxygen was used in fifteen cases, and spinal anesthesia in two.

Secondary Nephrectomy. — There were nineteen cases in this group, the operation being performed in some instances as a matter of choice. In others, errors of diagnosis or of judgment were responsible for the two-step nephrectomy. This procedure was performed six times in large pyonephroses, when the general condition was such as to contraindicate a primary nephrectomy or when the function of the other kidney was so impaired, either through toxic nephritis, reflex inhibition, or actual disease of the organ itself, that a preliminary drainage was considered necessary. It is surprising to note how quickly the function of the opposite kidney recovers after this simple procedure. The first stage of the operation may readily be performed under local or gas-oxygen anesthesia, and requires only a few minutes' time. In a few cases, the primary nephrotomy had failed to relieve the original condition; because of an error in diagnosis, a nephrotomy instead of a nephrectomy had been performed. This happened twice in renal tuberculosis. In six cases, stone kidneys

3. Schmieden: Deutsch. Ztschr. f. Chir. **62**: 205, 1901-1902.
4. Küster: Chirurgie der Nieren, Stuttgart, 1902.

were nephrotomized and drained, and subsequently removed on account of recurrence of symptoms. One secondary nephrectomy was performed for a severe attack of pyelonephritis, following a nephrotomy for calculus. In another instance, a small growth, which was found in the kidney during the course of an operation for stone, was excised and reported adenocarcinoma, and the kidney subsequently removed.

As a rule, secondary nephrectomies are more difficult than primary operations, on account of the adhesions which generally form and bind the kidney to the peritoneum or pleura or other surrounding tissues. In this type case, subcapsular nephrectomy in most instances will be found much simpler and less dangerous than attempting to mobilize the kidney and proceding in the usual manner.

Transperitoneal Nephrectomy. — In precystoscopic days, transperitoneal nephrectomy was in particular favor, as the incision permitted palpatory exploration of both kidneys. After cystoscopy became a routine procedure, this method of approach gradually fell into disfavor, chiefly on account of the danger of peritonitis. Its main indication at present is in large tumors of the kidney (especially in children), when the space between the crest of the ileum and last rib is too narrow to permit removing the kidney through the loin without undue traumatism. There were nine transperitoneal operations in this series, four in adults and five in children.

TABLE 5.—FATALITIES IN RENAL TUBERCULOSIS

	Nephrectomies	Mortality Per Cent.
Frank	1,331	9.3
Legueu and Chevassu	1,539	5.9
Israel	1,023	12.9
Albarran	118	3.3
Wildbolz	139	2.8
Zuckerkandl	104	7.7
Braasch (Mayo Clinic)	532	1.3

Nephrectomy in Bilateral Renal Disease.—In seven cases the disease was bilateral, twice in tuberculosis, and five times in calculus with infection. None of these patients died. All were operated on under gas-oxygen anesthesia. In three cases a preliminary nephrotomy with drainage was first performed.

Group 1 (renal tuberculosis) forms the largest group in our series for which nephrectomy was performed: ninety-two cases with two deaths, a mortality of 2.1 per cent. There were five secondary nephrectomies; three of the operations were subcapsular. In two instances the disease was bilateral and the more diseased organ was removed. In general, the ureter was ablated as low down as possible, through the lumbar incision, phenolized and dropped back into the wound; complete excision of the ureter down to the bladder, through an anterior extraperitoneal incision, was practiced ten times (approximately in 10 per cent. of the cases). Its main indication is marked stricture formation at the lower end of the ureter. In a number of instances, the lumbar wound became tuberculous and broke down, weeks after the operation, whereas the anterior incision required for removing the ureter has never been so infected. The mortality following nephrectomy for tuberculosis has steadily diminished. In 1902, in the hands of well known surgeons, the fatalities numbered between 18 and 20 per cent. More recent statistics are given in Table 5.

The unquestionable value of cystoscopic and functional examinations in lowering the mortality is especially noticeable in the reduction of the death rate from uremia. Pousson,[5] in a series of 435 nephrectomies performed a number of years ago, reported 128 deaths, fifty-one of which were due to renal insufficiency. This at present is one of the most infrequent causes of death. Legueu and Chevassu [6] reported 1,539 nephrectomies, with forty-three deaths, twelve of which were due to uremia. The most common causes of death following nephrectomy for tuberculosis, in order of frequency, are myocarditis, pneumonia and embolism. Tuberculous meningitis, although mentioned by some authors, is a very infrequent cause of death.

Group 2 (calculous pyonephrosis, calculous pyelonephritis, multiple abscesses) forms the second largest number of cases in our series, forty-nine, with one death, a mortality of 2.03 per cent. It was in this series that the majority (eleven) of the secondary nephrectomies occurred. A number of patients (six) had had previous operations (either pyelotomy or nephrotomy) for stone. With recurrence of the stone, plus infection, it was found necessary in these cases to remove the kidney. Primary nephrectomy was performed whenever it was determined that the destruction of the kidney had progressed to such a stage that its conservation would be useless. In the majority of cases, the question of nephrectomy or nephrotomy can be decided only at operation, as functional tests frequently give a false idea as to the actual pathologic condition of the organ. A secondary nephrectomy is often indicated in the large pyonephroses of long standing, when the patient's health has been considerably undermined by chronic suppuration. The operative mortality of primary nephrectomy for the foregoing conditions, reported by Schmieden, was 30.1 per cent.; for secondary nephrectomy, 18 per cent. Israel,[7] in a recent publication reporting 102 cases of stone with or without infection requiring nephrectomy, had a mortality of 7.8 per cent.

Group 3 (hydronephrosis, pyonephrosis) comprised thirty-six cases with three deaths, a mortality of 8.3 per cent., higher than in any other group. The deaths, however, were from such widely different causes that no single factor can be held responsible for the higher mortality. One was due to hemorrhage, one to pyelonephritis, and the third to tetanus. There were five secondary nephrectomies; the death from hemorrhage followed a secondary nephrectomy. The mortality following nephrectomy for renal suppuration, as reported by various authors, is still high, between 17 and 21 per cent. for the primary operation, and approximately 17.5 per cent. for secondary nephrectomy.

Group 4 (neoplasms) included twenty-seven nephrectomies with two deaths, a mortality of 7.4 per cent. Twenty operations were for hypernephromas, two for adenocarcinoma, and five for mixed kidney tumors. One patient died from uremia, the other from debility. The lumbar route was employed eighteen times, the abdominal incision in nine cases, five of which were in children. Pleschner,[8] who collected statistics, reports a mortality of 13.5 per cent. for lumbar nephrectomy and 37.5 per cent. for the transperitoneal operation. The mortality for nephrectomy in children is much higher than in adults. Cardiac failure has been mentioned as one of the most frequent causes of death following nephrectomy for tumor (66.7 per

5. Pousson: Bull. méd., 1903-1908.
6. Legueu and Chevassu: VII Cong. internat. de la tuberculose, Rome, 1912.
7. Israel: Folia urolog., October, 1918.
8. Pleschner: Ztschr. f. urolog. Chir., 1913, p. 1.

cent., Bloch [9]). This is attributed to a toxic myocarditis due to breaking down and absorption of hypernephroma tissue, and is more frequently observed in cases in which the vena cava has been invaded by the growth. Most of these cases showed no evidences of cardiac disease before operation. The nephrectomies for rupture and gunshot wound require no special comment, the destruction being so complete as to preclude conservative surgery. The operation for persistent ureteral fistula was in a patient who had an impacted calculus in the lower end of the ureter, which was removed through an extraperitoneal incision. Considerable ureteritis and periureteritis was present. There was a profuse urinary discharge through the incision, which persisted for months and finally necessitated nephrectomy.

TECHNIC OF NEPHRECTOMY

It would be out of place in this paper to go into all the details of the operation under discussion, but it is well worth while emphasizing some of the most important technical points that have impressed us in the course of our work. As in all surgical procedures, the prime essential is adequate exposure, and for almost all cases except the very large neoplasms that appear abdominally we have employed the lumbar approach, whereas for the latter (large neoplasms) the transperitoneal route vertically through the rectus muscle has been used.

A. In the lumbar approach the incision is begun above the twelfth rib over the edge of the erector spinae muscle and extended obliquely downward and curving forward toward a point slightly above the anterior superior iliac spine. After the muscles of the abdominal wall have been cut the transversalis fascia has been incised, the perirenal fat is exposed and by traction against the twelfth rib and with counter-traction against the crest of the ilium a wide separation of the soft parts and excellent approach to the kidney is obtained. At times the fibrous tissue posterior to the angle of the twelfth rib may have to be incised to give good exposure, and in cases in which the rib is acutely angulated on the spine and interferes with one's approach, it is surprising how readily this rib can be pushed up out of the way when those posterior attachments are divided. In placing one's incision in the foregoing position, the last dorsal and first lumbar nerves are exposed and the incision usually runs between these in its upper half. Rib resection or incision of the rib is rarely necessary. With adequate care the pleura is not injured. In one case in which rib resection had been employed, the pleura was opened and sutured.

After the perirenal fat, which is held out of the way, has been incised, the lower pole is regularly freed so that in case one encounters trouble, as bleeding from accessory vessels at the upper pole, one can quickly dislocate the organ without having to develop its lower half. With the organ delivered,[10] the vascular pedicle is carefully exposed with gentle sponging, and is transfixed with chromic gut. If the renal artery is readily felt that half the pedicle containing the artery is tied first at some distance from the kidney and the same ligature is thrown around the rest of the pedicle, which is then secured. This really makes a double ligature of the artery. Accessory strands containing vessels going to the upper pole of the kidney are doubly ligated before dislocating the organ. Such as go to the lower pole can usually be tied after developing the kidney and exposing its pedicle.[11] Before the vascular pedicle is cut through, reliable clamps are placed on it, and the stumps thus held (after cutting across the pedicle) are tied with plain gut. Throughout these procedures, care is taken not to open the pelvis or ureter. The latter can be readily held out of the way by throwing a loop ligature about it. At times when the delivery is difficult, ligation and section of the ureter, before attacking the vascular pedicle, may be helpful. In some cases it may be difficult to transfix a broad pedicle, and then it must be tied piecemeal. The avoidance of the use of clamps on the pedicle, and the regular use of ligatures under control of the eye, undoubtedly account for the fact that we have been successful in avoiding injuries to the colon and to the duodenum. In performing a subcapsular nephrectomy it is often necessary to incise the thick, inflammatory tissue as well as the reflected capsule to obtain soft pliable tissue at the vascular pedicle. Such incision should run parallel to the renal vessels and should extend well into the fat about these. Then the pedicle can be transfixed and the vessels tied firmly against their fibrous envelop. Using this technic, we have been able to discard the application of the rubber ligature to the pedicle with the regularly delayed healing that follows its use.

In the ordinary noncomplicated lumbar nephrectomy, accidents will rarely occur in experienced hands. In secondary nephrectomies and in those cases in which there is extensive perinephritis, one must be careful to avoid the peritoneum, which is usually readily seen. In case it cannot be separated from the kidney mass, either a piece of the perinephritic tissue or a piece of the peritoneum, preferably the former, must be sacrificed. Neither procedure adds to the danger of the operation provided, of course, that the operator appreciates the situation. Injury to the suprarenal system may prove a danger because of the ooze, which may be difficult to control. Suprarenals have been occasionally removed with the kidney, and as their vessels retract it may be difficult to control the bleeding except by packing. In other cases the suprarenal is torn, and then the bleeding is best controlled with interlocking sutures.

In some cases it may be necessary to remove the ureter and the kidney at the same sitting, and this is best done without opening the urinary channels in an aseptic manner. After the vascular pedicle has been tied, the kidney still attached to the unopened ureter is drawn out of the wound and the ureter is dissected bluntly with the fingers well down to the iliac vessels. A heavy ligature for the purpose of traction is applied to the lower part of the thus exposed ureter, and the kidney is replaced in the lumbar wound. Then the patient is rolled over on his back and an incision is made along the lower rectus muscle as far as exposure of the lower ureter. This is exposed retroperitoneally and readily identified by intermittent traction on the ligature applied to the ureter through the lumbar wound. The ureter is rapidly stripped out of its bed down to the bladder, doubly ligated and sectioned, and by traction from the lumbar wound it and the attached kidney are withdrawn. Both wounds are closed in layers with as little drainage as the indications suggest.

B. The transperitoneal approach, which was recommended in the seventies of the last century by T. Kocher for large tumors, gives a wonderful exposure and allows of early ligation of the pedicle. The peritoneum to the outer side of the colon is cut vertically, and the colon is displaced mesially. The kidney is rapidly dislocated and the vascular pedicle tied either after or before double ligation and section of the ureter. The bleeding is minimal if the proper cleavage plane is entered, and provided the kidney is rapidly dislocated. The large retroperitoneal space can be closed over by suture of the peritoneal opening, which is preferable, though in our experience not absolutely necessary.

SYNOPSIS OF DEATHS

CASE 1.—*Nephrectomy for hypernephroma of right kidney.*—The right renal vein was full of a tumor, which extended into the vena cava and thence, across the median line, into the opposite renal vein. Prior to operation, March 3, 1915, the left kidney appeared normal. After operation, hematuria continued and the patient died uremic, eight days after, as the result of involvement of the second kidney.

CASE 2.—*Secondary nephrectomy for massive tuberculoma and massive tuberculous perinephritis.*—In delivering a large mass, April 10, 1915, the upper enveloping perinephritic shell broke off, and in an attempt to liberate this, under the

9. Bloch: Folia urolog. **3**: 161, 1910.
10. The delivery of large nephroses is simplified by incision and evacuation of contents.
11. At times on the left side the spermatic or the ovarian veins may have to be tied separately.

impression that the process was neoplastic, a hole was made in the vena cava, over which the inflammatory mass was firmly adherent, and a fatal hemorrhage ensued.

CASE 3.—*Nephrectomy for large calculous pyonephrosis.*—Feb. 20, 1919, in the removal of a large pyonephrosis, the adherent suprarenal was removed. The operation took only a little more than fifteen minutes, but in the patient's debilitated condition shock was too severe, and death ensued within twenty-four hours. Whether the removal of the suprarenal contributed to the shock cannot be stated.

CASE 4.—*Nephrectomy (transperitoneal) for hydronephrosis of left half of horseshoe kidney.*—There was postoperative anuria due to obstructed hydronephrosis of the right half of the kidney. It was relieved by passage of a ureteral catheter. There was secondary pyelonephritis, and death occurred one week after operation.

CASE 5.—*Nephrectomy for tuberculous pyonephrosis.*—A patient, aged 35, had had fever and chills for ten weeks. The urine was negative for tubercle bacilli in smear, and guinea-pig inoculation. A left perinephric abscess was incised and drained. The kidney was not exposed. Fever continued. Then an incision was made for a subphrenic collection of pus, which was drained, without improvement. The condition of the patient gradually became worse, despite two transfusions; fever continued. The left kidney was exposed, and the upper two thirds was found necrotic, with miliary abscesses at the lower pole. Nephrectomy was performed; the pathologic report was tuberculous pyonephrosis. The patient's condition steadily declined, and death occurred two days after operation.

CASE 6.—*Nephrectomy for hydrohematonephrosis; tetanus.*—There was a history of trauma, with the formation of a tender mass in the left lumbar region. Cystoscopy demonstrated left renal hematuria. Operation revealed a kidney twice the normal size, with hemorrhages scattered over the surface, a cystic mass at the lower pole, the size of an orange, and dilatation of all calices, with thinning of the cortex. There was a small stone at the ureteropelvic junction. Eight days after operation, the patient developed symptoms of tetanus, the disease became progressive, and death ensued a few days later.

CASE 7.—*Second nephrectomy for pyonephrosis.*—A woman, aged 39, had had a previous nephrotomy and drainage at another hospital for calculous disease of the kidney. There was recurrence of symptoms. Cystoscopy revealed a double ureter and pelvis on both sides, with pyonephrosis of the right kidney. Secondary nephrectomy was performed. There was marked perinephric infiltration; considerable hemorrhage ensued in trying to mobilize the kidney, and the patient died a few hours later.

CASE 8.—*Transperitoneal nephrectomy for Wilms' tumor.*—A child, aged 2¾ years, was in poor condition before operation. An enormous tumor was found. It was very friable; the tumor tissue was literally scooped away in handfuls. Despite transfusions, the condition of the patient steadily became worse, and death took place three days later.

ABSTRACT OF DISCUSSION

DR. ARTHUR B. CECIL, Los Angeles: It is a matter of very nice judgment to decide about the two-step operation in these kidneys. Undoubtedly, we would use better judgment in some of these cases if we did a preliminary drainage instead of the large nephrectomy. It is a serious condition and I think we are sometimes led to do nephrectomy when a much shorter procedure would save some lives.

Hospital Ventilation and Lower Death Rate.—If we could control the temperature in the operating room—and we can—and could cut down by 20 per cent. the death rate, it certainly is worth at least considering. If we can reduce the time required for a patient's recovery, increase his comfort and help him in his fight for life, this also is to be considered and it can be accomplished through the right kind of ventilation and air control.—C. A. Eddy: *Hospital Management* **9**:45 (Jan.) 1920.

YELLOW FEVER CONTROL IN ECUADOR

FINAL REPORT

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A preliminary report on yellow fever control in Ecuador, already published,[1] described how an initial survey of Guayaquil was made with the object of accurately ascertaining conditions that favored the perpetuation of yellow fever in that city. Particular attention was given to the subject of water supply, with the attendant possibilities of menace from open containers as breeding places for the stegomyia mosquito, the bearer of yellow fever infection. It was found that, owing to scarcity of water, residents were obliged to store in tanks, barrels and similar receptacles a sufficient supply for a considerable future need. Such receptacles, of course, constitute excellent breeding places for the stegomyia mosquito. In view of the fact that the people, through ignorance or carelessness, neglected to safeguard these sources of infection, the disease menace was great, for mosquitoes bred freely in the containers and carried infection broadcast. When it is realized that there were some 7,000 tanks in the city, and about 30,000 other containers, the problem of control will be manifest.

The campaign for the elimination of yellow fever actually started, Nov. 25, 1918. On account of certain local reasons it was not possible to equip all barrels and similar containers with covers, so in containers other than tanks certain fish were used to destroy the mosquito larvae. In the case of the tanks, effort was made to provide suitable covers that would prevent mosquitoes from gaining access. The city was divided into sanitary districts, and inspections of containers were made regularly. The method in regard to farms outside the city of Guayaquil was to do away with all large containers; thus the problem was greatly simplified. Since the homes of most the farmers were on the river bank, it was found practicable to recommend small containers. These were just large enough for a twenty-four hour supply, and they could be replenished regularly.

Reports from various parts of Ecuador sometimes seemed to indicate that there might be endemic yellow fever centers besides the city of Guayaquil. A study of the records, however, quite clearly indicates that, on the contrary, persons visiting Guayaquil would become infected, migrate to nearby towns, and be stricken with the disease in these new localities. From these cases other persons would become infected, and the disease would in time become prevalent. These new centers, however, never became endemic, as is evidenced by the fact that no antilarvae measures were practiced outside of Guayaquil until the disease had been controlled in that city. Further, the records of the department of health prove that while the number of cases of yellow fever diminished in Guayaquil, they also decreased in the nearby towns; the opposite should have been the case if there had been actual foci in other sections of the country.

Chart 1 shows the movement of yellow fever from Nov. 25, 1918, to and including December, 1919. In the course of the campaign, of all receptacles of fresh

1. Connor, M. E.: Yellow Fever Control in Ecuador, J. A. M. A. **74**: 650 (March 6) 1920.

water examined a certain percentage were found to contain mosquito larvae: i. e., to constitute breeding places. This percentage, also shown on Chart 1, was determined by dividing the total number of fresh-water receptacles in which mosquito larvae were found by the total number of receptacles examined. The receptacles that were used for storing water were classified, for the sake of the work, as "tanks and other depositories." On the chart is shown, too, the rainfall from Nov. 25, 1918, through December, 1919. The data presented cover a total period of fifty-seven weeks. In Chart 2 are presented the number of yellow fever cases from January, 1918, to May, 1919; from that time to the present (June, 1920) no cases have appeared.

The seasons at Guayaquil are popularly classified as wet and dry. The latter season usually extends from July to December; the heaviest rainfall generally occurs between January and April. The barometric records for the city show that the total rainfall for the period embraced by the chart amounted to 59 inches, and that some rain fell every month of the year 1918. There were, to be sure, months in which the rainfall was almost nil; but even during those periods sufficient rain fell to prevent the ground from becoming quite dry, and the vegetation did not burn up, as it generally does during the dry season.

During the wet season, in endemic yellow fever centers there is always an increase of cases of this disease, owing to the increase in the number of stegomyia mosquitoes. This increase is logically explained by the fact that during the rainy period innumerable receptacles, such as bottles, tin cans and coconut shells, catch and hold the rain water and furnish ideal breeding places for the stegomyia mosquito. Of course, during the dry season these containers are no longer a menace. The 1918 epidemic of yellow fever in Guayaquil was partly attributable to the normal wet season. Another important contributory cause was the crippling of the department of health of Ecuador, among other government activities, because of revenue curtailment as a result of the war. This department, which was unfortunately one of the first to suffer in that respect, had not been able to function normally since 1915. Naturally, the public health was bound to suffer. The department of health, under whose supervision came the isolation and treatment of yellow fever patients and fumigation of habitations from which the sick came, made a serious effort to perform its functions, but the task was doubly difficult, first, because many of the benign cases could not be diagnosed within the infectible period, and, secondly, because many homes could not be satisfactorily fumigated on account of the structure of the buildings.

In combating the yellow fever epidemic of 1918, it was decided to follow a line of procedure suggested by the investigations of the preliminary survey. At the time of that survey, results indicated that water tanks were the preferred breeding places of the stegomyia mosquito. Therefore particular attention was concentrated on this class of container. For the purpose at hand, containers were differentiated by the classification "tanks" and "other depositories," the term "other depositories" signifying barrels, tins, pails, and similar fresh-water containers of a more or less permanent nature.

The inspectors' reports were arranged to show the number of tanks inspected and the number in which mosquito larvae were found; the same plan was followed with respect to the other water depositories. It was the practice to make at the end of each week calculations which showed what percentage of all fresh-water containers were breeding places for the stegomyia. The inspectors were instructed to consider as stegomyia larvae all mosquito larvae found in any fresh-water container in or near a human habitation. It was not thought advisable to ask the inspectors to attempt to differentiate between the different species of larvae, on account of the time that would have been required for them to do so. Great care was exercised in arriving at the figures shown on the chart; only containers that were actually in use were taken into account. For example, a merchant might have on his premises a large number of tins, none of which contained water or were used by the merchant as water receptacles. In such a case the inspector would examine these tins, but would not enter in his report any record of them; nor would he record a tank that was not in service unless that tank contained water. In the results shown in this report tin cans, bottles,

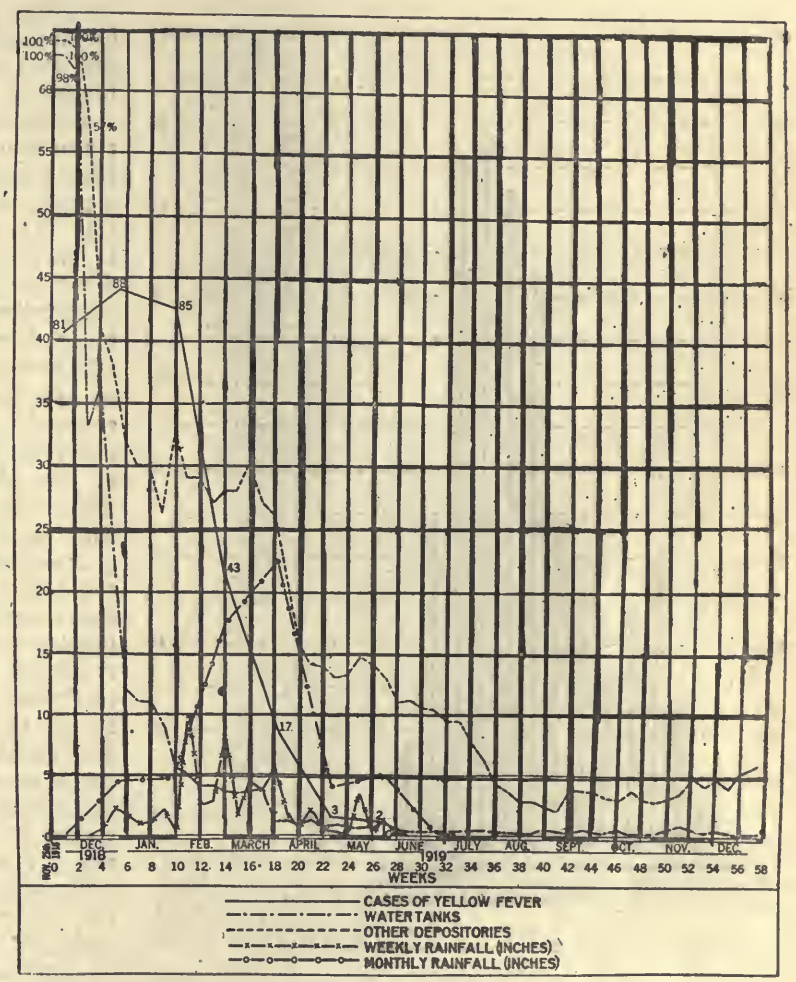


Chart 1.—Rainfall, and relationship between reduction in number of water depositories and decrease in number of yellow fever cases.

and other articles of a similar nature strewn about the patio or yard, have not been considered. The inspectors counseled the occupants of premises to gather such containers and place them on the street front for collection by the garbage service. The explanations given above are to be borne in mind for a full understanding of this report.

By the time the record reproduced as Chart 1 was begun—Nov. 25, 1918—all water receptacles (100 per cent.) had become mosquito-breeding places. It is not known exactly when the 100 per cent. mark was reached, but there is no doubt that the time when the increase in the number of breeding places began was when the national department of health was first

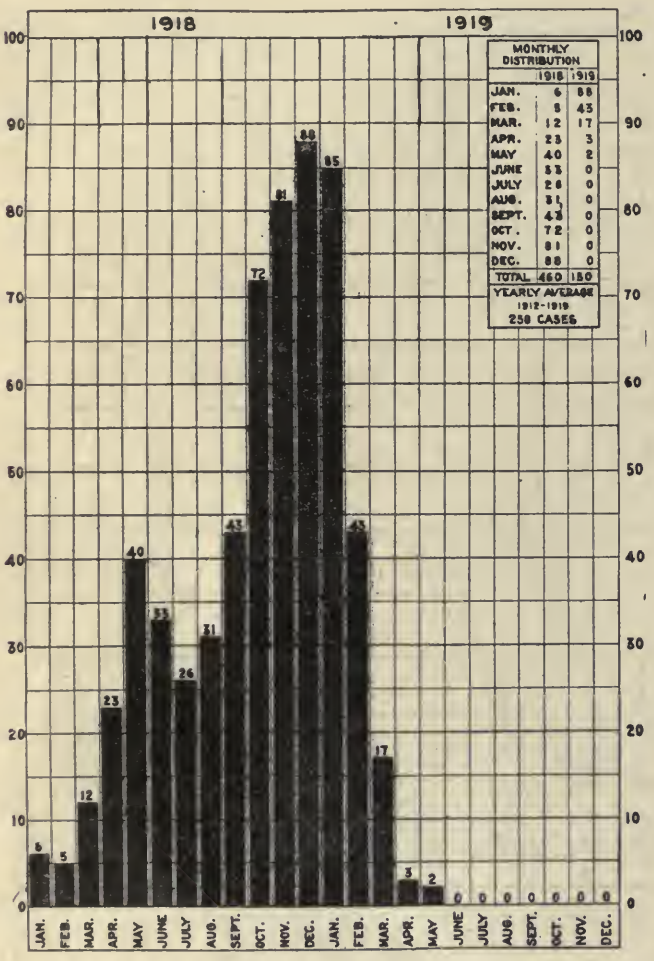


Chart 2.—Record of yellow fever cases in Guayaquil, from January, 1918, to December, 1919.

obliged to relax its efforts at control. In view of the tremendous handicap that conditions imposed at the very beginning of the campaign, the results accomplished were the more striking. Reference to the chart will give the reader graphically the principal high lights in the course of the operations.

As early as at the end of the second week after work had been begun, a 2 per cent. reduction (i. e., to 98 per cent.) in breeding places in tanks had been effected. By the end of the fourth week a remarkable decline had taken place—to 36 per cent.—and a rapid decrease continued for some two weeks after that.

Now if it was true, as was suspected, that the tanks were the preferred breeding places of the stegomyia mosquito, then clearly a 50 per cent. reduction in this type of breeding place should be reflected in a corresponding reduction in the number of cases of yellow fever. In order, however, to judge accurately concerning the decrease in the number of cases, it must be remembered that allowance has to be made for certain cases infected by mosquitoes bred before the tanks were covered. As the chart indicates, the number of cases did decrease as the number of tank breeding places was reduced. The high point in the number of yellow fever cases came in December, 1918. At this time, to be sure, the campaign had been in progress for about five weeks, but virtually all of that period had been consumed in mosquito-proofing tanks. Naturally, results could not have been expected before the effects of this work could be felt. The chart shows during the fourth week of operations a slight irregularity in the "tanks" curve, which is explainable by an increase that occurred in the number of districts and an accompanying increase in the number of tanks inspected.

Comparison of the "tanks" curve with the "cases" curve will show that from the time the cases reached their maximum—in December, 1918—down to the time when they were reduced to two a month, the two curves ran almost parallel, and that the first real decrease in number of cases took place about two months after the number of tank breeding places had been materially reduced. In other words, that two-month interval was the period already referred to, during which a certain number of cases inevitably are caused by the bite of mosquitoes bred before the tanks are covered. It is interesting to note here that the few experiments carried out showed that about 70 per cent. of the adult female stegomyia mosquitoes died on depositing their eggs, and that no female lived over four days when deprived of water.

The decline in the "other depositories" curve is less rapid and less regular, merely because efforts were concentrated primarily on the reduction of the number of tank breeding places. It will be noted, by reference to the chart, that long before the number of "other depositories" had been reduced to a low figure, the yellow fever cases that occurred were as few as three a month. It was not long before the cases were only two a month, and shortly afterward the infection was entirely eliminated. In other words, yellow fever had been actually controlled before breeding places in "other depositories" had even been reduced to a low figure. This fact shows clearly that the "other depositories" were relatively unimportant, and substantiates the statement that the eradication of stegomyia breeding places in tanks was the most important factor in the control of yellow fever in Ecuador.

Chart 1, it will be noted, shows also that the percentage of breeding places in "other depositories" reached its lowest figure (2 per cent.) during September, 1919. From that time it rose. Before the end of the same year the percentage had reached as high as 6, and in April, 1920, it was 10. This increase, however, is readily explainable. It will be recalled that mention was made earlier in this article regarding the use of fish to control mosquito breeding in "other containers." The increase of breeding places among receptacles of the latter type was directly attributable to the fact that the supply of fish became exhausted, and it was not possible during the dry season to renew it.

Finally, with respect to rainfall and yellow fever, reference to Chart 1 shows strikingly that increase in rainfall bears no relation whatever to increase in the

number of cases. It will be seen, on the contrary, that as the rainfall increased from month to month to its maximum, the number of cases decreased from month to month until the last case occurred, in May, 1919.

SUMMARY

Water tanks proved to be the principal source of yellow fever infection in Guayaquil. Smaller containers, such as barrels, tins and pails, and similar fresh water containers, were relatively unimportant. A very definite correlation was established between the number of tanks which bred *Stegomyia,* and the number of yellow fever cases. The two factors ran almost parellel. The first real decrease in the number of cases followed about two months after a material reduction in the number of tank breeding-places. The cases thereupon became fewer and fewer until finally, when breeding was under control in virtually all the tanks, the disease had been eradicated.

The rise and fall in the percentage of smaller containers (barrels, tins, etc.) in which *Stegomyia* bred, had no effect on the incidence of the disease, nor did rainfall bear any direct relation to the number of cases.

CONCLUSIONS

As a result of the yellow fever work in Ecuador, it was possible to arrive at certain well-defined conclusions. With the idea that they may be of more than general interest, they are here set down:

The only endemic center of yellow fever in Ecuador was in the city of Guayaquil.

The principal factor in the eradication of yellow fever at Guayaquil was the mosquito-proofing of fresh-water containers, especially tanks.

When tanks are used in homes for storing fresh water, they will be the preferred breeding places of the stegomyia mosquito.

Fish as mosquito-larvae consumers produce excellent results in barrels and similar containers, and are an economical means of mosquito-proofing this class of fresh-water receptacle. Fish are not recommended for use in tanks, because the latter are placed high up to gain head pressure, and it would be necessary for the inspector to use a ladder whenever he inspected the tank to be sure that the fish were still alive. The necessity of all this extra labor is eliminated by covering and "sealing" the tank. Again, when the water is low in the tank there might not be enough to keep the fish alive.

Yellow fever has been eradicated from Ecuador, and if it should ever again become endemic it would be because it was introduced from a focus outside of the country.

Industrial Instability of Child Workers.—Within a year after they were legally permitted to go to work, one child out of every four in Connecticut left school for that purpose, according to the report on Industrial Instability of Child Workers by the Children's Bureau of the U. S. Department of Labor. This does not include the large number of newsboys and those engaged in agriculture and domestic service. Three fourths of the children went to factories, the largest number of boys going to the metal industries and girls to textile and clothing factories. Most of the work in which children are employed is temporary or seasonal. In the first month after starting work 10 per cent. of the boys and 8 per cent. of the girls were out of jobs for at least one week. The proportion of unemployment was less as the children became used to industry. Throughout their work histories the boys showed a greater tendency to unemployment than the girls.

DESTRUCTION AND REPAIR IN PULMONARY TUBERCULOSIS

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Among the infections, the exciting organism of which has been identified and isolated, tuberculosis is remarkable not alone in its protean manifestations, but especially also for the varying reactions to it of the individual it attacks. There is perhaps no other of which our knowledge is so exact and complete so far as it relates to the tubercle bacillus itself and its immediate effect on the tissues in which it finds lodgment; but certainly, also, none is more obscure or offers wider and more promising fields for research in the phenomena exhibited by its host. It does not suffice, however, to know the morphology of *B. tuberculosis,* its cultural characteristics, and the histology of tubercle, or the pathologic alterations of tissue structure resulting from its activity. There is another and even more important series of reactions dependent on this, which, though largely of speculative interest at present, is probably of vastly greater importance in determining the course of the disease.



Fig. 1 (Case 1).—Condition on admission.

When a number of tuberculous persons are kept continuously under close daily observation, it is possible, as it rarely is on casual examination, to note slight, often apparently negligible or utterly irrelevant variations in their behavior, which in reality are indications of healing or progression of their disease. It is not unusual for persons exhibiting advanced lesions to pursue for some months or years an uninterrupted and favorable course, continuously proliferating the connective tissue elements which bring about healed lesions; yet frequently, too, those whose malady may not have passed beyond slight or moderate degrees of infiltration seem unable to summon to their aid those subtle forces of repair. Again, what appears a successful attainment of dependable improvement, with no alteration in the daily routine of life, may suddenly become hopeless deterioration.

These phenomena unquestionably are determined by structural alterations at the site of the lesion, or new implantations of tubercle elsewhere, which precede



Fig. 2 (Case 1).—Condition after eight months' treatment.

them in time and, it may well be, are themselves anticipated by variations, perhaps of virulence of the specific bacillus, perhaps of cell activity, or in the character of the blood or lymph streams. It is possible that in these, nervous stimuli, inhibitory or accelerator, originating often in the cerebral emotions, play an important part. At all events, there occurs an increased or diminished production or efficiency of toxin neutralization which, for lack of a better term, is spoken of as "resistance," and it is certainly possible in many instances to detect its fall before extensive tissue alterations have occurred.



Fig. 3 (Case 1).—Condition on readmission.

The pulmonary implantation of the bacillus occurs without appreciable indications of its presence, and it is clearly understood that the cellular activity it excites may become well established, indeed may even advance to definite infiltration, without producing constitutional symptoms sufficiently significant to attract the attention of either physician or patient. Hence the diagnosis of clinical pulmonary tuberculosis in this, the truly incipient stage, requires, in addition to careful and expert physical examination, a minute consideration of the slightest variations from the normal in the daily reaction of the patient to the accustomed routine of life. Such variations are quite as significant later as indications of the course, whether favorable or otherwise, of the disease, and, as already noted, may be slight and apparently negligible. In general, those conditions which make for well being and an uninterrupted adherence to a wisely ordered regimen are helpful toward recovery, or, in other words, under such conditions resistance rises and connective tissue proliferation and replacement proceeds apace, while on the contrary, continued mental anxiety, sudden emotional disturbances, uncongenial surroundings, introspection and depression, quite as much as a faulty regimen, are responsible for lowered resistance and retrogression. It is under such strains, or following them, that unusual fatigue, headache, insomnia, "nervousness," irritability of temper, "the blues," loss of appetite, acceleration of



Fig. 4 (Case 2).—Condition on admission.

pulse, slight cyanosis, or dyspnea on exertion, even before the more notable symptoms of fever, loss of weight, increase of cough or sputum occur, frequently indicate progression of the lesions or the development of fresh tubercles and infiltration.

Under such circumstances, careful physical reexaminations must be made; and since so frequently slight alterations in the character of the lesion or new infiltration may be detected only with their aid, stereograms should be studied. Such reviews will often enable the clinician immediately to make a readjustment of the patient's regimen which checks further retrogression, but which, if delayed until the development of more significant symptoms, may not be availing.

A few clinical and roentgenographic records have been selected which illustrate these observations and the following inferences:

1. Variations in the clinical behavior of patients ill with active pulmonary tuberculosis are frequently indicative of their diminished resistance and the progression of their lesions.

2. Such variations, though slight and apparently negligible, may be as important indications of progres-

sion of the disease as are similar variations of its conception.

3. Such variations should suggest the importance of careful reexaminations which frequently disclose retrogression of the lesion before the advent of more marked symptoms, and make possible helpful modifications of the management of the patient.

4. Roentgen findings, and especially stereoscopic studies should be employed in addition to physical examination.

CASE 1 (4192).—The disease was moderately advanced. The onset had been insidious under strain of war work in addition to the patient's usual occupation. He was of labile temperament, but unusually intelligent and cooperative. Roentgenoscopy (Fig. 1) revealed slight disseminated infiltration of the right lung with an area of consolidation and fibrosis above the second rib anteriorly which enclosed a cavity measuring on the plate 4 cm. in diameter. There were also a few peribronchial deposits in the right lung. The patient was 13 or 14 pounds below his usual weight, and had a moderate cough and expectoration averaging from 14 to 18 gm. daily and containing many clumped bacilli (Gaffky vii). After eight months' treatment by rest and graduated exercise



Fig. 5 (Case 2).—Condition after eight months' treatment.

during which improvement was steady and progressive, he gained 20 pounds and felt entirely well. The bacillary content of the sputum had decreased, and in the last three months, expectoration was scant and bacilli absent. Medium râles heard above the fourth rib and midscapular region had cleared, only a few fine râles at the apex remaining. Roentgenoscopy (Fig. 2) revealed marked retraction of the fibrosed and consolidated area in the right upper lobe which now extended only a little below the first rib. The area of rarefaction was reduced from 4 to 1.5 cm. in diameter, on the plate.

The patient was discharged "apparently arrested" and advised to live within strict limitations. However, business cares immediately devolved upon him, and under mental strain he exceeded the limitations set. He noted an increased tendency to worry, and was nervous and irritable beyond his wont. Six weeks after leaving the sanatorium he had several small hemoptyses; and two weeks later, despite rest in bed, developed fever with increased cough and expectoration. On readmission these symptoms were marked, the afternoon temperature ranged to 100 F. (rectal), and the sputum contained many tubercle bacilli. Medium râles were heard above the fourth rib and midscapular region. Roentgenoscopy (Fig. 3) revealed an increase and relaxation of the area of consolidation in the right upper lobe and an extension of the area of rarefaction with new implantations in the middle and lower lobes.

After six weeks' rest treatment, general symptoms persisting, artificial pneumothorax was induced on the right side with only partial collapse of the cavity and partial alleviation of symptoms.



Fig. 6 (Case 2).—Condition after twenty months.

Such cases demonstrate that while a cavity may be markedly retracted and even obliterated by surrounding fibrosis, with coincident disappearance of tubercle bacilli from the sputum, the closure may be impermanent. A weakened "resistance" may reestablish the ascendency of the process of destruction with recrudescence of both local and general symptoms, the only warning of such a change being slight and vague changes in temperament preceding, by weeks or longer, more tangible signs.

Very similar anatomic changes are shown by Case 2, except that the course of repair has continued without interruption.



Fig. 7 (Case 3).—Condition on admission.

CASE 2 (4230).—The disease was moderately advanced. Constitutional symptoms were not marked and were characterized by low fever. The sputum varied during the first four months from 25 to 114 gm. daily, and contained many tubercle bacilli (Gaffky iv to ix). Roentgenoscopy (Fig. 4) revealed a slight infiltration of both lungs, with a large,

moderately heavy walled cavity, 4.5 cm. in diameter (on the plate) extending from the apex to the second rib.

During more than a year the patient was almost constantly febrile and was given bed treatment, notwithstanding which



Fig. 8 (Case 3).—Condition later.

there was progressive gain in weight with diminution of local symptoms. After eight months' treatment the sputum averaged 32 gm. daily and contained only a few bacilli. Roentgenoscopy (Fig. 5) revealed an increased deposit of fibrosis which had retracted upward and had reduced the cavity to the dimensions of 2.5 by 4 cm. on the plate.

During the remainder of the period of twenty months, a gradual regression of both local and constitutional symptoms continued; and for nine months, except for a few on one occasion, the sputum has been free from bacilli and much reduced in amount. Roentgenoscopy (Fig. 6) revealed further retraction of the area of fibrosis in the right upper lobe, with almost total obliteration of the cavity.

Case 3 exemplifies new implantations of tubercle not revealed by physical signs.



Fig. 9 (Case 4).—Condition on admission.

CASE 3.—The patient had an apparently healed lesion of the right lower lobe and was working from six to eight hours daily. Roentgenoscopy (Fig. 7) revealed an old infiltration and fibrosis extending downward and outward from the hilum into the right lower lobe with marked diaphragmatic adhesions. A few small peribronchial deposits were scattered through both lungs.

Following a slight "cold" with low fever, and symptoms of little severity, convalescence was protracted and marked by vague symptoms of joint pains, most severe in the thoracic spine, slight spasticity of certain muscles, paresthesia, insomnia and lassitude, manifestations which suggested vertebral involvement, but gradually subsided, giving place to a small hemoptysis. Several physical examinations disclosed no change in the pulmonary signs. Roentgenoscopy (Fig 8) detected no change in the right basal lesion. At both apexes and in the first interspace on the left, there were a few isolated, light parenchymatous deposits not shown in previous roentgenograms. Recovery was uninterrupted, but, in view of these findings, a prolonged rest was advised.

The point to be emphasized is clear. From physical signs and the train of symptoms alone, the logical assumption might well have been that a relatively unimportant reactivation of the healed lesion had occurred. In such instances only the roentgen findings can be relied on to lay bare the deception and to determine a proper regimen for the patient.

There is also ample evidence that infiltration may proceed to caseation and excavation, while unfavorable



Fig. 10 (Case 4).—Condition later.

constitutional symptoms are very indefinite and local symptoms entirely absent.

CASE 4 (4095).—The disease was moderately advanced. The general condition was fairly good, with no expectoration. Roentgenoscopy (Fig. 9) revealed scattered infiltration of the right lung with a cavity in the upper lobe, and slight infiltration of the left upper lobe. For six and a half months satisfactory improvement apparently proceeded; then, with some loss of weight, there were noted nervousness, irritability and an increasing sense of undue fatigue. A few weeks later the sputum increased in amount and, for the first time, contained a few tubercle bacilli. It may be more than a coincidence that shortly preceding these symptoms personal animosities had created an environment incompatible with mental quietude. Roentgenoscopy (Fig. 10) revealed markings similar to those described except for a small cavity and slight increase in infiltration at the left apex.

Harmful Parasites of Man.—When an animal parasite acts simply in a mechanical way in transferring a micro-organism of disease to a man, it is called mechanical transmission. An example of this method of transmission is when a fly lights on typhoid feces, gets typhoid bacilli smeared on its feet, and then lights on a man's food, thus causing the typhoid bacillus to become parasitic in man.—*U. S. Nav. M. Bull.*, January, 1920.

PAPILLOMATOUS EPITHELIOMA OF THE KIDNEY PELVIS*

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The scarcity of American case reports on this disease is my reason for this presentation. A rather careful search of the literature and further inquiry reveal that six American cases have been reported to date: (1) a case by A. O. J. Kelly[1] in 1900; (2) one by Babcock[2] in 1902; (3) one by Watson and Cunningham[3] in 1908; (4) one by W. E. Lower[4] in 1914; (5) one by E. S. Judd[5] in 1919, and (6) one by Hyman and Beer[6] in 1920. There are also two unreported pelvic papillomas, one by Dr. Burford of St. Louis and the other by Dr. Parmenter of Buffalo. Also Judd[5] refers to one operated on by Dr. C. H. Mayo. These, with the present report, make a total of ten American cases. With this group I have combined thirty-eight foreign reports, which bring the number studied to forty-eight papillary tumors of the kidney pelvis. (Abstracts of forty-six cases are presented herewith.)

Illustrating the rarity of this growth, Watson and Cunningham state that "of ninety-four cases of renal and perirenal growths occurring in the Massachusetts General and Boston City hospitals in ten years, there has been but one case of renal pelvic tumor, a papilloma." Judd states that in the entire series of 207 cases of tumors of the kidney in the Mayo Clinic there was but one definite papilloma of the kidney pelvis.

REPORT OF CASE

History.—A woman, aged 58, widow for fifteen years, mother of two children, was referred by Dr. W. H. Foreman, Sept. 19, 1918, because of pyuria. The family history was incomplete. The father died very young, cause unknown. The mother died in the fifties from some form of asthma. The patient was quite sure that there was neither cancer nor tuberculosis in the family. The patient had had no serious illness. Childbirths and menstrual life were normal. The menopause was passed four or five years before without any unusual symptoms. There had been two attacks of bronchitis.

In September, 1917, she had passed "some blood" in the urine. She felt normal until January, 1918, at which time she had constant headache. Urinalysis at this time revealed pus. In February, 1918, the hematuria returned, with the passing of clots. The patient noticed tenderness in the right loin. The symptoms ceased after four days, and the patient was well for two months, when there was a recurrence of hematuria. Cystoscopic examination was made by a Seattle physician, who reported that there was no infection, but he suspected stricture of the ureter or tumor; no treatment was recommended. There was a return of headache with general weakness, loss of appetite and loin tenderness in June. These attacks, accompanied by slight hematuria, were recurrent at short intervals until the patient came under our observation.

Physical Examination.—The patient was short and very heavy, with a pendulous abdomen. The color of the skin was good. The reflexes were normal. Blood pressure was 150 mm. of mercury; pulse pressure, 40 mm. The heart and lungs were normal except for a possible evidence of chronic bronchitis. The extremities were normal. The abdomen was tender in the region of the right kidney, which was not palpable because of the thick abdominal walls. A catheterized specimen of bladder urine revealed a small amount of albumin, numerous pus cells, few red blood cells and epithelium which seemed to come from the ureter and pelvis. A stained sediment contained staphylococci and colon-like bacilli.

Cystoscopic Examinations: The bladder capacity was 400 c.c. The urine spurted normally from both ureters. Taking origin from within the orifice of the right ureter was a papilloma slightly larger than a B. B. shot. This was removed through the cystoscope and found benign. Examination of segregated urines revealed the left kidney apparently normal, while the right urine contained epithelial cells which we were unable to identify. The phenolsulphonephthalein output of the right kidney was about one third of the total. Operation was advised for probable tumor.

Operation and Result.—In St. Vincent's Hospital, Oct. 7, 1918, the right kidney was removed with 2 inches of normal ureter. The patient made an uneventful recovery and was discharged, October 29, at which time the wound had completely healed.

After leaving the hospital, the patient made reports weekly that she was rapidly regaining her strength until three months later, when she reported at the office complaining of returned hematuria. Cystoscopic examination revealed a small papilloma springing from the orifice of the right ureter. This was destroyed by fulguration, the wire being passed 2 cm. within the ureter in an endeavor to make sure of total destruction. There was also a very tiny papilloma springing from the border of the left ureter. Urine from the remaining kidney withdrawn by the ureteral catheter was normal. Subsequent examinations revealed three more recurrences of papilloma about the right ureteral orifice, with the left kidney and ureter remaining in good condition. While the patient's general health on the whole remained good, it became apparent that complete removal of the ureter was necessary to prevent recurrence of vesical papilloma and possible metastases.



Fig. 1.—Exterior surface of opened kidney and pelvis having been split, showing cauliflower-like growth.

With the cooperation of Dr. Goethe Link, transperitoneal ureterectomy was performed, Feb. 5, 1920. The patient again made a good recovery. February 26, cystoscopic examination revealed the scar of the bladder mucosa in good condition. April 23, the bladder capacity was 420 c.c. The bladder mucosa was normal. The scar edges were smooth. Healing was complete. There was no evidence of recurrence in scar or any other portion of the bladder. The general health of the patient was excellent.

Pathologic Report (by Dr. Virgil H. Moon).—The specimen consists of a kidney with about 1 inch of ureter attached. The kidney is small, weighing 115 gm. (3⅘ ounces). The

* Read before the Section on Urology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Kelly, A. O. J.: Proc. Path. Soc. Philadelphia, 1900.
2. Babcock: Am. Gynec., June, 1902.
3. Watson, F. S., and Cunningham, J. H.: Diseases and Surgery of the Genito-Urinary System, Philadelphia, Lea & Febiger, 1908.
4. Lower, W. E.: Surg., Gynec. & Obst., February, 1912, p. 151.
5. Judd, E. S.: Journal-Lancet **39**: 247 (May 15) 1919.
6. Hyman, H., and Beer, Edwin: Amer. Urol. Soc., March 25, 1920; Tr. A. U. A., 1920.

capsular surface is irregularly congested, showing mottled areas of deep red. Both cortex and medulla are compressed and reduced in amount. The pyramids and their papillae are flattened and the pelvis and calices distended so that the cortex and medulla form a shell-like structure with an average thickness of 9 mm. (three-eighths inch). The color of the kidney substance is pale yellowish brown. The dilated pelvis is lined throughout with a pinkish white growth from 3 to 4 mm. in thickness. This growth is soft, fragile and irregular, somewhat resembling cauliflower. On close inspection the growth is found to consist of numerous fringelike or villous projections closely crowded together. The growth is separated from the kidney substance by a thin layer of fibrous tissue. It is sharply limited by this, and shows no tendency to break through and invade the kidney substance.

The portion of the ureter present with the specimen is distended to a diameter of about 10 mm. and is lined throughout by a growth exactly similar to that lining the kidney pelvis.

Microscopically, the growth is found to consist of rather elongated epithelial cells arranged several cells deep on



Fig. 2.—Inner surface of the cut kidney, showing smooth border of normal kidney substance surrounding papillomatous growth.

numerous, irregularly branched stalks of fibrous tissue containing blood vessels. These stalks constitute the stroma of the growth, and arise directly from a rather regular fibrous partition which separates the growth from the kidney substance. The projecting stalks covered by several layers of epithelial cells give the growth a distinctly papillary character. At no point is the epithelial growth found to break through and invade the kidney substance.

The epithelial cells are quite regular in size, shape and arrangement. They are elongated, almost columnar, in shape. They are arranged upright or at right angles to their supporting stroma, in which particular they differ from the arrangement of ordinary squamous epithelium. The nuclei are oval, and have a fairly dense network of chromatin. The cytoplasm is clear, and is less in amount than in normal epithelium. A few mitotic nuclei can be found, but these show no irregularities of structure. There are no areas of necrosis or hemorrhage.

On the whole, the growth lacks the characteristics usually present in malignant epithelial neoplasms. Its structure is definitely that of a papillomatous epithelioma.

STATISTICS OF CASE REPORTS

The exciting cause of these tumors is not known. Some authors are inclined to ascribe the cause to inflammation, others to pelvic stone. However, in our study of forty-seven reports we find calculi mentioned only ten times and infection three. Ages vary widely; the youngest patient was 32, while the oldest was 86 years of age.

Divided into decades of life, there were five patients in the thirties, seven in their forties, seventeen in the fifth decade, nine in the sixth, three in the seventh and one in the eighth.

There were twenty-seven men and fifteen women; in five, sex was not mentioned. In seventeen instances the left kidney was involved, as compared to twelve on the right side. Data as to the side involved were not attainable in seventeen cases. Both kidneys were found involved in one case, that of Murchison.[7] Extension of the tumor or secondary growths on the ureter was found in twenty-three cases; involvement of the ureteral orifice or bladder, seventeen times.

In listing the symptoms, hematuria was reported in twenty-three cases and hematuria with renal colic in twelve cases, palpable tumor fourteen times and abdominal pain in eight instances, while in six cases there was reported frequency or painful urination. As illustrating the possible malignancy of this condition, eleven authors report metastasis as being present at the time of examinations or developing in the later course of the disease. It would seem, however, that all cases are potentially malignant since this is the outcome of untreated papillomas of the bladder.

It will be noted that hematuria is the most common symptom, being noticed in some cases as early as four and in one of Albarran's [8] cases seven years before the true condition was diagnosed. Hematuria is usually intermittent and painless in the beginning, but becomes more profuse and is accompanied in some instances by renal colic as the disease progresses. In a few cases there has been continuous hematuria for three or four months before the examination.

Pain other than renal colic caused by the passing of blood clots is not a common symptom. When present, it is of a dull aching nature and probably due to the distention and pressure within the renal pelvis caused by the growing villosity.

Palpable tumor was found in only one third of the cases. Reports indicate that these tumors vary from the size of a pigeon's egg to that of an infant's head. A number of patients were in very good flesh, even obese, making it impossible to palpate the smaller types of tumor.

Roentgenoscopy has not proved of much aid in the diagnosis of these conditions. Since common bladder papillomas are frequently found near the orifice of the ureter, the location has no significance; but should the tumor spring from within the ureter, as in this case, it would seem to indicate the strong probability of higher involvement. The finding of numerous unidentified bits of epithelium in the urine withdrawn from the kidney by one experienced in this work will help materially in the diagnosis of new growths. Since the kidney function is diminished in these cases, the usual function tests are of value. Of course, the possibility of tuberculosis and stone should be eliminated by the usual methods.

Nephrectomy is the treatment indicated, and since the ureter and bladder show a strong tendency to become involved, it would seem best to perform complete ureterectomy at the time the kidney is removed

7. Murchison: Tr. Path. Soc. London **31**: 563, 1870.
8. Albarran: Bull. Soc. de chir., 1898.

or soon after. Secondary growths on the bladder mucosa can be easily destroyed by fulguration unless they have become malignant. A study of these cases shows that malignancy is not an early development, giving all the more hope for complete cure by nephro-ureterectomy.

ABSTRACTS OF CASE REPORTS

CASE 1.[7]—A man, aged 65, had frequent hemorrhages and pain, and before that time had frequent urination. Death came from uremia caused by blood clots in the ureters derived from the pelvic growths of both kidneys. The necropsy revealed the ureter and pelvis of both kidneys enlarged; both ureters, especially the right, were studded by long villous processes, not forming a distinct tumor. The case was diagnosed villous disease of the bladder. It was found that both renal pelves were filled with long villous tumors, and in the lower part of both ureters kidney concretions were formed.

CASE 2.[9]—A woman, aged 70, for two years had had albuminuria and severe hemorrhages. She was operated on for strangulated hernia from which she died. Necropsy revealed the right kidney engorged with blood and extremely friable. The cortex was firm, but the pelvis was filled by a whitish yellow tumor attached by a thin, broad pedicle to the lower third of the pelvic wall. A number of other villous growths sprang from different portions of the wall. They consisted of a delicate fibrous stroma surrounded by epithelium.

CASE 6.[13]—This was a most interesting case of a man, aged 57, who had enjoyed fine health until he came in because of abdominal pain. Examination revealed a small tumor in the right side. Shortly afterward the patient went into collapse, marked dyspnea and rapid pulse. There was, however, no change in the tumor. The urine contained bile pigment and albumin, but no blood. The patient grew somewhat better, but about one week later had a recurrence, causing death. During this attack the tumor enlarged. Necropsy revealed a right kidney with two ureters, the superior closed by numerous villous growths that filled the upper half of the pelvis but did not infiltrate the cortex. The upper half of the kidney was greatly enlarged, while the lower half was apparently normal. Within the bladder there was a papilloma about 5 cm. from the ureteral orifice, and there was in addition hemorrhagic perinephritis. Microscopic examination of the tumor revealed the ordinary appearances characteristic of papilloma of the bladder.

CASE 7.[14]—A man, aged 55, for eighteen months had constant pain in the right loin, hematuria and progressive emaciation; he lost 34½ pounds. A soft, villous growth was found occupying the pelvis of the right kidney at operation, which was the size of the thumb and resembled similar growths of the bladder. This was removed by means of Volkmann's spoon. The small surface remaining was smooth and clean, but vascular. The thermocautery was used to stop the bleeding. Further examination revealed what seemed to be similar growths higher; but because of the serious condition of the patient, further operative treatment was abandoned. The patient improved for a while; but nine months later, after he had suffered for some time, the entire organ was removed. The subsequent history of the patient was not recorded.



Fig. 3.—Opened ureter, showing growth on the lower two thirds (at the right) and the smooth mucous membrane of the upper third (at the left); at time of ureterectomy, this upper third was a pus sac.

CASE 3.[10]—A woman, aged 47, had severe cystitis, and while being treated for this died of peritonitis. Necropsy revealed, aside from the peritonitis, hydronephrosis of the left kidney caused by a large calculus. Microscopically, it resembled medullary carcinoma, showing an alveolar structure with variations in the relative amount of stroma and cells in different regions. Israel suggests the possibility of the carcinoma's being caused by the calculus. This growth was villous in character.

CASE 4.[11]—A woman, aged 32, who said she had suffered since she was 8 with pain in the right side, had had occasional hemorrhages nine years before entering the hospital. During the last few months she had developed a tumor which was very painful. The diagnosis was cystic kidney. Nephrectomy was performed and the patient was up on the twenty-second day. The specimen was entirely different from any others by the way in which the hollow stone capped the tumor. The openings from the calices into the renal pelvis were dilated; two were blocked by smaller brown calculi, which had caused the hydronephroses. Also, there was a villous growth which extended from the mucous membrane of the renal pelvis at the beginning of the ureter and in other parts of the pelvis.

CASE 5.[12]—A man, aged 54, whose case was diagnosed calculous pyelitis and obstruction of the ureter, died from operation. Examination of the left kidney revealed papillary carcinoma of the pelvis, involving the ureter; also a small calculus. The cancer had extended to the pleura and liver.

CASE 8.[15]—A man, aged 51, had passed a large calculus six years prior to observation, and a smaller one since; he also complained of pain and hemorrhage. At operation several dark round calculi and many smaller calculi, grains of these, were removed. In addition, a soft villous tumor was found in the lower portion of the pelvis. This was removed and the site of attachment scraped with a spoon. The patient recovered from operation, but at the end of five months, hemorrhages again occurred, and later there was constant pain and small calculi were passed. The patient again recovered. The development of the tumor was ascribed to the irritation of the calculi.

CASE 9.[16]—A man, aged 56, three and one-half years prior to admission to the hospital had suffered pain resembling renal colic at intervals, these attacks becoming more frequent of late. Other symptoms were painful micturition, hematuria, sometimes profuse, and a swelling in the left side of the abdomen. July 30, 1896, nephrectomy was performed but no stone was found; the patient died, November 11. At the necropsy the left kidney was found much enlarged and the pelvis and calices much dilated and covered with a delicate papillomatous growth. Delicate tufts of villous growths attached by a narrow base were also found all along the ureter. In the bladder

9. Roberts and DeMorgan: Tr. Path. Soc. London **21**: 239, 1870.
10. Israel: Virchows Arch. f. path. Anat. **86**: 359, 1881.
11. Thornton, Knowsley: Tr. Path. Soc. London **36**: 269, 1885.
12. Hartman: Bull. Soc. anat. de Paris **61**: 260, 1886.
13. Neelsen: Beitr. z. path. Anat. u. z. allg. Path. **3**: 277, 1888.
14. Jones: M. Chronicles **14**: 267, 1891.
15. Battle: Tr. Clin. Soc. London **33**: 235, 1895.
16. Drew: Tr. Path. Soc. London **48**: 130, 1897.

springing from the margin of the ureteral orifice there was a large papillomatous growth, the base of which did not appear to infiltrate the bladder wall. Microscopically, the tumor was found to be composed of branching villi of extreme delicacy, the terminal branches being round or club shaped. In some the epithelial cells were arranged so as to suggest the transitional type of epithelium of the urinary tract.

CASE 10.[17]—A woman, aged 58, died of hemorrhage. Necropsy revealed hydronephrosis, and on the mucous membrane of the renal pelvis could be seen "small pedicled tumors of a gelatinous nature." The ureter and bladder showed similar growths. In this case the liver and mesenteric glands were infiltrated with numerous cancer nodes. In the kidney itself there was no apparent change.

CASE 11.[18]—A man, aged 70, had hematuria for two years. On cystoscopy it was found that the right kidney ejaculated bloody urine. An exploratory incision was made and the kidney found to be normal. The hemorrhages continued. Cystoscopy two years afterward revealed blood from the right ureter and its orifice red and eroded. Nephrectomy was performed, and the kidney pelvis showed papillary growths. One year later hematuria returned. On operation, the upper part of the right ureter was found distended with a villous carcinoma. This was removed. The man died four years later of uremia, and toward the end there was carcinoma in the prostate and pelvis, and recurrence in the nephrectomy scar.

CASE 12.[19]—A man, aged 40, in his youth had had hemorrhages and had passed several calculi. He complained of pain. The urine contained pus and blood. Nephrectomy was performed. There was a papillary carcinoma of the kidney pelvis. Six months later it recurred in the lumbar and supraclavicular glands. The patient died.

CASE 13.[20]—A woman, aged 69, when well in her sixty-seventh year had noticed blood in the urine intermittently. The kidney was removed and a villous tumor was found reaching into the ureter. The renal pelvis and calices were much enlarged. In the upper half of the former, close to the ureter end, was a tumor mass, the size of a pigeon's egg, which inclined toward the ureter. Small, villous tumor masses were located on the entire mucous membrane of the renal pelvis and upper third of the ureter. There were villous-like excrescences from 2 to 15 mm. in length. Microscopically, they had the usual appearance of such tumors—a vascularized connective tissue stalk surmounted by a mantle of epithelial cells. The patient died one and one-half years later of metastases of the wound and surrounding structures.



Fig. 4.—Diagram intended to show papilloma springing from within ureter orifice.

CASE 14.[21]—A woman, aged 86, had a tumor the size of an infant's head, on the left side. An oblique incision was made over the swelling. The patient died during the operation. Examination of the specimen revealed a huge hematonephrosis with papillary cancer of pelvis and ureter.

CASE 15.[9]—A man, aged 34, with hemorrhages, was found to have a tumor in the left side. Cystoscopy with catheterization of the ureter gave 80 gm. of bloody urine containing a number of polymorphous epithelial cells, great numbers being cylindric, some of the pavement type. Lumbar nephrectomy was performed. The specimen showed papillary epithelioma. It had not returned six years later.

CASE 16.[22]—A man, aged 44, brought to the hospital, Oct. 1, 1897, with delirium tremens and a severe hemorrhage, had noticed blood in the urine for one week, six months before. A large tumor was found in the left hypochondrium extending down to the umbilicus. The patient died, October 5. The postmortem revealed the tumor to be the left kidney. There was a calculus in the renal pelvis, and the mucous membrane was covered with soft villous growths which extended into the ureter 1½ inches. There was no epithelial ingrowth into the wall of the ureter or the renal pelvis. Stone caused the hydronephrosis.

CASE 17.[23]—A man, aged 41, with severe pain and hemorrhage, underwent nephrectomy and partial removal of the ureter. Examination of the specimen revealed a whitish mass of small villous tumor on the mucous membrane but not penetrating the kidney. The growths extended toward the bladder. The patient died one and one-half months afterward. The diagnosis was cancer of the kidney pelvis extending into the ureter. It is not known whether it was malignant or benign at the start.

CASE 18.[24]—A man, aged 49, had had a tumor since he was 25. About his fortieth year the tumor became enormous. Nephrectomy and partial removal of the ureter were performed. The patient recovered nicely from the operation, but one year later there was a return in the scar. This was removed. The man died two years later of general debility. Examination disclosed a large cyst with papillary cancer of the pelvis of the kidney.

CASE 19.[25]—A patient who suffered severely had profuse hemorrhage, making cystoscopy impossible. The bladder lavage brought forth great quantities of villosities. Operation was out of the question. Patient died in a short time. At necropsy, papillary cancer of the kidney pelvis was found.

CASE 20.[1]—A woman, aged 61, complained of hematuria and severe renal colic for the year prior to examination. The family physician recalled the passing of two calculi. Catheterization revealed blood coming from the right ureter. At operation it was found that a tumor occupied the upper half of the kidney, which was removed. The patient convalesced and for some months was in fine health. She died nine months later, of unknown cause; but there had been no recurrence. Examination of the specimen revealed a mass the size of a walnut taking origin from the mucous membrane of a crater-like excavation in the upper half of the kidney. On close inspection, octopus-like prolongations were seen extending into the kidney tissue but not of the renal parenchyma. The excrescences were composed of connective tissue stalks of loose alveolar tissue, in the center of which was a small capillary vessel. These stalks were surmounted by from fifteen to twenty layers of cylindric epithelium.

CASE 21.[26]—A man at the age of 43 had sudden hematuria and pain in the left renal region which, during the next seven years, had not entirely disappeared. In his fiftieth year, bladder hemorrhages caused him to enter the hospital. Nephrectomy was performed by Professor Schuhardt. The patient recovered, but died of exhaustion four and one-half months later. The inner surface of the renal pelvis was covered with fine villi. There was a tumor in the bladder the edge of which was covered with numerous long villi. This was originally benign, but within a few months had become malignant.

CASE 22.[26]—A man, aged 61, was operated on by Professor Häckel, who removed a kidney tumor under great difficulties.

17. Rayer: Traité des maladies du rein.
18. Fenwick: Ureteral Meatoscopy in Obscure Diseases of the Kidney, p. 80.
19. Fenwick: Ureteral Meatoscopy in Obscure Diseases of the Kidney, p. 186.
20. Kohlhardt: Virchows Arch. f. path. Anat. **168**: 565, 1897.
21. Toupet and Guerniot: Bull. Soc. anat. de Paris, 1898.
22. Bradford: Tr. Path. Soc. London, 1898, p. 171.
23. Poll: Beitr. z. klin. Chir., 1899.
24. Pantaloni: Arch. prov. de Chir., 1899.
25. Blum: Report of the Eleventh Congress of the German Urologic Society, 1900.
26. Busse: Virchows Arch. f. path. Anat. **148**: 565, 1897.

The operation was apparently successful, but the patient died four weeks later of abscess and hemorrhage from the lungs. The renal pelvis was covered with small, wartlike elevations on the mucous membrane, some with broad bases, others with threadlike pedicles, similar ones being present along the ureter, thickest near the orifice into the bladder, where a tumor the size of an egg was found. There was a small papilloma near the orifice of the right ureter. These growths were diagnosed as benign from the histologic formation of the tumors and also from the patient's history. Suffering could be traced for twenty years.

CASE 23.[27]—A woman, aged 37, had severe hemorrhages. Examination revealed a huge tumor which protruded across the liver at the crest of the ilium. Transperitoneal nephrectomy and partial ureterectomy were performed. The patient recovered from the operation, but died eight months later from an unknown cause. Examination of the kidney disclosed cancer of the pelvis and a stone the size of a pigeon's egg. The tumor on examination proved to be a villous papillary cancer.

CASE 24.[28]—A man, aged 51, had a villous growth of the renal pelvis. Near the entrance to the bladder a new growth could be seen that covered the last 3 cm. of the ureter. The patient had had a hemorrhage four years before, and since had had a few, more or less severe. There was no pain, but by palpation the kidney was found much enlarged. Puncture found a bloody liquid. Nephrectomy was performed; also removal of the ureter. Examination of the kidney revealed villous papilloma of the pelvis and ureter.

CASE 25.[2]—A woman, aged 61, complained of severe renal colic and hemorrhages. A diagnosis of calculi was made. Incision disclosed a papillary cancer of the renal pelvis. Nephrectomy was performed. Patient died three months later of a pulmonary infection.

CASE 26.[29]—A merchant, aged 58, came to Jeanbrau in April, 1901, for repeated hemorrhages which became very severe. On operation a tumor of the pelvis the size of a small egg was found resembling a cauliflower. The patient recovered from the operation, and trace was lost of him.

CASE 27.[30]—A woman, aged 44, complained of pain and had severe hemorrhages. On examination a large tumor was found that was painful to the touch. Lumbar nephrectomy was performed with complete recovery. Examination of the specimen revealed a papillary epithelioma of the kidney pelvis which was large enough to exert great pressure on the kidney parenchyma.

CASE 28.[31]—A man, aged 59, had hemorrhages and was seriously ill. The condition was diagnosed as vesical tumor. A cystotomy did not improve the patient's condition, so a nephrectomy was performed. The patient died six days later. Examination revealed a villous papillary epithelioma of the kidney pelvis.

CASE 29.[32]—A man, aged 56, had a villous cancer in the dilated calices and simple papillary tumors of the bladder and ureter.

CASE 30.[33]—A woman, aged 72, four years previously had had severe hemorrhages and was very ill at the time of the operation. A tumor was found about the size of an infant's head. She died three months later from metastases of the liver. Examination of the specimen revealed hydronephrosis, with papillary cancer of the kidney pelvis involving the ureter.

CASE 31.[34]—A woman, aged 65, had had intermittent attacks of hematuria for four years. For the last four months the bleeding was continuous. No local pain or rise in temperature had occurred until the last month, during which there were attacks of lancinating pain in the right loin. No enlargement could be found in this region. The cystoscope revealed a papilloma obscuring the orifice of the right ureter, and another in the base of the bladder. Suprapubic cystotomy was performed with removal of the bladder tumors, and the ureters were catheterized. The bladder was then closed and right lumbar nephrectomy was performed. Examination of the specimen revealed thin stalks of tissue coming from the surface of the kidney pelvis, dividing into branches. On these branches was seen much epithelium rich in chromatin. The cells were polymorphic, and many showed the process of mitoses. The diagnosis was papillary epithelioma of the kidney pelvis.



Fig. 5.—Low power photomicrograph. (reduced) showing papilloma springing from unbroken mucous membrane.

CASE 32.[35]—A man, aged 34, had had kidney colic four years, during two and one-half years of which he had hematuria. On palpation the kidney was extremely painful; the urine was dense, turbid and bloody. The kidney, when removed, weighed 650 gm., with the pelvis and calices much enlarged. The kidney and ureter were removed, complete ureterectomy being performed. The microscopic examination revealed a typical papillomatous proliferation of the cylindric epithelium of the renal pelvis and ureter. Numerous glandular nodules caused Mione to diagnose the case a papillary adenoma.

CASE 33.[36]—A woman, aged 54, had hematuria for nearly three years. In March, 1905, she was operated on for hemonephrosis. The kidney was not removed. She returned in September, not improved. The left kidney was removed on a diagnosis of a unilateral hemorrhagic nephrosis. On the kidney pelvis, benign cauliflower-like new growths were found. Nine months later hematuria had returned and cystoscopic

27. Grohe: Deutsch. Ztschr. f. Chir., 1901, p. 25.
28. Israel: Berlin. klin. Wchnschr. **38**: 655, 1901.
29. Jeanbrau and Etienne: J. d. urol. **2**: 235, 1902.
30. Josselin de Jong: Beitr. f. path. Anat. u. z. allg. Path. (Ziegler's), 1904, p. 205.
31. Retslaff, O.: Inaug. Diss., de Greifswald, 1904.
32. Savory and Nash, quoted from Lower (Footnote 4).
33. Pels Leusden, 31st German Clinical Congress, p. 137.
34. De Graeuwe and Wanthy: Ann. Soc. belge de chir., 1906.
35. Mione, G.: Riv. Veneta di scienze med., 1904, p. 218.
36. Derewenko: Zentralbl. f. Chir. **36**: 654, 1909 (quoted from Lower, Footnote 4).

examination revealed a papillomatous formation projecting from the ureter which was extirpated by opening the bladder. Six months later she complained of lumbago, paraplegia, retention of urine, and paralysis of the bladder and rectum. Later, gangrene set in causing death. Necropsy revealed the second and third lumbar vertebrae destroyed by a tumor in the left lumbar region, which also had caused metastases in the liver and lungs. The diagnosis was villous cancer.

CASE 34.[37]—This patient was operated on by Albarran for vesical papilloma of the bladder. There was a return of severe and continuous hematuria. The ureteral catheterization revealed the right kidney to be of small function, but left lumbar nephrectomy was performed with operative recovery. Nine months later there was a return of the hematuria, and on examination there was revealed a tumor in the left ureter orifice involving the left side of the bladder. Partial cystectomy and removal of 6 cm. of ureter was performed. The patient died fifteen months after the second operation from metastases.

CASE 35.[38]—A man, aged 51, suffered pain and hematuria. A bloody urine came from the left kidney. Nephrectomy and partial ureterectomy were performed. The patient made an operative recovery, but six months later the papilloma had appeared in the bladder. Further history was unattainable.

CASE 36.[39]—A man, aged 45, complained of severe pain and profuse hemorrhages. The first hemorrhage was spontaneous six years before. Since then he had had three crises of kidney colic accompanied by abundant hemorrhages. Some time later the hemorrhages returned with pain in the right side, being exaggerated by walking and likewise by respiratory movements. On examination a large movable tumor was found lying in the right costo-iliac region, pressing against the lumbar muscles. Transperitoneal nephrectomy was performed. The patient died one year later very cachetic. The diagnosis was papillary epithelioma of the kidney pelvis.



Fig. 6.—Larger magnification (reduced) of Figure 5, showing piled up mantels of epithelium on branching connective tissue stalk.

CASE 37.[39]—A man, aged 60, complained of kidney pain followed by spontaneous bleeding. The kidney was enlarged on the right side. On ureteral catheterization the urine from the right kidney was bloody and low in salts and urea. Nephrectomy was performed and examination of the specimen revealed papillary epithelioma of the kidney pelvis with the ureter normal. However, three years later a papillomatous pedicle protruded from the orifice of the ureter. Immediate ablation of the remainder of the ureter was performed. Six years later the patient was still alive, but had developed carcinoma of the prostate and pelvis.

CASE 38.[40]—A man, aged 53, entered the Velpeau ward at the Necker, March 26, 1912. Seven years before he had had two mild attacks of hematuria. During the last year the attacks became numerous, and for the month preceding admission the hemorrhages had been continuous. The patient complained of urgency and frequency of urination and pain in the left loin. A tumor was found in the left flank extending from under the ribs to the iliac crest, and on the front from the ribs to below the horizontal plane of the umbilicus. The cystoscope revealed papillomatous tumor in the bladder. Nephro-ureterectomy was performed, April 4, 1912. The specimen showed the pelvis and ureter full of papillary tumors revealing the same characteristics as those of the bladder. There was a partial thrombosis of the arteries and veins with cancer. The patient made an operative recovery.

CASE 39.[4]—A woman, aged 63, reported back strain, from lifting, five years before. She had had hematuria for the last three years. There was a dull pain in the back, mainly in the region of the left kidney, which was palpable and tender. Cystoscopic examination revealed left hematuria and two small papillomas bordering the left ureter. Exploratory operation was performed, Oct. 26, 1912. A slightly enlarged kidney with a very much distended pelvis was removed. The bladder was opened and the papillomatous growths were excised. The patient made an operative recovery, but had return of hematuria in three months. At this time tumors were found protruding from the ureter orifice. Complete ablation of the remaining ureter with the removal of a segment of the bladder wall was performed. Recovery was uneventful. Repeated cystoscopic examination revealed finally a small tumor mass at the site of the ureterectomy scar. This was removed by fulguration. Since that time there has been no apparent recurrence. The pathologic report was malignant papilloma of the kidney pelvis, ureter and bladder. The kidney pelvis was discovered to be full of fringelike villous growths.

CASE 40.[41]—Matsuoka performed a nephrectomy on the diagnosis of pyonephrosis, and found a purulent kidney with villous growths in the pelvis and ureter. The growths had invaded the connective tissue framework beneath the mucous membrane.

CASE 41.[42]—At necropsy a kidney was found, the pelvis of which was covered with masses the size of a hazelnut which had extended to the wall of the ureter. The histologic picture of the neoplasm showed fine connective tissue stroma surrounded by mantles of polymorphous epithelial cells.

CASE 42.[8]—A man, aged 55, complained of hematuria and frequency of urination. The patient was a large man with considerable blood in the urine. The left kidney was not functioning. A diagnosis of tumor or polycystic condition was made. A left anterior abdominal exploratory incision was made. The right kidney seemed normal. A soft tumor could be palpated in the pelvis of the left kidney which was removed with 2 inches of normal ureter, Nov. 7, 1917. Hematuria recurred, necessitating ureterectomy, Jan. 3, 1919. Recovery was complete. The kidney pelvis was found to be completely filled with papilloma, diagnosed as malignant because in places the epithelium seemed to penetrate into the submucous strata. The ureter specimen was filled with papilloma of the same type as that which had been found in the pelvis.

37. Legueu: Bull. et mém. Soc. de chir., Dec. 21, 1909.
38. Mecker: Wien. med. Wchnschr., 1911, p. 2394.
39. Albarran: Thèse Mock, Paris, 1912.
40. Picot: J. d'urol. **2**: 699 (Nov.) 1912; Thèse Mock, Paris, 1912.
41. Matsuoka, quoted from Lower (Footnote 4).
42. Hedenius and Walenstroen, quoted from Lower (Footnote 4).

CASE 43.[43]—A tumor appeared at the left ureteral meatus. The growth was rather small, and responded to fulguration treatment. The patient was observed for three weeks. The bladder appeared to be healed, when there was severe bleeding. This bleeding came from the left kidney, which proved to be without function, while the right kidney did the work. Nephrectomy and complete ureterectomy were performed, revealing a definite papillary tumor of the kidney pelvis, involving the ureter. This man was only 34 years old.

CASE 44.[6]—A man, aged 50, admitted to Mount Sinai Hospital in October, 1916, a painter, had had attacks of plumbism, was addicted to the excessive use of alcohol and tobacco, and had had gonorrhea eighteen years before, with no complications. The present illness began eighteen months before with frequency of urination, every ten to fifteen minutes; one week later the patient noticed blood in the urine, which ceased spontaneously a few days later. There had been hematuria most of the time for the last year, with tired feeling, no pain, and loss of weight (60 pounds in a year and a half). Physical examination revealed no lumbar tenderness, and the kidney was not palpable. Cystoscopy revealed a bladder papilloma near the urethral orifice, and blood coming from the left kidney. The patient died in the hospital from apoplexy. The postmortem report revealed the left kidney one and one-half times the normal size. The pelvis was dilated and its walls lined completely with soft, friable, papillary tumor tissue. The ureter was dilated, but contained blood and no tumor. The pathologic diagnosis was papillary tumor (nonmalignant) of the pelvis of the kidney, with implantation in the bladder.

CASE 45.[44]—A man, aged 69, complained of painless hematuria of four months' duration. He was well nourished and apparently normal except for slight arteriosclerosis. The left kidney was slightly enlarged and free of tenderness; the prostate was enlarged and bloody urine was frequently voided. The ureter orifices were normal. There was hematuria from the left side. Nephrectomy was performed by Dr. King, and examination of the specimen revealed a papilloma filling the kidney pelvis, which was benign. The patient made an operative recovery.

CASE 46.[45]—A woman, aged 54, in May, 1919, noticed blood in the urine and had severe pain in the left side of the abdomen. When seen, Sept. 26, 1919, she was very emaciated and complained of pain in the right side and radiating down the right thigh. Cystoscopy revealed a normal bladder. The phenolsulphonephthalein test proved function equal on the two sides. A pyelogram revealed the kidney normal, but there was a filling defect of the lower half of the right pelvis, and the two lower calices of the right kidney were entirely missing. Finally, after many cystoscopies a clot was found coming from the right ureter, and the right kidney was removed. When the specimen was opened, a pedunculated tumor the size of the last phalanx of the two thumbs was found growing from the cortical side of the pelvis, the distal end rather macerating and the whole thing filling more than half the pelvis. The pathologic report was that the growth was benign. The patient gained weight and strength and is still in good health.

ABSTRACT OF DISCUSSION

DR. W. F. BRAASCH, Rochester, Minn.: Dr. McCown has quoted Dr. Judd's statistics to the effect that papillary epithelioma of the renal pelvis was found at the Mayo Clinic in only two patients. Since then we have seen three other cases. From a clinical standpoint there are two types; those which have metastases in the bladder and those which do not. It is probable that the majority of cases will have vesical metastases. The diagnosis should, therefore, be made with two things in mind. If cystoscopy reveals a papillary tumor of the bladder, together with a unilateral renal hematuria, the probable diagnosis would be pelvic epithelioma with vesical metastasis. Where there is no tumor of the bladder the diagnosis becomes more difficult. In the majority of cases the diagnosis can be made quite certain by means of pyelography. In the first place, if the growth is large enough, it may occlude the pelvis entirely. Usually, however, there is an irregular, partially obliterated outline of the pelvis, together with dilatation or elongation of one or more calices. It must be remembered that partially organized blood clots in the renal pelvis may cause an outline simulating filling defects. Occasionally, the tumor may be so situated as to cause considerable urinary obstruction with resulting development of a large hydronephrosis. Metastasis in the ureter may also cause hydroureter and hydronephrosis. Papilloma of the renal pelvis will usually cause marked reduction in function of the kidney involved, which can usually be demonstrated by the differential function test. If we employ all of the various clinical data available, we should recognize the majority of these cases. As to treatment, nephro-ureterectomy is usually indicated. There may be no metastases visible in the upper portion of the ureter while the lower portion may be markedly involved and is easily overlooked unless carefully investigated. Complete ureterectomy is advisable in every case. As to the secondary metastases in the bladder, we have observed two recurrences following resection but they have responded well to fulguration. I am under the impression they will usually act about the same as benign papilloma.

DR. C. M. HARPSTER, Toledo, Ohio: We must bear in mind essential hematuria. I have had two specific instances in the last few years. I think it is hard to diagnose papilloma of the pelvis of the kidney. In one instance we used the high frequency current in a case of suspected papilloma of the kidney pelvis and cured the patient. A fine copper wire was passed into a ureteral catheter, which had the end cut off straight, and the catheter was then passed into the kidney pelvis, and the current turned on. Being pleased with our success, we tried it on another patient who was bleeding very severely and it did not do him any good. We injected some collargol into the pelvis of the kidney and the ureter and made a roentgen-ray examination, but did not learn anything from it. The man being nearly exsanguinated, we decided to remove the kidney. We did not find any papilloma, but found three anomalous arteries going to the upper pole of the kidney, which I think had something to do with the bleeding. It is difficult to decide in these cases what should be done. In one case the man was cured by primary fulguration of the kidney. I think we should always bear in mind the possibility of papilloma of the kidney or kidney pelvis in essential hematuria.

DR. WILLIAM E. STEVENS, San Francisco: A man complained of pain in the right lumbar region of one year's duration and hematuria of twenty-four hours' duration. Five years previously a papilloma of the bladder had been removed with snare and cautery. There were no genito-urinary symptoms for a year and a half after the removal of this papilloma. He then suffered from an attack of severe pain in the right kidney region. Following rest in bed this disappeared and the patient left the hospital. Three years later he noticed blood in the urine for a period of one week. Bearing in mind that he had had a papilloma of the bladder five years previously, we thought of a recurrence of this condition but cystoscopy revealed a normal mucosa and blood coming from the right ureteral orifice. The bladder papilloma had been near the left ureteral orifice. Pyelography showed some irregularity and a lateral elongation of the pelvis of the kidney. Operation disclosed a papilloma of the right kidney pelvis which proved to be malignant. It was the size of a walnut. The patient made an uneventful recovery and returned for examination two months ago. Although the upper ureter at the time of nephrectomy showed no evidence of involvement, cystoscopy now revealed a small sessile papilloma surrounding the right ureteral orifice. The advisability of ureterectomy in addition to nephrectomy was demonstrated in this case.

DR. ABRAHAM HYMAN, New York: In a series of forty tumors of the kidney were two tumors of the pelvis, a papilloma and an angioma. The papilloma was unusually interest-

43. Dr. C. H. Mayo's case, given in a footnote in Dr. Judd's report.
44. An unreported case, the history of which was furnished by Dr. F. J. Parmenter.
45. An unreported case, the history of which was furnished by Dr. C. E. Burford.

ing. The patient complained of hematuria. Cystoscopy showed a fairly large papilloma of the bladder near the right ureteral orifice. Specimens removed with the punch forceps were reported benign. The growth was fulgurated three times and disappeared. The hematuria, however, persisted after the disappearance of the growth, and cystoscopy showed that the bleeding came from the right kidney. The patient died in the hospital from an apoplectic stroke. At the necropsy a considerably enlarged right kidney was found, the pelvis of which was filled with a very large papilloma. The tumor of the bladder was an implant from the pelvic tumor. I agree with Dr. Harpster concerning essential hematuria. If more of the cases were subjected to careful examination and operation, undoubtedly some cause for the bleeding would be found in most instances. Dr. McCown, what percentage of pelvic tumors reported in the literature were malignant?

DR. HERMAN L. KRETSCHMER, Chicago: Dr. McCown's review of the literature shows that these cases are very rare. I have seen two cases. One occurred in a man of 48. His bladder was free of tumor. A papillomatous tumor of the renal pelvis was found and a nephrectomy was carried out. The second patient was a young boy who had papillary cystadenoma of the kidney with metastases. Unquestionably, this tumor had its origin in the renal pelvis.

DR. ALBERT E. GOLDSTEIN, Baltimore: A man about 48 years of age had a large mass in the abdomen on the left side. He had no hematuria and cystoscopically there was nothing abnormal in the bladder. An attempt was made to catheterize the kidney but the catheter would not pass. On account of the size of the mass and the fact that there was no function on this side nephrectomy was decided on. On removing the kidney a papilloma of the pelvis about the size of a large egg was found and the kidney showed cystic degeneration. The cysts were not connected, but were filled with blood. Unfortunately, the patient did not do well on the table and physiologic sodium chlorid solution was ordered. The intern gave this and it must have gone into the lung for a pneumothorax was produced and the patient died the next day.

DR. WILLIAM E. LOWER, Cleveland: I want to emphasize the importance of doing a complete ureterectomy when the kidney is removed. In the case which I reported a few years ago I removed the kidney and the upper part of the ureter which was absolutely free from any growth. A few years later I was forced to remove the whole lower portion which had become studded with growths. If there are any growths in the vicinity of the ureteral orifice it should lead one to suspect the possibility of an extension from growths in the pelvis of the kidney.

DR. PERCY E. MCCOWN, Indianapolis: Concerning the percentage of malignancy, there were eleven cases that showed metastases. The data in a great many case reports secured did not give a description of the microscopic picture but in some of them there was a diagnosis of "papilloma carcinoma." I believe that the term "papillary carcinoma" is probably loosely or incorrectly used in some instances. I do not feel that our own case had become malignant since there was no evidence of a tendency of the tumor to break through the mucous membrane and it had only spread by continuity. My study of these cases makes me feel that they probably have their origin as benign papilloma and degenerate into malignant carcinoma. As in other potentially malignant conditions, early operation is indicated to prevent a metastasis and widespread distribution of the tumor.

Health and Prosperity.—Health is at the root of happiness, of satisfaction in daily toil, of joy in achievement and enterprise and of all national prosperity.—*J. State M.*, July, 1920.

FRACTURE OF THE TIP OF THE DISTAL PHALANX

REPORT OF TWENTY-SEVEN CASES *

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BROOKLYN

Contusions of the fingers or toes are frequently encountered by the general practitioner and by the industrial surgeon, and the usual expectant treatment of such injuries affords relief in a majority of cases. But it is a matter of common experience that a small percentage of finger bruises do not do well. Pain of a throbbing character continues for days. Swelling of the finger tip and tenderness to pressure become marked, and after a varying period of time paronychia may and often does develop. These severe and protracted cases are not invariably the sequence of severe trauma, but on the contrary often give a history of rather slight injury.

It is my belief that virtually all of the cases with marked symptoms are cases in which the ungual tuberosity of the terminal phalanx is fractured.

Any one who will make roentgenograms of all his cases of contusion of the fingers or toes can readily demonstrate the correctness of the view that "chipping off" of a small fragment of the distal phalanx is not a rare occurrence.

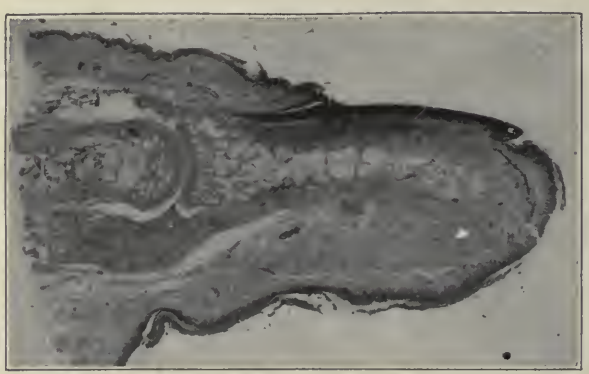


Fig. 1.—Longitudinal section of a finger tip, 20 microns thick, showing connective tissue sac and blood vessels.

The practice of routine roentgenography in all contusions of the hands and feet shows that, while in virtually all of the clinically severe cases, chip fracture is present, in about 50 per cent. of cases of chip fracture diagnosed by roentgen ray the clinical signs and symptoms are so mild that the bone injury would have been overlooked. This observation was confusing until further study revealed the paradox that compound fractures of this type healed quickly under ordinary aseptic treatment, while in expectantly treated closed fractures there was usually prolonged disability. An explanation of this phenomenon is offered in this paper.

In a recent important article which received editorial comment in the London *Lancet*, Hurley [1] reported a series of twenty-seven cases of this type and related that one of his patients "lost 196 days from work and that seventeen others lost an average of approximately sixty days each." The reason for this prolonged disablement in 66 per cent. of his cases was "persistent tenderness and late infection."

Study of longitudinal sections of a finger tip demonstrates the correctness of Kanavel's [2] statement that the pulp of the distal extremity of the finger lies in a closed, trabeculated connective tissue sac (Fig. 1).

Transverse sections show that this closed space in the tip of the finger is bounded by connective tissue

* Owing to lack of space, this article has been abbreviated by the omission of a tabulation of cases. The complete article appears in the reprints, a copy of which may be obtained on application to the author.

1. Hurley, W. R.: Chip Fractures of Terminal Phalanges, J. Indust. Hyg. **1**: 85-89 (June) 1919.
2. Kanavel, A. B.: Infections of the Hand, Philadelphia, Lea & Febiger, 1914, pp. 26-28.

that is least dense at the lateral borders of the ungual extremity of the bone. For this reason extravasated blood in the closed space often escapes to the nail bed and may even give rise to subungual hematoma. The



Fig. 2 (Case 18).—Appearance after three days of conservative treatment.

vessels run parallel with the bone, one lying on each side within the enclosure; and study of an injected specimen shows that while the blood supply is excellent in the normal case, the tension of edema or extravasated blood within this closed sac might shut off the blood supply to the diaphysis, where the nutrient foramina always open on the palmar surface of the bone. The epiphysis is not involved, because it receives its blood supply in a region protected by the flexor profundus tendon before the digital arteries enter the closed sac. A result of this peculiar anatomic structure is often seen in cases of felon which have not come under early treatment. On incision, the entire diaphysis often is found to have become a sequestrum.

PATHOLOGY

When fracture of the ungual tuberosity occurs, the periosteum, which it is virtually impossible to dissect up from the bone in this region, is torn, and there is bleeding into the surrounding encapsulated adipose tissue. Figure 2 is a photograph of a conservatively treated case of ungual tuberosity fracture of three days' standing, and shows the typical appearance of this injury.

The extravasated blood impairs the blood supply of the diaphysis, and may tend to keep separated the fragments of the broken bone. The digital arteries are not occluded by the pressure, for they can be felt pulsating in these cases, as they often can be in unopened bone felons with complete necrosis of the diaphysis.

The veins, however, are affected by the combination of traumatic edema and extravasated blood, and return circulation is greatly impeded.

DIAGNOSIS

The pressure pain that almost uniformly occurs in cases of closed "chip fracture" of the terminal phalanx is similar to the pain of a felon (as might be expected), but is less severe in most cases because products of infection are not held under tension. Swelling due to edema and hemorrhage is generally present, and subungual accumulations of blood are the rule if sufficient time has elapsed.

Even in cases seen a few minutes after injury I have never been able to elicit crepitus or to palpate the detached fragment, and tests for localized skin tenderness with the tip of a silver probe have not yielded satisfactory results.

The roentgen ray is the only positive means of early diagnosis that we have at the present time.

TREATMENT

The results of prompt surgical intervention in a series of twenty-seven consecutive and unselected cases have been uniformly excellent. All the cases occurred in adult male factory workers, and an average of only 6.3 days apiece was lost from work. No man was incapacitated for more than thirty-five days.

As soon as the diagnosis can be established, an incision should be made into the closed connective tissue sac. If the pressure is relieved promptly and without procrastination, its sequelae—pain and delayed sepsis—will not supervene.

The site and method of incision vary with the indications of each case. Should there be free blood under the nail (as is frequently the case) it can sometimes be evacuated by inserting the tips of sharp pointed scissors between the free edge of the nail and the nail bed, and by slightly opening the blades after the points have penetrated about one-eighth inch. This method has the objection that the tissues are opened through a field that can be only imperfectly sterilized, even though the free edge of the nail is clipped close. The



Fig. 3 (Case 18). — Fragmentation of ungual tuberosity.



Fig. 4 (Case 13).—The lesion commonly found in these cases.

hyponychium itself is peculiarly resistant to bacterial infection,[3] but the nail bed is not.

The more radical method of making two short longitudinal incisions through the eponychium and resecting a transverse strip of the nail where it is thin and soft is sometimes indicated when the hematoma is principally at the lunula.

If no extravasation is seen beneath the nail, a one-fourth inch incision may be made with a small, sharp scalpel or a Graefe cataract knife into the lateral aspect of the finger tip deep enough to open the connective tissue sac. An effort should be made to place this incision so that the digital arteries and the digital nerves will not be severed.

These minor operations can be performed painlessly under local anesthesia. Rigid surgical asepsis should be practiced after carefully clipping short the free edge of the nail, cleansing the skin with ether and painting the entire finger with 5 per cent. picric acid in alcohol (or with iodin, if preferred).

Some oozing is sure to occur and is to be desired. To avoid possible infection with skin saprophytes, the dressing may if desired be antiseptic (rather than merely aseptic) for the first forty-eight hours at least.

CONCLUSIONS

1. Fracture of the tip of the distal phalanx is not a trivial injury.
2. Early recourse to surgery, rather than expectant treatment, is indicated.
3. The results of prompt surgical treatment in a series of twenty-seven consecutive and unselected cases have been uniformly excellent.

1066 Lincoln Place.

REMOVAL OF THE ASTRAGALUS IN PARALYTIC FEET

RESULTS IN TWO HUNDRED AND SEVENTEEN CASES *

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BOSTON

In this paper I shall present the end-results of a fairly large number of cases of infantile paralysis in which the astragalus was removed for a paralytic condition of the foot, resulting in lateral instability and various other deformities which will be properly classified.

It has always seemed to me wise and of distinct value to present end-results from clinics or individual operators, regardless of the nature of the results. New procedures often lead to a stampede of operating by the advocated method, without knowledge of end-results, and even old methods are often perpetuated indefinitely, until one takes the trouble to see the end-results of such procedures, two, three or five years later. There is then generally a sad awakening; for however brilliant the operation or the operator may be, time and growth, especially in children, lead to anything but the expected result, though it may have seemed perfect six months after the operation. This is especially true in orthopedic cases.

It is my purpose here not to condemn the operation known generally as "Whitman's operation," or astragalectomy, but to offer a word of caution graphically expressed in figures and end-results, to warn the optimistic operator and to strengthen the hand of the conservative. Whitman first described the operation in 1901, and advocated it primarily for cases of calcaneovalgus. Since then the field has been broadened, and it is now used by him and others in many other types of paralytic distortions of the feet. He stated recently [1] that in sixty operations in which the astragalus was removed, only sixteen were for calcaneous deformity.



Fig. 1.—Postoperative condition of foot; foot not displaced far enough back on leg; compare with Figure 2.

The main object of the operation is to restore the symmetry and stability of the foot following paralytic distortions or relaxations. This report covers 195 cases. The operation has been performed on 217 feet in these cases by eight different surgeons, on feet varying from those completely paralyzed to those in which only one muscle was weak or gone. The object in all cases was, as stated above, to restore either symmetry or stability. This, I believe, it has failed to do in many cases.

The position of the foot before operation, that is, the existent deformity, as a result of the paralysis, is given in Table 1.

It will be noted that the operation has been performed for all types of deformity, and that the flail foot and the foot in the calcaneovalgus position are only about 25 per cent. of the total recorded deformities.

It seemed a matter of interest and importance for any adequate study to determine the muscle power existing in these feet before operation. This was done for all groups, with the results given in Table 2.



Fig. 2.—Condition of bone in foot illustrated in Figure 1.

Under the classification good to fair are those feet in which muscles were: (*a*) normal; (*b*) good: when the muscle was strong enough to overcome gravity and some resistance, but was not quite of normal strength.;

3. Jones, F. W.: The Principles of Anatomy as Seen in the Hand, Philadelphia, P. Blakiston's Son & Co., 1920, p. 47.

* From the Orthopedic Clinic, Children's Hospital.

1. Whitman: M. Rec., July 24, 1915.

(*c*) fair: when the muscle was able to overcome gravity and could perform part of the normal movement; (*d*) poor: when slight movement could be



Fig. 3.—Type of deformity, before operation.

accomplished but gravity could not be overcome, and (*e*) gone: totally paralyzed; no perceptible contraction.

A study of this table shows that the average percentage of good muscles, that is, muscles able to function well in weight-bearing, is 33.2 per cent. This brings us to the question of how one should formulate a standard by which one could determine the proper

TABLE 1.—POSITION OF FOOT BEFORE OPERATION

Equinovarus	48	Calcaneocavus	10
Equinovalgus	25	Flail	15
Equinus	18		188
Varus	11		
Valgus	19	No note	29
Calcaneovalgus	31		
Calcaneus	5	Total	217
Calcaneovarus	6		

Boys, 124 (representing 135 feet operated on).
Average age of boys, 8 years; oldest 12, youngest 2¾ years.
Girls, 73 (representing 80 feet operated on).
Average age of girls, 8.5 years; oldest 13, youngest 3.5 years.

muscular conditions of a foot, in relation to the advisability or necessity of this operation.

As will be noted, all muscle groups average about alike, with the exception of the anterior tibial of 18.6 per cent. and the toe flexors of 52.5 per cent. The latter group represent to my mind the most important factor in the bad results I have seen. The persistence of power in the toe flexor group, with the weakness or complete loss of power in the other groups, especially the toe extensors, and the peroneals, leads in many cases to a postoperative varus, associated with an equinus of a greater degree than was planned for at the time of operation. This deformity is liable to increase, and results in a foot which is no better than before operation and in many cases worse. In the analysis of a large series of cases by Lovett, it has been shown that of all the foot muscles, the toe flexors are the least often involved and the least often totally paralyzed. The posterior tibial has played very little part in this deformity, for in connection with the anterior tibial, it has been the most frequently paralyzed, or affected to the point at which it could not function effectually. Even adequate backward displacement of the foot may lead to later troublesome varus with per-

TABLE 2.—MUSCLE ANALYSIS PREVIOUS TO OPERATION

	Good to Fair	Poor to Gone	Total	Good Per Cent.
Gastrocnemius (including trace)	69	123	192	35.9
Anterior tibial	36	157	193	18.6
Posterior tibial	40	150	190	21
Peroneals	63	127	190	33⅓
Common extensors; extensor longus digitorum	67	121	188	35
Extensor longus hallucis	69	120	189	36
Toe flexors	92	83	175	52.5

Average percentage of good muscles, 33.2.

sistent toe flexors. I believe that it would be better to divide them at the time of operation, for they act in the same way as they do in a congenital club-foot, and tend constantly to increase the varus and equinus deformity.

A foot, which, even if unstable at the ankle, allows weight bearing with the sole flat on the ground is to my mind, other things being equal, better than a foot with a more or less stiff ankle, with the fore foot in equinovarus, and weight bearing restricted to the ball of the foot or its outer border.

The operation has not differed materially in technic, except for such variations in procedure as individual operators chose to use. The astragalus has been

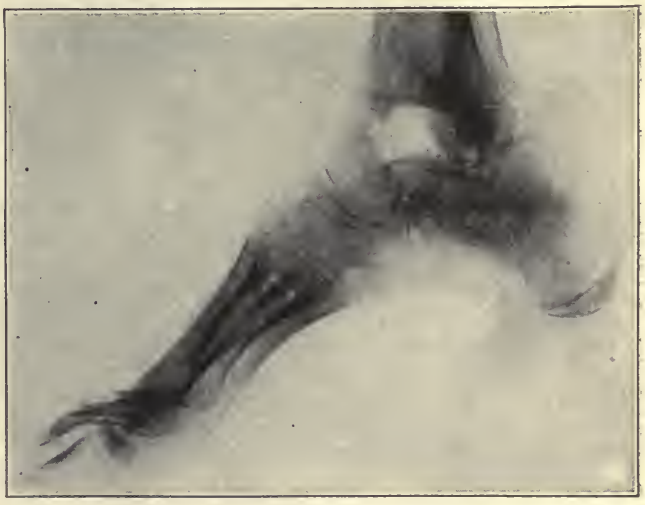


Fig. 4.—Good postoperative result.

removed by some as a whole, and by others in two pieces. This makes no difference, so long as it is all removed. It has been customary also to fit the articular surfaces of the malleoli into grooves on the sides of the cuboid and scaphoid, respectively. In a number of cases, after sliding the foot back, a stitch is taken to hold the foot in that position, this stitch pass-

ing through the cuboid or its periosteum, and through the end of the fibula. Care must be observed in placing this stitch that the foot is not carried too much into



Fig. 5.—Good postoperative position.

valgus. In a certain number of the cases, transplantation of tendons has been made, namely, the peroneals have been carried forward and inserted into the middorsum of the foot. In others, the peroneals have been divided and inserted into the os calcis after Whitman's method. So far as our results go, I have seen no especial reason why they were disturbed at all. Further, if the operation was devised to correct a hollow foot, in this series it has many times failed to do so, as will be noted later.

In regard to the increased shortening of the leg as a result of the removal of the astragalus, I believe that this factor can be dismissed as an objection more theoretical than practical. Accurate measurements to determine this condition of increased shortening have been impossible in this series.

GENERAL CONSIDERATION

Leaving out of consideration for a few minutes the statistical study of these cases, I wish to discuss the general question of when or when not an astragalectomy should be performed in any given case of infantile paralysis.

Originally devised as a practical operation for a calcaneovalgus deformity to insure stability, the operation has of late years been used more and more to insure lateral stability of the foot for all paralytic conditions. This is all right perhaps so far as the foot goes, but there are other considerations to be taken into account in walking and weight bearing besides the foot alone. Rarely does one see in a given case, supposedly in need of an astragalectomy, the foot and lower leg alone affected. Many times the trunk, abdominal, gluteal and thigh muscles are paralyzed in a greater or less degree, all of course affecting the gait and function. Many times the foot and ankle are the least offending factors, and not at all the principal elements in the lack of ability to walk well.

An astragalectomy for a simple varus or valgus represented by moderate lateral instability is to my mind not indicated. The indication is quite in the other direction in a flail foot, or a foot with only one muscle group left, in which there is persistent deformity in weight bearing, and inability to get the sole of the foot to the ground in weight bearing. Also, with a complete flail leg and foot, the question is not at all clear that an increased shortening as a result of the removal of the astragalus, and a stiff ankle, are going to make very much actual difference in function, as a brace will always have to be worn.

On the basis of a limp alone, the major part of the limp may not be due to the foot condition at all, as may be noted in the study of any series of cases, but may be due to weakness of any of the leg, hip or abdominal muscles. As a matter of fact, following astragalectomies, in my experience, the limp is practically no better, except in the case of those patients who had such good muscle power before operation that to my mind the operation should never have been performed, and where the ankle motion is nearly as good as that seen in a normal foot. Loss of ankle motion as expressed in an inability to plantar flex, either due to paralysis of the gastrocnemius, or as a result of an operative procedure, gives the same end-result so far as a limp goes.

RESULTS OF THESE OPERATIVE CASES

The average length of time of examination after operation was two and one-half years, the longest time was eight and ten-twelfths years, and the shortest four months. I have seen a large number of these cases,



Fig. 6.—Poor postoperative position.

and the results of the others have been taken from the hospital records.

Table 3 shows the results after operations, so far as the position of the foot is concerned.

A comparison of the preoperative with the postoperative deformity gives the results presented in Table 4.

This comparison with the preoperative deformity is not an encouraging one, in spite of the fact that the equinus position is supposed to be the one sought for by the operator. Combined with slight valgus it is not, to my mind, a satisfactory one for adequate weight bearing. So far as could be determined, equinus or equinovarus were the predominating postoperative deformities or positions, the equinus, of course, being due to the deliberate attempt to place the foot in that position, and the varus being a deformity as the result either of lack of adequate correction at the time of operation or, secondarily, as a result of growth and persistent toe flexors.

TABLE 3.—POSITION OF FOOT AFTER OPERATION (COMPARE WITH TABLE 1)

No Note	120	Calcaneocavus	3
Equinovarus	33	Calcaneovalgus	4
Equinus	20	Calcaneovarus	0
Varus	14	Perfect	1
Equinovalgus	9		
Valgus	7		217
Calcaneus	6		

TABLE 4.—COMPARISON OF PREOPERATIVE AND POSTOPERATIVE DEFORMITY

Before Operation	*After Operation*
9 flail feet	4 equinus, 3 equinovarus, 1 valgus, 1 calcaneus
4 feet with toe flexors only power	3 equinovarus, 1 equinus
3 equinus	3 varus
18 equinovarus	8 equinovarus, 4 varus, 4 equinus, 2 equinovalgus
13 equinovalgus	4 equinovarus, 4 equinus, 2 varus, 2 calcaneovalgus, 1 calcaneovarus
3 calcaneovarus	1 equinovarus, 1 varus, 1 calcaneovalgus
16 calcaneovalgus	5 calcaneus, 1 calcaneovarus, 3 equinovarus, 2 equinovalgus, 2 calcaneovalgus, 1 varus, 1 valgus, 1 perfect foot
4 calcaneus	3 valgus, 1 equinovalgus
6 varus	3 equinovarus, 2 varus, 1 equinus
4 valgus	2 equinovalgus, 1 equinus, 1 equinovarus
Foot displaced back	enough, 39; not enough, 15; no note, 163

An analysis of the individual deformities before operation and after operation shows that any type of variation is possible, and that no preoperative condition so far as the deformity goes can determine what the postoperative one is likely to be.

One might be led to remark here we do not know how to perform the operation or how to carry out the after-treatment; but until we can be shown comparable figures and results, we can well rest content, not, however, condemning the operation or its technic, but limiting it to suitable and selected cases at a suitable age when danger of distortion from growth has largely ceased to operate.

The results of the operation in 130 cases are given in Table 5.

Three poor results required a second operation.

Beside the three cases listed as "not better functionally, no other note," three other cases were not better functionally. Of these, the foot result was good in two cases and excellent in the third.

In all, twenty-four cases were listed as "functionally better." Of these, six were classified fair, four as good, one as excellent, and thirteen had no other note.

The functional result is what counts, not the surgical result, and one must not be led astray by the fact that the foot looks better, and that there may be less lateral instability at the ankle, as a result of the operation. The questions to be answered are: Can the child walk and stand better, is there less limp, and do the parents think the child is improved? To be sure, all parents expect miracles as the result of an operation, and many I know expect perfect restoration to health and function; but surgeons should be on their guard in interpreting results 1,920 years after miracles have gone out of fashion.

TABLE 5.—GENERAL CLASSIFICATION OF RESULTS

Excellent	17	Considerable	25
Good	60	No note	118
Fair	24		217
Poor	13		
Functionally better; no other note	13	Stable	104
Functionally not better; no other note	3	Not stable	7
No note	87	Doubtful	6
	217	No note	100
JOINT MOTION			217
Ankle joint:		Good inversion	9
No motion	18	Some lateral motion	24
Very little	36	Slight lateral stability	113, 165
Some	20	Fair stability	174
		Good lateral movements	180

CONCLUSION

As a result of this analysis of these cases, I feel that an astragalectomy is not an operation to be advised for any foot showing lateral instability as a result of the paralysis of one muscle group alone. The lateral instability at the ankle may be averted, but more subsequent deformity may develop. It is as good an operation as any in feet which are flail, or those which have only one muscle group left. In the presence of toe flexors, varus is likely to develop later and lead to a bad weight-bearing position.

The best results I have seen are in those feet in which there was good muscle power before operation, and where after operation there was good motion between the tibia and os calcis, and good weight-bearing positions of the foot. In the latter cases, I believe it should never have been performed. It is not an operation that will cure a limp, or even improve one as a rule.

It is not an operation to be advised lightly or invariably for foot deformities, but should be performed on older children in selected cases.

286 Marlborough Street.

PHENOL AND INDICAN EXCRETION IN A CASE OF TETANY OF INTESTINAL ORIGIN *

GEORGE ERIC SIMPSON, PH.D.
MONTREAL, CANADA

During the course of an investigation on the excretion of phenols and indican by normal persons, reported elsewhere,[1] an opportunity was afforded to study a case of tetany of intestinal origin.

The indican excretion of this patient on admission to the hospital was extremely high. The phenol excretion was not greater than is frequently encountered in the normal person. The patient's diet had included an unregulated amount of protein. When the patient was placed on a low protein diet, containing much carbohydrate, as cereals and milk, urinary indican disappeared within three days. When, after this low level of indican excretion was established, meat was fed for a day or two, indican excretion increased enormously, while phenol excretion showed an increase for a day. When the cereal diet was again given, with a reduced quantity of milk, the indican gradually disappeared from the urine. During the period of diet regulation the tetanic spasms decreased in severity and finally disappeared. In other respects the condition of the patient was unimproved.

REPORT OF CASE

A. B., an Italian housewife, was admitted to the hospital, April 25, 1919, in an extremely emaciated condition and suffering from severe attacks of painless cramps in the arms and legs. The elbows were flexed, and the hands and fingers in the position of tetany. A diagnosis of duodenal adhesions, with tetany, was made.

The general plan of the experiment was the same as that previously described.[1] Careful account was taken of the amount and character of the food actually consumed. The chemical analyses were made in duplicate, using the analytic method previously described. Urinalyses were made, May 15, 16 and 17, and daily from June 5 to July 17.

The home diet had consisted of meat, fish, macaroni, eggs, milk, cheese, beans, peas, tomatoes, spinach, lettuce, other vegetables, and wine. The cereal and milk diet consisted largely of bread, macaroni, noodles and milk. Between 50 and 100 gm. of total lactose was consumed daily, either in the milk or on the cereal. This diet caused an immediate marked reduction of indican excretion, with entire disappearance in two days.

When meat was fed, indican reappeared, but again was caused to disappear when the high cereal diet was again given. It took a longer time for the indican to disappear this time. During this period the amount of milk was limited on account of the patient's extreme distaste for this food. The amount of total lactose daily consumed was from 25 to 50 gm.

The large amount of indican is especially significant in that the patient was suffering from diarrhea at all times. The feces were always liquid in consistency, fatty, light colored, and very putrid. The patient's weight on admission was 64 pounds. This continued to decrease until, when she died, shortly after leaving the hospital, she weighed only 48 pounds. It was not possible to obtain permission for a necropsy.

PHENOL AND INDICAN EXCRETION IN TETANY OF INTESTINAL ORIGIN

Comment	Date	Volume, C.c.	Total Nitrogen, Gm.	Creatinin, Gm.	Indican, Mg. Indigo	Phenols				
						Total, Mg.	Free, Mg.	Conj., Mg.	Free, per Cent.	Conj., per Cent.
Before admittance										
diet contained	May 15	1,100	...	0.49	152	458	181	277	39	61
much protein	May 16	910	...	0.37	99	350	160	190	46	54
	May 17	1,005	...	0.37	120	405	184	220	45	55
Cereal and milk										
	June 20	1,390	4.0	0.34	10	363	178	185	49	51
	June 21	1,448	4.2	0.36	20	534	352	182	66	34
	June 22	1,215	3.8	0.32	None	366	254	112	69	31
	June 26	1,155	...	0.32	None	389	206	183	53	47
	June 28	1,325	4.0	0.28	None	298	207	91	70	30
	June 29	1,140	3.6	0.23	None	326	223	103	68	32
Meat										
	June 30	995	4.0	0.25	65	447	244	203	55	45
	July 1	1,005	4.2	0.30	34	323	196	126	61	39
	July 2	1,250	4.9	0.28	42	274	211	63	77	23
Cereal since July 3										
	July 12	750	4.3	0.26	7	216	120	96	56	44
	July 13	745	4.0	0.26	1	205	119	86	58	42
	July 14	1,082	3.7	0.25	None	211	108	103	51	49

* From the Department of Experimental Medicine, Yale University School of Medicine.

* The experimental data embodied in this paper are taken from the dissertation submitted by George Eric Simpson for the degree of Doctor of Philosophy, Yale University, 1920.

1. Underhill, F. P., and Simpson, G. E.: The effect of Diet on the Excretion of Indican and the Phenols, J. Biol. Chem., to be published.

THE BLOOD ALKALI RESERVE WITH EXPERIMENTAL INFECTIONS

PRELIMINARY REPORT *

EDWIN F. HIRSCH, M.D.
CHICAGO

Variations in the alkali reserve of the blood have been noted in different diseases, and a diminution below the normal level is regarded as evidence of acidosis. Some of the results obtained in studying the alkali reserve of the blood in animals with experimental infections are sufficiently striking to merit mentioning in a preliminary report. Rabbits were used in these experiments, and the alkali reserve of the whole blood was measured by determining its carbon dioxid combining power equilibrated with air containing 5.5 per cent. carbon dioxid, according to the Van Slyke and Cullen [1] method, the readings being properly corrected for 0 C. and 760 mm. barometric pressure.

The injection of each bacterial suspension is followed within four hours by a rapid and frequently marked lowering of the leukocytes of the blood (negative phase), coincident with which is a rapid diminution of the carbon dioxid combining power of the blood. Following the leukopenia and lowered alkali reserve, the leukocytes increase in number, and the carbon dioxid binding power of the blood returns to its normal

* From the Pathology Laboratory of St. Luke's Hospital.

1. Van Slyke, D. D., and Cullen, G. E.: Studies of Acidosis, I, J. Biol. Chem. **30**: 289-346 (June) 1917.

level, or even exceeds that determined for the animal before the injection of the bacteria, and then gradually approaches its normal value. This entire reaction occurs usually within twenty-four hours after the bacterial injection.

During the period of lowered alkali reserve and leukopenia, there is a more or less marked prostration of the animal, which disappears slowly with the increase of the leukocytes and the alkali reserve. In experiments in which the injection of a bacterial suspension fails to change appreciably the leukocyte content of the blood, there is also a slight or moderate diminution of the blood alkali reserve; but here also the reaction curves are similar to those of animals in which the number of leukocytes in the blood is changed greatly.

CONCLUSION

The blood alkali reserve of animals injected with bacteria is lowered coincidently with the initial leukopenia, and during the subsequent increase of the leukocytes rises to or exceeds the level determined originally for the animal. These changes occur within relatively short timed intervals. Graphs of these reactions resemble in contour those generally known for immune body production.

BENZYL ALCOHOL FOR TOOTHACHE*

DAVID I. MACHT, M.D.
BALTIMORE

In 1918, I[1] announced my discovery of the local anesthetic properties of benzyl alcohol, or phenmethylol, and published both pharmacologic and clinical data on the subject. I found that solutions of that drug in concentrations of from 1 to 4 per cent. by volume, in physiologic sodium chlorid solution or in distilled water, furnished a satisfactory local anesthetic for general surgical work, on the one hand, and that benzyl alcohol was at least forty times less toxic than cocain, on the other. It was found that solutions of phenmethylol produced efficient anesthesia, especially when infiltrated in the tissues, either alone or, still better, combined with small doses of epinephrin. On application to mucous membranes, solutions of benzyl alcohol produce also a distinct anesthetic effect, but the anesthesia is very superficial and does not penetrate into the deeper layers of the tissues. It was found that a much better anesthesia of mucous or skin surfaces could be produced by application of pure benzyl alcohol. Pure benzyl alcohol cannot be injected into living tissue for the same reason that pure ethyl alcohol cannot be administered in that way: it leads to local necrosis. When applied to mucous surfaces, however, the drug is not irritating and produces a marked anesthetic effect.

I undertook experiments with a view of enhancing the penetrating power of benzyl alcohol when applied to mucous or skin surfaces. It was found that when the drug was mixed with certain lipoid solvents, the local anesthesia after its application extended more deeply below the surface. Among the most satisfactory of such solvents were found to be xylene and chloroform, especially the latter.

In the present note I wish to call the attention of the general practitioner to a very satisfactory minor use of benzyl alcohol. I have found, as have others, that benzyl alcohol either alone (100 per cent.), or, still better, when mixed with an equal part by volume of chloroform, furnishes a most efficient anodyne for toothache, when introduced on a pledget of cotton into a tooth cavity, or applied to an exposed nerve. The relief obtained by the use of such drops is marked and almost instantaneous, and is also long-lasting. I am not aware of any other drug, with the exception of cocain, which is more efficient in relieving toothache. As benzyl alcohol is the least toxic of all the well-known local anesthetics, the repeated and free use of such a combination as was described above is free from the objections which are raised by the employment of cocain, and it can be administered with impunity even to small children. It is for this reason that it was deemed worth while to publish this note in order to advise the medical practitioner of a simple remedy for the relief of one of the most excruciating forms of pain.

* From the Pharmacological Laboratory of the Johns Hopkins University.

1. Macht, D. I.: J. Pharmacol. & Exper. Therap. **11**: 263 (April) 1918.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

CAPSULES FOLIA-DIGITALIS (UPSHER SMITH) AND TINCTURE OF DIGITALIS (UPSHER SMITH)

Report of the Council on Pharmacy and Chemistry

Capsules Folia-Digitalis (Upsher Smith) and Tincture of Digitalis (Upsher Smith), advertised and sold by Upsher Smith, St. Paul, Minn., were submitted to the Council. The Council finds that these preparations have the status of official articles and are, therefore, not within the scope of New and Nonofficial Remedies.

ACRIFLAVINE (See New and Nonofficial Remedies, 1920, p. 20).

Acriflavine-Abbott.—A brand of acriflavine complying with the N. N. R. standards.

Manufactured by The Abbott Laboratories, Chicago, under U. S. Patent No. 1,005,176 (Oct. 10, 1911; expires 1928), by license of The Chemical Foundation, Inc.

PROFLAVINE (See New and Nonofficial Remedies, 1920, p. 21).

Proflavine-Abbott.—A brand of proflavine complying with the N. N. R. standards.

Manufactured by The Abbott Laboratories, Chicago, under U. S. Patent No. 1,005,176 (Oct. 10, 1911; expires 1928), by license of The Chemical Foundation, Inc.

BETANAPHTHYL BENZOATE (See New and Nonofficial Remedies, 1920, p. 189).

Betanaphthol Benzoate-Seydel.—A brand of betanaphthyl benzoate complying with the N. N. R. standards.

Manufactured by The Seydel Manufacturing Co., Jersey City, N. J.

BENZYL ALCOHOL (See New and Nonofficial Remedies, 1920, p. 27).

Benzyl Alcohol-Seydel.—A brand of benzyl alcohol complying with the N. N. R. standards.

Manufactured by The Seydel Manufacturing Co., Jersey City, N. J.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Five dollars per annum in advance

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SATURDAY, OCTOBER 30, 1920

GLANDULAR ORGANS AS ARTICLES OF DIET

The fear of uric acid has long exercised a dominating influence in the formulation of rules for diet. It has become quite customary to proscribe those foods which contain precursors of uric acid in relative abundance. For the most part this includes products of animal origin, namely, meats and more particularly glandular tissues abounding in cells and therefore comparatively rich in nucleoproteins. In man the purins occurring free in tissues like the muscles, or derived from the nucleic acids of other cellular structures, are converted into uric acid as an end-product of metabolism. Ordinarily this catabolite is readily excreted and is free from the charge of harmful influences on the organism that has produced it. There are conditions, however, in which the renal threshold for uric acid is raised by disease so that it cannot be properly eliminated. The phenomenon is manifested in certain types of nephritis. Under such circumstances, harm may arise. In gout also the level of uric acid in the circulating blood is higher than usual. Whether the causal factor is renal or local in certain tissues is not clearly determined. At any rate, it is generally agreed that purin metabolism itself is not essentially at fault in gout, though the end-product may fail of excretion or may be deposited in undesired places. Numerous ills, particularly nondescript "rheumatic" disorders, are no longer attributable to "uric acid poisoning," as they were likely to be explained only a few years ago. More exact analysis of such cases has failed to justify the unfounded claims; while other causes, notably local infections and other bacteriologic agencies, have been found more likely as etiologic factors.

Although all flesh foods—fish, shell-fish, meats and fowl—have been subjected to criticism because they harbor a small amount of purins which lead to the production of uric acid, this objection has been particularly emphasized in the case of glandular representatives such as sweetbreads, liver and kidney, all of which are popular articles of diet with large numbers of persons. Indeed, they are regarded in many quarters as dietary delicacies. There is no doubt that when these foods are consumed in great abundance, the production of uric acid and other acids in the body is decidedly augmented. The possibility of producing calculi and deposits cannot be excluded, although most persons are never aware of these eventualities. However, if faulty excretion may occur despite normal metabolism, the necessity of dietary regulation to avoid harm must still be kept in mind. Perhaps it is for this reason that one may still read the statement that "among the worst foods are . . . sweatbreads, liver, kidneys, 'high' game or poultry." [1]

Recent investigations have made it seem questionable whether this severe incrimination is entirely deserved as judged by the newer knowledge of nutrition. Liver tissue has been found to be singularly rich in the known types of vitamins. Futhermore, its protein, biologically speaking, is of good quality. Osborne and Mendel [2] have found that animals would grow with vigor on diets in which liver furnished the sole source of water-soluble (B) and fat-soluble (A) vitamins as well as protein. In the treatment of diseases of the eye at present associated with deficiency in fat-soluble vitamin in the diet, liver consumed as an adjuvant has been regarded as remedial. This is true in the treatment of the night blindness encountered in Japan and India, where the free use of liver as food is said to be a popular remedy. We are told that in Japan, eel fat and chicken livers enjoy the reputation of being efficacious in the cure of xerophthalmia.

The peculiar dietary significance of liver and related products has lately been indicated by McCollum.[3] Reviewing his own experiments on animals, he states that it is possible to select carnivorous foods so as to secure a fairly satisfactory diet entirely derived from animal tissues. Young animals cannot grow or long remain in health when restricted to muscle tissue as their sole food. When blood, liver, kidney and other glandular tissues are selected, together with a certain amount of bone substance, he states, the food supply is sufficiently good to lead to normal development. Muscle tissue must be liberally supplemented with glandular organs to make possible success with the strictly carnivorous diet. It need not be denied that one may overeat in respect to glandular tissues, and that the result may be unwholesome. Overindulgence in potato also is not always well tolerated; and "cereal gout" is not unknown. But assuming moderation of diet on the part of healthy man in a regimen in which liver and its analogues are consumed as adjuvants rather than fundamentals in the ration, it is likely that they may often exercise a wholesome and even corrective influence in supplying food factors which the cereals, roots, tubers and even muscle tissue lack. Custom and the dietary preferences of multitudes evidently tally with this seemingly significant discovery.

1. Fisher, Irving, and Fisk, E. L.: How to Live, New York, 1919, p. 55.
2. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **32**: 309 (Dec.) 1917.
3. McCollum, E. V.: Newer Aspects of Nutrition, Proc. Inst. Med. Chicago **3**: 13, 1920.

THE NUTRITIVE VALUE OF NUTS

The food chemist accustomed to deal with edible products in terms of quantity and proportions—in calories and grams of protein, fat and carbohydrate—has long given to the various nuts a prominent place among concentrated foods. From his analytic standpoint they may even surpass such recognizedly valuable foods as meats, eggs and cereals in their concentration of nutrients. Although nuts and products made from them have been used by man the world over as adjuvants to his usual diet, they have only lately obtained a larger recognition in relation to the dietary. The failure to eat nuts more extensively is doubtless due in part, as Cajori [1] pointed out some time ago, to their reputation for indigestibility, and to the discomfort that may occur after eating them at the close of a heavy meal.

Scientific studies have not justified the reputation for the indigestibility of nuts that has become somewhat traditional. Experiments that were conducted by Cajori [1] at Yale emphasized anew what has long been contended by Jaffa [2] of California, namely, that nuts are valuable foods, judged by their behavior in digestion and metabolism. They point out that if nuts are eaten properly and used in the diet as eggs, meat and other foods rich in protein are eaten, they behave quite as well in the body as do the ordinary staple articles of food. Particularly when nuts are finely comminuted by proper mastication, or are consumed in the finely divided form of nut pastes or nut "butters," there can be no complaint about the proper utilization of the product. The question of texture, of the avoidance of hard, impermeable particles of any food substance concerns the culinary or physiologic manipulation of the material rather than its chemical make-up. In other words, it can usually be corrected by proper preparatory procedures; one need merely contrast raw almonds with almond "milk" by way of illustration.

But the nuts have something more than mere digestibility to recommend them. Their protein is, in general, of a superior quality. The production of good growth is a test for biologic "completeness" of a protein. In experiments just conducted at Yale University, Cajori [3] has secured very satisfactory growth over long periods in animals on diets in which the almond, English walnut, filbert and pine nut, respectively, furnished the essential source of protein in the ration. These proteins afford the necessary nitrogenous complexes for the elaboration of milk in the same species. From a study of the relations of diet to milk production in women, Hoobler [4] pointed out, not long ago, that as a rule animal proteins are more efficient than vegetable proteins for the elaboration of human milk. However, nut proteins were an exception to this generalization in that diets containing almonds, English walnuts, pecans and peanut butter as a source of protein proved to be as suitable for milk production as diets that furnished protein from animal sources.

This is not the limit of commendation. Nowadays adequate nutrition is also discussed with reference to vitamins in the diet, since these dietary essentials apparently cannot be synthesized by the animal organism. According to Cajori,[3] normal growth can be secured when rats are fed on otherwise adequate diet containing the almond, English walnut, black walnut, Brazil nut, chestnut or pecan as the sole source of water-soluble vitamin. Animals that have declined on a diet devoid of water-soluble vitamin promptly recover when the almond, English walnut, filbert, hickory, pine nut, chestnut or pecan is introduced in the diet. These observations indicate that nuts are sources of abundant quantities of water-soluble (B) vitamin. Evidence of the sort here reviewed need not be assumed to justify propaganda for any exclusive system of diet. We do not argue for a race of nutarians or vegetarians or any other fad of the extremists. The latest information as to the nutritive virtues of commonly used nuts can only be welcomed, particularly by those who, like diabetics, rely on these food products, most of which are poor in digestible carbohydrates but rich in proteins and fats, to enlarge the variety of a limited regimen. Furthermore, the nuts are logical dietary supplements to many foods, like the cereals, roots, tubers and fruits. There's a reason, as we now have learned.

1. Cajori, F. A.: The Utilization of Some Nuts as Food, J. Home Econom. **10**: 304 (July) 1918.
2. Jaffa, M. E.: Nutritional Investigations Among Fruitarians and Chinese, Bull. 107, U. S. Dept. Agric., Off. Exper. Stations, 1901; Farther Investigations Among Fruitarians, Bull. 132, 1903.
3. Cajori, F. A.: Some Nutritive Properties of Nuts; Their Proteins and Content of Water-Soluble Vitamine, J. Biol. Chem. **43**: 583 (Sept.) 1920.
4. Hoobler, B. R.: Problems Connected with the Collection and Production of Human Milk, J. A. M. A. **69**: 421 (Aug. 11) 1917; The Effect on Human Milk Production of Diets Containing Various Forms and Quantities of Proteins, Am. J. Dis. Child. **14**: 105 (Aug.) 1917.

THE PHYSICIAN'S RESPONSIBILITY: AN IMPORTANT DECISION ON PROFESSIONAL SECRECY

The recent decision of the Supreme Court of Nebraska, abstracted in the Medicolegal department of THE JOURNAL last week,[1] is of importance and interest to practicing physicians, and especially to health officers. It establishes for the first time, by the decision of a court of last resort, the exact relations that exist between a physician and his patients, on the one hand, and a physician and the public, on the other. The details of the case, as shown by the evidence, are interesting and unusual. The plaintiff, while stopping at a small hotel, consulted a local physician, the defendant, regarding some sores that had appeared on his body. After an examination, the physician told the plaintiff—his patient—that he believed the disease to be syphilis, but that it was impossible to make a positive diagnosis without a Wassermann test, for which he had no equipment. The defendant

1. Disclosure of Confidential Information as to Contagious Disease, J. A. M. A. **75**: 1153 (Oct. 23) 1920.

physician was also the physician of the hotel, and the family medical adviser of the owner. He told the plaintiff that there was danger of communicating the disease to others in the hotel and asked him to leave the hotel the next day, which the plaintiff promised to do. On the following day, the physician, while making a professional call on the manager of the hotel, who was ill, learned that the plaintiff was still there. He thereupon warned the manager's wife that he thought the plaintiff was afflicted with a contagious disease, and advised her to use special precautions to avoid infection. As a result of this warning, the plaintiff was forced to leave the hotel. He consulted a physician in another town, who, after a negative Wassermann test had been made, was unable to say whether the plaintiff had syphilis or not. The plaintiff, thereupon, brought suit against the physician, claiming damages on the ground that he had been injured by a disclosure of a confidential communication, which disclosure constituted a breach of professional confidence on the part of the physician. There was no dispute regarding the facts; the question before the Supreme Court was whether the statement of the defendant physician that the plaintiff was suffering from a contagious disease constituted proper grounds for damages.

The court pointed out that, under the common law, no privilege exists between physicians and patients, and that this ruling prevails except when changed by statute. This means, in everyday language, that, contrary to the opinion generally held by both physicians and the public, communications made to physicians are not under the obligation of secrecy but have the same legal status as communications made to any one else, unless the state legislature has passed a special law on this subject. In Nebraska there is no special law making communications to physicians privileged. The legislature in 1913 passed a law providing that a physician should not be allowed to disclose on the witness stand any confidential communication made to him in his professional capacity. The object of this statute is obvious. It is to prevent confidential communications being used as evidence against the person making them or, in other words, to protect an individual from being forced to testify against himself. But in the present case the physician was not on the witness stand, so that this statute did not apply. Another statute—the medical practice act—in defining unprofessional and dishonorable conduct for which a physician's license may be revoked, includes among the acts of such conduct "betrayal of a professional secret to the detriment of a patient." Is such a communication as the defendant made in this case "unprofessional and dishonorable conduct"? After an exhaustive discussion, the court decides that it is not.

This is the first time that such a question has come before any American court of final appeal; hence the language of the court is important and worthy of repetition. The court says that information given to a physician by his patient, though confidential, is subject to the understanding that if the patient's disease is found to be of so highly contagious or infectious a nature that it may be transmitted to others unless the dangers of transmission are disclosed, then the physician is warranted in making so much of a disclosure to such persons as is reasonable and necessary to prevent the spread of the disease. Putting this ruling in ordinary language, it means that the court recognizes the fact that while a physician owes a duty to a patient to respect his privacy, he owes a duty to the public to protect it against infectious diseases, and that of these two duties the duty to the public is the greater. Yet the court recognizes that this duty to the public must be properly safeguarded. It furthermore says that when a physician makes a disclosure, he must be sure that it is necessary to prevent the spread of the disease, and must act in good faith with reasonable grounds for his disclosures and without personal malice toward the infected person. Having observed these precautions, he cannot be held liable, even though he is mistaken in his diagnosis and has stated that his patient is afflicted with a disease that he does not have. In other words, the question at issue is not the accuracy of the physician's diagnosis. The law does not require the physician to be infallible; he is only required to possess the average skill and ability of other physicians in similar circumstances and to exercise due care and skill. After having made a diagnosis to the best of his ability, if he believes honestly and without malice that the patient is a danger to another individual or to the community, he is justified in communicating so much of his belief as may be necessary to protect others from contracting the disease. The decision recognizes the fact that while a physician owes a duty to his patient, he also owes a duty to his other patients and to the public.

Current Comment

THE BEGINNINGS OF DISEASE

The crude and bizarre ideas of disease that were slowly developed into the medical conceptions of the cultivated oriental races, and subsequently evolved into the medicine of the classical period of antiquity, reach far back into the period of the prehistoric ages. As early as 4000 B. C., a sort of medical knowledge was already well established, so that the existence of disease must have been recognized ages earlier. The discovery of the beginnings of the history of medicine does not reveal the beginnings of disease on the earth. Did it precede man or was it contemporaneous with him? To such questions the newly recognized study of paleopathology is addressing itself. Germs are said to be among the oldest inhabitants of the earth. Moodie [1] defends the thesis, however, that disease did not exist with the most ancient bacteria. They were

1. Moodie, R. L.: Ancient Bacteria and the Beginnings of Disease, Scient. Month. **11**: 362 (Oct.) 1920.

harmless, as are most of the present-day bacteria. According to this paleontologist, disease did not become especially active until the present age of the earth had been attained by nearly three quarters of its duration. That is, disease, so far as animals and plants are concerned, has been active only during the last quarter of the earth's history. We cannot imagine that there were no accidents with resulting injury to early mankind; indeed, the fossil remains give evidence of such misfortunes. According to Moodie, however, disease in the guise of bacterial invasion was not a part of the life history of primitive man. It is interesting to speculate on the characteristics of life and living at a period when disease was at its very beginnings. Moodie's picture is a tranquil one. So firmly guarded, he writes, were the primitive animals of the first ages of the earth that no disturbing influences entered into their existence. Only when racial old age, and the introduction of other antagonistic influences disturbed this natural immunity, did animals see the new factor of disease enter into their lives. Early land animals doubtless lived long lives of placid contentment undisturbed by fear of infection either from within or without. What a mighty change the succeeding ages have wrought!

VASOMOTOR CHANGES AND THE CAPILLARY MECHANISM

Until quite recently the volume changes in the capillaries, which play an admittedly important part in the interchange of nutrients and waste products between the blood and the tissues, were supposed to be a direct sequence of alterations in the general blood pressure and consequently of the state of contraction of the arteries and arterioles. The latter have long been recognized as being capable of contractile changes in caliber under the control of the vasomotor nerve supply to them. The clear proof of the existence of both vasoconstrictor and vasodilator nerves dates back to 1852 and 1858, respectively, when Brown-Séquard and Claude Bernard discovered their true functions. Since then, as Krogh has expressed the situation, the prevalent line of thought has identified vasomotor changes with arteriomotor. This view assumes that all other changes in caliber taking place in peripheral vessels, and especially the filling of the capillary system, follow as physical consequences. Various observations have served of late to emphasize the probability that the caliber of the capillaries is, nevertheless, not simply a function of the pressure of the blood coming from the arterioles. Under a diversity of conditions they evidently may dilate or contract individually and independently of the blood vessels.[1] As has been pointed out before in THE JOURNAL, the behavior of the capillaries toward certain drugs leaves no alternative to the conclusion that dilator effects, for example, can be produced independently of any extrinsic nerve supply or alterations in the arterial circulation. In this sense, a capillary tonus may be said to exist. In studying the phenomenon in the tongue, Krogh[2] has concluded that only to a slight extent, if at all, can it be of nervous nature, since it is generally maintained after section and degeneration of the nerves that might be involved. The maintenance of this tonus is, however, dependent on the supply of blood. When the vessel gets no blood its tonus will diminish, and it must finally become relaxed and admit a current of blood which will allow it to regain its tone. Krogh concludes, therefore, that every capillary must alternately open and close, and in the resting tissue, which is poorly supplied with blood, the positions of open capillaries must be continuously changing, with the result that the whole tissue is uniformly irrigated when considered over a period of sufficient duration. The substance responsible for the tonic action of the blood is unknown, but it is shown that it cannot be oxygen. At any rate, it is easier under the present conception of capillary motor function to understand how circulating chemical substances can produce a direct or immediate effect on the vascularity and blood supply of any tissue.

1. Krogh, A.: J. Physiol. **52**: 457 (May) 1919.
2. Krogh, A.: Studies on the Capillariomotor Mechanism, I, The Reaction to Stimuli and the Innervation of the Blood Vessels in the Tongue of the Frog, J. Physiol. **53**: 399 (May) 1920.

CHIROPRACTIC PATHOLOGY

A "chiropractor" of Waukesha, Wisconsin, emits (at advertising rates) the following words of wisdom on the pathology of gallstones and kidney stones:

> Gallstones are due to an excessive amount of heat in the gallbladder which crystallizes the calcareous material in the bile and forms stones. This excessive heat results from the loss of calorific or heat control of nerves due to nerve pressure in the middle dorsal vertebral region. Adjustment of the causative subluxation restores the condition to normal. Renal stones are caused in the kidneys in the same manner.

This is the sort of medical "information" that is being fed the public by the cult calling itself "chiropractic"; and unfortunately the public is not in a position to realize its grotesque nonsense. But even to suggest that those who would treat human ailments should be grounded in certain educational fundamentals is to violate the tenets of "medical freedom"!

AMALGAMATION OF PHILANTHROPIC ORGANIZATIONS

The multiplicity of organizations with a common philanthropic purpose frequently leads to duplication of effort and to increased expense of conducting the work. To combat such a tendency in work for children now being carried on in this country, several organizations devoted to child health activities have recently organized a new group known as the American Council for Coordinating Child Health Activities. The purposes of the council, as reported by the *Survey*, are:

> To define so clearly their own work that each organization will be working in harmony and cooperation with all the others. To develop new methods which will lead to meeting more effectively some of the special problems still unsolved. To afford an opportunity for any organization dealing with the health of children to submit its plans and program for suggestion.

The council at present consists of the American Child Hygiene Association, the National Organization for Public Health Nursing, the American Red Cross, the Child Health Organization of America and the

National Child Labor Committee. It is also hoped that other organizations will be taken into the council. The location of the office of the new organization in Washington should lead to close cooperation with the Children's Bureau of the federal Department of Labor. Persons inclined to criticize may insinuate that the right way out is not the formation of a new organization to take care of other organizations but the gradual amalgamation and thereby elimination of duplicating organizations. Possibly such amalgamation may be brought about as a result of the formation of this council.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

New Health Officer in Montgomery.—Dr. Frederick W. Dershimer has been appointed city and county health officer of Montgomery to succeed Dr. Wilbur A. McPhaul, resigned. Dr. Dershimer has been acting as state director of rural sanitation for the last few months.

CALIFORNIA

New Hospital at Visalia.—The nine physicians of Visalia have organized a corporation and are constructing a new hospital to be known as the Kaweah Hospital, Inc., with a capacity of thirty beds. The hospital will be opened for patients about November 15.

Physicians Oppose "Anti"-Health Measures.—An intensive campaign is being waged by physicians against four antihealth measures which have been placed on the November ballot. These include the chiropractic initiative, the compulsory vaccination, the antivivisection and the poison acts. The first of these measures would create a special board of examiners for chiropractors, the second would prohibit compulsory vaccination, the third would prevent all experimental investigations with animals, regardless of whether the experiments involve the infliction of pain, and the fourth would nullify the passage of a legislative act to control the narcotic drug traffic.

CONNECTICUT

Yale Medical School Appointments.—Dr. George Blumer, formerly dean of Yale Medical School, has accepted a temporary appointment as clinical professor of medicine. He will be assisted by Dr. Wilder Tileston, both of New Haven.—— Dr. Edward H. Hume, dean of the medical school of Yale-in-China, on leave of absence in this country, will serve as visiting professor of medicine.——Drs. John E. Lane and Alfred G. Nadler have been appointed clinical professors of dermatology, to succeed Dr. Ralph A. McDonnell, resigned.

DISTRICT OF COLUMBIA

Home for Science Organizations.—Through the generosity of a number of benefactors, the National Academy of Sciences and the National Research Council have obtained the block bounded by B and C streets, and Twenty-First and Twenty-Second streets N. W., facing the Lincoln Memorial in Potomac Park, as a site for a future home. Funds for the erection of the building have been provided by the Carnegie Corporation of New York.

FLORIDA

Personal.—Dr. R. G. Manchester, London, Ohio, has been appointed resident physician and head of the department of physical education at the University of Florida.——Dr. Grace L. Whitford, Ozona, has been appointed vice chairman of child welfare of the General Federation of Woman's Clubs.

Social Hygiene Department in University.—A department of social hygiene, designed primarily for the training of teachers and also to reach every student in the institution, has been created at the University of Florida, through the cooperation of the Interdepartmental Social Hygiene Board. The curriculum will include courses and conferences in sex hygiene and its direct personal and group applications.

GEORGIA

Harrison Act Violation.—It is reported that Dr. J. S. Cheshire, a negro physician of Atlanta, was sentenced to two years' imprisonment in the federal penitentiary after pleading guilty to five indictments charging violation of the Harrison Narcotic Law. He was accused of dispensing to drug addicts without requiring the presentation of the proper prescription.

Hospital Notes.—Ground has been broken for the erection of Emory Hospital, on the campus of Emory University. The hospital will serve for instruction in clinical branches in the Emory Medical School. It is expected that the central building of the hospital group will be ready for operation by Jan. 1, 1922.——Drs. Edward B. Claxton and William R. Brigham have purchased the Parker Home on Bellevue, Dublin, with the announced intention of converting it into a private hospital to be known as the Brigham-Claxton Hospital.

ILLINOIS

New Maternity Hospital in Mount Vernon.—Dr. H. Maxey Swift, Mount Vernon, has completed plans for establishing a maternity hospital at 1919 College Street. The hospital will have accommodations for ten patients and will be open to the use of the public and physicians of the city.

Chicago

Physician Loses Appeal from Criminal Sentence.—It is reported that the State Supreme Court has denied the appeal of Dr. Lillian Hobbs from a sentence of fourteen years imprisonment imposed after conviction on the charge of causing the death of Alda Christopherson by a criminal operation.

First Pasteur Lecture of Institute of Medicine.—At a meeting of the Institute of Medicine of Chicago, October 29. Prof. Graham Lusk, New York, delivered the first Pasteur Lecture on "Some Influences of French Science on Medicine." Professor Lusk was entertained at dinner at the City Club before the meeting.

Health Exposition Being Planned. — Plans are under way for an international health and sanitation exposition, to be held at the Coliseum and Annex, November 24 to 29. Dr. John Dill Robertson, city health commissioner, is director-general of the exposition, and the greater number of health agencies and organizations of the city will cooperate in a visualization of the value of health campaigns.

IOWA

New Medical Library.—A medical library has been opened on the second floor of the state historical building, Des Moines, and Miss Margaret Brenton, at one time with the Yale University Medical Library, has been appointed librarian. The nucleus of the new library was formed from a collection of books formerly the property of Drake University. Physicians throughout the state may use the library.

State College Reorganizes Health Service.—A reorganization of student health service of the Iowa State College was recently accomplished by the establishment of a department of hygiene in charge of Dr. N. C. Paine, assisted by Dr. Charles G. Tilden, Ames, college physician. This new department of hygiene will administer the college hospital and dispensary and will undertake at once the work of examining all new students. Plans for the department include the supervision of the hygienic and sanitary conditions in the student lodging houses.

KANSAS

Kansas Health Association Receives Charter.—The Kansas Public Health Association, formed by the union of the Kansas Health Officers' Association, Kansas State Tuberculosis Association and the Mental Hygiene Committee of Kansas, recently received a charter, providing for five sections: on general public health, health officers, public health nurses, tuberculosis and sanitary engineers. Other sections will be created as need arises. The officers of the association are: president, Rev. Edmund Janes Kulp, Topeka; vice presidents, William Allen White, Emporia, and Dr. Samuel J. Crumbine, Topeka; secretary, Dr. Charles H. Lerrigo, Topeka, and treasurer, Dr. Earle G. Brown, Topeka.

KENTUCKY

Medical Association Holds Annual Meeting.—The seventieth annual convention of the Kentucky Medical Association, was held in Lexington, September 27-30, under the presidency of Dr. John G. South, Frankfort, and the following officers were elected: president, Dr. William W. Anderson, Newport; president-elect, Dr. Joseph A. Stucky, Lexington; vice presidents, Drs. Robert H. Cowley, Berea, Alice N. Pickett, Louisville, and Elbert W. Jackson, Paducah, and secretary, Dr. Arthur T. McCormack, Bowling Green. A memorial portrait of Dr. Joseph N. McCormack, for many years secretary of the state board of health, was presented at the first public session held in the Central Christian Church. Dr. Hubert Work, Pueblo, Colo., president-elect of the American Medical Association, delivered an address. Louisville was selected as the place of meeting for 1921.

LOUISIANA

Orleans Medical Society News.—The Orleans Parish Medical Society recently sold its home to the Order of Elks for about $50,000, and has secured temporary quarters in the Hutchinson Memorial of the Tulane Medical College, 1551 Canal Street.——At the regular meeting of the society in September, $5,000 was appropriated for the use of its medical library.

Committee on Narcotic Habit.—A committee of the Orleans Parish and Louisiana State medical societies, appointed at the request of the state board of health, recently formulated plans for dealing with the narcotic question. It was resolved that the present narcotic clinic should be continued for two months as a temporary measure and that institutional treatment be provided for the attempted radical cure of the patients attending the clinic, and the aid of various social agencies be enlisted to secure occupation for the apparently cured patients away from their usual haunts.

MARYLAND

Herter Foundation Lectures.—The eleventh course of lectures under the Herter Foundation was delivered by Dr. Jules Bordet, director of the Pasteur Institute, Brussels, in the medical amphitheater, Johns Hopkins Hospital, October 26, 27 and 28.

Physicians Fined for Narcotic Act Violations.—On charges of violating the federal narcotic drug act the following physicians are said to have been fined recently in the federal court at Baltimore: Dr. Chauncey T. Scudder, fined $100 and costs and made to surrender his license to dispense narcotics; Dr. Albert D. Driscoll, fined $1,000; Dr. Joseph J. Nurkin, $450; Dr. Hugh M. Boring, $400; Dr. John I. Kuhn, $400; Dr. William M. Wright, $300, and Dr. Thomas H. Magness, $4,500.

Personal.—Colonel Masi, chief surgeon of the Paraguayan Army and a prominent surgeon in that country, is in Baltimore to make a study of the medical and surgical institutions of the city.——Dr. Kenneth D. Blackfan, associate professor of pediatrics at the Johns Hopkins Medical School, has been appointed professor of pediatrics at the Medical College of the University of Cincinnati.——Dr. Victor G. Heiser, director for the East of the International Health Board, recently delivered a lecture at the School of Hygiene and Public Health of the Johns Hopkins Hospital on the Halifax health program and on the work done by the United States Government in the betterment of health conditions in its dependencies.

MASSACHUSETTS

Superintendent Chosen for New Sanatorium.—Dr. Olin S. Pettingell has been chosen superintendent of the Essex Sanatorium at Middleton as soon as the institution is ready for operation. It is expected that 100 beds will be in service by the first of the year and that later expansion will bring the capacity to more than 200 beds.

Boston Surgeon Goes to China.—Dr. Frank P. Gaunt, who has been pursuing advanced studies at the Massachusetts General Hospital, Boston, has left for China to reorganize and enlarge the American Hospital in Wuhu, of which he is director. He will be assisted by members of the staff of the Massachusetts General Hospital. Wuhu has the only hospital for 10,000,000 people in the Anhwei Province.

MINNESOTA

Health Associations Move Offices.—The offices of the Hennepin County Tuberculosis Association and of the Hennepin County Public Health Association have been moved from Kasota Building to the Handicraft Guild, 89 South Tenth Street, Minneapolis. The Associated Charities and the Children's Protective Association will move their offices to 315 Temple Court.

County Society Elects Officers.—At the annual meeting of the St. Louis County Medical Society, held at the Duluth Commercial Club, Duluth, the following officers were elected for the ensuing year: president, Dr. Emanuel Z. Shapiro, Duluth; vice presidents, Drs. Rush L. Burns, Two Harbors, Leslie W. Morsman, Hibbing, and secretary-treasurer, Dr. Robert S. Forbes, Duluth.

MISSISSIPPI

Homochitto Valley Society Elects Officers.—At the annual meeting of the Homochitto Valley Medical Society, held in Natchez, October 13, the following officers were elected: president, Dr. John W. D. Dicks, Natchez; vice presidents, Drs. Richard D. Sessions, Natchez; Thomas E. Hewitt, Liberty; John L. Calcote, Hamburg; George M. Barnes, Red Lick, and William I. Marsalis, Centerville, and secretary-treasurer, Dr. Jacob S. Ullman, Natchez.

MISSOURI

Postgraduate Clinics.—The St. Louis Post Graduate meeting, held under the auspices of the St. Louis Medical Society, has been scheduled for November 16-18. The program committee has urged every hospital in the city to arrange clinics and to submit their program at an early date.

Trachoma Lecture and Demonstration.—Major John McMullen, U. S. P. H. S., chief of the field work for trachoma, held two trachoma clinics at the Public Health Service Hospital in St. Louis, October 26, and in the evening gave an illustrated address on "Trachoma," at the regular meeting of the St. Louis Medical Society.

NEW MEXICO

State Medical Society Elections.—At the annual meeting of the New Mexico Medical Society, held in Roswell, October 15 and 16 under the presidency of Dr. Charles A. Frank, Albuquerque, the following officers were elected for the ensuing year: president. Dr. Hugh V. Fall, Roswell; president-elect, Dr. Chester Russell, Artesia; vice presidents, Drs. Joseph S. Cipes, Albuquerque, Charles M. Yater, Roswell, and William F. Wittwer, Los Lunas; secretary, Dr. Frank E. Tull, Albuquerque, and treasurer, Dr. John W. Elder, Albuquerque. The next annual meeting will be held in Albuquerque in April or May, the exact date to be fixed by the Bernalillo County Medical Society.

NEW YORK

New Medical Director for Hospital.—Dr. John H. Carroll, Oswego, has recently been selected as head of the Glens Spring Hospital at Watkins Glen.

Investigation of Sanitary Condition of County Fairs.—The engineering division of the state department of health is making a sanitary survey of all county fairs, with reference to water supply, sewage, garbage and refuse disposal and the adequacy of toilet facilities. In many instances conditions have been found to be very unsatisfactory.

Postgraduate Courses at Albany.—The Bender Hygienic Laboratory, Albany, announces postgraduate courses of instruction in surgical pathology, diseases of the gastro-intestinal tract, diseases of the heart and kidney, tumors, diseases of the blood, and laboratory technic, consisting primarily of pathologic studies, but including clinical material whenever possible. Meetings will be held each Thursday at 4 p. m.

New York City

Venereal Diagnostic Clinic Moves.—The Manhattan Venereal Disease Treatment and Diagnostic Clinic has removed to the department headquarters at 505 Pearl Street, Manhattan.

The Carpenter Lecture.—At the stated meeting of the New York Academy of Medicine, October 21, Sir Berkeley Moynihan of Leeds, England, delivered the Wesley M. Carpenter Lecture, on the subject of "Gastric Ulcer and Its Treatment."

Increase in Open-Air Classes.—The board of education will provide for twenty-four additional open-air classes in the city during 1921. The borough chiefs of the Bureau of Child Hygiene have been requested to make an analysis of

those schools in which previous surveys have shown a large percentage of malnutrition and to forward recommendations as to the schools in which these classes should be opened. A tentative allowance by boroughs assigns seven to Manhattan; nine to Brooklyn; three to the Bronx; three to Queens, and two to Richmond.

NORTH CAROLINA

Personal.—Dr. J. H. Hamilton, Owensboro, Ky., has been appointed health officer of Wilmington to fill the vacancy caused by the resignation of Dr. R. A. Hering.——Dr. John E. S. Davidson, Charlotte, has been appointed a member of the board of directors for the state hospitals for the insane to act as a member of the executive committee to the hospital at Morgantown.

Physicians Form Group Clinic.—A group of physicians, including Drs. William Allan, John R. Aske, Robert F. Leimbach, Oren B. Moore, Alonzo Myers, J. M. Worthington, Charles M. Strong, and John Q. Myers have purchased an apartment on Carnegie Court, Charlotte, for the purpose of adapting the building for medical purposes and establishing a centralized clinic.

OHIO

Cincinnati Medical College Centennial.—At the centennial celebration of the College of Medicine of the University of Cincinnati, to be held, November 6, Mr. James R. Angell, president of the Carnegie Foundation, New York, Sir Auckland Geddes, British Ambassador, Hon. John Barton Payne, Secretary of the Interior, and Drs. Louis Schwab, Cincinnati, Rudolph Matas, New Orleans, and Charles R. Stockard, Utica, N. Y., will deliver the principal addresses.

Hospital Appointments.—Dr. Marion S. Reynolds, assistant physician at the state hospital, Columbus, for the last two years, has been appointed superintendent of the Children's Hospital, Columbus.——The volunteer medical and surgical staff of the Ohio Soldiers and Sailors' Orphans' Home, Xenia, has been enlarged by the appointment of Dr. Burch C. West, Cincinnati, to the chair of physical diagnosis, and Dr. Lawrence Shields, Xenia, to the chair of nose and throat. Dr. William A. Galloway was elected dean of the board and Dr. Asa C. Messenger, Xenia, secretary.

OKLAHOMA

Home for Girls Proposed.—A detention home for girls, to be supported jointly by the city of Lawton and the state, will shortly be opened at Lawton according to the announcement of Dr. Arthur R. Lewis, state health commissioner. The home will have a capacity for thirty girls and will be supervised by a matron and a physician.

OREGON

Public Health Legislation Committee Formed.—A committee for the protection of public health to fight the initiative measure known as the anticompulsory vaccination measure has been formed by representatives of the Oregon State Board of Health, Portland City Board of Health, Oregon Tuberculosis Association, Oregon Social Hygiene Society, Portland Ministerial Association, and city, county and state medical societies and other organizations interested in public health and welfare. At the first meeting held in Portland, October 11, plans were formulated for a systematic campaign against the bill which is described as "not only a direct attack on smallpox vaccination, but an attack on all other kinds of vaccination, inoculation and medication now used as a preventive of or a cure for communicable diseases."

PENNSYLVANIA

Grade Crossing Fatalities.—Collisions between automobiles and trains, the majority of which occurred at unprotected grade crossings, caused the death of thirty-eight persons and the injury of 158 in Pennsylvania during the first six months of 1920, according to an announcement of the public service commission. Ninety-three automobiles and thirty-one wagons were struck at unprotected crossings, twenty automobiles were struck at crossings protected by watchmen, and sixteen at crossings protected by bells.

Health Officers Appointed.—Commissioner of Health Edward Martin has appointed the following officers to fill vacancies caused by resignations: Dr. Robert G. Barckley, Milford, medical director for Pike County, Dr. Conrad S. Reber, West Reading, medical director for Berks County, and Paul Cleaver, Reading, consultant of the department of health for Berks.——A new staff has been appointed for the Harrisburg Clinic, State Tuberculosis Division, consisting of Drs. Harry J. Kirby, John W. MacMullen, Clarence W. Batdorf, Arthur L. Page, Sylvia J. Roberts and Martin W. Emerick.

Philadelphia

Personal.—Dr. Albert Hyman, formerly of the Long Island Hospital, Brooklyn, has assumed his duties as superintendent of Mount Sinai Hospital.——Dr. Albert P. Francine has been appointed chief of the division of tuberculosis dispensaries of the State Department of Health.

Campaign for Healthy Children.—A health campaign among the 200,000 children under 6 years of age will be begun immediately by Dr. John Blair Spencer, who resigned last week as physician-in-chief of the department of public welfare to head the medical staff of the Philadelphia Health Council and Tuberculosis Committee. A fairy play, called the "Health Fairies," will tour all sections of the city in an effort to visualize the lessons of health in a manner that will carry a special appeal to the young children.

SOUTH CAROLINA

Lee County Issues Health Journal.—Lee County has issued the first number of its new health organ known as *Lee County Health Journal*, under the editorial supervision of Dr. Paul Knotts, county health officer.

Tuberculosis Clinics Opened.—A free tuberculosis clinic will shortly be opened in the health offices at Anderson city hall under the auspices of the Piedmont Tri-County Tuberculosis Association. The clinic will share the offices of Dr. J. C. Mitchell, city health officer.

TENNESSEE

State Trachoma Hospital Moved.—The state trachoma hospital, formerly operated at Tazewell, has been moved to Morristown because of the latter town's proximity to the main railroad lines.

New Settlement House and Clinic.—The first of a series of three buildings of the new Episcopal settlement house and clinic, located at Fifty-Fifth Street and New York Avenue, West Nashville, is under construction. The clinic will be known as St. Luke's Community House.

VIRGINIA

Personal.—Dr. William A. Brumfield, formerly with the state department of health, has been appointed full-time health officer and professor of hygiene in the Virginia Polytechnic Institute, Blacksburg.

Health Board Resigns.—Following the adoption of a resolution by the council of the city of Charlottesville requesting the board of health not to reappoint a certain health inspector, five members of the health board tendered their resignations on the ground that the resolution implied lack of confidence in their judgment.

WEST VIRGINIA

Medical School Increases Staff.—The following have been added to the staff of the School of Medicine, West Virginia University: In the department of anatomy, J. Floyd Morrow, B.S.; in the department of bacteriology and pathology, T. J. Murray, M.S., associate professor, and Raleigh L. Moler, B.S., assistant; in the department of physiology and physiologic chemistry, Dr. J. Earl Thomas, associate professor of physiology, and H. C. Van Der Heyde, D.Sc., Heemstede, Holland, assistant in physiologic chemistry; in the department of pharmacology, Dr. Cassius H. Hoffrichter, associate professor of pharmacology and physiology, and C. E. Beers, Ph.G., assistant.

WISCONSIN

Proposed Health Legislation.—The program of the state board of health during the coming legislative session, as announced by Dr. Cornelius A. Harper, state health commissioner, will seek the increase of the number of health districts from five to at least eight or ten, with full-time deputy health officers. It will be proposed that every municipality with a population of 20,000 provide a full-time health officer with full equipment, and the recommendation will be made that the present bureau of child welfare and public health nursing be divided into two departments.

CANADA

Toronto Public Nursing System.—Dr. Charles H. Gardner, U. S. P. H. S., in charge of the Marine Hospital at Buffalo, on a visit to Toronto last week made a study of the public health nursing system of Toronto, and commented favorably on its attainments.

Public Health Notes.—Because the physicians practicing among the miners in Nova Scotia are asking increased fees, the miners have decided to import medical men from other centers.——A provincial laboratory of public health is to be located at Owen Sound, Ont.——Waterloo County, Ont., is organizing a health association.

University Memorial.—The funds collected from subscriptions toward the University of Toronto Memorial Fund, now totaling more than $331,000, are being used by the scholarship board as a memorial loan fund for returned soldiers. Last year $37,000 was loaned from the fund, a substantial portion of which sum has already been returned to the board.

Cancer Serum Under Investigation.—The Academy of Medicine, Toronto, has appointed a special committee to conduct an investigation into the alleged claims of Dr. Thomas J. Glover for his "cancer serum." The committee includes Dr. Jabez H. Elliott, president of the academy; Dr. Harry B. Anderson, past president of the Ontario Medical Association; Dr. John J. Mackenzie, professor of pathology in the University of Toronto; Dr. Wilbur H. Harris, dean of Grace Hospital, and Dr. John Harris McPhedran. A preliminary investigation has been made, but, although the public press has reported about the large number of patients who testified as to the value of the treatment, neither the special committee nor the academy has authorized any official report for publication.

GENERAL

Southern Medical Association Meeting.—The fourteenth annual session of the Southern Medical Association will be held in Louisville, November 15-18, under the presidency of Dr. Edward H. Carey, Dallas, Texas.

Pacific Surgical Association Meeting.—The eighth annual session of the North Pacific Surgical Association will be held in Spokane, December 10-11, under the presidency of Dr. John O'Shea. The membership list includes surgeons of Washington, Oregon and British Columbia.

Tri-State District Medical Society Elects Officers.—This organization, at its annual meeting in Waterloo, Iowa, elected the following officers for the ensuing year: president, Dr. G. V. I. Brown, Milwaukee; president-elect, Dr. John E. O'Keefe, Waterloo, Iowa; vice presidents, Drs. Walter L. Bierring, Des Moines, Iowa, Joseph S. Evans, Madison, Wis., and Edwin P. Sloan, Bloomington, Ill., and secretary-treasurer, Dr. Domer G. Smith, Freeport, Ill. (reelected).

Academy Holds Annual Meeting.—At the twenty-fifth annual meeting of the American Academy of Ophthalmology and Oto-Laryngology, held at Kansas City, Mo., Oct. 15, 1920, the following officers were elected for the ensuing year: president, Dr. Emil Mayer, New York; vice presidents, Drs. John R. Newcomb, Indianapolis, Robert Ridpath, Philadelphia, and W. C. Finnoff, Denver; treasurer, Dr. Secord H. Lodge, Cleveland; secretary, Dr. Luther C. Peter, Philadelphia, and editor, Dr. Clarence Loeb, Chicago. The next meeting will be held in Philadelphia.

Bequests and Donations.—The following bequests and donations have recently been announced:

Associated Jewish Charities, $15,000, by the will of Albert Stein, Chicago.

Home of the Merciful Savior for Crippled Children, Philadelphia, $10,000, by the will of Emily Baker Elliott.

Presbyterian Hospital, Philadelphia, to endow a free bed in memory of his daughter Maude E. Benson, and Pennsylvania Hospital, each $5 000, by the will of Colonel R. D. Benson.

Sanitarium for Hebrew Children of the City of New York, Montefiore Home, Hebrew Infant Asylum, Home for Aged and Infirm Hebrews, Beth Israel Hospital, Lebanon Hospital, Jewish Maternity Hospital, United Hebrew Charities and the Crippled Children of the East Side Free School, each $5,000; Mount Sinai Hospital, $3,000, and Hospital at Albany, Ga., $1,000, by the will of Max J. Breitenbach.

St. Mary's Hospital, Philadelphia, $300, by the will of Bridget Starin.

St. Luke's Hospital, Philadelphia, on the death of the last annuitant specified in the will, a sufficient amount to endow a free bed, by the will of Anna E. Burton.

Methodist Episcopal Hospital, Philadelphia, $5,000, by the will of Ellen A. Yewdell.

University of Cincinnati, Medical College, a gift of $250,000 to create a trust fund, the income from which is to be used for the maintenance of a department of pediatrics to be known as the B. K. Rachford Department of Pediatrics, by Mrs. Mary M. Emery, Cincinnati.

LATIN AMERICA

Children's Hospital in Mexico.—The government has ordered the construction of a children's hospital in the city of Mexico, which will have 1,000 beds and will be free for indigent children.

New Manager of the Gaceta Médica of Caracas.—Dr. A. Herrera Vegas has been designated by the National Academy of Medicine to fill the position of manager and assistant editor of the *Gaceta Médica de Caracas.*

Disease Investigation in Santo Domingo.—At the request of the Department of Sanitation and Beneficence of Santo Domingo, Harvard University has sent a commission of physicians to study "buba" cases and prescribe the measures necessary for the eradication of this disease.

FOREIGN

Smallpox on Canary Islands.—The *Medicina Ibera* states that smallpox is making considerable ravages at Teneriffe as the inhabitants absolutely refuse vaccination.

Bust of Saugmann Presented to Sanatorium.—The Vejlefjord Sanatorium in Denmark recently celebrated the twenty-fifth anniversary of the meeting of the Danish Medical Association at which the plan for founding the sanatorium was started. The famous sanatorium has been in operation for twenty years. The bust of Dr. Saugmann was presented by a group of sanatorium patients.

Racial Biology Institute.—The Swedish government has approved the plan to found an institute for research on the biology of the race, and has asked the Stockholm medical faculty to plan the institution. A committee from the faculty has been appointed for the purpose, comprising Drs. Lennmalm, Johansson, Müller and Gadelius, of the chairs of neurology, physiology, anatomy and psychiatry, respectively.

Belgian Sanitary Train for Poland.—The *Scalpel* states that Professor Depage of Brussels has organized a sanitary train to carry medical supplies and relief to Poland. The train has been equipped for a sixty bed hospital by the Red Cross and the minister of national defense. The expense of maintenance has been assumed by the society "Pro Polonia." The physicians and nurses are all Belgians, with an army surgeon in charge.

Fasting Records.—The *Vie médicale* cites from a recent lecture by Richet to the effect that seven fasters survived from twenty-five to fifty days of fasting, including Succi, thirty days; Tanner, forty days; Merlatti, fifty days. The Bérard miners survived fourteen days, the Licetus miners, seven, and the Bois-Monzil miners six days. Others that succumbed were Devilliers' insane patient, the seventy-sixth day; Desbarreaux' patient, sixty-three days, and Lépine's, Hufeland's and Viterbi's patients the sixteenth and seventeenth days.

International Psychanalysis Congress.—The Sixth Congress of the International Psychanalysis Association convened at The Hague, September 8 to 11, with a comparatively large attendance—about 130—from all the countries having societies for the study of psychanalysis, including the central empires, and one member from Belgium where there is no organization. Dr. Ferenczi of Budapest, the president of the international association, presided at the opening meeting. Freud described his latest research on the explanation of dreams, but he rejected the "prospective tendency" which Moeder and Jung accept. The *Nederlandsch Tijdschrift voor Genceskunde* brings quite a full report of the meeting. The next one is to convene at Berlin in September, 1921.

CORRECTION

Rats, Not Guinea-Pigs, Used for Testing Arsphenamin.—In the editorial on "The Popular Arsenicals," THE JOURNAL, October 9, the statement is made that guinea-pigs are employed for testing the toxicity of arsphenamin. Our attention has been called to the fact that according to the official procedure adopted by the Hygienic Laboratory of the U. S. Public Health Service, albino rats and not guinea-pigs are used for this purpose. Official acceptance of a preparation of arsphenamin requires the survival of at least 60 per cent. of the rats tested for a period of not less than forty-eight hours after injection of 100 mg. per kilogram of body weight. A 2 per cent. aqueous solution of arsphenamin is used. For neo-arsphenamin, a 4 per cent. solution is used, and official acceptance requires survival of at least 60 per cent. of the number of rats tested for a period of not less than seven days after injection of 200 mg. per kilogram of body weight.

Government Services

Medical Field Service School

The Army Medical Department Field Service School at Carlisle, Pa., has been formally opened in buildings which served the purposes of a general hospital during the war. The courses of instruction comprise administration, correspondence, preparation of reports and returns, subsistence, clothing and housing of soldiers, hospital care of sick and wounded, sanitary organization, field sanitation, company tactics and maneuvers.

Training of Enlisted Medical Personnel

The Surgeon-General has endorsed a recommendation providing that all recruits enlisted for the Medical Department of the Army be first trained as infantry soldiers for a fixed length of time. The result of such a plan, it is claimed, will materially add to the soldierly bearing, discipline and general efficiency of the men and will stamp them as real soldiers after they have become members of the Medical Corps.

Venereal Diseases in Drafted Men

Statistics compiled by the U. S. Public Health Service from the War Department records show that 3 per cent. of the first million drafted men whose examination blanks reached the Adjutant-General's Office were suffering from a venereal disease when they reported to camp. Of the second million drafted men examined at the mobilization camps, 5.4 per cent. had either syphilis, gonorrhea or chancroids. During the year 1918, the records for the entire Army were compiled by states; the average rate for venereal diseases was about 4 per cent.

Reserve Officers Training School Units

An effort will be made by Surgeon-General Ireland to establish a Reserve Officers Training School Unit in every Class A medical school in the country. The original plans of the War Department contemplated the inauguration of these schools in only ten medical colleges, but it has been decided to include all medical schools that can enroll the required minimum of fifty students. An officer of the Medical Corps is assigned to each school to conduct the course, which extends over four years, after the successful completion of which the graduates are awarded commissions in the Reserve Medical Corps.

Public Health Nursing at Army Posts

An experiment in public health nursing, made among the families of soldiers at Camp Jackson, S. C., has attained valuable results and will lead to adoption of the system at other military posts. A suitable nurse was selected and assigned to visit the families of the enlisted personnel at the post for the purpose of giving advice in the proper care of children and of the sick. Pregnant women were advised on the necessary preparations for confinement and on questions of personal hygiene. The service did not entail the actual nursing of children and the sick, but proved an excellent adjunct of preventive medicine, as the visits afforded opportunity for the early detection of infectious and communicable diseases.

Public Health Courses in Tuberculosis Diagnosis

The Public Health Service has recently opened mobile training courses for the early diagnosis of tuberculosis in Illinois, Wisconsin, Michigan and Washington. Similar courses have already been given in Texas, Louisiana, Missouri, Virginia, West Virginia, Maryland and Pennsylvania. The courses last seven days and are at present open only to physicians attached to the Public Health Service; but it is hoped that later it may be possible to hold similar courses for the benefit of other physicians who may desire to attend. The instruction is given by recognized experts in the diagnosis of pulmonary tuberculosis, and is supplemented by the showing of a remarkable motion picture, in six reels, which minutely illustrates every phase of the disease.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 9, 1920.

Sexual Problems

The National Birth-Rate Commission, under the presidency of the Bishop of Birmingham, has begun an inquiry into the problems of sex connected with adolescence. The purpose is to investigate the influences that affect the welfare of young persons as potential parents. Miss Norah March was the first witness called. She said that whether or not chastity was the best preparation for parenthood seemed to be a point on which medical and psychologic thought was not yet agreed. Personally holding that love should be the basis of marriage, she held that as a general social code the tenet of chastity as a preparation for marriage was the ideal. If marriage was delayed until late in life, chastity might be supremely difficult to many, while those to whom it was impossible were confronted with the problem of celibacy. Our social code in these matters was undergoing a change. The future might see some form of extramarital sex relationship and parenthood finding a place in our social code. There were many more women than men in this country. The wider education of girls, their entry into the world of labor, in short, their general emancipation, all tended toward a liberation of natural impulses and a desire for freedom of choice. The right to motherhood was a doctrine that was gaining ground. It was essential that a system of education—using the word in its broadest sense—should provide emotional and intellectual compensations for those to whom the more complete life was denied. The preparation of the young citizen for worthy parenthood was no simple matter merely of appropriate instruction. Though accurate knowledge might be a great help, it did not of itself empower the individual to follow the line of conduct chosen. To begin with the ethical considerations, without a firm basis of the biologic, psychologic, social and racial relations, was to court failure. Many more parents were learning to give information to their children on such subjects as birth and sex. Supplementary instruction in biology, physiology, and hygiene could best be given in school and other classes. As to venereal disease, she deprecated strongly its prominent presentation in instruction of the young. The pseudomorality induced by the fear of the disease might even be detrimental to character. Moreover, the fear did not deter on any large scale.

There has been drawn up recently an outline of a further inquiry by the National Birth-Rate Commission, which is designed to promote a further constructive effort. It is to embrace the development of the individual from the physiologic and psychologic standpoints, and take notice of the conditions under which the adolescent lives and works, and the social and moral influences to which he or she is exposed, especially at puberty and onward. It must include the extent to which worthy ideals of citizenship and parenthood are inculcated by education in its widest sense, by religious influence, by education in its widest sense, and by the atmosphere of the home, school, university, workshop and factory. The question of sex education is to be considered, and incidentally coeducation of boys and girls. The influence of various industrial occupations on fertility and healthy parenthood will also be inquired into. By exchanging an essentially feminine for an essentially masculine outlook, it is thought that our women may unknowingly be prejudicing the interests of their children and the race.

Physician of 97 in Practice

The resignation of Dr. William Gibson, at the age of 97, from the position of parochial medical officer for Campbell-

town, Argyllshire, which he has held for sixty-five years, is announced. The old doctor is evidently still "going strong," for his resignation from a number of other appointments which he holds, such as health officer, public vaccinator and police surgeon, is not announced. He graduated in the University of Edinburgh in 1854, and contributed a paper to the *Edinburgh Medical Journal* on "Carbuncle" in 1857, and one on "Smallpox and Vaccination in Campbelltown" in 1862. He is described as the oldest practicing physician in the United Kingdom, but it would be interesting to know whether any other country or any other period could furnish a record of active medical work at such an advanced age. He has evidently, by resignation from one of his appointments, only just found out that he is not quite so young as he used to be. He is still in full possession of all his faculties, and his tall, slightly bent form can be seen moving actively about the town.

Opening of the Winter Session

The winter session of the medical schools has been opened with the usual ceremonies and addresses. At St. Mary's Hospital, Dr. J. G. Adami, vice chancellor of the University of Liverpool (formerly professor of pathology in McGill University), presented the prizes and certificates gained by the students, and delivered the address. He said that the universities and professional schools found themselves in parlous state. Students were pouring into all the professions in numbers double those before the war, the demand for extra accommodations was urgent, and the cost of providing it had soared to an unheard of height. Like coal miners and bricklayers, university teachers must live, even if they manage to exist on stipends below the wages received by coal miners. So great had been the increase in the cost of living that, whereas a junior member of the staff was content with $500, his small personal fortune, or what he could make by the side, and his expectations, today, with the rise in the cost of clothes, lodging, and boarding, $1,250 was the minimum that sufficed. With such rising expenditure it was no wonder that the universities in their distress turned to the government, but only to be told by the chancellor that he had done more to aid education than any previous chancellor, that he was at his wit's end to meet the financial needs of the nation, and that he could do nothing to help those who did not help themselves. He as much as directed them to raise their fees, and only when they had done everything possible to come again. Unfortunately for the proposal, the universities had responded with open arms to the request of the minister of education to accept ex-service students, which they did to the limit of their capacity. They were also told that the ministry would not meet increased fees for the students already on the roll. He was on principle strongly opposed to seeking help from the government. What through generations had distinguished English universities was their independence of government. Mr. Chamberlain had done well to compare the results of English university education with those of the German system, to compare the sturdy independence and resultant active initiative of the British system with the formalism and repression of the German machine system. In three years the English scientists not merely caught up but advanced further those positions in what he might term offensive science gained by the Germans through thirty years of laborious effort. It was through their subservience as government officials that the Prussianized professors supported the military caste in leading Germany headlong into disaster. It would be an evil day for England when our universities and hospitals came under the government yoke.

CRITICISM OF THE GERMAN AND AMERICAN UNIT SYSTEM

Dr. Adami was more than a little nervous about the present strong movement for full-time professorships in medicine, surgery and midwifery, and the development of the unit system which had come to us from Germany through America (described in previous letters to THE JOURNAL). Could this system of German origin be securely grafted on our English system method of teaching medicine? In Germany the results seemed to him to have been very significant, not to say sinister: such results as none of them wished to see in these isles. Here the human being was the first consideration; but in Germany and Austria, hospital patients might too often be so many animals. The ordinary product of a German medical school had far less thorough and all-round general medical training than had the English medical student; he was a poorer practitioner. If we established the unit system, we would encourage the German defects—neglect of good general all-round teaching for all, and encouragement of the student to specialize too early in his career. He congratulated St. Mary's Hospital on its independence, which involved loss of revenue from the government, in not slavishly adopting the scheme of full-time professorships in medicine and surgery, and establishment of the unit system, but in adopting a scheme of its own. [It should be pointed out that St. Mary's has adopted the unit system, but the directors are part-time.] If classification and mastery of detail were science, then Germany was *par excellence* the home of scientific medicine. If, on the other hand, deduction of broad scientific principles from those details was the highest form of science, then it was remarkable that the great advances of medicine had not come from Germany—anesthesia, antisepsis, the development of neurology—from the recognition of motor and sensory nerves, through the work of Gull, Hughlings Jackson and Ferrier, to the latest studies of Sherrington and Head; the recognition of the internal secretions, hormones and vitamins; cardiac physiology, and a long list that might be given. The Germans had excelled in detailed studies of particular diseases, but where they were to be credited with notable discoveries it was noteworthy that those whose names were known to all were not university professors, were not clinical but laboratory men—Virchow, Koch and Ehrlich. A weak point in the English system was that it made for the solitary leader, not for the establishment of schools. Men like Bright and Addison, and even those of greater caliber, like John Hunter, remained isolated and had no successors to maintain their tradition. A grave mistake made in Germany, and followed in too many schools here and in America, was establishing the pathologic school away from the hospital. Pathology was the whole scientific investigation of disease, not as Virchow and, following him, the Germans in general considered it—gross and minute morbid anatomy. Dr. Adami finally pleaded for an institute of pathology in the medical school, to become the center of scientific research in connection with the wards and the individual patient.

Physicians Strike Against Miners

A tyranny which has become disastrous in this country is that called "organized labor." A combination of the men engaged in some industry vital to the country, such as miners, transport workers and railway men, go through the facile process of persuading themselves that they ought to have more without the slightest regard for others, often much worse off than they are. The granting of each exaction brings only temporary peace, and a fresh exaction quickly follows. The increased cost of living is given as a plausible reason; but as each exaction sends it up farther, the process is interminable. The most glaring example of the tyranny of the combinations is furnished by the bricklayers, who are paid three times as much as before the war but refuse to lay more than a third of the bricks possible, or allow discharged soldiers to enter their trade, notwithstanding that since the war, house accommodations have become so deficient that the

minister of health has had to take the problem up. Another truculent body is the miners, who, although the best paid manual workers in the country, with wages in some cases that a professional man with expensive appearances to keep up of which they know nothing might envy, are now holding a blunderbuss at the head of the country and threatening a strike which might be as disastrous as a war, in order that they may get still more. But, like all persons acting from selfish motives they are greatly disturbed when they become the subject of their own methods. In Nottingham and Derbyshire they are in the position of having to come to terms with a strike directed against themselves. Medical practice among them is carried on according to the contract or club (lodge) system. At present they pay a flat rate to the physicians of $4 per annum per family, irrespective of its size. The Nottingham branch of the British Medical Association gave notice to all the clubs of its intention to raise the rate to $6.50. The miners refused, whereupon the physicians gave notice of termination of all contracts by September 30. This considerably upset the miners, who offered $5. This offer is to be considered next week. The increased cost of living, of which the increased wages of the miners is one of the causes, is the reason for the demand for an increase. The physicians decline to be what the leader of the miners repudiated as a function for them—"wage slaves."

BERLIN

(From Our Regular Correspondent)

Oct. 2, 1920.

Meeting of the Society of Naturalists and Physicians

The first meeting in seven years of the Gesellschaft deutscher Naturforscher und Aerzte, held at Bad Nauheim, was attended by 2,600 members—additional evidence of the high regard in which this largest and oldest scientific society of Germany is held. Among the principal subjects of interest of the meeting were the newer researches in physical science, including the structure of molecules and atoms, and the Einstein theory of relativity. The papers of Dr. Max Rubner, Berlin, and Dr. M. von Gruber, Munich, on the problem of nutrition were probably the outstanding medical contributions.

NITROGEN IN NUTRITION

The theme of Dr. Rubner's paper was "The Physiologic Importance of Nitrogen in the Nutrition of Animals and Man," a question on which the exigencies of the World War fixed our attention. Nitrogen is the basis of protein, an absolute essential for the repair and growth of tissues and for the maintenance of metabolism and heat production. The body is incapable of storing any great reserve except by improving cell nutrition. There is no direct relation between protein intake and work output. In all animals and in man the minimal utilization of nitrogen represents only 5 per cent. of the total calories during metabolism at rest, whereas the remaining 95 per cent. may be furnished by proteins, fats or carbohydrates, depending on individual preference. The actual nitrogen requirement of man is only 0.04 gm. per kilogram per day. Any losses resulting from catabolism must be made up by the intake of protein. But this cannot be accomplished with all proteins. Animal proteins usually constitute an excellent replacement, but there are great variations among the vegetable proteins. The proteins may be replaced by the ingestion of their elements (Bausteine), and often by a combination of two or more inferior food materials. Even though the protein intake is fully one fourth less than the minimal requirement, provided the intake of a sufficient quantity of nitrogen-free food is maintained, the cellular elements of our body will be reduced by one fourth only after more than 1,000 days. Protein represents the cellular elements, and fat, the reserve substance. In obese subjects the protein utilization during fasting may be reduced to 6 per cent. of the total calories; in extremely lean subjects the cellular elements would be destroyed at a rate that would constitute actual protein disintegration. Obese persons fare better on small protein intake than do lean persons. If more than the minimal requirement of protein is ingested during a period of transitory deficiency of total calories, there is no loss of cell protein. When the cells have lost about 50 per cent. of their protein, life becomes extinct. More than 60 per cent. of protein has no purpose in anabolism, but the lower the protein content of the cells the greater the percentage of protein utilization. The practical experience of several nations comprising a total population of approximately 500,000,000 has yielded an index of the minimal protein requirement of a healthy normal person. There is very little variation in the caloric and protein requirements of the various races, but in Germany today the available quantity of food is well below the average of other nations.

The Food Supply of Germany

Dr. M. von Gruber pointed out that with the present shortage of foods, several millions of Germans are doomed to die. There is no possibility of extensive emigration, and the urban population cannot be saved from its fate by means of unemployment allowances. Although Germany manages to feed her people to some extent, this is made possible only by importation of foods for the payment of which the necessary resources will not be forthcoming much longer. Credit will not be given to us over any extended period, and then Germany must depend on the products of its own soil. The chief problem of society today is to feed the population on home products. With proper utilization of the soil, this is not impossible. With a daily per capita requirement of 2,600 calories, Germany needs, in addition to a fixed amount of protein, a total of 56.62 billions of calories a year for a population of approximately 60,000,000. Before the war, 217 billions were produced; and even now, after the loss of large agricultural territories, 171 billions can be won from the soil for man and animals. The domestic animals are not only producers, but they are actually greedy and dangerous competitors. How many calories can be safely allotted to animals? The horses, absolutely indispensable for productive labor, will take 26 billions of calories, leaving 145 billions for human food and feeding purposes. Eggs, milk and meat represent only a small return of the calories utilized, and these can furnish only 29 per cent. of our total food requirements; 71 per cent. must be derived from vegetable foods. It will be many years before the meat consumption can reach the same proportion as before the war, and Germany cannot afford to succumb to the temptation of feeding to animals food that is fit for human consumption because of the high returns from animal products. Compulsion will not avail, however, but the producers must be brought to make slight sacrifices for the common good through enlightenment. If greater production is to be expected from the farmer, then the consumer must be more moderate. Certainly the latter should not demand greater quantities of beer, especially not with a high alcohol content. The use of barley for brewing is more economical than feeding it to animals, but its use in the form of barley flour for human consumption is far more economical than either. More and cleaner cereals and less milling are demanded.

Berlin School Physicians

The number of school physicians in Berlin has gradually increased to fifty, excluding three specialists—one each in otology, ophthalmology and neurology. These physicians are not government officials, but are selected from among the medical practitioners in a given school district for part-

time service. Each physician must look after the children in at least six schools, with an attendance of between four and five thousand pupils. His duties comprise the routine examination of all new entrants into school and special examinations of those about to begin swimming and rowing lessons, and of those seeking employment after school hours. At stated intervals all children are examined for evidence of infectious diseases, and the sanitary arrangements of the schools are inspected. Special examinations are also required of unfit children who are instructed privately at the expense of the state and of children in special classes, such as the feebleminded, stammering, deaf and nearsighted pupils. Then, too, the school physician's duties include certain functions related to the social welfare, such as the examination of children recommended for country life, for the so-called vacation homes, and latterly for the excursions to neutral countries. Special provisions are made for the treatment of the poor children, for instance, by the establishment of dental clinics.

The Housing Crisis

For some years the regional krankenkasse of Berlin, which comprises thousands of members, has followed the useful practice of inspecting the homes of its sick members. The discovery of the deplorable conditions of many homes directed the attention of the government authorities to certain evils and led to efforts of improvement. Under the influence of the war and its immediate sequels, the housing conditions of the working classes have become very much worse. In 1918, a report for which year is the last published, the number of patients living in rooms of less than 6 square meters (64⅝ square feet) in area, and less than 2.5 meters (8⅕ feet) high had greatly increased. Twenty-nine rooms were less than 1.95 meters (6 feet, 5 inches) high. Thirty persons were living in rooms which had no provision for heating, and almost 3,400 were found to be living in rooms which did not furnish the hygienic minimum of 20 cubic meters (706⅔ cubic feet) of air space; in fact, approximately 600 persons had less than half of this requirement. In a model home of the Prussian State Commission on Housing there is this notice: "Every family residence, in which more than two children are domiciled in addition to the parents, should contain at least two heated rooms (living rooms and bedrooms) and a kitchen." The report shows that in 1918, 1.95 per cent. of the male members occupied one room with five others, 0.90 per cent. with six others, and 0.35 per cent. with seven others, as compared with 1.28, 0.79 and 0.24 per cent., respectively, in 1917. Of patients with contagious diseases, 390 occupied the same room with three and four other men, and fifty-seven with five or more men; 2,686 out of 3,656 patients with pulmonary tuberculosis shared sleeping quarters with others. The number of those living in rooms without windows and in damp houses showed a great increase. The records disclose the fact that 1,507 members of the krankenkasse shared a bed with others; 268 of these were tuberculous in families of from six to twelve persons. One family of five members, another of two members and five of one member possessed no bed at all. Many are forced to sleep in dark halls and narrow kitchens because the bedrooms were sublet to tenants. The residents of the smallest homes are compelled to sublet the tiny living room in order to reduce the burden of rent. It has been determined that to every hundred homes of one room there are twenty-four lodgers; in other words, one out of every four families has a lodger. The smallest apartments have the greatest number of occupants, and the most crowded lodgings are discovered in the houses on back lots. In Berlin, the worst conditions are met in the southwest, northwest and central sections, where the narrowest and least desirable houses serve for the homes of the proletariat, mostly in old dilapidated buildings.

Marriages

JOHN EDENS LATTIMORE, Waco, Texas, to Miss Alice Schoolfield Bissell of Atascadero, Calif., September 15.

CHARLES NICKELL WATTS, Fairmont, W. Va., to Miss Zella V. Van Camp of Paden City, W. Va., September 1.

ABRAHAM THEODORE GOLDSTEIN, Syracuse, N. Y., to Miss Harriet J. Geavitt of Utica, N. Y., August 15.

LELAND K. PHIPPS, Franklin, Ind., to Miss Lillian Nordica Tracy of Whiteland, Ind., September 21.

LOUIS NEUWELT, New York, to Miss Dorothy Lambert of Providence, R. I., October 18.

ISAAC JEFFERSON PARKERSON to Miss Annie Smith, both of Cadwell, Ga., October 6.

ISRAEL TRACHTENBERG to Miss Bessie Greenberg, both of New York, October 6.

Deaths

Paul Sorkness ⊕ Fargo, N. D.; University of Minnesota, Minneapolis, 1895; aged 53; at some time president of the North Dakota State Medical Association, and of the State Board of Medical Examiners; a member of the Western Surgical Association; local surgeon of the Northern Pacific and Chicago, Milwaukee and St. Paul railroads; onetime health officer of Fargo and Cass County; died, September 23, from cerebral hemorrhage.

James Wilson McDonald ⊕ Captain, M. C., U. S. Army, Fairmont, W. Va.; Western Reserve University, 1882; aged 59; a specialist in surgery; a member of the American College of Surgeons; at one time superintendent of Fairmont, W. Va., Hospital No. 3; in charge of Evacuation Hospital No. 6, near Verdun, during the war, and since with the American forces in Germany; died at Coblenz, October 7, from septicemia.

Randell Hunt ⊕ Shreveport, La.; Tulane University, New Orleans, 1889; aged 54; a member of the American College of Surgeons; one of the reorganizers of the Shreveport Medical Society and for one term president; at one time a member of the health board and board of education of Shreveport; major, M. C., U. S. Army, and discharged, Dec. 6, 1918; chief surgeon of Shreveport Charity Hospital from 1900-1908; died, October 2, from bronchial asthma and emphysema.

Woodson Moss, Columbia, Mo.; University of Missouri, Columbia, 1874; aged 68; a member and in 1902 president of the Missouri State Medical Association; from 1875 to 1900 demonstrator and professor of anatomy, and from 1900 to 1917 professor of practice of medicine and therapeutics in the University of Missouri; died, October 5.

Charles Kirkland Roys, St. Paul, Minn.; College of Physicians and Surgeons in the City of New York, 1902; aged 44; for many years a medical missionary in China under the Presbyterian Board of Foreign Missions, and superintendent of a hospital at Weishien, Shantung; died in Rochester, Minn., Sept. 23.

Albert L. Peterman, Parker, S. D.; State University of Iowa, Iowa City, 1877; aged 67; local surgeon for the Milwaukee and North Western Railroad; at one time mayor of Parker, and for one term a member of the South Dakota legislature; died in Minneapolis, October 12, from cerebral hemorrhage.

Anna Forrest Rowe, New York; Woman's Medical College of the New York Infirmary for Women and Children, 1880; aged 62; a member of the Medical Society of the State of New York; founder of the Lucretia Mott Dispensary and Infirmary; died in Boston, September 18, from heart disease.

Harriet Isabel Noble, Brooklyn; Woman's Medical College of Pennsylvania, Philadelphia, 1901; aged 61; for eleven years chief demonstrator of anatomy in her alma mater; a member of the gynecologic staff of the Post-Graduate Hospital; died, October 10.

Emil Carl Fraser Ruppel, Lynn, Mass.; Harvard University Medical School, 1892; aged 61; a member of the Massa-

⊕ Indicates "Fellow" of the American Medical Association.

chusetts Medical Society; for many years a member of the staff of the Lynn Hospital; died, October 10, from pneumonia.

Niles N. Warlick, Jonesboro, Tenn.; Baltimore University School of Medicine, 1885; aged 64; a member of the Tennessee State Medical Association; died, October 2, from injuries received when struck by an automobile.

Edwin J. Batchelder ⊕ Minneapolis, Minn.; University of Minnesota, Minneapolis, 1893; aged 54; a specialist in pediatrics; assistant in pediatrics in the medical college of the University of Minnesota; died, September 30.

Robert H. Sutton, Pasadena, Calif.; Eclectic Medical Institute, Cincinnati, Ohio, 1863; aged 78; for more than half a century a practitioner of Shenandoah, Iowa; died, September 17, from cerebral hemorrhage.

William George Ebersole, Cleveland; Western Reserve University, Cleveland, 1897; aged 56; also a dentist; at one time president of the Cleveland and Northern Ohio Dental Societies; died, October 5.

Richard Schlemm, Union Hill, N. J.; Bellevue Hospital Medical College, 1885; aged 55; for many years physician of Hudson County, and first mayor of Union Hill, serving three terms; died, October 3.

Michael Edward Kean ⊕ Manchester, N. H.; Dartmouth Medical School, Hanover, N. H., 1889; aged 57; a member of the American College of Surgeons; died, September 22, from cerebral herorrhage.

Andrew Jackson Douthit, Jacksonville, Ala. (license, Alabama, 1881); aged 70; a member of the Medical Association of the State of Alabama; health officer of Jacksonville; died, September 26.

Jacob F. Hill, Nanticoke, Pa.; Jefferson Medical College, Philadelphia, 1885; aged 64; a member of the Board of Health of Nanticoke; died, September 26, from cerebral hemorrhage.

Howard Moorman, Christopher, Ill.; St. Louis College of Physicians and Surgeons, 1906; aged 51; a member of the Illinois State Medical Society; died, October 1, from heart disease.

John Eliott Graham ⊕ Little Falls, N. Y.; College of Physicians and Surgeons in the City of New York, 1906; aged 36; city physician of Little Falls since 1913; died, September 25.

Joseph Sharp, Kansas City, Mo.; Kansas City (Mo.) Medical College, 1873; aged 68; at one time professor of materia medica and therapeutics in his alma mater; died, October 4.

Robert Ambrose Holland ⊕ Calais, Maine; Medical School of Maine, Brunswick and Portland, 1895; aged 50; died in Winnipeg, Manitoba, September 11, from nephritis.

William H. Short, La Grange, Ind.; University of Michigan, Ann Arbor, 1869; aged 76; a member of the Indiana State Medical Association; died, October 16.

Daniel Jerome O'Brien ⊕ Orange, N. J.; Baltimore Medical College, 1904; aged 45; for two terms city physician of Orange; died, October 15, from meningitis.

Charles Ransom Upson ⊕ Bristol, Conn.; Long Island College Hospital, Brooklyn, 1870; aged 62; died suddenly in his office, September 21, from heart disease.

Chester Manley Barton, Mittineague, Mass.; University of Vermont, Burlington, 1868; aged 82; a member of the Massachusetts Medical Society; died, October 1.

Humboldt Yokum ⊕ Beverly, W. Va.; Jefferson Medical College, 1885; aged 60; president of the Beverly Bank; died, September 29, from cerebral hemorrhage.

Charles Edwin Hill, East Killingly, Conn.; Harvard University, 1879; aged 66; a member of the Connecticut State Medical Society; died, September 25.

William L. McLane, West Union, W. Va.; College of Physicians and Surgeons, Baltimore, 1878; aged 75; died in Clarksburg, W. Va., October 15.

William Pierce Rawlinson, Homer, Texas; Memphis (Tenn.) Hospital Medical College, 1904; aged 44; died, September 15, from typhoid fever.

Edward Lyttleton Parramore, Oakland, Calif.; Kentucky School of Medicine, Louisville, 1889; Jefferson Medical College, 1891; died, October 6.

Clarence H. Wright, Christiansburg, Ohio; Eclectic Medical Institute, Cincinnati, 1876; aged 71; died, September 24.

Warren F. Klein ⊕ Lebanon, Pa.; Jefferson Medical College, 1887; aged 59; died suddenly in his office, September 20, from heart disease.

Washington West, Jr., Belleville, Ill.; Washington University Medical School St. Louis, 1897; aged 43; died, October 4, from peritonitis.

John G. Frank, Chicago; Rush Medical College, 1868; Chicago Medical College, 1871; aged 86; died, October 17, from lobar pneumonia.

G. L. Barrett, Godley, Texas; Atlanta (Ga.) Medical College, 1896; aged 48; died at Fort Worth, Texas, July 28, from nephritis.

Everett O. Posey, Woodruff, S. C.; Atlanta (Ga.) College of Physicians and Surgeons, 1901; aged 42; died suddenly, September 28.

Samuel G. Mengle, Chicago; University of Pennsylvania, Philadelphia, 1869; aged 70; died, October 13, from cerebral hemorrhage.

Francis A. Sauer, Baltimore; College of Physicians and Surgeons, Baltimore, 1874; aged 74; died, October 15, from pneumonia.

Samuel M. Bartlett, Kokomo, Ind.; Physio-Medical College of Indiana, Indianapolis, 1904; aged 56; died suddenly, September 30.

John H. Koons, Waynesboro, Pa.; Jefferson Medical College, 1881; aged 66; died, September 27, from cerebral hemorrhage.

Henry G. Brown, Bosworth, Mo.; American Medical College, St. Louis, 1883; aged 59; died, August 2, from abscess of brain.

John C. Newby, Sheridan, Ind.; Medical College of Indiana, Indianapolis, 1880; aged 72; died, September 30, from heart disease.

Page Floyd Green, Kearns, Colo.; Tulane University, New Orleans, 1906; aged 38; died, October 22, from tuberculosis.

Willett Spurgeon Connors, Boston; Dartmouth Medical School, Hanover, N. H., 1891; aged 51; died, October 9.

Charles M. Arbuthnot, Belleville, Kan.; Jefferson Medical College, 1881; aged 68; also a druggist; died, October 3.

Wilson Henry Hastings, Weston, Mass.; Harvard University Medical School, 1920; aged 25; died, September 5.

William P. Morgan, Rolling Bay, Wash.; University of London, England, 1871; aged 74; died, September 20.

Edward Wilson Dupee ⊕ Bridgeport, Conn.; Baltimore Medical College, 1900; aged 48; died, September 29.

Henry M. Brown, Hillsboro, Ohio; Medical College of Ohio, Cincinnati, 1879; aged 61; died, September 29.

Lemuel T. Hall, Potosi, Mo.; St. Louis Medical College, 1866; aged 79; died, August 17, from myocarditis.

John Joseph D'Aquin ⊕ New Orleans; Tulane University, New Orleans, 1892; aged 48; died, September 8.

Charles Francis Morse, Brooklyn; Harvard University Medical School, 1889; aged 59; died, October 9.

Austin Kent Hale, Adams, N. Y.; University of Michigan, Ann Arbor, 1874; aged 70; died, September 21.

Morris Leyser Chaim, New York; University of the City of New York, 1879; aged 80; died, October 9.

Robert Edward Harris, Atlantic City, N. J.; Jefferson Medical College, 1906; aged 39; died, October 5.

Schuyler B. Tuthill, Cincinnati; Medical College of Ohio, Cincinnati, 1891; aged 54; died, October 7.

Ernest V. Bailey, Atlanta, Ga.; Atlanta School of Medicine, 1912; aged 38; died, September 20.

David A. Lauck, Mechanicsburg, Pa.; Baltimore University, 1885; aged 64; died, September 24.

George B. Porch ⊕ Johnstown, Pa.; Jefferson Medical College, 1871; aged 75; died, August 15.

Orla B. Miles, Salem, Ore.; Willamette University, Salem, Ore., 1905; aged 48; died, June 20.

Duncan McDougall ⊕ Haverhill, Mass.; Boston University, 1893; aged 54; died, October 15.

Thomas W. Beeman, Perth, Ont.; Queens University, Kingston, 1878; died, September 9.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

SUPSALVS NOT ADMITTED TO N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report declaring Supsalvs (Anglo-French Drug Company) inadmissible to New and Nonofficial Remedies.

W. A. PUCKNER, Secretary.

Supsalvs are advertised by the Anglo-French Drug Company as "stable suppositories of '606' (of French manufacture)", with the claim that by the rectal administration of these suppositories the effects of arsphenamine may be obtained. The asserted efficacy of Supsalvs medication is based in part on the claim that for these suppositories an excipient was found which mixes with the cocoa butter base "to form an assimilable emulsion."

"The active principle and the vehicle being bound to one another, the mucous membrane is able to absorb both simultaneously and progressively in the form of an organic emulsion."

As no information was furnished the Council by the Anglo-French Drug Company on the origin or quality of the arsphenamine used in the preparation of Supsalvs or the character of the vehicle which was "bound" to the arsphenamine in such a way as to permit the absorption of this combination in the form of an "organic emulsion," the firm was requested to furnish: (1) Evidence that the arsphenamine used in Supsalvs complies with the N. N. R. standards and that deterioration of it does not occur in the preparation of the suppositories or on keeping. (2) The identity of the ingredients composing the suppository.

The Anglo-French Drug Company did not supply the requested evidence and consequently the Council judged the preparation on the basis of the information received from the company, and that contained in the available advertising and circulars. It found Supsalvs inadmissible to New and Nonofficial Remedies, first because the quality of the medicament contained in the suppositories has not been established, and second because the claimed efficacy of this preparation as a means of securing the effects of arsphenamine lacks substantiating proof.

During the past few years some French physicians have reported favorably on the intrarectal administration of arsphenamine. Boyd and Joseph at Panama published (THE JOURNAL, Aug. 17, 1918, p. 521) an enthusiastic report on intrarectal injection of arsphenamine but did not refer to its use in the form of suppositories. In a comprehensive report, on the "Treatment of Syphilis" (*Quarterly Journal of Medicine*, July, 1917) L. W. Harrison stated that arsphenamine (Salvarsan) in the shape of an enema is definitely less effective than intravenously and that "Neisser and the vast majority of workers can see no value in the rectal method." Schamberg and Hirschler (A Safe and Efficient Intensive Method of Treating Syphilis, *Therapeutic Gazette*, November, 1919, p. 761) have given a rather thorough trial of this method; the results were most disappointing: "A certain or rather uncertain amount of arsphenamine is absorbed into the blood, but the quantity is obviously too small to be at all comparable in its effect with the intravenous administration. Our conclusions are that the rectal administration of arsphenamine or neoarsphenamine is an extremely feeble method of administering these drugs."

The report of the Special Committee on the Manufacture, Biological History and Clinical Administration of Salvarsan and Other Substances of the British National Health Insurance. Medical Research Committee contains the following: "The rectal method of administration, either in the form of solution or as suppositories, has been advocated by a few observers mainly for cases in which there is difficulty in the adoption of the intravenous method. The experiments made by Mills at Rochester Row show that three enemata of '606' (0.6 Grm. in each) on successive days failed to produce any effect on the spironemes in the lesions. The general opinion of experienced workers is that the rectal method is ineffective, and in this view the Committee concur."

Correspondence

"THE SEGREGATION OF PNEUMONIA"

To the Editor:—I have read with much interest the article by Dr. Thomas S. Southworth, of New York, as published in THE JOURNAL, Oct. 2, 1920. My attention was particularly attracted by this sentence from this article:

It is not only pathetic but humiliating to realize that it required a devastating experience in our military camps with pneumonia in measles, and with pneumonia in influenza, to force any considerable recognition of the infectiousness of pneumonia.

In this connection it should be said that the dangers of measles and pneumonia in military commands had been well known to the sanitarians of the army for many years, and had been particularly impressed on them by the occurrence of pneumonia among the troops mobilized along the Mexican border in 1916. Coincidently with the appearance of a large number of measles cases during the late fall of 1917, the experienced sanitary inspectors from the office of the Surgeon General noted the failure to isolate properly many types of infectious diseases in hospitals, among these being pneumonia. As a result of reports from these inspectors received in the office of the Surgeon General, a memorandum was issued, Jan. 1, 1918, and sanitary inspectors made special efforts when visiting military stations to determine whether or not the provisions of this memorandum were being carefully complied with. In brief, the memorandum prescribed that an allowance of at least 1,000 cubic feet per patient should be provided in wards or barracks used for treating measles patients; that wires should be arranged across measles wards, and sheets or newspapers hung over these in such a way as to form a screen between each two patients, or that some other suitable screening arrangement should be provided. This was with a view to preventing the spread of pneumonia by droplet infection during coughing. Patients convalescent from measles were to be retained in a hospital or in a well warmed convalescent barrack for at least ten days after the temperature had permanently returned to normal. It was required that medical officers, nurses and male attendants in measles wards should wear gowns, caps and masks, and that nasal discharges and the sputum of patients should be disinfected. Oral cleanliness was to receive special attention. Attendants who had had measles were to be selected, if possible, for duty in measles wards. Floors of wards were to be gone over daily with a cloth wet in disinfectant. Dishes and eating utensils were to be disinfected. Individual drinking cups were to be used. Particular care was to be taken to disinfect thermometers and other utensils as they passed from patient to patient. Wards were to be kept warm. A urinary examination was to be made before discharge from the hospital.

Measles patients developing pneumonia were immediately to be removed from the measles wards and were not to be placed in the same wards with primary lobar pneumonia.

It was stated that pneumonia patients should be treated in wards used exclusively for pneumonia. Ordinary lobar pneumonias and postmeasles and postscarlet fever pneumonias should not be treated in the same wards. At least 1,000 cubic feet of air space per patient should be provided, and all of the precautions referred to in the section on measles

should be carried out, namely, gowns, caps, masks, screens between beds, disinfection of utensils, thermometers, excretions and floors. Convalescent pneumonia patients should use a mild antiseptic mouth wash as long as they remained in a hospital, and should pay special attention to oral hygiene. Special attention should be given to the early detection of empyema.

With the appearance of the influenza epidemic in the fall of 1918, the importance of applying to influenza cases the same precautions formerly prescribed in the case of measles became apparent, and the following memorandum, setting forth such procedure, was issued by the Surgeon General:

War Department
Office of the Surgeon General
Washington

Sept. 30, 1918.

Memorandum for all Camp Surgeons, Surgeons of Recruit Depots and Independent Stations, Department Surgeons and Officer in Charge, Air Service Division.

1. The attached report of a sanitary inspector from this office is furnished for your information, as showing, first, the steps taken at one camp to handle a serious situation in a very satisfactory manner and, secondly, the recommendations for further improvement made by an inspector.

2. In epidemics of influenza every effort should be made to avoid overcrowding of the uncomplicated cases with a view to forestalling complications. At least 100 square feet of floor space per man should be provided, *and all the precautions used which are prescribed for measles in memorandum this office, Jan. 1, 1918.*

3. Prior to the development of epidemics of influenza, camp surgeons should consult with the camp commander with a view to laying out an extensive scheme for evacuating barracks and using them for hospital purposes.

4. The camp surgeon should take steps to keep himself informed as to the sanitary situation at the base hospital, and should endeavor to prevent overcrowding of that institution if other buildings or tentage can be obained to shelter the sick.

By direction of the Acting Surgeon General:

D. C. Howard,
Colonel, Medical Corps.

Having been engaged in sanitary inspections during a large part of 1917 and 1918, I can heartily endorse the views of Dr. Southworth as to the limited recognition of the infectiousness of pneumonia. It was found to be exceedingly difficult to enforce the provisions referred to in the above-mentioned memorandum, or to impress their importance on the hospital authorities, practically all of whom had been but recently drawn from civil life. It is believed that the memorandum of Jan. 1, 1918, which was so prominently brought to the attention of a great number of civilian practitioners temporarily serving in the army, must ultimately have had a decided influence in disseminating a belief in the infectiousness of pneumonia and the importance of its segregation.

W. P. Chamberlain, M.D., Washington, D. C.
Colonel, Medical Corps, U. S. Army.

"IRON AND BLOOD REGENERATION"

To the Editor:—In the editorial on "Iron and Blood Regeneration" (The Journal, Oct. 9, 1920, p. 1004) you mention the work of Whipple, Hooper and Robscheit in that field. These investigators, working on dogs, found that iron given as Blaud's pills had no influence in simple secondary anemias. It seems pertinent to remark that these results are demonstrated only for dogs, and that any attempt to extend their application to human beings is entirely unwarranted. Compare, on the contrary, the recent well-controlled work of Nägeli (*Schweiz. med. Wchnschr.* **50**:661 [July 29] 1920; abstr., The Journal, Oct. 2, 1920, p. 966), who found in ten cases of anemia with gastric ulcer that benefit was evident when large doses of iron were given, and that the hemoglobin ran up rapidly from 37 to 82 and then to 100 per cent. Alder's results (ibid.) in using Blaud's pills in various anemias confirm its definite usefulness. It does not seem that the work of Whipple et al. can be applied to human beings.

Alvan L. Barach, M.D., Boston.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Arkansas: Little Rock, Nov. 9-10. Sec. Reg. Bd., Dr. F. J. Stout, Brinkley. Sec. Electic Bd., Dr. C. E. Laws, Ft. Smith.

Connecticut: Hartford, Nov. 9-10. Sec. Reg. Bd., Dr. Robert L. Rowley, Hartford.

Connecticut: New Haven, Nov. 9. Sec. Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec. Eclectic Bd., Dr. James E. Hair, Bridgeport.

Florida: Gainsville, Dec. 6-7. Sec. Reg. Board, Dr. W. M. Rowlett, 812 Citizens Bank Bldg., Tampa.

Louisiana New Orleans, Dec. 2-4. Sec., Dr. E. W. Mabler, 1551 Canal St., New Orleans.

Maine: Portland, Nov. 9-10. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

Massachusetts: Boston, Nov. 9-11. Sec., Walter P. Bowers, Room 144, State House, Boston.

Nebraska: Lincoln, Nov. 11-12. Sec., Mr. H. H. Antles, Lincoln.

Ohio: Columbus, Dec. 1-3. Sec., H. M. Platter, State House, Columbus.

South Carolina: Columbia, Nov. 9. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

Texas: Dallas, Nov. 16-18. Sec., Dr. Thomas J. Crowe, 617-20 Trust Bldg., Dallas.

GRADUATE COURSES FOR THE TRAINING OF SPECIALISTS

During recent years, considerable study has been given by the Council on Medical Education and Hospitals to the problems of graduate medical education. One of the great needs at the present time is a carefully worked out course representing the minimum standard of training for each specialty. With this end in view the Council has created fifteen committees, each consisting of nine members of national reputation in the specialty represented.

These committees are in anatomy; dermatology and syphilology; internal medicine; obstetrics and gynecology; ophthalmology; orthopedic surgery; otolaryngology; pathology and bacteriology; pediatrics; pharmacology and therapeutics; physiology; psychiatry; public health and hygiene; surgery, and urology. Each committee will be made up of representatives of the section of the American Medical Association and of the national association or associations in that specialty.

It is planned to have each committee outline a minimum course of study which it believes should be pursued by the graduate physician in order to prepare himself in that particular specialty, beginning with the basic training which should be completed in the undergraduate medical school. The committee may recommend forms of recognition by special degree or certificate for physicians who have satisfactorily completed the course, and suggest measures by which the fitness of the individual to practice the particular specialty may be established. The scheme adopted by the ophthalmologists may be suggestive in the formulation of the courses to be recommended in the other specialties. Besides outlining a course of study, the ophthalmologists have established a board to examine the men who have completed the required work. They also are prepared to investigate medical schools, hospitals and private institutions and to prepare lists of those deemed competent to give satisfactory instruction in that specialty.

It is suggested that the course of instruction in each specialty be established on the supposition that the physician is to be a graduate of an acceptable medical college, and that he has completed an internship in an approved hospital or, if the specialty is one of the laboratory branches, shall have taken an extra year of training in the preclinical sciences. It is of vital importance that this year of training in the preclinical sciences be counted as the equivalent of the intern year; i. e., it should count toward the M.D. degree but not necessarily for the license to practice.

Other suggestive items for each committee to consider in the proposed scheme, are:

(*a*) A course of instruction of at least nine months, to be devoted to the desired specialty; the portions of time to be spent in review courses, in advanced study, and in clinical work to be designated.

(*b*) An additional year's internship in a special hospital in which the work is devoted to the chosen specialty; any equivalents for such hospital work to be outlined by the committee.

(*c*) Other regulations with which the physician shall comply to be eligible for the qualifying certificate to be granted on satisfactory completion of the course.

(*d*) Recommendations in regard to requirements for a higher degree and suggestions as to what degree shall be granted.

(*e*) Specifications in regard to final examinations and to the establishing of a board of examiners in each particular specialty.

(*f*) Recommendations in regard to shorter courses which would have certification but not lead to a degree.

The foregoing outline applies chiefly to the committees dealing with the clinical specialties. For the committees dealing with the laboratory specialties, other points will need to be taken into consideration, depending on whether or not the physician is preparing to teach.

Although each committee consists of nine members, the chairmen are at liberty to confer with as many others as they may deem advisable.

ADDITIONAL HOSPITALS APPROVED FOR INTERN TRAINING

Since the publication of the list of hospitals furnishing acceptable internships, in the Educational Number of THE JOURNAL, Aug. 7, 1920, and the supplementary list in the issue of September 25, the following institutions have been added:

Middlesex County Hospital, 28 Cresent Street, Middletown, Conn.

St. Francis Hospital, 355 Ridge Avenue, Evanston, Ill.

Pittsburgh Hospital, Frankstown Avenue and Washington Boulevard, Pittsburgh, Pa.

Sacred Heart Hospital, Eighth and Brown Streets, Spokane, Wash.

The State Hospital for Mental Diseases, Howard, R. I., has been admitted to Section II of the list, which includes "State Hospitals and Hospitals for the Insane."

Children's Hospital, Thirteenth and W Streets, N. W., Washington, D. C., and the Episcopal Eye, Ear and Throat Hospital, 1147 Fifteenth Street, N. W., Washington, D. C., are approved and classified under "Special Hospitals," Section III of the list.

Connecticut July Examination

Dr. E. C. M. Hall, secretary, Connecticut Homeopathic Medical Examining Board, reports the written examination held at New Haven, July 13, 1920. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Two candidates were examined, all of whom passed. One candidate was licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
New York Homeo. Med. Coll. and Flower Hospital		(1920)	83
Hahnemann Med. Coll. and Hosp., Philadelphia		(1920)	80

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
New York Med. Coll. and Hosp. for Women		(1918)	New York

North Dakota July Examination

Dr. G. M. Williamson, secretary, North Dakota State Board of Medical Examiners, reports the oral, written and practical examination held at Grand Forks, July 6-9, 1920. The examination covered 13 subjects and included 104 questions. An average of 75 per cent. was required to pass. Of the 8 candidates examined, 7 passed and 1 failed. Eight candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery		(1916)	75
Northwestern University		(1920)	81
Rush Medical College		(1920)	76.6, 86.2
Johns Hopkins University		(1919)	75.1
University of Minnesota Medical School		(1920)	79
Queens University		(1919)	78.7
	FAILED		
University of Oklahoma		(1911)	71.6

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago		(1903)	Minnesota
Rush Medical College		(1919)	Illinois
St. Louis University		(1914)	Missouri
University of Minnesota Medical School		(1914), (1915), (1916),	(1917) Minnesota
University of Nebraska		(1913)	Minnesota

Book Notices

THE MARCHING YEARS. By Norman Bridge, M.D., A.M., LL.D. Cloth. Price, $2.50. Pp. 292. New York: Duffield & Company, 1920.

Among the medical personalities of early days in Chicago the name of Norman Bridge is prominent. Also it appears among those to whom may be credited the development of southern California. Thus, he is well known in the western as well as in the central part of the country. Further, Norman Bridge may be classed among those who have accomplished things. For these reasons many will rejoice that he has written this autobiography. After recounting his boyhood experiences in New England and later in central Illinois, which were those of the ordinary farmer's boy, he tells of the incidents which finally led him to the study of medicine. His medical education was obtained in the University of Michigan, which he entered in 1866, and in the Chicago Medical College, from which he received his medical diploma in 1868. Almost immediately after his graduation he became connected with the teaching faculty of his alma mater. The following year he associated himself with the Woman's Medical College and two years later entered the faculty of Rush, with which he has been closely or indirectly connected since. In 1872 he and Dr. T. D. Fitch published the first volume of the Chicago Medical Register and Directory, which he tells us contained the names of 305 physicians. Later he was instrumental in merging the *Chicago Medical Examiner,* which had been the organ of the Chicago Medical College, and the *Chicago Medical Journal,* the organ of Rush Medical College, into one journal, the *Chicago Medical Journal and Examiner;* he became associate editor with Drs. Byford, Etheridge, Hyde and Hotz—men whose names are intimately connected with the development of medicine in Chicago. In 1882 he visited California, and this proved the turning point in his life. When, a few years later, he became ill with premonitory symptoms of consumption, he concluded to make California his future home, and moved there in 1891. While his first interest was in medicine, he early began to take part in public affairs. He was one of those instrumental in building the new Cook County Hospital, and later the Presbyterian Hospital. In 1881 he accepted appointment as a member of the board of education in Chicago, and in 1886 membership on the election commission, on both of which bodies he served for many years. After moving to California he also held various public offices, among them membership on the board of freeholders, which framed the new charter for Pasadena. For many, the most interesting chapter in the book will be that on secular pursuits. It is rare that a physician so invests his meager capital that it brings such multifold returns as has been the case with Dr. Bridge. In this chapter he tells how it happened, and he gives the rules of commerce which brought him success. They seem very, very simple! He gives intimate details of the development of the Mexican Petroleum Company, and tells how a small investment yielded such rich returns. He does not tell what the returns were, but they are reported to be in seven figures. Nor does he dilate on the generosity with which he already has administered part of this fortune. He describes the founding of the Throop Institute, which has now become the California Institute of Technology. He does not say that he had already contributed $150,000, to which, since his book was written, he has added another $100,000; nor does he mention his contribution of more than $100,000 to Rush Medical College, and many other smaller benefactions. He relates that on account of the peculiar laws in California which prohibit the willing of more than one third of one's fortune to institutions, he established legal residence in Chicago in 1916, and maintains this residence by voting and by spending a portion of his time each year in that city. Chapters are devoted to Dr. Bridge's numerous contributions to medical and philosophical literature and to his interesting court experiences and political strategy. Of the last mentioned, one of the most interesting is the account of the Cook County Hospital examination in which Dr. Frank Billings received first place and in which for the first time women were successful. This anecdote and

numerous others give the book an appeal which makes it more than a matter of personal interest. Among other subjects, Dr. Bridge discusses and devotes chapters to music, charity, authorship, clubs, societies and friendships. The book is one that will be read with pleasure by all who know the author; it is instructive and interesting.

Diätetik der Magen- und Darmkrankheiten. Von Prof. Dr. I. Boas. Nebst einem Anhang: Diätetik vor und nach Operationen am Magen-Darmkanal. Von Prof. Dr. G. Kelling. Paper. Price, 85 cents. Pp. 216. Leipzig: George Thieme, 1920.

This is an instructive guide for the dietetic management of gastro-intestinal diseases. A chapter on general dietetic requirements emphasizes the importance of every physician's knowing not only the value of particular foods, but also the manner of their preparation for the invalid. The patient's desires and taste should be frequently a guide as to which foods are best suited to his individual case, especially in the gastro-intestinal conditions in psychoneuroses. The chapters on hyperacidity, reflex and organic, on duodenal and gastric ulcer, and on obstipation, colitis and chronic diarrheas are complete and well worth perusal by the practitioner. In several chapters on the dietetic management of preoperative and postoperative conditions, Kelling of Dresden lays particular stress on preparing the patient by dietetic measures, in order that his resistance may be at a maximum before every operation. War conditions have shown that protein loss is not necessarily associated with a lowered resistance to infection. There is a chapter on the preparation of a diabetic patient for operation. No mention is made of the Allen management. In fact, starvation days were not found necessary.

Studies in Neurology. By Henry Head, M.D., F.R.S., in Conjunction with, W. H. R. Rivers, M.D., F.R.S., Gordon Holmes, M.D., G.M.G., James Sherren, F.R.C.S., Theodore Thompson, M.D., and George Riddoch, M.D. Two Volumes. Cloth. Price, $17. Pp. 862, with 182 illustrations. New York: Oxford University Press, 1920.

These volumes consist mainly of a republication of a number of papers published by Head and his co-workers in *Brain* over a period extending from 1905 to 1918. No material change has been made in their arrangement. Each paper contained an account of the methods employed in testing sensation. These have been omitted, and a fresh chapter in which they have been combined has been added. An introduction and an epilogue dealing with the common aims which underlie these various researches have been added. Finally, some of the most serious criticisms of their researches have been considered in an appendix. The first volume consists of three papers on the peripheral nervous system. The profound studies herein described resulted in a new conception of the physiology of sensation. They led Head, Rivers and Sherren to conclude that the sensory mechanism in the peripheral nerves consists of three systems: deep sensibility, protopathic sensibility and epicritic sensibility. In addition to the sensory studies there are found some illuminating observations on changes in the skin and nails, and comments on paralysis, emphasizing the effect of supplementary motility. In the second volume the grouping of afferent impulses is described. After showing that afferent impulses which reach the central nervous system by way of the peripheral nerves undergo rearrangement within the spinal cord, so that each tract is devoted to the conduction of one of the specific impulses, such as pain, the authors attempt to trace the course of the impulses upward. They show that painful, thermal and tactile impulses ultimately pass from the point of entry to the opposite side of the spinal cord, having undergone recombination on the side into which they enter. A lamellar arrangement of fibers as they course upward is pointed out. Continuing their researches to the brain, there are exhaustive studies on the grouping of afferent impulses in the brain stem, and sensory disturbances from lesions of the optic thalami and the cerebral cortex. These volumes will be of interest to the physiologist and all clinicians. They permit a comprehensive view of the newer conceptions of the physiology of sensation, and should tend to stimulate further interest in this subject, which has so great a bearing on clinical neurology. The clinician will be especially edified by the full case reports and numerous illustrations.

Medicolegal

Hysterical Blindness from Operation Compensable

(Weber v. George Haiss Mfg. Co. et al. (N. Y.), 181 N. Y. Supp. 140)

The Supreme Court of New York, Appellate Division, Third Department, in affirming an award under the workmen's compensation law, says that the claimant sustained an injury to his right eye, which made its removal by operation necessary. Simultaneously with the operation, the sight of the left eye became affected, and was almost wholly lost. No injury appeared to have been done to the eyeball, the optic nerve or any physical thing constituting a part of the organ of sight. Yet distinguished physicians were agreed that the claimant was not simulating blindness, and in fact did not see. A neurologist said that the claimant could not see at all, and diagnosed the trouble as "traumatic neurosis" or "hysterical blindness," stating that "this psychic shock, the surgical operation which produced the shock, was the primary means of producing that hysterical blindness." It was not important that the claimant had an uninjured physical equipment with which he should, but could not, see. After all, a man sees with his brain, not with his eyeball or his optic nerve, and if an operation performed on an eye so affects the mind, the nerves or even the imagination that a man genuinely loses vision with his other eye, then the faculty of sight has been more directly attacked than when assailed through the mechanical contrivances by which it functions. The workmen's compensation law of New York provides that every employer shall pay or provide compensation for the disability or death of his employee resulting from an accidental personal injury. All the consequential results of an accidental injury are thus made compensable. The operation of this section is not in the least limited by the provision which merely makes certain that conditions consequent on disease following accidental injury shall be regarded as themselves the consequence of such injury. This was perhaps a necessary provision, for the reason that, strictly speaking, disease is never caused by injury, but is merely provided with opportunity thereby. If an injury requires an operation, and the operation deranges the mind or nerves, clearly disabilities resulting from the derangement result from the injury. In negligence cases involving railroad disaster, nothing is more common than recoveries for nervous and hysterical disorders due to shock. If a neurasthenic condition consequent on accidental injury is compensable, as it clearly is, then surely a disorder, such as hysterical blindness, which forms a constituent part of that condition, must also be compensable.

Care Required of Private Hospitals

(Davis v. Springfield Hospital (Mo.), 218 S. W. R. 696)

The Springfield (Mo.) Court of Appeals says that the plaintiff's former husband was a pay patient at the defendant hospital, which was not claimed to have been a charitable institution, but was conducted on the theory of charging and receiving adequate compensation for the services rendered. That it was liable for its negligent acts was not controverted. Two trials were had of this case, the second one being on the theory that this patient, being delirious and unconscious of his acts and danger, left his room on the third floor of the hospital, between 12 and 1 o'clock at night, in the absence of any nurse or attendant, and went into the hallway, opened a door leading to a fire escape, and fell down the steps of the fire escape to the ground, receiving injuries from which he died a few hours later. A judgment for damages, for an amount not stated by the court, was rendered in favor of the plaintiff, and is affirmed. But it was with some hesitation that the court came to the conclusion that there were sufficient facts to carry to the jury the question that the defendant could and should have anticipated that the patient was likely to receive injuries unless more closely watched and guarded. There was no question but that his mental condition and conduct were such as reasonably to warn the hospital attendants that unless watched he was likely at any time to leave

his bed and wander through the halls and open doors. The evidence was that the door to the fire escape was closed, and perhaps locked, but with the key left in the door. The patient had also shown a tendency to want to leave the building to get morphin or cocain. He would naturally come to this door in wandering through the hall, and finding the key therein open it to the fire escape, or he might have fallen down the inside stairs. The court thinks that the defendant's negligence was a jury question, and, having been properly submitted, the verdict was binding on this court.

There is no question as to the law being that the defendant was required to use reasonable care and diligence not only in treating this patient for his illness, but also in safeguarding him from the danger due to his mental incapacity to care for himself. The degree of care and diligence required is measured both by the mental incapacity of the patient and the danger which the surroundings indicate may befall such a patient in view of any peculiar mental traits exhibited by the patient.

While all the authorities hold that a private hospital owes to its patients such reasonable care and attention for their safety as their known mental and physical condition reasonably requires, yet this is always limited by the unbending rule that no one is required to guard against or take extreme measures to avert that which under the circumstances is not likely to happen, or, more accurately, which a reasonable person under the circumstances would not anticipate as likely to happen. The law requires only reasonable care—that care to avert dangers which a reasonable man would take under the circumstances as they exist—and no man does or is required to take measures to avert a danger which the circumstances as known to him do not suggest as reasonably likely to happen. These circumstances include the patient's mental condition and aberrations, and what he is likely to do by reason thereof, the degree of his mental and physical helplessness, and the dangers which his surroundings afford.

Insufficient Allegation as to Examination Before Prescribing Narcotic

(Kansas City v. Smith (Mo.), 218 S. W. R. 943)

The Kansas City (Mo.) Court of Appeals, in reversing a judgment of conviction of the defendant, says that it was charged in the information that the defendant, a duly licensed physician, did "unlawfully issue a prescription to one Arthur Hines for a narcotic, habit-forming drug, to wit, morphine, without first making a physical examination of said Arthur Hines for disease, injury or deformity—all in violation of Sections 1 and 6 of Ordinance No. 22373 of Kansas City, Mo., approved March 26, 1915." Section 1 of the ordinance thus alleged to have been violated forbids the sale of the drug mentioned by pharmacists, druggists, or other persons "except upon the written prescription of a duly licensed physician," etc., provided that the provisions of the ordinance shall not apply to the sale of certain proprietary remedies sold in good faith, etc. There is nothing in the section directed against a physician forbidding him from issuing a prescription. Except as quoted, no mention is made of a physician at all. The section of the ordinance pleaded does not justify the conviction. Section 6 referred to only fixes the penalty. In Section 2 of the ordinance, which section was not pleaded, there is a provision that it shall be unlawful for any duly licensed physician, veterinarian or dentist to issue any such prescription, "except after a physical examination of the person for the treatment of disease, injury or deformity." But even under that section the offense seems not to have been sufficiently alleged. The charge was that the defendant made "a physical examination of said Arthur Hines for disease, injury or deformity," whereas the ordinance is that he must have made the examination "for the treatment of disease," etc. An examination to ascertain whether there is a disease is not the same thing as examining for the purpose of treating such disease. In failing to state the purpose of such examination, as it is set out in the ordinance, the offense was not described. The treatment for disease, etc., formed an exception which went, in part, to make up the offense, and it should have been pleaded.

Society Proceedings

COMING MEETINGS

District of Columbia, Medical Society of, Washington, Dec. 1.
Hawaii, Medical Society of, Honolulu, Nov. 18-20.
Medical Association of the Southwest, Wichita, Kan., Nov. 22-24.
Porto Rico, Medical Association of, Ponce, Dec. 13-14.
Radiological Society of North America, Chicago, Dec. 16-17.
Southern Medical Association, Louisville, Ky., Nov. 15-18.
Southern Minnesota Medical Association, Mankato, Nov. 29-30.
Southern Surgical Association, Hot Springs, Va., Dec. 14-16.
Western Surgical Association, Los Angeles, Calif., Dec. 3-4.

INDIANA STATE MEDICAL ASSOCIATION

Annual Meeting, held at South Bend, Sept. 23-24, 1920

The President, DR. CHARLES H. MCCULLY, Logansport, in the Chair

SYMPOSIUM ON RENAL TUBERCULOSIS

Pathology

DR. VIRGIL MOON, Indianapolis: Tuberculous infection may reach the kidney by direct infection from a neighboring focus; by way of the lymphatic system, which is of infrequent occurrence since the drainage is from, not toward, the kidneys; rarely by infection ascending from the bladder, and most commonly by the blood stream. In caseous tuberculosis of the kidney, the ureter and lower urinary tract are regularly involved.

Early Recognition and Management

DR. FRANK B. WYNN, Indianapolis: Early diagnosis, the application of proper treatment—rest and hygienic, dietetic and therapeutic measures—may arrest or cure the disease, but this should never supplant surgery when there is proved unilateral tuberculosis of the kidney, or when there is evidence of retrogressive changes.

Differential Diagnosis

DR. H. O. MERTZ, Indianapolis: Tubercle bacilli in the urine mean tuberculosis, but their absence does not eliminate the disease. Cystoscopy and ureteral catheterization are of value in the obscure case, and necessary in every case coming to surgery. Repeated examinations are necessary in many cases, and a differential diagnosis may take many weeks, occasionally months, or may rest on a justified surgical exploration.

Roentgen-Ray Diagnosis

DR. R. C. BEELER, Indianapolis: A series of films of different densities should be made of the entire urinary tract in all suspected cases. One out of five cases will show definite roentgenographic signs, and by means of the roentgen ray a diagnosis may be made when all other methods have failed. In early inflammatory infection of the kidneys, pyeloscopy is of value.

Surgical Treatment

DR. H. G. HAMER, Indianapolis: In unilateral renal tuberculosis, early nephrectomy is indicated and affords the only assurance of cure. When both kidneys are infected, nephrectomy is contraindicated, unless one kidney is practically destroyed and the other still has good functional capacity. Under tuberculin treatment and proper dietetic, climatic and hygienic management, many patients will be improved, but are likely to have recurrences later on. Supposed cures are generally an expression of the phenomenon of excluded kidney. Seventy-five per cent. of cases of unilateral renal tuberculosis are amenable to cure by nephrectomy.

DISCUSSION

DR. CHARLES TERRY, South Bend: I believe in early operation in tuberculosis of the kidney when surgery is indicated. I see no objection to exploring the kidney.

DR. CHARLES BEALL, Fort Wayne: When the tuberculous process is advanced and unilateral, the kidney should be removed. This is, however, not the only cure, but is certainly gives the patient the best chance to get rid of his tuberculosis.

After the kidney is removed, however, the patient needs further treatment before he is well.

DR. A. C. KIMBERLIN, Indianapolis: The importance of early clinical history, and very thorough and repeated physical examinations that lead up to the lesions evidenced in the kidney itself, should be emphasized. Climatic and hygienic treatment is important, and tuberculin treatment is of value if you know how to use it.

DR. P. E. MCCOWN, Indianapolis: With an acid urine in which bacteria are not found, repeated stains should be made day after day for three or four weeks. Many times tubercle bacilli appear in the tenth or fifteenth stain.

DR. BERNHARD ERDMAN, Indianapolis: One hour before making a cystoscopic examination, I insert into the bowel, in a rectal suppository, 1 grain of powdered extract of opium and ⅛ grain of powdered extract of belladonna. After thirty minutes I instil into the bladder 1 ounce of a solution containing 30 grains of antipyrin. It is surprising with what comfort cystoscopy may then be performed.

DR. H. K. BONN, Indianapolis: In cases of bilateral inoperable renal tuberculosis, Rosenkranz suggested extraperitoneal dissection of the ureter, ligating the bladder end of the ureter, conducting the renal end through the abdominal wall, and implanting it subcutaneously below the level of the umbilicus.

Association of Free Hydrochloric Acid and Gastric Motility in Gastric Diseases

DR. IVAN C. BRENNER, Winchester: In cases of chronic duodenal ulcer I found hypermotility with hypochlorhydria or achylia gastrica; in chronic gastric ulcer, hypermotility with hypochlorhydria in 80 per cent. of the cases, and in acute ulcer of the stomach hypomotility with hyperchlorhydria in 60 per cent. of the cases; all of which indicates that the increase or decrease of free hydrochloric acid in chronic ulcer has nothing to do with the gastric motility. In cases of gastritis chronica, regardless of cause, I found hyperchlorhydria with hypomotility, and hypochlorhydria with hypermotility. I could not depend on the symptoms of hunger pain, food relief, hypersecretion and hyperchlorhydria as laid down in textbooks as the cardinal symptoms of chronic duodenal ulcer. I also found that most cases of burning and gnawing sensation in the stomach were either achylia or hypochlorhydria rather than hyperchlorhydria only.

DISCUSSION

DR. FRANK JETT, Terre Haute: In the diagnosis of stomach ulcer, stomach carcinoma, or duodenal ulcer the history is most important, outside of radiography. By elimination, a diagnosis of gallbladder trouble can often be made. Gastric analysis has very little place in scientific diagnosis.

DR. H. O. PANTZER, Indianapolis: It is my belief that in a vast majority of these cases the history will show that the trouble began the day the patient was born, and is due to some gross irregularity of the stomach.

DR. ALFRED S. JAEGER, Indianapolis: Surgery simply relieves the abdominal irregularities and gives Nature a chance to bring into force its recuperative powers; but surgery alone does not cure. The ultimate cure is medical, not surgical.

Rôle of Roentgen Ray in Diagnosis of Surgical Abdomen

DR. B. R. KIRKLIN, Muncie: It is my opinion that by the skilful use of roentgen-ray methods alone it is possible to diagnose from 80 to 95 per cent. of all pathologic gallbladders and appendixes. The most important factor in this work is the correct interpretation of the various shadows on the plates and screens.

Pelvic Lymphangitis

DR. CARL HABICH, Indianapolis: The severity of this type of pelvic infection, which does not include those following labor, abortion or instrumentation, depends entirely on the amount of cervical invasion, the virulence of the infection and the resistance of the patient. The functional changes in menstruation have a direct relationship to the amount of ovarian involvement. The recognition of chronic endocervicitis as a primary focus of infection, and its extension as an ascending lymphangitis, places it on a rational parallel with any other infectious process. If further investigation of this subject should prove that the extension of infection from the cervix is by way of the lymphatics, it would be a happy solution of some of the unexplained phenomena of pelvic infections and the associated menstrual disturbances.

DISCUSSION

DR. WALTER J. BAKER, South Bend: I have searched the literature and cannot find any record of any case of leukorrhea being improved by curettage unless there was positive congestion. On the other hand, the condition is made worse, new channels of infection are laid open, and the patient is harmed by the procedure. Treatment should extent to the external os, not beyond it.

DR. E. E. PADGETT, Indianapolis: I agree with Dr. Baker about curettage for leukorrhea. I have not curetted for a long time, except to remove particles from an incomplete operation. The leukorrhea comes from the cervix, and one cannot cure it by curettement of the uterine canal.

Syphilis as a Factor in Deafness

DR. C. H. MCCASKY, Indianapolis: Syphilis is a much more frequent cause of deafness than is commonly supposed. Congenital or hereditary syphilitic deafness usually occurs in early life, while acquired syphilitic deafness is, as a rule, found in adult life. It attacks both the receptive and perceptive apparatus, but the latter much more frequently. It is usually bilateral in destruction of hearing. The diagnosis depends largely on the case history and the laboratory findings.

(To be continued)

KENTUCKY STATE MEDICAL ASSOCIATION

Seventieth Annual Session, held at Lexington, Sept. 27-30, 1920

The President, DR. W. W. ANDERSON, Newport, in the Chair

End-Results in Surgery of Gastric and Duodenal Ulcer

DR. LOUIS FRANK, Louisville: Gastric and duodenal ulcer are distinctly amenable to surgical treatment and are best handled by it. In from 75 to 85 per cent. the results of surgical treatment are quite satisfactory to the patient. Many of the failures to relieve completely are due to delay in instituting surgical interference. Failures are also due to incorrect diagnosis. In the presence of ulcer, lack of cure may also be the result of an imperfect technic or of an incorrect type of operation, thereby leaving the way open to postoperative complications or sequels such as jejunal ulcer or carcinomatous engraftment on the ulcer.

Radium Treatment of Cancer

DR. WILLIAM J. YOUNG, Louisville: In inoperable carcinoma of the uterus, radium has produced startling results which are for the most part temporary. When the cervix is involved and a foul-smelling discharge is a constant source of annoyance to the patient and those coming in contact with her, radium treatment will clarify the situation and relieve the pain that is usually present. In carcinoma of the prostate, radium is used to reenforce surgery, should it be deemed wise to operate; and if considered inoperable, radium is the one means by which the condition may be reached directly.

Treatment of Skin Tumors

DR. M. L. RAVITCH, Louisville: Radiation in the treatment of malignant tumors may be carried out either with radium or the roentgen ray. The latter is still the method of choice when it can be employed, since it will accomplish everything that radium can accomplish. Radium, on the other hand, can be employed when it is impossible to get a good exposure with the roentgen ray, as, for example, in cavities of the body and in fistulous tracts. The great majority of operators are using the roentgen ray for the treatment of skin malignancies. It is essential that proper apparatus be used. The results of roentgen-ray treatment in nonmetastasized epithelioma are amazingly good. In nearly 100 per cent. of cases a permanent cure is obtained. Involvement of the lymph glands means a decided drop in the percentage of cures, while in sarcomas the results again are far from what we

obtain with epitheliomas. Lipomas and myomas are best treated by complete surgical excision. The tubercular nodules and tumors of lupus vulgaris and tuberculosis verrucosa cutis may be reduced by chemical or electrical cauterization, combined with radiation. Sometimes the use of the roentgen ray in these cases produces considerable irritation, and the ultraviolet ray may be found more suitable.

Malignancy of the Face and Jaws

DR. FRANK T. FORT, Louisville: Of the various types of malignancy involving the face and jaws, the basal cell tumor is the least malignant and may exist for many years without appreciable change. A frozen section should be made in every case in which an anesthetic is required, so that the surgeon may be guided by the microscopic findings as to whether little or much tissue should be sacrificed. In the small basal cell type of epithelioma of the face, some form of paste, the knife, cautery, radium or the roentgen ray is all that is necessary for its destruction. In malignant epulis, which is usually one of the least of the malignancies, in addition to enucleation of the main growth it is always necessary to chisel away diseased portions of the alveolar process. In cancer of the tongue, which is one of the most malignant types involving the mouth, metastases occur quite early, and operation with hope for a cure is best performed in two stages, that is, removing all the glands of the neck immediately connected with the lymphatics of the tongue, and excising the tongue.

Diagnosis of Syphilis

DR. HERBERT BRONNER, Louisville: The provocative Wassermann test is a possible means of early diagnosis. In some cases in which the blood has been decidedly negative, a positive reaction was obtained after the provocative injection. If the blood is negative after twenty-four hours, the blood should again be taken at forty-eight hour intervals for several days and tested. Laboratory procedures, including the dark field illuminator or the Wassermann test, will make or confirm the diagnosis of syphilis in the primary stage in more than 90 per cent. of the cases.

Bacillus Coli Infection of Prostate and Seminal Vesicles

DR. CLAUDE G. HOFFMAN, Louisville: Of five cases of colon bacillus prostatitis coming under my observation, the seminal vesicles were affected in four; in one there was an accompanying bilateral epididymitis. In all of the cases the infection was acute in type and *B. coli* was the predominating organism, as shown by bacteriologic and cultural methods of investigation. In only one case was there a history of antecedent venereal disease. Involvement of the prostate and seminal vesicles from mixed infection following improperly treated gonorrheal urethritis is quite common. Acute prostatitis, epididymitis and seminal vesiculitis due to *B. coli* invasion must be rather rare, as few such cases have been recorded in available literature. Chronic cases are common, but these are usually due to mixed infection.

Lessons From the Study of Three Hundred Diphtheria Deaths

DR. L. H. SOUTH, Louisville: Experience and statistics have proved that if antitoxin is given the first day of the disease in large enough doses there will be no deaths. The mortality curve increases in direct proportion to the duration of the disease before its use. The initial dose of antitoxin used in the 300 cases in which death occurred in Kentucky, and the interval between doses, varied extremely. The majority of the physicians reporting favored an initial dose of 10,000 (43 per cent.); 20,000 units were given by 14 per cent., and 20 per cent. gave only 5,000 units, the majority of the latter being city physicians, by whom large doses easily could have been procured. Four per cent. gave the obsolete dose of 3,000, virtually the same as giving none at all. In no instance was an intravenous dose given, although this method of treatment was urged in severe cases in 1911.

Significance of Acidosis in Children

DR. T. M. MARKS, Lexington: Acetonuria does not necessarily mean acetone body acidosis. True acidosis, the most common type in children, shows no acetonuria in the early stages, and never enough to be of clinical importance. Hyperpnea with nervous symptoms and no cyanosis in an infant means acidosis. Acidosis is the most common disorder to be overlooked in treatment of children, many deaths resulting because many still hold that if there is no acetonuria there is no acidosis. It is deemed inadvisable to treat acetone body acidosis with alkalis, while in true acidosis alkali is indicated. Acidosis introduces the necessity for rapid and energetic specialized treatment; but when it is overcome, the underlying condition is still to be recognized and combated.

Indications for Removal of Faucial Tonsils

DR. S. SHELTON WATKINS, Louisville: Before the tonsils are removed as the probable cause of various disorders due to focal infections, other foci should be ruled out. The most important ones are adenoids, accessory sinuses, teeth, the prostate, the seminal vesicles, the gallbladder, the appendix and cecum, and a dilated, sluggish colon. Extraction of important teeth should be performed last of all, since it is difficult to replace them satisfactorily with artificial teeth. The percentage of diseased teeth acting as foci of infection is probably much smaller than is generally supposed. Of course, when they are causing serious trouble, they should be removed; but too many men assume that they are doing so merely because they are diseased, and do not make an effort first to treat more likely foci. Radical operation on any of the foci should be discouraged until there is little doubt of the need for them, but not postponed when needed just because they are radical.

End-Results of Surgery of Kidney

DR. JOHN R. WATHEN, Louisville: I have performed eleven nephrectomies for pyonephrosis combined with stones. Four deaths occurred soon after the operations, either from shock or from uremia. In eighteen cases for stone in the kidneys and ureters, six operations were for stones in the ureter low down, and all the patients recovered; of the twelve patients operated on for stones in the kidney, two died, one from internal hemorrhage through the ureter and bladder, due to faulty closure of the nephrotomy incision, and the other from anuria. The patients who made operative recoveries have remained well, and only two returned with pain in the other kidney. My youngest patient operated on for nephrolithiasis was a boy 8 years old, and my oldest patient was a woman, aged 67 years.

Local Versus General Anesthesia in Tonsillectomy

DR. R. H. COWLEY, Berea: A local anesthetic is safer, pleasanter and in every way preferable to a general anesthetic, except in young children and very nervous adults. One should perfect his technic in both methods so that he can practically leave the choice of method to the patient.

Diagnosis and Management of Hyperthyroidism

DR. C. W. DOWDEN, Louisville: An increase of the basal metabolic rate of 10 points or more above the normal means hyperthyroidism if pernicious anemia, leukemia, polycythemia, etc., are excluded. It should also be remembered that menstruation frequently causes a slight rise, even 10 points or more, and that nervous persons will show a decided rise on one day, and the following day, after having been accustomed to the apparatus and the surroundings, be perfectly normal. Determination of the basal metabolic rate is the only means by which we can differentiate the borderline cases. The epinephrin test or the sugar tolerance test are not reliable guides.

Control of the Milk Supply

DR. J. D. MAGUIRE, Lexington: The first essential for the control of the milk supply is that the health department be thoroughly equipped with diligent inspectors, sufficient money, a competent bacteriologist, and a complete, up-to-date score card and grade card system for records and references. Milk must be graded just as other commodities are graded. The public should know the food value of milk as well as its bacterial content.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Neurology and Psychiatry, Chicago

October, 1920, **4**, No. 4

Static and Kinetic Systems of Motility. J. R. Hunt, New York.—p. 353.
*Acquired Double Athetosis (Dystonia Lenticularis). W. G. Spiller, Philadelphia.—p. 370.
*Herniation of Brain. A. Meyer, Baltimore.—p. 387.
*Histopathology of "Pseudotumor Cerebri." P. Bailey, Chicago.—p. 401.
*Dystonia Lenticularis (Dystonia Musculorum Deformans). E. W. Taylor, Boston.—p. 417.
Chronicity in Lethargic Encephalitis. I. Abrahamson, New York.—p. 428.

Dystonia Lenticularis.—Spiller reports a case of the myoclonic form of lethargic encephalitis with intense muscular contractions of the myoclonic type in various parts of the body which terminated fatally. He found in microscopic sections a pronounced cellular infiltration of the region of the basal ganglions, but not confined to them. It occurred diffusely in the basal part of the temporal lobe. The intense perivascular cellular infiltration of the region of the aqueduct of Sylvius, so common in the usual form of lethargic encephalitis, did not occur in this case.

Herniation of Brain.—Cases illustrating various types of herniation under the falx and under the tentorium and into the foramen magnum are recorded by Meyer. They give an interesting quasi-experimental picture of the topography and at least in two instances collateral consequences of possible importance among the so-called distant symptoms of brain tumor. One case of glioma of the left opercular region, shows, besides a moderate cerebellar wedging into the foramen magnum, a characteristic sagittal "tentorial line" on the left uncus, not to be taken for a sulcus semi-annularis Retzius. A glioma of the anterior and middle hindbrain segment, showed similar tentorial lines due to slight hydrocephalus. A most extensive prolapsing glioma of the left temporal lobe with death in coma, showed a frontal herniation under the falx and a marked subtentorial herniation of the uncus. A cancer metastasis with a cyst in front of the paracentral lobule lead to herniation of the fornicate gyrus under the falx and subtentorial herniation of part of the uncus and of both subicula, with a striking impingement on the calcarine branch of the posterior cerebral artery and collapse of the corresponding part of the occipitotemporal cortex; hence providing a foundation for hemianopsia. An aneurysm of the circle of Willis just in front of the optic tract and chiasma impinged on the circulation of the right hemisphere, with swelling of the right hemisphere without actual softening or infarction, but marked herniation of the subiculum; left hemiplegia and hemianesthesia, three days later coma, and nine days later death. An hemorrhagic cancer metastasis in the right postcentral gyrus led to subtentorial herniation and to wedging of the cerebellum. An unusually great subtentorial herniation occurred in a case with a cystic glioma extending from the right frontal lobe to the right occipital lobe, without, however, occluding the calcarine artery. Wedging of the cerebellum was added as a secondary consequence. A cancer metastasis in the inferior semilunar lobule of the cerebellar hemisphere led to cerebellar herniation into the foramen magnum and to an interesting supratentorial distention of the region of the splenium, with death eight days after a subtemporal decompression. Moderate wedging of the cerebellum in a child of 10 months, with convulsions and brain swelling, but no focal lesion, led to a case of marked wedging of the cerebellum, distention of the hindbrain and forebrain ventricle; severe frontal headache, lumbar puncture, followed by aggravation and disturbed vision and death in three weeks. A suspicion that herniations of the subiculum might be responsible for the sclerosis of the cornu ammonis in epilepsy through the effects of transitory subtentorial herniation is not, so far, corroborated by this series of cases.

Meningo-Encephalitis Simulating Tumor.—A case simulating a tumor of the left cerebellar hemisphere proved on microscopic examination to be a meningo-encephalitis. Macroscopically the brain showed only slight hydrocephalus. From a consideration of the cases properly examined, Bailey says it is certain that no clinical or pathologic entity exists which deserves to be dignified by the term "pseudotumor cerebri." The term "pseudotumor cerebri," if used at all, Bailey urges should be restricted to purposes of clinical classification without attributing to it any etiologic or pathologic significance whatever.

Dystonia Lenticularis.—Two cases occurring in the same family (brother and sister) are reported by Taylor. One was entirely typical and the other doubtful.

Boston Medical and Surgical Journal

Oct. 7, 1920, **183**, No. 15

*Orchitis in Mumps. C. Wesselhoeft, Boston.—p. 425.
Why Relief of Joint Troubles is Easy or Difficult. H. W. Marshall, Boston.—p. 430.
Influence of Medical Profession on Medical Legislation and Public Welfare. J. B. Hawes, Boston.—p. 434.
*Transfusion in Obstetrics. Blood Matching as Routine on Pregnant Patients. R. S. Titus, Boston.—p. 438.

Orchitis in Mumps.—Wesselhoeft collected from all sources 8,153 cases of mumps, with 1,468 cases of testicular involvement giving a total incidence of 18.0 per cent.

Blood Matching of Pregnant Women.—It is Titus' custom to match the bloods of his patients with the blood of their husband and with the blood of a group of four persons, so as to be prepared for the performance of transfusion should it be necessary later on. This is done within six or eight weeks of expected delivery.

Florida Medical Association Journal, St. Augustine

September, 1920, **7**, No. 3

Diarrheas of Infancy. M. B. Herlong, Jacksonville.—p. 38.
Problem of Physical Illiteracy. G. Whitford, Ozona.—p. 40.

Iowa State Medical Society Journal, Des Moines

Sept. 15, 1920, **10**, No. 9

Treatment of Uterine Tumors. L. J. Stacy, Rochester, Minn.—p. 301.
Vestibular Manifestations in Neurologic Cases. W. W. Pearson, Des Moines.—p. 303.
Diseased Tonsils. R. M. Lapsley.—p. 308.
Tonsils Cases I Have Met. C. P. Frantz, Burlington.—p. 309.
Lacrimal Apparatus. J. E. Reeder, Sioux City.—p. 313.

Journal of Biological Chemistry, Baltimore

September, 1920, **43**, No. 2

Does Gliadin Contain Amide Nitrogen? T. B. Osborne and O. L. Nolan, New Haven, Conn.—p. 311.
Methods Used in Determining Electric Conductivity of Solutions. J. F. McClendon, Minneapolis.—p. 317.
Rate of Hydrolysis of Phosphoric Esters of Sugar Derivatives. P. A. Levene and M. Yamagawa, New York.—p. 323.
Hydrolysis of Nucleotids. M. Yamagawa. New York.—p. 339.
Estimation of Aminoethanol and of Cholin Appearing on Hydrolysis of Phosphatids. P. A. Levene and T. Ingvaldsen, New York.—p. 355.
Unsaturated Lipoids of Liver. P. A. Levene and T. Ingvaldsen, New York.—p. 359.
Structure of Yeast Nucleic Acid. Ammonia Hydrolysis: So-Called Trinucleotid of Thannhauser and Dorfmuller. P. A. Levene, New York.—p. 379.
*Relation of Hydrogen Ion Concentration to Incoagulability of Blood Produced by Peptone, Hirudin, and Cobra Venom. M. L. Menten, Chicago.—p. 383.
Gas Production During Acetone and Butyl Alcohol Fermentation of Starch. H. B. Speakman, Toronto.—p. 401.
*Effect of Whole Blood Transfusion on Cholesterol Content of Human Serum in Pernicious Anemia. H. A. Kipp, Pittsburgh.—p. 413.
Use of Synthetic Diets in Growth of Baby Chicks. Study of Leg Weakness. E. B. Hart, J. G. Halpin, H. Steenbock and O. N. Johnson, Madison, Wis.—p. 421.
Amino-Acids in Nutrition. I. Studies on Proline. B. Sure, Madison, Wis.—p. 443.
Id. II. Nutritive Value of Lactalbumin: Cystine and Tyrosine as Growth-Limiting Factors in That Protein. B. Sure, Madison, Wis.—p. 457.
Occurrence of Inosite Hexaphosphoric Acid in Seed of Silver Maple (Acer Saccharinum). R. J. Anderson and W. L. Kulp, Geneva, N. Y.—p. 469.
Amino-Acids of Blood as Precursors of Milk Proteins. C. A. Cary, Washington, D. C.—p. 477.
*Carbohydrate Metabolism in Rabbits. I. Observations on Limits of Assimilability of Various Carbohydrates. L. B. Mendel and M. R. Jones, New Haven, Conn.—p. 491.
Id. II. Effect of Carbohydrate Feeding on Blood Sugar. M. R. Jones, New Haven, Conn.—p. 507.

Studies on Proteinogenous Amins. M. T. Hanke and K. K. Koessler, Chicago.
VI. Preparation of Histidin from Blood Corpuscle Paste.—p. 521.
*VII. Quantitative Colorimetric Estimation of Histidin in Protein and Protein-Containing Matter.—p. 527.
VIII. Method for Quantitative Colorimetric Estimation of Histamin in Protein and Protein-Containing Matter.—p. 543.
*IX. Is Histamin a Normal Constituent of Hypophysis Cerebri?—p. 557.
*X. Relation of Histamin to Peptone Shock.—p. 567.
XI. Response of Excised Uterus to Potassium Rubidium and Cesium Ions.—p. 579.
*Some Nutritive Properties of Nuts; Proteins and Content of Water-Soluble Vitamin. F. A. Cajori, New Haven, Conn.—p. 583.

Prevention or Retardation of Clotting.—From the work outlined by Menten it is evident that the rôles which peptone, on the one hand, and hirudin and cobra venom on the other, play in the prevention or retardation of clotting of blood are of a very different character. With the production of incoagulability by peptone there occurs a marked increase in the acidity of the blood, a condition under which the other two substances lose completely or in large degree their anticoagulant power.

Effect on Cholesterol Content of Blood Transfusion.—Kipp found that repeated whole blood transfusion does not appreciably alter the total cholesterol content of the serum in pernicious anemia. The immediate increase in cholesterol in the serum of the recipient, following transfusion of whole blood, is dependent on the degree of admixture of the blood from the donor with that of the recipient and on the time which has elapsed after the transfusion, when the specimen of blood from the recipient is obtained. The cholesterol content of the serum varies relatively with the degree of anemia and the hemoglobin percentage of the blood. The cholesterol level in the serum of patients with pernicious anemia may be an index of its utilization against hemolytic substances present in the body in this disease. The relative depression of cholesterol manifested in the more severe cases indicates an increased demand for the neutralization of these toxic substances.

Carbohydrate Metabolism.—Comparable doses of carbohydrates gave rise to hyperglycemia in the following order of increasing blood sugar values: dextrin, dextrimaltose and glucose. Sucrose ingested in doses sufficient to cause glycosuria presented three distinct phenomena: (1) hypoglycemia with normal total blood sugar content accompanied by sucrosuria; (2) a relatively low glycemia with high total blood sugar value accompanied by both glycosuria and sucrosuria; (3) hyperglycemia accompanied by glycosuria. In the few determinations made, maximum blood sugar values were attained one hour after ingestion of glucose and dextrimaltose, an increase in dose resulting, in general, in an increase in blood sugar content.

Estimation of Histidin.—A colorimetric method is described by Hanke and Koessler by means of which quantities of histamin (B-imidazolylethylamin) as small as 0.1 mg. can be accurately determined in protein and protein-containing matter. The presence of histamin could not be demonstrated in 40 gm. of casein by this method. Casein contains a depressor substance that is similar to histamin pharmacologically. Histamin, that has been added to casein before the latter is hydrolyzed, can be recovered quantitatively. The presence of histamin could not be demonstrated in 75 c.c. of human blood serum by this method. Histamin that has been added to the blood serum before the latter is hydrolyzed can be recovered quantitatively.

No Histamin in Hypophysis Cerebri.—The result of careful testing showed that perfectly fresh beef hypophysis does not contain histamin.

Histamin and Peptone Shock.—A typical peptone is obtained by the injection of a histamin-free peptone; hence Hanke and Koessler state that peptone shock and histamin shock are not identical.

Vitamins in Nuts.—Satisfactory growth was observed by Cajori in young rats on diets in which the almond, English walnut, filbert and pine nut, respectively, furnished the essential source of protein in the ration. Normal growth can be secured when rats are fed on otherwise adequate diets containing the almond, English walnut, black walnut, Brazil nut, chestnut, or pecan as the sole source of water-soluble vitamin. Animals which have declined on a diet devoid of water-soluble vitamin promptly recover when the almond, English walnut, filbert, hickory, pine nut, chestnut, or pecan is introduced in the diet. These observations indicate that nuts are sources of abundant quantities of water-soluble vitamin. The proteins of the almond, English walnut, pine nut or filbert furnish the necessary nitrogenous complexes for the elaboration of milk in rats.

Journal of Laboratory and Clinical Medicine, St. Louis

September, 1920, 5, No. 12

*Incidence of Streptococcus Hemolyticus in Recent Epidemic of Influenza. H. L. Conner, M. C., U. S. Army.—p. 767.
Chemical Changes in Blood in Disease. VI. Cholesterol. V. C. Myers, New York.—p. 776.
*Value of Complement Fixation Test in Tuberculosis. R. Upham and A. J. Blaivas, Brooklyn.—p. 784.
*Body Temperature Taken in Freshly Voided Urine. T. Kasparek, Prague.—p. 791.
Laboratory Chart for Recording Observations on Microorganisms. F. W. Tanner, Urbana, Ill.—p. 792.
Improved Method for Feeding Rabbits by Stomach Sound. M. R. Jones, New Haven, Conn.—p. 797.

Influenza and Hemolytic Streptococcus.—The survey made by Conner disclosed a direct relationship between *Streptococcus hemolyticus* and the influenza epidemic.

Value of Tuberculosis Complement Fixation Test.—Patients who came for gastro-intestinal disturbances and in whom tuberculosis was not suspected were tested for tuberculosis by Upham and Blaivas. The antigens of Petroff, Miller and Fleisher-Ives were used. In the original technic there were eight positive results with Petroff's antigen, four with Miller's and three with Fleisher-Ives' antigen. In a modification of this technic there were fourteen positive reactions with Petroff's antigen, eleven with Miller's and eleven with Fleisher-Ives'. There was not a single case in which Miller's or Fleisher-Ives' antigens were positive that Petroff's antigen was negative; on the contrary, there were cases where the Petroff antigen was positive and Miller's and Fleisher-Ives' antigen were negative. These conclusions regarding the antigens are not final, as future experiments may prove otherwise. The authors agree with Singer and Ives that a serologic test for tuberculosis that will be as useful as the Wassermann test in syphilis is desired, but they observed that the original technic for tuberculosis was not as valuable as the Wassermann test in syphilis. If the eleven cases of clinical tuberculosis, 39.6 per cent. reacted positive, whereas in the modification there were 59.4 per cent. positive. In other words, the modification gave 20 per cent. more positives than the original test.

Body Temperature Determined by Temperature of Urine.—The results of the investigation made by Kasparek indicate that the method of determining the body temperature by observation of the temperature of freshly passed urine is of practical value. This will apply principally to cases in which measurement by rectum is impossible or obnoxious, as, for instance in timid patients (children and hysterics) or in hypochondriacs, who should not be acquainted with the existence of high temperature. It may also be of value as a new diagnostic method in diseases of the urinary tract.

Journal of Orthopaedic Surgery, Lincoln, Neb.

September, 1920, 2, No. 9

Traumatic Osteomyelitis As Seen During War. E. W. Ryerson, Chicago.—p. 499.
*Pain in Great Toe from Adhesions of Internal Sesamoid Bone. R. Hammond, Providence, R. I.—p. 506.
*Technic of an Operation for Spinal Fusion as Practised in Montreal. A. M. Forbes, Montreal.—p. 509.
*End-Result Study of Arthrodesis for Nontubercular Affections of Hip Joint. H. W. Spiers, Los Angeles.—p. 515.
*Operation for Relief of Median Nerve Anesthesia. R. I. Harris, Toronto.—p. 519.
Hypertrophy of Head of Fifth Metatarsal. J. K. Young, Philadelphia.—p. 527.
Arthroplasty of Knee Joint. Putti (Translation).—p. 530.

Pain in Great Toe Caused by Sesamoids.—Two cases are cited by Hammond in which pain in the great toe proved to be due to adhesions between the internal sesamoid bone and

the head of the first metatarsal bone. In both cases the pain was relieved by the removal of the sesamoid bone. In the first case the pain was felt on the internal surface of the first toe from the metatarsophalangeal joint forward to the end of the toe; in the second case the pain was felt on the under surface of the first toe when bearing weight and was localized at the metatarsophalangeal joint.

Operation for Spinal Fusion.—In the operation described by Forbes, the supraspinous ligament, the interspinous ligaments and other tissues between the adjacent spinous processes are removed. In the case of the dorsal vertebrae the following additional steps are carried out. The spinous processes and laminae are so gouged by means of a concave chisel that their cortical layers are separated from the medulla beneath and a series of chips of bone and periosteum are pried up along the superior and inferior surfaces of these parts of the vertebrae. These chips of bone are made to interdigitate with each other, thus similar cortical chips or digitations from the adjacent vertebrae are so opposed that the new bone thrown out from the raw surfaces of the exposed medulla will unite in one bridge or band extending from vertebra to vertebra. In other words, the laminae and spines in this region are in such close opposition that the interval between them is easily bridged by pushing the elevated fragments adherent to the periosteum alternately upward and downward from the laminae and spinous processes thus making a form of connecting trellis. The laminae are so gouged by means of a concave chisel that their cortical layers are separated from the medulla and pried up along the superior and inferior surfaces of these parts of the vertebrae as practiced in the dorsal vertebrae. In the case of the spinous processes, as these are more widely separated, the connection is made more directly by splitting them vertically into several thin sections which are forced upward and downward and to the sides in order to interlock with those from the adjoining spinous processes and laminae. In other words, the spinous processes of the adjacent lumbar vertebrae are multisected into a petal-like formation extending in a vertical direction. The layers of petals are made to interlock or interdigitate with each other after having been depressed laterally and made to lie layer on layer over the laminae of the vertebrae which have already been freshened. The patient then is laid in the prone position on a narrow hammock and placed in the position of greatest possible correction, and this correction is maintained by means of a plaster jacket in which the patient remains for six months.

Arthrodesis for Nontuberculous Affections of Hip.—The statistical study of twenty-five cases made by Spiers shows that arthrodesis for painful hips of traumatic origin gives a satisfactory end-result, whereas arthrodesis for painful hips of hypertrophic arthritic origin is less satisfactory but justified. The time of convalescence is a long one, approaching one year. The tendency of the extremity is to return to the position of adduction and little should be promised in this regard.

Relief of Median Nerve Anesthesia.—In the case cited by Harris the radial nerve was united end to end with the median. The operation appears to offer a means of alleviating one of the worst disabilities of irreparable median injuries, viz., anesthesia of the palmar surface of the thumb, index and middle fingers.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

September, 1920, **16**, No. 2

*Action of Drugs on Output of Epinephrin from Suprarenals. VI. Atropin; Pilocarpin. G. N. Stewart and J. M. Rogoff, Cleveland.—p. 71.
Action of Cocain on Splanchnic and Cervical Sympathetic Neuromuscular Mechanisms. A. L. Tatum, Chicago.—p. 109.
*Part Played by Liver in Regulation of Blood Volume and Red Corpuscle Concentration in Acute Physiologic Conditions. P. D. Lamson, Baltimore.—p. 125.
*Action of Borax on Uterus. J. W. C. Gunn, Cape Town, S. A.—p. 135.

Effect of Atropin and Pilocarpin on Epinephrin Output.—According to Stewart and Rogoff the rate of output of epinephrin from the suprarenals (in cats) is not materially influenced by the action of atropin or pilocarpin. A moderate increase in the rate of liberation may be produced by atropin, which in large doses may be preceded by a moderate transient depression of the rate of output. The augmentation of the output, if any is caused, by pilocarpin is small and is not comparable with the large increase in the rate of epinephrin liberation caused by strychnin or the immediate effect of nicotin. One experiment was performed which indicates that pilocarpin is capable of producing a moderate depletion of the epinephrin store, suprarenals with intact nerve supply.

Cause of Acute Polycythemia.—Evidence is given by Lamson to show that there is no reservoir of red corpuscles in the body normally of sufficient magnitude to influence the red count appreciably. All conditions of acute polycythemia in which there has not been sufficient time for red cell production are due to concentration of the blood by fluid loss. The physiologic polycythemias of exercise, asphyxia, increased blood pressure and emotional disturbances, could all be of the epinephrin type, namely, temporary loss of fluid from the circulation through the liver lymphatics, although it is not yet proven that they are. Two other types of acute polycythemia occur, namely, those in which there is endothelial poisoning as after the injection of histamin, when fluid is lost into the tissues directly, and in cases of local irritation when fluid is secreted, as in the diarrhea of cholera, and gas poisoning, in which enormous amounts of fluid are secreted into the bronchi.

Effect of Borax on Uterus.—Gunn states that borax has a direct stimulant action on the uterus in concentrations corresponding to toxic doses. This action is largely due to the alkalinity, as neutral solutions have less effect.

Laryngoscope, St. Louis

Sepetmber, 1920, **30**, No. 9

Relationship of Anatomy and Physiology to Pathology of Nose, Throat and Ear. H. S. Wieder, Philadelphia.—p. 543.
Apparatus for Irrigating Nasal Cavities, Useful in Home Treatment. C. J. Imperatori, New York.—p. 550.
Diagnosis of Accessory Sinus Disease Causing Loss of Vision. L. E. White, Boston.—p. 551.
New Instrument and Method for Washing and Draining Nasal Sinuses. M. Unger, New York.—p. 561.
Mastoidectomy (Perisinus Abscess, Exposure of Dura) Followed by Attacks of Toxic Insanity; Recovery. O. Glogau, New York.—p. 566.
Mastoiditis Without Tympanic Involvement. S. Salinger, Chicago.—p. 573.
Cavernous Sinus Thrombosis Following a Secondary Mastoidectomy. J. A. Robinson, New York.—p. 574.
Simple Bloodless Tonsillectomy, with Local Anesthesia. S. Rosenblatt, Chicago.—p. 576.
Motor Neuroses of Larynx. G. W. MacKenzie, Philadelphia.—p. 585.
Condemnatory Note on Use of Paraffin in Cosmetic Rhinoplasty. S. Oppenheimer, New York.—p. 595.
The Deaf. J. D. Wright, New York.—p. 597.

Medical Record, New York

Oct. 9, 1920, **98**, No. 15

Chronic Tonsillar Infections. H. B. Anderson, R. W. Mann, and N. C. Sharpe, Toronto.—p. 589.
Anatomy, Physiology and Pathology of Tonsillar Structures in Relation to Cryptogenic Infections. G. B. Wood, Philadelphia.—p. 593.
Therapeutics of Benzosulphinid. R. W. Wilcox, New York.—p. 595.
*New Procedure for Prevention of Spinal Puncture Headache. G. Baar, Portland, Ore.—p. 598.
The Unconscious. H. Laveson, New York.—p. 599.
Etiologic Classification of Heart Disease. C. M. Nice and J. G. Vance, Birmingham, Ala.—p. 605.
*Protein Shock Reaction in Leprosy. E. M. Josephson, New York.—p. 607.

Prevention of Spinal Puncture Headache.—Baar follows up every spinal puncture immediately with intravenous salt solution, if not giving simultaneously arsphenamin. He injects from 500 to 750 c.c. of a 0.5 per cent. sodium chlorid solution. only three headaches occurred among seventeen patients on whom fifty spinal punctures were made.

Protein Shock Reaction in Leprosy.—An unknown amount of a vaccine was accidentally administered with an intravenous dose of sodium gynocardate to a patient suffering from a quiescent but well advanced leprosy. A typical protein shock reaction followed shortly after the injection. For several days following the recovery from the shock the patient

stated that he felt an improvement, notably in several anesthetic areas. Within a week, however, there supervened a marked exacerbation of the disease. A crop of macules rapidly appeared, more markedly over the parts previously more extensively involved, the face and the arms; a chronic ulnar neuritis lighted up and once again became hyperacute, and the patient ran a low fever as compared with his previously subnormal temperature. When Josephson last saw the patient, two months later, the exacerbation had not yet subsided. This case indicates that the protein shock reaction has some possibilities in the diagnosis of latent leprosy. The reaction, however, bears the very unpleasant feature of creating an exacerbation of the disease. Experimentally, Josephson thinks, its use is pardonable in checking up cases of suspected cures where release of the patient from the leprosarium is advocated, and in preventing spread of the disease by immigration from the endemic zones.

Michigan State Medical Society Journal, Grand Rapids

October, 1920, **19**, No. 10

*Protective Changes in Oviduct. J. E. Davis, Detroit.—p. 429.
Sluder Operation. E. J. Bernstein, Detroit.—p. 448.
Kidney and Bladder Sag in Women. G. V. A. Brown, Detroit.—p. 450.
Technic of Gifford's Operation for Destroying Lacrimal Sac. R. D. Sleight and W. Haughey, Battle Creek, Mich.—p. 451.
Chronic Appendicitis, Scapegoat of Abdominal Surgery. H. Cabot, Ann Arbor, Mich.—p. 452.
Diagnosis of Hyperthyroidism. C. H. Johnston, Grand Rapids, Mich.—p. 456.
*Case of Pellagra. R. C. Moehlig, Detroit.—p. 461.

Changes in Oviduct.—Thirty representative cases illustrating twenty-three types were studied intensively by Davis to portray the correlation of morphologic and histologic tubal changes.

Pellagra.—The case cited by Moehlig illustrates the production of pellagra dermatitis after exposure to the sun's rays and a peculiarity in diet.

Minnesota Medicine, St. Paul

October, 1920, **3**, No. 10

*Tuberculosis of Knee Joint in Children. M. S. Henderson, Rochester, Minn.—p. 463.
Study of Chest Conditions Associated with Aortic Diseases, Specific and Nonspecific. E. L. Tuohy, Duluth, Minn.—p. 471.
Chronic Interstitial Nephritis in Children. R. Taylor, Minneapolis.—p. 481.
*Acute Dilatation of Stomach. O. W. Holcomb, St. Paul.—p. 486.
Pre-Eclamptic Toxemia and Post Partum Eclampsia. A. L. McDonald, Duluth, Minn.—p. 494.
Mechanics of Digestion. C. N. Hensel, St. Paul.—p. 497.

Knee Joint Tuberculosis in Children.—Open air, sunshine, tonics, nourishing food and congenial and at the same time sensible surroundings, Henderson says, should be insisted on in the treatment of this condition. The keynote to local treatment is conservatism. If treatment is instituted early and the proper means are taken to prevent the development of deformities, the management is easy. The patient coming late with subluxation and knock-knee and external rotation of the tibia is, on the other hand, most difficult to treat. A properly applied plaster-of-Paris cast affords excellent fixation. The ordinary stiff legged brace, in mild cases, is often sufficient. In the more acute cases rest in bed with extension may be necessary and when the patient is allowed to be up a plaster of Paris cast is indicated, with a high soled shoe on the opposite foot and crutches to prevent weight bearing. The Thomas extension splint is excellent, but unless guarded against is especially prone to cause a relaxed knee joint. As the condition improves, a walking caliper Thomas splint may be used. All apparatus must be supervised carefully and care taken once the flexion is overcome to prevent genu recurvatum. When subluxation is present, more elaborate measures are necessary. Prolonged traction with weight and pulley, with the line of pull carefully directed, may straighten the knee. At the first indication of a tendency to further subluxation, the force should be stopped and a cast applied with the flexion deformity only partially corrected. This may be repeated and usually the knee can be brought straight in three or four attempts. The knee must never be moved back and fourth, but merely forced straight to the point where it seems safe. It has never been our custom in the Mayo Clinic to resect tuberculous knees in children.

Acute Dilatation of Stomach.—Early and repeated gastric lavage, according to Holcomb, will save the majority of cases. In well developed cases at least one trial lavage should be given where the first return of the gastric content is clear before the washing is discontinued. The posture treatment should not be forgotten. Patients may be saved by this procedure where other measures fail. Surgery is not indicated except where there are definite signs of obstruction, in which cases naturally lavage and posture fail. An offensive or feculent odor of the vomitus or gastric content is not in itself prime evidence of an obstruction.

Missouri State Medical Association Journal, St. Louis

October, 1920, **17**, No. 10

*Treatment of Advanced Carcinoma of Mouth. V. P. Blair, St. Louis.—p. 395.
*Diagnosis of Chronic Myocarditis. F. N. Wilson, St. Louis.—p. 403.
*Thrombosis of Coronary Arteries with Tachycardia. G. R. Herrmann, St. Louis.—p. 406.
Two Cases of Blindness Relieved by Ethmoid Exenteration; Case of Kerato-Iritis Due to Tonsil Infection. H. W. Loeb, St. Louis.—p. 409.
Review of Surgery of Gonorrhea in Male. E. G. Mark, Kansas City, Mo.—p. 411.
Abdominal Syphilis. J. Q. Chambers, Kansas City, Mo.—p. 415.
Present Status of Nitrous Oxid-Oxygen Anesthesia. M. H. Clark, Kansas City, Mo.—p. 417.
Celluloid Foot Form Brace. R. McE. Schauffler, Kansas City, Mo.—p. 420.
Sterilizing Seminal Vesicles with Mercurochrome 220. N. F. Ockerblad, Kansas City, Mo.—p. 421.

Cancer of Mouth.—It is probable that in only 1 per cent. of fatal cancers of the mouth does infection extend below the clavicle. This fact, Blair says, with the extreme gruesomeness of the later stages of the disease, should lend confidence in attacking it surgically. In all cases the related lymphatics of the neck should be removed.

Diagnosis of Chronic Myocarditis.—Every patient with cardiac decompensation who has neither aortic insufficiency nor stenosis nor mitral stenosis, Wilson says, may be looked on as a case of chronic myocarditis. It is the failure of the heart muscle to do its work that gives rise to this condition. Less marked symptoms of cardiac insufficiency, such as increasing shortness of breath or anginal attacks, are to be looked on as myocardial in origin when they occur in patients past middle age, providing no noncardiac cause for them can be found. The diagnosis of chronic myocarditis in the young on symptoms alone is not justifiable.

Coronary Thrombosis with Tachycardia.—Six cases are presented by Hermann three of which were proven at necropsy to be coronary thrombosis. The first case was one of angina major, with death with the first breast pang. The second patient survived the attack but died of rupture of the degenerated necrotic ventricular wall, which had resulted from the infarction that followed the thrombosis. Electrocardiograms gave suggestive evidence of grave myocarditis. Of the other four cases, the last one was proven to be coronary thrombosis at necropsy, while the other three are highly probable cases. All had acute severe anginal attacks and presented high pulse rates, from 170 to 250 per minute, and characteristic electrocardiographic findings (paroxysmal ventricular tachycardia), which heretofore have been shown to be associated experimentally only. One patient is still living two years after the attack. One died six months after the attack. One died six weeks after a sudden onset, with a persistent status anginosus without relief until death. The last one died twenty-six hours after the onset of a terrific anginal attack. He had two long paroxysms of ventricular tachycardia. Necropsy showed thrombosis of the descending branch of the left coronary artery. This is the first clinical case on record substantiating Lewis' experimental facts. The other cases were similar in every way, except that they were not checked up postmortem. The pulse rates ranged from 170 to 250. Syphilis was the promient etiologic factor in the series. Only one patient had a positive Wassermann. Three patients at necropsy showed positive histologic evidence of syphilis. Three gave definite histories of "hard chancres." Four gave suggestively positive marital histories.

New Jersey Medical Society Journal, Orange

October, 1920, **17**, No. 10

Arthroplasty. G. H. Sexsmith, Bayonne.—p. 333.
Economic Aspect of Modern Diagnostic Survey. J. Hunter, Jr., Westville.—p. 341.
Cholecystitis Complicating Gastric Ulcer. H. G. MacDonald, Hackensack.—p. 349.

New Orleans Medical and Surgical Journal

October, 1920, **73**, No. 4

Is It Scientific to Give Vaccines on a Clinical Diagnosis? G. H. Sherman, Detroit.—p. 125.
*Operative Cure of Pruritus Ani and Vulvae. C. W. Allen, New Orleans.—p. 127.
Rôle of Physicians in Physical Education. C. M. Menville, Houma, La.—p. 129.
Five Hundred Appendectomies. E. Kiblinger and A. Kiblinger, Marksville, La.—p. 136.

Operation for Pruritus Ani and Vulvae.—The operation described by Allen has in view the separation of the skin from the underlying tissue thus dividing all nerves which reach the affected parts, rendering them anesthetic, and preventing the skin from immediately healing to the underlying tissues by packing, which is kept up until a firm bed of granulation has formed, which usually requires about one week, when the packing is discontinued and the skin allowed to fall back in place where it soon is again firmly united, leaving an anesthetic area which nearly equals the extent of the undermined area. This anesthetic area is not complained of but is usually a quite welcome change. It gradually diminishes in size with the return of normal sensation after a few months and has not been followed by a return of the pruritus. In the case of anal pruritus a series of incisions are made beginning at the anal margin and continued outward to about one-half inch beyond the affected area, which rarely exceeds 2 inches. These incisions are made about 1 inch apart at their peripheral extremities until the entire perineal region has been covered. These skin strips are dissected up, preferably with a scalpel, except at their two ends which are left attached.

New York Medical Journal

Oct. 9, 1920, **112**, No. 15

Diagnosis of Inflammations of Male Urethra. A. L. Wolbarst, New York.—p. 521.
Comparative Anatomy of Genito-urinary Organs of Lower Animals. H. Tucker, Philadelphia.—p. 525.
Modern Treatment of Syphilis. O. L. Levin, New York.—p. 531.
Conquest of Venereal Infection. E. A. Rout, London.—p. 533.
Results in Treatment (Swift-Ellis) of Neurosyphilis. P. Goldfader, Brooklyn.—p. 536.
*Syphilis as Cause of Delayed Healing in Noninfected Abdominal Incision. W. E. Darnall, Atlantic City.—p. 539.
Early View of Venereal Disease. W. R. Riddell, Toronto.—p. 540.
Disorders of Function of Urinary Bladder. S. R. Martin, Buffalo.—p. 544.
Wassermann Reaction. C. G. Cumston, Geneva, Switzerland.—p. 547.

Syphilis Causes Delayed Wound Healing.—Three cases are recorded by Darnall to suggest syphilis as one of the causes, at least, of delayed healing in the abdominal incision.

Oct. 16, 1920, **112**, No. 16

*Relation of Medical Profession to Campaign for Control of Cancer. R. B. Greenough, Boston.—p. 565.
*Use of Radium in Esophageal Cancer. H. H. Forbes, New York.—p. 568.
*Treatment of Arterial Hypertension. J. H. Musser, Philadelphia.—p. 570.
What is Disease? C. L. Redfield, Chicago.—p. 572.
Doctor and Neuropath. C. R. Ball, St. Paul.—p. 575.
Impairments Regarding Family and Personal History. W. H. E. Wehner, Philadelphia.—p. 579.
*Therapeutic Value of Cupping. J. Epstein, New York.—p. 584.
Biochemistry of Drug Addiction. A. S. Horovitz, Cincinnati.—p. 585.

Campaign Against Cancer.—Greenough believes that the situation in regard to cancer is at present a very serious one, and that it demands the best efforts of the whole medical profession toward its relief. While the first step must be taken by the education of the public to the dangers of delay, and the recognition of the early symptoms of cancer, more must yet be done to help the physician to recognize the disease in its earliest and curable stages, in order that his patient may have the benefit of such resources in the way of operation and other methods of treatment as the community affords. Physicians must teach that the so-called precancerous diseases justify and demand treatment in the prophylaxis of cancer, and, finally, they must support in every way possible the investigations which are being carried on in hospitals and in laboratories all over the world to improve the effectiveness of methods of treatment of cancer.

Radium in Esophagus Cancer.—Forbes details the technic employed in the radium treatment of six cases of malignant disease of the esophagus. One patient died, hemorrhage being the cause of death.

Treatment of Arterial Hypertension.—Musser emphasizes the point that unless some threatened vascular cardiac or renal catastrophe seems imminent, physical and hygienic measures should be relied on more than drugs in the treatment of this condition. The reduction of salt and water intake forms a valuable adjuvant to these measures.

Value of Cupping.—As the result of clinical investigation on the subjective and objective effects of cupping, Epstein states definitely that it does not prevent or cure influenza or pneumonia or any other disease of the lungs for which it is most commonly used. Cupping may do some good in edema or congestion of the bases of the lungs, in renal congestion, in subacute pleuritis, in lumbago or other muscle aches, in neuritis and neuralgia. Cupping does actual harm to infants, young children, asthenic adults, and the aged. It makes them weak, and their skin sore, painful, and black and blue. The entire process of cupping, with its imposing paraphernalia, is so terrifying to young children that it should never be used in any disease of childhood. Whatever good there may be in the counterirritation of cupping has been grossly abused. When cupping is used in the right case with proper care and discretion it may be of some assistance in the care of the sick; but its careless, thoughtless, and offhand use for any disease or no disease has done much harm to many patients and brought down this popular remedy to the ranks of a quack medicine and a therapeutic humbug.

Ohio State Medical Journal, Columbus

Oct. 1, 1920, **16**, No. 10

Causes and Treatment of Conditions Underlying High Blood Pressure. L. F. Barker, Baltimore.—p. 709.
Peripheral Nerve Injuries: A Clinical Analysis. L. J. Pollock, Chicago.—p. 720.
Vestibular Vertigo; Prognosis in Different Types of Cases; Reports of Cases. P. D. Kerrison, New York.—p. 726.
Physiology of Normal Thyroid and Physiology of Thyroid in Exophthalmic Goiter. D. Marine, New York.—p. 735.
Etiology and Pathology of Exophthalmic Goiter; Their Bearing on Prevention, Prognosis and Treatment. A. Crotti, Columbus.—p. 738.
Medical Problems in Treatment of Exophthalmic Goiter. C. F. Hoover, Cleveland.—p. 742.
Surgical Problems in Management and Treatment of Exophthalmic Goiter. G. W. Crile, Cleveland.—p. 746.
*Treatment of Hyperthyroidism with Corpus Luteum: A Second Report. H. H. Hoppe, Cincinnati.—p. 749.
*Preliminary Report on New Method for Clinical Diagnosis of Toxic Thyroid States; Serologic Technic. W. N. Berkeley, New York.—p. 754.
Goiter Survey Work in Ohio; Incidence of Simple Goiter in School Children of Cleveland, Akron and Warren. D. Marine, New York, and O. P. Kimball, Warren, Ohio.—p. 757.

Corpus Luteum in Hyperthyroidism.—The theory on which the corpus luteum treatment of hyperthyroidism is based, is that hyperthyroidism is caused by a defective secretion of the interstitial sex glands; that the hormones of the interstitial sex glands have an inhibitory and regulatory action on the secretion of the thyroid; that when the function of these interstitial glands is deficient, there is a lack of physiologic inhibition of the thyroid, with an excessive secretion and therefore, hyperthyroidism. In other words, hyperthyroidism and hypo-ovarianism are synonomous conditions. Hoppe emphasizes that these patients also require careful dietetic, hygienic and symptomatic treatment. He has had very good results from this treatment.

Fixation Test of Toxic Thyroid.—Starting out with this test as a guide—i. e., using normal dog thyroid as antigen—fixation experiments have been done by Berkeley and Koopman on more than 175 human serums, of which 40 were under suspicion of positive thyroid dyscrasia. Of the 40, 18 were clinically undoubted cases of exopthalmic goiter, 2 were probably so, 10 were doubtful, and 10 were probably not.

Psychobiology, Baltimore

August, 1920, **2**, No. 4

Some Transfer Factors in Maze Learning by White Rat. J. F. Dashiell, Chapel Hill, N. C.—p. 329.
Dynamogenic Influence of Light on Tactile Discrimination. H. M. Johnson, Cleveland.—p. 351.

October, 1920, **2**, No. 5

Integration of Movements in Learning in Albino Rat; Study of Adjustment of Organism to Environment. J. L. Ulrich.—p. 375.

South Carolina Medical Association Journal Greenville

September, 1920, **16**, No. 9

County Health Department; Factor in Disease Reduction. L. A. Riser. —p. 216.
Incision of Tumors for Diagnosis. K. M. Lynch, Charleston.—p. 217.
Proctoscope in General Diagnosis. F. M. Durham, Columbia.—p. 221.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Sept. 25, 1920, **2**, No. 3117

*Relation of Physiology to Medicine. T. Lewis.—p. 459.
*End Results of Injuries to Peripheral Nerves Treated by Operation. W. Thorburn.—p. 462.
*End Results of Injuries to Peripheral Nerves Treated by Operation. P. Sargent.—p. 464.
Results of Operations for Nerve Injury at Edinburgh War Hospital. M. F. Forrester-Brown.—p. 467.
*Late Results of Nerve Operation. J. L. Joyce.—p. 468.
*Dementia Praecox and Its Relation to Other Disorders. B. Hart.—p. 470.
Fatal Poisoning by Arsine (Arseniuretted Hydrogen). M. Bannister. —p. 476.
*Case of Erysipelas Terminating in Acute Thyroiditis. L. M. Weeks.—p. 476.
*Hereditary Spastic Paraplegia with Ataxia and Mental Defect. J. S. Manson.—p. 477.

How to Teach Physiology.—The obligations of physiology to medicine Lewis says are twofold: to teach the student bent on the practice of medicine the normal functions of the human body, and in doing so to train him as an accurate observer and thinker; and to lay the foundation on which the house of medical science shall erect itself. In its relation to medicine the function of physiology is to gather, classify and spread knowledge and methods of studying the normal functions of the animal body. The very closest association of physiology and medicine is necessary. In Lewis' opinion the pivot around which physiologic teaching should play is human physiology; that human as opposed to animal physiology should form the central point of physiologic teaching to medical men. Knowledge which has been obtained or is now obtainable by observation on man himself should be stressed; animal physiology should be taught where it supplements knowledge which is so obtained. It is of considerable greater consequence to the student of medicine that he should witness a given and normal phenomenon, or gather a given principle, by observation on the human rather than on the animal body; when, therefore, a phenomenon can be displayed both in the man and in the beast with equal accuracy, it should be displayed as it occurs in the former. When it cannot be displayed in man, or when it cannot be displayed with the same fine degree of certainty, then animal physiology should be called in. When a phenomenon can be displayed in man, even though it can be displayed less accurately than it can on the animal body, it should be demonstrated and stressed, not to the exclusion of the more precise demonstration on the lower vertebrate, but alongside of it, so that the two demonstrations may be evaluated and the two compared.

Secondary Nerve Suture Does Not End in Perfect Recovery.—The impression is conveyed to Thorburn by a review of reported cases that secondary nerve suture gives very good results in somewhere between one-third and two-thirds of all cases, but the most careful study of original articles, as well as personal experience, leads him to believe that a perfect neurologic recovery is rarely if ever obtained. Permanent disability may be masked in various ways, but is almost invariably to be detected if carefully searched for. Complete failures are by no means uncommon, and must be looked for in a very definite percentage of even the best operations. Such appear to be the general results in the case of secondary suture. In the case of grafting, much less is to be hoped for. Thorburn believes that it will be found that the greater the experience of end-to-end suture, the less often the need for grafting will be found to arise. So much can be done by bold operating, by extensive exposures, by thorough stretching of nerve trunks, by alteration of their anatomic course into a shorter bed, and by the operation of stretching in two stages, that grafting will always be, and should always be a last resort. He has yet to see any cases in which it has been a success.

Sargent is somewhat skeptical as to how end-results following nerve surgery should be estimated as improvement continues to be noted three or more years after operation. Late results is the term he prefers. The method of determining these results are discussed.

Surgery of Nerves.—The operations of pedicled autogenous transplants and of free autogenous transplants are in Joyce's opinion deserving of further study and research, and still have a place in the operative surgery of injured nerves.

Dementia Praecox.—Hart feels that dementia praecox has established its claim to be regarded as a clinical entity in the sense that it marks off a group of cases with notable similarities in their symptomatology, course, and outcome, although the borders of this group cannot be accurately defined. To what extent it can claim to be an entity in a more exact sense must depend on the success with which a specific morbid process can be shown to underlie it. From the clinical standpoint, a number of conditions are either akin to dementia praecox in the similarity of the morbid process involved and the clinical pictures displayed, or are connected to dementia praecox by a chain of cases showing a gradual transition from one to the other. The most important of these conditions are mental deficiency, including imbecility and idiocy, the psychoneuroses, including hysteria and the compulsion neurosis, manic-depressive insanity, Meynert's amentia (exhaustion psychoses, confusional psychoses) paranoia and Kraepelin's recently constructed conception of paraphrenia.

Erysipelas Terminating in Acute Thyroiditis.—Weeks' case commenced as an erysipelas, developed into a septicemia and terminated as an acute thyroiditis. He feels that had a blood examination been made in the early stages of the illness, an injection of antistreptococcic serum might have avoided the septicemia and acute thyroiditis.

Hereditary Spastic Paraplegia.—Manson reports the cases of four children who were affected by this disease, the parents being alive and healthy at 60. All the children were born seemingly healthy and intelligent, and went to school in due course, where they learned to read and write. The first sign of any abnormality appeared between the ages of 7 and 8 years, when they were noticed to stagger in walking. This defect progressed, and in a short time they were unable to attend school. This history is clear that in all the onset occurred in the same manner, and at approximately the same age. One child died at 22 and one at 27. The two survivors, aged 28 and 23, respectively, present practically the same symptoms. On the mother's side no abnormality can be traced. The father was the illegitimate son of a woman who was an inmate of a workhouse owing to blindness following an accident to her eyes at a mill, and of a man who was an "invalid" in the workhouse. The nature of the invalidity was not known.

Japan Medical World, Tokyo

Sept. 11, 1920, **10**, No. 37

*Cutaneous Manifestations of Leprosy. I. Ando.
Development of Myomatous Tissue in Uterus. M. Otsuki.
Influence of Foreign Cells Against Complements. T. Matsuura.
*Causative Agent of Acute Infectious Pneumonia of Rabbit. K. Seki.

Classification of Leprosy Lesions.—Ando proposes the following symptomatologic terms for the diagnosis of leprosy: (1) initial erythema, which means a typical slight reddening; (2) lepra maculosa; (3) lepra marginatum, skin lesions resemble those of psoriasis; (4) lepra maculo-elevatum; (5) leproma acuta; (6) lepra infiltrativa; (7) lepra tuberosa;

(8) atrophia ichthyoticum leprosum; (9) leukoderma leprosum (lepra alba belongs to this heading); (10) pemphigus leprosum; (11) mal perforans; (12) alopecia leprosum; (13) nychia leprosum; (14) lepra mutilans; (15) lepra totalis. Besides these fifteen different forms are the cases in which there is dull perception, only maceration of the skin, thickening of the nerves, disturbances and difficulties of the motor nerves and muscles, chaulmoogra oil feature and rarely erysipelatous changes and edema.

Cause of Pneumonia in Rabbit.—In the heart blood, lungs and liver of eighty-six rabbits dead of an acute infectious pneumonia, Seki discovered *Bacillus cuniculi-pneumonicus.* He experimentally made the rabbit inhale the bacillus by means of a spray or by smearing the culture over the mucous membrane in the larynx, and the rabbit easily became infected. This bacillus was toxic for guinea-pigs and the albino rat. It lived over forty days on culture medium and was sterilized by exposure to direct sunlight for thirty minutes. It produced no toxin. It produced antibacterial immune serum. Neither the immunized serum nor the vaccine has any curative power, but by the use of the vaccine animals were made immune against the infection.

Journal of Tropical Medicine and Hygiene, London

Sept. 15, 1920, **23**, No. 18

Bronchospirochetosis (Castellani's Bronchitis). C. L. Browne.—p. 225.
Locality Differences in Feeding Habits of Mosquitoes. M. E. MacGregor.—p. 226.
Treatment of Tropical Ulcer. N. Crichlow.—p. 227.

Lancet, London

Oct. 2, 1920, **2**, No. 5066

Disinfection and Disinfestation in Field. W. W. O. Beveridge.—p. 681.
Results of Pneumothorax Treatment of Pulmonary Tuberculosis. C. Saugman.—p. 685.
*Clinical Value of Routine Cerebrospinal Fluid Examination in Diagnosis of Nervous Disease. A. D. Bigland.—p. 687.
Diplococcus Crassus and Meningitis, Associated with a Case of Fractured Base. J. G. Forbes.—p. 690.
*Origin of Cancer. A. Paine.—p. 693.
Exophthalmos and Limitation of Eye Movements of Exophthalmic Goiter. R. F. Moore.—p. 701.

Routine Cerebrospinal Fluid Examination.—Bigland urges that no patient having nervous symptoms, even though there is a clear history of syphilis, should be regarded as having neurosyphilis until proved so by cerebrospinal fluid examination. No case showing signs of organic nerve disease, and in which no suspicion of syphilis is entertained, should be regarded as nonneurosyphilitic until proved so. No case with signs of organic nerve disease and a positive Wassermann reaction in the blood should be diagnosed as neurosyphilis until the cerebrospinal fluid also has been examined. No case with signs of organic nerve disease should be regarded as not neurosyphilis merely because his serum Wassermann is negative. In the diagnosis of neurosyphilis by the above methods the combined evidence of all the tests should alone be relied on. On no account should the diagnosis be made on the result of one test alone.

Origin of Cancer.—In Paine's opinion cancer is not a specfiic disease due to the activities of a special parasite, but a disordered growth of epithelium caused by various physical or chemical irritants, the most important being the toxins of micro-organisms. He considers that the origin of cancer lies in the degeneration of the nobler parts of the cell consequent on damage of its structure. The result of this damage is to disturb the balance of metabolism by impairing the special functions of the cell, and thereby causing persistent overgrowth.

Medical Journal of South Africa, Johannesburg

July, 1920, **15**, No. 12

Misbranded Foods and Drugs. J. McCrae.—p. 255.

South African Medical Record, Cape Town

Aug. 28, 1920, **18**, No. 16

Syphilis; Its Recognition. C. V. Impey.—p. 303.
Two Cases of Abdominal Abscess Draining into Bladder. H. Lewis.—p. 307.
Case of Malignant Endocarditis with Recovery. C. Lundie.—p. 308.

Archives de Médecine des Enfants, Paris

September, 1920, **23**, No. 9

*Cephaloplegic Syndrome in Children. F. Figueira (Rio de Janeiro).—p. 513.
Scleroderma with Inherited Syphilis. Marfan and Rabuteau.—p. 532.
*Meningococcus Meningitis in Infant. Comby and Pallegoix.—p. 535.
Cure of Diffuse Staphylococcus Meningitis and Brain Abscess Under Autogenous Vaccine. K. Lewkowicz.—p. 540.
*Suppuration in Urinary Apparatus in Children. J. Comby.—p. 548.

Head Drop in Children.—Figueira here brings the subject of the "cephaloplegic syndrome" down to date with description of 4 new cases bringing the total in Brazil to 15, all but 4 in Rio. The age ranged from 9 months to 3 years. In 80 per cent. of his own 11 cases there had been more or less directly preceding general symptoms, fever, catarrh of the air passages, vomiting, diarrhea or constipation. The tendon reflexes were partially or totally abolished or normal in the different cases. Recovery was complete in from five to twelve days. The cephaloplegia is of the flaccid type, in the extensor and flexor muscles, the child being able to move its head sideways. He compares this with the rare cases of paralysis of the neck among the 8,188 cases of epidemic poliomyelitis he has collated, and points out the differences, especially the prompt recovery, the absence of sweating, of rigidity of the neck, the normal findings in the cerebrospinal fluid, and the sudden onset of the cephaloplegia, usually on waking. On the other hand, this cephaloplegic syndrome was observed at a time when epidemic poliomyelitis was prevailing. During the period 1909 to 1911 there were 60 cases of the latter and 2 of the cephaloplegia, and from 1913 to 1918 there were 9 of the cephaloplegia to 60 poliomyelitis cases. In one instance a child developed the cephaloplegia two years after another child in the family had presented the same syndrome. There had been no case of classic poliomyelitis in the house at any time.

Meningococcus Meningitis in Infant.—Comby and Pallegoix report that a robust breast-fed infant of 8 months was taken suddenly with high fever, highest in the evening; no signs of pneumonia or digestive upset; no Kernig, and the fontanels were not bulging. Strabismus was the only clue to the cause of the fever, and lumbar puncture showed the meningococcus. Intraspinal serotherapy was begun at once, the third day, and after four injections defervescence the eleventh day was followed by complete recovery without sequels. A total of 70 c.c. of the antiserum had been injected. The early diagnosis and large doses were evidently responsible for the recovery. In connection with this case they cite sixteen others in infants—all from French or Latin countries—with recovery in seven. In five the meningitis had become partitioned off and was treated by intraventricular injection, with recovery of two of the infants. (Marcland's and Castro's cases.)

Suppuration in Urinary Apparatus in Children.—Comby translates with comment Lozano and Ruiz Falcó's work reviewed in these columns, Nov. 29, 1919, p. 1732.

Encéphale, Paris

Aug. 10, 1920, **15**, No. 8

Paralysis of Serratus Magnus. A. Barbé.—p. 489.
The Echo of What is Read. Laignel-Lavastine and Vinchon.—p. 496.
Visual Hallucinations in General Paresis. L. Livet.—p. 504.

Gynécologie et Obstétrique, Paris

1920, **1**, No. 5

*Dystocia from Immovable Retroversion. J. Potocki.—p. 413.
*Impacted Fibroma. P. Bégouin.—p. 429.
*Castration for Hemorrhagic Uterine Fibromas. De Rouville.—p. 433.
Correction of Prolapse of Uterus by Anterior-Lateral Colpovesicorrhaphy with Colpomyorectorrhaphy. R. Zaletel.—p. 444.
Treatment of Pyelonephritis During Pregnancy. A. Couvelaire.—p. 448.

Immovable Retroversion of Gravid Uterus at Term.—Potocki did not recognize that the uterus was firmly bound down by adhesions to the sigmoid flexure and the colon until after extraction of the dead child by abdominal cesarean section. In this and in Couvelaire's similar case, there had been no pain during the pregnancy to attract attention to the anomaly. Presentation was by the shoulder or sloping breech, and the flexion of the uterus prevented natural expulsion.

The walls of the uterus were taut as with hydramnios. Danger of rupture of the uterus wall should compel early intervention as soon as these retro-uterine adhesions are suspected.

Hysterectomy for Impacted Fibroma.—Bégouin relates that when the lower pole of a large fibroma is impacted so firmly that it is inaccessible from any point below, he reaches it through an abdominal incision. Seizing the top of the fibroma with forceps he draws it up and cuts a circle around its base, the tip of the bistoury sloping inward so that the body of the fibroma is thus cut loose as one cuts out a rotten spot in a pear, and the whole is lifted out in an inverted cone. This leaves nothing of the fibroma in the pelvis except a small funnel, and the sides of this collapse inward as traction is applied from below. Bégouin has now a record of ten cases in which this *évidement* method has been applied with gratifying results, and he cites Costales Latatu's report of a similar experience.

Ovariectomy for Hemorrhage from Uterine Fibromyomas.—De Rouville explains that the influence from the ovaries on a bleeding myomatous uterus is exerted on the uterus itself, and not on the myomas. The latter may keep the same size and shape long after castration has put an end to all tendency to hemorrhage. If the fibroma or myoma is not an integral part of the uterus but pedunculated, it may bleed independently of the uterus, and castration would have little effect. He has applied bilateral ovariectomy in seven cases, and six of the patients by this means escaped imminent death from their extraordinarily hemorrhagic interstitial fibromas. There was no further hemorrhage after a few days following the castration. The anemia was so extreme that he feared to risk hysterectomy. The hemorrhagic influence of the ovaries is beyond question now. He published in 1913 a case of bilateral ovarian dermoid cysts with no symptoms except hemorrhages.

Médecine, Paris

August, 1920, **1**, No. 11. Pediatrics Number

*Recent Progress in Pediatrics. P. Lassablière.—p. 645.
*Puericulture. A. Pinard.—p. 652.
*Milk Injections for Intolerance of Milk. E. Weill.—p. 655.
Welfare Work for Infants: the "Visiteuses." Chatin.—p. 661.
*The Infant's Ration. P. Lassablière.—p. 663.
*Lethargic Encephalitis. A. Netter.—p. 668.
*Scurvy in Infants. J. Comby.—p. 673.
*Tardy Misdeeds of Inherited Syphilis. H. Dufour.—p. 676.
Advantages of Milne's Method in Eruptive Fevers. Lemoine.—p. 682.
*Chronic Splenomegaly in Inherited Syphilis. E. Lesné.—p. 686.
The "Living" Element in Dietetics. G. Mouriquand.—p. 689.
*Ether in Treatment of Whooping Cough. Audrain.—p. 694.
Preparation of Condensed Milk for Infants. P. Lassablière.—p. 696.

Recent Progress in Pediatrics.—Lassablière mentions among other things the arrangements that have been made at a number of places in France to provide food and shelter for every working woman that agrees to nurse her child, and she is given a small sum of money besides. She is thus "hired" to nurse her own child. Nanterre and Tours have each one of these *abris maternels* and seven other cities have something in the same line. He mentions also as progress the article by Hess and Unger in THE JOURNAL, Jan. 24, 1920, p. 217, which reiterates the predominant importance of the proper amount of calories in infant feeding, and that rachitis is not the result of lack of fat-soluble vitamin.

Puericulture.—Pinard defines puericulture as "a new science of French origin which aims to study and apply what is known to promote eugenics and the hygiene of pregnancy and of childhood." He pleads that procreation should be planned for the human race with at least as much care as is now applied to breeding of cattle and raising of plants.

Treatment of Intolerance of Milk in Infants.—Weill's previous communications on this subject have been reviewed in these columns (Dec. 6, 1919, p. 1806). When the disturbances are due to this cause, he reiterates, a most remarkable change may follow the subcutaneous injection of from 1 to 5 c.c. of the milk that is being used, cow's or breast milk, heated in the water-bath for twenty-five minutes at longest. In most cases the injections have to be repeated to a total of 5 or 10 c.c. Vomiting is the first symptom to attract attention to the child's inability to digest the milk. Some children cry after feeding until the milk has been thrown off. Sometimes the mother gives a second feeding, and this may be retained, as if the child had vomited some poison at first. The child grows more and more restless and complaining, wakes at the slightest sound and jerks in its sleep, and the limbs may be found drawn up tight against the abdomen; this contracture is characteristic but not constant. Constipation may alternate with diarrhea, and the child loses in weight. A change to another milk may give transient relief, but the injection of milk usually transforms permanently the clinical picture to smiling, quiet sleep and increase in weight

Ration for Infants.—Lassablière insists that, not the weight, but the surface area should be the gage for the proper amounts to be fed to infants. He kept records of the proportionate amounts fed to infants that were thriving during their first year or two, and has accumulated a large series of such records. His research demonstrated further that Meeh's formula for the surface area has to be corrected for infants to $S = 10.5^3 \sqrt{P^2}$. The total surface area multiplied by 25 is the approximate amount required by the infant in twenty-four hours. He states further that the proper ration can be estimated by multiplying the height in centimeters by the figure 14. Or by multiplying the chest measure (unless the child is very thin) by 23. Or by multiplying the sum of its height and chest measure by 9. These formulas apply not only to the healthy but to undernourished and undersized infants, and serve as control.

Diagnosis and Treatment of Lethargic Encephalitis.—Netter emphasizes that while resembling epidemic poliomyelitis in many points, lethargic encephalitis differs in the long survival of the virus in the nerve centers; in this it resembles syphilis. Its course may thus be serpentine, with remissions for months or years, and the connection with cases classed as chorea, epilepsy, shaking palsy, sclerosis in patches, attacks of mania or gastric and other tabetic crises may be overlooked. Confusion is possible also with meningitis, brain tumors, neurosyphilis and typhoid fever. He advocates a turpentine fixation abscess in treatment. He applied this in eighty-three cases and the mortality was only 7.46 per cent. in the sixty-seven cases in which an abscess developed, while all but one died in the sixteen cases in which the injection failed to elicit abscess formation. In 75 per cent. of the patients that recovered under the fixation abscess there were no complications, and the recovery was prompt and complete. In ten cases he induced a second abscess later. Hexamethylenamin and epinephrin are his main reliance otherwise, given simultaneously. Convalescents' serum may be dangerous on account of the possibility of relapses.

Infantile Scurvy.—Comby reiterates the importance of suspecting scurvy in an infant when it keep its limbs still and cries if they are touched. This painful pseudoparaplegia is not observed in older children, but is constant in nurslings, and is often incorrectly diagnosed, as the gums may be normal.

Tardy Misdeeds of Inherited Syphilis.—Dufour reports three cases of dementia praecox at 20 in families with a history of syphilis at the time the child was born. In two cases young pregnant women developed hemichorea and the blood and spinal fluid gave positive serologic reactions. In two other cases chorea or hemichorea recurred with positive Wassermann reaction during a pregnancy. He has also had three cases of sclerosis in patches developing on a basis of inherited syphilis. He is confident that he arrested sclerosis in patches in three other young persons with inherited syphilis by a vigorous course of arsphenamin. If minor signs had been heeded during late childhood or adolescence, it might have been possible to ward it off completely. With chronic deforming rheumatism developing in older children in one joint and by the twentieth or twenty-fifth year spreading to other joints, with atrophy of muscles and remittent enlargement of the joint, a history of mild syphilis in the parent will generally be found. Inherited syphilis may induce a predisposition which leads to the localization of other infection, as in a recent case in which the young man developed paralysis of one leg, like that of anterior poliomyelitis, in the course of an ordinary gonorrhea. Dufour advocates that specific treatment for the parents should be kept up throughout life, and be reenforced for the woman during pregnancy. New-born

infants with positive Wassermann reaction should be treated until it veers to negative. If the mother is not aware of the taint in the family, alternating daily doses of calomel and injections of sodium nucleinate have always served him well without arousing the mother's suspicion, while they ward off dystrophy of the developing nervous system.

Chronic Enlargement of the Spleen in Children.—Lesné explains that in young children the spleen is peculiarly active, with multiple functions. All general infections attack it; all pathologic conditions of the blood affect it more than other organs, and as it is such a vascular organ, any insufficiency in the circulation is felt most severely here. In one much debilitated boy of 7, the enormous enlargement of the spleen was traced by exclusion to either tuberculosis or inherited syphilis, and it "melted away" after the second injection of neo-arsphenamin, plus roentgen exposures of the spleen.

Ether in Whooping Cough.—Audrain reaffirms the success of ether in arresting the vomiting in whooping cough, next, the spasms and finally the cough. He injects 0.02 gm. of ether into the muscle at the crest of the ilium and has never known it to fail in uncomplicated pertussis, but it does not cure cases of spasmodic cough from other causes, although it always relieves.

Paris Médical

Aug. 14, 1920, **10**, No. 33

*Rare Localizations of Rheumatism. W. Janowski.—p. 129.
Tuberculosis in Negroes in Tunis. H. Gros.—p. 132.

Rare Localizations of Rheumatism.—Janowski reports that a man had a temperature of 39 C. (102.2 F.) with violent pain in the right thorax, the whole developing suddenly. Auscultation twenty-four hours later was negative, and Janowski decided that pneumonia was developing, with irritation of the diaphragmatic pleura. The condition grew worse by the next day, the pain almost preventing breathing. As the patient was raised to permit auscultation, he winced from contact with the hands, and palpation then disclosed that all the muscles on that side were extremely sensitive, and under sodium salicylate the whole clinical picture rapidly faded away. The reason why this part of the body should have been exclusively affected is still a mystery, but the case has served as a lesson and prevented errors in diagnosis in a number of other, less extreme cases. Janowski describes further some puzzling cases of rheumatism of the sacro-iliac synarthrosis, intervertebral articulations and connections of the ribs with the spine. These cases are often mistaken for sciatica. Once Janowski found the patient on the table for the proposed operation for assumed osteomyelitis of the left ilium, but was able to demonstrate that the trouble was a promptly curable rheumatism of the sacro-iliac articulation. In another case, severe febrile rheumatism of the articulations of the cervical vertebrae had induced symptoms suggesting basal meningitis, but the prompt recovery under salicylate confirmed the true diagnosis. When the rheumatism is limited to the articulations of dorsal vertebrae, and it begins in a subacute form, it is liable to simulate Pott's disease or syphilis of the spine. In one extreme case of the kind the disturbances had been ascribed to stenosis of the esophagus from cancer, but all melted away under salicylates. Rheumatism affecting the junction of the ribs with the spine may simulate pyelitis, paranephritis, neuralgia or gallstone mischief, but the true nature of the lesion can be suspected if the pain in the side is aggravated when the trunk is flexed sideways, the pelvis immobilized, a tender point is found at the junction of the rib with the spine, and the neighboring spinous processes are tender, and perhaps also the chondrocostal articulations of the corresponding ribs.

Aug. 28, 1920, **10**, No. 35

*Nocturnal Incontinence in Adults. Papastratigakis.—p. 153.
Lethargic Encephalitis in Roumania. C. D. Constantinescu.—p. 158.
Extension of Primary Syphilis. G. Quioc.—p. 161.

Nocturnal Incontinence in Adults.—Papastratigakis was in charge of the army service for nervous and mental cases at Saloniki, and he found that the sodium chlorid content of the urine of the congenitally incontinent was always abnormally high, and the urine never had the normal aspect or composition. The response to administration of a small amount of methylene blue confirmed the abnormal character of the urine secretion. In the cases of acquired incontinence, he discovered latent chronic nephritis in a large number, and in these cases the response to the blue test was much the same as with congenital incontinence, differing decidedly from the normal response. But the sodium chlorid content was not high as in the congenital cases. He concludes with an appeal to get away from the genito-urinary apparatus in studying incontinence, and to seek a broader basis.

Presse Médicale, Paris

Sept. 1, 1920, **28**, No. 62

*Bolt for Fractured Bone. E. Juvara.—p. 605.
*Pericarotid Sympathectomy. C. Abadie.—p. 606.
Filariasis Simulating Scabies. J. Montpellier and A. Lacroix.—p. 607.

Bolt Treatment of Fractures.—Juvara's illustrations show his method of reconstructing the fractured bone by driving a steel bolt through it; nuts on each end can be screwed to hold the whole firm. The hole is bored with a long slender drill and a long tube with sharp edges is forced over the emerging tip of the drill. The drill is then removed and the steel bolt, 1 mm. in diameter and from 8 to 16 cm. long, is passed through this guide tube and on through the drilled hole. Short tubes are slipped over each end of the bolt and the nuts are screwed on beyond them.

Pericarotid Sympathectomy.—Abadie explains that certain forms of atrophy of the optic nerve are probably the result of constriction of the arterioles which nourish the nerve trunk. This special atrophy is characterized by restriction of the visual field on the side toward the nose. The internal and lower visual field may have been long lost when the external and superior shows no signs of impairment. Instillation of atropin produces only a moderate effect, and the papilla is blanched; the findings are like those in the eye with severe quinin poisoning, the arteries filiform and empty of blood. This contraction of the arterioles is variable in degree and duration, but it entails in time this form of atrophy of the optic nerve. To arrest the permanent contraction of the arterioles in a severe case of the kind, he had a stretch, 1 cm. long, of the sheath of the carotid artery resected to interrupt the sympathetic innervation. The immediate effects were brilliant, the visual field rapidly enlarged until in two weeks it approximated normal, and vision improved to ⅔. This favorable condition persisted for a month, but then, two months after the sympathectomy, the improvement retrogressed until conditions were the same as before the intervention. Ligation of the common carotid was also followed by marked improvement, but the benefit was transient. He has a record of four operations of the kind on the carotid, and although marked benefit followed, it was transient. But even this sustains the assumption of impairment of the circulation in the optic nerve and its sheath.

Progrès Médical, Paris

Aug. 14, 1920, **35**, No. 33

*Kinship of Albumins in Cancer and in Blood Serum. Loeper and others.—p. 355.
Laterovesical Hydatid Cyst. L. Thevenot.—p. 355.
Chronic Nephritis in Children. Nobécourt.—p. 356.
Radioactive Cataplasms in Treatment of Enterospasm and Enteralgia. P. Froussard.—p. 358.
Asthenia and Attenuated Responsibility. R. Benon.—p. 359.

Albumin in Serum in Malignant Disease.—The albumin in the blood serum was found unusually high in persons with cancer, and injection of guinea-pigs with the albumin from the serum induced anaphylaxis for the albumin in the cancer, thus establishing the relationship between them.

Schweizerische medizinische Wochenschrift, Basel

Aug. 19, 1920, **50**, No. 34

Importance of Probability in Medicine and Biology. H. Zangger.—p. 737.
The Relation of Causal to Statistical Modes of Thought in Physics. H. Weyl.—p. 737.
Application of Probability Calculations to Biologic, Sociologic and Medical Data. E. Haemig.—p. 741.
Importance of Calculation of Probabilities in Internal Medicine. L. Michaud.—p. 743.
Estimation of Probabilities and the Relation of Medicine to Law. H. Zangger.—p. 751.

Chirurgia degli Organi di Movimento, Bologna

July, 1920, **4**, No. 3

*The Circulation in Isolated Nerves. L. Torraca.—p. 279.
*Motor Plastic Operations: Cinematization. G. Bosch Arana.—p. 296.
Skin Plastic Operation to Correct Cicatricial Retraction of Finger. G. Pieri.—p. 303.
*Local Sweating Under Heliotherapy. V. Marconi.—p. 307.
*Fractures of Femur in Children and Youths. F. Satta.—p. 311.
Traumatic Lesions of the Carpus. T. M. Biancheri.—p. 347.

The Blood Circulation in an Isolated Nerve.—Torraca isolated the sciatic nerve in dogs by different means, and gives the findings in the vessels of the nerve, alone or when the nerve had been wrapped in rubber tissue. The vessels dilate and hypertrophy inside the rubber wall, and the circulation thus proceeds amply adequate to provide for the nourishment of the nerve even in the apparently most unfavorable cases. This occurs even with permanent isolation of the nerve from the encircling tissues.

Cineplastic Amputation.—Bosch Arana describes his method for plastic motor surgery to permit actuation of prostheses by voluntary movements, and claims that it gives a firmer control than is possible with other technics. He cuts down to the bone of the stump on the four sides, the incisions stopping about 3 cm. from the tip of the stump. Through these long parallel incisions he isolates the bone within and saws it off with a wire saw, on a level with the upper end of the incisions, from 11 to 18 cm. from the tip of the stump. After the bone has been extracted, the corresponding lips of two opposite incisions are sutured together thus bridging the space and forming a large tunnel through the stump. The other incisions are left to heal spontaneously as the skin is pulled away from them, but they soon heal over. Or two tunnels can be made. The article is illustrated, showing also an ergograph devised to test and train the force. He has obtained a lifting power of 3 kg. with excursions of 2 cm. This article has eight illustrations, but Bosch Arana's article describing fully his remarkably extensive work in this line of cinematization, in the *Semana Médica* for Nov. 29, 1919, was accompanied by thirty-three illustrations.

Sweating Around the Focus in Heliotherapy.—Marconi calls attention to the peculiar sweating around a surgical tuberculous process under the influence of heliotherapy.

Fracture of the Femur in the Young.—Satta reviews experiences with twenty-three cases of fracture of the shaft of the femur, in children from 2 to 17, which had healed with deformity requiring operative correction. He warns that when the fracture shows by the end of fifteen or twenty days that it is healing with a vicious callus, it should be operated on at once without further delay. The deformity grows only worse with time. He describes the various technics applied for different indications, and adds that an ideal outcome may be counted on when applied according to the proper indications.

Policlinico, Rome

Sept. 13, 1920, **27**, No. 37

*Coffee and the Vitamins. P. D. Mattei.—p. 1011.
Agglutination in Typhus. A. Ruggiero.—p. 1014.
*Acute Osteomyelitis of Rib. D. Pizzetti.—p. 1018.

Vitamins and Coffee.—Di Mattei fed pigeons on polished rice until they developed typical deficiency polyneuritis and paralysis. Then he gave them 8 c.c. of a 5 per cent. infusion of coffee, and the nervous symptoms promptly disappeared, the pigeons becoming apparently normal again for a time. But they did not gain in weight, although otherwise apparently normal and lively. This satisfactory condition continued for several weeks, the coffee apparently making up for the deficiency in the polished rice. But by the end of a month or six weeks, in some of the pigeons the paralysis suddenly returned and the condition was soon as grave as before. Others remained in good health but without gaining in weight. Infusion of unroasted coffee did not act the same as the roasted, and he theorizes that the effect was due to the generation of certain substances by the heat of the roasting, these substances having an effect like that of true vitamins to a certain extent. We have no right, he says, to assume that the vitamins which are generally referred to in the literature are all that there are. In conclusion he describes experiments on pigeons fed with an excessive amount of vitamins, as in bran. They lost rapidly in weight and strength; to keep them alive a little rice had to be given besides.

Acute Osteomyelitis of the Ribs.—The difficulty of differential diagnosis in cases of this kind is well illustrated by Pizzetti's case. The previously healthy man of 32 suddenly developed high fever, headache and mild pain at the base of the posterior thorax. The pain grew constantly worse until walking and deep breathing were impossible. By exclusion and palpation, a lesion was finally localized at the tenth rib, and puncture here brought pus. The operation disclosed a patch of osteomyelitis and after scraping this away and draining, recovery was soon complete. When such a lesion of the ribs is suspected, pressure on the ends of the rib, as if to bend it more, might differentiate and locate the lesion. The intense pain at the slightest movement is also instructive.

Riforma Medica, Naples

Aug. 7, 1920, **36**, No. 32

*Chronic Acrocyanosis. G. Zagari.—p. 709.
Factors in Action of Potassium Permanganate. Sabbatani.—p. 715.
*Serum Sickness Arrests Purpura. V. Ronchetti.—p. 719.
Priority in Vaccination against Tuberculosis. E. Maragliano.—p. 720.
Tuberculous Peritonitis. C. H. Mayo (Rochester).—p. 721.
Echinococcus Cysts in the Brain. E. Aievoli.—p. 723.

Chronic Acrocyanosis.—In Zagari's two cases, peripheral vasomotor upset was evidently responsible for the blue hands in one case. In the other, general derangement of the endocrine system was the unmistakable cause.

Serum Sickness Arrests Hemorrhagic Disease.—Ronchetti reports two severe cases of hemorrhagic purpura which abruptly subsided when serum sickness, with urticaria, followed an injection by the vein of normal horse serum or of serum from the emulgent vein of goats.

Semana Médica, Buenos Aires

April 15, 1920, **27**, No. 16

*Genesis of Cancer. E. Cisneros.—p. 513.
Campaign Against Tuberculosis at Rosario. J. B. Valdés.—p. 527.
Treatment of Influenza. J. A. López.—p. 535.

Pathogenesis of Cancer.—Cisneros presents a long array of arguments to sustain his assertion that cancer is not a morbid entity but a local manifestation of a general state of deficit. It occurs as a biologic reaction during this state to some foreign body of organic composition. Prophylaxis requires avoidance of all causes inducing asthenia, the state of general deficit.

Archiv für Gynaekologie, Berlin

1919, **110**, No. 2

Mechanism of Rupture of Uterus with Shoulder Presentation. R. T. v. Jaschke.—p. 231.
*Influence of Diet on Size of Fetus. L. Zuntz.—p. 244.
Uterine Mucosa During Menstruation. Meyer-Rüegg.—p. 274.
Ovulation, Embedding and Function of Tube. O. Grosser.—p. 297.
*Pressure in Spinal Fluid in Pregnancy. Kirstein.—p. 328.
*Cures of Cancer Under Radium. P. Schäfer.—p. 374.
*Experimental Castration with Cholin. H. Wintz.—p. 397.
*The Ovaries After Roentgen-Ray Treatment. P. Werner.—p. 434.
Influence of War Diet on Size of Newborn. H. Hofmann.—p. 451.
The Pressure, the Sugar, and Hemoglobin Content of the Blood in War Amenorrhea. O. Schlesinger.—p. 475.
Chorio-Epithelioma of the Vagina with Multiple Lutein Cysts in Ovaries. A. W. Fischer.—p. 496.
Colloid Cancer of Uterine Cervix plus Adenocarcinoma of the Corpus. Meyer-Wirz.—p. 510.

Scant Influence of Diet on Size of Fetus.—Zuntz selected rats for his experiments, mainly because their diet resembles that of man. The findings from his extensive research demonstrate anew the tenacity with which the growing organism insures its supply of calcium and its normal development in general regardless of the conditions of diet of the gravid animal. The weight of the fetus was only slightly modified even when the gravid animal was kept fasting to great loss of weight, and the hardness of the skull was not modified at all.

The Pressure in the Cerebrospinal Fluid.—Kirstein's long article concludes with the statement that in testing the pressure in thirty-one pregnant and nonpregnant women no influence from the pregnancy could be detected. But he found that the blood pressure is always abnormally high in eclampsia, and he explains the eclamptic convulsion as due to an exceptionally high rise in the blood pressure which keeps up during the attack, and the attack ends with a Traube-Hering blood pressure wave. In prophylaxis, attempts must be made to ward off the edema of the brain responsible for the extra pressure on the brain, and aim to reduce the blood pressure, and, above all, to prevent the extra high rise in the blood pressure which seems to be the direct cause of the convulsion. This might be warded off by injection by the vein of some substance which has a vasodilator action. The experiences related confirm Zangemeister's conception of eclampsia as the result of abnormal pressure on the brain.

Radium Treatment of Genital Cancer.—Schäfer has been reexamining patients given radium treatment between 1912 and 1915. He was able to trace 173 of 175 cases in which primary healing had occurred, and found 48.6 per cent. in good health. As recurrences are likewise amenable to radium treatment, the women return for reexamination every second or third month and in 2 cases it thus proved possible to postpone the fatal outcome for three more years. Recurrences in glands not accessible to radium often yielded to roentgen-ray treatment. With radium, recurrence may develop after a surprisingly long interval; in 2 cases treated in 1911, recurrence in glands has just developed. After a three year interval, the outcome is better than after operation, but at five years, the operation statistics are better. In 36 operable cases, 15 would probably be living today after five years if the tumor had been excised, while only 9 in this group are still alive. Very encouraging results were obtained with injection of carcinoma extract and emulsions given simultaneously with the radium or roentgen-ray treatment. It seems to render the cancer more susceptible to the radiotherapy.

Experimental Castration with Cholin.—Wintz says that it is still a mystery why certain cells are destroyed by the roentgen rays, but there is some evidence that the lipoids are the elements most affected, the lecithin in the cells becoming transformed to cholin and this in turn destroying the cell. By direct injection of cholin we might act on the cell in the same way as do the roentgen rays, a chemical imitation of radiotherapy. Experimental experience and three clinical cases seem to confirm these theoretical assumptions, but the effect is so much less than what can be attained with a single exposure to the rays, that the procedure has no practical import as yet.

Ovarian Functioning After Roentgen-Ray Treatment.—Werner reports from Wertheim's service several instances of normal pregnancy after the young women had had the ovaries exposed until total amenorrhea had been realized. The injury of the ovaries is only transient, and complete recuperation is the rule, menstruation returning sooner or later and the women bearing entirely normal children thereafter.

Archiv für Verdauungs-Krankheiten, Berlin

1920, **26**, No. 5-6

*To Reduce Secretion of Hydrochloric Acid. G. Kelling.—p. 287.
*Pancreas Ferments in the Feces. K. Isaac-Krieger.—p. 351.
*Diabetes Insipidus. H. Gorke.—p. 365.
Digestive Disturbances After Dysentery. M. Brandeis.—p. 399.

Hydrochloric Acid Secretion and Means to Reduce It.—Kelling's research on the mineral metabolism and the physiology of the secretion of hydrochloric acid has shown that the formation of the acid is mainly a matter of electrolytic dissociation and osmotic phenomena. The diet must conform to this conception, in treatment of gastric ulcer. The food must be in fluid form, and no meat or its extractives, acids, or condiments or carbonated drinks allowed. It is especially important that the ulcer patient should recline during digestion, and substances which bind the acid, such as milk, should be taken with the food. The addition of fats is useful, and they can be stirred into gruels, and oil given fasting. The intake of salt should be restricted as much as possible. Absorbents like charcoal or kaolin are of slight use as they bind very little of the acid. Bismuth carbonate is the best bismuth preparation but it must be given in large doses and before meals. Small doses have little effect on the acid. With the pylorus permeable, sodium bicarbonate, fasting, or sodium containing mineral water (with little salt content) neutralizes the acid, but the effect is not proportional to the amount. Tentative small amounts should be given to determine the optimum which is soon reached, and thus overburdening of the kidneys is avoided. If the gastric motor function is impaired, magnesia is preferable. A solution of hydrogen dioxid is a very energetic means for suppressing secretion of hydrochloric acid for a long time while promoting secretion of mucus. With stenosis of the pylorus and duodenal ulcer, excessive secretion of acid and stagnation, the stomach should be rinsed out to get rid of the acid, and atropin given to check its production. A further measure to help reduce it is to administer a soda solution by the rectum. The details of the extensive experiments on dogs and the clinical experiences are given, and are compared with those published by others, especially in regard to the mathematical laws of digestion, and the advantage of organic iron over the inorganic, and of administering it toward the end of digestion.

Pancreas Ferments in Stools and Duodenal Juice.—This article states that the Berkefeld or paper filter interferes with the outcome of tests for trypsin in extracts of feces. Acid fermentation in the bowel is liable to destroy all the trypsin present. Hence it is futile to apply tests for trypsin to the stools; only the diastase content is instructive. If the diastase test gives negative findings, in dubious cases it will be necessary to examine the duodenal juice directly. The insignificance of the tryptic and diastasic potency of the stools is appreciated only when compared with that of the duodenal juice. Diastase seems to pass unmodified through the Berkefeld and paper filters, but acid fermentation in the bowel may have a destructive action on the diastase as well as on trypsin.

The Metabolism in Diabetes Insipidus.—Gorke has been making a detailed study of three cases of polydipsia and polyuria from inability of the kidney to eliminate sodium chlorid and salts in normal concentration, although the concentration of nitrogen does not seem to be impaired. The great danger with diabetes insipidus is thus that the body will become dehydrated and the blood too thick. The only means to remedy the inability of the kidney for normal concentration is by pituitary extract, injected subcutaneously or by the vein, and the effect of this is not permanent. In the three cases described, no anomalies in the pituitary region could be detected, but amenorrhea in one and dystrophia adiposogenitalis in two others suggest a pituitary origin for the diabetes insipidus. The fourth patient had mild enlargement of the sella turcica. In conclusion the importance of examining the blood as well as the urine in these cases is emphasized.

Münchener medizinische Wochenschrift, Munich

July 16, 1920, **67**, No. 29

Treatment of General Paresis by Induction of Malarial or Recurrent Fever. P. Mühlens, W. Weygandt and W. Kirschbaum.—p. 831.
*Operative Treatment for Deafness. H. Krukenberg.—p. 835.
Observations on Silver Arsphenamin. A. Stühmer.—p. 836.
Favorable Results of Quartz Lamp Irradiation in Rachitis. G. Riedel. p. 838.
*Roentgen-Ray Treatment of Enlarged Prostate. Oppenheimer.—p. 840.
Operative Treatment of Contracted Bladder. Birnbaum.—p. 841.
An Improvement in Hegar's Dilator. P. Klaar.—p. 844.
Herpes Zoster in Relation to Arsenic. K. Mezci.—p. 844.
Exanthem Accompanying Diabetes in Child. Prym.—p. 845.
Diagnosis of Incipient Tuberculous Arthritis. J. Oehler.—p. 845.

External Operation for the Hard of Hearing.—Krukenberg operates on the external ear, resecting cartilage and bone from behind to make the meatus wider and straighter. With the small operation he describes, with an illustration, the hearing has been improved up to 300 per cent. in his ten patients thus treated (fifteen operations). The ages ranged from 8 to 45.

Roentgen-Ray Treatment of Hypertrophy of the Prostate.—Basing his statements on his experience with fifty-four cases, Oppenheimer says that the value of roentgen-ray treatment in hypertrophy of the prostate is limited. In the first stage the results are sometimes good, but the effect is not permanent and does not prevent the further development of the disease. If used promiscuously with the hope of decreasing the residual urine or of reducing the size of the prostate, it will prove disappointing. On the other hand, if used as a symptomatic remedy, within a limited sphere, it has a favorable effect on prostatic bleeding, and exerts in many cases a calming influence on the frequent micturition of the first stage. This gives it considerable value, since in the first stage the indications for prostatectomy are not imperative, although the annoying symptoms may continue for years, disturbing the patient's sleep and thus weakening his general health. The choice of remedies for this is limited and uncertain. During the stage of chronic retention, prostatectomy is the only method, provided the general condition is good.

Zentralblatt für Chirurgie, Leipzig

Jnly 17, 1920, **47**, No. 29

*Felons with Gangrene of the Finger Tip. H. Burckhardt.—p. 882.
Transplantation of Tendons for Radial Paralysis. W. Krause.—p. 884.
Metal Device to Aid in Tamponing Cavities. V. E. Mertens.—p. 889.

Felons Accompanied by Gangrene of the Finger Tip.—Burkhardt reports five cases of felon in which black gangrene developed at the end of the finger, caused apparently by interruption of the blood circulation through the afferent arteries. The black color of the necrosis indicated reflux of blood from the veins, or at least that the blood had not been fully expelled from the capillaries. This interruption is doubtless occasioned by thrombosis. It is possible that the division of an artery through operative intervention sometimes cuts off the blood supply of the finger tip, which, therefore, we should take into account when making incisions. Furthermore, the compression resulting at the site of inflammation may possibly hamper the blood flow to the finger tip to such an extent as to cause gangrene though no actual blocking of the arteries has occurred. None of the cases had been treated by the incision at the end of the finger, which has been recommended to start up the sluggish circulation with such inflammatory processes. If this had been done when the panaris was at its height, the gangrene might have been averted.

Zentralblatt für Gynäkologie, Leipzig

July 24, 1920, **44**, No. 30

*Fåhræus' Sedimentation Pregnancy Test. G. Linzenmeier.—p. 816.
*Diphtheria Bacilli in Parturients and the Newborn. Wauschkuhn.—p. 820.
Inhalation of Oxygen in Asphyxia Neonatorum. F. Engelmann.—p. 824.
Technic for Laminaria Tents. M. Linnartz.—p. 825.

Fåhraeus' Blood Test for Pregnancy.—This sedimentation test was described in THE JOURNAL June 15, 1919, p. 1900. Linzenmeier applied it to more than 300 specimens of blood. In ascertaining the normal rate of sedimentation of the corpuscles in the blood of nonpregnant women, he found that from five to six hours were required before the corpuscles had settled sufficiently to leave a plasma column in the sedimentation tube 18 mm. deep, which is the uniform standard he adopted for purposes of comparison. There was considerable variation in time, and in one isolated case nearly ten hours were required. Sedimentation time in men was much longer than in women. During and shortly after the menstrual period the time was reduced by from one to two hours. Of 100 pregnant women examined in their homes during the seventh to the tenth month of pregnancy, he discovered a sedimentation time of less than two hours in every case except one. In a small number examined during the fourth, fifth and sixth month the time never exceeded two hours. During the last three months of pregnancy, sedimentation occurred in fifty minutes. But this change in sedimentation time does not appear before the fourth month, and rapid sedimentation of red corpuscles is not a specific reaction for pregnancy, since it occurs also in all conditions associated with inflammation and fever, as Fåhraeus himself stated. Linzenmeier found the most rapid sedimentation in exudative processes, with high fever; especially with adnexa tumors, parametritis and peritonitis; in such cases sedimentation may take place in from eight to ten minutes. He discusses from various standpoints the electrical theory proposed by Fåhraeus to explain the accelerated sedimentation of corpuscles.

Diphtheria Bacilli in Parturients and the New-Born.—Wauschkuhn refers to the investigations of Läwen and Reinhardt on "skin carriers." They examined the tissues adjoining wounds containing diphtheria bacilli and found, a hand's breadth or more removed from these, diphtheria bacilli in 19 out of 107 cases. Wauschkuhn made smears from the tonsils, breasts and vagina of 200 parturients in the delivery room and from the nose of the 200 infants within one to three hours after birth. Of the 800 smears so taken, suspicious bacilli were discovered in 89. Of the 35 smears giving unmistakably positive results, 26 were from the mothers and 4 from infants. In 21 mothers the diphtheria bacilli were found in only one smear (tonsils 9, breasts 6, vagina 6); in one mother in two smears (tonsils and vagina); in 2 mothers in the vagina and in the nasal smear of their infants; in 2 mothers in 3 smears (tonsils, breasts and vagina) and in the nasal smear of their infants. In all 4 mothers of the 4 infants in whom genuine diphtheria bacilli were found in the nasal secretion immediately after birth, genuine diphtheria bacilli were present in the vagina. There were no symptoms of diphtheria in the 26 mothers, but 8 of the infants developed "snuffles," some with slight fever, and they were isolated and treated with antitoxin, as also the infants of the others with diphtheria bacilli in the vagina.

Zentralblatt für innere Medizin, Leipzig

June 19, 1920, **41**, No. 25

*Effect of Calcium on Hydrops and Nephritis. W. Hülse.—p. 441.

Effect of Calcium Salts on Hydrops and Nephritis.—Hülse reports that in dealing with a large number of edema patients during the war he found calcium chlorid very valuable in the treatment of dropsical conditions. Although used at first in combating only one of the symptoms of nephritis—the anasarca—it soon became evident that the renal process itself was often very favorably influenced. Eight case histories are given, to which many more could be added, which Hülse thinks give abundant evidence of the value of calcium chlorid. There were a few cases in which the effect was not so marked, but there was scarcely a case that was not benefited somewhat. Occasionally the effect of the calcium chlorid was increased by adding other neutral salts (magnesium, urea). He ascribes the pathogenesis of edema to some modification of the colloids, thus exculpating the kidneys.

Mededeel. v. d. Burg. Geneesk. Dienst, Neth. Indies

1920, No. 1. Parallel Dutch-English edition.

*Coconut Press Cake as Food for Man. B. C. P. Jansen.—p. 3.
*Vitamin Content of Extract of Rice Bran. B. C. P. Jansen.—p. 23.
Respiratory Quotient of Pigeons Fed on Polished Rice. B. C. P. Jansen and R. M. M. Mangkoewinoto.—p. 51.
Bacteriologic Research on Septic Tanks. J. Groenewege.—p. 67.

Coconut Press Cake as Food for Man.—Jansen reports from the medical laboratory of the public health service of the Netherlands Indies that his tests with house rats and with three human subjects have demonstrated that coconut press cake contains complete proteins, and that they are absorbed sufficiently by the digestive tract. The press cake is the residue after the oil has been squeezed out of the coconut meat. The diet of the tropics might be advantageously supplemented with this, he suggests, in times of dearth. The metabolic findings showed that the protein was assimilated, and none of the three human subjects seemed to have any unpleasant consequences from the diet of press cake and rice, while the growth of the rats was satisfactory. [In this country coconut press cake is used for feeding cattle; the expressed oil is the basis of a certain form of margarin. Recent experiments with white rats apparently confirmed their normal growth on it.—ED.]

Vitamin Content of Rice Bran.—Jansen advises to use birds more susceptible than pigeons to the lack of the antiberiberi vitamin, to test the content in rice bran. A small bird, the *munia maja,* is much more convenient for a number of reasons. A large number can be kept in one cage and weighed all together, and the polyneuritis is as characteristic as with pigeons, and develops sooner, in twelve days.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

March 29, 1920, **1**, No. 12

*Blood Pressure in Pulmonary Tuberculosis. P. J. de Bloeme.—p. 943.
The Prognosis with Mental Disease. H. J. M. Schade.—p. 950.
Treatment of Fracture of Neck of Femur. S. M. Kropveld.—p. 958.
Adulterated Neosalvarsan. C. J. v. L. Hulsebosch.—p. 961.

The Blood Pressure in Pulmonary Tuberculosis.—De Bloeme records the pressure findings in 500 cases, classified according to Turban. In stage 1 the pressure was normal in 87.7 per cent. of the men; below normal in 4 per cent. and above normal in 6.7 per cent. In the second stage the figures were, respectively, 86, 9.6 and 5.1 per cent. In the third stage, 75.1, 17.7 and 4.8 per cent. In the women patients it was below normal in stage 1 in 2.7 per cent. and above normal in 6.8 per cent. In the second stage, below 3.1, and above 3.1 per cent. In the third stage, below in 10.8 and above in 6.6 per cent. Hemoptysis did not seem to be inevitably connected with high blood pressure. The cases with a low blood pressure of 80 to 100 all terminated fatally in less than a year. The discovery in men of a blood pressure of 100 to 110 mm. is a convenient and reliable sign of the gravity of their case which otherwise might not be suspected. If the pressure keeps low when the patient seems to be thriving otherwise, there is greater danger of a relapse.

Hygiea, Stockholm

Aug. 31, 1920, **82**, No. 16

*Vegetative System as Factor in Ulcer. L. Wolff.—p. 513.
Gonococcus Perirectal Abscess. J. Almkvist.—p. 529.

Disturbance in Autonomic Nervous System as Factor in Disease.—Wolff refers particularly to gastric and duodenal ulcer as a manifestation of overactivity of the vagus nervous system, saying that Gundelfinger has reported multiple signs of vagotony in 22 per cent. of 1,200 cases, and Bergmann found very few exceptions in which there was nothing to indicate a loss of balance between the sympathetic and the vagus systems. In Petrén and Thorling's 18 cases tested, 8 responded exclusively to pilocarpin and one exclusively to epinephrin, while 5 responded alike to both. Wolff's own experience testifies that many of the symptoms for which we regard the ulcer as responsible—the pains, gastrospasm, hypersecretion and contraction of the mucous membrane and of its blood vessels, with the consequent erosions and ulcerations which cannot heal so long as the spasmodic contraction lasts and the gastric juice flows over them—all of these might well be explained by overirritability of the vagus innervation. This assumption has more than theoretical interest as it suggests treating gastric and duodenal ulcer with a systematic course of atropin. Von Amstel has reported brilliant results in 50 cases, given 0.5 or 1 mg. of atropin sulphate by the mouth or subcutaneously, kept up daily for ten weeks. A few patients showed slight, transient, toxic action, but in all the pains were arrested, the secretion became reduced, motor function regulated and the pylorospasm subsided, including cases in which the spasm had been so severe that it had simulated a tumor. The usual ulcer treatment was given in addition, but this was of slight or no benefit in the cases without the atropin. Wolff adds that calcium treatment and electricity might usefully supplement the belladonna, and some other drug may yet be found even more potent to reduce the overactivity of the autonomic system.

Norsk Magazin for Lægevidenskaben, Christiania

September, 1920, **81**, No. 9

*Diphtheria of the Umbilicus. T. Schønfelder.—p. 857.
*Comparison of Blood Sugar Tests. H. F. Høst and R. Hatlehol.—p. 877.
*Stenosis at the Bend of the Colon. S. Widerøe.—p. 890.
*Case of Hysteric Scoliosis. P. Bull.—p. 900.
*Ganglion Neuroma in the Neck. L. Sommerfelt.—p. 911.

Diphtheria of the Umbilicus.—Schønfelder cites Snell's compilation (1919) of the cases of diphtheria of the umbilicus on record, and states that at the contagious disease hospital at Christiania diphtheria bacilli were found in the umbilicus of an infant cadaver. The mother also had diphtheria, and 130 other patients were received from the women's clinic in the following seven months. In thirty-three of the infants diphtheria bacilli were found in the umbilicus. He warns that diphtheria of the umbilicus closely resembles the ordinary processes found in the umbilicus, and when there is diphtheria in the environment the slightest sign of anything pathologic in the umbilicus should lead to search for the bacilli and antitoxin treatment. The course is mild, without fever, and the general health does not seem to be impaired as a rule. Local membrane formation need not be expected. The bacilli were found also in the nose in two infants and in both nose and throat in three. Broer has recently reported finding diphtheria bacilli in several new-born babes and in smears from the vagina of seven of thirty parturients.

The Sugar Content of the Blood.—Four different technics were applied to determine the sugar content of the blood in thirty-five specimens from twenty-eight patients and healthy controls, and the parallel findings are tabulated. The normal level seems to be 0.11 per cent. with the Bang, Hagedorn and Folin tests but the Myers and Bailey modification of the Lewis and Benedict method gave higher figures than this in three cases, up to 0.142 in one instance.

Stenosis at the Colon Flexures—Widerøe reports three cases of chronic mild stenosis at a bend of the colon, and insists that a saline purge, petrolatum, and proper diet would cure many cases now sent to the surgeon. Appendicectomy gives only transient if any relief. The clinical picture had been that of recurring appendicitis except for the almost normal temperature and the soft abdominal walls.

Case of Hysteric Scoliosis.—Bull's patient was a young woman with typical hysteric claudication and hysteric scoliosis which resisted five months of treatment in the service for nervous diseases after a month's stay in the surgical ward. The family had great faith in a certain quack, and under his directions—without his seeing the patient—she was cured in a week. There is still a little pain in the spine but the family attribute this to the "experimenting" that was done with her at the hospital. The quack's directions were to take a warm footbath with salt and mustard every evening for a week, and then three times a week; to refrain from meat and eat only fish and milk dishes, and to drink or take by the spoonful infusions of three specified herbs.

Ganglion Neuroma.—The neuroma was removed from the neck of a woman of 36. It had developed in the course of ten years. No effect from roentgen treatment had been noted.

Ugeskrift for Læger, Copenhagen

Aug. 12, 1920, **82**, No. 33

*Modern Research on Biology of Gonads. K. Sand.—p. 1045.

Experimental Biology of Sexual Glands.—Sand has done considerable experimental work in this line himself but his article is a review of what has been accomplished by others, and especially Steinach's recent work on the puberty gland, described p. 617 and also in the Berlin Letter, p. 755. Steinach urges the foundation of institutes for experimental biology and experimental research on old age, and Sand remarks that whether Steinach's conclusions are accepted or not, his work will give impetus to intensive research the world around. The process of growing old is more complicated in women than in men, and access to the ovaries requires a laparotomy, but Steinach thinks that the tissue producing the sexual hormone might be influenced by the roentgen ray or by autotransplantation or transplantation of young ovaries. Holzknecht's recent reexamination of women who had been treated at some time with the roentgen rays for uterine myomas yielded results which Steinach regards as promising for the applicability of this method. Sand's review of the whole history of "sexual research," confirms anew the wonderful potency of this hormone tissue or puberty gland as evidenced by the years of experimental research on fowls, etc.

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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, NO. 19 CHICAGO, ILLINOIS NOVEMBER 6, 1920

ABDOMINAL PAIN IN DISEASES OF THE KIDNEY AND URETER*

ARTHUR B. CECIL, M.D.

LOS ANGELES

This study is based on a critical review of 300 cases in which a complete urologic investigation has been carried out on the upper urinary tract. It has been undertaken for the purpose of determining the frequency of occurrence and distribution of abdominal pain in association with diseases of the kidney and ureter.

The classical picture of pain beginning in the region of the superior lumbar triangle, radiating to the lower abdomen and to the genitalia or thigh, is undoubtedly the most typical picture of renal pain. It is not appreciated, however, how often this typical picture is absent; much less is it appreciated that pain arising from diseases of the kidney and ureter is often purely abdominal in type, with no pain in the back whatsoever.

When abdominal pain is the most evident symptom of renal or ureteral disease, it may be extremely misleading, for, as will be shown, the localization of the pain is oftentimes in the neighborhood of McBurney's point, or in the upper abdomen beneath the costal border. On the one hand, it may be confused with the pain of appendicitis, and on the other, with gallbladder disease or gastric disturbances.

It was soon recognized, in reviewing these cases, that practical data of scientific value could not be derived from them unless the cases were grouped and studied systematically, for in no other way was it found possible to draw general deductions from material so comprehensive in its scope.

To complete the clinical picture of the various groups, it has been necessary to surround them by certain data in association with the distribution of pain. The cases have been classified under twelve main groups, namely, stone in the kidney or ureter; renal tuberculosis; pyelonephritis; hydronephrosis; tumor of the kidney; polycystic kidney; nephroptosis; pyonephritis; chronic nephritis; congenital malformations of the kidney; cystitis, and a miscellaneous group comprising cases of essential hematuria, cases which were studied for differential diagnosis, various rare conditions, and those in which the findings were negative.

GROUP 1. STONE IN THE KIDNEY OR URETER

This group comprises sixty-seven cases. The youngest patient was 10 years of age, and the time of life in which stone most frequently occurred was between the ages of 30 and 44. During this period thirty-six cases were found. There were three patients between 65 and 69 years of age.

The duration of symptoms varied all the way from seven cases under one month's duration to one case with symptoms dating back over forty years.

Of the sixty-seven cases, urine was found to be entirely negative in seven cases. Blood was found in the urine in fifty-six cases, pus was found in the urine in fifty-four cases, albumin was present in thirty-two cases; and the urine was found to be infected in fourteen cases.

TABLE 1.—AGE OF PATIENTS IN GROUP 1

Age	No. of Cases
From 10 to 14	1
From 15 to 19	0
From 20 to 24	4
From 25 to 29	5
From 30 to 34	9
From 35 to 39	17
From 40 to 44	10
From 45 to 49	7
From 50 to 54	4
From 55 to 59	5
From 60 to 64	2
From 65 to 69	3

TABLE 2.—DURATION OF SYMPTOMS IN GROUP 1

Duration	No. of Cases
Under 1 month	7
Between 1 month and 1 year	16
Between 1 year and 2 years	10
3 years	4
4 years	3
5 years	2
6 years	4
7 years	2
8 years	2
9 years	0
10 years	3
Between 11 and 15 years	7
Between 16 and 20 years	2
Between 21 and 25 years	3
Between 26 and 30 years	0
Between 31 and 35 years	1
Between 36 and 40 years	0
Between 40 and 44 years	1

Thirty of the cases showed bladder disturbances which varied all the way from minor grades of frequency or discomfort to very marked frequency, pain and tenesmus. It will be noted that although bladder disturbances were present in thirty cases, the urine was infected in only fourteen, so that the bladder disturbances were not necessarily dependent on infection of the urine.

When the stone was present in the lower end of the ureter, rectal tenesmus was often complained of, and this occurred irrespective of whether the stone was in the lower portion of the right or the left ureter.

It is primarily with pain with which this paper is concerned. In the cases of stone in the kidney or

* From the Hospital of the Good Samaritan.

* Read before the Section on Urology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

ureter, pain was present in every case, and in the large majority of cases the patients presented themselves for treatment on account of pain. In a few instances, hematuria was the principal complaint.

Twenty-one cases presented typical renal pain, that is to say, pain in the region of the superior lumbar triangle, which tended to radiate along the course of the ureter.

Nineteen cases presented pain in the abdomen alone. It is most striking that 28 per cent. of cases of stone in the kidney and ureter presented abdominal pain without pain in the back. The abdominal pain in these cases was thus distributed: In seven instances pain was limited to the left lower abdomen; in six, to the right lower abdomen; in one, to the left upper abdomen; in four, to the right upper abdomen, and in one case, to the epigastric region.

When the pain was present over the lower abdomen, it occurred in the neighborhood of McBurney's point when on the right side, and in the corresponding position when on the left side. As a rule, it was found a little farther lateral than McBurney's point, but at times was found just at McBurney's point, and in some instances above it.

The distribution of pain when in the upper abdomen was usually just beneath the border of the ribs in about the mammary line or a little mesial to it.

In the case in which pain was limited to the epigastric region it was described as a "deep in" pain, and would hardly lead one to think of a renal condition as its origin.

In twenty-six cases, pain in the back was associated with pain in the abdomen. The pain in the back was what is usually described as typical renal pain; but associated with it was pain in the abdomen which in some instances overshadowed the pain in the back. The abdominal pain in these cases was thus distributed: In five cases, pain was in the right upper abdomen; in four, in the left upper abdomen; in eleven, in the right lower abdomen; in two, in the left lower abdomen. In two cases there was diffuse abdominal pain, and in two cases there was a deep epigastric pain. In one instance there was a slight left lower abdominal pain, but the principal pain of which the patient complained was pain in the left testicle. It was only on routine roentgen-ray examination that a stone 1 cm. in diameter was demonstrated in the pelvis of the left kidney. In one other case, which at the time of urologic study showed well marked renal distribution of pain, there was a history of an operation on the epididymis, at which time pain was limited to the testicle.

The confusing nature of abdominal pain in cases of stone in the kidney and ureter is well brought out by the fact that in thirteen of the sixty-seven cases studied, various surgical procedures had been undertaken for the relief of pain in which the symptoms were in no way changed, and in which it was been demonstrated that the pain was of renal origin. In the thirteen cases in which operation was performed the procedures had consisted of nine appendectomies, one operation on the left epididymis, two abdominal explorations, one gallbladder drainage, and one removal of the right ovary. In one case in which the roentgen ray revealed a stone 2.5 cm. in diameter in the right kidney, the appendix and right ovary had been removed, and at a later date an abdominal exploration had been performed.

In only two of the thirteen patients that had been operated on was the urine negative. Among the other eleven, blood was present in eight cases; pus, in ten; albumin, in seven, and infection in four.

Five of the thirteen cases showed bladder disturbances, and in two of these the urine was infected. A brief history of the cases in which operation was performed is given in Table 3.

In addition to the thirteen cases in which operation had been performed, in which the operative procedure had been directed toward other conditions than stone in the kidney and ureter, there were eight cases in which

TABLE 3.—HISTORIES OF CASES IN GROUP 1 IN WHICH VARIOUS OPERATIONS HAD BEEN PERFORMED

Case No.	Distribution of Pain	Bladder Disturbances	Duration	Urine: Pus	Urine: Blood	Urine: Albumin	Urine: Infection	Operations
1	Right lower abdomen	Present	21 yrs.	+	—	+	+	Appendectomy; removal of right ovary; later abdominal exploratation
2	Right lower abdomen and right back	Present	18 mos.	—	—	—	—	Appendectomy
3	Right lower abdomen and right back	Present	6 yrs.	+	—	+	—	Appendectomy
4	Right lower abdomen and right back	Absent	2 yrs.	—	—	—	—	Appendectomy
5	Right lower abdomen and right back	Present	7 yrs.	—	+	—	—	Removal of right ovary
6	Right lower abdomen and right back	Absent	4 yrs.	—	—	—	—	Appendectomy
7	Right back	Absent	2 yrs.	+	+	+	—	Removal of cyst of epididymis
8	Right back	Present	3 yrs.	+	+	+	+	Appendectomy
9	Diffuse abdominal pain and pain in left back	Absent	2 yrs.	+	+	+	—	Appendectomy
10	Left lower abdomen	Absent	1 mo.	—	+	—	—	Exploratory laparotomy
11	Right upper abdomen	Absent	8 yrs.	+	+	—	—	Appendectomy
12	Right lower abdomen and right back	Absent	5 yrs.	+	+	+	+	Appendectomy
13	Right upper abdomen	Absent	6 yrs.	+	+	+	+	Gallbladder drainage

TABLE 4.—HISTORIES OF CASES IN WHICH ERRONEOUS DIAGNOSIS HAD BEEN MADE BUT OPERATIONS HAD NOT BEEN PERFORMED

Case No.	Distribution of Pain	Bladder Disturbances	Duration	Urine: Pus	Urine: Blood	Urine: Albumin	Urine: Infection	Diagnosis
1	Right lower abdomen and right back	Present	18 mos.	+	+	—	—	Appendicitis
2	Left upper abdomen and left back	Absent	2 yrs.	—	+	+	—	Gallstones
3	Right lower abdomen and right back	Present	2 yrs.	—	—	—	—	Appendicitis
4	Right upper abdomen	Present	3 mos.	+	+	—	—	Gallstones
5	Epigastrium	Absent	10 yrs.	+	+	+	+	Ptomain poisoning
6	Right lower abdomen and right back	Present	5 mos.	+	+	—	—	Appendicitis
7	Right lower abdomen and right testicle	Absent	2 yrs.	—	—	—	—	Appendicitis
8	Right lower abdomen	Present	13 yrs.	+	+	+	+	Appendicitis

stone had not been diagnosed and in which a diagnosis of appendicitis had been made in five cases, gallstones in two cases, and ptomain poisoning in one case. In two of these cases the urine was normal at the time of urologic examination. The history of these eight cases is shown in Table 4.

A detailed study has shown that the position of the stone, whether in the kidney or in the ureter, has had little bearing on the distribution of the pain. Thus, it has been found that a stone in the lower portion of the ureter may give symptoms of pain in the renal region of the back or high up in the abdomen. It is likewise true that a stone in the kidney may give pain which is limited to the lower abdomen, and as has been shown in some instances, the pain may be virtually limited to the testicle. This fact has a bearing on the absolute necessity of covering the entire upper urinary tract in making roentgenologic examinations.

GROUP 2. RENAL TUBERCULOSIS

This group comprises forty cases. The youngest patient studied was between 10 and 14 years of age, and the oldest one between 70 and 74 years of age. The period of life in which most of the patients presented themselves for study was between 25 and 29 years of age. During this period of five years, eight of the forty cases occurred (Table 5).

TABLE 5.—AGE OF PATIENTS IN GROUP 2

Age	No. of Cases
From 10 to 14	1
From 15 to 19	2
From 20 to 24	4
From 25 to 29	8
From 30 to 34	7
From 35 to 39	3
From 40 to 44	6
From 45 to 49	3
From 50 to 54	3
From 55 to 59	2
From 60 to 64	0
From 65 to 69	0
From 70 to 74	1

The duration of symptoms varied very greatly. Two patients had had symptoms for thirty years (Table 6).

TABLE 6.—DURATION OF SYMPTOMS IN GROUP 2

Duration	No. of Cases
Under 1 year	2
1 year	6
2 years	5
3 years	2
4 years	7
5 years	4
6 years	2
7 years	1
8 years	1
9 years	0
10 years	1
From 11 to 15 years	4
From 16 to 20 years	3
From 21 to 25 years	0
From 26 to 30 years	2

There were fifteen cases of right renal involvement, thirteen cases of left renal involvement, and twelve cases of bilateral tuberculosis.

All the cases showed bladder disturbances, which varied from slight stinging on urination to total incontinence of urine. The majority of patients presented themselves for treatment on account of bladder disturbances or hematuria.

Every case showed pus in the urine, but in some instances only a very few pus cells were found after prolonged centrifugalization of two or more tubes of urine. Blood was found in the urine in thirty-eight cases, and albumin in thirty-four cases. Tubercle bacilli were found in every case directly by slide investigation, and only in a few instances was a guinea-pig injection of any help. In fact, in one case a guinea-pig injection was negative when tubercle bacilli had been demonstrated in the very specimen of urine with which the guinea-pig was injected, and from this patient a tuberculous kidney was removed.

TABLE 7.—AGE OF PATIENTS IN GROUP 3

Age	No. of Cases
From 15 to 19	1
From 20 to 24	6
From 25 to 29	9
From 30 to 34	6
From 35 to 39	9
From 40 to 44	15
From 45 to 49	6
From 50 to 54	7
From 55 to 59	5
From 60 to 64	5
From 65 to 69	6
From 70 to 74	1
From 75 to 79	1

On investigating the matter of abdominal pain or pain in the back, it was found that abdominal pain was present, without pain in the back, in seven cases. In these seven cases in which abdominal pain alone was present, the pain was thus distributed: right lower abodminal pain, one case; general diffuse abdominal pain, two cases; epigastric pain, three cases; diffuse lower abdominal pain, one case.

There were six cases in which pain in the back was associated with pain in the abdomen. The pain in the back in these cases was in what is known as the renal region. The distribution of abdominal pain was: right lower abdominal pain, one case; right upper abdominal pain, two cases; diffuse abdominal pain, two cases; epigastric pain, two cases.

Pain in the back alone occurred in eight cases. In eighteen cases no pain was complained of either in the back or in the abdomen, and the symptoms were entirely limited to the bladder. In studying the pain complained of in renal tuberculosis, it was found to be of entirely different type from that found in hydronephrosis or stone. It was usually not a demanding pain, but more of an aching in the region of the back; and when in the abdomen, it was often spoken of as a burning sensation. When in the epigastrium, it was usually a sickening pain, but in none of the cases studied was it of an acute severe type. This perhaps accounts for the fact that of the forty cases of renal tuberculosis studied, no abdominal operations had been carried out for relief of pain, although in one case suprapubic drainage of the bladder had been performed for relief of bladder tenesmus, and in another an internal urethrotomy was performed for supposed stricture of the urethra.

GROUP 3. PYELONEPHRITIS

This group comprises seventy-seven cases. As only cases in which complete urologic examinations have been made were selected, young children presenting pyelonephritis have not been included. Thirty-one per cent. of the patients that presented themselves for study were between 35 and 45 years of age (Table 7).

In two cases, symptoms had been present in the neighborhood of forty years. Thirty-eight per cent. of the patients, however, had been ill for one year or less (Table 8).

In forty-seven cases the infection was bilateral. In fifteen cases the infection was limited to the left side, and in fifteen cases the infection was limited to the right side. Sixty-four cases showed bladder disturbances.

TABLE 8.—DURATION OF SYMPTOMS IN GROUP 3

Duration	No. of Cases
Under 1 month	8
Between 1 month and 1 year	20
Between 1 year and 2 years	8
3 years	5
4 years	2
5 years	3
6 years	4
7 years	3
8 years	1
9 years	1
10 years	4
Between 11 and 15 years	7
Between 16 and 20 years	3
Between 21 and 25 years	1
Between 26 and 30 years	0
Between 31 and 35 years	4
Between 36 and 40 years	2
Between 40 and 44 years	0

Pus was present in the urine in seventy-three cases. Blood was present in forty-six cases; albumin was present in fifty cases, and infection of the urine was demonstrated in all of the cases. In four of the cases the urine was macroscopially clear, and on careful examination, after prolonged centrifugalization, no pus cells were found. These are cases in which it is most important that a catheterized specimen be obtained and immediately centrifuged and stained for infection, the immediate direct slide smear being of the greatest value, for in one case in which no urinary antiseptics were being given by mouth, a large number of bacilli were demonstrated by the ordinary staining methods. Yet, on three occasions in which cultures were immediately made from the same urine directly on agar and bouillon, no growth occurred.

In connection with the clinical studies of the urine and pyelonephritis, some interesting cases have been observed of which one reads very little. In some instances in which a typical picture of parenchymatous nephritis was present, with large amounts of albumin in the urine, associated with edema, catheterized bladder urine in addition showed marked infection. In some of these cases the body had been searched throughout for various types of focal infection, and, strange to say, a bacteriologic study of the urine had been neglected. It is possible that infection had occurred in association with a typical parenchymatous nephritis; but if this is the case, infection of the kidney would seem to have played a large part in the renal destruction, for in one of the cases showing a heavy cloud of albumin, the left kidney had been virtually destroyed, and the right reduced considerably in its functional capacity. The kidney itself should be more often considered as a source of its own focal infection, if focal infection bears any great relation to nephritis.

Pain in these cases of pyelonephritis was thus distributed: In left renal infection pain was present in the left renal region alone in seven cases. It was present in the epigastrium alone in one case. In seven cases there was no pain.

In right renal infection, pain occurred in the right renal region in six cases and across the renal regions in one case. In one case of right renal infection pain was limited to the epigastrium, and in two casese there was pain in the right upper abdomen associated with pain in the right renal region. Five patients were without pain.

In the bilateral cases of renal infection pain in the back alone occurred in fifteen cases. This pain was thus distributed: right renal region, four cases; across both renal regions, eight cases; across the lower back, three cases.

Pain in the abdomen alone occurred in four cases thus distributed: right lower abdomen, two cases; pain in the epigastrium, two cases. There were three cases in which pain in the back was associated with abdominal pain. In two of these cases there was pain in the right renal region associated with pain in the right lower abdomen, and in one case, pain in the left upper back associated with pain in the left lower abdomen.

In twenty-five of the bilateral cases there was absence of either abdominal or renal pain.

In only two instances were abdominal operations carried out with the idea of relieving abdominal pain in this series of cases of pyelonephritis. In one case of bilateral pyelonephritis, the gallbladder was drained on account of pain in the right upper abdomen and right back. In one case of right-sided pyelonephritis, the appendix was removed on account of pain in the right lower abdomen.

In this group of cases, as in renal tuberculosis, abdominal pain is of a much less severe type than in hydronephrosis or stone, and the severity of the pain has evidently been one of the principal factors in leading to unnecessary abdominal operations.

GROUP 4. HYDRONEPHROSIS AND HYDRO-URETER

Hydronephrosis and hydro-ureter comprised twenty-six cases. The youngest patient was between 10 and 15 years of age, and the oldest between 60 and 64. Eleven patients, or 42 per cent., were between 30 and 40 years of age on admission (Table 9).

TABLE 9.—AGE OF PATIENTS IN GROUP 4

Age	No. of Cases
From 10 to 14 years	1
From 15 to 19 years	1
From 20 to 24 years	1
From 25 to 29 years	2
From 30 to 34 years	6
From 35 to 29 years	5
From 40 to 44 years	3
From 45 to 49 years	5
From 50 to 54 years	1
From 55 to 59 years	0
From 60 to 64 years	1

Six of the twenty-six patients had had symptoms between ten and fifteen years on admission (Table 10).

TABLE 10.—DURATION OF SYMPTOMS IN GROUP 4

Duration	No. of Cases
Under 1 month	1
Under 1 year	4
Between 1 and 2 years	2
2 years	0
3 years	1
4 years	0
5 years	2
6 years	2
7 years	1
8 years	1
9 years	1
10 years	2
Between 10 and 15 years	6
Between 15 and 19 years	2
Between 20 and 24 years	0
Between 25 and 29 years	0
Between 30 and 34 years	0
Between 35 and 39 years	1

Fourteen cases were limited to the right side, ten to the left side, and one case was bilateral. There was one case in which there was hydro-ureter in a pelvic ectopic kidney.

The urine showed pus in nineteen cases, blood in seventeen cases, albumin in fifteen cases, and was infected in thirteen cases.

Bladder disturbances were present in thirteen of the cases.

The pain in the cases of right hydronephrosis was found to be thus distributed: Pain was limited to the abdomen in four cases. Two of these presented pain in the right upper abdomen, and two of them pain in the right lower abdomen.

In two cases of right hydronephrosis, the pain was limited to the back, and was situated at the right renal region.

In four cases of right hydronephrosis, pain in the back was associated with pain in the right upper abdomen, and in four other cases pain in the right back was associated with pain in the right lower abdomen.

diagnosed as appendicitis, and another as ptomain poisoning (Table 12).

GROUP 5. TUMORS OF THE KIDNEY

Group 5 comprises four cases, the respective ages of the patients being 30, 38, 40 and 41. The duration of symptoms was six weeks, six months, two years and five years. In two instances both kidneys were involved in large tumor masses. One of these presented pain in the right upper abdomen, the other, colicky pain across the upper abdomen and left lower abdomen. *Neither showed pain in the back.* There was one case of tumor of the right kidney which was associated with stone and large hydronephrosis. This case showed pain in the right back without any associated pain in the abdomen. There was one case of hypernephroma of the left kidney which presented pain in the left renal region, but no abdominal pain.

TABLE 11.—HISTORY OF PATIENTS WHO HAD BEEN OPERATED ON ON ACCOUNT OF SYMPTOMS DUE TO HYDRONEPHROSIS

Case No.	Distribution of Pain	Bladder Disturbances	Duration	Urine: Pus	Urine: Blood	Urine: Albumin	Urine: Infection	Operations
			Right Hydronephrosis					
1	Right upper abdomen	Absent	16 yrs.	+	+	+	+	Gallbladder drainage
2	Right lower abdomen and right back	Present	8 yrs.	+	+	+	+	Appendectomy, abdominal exploration
3	Right upper abdomen	Present	1 mo.	+	+	+	+	Appendectomy
4	Right lower abdomen and right back	Absent	2 yrs., 3 mos.	—	—	—	—	Nephropexy
5	Right lower abdomen and right back	Present	13 yrs.	—	—	—	+	Appendectomy
			Left Hydronephrosis					
1	Right upper abdomen and right back	Absent	15 yrs.	+	—	+	+	Gallbladder drainage; nephropexy; appendectomy

TABLE 12.—HISTORY OF TWO PATIENTS NOT OPERATED ON BUT IN WHOSE CASES ERRONEOUS DIAGNOSES HAD BEEN MADE

Case No.	Distribution of Pain	Bladder Disturbances	Duration	Urine: Pus	Urine: Blood	Urine: Albumin	Urine: Infection	Diagnosis
			Hydro-Ureter of Ectopic Kidney					
1	Colicky pain in left lower abdomen	Absent	36 yrs.	+	+	+	—	Ptomain poisoning
			Bilateral Hydronephrosis					
1	Epigastrium and left lower abdomen	Present	10 yrs.	+	+	+	+	Appendicitis

The distribution of pain in left hydronephrosis showed that the pain in five instances was limited to the left upper back.

In one case, pain in the left renal region was associated with pain in the left upper abdomen.

Only one case of bilateral hydronephrosis was observed. In this there was pain in the epigastrium and left lower abdomen without any pain in the back.

In this group is included one case of pelvic ectopic kidney, in which there was hydro-ureter. The distribution of pain in this case was over the lower abdomen, a little to the left of the median line. The pain was colicky in character, and in no way suggested a renal disturbance. The case was found on routine roentgenologic examination with catheters in place, and was studied because the urine showed a few red blood cells.

The severe pain of hydronephrosis has led to various operative procedures in this group. Six of the cases included here were associated with stone, and have been included under Group 1. Of the remaining twenty cases, operation had been performed in six directly for the relief of pain due to hydronephrosis.

In addition to the six cases in which various operations had been performed, one other case had been

Only one of the cases showed bladder disturbances.

All of the cases showed blood, one showed pus (case associated with stone and hydronephrosis), three showed albumin, and none were infected.

In none of the cases of tumor of the kidney had any previous operations been performed for the relief of pain.

GROUP 6. POLYCYSTIC KIDNEY

Group 6 comprises only one case. At the time of admission, an exploratory operation disclosed a perirenal abscess about a polycystic kidney. The patient was a man, aged 50, who complained of pain in the left renal region which had been present for three years. There was no abdominal pain or bladder disturbances. The urine showed blood, pus and albumin. No previous operation had been performed for the relief of pain.

GROUP 7. CONGENITAL MALFORMATIONS OF THE KIDNEY

This group comprises three cases, including one case of pelvic ectopic kidney which has already been included under hydronephrosis; another case of hydronephrosis of the superior pole of a completely duplicated left kidney, and a third case of a double

renal element on the left side in which each pelvis showed a primal division into caudal encephalic portions. There was no complaint of abdominal pain or pain in the back. No operation had been performed for the relief of pain in any of these cases.

GROUP 8. NEPHROPTOSIS

This group comprises three cases. The only cases included in this group are cases of nephroptosis in which it was believed that the displacement alone was responsible for the pain. There were two cases on the right side. One of the patients complained of pain in the right lower abdomen, and one, of pain in the right back associated with pain in the right upper abdomen. Both of these patients had been operated on. One had had an appendectomy, and the other, removal of a right ovarian cyst, and subsequently drainage of the gallbladder. In the bilateral case the patient complained of sore lumps in both sides of the abdomen, and there was no pain in the back. This patient had not been operated on.

GROUP 9. CHRONIC NEPHRITIS

Complete urologic investigation has been carried out for one reason or another in five cases of chronic nephritis. One of the cases was associated with stone, and has already been included under Group 1. Cases of this group are necessarily of but little interest for the subject under consideration. Only one of the patients suffered with pain, and this was a girl with chronic parenchymatous nephritis, showing edema and large amounts of albumin in the urine. She was 25 years of age, and had been ill for two years. She complained constantly of severe pain in the region of the left kidney. At no time was the urine infected, nor could any cause for the pain be discovered other than pain probably associated with swelling of the kidney.

GROUP 10. PYONEPHRITIS

This group comprises two cases, the characteristic features of which were toxemia rather than pain. Both patients complained of pain in the renal region of the back.

GROUP 11. CYSTITIS

There were twenty-nine cases of cystitis in which the infection was limited to the bladder. Cases were studied to rule out the presence of infection in the upper urinary tract. This group is obviously of no value in the question of distribution of abdominal pain.

GROUP 12. MISCELLANEOUS

Group 12 comprises fifty-two cases. One of the cases subsequently at necropsy showed a ruptured aneurysm of the left renal artery. When the patient was studied he complained of severe pain in the left renal region. Another patient showed a large cyst of the left kidney lined with a calcareous deposit fully 0.5 cm. in thickness. This patient presented severe pain in the left back and left lower abdomen. There were two cases in which the left kidney was totally dead, and from the histories it was concluded that in previous pelvic operations the ureters had been ligated. One of these cases presented aching pain in the left back. The remaining cases were studied for various reasons, usually as a matter of differential diagnosis, to differentiate the kidney from various intraperitoneal conditions, abdominal tumors, etc. One interesting case was studied for the purpose of differentiating a carcinomatous mass within a diverticulum of the descending colon, from the left kidney. Cases of pyonephrosis have been classified under renal tuberculosis, stone and hydronephrosis. It is striking that the history in these cases shows a marked change of symptomatology with the onset of acute renal inflammatory changes. In association with large pus sacs with perirenal inflammation, the symptoms have in many instances taken a sudden turn, so that they were almost entirely gastric: nausea, vomiting and pain. It is these cases which are often spoken of as cases of ptomain poisoning.

SUMMARY

A review of these cases shows that the most practical conclusions as to the distribution of abdominal pain in diseases of the kidney and ureter can be best arrived at by a study of those diseases which are most constantly characterized by pain, namely, stone and hydronephrosis. It will be noted from Group 1, stone in the kidney and ureter, that the distribution of the pain was purely abdominal in 28 per cent. of the cases, and that in 20 per cent. of the cases it was so misleading as to lead to abdominal operations.

The figures from the tables on hydronephrosis are even more striking. Excluding the six cases of hydronephrosis which are associated with stone, it will be noted that abdominal operations had been performed in 30 per cent. of the remaining cases, for the relief of pain which was subsequently demonstrated to have been of renal origin. The symptomatology of hydronephrosis is often obscure and misleading, and it is in this group of cases that the urine is so often practically normal.

It is obviously impracticable to carry out urologic examinations as a routine. There are, however, certain well defined indications, and while abdominal pain is not one of them, it is by no means a contraindication, and becomes a definite indication when the urine shows abnormalities. In obscure cases of abdominal pain, pyelographic studies should be more frequently made.

CONCLUSIONS

Emergency of operation in obscure abdominal pain does not often depend on severity of the pain alone. Some of the severest types of abdominal pain have as their origin diseases of the kidney and ureter.

ABSTRACT OF DISCUSSION

Dr. William E. Stevens, San Francisco: In many cases the symptoms are misleading. In one of my cases the roentgenogram disclosed a shadow in contact with the bismuth catheter in the ureter. At operation the tip of the appendix was found attached to the ureter. In the appendix was a concretion which gave the shadow of a ureter stone in the roentgenogram. A child, aged 13, complained of slight pain in the region of the appendix and intense pain in the right lumbar region. The roentgen ray showed a slight hydronephrosis of the right kidney and a stone in the left kidney. A surgeon removed an appendix which was not definitely pathologic. Strange to say, all symptoms disappeared following this operation. A third patient complained of severe pain in the right lower abdominal quadrant. Tenderness was marked over McBurney's point and there was a slight degree of rigidity. The appendix was removed. It was normal and the pain was unrelieved. Examination of the urine revealed a large number of pus cells and the symptoms disappeared following treatment for pyelitis of the right kidney.

Dr. W. F. Braasch, Rochester, Minn.: The various lesions occurring in the abdomen frequently demand the special data made available by the urologist in order to arrive at an exact diagnosis. The ideal status of the urologist is that of an

internist or general surgeon who specializes in diseases involving the urinary tract. He should also be more closely related to the neurologist, since disease of the central nervous system is frequently recognized and identified largely by means of cystoscopic examination. The present status of the urologist which places him aloof in his specialty and separates him from general abdominal diagnosis is unfortunate. The urologist should be at the beck and call of the internist and the internist should be similarly associated with the urologist. The ideal status would be to have the urologist and the internist work as a unit in every case of abdominal disease. There is probably no area in the abdomen where so great error occurs in diagnosis as in the urinary tract. The subjective symptoms with lesions involving the urinary tract may so closely simulate those occurring with lesions in the adjacent organs that they are frequently of no practical diagnostic value. Fully one-half of the patients with lesions in the right kidney and ureter whom I have observed have had previous operations on adjacent organs, while the condition in the ureter and kidney have not been recognized. It is our custom at the Mayo Clinic to refer every patient with abdominal pain which is not definitely identified by general physical examination for a roentgenographic examination of the urinary tract and later to the urologist for further data. The same procedure is followed also in every patient with (1) a history of pyuria or hematuria, (2) where on urinalysis pus or blood cells are found in the course of routine urinalysis, irrespective of the other symptoms or physical data, and (3) every doubtful abdominal tumor.

DR. HARRY A. FOWLER, Washington, D. C.: I have gained one important impression from Dr. Cecil's paper: namely, in cases of abdominal pain, when in doubt, suspect the kidneys. That is a safe rule to follow in any case of diffuse abdominal pain. We all have seen patients operated on for various supposed abdominal lesions, and find later that the real trouble was in the kidney. For purposes of convenience it is well to group patients with renal calculous disease into three groups: first, those with silent stone; second, those suffering with typical renal colic attacks; and third, those presenting referred pain with few or no symptoms referable to the kidney itself. This is the most interesting group and the one presenting the greatest difficulties in diagnosis. In one case of stone in the ureter the pain was referred to the opposite kidney. Complete transference of pain from the diseased to the healthy kidney has been denied. However, this patient was suffering with a typical attack of rightsided renal colic. Examination by roentgen ray and ureter catheter showed a healthy right kidney and a stone in the upper left ureter. Removal of the stone cleared up the symptoms. This patient now has a recurrence of stone in the left kidney with all symptoms referred to the left side.

DR. ABRAHAM HYMAN, New York: The most difficult cases to diagnose are those in which the pain is referred to the appendix and the gallbladder region. In the chronic cases in which the differential diagnosis is in doubt one has time for roentgen-ray examination and cystoscopy. The difficulty arises in the cases with acute pain in the right iliac fossa. One must determine immediately whether the attack is due to an intraperitoneal condition or to stone in the ureter. It is my practice in such cases to cystoscope the patient immediately. Occasionally, an attack of acute cholecystitis will simulate a renal condition, such as in one case which I saw. The symptoms were typical of acute cholecystitis but it proved to be a case of multiple abscesses in the kidney tissue, with a large perinephritic abscess anterior to the kidney. Occasionally two conditions may be associated at the same time. A patient was known to have a renal, ureteral, and vesical tuberculosis. He was admitted to the hospital with an attack of pain in the right iliac fossa, which at the time was thought to be due to a tuberculous ureteritis. Operation revealed an acute gangrenous appendicitis.

DR. ALBERT E. GOLDSTEIN, Baltimore: A group of cases that very frequently gives the same referred abdominal symptoms are the ureteral strictures. In many instances the urine examination may be positive. A calculus is often suspected and never found. A stricture is located.

DR. ARTHUR B. CECIL, Los Angeles: I believe that at the Mayo Clinic roentgen-ray examinations of the urologic tract are deemed advisable whenever the urine shows blood or pus associated with abdominal pain which is not definitely localized; or whenever the urine shows pus or blood, or whenever there is pain suggestive of renal or ureteral disease even though the urine be normal. Complete urologic examinations would seem to be advisable in most of these cases. In regard to ureteral stricture, I have included these cases under the group of hydronephrosis and hydro-ureter.

A DENTAL CLINIC FOR CHILDREN IN A SETTLEMENT*

HAIDEE WEEKS GUTHRIE, D.D.S.
NEW ORLEANS

The first dental clinic for children in a settlement was established in the New Orleans Dispensary for Women and Children. The clinic is for the poor without regard to race, creed or color. The clinic is now caring for 1,500 children in the immediate neighborhood, and others between the ages of 2 and 8 years from all parts of the city and adjoining parishes. The clinic is able to do this because of the excellent cooperation of the social service workers, who gather the children from the neighborhood and return them at stated times for necessary treatment and examination. Kingsley House is our first settlement house, and the dispensary is in the settlement.

The New Orleans Dispensary for Women and Children is a fifty bed hospital. We have seven allotted beds in the children's ward, and at times have taken care of thirty-five children. The nurse in charge of the children's ward is punctilious in the care of the mouths of the children. The children are given regular and systematic care of their teeth with a toothbrush, which is of a size adapted to each mouth, a point very often overlooked. Physiologic solution of sodium chlorid, for a wash, is used after each meal and at bedtime.

This report is based on the case records of more than 8,000 children. In point of age, the patients ranged from infancy to the sixteenth year.

The data collected showed the age, sex, race, nutrition and the history of previous infections. The grade in school and whether or not the child was a "repeater" were also recorded. The number of deciduous and permanent teeth present, as well as the existence of cavities, abscesses or sinuses, and their location, were noted in every case.

Special dyscrasias, when existent, were also noted, as well as abnormal frenum, fifth cusp and geographic tongue. Roentgen findings and the results of Wassermann reactions were also recorded when these examinations were made.

So far as the social workers were able to observe them, a marked reduction in the number of cases of infectious diseases occurred in the children who "belonged" to the clinic. There has not been an epidemic in this neighborhood since the clinic was started.

Two special groups of children were studied: one group known to be tuberculous and one made up of proved subjects of syphilitic infection. These were observed to determine the value of thorough dental care in these conditions. In the tuberculosis group, 95 per cent. of the deciduous teeth had to be removed

* Read before the Section on Stomatology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

before the eighth year, on account of abscesses. In the syphilitic group, only 40 per cent. had to be removed. More cases of retarded absorption of the deciduous roots and later eruption of the permanent teeth were noted in the syphilitic group than in the tuberculous. In nine cases of the sixty, at the thirteenth year, I had records of roentgenograms made to determine the condition of the deciduous roots. The roentgenograms disclosed a beginning absorption. In these nine cases the ten deciduous teeth (right and left upper and lower, first and second deciduous molars) were extracted, first on one side, upper and lower, and then, in about six weeks, on the opposite side. In a few months the permanent teeth were erupted in correct position.

Ulcerative stomatitis occurred with greater frequency among the children who came from the parochial (religious) schools. These patients were all isolated in the hospital and treated on the basis of using bactericidal measures directed against an anaerobic organism. No deaths occurred; several cases of marked deformity, as the result of extensive operative procedure necessary to get rid of the infection, resulted.

In cases of ulcerative stomatitis, it is our practice to substitute a dichloramin-T solution in water, 1:1,000, for the physiologic sodium chlorid; and a mixture of potassium chlorate, dilute hydrochloric acid and glycerin is given internally, every two hours, with a nourishing diet.

We find more of these cases during the months of January and February, following the usual winter diseases in this climate, when the resistance is low and there has been poor or very scanty nourishment and no mouth hygiene. In 80 per cent. of these cases there was great loss of both hard and soft tissue. Our cold weather begins in November and December. The infections which are continued through six winter months in the children in a more northern climate are experienced by our children during only two months, November and December. The children lack the necessary green vegetables and fruits during these months, and the milk is less rich and more expensive. There is a relative deficiency of fat-soluble A vitamins and water-soluble B vitamins during these months. This,

TABLE 1.—ERUPTION OF THE BICUSPID

Age	No. of Bicuspids	Cases
6 years	1	134
7 years	1	49
7 years	3	133
8 years	2	236
8 years	3	240
9 years	7	131
9 years	8	336
10 years	8	29
		1,288

while not producing actual lesions of scurvy, certainly is a factor in bringing about an impairment of nutrition sufficient to account for the diminished cell resistance, a predisposing cause, at least, of the more extensive ulcerative processes we see during the winter months.

On one occasion, a child of foreign-born parents was confined to the hospital with a mouth infection, and on my next visit to the ward, I found *all of the children* in this family, three in number, all under 8, in the children's ward, where they had been sent by their parents—"a fine place to stay." The parents knew the children would be well fed and cared for, and would be out of their way during that time. It is surprising how many times the mother will bring the child to the clinic and ask whether they could be left for treatment. There is no horror in the mother's mind of this neighborhood clinic or of the hospital.

Acute abscess in the sense that is conveyed by the use of this term in dental literature was never seen in this series. Undoubtedly there must be an acute phase of the lesion; but evidently the subjective discomfort at this stage does not bring the child to the dentist. In the child, the peridental membrane really exists as a definite structure differentiated from the bony walls which support it. Later, it takes on a bony structure

TABLE 2.—ERUPTION OF FIRST MOLAR

Age	No. of Molars	Cases
3 years	4	1
4 years	1	11
4 years	2	12
4 years	3	1
4 years	4	13
4½ years	1	11
5 years	1	214
5 years	2	211
5 years	3	163
5 years	4	212
6 years	4	434
		1,288

by the migration of bone cells into the stroma and becomes itself truly bony.

The question of the absence of acute abscess in the child's mouth has given rise to much thought and study. Why do we not hear the child crying and screaming with the pain in the *deciduous* teeth, as we do with the pain in disease of the first permanent molar? We encounter acute abscess and toothache in the first molar. In the child under 6, we often find a swelling, pus and perhaps a sinus before the child has given any sign of inconvenience.

The variation in structure and progressive hardening of the peridental membrane is probably the explanation of the variation in the occurrence of acute abscess in childhood as contrasted with the more advanced years. Apparently it is only after fistula, sinus or free pus discharge is established that the child comes for help.

In 70 per cent. of the cases the tooth may be saved between the fourth and sixth year, by forcing a saturated solution of silver nitrate through the root and sinus, followed by formaldehyd solution, and sealing with gutta-percha for two weeks. Sometimes it takes two months of treatment, but we have maintained the tooth in usefulness for four or five years. Following the abscesses of the deciduous molars, it is surprising how quickly the bicuspid erupts. For example, a lower right first deciduous molar abscessed at the age of 5 years. It was treated after this plan, cured (roentgenographed many times), and filled with amalgam. After two years, that patient, now aged 7 years, came with tooth loose and was roentgenographed again. The roentgenogram revealed completely absorbed roots, and a perfectly formed bicuspid erupted. At the age of 10, the patient still has eleven deciduous teeth, the last roentgenograms showing very little absorption of the deciduous roots (another syphilitic case).

Following these abscess conditions we have a rapid absorption of the deciduous tooth and a correspondingly rapid formation of the permanent tooth. The irritant which stimulates the osteoclasts in the absorption of the deciduous tooth also stimulates the osteoblasts in the formation of the permanent tooth. These conditions we find between the ages of 3 and 5. If these teeth are erupted in infancy earlier here than in

a more northern latitude, the earlier eruption time may account for the earlier decay.

The eruption of the bicuspid furnishes striking record of the earlier development in New Orleans.

The study of the eruption of the first molar is interesting. In New Orleans, we cannot call it the six-year molar. Its eruption is from eight to twelve months earlier here than in the Northern states.

An appreciation of the principles of the child's psychology is fundamental in this work and more or less difficult to formulate. Results are absolutely predicated on an understanding existing between the one who is charged with the work and the patient. Here, more than in other fields, discipline is essential.

Success in the management of a child's dental clinic depends also on securing the return of the child regularly for inspection and treatment, if treatment is needed. The child must feel that the clinic exists for him and that he has become a member of the organization. The feeling of mutual interdependence can be achieved best by placing the clinic near the child's home. It should become a necessary part of his life, and he must feel that he must attend as he attends school or church. A location near his home makes easier the task of the social worker and really economizes the time of the dentist.

Without the lessons in prevention and instruction to the children in prophylaxis and without the close liaison that has been possible through the location of my own clinic near to, and in cooperation with, Kingsley House, the social service center of the neighborhood, my own task would have been beyond my power to perform.

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PROGRESS IN DENTAL EDUCATION*

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Dentistry as an organized profession dates back only to the year 1839. During the latter part of that year was first issued the *American Journal of Dental Science,* the first periodical published in the field of dentistry. Feb. 1, 1840, a charter was granted by the legislature of Maryland to Drs. Hayden, Harris and others incorporating the first dental college in the world, the Baltimore College of Dental Surgery; and on the 18th of August in the same year, the first dental society was formed in New York City and called the American Society of Dental Surgeons. During the session of 1837-1838, Dr. Horace H. Hayden delivered a series of lectures on dentistry in the Medical College of the University of Maryland, and undoubtedly it was from this germ that organized dental education sprang.

That there was great need for such organized instruction in dentistry was evidenced by the immediate and continued success of the Baltimore College of Dental Surgery, and the early establishment of many other schools in all parts of the country.

In 1907 there were fifty-six dental schools in the United States employing 676 professors and 653 special and assistant instructors, and enrolling 6,876 students. The graduates of these schools in the year 1906 numbered 1,624.

For many years after the opening of the first school the dental course consisted of two four-month lecture courses in separate years; and a practitioner of five years or more could be graduated after one four-month course. A few years later the course was extended to two years of five months each. In 1884 a national organization of the dental schools was formed—the National Association of Dental Faculties—and as a result of the efforts of that body, in 1892 the course was lengthened to three years of five months each, and shortly thereafter to seven months yearly.

TABLE 1.—DENTAL STATE BOARD EXAMINATIONS, 1910-1919

Year	Number of Graduates	Number Examined	Passed	Failed	Percentage of Failures
1910.....	1,646	1,295	1,102	193	14.9
1911.....	1,742	1,372	1,211	161	11.7
1912.....	1,940	1,507	1,274	233	15.4
1913.....	2,022	1,564	1,320	244	15.6
1914.....	2,254	1,783	1,380	403	22.6
1915.....	2,388	1,874	1,568	306	16.3
1916.....	2,894	2,459	2,029	430	17.4
1917.....	3,056	2,596	2,266	330	12.3
1918.....	3,366	2,918	2,510	408	14
1919.....	3,597	3,141	2,667	474	15
Totals.....	24,905	20,509	17,327	3,182	15.5

In 1893 the dental teachers of the country formed a national body which flourishes today under the name of the American Institute of Dental Teachers. As a result of the efforts of these two organizations, in 1917 the dental course was extended to four years of eight and one-half months each year.

Prior to the establishment of the first dental school, dental training could be obtained only in the office of a preceptor, and for many years thereafter, until all sections of the country were fairly well provided with schools, this method of studying dentistry existed. The United States Census Bureau's published statistics show that in 1902 there were 28,142 practicing dentists in the country, and of that number only 16,831 were graduates of dental schools. Eventually, however, all the states adopted dental laws, requiring a college education to practice dentistry, and state boards of dental examiners were appointed in all states to pass upon the qualifications of graduates who applied for licensure.

With few exceptions the dental schools of this country were organized and maintained by private enterprise for many years before various universities saw fit to include dental education in their field. In some cases the dental schools of universities were organized by the university, but in most cases existing private institutions were taken over and became organic parts of the university.

The influence of the examining boards and their national organization, the National Association of Dental Examiners, has had a salutary effect in encouraging private schools to provide adequate education for their students. Approximately seventeen years ago the National Association of Dental Examiners established a tabulation of the reports of the state board examinations of the output of all the dental schools, with the result that the quality of dental education has been raised very markedly.

A summary of the tabulation of dental state board examinations for the last ten years is given in Table 1.

The best information available indicates that there were 36,823 dentists practicing in the United States in 1908; and the figures for 1919 are approximately 44,000. During the period from 1908 to 1919, inclusive, there were approximately 28,500 graduates.

* Read before the Section on Stomatology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

These figures show an average yearly graduation of 2,375 for the twelve year period, and a yearly wastage of 1,777: a net annual gain in dental practitioners of 598.

The figures given in Table 2 indicate the growth in schools and enrolment at periods during the last forty years.

TABLE 2.—GROWTH IN SCHOOLS AND ENROLMENT IN FORTY YEARS

Year	No. of Dental Schools	No. of Students	No. of Graduates
1880.....	16	730	266
1890.....	27	2,696	943
1900.....	54	7,928	2,029
1907.....	57	6,979	1,754
1919.....	46	*	3,597†
1920.....	46	9,302	‡

* No figures.
†Last three-year class.
‡ Year not finished. Senior students enrolled, 1,042.

In view of the astonishing increase in the demand for dentists that has arisen during recent years, the existing dental schools will be taxed far beyond their normal capacity to meet such demand, and established universities in logical centers should recognize the necessity for providing adequate dental education for the communities they now serve in other fields of education.

A glance at a table of enrolment of students in the existing dental schools indicates the totals for the year 1919-1920 given in Table 3.

TABLE 3.—ENROLMENT IN THE FORTY-SIX EXISTING DENTAL SCHOOLS

Senior students	1,042
Junior students	1,885
Sophomore students	1,983
Freshmen students	4,392
Total enrolment	9,302

The small number of seniors is due to the fact that the class of 1919 was the last regular three year class, and many of the present seniors are hold-overs, or men who were in government service during the war. The unusually large freshman class also probably includes a certain percentage of students who would have entered school a year or two earlier but for the war.

In the matter of entrance requirements, dental education has passed through periods of evolution similar to that experienced by medical education. For the first half century of the existence of dental schools, virtually no preliminary education was required beyond that of "a good English education," which was fairly uniformly interpreted to be a grammar school education, or anything beyond. Beginning somewhere between 1895 and 1900, the schools began to request first one year of high school work for entrance; then two, and later three; but it was not until within the last ten years that graduation from a first grade four year high school has been made obligatory, and this has come about very largely through the efforts of the Dental Educational Council of America. The latter body was organized in 1909, and is composed of five representatives from each of the three national dental organizations then existing, namely, the National Association of Dental Examiners, National Association of Dental Faculties, and the National Dental Association.

The Dental Educational Council has made an exhaustive study of the conditions existing in dental education, and a thorough inspection of the dental schools of the country. At the outbreak of the war in 1917 this body had collected many valuable data bearing on the standing and efficiency of dental schools, and it was selected by the War Department as the best equipped agency to do such work, and at the request of the War Department and in cooperation with some of its representatives, a classification of the dental schools was made for and approved by the department, which was guided in its recognition of dental schools by the council's classification.

In the matter of curriculum, the schools have advanced from a very limited list of subjects that were taught largely didactically to a carefully graded and balanced course of study, well provided with laboratory work, which year by year has been approaching more closely the basic curriculum of medical education.

The guiding influence in dental education, which has been effective for the last decade, is the Dental Educational Council. On account of its tripartite composition, including examiners, educators and representatives of the National Dental Association, this body has been able to bring about a constructive survey, inspection and classification of dental schools that has produced great advances in every phase of dental education. The work has been done along lines parallel to that of the Council on Medical Education and Hospitals, with the result that dental education

TABLE 4.—DENTAL SCHOOL ENROLMENT FOR THE YEAR 1919-1920

School	Year 1st	2d	3d	4th	Total
1. Northwestern University Dental School...	265	74	61	47	447
2. College of Dentistry, Univ. of Minnesota.	87	124	91	81	383
3. Vanderbilt Univ. School of Dentistry.....	48	13	9	6	76
4. Louisville College of Dentistry.....	34	21	20	19	94
5. Western Reserve University School of Dentistry	95	39	36	7	177
6. Chicago College of Dental Surgery.....	127	68	98	123	416
7. Univ. of Mich. College of Dental Surgery.	186	70	64	34	354
8. Ohio College of Dental Surgery.....	49	17	15	19	100
9. Univ. of Calif. College of Dentistry.....	130	44	38	20	232
10. University of Iowa College of Dentistry.	180	58	40	7	285
11. Indiana Dental College.....	84	51	40	..	175
12. Kansas City-Western Dental College.....	100	63	46	20	229
13. Univ. of Buffalo College of Dentistry....	66	40	57	9	172
14. School of Dentistry, Univ. of Pennsylvania	254	112	123	51	540
15. Baltimore College of Dental Surgery.....	29	16	41	39	125
16. Philadelphia Dental College.....	84	30	26	23	163
17. Cincinnati College of Dental Surgery.....	12	..	..	1	13
18. St. Louis Dental College.....	58	19	38	5	120
19. Ohio State Univ. College of Dentistry....	90	20	20	28	158
20. Washington University Dental Department	40	16	16	3	75
21. Univ. of Pittsburgh School of Dentistry.	207	103	67	37	414
22. New York College of Dentistry.....	258	119	138	58	573
23. Univ. of Illinois College of Dentistry.....	108	41	28	17	194
24. Tulane Univ. College of Dentistry.....	37	16	13	4	70
25. College of Dental and Oral Surgery, N. Y.	163	116	188	29	501
26. University of Southern California, College of Dentistry.....	104	47	37	22	210
27. Colorado College of Dental Surgery.....	48	40	15	12	115
28. Tufts College Dental School.....	201	116	78	17	412
29. Georgetown Univ. Dental Department.....	53	16	22	24	115
30. Creighton Univ. College of Dentistry.....	60	28	22	3	113
31. Med. Coll. of Virginia Dental Department.	45	17	16	4	82
32. Univ. of Tenn. College of Dentistry.....	15	13	6	20	54
33. Univ. of Maryland Dental Department....	50	23	23	14	110
34. Harvard University Dental School.....	79	39	36	26	180
35. George Washington University, Department of Dentistry.....	21	11	19	14	65
36. North Pacific College of Dentistry.....	191	61	49	10	311
37. Marquette University Dental School.....	168	92	48	..	308
38. Atlanta-Southern Dental College.....	119	42	40	10	221
39. Loyola Univ. School of Dentistry.....	15	10	5	3	33
40. Univ. of Neb. College of Dentistry.....	71	20	9	9	109
41. College of Physicians and Surgeons, Dental Department	27	20	38	28	113
42. Texas Dental College.....	20	4	3	30	57
43. Baylor University	21	11	26	9	67
44. Howard University Dental Department*..	110	30	38	37	215
45. Meharry Dental College*.....	160	46	35	55	296
46. Univ. of West Tenn., Dental Department*	8	7	7	8	30
Totals.....	4,392	1,983	1,885	1,042	9,302

* Schools for negroes.

today is on a far better foundation and a more uniform basis than it has ever been before.

At present the council is revising its requirements for Class A schools, and is preparing a recommended curriculum that will closely approximate the schedule given in Table 5.

TABLE 5.—SUGGESTED STANDARD SCHEDULE FOR FOUR-YEAR COURSE IN DENTISTRY, WITH PRELIMINARY REQUIREMENT OF FIFTEEN HIGH SCHOOL UNITS

	Hours		
	Lectures or Recitations	Laboratory	Total
FRESHMAN			
English	64	...	64
Physics	..	48	48
Chemistry, inorganic	64	128	192
Biology	32	64	96
Anatomy	32	96	128
Histology	32	64	96
Dental anatomy	16	96	112
Operative technics	16	96	112
Prosthetic technics	32	288	320
Technical drawing	..	48	48
Total	288	928	1,216
Hours per week	9	29	38
SOPHOMORE			
Chem., met., org., physiol.	32	128	160
Anatomy	32	128	160
Histology, dental	16	48	64
Physiology	64	...	64
Materia medica and pharmacology	32	48	80
Bacteriology	32	96	128
Operative technics	48	96	144
Prosthetic technics	32	288	320
Total	288	832	1,120
Hours per week	9	26	35
JUNIOR			
Physiology	32	48	80
Physical diagnosis	16	...	16
Pathology, general	32	48	80
Pathology, dental	32	48	80
Surgery	16	...	16
Anesthesia	16	...	16
Radiography	16	...	16
Mouth hygiene	16	...	16
Orthodontia	16	32	48
Comp. dent. anat.	16	...	16
Operative dentistry	32	...	32
Prosthetic dentistry	32	96	128
Clinic	..	576	576
Total	272	848	1,120
Hours per week	8½	26½	35
SENIOR			
Pathology, dental	32	...	32
Oral surgery	32	64	96
Orthodontia	32	...	32
Operative dentistry	32	...	32
Prosthetic dentistry	32	...	32
Jurisprudence, history, ethics, economics	32	...	32
Seminar	32	...	32
Clinic	..	832	832
Total	224	896	1,120
Hours per week	7	28	35

There is a tendency on the part of some schools to require a predental college year for entrance in 1921, and two predental years in 1926. In view of the great demand at present for dentists and the limited number of dental schools, the wisdom of requiring a predental year at this time is worthy of serious consideration.

The gradual development and enlargement of the dental curriculum, always more closely approaching that of medicine in many subjects; the advancement of the entrance requirements, and the general supervision of dental education by the profession as represented in the Dental Educational Council, will eventually bring dental education to a point at which the foundation training will be practically the same as that of medicine.

A STUDY OF THE EFFECT OF PULMONARY TUBERCULOSIS ON VITAL CAPACITY

FIRST REPORT *

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AND
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MINNEAPOLIS

In 1846, as Dreyer [1] has pointed out, John Hutchinson made use of the study of vital capacity of the lungs as an aid in the diagnosis of pulmonary diseases, especially tuberculosis. He demonstrated that cases of pulmonary tuberculosis showed a definite lowered vital capacity. Although Hutchinson's observations were accurate, some of his conclusions were erroneous, as proved later by Dreyer.

The studies of Dreyer were stimulated further during the recent war when the vital capacity measurement was a decisive factor in the selection and rejection of candidates for the British flying service. Standards were determined simply as a result of the vital capacity measurement on a number of successful pilots, regardless of the size of the man.

These observations enabled Dreyer "to establish definite relationships between vital capacity and body surface, body weight, stem length and chest measurement." He showed that the relations, in their order of importance, are as follows.

Vital capacity is a function of the weight and may be expressed in the formula:

$\frac{W^n}{V.\ C.} = K_1$, in which W = net weight in grams; V. C. = vital capacity in cubic centimeters; ^{n} = approximately ⅔ (more accurately, 0.72); K = constant.

And since $\frac{W^n}{S} = K_2$, in which S represents the body surface, "it follows that the vital capacity is a simple function of the body surface, i. e., the smaller and lighter person with his relatively larger surface has a greater vital capacity per unit of body weight than the larger one." The relation of the other measurements, such as stem length or approximately the sitting height, and chest circumference to vital capacity are shown in his three simple formulas.

$\frac{L^n}{V.\ C.} = K_3$, in which L = stem length and $^n = 2$.

$\frac{Ch^n}{V.\ C.} = K_4$, in which Ch = chest circumference, and $^n = 2$.

$\frac{L \times Ch}{V.\ C.} = K_5$

The author proved these relationships and the fixing of standards by the observations of John Hutchinson, as well as his own on "sixteen men and boys carefully selected on account of their physical fitness and covering as widely different a range in weight, heights, etc., as possible". Later he made a careful study of measurements on a definite class of fourteen Oxford undergraduates, and also applied the formulas to Schuster's extensive series of measurements of vital capacity on 959 Oxford undergraduates, finding their results absolutely identical. His final values are:

$\frac{W^{0.72}}{V.\ C.} = 0.69$; $\frac{L^2}{V.\ C.} = 1.9$; $\frac{Ch^2}{V.\ C.} = 1.82$

* Read before the National Tuberculosis Association, St. Louis, April 23, 1920.

1. Dreyer, G.: Lancet 2: 227 (Aug. 9) 1919.

Since, as Dreyer points out, the vital capacity varies considerably in different classes, modes of living, and during the war was influenced by the strain on flying men (continued high flying results in a temporarily decreased vital capacity) it is likely to vary with fatigue. This being so, it probably is true that certain disease conditions, especially those of respiration and circulation, would lead to a distinct decrease in vital capacity measurements. Thus, by means of a few fairly accurate standards arrived at so far, he studied the effect of pulmonary tuberculosis on the vital capacity of about 150 tuberculous patients at Brompton Hospital. His results are very promising and, to quote Dreyer's own words, he has been able, without seeing the cases or knowing anything about the diagnosis, but simply from measurements, recorded and sent to him by Dr. Burrell, of the vital capacity and the various body measurements mentioned above and by subsequent calculation, to classify these persons as normal individuals or as examples of mild, of moderate, or of severe pulmonary tuberculosis, in practically absolute agreement, as afterward appeared, with the clinical diagnosis and classification made at the time at the Brompton Hospital.

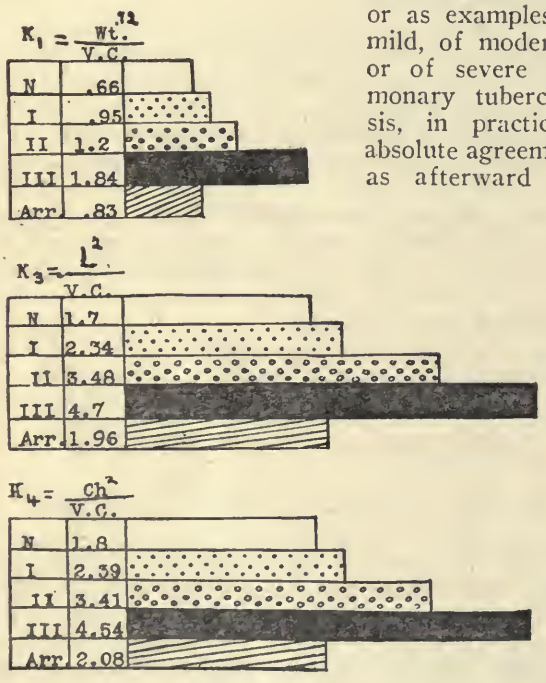


Chart 1.—Comparison of constants in cases of tuberculosis with those of normals. *N*, normal; *I*, Stage I, or incipient; *II*, Stage II, or moderately advanced; *III*, Stage III, or far advanced; *Arr.*, arrested.

Our observations consist of the vital capacity together with the stem length or sitting height and chest circumference taken at the same time of 174 patients, 117 being cases of disease of the respiratory tract, ninety of whom are definitely classified tuberculous ones, the majority being personally known sanatorium cases under close observation and confirmed by stereoroentgenograms when the classification or diagnosis was doubtful.

No effort was made beforehand to group the cases or classify them according to the stage of the disease. All measures are expressed in the metric system unless otherwise stated. The weight is net without clothing.

The sitting height, as the patient sat on a chair with a board protruding backward on the seat, was taken instead of the stem length as reckoned by Dreyer. The latter's method was to have the patient place the hands on the floor or board close to the body and, drawing up the knees, to raise himself for a moment and press the os sacrum as closely as possible against the scale. The latter method gives a more constant measurement of stem length; but since he and Ainley Walker have shown the results by the former method to be about 3 per cent. greater, our measurements for stem length have been reduced by 3 per cent. This was found to be more practicable among the class of patients with whom we worked.

The circumference was measured by a steel tape measure placed directly on the skin around the chest about the level of the nipple line in males, and at the greatest circumference in females. This measurement was taken with the patient's arms hanging loosely at the sides, muscles relaxed and while breathing normally. Expansion measurements proved of no value.

Most of the vital capacity observations were made in the forenoon long enough after breakfast so that a full stomach and the process of digestion would probably not influence the readings. Experiments of filling the stomach with malted milk, soups, etc., and comparing the readings after the ingestion of heavy meals showed that the latter had little or no influence over the vital capacity readings, at least not sufficient to rule out the practical value of the spirometer readings any more than the blood pressure readings in a case of hypertension after eating. However, it is best to make the observations at a uniform time and at least an hour after food has been taken.

While making our vital capacity observations on patients with a full stomach, it was our opportunity to study the effect of pregnancy on vital capacity in several cases as well as readings after delivery. It was thought that the increased intra-abdominal pressure with the high diaphragm would influence vital capacity. If the pregnancy was a normal one in a healthy woman, there was very little difference in the constants, and the vital capacity was about the same shortly after delivery as before. It appeared in these few cases that fatigue or exhaustion played a greater rôle than the mechanical one expected, and that the vital capacity became normal when convalescence was complete.

For the measurements of vital capacity, a spirometer of the plain water type was used at first; but after readings had been compared with the dry type, the latter was preferred as it offered a minimum of resistance to expiration. Our spirometer was tested frequently by an expert of a local gas company using gasometers, and was found to vary not more than 5 per cent. at any time. Gasometers are fairly accurate, but the smallest division on the scale is a hundred cubic centimeters. Spirometers will have to be perfected to the degree that the sphygmomanometer is today, when more accurate constants can be arrived at; but any constant may be determined for a given spirometer by making vital capacity observations on six or a dozen normal individuals and using the constant determined as the norm for that spirometer. A sliding scale is being made that will simplify the mathematical calculations to a degree. A description of this will be published later.

We wish to lay great stress on the value of carefully instructing the patients how to use the spirometer. Frequently it was necessary to illustrate what was wanted and to have the patient make several attempts before a reading was obtained that more nearly represented the greatest amount of air expelled by the greatest possible expiration after taking the greatest possible inspiration. The patient was not allowed to observe the spirometer readings, as it affected the results.

After the patients became accustomed to our visits and learned what was required, we checked up our former vital capacity readings by making a complete new set, so that we feel our results are as constant as any practical observations that could be made. The highest vital capacity blown was the one recorded.

The question naturally arises whether such a procedure is harmful to a tuberculous patient. In our experience there were no injurious effects. Before taking up the work, this question was asked Professor Dreyer also and he said that he knew of no harmful results. No measurements were taken of patients subject to hemorrhages or after recent hemoptysis. The average tuberculous patient daily goes through experiences, such as defecation or coughing, in which the intrapulmonary pressure is raised probably just as high. At any rate, it is highly improbable that if the existing pathologic condition was so precarious as to result in harm after a forced expiration, the tissues would not sustain life for a much greater period.

The accompanying table and charts include details of the 174 patients regarding weight, stem length, chest circumference and vital capacity. A closer analysis of these is interesting. It will be observed that our constants are virtually identical with those of Dreyer for the normal healthy individual. Although occupation, mode of living and the different classes influence the vital capacity, the patients in our study represented many occupations and different classes so that the constants are fairly accurate averages.

From these observations it would appear that pulmonary tuberculosis has a definite influence on the vital capacity, and that the latter decreases in relation to the body weight as the disease progresses, being in direct proportion to the amount of disease present. The reverse is also true, that as the lung heals and the patient's condition improves there is an increase in the vital capacity. In other words, the vital capacity in its relation to body weight is an absolute measure of a person's physical fitness.

VITAL CAPACITY CONSTANTS OF PULMONARY AND OTHER CASES

Tuberculosis		No. of Cases	K_1	K_3	K_4
Stage I:	Symptoms A	13	0.88	2.22	2.18
	Symptoms B	7	1.09	2.64	2.85
	Totals	20	0.95	2.34	2.39
Stage II:	Symptoms A	7	1.12	3.1	2.92
	Symptoms B	10	1.33	3.59	3.44
	Symptoms C	5	1.08	3.78	4.06
	Totals	22	1.2	3.48	3.41
Stage III:	Symptoms A	12	1.53	4.29	4.49
	Symptoms B	18	1.8	4.5	4.34
	Symptoms C	10	1.88	5.46	4.92
	Totals	40	1.84	4.7	4.54
Arrested		8	0.83	1.96	2.08
Chronic bronchitis		14	0.94	2.25	2.54
Bronchial asthma		6	1.15	2.8	3.34
Bronchiectasis		4	0.95	2.42	2.41
Pulmonary abscess		1	1.55	5.19	3.97
Lobar pneumonia (convalescents)		2	1.05	2.58	2.67
Glandular tuberculosis		2	0.72	1.82	1.9
Pott's disease		3	1.35	3.36	4.06
Focal infection (secondary anemia)		4	0.89	2.32	2.14
Myocardial damage, toxic (electrocardiogram)		3	1.3	3.34	2.86
Chronic diabetes		3	1.94	2.92	3.5
Negatives		42	0.66	1.7	1.8

Constants representing arrested cases very nearly approach normal standards, which fact increases the value of the readings of those with active disease; and it may be proved by active follow-up work that the vital capacity of the latter is an indicator of slight variation in the patient's condition before there is a noticeable change in his symptoms and signs. If so, periodic vital capacity readings when the patients are weighed would be the simplest method known of determining changes in the pulmonary condition.

Following the first readings, as reported in the table, measurements of twenty-four definitely tuberculous sanatorium patients were made after a period of from three to six months and results compared. Of the nine cases whose physical signs caused them to be reported in *worse condition*, eight showed all three constants indicating progressive disease, while readings for the ninth would suggest stationary or slight improvement. Of the eight cases whose clinical reports were *disease stationary*, the vital capacity blown in every instance indicated a slightly worse condition. Of the seven cases whose reports were *condition improved*, the measures of only two confirmed such report, and five showed constants pointing toward a stationary condition or slightly progressive disease. To be of value, such studies must cover a longer period of time; and a later report on this group will prove whether these second readings were a true index of the physical signs.

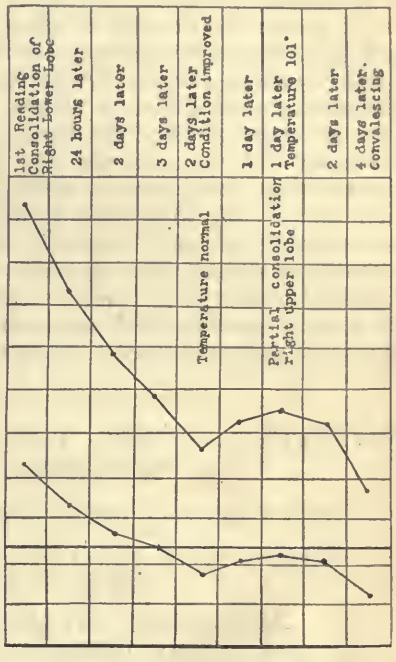


Chart 2.—Course of lobar pneumonia in a boy, aged 9; first (lower) base line, normal K_1; second (upper) base line, normal K_3 and K_4.

A study of the symptoms in connection with the lobe involvement has made it possible to divide the disease according to the vital capacity into at least six stages, and is a fair index of the amount of disease present. It is obvious that group studies of definite tuberculous patients are not so satisfactory as studying the individual case because the physical signs and symptoms may vary considerably in the same classified stage. In no instance was a patient with pulmonary tuberculosis able to blow the normal vital capacity, making a normal reading of value in differential diagnosis. As with any simple method or test, its value as an aid in diagnosis depends on its correlation with the history, symptoms and physical findings of the case.

It is of interest to note that the average constants of eight successful artificial pneumothorax cases practically coincide with the indexes for the far advanced "symptoms A" classification, and they are slightly more than twice as high as those of a normal individual. The few observations on the nontuberculous diseases of the respiratory tract, as well as those of circulation and metabolism, some of which are presented in the table, show that all influence the vital capacity. A few cases of glandular and bone tuberculosis are tabulated also.

It was thought it might be of interest to present in a graphic chart the course of one of the lobar pneumonia cases. It is that of a boy, aged 9 years, who had increased consolidation on the ninth day, which then rapidly cleared up. The progress of the disease is definitely shown by the vital capacity constants, the lower curve being K_1 and the upper K_3 and K_4, which are practically the same.

It appears that the careful study of the vital capacity in its proper relationship to other body measurements will give important information in the diagnosis of pulmonary diseases, especially tuberculosis. It will aid in the accurate classification of the cases, and in determining the progress of the disease and the influence of treatment. It is a simple and harmless method of determining the patient's actual physical fitness or limitations. We may have sacrificed clearness in the presentation of our observations to the details of mathematical facts, but our object has been to confirm Dreyer's researches, as well as to stimulate an interest in a more accurate interpretation of simple available clinical data in the study of tuberculosis.

MOVABLE KIDNEY WITH UNILATERAL NEPHRITIS

A REPORT OF TWO CASES CURED BY OPERATION

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AND
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Perhaps no subject in the whole realm of medicine has attained greater notoriety than that of movable kidney; certainly few, if any, other conditions have had so many symptomatic attributes. Every conceivable ache and pain, every possible dyspeptic complaint has been ascribed to it; and some varieties of insanity even were held by the elastic and racy imagination of the faddist to be consequent upon and entirely owing to movable kidney. Considering the swirl of professional emotion that engulfed the subject, it is small wonder that many surgeons, only a few years ago, were busily engaged in fixing loose kidneys, irrespective of the degree of mobility, or of the possible existence of other sources of the symptoms.

Unlike the Pharisee, I cannot thank God that I am not like other men; on the contrary, I must confess to having administered the fixation chastisement to no fewer than half a dozen kidneys whose only offense was a range of motion greater than what we were pleased to term normal. Of course a cure (?) eventuated in every case: at least every patient involved was so disposed to state. Particularly interesting was the last of this series, a neurotic of the enteroptotic type who, having been informed that one of his kidneys was loose, prevailed on me to suture it in place. So sanguine of success was he, that he rose from his bed at the end of ten days, instead of three weeks, and shortly afterward resumed his customary activities. In the height of his elation he called on me, at which time I took occasion to inspect the field of any former labor; and there, slipping and sliding, in the same old way, was the same kidney in the same old place. Nevertheless, he remained *cured*.

There is, however, an aspect to movable kidney that is of more serious import and therefore demands our most careful consideration. I here make particular reference to unilateral nephritis dependent entirely on the renal mobility. Some urologists assert that nephritis is the rule in movable kidney. This seems improbable unless those who make the assertion refer exclusively to the extreme degree of renal mobility—the so-called floating kidney. While it is not within the purview of this article to discuss the varieties of the condition under consideration, I might in passing state that we may properly recognize four degrees of renal mobility: (1) that in which only the lower pole is perceptible to the touch; this is frequently referred to as palpable kidney: (2) that in which the greater part of the body, but not the upper pole, may be palpated; (3) that in which, besides the findings of the second variety, the upper pole may be distictly outlined, and (4) that in which the entire kidney is palpable and may be freely displaced in the abdomen or in the pelvis—the so-called floating kidney.

The express purpose of this communication is to report two cases of unilateral nephritis in movable kidneys of the second and third degrees, cured by fixation.

REPORT OF CASES

Case 1.—A man, aged about 29, consulted me because of dull pain in the right loin, radiating to the hypochondrium and downward to the genitals; there were irregular dyspeptic symptoms, headache, and general weakness and debility. He had recently been discharged from the army. The symptoms had been fairly constant for nearly four months, during which time he had lost moderately, but constantly, in weight. He had once been told by a service physician that the urine contained albumin. He further gave a history of occasional pollakiuria.

The patient was somewhat undernourished, and of slender build, but not of enteroptotic configuration. There was, however, a moderate degree of prolapse of the stomach and the hepatic flexure of the colon. The right kidney was easily palpable, the greater portion of the body, but not the upper pole, being readily accessible to touch. The organ had a marked lateral range of motion, slipping easily from the outer boundary of the flank to the midvertebrum. Local tenderness was present precisely in the gallbladder region; it was not, however, augmented by digital pressure upward under the costohepatic margin, nor by direct backward pressure unless the kidney was compressed, in which case exquisite sensitiveness was perceived. The abdomen was otherwise negative and the chest normal. The pulse and temperature showed no variation from the normal. The systolic pressure was 140; the diastolic, 110. Examination of the blood revealed a moderate chlorocellular anemia. There was no history of recent infectious disease, and no tonsillar or oral sepsis. The patient was pale and nervous.

Examination of a twenty-four hour specimen of urine disclosed: total quantity, 23 ounces; specific gravity, 1.024; albumin, a moderate quantity; numerous tube casts, granular, epithelial and hyaline, and an occasional blood cylinder; some leukocytes were present, and numerous red cells.

The patient was placed in bed and supplied with a diet rather liberal in carbohydrates and fats, but adequately restricted in protein; an abundance of water was ordered and taken. Under this regimen, at the end of a week the albumin, which daily examinations had shown to be decreasing, had entirely disappeared; but the casts, although diminished, still persisted. By the lapse of a fortnight the patient, feeling much improved generally, insisted on rising from bed; and several days later he resumed ordinary activity.

In the course of two weeks he reappeared complaining of his former symptoms. The urinary findings were the same as before. One month's rest under the previously described regimen eventuated as in the first instance; after another month of ill-advised activity, the patient again returned; all his symptoms had recurred and were persistent and distressing;

and besides the same abnormal urinary findings, there was an increase in the blood cells and the albumin. Coupling the clinical history with the physical findings, I determined on catheterization of the ureters. The urine thus obtained from the right kidney showed all the pathologic changes noted above; that from the left organ was normal. The phenolsulphonephthalein test was then applied, the solution being injected intravenously (median basilic), and the period of observation covering one hour from the first appearance of color in the tubes. The dye appeared from the left kidney in seven and one-half minutes; from the right, in fourteen minutes. On the left side, 20 per cent. was excreted in the first fifteen minutes, 25 per cent. in the first thirty minutes, and 30 per cent. in the first hour; on the right side the figures were 10, 15 and 20, respectively. A diagnosis of unilateral nephritis was then made.

The patient was again confined to bed and the same dietetic regimen reapplied. At the end of two weeks, a small quantity, more than a trace, of albumin was present, and the casts were comparatively numerous. My proposal, at this juncture, to suture the kidney in place was accepted. The operation involved no noteworthy departure from the usual procedure. Care was taken to make a clean exsection of the retrorenal fatty tissue, and the posterior surface of the organ was freed from its fibrous capsule. The renal pelvis apparently was not at all dilated; but the kidney was swollen, congested and dark.

The postoperative course was comparatively smooth, the patient remaining in bed one month. Examination of the urine at the end of this time revealed a few casts, but no albumin or other abnormal constituents. The patient now assumed light ambulation, resting forenoon and afternoon, for a period of two weeks, gradually increasing the physical exercise. Careful watch was kept on the condition of the urine throughout the entire time; despite the gradually increasing exercise, the casts steadily diminished and the albumin did not reappear. Three months subsequent to operation, the urine showed a twenty-four hour total of 39 ounces, with a specific gravity of 1.020; there were no albumin, no cells and no casts, the last having gradually dwindled out. It is noteworthy that these were the last to disappear. The local pain and discomfort had now entirely subsided, and the patient's general condition had manifestly greatly improved, although he still retained his neurotic tendency, and perhaps always will. He negatived my request for a second series of ureterocatheteric specimens of urine for comparative function test, and resumed the activity of physical labor. When seen a month later, he was in very good health and physical condition, and the urine was normal.

CASE 2.—An unmarried woman, aged 27, of fragile build, had been removed from school when a girl and constrained to perform comparatively heavy work on a farm, her home. She now complained of headache, weakness, palpitation, shortness of breath, gastro-intestinal disturbances, and pain in the back and right side. She was pale, debilitated, and reduced in weight. There was no evidence of focal infection, and no history of infectious disease in the last twelve years. The chest was negative, but the abdomen showed the common form of gastro-enteroptosis. The right kidney was readily palpable and freely movable; and the urine showed all the findings of nephritis. After strong persuasion and some difficulty, ureterocatheteric specimens were obtained, which localized the disease entirely to the right organ; but the extreme irritability of the patient rendered impracticable the prolonged retention of the catheters for separate investigation, by the phenolsulphonephthalein test, of the comparative functional value of the two organs.

I prescribed rest and appropriate feeding; but the principle of rest was repugnant to both parents. However, the young woman's physical disability soon became extreme, compelling her to take to bed. In this, as in the other case, the albumin steadily decreased, and, after a space, disappeared; the casts diminished somewhat, but did not altogether disappear. The general condition improved, and the patient was up and about in less than two weeks, whereupon the albumin promptly reappeared. I again informed the parents (the patient was but a child in self-management) that the girl had an inflamed kidney, and that it could be cured by operation. After mature deliberation, consent was obtained.

The kidney was fixed as in Case 1; but, knowing the patient's domestic circumstances, I insisted on absolute bed rest for six weeks. The urine became normal, and the general condition decidedly improved. Slightly less than three months after operation, the patient was leading a comparatively comfortable life, and performing the ordinary household duties. The urine remained normal.

COMMENT

These two cases seem to me to be rather instructive, serving as they do, to remind us that, while a mere movable kidney may constitute a negligible condition, it may sometimes be the seat of serious organic mischief amenable to proper treatment; that not every neurotic with a movable kidney is to be passed by or treated merely as such; and, above all else, that every patient with a movable kidney and nephritic urine must be subjected to ureteral catheterization, and each renal function and excretion be separately investigated. Chronic bilateral nephritis means Bright's disease, with its grave prognosis; chronic unilateral nephritis, from this particular cause, is curable and, hence, a vitally different matter.

219 Moore Building.

A GAUZE SPONGE FORMING THE NUCLEUS OF A VESICAL CALCULUS *

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The most common mode of entry of foreign bodies into the bladder is through the urethra. There are carefully controlled reports, however, which tend to show that these bodies may occasionally find their way into the bladder in other ways, as secondarily from the digestive tract, through the perineum after its injury, from bony sequestrums after fractured ribs and osteomyelitis, and following pelvic operations. A variety of articles have been found. Some of them have been surgical instruments, as catheters and bougies, which have been broken off or lost in the urethra. Other foreign bodies have been introduced into the urethra for nonsurgical purposes and then lost control of, subsequently finding their way into the bladder. Some of them have been of such remarkable form and shape as to excite speculation as to how they could have passed through the urethra into the bladder, especially in men. The female urethra, being shorter, affords an easier approach. Lead pencils, hairpins, buttonhooks, straw, feathers, paintbrushes, kidney beans, chewing gum, watch chains, leather shoestrings, cord, chalk, cork, glass, etc., have been repeatedly found.

The length of time for which the bladder tolerated these substances has varied within wide limits. Frequently the irritation has been so intense that the patient has been forced to seek immediate relief; other cases have remained without symptoms for many years. Packard [1] reports a case of a hard rubber bar which was introduced through the urethra and which

* From the Woman's Clinic, University of California Hospital.

1. Packard: An Analysis of 221 Cases of Foreign Body Introduced into Male Bladder per Urethram with Report of a Recent Case, Ann. Surg. **25**: 568-599, 1897.

remained in the man's bladder for fourteen years. Fleury [2] removed an awl from a man's bladder, which the patient declared had been introduced by a companion fifteen years before. Steinitz [3] records a case in which a rubber catheter was passed spontaneously after dilatation of the urethra. It had been in the bladder for seventeen years.

These objects when removed are more or less covered with incrustations. The nature of the article apparently determines the amount of salt deposit. Smooth articles, like bone, glass or wax, are much less likely to become densely incrusted than the rougher articles, although no substance is immune from vesical incrustation.

There are many cases of foreign bodies which are stated to have ulcerated through neighboring viscera into the bladder. Freeman [4] removed by cystotomy an incrusted darning needle from the bladder of a child of 4 years. The mother had seen her swallow the needle eighteen months previously. Harrison [5] removed a calculus from a sailor's bladder. The nucleus of the stone was a whalebone mouthpiece of a pipe which the man insisted that he had swallowed many years previously. Roberts,[6] through a perineal incision, removed a slate pencil from a man's bladder which he stated had been swallowed six months before in the presence of reputable witnesses.

Injuries to the perineum with subsequent ulceration into the bladder have been reported by several authors. Otis [7] records a case in which the nucleus of the stone was a piece of cloth which had formed part of the man's trousers when he had sustained a serious injury to his perineum some time before the operation. Ghose [8] extracted from the bladder of a boy of 5 years a piece of wood that had been forced through the perineum by a fall one year previously.

Judd,[9] in reviewing the foreign bodies in the bladder in the cases of the Mayo Clinic, reports two unusual cases in which he believes that the articles were so large that they could not have entered the bladder through the urethra. A boy of eighteen, with a tuberculous osteomyelitis of the femur, had passed fragments of bone with the urine. Five years after the onset of bladder symptoms, a piece of the sequestrum was removed from the viscus. There were no scars of the bladder wall at the time of operation which would indicate the point of entry. In the second instance, a knife blade formed the core of a large bladder calculus. The man stated that an open jackknife had penetrated into his left hip twelve years before and had been broken off so that it could not be found. He was sick in bed three weeks thereafter. Symptoms were present twenty-one months before the operation. Packard removed an inch of rib bone from the membranous portion of the urethra of a man who several years previously had had several fractured ribs. The groove on the under surface of the bone identified its origin.

La Roque [10] reported a case in which a gauze sponge was left in a pelvis after hysterectomy. The woman was free from any vesical symptoms for five years; then apparently without any cause there was a sudden onset of severe tenesmus and suppuration of the bladder with a subsequent explusion of a gauze sponge.

The case here reported is of interest in this connection.

2. Fleury: Bull. de la Soc. chir. de Paris **4**: 39, 1878.
3. Steinitz: Breslau Aerzt. Ztschr. **1**: 24, 1879.
4. Freeman: Lancet **1**: 340, 1885.
5. Harrison: Lancet **1**: 287, 1885.
6. Roberts: Med. Times & Gaz., London **40**: 113, 1859.
7. Otis: Med. Gaz., New York **7**: 181, 1880.
8. Ghose: Indian Med. Rec. **5**: 387, 1893.
9. Judd: Journal-Lancet **35**: 421, 1916.
10. La Roque, G. P.: Surg., Gynec. & Obst. **28**: 522 (May) 1919.

REPORT OF CASE

E. N., a woman, aged 45, married, whose family and past histories were negative, and who had had ten children, entered the Woman's Clinic of the University of California Hospital one year after a left inguinal herniotomy and a cervical repair had been performed by a reputable surgeon in another hospital, following which a train of vesical symptoms gradually developed. At the time of admission she complained of frequent painful urination, vesical tenesmus and passage of stringy, whitish material.

There was a tender cystic pelvic mass the size of a small orange, most of which was to the left of the mesial pelvic line. This mass was later proved to be the markedly contracted and indurated bladder. The uterus was upright and large, in close approximation on the posterior bladder wall. A glass catheter struck a hard mass which gave a definite clinking sound. The cystoscope revealed a markedly injected urethra, a hyperemic bladder presenting many ulcerating areas, and a large grayish stone which nearly filled the contracted bladder. A large vesicovaginal fistula was made and the stone was removed in fragments, since it was found too large to be removed without crushing. It proved to be a surgical gauze sponge infiltrated with salty deposits. The entire mass was judged to be 8 cm. in its longest pole.

The patient's symptoms cleared immediately after operation, and she was discharged three weeks later with urine still cloudy with pus. Three months later the bladder wall appeared normal and the vesicovaginal fistula was closed without difficulty. Subsequently the bladder was treated with boric irrigations to dilate it to normal size. The patient is now well and free from any bladder symptoms, one and a half years after the closure of the fistula.

COMMENT

We are unable to determine how this gauze obtained entry into the bladder. The urethra in our hands admitted a No. 12 Kelly cystoscope with difficulty. It seems impossible that the large amount of gauze concerned in the concretion could have been forced through this channel into the bladder by the patient. Nor could the sponge have ulcerated through the vagina into the bladder. More likely a diverticulum or corner of the bladder was intimately connected with the hernia and was opened at the time of operation without its true character being recognized, and in some manner the gauze found entry into the viscus, which in turn was closed off as part of the hernial sac. While this is but theory, it appears as if it were the most likely of the three possibilities which merit consideration.

In this connection it is worthy of comment that foreign bodies which appear to have entered the bladder other than through the urethra have been able to effect entrance without causing leaking of urine or subsequent scar formation in the bladder. The foreign bodies that so enter must be completely walled off, or extravasation would occur. The bladder, in turn, must close as quickly as the body enters.

It is of interest that foreign bodies are but rarely expelled spontaneously from the bladder. Only fourteen of Packard's 221 collected cases were delivered in this manner. Removal is usually effected by crushing or after cystotomy. Van Meter [11] and Weisz [12] were able to dissolve wax bougies in the bladder by instilling benzin.

11. Van Meter, S. D.: Removal of Paraffin from the Bladder, J. A. M. A. **58**: 478 (Feb. 17) 1912.
12. Weisz: Am. J. Urol., December, 1909.

GRADUAL REDUCTION OF FRACTURES OF THE MAXILLA AND MANDIBLE*

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In the gradual reducton of fractures of the maxilla and mandible, we are dealing with cases in which union is well under way in malopposed bones, or we are endeavoring to establish a bony union when there has been a loss of substance, and attempting to influence a growth of bone in its place by use of tension following the formation of a callus. In these the osteogenic processes are the same as those attending bone injuries in any other part of the body, the bone repair being dependent on the osteoblasts, and the bone resorption depending on the osteoclasts. Both processes are vitally active at all times in this class of work,



Fig. 1 (Case 1).—Malocclusion following bone graft due to miscalculation of bite in splinting. Patient unable to close mouth.

for much of the newly formed bone is again absorbed in yielding to the pressure brought to bear in an effort to correct the malposition of the bones or the malocclusion of the teeth resulting from jaw fractures.

When a case of fracture reduction is undertaken, it is most important that the exact condition of the areas involved be definitely ascertained. This applies to all cases, but more especially to those in which this method of reduction is employed, as will be explained later.

Roentgenograms should be taken in order to demonstrate the absence of teeth or foreign matter in the line of fracture or the areas involved, and the nonexistence of sequestrums or infection. The presence of any of the foregoing will at least threaten the results, if not spell complete failure.

In cases in which there has been a loss of substance, the clearing away of all foreign matter, roots, etc., and the freshening up of the fragmented ends of the bone followed by their approximation and immobilization by splints are the first and most important steps toward influencing bone formation for supplementing the lost parts. The reduction of the fracture to its



Fig. 2 (Case 1).—Self-adjusted jaws. This change was accomplished while a splint was being made for its correction. The inclined plane of the teeth exerted a sufficient amount of influence to effect the correction, showing how slight an amount of force is necessary to bring about a result if taken at the proper time.

proper position should not be begun until roentgenoscopy reveals a good callus with a fair deposit of lime salts. The tension at first should be very mild until it is learned just how rapidly the parts respond to the force applied. After the parts have been under ten-



Fig. 3 (Case 2).—Fracture of superior maxillary with extensive loss of bony substance. Note retraction of superior maxilla.

sion for a few days, the force should be entirely relaxed and the parts allowed to rest; this will give Nature a chance to throw down a heavier deposit of lime salts, and allow the irritation created by the applied force to subside. As soon as it is found just

* Read before the Section on Stomatology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

what amount of force is required to conduct the case in an easy and gradual manner, the force should be kept up steadily for several days at a time and relaxed completely for a few days. This, as stated before, rests the parts and allows a heavier deposition of the lime salts. Great care should be exercised in not forcing the parts too rapidly, for such action would



Fig. 4 (Case 2). — Roentgenogram revealing loss of bony substance of palate and nasal bones, also retraction of superior maxilla. Note malocclusion of teeth.



Fig. 5 (Case 2).—Regeneration of bony tissue and occlusion of teeth after reduction of fracture.

cause an inflammatory process and a consequent breaking down of the bony substance thus far formed, resulting in a fibrous union, while a movement to a moderate degree causes a mild irritation and a stimulation of bone deposit. Many bone grafts have been avoided and excellent results obtained by the foregoing process, following the early approximation of the fragmented ends of fractured bones.

The thorough cleansing of the area of all roots and infectious materials is imperative, for as soon as tension or force is applied, the irritation thus created offers an excellent opportunity for any latent infection to present itself; however, when a "flare up" of this nature occurs, the infection is usually traceable to either a root or a small sequestrum of bone, and its removal will stop all process of suppuration and the tissues rapidly return to normal. The force must be entirely relaxed during such an occurrence, and all work must cease until the tissues have regained their normal condition.



Fig. 6 (Case 2).—Appearance of patient at end of treatment.

The supplementing of lost bony tissue by this method has its limitations; extensive losses cannot be supplanted, excepting by the process of bone-grafting, although one case in which a loss of 1¼ inches was accomplished by the near approximation of the fragmented ends, followed by tension after the roentgen ray, showed good callus formation.

When a delayed union exists, there is always a cause for it, either septic involvement, due to roots, foreign matter or sequestrums, or possibly to the lowered vitality of the fragmented ends of the bone,



Fig. 7 (Case 3). — Compound, comminuted fracture of superior maxilla with extensive loss of bony tissue. Note retraction of superior maxilla and sunken condition of nasal bones and orbits.



Fig. 8 (Case 3).—Appliance in position after six weeks' treatment.



Fig. 9 (Case 3).—After two and one-half months' treatment. Note elevated condition of nasal bones and orbits.

in which case any such matter, including fibrous tissue, should be removed, the fragmented ends of the bone freshened up and approximated, and the splints properly adjusted preparatory to applying tension following callus formation.

The means employed in conducting these cases is either interdental, intermaxillary or the combination of both, depending on the nature of the case. Very often an appliance can be used singly, on either the upper or the lower jaw, provided there is a sufficient number of teeth present to support the appliance and to withstand the necessary force required to accomplish the desired result. On the other hand, when the anchorage for the appliance furnished by all available teeth of the one jaw is insufficient to withstand the stress to be applied, it is necessary to utilize a splint anchoring from the opposite jaw in conjunction therewith.

The question of firm anchorage is one worthy of serious thought; for if the bony union is in a well advanced stage, and the case is one presenting a lone tooth as the only support for anchorage to the one fragment, the tooth will be the one to alter its position instead of the bone in malposition; therefore it is necessary to obtain an anchorage that is firmer than the bony union of the fracture.

ORCHITIS FROM MUMPS

THE NEED OF CONSERVING THE TESTES BY INCISION OF THE TUNICA ALBUGINEA*

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Can we lessen the number of testes now being atrophied each year by orchitis from mumps? We think we can, though our opinion is based on a consideration of the pathologic condition present and on the method employed, rather than on a sufficient number of cases to prove our opinion. We have had only a limited number of patients with orchitis from mumps because these patients are nearly always seen by the general practitioner instead of the genitourinary specialist; and while we have had the opportunity of treating only three patients by the method we recommend, the results in these were so satisfactory and so nearly in accord with what might logically be expected that we desire to direct attention to the probability of similar results being obtained in other cases.

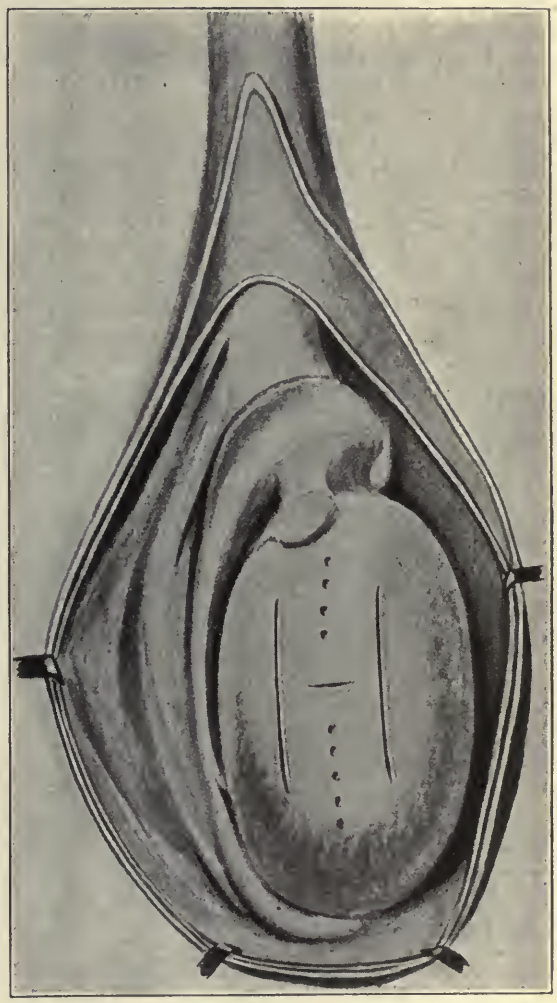
That the present method of treating orchitis caused by mumps is inadequate is shown by the large number of atrophied testes observed in our daily routine examinations. The patient explains that he had mumps and they went down on him, and that when he recovered, the testicle gradually grew smaller.

This destruction is probably caused by two things: (1) the local toxic product of the mumps organism; (2) the pressure necrosis due to the inelastic tunica albuginea's preventing the testicular substance from swelling in response to the inflammation present.

In mumps, the parotid and salivary glands contain an exudate that is mainly serous and rarely suppurates. The same thing is probably true of orchitis from mumps.

In the present discussion we will not consider orchitis caused by other affections than mumps, for rarely does atrophy follow orchitis from traumatism, gonorrhea, malaria, scarlet fever, typhoid fever, influenza, rheumatism, gout, etc., unless it proceeds to suppuration, which is unusual.

Orchitis follows mumps in from 10 to 25 per cent. of the cases, and in about one half of these atrophy results. This percentage is sufficiently high to suggest a reconsideration of our treatment to determine whether another plan would not secure a smaller number of atrophies. The psychic and physiologic effects on the patient, especially when both testes are atrophied, are considerable and produce much unhappiness and dissatisfaction.



Lines for incisions of tunica albuginea for orchitis from mumps. Dotted lines are for optional incisions if it is thought necessary to relieve tension.

That it would be desirable to prevent the atrophy will doubtless be granted. Assuming, then, that in about half of the patients with orchitis from mumps atrophy will result, what are we to do to prevent this occurrence? A consideration of the pathologic process has led us to the conclusion that the rational plan to follow is to incise the tunica albuginea and relieve the pressure, and at the same time allow the escape of some of the toxic substances produced by the organisms which cause mumps. This, of course, must

* Read before the Section on Urology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

be done early in the disease before the necrotic process has become established, just as in strangulated hernia the operation should be performed early if resection of the intestine is to be obviated.

Several factors would tend to prevent the prompt incision of the tunica in mumps:

1. The mildness of the symptoms and the small amount of swelling of the testes lead the patient, his family and his physician to regard the palliative measure as being sufficient.

2. The contagiousness of the disease requires more care than in an ordinary operation.

In answer to the first objection, we may reasonably assume that some of the patients will decide on an incision of the tunica albuginea if they are informed that without an operation there will be about a 50 per cent. chance of atrophy of the testicle, while with a slight operation, there may be a good chance of preventing this undesirable occurrence.

As regards the contagiousness of the disease, we say that with a little care it is easy to secure sufficiently adequate isolation in the average hospital to prevent the spreading of the contagion to other patients. The operating room should be carefully cleansed after the operation, with about the same precautionary measures that would be used after an ordinary streptococcic infection.

TECHNIC

The patient should be anesthetized, preferably with gas-oxygen. The scrotum, which has been previously thoroughly cleansed, is painted with a weak solution of iodin. An incision is made in the anterior surface of the scrotum through the tunica vaginalis, and the testis is delivered. An H-shaped incision then is made in the tunica albuginea. The testicular pressure causes the swollen, reddened substance to protrude somewhat through the incised tunica. If the swelling is extensive, other slits may be made, wherever indicated, to relieve pressure. The testicle is wrapped for a few minutes in a towel wet with a hot saline solution, and then replaced in the tunica vaginalis; a small Penrose cover is inserted, and the incision closed layer by layer with interrupted sutures. A 25 per cent. ichthyol dressing is applied and held in place by an ordinary suspensory.

Three testes so operated on are now normal, two after three years and one after twenty months.

We hope by this suggestion to enlist the interest of others to try this method, as we do not see a sufficient number of patients with mumps to obtain a large enough series to prove with certainty the value of the method suggested.

ABSTRACT OF DISCUSSION

DR. VICTOR D. LESPINASSE, Chicago: The destruction of testicular tissue by mumps is enormous in the aggregate. Dr. Ballenger was courageous in incising the tunica vaginalis. The thought has been that in incising the testicle, the testicular parenchyma would ooze out through the opening and all that would be left would be the empty tunica vaginalis. It seems to me that multiple incisions should be made, and long rather than short. I have had two instances where the testicle following its involvement during mumps was studied in relation to its spermatogenic function. In one case, a rather severe type of orchitis, the man remained free from spermatozoa for eight months; in the course of another eight months spermatozoa were present in normal numbers. It has been stated that mumps is a pure testicular disease, while gonorrhea attacks the epididymis and the testicle only secondarily. But mumps does attack the epididymis alone and runs a course exactly similar to a moderate gonorrheal infection.

DR. E. G. BALLENGER, Atlanta, Ga.: I used an H-shaped incision; additional slits are made if needed to relieve tension. No very long cut is made and yet this holds the testicular tissue within control. Multiple short incisions would probably do just as well. It is true that in the ordinary inflammatory condition the testicular tissue will come out in long threads, but orchitis from mumps is not a pyogenic inflammation. The swelling is caused by a serous exudate. The only pathologic study I could find was that of the parotid glands, and it is probably a similar condition in the testicle. One point for the operator to consider is whether he has ever had mumps. I contracted it from the first patient operated on. The utmost care was taken not to develop an orchitis and luckily I escaped.

RATE OF ABSORPTION OF DIGITALIS FROM GASTRO-INTESTINAL TRACT

A CLINICAL STUDY *

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The problem of digitalis medication is steadily emerging from the condition of uncertainty and imperfect knowledge by which it has been surrounded. The idea that the variable results which were obtained with different patients were due to a variability in the drug itself has been shown to be largely false. The variable activity depended much more often on whether the patient's heart failure was due to the rapid rate of auricular fibrillation, or to the mechanical handicap of a valvular lesion or a weak ventricular muscle, and on whether or not the physician gave what we have come to know is an adequate therapeutic dose of the digitalis.

The great success which attended the use of 2 dram or 3 dram doses of the infusion, as compared with 5 minim or 10 minim doses of the tincture, can be readily understood, for the amount of digitalis in 1 dram of the infusion is the same as is found in 8.7 minims of the tincture. Those who used the infusion gave more digitalis; and yet, at the time when half ounce doses of the infusion were sanctioned by common usage, a suggestion of 30 minim doses of the tincture was met with apprehension. It is not denied that there are digitalis preparations of very low potency, but preparations of this sort are not common, and the failures due to them are far fewer than the failures due to improper administration, or to the heart's being severely handicapped by disease.

The use of these small doses also gave rise to a belief that digitalis is slowly absorbed, taking three or four or more days to produce its effect, and some of the failures have been wrongly ascribed to the special inability of the patient to absorb the drug. Here, again, the infusion achieved a reputation for superior absorbability, owing to the relatively larger amount of digitalis leaf represented in the commonly accepted dose.

When it was pointed out by Cohn, Fraser and Jamieson [1] that digitalis produced a definite change in the form of the T wave of the electrocardiogram, it seemed that we had here a definite index of digitalis action on the ventricular muscle. These authors gave 1 gm. doses at four hour intervals and noted the first change in from twelve to twenty-four hours. By giving rather

* Read before the Section on Medicine, New York Academy of Medicine, Dec. 16, 1919.

1. Cohn, Fraser and Jamieson: The Influence of Digitalis on the T Wave of the Human Electrocardiogram, J. Exper. Med. **21**: 593, 1915.

large doses of digitalis to a series of patients, and taking a control and frequent subsequent electrocardiographic records, it seemed that it should be possible to decide how quickly the drug is absorbed and begins to exert its effect on the muscle of the ventricles. By counting the heart rate shown in the records it was also possible to decide how quickly the drug begins to exert its effect on the vagus center causing the heart to slow.

DETAILS OF THE EXPERIMENTS

The dosage that was used in these experiments was approximately 1 minim of the tincture given by mouth, well diluted, for each pound of the patient's weight. This dosage was selected because I believe that it is the maximum single initial dose of the tincture that can be safely prescribed by a physician who is dealing with a commercial tincture whose potency he does not know. Seven patients were tested in 1917, and the tincture used at that time had a potency of 125 c.c. per cat unit.[2] On continuing the work two years later the old tincture was not available, and the one used for the last two patients was found to have a potency of 0.65 c.c. per cat unit.[2] The dose of 1 minim per pound for these two patients is therefore almost twice as powerful as the first group, and proves the need for caution with tinctures of unknown potency.

Patients with normal cardiac rhythm were selected, because of the difficulty in measuring slight changes in the T wave when the waves of auricular fibrillation are present. Patients were selected who did not show cardiac failure, in order to avoid the possibility of a variable absorption due to a congested intestinal tract. Eight of the patients selected were free from cardiac valvular disease, in order to show that the digitalis effect is exerted on healthy as well as on diseased hearts. One patient with valvular disease was included (Case 8), and one with chronic interstitial nephritis and auricular fibrillation (Case 7).

Figure 1 is shown as an example of the sort of change which the T wave underwent during these experiments. There is a diminution in its height, or a sinking of the level before the T, which constitutes the early stage of a change which later results in an inversion of the T in one or more of the leads in which it was originally upward. A diminution in height may appear after as little as 30 minims of the tincture given in one dose by mouth. It is impossible to say that it appears immediately on the entrance of the drug into the blood stream, but it is at least a very early result of the drug's action on the heart muscle. In order to make the waves larger and thereby increase the size of any variations which might occur, the galvanometer was standardized so that 1 millivolt caused a deflection in the record of 15 mm. instead of the usual 10 mm. Even with the string at this degree of slackness, the deflection time was less that 0.2 second, so that the waves are in no way deformed.

2. Reported by Dr. R. A. Hatcher, through whose kindness these tinctures were assayed.

Figure 1 gives the records of two patients, showing in each case the control record and the record taken after three, six, seven, eleven and twenty-four hours. The figure for the height of the T wave which appears in the corner of each lead is not a measurement of the height of the wave of the figure but is an average of several T waves from this record. Case 6 shows a sinking of the level before T in Lead 3, while Case 5 shows merely a decrease in the height of T.

PROMPT APPEARANCE OF EFFECT ON MUSCLE AND ON RATE

The results of these experiments can be seen in Figures 2 and 3, the former showing the effect on the T wave and the latter the effect on rate. Figure 2 gives the weight of each patient and the dosage of

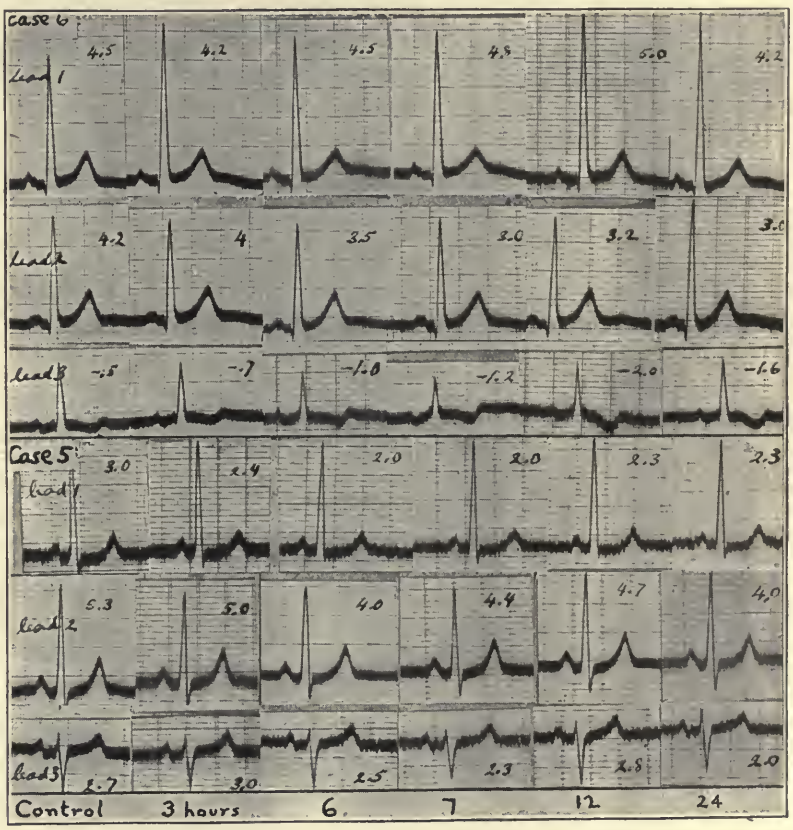


Fig. 1.—Records of two patients taken by Leads 1, 2 and 3. From left to right the first vertical column is the control of each case, the second is after three hours, the third after six hours, the fourth after seven hours, the fifth after twelve and the last after twenty four hours. The figures on each lead are the average height in millimeters of the T wave in that lead as computed from the measurement of several different waves. The paired vertical lines are made by the time marker; the space between the corresponding line of each pair is 0.2 second. Both patients show the first effect in the three hour record.

tincture of digitalis. The vertical lines are time lines and refer to the number of hours elapsing after the dose was given. The appearance of an x on the line opposite the patient indicates that a record was taken at the time indicated by the relation of this x to the time lines. If a horizontal line is drawn to the right from this x, it indicates the beginning of the effect on the T wave, or if the effect has begun previously it indicates an increase in the change. When the line is dashed and not solid, it indicates a very slight effect which could not have been considered definite unless the next record had shown it increased. Sometimes the T wave would vary irregularly in one lead (Fig. 1, Case 6, Lead 1), while in another lead it would show

a steady and increasing diminution in size, or perhaps the lead which eventually showed a steady diminution would vary irregularly a few tenths of a millimeter at first. The reaction was considered to start only when the T wave in the lead which was eventually to show the marked change had ceased to show irregular variations and was definitely started on its decrease in height, more than 0.3 mm. being considered definite.

It is plain from an examination of Figure 2 that the *first effect* on the heart muscle as shown by this change in the T wave appeared in three of the patients by the end of two hours after the administration of the digitalis, and in seven patients by the end of three hours, while all but one showed it by the end of four hours. This patient was exceptionally slow to develop the change in the T wave, still showing an increase as late as after twelve hours, while all of the other patients had developed the maximum change by twelve hours and usually earlier. Six patients developed the *maximum change* by the sixth or seventh hour after the administration and two reached it between seven and twelve hours, while only the one mentioned developed it after twelve hours.

The fact that a definite effect appears in most of the patients at the third hour is of great interest as

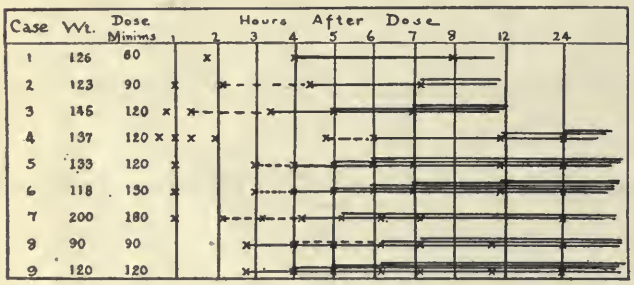


Fig. 2.—Time of onset of the action on heart muscle as shown by the T wave. The weight of each patient and the dose of tincture of digitalis are shown. The vertical lines represent hours after the administration of the dose, and the *x* marks show the time of each record by their relation to the time lines. A dotted line drawn to the right from an *x* shows that the record taken at this time showed a very slight change in the T wave, while a solid line indicates a definitely marked change in the record at which it begins, or an increase in the change, if such is already present.

showing that the drug is fairly quickly absorbed, and that its action begins at a time much sooner than has been believed. It is even possible that an effect might have been noted more frequently at the second hour if more records had been taken at that interval. This is especially likely in Cases 8 and 9, which showed a very definite change in the first record after the administration taken at an interval of only two and three-quarters hours.

After the effect appears it increases slowly and usually reaches its maximum for this dosage at about six or seven hours after the administration, maintaining this maximum for a period of twenty-four hours. The change then decreased steadily in the two cases that were followed for three days and for ten days after administration, and increased in all of the five cases that were continued on further doses of digitalis at the end of the twenty-four hour period of observation. The change became much more marked as the patient approached the point of full therapeutic action of digitalis. This is considered to support the former statement that the changes which appeared during this experiment represent only a slight digitalis effect, as is also the fact that Cases 1 and 2, in which the patients received smaller proportional doses than the others, still showed the effect on the T wave, and the effect in these two cases appeared at about the same time after the administration as in the other cases, in which more digitalis was given. Variation in the size of the dose within these limits does not appear to have a marked influence on the time of onset of the digitalis action.

It is plain that there are the usual variations in individual reaction which are so evident in work with digitalis. Case 4 is an especially marked variant, showing only the slightest effect after four and three-quarters hours, the definite effect at six hours and the maximum effect after twelve hours. This patient was not slow to absorb the drug, because reference to Figure 3 will show that there was a slowing of the rate after one and one-half hours and a very definite slowing after two hours, which is considered to indicate that the drug had been absorbed at this time.

Figure 3 shows the changes in the heart rate at each period after the digitalis. It gives the rate as counted over a period of twenty seconds in the control record, and the rates in the later records which were taken at a time indicated by the relation of the figures to the time lines, which are here horizontal instead of vertical. The rate considered to be the first to show slowing of the heart by digitalis is printed in boldface type. Irregular variations in rate are seen in the early records of some patients, but definite slowing was not accepted until these had given place to a rate constantly slower than that of the control.

The rate change appears before the change in the T wave in three of the patients, at the same time in four, and later in two of them. The average time of appearance of the first definite slowing is slightly less than for the T wave effect, though the difference is almost negligible. Evidently it occurs independently of the change in T, and this is not surprising for the one is due to vagus activity influencing the sinus node when normal rhythm is present, and the auriculoventricular node in the presence of auricular fibrillation, while the change in the T wave is more probably a sympathetic nerve effect or a direct effect on the muscle. The actual amount of the change in rate averages close to 10 beats per minute in the cases with normal rhythm, but was 50 beats per minute in the case with auricular fibrillation (Case 7). In Case 2 the patient had a sarcoma of the sacrum, and his somewhat weakened condition was the cause of the rapid rate. It is noteworthy that this rapid rate was slowed very slightly, as contrasted with the more marked slowing shown by the hearts which were not subjected to any abnormal influence.

The slowing that these patients showed after the digitalis is quite plainly more irregular than the change in the T wave, which appears as a minimum and increases quite regularly to a maximum, which is maintained. The heart rate is well known to be constantly varying in response to varying impulses from the vagi and the sympathetics; and from the few observations of this series, it seems that the digitalis effect on the vagus center begins to wear off by twenty-four hours after the drug is given, and that even during its action the rate may be varied by other factors.

SUMMARY OF RESULTS

The action on the heart muscle, as shown by the change in the T wave, begins between two and four hours after a dose of 1 minim of the tincture for each pound of weight, and reaches its maximum at about

the sixth or seventh hour. This effect continues for a period of twenty-four hours without change that is apparent. It seems likely that this represents the rate of absorption of the drug, or at least that it does not lag far behind it, for both rate changes and T wave changes appear and reach a maximum practically together. Somewhat smaller doses are absorbed at the same rate, and this is probably true of doses that are just sufficient to produce this change in the T wave and also of doses that are maximal.

The effect on the heart rate of patients with normal sinus rhythm seems to begin on the average slightly before the effect on the muscle, but is not constant in this. When the rate is between 60 and 80 to start with, the slowing is appreciable, and seems to reach its maximum at about the same time as does the muscle effect, i. e., after six or seven hours. With rapid rates the slowing is very marked in the one case of auricular fibrillation investigated, while in the case with normal rhythm the rate is scarcely affected. These two cases fall in with the commonly accepted conception of the effect of digitalis on rapid heart rates, that those which are due to auricular fibrillation are promptly slowed while those which have an accelerated sinus rhythm are but little affected. The amount of slowing shown by the cases with slow regular rhythm varies from 7 to 16 beats per minute, and is much more than it was anticipated to find. It appears that the heart which is not accelerated by abnormal influences is more susceptible to the vagus effect on rate.

APPLICATION TO THERAPEUTIC USE OF DIGITALIS

It seems evident from these facts that, when given by mouth, digitalis is absorbed rapidly enough to affect both heart rate and heart muscle in from two to four hours in different patients, and that the effect increases to a maximum at six or seven hours, which is maintained at least approximately for twenty-four hours.

In giving digitalis to patients with symptoms of heart failure, we should not expect much slowing even from quite adequate doses, unless auricular fibrillation is present. That we shall obtain prompt and marked slowing in cases with auricular fibrillation is suggested by the result with our single case, and very amply demonstrated by the results obtained by Robinson [3] in a series of twenty-six cases with fibrillation, in which, however, he gave doses which were for the most part twice as large as those used in this series. His first effects on rate were obtained in from two to five hours without exception, and the maximum effect appeared in from six to nine hours in some cases, though in most it came between fifteen and sixteen hours. The present series is too small and the rate variations are too slight to allow me to indicate a time for maximum slowing; but in general these cases agree with Robinson's findings, and in particular the one case of auricular fibrillation, Case 7.

In patients who are not suffering from heart failure, the variations in the rate of absorption are not great, and it may be surmised that this is also true of patients who are suffering from heart failure because of the agreement of these figures with those which Robinson obtained, using for the most part patients with severely failing hearts.

Patients who receive a single dose of digitalis by mouth will be subject to its influence first at the third or fourth hour and strongest at the seventh hour, whatever may be the size of the dose. If the dose is small there may be no evidence of its action; while, if it is sufficiently large, clinical improvement may follow shortly after the time of maximum effect. This has, in fact, been repeatedly noted when doses of proper size have been given.[4]

For reasons which have been given in detail elsewhere [5] but which are based on the variable strength of different tinctures and the variable susceptibility of different patients to the drug, it is recommended that a single dose of 1 minim of the tincture per pound of body weight should never be exceeded when a tincture of unknown potency is being employed. It is believed, though, that this dosage is always safe to use, because a very large number of patients have been reported to have received double this dose of a tincture of average

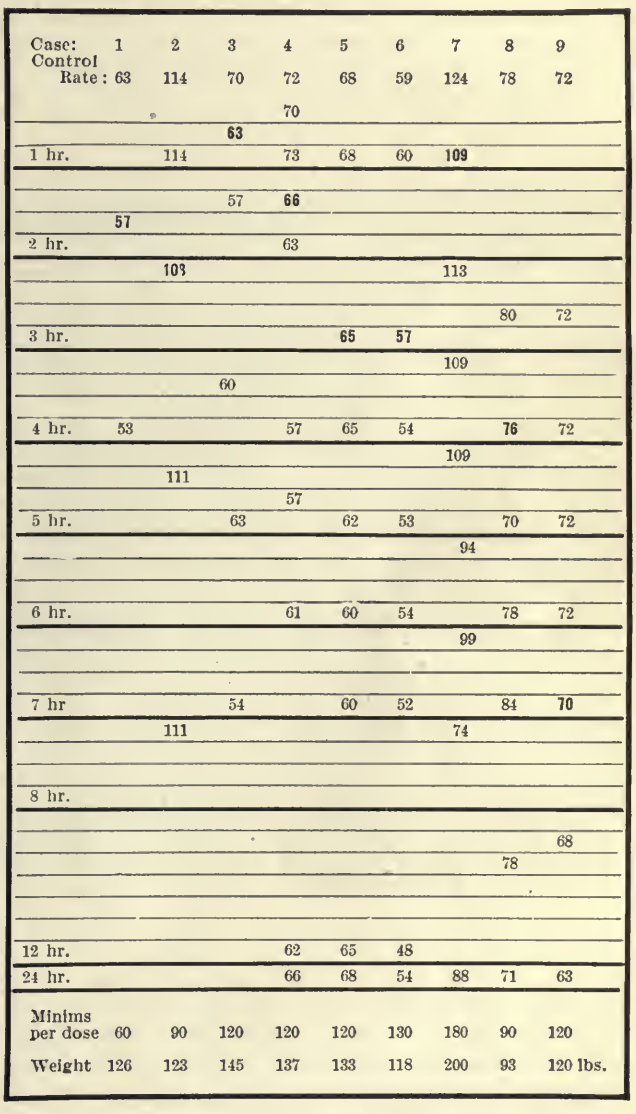


Fig. 3.—The heart rate after digitalis. This is the same series of patients, and the weights and doses are shown below. The horizontal lines represent hours after the administration. The figures are the number of beats per minute. and the first one to show definite slowing is in boldface. In Case 7, the patient had auricular fibrillation; all the others had normal rhythm.

3. Robinson, G. C.: The Rapidity and Persistence of the Action of Digitalis on Hearts Showing Auricular Fibrillation, Am. J. M. Sc. **159**: 121 (Jan.) 1920.

4. Robinson, G. C. (Footnote 3). White, S. M., and Morris, R. E.: The Eggleston Method of Administering Digitalis, Arch. Int. Med. **21**: 740 (June) 1918. Eggleston, Cary: Digitalis Dosage, ibid. **16**: 1 (July) 1915.

5. Pardee, H. E. B.: Principles of the New Method of Administering Digitalis, New York M. J. **110**: 1064 (Dec. 27) 1919.

strength, i. e., 1 c.c. per cat unit, without any unpleasant or dangerous results having been observed.[4] The administration of single doses equivalent to 1 minim per pound is inadvisable except in the presence of urgent heart failure, when the patient is in bed and when prompt results are demanded. It should never be attempted under any circumstances if the patient has received any preparation of digitalis or its allies within a period of two weeks.

It seems plain that when we are desirous of maintaining a continuous effect from digitalis, it is unnecessary to give it at less than six hour intervals, for the maximum effect of any one dose will not be reached until six hours after its administration. A twenty-four hour interval between doses would appear to be quite satisfactory for maintaining a continuous effect; in fact, I have found it so during the experience of the last two years. One dose can be given each night and will carry the patient until the next night. A dose of 20 minims daily, which is the average amount that the body can dispose of in twenty-four hours,[6] will suffice in the great majority of patients to maintain the desired digitalis effect which has been produced by a series of larger doses.

It is furthermore plainly inadvisable to give a second dose at an interval of less than six hours after a large initial dose such as has been recommended, for the full effect of the first dose will not be manifest until this time has elapsed. It would be more reasonable to wait for twelve or eighteen hours before giving the second dose, for by that time early toxic signs might make their appearance and warn us that more of the drug would have no further beneficial effect on the heart, and would only produce the undesirable phenomena of poisoning.

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DIAPHRAGMATIC HERNIA DIAGNOSED DURING LIFE*

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CHICAGO

Diaphragmatic hernia is not so rare a condition as is commonly believed. Most of the cases in the literature were discovered either in the necropsy room or by operation. The diagnosis during life without operation was exceedingly rare until the advent of the roentgen ray. With the aid of the fluoroscope in the last decade, cases have been reported frequently. Almost all of the roentgenologists of broad experience have reported one or more cases. The condition is encountered more frequently now as a result of war injuries.

Hernia of the diaphragm, as hernia elsewhere, may be of congenital or acquired origin. A distinction should be made between true and false hernia. The true hernia has a distinct sac, consisting of a layer of peritoneum inside and a pleural layer outside. Most of the cases of traumatic hernia, due to crushing injuries or stab or gunshot wounds, are of the false variety. The hernia may occur through the three larger preformed natural openings of the diaphragm which permit the esophagus, aorta and vena cava to pass, or the smaller ones for the passage of the azygos veins and splanchnic nerves. Besides, it may occur in congenitally weak areas of the diaphragm, like the foramen of Morgagni, which lies on each side at the costosternal portion, or it may occur in the posterior portion, in the space between the costal and lumbar portions of the diaphragm. Gossnitz[1] has shown by studies in comparative anatomy that this area is the last to be closed, and that defects invariably occur in this region.

DIFFERENTIAL DIAGNOSIS ACCORDING TO ROENTGENOLOGIC FINDINGS

Eventration	Hernia
High dome of the diaphragm with no loss of contour	High diaphragm with loss of contour, a portion being regular, a portion being blurred
No gas shadows above liver shadow	Gas or barium shadow seen above liver shadow
	Gastric deformity
More likely to be congenital	Obstruction
Paradoxical movement of the diaphragm	Presence of gas or fluid or both in the hernial sac.

Various abdominal viscera are found in the hernia, but the stomach and colon are by far the most common. The left side is the one most often involved, probably because the liver protects the diaphragm on the right side. According to Vogel,[2] the left side is involved fifteen times as often as the right. The size is variable, from some so small that they can hardly be demonstrated, to others so large that almost the entire diaphragm is involved.

SYMPTOMS

There are no pathognomonic symptoms. Many cases give no symptoms at all. Especially is this true in those of congenital origin. The complaints are variable and arise either in the abdomen or in the chest, depending on the amount of interference with the function of the various organs involved in or near the hernia. The displacement of the thoracic organs by the hernia and the constriction of the hernial ring on the contents of the sac, as well as the effect of adhesions both inside and outside the sac, all serve to modify the clinical picture.

In some cases embarrassed respiratory action causes dyspnea and cyanosis. In others, cardiac displacement may cause palpitation and mediastinal discomfort and dizziness. Gurgling and rumbling sounds may be heard in the affected region.

Gastro-intestinal symptoms are not constant. Dyspepsia, belching, nausea and even vomiting may occur. Hematemesis has also been reported. Pain in the upper abdomen is frequent, and it may be felt in the chest on the affected side. The pain is usually increased by respiration. At times there may be colicky pains, with the clinical picture of subacute or acute intestinal obstruction.

Constipation is frequent, and strong cathartics may be necessary for free evacuation. Our case presents the clinical picture found in Hirschsprung's disease. The toxic picture, during the constipated stage with the accumulation of feces in the colon, was relieved by forced evacuations from time to time of large amounts of fecal material.

6. Pardee, H. E. B.: Notes on Digitalis Medication, I, The Rate of Disappearance of Digitalis from the Body, J. A. M. A. **73**: 1822 (Dec. 13) 1919.

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Gossnitz: Inaug. diss., Jena, 1903.
2. Vogel, K. M.: Am. J. M. Sc. **145**: 206-219, 1913.

There is usually a loss of weight during the acute stage, with a gain in the interval, when free from symptoms. The position of the patient also influences the symptoms. Some are unable to lie down because of aggravation of the complaint, while others are able to lie only on one side.

PHYSICAL SIGNS

In the large hernias the findings are usually definite and easily recognized. In the small ones, however, it may not be possible to demonstrate any abnormal findings.

The affected side may appear larger. Litten's sign is often absent on the affected side. The heart may be found to be displaced.

Tympany may be elicited where normal pulmonary resonance should be found. The note may change with posture or at different times, owing to the presence of fluid in the viscera in the hernia or fluid in the sac. This variation in the findings is very significant for the diagnosis of hernia. Breath sounds are usually absent over the tympanitic or dull area. Frequently gurgling sounds are heard. Succusion may be elicited.

The roentgen-ray findings are the most important and conclusive. With the fluoroscope one can readily see the high position of the diaphragm on one side, with one or more of the abdominal viscera protruding into the elevated area. With the opaque meal the stomach or colon or both may be demonstrated in the hernia. The displacement of the heart and the lungs and the change of position of the abdominal viscera are all readily seen. The stomach alone, or the stomach and colon, are found most frequently in the sac. The small intestine and the liver and the spleen have also been found in the hernia.

DIFFERENTIAL DIAGNOSIS

Hernia of the diaphragm must not be confused with eventration, pneumothorax, subphrenic abscess or diverticulum of the esophagus. The differential diagnosis is usually not difficult. However, eventration offers a great deal of trouble in differentiating it from large hernias. The term eventration is rather loosely used by some authors. It should be limited to cases with atony or paralysis of half of the diaphragm. J. P. and D. Y. Keith state their differential diagnosis based on roentgenologic findings as in the accompanying tabulation.

In cases with hernia, bismuth can often be demonstrated in the colon above the level of the bow line of the diaphragm.

TREATMENT

Aside from palliative medical measures, the only treatment is surgical repair of the hernia. Although the operation is at times very difficult, yet a number of successful operations are recorded in the literature.

REPORT OF CASE

History.—Mr. M., aged 42, who consulted us in November, 1919, sixteen years before, while wrestling, felt a sudden severe pain in the left side, and this continued for several days. Since that time he had not been well. He had had recurring periods of abdominal distress, especially associated with constipation. By forced measures, a large evacuation was induced at these times and was accompanied by temporary prostration. Then he would have an interval of comparative comfort. These attacks had been coming more frequently until there were more than one a week. Between attacks stools were frequently ribbon-like and contained mucus, but no blood was ever noted. He had frequent headaches and malaise. There were attacks of severe epigastric pain in the early morning hours, which were relieved by alkalis, and he also had had sharp pains several hours after meals, which were relieved by food. He had never had nausea or vomiting.

Physical Examination.—The patient was well nourished and robust. The eye reactions were normal; the reflexes were intact, and likewise no abnormalities were to be found in the nervous system. The lymphatic system showed nothing abnormal. There was no deformity of the chest. The apex beat was seen faintly toward the ensiform. Litten's sign was absent on the left side. There was an area of tympany below the angle of the scapula on the left, and the breath sounds were faint in this region. Gurgling sounds were heard in the axilla and beneath the angle of the left scapula. The right border of the heart was found 1 inch to the right of the right sternal border, and the apex was displaced inward and downward. The heart tones were normal. The systolic blood pressure was 112, and the diastolic 85. The abdominal findings were negative. The liver was normal and the spleen could not be palpated. The urine showed no albumin, sugar or casts, but did show a large amount of indican. The stomach test revealed normal acids and ferments, and there was no occult blood. The motility was normal. The stool showed no occult blood. The blood gave a picture of secondary anemia of moderate grade. The Wassermann test was negative. The fluoroscopic examination revealed a high diaphragm on the left side which involved the inner two thirds. In this pouch gas-filled viscera were seen. The heart was crowded to the right.

On giving barium in buttermilk, the stomach was found in this pouch and to its left the splenic flexure of the colon was seen. This was more apparent when the patient was in the reclining position. The stomach did not show an hour-glass appearance. Food dropped readily from the part above the



Left leaf of diaphragm high and arched; stomach in pouch; to right and below, splenic flexure of colon.

bow line of the diaphragm into the part of the stomach below and the stomach emptied in normal manner. The duodenal bulb was normal. The liver shadow was normal and there was no tenderness over the appendix or the gallbladder.

ABSTRACT OF DISCUSSION

DR. JAMES T. CASE, Battle Creek, Mich.: In five cases of diaphragmatic hernia the stomach was involved in the hernia, and in four cases the colon was involved. Three of these nine patients were hunchbacked, and I have wondered if it would not be possible that deformity of the spine and the accompanying unequal pull on various portions of the diaphragm might not predispose to this condition.

DR. ERNEST CLYDE FISHBAUGH, Los Angeles: I had one case in which, from the history and the physical examination, I felt sure such a condition existed. On the morning of the examination, the symptoms of fullness in the stomach, belching and distress, of which the patient complained, were absent. Roentgen-ray examination revealed a normal stomach, in normal position. Next day his symptoms were present. The stomach was again roentgenographed and the greater part of it and of the splenic flexure were in the left side of the thorax. This case showed the possibilities of a roentgen-ray error in the study of diaphragmatic hernia.

DR. W. O. NISBET, Charlotte, N. C.: A man was standing on a table doing some work. The table tilted and he was precipitated from a second story window into a pile of drygoods boxes on the ground below. He was considerably injured about the thorax, and very much shocked. During the roentgen-ray examination the diaphragmatic hernia was discovered. The man gradually recovered from his thoracic injuries and although the hernia remained unreduced, was back at his work and able to take his food satisfactorily.

DR. F. A. SPEIK, Los Angeles: A boy, 5 years old, exhibited symptoms of ulcer of the pylorus, together with signs of obstruction. He had a hernia of the stomach through the left leaf of the diaphragm. He was operated on by the subdiaphragmatic method, and entirely relieved of the obstructive symptoms, and cured. As for the differential diagnosis of diaphragmatic hernia, particularly with relation to diverticulum of the cardiac end of the esophagus, one is apt to miss a diverticulum in the lower end of the esophagus by depending entirely on the plate method, as most of the bismuth or barium may stay above the diaphragm, and the condition may not be recognized as a diverticulum of the esophagus. I saw such a case diagnosed hernia of the stomach by a competent roentgenologist.

DR. MILTON PORTIS, Chicago: One of the authors referred to in the literature said that he had operated and found a small diverticulum that he had not been able to diagnose either clinically or roentgenologically. He emphasized the fact that in case of obscure abdominal symptoms, when the abdomen was opened and the definite lesions were not found in the usual, ordinary places, he always searched the diaphragm very carefully for evidences of these small hernias.

SOME DIFFICULTIES IN THE DIAGNOSIS OF OSTEOSARCOMA*

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CINCINNATI

The early recognition of osteosarcoma is probably one of the most difficult, as well as one of the most important problems in the differential diagnosis of bone diseases. As its primary origin is in the medulla or periosteum of bone, as it is not confined to any particular age in life, and as it not infrequently runs an irregular clinical course on account of the wide variation in its histologic elements, its early recognition is extremely difficult. The fact that a deferred diagnosis not infrequently means the sacrifice of the patient's life, while a mistaken diagnosis may result in the needless loss of the patient's limb, brings to us a realization of the importance of a careful study of this problem.



Fig. 1.—Multiple sarcoma of the spine, showing expansile tumors of the vertebrae simulating circumscribed abscesses.

Sarcoma involving the spinal vertebrae and the short bones, such as the tarsus, is probably more difficult of recognition than that occurring in the long bones. Central or medullary sarcoma is frequently more confusing than the periosteal variety. Occurring, as it does, where we are accustomed to find chronic inflammatory processes developing, it is frequently confused in the beginning with tuberculosis, syphilis and osteomyelitis. On account of its proliferative character it not infrequently takes on characteristics simulating new growths, such as osteoma, chondroma, myeloma, and myositis ossificans.

Since there are no pathognomonic symptoms or definite serologic reactions whereby we can recognize the early appearance of primary osteosarcoma, we are compelled to rely for a diagnosis on: (1) the clinical data; (2) the roentgen-ray examinations, and (3) exploratory operation with macroscopic and microscopic examination of the pathologic material.

CLINICAL DATA

The clinical course of osteosarcoma varies according to its origin and degree of malignancy, and whether it is of the medullary or periosteal variety. Medullary sarcoma occurring in the long bones usually has its origin in the region of the metaphysis, and soon takes on a rapid destructive effect, invading the shaft and breaking through the cortex, where it

* Read before the Section on Orthopedic Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

is prone to involve the surrounding tissues; the epiphyseal and joint cartilages are the most resistant barriers to its invasion. Pain, of a severe boring character, is often the first indication of its presence; and on account of its proximity to the joint and the accompanying effusion which may appear in the articulation, the condition is often mistaken at first for an arthritis. Since the pain is neither increased by motion nor relieved by fixation, the arthritic involvement can usually be ruled out. An irregular temperature with elevation to 99 or 100 F. occurs, especially in the rapid growing form. A leukocytosis may be present to some extent, and some authorities believe that an eosinophilia is a sign of value in the diagnosis of this variety. The Bence-Jones protein reaction in the urine may be present; but since this can occur in other severe bone marrow affections, it is of doubtful value in differentiation. Since metastasis is disseminated through the blood stream, involvement of the lymphathatic glands does not occur until late in the disease, with the possible exception of melanotic sarcoma. Metastatic deposits in the lungs may occur, producing an irritating cough and the characteristic oval sarcomatous areas depicted in the roentgenogram. Decalcification of bone at the seat of the lesion may result in a spontaneous fracture. The rapid growth of the neoplasm and the infiltration of the surrounding tissues cause pressure on the deep veins, resulting in an engorgement of the venous circulation in the overlying skin. Cachexia soon develops, the patient rapidly loses weight, and life is rarely prolonged for a period exceeding two years, in inoperable cases.



Fig. 2.—Lateral view of spine shown in Figure 1, revealing the crushed vertebral bodies.

Sarcoma of the spine is usually of the medullary variety, and most frequently involves first the bodies of the vertebrae. The clinical characteristics are similar to those occurring elsewhere in the osseous system, with the exception that here we soon encounter the formation of a gibbus from the crushing of the vertebral bodies by the superincumbent weight, and the rapid development of a paraplegia from the destructive invasion of the spinal cord. The examination of the spinal fluid may give a positive reaction in Lange's gold test, and the yellow color of the fluid may suggest the presence of malignancy.

The clinical picture of periosteal sarcoma varies but slightly from the myelogenous variety. The pain which the patient experiences is not of the severe boring character, but more of an ache; the tumor mass, being external to the shaft of the bone, is more easily recognized, and the early invasion of the contiguous joint is more likely to occur.

ROENTGEN-RAY EXAMINATION

While the roentgenogram is one of the most important adjuncts in differentiating bone diseases, it is often impossible to make a diagnosis, by the roentgen ray alone, in the early or atypical cases of osteosarcoma. It may necessitate serial examinations as well as a careful study of the full clinical data, and occasionally an exploratory incision to be positive of the true nature of the disease.

The roentgen-ray picture of central sarcoma of the long bones is one of irregular destruction, with little or no tendency toward new bone formation until the periosteum is involved or broken through. The lesion is usually confined to one area, although multiple lesions are occasionally observed. Medullary sarcoma in the beginning may be confused with myeloma, cyst and osteomyelitis. Since they frequently have the same point of origin and are more or less destructive in character, it may require repeated roentgen-ray examinations to differentiate these conditions. In myeloma, the globular outline of the tumor is maintained during its expansion; the swelling shows little or no tendency to extend along the shaft or break through its capsule and invade the surrounding tissues and, when completely removed, does not recur or produce metastasis; myeloma was formerly classified as a nonmalignant giant cell sarcoma, and is probably the same condition as described by Barrie under the title "chronic hemorrhagic osteomyelitis." In cysts, the cell wall is usually sharply outlined and clearly defined, and shows no tendency toward rapid expansion and invasion.

In suppurative osteomyelitis the roentgen-ray findings are often not definite enough in the beginning to make a diagnosis; but as the disease progresses, the inflammatory redness of the skin appearing over the rapidly growing tumor would suggest a pus infection rather than malignancy.

Sarcoma involving the spine may portray an expansile tumor of the vertebrae simulating a circumscribed abscess when viewed in the anteroposterior position; and at the same time a lateral view may reveal the crushing of the vertebral bodies, as seen in Pott's disease. In other cases the extensive destruction of the vertebrae, accompanied by more or less hyperplasia of bone, may resemble syphilitic spondylitis. The severe pain, which is not relieved by fixation, the rapid inva-

sion of the surrounding tissues and the early involvement of the spinal cord, with a resulting paraplegia, strongly suggest malignancy.

The roentgen-ray picture of periosteal sarcoma is more distinctive in character, the new bone formation showing a trabeculation or spiculation at right angles with the shaft of the bone and presenting a smoky appearance. Early in its course it may be mistaken for osteoma, osteochondroma and myositis ossificans. Osteoma and exostoses are readily recognized, as they are conical or pedunculated, and their sharp outline is continuous with the bone from which they arise. Osteochondroma, when growing from the epiphysis laterally, gives a rather typical appearance; when of central origin it is more confusing. Either form may at any time take on the characteristics of malignancy, indicated by rapid growth and destruction of the enveloping capsule.

Myositis ossificans and ossifying hematoma, the latter occurring in subperiosteal hemorrhage from injury or scurvy, show a definite bony border due to the deposit of calcium salts, and the bone is laid down parallel to the shaft rather than perpendicular, as seen in periosteal sarcoma.

The diagnosis is most difficult when a rapidly growing periosteal sarcoma invades the adjacent joint; as the disease spreads to the joint capsule and periarticular tissues, the joint takes on a fusiform shape and symptoms simulating a tuberculous, syphilitic or hemophilic lesion, the latter particularly when blood is aspirated from the joint.

Carcinoma of the osseous system is rarely confused with sarcoma, since carcinoma is of metastatic origin and always secondary to cancer elsewhere in the body; when occurring in bone, it usually attacks the cancellous tissue first and shows areas of regeneration along with the destructive process. I have seen a pathologic fracture of the femur heal under the influence of mechanical fixation only to break down again after the support was removed.



Fig. 3.—Sarcoma of spine, showing extensve destruction extending to the ribs.

EXPLORATORY INCISION

Clinical observations and roentgen-ray studies should not be continued over too long a time. When the clinical data and roentgen-ray examinations are not sufficiently distinctive to make a diagnosis, an exploratory incision is justified. If the presence of malignancy is established, operative measures, unless they are contraindicated, should be carried out at once, as cells set free from traumatizing the tumor mass may produce metastasis. To one familiar with the gross appearance of sarcomatous tissue, a macroscopic examination is usually sufficient. When a microscopic examination is called for to corroborate the diagnosis, too much reliance must not be put in the pathologic report, especially when it conflicts with the clinical and roentgen-ray evidence, as the report may be made from sections that are not typical.

ABSTRACT OF DISCUSSION

DR. FREDERICK J. GAENSLEN, Milwaukee: Diagnosis of these conditions is at times a very difficult proposition. The work that Dr. Bloodgood has been doing in collecting clinical data and operative results in cases of bone tumors seen by many men throughout the country is very important and will without doubt have far-reaching results. Not any one surgeon is apt to see in his own practice a sufficient number of these cases to give him that positive knowledge which is so essential in the individual case. The exceptions to the rules are too numerous. It is only by coordinating a large amount of clinical material that we can enlarge our own knowledge of the lesions in question. There has been a question as to whether the term giant-celled sarcoma should be used at all. The word sarcoma immediately conveys an idea of malignancy, indicating the advisability of radical surgery, and unless we are on our guard as to the condition actually present we may be led to do more radical surgery than necessary. Dr. Cofield has dwelt on the macroscopic findings in these cases. In all cases in which there is any legitimate doubt as to the nature of the tumor, one should operate with a tourniquet in place, and if the gross appearance of the tumor and of the lining of the wall is such as to make you feel positive that you are dealing with a malignant tumor, then amputation should be done. The application of a tourniquet is very important, because we do not know just when the metastatic deposits appear. During the operation there is much opportunity for dissemination of the tumor elements, in which event these cells might be sent into the blood stream almost immediately and possibly into the lungs where a great many of the deposits occur. This section might do well to undertake in an organized way the study of these conditions. If that plan were considered feasible and a committee were appointed to carry out the details, suitable history sheets could be gotten up so that in the taking of histories none of the important points would be neglected. The Wassermann test should, of course, be used in all cases.

We see few cases of malignant disease of the spine, and the fixation principle mentioned by Dr. Cofield is very important. If you have immobilized the trunk or an extremity for a supposedly tuberculous lesion and find there is no relief from pain in spite of efficient fixation, the possibility that the condition is malignant should be gone into very carefully.

DR. MELVIN S. HENDERSON, Rochester, Minn.: Dr. Gaenslen emphasizes that we should not be too radical. Nevertheless,

when our treatment is not radical enough in those borderline cases that are malignant, our patients will succumb to conservative surgery. The fresh tissue examination at the time of operation is essential in the handling of these conditions. Sometimes the pathologist cannot make a definite diagnosis and we are in a quandary as to what should be done. It should be remembered that the clinical history in this group is just as important in the making of a diagnosis as is the microscopic picture, and often more so. I have relied on a negative microscopic examination for malignancy in cases in which the patient has exhibited positive clinical symptoms, only to have the patient die with metastases in the lung. If the case is clearly malignant, but one is unable to obtain for the pathologist a piece of tissue satisfactory for his examination, the measures adopted should be radical enough to deal safely with the clinical findings. Amputation should not be tabued. The pendulum has swung too far toward conservatism. The giant-cell tumors, which are nonmalignant, have come into such prominence in recent discussions of the subject that we are apt to include with them the malignant ones. Too much care cannot be exercised in weighing all the evidence before making the diagnosis. We must be just as careful not to err on the conservative side as on the radical, for when we do err on the side of conservatism, we jeopardize the patient's life.

DR. HARRY E. MOCK, Chicago: There is no problem in industrial surgery that causes more trouble than does this one of bone disease. Occasionally a slight injury occurs and the patient does not recover. The disability continues month after month, and the employer or the insurance company that is paying compensation wants to know why. We answer that it is some kind of tumor, or that some trouble connected with the bone has developed. The differential diagnosis as to whether a slight injury that has been sustained has caused osteosarcoma has a very important medicolegal bearing in industrial surgery. I recall two cases, in one of which a man suffered a slight injury to his femur by pulling on a rod which suddenly gave way and struck his knee, causing a slight contusion above the knee. This continued to swell, and in two weeks had swollen to an enormous extent. It was incised in the belief that an abscess was present, but none was found. Gradually the incision healed, the swelling went down, the man was up and around, when suddenly after about two months, the knee again became swollen and painful. A roentgenoscopy disclosed nothing. The case went along for ten months with compensation being paid constantly. Finally roentgenoscopy showed a tumor of the leg, and amputation was done. The man made a good recovery and after four months was back at work. However, he had had a disability extending over a period of a year and two months which could have been cut down by early diagnosis of the osteosarcoma. The other case was that of a man who had a number of mail sacks, weighing several hundred pounds, fall on his femur and severely contuse it. As the swelling did not go down a roentgenogram was taken and a diagnosis of osteomyelitis of the femur was made. The man refused operation and was treated by being kept quiet, etc. Finally another roentgenogram was taken and one of our leading surgeons made the diagnosis of osteosarcoma of the femur and advocated amputation at the hip. The man refused to have the amputation done. He went to a sanatorium to a doctor who diagnoses every disease by looking at the retina. He put the patient on hydrotherapy, wrapped the leg in clay and baked it, had him take building-up exercises, prescribed a good diet and had him sleeping outdoors. One year and two months after this man had been at this sanatorium the U. S. Compensation Commission asking me to investigate the case, as the patient had requested the government to pay his bill. I found that he had two discharging sinuses from the femur. A roentgenogram showed definite osteomyelitis of the femur that had practically healed, except for two small places where there was a little destruction of bony tissue. If that surgeon had amputated at the hip there would have been a loss to the man and to the government and to the entire economic situation.

DR. EDWIN W. RYERSON, Chicago: It is very fortunate that cases of bone sarcoma are rare, because the difficulties of diagnosis are so extreme. It is also fortunate that diagnosis is easier in cases of osteosarcoma of the extremities than in the spine, because we can cure many patients when the extremity is involved, whereas we cannot do very much in cases in which the spine is involved. A medical man fell from a street-car and slightly injured his back. Two months later he became paralyzed and a slight kyphosis appeared in the dorsal region. A number of eminent surgeons concurred in the diagnosis of tuberculosis of the spine. The characteristic and very important sign in this case was that the pains which radiated from his back were intense and were not relieved by the proper orthopedic treatment for tuberculosis of the spine. For eight years he lay on his back, suffering intense pain and completely paralyzed. Finally, after we had arranged to perform a bone grafting operation on the spine in the belief that the condition was tuberculous, the surgeon in charge sent word that a swelling had appeared over the kyphosis. Aspiration was done and nothing but blood was found. We then decided the condition was sarcoma and told the patient that his case would shortly terminate fatally. Six years after onset of the trouble, he was still lingering and it was concluded that the trouble must be tuberculosis. He refused operation. He then went to Canada and lived two years longer. Necropsy showed osteosarcoma. The man had lived eight years with an osteosarcoma. Dr. Cofield's case was neither sarcoma nor tuberculosis. It was probably osteitis fibrosa.

DR. J. D. GRIFFITH, Kansas City, Mo.: Do we have sarcoma of any kind without pain? My reason for asking this question is that a week before leaving home a man came to me because of a "lump" on his leg which had appeared ten days previously. He was 87 years of age, very active, beyond the ordinary sarcoma age. He had never had the slightest pain in the mass. On measuring the thighs I found a difference of 8½ inches in the circumference of the two limbs. He was given roentgen-ray treatments. The growth went down four inches in a week. Microscopic examination of material aspirated from the tumor failed to disclose anything except muscular tissue. The growth is freely movable. The roentgen ray does not show that it has any connection whatever with the underlying bone. No glands are involved. What is it?

DR. HARRY M. SHERMAN, San Francisco: A lumber-jack came to me with a fracture of the left humerus. The roentgenogram showed a tremendous cyst. He had been doing his work perfectly well, without any knowledge of anything the matter with the arm until he fell and fractured it. I did an exploratory operation because the tuberculin and the Wassermann tests were negative. The pathologist who examined the material I scraped out said it looked like sarcoma. The patient had had no pain or tenderness or any other evidence of malignancy. I do not know what the condition is and am waiting to see how it turns out. A young man came with a swelling at the upper end of the humerus. He was negative to everything, and I took him into the hospital on a clinical diagnosis of sarcoma. I made an exploratory incision and opened into a cavity which contained blood. The pathologist said the tissue "looked like" sarcoma. I took the arm off, and then the pathologist demonstrated tuberculosis. I had amputated an arm at the shoulder for a tuberculous process which would have been perfectly amenable to ordinary protective treatment or to an excision.

DR. WILLIS C. CAMPBELL, Memphis: Two or three years ago I saw a man who had intense pain in the sacrum and coccyx. That was the only symptom at the time. The roentgen-ray examination and all tests were absolutely negative. I kept him under observation for about two weeks and finally recommended rest with simple brace. He refused to accept this advice. He saw other surgeons, but finally returned home and his physician incised the pain area. There was a terrific hemorrhage. A small portion of the bone was examined and

a diagnosis of sarcoma was made. Later a diagnosis of carcinoma was made elsewhere and he was treated with radium. After several months the diagnosis was changed to sarcoma. The man finally died from metastases due to sarcoma. Another case was that of a doctor's son, who showed a distinct thickening of the upper third of the femur which looked very much like a low grade osteomyelitis. He had some pain, not a great deal, some limitation of motion in the hip-joint. I operated, found the bone dense, and some sequestrums. The pathologist reported that the condition was a low grade osteomyelitis, a diagnosis in which many men who saw the roentgenograms concurred. After several months the swelling in the leg had gradually increased, cachexia developed and the boy finally died. The differential diagnosis in these cases is a difficult problem and we have to depend largely on the macroscopic findings at the time of operation. In many cases we cannot determine the condition by microscopic examination, but by the macroscopic findings we often can. In advanced cases the correct diagnosis is too late.

DR. ROBERT CAROTHERS, Cincinnati: In a case I saw there had been a "gunshot" diagnosis of sarcoma of the upper end of the femur. A man of about 40 gave a history of traumatism to the outer surface of the leg about four weeks previously. He was suffering some pain and was not in good condition physically. He was given a thorough examination. The roentgenographer reported that the tumor was a bone cyst, possibly sarcoma. The patient was prepared for operation, an exploratory incision was made, and we found a gelatinous substance which came out in large quantities. The pathologist examined this material and reported sarcoma. Amputation was suggested, but I did not believe the patient could stand the operation. We left the wound wide open and introduced 25 mg. of radium. This man made an uneventful recovery. We have given him roentgen-ray treatment and also Coley's fluid.

DR. ROBERT B. COFIELD, Cincinnati: It is unfortunate that we are not able to diagnose these cases early enough to save life. It is only when the condition has gone on to such an extent that metastasis has taken place that we realize what we are up against. Dr. Mock's discussion of the question as relating to industrial accidents is very interesting. Occasionally sarcoma will follow an irritating trauma, as carcinoma is often preceded by some injury or constant irritation. Dr. Ryerson's case is very interesting. The only question in my mind is, did the man really have sarcoma for eight years, or did he first have something else and the sarcoma developed later? Osteosarcoma, especially of the spine, usually develops rapidly. During the past three or four years I have seen three cases of osteosarcoma of the spine. Dr. Griffith's case was probably not osteosarcoma, but some growth in the soft tissues. I do not believe that sarcoma in the soft parts causes the severe pain of sarcoma of the bony tissues. I have been led to believe, and feel still more strongly today after hearing this discussion, that we should not depend too much on the report of the pathologist. We should base our diagnosis on the clinical data and serial roentgen-ray examinations, and if necessary on the macroscopic rather than on the microscopic findings.

The Rights of Children.—How far the states have gone in modernizing their attitude toward the delinquent and the neglected child is shown by the Children's Bureau of the U. S. Department of Labor, in a bulletin entitled "A Summary of Juvenile Court Legislation in the United States." Because of the differences in the structure of their judicial systems, the states have had to meet the problems by various methods of legislative attack. In every state, however, the attempt has been made through legislation to solve the difficult problems involving the unfavorable conditions—domestic, social and economic—under which children are living and developing today. The summary embodies an analysis of the legislation in force at the beginning of 1919, with an appendix giving additional legislation and amendments enacted during 1919.

TYPES OF PNEUMOCOCCI IN THE THROATS OF ONE HUNDRED NORMAL PERSONS *

JACOB MEYER, M.D.
CHICAGO

Stillman [1] studied the mouth secretions of 297 individuals in whom no history of contact with an acute or recent case of lobar pneumonia could be obtained, and found pneumococci in 116 cases. Type I was found in 0.8 per cent. of the cases, Type II not at all, Types II A, II B and II X in 18.2 per cent., Type III in 28.1 per cent. and Type IV in 52.9 per cent.

The present study was made on 100 normal individuals of varying ages, in whom no history of contact with an acute or recent case of lobar pneumonia could be obtained. The work was carried on during February, March and April, 1920, following the epidemic of influenza in Chicago. Swabs from the pharynx and tonsils were spread on 5 per cent. goat's blood agar plates and incubated for from twenty to twenty-four hours. Colonies resembling the pneumococcus were inoculated in plain broth and the organisms tested as to bile solubility and fermentation of inulin. Bile solubility was determined by adding one part of fresh sterilized ox bile to four parts of a broth culture and incubating the mixture for one hour. Type determinations were made by the precipitin and agglutinin methods.

Pneumococci were found in twenty-one intances. Types I and II were not found in any case. Type II A was isolated once. Type III occurred in three instances, and Type IV in seventeen. The organism identified as Type II A by the precipitin method was bile soluble but did not ferment inulin. Of the seventeen strains of pneumococcus Type IV, eight were apparently more readily soluble in bile than the remaining nine. As the diagnosis of this group largely depends on the bile reaction, the bile test was repeated. All seventeen strains were found bile soluble, but the results did not correspond closely with those obtained when the organisms were first isolated. Keegan [2] found "that the differentiation of Type IV pneumococcus and the pleomorphic forms of *Streptococcus viridans* is not without difficulty, and that some may be found to fall within the *Streptococcus viridans* group." Bile solubility tests of broth cultures were not found very reliable for the identification of the pneumococci, some of the fixed types identified by agglutination not showing distinct bile solubility. Similar observations were noted by Nuzum,[3] who found that pneumococcus Type IV and allied green producing organisms varied as to bile solubility and inulin fermentation. Tunnicliff [4] has recently made similar observations as to the green producing cocci in influenza. The present observations point in the same direction. Attention is also called to the difficulty in differentiating colonies of pneumococci from colonies of *Streptococcus viridans*. It is therefore quite likely that the variations in the percentage of pneumo-

* From the John McCormick Institute for Infectious Diseases.

1. Stillman, E. G.: J. Exper. Med. **24**: 651 (Dec.) 1916; **26**: 513 (Oct.) 1917.
2. Keegan, J. J.: The Prevailing Pandemic of Influenza, J. A. M. A. **71**: 1051 (Sept. 28) 1918.
3. Nuzum, J. W.; Pilot, Isadore; Stangl, F. H., and Bonar, B. E.: Pandemic Influenza and Pneumonia in a Large Civil Hospital, J. A. M. A. **71**: 1562 (Nov. 9) 1918.
4. Tunnicliff, Ruth: Observations on Green Producing Cocci of Influenza, J. Infect. Dis. **26**: 405 (May) 1920.

coccus Type IV found in normal persons may be due to difficulties of differentiation between pneumococci and green producing streptococci.

104 South Michigan Avenue.

Clinical Notes, Suggestions, and New Instruments

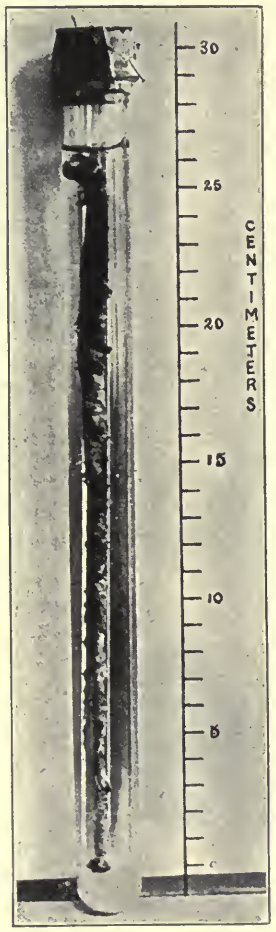
REPORT OF AN EXTREMELY LONG VERMIFORM APPENDIX

GEORGE B. LAKE, M.D., COLUMBUS BARRACKS, OHIO
Major, Medical Corps, U. S. Army

The measurement of the length of the vermiform appendix in thousands of cases has established the average as from 3 to 3½ inches (7.5 to 8.75 cm.); but wide variations from this length are not infrequent. Morris[1] states that "we occasionally find an appendix eight inches long." Gray's Anatomy gives the extreme variations in length as from 1 to 23 cm.; Morris' Anatomy as from 1 to 6 inches: Deaver's Surgical Anatomy as from 1 to 23 cm.; Keen's Surgery as from 1 to 9 inches; and Da Costa's, "Modern Surgery" states, on the authority of Monks and Blake, that in 641 necropsies the shortest appendix measured one-third inch and the longest 9⅓ inches.

Kelly, in "The Vermiform Appendix and Its Diseases," states that the longest appendix on record measured 33 cm., and the second longest which he records was 24 cm. He reports three others, 21.5, 22 and 23 cm. long, as having been of such extreme length as to be worthy of particular notice.

A search of such literature as is available fails to reveal any figures different from those quoted, and in view of this fact it is believed that the case to be detailed, in which an appendix measuring 29.4 cm. (11¾ inches) in the fresh state and 26.5 cm. (10 9/10 inches) after preservation, was removed at operation, will be of interest as being the second longest so far reported, particularly as Morris[1] states that "measurements taken from specimens removed at operation will give too short an average length, because the structure contracts almost immediately on separation from the cecum."



Appendix removed from colored soldier.

It is also worthy of note that in comparing the length of appendixes removed at operation with those measured at necropsy, the former will average about 1 cm. relatively shorter than the latter for the reason that approximately this amount of the organ remains attached to the cecum after appendectomy.

The specimen here described has been forwarded to the Army Medical Museum, Washington, D. C. The patient, J. P., a colored soldier, aged 22, a cook, had had "stomach trouble," on and off for more than a year. A few days before the present trouble he had an attack which was relieved by cathartics. June 1, 1920, he complained of severe griping pain in the lower abdomen and the small of the back. He had vomited once or twice.

The patient was normal except for exquisite tenderness all over the abdomen. The lightest touch anywhere on the body was followed by a strong voluntary contraction of all the abdominal muscles. Decubitus was normal. The temperature was 99.4 F., pulse 82, and respiration 20. There was no localization of pain or tenderness anywhere.

This condition continued until June 3, with slight attacks of vomiting. Pain and tenderness were never localized. The temperature was never above 99.4. June 2, the leukocyte count was 19,500, with 73 per cent. polymorphonuclears; June 3, 21,500, with 68 per cent. polymorphonuclears. On the latter date a diagnosis of appendicitis was made and appendectomy performed. Masses of very dense and extensive adhesions were found. The appendix was not palpable. With great difficulty the cecum was brought into the wound after numerous adhesions had been broken up. The appendix was found to be entirely retroperitoneal, dipping down into the pelvis and passing upward and backward to a point nearly opposite the umbilicus. The base of the appendix was cleared by making an incision in the peritoneum over the head of the cecum, and the organ was then carefully dissected out with the finger during which process it ruptured, discharging several cubic centimeters of pus, which gave a pure culture of *Streptococcus hemolyticus*.

When removed, the appendix was entirely denuded of peritoneal covering, and measured 29.4 cm. in the fresh state. The rupture had occurred at the tip. The stump of the appendix was buried with Pagenstecher's linen, and the wound in the peritoneum around the cecum was closed. One drainage tube was inserted into the pelvis and one up to the liver. The wound was closed in the routine manner. Recovery was rapid and uneventful.

1. Morris: Lectures on Appendicitis, New York, G. P. Putnam's Sons, 1895.

STERILIZING URETERAL CATHETERS

WILLIAM S. ROBERTSON, M.D., CHARLESTON, W. VA.

The difficulty of sterilizing ureteral catheters without boiling may be overcome in this manner: A tall cylinder (1,000 c.c.) is filled with any suitable antiseptic solution, the eye-end of the catheter is carried to the bottom of the vessel, the catheter is filled with the solution by means of a convenient syringe, and the distal end of the catheter is promptly depressed so that siphonage is established. The catheters require no further attention. The lumen is bathed with a constant antiseptic *current* until the cylinder is emptied, which is from fifteen to thirty minutes. The procedure may be repeated as often as deemed necessary by transferring the siphoned solution to the original container. The simplicity and effectiveness of this method should appeal to all cystoscopists.

Coyle and Richardson Building.

REPORT OF CASE OF FRACTURED CERVICAL VERTEBRAE

F. L. PRESTON, M.D., EL DORADO, KAN.

N. P. B., a man, aged 57, farmer, height 5 feet 7 inches, weight 170 pounds, strongly built and in good health, was struck from the back by an automobile, Feb. 2, 1920, and thrown violently forward with the head bent on the chest. The car then hit him the second time and stopped with the front wheels on his back. The patient was carried to the office of a physician and told he was all right and could be taken home. At this time he was suffering great pain in the neck and could not turn the head to either side, nor could he bend it forward or backward. He was not able to walk or sit up in bed because of a "paralyzed condition" in the legs and one arm, and because he could not hold his head up. He remained in bed for some weeks, using only liniment on his "lame and sore and stiff" neck.

He gradually recovered from the muscle weakness, except in the right arm, and the pain in the legs disappeared. He continued to have the lame and stiff neck, and this finally brought him to the hospital, June 12, for a roentgenogram, which revealed plainly the present condition of the cervical vertebrae. The length of time since the injury has of course made the outline of fragments quite indistinct, because of callus formation.

Physical examination reveals the sixth cervical spine 1 inch out of line with the seventh, the neck very tender and the muscles rigid. He complains of a great deal of tenderness and a "slipping feeling" in the region of the atlas, and severe pain on pressure over the sixth and seventh cervical vertebrae. He says it makes him "tingle all over." The head moves some with difficulty, probably because the patient is afraid to let the neck be flexed. I was unable to detect any nervous disturbance or suggestion of one, except as mentioned above. The patient seems in perfect health, but when he rides in a car he supports his head on his hands, and when he gets up from a prone position, some member of the family helps him raise his head.



Present condition of cervical vertebrae.

224 West Central Avenue.

INTRA-UTERINE INTESTINAL OBSTRUCTION FROM INSPISSATED SEBACEOUS MATERIAL

ARTHUR L. SMITH, A.B., M.D., AND CARL H. BASTRON, M.D., LINCOLN, NEB.

REPORT OF CASE

History.—Baby R. was born, Nov. 6, 1919. The presentation was right occiput posterior. A midforceps extraction was performed on account of the irregular and rapid fetal heart. The head and shoulders were finally delivered without a perineal tear, but a double episiotomy was necessary before the abdominal portion could be extracted. The child was born in asphyxia pallida, which was probably due to the compression of the cord by the distended abdomen. The baby made no attempt to breathe. The heart beat rapidly and weakly for about an hour.

Necropsy.—The abdomen was greatly distended; and when it was opened, a dark brown fluid, 550 c.c. in amount, was recovered from the peritoneal cavity. The ascending, transverse and upper half of the descending colon were greatly dilated and filled with meconium. The remaining portion of the large intestine to the anus was a small, round tube. There was no external pathologic condition at the point of collapse of the descending colon. The lower colon and sigmoid were opened and a dried sebaceous plug (Fig. 1) closed the tube. Distally to this the bowel was patent and contained a small amount of sebaceous material but no meconium. The peritoneum was normal.



Fig. 1.—Impacted sebaceous plug (1); contracted descending colon and sigmoid (2); distended colon, cecum to descending colon (3).

Other findings were: cortical hemorrhage in the parietal region of the brain; open interauricular septum of the heart, 1 cm. in diameter; absence of air in the lungs, and a complete double right ureter (Fig. 2). The baby weighed 9 pounds without the abdominal fluid.

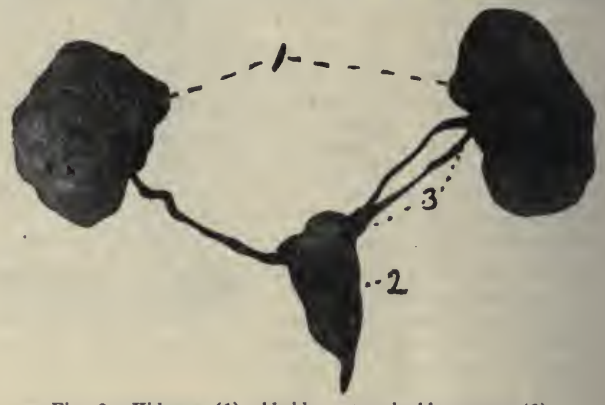


Fig. 2.—Kidneys (1); bladder (2); double ureter (3).

COMMENT

The reason for reporting this case is a statement by Bullowa and Brennan[1] that there is "no report of the occurrence of a similar case."

411 Funke Building.

1. Bullowa, J. G. M., and Brennan, R. E.: Intra-Uterine Intestinal Obstruction from Inspissated and Impacted Meconium, J. A. M. A. 73: 1882 (Dec. 20) 1919.

SUTURE OF THE HEART

ASA W. COLLINS, M.D., SAN FRANCISCO

History.—C. G., aged 20, automobile salesman, admitted to the French Hospital, March 15, 1920, had shot himself in the chest two days before with a 32 caliber revolver and was removed to the Central Emergency Hospital in profound shock, blood flowing quite freely from the wound in the chest, necessitating frequent changing of the dressings. I examined him first at the Central Emergency Hospital. He was thin but well developed, 6 feet 2 inches tall, and weighed about 175 pounds. He was propped up in bed, pale to the point of exsanguination and in a state of collapse. He complained of pain and weakness and often called for water, which had been given him freely. The chart showed, since his entrance, temperature not over 97, pulse from 128 to 150, and respiration from 38 to 48. Morphin sulphate, one-sixth grain, had been given him every four to six hours. He vomited a dark brownish fluid and coughed some blood. The left pleural cavity had been aspirated and 2 pints of blood withdrawn. He had the appearance of one who had but a short time to live. The dressings were removed, and blood flowed from a small hole about the diameter of a lead pencil, situated 4.5 cm. to the left of the midsternal line and 1 cm. above a line drawn between the nipples, and from another hole in the back 10 cm. to the left of the median line and on a level with the hole of entrance of the bullet in front. On inspection it seemed that if the bullet had passed straight through, it must have passed through the heart.

Operation.—He was removed to the French Hospital and an operation to stop the bleeding was decided on. At 8 p. m., under ether anesthesia, with the assistance of Drs. B. F. Alden and V. E. Putnam, I made an incision at the junction of the third interspace with the sternal border, downward to the fifth interspace, and then laterally to the right from each end of this incision for a distance of 10 cm. The knife was made to pass through the costal cartilage close to the sternal border. The ribs were cracked at the outer end, and the flap containing skin, muscle, cartilage and rib was turned outward. There was an immediate gush of blood which masked the whole field of operation. Laparotomy pads were introduced into the pleural cavity and all the blood was removed, thus giving a good view of the field of operation.

The lung had collapsed into the vertebral gutter. The opening into the pericardium was easily found and the course of the bullet readily followed. The wound in the pericardium was about 3 cm. long, and permitted the blood ready access to the pleural cavity. The pericardiac wound was enlarged and a wound of the outer side of the left ventricle about midway between the auricle and apex was seen. This penetrated through the outer edge of the muscle. A clot had formed, yet blood was seen to leave the heart at each pulsation. The pulsations were so rapid and feeble that it was impossible to distinguish whether the blood spurted during diastole or systole. The heart was sutured with two No. 2 chromic gut on a full curved intestinal needle. This stopped the bleeding immediately. The pericardium was closed with continuous chromic gut, the cartilage sutured with chromic gut and the skin with interrupted silkworm. No bleeding was seen to come from the lung or parietal pleura. A drain was placed in the puncture wound of the chest for drainage of the pleura.

Postoperative Course.—During and after the operation, 1,000 c.c. of hypertonic solution was given intravenously. The duration of the operation was thirty minutes. After operation the foot of the bed was raised, external heat applied, etc. The patient suffered shock for twelve hours. The following five days showed a gradual improvement, although the pulse remained from 100 to 130, respiration from 30 to 38, and temperature from 99 to 102.

Culture from the drain revealed *Staphylococcus aureus.* The patient's appetite was good and he conversed freely.

At midnight on the sixth day after operation he became irritable and restless and wanted to leave the hospital to visit his wife, who he claimed was the cause of his misfortune. A temporary absence of the nurse gave him the desired opportunity, and when she returned to the room the patient had disappeared. A fifteen minute search disclosed him in the garden of the hospital. The next day he had a chill followed by a consolidation of the lower lobe of the right lung, and he died, March 26, just thirteen days after the injury. The body was delivered to the coroner.

Necropsy.—The heart and pericardium had healed completely. There was very little blood-tinged fluid in the pericardium. Death was due to an empyema and pneumonia. The pulse was regular and of good volume a few days after operation and until shortly before death.

126 Post Street.

A TRACTION SPLINT FOR FRACTURES OF THE HUMERUS

FRANK N. POTTS, M.D., BUFFALO

This splint was developed for traction in fractures of the humerus. It is best adapted to those cases in which the fracture is of the shaft, 3 inches above or below the joint.



Front and rear views of traction splint for fractures of the humerus.

The splint is made of some light wood, 3 inches wide, 19 inches long and ¾ inch thick. It is made concave on the inner side for coaptation. A piece of drill steel 18 inches long and ¼ inch in diameter should first be bent to have a hook in the upper end, and an arm 1½ inches long extending from the hook to the shaft. The shaft is approximately 14 inches long. This shaft is threaded from the lower end up to within 2½ inches of the arm going over to the hook; a wing nut is run up on the threaded shaft. On the back of the splint, in the upper 9 inches, is fastened a piece of ⅜ inch metal tubing. This holds the extension rod and gives a surface on which the rod may be extended by use of the wing nut. To the inner side and lower end of the splint is fastened a 2 inch right angle bar, ⅝ inch wide.

A piece of adhesive plaster 2 inches wide and sufficiently long to form a loop in which can be fastened the metal bar of the lower portion of the splint is then applied to the inner and outer sides of the lower portion of the arm, care being taken that the adhesive does not extend more than 1 inch above the site of fracture. The arm is then bandaged very carefully with a thin layer of wadding, and the bar at the lower end of the splint is fastened in the loop of adhesive plaster. A piece of ¾ inch felt pad about 6 inches square is then covered with wadding and placed in the axilla. A web strap ¾ inch wide is then passed over the felt and brought up over the extension bar at the hook and fastened. Coaptation splints are then placed about the humerus on the outer and inner sides. Finally, the entire dressing is bandaged with gauze.

The advantages of this splint are: (1) possibility of obtaining any desired degree of extension; (2) ease of application; (3) constant readiness; (4) comfort to the patient, and (5) neatness in appearance.

The forearm is carried in a sling.

523 Franklin Street.

Surgical Examination.—Sir George Humphry crystallized the rules for the examination of surgical patients in the words, "Eyes first and much; hands next and little; tongue not at all." It is useless to begin by asking about the family history in a case of acute intestinal perforation, yet many do so.—Sir D'Arcy Power, Surgical Aphorisms, *Clin. J.* **49**:28 (Feb.) 1920.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

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Subscription price - - - - - Five dollars per annum in advance

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SATURDAY, NOVEMBER 6, 1920

THE SOURCES OF MUSCULAR ENERGY

The contractions of the body musculature occasion the foremost demands for the expenditure of energy in the organism. Work calls for sources of energy—in the long run, for food fuel. There was a time when muscular work was supposed to be performed at the expense of increased destruction of the tissue in which the contractile transformations take place. In Liebig's opinion, this assumed physiologic breakdown of the muscular tissue rich in albuminous complexes necessitated in turn a replacement or reconstruction that could be secured only by furnishing protein in the diet. The Munich school of physiologists led the way, however, to the demonstration that under ordinary circumstances muscular work is not performed primarily and preferably at the expense of nitrogenous products. In a person living on a mixed diet, increased work does not call forth any corresponding or noteworthy metabolism of protein; the energy expenditure involved is chargeable to the conversion of non-nitrogenous compounds. This is now a well recognized fundamental dictum of the science of nutrition.

Is there any choice between fat and carbohydrate as sources of muscular work? The answer to this question is not only of theoretical interest but also of immense practical import. There is a fairly general assumption that the first call is on the carbohydrates, which include the sugar in the blood and the glycogen stored in the liver and the muscles. The distinguished French physiologist Chauveau [1] went so far as to conclude that possibly fat must first be converted into sugar in the body before it can be used directly for muscular work. This assumption was vigorously denied by the Berlin physiologist Zuntz [2] and his collaborators, who were unable in actual experimental tests to discover a 30 per cent. difference in working energy value between fat and carbohydrate postulated by the hypothesis of Chauveau. At the present moment there seems to be a tacit belief that even if the different foodstuffs are not always equally available; fat and sugar are at least equally efficient as sources of energy in muscular work; that is, they are isodynamically equivalent.

Recent studies of the physiology of muscle, however, have cast doubt on the teaching that this working organ performs like a simple heat engine as the result of the direct combustion of the fuel furnished to it. One may perhaps more appropriately speak of the muscle as a chemical engine from the standpoint of the critics of today, who also believe that definite characteristic chemical compounds are the immediate source of muscular energy. As they have pointed out, if the muscular machine requires that certain reactions take place between definite substances which must be closely allied to carbohydrates, it is almost inconceivable that substances such as fats can be utilized without a transformation involving loss of energy, and one is led to expect that the coefficient of utilization should be lower for other substances than for carbohydrates.

During the last few years, Krogh,[3] of Copenhagen University, just awarded the Nobel prize,[4] to whom we owe fundamental contributions to the technic of investigations in respiratory metabolism, have conducted researches on man to determine the relative value of fat and carbohydrate as sources of muscular energy. One gains the impression from these painstaking investigations that work is more economically performed at the expense of carbohydrate than of fat. For example, in the best series of experiments the net expenditure of energy per calory of technical work varied from about 4.6 calories when fat alone was catabolized to about 4.1 calories when carbohydrate alone was catabolized. The waste of energy from fat is 0.5 calory, or 11 per cent. of the heat of combustion of the fat. Such results could be realized by having the persons perform definite amounts of work (on stationary bicycles) under conditions of diet low in protein and in which fats or carbohydrates, respectively, greatly predominated. The testimony of the subjects was that they performed the work with greater difficulty on fat than on carbohydrate and became much more tired. This possible relation of fatigue to diet is one deserving of careful further consideration. Variations in fatigue may, for instance, be in part correlated with differences in the liability to acidosis in which the differing products of metabolism play a discriminating rôle. It appears that under ordinary circumstances the organism maintains during work a remarkably constant proportion between the amounts of carbohydrate and fat catabolized. This proportion is evidently a function of the available supplies of the two sources of energy.

The "efficiency" of ordinary muscular work may again be calculated as it has been in many previous

1. Chauveau, M.: Compt. rend. Acad. d. Sc. **125**: 1070; **126**: 795, 1898.

2. Zuntz, N.: Die Quellen der Muskelkraft, Handb. d. Biochem. (Oppenheimer's) **4**: 826, 1911.

3. Krogh, A., and Lindhard, J.: The Relative Value of Fat and Carbohydrate as Sources of Muscular Energy, Biochem. J. **14**: 290 (July) 1920.

4. See page 1275.

studies. According to the new Danish data, the net expenditure of energy above the maintenance quota necessary to perform one calory of technical work on the ergometer has varied between about 5.5 and 4 calories. It decreases with increased training and may increase with the onset of fatigue. A good heat engine may approach this degree of efficiency.

SOME MEDICAL HUMORISTS

A bit of humor now and then is welcomed by every class of thinkers, no matter how serious minded may be their daily routine. According to Bergson, humor is a lively sense of the incongruous in the world and in life. It is not strange that physicians should see much humor in their work, since no men see life more intimately than they do. Unfortunately, too few record humorously the things they have seen. Thus, Broxholme, first Radcliffe Fellow at Oxford, although known as one of the wittiest men of his time, nevertheless left nothing permanent as a monument to his wit and humor. In the great literature of humor there appear, however, the names of many physicians. Their works are often tinged with scientific observations or similes characteristic of the medically trained author. The works of Goldsmith, Lever and Smollett, noted English writers, are conspicuous examples. Foremost among medical humorists are the two recently selected by Douglas [1] as the subject of his Harveian Oration before the Edinburgh Harveian Society. One, Rabelais, was a Frenchman; the other, Oliver Wendell Holmes, an American. They are aptly characterized as "laughing philosophers," full of quaint quips and witticisms at the foibles of their time and the failings of human nature. Douglas makes an excellent analysis of their work, particularly from the medical point of view. He mentions Rabelais' great attempt to reform methods of education, and points out that he was interested in the study of the work of the Greek physicians, and above all that he raised the gift of story telling to a height few great writers have ever reached. Rabelais, however, gave up medicine for the practice of another art. Not so Oliver Wendell Holmes: he was famous alike as a scientist and as a writer. He was a master of style—Douglas compares him to Robert Louis Stevenson—and all of his work was illuminated with numerous flashes of wit. How large a part medical knowledge played in this may be judged from the similes employed by Holmes in describing the feelings of the teacher in "Elsie Venner" when gazing at the rattlesnake:

> His eyes were drawn as with magnets towards the circles of flame. His ears rung as in the overture to the swooning dream of chloroform. Nature was before man with his anaesthetics; the cat's first shake stupefies the mouse; the lion's first shake deadens the man's feeling and fear; and the crotalus paralyzes before he strikes.

As for the reaction of the practitioner on his patients, nothing will so quickly relieve the strain with which most laymen confront the physician as the kindly directed remark accompanied with a smile and a sense of humor. Douglas concludes:

> We need humor in the profession. It is one of its necessary virtues. For who, save ourselves, and perhaps the police, live in such a *milieu* of disharmonies? We live the life pathological; we breathe the vitiated air of the sickroom, the laboratory, the deadhouse; we daily see sights that turn the layman green and giddy; our ears are filled with the burden of all who are in any way desolate or oppressed in mind or body. We are saved, it is true, by those two saving graces within ourselves, the divine instinct of pity, and the fascination of science. But let us also cling to humor, the antiseptic of life. So now abide these three, pity, knowledge and humor; and not the least of these—is Humor.

A sense of humor is not incompatible with dignity. It involves no loss of self respect. Abraham Lincoln was a conspicuous illustrator of the value of a well placed anecdote in the elucidation of a point, and of the witty remark in the release of tension during a personal interview. In medicine, humor is a virtue. The cultivation of optimism and of a sense of humor—both can be cultivated through well chosen books—will make any practitioner a better physician.

1. Douglas, C. E.: Two Medical Humorists, Edinburgh M. J. **25**: 209 (Oct.) 1920.

THE DISTRIBUTION OF ACETONE IN THE BODY

In certain conditions, both physiologic and pathologic, acetone may be present in the organism in amounts not negligible. At times it becomes a matter of considerable importance to obtain dependable information about them. While it is circulating in the blood stream, acetone may appear in the urine and expired air. The view that the acetone substances—acetone, aceto-acetic acid and beta-oxybutyric acid—are derived in large part from improper and incomplete metabolism of fats in the body has been generally accepted. The importance of careful observations of ketosis, as well as the abnormalities of carbohydrate transformation in the organism of the diabetic, is daily being better appreciated by discriminating clinicians, so that perversions in the metabolism of fat are receiving far more attention than in the past. There is no more potent agency in the prevention of ketosis and the acidosis related to it than the withdrawal of fat from the diet, wherefore Joslin [1] has trenchantly remarked that fat at one time may save the life of the diabetic, but at another may destroy it.

Widmark [2] has recently demonstrated at the physiologic institute in Lund, Sweden, that free acetone belongs to the group of substances that can with the greatest ease penetrate living cells. Hence they diffuse readily throughout the organism and tend to avoid

1. Joslin, E. P.: Treatmnt of Diabetes Mellitus, Philadelphia, 1917, p. 281.

2. Widmark, E. M. P.: Studies in the Acetone Concentration in Blood, Urine and Alveolar Air, II. The Passage of Acetone and Aceto-Acetic Acid into the Urine, Biochem. J. **14**: 364 (July) 1920.

undue concentration at any locality or in any special tissue. Acetone itself passes into the urine by the process of diffusion; hence the concentration of this compound in the blood and urine is usually the same. Aceto-acetic acid (diacetic acid), to which the well-known ferric chlorid urinary test of Gerhard is attributable, depends on the characteristic secretory functions of the kidneys for its elimination; consequently its concentration is commonly higher in the urine than in the blood.

It also appears from the observations of Widmark [3] that the elimination of acetone through the lungs is a pure diffusion process. From his data there is no reason to suppose that any secretion of the volatile compound takes place, such as has at times been assumed for the passage of certain gases through the alveolar membranes. From a simple determination of the concentration of acetone in the alveolar air, so commonly collected nowadays in the estimation of carbon dioxid factors, it is possible to secure an accurate calculation of the free acetone concentration of the blood. Widmark points out that accordingly in a diabetic, by combined blood estimation and analysis of alveolar air, one may arrive at an understanding of the relationship between the free acetone and the total acetone in the blood. The method, he adds, has this great advantage, that the relationship between the acetone and the aceto-acetic acid can in no way be disturbed by the analysis: the separation of the free acetone from the aceto-acetic acid is effected, so to speak, with the organism itself as distillation apparatus. The ability to differentiate and estimate the various ketone substances with accuracy, as is already accomplished for the sugar in the blood and urine of glycosuric patients, is likely to prove helpful in the clinic of diabetes.

THE PUBLIC PRESS IN MEDICAL MATTERS

A French physician, Dr. Georges Bourgeau, in 1916 chose as the theme for his thesis for the doctorate in medicine the subject, "The Errors and the Dangers of the Public Press in Medical Matters." [4] In this monograph he does not confine himself to a rodomontade arraigning the public print on general grounds for inaccuracy and misstatement, but with painstaking accuracy cites examples to prove the correctness of his contention. His grievance lies under two separate heads: (1) the deliberate disregard of French law in the question of the exploitation of quack and proprietary preparations, and (2) the fact that the reporting of medical questions is not done by a trained personnel, and that as a result the published accounts are inaccurate and may often work harm to a credulous public.

The French law—the *loi germinal*—has been specific in the matter of the regulation both of the sale and of the advertising of nostrums. As Bourgeau says:

> The *loi germinal* not only forbids the sale of remedies of this class, but also interdicts their advertisement, for in the decree . . . such advertisement is punishable by a fine of from 25 to 600 francs for a first offense, and for further infringement, by imprisonment for from three to six days.

Bourgeau finds no fault with the French code in respect to the regulation of this vicious practice, but he expresses resentment that there is such lamentable failure to enforce it. He cites instances in which conviction has failed through legal technicalities and loopholes, and asks: "Why does not this legislation apply to the press as it does in some instances, though with unfortunate infrequency, to the manufacturers of the nostrums? Some people assert that it is because the newspapers are a power with which the magistracy must reckon, a statement to which I refuse to subscribe." He expresses his sense of this injustice by commenting on the fact that although the press benefits from this class of advertising (and thus becomes equally culpable with the proprietors of the so-called remedies), it makes no effort in behalf of the convicted manufacturers, but leaves them to carry the penalty of conviction while it goes merrily on to the exploitation of other quackeries.

While this deliberate violation of the law of the land is viewed by Dr. Bourgeau as the most serious evil to which the press contributes, he takes up under a second head another evil which should be susceptible of correction. This is the looseness and inaccuracy of statement by the lay press with regard to matters of scientific medical interest. As examples he cites, among others, these captions from newspapers, giving for each the name of the publication and the date of issue: "Contagion Has Been Abolished in Scarlet Fever"; "The Transfusion of Blood Is a Dangerous Procedure for the Donor"; "Arteriosclerosis Is Vanquished"; "One Half of Those Who Are Deaf Are Curable by Radium." In addition to headings of this sort, which have no place save in fiction, Bourgeau very properly takes exception to the process of "snap judgment" in regard to discoveries in medicine and to the publication of reports of advocated or approved methods of treatment. He arraigns the *Matin* in regard to its writings as to the value of antityphoid inoculation. This paper first hailed the discovery as one of incalculable benefit and then attacked it most viciously. The *Matin* says that "nurses in hospitals refuse to serve as 'guinea-pigs,'" and quotes alleged mortalities from the inoculation. So serious did the Assistance Publique regard these statements that it deemed it necessary to have handbills printed and affixed to the walls of hospitals and other places, explaining that the inoculation of nurses was voluntary and that the deaths quoted were three—two nurses who contracted typhoid from patients they were attending, and one who died as

3. Widmark, E. M. P.: Studies in the Acetone Concentration in Blood, Urine and Alveolar Air, III, The Elimination of Acetone Through the Lungs, Biochem. J. 14: 379 (July) 1920.

4. Bourgeau, Georges: Les erreurs et les dangers de la grande presse en matière médicale, Paris, A. Maloine et Fils, 1916.

the result of an infected wound of the hand. These facts, says Bourgeau, were easily obtainable by "any serious journalist," and would have avoided the discrediting of the hospitals and the spreading abroad of gross misinformation to the disadvantage of the public.

The same course has been followed with reference to cancer and its alleged cures, with respect to tuberculosis and with regard to the introduction of arsphenamin in the treatment of syphilis. The statements concerning the last seem to him particularly objectionable, for there is a change of attitude from day to day; laudation in one issue to be followed in a succeeding number by the statement that arsphenamin has killed more than syphilis itself. Bourgeau ascribes as the reason for this mass of illogical writing an undue readiness of the newspaper writer to believe:

> Why does the journalist commit so many mistakes in matters medical? It is because he is ready to believe. Science has overthrown the gods; but the necessity for faith has not been done away with, and it is to science that our beliefs turn. The medical man is the latest deity, but the journalist does not see the human personality behind the savant, the man with his mistakes, his personal pride and his self interest. The newspaper believes as a matter of self interest. It sees in a discovery an article to be written, a chance for a sensational heading; and in the haste to be the first to announce it abandons all effort for accuracy as to either facts or time.
>
> The man who writes for the newspaper believes because he is ignorant, and his excuse is that in the multiplicity of things which he is forced to discuss it is impossible for him to have universal knowledge, and that this lack of knowledge forces him to draw general conclusions from single cases.

Some may ask, as Bourgeau does, "Is this really a matter of importance!" His answer is, "Yes, unfortunately, for there are many of the public who believe these things which they read in the papers, and it is this class which abandons a rational treatment for the newest thing exploited. Not infrequently also this results in the failure to seek competent advice, and with what sad frequency do we medical men find in our hospitals tuberculous or syphilitic patients who, having run through all the 'cures' in the newspapers, finally come to us in deplorable shape."

Bourgeau's criticism of the French press applies with equal weight to the press of the United States. Fortunately, in this country there is at least a beginning of betterment, for a few of the larger and better class dailies have recognized the necessity of greater accuracy in this class of reporting and have a trained personnel to cover matters of this sort and insure that the written account may be something more than a fanciful story written by one to whom even the terminology of the subject is an unintelligible jargon. The remedy for the evil lies in the development of the journalistic conscience. Heywood Broun, the critic, recently said: "The reason for complaint against the yellow press is not that it represents with any fidelity the taste of the average man and woman but that it first creates a taste and then satisfies it." There has been created in the minds of hundreds of thousands of newspaper readers a taste for the sensational. The developments of science along medical or any other lines are seldom sensational. To satisfy the artificially created, perverted taste of the newspaper reading public, the newspapers, especially those of the yellow type, make their reports of medical matters sensational. When such papers can be brought to a realization of their responsibilities to the public, especially in matters affecting health, there will be an end to the fantastic fiction of newspaper pseudomedical science.

Current Comment

HELPING THE COUNCIL

If they were built that way, the members of the Council on Pharmacy and Chemistry of the American Medical Association might become discouraged at the apparent indifference of many members of the medical profession to their efforts. There are many physicians who, while figuratively patting the Council on the back, actually do nothing to aid its efforts. On the other hand, there are men in the profession who give the Council active support instead of merely passive appreciation. The letter that follows was written by such a man to a pharmaceutical concern:

> I am receiving circular advertising from you concerning ——— ——— solution, and I am writing to suggest that until these products have been approved by the Council on Pharmacy and Chemistry of the American Medical Association, you are wasting your postage on the practice. Aside from the fact that these products do not appeal to me personally, I feel that I am not in a position to judge the value of such products and I depend entirely on the large clinical opportunities of the Council on Pharmacy and Chemistry of the American Medical Association, in addition to their laboratory facilities, in such matters as these. I may therefore, with all due respect, suggest that . . . it will pay you to eliminate my name from your mailing list.

The members of the Council on Pharmacy and Chemistry are working week in and week out without remuneration. Few appreciate how much these scientific men are doing for rational therapeutics; fewer still realize how much has been accomplished through their efforts, or how much more could be accomplished if every physician who at least believes in the work of the Council would give it his full support.

AWARD OF NOBEL PRIZES IN MEDICINE

The cable brings word that the Nobel prize in medicine for 1919 has been awarded to Prof. Jules Bordet of Brussels, and the 1920 prize to Prof. August Krogh of Copenhagen. Bordet's research on serology laid the foundation for the modern hemolysis tests of syphilis, the fixation or deviation of complement being his discovery. With Gengou he also discovered the bacillus in the sputum in whooping cough which may be the causative agent. Bordet was awarded the city of Paris prize of $600 at the International Medical Congress at Budapest in 1909. He is professor of bacteriology at the University of Brussels and director of the Pas-

teur Institute, and is now in this country. Dr. Krogh is professor of animal physiology at the University of Copenhagen. He was a pioneer in the study of the forces governing gas exchange in the lungs, carbon dioxid as a regulator in the organism, tonometric determination of dissolved gases, microscopic gas analysis, development of embryos at different temperatures, the composition and tension of the alveolar air, and other related physiologic problems. The previous recipients of the Nobel prize in medicine have been Behring, Ross, Finsen, Pawlow, Koch, Laveran, Kocher, Kossel, Gullstrand, Carrel, Richet and Bárány, and two prizes were divided between Ramón y Cajal and Golgi, and between Ehrlich and Metchnikoff. Carrel is the only resident of the western hemisphere to receive the prize in medicine to date. No award was made of the prize in medicine during 1915, 1916, 1917 and 1918. The prize has thus gone once to England, Russia, Italy, Spain, Switzerland, Sweden, America, Austria and Belgium, twice to Denmark, three times to France, and four times to Germany.

AN OPPORTUNITY FOR RETURN TO A HISTORICAL SOURCE

"In the thirteenth century," says Garrison, "the Collège de Saint Côme was organized at Paris, constituting a guild the members of which were divided into the clerical barber-surgeons or surgeons of the long robe, and the lay barbers or surgeons of the short robe, and in 1311, 1352 and 1364, royal decrees were issued forbidding the latter to practice surgery without being duly examined by the former. In 1372, Charles V decreed that the barbers should be allowed to treat wounds and not be interfered with by their long-robed confrères."

Now it is announced that in 1921 the barbers of Chicago will charge one dollar for a haircut and from thirty-five to fifty cents for a shave. This should make their net incomes average well beyond the income of the average physician. Why should not physicians and surgeons take up this delicate art? If the barbers were surgeons, let the surgeons be barbers. They might call the process "keratinectomy" or "hairostomy" or "pilectomy," the latter term possibly confusing the followers of "orificial surgery." As the proverb sayeth: "Turn about is fair play"; "What's sauce for the goose is soup for the gander," or words to that effect.

CHIROPRACTIC CANDOR

In Butte, Montana, recently there was a convention of "chiropractors." This august assembly was addressed by one of its shining lights—Mr. Palmer, of Davenport, Iowa, "the Fountain Head of Chiropractic." To the local newspapers Mr. Palmer explained:

"Our school back at Davenport is established on a business and not a professional basis," Mr. Palmer said. "It is a business where we manufacture chiropractors. They have got to work just like machinery. A course of salesmanship goes along with their training. We teach them the idea and then we show them how to sell it."

Commendably frank! They *do* work like machinery; from the eyebrows down. The Journal has always held that "chiropractic" is a trade and not a profession; Mr. Palmer's admission makes it unanimous.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Epidemic of Dengue.—Dengue fever, of which a number of cases were reported throughout the state, is completely under control since the advent of cool weather, according to an announcement of Dr. Samuel W. Welch, state health officer.

Quarantine Station Closed.—Announcement has been made by federal officials at Washington that the quarantine station near Fort Morgan will shortly be closed. All effects will be moved to Mobile, where the quarantine physicians will hereafter have their offices at the custom house.

ARKANSAS

New Health Associations Organized.—The Arkansas Public Health Association was incorporated, October 15, on application of Dr. Augustus C. Shipp, president; Mrs. T. S. Shannon, vice president, and Miss Erle Chambers, executive secretary. ——Pope County Public Health Association was organized, October 15, at Russellville, and the following officers were named: president, Rev. W. L. Hurie; vice presidents, Mrs. J. D. Ward and A. T. Stork; secretary, Mrs. L. B. McClure, and treasurer, A. N. Falls.

Prevalence of Trachoma.—During the last summer, in a trachoma survey carried on throughout Arkansas under the auspices of the U. S. Public Health Service, out of 1,451 persons examined in ten counties, 262 were found afflicted with trachoma. It is estimated that at least 40 per cent. of the blindness in the state is caused by trachoma. The greatest number of cases, 108 out of 746 examined, was found in Searcy County. No cases were discovered in Ashland County out of 313 subjects examined.

CALIFORNIA

Illegal Practitioner Convicted.—It is reported that A. C. Goscinsky, who for several years has practiced medicine and surgery in Monterey County, claiming that a certificate issued to him by the state board of medical examiners had been destroyed in the San Francisco fire of 1906, was convicted at Salinas recently on a charge of violation of the medical practice act in practicing without the possession of a certificate.

Results of California Referendum.—As The Journal goes to press a special telegram from California reports that the antivivisection measure has been overwhelmingly defeated; also, that the California State Medical Society and the League for the Conservation of Public Health have won decisively in the fight against the osteopaths. The vote on the antivaccination question and the proposed chiropractic bill is close. It is believed that both have been defeated.

DISTRICT OF COLUMBIA

Occupational Therapy Association Organized.—Delegates representing Walter Reed, Providence, Mount Alto and St. Elizabeth's hospitals, the Public Health Service and the Federal Board for Vocational Education met at the Walter Reed Hospital, October 12, and perfected the organization of the District of Columbia Association of Occupational Therapy. The following officers were elected: Col. James D. Glennan, M. C., U. S Army, honorary president; Major A. C. Monohan, Sanitary Corps, U. S. Army, president; Mrs. Helen Smith, vice president; Miss Tracy, recording secretary; Miss Elsie Taft, corresponding secretary, and Miss M. Morris, treasurer.

FLORIDA

Personal.—Dr. Charles M. Conkling, West Palm Beach, has been appointed city health officer to succeed Dr. Albert H. King, resigned.

Eclectic Board Member Removed.—According to a report, Dr. George A. Munch, formerly secretary of the Eclectic Board of Medical Examiners, has been removed by Governor Catts because he has failed to surrender the books, records

and files of the board to Dr. A. J. McDonald, who was recently elected to the secretaryship.

Medical Society Holds Annual Meeting.—At the meeting of the Florida Midland Medical Society, held at Orlando, October 13, the following officers were named for the ensuing year: president, Dr. Earl McRae, Tampa; vice presidents, Drs. Robert L. Cline, Arcadia, John C. Knight, Plant City, and Calvin D. Christ, Orlando, and secretary-treasurer, Dr. Rufus R. Kime, Orlando. Tampa was chosen as the meeting place of the next session of the society in April, 1921.

ILLINOIS

Chiropractors Convicted.—Lucius J. Love of Danville and Peter Walker of Chicago, chiropractors, were arrested by the Illinois Department of Registration and Education for practicing without licenses. They were given jury trials and a verdict of guilty was returned in the case of each. A second charge is pending against Walker.

Reserve Corps Division Organized.—At a meeting of reorganization held at the Aviation Club, Chicago, October 26, the Medical Reserve Corps of the U. S. Army, Illinois Division, elected the following officers: president, Col. Frank Billings; vice president, Col. Allen B. Kanavel; secretary-treasurer, Lieut. Harry T. Arkin; councilors, Lieut.-Cols. Frank W. Broderick, James A. Harvey, William L. Baum and Joseph Beck.

Chicago

Arrested for Practicing Without Licenses.—Yin Joe Lee, 327 West Twenty-Second Street, was arrested for practicing medicine without a license and fined $25 and costs.——Mrs. F. Zientarske, 2708 North Richmond Avenue, who poses as a nurse, was arrested for practicing medicine without a license and fined $25 and costs.

Gynecologic Society Offers Prize.—The Chicago Gynecological Society offers an annual prize of $100 for the best paper presented during the year. Nonmembers as well as members are eligible for the competition which will be limited to those authors who have announced their intention to compete. Those interested should communicate with the secretary, Dr. Joseph L. Baer, 104 South Michigan Avenue.

Polyclinic Hospital Drive.—A drive to raise a fund of $1,000,000 to make possible the establishment of a modern hospital and health center will be inaugurated by the Chicago Polyclinic and Hospital, November 8. Tentative plans contemplate the establishment of an institution with five general departments, an outpatient department and dispensary, hospital, educational department, training school for nurses, and social service department. The campaign will close November 20. Headquarters will be at the LaSalle Hotel.

IOWA

Personal.—Dr. Herman S. Major, formerly at the Fulton (Mo.) State Hospital, has been appointed assistant superintendent of the Iowa Hospital for the Insane, Independence.

Iowa Awarded Crusade Cup.—The loving cup offered by the National Tuberculosis Association to the state which showed the best results in the modern health crusade has been awarded to Iowa.

LOUISIANA

Society to Have Postgraduate Meeting.—The Louisiana State Medical Society is making arrangements for a postgraduate course to be held in connection with the next annual meeting.

Legislature Enacts Abortion Measure.—Two laws against abortion, submitted by a committee of the Orleans Parish and Louisiana state medical societies were unanimously passed by the Louisiana legislature. The first act prohibits the distributing or attempt to distribute the means for the procuring of abortions or premature deliveries, in the subjoined text.

Section 1. Be it enacted by the General Assembly of the State of Louisiana, That whoever shall, for the criminal purpose or with the intent of procuring a premature delivery or abortion, sell or lend or offer to sell or lend, or advise to use or in any way or form advertise or expose for sale either orally or in writing, or who shall, in any manner or form distribute any drug, potion or instrument or any other article or thing to any person, shall be guilty of a felony and on conviction shall be punished by imprisonment in the State Penitentiary for a term not exceeding two years.

Section 2. Be it further enacted, etc., that nothing in this Act shall be construed as amending or repealing Act. No. 24 of 1888 entitled "An Act to amend and re-enact Section 807 of the Revised Statutes of 1870, relative to attempt to procure premature delivery or abortion," or any part thereof.

The second act prohibits the printing or publishing of advertisements of means for the criminal procurement of abortion or miscarriage or prevention of conception, in these terms:

Section 1. Be it enacted by the General Assembly of the State of Louisiana, That whoever prints or publishes an advertisement of any secret drug or nostrum purporting to be for the exclusive use of females or which cautions females against their use when in a condition of pregnancy, or in any way publishes an account or description of any secret drug or nostrum purporting to be exclusively for the use of females, or for preventing conception or procuring abortion or miscarriage, shall be fined five hundred dollars ($500.00), and imprisoned for not less than ten days nor more than six months.

MARYLAND

Blind School Asks Funds.—The Maryland Workshop for the Blind has requested an increase of $3,000 in its municipal appropriation, now amounting to $5,000 a year, to supplement the state appropriation, which has been increased from $14,000 to $16,000. Among the 200 blind men and women cared for, 154 are from Baltimore.

Offer of Hospital to City Withdrawn.—Dr. C. Hampson Jones, health commissioner of Baltimore, has been notified that the U. S. Public Health Service has withdrawn its offer to the city of the Marine Hospital. The War Department has canceled the agreement under which the Public Health Service has been using the hospital buildings at Fort McHenry and the Public Health Service will again use the Marine Hospital after extensive improvements have been made.

Personal.—Dr. Jules Bordet, Herter lecturer at the Johns Hopkins University, and his Belgian associates were recently entertained at dinner at the Maryland Club by members of the faculties of the Johns Hopkins Medical School and the School of Hygiene and Public Health.——Dr. Henry B. Thomas, Baltimore, sustained a broken rib and cuts and bruises on the body when his automobile was struck by an express car of the Electric Railway Company, October 29.

MASSACHUSETTS

Surgical Association to Hold Meeting.—The first meeting of the Clinical and Surgical Association of Massachusetts will be held at the Boston City Club, November 9-11.

Personal.—Dr. Henry A. Christian, Hersey professor of the theory and practice of physic at the Harvard Medical School and physician-in-chief of the Peter Bent Brigham Hospital, Boston, has resumed his duties after a year's leave of absence in Washington, D. C., as chairman of the Division of Medical Sciences of the National Research Council.——Dr. Currier C. Weymouth, Midway, has been appointed associate medical examiner (coroner) of the seventh Norfolk district.——Dr. Charles E. Mackey, South Boston, has been appointed director of the city health educational service of Boston to succeed Dr. Robert B. Hunt, resigned.

MICHIGAN

Personal.—Dr. A. Joslin, Pontiac, has been appointed city sanitary inspector, to succeed Dr. Ralph A. Brady, resigned.——Dr. Willard L. Quennell, formerly with the Massachusetts State Infirmary, Tewkesbury, has been appointed superintendent of the Highland Park General Hospital.

Society Unveils War Memorial.—A memorial tablet, bearing 268 names of members of the Wayne County Medical Society who served during the World War, was unveiled at a special patriotic meeting of the society, October 18, at which Dr. James McMillan officiated as chairman. Dr. Harold Wilson, president of the society, accepted the tablet on behalf of the members.

MINNESOTA

County Health Association Organized.—At a meeting held at Arlington, October 7, the organization of Sibley County Public Health Association was completed and the following officers were elected: president, Miss Martha Beatty; vice presidents, Mrs. Peter Morton, Winthrop, and Mr. R. S. Peterson, Henderson; secretary, Mr. S. J. Maurer, Gaylord, and treasurer, Mr. C. F. Maurer, Arlington.

New County Health Journal.—The Hennepin County Public Health Association is publishing a new journal, known as the *Hennepin Commonhealth*, the first number of which appeared October 18. The journal will record the activities of the association and its constituent agencies, of the Minneapolis Health Department, of general hospitals, and allied activities. The offices of the associaton are in the Handicraft Building, Minneapolis.

MISSOURI

Personal—Dr. Herman A. LaForce has been elected city physician of Carthage to succeed Dr. Warren B. Chapman, resigned.

Postgraduate Clinics.—Announcement is made that the St. Louis postgraduate clinics, originally scheduled for November 16-18, will be held November 23-24, under the auspices of the St. Louis Medical Society.

NEW JERSEY

Medical Society Elects Officers.—At the annual meeting of the Westfield Medical Society, October 5, Dr. Frederick A. Kinch was elected president, Dr. William W. Sisseron, vice president, and Dr. Murray E. Ramsey, secretary.

Academy Dedicates New Home.—The new home of the Academy of Medicine of Northern New Jersey, 91 Lincoln Park, Newark, was dedicated with appropriate exercises, October 20. The building contains an auditorium, council room, library and reading room, a museum of history and pathology and a collection of prints, paintings and pictures illustrating the history of medicine. The library and historical miscellany are the gifts of Dr. William S. Disbrow. The officers of the academy, whose membership totals 360, are Dr. John F. Hagerty, president; Dr. Emanuel D. Newman, secretary, and Dr. Henry J. Wallhauser, treasurer.

NEW YORK

Ontario Medical Society Meeting.—At the annual meeting of the Ontario Medical Society held at Canandaigua under the presidency of Dr. Daniel A. Eiseline, Shortsville, the following officers were elected: president, Dr. Henry C. Burgess, Rochester; vice president, Dr. Joseph A. Sanders, Clifton Springs, and secretary-treasurer, Dr. Daniel A. Eiseline, Shortsville.

Albany Medical College Scholarships.—The income from the fund given by the late Dr. Robert M. Fuller to Union College to establish scholarships in the Albany Medical College will be divided into ten scholarships. Five will be reserved for students who at the time of entering medical school received or were candidates for a bachelor's degree from Union College, and five will be awarded to students who have completed the two years' premedical course at Union College. Preference will be given to those who have excelled in the work of the department of chemistry.

New York City

Personal.—Dr. James F. McKernon has been elected president of the New York Post-Graduate Medical School and Hospital to succeed Dr. Frederic E. Sondern.

Beth Moses Hospital Dedicated.—The Beth Moses Hospital, a five-story structure, costing $400,000 and with a capacity of 165 beds, has been opened at Stuyvesant Avenue and Hart Street, Brooklyn.

Vanderbilt Memorial.—The Post-Graduate Hospital is the recipient of a gift of $100,000 from Mrs. Raymond T. Baker as a memorial to her former husband, the late Alfred G. Vanderbilt. This subscription, together with another of $1,000 from Mrs. Maud L. Smith, brings the total subscribed toward the $2,000,000 endowment fund of the Post-Graduate Hospital to $1,445,054.50.

Hospital for Washington Heights Section.—The Missionary Sisters of the Sacred Heart have acquired the property fronting on Edgecombe Avenue, between One Hundred and Sixty-Third and One Hundred and Sixty-Fourth streets, on which is located a small hospital conducted by the Sisters of St. Lawrence, for the erection of a modern hospital to be known as the Columbus Hospital. The new institution will serve the Washington Heights, Dyckman, Inwood and Kingsbridge sections.

NORTH CAROLINA

Personal.—Dr. Raymond V. Yokeley, health officer of Davidson County, who recently underwent a serious operation at High Point Hospital, Lexington, is reported to have recovered and to have returned to his home at Denton.

District Society Elects Officers.—At the annual meeting of the Ninth District Medical Society of North Carolina held in Mooresville, October 12, under the presidency of Dr. Henry C. Menzies, Hickory, Dr. Andrew E. Bell, Mooresville, was elected president, Dr. Harold H. Newman, Salisbury, secretary. The next annual meeting will be held at Salisbury, October, 1921.

NORTH DAKOTA

Dr. E. F. Ladd Becomes Senator.—At the election held, November 2, Prof. E. F. Ladd, Fargo, for many years president of the North Dakota Agricultural College and since 1902 state food commissioner, was elected United States Senator, succeeding Senator Gronna. Dr. Ladd may be remembered by many of the readers of THE JOURNAL as one of the effective workers for pure food and the elimination of fraudulent medicines. He was among the pioneer workers who did active and consistent work for this cause.

OHIO

Health Council in Cleveland.—Dr. Haven Emerson, New York, who recently completed the Cleveland health and hospital survey, has been appointed by the Welfare Federation of Cleveland to be director of a proposed health council whose function it will be to carry out some of the recommendations made in the survey report.

Hospital Appointments.—The following appointments have been announced to the staff of St. Alexis Hospital, Cleveland: Dr. John J. Thomas, chief of the maternity department; Dr. Theodore A. Willis, chief of the orthopedic clinic; Drs. Joseph R. Thompson, and Harold O. Ruh, to the pediatric department; Dr. Edgar P. McNamaree, chief of the roentgen-ray department; Dr. Richard Dexter, chief of the medical department, and Dr. Clyde L. Cummer, director of laboratories.

OKLAHOMA

State Health Association Meeting.—At the closing session of the Oklahoma State Health Conference, October 14, the Oklahoma Tuberculosis Association resolved to change its title to the Oklahoma Public Health Association, and the following officers were named for the ensuing year: president, J. F. Owens, Oklahoma City; president-emeritus, E. K. Gaylord, Oklahoma City; vice-presidents, Drs. Lewis J. Moorman, Oklahoma City, Tams Bixby, Muskogee, and O. H. McCarty, Tulsa; secretary, Jules Schevitz, Oklahoma City, and treasurer, J. Henry Johnson, Oklahoma City.

PENNSYLVANIA

Medicinal Preparations as Alcoholic Beverages.—Complaints of the promiscuous sale of Hoffman's anodyne and tincture of Jamaica ginger, and the death in York of a man supposedly from the effects of drinking anodyne, have led to a campaign by the bureau of drug control of the state department of health to search for evidence against persons selling or furnishing any medicinal preparation in a manner not in conformity with lawful medicinal uses.

Philadelphia

Philadelphia Masons' Hospital.—A memorial hospital is being erected by Philadelphia Masons at the Masonic Homes of the Grand Lodge of Pennsylvania, Elizabethtown, to be known as the Philadelphia Freemasons' Memorial Hospital. The hospital includes two wings, a central administrative building and two connecting corridors, and when completed will accommodate 124 patients.

Tuberculosis Clinics.—As part of its campaign against tuberculosis among industrial workers in this city, the Philadelphia Health Council and Tuberculosis Society will establish immediately night clinics in every important factory district. These clinics will be conducted under the direction of Dr. J. Blair Spencer.

Jefferson Acquires Gross Medal.—A gold medal, studded with diamonds, but valued chiefly because it had been "presented to Dr. S. D. Gross by his medical friends in commemoration of his fifty-first year in the profession, April 10, 1879," was recently given to Dr. J. Chalmers DaCosta, S. D. Gross professor of surgery at Jefferson Medical College, to be placed in the Jefferson College Museum. The medal was obtained by Dr. John Bertolet, Reading, from the descendants of Dr. Gross.

TEXAS

Personal.—Dr. Irvy L. McGlassen, San Antonio, has been appointed a member of the state board of medical examiners, succeeding Dr. Swayne, deceased.

Vaccination Ordinance on Ballot.—The city commissioner of Waco has fixed November 23 as the date for submitting to voters the ordinance providing for compulsory vaccination against smallpox as a condition for admission to the city schools.

CANADA

Personal. — Dr. Margaret O'Hara, Dhar, India, recently made a number of addresses in Montreal on missionary work in the Far East. —— Dr. Roy McGibbon, Montreal, has returned from overseas.——Dr. J. A. Chabot, for more than ten years medical officer of health of Verdun, Quebec, has resigned.

Hudson Bay Research Fellowship.—The Hudson's Bay Company, in celebration of the two hundred and fiftieth anniversary of its foundation, recently founded at the University of Manitoba a fellowship of the annual value of $1,500 for the years 1920-1929, inclusive. The fellowship, to be known as the Hudson's Bay Company Research Fellowship, will be awarded annually and will be open to graduates of any Canadian university. It is tenable at the University of Manitoba and each fellow must devote his entire time to original research in some branch of pure or applied science, including the medical sciences. The first appointment will be made at an early date.

Women Physicians for India.—At a recent meeting of the Canadian auxiliary committee of the Women's Medical College at Ludhiana, India, at which Dr. Jennie Gray Wildman, Toronto, presided, Dr. Margaret Mackellar delivered an address on the great need of medical workers in India. The Women's Christian Medical College at Ludhiana in the course of twenty-five years has trained 335 women, now working in all parts of India and Arabia. The college is interdenominational and apart from grants from the government of India, is dependent on free will offerings. Dr. Gray was elected president of the auxiliary committee; Dr. Laura Hamilton, corresponding secretary; Dr. Mary Fotheringham, recording secretary; Dr. Margaret Patterson, treasurer.

GENERAL

General Ireland on Association Council.—Surg.-Gen. M. W. Ireland, U. S. Army, has been appointed a member of the Council on Medical Education of the American Medical Association to succeed the late Dr. Isador Dyer, New Orleans.

Southwestern Association to Hold Meeting.—The fifteenth annual meeting of the Southwestern Medical Association, comprising the states of Missouri, Kansas, Oklahoma, Arkansas and Texas, will be held at Wichita, Kan., November 22-24, under the presidency of Dr. Ernest F. Day, Arkansas City, Kan.

American Delegates to the Pan-American Sanitary Conference.—The U. S. Public Health Service announces that the American delegates to the Sixth International Sanitary Conference of the American Republics, to be held at Montevideo, Dec. 6-11, 1920, will be Asst. Surg.-Gen. J. H. White and Senior Surgeon G. M. Guiteras, both of whom are familiar with Pan-American public health problems, especially as regards tropical countries.

Woman Physician Receives Honors.—Dr. Blanche Norton has been awarded the Cross of King George I by the Greek government in recognition of her work for victims of trachoma in Greece. For the last year, Dr. Norton has been engaged in trachoma eradication work in Trebizond and Constantinople under the auspices of the Near East Relief. In the course of her service Dr. Norton contracted the disease herself and although not fully recovered, she has returned to the United States.

Military Roentgenologists Organize.—At the annual meeting of the American Roentgen-Ray Society at Minneapolis, the American Association of Military Roentgenologists was organized and the following officers were elected: Dr. Arthur C. Christie, Washington, D. C., president; Dr. Henry K. Pancoast, Philadelphia, vice president, and Dr. Francis F. Borzell, Philadelphia, secretary. Officers of the Medical Corps and Sanitary Corps who were actively engaged in roentgen-ray work during the World War are eligible to membership.

American Journal of Obstetrics and Gynecology.—The first issue of this journal has just appeared from the press of the C. V. Mosby Company, St. Louis. It succeeds the former *American Journal of Obstetrics and Diseases of Children* and represents the American Gynecological Society, the American Association of Obstetricians and Gynecologists and the obstetric societies of New York, Philadelphia and Brooklyn. It is edited by Dr. George W. Kosmak, New York, and Dr. Hugo Ehrenfest, St. Louis. There is also an editorial board of thirty-three, whose names appear on the front cover. The first issue is largely devoted to papers read at the last session of the American Gynecological Society, together with the discussions, a collective review and some selected abstracts. The journal makes a good appearance and should well fill the special need for which it was created.

LATIN AMERICA

New Health Laws in Venezuela.—New laws have been adopted by the government of Venezuela relative to public health organization, practice of pharmacy and the importation and sale of opium and other narcotic drugs.

Monument to Dr. Núñez.—It is stated from Havana that the monument to Dr. Enrique Núñez, former secretary of sanitation, will shortly be unveiled. The monument will be located in front of the Hospital Calixto García, an institution which owes its existence to Dr. Núñez' efforts. In the frieze of the statue will be illustrated several phases of Dr. Núñez' life work, such as his patriotic services, his surgical accomplishments and his infant welfare work.

Personal.—Drs. R. Rebagliati and A. Flores have been appointed professors of bacteriology and otorhinolaryngology, respectively, at the University of Lima, Peru.——Dr. J. L. Tamayo of Guayaquil has been elected president of the republic of Ecuador for a four year term.——Dr. C. E. Paz Soldan, founder and editor of the *Reforma médica* of Lima, has been appointed to the chair of hygiene in the medical faculty.——Dr. V. Giolito, the director of the S. Paulo biology laboratory, is traveling in Europe.——Dr. J. C. Navarro of Buenos Aires is in Paris as the delegate of the Liga Argentina contra la tuberculosis to the international conference on tuberculosis held there late in October.

FOREIGN

Retirement of Salomonsen.—Prof. C. J. Salomonsen has retired from the chair of pathology and bacteriology at the University of Copenhagen after thirty-seven years of service. He is now 73.

Next French Medical Congress.—The Fifteenth Congrès français de Médecine is announced to be convened at Strasbourg in 1921, with Professor Bard in the chair. The addresses are to be on the anatomic and functional adaptation of the heart to pathologic conditions in the circulation; on glycemia, and on antianaphylaxis.

Bucharest Honors French Physician.—The city of Bucharest has changed the name of one of its streets in honor of Dr. J. Clunet, who devoted himself for years to fighting epidemics in Roumania, especially at Jassy where he has been instrumental in getting a hospital founded, almost building it with his own hands. It is there that he was buried.

A Council on Pharmacy and Chemistry for the Netherlands.—The minister of labor of the Netherlands officially inaugurated, September 1, the government Instituut voor Pharmacotherapeutisch Onderzoek, which seems to be modeled after the Council on Pharmacy and Chemistry of the American Medical Association. The minister of labor remarked in his opening address that the Netherlands has had a permanent pharmacopeia commission since 1899. But this does not attempt to keep pace with the flood of new remedies, and the government has finally heeded the appeals of the Netherlands Medical Association and the Pharmaceutical Association and founded this institute, mainly in the interests of the sick and suffering, but also in the interests of physicians, pharmacists, and others, including manufacturing chemists when they succeed in adding to the treasure of useful drugs. The president of the institute, Prof. L. van Itallie, expressed the appreciation of the organized physicians and pharmacists for the government's initiative, and described the attempts that have been made in other countries in this line, citing the success of the American Medical Association with its Council on Pharmacy and Chemistry. "The reports published by this Council give much valuable information which certainly should be appreciated by all concerned." He added, "England is also beginning to realize the necessity for supervision of new remedies. The British minister of health appointed a commission a few months ago to study ways and means for legislative and administrative measures to allow control of the quality and the identity of such remedies as cannot conveniently be investigated by chemical tests." He told of the efforts in this line in Germany, saying "As long as twenty years ago at one of the Naturforscher Congresses the question of physicians' writing testimonials for newly discovered remedies was discussed. It was an attempt to regulate the relations between the manufacturing chemists, pharmacologic institutes and physicians. Laudatory articles written heedlessly, without adequate basis for the statements, had led to great disappointments in administering the drugs thus

endorsed. Medical articles designed for scientific journals were being republished for advertising purposes in illustrated weeklies and the dailies to cultivate a demand for the new remedies and new artificial foods on the part of the public. But the discussion at the congress although introduced by leading men was of little practical benefit. The opposition from part of the manufacturing chemists soon led to the dropping of the matter. Not much better success was realized by the commission appointed in 1912 by the Congress for Internal Medicine. This commission was appointed for the purpose of ascertaining whether the claims made for the new drugs were exaggerated, intentionally misleading or untrue. The publication of the commission's reports set a few pens in motion, but the manufacturing chemists took up the cudgel against the medical journals that aided the commission. They withdrew their advertising from the journals guilty of such audacity. There was no adequate support, either, on the part of physicians. Better success was realized in the United States. . . ." "The Netherlands is the only country which has inaugurated a government institution for the purpose. The fact that it is a state institution is a guarantee that the council in charge will have the support of the government."

[NOTE.—Judging from this report, the Council on Pharmacy and Chemistry of the Netherlands is to have the support and the backing of the government. The Council on Pharmacy and Chemistry of the American Medical Association has only the backing of the medical profession.—ED.]

CORRECTION

Potassium Permanganate Solution, 1:5,000, Not 1 Per Cent.—In the discussion of the paper of Dr. Richard L. Sutton on "Infectious Eczematoid Dermatitis," THE JOURNAL, October 9, page 979, Dr. Harold N. Cole is quoted as advising the use of a 1 per cent. aqueous solution of potassium permanganate, four or five times a day, for the treatment of this disease. Dr. Cole calls our attention to the fact that this should read, 1:5,000, as a 1 per cent. solution of potassium permanganate would give rise to a severe dermatitis.

Government Services

Transfer of Hoff General Hospital

The U. S. Public Health Service has taken over the Hoff General Hospital and U. S. Debarkation Hospital at Fox Hills, Staten Island, N. Y. It will be continued as a general hospital with a capacity of 500 beds. Dr. J. O. Cobb, recently in charge of Public Health Service activities in Chicago, will be in charge.

Public Health Service Examinations

A board of commissioned officers of the U. S. Public Health Service has been convened in Washington for the purpose of examining officers to determine their fitness for promotion and to examine applicants for appointment as assistant surgeons. The board is composed of Senior Surgeon G. M. Magruder, chairman, Surgeon Edward Francis, and Surgeon A. M. Stimson, recorder.

Purchase of Medical Supplies

The purchase of all technical supplies for the Medical Corps of the Army has reverted back into the hands of the Surgeon-General's Office, according to an announcement made by the War Department. During the war, and since, all supplies for the Army, including the Medical Corps equipment, were obtained through the Purchase, Storage and Traffic Bureau under the jurisdiction of the General Staff.

Examinations for Army Commissions

More than 300 emergency officers appeared for examination for commissions in the Medical Corps of the Army at various camps throughout the country, October 25. During the next few weeks the papers will be graded and recommendations will be made for the issuance of commissions to the successful candidates. These recommendations will then go before a higher board composed of eight general officers in session at Washington of which Surgeon-General Ireland is a member.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 16, 1920.

Silica as a Cause of Printers' Phthisis

In a letter to the *Times*, Mr. E. Halford Ross brings forward a new theory as to the causation of printers' phthisis. Early in 1918 he reported to the health committee of the joint industrial council of the printing trades that there was a concentration of hereditary predisposition to consumption in compositors owing to the "closeness" of their craft and to intermarriage within their families. About a year ago his suspicions fell on printers' list as a cause. It is a black, grumous, woolly, fluffy substance that collects in compositors' boxes, trays, cases and chases. It had already been examined by bacteriologists for the tubercle bacillus but found to be sterile. This was a peculiar fact and encouraged Mr. Ross to make a further examination. He then found that the list does not readily decompose like the dirt collected in rulers', readers' and binders' rooms, which soon becomes musty and smells. Then he remarked its weight and realized that there was no object in looking for the tubercle bacillus in it, for the bacillus was already latent in the human subject. A chemical analysis was carried out. Samples of list were obtained from various works and sent unlabeled to chemists. They reported that the list from composing rooms contained both silica and iron in appreciable quantities; the list from machine rooms contained less. It is known that silica and the oxids of iron light up phthisis when inhaled continually by those predisposed to the disease. The condition of the lung produced by silica, which predisposes to phthisis, has been described as silicosis. One of the great printing firms of London has for some time used suction bellows on compositors' trays, cases and chases to remove the list.

Serious Financial Position of the Hospitals

The financial position of the London hospitals is described in a report just issued by the committee of King Edward's Hospital Fund as alarming. The expenditure of 109 institutions, providing a total of 9,988 beds in average daily occupation during the year 1919, is reviewed. The chief features are a continued rise in wages and salaries, and the cessation of the treatment of military and naval patients (for whom the government pays). The total expenditure of these hospitals for maintenance, administration, rates and taxes, but excluding capital expenditure, interest on borrowed money and contributions to the maintenance of convalescent homes and country branches, amounted to $10,500,000. In 1913, the last year before the war, the expenditure was only $5,700,000.

Intellectual Reconciliation with Germany

The subjoined letter, signed by a large number of professors and doctors of Oxford University, has been sent:

To the Professors of the Arts and Sciences and to the Members of the Universities and Learned Societies in Germany and Austria:—Since there will be many of you who fully share our heartfelt sorrow and regret for the breach that the war has occasioned in our friendly intercourse, and since you cannot doubt the sincerity of the feeling which engendered and cherished that old friendliness, you must, we believe, be sharing our hope for its speedy reestablishment. We therefore, the undersigned doctors, heads of houses, professors and other officers and teachers in the University of Oxford now personally approach you with the desire to dispel the embitterment of animosities that under the impulse of loyal patriotism may have passed between us. In the field where our aims are one, our enthusiasms the same, our rivalry and ambition generous, we can surely look to be reconciled, and the fellowship of learning offers a road which may, and, if our spiritual ideals be alive, must lead to a wider sympathy and better understanding between our kindred nations. While political dissensions are threatening to extinguish the honorable comity of the great European states, we pray that we may help to hasten that amicable reunion which civilization demands. *Impetret ratio quod dies impetratura est.*

This appeal is severely criticized by the *Times*, which says that its tone will shock the feelings of many in all classes of the British people. "Their attitude throughout the war was wonderfully free, in the face of unparalleled provocation, from hatred and vindictiveness, and they recognized to the full the catholic nature of art and literature. But they do not forget, as these professors seem ready to do, the unjust and wicked war forced upon them, which has swept away a whole generation of their youth, and to which the political dissensions threatening Europe mourned over by the signatories are directly due. The 'fellowship of learning' is very fine, and forgiveness to the truly repentant wrongdoer is a lofty spiritual ideal and a Christian duty. But justice is the first of human virtues, and justice demands that there shall be no pardon, to say nothing of 'amicable reunion' and the restoration of 'former friendliness' until the offender publicly confess their guilt, exhibit heartfelt sorrow for their crimes, and make the utmost satisfaction in their power. Only then will it be time to admit them into 'the honorable comity of European states.' The signatories seem ready not merely to forget the war and the German crimes in the war, but to imply that these crimes were committed under the impulse of loyal patriotism, such as inflamed our own people. They make no distinction between 'the embitterment of animosities' rightly kindled by the deliberate sinking of our hospital ships or the bombing of our open cities and the black passions of the wretches who perpetrated these enormities. Are the Oxford professors so ignorant of modern German thought as not to know that these passions were systematically fostered and propagated by the professorentum and learned societies of Germany for generations before the war? Have they no recollection of the manifesto signed by no less than ninety-three representatives of German science and art? Many of the greatest names in Germany in theology, natural science, law, history and philosophy were appended to that blank repudiation of German guilt, that whole-hearted defense of the violation of Belgium and all the murders done there, that frank confession that 'it is for the protection of kultur and out of kultur, that militarism has arisen.'"

Moral Objections Against Propaganda for the Prevention of Venereal Disease

In Manchester, protests have been made to the city council by certain religious associations against some features of the scheme for the prevention of venereal disease, and especially against the official poster. The health officer, Dr. J. Niven, at the invitation of the health committee has prepared a reply. He lays stress on the point that the Royal Commission on Venereal Diseases adopted the principle that these diseases should be treated on the same lines as other infectious diseases. It follows that the public should be freely canvassed as to the dangers, modes of prevention and means of cure. He points out that moral suasion has been abundantly tried in the army, and yet there has been a great extension of venereal disease. The class which is not affected by moral teaching has to be reached if venereal disease is to be materially reduced. Many men, for various reasons, will not go to treatment centers; therefore it was necessary to consider how they could be protected. Some of the objections raised are thus met by Dr. Niven: Objection 1. The poster does not sufficiently emphasize the need for purity of life. Reply: Perhaps this is because purity of life does not always protect against venereal disease. Objection 2. The poster is an encouragement to vice, assuming, as it does, that sexual indulgence is a thing of little moment. Reply: One would have thought the reverse, as it reminds the public that promiscuous intercourse is fraught with danger, a fact which only too readily slips from the mind of the young. But it is considered that the safety which may be obtained by following certain directions removes a deterrent to vice. This is more than doubtful. The mere fact that certain steps must be taken in a definitely prescribed manner acts rather as a check than otherwise, and only those bent on giving rein to their passions will take the necessary trouble. The deadly thing is the inertia which prevails with regard to venereal disease. This is shown by the fact that only two men a day apply at the public health office for a copy of the directions. Objection 3. It is contended that measures of personal disinfection are futile. Reply: At certain periods during the war the adoption of personal precautions reduced the incidence of venereal disease to small dimensions, when the necessary means were supplied and thorough instruction was given.

The Physician's Right to Strike

In a previous letter, a threatened strike of physicians against coal miners—a class which of late has repeatedly held the community in ransom by threatening to strike—was described. "The Right to Strike," a play by Ernest Hutchinson, dealing with the question, is now running. The staff of a small railway line giving sole access to a town decides to strike in order to enforce its terms. Medical supplies being held up, the staff of the local hospital counters by a motor transport service. On the first day of the strike a car is upset by a steel wire placed across the road, and a young physician, newly married, is killed. The medical strike then becomes as complete as the railway strike, and medical help is denied to the strikers and their families. The wife of a signalman has an obstructed labor. A physician, a friend of the one killed, is sought. He hesitates for some time; but, the railway strike being over, he is persuaded by his friend's widow to save the woman. The play has attracted much attention in the medical profession. A daily paper organized a matinée to which it invited about 300 physicians and a number of members of Parliament and trade unionists. So great was the demand for seats that the gallery and pit contained almost as many physicians as the stalls. The audience was very demonstrative. During the performance, ballot papers bearing the question, "Are physicians justified in starting a reprisal strike?" were distributed to the audience. The result was a majority of 16 per cent. in favor of the reprisal strike.

MADRID

(From Our Regular Correspondent)

Oct. 4, 1920.

Medical Week at Santander

The sanitary authorities have considered it their duty to extend their work by a campaign of propaganda, especially needed in this country, where sanitation does not exert in public life the influence it ought to. The public health officials selected the city of Santander at the time when the summer tourists were there in greatest numbers and when the royal family was spending a few days in the town. The public success had been taken for granted. The Santander physicians unfortunately did not participate fully in the medical week. The medical side, however, was much to the fore, as the lectures were prepared for physicians and not for the general public that filled the theater where the sessions were held. But the king surmounted all the misgivings with an address which, listened to respectfully at the beginning, created so much enthusiasm later that, contrary to the custom when the king speaks, wave followed wave of applause, and the king ended amid thundering cheers. His participation endowed the medical week with an importance never dreamed of by its organizers. In his address, the king, after greeting the medical society of Santander, emphasized the importance of this meeting, which would show the world after the war that Spain possesses a medical corps competent to improve Spanish health conditions. He called attention to the transformation that has been brought about in science

since 1914. Thus, we find chemists searching for the most effective agents of destruction, and at the same time permitting medicine to employ its inhuman discoveries for the benefit of mankind. On the other hand, it furnishes products and instruments for slaughter and, on the other, physicians study the way of nullifying these discoveries and even employing to restore health what was designed for the very purpose of destroying health and life. He advised physicians to go back to the laboratories and clinics and to work again for the welfare of humanity. He emphasized the important social rôle of the physician, to whom people used to resort only in case of sickness, while nowadays he is in constant demand in everyday life. The three chief subjects comprised by social medicine are natality, morbidity and mortality. He praised the holding of "medical" or "health" weeks that educate the public in the importance of public health and the duty of every citizen to do his share in increasing births and decreasing morbidity and mortality. The number of births in Spain should constitute at this moment a matter of public concern; for, while in 1906 the birth rate of Spain was exceeded only by that of Russia and equaled only by the birth rates of Germany, Austria and Italy, being 38 per thousand, this rate has now decreased to 33 per thousand. So we have lost 5 per thousand in a period of fourteen years. Going still further into this subject, the king said that according to the Instituto Geográfico and Estadístico (March report), the birth rate in Spain is lower than the death rate. There are some towns, as Santa Cruz de Tenerife, where the number of deaths are 10 per thousand more than the number of births. Madrid, with a birth rate of 27 per thousand, has a death rate of 26 per thousand. This cannot continue, as it will require only an epidemic of malaria, influenza or even a cold breeze from the mountains which may cause more pneumonia than usual to place mortality ahead of natality. He recognized that human selfishness, from which women were not exempt, made people try to live more comfortably by having fewer children or none at all, but he hoped that eventually this condition would be corrected and that citizens, while understanding their rights, would also fulfil their duties. So far as mortality is concerned, tuberculosis is a prominent factor. Therefore he did not consider too excessive any sanitary means that might be employed to combat it. He thought there were also in Spain other diseases that should be combated energetically, for instance, malaria, which has spread so extensively of late that now it may be said that it prevails throughout the forty-nine Spanish provinces. The government is at present studying measures to combat it, and the king stated that he had requested the minister of the interior not only to attend the medical week as a witness but also to discuss with the king the first steps that should be taken in the campaign against malaria. The king expressed his desire to have the medical profession take the leadership in making the people understand their duty of having more children so that Spain might be at the head of the world in this respect. Finally, he appealed to the women present to assist in passage and enforcement of laws for child welfare—a work that can be done only by women. He turned then to the physicians in the audience, reminding them that while he knew they were always ready to sacrifice their lives, this was not sufficient, for what was really needed was a daily sacrifice without the glamour of death. "It has been stated recently that Spanish physicians would go on a strike, abandoning their patients. This is an insult, for Spanish physicians will not do such a thing." (Great applause.) "Your diploma represents rather than a means of making a living a priesthood of service which you have never deserted." (Applause.) "I hope therefore that all of you will fulfil your duty and show the world our worth by means of better statistics than those of any other country." The king's speech was impromptu.

BELGIUM

(From Our Regular Correspondent)

Oct. 1, 1920.

Congress of Physiotherapy

Physical agents are gradually assuming more importance in modern therapeutics, the more so as the war developed newer indications and extended the old indications for physiotherapy. It is not surprising, then, that the first meeting of physiotherapeutic specialists since the war, held at Antwerp, September 11-12, should have been a marked success.

DISORDERS OF GROWTH

Dr. Kouindjy presented an extensive study on the disorders of growth and their treatment by physical agents and therapeutic work and exercises. The disorders of growth represent a class of affections which demand attentive surveillance, for even slight neglect may lead to grave consequences. Besides surgical intervention for osteitis and osteomyelitis and the measures employed for combating certain special affections during the growing period, the methods of treatment may be classified in two groups: hygienic measures and prophylactic measures. The first group comprises fresh air, light, rational dietetics and rest; the second includes especially methodical gymnastics and therapeutic work and exercises. Regulated work and exercises bring the psychomotor centers of the child into play, and make possible the maximum of movements with the minimum of effort. Since the hygienic and prophylactic measures form the bases of physical education, it is logical to assert that these, if rationally applied, constitute the whole of the treatment of the diseases of growth.

ABUSE OF MECHANOTHERAPY

It is perhaps the abuse of mechanotherapy which has done the greatest injury to the cause of physiotherapy; in fact, in late years many mishaps have been charged to this method of therapy. Dr. Guermonprez has made a special study of the contraindications to mechanotherapy in myotenositis, and he suggests that it should be avoided in all cases accompanied by a lesion of the muscle, especially at the beginning of treatment. Premature application of mechanical movement might cause an irritation of the muscle fibers and induce myositis and sclerotic processes in the muscles. The regrettable accidents of mechanotherapy should be attributed to the fact that this kinetic agent for a long time was limited to the empirics. Well directed and properly applied by an experienced physiotherapist, mechanotherapy yields excellent results. While it is true that early forcible mobilization and functional reeducation by graduated work and exercise can advantageously replace mechanotherapy, nevertheless the latter is amply justified and indicated in the treatment of stiff and ankylosed joints.

THE SPIROMETER

The rationale of the use of the spirometer was outlined in an interesting paper by Professor Spehl of Brussels. The majority of kinesitherapists are of opinion that the spirometric determination of the respiratory capacity is not sufficient: the inspired air should also be measured. Inspiration is a function of respiration just as much as is expiration. To get an exact knowledge of the respiratory capacity we must be content with chest measurements, for, imperfect as this method may be, no more precise means of measuring the inspired air has yet been found. The method does give an approximate idea of the quantity of air inspired. The relation betwen the two figures, that derived from the spirometric determinations for expiration and from the chest measurements of inspiration, permit the plotting of curves by which we can make a rational study of the respiratory capacity of each person.

TEACHING OF PHYSIOTHERAPY

Up to the present time, according to the reports of Drs. K. Lynens (for Belgium), Guilleminot (for France) and Stanley Melville (for England), there is nowhere organized instruction in physiotherapy. With few exceptions, as at the University of Ghent and the University of Madrid, where chairs of electrotherapy have lately been established, and on the rare occasions when some physiotherapists hold a professional meeting, the teaching of physiotherapy is conspicuous by its absence. The congress therefore passed a resolution favoring the institution in every school of medicine of a practical obligatory course of training in physiotherapy and radiology.

THE NEXT CONGRESS

It was decided that the fifth International Congress of Physiotherapy, to have been held in Petrograd, will meet in Madrid in 1922, and Dr. Bartrena Costa, the newly appointed titulary to the chair of physiotherapy at the University of Madrid, has been appointed chairman of the committee on organization.

BERLIN

(From Our Regular Correspondent)

Oct. 9, 1920.

The Right of Putting Incurable Patients Out of the Way

Again and again, the demand has been made by the laity that physicians be given the right to shorten the life of incurable patients, either at the request of the patients themselves or on demand of their relatives or friends, and thus save the patients weeks of useless pain and suffering. Two prominent men in this country have recently supported the idea; namely, the eminent Leipzig jurist, the late Professor Binding, and the Freiburg neurologist, Professor Hoche. They are the co-authors of a book entitled "Die Freigabe der Vernichtung lebensunwerten Lebens" (The Destruction of Useless Human Lives), in which they take the standpoint that to shorten the sufferings of patients who are irretrievably doomed to die is justifiable on humane, ethical, medical and juridical grounds. Binding divides into two main groups those to whom he considers this principle applicable: (1) those who on account of illness or injury cannot possibly recover, and who, in full knowledge of their condition, long to be relieved of their sufferings and have given distinct expression to such desire, and (2) the incurable insane, irrespective as to whether the mental disease is of congenital origin or otherwise. Binding can discover no reason, from a legal, social, moral or religious standpoint, why the incurable insane, who are a terrible caricature of true human beings and awaken horror in almost every one who sees them, should not be put to death. Furthermore, he thinks that friends, relatives or guardians who have the care of these patients and whose lives are made a burden by their continued existence should have the right to petition the authorities that such drastic action be taken.

In a middle group he puts all mentally sound persons who, owing to any event, for example, the infliction of an unequivocally mortal wound, have lost consciousness, and who, if they should regain consciousness, would only awaken to indescribable pain and misery. The according of permission to put sufferers out of their misery could be vested in the state authorities, or the matter could be left to the judgment of the attending physician, who would be in a position to know whether or not the indications for such intervention were present. Binding admits the possibility of errors arising in the according of such permission by state authorities, and also if the attending physician were granted the right to act on his own judgment; but he believes that "what is good and reasonable should prevail in spite of the risk of error." Under the conditions as they exist, he thinks that sympathy goes beyond all rightful bounds and thus becomes cruelty. Not to grant to incurables who long for death the desired relief that an easy death would bring is not based on true sympathy, but rather the opposite. The neurologist, Professor Hoche, states that friends and relatives in cases of incurable disease or incurable mental conditions not infrequently express the wish that "it might soon be over," and, in the case of patients who are suffering and who are near death, physicians are sometimes requested to do nothing to prolong life. The medical code of ethics puts the physician under obligations to preserve life and prolong it as far as possible. Exceptions to these principles we have in certain obstetric cases in which the physician is compelled to interrupt a pregnancy or to sacrifice a living child in order to save the mother. In line with Binding's view that, owing to a false system of ethics, the state goes to extremes in its endeavor to preserve unconditionally useless human lives, Hoche does not regard putting the incurable insane out of the way as an immoral deed but rather as an advisable and useful act.

Dr. Ebermayer, one of our most eminent criminal judges and a member of the Reichsgericht, writing in the *Deutsche medizinische Wochenschrift,* raises serious objections to the foregoing views. He emphasizes, in the same manner as former writers and speakers on the subject, that the establishment of the incurability of a disease or the absolutely fatal character of a given illness is often not possible beyond reasonable doubt. He says that Binding's proposal that a special board be appointed to consider whether or not the indications for drastic action were present awakens grave doubts. Putting the incurable insane out of the way seems to him even more questionable. In the case of such patients as seriously desire death on account of incurable disease, the fact that the one concerned desires death helps to overcome any possible scruples. But the incurable insane are powerless to express their intelligent will in the matter, so that if they were to be put out of the way it would be a case of a third party pronouncing a death sentence on a person whose judgment could not be heard. From a legal standpoint, such a view could not be entertained, especially since, in such cases, it would be more difficult than in the others to guard against abuse. Our sense of justice revolts at the thought of allowing the destruction of useless human lives to go to such lengths as Binding and Hoche propose.

Demand of the Independent Social Democrats that the Penalties for Abortion be Removed

A certain inward relation exists between the demands of Binding and Hoche, on the one hand, and the bill proposed in the reichstag by the independent social democrats that the paragraphs of the Penal Code be annulled which impose penalties on any one who brings about the death of a living embryo or fetus. As the law reads at present, an expectant mother who commits abortion on herself becomes liable to a jail sentence of at least six months (if there are mitigating circumstances) or otherwise of a penitentiary sentence up to five years. The same punishment awaits any one who brings about an abortion in a woman with her consent. If the abortion is performed without the knowledge and consent of the woman, a penitentiary sentence of at least two years is imposed on the perpetrator. If the death of the woman occurs, a penitentiary sentence ranging from ten years to life is provided. That the independent social democrats should demand the annulment of these provisions grows out of the position they take toward the rights of the individual in relation to the rights of the state. They consider the rights of the individual as above the rights of society and the state, but there is no doubt that all the other parties in the reichstag will oppose the bill.

Marriages

CHARLES FREDERICK RATHGEBER to Miss Helene Elizabeth Menzel, both of East Orange, N. J., October 23.

JOSEPH ROSCOE LATHAM, Casper, Wyo., to Miss Marjorie Janet Morey of Racine, Wis., October 11.

LOUIS PRESCHEL, New York, to Miss Mary B. Leisten of Newark, N. J., October 23.

HAROLD ALFRED RAMSER to Miss Mildred E. Jackson, both of Chicago, October 16.

ANTHONY CHARLES SAELI to Miss Johanna Crimi, both of Brooklyn, October 23.

Deaths

Alonzo Potter Williamson, Santa Monica, Calif.; Hahnemann Medical College and Hospital, Philadelphia, 1876; aged 66; a specialist in neurology; a member of the Philadelphia Psychiatric Society; at one time superintendent of the New York State Hospital for the Insane, Pennsylvania State Asylum at Philadelphia, and of the State Asylum for the Insane at Minneapolis, and for four years connected with the Southern California State Hospital at Patton; died suddenly, October 21, from heart disease.

Harry Edward Sears ⊕ Beverly, Mass.; Harvard University Medical School, 1896; aged 50; who served as assistant surgeon, U. S. Army, in Porto Rico during the Spanish-American war, and as Lieutenant-Colonel, M. C., U. S. Army, during the World War, receiving his discharge, May 26, 1919; at one time secretary of the Essex South District Medical Society; was found dead, October 19, from a gunshot wound of the heart, self-inflicted, it is believed, while despondent on account of ill health.

Theodore Mead, Washington, D. C.; Georgetown University School of Medicine, Washington, 1869; aged 83; a member of the Medical Society of the District of Columbia; at one time inspector in the Health Department of Washington; for many years medical examiner in the U. S. Bureau of Pensions; died, October 16.

Ferdinand Taylor Stires, Columbus, Neb.; University of Pennsylvania, Philadelphia, 1908; aged 38; a member of the Medical Society of the State of Pennsylvania; at one time resident physician at Moses Taylor Hospital, Scranton; died, September 28, from acute dilatation of the heart.

Henry Bullwinkel, Brooklyn, N. Y.; Bellevue Hospital Medical College, 1888; aged 54; at one time assistant sanitary inspector of the Brooklyn Board of Health, and in 1891 superintendent of the Hospital for Contagious Diseases, Brooklyn; died, September 14, from nephritis.

James Aloysius O'Reilly ⊕ Middletown, N. Y.; College of Physicians and Surgeons in the City of New York, 1912; aged 33; Lieutenant, M. C., U. S. Army, resigned Nov. 19, 1918, on account of ill health; visiting physician to the Brooklyn Hospital; died, October 20.

William Harold Stutsman, Chicago; Rush Medical College, 1915; aged 34; a member of the Illinois State Medical Sociey; Captain, M. C., U. S. Army, and discharged, June 13, 1919; died in Seattle, Wash., September 22.

Robert I. Hicks, Warrenton, Va.; University of Pennsylvania, Philadelphia, 1855; aged 86; a member of the Medical Society of Virginia; died in the Garfield Memorial Hospital, Washington, D. C., October 16.

Baruch Israeli, Washington, D. C.; Georgetown University School of Medicine, Washington, 1897; for many years an employee of the Surgeon General's Library; died suddenly, October 16, from heart disease.

Herman John Halvorsen ⊕ Chicago; Chicago College of Medicine and Surgery, 1912; aged 33; Lieutenant, M. C., U. S. Army, and discharged Jan. 4, 1919; died, October 21, from acute endocarditis.

Charles Thaddeus Love, Alamo, Tenn.; Vanderbilt University, Nashville, Tenn., 1894; aged 61; a member of the Tennessee State Medical Association; died in a hospital in Nashville, October 3.

Charles Harrison Gardner, Philadelphia; Bellevue Hospital Medical College, 1868; aged 82; assistant surgeon, First Pennsylvania Cavalry, during the Civil War; died, October 19, from pneumonia.

Warren Fletcher Sherman, Lyons, N. Y.; Hahnemann Medical College and Hospital, Chicago, 1866; aged 83; died, September 27, from injuries received in an automobile accident, September 23.

Elijah C. Dimmitt, Germantown, Ky.; University of Pennsylvania, Philadelphia, 1857; aged 85; for several years a member of the state board of health; died suddenly, October 15.

R. C. Matheson, Madison, N. C.; College of Physicians and Surgeons, Baltimore, 1891; aged 52; a member of the Medical Society of the State of North Carolina; died, October 15.

Charles C. Miller, Marengo, Ill.; University of Michigan, Ann Arbor, 1856; aged 89; a well-known apiarist, editor, and author of several books on bee culture; died about September 7.

Mary M. Cronemiller, Sacramento, Calif.; Hahnemann Medical College and Hospital, Chicago, 1890; aged 59; died at the home of her brother in Los Angeles, October 12.

Robert L. Miller, Wichita Falls, Texas; St. Louis College of Physicians and Surgeons, 1895; aged 52; a member of the State Medical Association of Texas; died, October 20.

Charles Ives, Pecatonica, Ill.; Chicago Medical College, 1888; aged 58; a member of the Illinois State Medical Society; died, October 11, from cerebral hemorrhage.

Jerome Bland, Bucyrus, Ohio; Starling Medical College, Columbus, 1869; aged 80; for five years coroner of Crawford County; died, August 31, from cerebral hemorrhage.

Edwin Corlies Bullock, Chester, Pa.; Jefferson Medical College, 1906; aged 37; a member of the Medical Society of the State of Pennsylvania; died, October 18.

James A. Brown, New Kensington, Pa. (license, Pennsylvania, 1894); aged 76; a member of the Medical Society of the State of Pennsylvania; died, October 11.

N. F. Kirkland, Bamberg, S. C.; Medical College of the State of South Carolina, Charleston, 1856; aged 90; a veteran of the Civil War; died, September 26.

Julius P. May, Aspen Hill, Tenn.; University of Louisville, Ky., 1887; aged 64; a member of the Kentucky State Medical Association; died, September 12.

Percy H. Ealer ⊕ Philadelphia; Hahnemann Medical College and Hospital, Philadelphia, 1890; aged 62; died suddenly, October 17, from heart disease.

William Sanders ⊕ Louisville, Ky.; Kentucky School of Medicine, Louisville, 1904; aged 49; died, October 18, from cerebral meningitis.

Frederick Fremont Bigelow ⊕ Island Falls, Maine; Jefferson Medical College, 1883; aged 62; died, September 24, from myocarditis.

Anthony John Hill, Torrington, Conn.; Niagara University Medical Department, Buffalo, 1886; aged 55; died about September 5.

John Haskell Billings, New York; College of Physicians and Surgeons in the City of New York, 1878; died, August 20.

Samuel B. Horning ⊕ Norristown, Pa.; Jefferson Medical College, 1884; aged 58; died, October 19, from heart disease.

John M. Crandall, Charleston, Ark. (license, Eclectic State Medical Board of Arkansas, 1903); aged 67; died, October 6.

Robert Vaughn Ferguson, Pembroke, Ky.; Jefferson Medical College, 1885; aged 62; died, October 8, from diabetes.

William W. Moody, Sunbury, Pa.; Pennsylvania Medical College, Philadelphia, 1861; aged 86; died, October 17.

James B. Stetson, Sheffield, Ill.; Rush Medical College, 1870; aged 75; also a druggist; died, September 18.

Edwin W. Cook ⊕ Rock Island, Ill.; State University of Iowa, Iowa City, 1884; aged 63; died, October 14.

Benjamin Frank Hockman, Sumner, Ill.; Medical College of Ohio, Cincinnati, 1893; aged 55; died, October 8.

Eliza Maria Ellinwood, Rome, N. Y.; University of Michigan, Ann Arbor, 1876; aged 71; died, October 1.

W. H. Bishop, Bremen, Ga.; Atlanta, Ga., Medical College, 1891; aged 69; died, August 12, from pellagra.

Abner Woodward, Trenton, N. J.; Jefferson Medical College, 1852; aged 89; died, September 30.

⊕ Indicates "Fellow" of the American Medical Association.

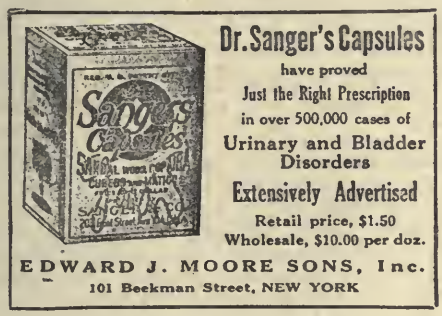
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

MORE MISBRANDED VENEREAL NOSTRUMS

Musser's Capsules.—A number of packages of these capsules, shipped in September, 1919, by the Musser-Reese Chemical Co., Pittsburgh, Pa., were seized by the federal authorities on the charge of misbranding. Analysis of a sample made in the Bureau of Chemistry showed that the capsules consisted essentially of copaiba balsam and oil of santal with indications of oils of cubebs and mace. According to the claims on the label, these capsules would quickly relieve all inflammations of kidneys and bladder and the purchaser was urged to use in connection with the capsules "Dr. Musser's Injection 500." The curative claims were declared false and fraudulent and in December, 1919, the court entered judgment of condemnation and forfeiture and ordered the product destroyed.—[*Notice of Judgment No. 7555; issued Oct. 8, 1920.*]

Dr. Sanger's Capsules.—Thirty-four cartons of these capsules were seized by the federal authorities on the charge that they were misbranded. They had been shipped in June,

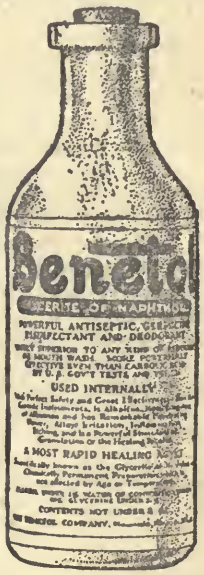


1919, by the Edward J. Moore Sons, New York. The preparation was recommended "for Diseases Pertaining to the Mucous Membranes" and especially for cystitis, "Catarrh of the Bladder," retention of urine, leukorrhea, etc. The Bureau of Chemistry reported that analysis showed the capsules to consist essentially of copaiba, cubebs, santal oil, matico, licorice root and magnesium oxid. The therapeutic claims made for the capsules were declared false and fraudulent and in October, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 7566; issued Oct. 8, 1920.*]

Rid-It Caps.—Six dozen packages of this product consigned in June, 1918, by the S. Pfeiffer Mfg. Co., East St. Louis, Ill., were seized on the charge of misbranding. Analysis showed the preparation to consist essentially of salol, oils of juniper and sassafras, turpentine, a fixed oil and coloring matter. It was falsely and fraudulently recommended for the treatment of gonorrhea, gleet, catarrh of the bladder, rheumatic pains, chronic valvular troubles, etc. In July, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 7516; issued Sept. 24, 1920.*]

Black and White Capsules.—A number of packages of this product were seized in November, 1919, on the charge of misbranding. The product has been shipped by the Wilson Drug Co., Norfolk, Va., and was labeled in part: "Black and White Capsules for Men. . . . An Efficacious Remedy for the Affections of the Kidney, Bladder and Urinary Organs." The federal chemists reported that one-half of the capsules contained hexamethylenamin and the other half a mixture of volatile oils including cubebs and copaiba. The therapeutic claims were declared false and fraudulent and in December, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 7558; issued Oct. 8, 1920.*]

Benetol.—Government officials seized 288 bottles of this nostrum which had been shipped in August, September and October, 1919, by the Benetol Co., Minneapolis, Minn. The preparation was labeled in part:



"Men and Women Will find Benetol a highly efficient douche or injection, or local wash, to insure against infection or to quickly check germ diseases.

"Gonorrhea — Take internally twenty drops in hot water after meals and before retiring. As injection, irrigation or douche use thirty drops of Benetol per glass of warm water or teaspoonful per pint of warm water. Use at night before retiring.

"Gleet—Start treatment as above and gradually increase injection, etc., to teaspoonful per glass of water if necessary."

The federal chemists analyzed the product and reported that the stuff consisted essentially of alphanaphthol, soap, glycerin, water and traces of essential oils and alcohol. This analysis agrees essentially with that made by the chemists in the A. M. A. Chemical Laboratory in 1911, at which time the nostrum was exposed in THE JOURNAL. The federal authorities in the present case held that the therapeutic claims made for Benetol "were false and fraudulent in that the product contained no ingredient or combination of ingredients capable of producing the effects claimed for it." In December, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 7561; issued Oct. 8, 1920.*]

G-U-C Capsules.—More than fifty bottles of this nostrum were seized by the federal authorities on the charge that the product was misbranded. It had been shipped in July, 1919, by the Hollander-Koshland Co., Baltimore. It was recommended as a treatment for "Gonorrhea and Gleet and disorders of a similar nature and origin." The federal chemists reported that analysis showed the capsules to consist of a sulphurated oil with volatile oils, including copaiba, cinnamon and santal oils. The therapeutic claims were declared false and fraudulent and in November, 1919, judgment of condemnation and forfeiture was entered and the court ordered the product to be destroyed.—[*Notice of Judgment No. 7587; issued Oct. 8, 1920.*]

Merz Santal Compound.—Several dozen packages of this product shipped by the Merz Capsule Company of Detroit, in



June, 1919, were declared misbranded. Analysis showed the preparation to consist of balsam copaiba, cassia, sandalwood oil and a sulphurated oil. It was falsely and fraudulently claimed to be a cure for catarrh of the bladder, inflammation of the bladder and other diseases of the genito-urinary organs. In September, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product should be destroyed.—[*Notice of Judgment No. 7505; issued Sept. 24, 1920.*]

Enoob Antiseptic Injection and Capsules.—These products shipped in December, 1917, by the Tropical Cooperative Co., Jacksonville, Fla., were declared misbranded. Analyses showed the "injection" to be essentially a solution of phenol

(carbolic acid), menthol, thymol, boric acid and zinc sulphate in water and the "capsules" to consist essentially of cubebs, copaiba, gum turpentine and pepsin with indications of santal oil. The products were falsely and fraudulent represented as a treatment and cure for gonorrhea, gleet and other diseases of the bladder and urinary organs. In July, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product should be destroyed.—[*Notice of Judgment No. 7507; issued Sept. 24, 1920.*]

White Swan Injection.—Some bottles of this preparation which had been shipped in February, 1917, by the Stacy Chemical Co., Houston, Texas, were seized by the federal authorities on the charge that the product was misbranded. The article was labeled in part:

"A new and scientific combination for the successful treatment of Gonorrhea and Gleet and all urinal complications. This remedy used in accordance with directions is very effective in the worst cases."

Analysis of the preparation by the federal chemists showed it to be essentially a watery solution of boric acid, salts of aluminum, zinc and ammonium, glycerin and phenol (carbolic acid) with bismuth subgallate in suspension. The therapeutic claims were declared false and fraudulent and in October, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 7568; issued Oct. 8, 1920.*]

Correspondence

HOT FLOORS AS A PREVENTIVE TO SHOCK

To the Editor:—I have been operating in Korea for the last twelve years and have never been bothered with "surgical shock," the reason being the "kan," or heated floor, which we have in Korea and certain parts of China. This floor is a wonderfully economical thing, being heated with the smoke after the rice has been cooked. A pot or kettle is placed outside and below the level of the floor of the room, usually in a sort of lean-to. Fuel of grass, weeds, straw, pinetops or the like is used to cook the rice, which takes only a few moments. The rest of the heat and smoke passes under the sleeping or living room and heats the floor, which is made of stones covered with plaster, and over this a very thick layer of native paper similar to linoleum. After the rice is cooked the water must be heated, or the food for the cow is heated; and, of course, cooking three meals a day heats these thick rock and plaster floors, which remain hot for twelve hours.

An American takes off his hat when entering his home. A Korean removes his shoes at the door and enters in the cozy little 8 by 8 foot room, leaving his hat on. Instead of taking a chair, he sits on the hot floor, and smokes his pipe. On retiring, he removes his overcoat and hat, made of horsehair, and stretches himself at full length on this floor, which has been scrubbed clean during the day. He usually sleeps with his clothes on, with little or no cover except toward daybreak when, as it begins to grow chilly, he may cover himself with a quilt or his overcoat. In cold weather he reclines near the hot spot. If one has rheumatism or some painful area and reclines on this hot spot, one finds it a wonderful remedy. The good mother or sister becomes skilful in heating the floor to the proper degree according to the season. In warm weather she rakes out the hot coals, or cooks elsewhere.

One evening, two other Americans and myself arrived at one of these houses to spend the night. It had been a cold day, and after waiting an hour for the room to become warm we insisted that more fire be made. We were told that by and by it would be warm enough, but still insisted, and more fire was made. This caused us a sleepless night; for two hours later, just as we had fallen asleep, the floor became so warm that we were obliged to turn over repeatedly so as to prevent being roasted.

The basement floor of my hospital has rooms heated in this manner, and it is needless to say that these are the popular rooms of the hospital. Every patient that has been operated on is placed over a hot spot, covered with blankets, and kept there until he is well heated, usually for the entire night. We have amputations, laparotomies and other long operations in which shock would naturally be expected, but seldom or never a case of shock. We perform about 450 operations a year, and I firmly believe that this hot spot is the reason we do not have shock.

As we use chloroform almost exclusively as an anesthetic, one might expect more shock; but during my twelve years we have never lost a case from the anesthetic, and shock is very rare.

R. M. WILSON, M.D., Kwangju, Korea.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EFFECT OF PREGNANCY ON THE VOICE

To the Editor:—Please inform me what effect pregnancy has on the voice. Would it be a risk for a professional singer to use her voice, either for concert work or for parties, during pregnancy? Is there more of a chance of her voice being changed following pregnancy (*a*) if she were to use it, or (*b*) if she were not to use it (during pregnancy)? Is it a fact that some noted singer or singers have found their voices to be impaired after pregnancy? If you publish, kindly omit my name.

C., Oakland, Calif.

ANSWER.—So far as we know, there are no grounds for supposing that pregnancy has any deleterious effect on the voice, or that a singer takes any risk in using her voice for concert work or parties during pregnancy. Nor are there any grounds for believing that there will be any change in the voice following pregnancy, whether the singer uses or does not use the voice during this period.

As regards singers finding their voices impaired after pregnancy: It would be strange if such a coincidence might not occur, but such a relationship as cause and effect does not exist. For instance, one of our best known modern singers has seven grown sons. She is still on the concert stage, and it is not known that at any time she was incapacitated for more than a few months during a pregnancy. In a word, normal pregnancy is a physiologic, normal condition.

COMPOSITION OF EGGSHELL

To the Editor:—I should like to know the composition of the shell of a hen's egg, particularly the acid-insoluble portion.

B. G. R. WILLIAMS, M.D., Paris, Ill.

ANSWER.—According to Tibbles (Foods, Their Origin and Manufacture), the shell of the hen's egg, including its lining membrane, amounts to 11 per cent. of its weight. According to the same author, the composition of the entire shell is:

	Per Cent.
Calcium carbonate	93.7
Magnesium carbonate	1.3
Calcium phosphate	0.8
Organic matter	4.0

The "organic matter" consists mostly of the lining membrane of the shell. This has practically the composition of keratin. Most writers, in fact, consider it as a form of keratin. Exclusive of the lining membrane, the shell contains only traces of organic matter (from 36 to 65 parts per million).

REQUEST FOR UNREPORTED INSTANCES OF MYCETOMA, OR MADURA FOOT

To the Editor:—I am collecting records of the occurrence of mycetoma, or Madura foot, in North America, and I am anxious to get in touch with physicians who have knowledge of cases that have not been reported in the literature.

MARK F. BOYD, M.D., Galveston, Texas.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, Nov. 9-10. Sec. Reg. Bd., Dr. T. J. Stout, Brinkley. Sec. Eclectic Bd., Dr. C. E. Laws, Fort Smith.

CONNECTICUT: Hartford, Nov. 9-10. Sec. Reg. Bd., Dr. Robert L. Rowley, Hartford.

CONNECTICUT: New Haven, Nov. 9. Sec. Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

CONNECTICUT: New Haven, Nov. 16-17. Sec., Eclectic Bd., Dr. James E. Hair, 730 State St., Bridgeport.

DELAWARE: Dover, Dec. 14-16. Sec., Reg. Bd., Dr. P. S. Downs, Dover.

FLORIDA: Gainsville, Dec. 6-7. Sec. Reg. Board, Dr. W. M. Rowlett, 812 Citizens Bank Bldg., Tampa.

ILLINOIS: Chicago, Dec. 6-7. Director, Mr. F. W. Shepardson, Capitol Bldg., Springfield.

LOUISIANA New Orleans, Dec. 2-4. Sec., Dr. E. W. Mahler, 1551 Canal St., New Orleans.

MAINE: Portland, Nov. 9-10. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

MARYLAND: Baltimore, Dec. 14. Sec., J. McP. Scott, 137 W. Washington St., Hagerstown.

MASSACHUSETTS: Boston, Nov. 9-11. Sec., Walter P. Bowers, Room 144, State House, Boston.

NEBRASKA: Lincoln, Nov. 11-12. Sec., Mr. H. H. Antles, Lincoln.

OHIO: Columbus, Dec. 1-3. Sec., H. M. Platter, State House, Columbus.

SOUTH CAROLINA: Columbia, Nov. 9. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TEXAS: Dallas, Nov. 16-18. Sec., Dr. Thomas J. Crowe, 617-20 Trust Bldg., Dallas.

VIRGINIA: Richmond, Dec. 14-17. Sec., J. W. Preston, 511 McBain Bldg., Roanoke.

CLASSIFICATION OF DENTAL SCHOOLS

The following classification of dental schools by the Dental Educational Council of America is said to be revised to August, 1920. According to the report, these classifications were all made on the basis of the requirements in force prior to April 30, 1920:

CLASS A

University of Southern California College of Dentistry, Los Angeles.
University of California College of Dentistry, San Francisco.
Northwestern University Dental School, Chicago.
University of Illinois College of Dentistry, Chicago.
University of Iowa College of Dentistry, Iowa City.
Harvard University Dental School, Boston.
Tufts Dental College, Boston.
University of Michigan College of Dentistry, Ann Arbor, Mich.
University of Minnesota College of Dentistry, Minneapolis.
St. Louis University Dental School, St. Louis.
Creighton University College of Dentistry, Omaha.
University of Buffalo Dental Department, Buffalo.
Ohio State University College of Dentistry, Columbus, Ohio.
North Pacific Dental College, Portland, Ore.
University of Pittsburgh College of Dentistry, Pittsburgh.
The Thomas W. Evans Museum and Dental Institute, University of Pennsylvania.
Vanderbilt University School of Dentistry, Nashville, Tenn.
Medical College of Virginia School of Dentistry, Richmond, Va.
Marquette University College of Dentistry, Milwaukee.

CLASS B

College of Physicians and Surgeons Dental Department, San Francisco.
Colorado College of Dental Surgery, Denver.
Georgetown University School of Dentistry, Washington, D. C.
George Washington University Dental School, Washington, D. C.
Howard University Dental School, Washington, D. C.
Atlanta-Southern Dental College, Atlanta, Ga.
Chicago College of Dental Surgery, Chicago.
Indiana College of Dentistry, Indianapolis.
Louisville University College of Dentistry, Louisville, Ky.
Loyola University School of Dentistry, New Orleans.
Tulane University School of Dentistry, New Orleans.
Baltimore College of Dental Surgery, Baltimore.
University of Maryland Dental Department, Baltimore.
Washington University Dental School, St. Louis.
Kansas City-Western Dental College, Kansas City, Mo.
University of Nebraska College of Dentistry, Lincoln, Neb.
New York College of Dentistry, New York.
College of Dental and Oral Surgery of New York, New York.
Western Reserve University Dental School, Cleveland.
Ohio College of Dental Surgery, Cincinnati.
Philadelphia Dental College, Philadelphia.
University of Tennessee College of Dentistry, Memphis, Tenn.
Meharry Dental College, Nashville, Tenn.
Baylor University College of Dentistry, Dallas, Texas.

CLASS C

College of Jersey City, N. J.
University of West Tennessee, Memphis, Tenn.
Texas Dental College, Houston, Texas.
Cincinnati College of Dental Surgery, Cincinnati.

Illinois June Examination

Mr. F. C. Dodds, superintendent of registration, Illinois Department of Registration and Education, reports the written and practical examination held at Chicago, June 14-18, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 243 candidates examined, 221 passed and 22 failed. Thirteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	No. Licensed
Denver Homeopathic College		(1904)	1
University of Colorado		(1919)	1
Chicago College of Med. and Surg.		(1911), (1916), (1917)	3
Chicago Hospital College of Medicine		(1918), 1919)	2
Chicago Medical School		(1920)	12
Jenner Medical College, Chicago		(1916)	1
Loyola University		(1919) 4, (1920)* 47	51
Hahnemann Med, College and Hospital Chicago		(1920)	3
Northwestern University		(1920)† 57, (1917) 1	58
Rush Medical College		(1920)	35‡
University of Illinois		(1920)	40
Women's Medical College of Chicago		(1887)	1
University of Louisville Medical Department		(1920)	1
Harvard University		(1916), (1917), (1920)	3
St. Louis University School of Medicine		(1920)	3
Washington University Medical School		(1920)	2
Fordham University School of Medicine		(1917)	1
Long Island College Hospital		(1903)	1
Jefferson Medical College of Philadelphia		(1920)	1
Chattanooga Medical College		(1909)	1

College	FAILED	Year Grad.	Number Failed
Chicago College of Medicine and Surgery		(1913), (1917)	2
Chicago Medical School		(1920)	4
Chicago Hospital College of Medicine		(1918)	3
Hahnemann Medical College and Hospital, Chicago		(1920)	1
Loyola University		(1916), (1920)	2
University of Illinois		(1920)	2
St. Louis University Medical School		(1920)	1
Meharry Medical College		..(1908), (1913), (1913), (1913), (1916), (1917), (1920)	7

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Howard University School of Medicine		(1908)	Texas
State University of Iowa College of Med.		(1912), (1919)	Iowa
State Univ. of Iowa Coll. of Homeopathic Med.		(1912)	Iowa
Loyola University		(1916)	Missouri
Harvard University		(1910)	Maine
Tufts College Medical School		(1918)	Mass.
Johns Hopkins University Medical Department		(1916)	Maryland
University of Michigan Homeopathic Med. School		(1916)	Michigan
St. Louis University School of Medicine		(1918)	Missouri
Western Reserve University School of Medicine		(1905)	Ohio
Marquette University School of Medicine		(1913)	Wisconsin
Milwaukee Medical College		(1911)	Wisconsin

* Forty-five candidates received temporary licenses pending completion of their hospital internships.

† Fifty-six candidates received temporary licenses pending completion of their hospital internships.

‡ Thirty-three candidates received temporary licenses pending completion of their hospital internships.

Iowa June Examination

Dr. G. H. Sumner, secretary, Iowa State Board of Medical Examiners, reports the written examination held at Iowa City, June 16-18, 1920. The examination covered 8 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 24 candidates examined, 23 passed and 1 failed. Fourteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Cooper Medical College		(1912)	91.5
Yale University		(1904)	87.8
University of Illinois		(1920)	87.3
State University of Iowa School of Medicine		(1920)	82.1, 84.7, 85.5, 86.1, 86.3, 86.3, 86.5, 86.7, 88.3, 89.6, 90.3, 90.5
Johns Hopkins University		(1920)	85.8
Harvard University		(1915) 88.2, (1918)	87.2
St. Louis University School of Medicine		(1920) 84.2, 86.6, 87	
Meharry Medical College		(1912)	75.3
University of Virginia		(1918)	87.3

	FAILED		
Loyola University		(1918)	73.5

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Illinois		(1916), (1918, 2)	Illinois
Rush Medical College		(1915)	Illinois
Harvard University		(1915)	Penna.
Medical School of Maine		(1908)	New Hamp.
University of Minnesota Medical School		(1903)	Minnesota
University of Michigan Homeopathic Med. School		(1883)	Nebraska
Washington University		(1919)	Missouri
John A. Creighton Medical College		(1913)	Nebraska
Eclectic Medical College		(1907)	Illinois
Jefferson Medical College		(1896)	Penna.
University of Virginia		(1896)	Virginia
Marquette University		(1917)	Wisconsin

Book Notices

Chemistry for Public Health Students. By E. Gabriel Jones, M.Sc., F.I.C., Lecturer in Public Health Chemistry in the University of Liverpool. Cloth. Price, 6 shillings. Pp. 244. London: Methuen & Co., 1920.

The material in this easily readable book has been compiled from work sheets and notes of lectures provided for students preparing for the Diploma in Public Health. The criterion of standards is that applicable to conditions in England rather than to those in the United States. The methods of analysis, however, are so detailed that persons who possess only an elementary knowledge of quantitative chemistry may have little trouble in pursuing this type of work; nor does the author feel that it is necessary to apologize for inclusion of the "examples of calculation"—"it has been found that these explanations are necessary in order to avoid waste of time over the arithmetical part of the work." The book is divided by subtitles dealing with gravimetric and volumetric analysis, various food classifications, water, sewage effluents, air and disinfectants.

One fallacy which many authors, especially the English, persist in perpetuating is that an oxidizing reaction necessitates the "giving up" of oxygen. Thus Mr. Jones states in reference to calcium hypochlorite:

> By reason of the ease with which it gives up oxygen to reducing substances, bleaching powder is a powerful oxidizing agent, and it is to this fact that it owes much of its disinfectant power.

As has been pointed out previously in The Journal, this explanation is not according to present-day concepts. In modern chemistry, oxidation may be considered to involve ultimately the assumption of positive or loss of negative electrical charges by ions or atoms, and defined "as consisting fundamentally in the loss of electrons by atoms or ions" (Stieglitz, Qualitative Chemical Analysis).

On the whole, this is an up-to-date treatise. Physicians who are actively engaged in public health work, either from an administrative or a laboratory point of view, will find the book a worthy addition to their library.

The Newer Methods of Blood and Urine Chemistry. By R. B. H. Gradwohl, M.D., Director of the Gradwohl Laboratories, Chicago and St. Louis, and A. J. Blaivas. Second edition. Cloth. Price, $5. Pp. 418, with 79 illustrations. St. Louis: C. V. Mosby Company, 1920.

This edition has been considerably enlarged by the inclusion of new matter. Among the recent methods introduced we find the processes for the systematic examination of the blood advanced by Folin and Wu, which are probably the best at our disposal for the chemical examination of the blood. It is unfortunate that the newer modification of the blood-sugar test of these authors was not included; but this, no doubt, is due to the fact that the test did not appear in time for inclusion. An entirely new section dealing with the increasingly important work on basal metabolism has been introduced, which should prove of great value to those desiring a knowledge of the basis of such work. Especially important to the general worker are the sections dealing with the interpretation of the blood findings. These sections give in full detail the findings to be expected in the many conditions to which such examinations are applicable. We can recommend this book to all who desire to keep in touch with this field of laboratory diagnosis, which is fast becoming of such great importance from the clinical point of view.

Woman and the New Race. By Margaret Sanger. With a Preface by Havelock Ellis. Cloth. Price, $2. Pp. 234. New York: Brentano's, 1920.

The primary mark of the propagandist is the fact that he is inclined to consider his particular subject the panacea for all human ills. This is especially exemplified in the book by Mrs. Sanger. According to the author, if we can once have birth control, we shall prevent war and profiteering, poverty and tuberculosis; improve housing conditions; stamp out disease, and raise a race of physical and mental giants. Besides this, the world will be improved in its morality, and womanhood will at last shake off its bondage. In her final peroration: "Great beings come forth at the call of high desire. Fearless motherhood goes out in love and passion for justice to all mankind. It brings forth fruits after its own kind. When the womb becomes fruitful through the desire of an aspiring love, another Newton will come forth to unlock further the secrets of the earth and the stars. There will come a Plato who will be understood, a Socrates who will drink no hemlock, and a Jesus who will not die upon the cross. These and the race that is to be in America await upon a motherhood that is to be sacred because it is free." But a cruel government has ruled that methods of birth control cannot be taught, that apparatus for birth control cannot be sold; and so all of these must wait! Mrs. Sanger cannot even tell about the practical end of the matter in her most recent book; if she did, the book would be suppressed and that would not help Mrs. Sanger, who has already been considerably suppressed. Physicians will learn very little from this book; the public will learn much that is not quite accurate and a great deal which it could just as well do without. This does not mean that many intelligent, thoughtful and earnest people are not in favor of birth control; it means that, like many other great causes, the cause of birth control has been much injured by its chief propagandists.

Taschenbuch der Frauenheilkunde. By Dr. Koblanck, a. o. Professor an der Universität, Berlin. Second edition. Cloth. Price, 54 marks. Pp. 282, with 63 illustrations. Berlin: Urban & Schwarzenberg, 1920.

In the preface, Koblanck states that this book is intended for the general practitioner. He omits microscopic diagnosis and the technic of major operations as belonging more strictly in the sphere of the specialist. For the purpose intended, the little volume is a valuable one. The subject matter is handled in an authoritative and at the same time practical manner. Particularly excellent are the chapters on gonorrheal infections and on carcinoma of the uterus, because of the emphasis on the things the general practitioner ought to know. A novel feature for a handbook is the introduction of such subjects as nasal reflexes in their relation to the menstrual function, disturbances of sexual life, etc. There is a brief but adequate discussion of the diseases of the breast and of the rectum.

Ohrenheilkunde für den Praktischen Arzt. Von Privatdozent Dr. Rudolf Leidler. Paper. Price, 30 marks. Pp. 278. Berlin: Urban & Schwarzenberg, 1920.

This handbook, designed to assist the practitioner in the care of otologic patients when specialists are not in reach, falls into the error common to books of Teutonic origin. The earnest and zealous love of detail has clouded the work with a mass of text, the majority of which can be of interest only to the specialist. In this regard it is inferior to recent English and French books of similar design. The material of the text is excellent and is readily recognized as a compend of Politzer's classics. The subject matter is so well arranged that the lack of an index will scarcely be noticed.

Grundriss der Physiologie für Studierende und Aerzte. Von Prof. Carl Oppenheimer, Dr. phil. et med. München, und Prof. Dr. Otto Weiss, Dir. des physiol. Instituts Königsberg i. Pr. Erster teil: Biochemie. Von Carl Oppenheimer. Third edition. Cloth. Price, $1.98. Pp. 522, with 6 illustrations. Leipzig: Georg Thieme, 1920.

This is the first part of a series of volumes covering the subject of physiology. It is a clear, concise, well selected presentation of modern biochemistry. It differs from the usual American textbooks of physiologic chemistry, as it is presented more from the biologic side; it is not intended to serve as a laboratory manual.

Rectoscopie: Sigmoïdoscopie. Traité d'endoscope recto-colique. Par le Dr. R. Bensaude, Médecin de l'Hôpital Saint-Antoine. Paper. Price, 28 francs. Pp. 63, with 88 illustrations. Paris: Masson et Cie, 1919.

The chief value of this work lies in the description and interpretation of the findings as seen by means of the rectoscope and sigmoidoscope, and in the colored plates. The text is well written and indicates a personal knowledge of the subject based on experience. The plates, which are taken from actual cases, are particularly well done and constitute a valuable atlas.

Medicolegal

Manslaughter by Treatment with Hog-Hoof Brew and Incantations

(Barrow v. State (Okla.), 188 Pac. R. 351)

The Criminal Court of Appeals of Oklahoma affirms a conviction of manslaughter in the second degree, charged to gross ignorance and culpable negligence in the treatment of disease resulting in death, for which defendant Barrow was sentenced to serve a term of two years' imprisonment in the state penitentiary. The information charged, in effect, that the defendant, although grossly ignorant of the science of medicine and grossly incompetent to act as a physician, and not licensed as one under the laws of the state, held himself out as a physician, to one Lankford, who was suffering from disease or sickness; and, wrongfully, and by malpractice in the use of remedies, by unskilful acts and culpable negligence, wanton failure and refusal to give ordinary remedies, etc., did kill the said Lankford. The information charged further that the defendant administered to Lankford as a medicine a brew made by burning hog feet that had been thrown out as refuse, pretending that the brew possessed curative qualities, and, accompanied with some incantation, rubbed Lankford's limbs and body. The court holds that the information was not duplicitous, although it charged more than one way in which the defendant, through gross ignorance and culpable negligence, attempted to treat and heal the sickness or disease from which Lankford was alleged to have been suffering, and which was alleged to have contributed to and resulted in the latter's death. Furthermore, the information as a whole was sufficiently definite and certain as to the various means employed. It stated an offense which, if proved to be true, would justify a conviction of manslaughter in the second degree.

There was evidence in the record to the effect that at the time the defendant undertook to treat him, Lankford was suffering from an attack of grip which was bordering on incipient pneumonia; that the defendant was aware of his condition, and at first protested against treating him, but thereafter, being prevailed on by relatives of Lankford, he undertook the treatment and administered to him by laying on of the hands and offering a prayer or incantation that the pain be transmitted from Lankford's body to his own; also by administering to Lankford a brew or concoction made by parching and boiling hog hoofs, and also by giving Lankford shortly before death a headache or fever powder containing 3½ grains of acetanilid. The defendant contended that, in view of the fact that from 10 to 40 per cent. of patients suffering from the disease Lankford had died, despite the very best of medical attention and nursing, it could only be surmised that the treatment administered by the defendant possibly may have contributed to Lankford's death, and that the evidence of guilt amounted only to a suspicion, and that the crime was not proved with that degree of certainty which authorizes a conviction in a criminal case. But the question here was not whether Lankford would have lived had he received treatment according to the care and skill usual among good practitioners of any recognized and authorized school, but did the treatment given and applied by the defendant contribute to and result in his death, and was the defendant grossly ignorant of the manner in which such disease should be treated and culpably negligent of the patient in giving the treatment? There was evidence in this record from which the jury was authorized reasonably to conclude that death resulted in the manner charged in the information. The application of the hands, accompanied with an incantation or prayer that the pain be transmitted from Lankford's body to that of the defendant, the administering of hog-hoof tea and of the headache or fever powder at the time it was given, evidenced gross ignorance and culpable negligence on the part of the defendant in the treatment of the disease.

The crime here did not consist in the omission to perform some duty specifically imposed by law. The defendant owed Lankford no duty; but, having assumed to treat him for disease, the defendant was bound to know the nature of the remedies he prescribed and the treatment he adopted, and he was responsible criminally for a death resulting from gross ignorance and culpable negligence. A person assuming to treat disease is bound to know the nature of the remedies he prescribes and the treatment he adopts, and he is responsible criminally for a death resulting to the patient from gross ignorance and culpable negligence in the selection of remedies and the application of the treatment.

Sued for Exhibiting Motion Picture of Operation

(Feeney v. Young (N. Y.), 181 N. Y. Supp. 481)

The Supreme Court of New York, Appellate Division, First Department, says that the plaintiff, in giving birth to a child, was compelled to undergo a cesarean section operation. The defendant was her physician. She gave him her oral consent to a motion picture being taken of the operation, to be exhibited for medical societies and in the interest of medical science. The picture was taken by one Warman. Thereafter the defendant and Warman exhibited the picture publicly in two of the leading motion picture houses in New York as part of a picture which was named "Birth." The exhibition was made clearly for the purposes of trade. Thereupon this action was brought to recover damages, under the civil rights statute of the state of New York, for the exhibition of the plaintiff's picture without her written consent. Her complaint was dismissed at the close of her evidence; but the judgment dismissing the complaint is reversed, and a new trial granted, on account of error in excluding the testimony of witnesses who had seen the picture as thrown on the screen, by whom the plaintiff sought to show that the picture, as it appeared on the screen, represented the plaintiff, and could be identified as her picture. The trial court held that the film used to throw the picture on the screen was the best evidence of what was there exhibited, but little could be ascertained from the film. The picture, as presented on the screen, constituted the offense under the statute. If that were a permanent photograph, the photograph itself might probably be the better evidence; but it was not. It was a flash picture, presented only for a moment. There was, therefore, no permanent print of that presentation on the screen which could be deemed the best evidence, and, in the absence of such permanent print, the evidence of eyewitnesses, who had seen the representation, must be competent evidence of the presentation itself.

Release as to Conditions Shown by Examination

(Hines v. Industrial Accident Commission (Calif.), 188 Pac. R. 277)

The Supreme Court of California had here an application by Hines, director-general of railroads, as employer, for a writ of certiorari to review an award of compensation made by the industrial accident commission to an employee of the Southern Pacific Company. The application was based on the following agreement that was executed by the employee:

> Having submitted myself to an examination by an examining physician of the Southern Pacific Company, with a view of entering the service of that company, it has been found that I have a congenital defect, viz.: lax inguinal rings. I have been fully advised and informed concerning such condition, and it has been explained to me that because of such congenital defect, a protrusion of the abdominal contents, commonly known as rupture or hernia, may take place at any time and due wholly to said congenital defect. Realizing this and in consideration of my employment by the Southern Pacific Company I hereby agree to hold the said company blameless in event of said rupture or hernia so appearing, and I will not apply to said company or its hospital department during my term of service for any operation or treatment therefor; and for the consideration herein above expressed I do hereby release the Southern Pacific Company from any and all claims that may arise on account of rupture or hernia so appearing while in its service.
>
> It is further understood and agreed that I am not entitled to hospital benefits for the following further disability from which I am now suffering, to wit: chronic affection of tonsils.
>
> It is further understood and agreed that I am entitled to and will be given hospital benefits for all other disabilities than those I am now subject to, in accordance with the rules and regulations of the hospital department of the said company.

The supreme court denied the application for a writ of review with the simple statement that it was satisfied that, in view of the provisions of the workmen's compensation, insurance, and safety act of California of 1917, the employer could not avail himself of the agreement relied on.

Society Proceedings

COMING MEETINGS

American Physiological Society, Chicago, Dec. 30.
District of Columbia, Medical Society of, Washington, Dec. 1.
Hawaii, Medical Society of, Honolulu, Nov. 18-20.
Medical Association of the Southwest, Wichita, Kan., Nov. 22-24.
Porto Rico, Medical Association of, Ponce, Dec. 13-14.
Radiological Society of North America, Chicago, Dec. 16-17.
Society of American Bacteriologists, Chicago, Dec. 28-30.
Southern Medical Association, Louisville, Ky., Nov. 15-18.
Southern Minnesota Medical Association, Mankato, Nov. 29-30.
Southern Surgical Association, Hot Springs, Va., Dec. 14-16.
Western Surgical Association, Los Angeles, Calif., Dec. 3-4.

INDIANA STATE MEDICAL ASSOCIATION

Annual Meeting, held at South Bend, Sept. 23-24, 1920

(Concluded from page 1224)

Surgery of Gallbladder

DR. LUTHER WILLIAMS, Indianapolis: The type of operation can best be determined by the surgeon after a thorough knowledge of the history, the physical findings and a careful survey of the pathologic condition present. Operative treatment should be instituted early. Each case will require its particular type of operation, but the vast majority of patients will do best with a complete removal of the gallbladder.

DISCUSSION

DR. WILLIAM DAVIDSON, Evansville: In cases of cholangeitis, ordinary drainage of the gallbladder is not sufficient. It would be better done through long drainage of the common duct by means of the Sullivan tube.

DR. JAMES Y. WELBORN, Evansville: In some gallbladders, the pathologic condition is apparently slight, and yet the cystic duct is hardened, reminding one of the "grape-vine" condition found in the arteries. The clinical history reveals chronic symptoms, afebrile in nature. We find a catarrhal condition in the cystic duct, and there is just enough pressure in the common duct to press the bile through, and it remains stagnant in the gallbladder itself. The only treatment for such cases is removal of the gallbladder.

DR. A. M. HAYDEN, Evansville: If the gallbladder is in bad shape the only thing to do is to remove it; otherwise it is better to drain.

DR. H. A. DUEMLING, Fort Wayne: I do not think that stones reform. They have been overlooked by the surgeon in 99 per cent. of cases, because he is so happy in removing anywhere from twenty to a hundred stones that he forgets to look into the common duct.

DR. W. D. GATCH, Indianapolis: Complete exploration of the whole duct system in all cases of jaundice is most important. A good instrument for that purpose is an ordinary urethral bougie.

DR. ALFRED S. JAEGER, Indianapolis: So long as the general practitioner considers acute or chronic gastric derangement to be caused by changes in the stomach, just so long as he bases a diagnosis of cholecystitis on jaundice or coffee-ground vomiting, just so long will we see these cases too late.

DR. J. C. FLEMING, Elkhart: In this controversy of cholecystectomy versus cholecystostomy we should err on the side of conservatism, because if a gallbladder is removed it cannot be put back, but if a cholecystostomy is performed, the gallbladder may be taken out afterward, if necessary.

DR. W. H. WILLIAMS, Lebanon: I think we sometimes make the mistake of not draining enough. If we are going to drain a gallbladder we should drain it well.

Silver Wire in Vesicovaginal Fistula

DR. J. R. EASTMAN, Indianapolis: I believe that the use of silver wire in vesicovaginal fistula is to be considered a contravention of a surgical dogma. Silver wire is always sterile; it cannot be contaminated in the sense that absorbable suture material may be contaminated, and the field of silver as a bactericide is well known. A comparison of the statistics of those operators who cling to silver wire in vesicovaginal fistula and the statistics of those who have been lured away from it would make it clear that silver wire in this condition is one of the most reliable resources of surgery.

DISCUSSION

DR. FRANK JETT, Terre Haute: I use filigree wire because it has a mild antiseptic effect, and then it causes a slight irritation which is followed by a fibrosis. I have used it several times in hernia operations with great success.

DR. LUTHER WILLIAMS, Indianapolis: I have had some failures with catgut, and silver wire seems to have helped me over some of the hard places.

DR. E. E. PADGETT, Indianapolis: I have tried other suture material in the bladder, but have come back to silver wire, although during the last two years I have used a modification that has served me better. I dissect the mucous membrane out after a wide incision has been made, bring the edges together with ordinary plain No. 1 catgut, and then I close it according to Dr. Eastman's method with silver wire.

Cancer of the Breast

DR. MILES F. PORTER, Fort Wayne: The number of operative plans advised for removal of cancer of the breast is great, and of each perhaps something good may be said; but no one may be said to be the best. The surgeon should make himself master of the whole situation and then perform that operation which best suits the case in hand, remembering that no sacrifice in the way of time, cosmetic results or utility is too great to make for the cure of the patient, but unnecessary mutilation is to be avoided. Properly planned incisions, with undermining of the skin, and, at times, mobilizing of the opposite breast, will make it possible to close nearly all of these wounds. The posterior thoracic nerve should be preserved, and the flap lining the axillary space should be held snugly in the apex by stitches or dressing to avoid subsequent inability to raise the arm. Careful and complete hemostasis adds to the safety and comfort of the patient, and may do away with the necessity of drainage. Early use of the arm should be encouraged.

DISCUSSION

DR. W. D. GATCH, Indianapolis: The propaganda through the press, medical and lay, warning people of the necessity of being on the lookout for early signs of malignancy, is bearing fruit, and women are coming in with early lesions—lesions which it seems impossible to diagnose without an exploratory incision. We make a bad mistake if we wait for retraction of the nipple and invasion of the skin and lymph nodes. In case one is not sure, one should explore.

DR. THOMAS C. KENNEDY, Indianapolis: Until about four years ago I refused to treat any patient with radium that had not been operated on. Since that time, however, I have treated a few such cases and with apparently good results. I am not advising the use of radium in operable cases—I believe we should resort to surgery, but with improvement in technic and with a larger number of cases, I believe the number of operable cases will be somewhat limited.

Student Health at Indiana University

DR. J. R. E. HOLLAND, Bloomington: An important factor in the health of our students at Indiana University is the close watch on the condition of the water used by the students. Our bacteriologist makes daily examination of the city water supply, the university water supply, and the water from the different swimming pools. This has proved a valuable means of preventing the various enteric disturbances due to polluted water.

The Duty of the State to the Epileptic

DR. W. D. VAN NUYS, New Castle: State care for the epileptic is not a charity but a duty. In Indiana it is so declared by law. Proper care for epileptics can best be provided in special public institutions designed for their peculiar needs, but this cannot be accomplished without a liberal policy on the part of the state.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

October, 1920, 20, No. 4

*Acrocephaly and Scaphocephaly with Symmetrically Distributed Malformations of the Extremities. E. A. Park and G. F. Powers, Baltimore.—p. 235.
*Calcium Metabolism of Premature Infants. B. Hamilton, Stockholm, Sweden.—p. 316.
*Tumors of Kidney Region in Children. L. Porter and W. E. Carter, San Francisco.—p. 323.
*Metabolism of Very Obese Child with Small Sella Turcica (Typus Frölich). F. B. Talbot, Boston.—p. 331.
*Fate of Subcutaneously Injected Red Blood Cells. R. Taylor, Minneapolis.—p. 337.
*Pneucococcus Peritonitis in Infancy and Early Childhood. P. W. Beaven, New York.—p. 341.

Acrocephaly and Scaphocephaly.—Park and Powers cite one case, and present a detailed report of the literature with abstracts of published cases.

Calcium Metabolism of Premature Infants.—Three infants out of four studied by Hamilton had very low calcium retentions during the first months of life. This might possibly be ascribed to rachitis, as in all the infants craniotabes appeared in the second month. The assumption, however, is not in harmony with the fact that although the craniotabes in these cases which were followed further made progress in the subsequent months, the retentions increased to amounts as large as those found in normal infants.

Tumors of Kidney in Children.—Eleven cases are analyzed by Porter and Carter. They fall into the following groups: sarcoma, 4 cases; carcinoma, 3 cases; malignant kidney, unclassified, 2 cases, and hydronephrosis, 2 cases.

Metabolism of Very Obese Child.—Talbot's patient showed a very low metabolism from every point of view as compared with normal children of the same age, except the total basal metabolism. When he did not receive the pituitary extract he gained in weight and presumably put on fat very rapidly even on a diet containing relatively few calories. After pituitary extract was supplied he lost weight and commenced to develop mentally. It is to be hoped that the metabolism of similar cases will be studied in the future and thus throw light on such obscure conditions as this child presents.

Fate of Subcutaneously Injected Red Blood Cells.—Taylor says that subcutaneous injection of blood is usually followed by a rise in hemoglobin percentage and only a small fraction of the cells so injected reach the circulation of the recipient.

Pneumococcus Peritonitis.—The nine cases reported by Bevan show that clinically two types of the disease are met with: (1) those which are clearly secondary to a pneumonia or an empyema and (2) those which are apparently primary. The onset of the first may be unattended by any definited symptoms or these symptoms may be so slight as to be easily overlooked, and nothing is apparent until the peritonitis becomes localized and abdominal distention is present. The onset of the second group is characterized by symptoms so acute as to immediately overwhelm the patient.

American Review of Tuberculosis, Baltimore

September, 1920, 4, No. 7

Personal Experience and Value of Medical Society to Its Members. L. Brown, Trudeau, N. Y.—p. 481.
*Influence of Smallpox and Vaccination on Pulmonary Tuberculosis. H. J. Howk and W. E. Lawson, Mt. McGregor, N. Y.—p. 490.
*Problems in Differential Diagnosis of Pulmonary Tuberculosis. J. A. Miller, New York.—p. 502.
Diagnosis of Pulmonary Tuberculosis. F. H. Heise, Trudeau, N. Y. —p. 512.
*Importance of Physical Signs in Prognosis of Pulmonary Tuberculosis. F. B. Trudeau, Saranac Lake, N. Y.—p. 518.
*Investigation of Acid Fastness of Tubercle Bacilli. B. Suyenaga, Chicago.—p. 526.
*Artificial Heliotherapy in Pulmonary Tuberculosis. S. Simon, St. Louis.—p. 530.
*Influenza as Factor in Activation of Latent Tuberculosis. L. C. Boisliniere, St. Louis.—p. 534.
*Surgeon and Consumptive. E. A. Gray, Chicago.—p. 541.
*Silence in Treatment of Pulmonary Tuberculosis. S. W. Schaefer. Colorado Springs, Colo.—p. 546.

Vaccination, Smallpox and Tuberculosis.—This report is a record of an epidemic of smallpox occurring in a sanatorium in the autumn of 1914. Smallpox occurring in patients with pulmonary tuberculosis, runs a course not noticeably different from that encountered in well people. The symptomatology, appearances of exanthem, and duration of the smallpox, are not influenced by the presence of tuberculosis. In early, inactive cases of tuberculosis with favorable prognosis there is no apparent interruption of recovery when complicated by smallpox. In one active advanced case there was a disappearance of sputum and bacilli after smallpox, lasting for four months. In one very active advanced case there was a permanent disappearance of sputum and bacilli immediately after the smallpox. The disease was progressive up to the time of smallpox and retrogressive thereafter. The seven patients recovered from smallpox and six are alive and well at present. The presence of tuberculosis does not affect the normal course of vaccinia. Tuberculosis in any stage or any degree of activity was not affected by vaccination, either favorably or unfavorably.

Diagnosis of Pulmonary Tuberculosis.—Miller emphasizes the fact that methods of more or less scientific precision, such as tuberculin tests, sputum examinations, the roentgen ray and complement fixation reactions, indispensable as they are, frequently fail or even confuse the diagnostician, and that in the last analysis the diagnosis of pulmonary tuberculosis, as indeed most other internal diseases, depends mainly on the development of that clinical sense on the part of the physician, the pursuit of which constitutes much of the fascination of the practice of medicine; and further, that justice to patients and the profession alike demands that those who see a good deal of pulmonary disease should constantly keep in mind the not unlikely possibility that a thorough general examination may explain quite otherwise the suspicious symptoms which are apt to be ascribed solely to the lungs; and that certain definite physical signs in the chest may be susceptible of quite other interpretation than the temptingly obvious one of tuberculosis.

Results of Treatment of Tuberculosis at Trudeau.—In spite of the fact that practically 70 per cent. of the patients at Trudeau were discharged as "apparently arrested" or "quiescent," 44 per cent. showed an increase in their physical signs during their stay in the institution, 41 per cent. showed a decrease, while 16 per cent. remained stationary. Among the patients in whom the physical signs diminished one third more were well, one half less were dead, one ninth less of the deaths in which the causes were known were caused by tuberculosis, and there were about one fourth fewer relapses at the end of from five to eleven years than in the cases of those patients in whom signs increased. In regard to the arrested cases 68.3 per cent. are well, 19 per cent. are dead and 11.5 per cent. are living after a period of from five to eleven years after discharge, regardless of the change of physical signs. Of those with increased physical signs 63.6 per cent. are well, 22.7 per cent. are dead and 12.8 per cent. are living. Of those with decreased physical signs 71.1 per cent. are well, 18.6 per cent are dead and 8.8 per cent. are living, while those with stationary physical signs show 76.9 per cent. well, 6.2 per cent. dead and 15.4 per cent living. In dealing with all cases regardless of admission or discharge condition, and also of physical signs, 63.8 per cent. are well, 21.5 per cent. are dead and 13.3 per cent. are living after a period of from five to eleven years after discharge. In all cases, however, showing increased signs, 52.8 per cent. are well, 31.1 per cent. are dead, and 14.7 per cent. are living. Of those with decreased signs, 69.9 per cent. are well, 15.8 per cent. are dead and 12.8 per cent. are living, while, for the stationary cases, 77.9 per cent. are well, 10.1 per cent. are dead and 10.7 per cent. are living.

Acid Fastness of Tubercle Bacilli.—Since it has not proved possible by the the methods used, to separate an acid fast from a nonacid fast strain, Suyenaga regards it as probable that they are not distinct strains, either mutation or symbiotic. The question whether the nonacid fast forms may be degeneration forms has not been investigated. Gentian violet has a stronger bactericidal and inhibitory power than methylene blue over saprophytic acid fast and some gram-positive and

gram-negative organisms. There is considerable difference between the bactericidal and the inhibitory power of these antiseptic dyes. Of the acid fast bacilli, the less acid fast seem more susceptible to the action of gentian violet and methylene blue.

Value of Artificial Heliotherapy in Tuberculosis.—Observations from a purely clinical standpoint on about sixty patients lead Simon to believe that artificial heliotherapy holds out little hope as a curative agent in lung tuberculosis.

Measles and Influenza.—The investigations made by Boisliniere suggest what has been noted before, namely, a possible biologic and epidemiologic analogy between measles and influenza.

Surgeon and Consumptive.—The attention of the surgeon is called by Gray (1) to the importance of making, or having made, a careful examination of the chest in all cases preparatory to operation, (2) to the advisability of deferring operations (where possible) in all cases where the lung findings are suspicious, (3) to the fact that every patient presenting himself for operation for the relief of a tuberculous condition should be suspected of pulmonary tuberculosis until proved beyond question to be free from such disease. It is urged that acute pulmonary tuberculosis must be recognized as a possible sequel to operation unless the points above adduced are given their true value.

Value of Silence in Treatment of Tuberculosis.—"Silent bed cure" is advocated by Schaefer for patients with pulmonary lesions who have not made satisfactory progress on the ordinary regimen of rest and who are unsuitable for operative procedures; the alert talkative patient who although in bed exercises his lungs more than he would be in walking a short distance, and the nervous excitable patient in whom conversation is most apt to upset his central nervous system already impaired by the tuberculous toxin. With these ideas in mind, this treatment was tried in several moderately advanced cases with results which indicate the wisdom, even the need, of paying more attention to restricting the amount of talking in which patients are allowed to indulge. The great objection to the use of silence is its effect on the mental condition. On the other hand, the advantage of silence is not solely due to localized effect on the lung but also to the lessening of general bodily fatigue and the absence of mental excitement. The treatment requires the most careful supervision and encouragement of the patient by the physician; but if the physician has the absolute confidence of the patient, with the judicious use of psychotherapy and the improvement of the patient's condition apparent to him, the mental attitude will improve along with the physical condition.

Boston Medical and Surgical Journal

Oct. 14, 1920, **183**, No. 16

*Clinical Apparatus for Measuring Basal Metabolism. F. G. Benedict and W. E. Collins, Boston.—p. 449.
Orchitis in Mumps. C. Wesselhoeft, Boston.—p. 458.
Improved Method in Treatment of Otitis Externa. J. Prenn, Boston.—p. 463.
Institutional Dentistry: Results, Report No. 4. F. A. Keyes, Boston.—p. 464.
Vincent's Angina—Stomatitis. J. E. Ganley, Brockton, Mass.—p. 466.

Apparatus for Measuring Basal Metabolism.—The portable respiration apparatus has been modified by Benedict and Collins, reduced in weight, and provided with support and stand so as to make it a strictly portable apparatus. Without gas analysis, without weighings of any kind, the oxygen consumption of patients may be studied by this apparatus in the customary ten and fifteen minute periods, with an accuracy fully equal to other standard methods of studying respiratory exchange. A simple method of timing the readings of the position of the spirometer bell eliminates the use of stop watches. Three series of comparison tests on two different subjects with widely varying basal oxygen requirements show that the most satisfactory results can be obtained.

Oct. 21, 1920, **183**, No. 17

*Trend of Modern Pediatric Teaching. L. W. Hill, Boston.—p. 475.
Acute Respiratory Infections at Boston City Hospital: Pneumonia Service. E. A. Locke, H. M. Thomas and D. O'Hara, Boston.—p. 480.
Intracistern Injections of Arsphenamized Serum in Neurosyphilis. H. McCusker, Providence, R. I.—p. 490.
Orchitis in Mumps. C. Wesselhoeft, Boston.—p. 491.

Trend of Pediatric Teaching.—The points dealt with by Hill are: the relation of the laboratory to practice; the didactic lecture; the necessity of teaching fundamentals in infant feeding; infant welfare; the graduate student; and the necessity of a good general education for student. Hill states that the standards for admission to the medical schools even now are none too high; in the past they were deplorably low, and immature young doctors were being turned out wholesale, who did not have even the rudiments of a general education. The purpose of college training is to teach the student how to think originally, how to appreciate facts in their proper proportion, to distinguish the essential from the nonessential, to have a wide vision instead of a narrow one.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

October, 1920, **16**, No. 3

*Influence of Diuresis on Elimination of Urea, Creatinin and Chlorids. E. K. Marshall, Jr., Baltimore.—p. 141.
*Influence of Saccharin on Catalases of Blood. F. C. Becht, Chicago.—p. 155.
*Quantitative Studies in Chemotherapy III. Oxidation of Arsphenamin. C. Voegtlin and H. W. Smith, Washington, D. C.—p. 199.
*Effect of Opium Alkaloids on Behavior of Rats in Circular Maze. D. I. Macht and C. F. Mora, Baltimore.—p. 219.
Comparison of Effect of Certain Saponins on Surface Tension of Water with Their Hemolytic Power. H. E. Woodward and C. L. Alsberg, Washington, D. C.—p. 237.

Influence of Diuresis on Elimination of Creatinin, Urea and Chlorids.—The effect of the ingestion of large quantities of water (water diuresis) on the elimination of creatinin, urea and chlorid was studied by Marshall in normal men and dogs. The urine volume is frequently increased twenty-fold or more; creatinin is not increased to a measurable extent; urea is increased definitely but never more than two-fold; chlorids are apparently increased but the increase is variable and generally less marked than that of urea. The increases in urea and chlorid do not correspond with the maximum increase in water excretion, in fact at the height of the diuresis the chlorid elimination generally decreases. During water diuresis, the chlorid of the plasma may decrease, while the concentrations of urea and creatinin in the plasma do not vary appreciably.

Influence of Saccharin on Blood Catalases.—The effect of saccharin on processes of oxidation, particularly diabetes was studied by Becht. Four grams of saccharin per kilogram of body weight did not increase the catalytic power of the blood of cats when the drug was injected into the gastro-intestinal canal. Wide variations in the catalytic power of the blood were noted in two dogs studied over a period of seventy-three to ninety-one days. Saccharin in doses of 4 grams per kilogram acts as a powerful gastro-intestinal irritant producing in most cases vomiting and in many cases diarrhea. Saccharin intravenously produced in practically every case a marked decrease in the catalase content of the blood probably due to the direct action of the drug on the cells of the blood by alteration of the number of red cells per unit volume of the blood. Removal of the pancreas had no specific influence on the catalase content of the blood. The action of saccharin is the same in the animal with pancreatic diabetes as in the normal animal. An increase was observed in the catalytic power of the blood in 80 per cent. of observations of patients with diabetes mellitus. Since the dose was small and since there were relatively few cases, it is believed that this is of no significance.

Oxidation of Arsphenamin.—It is stated by Voegtlin and Smith that the sodium salts of the following arsenicals are relatively very stable toward atmospheric oxygen: arsenious acid, methyl and ethyl arsenious oxid, phenyl and diaphenylarsenious oxid p-amino phenylarsenious oxid. Arsphenamin (dihydrochlorid), contrary to the prevalent views, is exceedingly stable toward atmospheric oxygen. The addition of alkali leads to a rapid increase in the rate of oxidation of the compound, the rate of oxidation being roughly inversely proportionate to the hydroxylion concentration. The sodium salt of arsphenamin is first oxidized to the corresponding oxid and this compound is simultaneously oxidized to the pentavalent arsenical. The relative concentration of unchanged arsphenamin and oxid depends on the rate of reac-

tion. The slower the reaction, the more oxid is formed, but in every case, the last portion to be oxidized consists of 50 per cent. arsphenamin and 50 per cent. oxid. M-amino-p-oxyphenylarsenious oxid ("arsenoxid") is oxidized only in alkaline solution. The nature of the process curve indicates that the reaction is catalyzed by a reaction product. Neo-arsphenamin shows a rapid oxidation on exposure to air, amounting to about 50 per cent. in the first ten minutes, after which the rate decreases rapidly. The nature and rate of oxidation of arsphenamin and neo-arsphenamin to the corresponding oxids furnish an explanation of the increase in toxicity and trypanocidal activity of these compounds, when their solutions are exposed to air.

Effect of Opium Alkaloids on Rats.—The behavior of albino rats before and after injections of opiates was studied by Macht and Mora in the circular maze. It was found that morphin produced a depressant effect on the behavior of the animal, after both large and small doses, but that in the case of one animal the drug exhibited a stimulating effect. Of the other opium alkaloids, with the exception of papaverin, all were found to be slightly depressant. Combinations of morphin with other opium alkaloids are, on the whole, somewhat less depressant than equivalent doses of morphin when given alone. In all the experiments, even where large doses of the narcotics were administered, and marked and prolonged impairment of the psychological functions was produced the animals eventually recovered their activity.

Medical Record, New York

Oct. 16, 1920, **98**, No. 16

Organ Therapy in Thyroid and Allied Disorders. J. Rogers, New York.—p. 631.
State Medicine and Poetic Doctor. J. J. A. O'Reilly, Brooklyn.—p. 639.
Kidney and Ureteral Surgery. D. N. Eisendrath, Chicago.—p. 645.
Individual Factor in Disease. F. M. Pottenger, Monrovia, Calif.—p. 647.
Vividiffusion with Intestinal Membranes. G. R. Love, Chicago.—p. 649.

New York Medical Journal

Oct. 23, 1920, **112**, No. 17

*National Health Problems. H. S. Cumming, Washington, D. C.—p. 609.
Eugen Steinach's Work on Rejuvenation. A. Grant, New York.—p. 612.
Hemorrhoidectomy. E. J. Clemons, Los Angeles, Calif.—p. 613.
Gunshot Injuries of Chest in Civil Practice. G. P. Müller, Philadelphia.—p. 614.
Futility of Examining Filtrate for Presence of Occult Blood in Gastric Contents. A. A. Rutz, Brooklyn.—p. 619.
Filing Conveniences Suitable for Physicians. J. M. Taylor, Philadelphia.—p. 620.
Diagnosis of Chronic Conditions by Spinal Reflex System. A. C. Geyser, New York.—p. 621.
Heredity. L. D. McEvoy, New York.—p. 628.
Intestinal Symptoms in Malaria. C. G. Cumston, Geneva, Switzerland.—p. 632.

National Health Problems.—The rational and business-like method of disease prevention, Cummings says, should begin at the bedside of the first patient or before and not wait until it reaches epidemic proportions. Applying such a business principle would make it imperative that the national, state and local health agencies work together—form a joint partnership, and each bear its proper share in the work and expense. If Congress should recognize this principle and authorize such a partnership, the amounts now spent in the cooperation with the states would have to be greatly increased and a plan or organization would have to be carefully worked out so that each party to the partnership would meet the obligations and expeditures according to their respective responsibility. The Public Health Service, owing to its size and present position in the field of health protection, would constitute the foundation on which to build the federal health agency in such a partnership. The other federal agencies now authorized by Congress to perform certain health functions would necessarily have to be brought into the organization and their work correlated with that of the Public Health Service, in order to constitute a smooth working machine. In state and local organizations, where there are several legally authorized agencies performing health functions, these would have to be brought together and their work also correlated. In the formation of a partnership of this kind volunteer health agencies now organized and working in the field of preventive medicine should be recognized and made a part of the machinery, but it should distinctly be understood that such agencies are auxillary to legally constituted health agencies. However, they could be utilized to great advantage in this partnership owing to the elasticity of organization and the possibility of utilizing funds for work not authorized by law. But in the end these volunteer agencies should be brought under either federal, state or local laws and form a legal part of the health machinery. The control of disease is a governmental function and in a democratic government all agencies should finally come under authorized legal authorities, otherwise our government would fail to be a democracy and would be subject to control by volunteer agencies who are not directly responsible to the people.

Porto Rico Medical Association Bulletin, San Jaun

September, 1920, **14**, No. 127

*Differential Diagnosis of Tropical Pyrexias Most Commonly Encountered in Porto Rico. A. Torregrosa.—p. 67. Cont'n.
*Sprue or Psilotic Moniliasis. F. del Valle Atiles.—p. 103.
*Rhythm and Melody in Therapeutic Physical Exercises. P. Briganti.—p 106

Differential Diagnosis of Tropical Pyrexias.—In this instalment of his long article Torregrosa discusses malaria and sepsis of internal or external origin, malaria and syphilis, malaria and glandular or blood disease, chorosis and pernicious anemia. He warns that the anemia of malaria may simulate in every respect an ordinary pernicious anemia, even in the blood picture, and cites some instructive cases.

Sprue or Moniliasis.—Del Valle Atiles cites some recent authorities to the effect that this form of oïdiomycosis is not restricted to tropical regions, and that it may incapacitate as much as hookworm or pellagra. Ashford has isolated the monilia from imperfectly baked bread and bread made with fermented grains, which points the way to effectual prophylaxis against moniliasis. The deviation of complement tests allows detection of moniliasis even in incipient and atypical cases, and thus permits treatment before the mycosis has done irreparable damage. Atiles suggests a possible connection between the disease and alveolar pyorrhea; the pyorrhea may, at least, provide conditions favorable for development of the disease. At the same time, the connection cannot be very close, as pyorrhea is common in countries where moniliasis does not prevail.

Rhythm and Melody in Physical Exercises.—Briganti declares that drugs have usurped too much space in treatment, taking up space that belongs to light, electricity, music, etc. There are certain morbid conditions which yield only to systematic exercise. Locomotor ataxia is one of them, and the treatment of this can proceed much more effectually if the exercises are done to music. This is particularly evident in the condition which he calls potential ataxia. The therapeutic exercises can be done with the aid of a phonograph and written directions. There is a rhythm in our bodily functions, and by rhythmically influencing the movements of the limbs we react on the brain, and the body automatically strives to conform to the rhythm. Physical exercises aid in increasing the production of heat and in distributing it. His outline of treatment is first deep breathing, then physical relaxation, then functional exercises, with or without massage, then a sponge bath, and then repose, all accompanied by a musical rhythm.

Rhode Island Medical Journal, Providence

October, 1920, **3**, No. 10

Lethargic Encephalitis. C. A. McDonald, Providence.—p. 191.

Surgery, Gynecology and Obstetrics, Chicago

October, 1920, **31**, No 4

*Leukoplakia of Bladder and Ureter. Report of Case. H. L. Kretschmer, Chicago.—p. 325.
*Diagnosis and Treatment of Hydrocephalus Resulting from Strictures of Aqueduct of Sylvius. W. E. Dandy, Baltimore.—p. 340.
*Compression Fracture of Vertebral Bodies with Delayed Symptoms (Kuemmel's Disease); Report of Seven Cases. R. H. Baker, Ann Arbor, Mich.—p. 359.
Pre-Operative Preparation of Diabetic Patients and Their Subsequent Treatment. M. Kahn, New York.—p. 363.
*Pathology of Knee Joint in Relation to Roentgen-Ray Findings. S. C. Woldenberg, Iowa City.—p. 366.
Case of Fibromyoma of Mesentery. E. S. Judd and J. R. McVay, Rochester, Minn.—p. 372.

Diverticula of Duodeum; Clinical and Roentgenologic Recognition. L. G. Cole and D. Roberts, New York.—p. 376.
Functional Menstrual Disturbances. F. L. Meredith. New York.—p. 382.
*Calcified Tubal Mole. J. P. Maxwell, Peking, China.—p. 388.
Cruveilhier's "Tumeurs Perless' Report of Two Cases. P. Bailey, Boston.—p. 390.
Inguinal Hernia. D. Foldes, Cleveland.—p. 402.
Three-Forceps and Four-Forceps Knot. R. E. Farr, Minneapolis.—p. 408.
*Use of Double Thread in Surgical Work. K. H. Digby, Hong Kong, China.—p. 410.
Correct Rhinoplasty. L. Cohen, Baltimore.—p. 412.
Steel Ball Bearing in Esophagus. A. L. Blesh, Oklahoma City.—p. 416.
*Removal of Missile from Right Ventricle of Heart with Recovery. W. H. Luckett, New York.—p. 417.

Leukoplakia of Bladder.—While there is no symptom or syndrome by means of which this condition can be diagnosed, Kretschmer says the presence of large quantities of sequamous epithelial cells in the urine from the bladder, or from the kidney after ureteral catheterization, and the passage of pieces of membrane or flakes of squamous epithelial cells, are very valuable findings in making the diagnosis of leukoplakia. By means of careful cystoscopic examination leukoplakia of the bladder can definitely be recognized. He reports a case in which the bladder lesion was recognized but the ureteral involvement was discovered on postmortem examination.

Obstruction of Aqueduct of Sylvius Cause of Congenital Hydrocephalus.—Twenty-five aditional cases of hydrocephalus; ten of the communicating and fifteen of the obstructive type are put on record by Dandy. Cicatricial stenosis of the aqueduct of Sylvius is the most frequent lesion in congential hydrocephlus (about 50 per cent.), and is found in a large percentage of cases of hydrocephalus occurring in infancy and early childhood. It may occur (though rarely) in adult life. Hydrocephalus always follows occulsion of the aqueduct. The third and both lateral ventricles progressively dilate. The fourth ventricle, being posterior to the obstruction, does not enlarge. In the gross, the occluded aqueduct appears to be replaced by a fibrous tissue which microscopically is neuroglia. Microscopic remnants of the aqueduct are usually but not invariably found. The stenosis may occupy the entire length of the aqueduct, or varying parts; it may be only a thin, even transparent membrane. Again, the stricture may be only partial. Strictures of the aqueduct of Sylvius can be diagnosed and accurately localized. The indigocarmin test will indicate that an obstruction is present; ventriculography will be the means of precisely locating the obstruction. Spontaneous relief is not possible. Surgical attempts to drain the fluid from the third ventricle to the exterior of the brain have all proved futile. The openings invariably close and the fluid cannot absorb in the subdural space. A surgical procedure is suggested which is directed toward the cause. A new aqueduct of Sylvius is constructed; a tube is left in place for two to three weeks. This operation has been performed in two cases, both patients recovering from the operation. One patient died of pneumonia several weeks later, the second seems well one year after the operation.

Compression Fracture of Vertebra.—Baker presents the theory that there is a type of compression fracture of the spinal bodies which is apparently benign at first and gives no roentgen-ray evidence of a bony lesion, but in which, at some later period, definite bony changes develop, and the diagnosis can be easily made by certain distinctive signs, including the typical roentgen-ray picture.

Roentgen Ray in Diagnosis of Knee Joint Conditions.—Woldenberg cautions that the roentgen-ray findings are only an aid in making a differential diagnosis between the different bone conditions, and that it should be used only as a corroborative agent in making a positive diagnosis of bone and joint conditions.

Calcified Tubal Mole.—The specimen described by Maxwell he thinks was probably one of an ampullary pregnancy which was transformed into a tubal mole. The omentum became adherent, preventing the occurrence of a tubal abortion, and the whole mass became subsequently calcified. Questioning could not elicit any light as to the date of the tubal pregnacy.

Double Thread Suture.—Digby advocates the use of double thread as another means of facilitating and expediting the procedures in "no hand touch" technic.

Removal of Missile from Heart.—In the case cited by Luckett an incision three-fourths inch long and about one-fourth inch deep was made through the wall of the right ventricle down to the apex of the missile which was grasped by an artery clamp and extracted. The incision into the heart bled only scantily until the missile was extracted when it was followed by a profuse hemorrhage, spurting with each cardiac impulse. Three deep catgut suture were placed in the heart to close the wound, and Allis clamps were removed when the upper angle of the wound bled freely. This was controlled by a fourth sature in the heart. The pericardial cavity was sponged of all blood. The pericardium was closed by catgut sutures, a small opening being left at the lower angle of wound for drainage into pleural cavity. Thoractomy wound was closed without drainage. The patient left the operating table in most excellent condition and eventually made a good recovery.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

September, 1920, **25**, No. 4

*Intensive Roentgen-Ray Therapy versus Hysterectomy for Fibromyoma of Uterus. L. Martindale.—p. 97.
*Rare Fracture of Elbow Joint. Jules F. Rey.—p. 109.

Roentgen-Ray Therapy of Uterine Fibroids.—Of 118 patients with uterine fibroids under Martindale's care since 1914, twenty-five were either untreated or treated by medical means alone; in the remaining ninety-three cases he performed hysterectomy in forty-seven, myomectomy in four and used intensive roentgen-ray therapy in thirty-seven. In five cases hysterectomy was performed after roentgen-ray treatment. In 39 per cent. of cases, therefore, of uterine fibroids requiring treatment Martindale definitely chose radiotherapy, but in examining the cases in which he performed hysterectomy, he found that no fewer than six out of the forty-seven would have been just as satisfactorily treated by the roentgen rays, making, therefore, the probable percentage in which radiotherapy could be employed satisfactorily as 46 per cent.

Fracture of Lower Humerus Epiphysis.—A man fell heavily on a hard floor, striking the point of his left elbow, the arm being flexed at about 90 degrees. On screening the elbow joint a fracture of the lower end of the humerus was seen. The articular surface of the humerus was found to be entirely free and lying in front of the lower end of the shaft. It consisted of nearly the whole trochlea, and the whole of the articular surface of the capitellum. It was impossible to fix it into position by wire, screw or plate, without interfering with its articular surface. Therefore, it was removed and the incision closed confidence being felt that good movement without instability could be obtained by careful, early and persevering active and passive movements. These were commenced about the third day after the operation, increasing in range and activity daily. Later, massage and ionization were vigorously applied. The range of movement both as regards flexion and extension, is already very good and pronation and supination are perfect. Moreover, the joint is practically stable and without any lateral mobility at the elbow.

British Medical Journal, London

Oct. 2, 1920, **2**, No. 3118

Diagnosis of Nervous Disorders of Stomach and Intestine. A. F. Hurst.—p. 499.
*Subacute Perinephric Abscess of Nonrenal Origin. Z. Cope.—p. 509.
*Menstruation During School Life. A. E. S. Clow.—p. 511.
*Place of Muscle Re-Education in Treatment of Anterior Poliomyelitis (Infantile Paralysis). C. Mackay.—p. 513.
Acute Intestinal Obstruction Caused by a Herniation of Small Intestine into Paraduodenal Fossa. B. Hughes.—p. 515.
*Case of Extra-uterine Fetation Presenting in Vagina. A. E. Joscelyne.—p. 516.
Case of Urinary Sinuses. P. McRitchie.—p. 516.

Abscesses of Nonrenal Origin.—A case of bilateral perinephric abscess is reported by Cope and a summary is given of thirteen cases of retroperitoneal perinephric abscess of nonrenal origin.

Menstruation and Education.—The menstrual function of 1,200 healthy girls was made the subject of analytical study by Clow. Seventy-three per cent. of the girls were free from any disturbance whatever. Only four girls had the spasmodic type of dysmenorrhea. There was one case of intermenstrual pain or "mittelschmerz." School work did not seem to have any ill effect on the menstrual function. Clow advocates the practice of taking baths, and more especially exercise, during the menstrual period to reduce the number of those suffering from the congestive forms of dysmenorrhea and constipation.

Muscle Reeducation in Infantile Paralysis.—Mackay claims that each and every child surviving the first onslaught of infantile paralysis can be assisted to regain muscle power; a few may remain permanent cripples, in spite of every care, but if treatment is begun at once and properly carried out the majority should recover more or less completely. The paralysis is not the disease; it is the obvious sequel. Aim in treatment is, therefore, not the cure of the disease but the restoration of function; this must be begun at once, before postural defects have occurred, or fibrous changes in the essential structures have taken place. Rest must be given immediately; muscle reeducation should be attempted as soon as the inflammatory process has ceased, which may be at the end of the first week. The three cardinal points of treatment are: (1) anatomic rest; (2) muscle reeducation; (3) general care of the patient, particularly as regards warmth of the limbs, light massage for a short period preliminary to the exercises, careful superintendence of the whole life of the child, and the avoidance of fatigue and strain.

Extra-Uterine Vaginal Fetation.—In Joscelyne's case the patient was about five months pregnant. The fetation was in the vagina. The uterus was little, if at all, enlarged to the left of the presenting mass, and distinctly separable from it. The fetus had evidently been dead some time. The placenta was removed with some little difficulty, leaving a large ragged hole in the right vaginal fornix. There was a little hemorrhage, and the patient made a good recovery. Joscelyne believes this to have been a case of extra-uterine fetation which developed and came down between the layers of the broad ligament.

Oct. 9, 1920, **2**, No. 3119

Treatment of Uterine Fibroids by Radiation. R. Knox.—p. 535.
Advantages and Disadvantages of Roentgen-Ray Treatment of Uterine Fibroids. H. Williamson.—p. 537.
Treatment of Uterine Fibromyoma by Intensive Roentgen-Ray Therapy; Thirty-Seven Cases. L. Martindale.—p. 538.
Radiology in Gynecologic Practice. C. Lockyer.—p. 539.
Clinical Manifestations of Mobile Proximal Colon. J. Morley.—p. 542.
*Case of Hepatic Cirrhosis Allied to Hanot's Disease. H. Rolleston and S. Wyard.—p. 544.
*Influence of Overcooking Vegetables in Causing Scurvy Among Children. H. Chick and E. J. Dalyell.—p. 546.
*Two Carcinoma Patients Alive Eight Years After Radium Treatment. E. S. Moyneux.—p. 548.
*Sodium Biborate in Treatment of Epilepsy in an Asylum. J. McCartney.—p. 548.
Labor Complicated by Marked Elongation of Supravaginal Cervix. E. F. Murray.—p. 549.
*Volvulus of Whole Small Intestine. C. M. Billington.—p. 549.

Hepatic Cirrhosis Allied to Hanot's Disease.—The main clinical features of the case cited by Rolleston and Wyard were a large liver and spleen, jaundice, fever, chronicity and absence of ascites until late in the course of the disease, symptoms strongly suggestive of Hanot's hypertrophic biliary cirrhosis, and histologically the unilobular and intralobular cirrhosis approached the changes described as characteristic of that disease. But both clinically and histologically there was a want of prominence of the biliary element. The jaundice was slight until late in the course of the disease; but, as it was present throughout, Rolleston and Wyard say the case cannot be regarded as one of the anicteric hypertrophic biliary cirrhosis described by the French. Then histologically evidence of biliary stasis, such as bile thrombi in the intralobular bile canaliculi or pigmentation of the hepatic cells, was extremely slight, and there was no inflammation of the small bile ducts. The type of cirrhosis corresponds fairly closely with that produced experimentally by Rous and Larimore. The patient was 11 years of age. The onset of his trouble dated back to an attack of influenza seven months before death.

Overcooking Vegetables Causes Scurvy.—An outbreak of scurvy is reported by Chick and Dalyell which affected forty children out of sixty-four, aged between 6 and 14 years, under treatment for tuberculosis. From September, 1918, to February, 1919, a good supply of fresh vegetables and milk was available. From the middle of February to the middle of April the daily ration of fresh vegetables was reduced to about 80 gm. per head; deprivation was never complete. The eight weeks' period of shortage preceding the outbreak is a much shorter period than the four to six months noted by other observers as necessary for the development of scurvy. It is concluded that though the supply of fresh food was adequate, the diet was nevertheless a scurvy producing one, and that the period of deprivation of antiscorbutic was longer than it appeared to be. An explanation is found in the method for cooking food employed in the hospital which involves a serious destruction of antiscorbutic. Suggestions are made as to means of preventing this. The germination of dry peas, beans, and lentils before cooking is strongly recommended as a means of providing extra antiscorbutic when fresh vegetables and fruit are scarce or absent. It is suggested that abnormally rapid growth may promote the development of scurvy in children.

Radium Treatment of Inoperable Carcinoma.—The two cases reported by Molyneux were a carcinoma of the pharynx, quite beyond operative interference, and a scirrhus cancer of the breast. The first patient, a male, now 69 years old, is in excellent health, and able to lead a busy life. The second patient, a woman, now aged 68, was quite well until lately when symptoms suggestive of a recurrence in the lungs and liver appeared.

Sodium Biborate in Epilepsy.—McCartney reports good results from the use of a mixture containing potassium bromid and sodium biborate in the treatment of epilepsy. The total number of patients in whom the treatment has been tried is forty-two; in all there is a marked improvement in the mental state of the patients, and in all except one the number of fits has been reduced. In addition to the marked mental change and lessening of the fits, other points noticeable are the great reduction in the amount of sedative used, and the marked diminution in the number of accidents which occur. The dosage is not given by McCartney.

Volvulus of Whole Small Intestine.—A weakly boy, aged 18, was admitted to hospital in a dying condition. On the previous afternoon he had eaten fish, followed by ice cream, and had then played football. At 6 p. m. he complained of a dull ache in the epigastrium and of nausea; he went to stool, but with what result is unknown. Hot fomentations were given through the night, but the pain grew worse; he was moved to hospital at 8:30 a. m., and died half an hour later. At the necropsy it was found that the whole of the small intestine from the first free loop of the jejunum to the ileocecal junction was strangulated by one and a half complete twists of the mesentery. There was collapse of the whole of the large bowel, and the small bowel was plum colored and distended; there was free blood in the lumen of the bowel and in the peritoneal cavity. No Meckel's diverticulum nor other anomaly could be found as an exciting cause. Billington suggests that the twist may have been of developmental origin, and was aggravated to strangulation by some sudden congestion (caused perhaps by injudicious dietary).

Indian Medical Gazette, Calcutta

September, 1920, **55**, No. 9

Midwifery Mechanics. A. Buchanan.—p. 321.
Lethargic Encephalitis. A. B. de Castro.—p. 325.
Analysis of Cases of Genital Chancer in Native Male. P. H. Hennessy.—p. 327.
*Treatment of Tubercular Affections of Enclosed Cavities, Abscesses and Caries, by Inflation with Oxygen. E. R. Rost.—p. 329.
Treatment of Cerebrospinal Meningitis by Spinal Irrigation with Electrargol. U. N. Brahmachari.—p. 332.
Notes on Novarsenobillon. R. M. Bose.—p. 334.

Treatment of Enclosed Tuberculous Lesions by Oxygen.—This method has been used successfully by Rost in the treatment of tuberculous joints, psoas abscess and tuberculous peritonitis. In the case of joints, for instance, the joint is drained of fluid by puncture, iodin solution—1 dram to the

pint—is run through, and the joint is then inflated with oxygen. Only one treatment has been necessary in these cases. The joint is then apparently normal, and functioning. In cases of tuberculous peritonitis, the peritoneal cavity is filled with oxygen. Psoas abscess sinuses are injected with oxygen twice daily. Full details of the treatment are given.

International Journal of Psycho-Analysis, Vienna

1920, 1, No. 1

One of Difficulties of Psychoanalysis. S. Freud.—p. 17.
Character and Married Life of Henry VIII. I. C. Flugel.—p. 24.
Freud's Psychology. D. Bryan.—p. 56.

Lancet, London

Oct. 9, 1920, 2, No. 2

*Medical Research and Education. S. Vincent.—p. 729.
*Science and Art of Medicine. G. Adami.—p. 732.
*Value and Interpretation of Some Physical Measurements. C. B. Heald and B. Thompson.—p. 736.
Induction of Premature Labor: Its Scope and Present Results. J. Phillips.—p. 741.
*Duration of Ventricular Systole. J. Cowan and W. T. Ritchie.—p. 743.
*Case of Cardiac Ball Thrombus. G. D. Mathewson and A. Rutherford.—p. 745.
Orbital Cellulitis. A. L. McMillan.—p. 746.
Case of Nonfatal Rupture of Aneurysm of Descending Aorta. S. R. Tattersall.—p. 748.
Incidence of Ascites and Edema in Malaria. J. I. Enright.—p. 748.
Case of Heat Stroke with Hyperpyrexia (106.4 F.). E. S. Pattison.—p. 749.

Problems in Medical Education.—The fallacy of so-called "practical" methods is brought out by Vincent. He says, that if by a "practical man" we mean a doctor who is equipped by his training to apply promptly and efficiently such treatment as may be the best for his patient, then, of course, "the practical man" is the best kind of man. But it is his firm conviction that such practitioners can only be turned out by medical schools if the education given is of the broadest and most generous type, and if the true scientific spirit is instilled into students, so that they shall always regard their cases as problems, to the solution of which they are to give their utmost skill and energy, employing their mental tools as they have been trained to use them in their scientific studies. The relation of lectures to laboratory work is also discussed. In the majority of subjects in the curriculum, Vincent says, a short introductory course of about forty lectures is all that is necessary or desirable. Advanced students should have the privilege of attending short special courses delivered by the staff or investigators on subjects to which the lecturers have devoted special attention. The time devoted to laboratory work should be considerably increased and the lectures ought to be to a large extent explanatory of the laboratory courses. Great improvement would result if medical teachers could be induced to study more carefully their educational methods. Separate research chairs and research departments or institutions are, in Vincent's opinion, unless in quite exceptional cases, undesirable. Elasticity in the medical course is advocated, because it is the only practicable method of relieving the strain. A matter which requires very serious consideration at the hands of the authorities of medical schools in Vincent's opinion is the desirability or otherwise of a more careful selection of students and of some method of eliminating altogether those who prove unsatisfactory. The greatest hindrance to progress in medical education has always been, and still continues to be, the difficulty in finding money to defray the expense of buildings and laboratory equipment, to say nothing of the salaries of teachers. The director of a university laboratory is indeed supremely lucky if his place of work is as well adapted for its purposes as a bank, a departmental store, or a hotel kitchen. The reason of this deplorable condition is clearly to be sought in the lack of interest in and appreciation of scientific work on the part of the general public and the reflection of this state of affairs in the attitude of governments. In regard to medical education, the public has never realized that efficient training of doctors is absolutely dependent on a sound scientific education. And this is, perhaps, not to be wondered at, since medical men themselves have not always held the most enlightened views on the subject. There has been a partial awakening, but poverty-striken universities still stand as a sign that everything has yet to be done. State support to the universities should be generous and complete. Teachers should be well paid and laboratories well endowed.

Importance of Pathology in Medicine.—The present financial straits of universities, the drawbacks of government control, the development of the unit system, the dangers of specialization are some of the topics discussed by Adami. He urges that the department of pathology be adopted as the guiding center with a parallel department of therapeutics and pharmacology, and a laboratory of experimental medicine and surgery. It is the hospitals and the living, and an intimate knowledge and comparison of symptoms in the living with the findings in the postmortem room, that keep pathology a live subject, and today certainly it is the problems of infectious disease that are most fertile. Pathology is the whole scientific investigation of disease, not merely the restricted field of the study of dead tissues—the gross and minute morbid anatomy. It is with this wider conception that an institute of pathology should become the center for scientific research in connection with the wards and the individual patient. Once this institute of pathology or institute of the science of medicine takes its right place in the school in closest association with the hospital and with every department of that hospital; once the staff become accustomed to turn to it for the solution of their problems, then surely, with all the junior members of the staff trained in that institute, within ten years the whole staff will be animated and leavened with the spirit of the science, over and above but not excluding or even damaging, the spirit of the art of medicine. That is the true education.

Physical Measurements.—Heald and Thomson report on an investigation made with the object of finding some method by which the Dreyer and Flack tests could be brought into agreement, as both sets of measurements were considered to give information of great value as to the physical condition of the respiratory organs. Each set of measurements has been formed into a product, and a graphical method of combining the two products into a single numerical result has been developed.

Prolonged Ventricular Systole and Heart Block.—The cardinal feature of the analysis presented by Cowan and Ritchie is the association of prolonged duration of ventricular systole with heart block. The authors do not imagine that a lesion in the vicinity of the bundle is the cause of the prolongation, but rather that lesions of similar type to those which obtain in the vicinity of the bundle, occurring elsewhere and diffusely, may be the cause. Evidence of a progressive lesion of the myocardium is sometimes forthcoming in these cases and one such case is cited. On admission of the patient signs of cardiac failure were distinct, and as time went on became more extreme, though neither the frequency nor the severity of the attacks increased. With increasing signs of cardiac insufficiency the electrocardiographic evidence pointed to the spread of the fibrosis from the main bundle to the branches, and presumably into the ventricular muscle as well.

Cardiac Ball Thrombus.—Mathewson and Rutherford cite the case of a woman, aged 49, who complained of shortness of breath and of giddiness occurring mainly on exertion, but occasionally while at rest. These symptoms had troubled her for an indefinite period, but had been more pronounced since an attack of pneumonia two months before admission. There was no history of rheumatism of infective disease other than the pneumonia, but she had suffered from epileptic fits for seventeen years. The pulse rate at the wrist was from 60 to 70 per minute with complete irregularity and great variation in the strength of the beats. A short systolic murmur was audible at the apex and over the lower part of the sternum, and at the apex a short diastolic murmur immediately following the second sound could be heard at times. The second pulmonary sound was accentuated. The patient suddenly became deeply cyanosed, drew a few gasping breaths, and died immediately. The necropsy disclosed mitral stenosis; early interstitial myocarditis; thrombosis in left auricle and free ball thrombus; arteriosclerotic kidneys; chronic venous congestion of liver, spleen and lungs; infarctions of right lung with old and recent pleurisy.

Archives des Maladies du Cœur, etc., Paris

July, 1920, **13**, No. 7

Syphilitic Disease of the Heart. C. Oddo and C. Mattei.—p. 289.
Bradycardia of Convalescence. J. de Meyer.—p. 300.
Lymphoid Leukemia with Leukopeny. J. C. Mussio Fournier.—p. 307.

Bulletin Médical, Paris

July 31, 1920, **34**, No. 38. Malaria Number

Endemic Index of Malaria in French Colonies. P. Gouzien and M. Leger.—p. 677.
The Biologic Reactions in Malaria. F. Noc.—p. 682.
Prophylaxis of Malaria. F. Heckenroth.—p. 684.
Treatment of Blackwater Fever. Nogue.—p. 690.

Journal de Médecine de Bordeaux

Aug. 25, 1920, **91**, No. 16

*Cicatricial Deformity of Hands. W. Dubreuilh and Bardet.—p. 431.
Tuberculosis in Germany Since the War. J. Peyrot.—p. 434.
*Diagnosis of Acute Dysentery. R. Damade.—p. 438.

Cicatricial Deformity of Hands.—Dubreuilh and Bardet describe some cases of exceptional deformity of the hands from burns or tuberculous ulceration in childhood, and cite some literature on the subject. The use of the hands was not much hampered, the children learning to overcome the handicap in a most remarkable manner.

Diagnosis of Acute Dysentery.—Damade reiterates the necessity for prompt microscopic examination of the stools when symptoms suggesting acute dysentery develop in any one who has not been living in the tropics. This is especially important when several cases develop within a short period. Even if the Shiga bacillus is found, the search for the ameba should be continued, as this calls for emetin in addition.

Journal de Radiologie et d'Electrologie, Paris

June, 1920, **4**, No. 6

Management of Coolidge Tube. J. S. Shearer.—p. 241.
Radioactive Bodies in Mineral Waters. P. Loisel.—p. 247.
*Mishaps from Electricity; Rescue Work. M. D'Halluin.—p. 254.
Angiosarcoma of Clavicle. L. Mauguière.—p. 269.
Radiography of the Urinary System. J. Belot.—p. 271.

The Dangerous Heart Factor in Electric Accidents and Its Treatment.—D'Halluin's research on dogs has confirmed the importance of fibrillation as a most serious effect of exposure to an electric overcharge. The respiratory phenomena should be combatted by the classic measures, but the phenomena on the part of the heart, primary or secondary, call for immediate application of massage to the heart, although not with much hope of arresting the fibrillation by this means alone. But we have in intravenous injections of potassium chlorid, he continues, a simple means to combat this irregularity of the heart, applied in connection with massage. This drug is a poison for the heart muscle, but it becomes diluted in the blood stream. The fatal dose is 14 cg. per kg., if injected rapidly, but up to 33 cg. can be borne injected slowly. His practice in dogs is to inject a 5 per cent. solution into the jugular vein, in the dose of 4 c.c. per kilogram of weight. Instantaneously the fibrillation ceases. Continuing the massage of the heart for five minutes, ten minutes, or even longer, the heart begins to contract again. He asks "Why not apply to man this treatment which has proved so effectual on dogs?" Before he had learned of this efficacy of potassium chlorid he lost 63 per cent. of the dogs after inducing the fibrillation, the massage alone not being enough to resuscitate them, but after injection of the drug, he saved 65 per cent. even when the massage was not begun until ten or fifteen minutes after the arrest of the heart. He remarks that the desired effect would probably be realized with a proportionally much smaller amount than 4 c.c. per kg. This drug seems to combine the greatest potency with the least harmful action of the large number of measures he tested.

Médecine, Paris

September, 1920, **1**, No. 12. Biology Number

*Biologic Progress During the War. J. Gautrelet.—p. 709.
*Experimental Research on Antiseptics. C. Richet.—p. 719.
Physiologic Rôle of the Thymus. P. Portier.—p. 722.
*Biologic Test of Vitamins. G. Schæffer.—p. 728.
*The Individual Glycemia Threshold. H. Bierry.—p. 733.
The Circulation in the Forearm. H. Delaunay.—p. 737.
*Healing of Wounds. E. Fauré-Fremiet.—p. 743.
Laboratory Aid in Epidemic Meningitis. R. Legroux.—p. 746.
The Micromethods. A. Baudouin.—p. 751.
*Oxalic Autointoxication. E. Gautrelet.—p. 753.

Progress in Biology During the War.—Gautrelet remarks that the old question whether it is allowable to experiment on man seems ironical now when we consider how millions of men during the war spontaneously realized the widest, the most varied and the most tragic field of observation and experience that the imagination can conceive. The biologists, the chemists, the bacteriologists have cooperated with physicians and surgeons, all concentrating their energies on the one field and their concerted action has been fruitful of results especially in the line of preventive and curative vaccines, sterilization of water, detection of factitious disease, transplantations, grafts, aviation, war gassing, prostheses, parasitology, radiology and physiology. He specifies the leading advances in these different lines, and reports symposiums on traumatic shock, on carriers, and on antiseptics, held not long ago at the Société de Biologie.

Research on Antiseptics.—Richet describes personal research on different antiseptics, estimating their potency by their action on the lactic ferment in milk. The vitality and activity of the ferment can be measured easily and with precision. by the amount of lactose transformed, that is, of lactic acid produced. The most striking feature of the results was the amazing potency of extremely minute quantities of the antiseptics. Even as little as ten thousandths of a milligram to the liter is not without action. He recalls that the phenomena of fecundation and immunization occur with quantities so minute as to be beyond our measuring instruments. Another fact brought out by his research is that whenever an antiseptic (and probably also a drug taken internally), has proved successful, then is the moment to change to another. As soon as the bacteria have had their proliferation checked by the antiseptic, change to another will continue the checking work, while if the same antiseptic is continued, the bacteria rapidly adapt themselves to it. He announces as a guiding principle for all therapeutics, "Quand une médication a bien réussi, il faut l'abandonner et en adopter une autre."

We have seven excellent antiseptics at our disposal, he says, and nothing is easier than to use a different one for each day in the week, from phenol, sodium hypochlorite, tincture of iodin, silver nitrate, sodium fluorid and creosote to hydrogen dioxid. Another phenomenon brought out by his experiments is the strange irregularity in the action of certain antiseptics. When the same amount of milk is placed in a number of different tubes to ferment and conditions are made apparently identical in each, there will be a considerable variation in the amount of lactic acid produced in the different tubes. Sodium fluorid is the most regular in this respect, the yield in lactic acid being almost the same in the whole set of tubes, while mercuric chlorid sometimes exaggerates the fermentation and sometimes checks it completely.

Biologic Test of Vitamins.—Schaeffer advises testing the food in question by adding it to the J. C. Drummond test diet for white rats or white mice. On this diet the animals grow thin and finally succumb in forty or fifty days, but the addition of even 5 per cent. of a vitamin-containing food arrests the decline, and the animals begin to thrive with a suddenness actually amazing. He adds that the avitaminosis of young infants is the most common of all and is the hardest to differentiate. By this simple biologic test of the food the infant is getting, we can tell at once whether it is suitable for the infant or not. The Drummond diet comprises 18 per cent. purified casein; 56 per cent. purified dextrin; 3.7 per cent. of a synthetic saline mixture, and 20 per cent. chemically pure twice recrystallized lactose, with 2.3 per cent. agar.

Individual Threshold for Glycemia.—Bierry comments on the individual threshold for sugar in the blood and the important information to be derived from fluctuations in it. The glycemic index requires estimation not only of the free sugar in the blood but also of the sugar combined with the proteins of the different plasmas. The free sugar and the *sucre protéidique* persist in remarkably stable relative proportions and absolute amounts in the individual under like conditions. Variations in the proteid sugar are most instructive in chronic nephritis and diabetes, he remarks in conclusion.

Healing of Wounds.—Fauré-Fremiet describes the complex phenomena of the healing of a wound, saying that it never results in the integral reconstruction of lost tissue, but the tissue that forms may fully substitute it in shape, aspect and function, a useful equivalent.

Oxalic Autointoxication.—Gautrelet emphasizes the unsuspected frequency of the proteiform manifestations of oxalic acid poisoning in persons with sluggish metabolism. It is a poison for the nervous system which it affects like Indian hemp or morphin. It is a poison also for the blood. The excretion of calcium oxalate may simulate all the phases of pulmonary tuberculosis, and its deposits in the joints may be more painful than attacks of gout. It may irritate the bowel, and may cause obstruction by calculi, but its worst misdeeds are from potassium oxalate. This is a poison for the muscles which it tetanizes like curare. The microscope may reveal the calcium oxalate in the urine or its presence may be determined by the red tint when 5 drops of a saturated solution of sodium hypochlorite are added to 10 c.c. of urine with which have been mixed 5 drops of a 10 per cent. solution of manganese sulphate. The patients should refrain from all foods containing oxalic acid and from all that might generate it by incomplete metabolism, and they should take hydrochloric acid and sodium bicarbonate, as Gautrelet describes in detail.

Presse Médicale, Paris

Sept. 4, 1920, **28**, No. 63

Chemotherapy. A. Richaud.—p. 613.
*Acute Transverse Myelitis in Boy. A. d'Espine.—p. 617.
*Fat Embolism in Pneumonia. J. Catsaras.—p. 618.

Transverse Myelitis in Child.—The flaccid paralysis in the legs and sphincters was complete below a point two finger breadths above the umbilicus in the boy of 8. It had come on suddenly the fifth day of mild measles, and electric tests and the absence of pain excluded acute poliomyelitis and polyneuritis. Hexamethylenamin was given regularly for twelve days, 0.5 gm. daily, with a daily application of faradic electricity, and nearly normal conditions were restored in less than two weeks.

Fat Embolism in the Lungs in Influenzal Pneumonia.—Catsaras reports from Athens that he found fat embolism in the lungs in eighteen of sixty-seven cadavers. He theorizes to explain this that possibly the liver had been incapable of the normal transformation of the fat from the prolonged milk diet, and this was responsible for its passage unmodified into the circulation.

Schweizerische medizinische Wochenschrift, Basel

Aug. 26, 1920, **50**, No. 35

*Intraligamentary Ovarian Cysts. O. Beuttner.—p. 761.
*Localization of Psychic Functions. E. Fankhauser.—p. 767.
*Intra-Uterine Tuberculous Infection. M. Dubois.—p. 772.
Isolated Sprain of the Humeroradial Articulation and Epicondylitis: A Reply. J. Dubs.—p. 778.

Operative Treatment of Ovarian Cysts.—Beuttner discusses the technic for removal of ovarian cysts that have developed between the ligaments, reporting the details of twenty-nine such cases. He urges others to adopt his technic and not attempt to ligate and divide the utero-ovarian ligament as the first step. The first thing to be done is to detach the cyst from the uterus wall, eventually sacrificing the tube. Instead of incising the serosa over the highest point of the cyst he makes two incisions at the front and back, at the outer limit of the circumference of the cyst. In this way no time is lost in trying to detach the serosa from the top of the cyst as this portion of the serosa will have to be sacrificed if the cyst is large. All that is left to do is the enucleation of the lower half of the cyst. Ventral fixation of the uterus may be required not only to correct its position but also to stabilize the ligaments which may be stretched or otherwise injured by the cyst or operation.

Localization of Psychic Functions.—Fankhauser places the brain at the peak of an equal-sided triangle of which the vegetative nervous system and the endocrine system form the other sides. He theorizes further that in a perception the impulse proceeds from the depths toward the surface, and on reaching the fourth of Meynert's six layers of ganglion cells, which form the cortex, the psychic elements come into play. This fourth layer is the connecting link between the recording apparatus and the mind.

Intra-Uterine Tuberculosis.—In Dubois' case the child showed an old tuberculous focus in the lung, and signs of miliary tuberculosis. It had died the fifty-fourth day after birth. Necropsy of the mother disclosed old tuberculous peritonitis and metritis; she had succumbed in forty-two days to acute miliary tuberculosis which had developed two days before the child was born.

Pediatria, Naples

Sept. 1, 1920, **28**, No. 17

*Pernicious Anemia in Children. E. Mensi.—p. 785.
*Diabetes Insipidus. I. Nasso.—p. 812.

Pernicious Anemia in Children.—Mensi gives details of 15 cases from the literature and cites others to a total of 29; 14 were infants and only 9 of the total 29 were girls. He has encountered 4 cases among the 3,029 children in his service. Of the 19 cases described in detail, 16 have died and the fate of 3 is unknown. Mensi's fourth patient, a girl of 15 months, is still living. The anemia was of the plastic type in the majority. The etiology is still obscure after excluding the few cases in which syphilis, tuberculosis or intestinal parasites can be incriminated.

Diabetes Insipidus.—Nasso's case in a girl of 8 is notable in that the output of water in the twenty-four hours surpassed the weight of the body. The child drank from 11 to 14 liters of water and voided from 12 to 15 liters of urine. Under pituitary treatment, marked improvement was observed, the output of urine dropping to 4 or 5 liters and the child being content with drinking 4 or 5 liters of fluid. The disease was of about four years' standing, and the child had been brought to the physician on account of a recent tendency to jaundice.

Policlinico, Rome

September, 1920, **27**. Medical Section No. **9**

*Secondary Hemolytic Jaundice. A. Fagiuoli.—p. 317.
*Nature of So-Called Hemolytic Jaundice. L. Lenaz.—p. 337.
*Paroxysmal Hemoglobinuria. F. Schiassi.—p. 346. Cont'd.

Secondary Hemolytic Jaundice.—The symptoms of hemolytic jaundice developed in the course of pulmonary tuberculosis in the two cases reported by Fagiuoli. Only thirteen instances of hemolytic jaundice secondary to tuberculosis are known; it does not seem to differ in any respect from the primary form. The intermittent character of the secondary form may prove misleading if the patient is examined first during one of the remissions, the cause of the jaundice then escaping detection.

Pathogenesis of Hemolytic Jaundice.—Lenaz describes his conclusions from study of hemolytic jaundice in two women with their five children and one man and his son. His research demonstrated, he says, that the characteristic feature is the discordance between the presence in the blood of numerous nucleated corpuscles, such as we are accustomed to encounter only in grave anemia, and the lack of sufficient anemia to justify it. This discordance between the blood findings and the degree of anemia is encountered in adults only in this so-called hemolytic jaundice. The presence of megaloblasts without normoblasts and without anemia enough to explain them can be due only, he argues, to the persistence of the megaloblast-producing tissue which normally undergoes involution as the normoblast-producing tissue develops to take its place. This involution is completed soon after birth. The arrest of this involution is probably not the primary cause nor the essence of hemolytic jaundice, but it is the most evident sign of a general arrest in the evolution of the blood-producing organs. The persistence of one element throws the whole system out of gear.

Paroxysmal Hemoglobinuria.—Schiassi devotes ten pages to a description of various tests and experiences in a case of paroxysmal hemoglobinuria, brought on by chilling, in a woman of 24. The action of the cold seemed to induce a series of phenomena of the anaphylactic order, transient leukopeny followed by leukocytosis, reduction of coagulation

time, nausea, general malaise and fever. It also induced the phenomena of hemolysis. These two sets of phenomena could be elicited separately, according to the intensity of the chilling. If moderate, merely the first set of symptoms was induced, but if intense, the second set was induced likewise. The chilling acts as an antigen in bringing on the anaphylactic state.

Riforma Medica, Naples

July 24, 1920, **36**, No. 30

*Production of Bactericidal Substances by Vaccines. R. Paolucci.—p. 662.
*Familial Spondylosis. C. Castelli.—p. 663.
Scarlatiniform Eruption in Influenza. M. Gioseffi.—p. 668.
*Skin of Forearm in the Tuberculous. G. Gargiulo.—p. 669.

Production of Bactericidal Substances by Vaccines.—Paolucci has confirmed the phenomenon that when an emulsion of heat-killed bacteria is added to whole blood, the serum that separates out has decided bactericidal properties. They are not specific, as a staphylococcus vaccine proved equally bactericidal for the streptococcus and the typhoid bacillus.

Familial Rhizomelic Spondylosis.—Castelli reports the case of a man of 42 who since the age of 27 has had repeated attacks of severe pains in back, hips and shoulders with the exception of one three year intermission. He contracted malaria at 41, and the pains became more severe and the joints stiff, until by the end of the year he presented the typical picture of Marie's rhizomelic spondylosis. The parents, the three sisters and the man's children are healthy, as also two brothers, but a third brother, now 28, after a fall at the age of 26, developed spondylosis of the Bechterew type. The forward curve of the rigid spine is alike in both men, and both are farmers; neither is incapacitated.

The Skin of the Forearm in the Tuberculous.—Gargiulo has noticed that the skin of the forearm is uneven and rough in the tuberculous, owing probably to the loss of fat beneath and the effects of excessive sweating.

Semana Médica, Buenos Aires

May 13, 1920, **27**, No. 20

Lethargic Encephalitis at Paris. E. Krebs.—p. 646.
*Spurious Pregnancy (Pseudocyesis). C. Lanza.—p. 652.
Iodized Horse Serum in Diseases of Deranged Metabolism. A. Lamarque.—p. 655.
*Acute Pulmonary Edema During Labor. I. Iriarte.—p. 658.
Advantages of Poly-Organotherapy. A. Guardia Abadal.—p. 658.
Oxidizing Ferments in Tuberculous Congestions and Exudates. S. de Madrid.—p. 667.

Spurious Pregnancy.—Lanza's patient was an apparently normal woman of 26, married for ten years, who had had two abortions and was anxious for a child. She developed the usual symptoms of pregnancy and the abdomen increased regularly in size but this was merely accumulation of fat. She would not believe his denial of pregnancy until the subsidence of all symptoms after "term." A year or so later she developed auditory and visual disturbances, after emotional stress, becoming totally blind for a time. In conclusion Lanza refers to Gurrieri's report of a case of hysteric pregnancy in which the measures instituted by the physician to cure the amenorrhea led to the denunciation by the patient—when the blood appeared—that he had induced abortion. Turenne has also commented on the rapid development of obesity which may accompany the supposed pregnancy. This was particularly manifest in Lanza's case.

Acute Pulmonary Edema During Labor.—Iriarte describes an extremely serious case of this kind in which he evacuated the uterus at once. The loss of blood relieved the circulation and complete recovery followed.

Siglo Médico, Madrid

July 10, 1920, **67**, No. 3474

Serologic Tests for Syphilis. F. Murillo.—p. 505.
Beginnings of Vision after Removal of Congenital Cataracts at '17. B. Castresana.—p. 507. Conc'n.

July 24, 1920, **67**, No. 3476

Serologic Tests for Syphilis. J. Mouriz.—p. 545. Conc'n. p. 568.
*Vaccine Treatment of Otitis. I. Fernández Seco.—p. 547.
Acute Exacerbations of Chronic High Blood Pressure. Elizagaray.—p. 549. Cont'd.

Autogenous Vaccines in Otitis.—Fernández reports three cases in children and one in an adult in which acute or long rebellious otitis media yielded to injections of an autogenous vaccine. The staphylococcus was responsible in one child of 4 and the Friedländer pneumobacillus in one of 8. In a girl of 2 and a woman of 27 a polyvalent vaccine was used, comprising staphylococci, pseudodiphtheria bacilli and the pyocyaneus. The suppuration rapidly declined and the cure was complete in all in from twenty days to a little over two months. In a fifth case a minor operation on the ear was needed but was refused, and the vaccine was unable to overcome this handicap, so that no benefit was derived.

Deutsche medizinische Wochenschrift, Berlin

Aug. 5, 1920, **46**, No. 32

No Immunization Against Experimental Tuberculosis by Massive Doses of Antigen. Uhlenhuth and Joetten.—p. 877. Conc'n No. 33, p. 901.
Arsphenamin and Silver Arsphenamin in Syphilis. W. Scholtz.—p. 879.
Reaction to Parenteral Injection of Casein. R. Riedel.—p. 881.
Iodin Prophylaxis in Influenza. H. Salomon.—p. 882.
Treatment of Pleural Empyema in Influenza. Hollenbach.—p. 882.
Examination of Stomach Contents in Children. H. Brüning.—p. 883.
Roentgenology of the Diaphragm in Children. E. Schiff.—p. 884.
A Fistula of the Urachus. Krüer.—p. 885.
Indirect Auscultation under Water. A. Esser.—p. 885.
Pathologic Anatomic Findings from Marburg Trial. Jennicke.—p. 886.
Otologic Hints for the General Practitioner. G. Brühl.—p. 886.
The Reform Movement in Medical Education. J. Schwalbe.—p. 889. Conc'n.
Steinach's Rejuvenation Method. W. Roux.—p. 891.

Aug. 12, 1920, **46**, No. 33

Indications for the Friedmann Tuberculosis Treatment. A. Dührssen.—p. 902.
Gateways of Infection in Tuberculosis. Koch and Möllers.—p. 904.
History of Pathologic Anatomy of the Nervous System in Relation to Nervous and Mental Disease. Wohlwill.—p. 906.
Biochemistry of Hemolytic Icterus with Splenomegaly. W. Schön.—p. 909.
Induced Pneumothorax. A. Schüle.—p. 910.
*Operation for Female Epispadias. H. R. Schmidt.—p. 910.
Early Involvement of Spinal Cord in Syphilis. Blumenthal.—p. 912.
Desirable Method of Staining Spirochetes. W. Krantz.—p. 913.
A "Fixed" Arsphenamin Rash. A. Kraus.—p. 913.
Potassium Permanganate for Furuncles, etc. Fries.—p. 914.
Foot-Steering Contrivance for Artificial Leg. M. Blumenthal.—p. 914.
Adhesive Plaster to Relieve Headache. Heermann.—p. 916.
Physiology and Pathology of Vegetative System. Renner.—p. 917.
Otologic Hints for the General Practitioner. G. Brühl.—p. 919.

The Göbell-Stöckel Operation for Epispadias in the Female.—Schmidt reports the results secured in three operations for epispadias by the Göbell-Stöckel plastic method. The first patient, aged 20, had been operated on in 1914 without success. She was always wet and the urethral opening was very wide. On dismissal from the hospital following the recent plastic operation she could hold the urine four hours and could sleep through the night from 11 to 6 without accident. In the second case, a girl of 9, operated on at the age of 2 without success, suffered in winter from abdominal pains due to the continuous wet condition of her clothes. Three weeks after the operation she had perfect control of urine in the daytime, but occasionally at night she would find herself wet. The third case cited was that of a woman of 34 with constant dribbling of the urine, on whom an operation had been performed without success at the age of 21. Four weeks after the plastic operation the patient had no trouble if she urinated every two hours, but if more than 150 c.c. of urine was allowed to accumulate, dribbling was likely to occur.

Monatsschrift für Kinderheilkunde, Berlin

August, 1920, **18**, No. 5

Diagnosis of Congenital Heart Defects. E. Rominger.—p. 417.
Tuberculin Diagnosis in Children. E. Rominger.—p. 424.
*Influence of Nervous System on Blood Count. E. Friedberg—p. 432.
*Cholesterin in Kidney Disease in Children. H. Beumer.—p. 443.
*Congenital Cystic Dilatation of Small Intestine. Herweg.—p. 454.

The Influence of the Vegetative Nervous System on White Blood Cells.—Friedberg announces that stimulation of the vegetative nervous system in children exerts no effect on the white blood corpuscles. There is no such a thing as a vagotonic or a sympatheticotonic blood picture. Eosinophil cells have a tendency, in their reactions to stimulation, to parallel variations in the lymphocytes, whereas the monocytes line up with variations in the polymorphonuclear cells. For this reason, it is of practical and theoretic importance always

to make a separate count of the monocytes and the lymphocytes. The marked similarity between the pilocarpin and the epinephrin blood pictures leads to the supposition that these blood reactions are not dependent on the specificity of the ingested drugs but are rather a general form of reaction of the hematopoetic organs to nonspecific stimuli.

Cholesterin in Nephrosis and Nephritis in Children.—Beumer found an increase of cholesterin in the nephrotic organism in the blood serum, kidneys and suprarenals, but not in the liver, which, in fact, shows a decrease. In acute nephritis cholesterin esters are present, but there is no increase of total cholesterin content as is the case in lipoid degeneration of the kidney. A considerable increase of cholesterin in the suprarenals is common to nephrosis and nephritis, but the distribution of cholesterin in the blood and the various organs is not at all uniform. The cholesterin content of each organ is determined by local disease processes and the interdependence of the various organs.

Congenital Cystic Dilatation of the Small Intestine.—Strathmann-Herweg describes an infant of 3 months with incomplete ileus. A roundish protuberance was noted in the region of the navel, which led to the diagnosis of cystic tumor. On account of the weakened condition of the child an operation was not performed, the child dying the day following admission. The cyst proved to be a markedly dilated portion of the small intestine, for in the histologic examination the various layers of the intestinal wall could be clearly distinguished, and the small intestine was very much shorter than usual. It is therefore evident that the cyst was in reality a part of the small intestine and not merely an appendage.

Münchener medizinische Wochenschrift, Munich

July 2, 1920, **67**, No. 27

*Plaut-Vincent Angina. A. Brüggemann.—p. 772.
Stalagmometric Urinalysis and the Clinic. W. Schemensky.—p. 773.
Rerouting of Nervous Impulses. H. Bickel.—p. 775.
*Poisoning with Fluorin Compounds. Kockel and Zimmermann.—p. 777.
Hydrocyanic Acid Derivatives for Vermin. Flury and Hase.—p. 779.
Value of Combined Treatment in Syphilis. W. Wagner.—p. 780.
Blood Picture in Postoperative Tetany. W. Haas.—p. 781.
Undernourishment and Milk Secretion in Women. Momm.—p. 783.
Paraplegia Urinaria; Three Cases. A. Foerster.—p. 784.
Treatment of Surgical Tuberculosis with Vaccines of Cold Blooded Animals. Brandenstein.—p. 786.
*Roentgen Irradiation and Blood Coagulation. A. Szenes.—p. 786.

Plaut-Vincent Angina.—Brüggemann states that of all the remedies that he has tried, neo-arsphenamin has proved most effective. He uses a concentrated, aqueous solution (a few drops of water to 0.3 gm., or 1 ampule, of neo-arsphenamin), with which he swabs the ulcerations. The patients were sometimes instructed to hold the swab on the ulcers for about ten minutes. Usually a marked improvement could be noted the next day, and after a second application recovery generally followed. If not, he injected neo-arsphenamin intravenously (0.3 gm. of neo-arsphenamin with 10 c.c. of water). The value of the neo-arsphenamin did not seem so marked with the intravenous injections as with the intensive local applications. Most patients were cured in a week; in the case of more marked inflammation in from two to three weeks, although one especially severe and refractory case required two months for a cure.

Poisoning by Fluorin Compounds.—Kockel and Zimmermann report two cases of poisoning from hydrofluoric acid. The clinical picture was characterized by marked physical weakness and frequent vomiting. The course of the intoxication was very rapid, covering not much more than two hours before the fatal issue. One case was traced to rat poison and is regarded as a suicide; the other was a criminal poisoning case.

Roentgen Irradiation and Blood Coagulation.—Szenes reports that roentgen irradiation of the spleen brings about an accelerated coagulation of the blood, which corresponds, in a general way, to that produced by intramuscular and intravenous injections of calcium. An initial retardation of coagulation precedes the acceleration. This accelerated coagulation can be still further increased by the intravenous injection of a 10 per cent. sodium chlorid solution. The cause for this accelerated coagulation lies doubtless in the breakdown of cellular structure (lymphocytes of the spleen follicles) and in the liberation of substances exerting a thromboplastic effect. Roentgen irradiation of other cells (tumor cells, lymphoid cells) causes likewise an accelerated coagulation, though to a less degree.

Wiener klinische Wochenschrift, Vienna

July 29, 1920, **33**, No. 31

Treatment of Perforative Peritonitis. Haberer.—p. 671.
Dulness Over Apex of Lung with Goiter. Elias and Pick.—p. 674.
Percussion of Apex of Lung. N. Jagic.—p. 676.
Cystoradioscopy. Blum, Eisler and Hryntschak.—p. 677.
*Sphincterotomy for Retention in Tabetic. Ruhritius.—p. 680.
Simulation of Syphilitic Chancre Following Use of "Orthoform." O. Sachs.—p. 680.

Sphincterotomy for Retention of Urine in a Tabetic.—Rubritius reports the case of an army officer of 53 who acquired syphilis in 1892. In 1899 neuralgic pains in the legs appeared. In 1905 bladder trouble began, and soon he was unable to pass urine other than in a squatting position during defecation. Two weeks before his admission to the hospital he grew rapidly worse, with excessive thirst, edema in the legs and dribbling of urine. Residual urine was 800 c.c.; the twenty-four hour specimen, 4,600 c.c.; specific gravity, 1.010; the urine was cloudy, alkaline, contained 0.108 per cent. albumin and a considerable number of pus corpuscles. Preliminary treatment with retention catheter was given. Later an operation was undertaken under local anesthesia. A suprapubic opening into the bladder was made and a deep wedge cut from the posterior commissure of the internal urethral orifice, which removed, at the same time, a portion of the internal sphincter. In four weeks the bladder fistula had closed. Four months after the operation the findings were: no residual urine; moderate cystitis; urine is still passed in squatting position but without residue; patient much improved and well satisfied with his condition. The operation is simple and free from danger. There is no likelihood of incontinence, as the external sphincter is entirely sufficient to serve as a closing muscle.

Zeitschrift für klinische Medizin, Berlin

1919, **88**, No. 5-6

*Jaundice After Arsphenamin. H. Silbergleit and Föckler.—p. 333.
*Monocytosis with Endocarditis. V. Schilling.—p. 377.
Agglutination in Dysentery. R. Hamburger.—p. 398.
*Changes in Size of Heart. Frieda Linss.—p. 407.
Auricular Flutter with Perpetual Arrhythmia. K. Fleischhauer.—p. 429.
*Weil's Disease. H. Reiter.—p. 459.

Jaundice Following Neo-Arsphenamin Treatment.—Silbergleit and Föckler relate that in the winter of 1917-1918 they had thirteen cases of acute yellow atrophy of the liver, all fatal, and all occurring in syphilitics who shortly before had been given mixed mercurial and neo-arsphenamin treatment. In eight other cases severe jaundice developed, but the men recovered. Weil's disease could be excluded, but nothing could be found to explain these cases. A fourteenth case of the atrophy developed outside but it was not known whether the man had been taking treatment or not.

Monocytosis with Endocarditis.—Schilling refers to extreme monocytosis with macrophages during ulcerative endocarditis, and discusses in connection with two cases described the source of origin of the large mononuclears.

Changes in Size of Heart.—Linss reproduces the shifting outline of the heart in thirteen cases of different types of heart disease under the influence of drugs and other factors. The essentially pathologic dilatation of the heart is that with stasis; the heart here does not work according to its normal laws. This can retrogress under appropriate treatment, as was shown in a case of bothriocephalus anemia. Thyroid treatment proved effectual in myogenous dilatation of the myxedematous, but not in other conditions.

Spirochetal Jaundice.—Reiter concludes his long study of Weil's disease with an account of his successful transmission of the disease by means of a biting fly, *Haematopota pluvialis*, the habits of which correspond to what we know of the seasonal and other features of spirochetal jaundice. He has demonstrated that the spirochetes can retain their vitality for

seven days in water and in damp warm soil. In prophylaxis, the particulars of the first case must be ascertained, whether the patient had been digging or been in bathing or been working with bare arms and feet. Measures to correspond should be taken to protect others against the bathing place, or by compelling diggers to wear high boots. The danger is less if the bathing is done in the evening, and a bath robe is worn when lying on the bank. Carriers should be instructed, and the sick isolated from insects.

Zentralblatt für Gewerbehygiene, etc., Berlin

September, 1920, 8, No. 9

*Bladder Tumors in Dye Workers. H. Curschmann.—p. 169. Begun in No. 8, p. 145.
Training of Factory Inspectors. Hertha Bernecker.—p. 176.
System for Prevention of Industrial Accidents. H. Hederich.—p. 179.

Bladder Tumors in Dye Workers.—Curschmann sent a questionnaire to the chemical industries of Germany inquiring as to bladder lesions in the workers. Fifty-seven were filled out and returned. The data show that, since 1913, 28 cases of bladder tumors have been encountered among workers in the chemical industries, and the list includes 15 malignant tumors. This brings to about 200 the total number of cases of bladder tumors among the 80,000 to 100,000 persons employed in the manufacture or handling of chemicals, especially anilin dyes. It is still a question which chemicals are responsible for the tumors, but those with aromatic bases and beta naphthylamin seem to be generally incriminated. Since attention was first called in 1905 to bladder tumors in dye workers, extensive improvements have been made in the care of the workers, and the benefit is apparent in the drop in the number of cases to 28 in seven years notwithstanding that attention has been focused on their detection. Nothing was found to indicate that persons living in the vicinity of chemical works develop bladder tumors more frequently than the average population. Years of contact are necessary. In some of the cases the workmen had been engaged in this work for ten, fifteen, up to thirty years, and in 2 instances for more than thirty years. The outcome in the nonmalignant cases was always favorable, but only 5 in the 15 malignant cases have survived. The cancer proved speedily fatal in the others.

Zentralblatt für Gynäkologie, Leipzig

July 31, 1920, 44, No. 31.

The Merits of the Kielland Forceps. K. Riediger.—p. 847.
*Pneumococcus Infection of Genitals. R. Hornung.—p. 850.
*Hematoma of Vulva Impeding Delivery. T. Johannsen.—p. 856.

Primary Pneumococcus Infection of Female Genital Organs.—Hornung cites three cases to prove that primary pneumococcus infection of the genital organs does occur. But he warns that as it has been shown that the pregnant and puerperal uterus constitutes a locus minoris resistentiae for hematogenic infections with pneumococci, a primary infection cannot be regarded as proved unless the clinical, bacteriologic and necropsy findings agree with or supplement each other.

Hematoma of Vulva Preventing Expulsion of the Child.—Johannsen reports a peculiar case in a primipara of 25. During pregnancy there had been an insignificant varicose vein in the vulva. When the midwife arrived ten hours or more after the beginning of labor, she found that a large tumor was preventing the expulsion of the head of the child. Johannsen was called, and on the right labium found a bluish red tumor the size of a child's head. The tumor extended to the anus, covering thus the perineum on the right side and preventing the passage of the head through the vulva. No outward force had been exerted. The patient stated that the tumor had slowly formed after the onset of labor. The tumor was covered with a thin, transparent membrane. An incision in the tumor, about 2 cm. in length, was made but owing to the strong tension a rip from 10 to 12 cm. long occurred. The tumor cavity was full of clotted blood, which was removed at once. In order to hurry matters, lest a violent hemorrhage should occur, forceps were used and the soft perineum gave way under the pressure exerted by the passage of the head. Four sutures were placed in the perineum, one in the vaginal wall and two superficial sutures were taken in the labium to bring the edges of the tumor cavity together. The cavity was not tamponed as it was not bleeding much. A firm bandage was, however, applied. The patient recovered rapidly and was able to nurse her child.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Aug. 7, 1920, 2, No. 6

Paranoid Psychoses in Imbeciles. J. van der Torren.—p. 481.
Cholesterin Content in Sachs-Georgi Reagent. S. T. Bok.—p. 499.
The Miostagmin Reaction with Cancer. Boom and Deelman.—p. 505.
Leukemia Simulating Mikulicz' Disease. Roessingh.—p. 508.
Sulfarsenol in Treatment of Syphilis. S. Mendes da Costa.—p. 513.

Aug. 21, 1920, 2, No. 8

Card for Inspection of Schoolchildren. C. W. Vrendenberg.—p. 691.
*The So-Called Vagus Neuroses. J. Koopman.—p. 692.
*Roentgen-Ray Treatment of Cancer of Genitals. C. Orbaan.—p. 695.
*Treatment of Inversion of Uterus. G. C. Nijhoff.—p. 703.

Vagus Neuroses.—Koopman ridicules the present vogue of "vagus neuroses" and seeks to show that some of the premises on which the conception is based are untenable.

Roentgen-Ray Treatment of Ovary and Testicle Cancer.—Orbaan relates the outcome in 23 cases of malignant ovarian or testicle disease. More than half of the ovarian cases were materially benefited and the cure has been permanent for one and three years to date in 2. Even a very extensive cancer need not be regarded as absolutely hopeless now. Three of the 9 males are still in good health, including a boy of 9 whose other testicle had been removed on account of sarcoma five years before. The recurrence in the testicle was excised the sixth week and proved to be a carcinoma. The last of the three series of postoperative exposures was concluded in September, 1917, and he was in good health in March, 1919. In 6 of the 9 testicle cases the cancer was a sarcoma, as also in 2 of the 11 ovary cases. An operation had been done in all the cases from a few weeks to five years before, and the roentgen exposures were given on account of metastasis or recurrence. In 5 cases the operation could be only partial. In 3 cases the ovarian cancer was a metastasis of a mammary cancer. He comments on the frequency of involvement of the supraclavicular glands in malignant disease of ovaries or testicles; it is a grave sign, as it so often is accompanied by metastasis in the mediastinum. In 7 cases there was extensive involvement of the glands in the region or at a distance, and the roentgen exposures were made without any hope of permanent success, but all in this group were materially improved—both subjectively and objectively—but in 3 other cases no benefit was apparent. This latter group includes a girl of 12; numerous tumors could be palpated in her abdomen four months after removal of a sarcoma in the right ovary. Roentgenotherapy was started but had to be abandoned on account of fever; and the girl died in seven weeks. One of the much improved patients was a woman of 24 with a sarcoma in the knee and neck, both of which rapidly retrogressed under roentgen exposures. Two months later a sarcoma developed in the ovary which was not modified by roentgen exposures or arsenic, during the year, and the ovary was removed May, 1919, and a series of injections of the woman's own ascitic fluid were given. They induced a febrile reaction with pain in the lower abdomen, neck and knee. Since then she has been in good health.

Treatment of Inversion of Uterus.—Nijhoff reports three cases in which acute puerperal inversion of the uterus was corrected with ease and complete success, without injury of the muscular wall such as others have reported from pushing up the uterus from below. He makes an incision on the median line about 12 cm. long, between the umbilicus and the symphysis. This exposes the funnel made by the inverted uterus, and he seizes with forceps the front edge of the inversion funnel. As soon as he feels that the uterus begins to yield to his pull on it, the round ligaments are seized with forceps and the uterus is drawn up by this traction on the round ligaments. He found that it is not necessary to assist by pushing on the uterus from below, and the uterus does not have to be packed with gauze to hold it in place. In his last case he fastened the anterior wall of the uterus to the abdominal wall with catgut, expecting that this fixation would be only temporary as the catgut would be soon absorbed.

Acta Medica Scandinavica, Stockholm

Aug. 31, 1920, **53**, No. 5

*Duration of Systole. L. S. Fridericia.—p. 489.
*Direct Count of Blood Platelets. O. Thomsen.—p. 507.
First Cases of Epidemic Encephalitis in France. R. Cruchet.—p. 517.
*Modern Views of Kidney Disease. F. Umber and M. Rosenberg.—p. 523.

Duration of the Systole.—Fridericia discusses the duration of the systole in the healthy and in heart disease, and the modification under the influence of atropin, epinephrin, amyl nitrite, muscular exercise and fever. The electrocardiograms show that the variation from normal never amounted to as much as 0.047 second. (In German.)

Direct Count of Blood Platelets.—Thomsen sets the citrated blood aside for six hours, by which time the corpuscles have settled to the bottom. The platelets in the fluid above are then counted in the ordinary blood counting chamber. There is no appreciable sedimentation of platelets in this period. In sixty-eight persons examined, pregnant and nonpregnant, healthy and sick, the sedimentation of the corpuscles was always sufficient in two or three hours to allow the plasma to be pipetted off for counting the platelets. The normal range seemed to be between 206,700 and 413,400. Thomsen's article is in English, and he gives a table for ready calculation of the platelets from the one count.

Kidney Disease. — Umber and Rosenberg distinguish between true uremia (retention of residual nitrogen) and eclamptic uremia which has a better prognosis and is encountered principally in young persons, and almost exclusively in acute glomerular nephritis with edema and high blood pressure. Acute edema of the brain is the most plausible explanation of the convulsions, and lumbar puncture the main indication. The uremia with arteriosclerosis of the kidney is a spurious uremia. Retention of nitrogen is the only dangerous form of retention, but when there is excessive production of waste products, the residual nitrogen may accumulate in the blood without the kidneys being responsible. Such a condition may occur in acute atrophy of the liver and when the circulation is hampered from any cause. The normal residual nitrogen level in the blood is from 0.20 to 0.40 gm. per thousand, but when waste products accumulate, the composition changes—as Umber and Rosenberg have confirmed in their more than 2,000 separate tests—and the urea, which normally forms about 45 to 60 per cent. of the residual nitrogen, increases to over 90 per cent. The creatinin in over 1,500 tests varied from 5 to 20 mg. per thousand in the healthy, but it rose with severe liver disease and in diabetic coma, reaching a height of 67 mg. per thousand. From their 1,600 tests for indican, the conclusion is drawn that over 1.3 mg. per thousand is pathognomonic for insufficiency of the kidneys if ileus and purulent processes can be excluded. A high indican and creatinin content with low urea content indicates a more unfavorable prognosis than the reverse. Treatment to date can be only symptomatic, restricting the intake of nitrogen, salt and water but only as the capacity for eliminating one or the other is impaired.

They have never witnessed any harm from a little mustard, pepper, lemon juice or alcohol as seasoning in place of salt. They emphasize the imperative necessity for staying in bed with acute glomerular nephritis until the last trace of hematuria has disappeared and, if possible, until the albuminuria is much less. When allowed to get up the urine should be watched for blood and albumin and the blood pressure tested. Not until these show no appreciable harm from the getting up should the patient be allowed up for short intervals at a time at first. Physical exertion must be strictly warned against to the very last of convalescence, and the urine and blood pressure should be reexamined from time to time for months afterward. The great danger is that true uremia may develop, and this must be warded off by dietetic restrictions, not more than 4 or 5 gm. of protein a day and 1.5 to 2 liters of fluids. They have never seen any benefit from diuretics, but sometimes harm. The attempt to overcome the glomerular obstruction by inducing a sudden freshet of urine has never proved beneficial in their experience, but has done direct harm. In chronic kidney disease, excesses and exposures must be scrupulously avoided.

Finska Läkaresällskapets Handlingar, Helsingfors

July-August, 1920, **62**, No. 7-8

*Bilateral Pleural Empyema. F. Stenius.—p. 369.
*Pituitary Tumor. E. Behse.—p. 382.
Pasteboard Splints for the Legs. R. Faltin.—p. 396.
*Cream Mixture in Intolerance for Milk. G. Renvall.—p. 403.

Bilateral Pleural Empyema.—Stenius states that there has been only one bilateral case, following pneumonia, at the Helsingfors surgical clinic to 120 cases in which the empyema was restricted to the right side and 112 to the left. In the one bilateral case he operated on one side and then on the other, allowing an interval of three and a half weeks, but a week or a week and a half would probably be a long enough interval. It is possible to operate on both sides at the same sitting if valve drainage without danger of pneumothorax can be arranged. The individual conditions must decide the technic to be applied, according to the Carrel, Perthes, Regher, Moszkowicz or other method.

Pituitary Tumor.—Behse gives the detailed case history of a case of pituitary tumor in a cabinet maker of 47. It had entailed acromegaly and temporal hemianopsia. He compares the case with others on record and emphasizes the great improvement realized under pituitary treatment, three to ten tablets a day. The excessive thirst abated, as also the somnolency, profuse sweating and glycosuria, the sugar dropping to 2.5 per cent. The man was able to return to work and vision improved to nearly normal in one eye and the other could count fingers at 3 meters.

Cream Mixture as Substitute for Milk in Case of Intolerance.—Renvall has experimented with a test diet given with and without milk and has found marked intolerance for milk in certain cases of achylia, achlorhydria, hyperchlorhydria, hypersecretion and various gastro-intestinal derangements. This intolerance subsided as digestive conditions returned to normal. During the periods of intolerance he has been very successful with cream, used with one-third, or one-half, two-thirds or three-fourths water. The cream has to be of the kind suitable for whipping, and these mixtures represent from 162 to 61 calories, and the patients thrive on them when whole milk induces grave symptoms of severe intolerance. Vegetable milk should be reserved, he thinks, for very special cases. The cream mixtures are nearly always well borne.

Ugeskrift for Læger, Copenhagen

Aug. 19, 1920, **82**, No. 34

*Tardy Hemiplegia in Syphilitics. H. Vedsmand.—p. 1077.
*Urobilinuria as Index of Liver Functioning. O. V. Brandt.—p. 1083.

Tardy Hemiplegia in Syphilitics.—Vedsmand relates that there was a history of syphilis in 15 per cent. of 81 patients with hemiplegia that had developed after 60. He knows of only one publication on the connection between hemiplegia and syphilis since the Wassermann test was introduced. This one article is H. A. Thomas' monograph on 740 cases of hemiplegia; he found syphilis in 11 per cent. of those in the forties; 7 per cent. in the fifties (Vedsmand, 12.5 per cent.); 13 per cent. in the sixties (Vedsmand, 25.7 per cent.), and none beyond this, while Vedsmand had 8.8 per cent. in the seventies.

Urobilinuria as Index of Liver Functioning.—Brandt protests against assuming that urobilin can occur constantly in appreciable amounts in the urine in normal conditions. His repeated tests of fifty persons, entirely healthy or with disease not affecting the liver or digestive organs, elicited a constantly positive response in 6 per cent., that is, with dilution of 1:5. He determines the urobilin content of the urine by mixing 5 c.c. of urine and 5 c.c. of alcohol and adding 50 cg. by weight of pulverized zinc acetate, stirring and filtering. This is repeated with the same amounts of the zinc acetate and the alcohol but with smaller amounts of the urine, diluting with distilled water to bring it up to 5 c.c. The extreme physiologic limit is with 2 c.c. of urine and 3 c.c. of distilled water—the 1:5 dilution. The research described shows further that the findings of a single test cannot be depended on. Only when the response is constant at 1:10 is it certainly pathologic. As a rule, the dilution 1:5 must be regarded as pathologic also, when the reaction is constant.

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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, NO. 20 CHICAGO, ILLINOIS NOVEMBER 13, 1920

THE TREATMENT OF PYELITIS IN INFANCY AND CHILDHOOD*

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This paper is based on a series of eleven cases treated by pelvic lavage with silver nitrate, and is intended as a preliminary report of one of our studies of pyelitis occurring in infants and children.

Nothing new is claimed for this method of treatment, that is, pelvic lavage, nor do we lay claim that silver nitrate is a specific, nor is it the only drug that may be or has been used in treating colon bacillus infections of the higher urinary tract. In this paper we wish to present the results obtained in this series of eleven cases that were treated by silver nitrate instillations into the renal pelvis.

The excellent results obtained in the treatment of *B. coli* infections in adults by means of silver nitrate injections of the renal pelvis seemed to justify an attempt to treat a series of cases in this way in order to determine whether or not this form of treatment could be applied to infants and children and, furthermore, to determine whether or not this method possesses advantages over the methods in general use, namely, internal treatment and vaccine treatment.

As a rule, pediatricians have not availed themselves of this form of treatment. The urologist who is prepared to carry out pelvic lavage does not, as a rule, see many of these cases. This situation calls for a closer cooperation between these two specialties than exists at present.

The acute hematogenous unilateral cases of renal infection, more or less fulminating in character, generally call for surgical intervention and will not be considered in this paper.

There are several reasons why this form of treatment has not been employed in infants and children more frequently than it has. Perhaps the first of these is the lack of appreciation that this is possible, and the second, that general anesthesia is necessary.

Nitze,[1] Jacobi,[2] Casper,[3] Portner,[4] Beer,[5] Hyman,[6] Hinman[7] and Quinby[8] have called attention to the possibilities of cystoscopy in children. With the rapid advance in developing and perfecting small cystoscopes, this field has been very materially enlarged so that cystoscopy can be performed in infants as easily as in adults.

Nitze was the first to call attention to the use of cystoscopy and ureteral catheterization in children. He performed cystoscopy successfully in boys as young as 8 years of age. Naturally, because of anatomic conditions it is much easier to perform cystoscopy and catheterize ureters in girls at a much earlier age than it is in boys. Hyman reports a series of more than thirty children under 9 years of age in whom cystoscopy was performed. The youngest patient was a boy of 17 months who was subsequently operated on for kidney tumor. The youngest boy catheterized was under 3 years old, and the youngest girl was 22 months old. In our series the youngest patient was a girl 7 months old, in whom both ureters were catheterized simultaneously and pelvic lavage was carried out.

In boys, because of anatomic considerations, cystoscopy and ureteral catheterization cannot be carried out as early as it can be in girls, although one of us has repeatedly performed cystoscopy on boy babies of 14 months. In order to facilitate cystoscopy and ureteral catheterization in boys, it has been suggested that this may be done through an external urethrotomy incision. Thus far we have not availed ourselves of this procedure.

As this paper deals with the treatment of pyelitis, no attempt will be made to include all of the cases in which cystoscopy has been employed from time to time for conditions other than those to be embraced in this paper.

The value of a routine roentgen-ray examination cannot be overemphasized. Experience in treating adults has demonstrated the value of this procedure before instituting pelvic lavage. In this way several cases of so-called pyelitis were proved to be cases of stone in the pelvis with infection, and hence the patients were spared a long and fruitless course of pelvic lavage. In one of the cases at the Children's Hospital in which the institution of pelvic lavage was considered, a preliminary roentgen-ray examination revealed the presence of a stone in the renal pelvis. Doubtless in some of the cases that are diagnosed as pyelitis and in which pelvic lavage fails to produce a cure, there are factors present which explain the failure, such as the presence of calculi, tuberculosis of the kidney, and stricture of the ureter.

In order not to overlook a possible renal tuberculosis, routine examination for tubercle bacilli were made, including guinea-pig inoculations from urine obtained from each kidney and bladder. In this series no evidence of renal tuberculosis was found.

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* From the Otho S. A. Sprague Memorial Institute, Children's Memorial Hospital.

* Read before the Section on Urology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Nitze: Lehrbuch der Kystoscopie, 1907, p. 97.
2. Jacobi: Lehrbuch der Kystoscopie, Leipzig, 1911.
3. Casper: Handbuch der Kystoscopie, Leipzig, 1911.
4. Portner: Deutsch. med. Wchnschr., 1908, No. 43.
5. Beer: J. Surg., March, 1911.
6. Hyman, A.: Surgical Diseases of the Urinary Tract in Children, Am. J. Dis. Child. **15**: 116 (Feb.) 1918.
7. Hinman, Frank: The Cystoscopic Study of Urologic Conditions in Children, Am. J. Dis. Child. **17**: 305 (May) 1919.
8. Quinby, W. C.: Pyelitis in Children, J. A. M. A. **68**: 591 (Feb. 24) 1917.

The youngest patient treated was 7 months of age. In this case the two ureters were catheterized simultaneously, and both renal pelves were treated with silver nitrate. The oldest child was 10½ years old. Between these the following ages were recorded: one, 1½ years old; one, 2 years old; two, 2½ years old; one, 5 years old; one, 7 years old, and two, 8½ years old. All cases occurred in girls.

There were no untoward results or reactions following instrumentation and treatment. As a matter

TABLE 1.—FINDINGS IN CASE 1 (E. G., GIRL, AGED 5 YEARS)

	Leukocyte Count			Cultures			
Date	Right	Left	Bladder	Right	Left	Bladder	Treatment
1/ 1/20	.....	...	200	.....	.....	B. coli	
1/ 7/20	560	230	300	B. coli	B. coli	B. coli	None
1/12/20	.....	...	325	.....	.....	B. coli	
1/14/20	1,920	300	340	B. coli	Contaminated	B. coli	3 c.c. 0.5% silver nitrate, each pelvis
1/19/20	.....	...	130	.....	.....	B. coli	
1/24/20	No specimen	30	...	.....	B. coli	B. coli	2.5 c.c. 5% thorium sol. right pelvis; 3 c.c. in left
2/ 2/20	.....	...	32	.....	.....	B. coli	
2/ 5/20	30	130	60	Sterile	Sterile	B. coli	3.5 c.c. 0.5% silver nitrate, lt. pelvis; 3 c.c. in right pelvis
2/10/20	.....	...	3	.....	.....	Sterile	
2/16/20	.....	...	0	.....	.....	Sterile	

of fact, these little patients seemed to stand this quite as well as do adults.

It was our object in treating this series of cases to render the urine free of pus and sterile. In other words, no case was considered as cured in which these two requirements were not fulfilled. Symptomatic cures were not considered. It is a matter of general knowledge that there is a big difference between a symptomatic cure and a bacteriologic cure. Not infrequently these patients on admission to the hospital show a great deal of pus and countless numbers of bacteria in the urine. They have a very high temperature, a marked pallor is present, and they appear prostrated. Under routine hospital treatment, namely, rest in bed, bland diet, large amounts of water, the internal administration of alkalis, diuretics and urinary antiseptics, the fever disappears more or less rapidly, the appetite returns, and the patients make an apparently rapid recovery, so far as their general condition is concerned. This may at times occur as rapidly as if the patient had had a crisis, yet a careful examination of the urine discloses that the amount of pus and bacteria present in the urine is just the same after as it was before the clinical improvement took place. In other words, the clinical improvement is very marked, whereas the urinary findings remain unchanged or are only slightly improved.

It has been repeatedly stated by some authors that many of the cases of pyelitis of pregnancy and pyelitis of adolescence are but recurrences of the pyelitis of infancy and childhood. This may be possible, especially if we consider the fact that formerly these cases were treated without any consideration of the urinary findings or the bacteriologic results. As a matter of fact, some authors today are satisfied with a so-called clinical cure, paying little or no attention to the condition of the urine at the time the patient is discharged from treatment.

Thus, Rhonheimer[9] in his conclusions states that albumin, leukocytes, bacteria and epithelial cells may persist in the urine for a year after the acute illness, without necessarily considering these children as being sick, or that any special danger of recurrence persists.

With these views we can not agree. Hence we have not designated as cured any cases that showed either pus or bacteria in the urine.

In nine of the eleven cases, complete cures were obtained; that is, at the time the patients were discharged as cured, the urine was free of pus and the cultures were sterile.

The cultures were reported sterile if no growths were found at the end of forty-eight hours. In order, however, not to overlook the possibility of the presence of slow growing organisms, the plates were kept in the incubator for five days before a final report of a sterile specimen was given, so that it may be stated that in each case in which specimens were obtained, the cultures remained sterile at the end of the fifth day of incubation.

One patient left our observation after the first lavage. The cultures still showed the presence of infection; hence this case is not included under the cures, although the urine was free of pus.

Silver nitrate solution was used in each case. The strength of the solution used was 0.5 per cent. The amount injected varied from 1 c.c. in the infants to 5 c.c. in the older children. As stated above, there were no reactions.

The number of injections required to render the urine sterile varied. Three patients required but one injection of the silver nitrate. Five patients required two injections, and one patient required three injections.

In two cases the kidney urines were sterile before the bladder urine, in one case after two injections and in the other after the first injection. This patient had a *B. paratyphosus* infection. A subsequent examination one week after revealed that the kidneys were again infected.

TABLE 2.—FINDINGS IN CASE 2 (B. S., GIRL, AGED 8½ YEARS)

	Leukocyte Count			Cultures			
Date	Right	Left	Bladder	Right	Left	Bladder	Treatment
10/15/19	800	400	800	B. coli	B. coli	B. coli	3 c.c. 0.5% silver nitrate into each pelvis
10/27/19	...	...	870	.....	.....	B. coli	
10/29/19	30	0	280	B. coli	B. coli	B. coli	3 c.c. 0.5% silver nitrate into each pelvis
11/ 3/19	...	...	650	.....	.....	B. coli	
11/12/19	...	...	650	.....	.....	B. coli	
11/19/19	240	120	450	B. coli	B. coli	B. coli	2.5 c.c. 0.5% silver nitrate into each pelvis
11/24/19	...	...	100	.....	.....	B. coli	
11/29/19	...	...	10	.....	.....	B. coli	
12/ 3/19	0	0	10	Sterile	Sterile	Sterile	2.5 c.c. 0.5% silver nitrate into each pelvis
12/ 8/19	...	...	0	.....	.....	Sterile	

In treating adults, this observation had been made several times. In some of the cases in which this fact was noted there were relapses or recurrences of the pyelitis. This fact would seem to be of sufficient importance to warrant emphasis because, if the kidneys show sterile specimens and the bladder still harbors infection, may not the bladder be a cause for subsequent recurrences or relapses? That this is possible, we believe. In a publication on cystography,[10] it was shown that fluid may regurgitate from the bladder up the ureter into the kidney pelvis. This phenomonon

9. Rhonheimer: Cor.-Bl. f. Schweiz. Aerzte, Dec. 18, 1919.

10. Kretschmer, H. L.: Surg. Gynec. & Obst. 23: 709 (Dec.) 1916.

was noted in infants and children as well as in adults in a series of cases in which this procedure was carried out both in normal and in pathologic bladders.

Two cases in this series showed regurgitation of bladder fluid into the renal pelvis. This occurred during ureteral catheterization while waiting to collect specimens from each kidney. It was suddenly noted that the fluid ran out of the ureteral catheters very rapidly and that it was colorless. It was assumed that the water of distention in the bladder was flowing up the ureter and was running out of the catheters. In order to prove this assumption, argyrol solution was injected into the bladder, and in a few minutes the water flowing from the ureteral catheters was colored by the argyrol. Although catheters were in both ureters this phenomenon was present only on the left side. Several years ago Hagner [11] drew attention to this regurgitation during ureteral catheterization.

In order to differentiate between a true regurgitation due to insufficiency of the ureterovesical valve or sphincter and between a simple running up of fluid due to the presence of the catheter holding the ureterovesical valve open, the catheters were withdrawn from the ureters and the bladder fluid removed. The bladder was then filled with a 10 per cent. argyrol solution, and a roentgenogram was taken. In neither of these two cases after removal of the catheters did regurgitation up the ureter take place.

In ten of the eleven cases, the colon bacillus was found in pure culture. One patient had a parathyphoid bacillus infection.

In all of the cases the pyelitis was bilateral. There were no cases in which a colon cystitis was found; that is, in which only a bladder infection was present.

Routine leukocyte counts were made on each specimen of urine.[12] This method gives a more accurate estimation of the amount of pus present in the urine than does the use of indefinite terms now in use. Furthermore, when comparing the counts one can see at a glance just how much improvement is made from one treatment to the next. This can best be illustrated by the accompanying tables from two of the cases in this series.

SUMMARY

1. Pelvic lavage with solutions of silver nitrate is a procedure that can be carried out in infancy and childhood.

2. This mode of treatment has rendered the urine sterile and free of pus in nine cases in this series.

3. There have been no complications or unfavorable results of this treatment.

4. All of the cases treated this way had resisted all other forms of treatment.

ABSTRACT OF DISCUSSION

DR. W. F. BRAASCH, Rochester, Minn.: The suggestion regarding the employment of pelvic lavage for infections of the kidney in children is very interesting. Cystoscopy in children, particularly in boys, is not so easy a procedure as one might be led to believe. However, that is not a serious objection. Pyelonephritis in children disappears spontaneously in the course of time in practically every case. I am under the impression that if one or two pelvic lavages will cure a pyelonephritis, the infection would disappear spontaneously. The contention that the pyelonephritis of children frequently continues and is usually the cause of a chronic pyelonephritis in the adult is open to question. It has been my experience that adult patients with pyelonephritis have no history of urinary infection other than recent. Occasionally pyelonephritis in childhood becomes complicated by ureteral stricture and resulting pelvic dilatation and the condition may then become surgical. It is possible that in this type of case, pelvic lavage and ureteral dilatation might prevent further destruction. Lavage of the renal pelvis in children should in my opinion be rarely employed and then only in the occasional case which is progressive or complicated by mechanical obstruction.

DR. I. L. VAN ZANDT, Fort Worth, Texas: In the case of a girl, 4 years old, who had high fever, severe but variable pain in the abdomen, and occasionally some nausea, no abdominal tenderness, I gave the patient by enema, 4 grains of collargolum, once or twice daily; the bowels having first been washed out. In four days the fever was gone and the child was hungry. This remedy has served me well in several cases of pyelitis. Some months later the urine was found to contain many pus cells. I gave alkalis but got no results. I then gave hexamethylenamin and sandalwood oil. This cleared up the urine in two or three weeks.

DR. MARCELL HARTWIG, Los Angeles: I discovered this disorder in breast-fed children many years ago. I found only one case published and it was found postmortem. At that time I stated that the affection had the characteristics, almost, of typhoid fever, that it was probably mixed in with typhoid fever, and that hexamethylenamin and turpentine had cured my patients. I have not made any further bacteriologic examination. One bacteriologist said that the condition was probably due to the colon bacillus. At the same time, he presented the theory that it probably is a direct transmission through the thin intestinal wall into the blood and hence down into the kidney. I feel now that it is a self-limited disease. One child, aged 2½ years, had a recurrence which yielded to the same treatment.

DR. ABRAHAM HYMAN, New York: Cystoscopy has been neglected in children, because it has not been generally recognized that it is a perfectly feasible procedure. Using proper instruments, there should be no trauma, and aside from the fact that young boys require an anesthetic, the technic is no more difficult than in the adult. Dr. Beer was one of the first to advocate cystoscopy in young children, and the two instruments we use were described by him a number of years ago. The observation cystoscopes are Nos. 10.5 and 12.5 French caliber, and with the catheterizing sheath can readily be detached, making an examining and single catheterizing cystoscope in one. The shafts of the instruments are short, from 9 to 12 cm. in length. We have records of more than fifty children under 9 years of age, cystoscoped during the past five years. The youngest boy examined was 17 months old. Indigo carmin is injected fifteen minutes before examination, and the ureteral orifices are carefully watched for its appearance. The diagnosis can be made in most instances without resorting to ureteral catheterization.

DR. H. J. SCHERCK, St. Louis: A few years ago I made a study of a series of forty cases. The investigation was suggested by the finding of pus in the urine of young children. The children selected for this study did not all complain of symptoms referable to the urinary organs, but were taken at random from the patients in the childrens' service. We found that 6 or 8 per cent. of these children had colon bacillus infection of the urinary tract. These cases were carefully worked up, with cultures of the urine. The histories of those cases in which a distinct colon bacillus infection existed were carefully analyzed. The general conclusions reached were that in the first or second attack the chills and temperature reactions were well marked; that after a while there would be second, third and fourth attacks, each occurrence, however, being less severe than the previous one. This moderation in the exacerbation we attributed to a developing immunity, which made the attacks less severe. In treatment we found that vaccines were of no value. In a few necropsies made on children who died from other causes and in which there was

11. Hagner: Surg., Gynec. & Obst., October, 1912.
12. Kretschmer, H. L.: The Value of Making Leukocyte Counts on the Urine in Infections of the Kidney, J. A. M. A. **69**: 1505 (Nov. 3) 1917.

a distinct pyelitis due to the colon bacilli there was no destruction of the parenchyma of the kidney. This fact coincides with our observation in adults. Our best results so far as our therapy is concerned were from most excessive and prolonged alkalinization of the urine. In the main I agree with Dr. Braasch and disagree with Dr. Kretschmer in regard to the use of instruments in young children. I believe the trauma incident to the manipulation is too severe and followed by too much reaction to make it justified, except in very exceptional cases.

DR. ARTHUR B. CECIL, Los Angeles: I am sure that the cases of which Dr. Kretschmer is speaking are those which have not been self-limited. He is speaking of the type of case which has been allowed to rest, and in which everything possible has been done for a prolonged period of time, in spite of which the infection has continued. I have seen children who have been ill for several years with pyelonephritis. In support of Dr. Braasch's views that pyelonephritis of childhood is self-limited, it is a fact that one finds a great number of children with pyelonephritis and also a large number of adults with pyelonephritis, but I doubt if one sees many patients 15 or 16 years of age with pyelonephritis. I cannot recall a single case. The fact remains, however, that there are children who remain ill for a great period of time, and who become seriously handicapped in their early life. It is in these cases that something should be done. It does not seem to me to be advisable to give instrumental treatment in the case of infants with pyelonephritis, for from the very nature of things it is evident that there could not have been much time for spontaneous recovery to have occurred.

DR. WILLIAM E. STEVENS, San Francisco: I have seen a number of interesting urologic conditions in the children's ward at Mount Zion Hospital and my work has convinced me that, contrary to general opinion, tuberculosis of the kidney is not uncommon in children; that strictures are often encountered in the ureter and urethra of both male and female children; that pelvic lavage is of definite value in pyelitis in children. Recently, in a child, 6 years of age, suffering from an obstinate pyelitis, the urine became microscopically and culturally negative following a single irrigation of the renal pelvis with 1 per cent. silver solution. In my opinion pyelitis is not a self-limited disease. Internal medication, vaccine therapy, etc., will fail to cure a definite proportion of cases. Many of these cases, if neglected, would terminate in destruction of the kidney but clear up following ureteral catheterization and pelvic lavage. Cystoscopy, ureteral catheterization, comparative functional kidney tests and pyelography are also valuable procedures in the diagnosis and treatment of genito-urinary conditions in children. Although a general anesthetic is usually necessary, I have been able to do a cystoscopy on a few children between 7 and 9 years of age under local anesthesia.

DR. B. C. WILLIS, Rocky Mount, N. C.: I saw a child, 6 years old, whose temperature ranged from 103 to 105 F. in the afternoon. To be on the safe side we searched for the tubercle bacillus but found none. The roentgen-ray examination for stone was negative. We then got a baby cystoscope, using the Braasch's type, and did a cystoscopy under general anesthesia. We passed ureteral catheters into both kidney pelves and found that she had a pronounced hydronephrosis and dilatation of both ureters, about 1½ inches in diameter. We treated this child once a week with irrigation of the pelves with silver nitrate solution, from 0.5 to 2 per cent. strength. The first few times it was necessary to use a general anesthetic; she then begged us not to use the anesthetic. A cystoscopy was done on her thirty-five or forty times, and she was kept in the hospital for four months. The child gained so much in weight and appearance that her friends hardly knew her. We allowed her to return home with instructions to come once a week for treatment. She made about six trips back and forth and then unfortunately developed measles with the return of all the symptoms greatly exaggerated. We lost her four weeks later. This case was very interesting in that a condition that had existed for four years would respond to proper treatment.

DR. HERMAN L. KRETSCHMER, Chicago: We do not use this treatment in every case of pyelitis. I stated that the patients we treated were those that do not get well on routine management.. We follow the same fundamental principles as in adults, but only when other methods fail. It is a fact that pediatricians state that their patients do not get well. Pediatric literature is full of such cases. For that reason I do not believe that pyelitis is self-limited. Some of the patients get well, but there is a certain definite group of patients who do not get well. What are you going to do for those patients? They are the ones we have treated. The fact that one injection cures some cases, as brought out by Dr. Braasch, is no evidence that the disease is self-limited for we have had sterile cultures from patients who have not gotten well under other methods of treatment. Perhaps the injection of the silver did the work. The catheterization may have served to straighten out an irregularity or kink in the ureter, but the fact remains that after the injections, or injection, of silver nitrate, the patients got well and remained well so far as being free from pus and bacteria was concerned. I do not know why some of the men who discussed the paper fail to do this as they said, "because of traumatism." I fail to see where there is any traumatism, or why there should be more traumatism in children than in adults. We have had no cases of traumatism and we have had no reactions. If care is used there is no more traumatism in these cases than in adults. Of course, we are working with small instruments and small patients and at first it is a little harder to do because we are not so accustomed to this work in children; but it can be done successfully.

In reference to pyelonephritis in adults being a continuation of a pyelitis in children, in all of our cases we have laid stress on the fact as to whether or not the patient had pyelitis in childhood. It is surprising to find how many patients will tell you they had "bladder trouble" when they were children. Another point bearing on this question: in a recent number of the *Zeitschrift für gynäkologische Urologie* a pediatrician in a small town in Switzerland where the people intermarried, and remained, took care of different generations of the same families. He went over his old records and found that many of his patients who had pyelitis in childhood, developed pyelitis in adult life and many of them developed pyelitis in pregnanacy. He believes this is a continuation of the pyelitis in infancy and childhood. He also believes that some of these patients are never cured. They are clinically cured but no attention is paid to the urine. Why cannot these patients have recurrences? I was not familiar with the work of Dr. Hartwig. In reference to pyelitis in breast-fed infants, Dr. Schott, one of the men working at the hospital, repeatedly found pyelitis in children 4 days old.

Dr. Scherck said he had found the colon bacillus in the urinary tract in children with other diseases. With this we agree. I also agree with Dr. Scherck that most of the autogenous vaccines are not of very much value. Most of our patients were treated with alkalis. I cannot agree with him that pelvic lavage produces traumatism. Since my return from the army we have had three children of the age of 12 who had definite tuberculosis and on whom we have done nephrectomy. I think that many of these cases are overlooked because we do not suspect this condition. Dr. Hyman says he does not catheterize the ureter. We have no hesitancy in catheterizing the ureters when we think it necessary. I emphasized the fact that all of our patients were girls, which makes the treatment a little easier. There may be relapses after this form of treatment as after all other forms of treatment. Many of these patients have been back in the hospital with other diseases during the winter, mostly pneumonias or respiratory infections, and their urine was at that time still free from pus and sterile.

Instinct and Exercise.—In the natural state animals are compelled by the struggle for existence to lead active lives, and apart from this they indulge in exercise—especially the young—for the sheer pleasure of it; but the struggle for existence does not, in the case of civilized man, necessarily entail much exercise, and if not prompted by instinct to take his proper amount his health tends to suffer in consequence. —*Med. Press*, July 14, 1920.

OCCLUDED RENAL TUBERCULOSIS *

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Renal occlusion may occur so insidiously that but few subjective symptoms accompany the process. The etiologic factors are numerous and varied. Among the most common causes of the condition are ureterolithiasis and nephrolithiasis, carcinoma of the bladder, pyelonephritis and renal atrophy, stricture of the ureter following infection other than tuberculous, operative trauma, pressure and involvement by abdominal neoplasm, and renal tuberculosis.

Probably the most common factor of renal occlusion is stricture of the ureter in renal tuberculosis. The condition was first recognized as a clinical entity by Zuckerkandl,[1] in 1897, and was described more fully by Smirnow,[2] in 1913. At first it was regarded as a rare condition, and only recently have Caulk and Greditzer [3] and Fowler [4] asserted that it occurs more frequently than is generally supposed.

The records at the Mayo Clinic show that 621 patients were operated on for renal tuberculosis from January, 1900, to January, 1919. In sixty-nine of this number the affected kidney was found to be occluded. Nine of the patients had bilateral renal tuberculosis and sixty patients (9 per cent. of the total number) had unilateral renal occlusion. This number does not include the cases in which occlusion was questionable, and in all probability recent, or in which at operation any active renal tissue was found. Although occlusion in renal tuberculosis may occur suddenly and be permanent, the process is often gradual, and the ureter is temporarily occluded, reopens for a variable length of time, and then gradually becomes occluded permanently. The clinical symptoms often faithfully reflect the time of occlusion. To illustrate: The patient usually has previously had a period of marked frequency and dysuria which suddenly diminished or ceased, the general symptoms improved, and the patient gained weight. If cystoscopy is now performed, the bladder may show but little evidence of cystitis, and the ureter on one side will be found to be occluded.

REVIEW OF CLINICAL DATA

The preponderance of male patients in this series is in keeping with our previous review of renal tuberculosis, which shows that the condition occurs virtually twice as often in the male as in the female. From the time of onset it may be inferred that renal occlusion generally occurs a decade later than is usual with renal tuberculosis. It is found most frequently among adults in the fourth and fifth decades, and is unusual under 30.

Frequency.—Urinary frequency was the chief complaint in thirty-nine (56 per cent.) of the patients, in contradistinction to more than 90 per cent., as is usual in renal tuberculosis. The frequency was marked in only twenty-two of the patients, and moderate and often of variable intensity in the others. Whether or not frequency persists to marked degree following the occlusion will depend on (1) the degree of bladder involvement prior to the occlusion; (2) the intensity of the infection; (3) the length of time since the occlusion, and (4) whether the ureter is completely occluded throughout or whether it permits sporadic secretion from its lower segment. Nine of the twenty-two patients with marked frequency at the time of examination had bilateral renal tuberculosis, and three had other complications to account for the continued frequency, leaving ten (16 per cent.) of the unilateral cases in which frequency was persistent and marked, even though the kidney was occluded.

Pain.—Twenty-one patients (30 per cent.) complained largely of pain. The pain was rarely acute and was usually described as a dull ache, generally referred to the lumbosacral area or the lateral abdomen. Several patients complained of acute colic at the time of occlusion. At the time of examination the pain, although usually described as moderate or not definitely localized, was frequently sufficient to interfere with ordinary pursuits.

Although twenty-four patients were found to have hematuria of vesical origin, it was recent in only six, and it was the chief complaint in but one, and he had bilateral disease. Two patients came to the clinic because of persistent renal sinuses following drainage of lumbar abscesses. The discovery of renal occlusion was accidental in six cases, the patients coming because of other conditions. Three patients came because of the discovery of an abdominal tumor; they had no recent symptoms whatever suggestive of involvement of the urinary tract. In one instance the tumor was so large that it caused protrusion of the entire left abdomen.

Duration of Symptoms.—The symptoms existed much longer than in cases of active unilateral renal tuberculosis, because, the previous acute symptoms having diminished or disappeared, the patients do not seek medical advice, or because, owing to the obscure nature of the symptoms, renal involvement is not suspected. Only twelve patients were found to have had symptoms of less than one year's duration; the remainder had symptoms over a period of from one to twenty years, with an average of six and one-half years.

Urinalysis.—The discovery of the presence of pus or red blood cells in the course of routine examination of the urine called our attention to the involvement of the urinary tract in many cases in which the symptoms were otherwise indefinite. Pus and red blood cells were found in variable quantities in all but eight patients. It must be remembered, therefore, that renal occlusion may exist even though the urine is negative. As a rule the urinary evidence of disease was not gross, and on urinalysis only a moderate number of cells were found. Excluding the cases of bilateral tuberculosis, tubercle bacilli were demonstrated in the urine of nine patients (15 per cent.). In the majority of this group the occlusion was comparatively recent, and the tubercle bacilli doubtless originated from the tuberculous bladder.

Roentgenographic Data.—Roentgenographic examination of the urinary tract has repeatedly called our attention to the condition of closed renal tuberculosis which would otherwise have been clinically overlooked. Roentgenographic examination of the urinary tract was made in sixty-two of the cases and

* From the Section on Urology, Mayo Clinic.
* Read before the Section on Urology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Zuckerkandl, O.: Die geschlossene tuberkulose Pyonephrose, Ztschr. f. Urol. **2**: 97-104, 1908.
2. Smirnow, A. W.: Pyonephrosis tuberculosa occlusa, Folia Urolog. **7**: 229-249, 1913.
3. Caulk, J. R., and Greditzer, H. C.: Occluded Renal Tuberculosis — Autonephrectomy, Med. & Surg. **2**: 453-456 (April) 1918.
4. Fowler, H. A.: Discussion of Occluded Renal Tuberculosis, Tr. Am. Urol. A. **9**: 416-418, 1915.

found to be definitely positive in eighteen (30 per cent.); in a few others the shadows were of a questionable nature. It is evident, therefore, that with occluded renal tuberculosis the caseation with calcareous deposits sufficient to cause a shadow occurs more frequently than with the average renal tuberculosis; the shadow, as a rule, is more extensive and may outline the entire kidney. The shadow varies greatly in density, and often shows lobulations in the kidney substance. The frequent discovery of these shadows, when the symptoms are not at all suggestive of involvement in the urinary tract, warrants the routine roentgen-ray examination of every patient who has chronic urinary frequency or obscure abdominal and lumbar pain.

Cystoscopic Data.—The clinical diagnosis of renal occlusion can usually be made by means of cystoscopic examination. It is impossible only when the bladder is so inflamed or contracted that satisfactory cystoscopy is difficult. As a rule, however, the bladder is not markedly inflamed and the absence of a meatus on one side and evidence of overfrequent secretion from the other meatus are sufficient to direct attention to the probability of unilateral renal occlusion. Cystoscopic examination showed that the bladder was practically normal in twenty (33⅓ per cent.) of the cases in which there was unilateral tuberculosis. There was evidence of slight inflammation in thirty-three others, so that in fifty-three (88 per cent.) the bladder was but little involved. Aside from the cases in which there was bilateral disease, there were but seven (11 per cent.) in which cystitis was extensive. The pathologic condition of the bladder may be of three types: (1) marked inflammation or contraction; (2) one or two localized ulcerated or inflamed areas surrounding or adjacent to the infected meatus, and (3) a normal bladder with eradication of the meatus. In the last type the site of the meatus was frequently represented by an area of granulation tissue. It must be remembered, however, that error in the cystoscopic diagnosis of renal occlusion may readily be made. We had this experience several years ago in one case in which the cystoscopic examination and functional tests led us to believe that renal occlusion existed and at operation the kidney was found to be normal. It is obvious that the occlusion must have been temporary at the time of cystoscopic examination and may have been due to temporary reflex ureteral spasm caused by the cystoscopic irritation. Inspection of the diseased meatus hidden in the ulcerated and edematous mucosa is often misleading. In a few of the cases the bladder was so badly deformed that it was quite impossible, even with the aid of indigocarmin, to determine whether the meatus was functionating.

The differential functional test is of considerable aid in the determination of occlusion. If only one kidney can be catheterized, and the phenolsulphonephthalein secretion from that kidney is from 25 to 30 per cent. in fifteen minutes as the result of hypertrophy, and if there is no dye to be found in the bladder, it may be inferred that the other knidney is occluded. It should be remembered, however, that temporary occlusion, such as often occurs from reflex irritation of the cystoscope, may cause the absence of phenolsulphonephthalein in the bladder. In the presence of marked vesical inflammation and deformity when inspection of the meatus is unsatisfactory, this might be confusing. Furthermore, should there be a return flow alongside the ureteral catheter, the discovery of the dye in the bladder might mislead to the inference that there is function in the other kidney. In such cases a repetition of the functional test with a large occluding catheter is advisable. A correct preoperative diagnosis was made in forty (63.8 per cent.) of the cases of occluded renal tuberculosis in this series. In virtually all in which operation was performed during the last five years, the condition had been recognized clinically prior to operation.

Operation.—Nephrectomy for occluded renal tuberculosis is, as a rule, rendered easier when the kidney has been occluded and dormant for a long period. Nephrectomy, however, in cases of recent occlusion complicated by large pyonephrosis or diffuse perinephritis, may be more difficult. In thirty-seven (53.6 per cent.) cases the occluded ureter was found to be in such condition that it could be tied and dropped back and the wound closed without drainage. In thirty-four of this number the wound healed by first intention. In the others, in which drainage was established, the majority healed in a month or two following the operation.

Postoperative Data.—Only one (1.6 per cent.) of the sixty patients with unilateral occluded renal tuberculosis died as the result of operation. Complete postoperative data were obtained in fifty-eight (84 per cent.) of the total number operated on. Excluding the patients with bilateral tuberculosis, all but one of whom are reported dead, eight of the patients (15 per cent.) have died. This is a little less than the average total mortality of 20 per cent., and is what might be expected since the renal occlusion may be regarded as an index to the patients' increased resistance to the infection.

Postoperative Condition.—The majority of answers to the letters of inquiry sent to the patients show improvement or complete relief of the various preoperative symptoms. Of the patients whose chief complaint was dysuria, all but nine (18 per cent.) noted considerable improvement or are entirely well of the bladder trouble. If the bladder had become widely infected with consequent contraction and deformity; the prognosis following nephrectomy was not so favorable as for patients with bladders less diseased; a few patients have improved following nephrectomy, even though the bladder was greatly contracted. The degree of improvement of bladder symptoms, however, will vary with the time of occlusion; if of recent origin, improvement is much more marked than if occlusion has taken place some time previously. Marked improvement in the general condition of the patients was noted in thirty-three (67 per cent.); the gain in weight averaged 19 pounds. Of considerable interest is the fact that in the group of patients who complained of dull pain in the dorsal or lateral abdominal areas, the majority were entirely relieved following nephrectomy.

Focus of Infection.—The possibility of an occluded tuberculous kidney acting as a focus of further tuberculous infection must be considered. It would be logical to assume that in some cases *Bacillus tuberculosis* remains dormant in the remnant of the kidney tissue, and that in a period of lowered resistance it might be carried to other portions of the body. I am under the impression, however, that if the kidney has been definitely occluded and dormant for many years, the chances of infection are not very great. In order to determine whether or not any tubercle bacilli might exist, 5 c.c. of an emulsion of the substance of the occluded tuberculous kidney from five patients

were injected into guinea-pigs. In four no evidence of tuberculous infection could be found. In one case, however, the guinea-pig died two months after the inoculation with evidence of diffuse tuberculosis. The patient, however, had a history of recent infection and occlusion, and some atrophic kidney tissue remained. It may be concluded that if the kidney has been dormant for many years, unless there are definite symptoms referable to the kidney, little good will be derived from a nephrectomy. If, however, any of the following conditions are present operation is indicated: (1) recent occlusion; (2) possibility of occasional reopening of the ureter and consequent reinfection of the bladder; (3) persistent pain referred either to the abdominal or to the lumbar region; (4) the presence of a large abdominal tumor, and (5) physical debility or evidence of focal infection.

CONCLUSIONS

1. Renal occlusion occurs in about 10 per cent. of the cases of chronic renal tuberculosis.
2. It can be recognized by means of clinical, roentgenographic and cystoscopic data in fully 90 per cent.
3. The usual symptoms are persistent frequency, dull pain or abdominal tumor; they usually extend over a period of many years.
4. The occluded kidney may be a focus of infection, if the occlusion is of recent occurrence. If it has existed for many years it usually becomes sterile.
5. In the presence of persistent frequency, dull pain or abdominal tumor, nephrectomy is indicated.
6. The postoperative results are usually excellent, with recovery from the various symptoms.
7. In cases of bilateral tuberculosis, the removal of an occcluded kidney will not benefit the patient and operation should not be performed.

ABSTRACT OF DISCUSSION

DR. JOSEPH HUME, New Orleans: Pathologically it has been known for a long time that occluded tuberculosis exists, but it is only in the last ten years that attention has been drawn to the subject and Dr. Braasch has contributed no small part to the information we have obtained. There is, however, a certain amount of confusion as to the word "occlusion," and in the literature the records are constantly confused as to whether the occlusion is permanent or partial. It is a good plan to speak of complete occlusion when nothing comes down, and of partial occlusion when at one time the kidney will allow a little to seep down and at other times nothing at all. I have had a few cases of what might be termed "intermittent occlusion." The results of this occlusion are very important. Pathologically four general results may be mentioned: first, a large pyonephrosis; second, a very rare condition, a hydronephrosis; third, cystic degeneration of the kidney, and, fourth, atrophy of the kidney. This may be of two types: a large type in which the kidney is very small and surrounded by a large capsule, giving the impression of a large kidney; often there is no kidney tissue at all. These cases can be divided into two great groups: an active group and a silent group. In the active group there is acute pain, cachexia, marked bladder symptoms. The silent type presents many problems. In some cases there are no kidney symptoms at all, or possibly some reflex pain which does not lead us to suspect a kidney lesion. In another group of cases there is some flare-up on one side and there is no ureter on the opposite side or you cannot get up on the opposite side. These cases are of great importance and are very difficult to diagnose. If we cannot find a ureter on either side the probability is that the kidney was destroyed by tuberculosis, or there was no kidney from the start. In many cases the roentgen ray shows no evidence of a kidney at all. What shall we do with these cases? Shall we operate? I think Dr. Braasch is right. Operation should not be advised because in many cases no tubercle bacilli are left. Even if we take out the silent kidney, the disease is apt to flare up in the other, so it is best not to advise operation.

DR. HERMAN L. KRETSCHMER, Chicago: "Autonephrectomy" is the term used by the older authors in these cases. When Zuckerkandl described three clinical cases it was considered a phenomenon. Dr. Braasch has told us that in his series of renal tuberculosis cases 10 per cent. with occlusion of the ureter were found. I had no idea these cases were so frequent, and it raises the question whether we are missing some of them. Very frequently one cannot pass a catheter or the catheter can only be passed up the ureter a very short distance, and one is satisfied to stop at that point with the idea that it is a stricture, and no attempt is made to prove whether we are dealing with occlusion or stricture. In these cases it is well to use indigocarmin. If the dye does not come through it shows that we are dealing with an occluded ureter. I have been on the lookout for tuberculosis in the cases in which I have not been able to do a satisfactory cystoscopy because of local bladder conditions. Perhaps in some of these cases the roentgen ray will reveal the condition pointed out by Dr. Braasch. It seems to me the cases in which the urine is normal are the ones we are likely to miss. I do not remember the figures in regard to the palpable tumor. It ought to be easy when one can demonstrate the presence of the tumor and find it in the kidney region. As has been pointed out, some of these kidneys undergo atrophy. In one of my cases the patient had a large kidney on the right side, which I thought was hypertrophied, and on the other side I found one which I thought was atrophied. Necropsy showed an atrophied right kidney with complete stricture of the ureter and a large hydronephrosis on the other side. I agree with Dr. Hume about the use of the word occlusion. In a recent publication on this subject the author reported a large number of cases of occluded tuberculosis, and yet he says he can catheterize the ureter and get urine from that side. The use of this word should be restricted to those cases in which the occlusion is complete.

DR. H. MCCLURE YOUNG, St. Louis: Dr. Braasch spoke of the possibility of error in diagnosis; that failure to find a ureteral orifice creates a strong probability that it is not there. There is a strong probability, but it is not certain. We should not be contented with a probability when we possess a means of making absolutely certain. If a Gareau catheter is put up on the sound side we can be sure that we collect all the urine that comes down on that side, then a functional test with phenolsulphonephthalein can be made, and we collect the urine entirely through the Gareau catheter. At the end of half an hour if the intravenous method has been employed the Gareau catheter is withdrawn and an ordinary catheter is put into the bladder, and if we find only a trace of the dye in the bladder even after irrigating and collecting the irrigating fluid I think we have an absolute demonstration that the dye is not coming through on the opposite side. I have made it a rule whenever I have suspected an occlusion on one side to make that test even after catheterizing both ureters if there has been leakage. A certain amount of the dye will often be found in the bladder after catheterization of both ureters and you do not know which side it is coming from, but this can always be checked up later by the use of the Gareau catheter.

DR. A. J. CROWELL, Charlotte, N. C.: Dr. Braasch did not state the location of the occlusion in his cases.

DR. HARRY A. FOWLER, Washington, D. C.: A woman in the late thirties had a large tumor in the upper right abdominal quadrant, projecting from under the costal border, presumably a kidney tumor. She gave a long history of calculus, dating back fifteen years, when a stone was removed from the left renal pelvis. This recurred ten years later, and a second stone was removed from the same kidney. Two years later she had a typical attack of right-sided renal colic. Examination showed a small stone in the left pelvis, and a slightly larger one in the right kidney. Despite this she was operated on a few months later for appendicitis and a normal appendix was removed. The symptoms persisted. Two and a half years after this she came under my observation on account of right-

sided pain and the tumor above referred to. Examination showed a small stone in the left pelvis and a larger stone at the right pelvo-ureter juncture, producing complete obstruction of the right ureter. It was impossible to obtain any urine from the right side, therefore the nature of the tumor could not be determined definitely. The bladder urine was clear and free from infection. At operation a very large kidney was removed, and on examination proved to be completely destroyed by multiple tuberculous abscesses. This case represents an unusual type of occluded renal tuberculosis, the occlusion being due to an impacted pelvic stone. It is the only case of a true calculus complicating renal tuberculosis which has come under my observation.

DR. W. F. BRAASCH, Rochester, Minn.: Dr. Crowell's question in regard to the usual location of strictures in the tuberculous ureter is a difficult one to answer in a few words. The strictures, as a rule, are multiple, and may be situated in any portion of the ureter. I am under the impression that the occluding stricture is more often situated near the renal pelvis. If the primary stricture is situated in the lower portion of the ureter, it depends on whether the stricture is partial or complete as to what the result may be. If it is partial, hydronephrosis and hydro-ureter may result. Occluded renal tuberculosis occurs more frequently than is generally recognized. I might have divided these cases into two groups, namely: silent tuberculous kidneys and those of more recent origin.

STANDARDIZED VS. UNSTANDARDIZED SPLINTS OF THE AMERICAN ARMY *

H. R. ALLEN, M.D.
INDIANAPOLIS

At our last session in Atlantic City it was suggested in open meeting that the standardized splints of the army be placed in all medical schools and in hospitals for teaching and treating purposes. Among the most ardent advocates of this idea were the men who did the standardizing. The splints they selected for standardization were chiefly of British origin, with an occasional continental digression in the form of a bulky Balkan frame or a domestic selection of devices from a very limited geographic area of the United States, referred to as "America's contribution."

Then and now I resent their selection of both foreign and so-called American splints, as I believe none of them are as good as the best this country affords. We are now asked to endorse the selection and clinch the endorsement by forcing this selection of splints into all of our hospitals and medical schools. A good splint does not require forcing. It will automatically find its proper place.

Before submitting for comparison the most important of the standardized and unstandardized splints, it is only fair to say that there may be many better splints than the few I shall exhibit.

THOMAS LEG SPLINT

Since the Thomas splint for the lower extremity appears to outshine all others in the standardized group, and since its various parts keep popping up in splints for other parts of the body, it may be well to compare it and its various parts with at least one of the unstandardized splints. For convenience, this one splint will be referred to as the Allen splint.

These two splints may be compared, first by their lower or foot ends, secondly by their vertical rods, and lastly by their top ends. Figure 1 shows that the foot ends are just about as different as they can be. The Thomas humps up in the middle toward the sole of the foot, while the other bends down away from it. To the top of the upturned loop in the Thomas the traction bandages are tied. This being a central point, it causes these bandages to compress the foot in a very unpleasant way. In order to obviate this lateral pressure, we are advised to pass the traction bandages out around the steel rods and then tie them to the upturned loop. This obviously would strip the adhesive plasters away from the sides of the leg unless an annular band was put around the ankle. Any one can see that outward lateral traction will flatten the annular bandage in front against the ankle and behind against the Achilles tendon. It would be better to let it compress the foot.

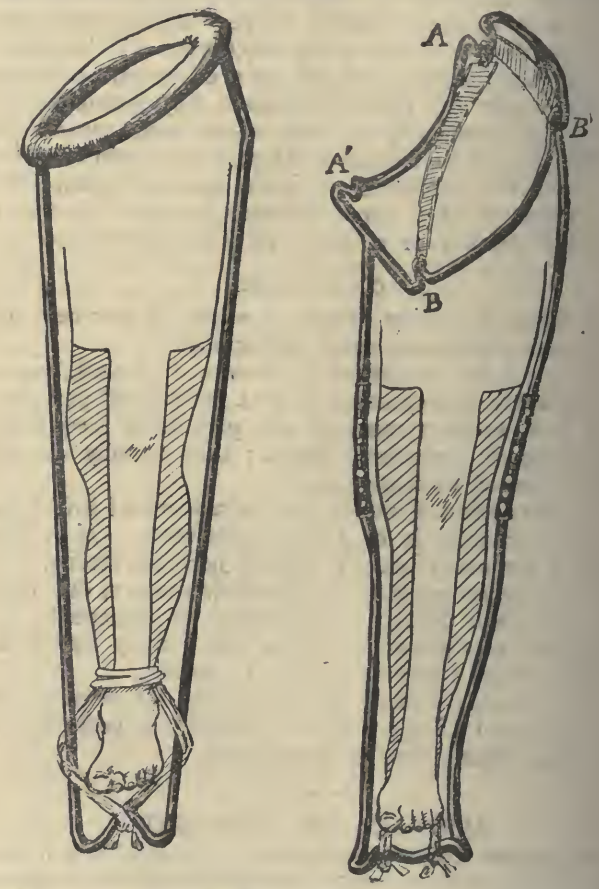


Fig. 1.—In order to provide a splint appropriate in length for the patient who has to wear it, the Allen splint has a steel tube elongation attached to the steel bar on each side, just above the level of the knee, into which the upper portion of the splint slides down. This tube has a series of adjustment holes, through which shortened nails may be passed in order to hold the upper portion of the splint at any desired height, thereby regulating the length of the splint. The round steel ring of the Thomas splint must be made the right size and reshaped to fit different patients, while the Allen splint, with its flexible sling, makes its own adjustment to fit.

There is another amusing bit of construction about this foot part. The top of the upturned loop is just about an inch and a half above the extreme bottom of the splint, so that when the foot is drawn well down and the splint is fitting the very best it can, it is still an inch and a half too long for any patient who has to wear it.

In the Allen splint, the traction bandages run directly down from the adhesive plasters on the sides of the leg to their attachment at the laterally placed loops. This construction makes lateral compression of the foot impossible. The Thomas could have had this and

* Read before the Section on Orthopedic Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

other advantages had it only been designed backward and just reversed from the way it is designed.

Our second comparison is that of the steel rods that connect the bottom with the top. The rods in the Thomas are two straight diverging lines from bottom to top, excepting for one slight angular bend over the greater trochanter. The Thomas could have conformed to the natural lines of the body, had it so been designed. The advantages of following these natural lines were clearly brought out and published during the war, in the *Military Surgeon*.

Our last comparison of the two splints exposes the weakest hope for the Thomas construction. Like the mountain ash, it dies at the top. Since there is no possible section through the human hip that resembles a circle or a bilaterally symmetrical modified circle, we may look on a splint thus terminating with more or less suspicion. A substantial misfit appears to be a logical conclusion if we try to make a bilaterally symmetrical steel ring, all nicely padded, fit a hip whose front and rear, inside and outside have no anatomic or morphologic resemblance. If it fits in front it cannot fit behind, nor can it fit when the foot is elevated if it fits when the foot is down on the bed. This brings us face to face with the important question as to where the padded ring makes its pressure against the pelvis.

We are told that the Thomas splint rests against the tuberosity of the ischium. As nature intended that part for a resting place, we may as well agree that it would be a very appropriate place for a Thomas splint to rest; but instead of resting there, it really rests against the horizontal ramus, an area far too sensitive to endure any prolonged pressure (Figs. 1, 2 and 3).

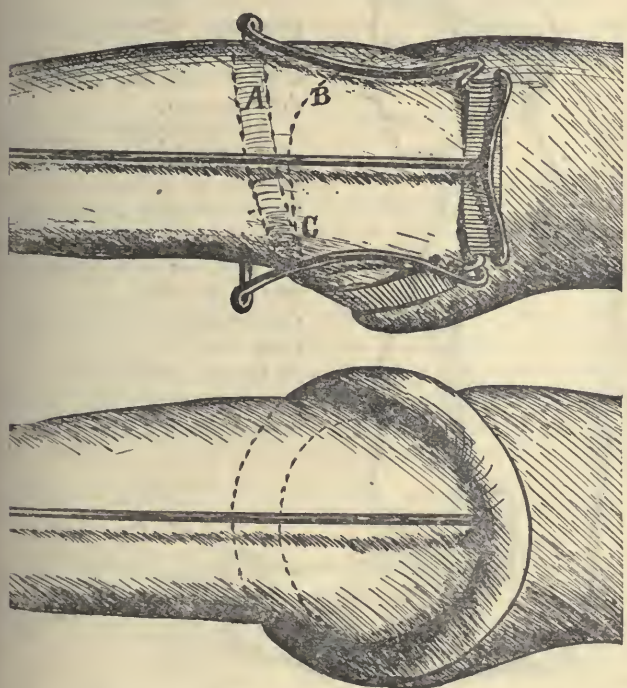


Fig. 2.—The angle *ACB* shows an open space between the ischial sling and the patient, which angle can be increased sufficiently to make painful pressure or even contact with skin impossible. Putting a Thomas splint on one leg and an Allen splint on the other settles at once and for all time the difference in comfort and prolonged use. Without actual experience with the two splints, opinions of relative merit can be merely theoretical

You will doubtless recall a very elementary lesson in geometry informing us that a straight line lying in the same plane with a circle would touch the circle at two points when it traversed the circle, but it could touch at only one point if it did not lie in the same plane. The line of the horizontal ramus does not lie in the plane of the padded circle. Therefore, we are concerned with only one point of pressure, and we shall find that point not at the ischial end of the line of the ramus but away over toward the pubic end, where things are most sensitive. You will be instantly informed as to the exact resting place by putting the splint on your own leg or, better still, slip the padded ring over a patient's foot and slide it up over the knee and adductor muscles and then watch it find itself, with the internal part of the ring resting against the ramus just external to the pubis. Then tighten up the splint and elevate the foot. It will not be necessary to ask where it hurts, as the patient will promptly furnish that bit of instructive information. In case there is any doubt as to just where the tuberosity of the ischium is, it can easily be found well inside the padded ring. The pictures of the pelvis account for my referring to its most dependent portion as the horizontal ramus. They also clear up any doubt as to where the padded ring can and cannot rest.

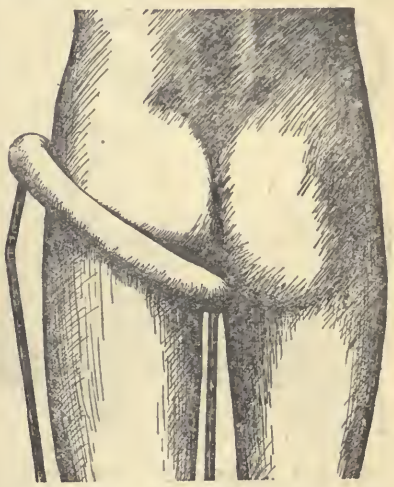


Fig. 3.—If the Thomas splint is especially fitted for each individual patient, it remains both painful and insanitary, as it causes more or less blocking of the anal outlet. In case the foot is elevated from the bed, the padded ring cannot rest against the ischium. So a weight and pulley are sometimes used to lessen the unbearable pressure near the pubis. This, of course, defeats the purpose of the padded ring for ischial pressure as the splint is pulled away from all pelvic bearing. Furthermore, the constant force of gravity is substituted for fixation energy—which is a questionable substitution.

It would be unfair to the wounded soldiers of future wars to pass unnoticed what is shown in Figure 3. It will be observed that the steel rod that runs up between the thighs joins the steel ring at a point almost directly opposite the anal outlet. With this construction, more or less blocking of the anal outlet is unfortunately necessary. The disagreeable, time-consuming aspect of this presents a picture most objectionable to contemplate.

By a totally different design and construction, based on a different selection of mechanical principles, the objectionable and painful elements of the Thomas splint can be eliminated without in any way dodging its basic intent and purpose.

The Allen splint depends on no padded steel ring, but uses instead a padded, flexible, inelastic ischial sling, which, like the belly band of an army harness, adapts itself automatically to the shape of the animal that wears it. This sling is not a loose loop, but is a short, curved, sharply inclined plane as indicated at the right in Figure 1. After this sling passes down behind the gluteal region, it bears against the posterior and inferior zone of the ischium. From here it makes a straight departure, forming the angle *A C B* (Fig. 2), which can be widened out to accommodate any reasonable amount of foot elevation, without pressure against the inclined plane, which slants away from the horizontal ramus. The sling does not follow the ramus

around as the ring is compelled to do, as shown in the lower part of Figure 2.

In order to change the splint for right or left sides, it is only necessary to slide the high end of the ischial sling down at one end and the low end up at the other. The ends of the sling are equipped with double-linked swivel rings that slide up or down the steel rods to

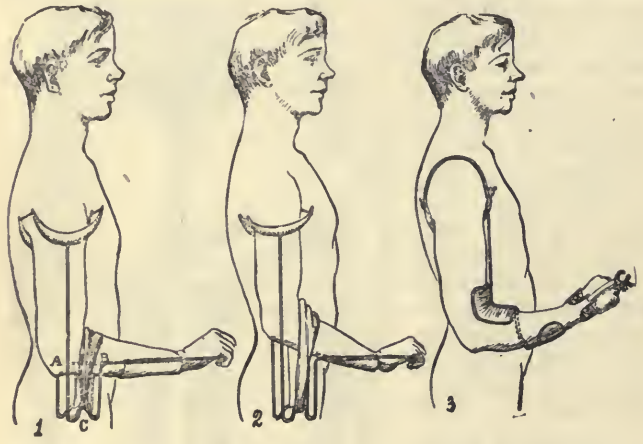


Fig. 4.—1. A patient the right size for the standardized humerus splint. 2. A patient whose arm is not long enough for the splint. Both splints represent the unnecessary bulkiness at the elbow. As much traction can be made from line *AB* as can be made from point *C*, several inches below line *AB*. 3. Allen splint for both humerus and forearm. The details of this splint are better shown in Figure 5.

their retention seats. *A* slides to *A'* (Fig. 1), while *B* slides to *B'*, resulting in line *AB* or *A'B'*. The top sling does not have to be changed, as it merely serves to keep the metal from touching the skin.

A patient can endure much longer and much more pressure against a padded sling than against a padded, round steel rod.

Had the Thomas splint a better top and bottom and more shapely rods connecting them, we might understand its popularity; but to force it into our hospitals and medical schools with all its incongruities and violations would be merely an abrupt way to warp all our modern mechanical ideas downward and backward beyond all hope of progress.

FRACTURE SPLINTS FOR UPPER EXTREMITY

In Figure 4 will be seen what at first sight appears to be a badly bent up Thomas leg splint. It is in reality the fracture splint for the humerus, and betrays the deep seated Thomas influence on the standardization committee. It is intended for right or left side. Figure 4-1 shows it fitting perfectly on a man who happens to be just the right size for it. It is double crutched at the top. One crutch is on duty under the axilla, while the other stands at inattention clear outside the deltoid. At the shoulder it is entirely too bulky for an army overcoat to be drawn over; but that should not concern us, since no garment ever could pass the elbow construction, with its double set of dropped, parallel steel bars and their upturned Thomas loops for traction bandages. Why these bars went only 6 or 8 inches below the elbow instead of to line *AB* is an open question, because as much traction can be made from line *AB* as can be made from a point 6 or 8 inches below it. Figure 4-2 shows a short-armed man trying to wear the standardized splint.

Figures 4-3 and 5 show what can be done with a little less than half as much steel rod. For more than twenty-five years this modification of my original splint has been most successful. It takes care of fractures not only of the arm but also of the forearm, and can be applied in about the time it takes to light a cigaret. It also works on either side and can be worn under or over the nightshirt or over the big army overcoat, and it fits any man in the army. Instead of using the "clove hitch," it makes its traction by means of a handcuff so constructed that the blood vessels in front and behind are arched over and are not subjected to any compression. The best way to compare this form of traction is to put a handcuff device on one hand and the clove hitch on the other, tie them together, and then pull the hands away from each other. The traction will be equal for the two hands; but one will turn blue and swell up while the other will remain about normal. This splint was also ignored by the standardization committee, although it appears to have some merit.

SIR ROBERT JONES' COCKUP SPLINTS

Figure 6 represents, at the top, a variety of Jones cockup splints, at the bottom the Allen splint. I refer to the variety of Jones cockup splints because they are made for right and left hands, also right or left, without and with thumb rests. Apparently they are all for one purpose, so far as holding the hand in dorsiflexion is concerned. That is an important position unless the flexor tendons are cut, and then just the opposite position is absolutely essential. Along with a description of surgical technic we are more than once warned not to apply any pressure on parts that have been operated on, and yet every one of the splints shown is a three point lever device with its constricting and compressing fulcrum bearing down with sufficient energy to hold the hand in dorsiflexion.

At the lower central part of Figure 6, *X* represents a splint that is made of wire and adhesive plaster. It will hold the right or left hand of any soldier in palmar or dorsiflexion without even touching any part of the forearm, and it is also self-retaining, light in weight and clean.

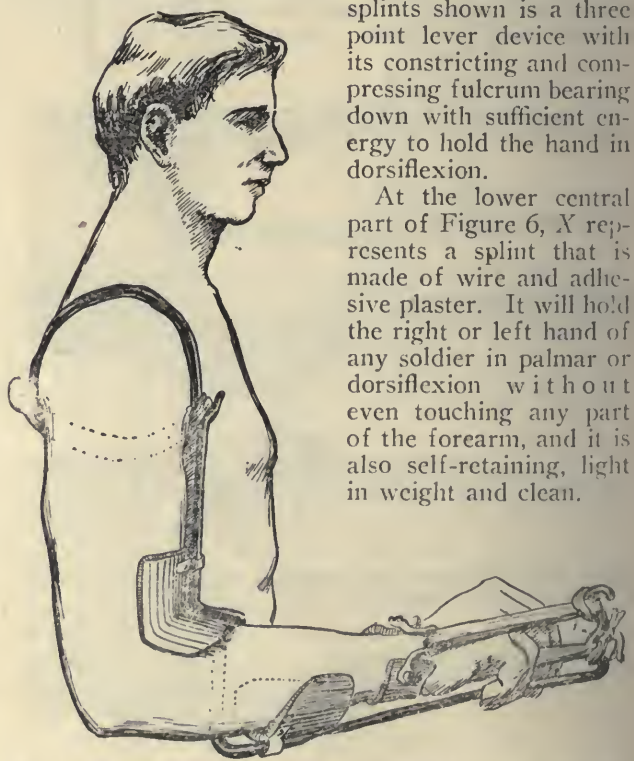


Fig. 5.—This splint, with its nonconstricting wrist bearing, takes care of fractures of the arm and forearm for either side of the body, and fits any soldier in the army, under or over his clothing.

THE SHOULDER SPLINT

Among the standardized group of army splints there is one fairly ponderous device intended to hold a shoulder joint in a fixed position of anterior abduction and internal rotation. There are too many moving parts and links in the chain hoist to interest an ama-

teur artist, so I made no sketch of it. However, the U. S. government has pictures of it and they can be seen in the standardized group.

Figure 7 represents a front and side view of a splint that a man can wear while asleep or while awake. It

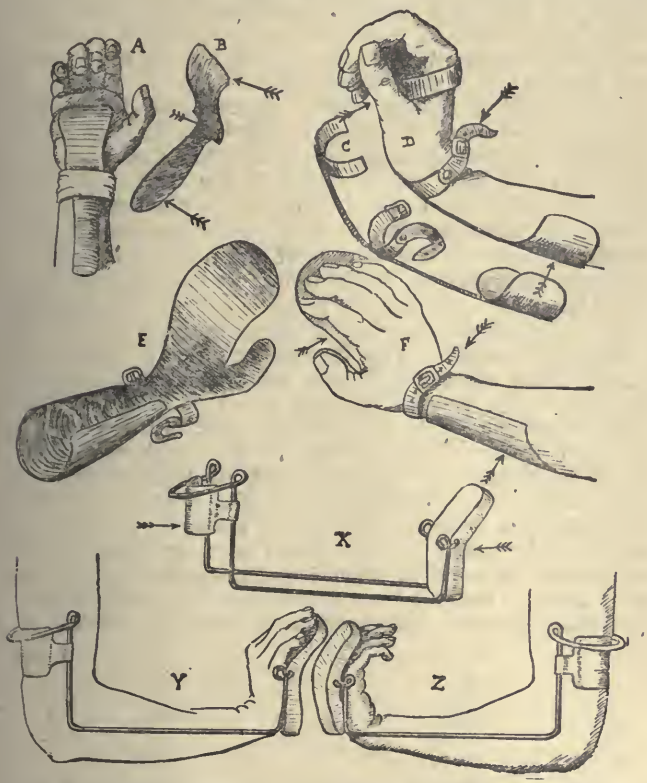


Fig. 6.—At *X* is shown a self-retaining splint to hold either hand in palmar or dorsal flexion without pressure on any part of the forearm. It will fit any soldier. The palmar surface can be padded up to relieve any degree of pressure against the thenar eminence.

is made of wire and adhesive plaster. It is very light and yet sufficiently rigid.

In the museum of modern war injuries and their surgical treatment, at Fort Oglethorpe, Ga., there were two of these splints. Copies of them were frequently made and taken abroad by the best surgeons in this country. Any time you would go into the museum you would see some interested surgeon wearing one or both of them. This splint can be worn over or under the clothing, and as no one ever bent the wires, it must have been a comfortable fit. The exact position of the arm and forearm can be instantly and permanently secured by bending the wires to meet the exact requirements of each case.

FRACTURES OF THE JAW

Concerning fractures of the lower jaw, we orthopedic men have no laurels to keep fresh and green. Who it was that scared us clear out of this field, I know not. I do know that there is no standardized splint, unless the dentists put one across. Figure 8 represents a reliable lever type of splint that dentists borrow now and then for their dental meetings. It also is made of wire and adhesive plaster, and the dentists tell me that it actually holds a broken jaw both forward and upward and is very comfortable to wear. It can be used as a temporary splint until the dentist comes to our rescue or we can go on without him.

THE STRETCHER

The Thomas spinal splint and its various modifications for pelvic injuries resemble bifurcated undertakers' baskets, with the additional possibility of abducting one lower extremity, if used for pelvic injury. Illustrations of these monovalve cradles are unnecessary. They were not used once in a thousand cases, and anything holding that record is admittedly useless. As a complete substitute, the new army hand litter or stretcher does all and more than can be done by any possible modification of the Thomas spinal splint. The stretchers were standardized during the war, and a tremendous number of them ordered not by the medical department but by the ordnance department, although they were published in the *Military Surgeon* and republished in foreign languages (Fig. 9). There exists today no one device that serves so many commendable purposes. It serves as a portable bed, a splint for many parts of the body and as an operating table, and with the addition of a back rest it becomes a most comfortable reclining chair. It has a 7-inch hole cut in the canvas for elimination purposes and a rectangular hole in the tread of each stirrup for the reception of sticks which, according to their length, serve as table legs for any desired height of table or bed.

Equipped as it is in Figure 9, with its transverse rods for traction or fixation attachment and its traveling, swinging cranes it is more complete than any standardized Balkan frame and hospital bed combination. This stretcher is a self-contained, compact unit, completely eliminating any and every excuse for the existence of a Balkan frame for any purpose. A patient can have one or all extremities elevated; also he can reach up and lift his own weight or change his position by catching hold of the swinging, traveling cranes. He can remain on his stretcher from the time of his injury until he is discharged from the hospital, without submitting to the many painful changes from bed to operating table. He can be taken out into the sunshine or into the treatment room without having to be first untied from a Balkan frame. He can be

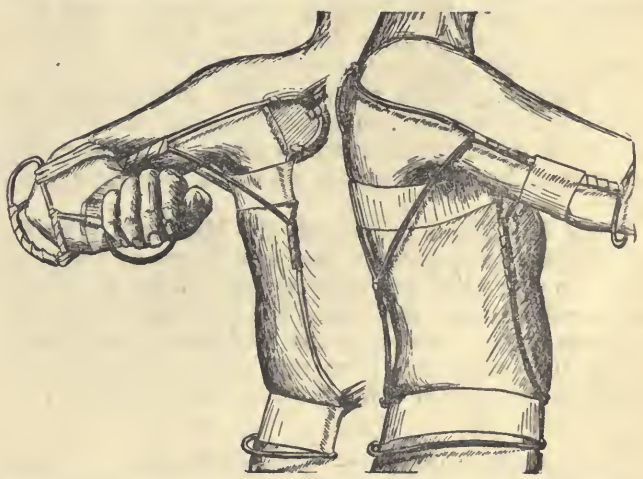


Fig. 7.—Front and side views of the shoulder splint. It is made of wire and adhesive plaster, and can be bent to hold the humerus and forearm in any desired position. It is light, and all injured parts are exposed for treatment.

roentgenographed right through the stretcher without being disturbed. All of his Carrel-Dakin and other paraphernalia are attached to this complete portable unit. In case wounds on the back require treatment, holes can be cut through the bedding and canvas; and in order to make treatment still more convenient, longer sticks will elevate the bed to a desired height, so that every part is easily accessible.

There are, in addition to the many surgical and hospital advantages, certain strategical advantages in the battle field. A hospital protected from direct fire can be as far forward as any fighting man, even if the



Fig. 8.—Outside lever splint for fractures of the lower jaw. It holds the jaw upward and forward, and dentists assure us that it is both comfortable and effective.

mud and water are deep, because the patients are up high and dry and can stay there until favorable time for moving them back. Furthermore, a patient will receive better treatment if he is up where he can be worked with than he will if his attendant has to kneel in slush and ice water or sit in a soft, warm mud.

In holding the standardized splints up to the light of comparison, let us hope that the abundant evidence of unnecessary mechanical errors did not account for the anxiety last year to rush the foreign devices into all American medical schools and hospitals.

In discussing these splints, I beg of you not to assume that I regard them as the last word and finished product in splint construction. I know, as well as you know, that there is much for all of us to learn about splints.

These few splints are merely the ideas of one man out of many thousands of men who strove to win the war. So your ideas and your suggestions for improvements will be most welcome. We are really all after just one thing: We want the best splints on earth; and if they can come from this country, it gives us additional reason for being proud of our country.

ABSTRACT OF DISCUSSION

DR. H. WINNETT ORR, Lincoln, Neb.: For the first two and one-half years of the war the British had many men who were enthusiastic in the use of splints, but in the third year of the war, because of the bad results secured in the treatment of fractures of the femur, an investigating committee was appointed to collect statistics as to the final results in treatment of injured femurs. The results were so bad that improvements were inaugurated to the end that the results obtained afterward were very much better. This meant simply the adoption of a standardized method in the use of the Thomas splint. Many of us have seen the Thomas splint applied in hundreds of cases of all kinds of fractures of the femur with almost uniformly beneficent results.

Dr. Allen's claim with regard to his own splint is open to criticism. He has simply changed a few angles of the Thomas splint, and I think his splint is not as good as the Thomas splint. In the matter of applying the Thomas splint, Dr. Allen's statement as to pressure on the perineum is erroneous. He does not know how to apply the splint or that would not happen. I have seen patients taken from a hospital train screaming with pain at every movement and within ten minutes be made perfectly comfortable with nothing more being done than to adjust the Thomas splint.

With regard to making traction, as recommended by Dr. Allen, it is necessary to adjust a constricting bandage about the ankle. By properly applying the moleskin plaster but few cases give difficulty, and loosening of the traction is very much the exception. I should be the last to discourage either initiative or ingenuity. We must be careful, however, to distinguish between the amplification of a principle and the elaboration of an apparatus. In the former we make progress, but in the latter we often lose the principle entirely. Dr. Allen's splint has a sufficient number of adjustments so that it does become more complicated for the average surgeon. One of the biggest points about the Thomas splint as used in the war was that it was possible in many wards in France to take surgeons without much previous experience in the treatment of femur fractures, and so impress them with the details of the application of this splint that hundreds of patients over a wide area could all be treated alike so that the results were relatively uniform. Losing the principles of adequate traction and fixation is what occurs so many times in the modification of so-called standardized apparatus. Variations of or so-called improvements in apparatus are justifiable only on certain grounds. Standardization simplifies methods of

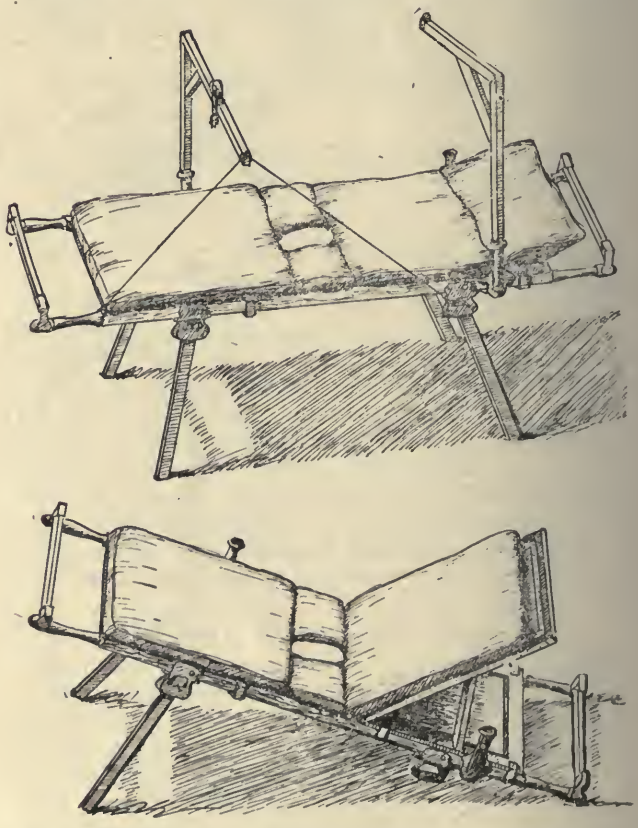


Fig. 9.—Above, swinging, traveling cranes ready to fulfil all the duties possible to a massive Balkan frame. This stretcher is a self-contained, complete unit to which all Carrel-Dakin and other paraphernalia can be attached. The patient can remain on this stretcher from the time of receiving his injuries until dismissed from the hospital without experiencing the usual pain from being lifted out of bed for operating or roentgen-ray table or other treatment. Below, stretcher and back rest combination, resulting in a most comfortable reclining chair.

teaching, popularizes methods that have been shown to be applicable, and contributes most of all to uniformly better results than those to which we have become accustomed.

DR. FRANK R. OBER, Boston: In France I worked with Dr. R. B. Osgood, a member of the army splint committee. In our hospital we treated between 46,000 and 47,000 casualties. We found that the only Thomas leg splints causing discomfort were those with large rings. The splint with a properly fitting ring will fit closely the tuberosity of the ischium, will not slip into the anus or impinge on the side of the thigh and will give no discomfort. In criticizing the diagram shown one sees that the splint is not of sufficient length below the foot; constricting bands to hold traction straps at the malleoli are not necessary. The two straps shown in Dr. Allen's splint and secured separately always impinge on the malleoli and cause pressure sores. This method of fastening consumes a great deal more time in maintaining the traction because the straps have to be untied and refastened daily. When the two straps are secured by one knot, a nail may be inserted between the straps so that by one or two daily twists any amount of traction may be had. It is not necessary to bend the splint to conform to the outline of the leg. In a way, this is a disadvantage, because it is very much more difficult to dress wounds when close fitting splints are used. A Thomas splint can be applied by any one with very little training. Every ambulance was equipped with them and the transportation of wounded was remarkably facilitated by their use. Our patients always came in after a long trip, often being on one stretcher for many hours, in the greatest degree of comfort. I believe that the Thomas splint has come to stay. We have used it for years in orthopedic hospitals for treatment of tuberculosis of knee joints.

DR. R. W. BILLINGTON, Nashville: It is not to be supposed that the Thomas splint needs much defense before this association of surgeons. It was the most useful splint for the purposes for which it was used in war injuries that we had. It was not perfect for some cases, but the standardized model was adapted so that its purposes might be varied without having to have special splints for all these special cases. The principles applying in emergency work do not apply in civil practice. In civil work we do not have to adopt this standardized splint. It is not a true Thomas splint. This ring is not the true Thomas ring, which is not circular in the original Thomas splint. It is not placed at right angles to the *transverse plane* of the sidebars. It is tilted downward behind and is flattened in front; three fifths of the circumference of this ring is behind the uprights, two fifths being in front, and that throws the uprights in front of the center of the thigh. The weight is carried behind and the lowest point of the ring is below the tuberosity of the ischium. It forms a perfect saddle and is absolutely comfortable. That is possible in civil practice, but it was not feasible in the emergency of military practice. The army splint was a transportation splint and was designed for that purpose, and it was used chiefly for that purpose. It reduced the mortality from fracture of the femur from 75 to 25 per cent. Any apparatus that has done that much should not be said to be absolutely useless.

DR. EDWIN W. RYERSON, Chicago: I think Dr. Allen is led astray by the fact that the Thomas splint as used in our army is not an ambulatory splint. It was not designed to be used in walking. No man could walk about comfortably in the Thomas army splint, and it is not intended that he should walk. Moreover, Dr. Allen has been led astray in regard to the length of the splint, because, as we used it in the army, it should be long. As we used it, it was most efficient, and Dr. Allen would not condemn it for such use. The splint for the elbow designed by Dr. Allen seems to be extremely useful. I think it is better for hospital use than the one we employed in the army. The cock-up splint for the elbow does not impress me so much; in fact, I think it is absolutely worthless. An ordinary flat metal or wire apparatus, such as we have been using, is much less cumbersome than this splint, and is just as effective.

DR. JOHN D. RIDLON, Chicago: Dr. Ryerson should amend his remarks. I do not think Dr. Allen was *led* astray. I think he *went* astray.

DR. C. L. STOREY, Detroit: Out of the great war came the use of the pylon or pegleg. The pylon is a plaster bucket fitting over the stump with side bars running down and with a wooden block for a foot which made a pegleg for the patient to walk on shortly after amputation. I have made many of these peglegs and have seen others make them, and I have seen many failures to properly construct them. On investigating the cause of these failures we found that they are due to this: In putting the plaster bucket on the stump, when it came to the point where the bearing was either on the perineum or in between the ischium and the shaft of the femur the plaster was not drawn in at the bearing point, and it had exactly the same effect as a large ring in a poorly applied Thomas splint. In regard to treatment of fractures of the femur, I have seen men in the army who have always had trouble with the Thomas splint. On investigation we usually found that they were using a splint with too large a ring, and the leather pad part did not come between the shaft of the femur and the tuberosity of the ischium and was bearing on the ramus, causing discomfort. The Thomas splint, even with a large ring, can with counter weights, be applied in such a way that it will have a proper bearing point, if impossible to get a Thomas splint with the proper sized ring.

DR. HORACE R. ALLEN, Indianapolis: There were two distinct subjects in my paper for discussion: One was a comparison of splints and the other was whether American medical schools and hospitals were to have the standardized splints of the army injected into them. I think the discussers have been fair considering the fact that in the army they were familiar with the standardized splints only and had absolutely no experience with or knowledge of the other splints. They all agree that the Thomas splints must be the exact size and shape for each patient. The necessary time to select and alter these splints to size and shape would seem to detract from their use as emergency devices. The Allen splint requires no more adjustment nor sizing than the belly band of an army harness, which automatically and instantly fits any army horse comfortably. By putting a Thomas splint on one leg and an Allen splint on the other you will at once appreciate the difference and you will never again advocate a Thomas splint, especially if the foot is to be elevated. By comparing other groups of splints with the two groups presented, we can broaden our experience and ability to select splints. However, if in this one hour we have seen enough to convince ourselves of the wisdom of not forcing the standardized splints of the army into all of the medical schools and hospitals of America we can regard the time as well spent.

Danger in Using Army Gas Masks in Mines.—George S. Rice, of the U. S. Bureau of Mines, has called attention to the fact that gas masks have serious limitations and in no case should they be used in underground workings for the reason that there may be an insufficient amount of oxygen (the gas mask does not supply oxygen), or there may be present carbon monoxid, which the Army mask will not remove. Some carbon monoxid is always produced by a mine fire or coal-mine explosion, or by a blast of dynamite or other explosive. While the Bureau of Mines developed a mask which may take care of a small percentage of carbon monoxid, that is, 1 per cent. or less, in mine fires and after explosions there frequently is a much larger percentage of carbon monoxid in the mine atmosphere. Such masks are for use in industrial surface plants, as for example, on the top of a blast furnace or around gas producers in the open air. A mask is not of the slightest help when there is a deficiency of oxygen, and this deficiency is always present in the immediate vicinity of a mine fire, usually accompanied by the presence of both carbon dioxid and carbon monoxid. If a man enters a mine whose atmosphere contains less than 8 or 10 per cent. of oxygen, he is likely to collapse without the slightest premonition. The self-contained oxygen breathing apparatus is the only reliable safeguard in an irrespirable mine atmosphere.

LATE RESULTS IN TREATMENT OF GUNSHOT FRACTURES OF THE MANDIBLE

WITH SPECIAL REFERENCE TO VARIOUS METHODS OF BONE GRAFTING *

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This paper is based on data furnished by the Office of the Surgeon-General and by personal communications from officers in charge of maxillofacial cases at the different army hospitals designated for the treatment of such injuries on return of the wounded to the United States. It is an attempt to give a combined survey of the end-results of the various methods of bone grafting employed for the cure of nonunion with loss of substance following gunshot fracture of the mandible in the American Expeditionary Forces.

It is impossible at present to state accurately the number of gunshot fractures of the jaw bones occurring in the American Expeditionary Forces, but it is possible to reach an approximate estimate. We know that fractures of the jaws constituted about two-thirds per cent. of all gunshot wounds in the late war. The total number of wounded in the American Expeditionary Forces was about 225,000. Two-thirds per cent. of this yields 1,500 gunshot fractures of the jaw bones.

In about three fourths of these cases the mandible is involved, while in one fourth the maxilla is affected. So that, assuming a total of 1,500, 1,125 would be fractures of the mandible and 375 of the maxilla.

We have fairly accurate records that in the neighborhood of 600 patients with gunshot fracture of the jaw bones required further hospital treatment after return to the United States. The great majority of these patients were treated in certain hospitals where special personnel and equipment were provided for the carse of maxillofacial injuries. The hospitals and surgeons in charge of this work were: U. S. Army General Hospital No. 2, Fort McHenry, Md., Lieut-Col. George C. Schaeffer; U. S. Army General Hospital No. 11, Cape May, N. J., Major George M. Dorrance; Walter Reed General Hospital, Takoma Park, D. C., Lieut.-Col. Robert H. Ivy, and later Lieut.-Col. Jay D. Whitham, U. S. Army General Hospital No. 40, St. Louis, Lieut.-Col. V. P. Blair and Major Frank J. Tainter. Later the Post Hospital at Jefferson Barracks, Mo., replaced General Hospital No. 40; and Post Hospital, Columbus Barracks, Ohio, replaced General Hospital No. 2. At present the cases still remaining under army treatment are at Walter Reed General Hospital, Jefferson Barracks and Columbus Barracks.

TABLE 1.—SITES OF FRACTURE IN FOUR HUNDRED AND FORTY-FIVE MANDIBULAR CASES

	Number	Per Cent.
Body	230	51.7
Symphysis	76	17
Angle	53	12
Ascending ramus	31	7
Alveolar process alone	14	3.1
Condyle or coronoid	7	1.8
Multiple	34	7.6
Total	445	

Of the 600 cases of gunshot fracture of the jaw bones requiring hospital treatment after return to the United States, 445 involved the mandible and 155 the maxilla. In thirty-six cases both upper and lower jaws were involved.

Of 445 cases of gunshot fracture of the mandible retained in U. S. Army hospitals for treatment 322, or 89 per cent., of the American Expeditionary Forces total secured bony union without bone graft, leaving 123, or 11 per cent., of the total resulting in nonunion or vicious union, and requiring bone graft. In two of these cases of nonunion the patients refused operation.

TABLE 2.—FRACTURES OF JAW BONES IN AMERICAN EXPEDITIONARY FORCES

Total gunshot fractures of jaw bones in A. E. F. (estimated)	1,500
Maxilla	375
Mandible	1,125
Total gunshot fractures of jaw bones requiring care in U. S.	600
Maxilla	155
Mandible	445
Total mandibular fractures securing bony union without graft	322, or 89% of A. E. F. total.
Total cases of nonunion or vicious union requiring grafts	123, or 11% of A. E. F. total.
Total number of bone grafts to date	103

Up to the present date, 103 bone grafts have been made or have come under observation at the hospitals named. Cases of vicious union with such loss of substance as to require bone grafting were comparatively few, probably not more than twelve in all. This was because most of the cases received early and constant attention in the form of reduction and fixation with respect to proper occlusal relationship of the upper and lower teeth. In other words, collapse of the fragments to close the space due to loss of substance was not permitted, a nonunion with good occlusion being regarded as a lesser and more easily corrected evil than firm union in bad position. The almost universal preservation of good occlusal relationship in these cases, and the exceptionally large percentage of good functional results in cases cured without bone grafting are principally due to the efficient and painstaking work of the dental officers.

METHODS AND RESULTS

The methods of bone grafting employed will not be described in detail. The technic is given in the various references mentioned.

The results with the different methods employed are recorded as successful, partially successful, and failures. By a successful result is meant complete restoration of continuity of the bone. By a partial success is meant union of the graft at one end only, in which a further, supplementary operation was necessary. By failure is meant loss of the graft from suppuration or absorption.

1. *Pedicled Graft from the Mandible Itself.*—This method was first described by Cole,[1] and has also been the subject of a paper by Tainter.[2] Here a piece of the lower border of the anterior fragment is removed, with a pedicle of digastric muscle and fascia attached to it below for nourishment. This is carried back to fill the gap and fastened to the ends of the fragments by

* Read before the Section on Stomatology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Cole, P. P.: Brit. J. Surg. **6**: 57 (July) 1918.
2. Tainter, F. J.: United Fractures of the Mandible Treated by Bone Graft, J. A. M. A. **73**: 1271 (Oct. 25) 1919.

means of silver wire. This form of graft is satisfactory in cases of loss of substances up to 3 cm. in the body or symphysis of the mandible. It is not applicable when the ramus is involved. It has the advantage of furnishing a piece of bone that has not been cut off from its blood supply, and is therefore not so vulnerable to infection as the free graft.

This form of graft showed the best results on the whole, namely, thirty-one cases, twenty-seven successes, three partial successes and one failure (successes, 87 per cent.). It must be remembered, however, that this method was used principally in cases of comparatively small loss of substance, in which the ramus was not involved. It is my experience that regeneration does not occur nearly as readily in the region of the ramus as in the body and symphysis.

2. *Osteoperiosteal Method.*—This graft [3] consists of a thin shaving of bone from the surface of the tibia together with the overlying periosteum, which is laid in two or more pieces between and in contact with the ends of the fragments. It is suitable for loss of substance of any extent, and in any position, and the technic is simple. Thirty-eight patients were operated on by this method, with twenty-seven successes (71 per cent.), three partial successes and eight failures.

3. *Free Graft from Crest of Ilium.*—This has been the method of choice of Gillies and his associates at Queen's Hospital, Sidcup, England, and I have already described it.[4] The graft consists of a piece of bone, the full thickness of the crest of the ilium, beginning at the anterior superior spine. It is adapted either to a small or a comparatively large loss of substance. It is especially suitable in cases in which immediate rigidity is desired, namely, when too much dependence cannot be placed on splints for fixation, and also for an immediate cosmetic result when the loss of substance has produced much visible deformity.

Only seven grafts have been made from the crest of the ilium, five, or 71 per cent., being successful, one partially successful, and one lost from suppuration. The series is too small to form a basis for comparison.

TABLE 3.—TYPES OF GRAFT AND RESULTS

Type of Graft	Successful	Partially Successful	Failures	Doubtful	Total
1. Pedicled graft from mandible.	27 (87%)	3	1	—	31
2. Osteoperiosteal from tibia.....	27 (71%)	3	8	—	38
3. Crest of ilium..	5 (71%)	1	1	—	7
4. Cortex of tibia.	11 (65%)	1	2	3	17
5. Rib	6 (100%)	—	—	—	6
6. Ramus sliding..	2	—	1	—	3
7. Ox-bone	—	—	1	—	1
Total	78 (76%)	8 (7.7%)	15(13.5%)	3	103

4. *Free Cortical Graft from Tibia.*—In this method the technic of Albee was generally followed. Of a total of seventeen cases, eleven, or 65 per cent., were successfuly, one was partially successful, two were failures, and in three the result is still in doubt owing to the short time that has elapsed since the operation.

5. *Free Rib Graft.*—Only six patients were operated on by this method, all being successful. This series is too small, however, to form a basis of comparison with other methods.

6. *Ramus Sliding Graft.*—I am unfamiliar with the technic of this method, but assume that it is a modified pedicled graft in cases of involvement of the ascending ramus. Of three cases treated in this way, two were successful and one a failure.

7. *Free Ox-Bone Graft.*—One case in which this operation had been performed at another hospital came under observation at the Walter Reed General Hospital several months later. There was nonunion at one end, and evidence that absorption was going on in the transplanted bone. It would appear from recent experience that there is little use for anything but an autogenous graft.

Of a total of 103 graft operations, seventy-eight, or 76 per cent., are recorded as entirely successful. Partial success was attained in eight, or 7.7 per cent.; in three the result is still doubtful, while the failures numbered fourteen, or 13.5 per cent.

Comparative figures of the three methods most commonly employed are distinctly in favor of the pedicled graft with 87 per cent. successes, as against 71 per cent. for the osteoperiosteal method, and 65 per cent. for the cortical tibial graft. However, elimination of cases of the two latter types, in which a pedicled graft would not have been indicated, might materially change these deductions.

3. Delagenière: Bull. et mém. Soc. chir. de Paris, May, 1916; Lébédinsky and Virenque: Prothèse et chirurgie cranio-maxillo-faciale, Paris, 1918.

4. Ivy, R. H.: Ann. Surg. 71: 363 (March) 1920.

MANY ORTHOPEDIC DEFORMITIES DUE TO CALCIUM DEFICIENCY

A DIRECT RESULT OF STERILIZED AND PASTEURIZED FOOD *

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Calcium is an essential part of the human economy. Approximately it constitutes 50 per cent. of the inorganic matter of bone, and is also an important part of the structures in ligaments, muscles and the nervous system. When calcium metabolism is interfered with, there may result a deficiency, in which case the bones, muscles, nerves and ligaments are deprived of their calcium. Under these conditions, there may directly result scoliosis, knock knees, bow legs, flat feet, etc.

This condition of calcium deficiency was made very real in a study of a number of cases of scoliosis. After that, the same underlying causes were found in the other conditions just mentioned. The orthopedic surgeon is so interested in mechanical and surgical measures that the part of the treatment depending on physiology and physiologic chemistry may often be overlooked. In many of these cases, there will be found the history of an artificially fed baby. This usually means that the food was sterilized or pasteurized, or both. When this is done, the vitamin substance is destroyed or partially destroyed, and no substitute is as good as the real thing in fresh, uncooked milk. In this way, many babies are scientifically handicapped at the very beginning of life, and specialists in infant feeding persist in believing that this is the thing to do. The vitamin substance is an essential in calcium metabolism.

Another supposed fact in physiology is that the thyroid secretion presides over calcium fixation in the system. These facts become of the utmost importance in treatment.

* Read before the Section on Orthopedic Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

That a great difference may result in two children brought up, the one with and the other without, the vitamin substance, the following history will illustrate:

A mother brought her two children, the one about 12 or 13 months of age, artificially fed from birth and still being given sterilized milk mixtures by a specialist. The other child was about 4 years of age and was a perfect picture of health. The story was that the older child was brought up in accordance with a so-called "doctor's book" that the mother had bought. This child had always been perfectly well and had never given a minute's trouble, while the baby had been under a specialist's care all the time and had never been anything but trouble. The baby was brought because of a curvature of the spine. In addition to the deformity, examination brought out the fact that the baby was fretful, crying out if it was handled very much. Even the cry of such a child is almost pathognomonic after one has heard it a number of times. As for walking, it was out of the question. The book that the mother used as a guide for the older child was by Dr. L. Emmett Holt, which meant fresh, raw, uncooked milk. The specialist for the baby had used formulas enough to feed a kindergarten, but they had always been sterilized. The treatment consisted in substituting fresh milk and lime water, orange juice, etc. In a month the baby was practically well.

Another case was that of a baby aged 22 months. This child was brought because of a lame and painful hip, which had *slowly* developed. On examination with the baby stripped, there was a lameness on walking, but it was more a walk against the baby's will because the weight bearing evidently hurt, more complaint being made of one hip than the other. Closer examination revealed that handling the baby very much also hurt. A roentgen-ray examination showed a normal hip joint. The history brought out the fact that the family was buying pasteurized milk and the baby was getting that and not much else. The substitution of fresh milk and the giving of orange juice, etc., was all that was necessary. In a month the baby was able to run about.

It does not do to be misled because the baby is being fed on mother's milk. This may be at fault also. One illustrative case will suffice:

A nursing baby aged 9 months was brought because of a very evident curvature of the spine. The deformity began at an early age, because when about 5 months old, the baby had been taken to a competent man who had placed it back down on a well-padded board. The idea was, apparently, that with the body weight removed by the recumbent position, the spine would straighten. No attention was paid to the mother's milk. At 9 months, when I saw it, the bones and ligaments were soft and the muscles flabby, so that when the baby was placed in the upright position, the spine would not support the body weight, and yielded in every way, and all kinds of curves resulted. With a nursing baby, there could be only one answer, that is, the mother's milk. The baby was weaned and put on cow's milk and lime water. It was also given orange juice, and in about five months was apparently all right and walking.

Another case was that of a boy about 10 years old, who was brought because of a scoliosis. In addition, the history revealed the fact that the boy was very irritable, having "crying spells" and remaining in the house rather than playing outdoors with the other boys. He had been a bottle-fed baby with sterilized milk, which had been continued until he was 13 or 14 months old. Examination revealed a scoliosis; also the lower eyelids were somewhat puffy and the appearance in general was flabby. Here was a complete picture of lack of calcium due to the absence of vitamins. The treatment consisted of adding milk to the diet, with sufficient lime water to render it distinctly alkaline. Orange juice was given, also thyroid extract, one half grain, morning and night. A jacket was applied for the mechanical correction of the deformity. At the end of a month, the jacket was removed, a second one being entirely unnecessary. The spine had straightened up wonderfully, and as regards his general condition, he was another boy. He was now playing with other children, running and romping as a normal, healthy boy should. No further attention was paid to the spine, which proceeded to straighten up completely without any mechanical or gymnastic treatment.

In a knock knee, the superincumbent weight bulges the knee inward, and nature then makes the inner condyle larger to assist in supporting the body weight. In a bow leg, the bones are bent outward, and in both deformities, the ligaments of the knee joints are very lax, so that the leg can be rocked in and out in a marked excursion on account of the great laxness of the ligaments. In such cases, the muscles are weak and the children flabby. Osteotomy for the knock knee, and osteoclasis for the bow leg or braces if operative treatment is unnecessary, may make the leg straight; but the joint capsule and ligaments are still lax, and the general condition of the child remains the same. Among the better class of people, the history is likely to be one of sterilized milk mixtures and, not infrequently, either the sterilized milk is continued unnecessarily, or milk is obtained from a pasteurized supply. The general condition should be taken into account and proper etiologic treatment instituted.

Another type of patient is the youngster who is brought in for so-called flat feet. Such a patient is in much the same general condition as those just described under bow leg and knock knee, with general flabbiness and weak musculature. The two tibials, anterior and posterior, have apparently lost their tonicity, the ligaments have stretched, and all this because of calcium deficiency. In many cases, at least, the history shows that the child was bottle fed and the food sterilized. In addition, in many of the cases, the sterilized milk was continued for many months or else pasteurized milk was substituted. Whether the treatment is the mechanical balancing, or exercises, or both, the result will be much improved if the calcium deficiency is taken care of, because this is fundamental.

Another condition that comes under the care of the orthopedic surgeon is that of lack of union or delayed union in fractures. The majority of such cases coming for treatment have been in children who were bottle fed, with sterilized milk mixtures. These children being deficient in calcium, the delayed union has been attributed to that. The administration of calcium in some form, in connection with thyroid extract, has been instituted, while at the same time, diathermy was applied locally. In my hands, the results have been much more rapid and more satisfactory than with any other methods of treatment.

Just a word regarding arthritis: We know something about focal infection and all that, but there is a certain (large) percentage of cases due to faulty physiology or metabolism. In these cases, the trouble is from autointoxication on account of faulty action of some of the abdominal organs, as the intestine or the liver. In a recent article [1] by a specialist in stomach troubles in which a study had been made of a series of histories of patients suffering from various abdominal disturbances, it is stated that "the majority of these patients dated their sickness from an acute abdominal illness, and this acute illness often occurred in the first years of life, especially in bottle fed infants." Again, the same author says that "at the time of the initial attack, there was uniformly a great

1. Peckham, C. F.: Rhode Island M. J. 3: 47 (March) 1920.

increase in the amount of intestinal mucus," and that "following the acute attack, certain dyspeptic symptoms more or less irregular in their occurrence made their appearance; the patient had to exercise care in the selection and the amount of food taken, in order to be comfortable, and there was a great liability of attacks of indigestion either acute, subacute or chronic."

From other sources and from some personal experience, it seems to be a fact that when calcium metabolism is interfered with, the mucous membranes may suffer in direct consequence. Here seems to be a line of thought that directly connects an increase of intestinal mucus and consequent dyspeptic conditions with patients who began life as bottle fed babies. This kind of reasoning at once places calcium deficiency as, at least, a factor in a certain percentage of cases of arthritis; and if this is taken into account, it will afford much aid in the treatment.

In any deformity, Nature always tends to make the part grow back to normal if the physiologic machinery is working properly. When orthopedic deformities are brought for treatment, the fundamentals resting on the physiologic processes must be taken into account. The results of such treatment are very evident. If fresh uncooked milk, orange juice, and in many cases, thyroid extract, are administered, the difference in the result obtainable is often remarkable. Another important thing is the addition of lime water to all milk given. Cow's milk is acid, and in the winter when ensilage is used, the acidity is much greater. All milk should be tested with litmus and sufficient lime water added to render it alkaline. It should not be guessed at. The acidity may nullify any good that might otherwise be derived.

One bad habit is so often repeated that I wish to call especial attention to it: If a baby has diarrhea or any other intestinal disturbance, the medical attendant will order, quite properly, sterilized milk, just as he would order some kind of medicine. When the baby recovers, the sterilized milk is likely to be continued indefinitely, much to the calcium detriment of the baby; while, if drugs are ordered through any sickness, the parents usually discontinue them, even if not instructed to do so by the physician.

I think it has not been appreciated what "human nature," always looking for the dollar, will do to pasteurized milk. If a general dealer gets some of his milk from a distance so that on arrival it is slightly turned, it might then all be mixed together and pasteurized and the temperature made "sufficiently high" to "do the work." Also, in some dairies, if the milk gathered from different sources was pretty thin or if "human nature," again yielding, made it thin, enough condensed milk might be added to make it look pretty rich. The whole mixture might then be made bacteriologically safe for general distribution, by pasteurization. If such things are done (and are they not done?), is it to be wondered at, not that many babies are physically and physiologically handicapped, but that many more are not affected.

The effect on the human economy from the use of pasteurized milk is a slow and insidious affair. It takes a long time, for example, to produce a condition of scurvy. As a matter of fact, we see very little scurvy in the acute form, but we do see a metabolism interfered with on account of calcium deficiency due to absence of vitamins, and these children, as they grow older, get into various kinds of trouble as a direct result. At a discussion on this subject before the New York State Medical Society at its March, 1920, meeting, Dr. L. Emmett Holt made the statement that "such children were much more susceptible to infection, such as pneumonia, typhoid fever and scarlet fever," and I have not the slightest doubt that the death rate with such diseases is much greater than in other children.

It seems to me that this is a live subject for orthopedic men to take into consideration, and the object of this paper is to present a few concrete cases in which the treatment along the lines indicated has been of the greatest assistance.

249 Thayer Street.

ABSTRACT OF DISCUSSION

DR. MAURICE L. BLATT, Chicago: Vitamins are not killed by the sterilization of milk. Experimentally, fat soluble A has been subjected to 15 pounds of steam pressure in the autoclave for three hours and has not lost its active properties. The water soluble B occurring in milk is not killed; its activity is affected little, if any, by sterilization. Under those circumstances it seems illogical to discuss bone deformities from the standpoint of the killing of vitamin by the action of sterilization.

Certain principles of infant feeding which, both from clinical experience and experimentation on young animals, we are inclined to adopt. The first of these is pasteurization or sterilization of milk by heat. All who live in large cities or in communities where milk is brought in from a distance, are dependent, in large measure, on heated milk. It is practically impossible in any of the larger cities in the United States to obtain economically adequate supplies of milk which has not in some way been subjected to heat. Both pasteurization and boiling produce definite changes in milk, changes that are desirable and advantageous. First, the boiling of milk makes it a more digestible food. It makes the proteid curd, formed in the stomach, a fine instead of a large one. Second, the boiling of milk kills a large number of the pathogenic organisms ordinarily present. The bacillus of tuberculosis is killed by boiling, and we firmly believe that we save many lives and prevent much bone tuberculosis by boiling milk. Third, the economic question in a large city is a factor of very grave importance. If we could afford to feed all children with the costly certified milk, a somewhat larger percentage of raw milk would be used.

There are, however, factors in the feeding of children which are of far greater importance than heat, and one of the most important of these is the proper balance of food. To avoid scurvy, we add raw orange juice to sterilized milk; also vegetables and cereals. The degree of digestibility of all cooked vegetables fed in infancy is dependent entirely on the fineness of subdivision and not on the age of the child. In certain races there is a tendency toward rickets, and a low vitamin content of the mother's milk is the factor in the production of rickets. It does not contain enough fat-soluble A.

DR. L. C. SPENCER, New Orleans: Children fed under the direction of the specialist are always underfed. During an experience in one of the large hospitals in Baltimore, with many cases in which rachitic deformities occurred, we found that the mother was careful about what the child had. When the mother was careless or ignorant in this respect, but able, nevertheless, to provide good food, the child was well nourished and deformities were minimized. Surely the pasteurization or sterilization of milk is not very important in itself, for this reason: The rachitic deformities occur in greatest number among those people who do not use sterilized or pasteurized milk. The negroes present more rachitic deformities than any other class. The Italians and Russian Jews also exhibit a large number of rachitic deformities. And among these classes not much cow's milk is used in infant feeding. They, for the most part, use mother's milk or anything that comes to hand.

Dr. A. H. Byfield, Iowa City: The orthopedist realizes that rickets is almost a universal disease, and that realization has come to us as well, although the question of the cause of rickets in infants has not been solved.

The relationship of the vitamins to this problem should be considered. We have found that the growth stimulating vitamin is not affected by heat. But the growth stimulating vitamin content of cow's milk is low. The theoretical possibility, mentioned by Dr. Peckham, that the growth stimulating vitamins may be intimately bound up with calcium metabolism, has engaged our attention in quantitative experiments, and it is our hope that a report on the subject will be ready within a year. However, if those orthopedic experts who pay close attention to the feeding of their rachitic patients wish to increase the content of growth stimulating vitamin in the food, they ought to prescribe orange juice. This fact was established independently by Dr. Mandel of our clinic and a full report will soon appear. Orange juice is also an antiscorbutic and probably also contains the thyroid vitamin.

In regard to the question of calcium in rickets, from what I have been shown in connection with experimental nutritional work carried on in our clinic, I believe that the trouble is not so much due to whether milk is boiled or not, but to whether it is pasteurized, and also to whether a sufficient quantity of milk is given.

Dr. Gustave Lippmann, St. Louis: In my work with babies that must be breast-fed, I have found it necessary to be careful about the food of the mother. Many people of the poorer classes live almost exclusively on root vegetables; the mother eats very few green vegetables. In these cases our first duty is to get the mother on a vitamin-rich diet. In all my clinical work with rachitic infants I immediately correct the diet of the mother. This applies as well to the cases of rickets among the well-to-do. With a carefully selected diet, the mother eating steaks, some sweets, fresh vegetables and fruits, the condition of the child will improve. Experiments carried on at Wisconsin University have proved that when the mother animal is fed on a vitamin-free diet, the young develop rickets. Therefore, do not take a rickety baby off the breast. If you feed the mother correctly on a vitamin-rich diet, you may overcome the rickets in the child.

Dr. J. D. Griffith, Kansas City, Mo.: In 1869, Dr. Van Buren, one of my teachers, asked me what I wanted to do in the future. I told him I wanted to practice surgery. He advised me to go into medicine at once, to broaden myself. I do not know much about the specialty of pediatrics, although I was a general practitioner until 1888. I found that by feeding children vegetables, even though we did not know anything about vitamins then, we secured results. If the child was "scrofulous," as we called it then, or if it was suffering from some other condition which prevented proper development, we prescribed lactate of lime, fed fruits, fresh vegetables, etc. We did not know why we did this, but we got results. This was especially true in cases of delayed union of fractures. We did not attempt to correct the condition at once by surgical means. And we learned another thing. When the child's breath gave out an odor peculiar to the condition now known as acidosis, we gave alkalis. We did not know why, but we secured results. I have, to a degree, kept up that same treatment, and now, before invading a gallbladder or attempting repair in a case of delayed union, the surgeon sends the patient to a hospital for observation, and, perhaps, finds that some of his physiologic processes are wrong. These things we can figure out now, but we could not do so then.

Dr. Frank E. Peckham, Providence, R. I.: It is a fact that the children I have observed are the ones that have been artificially fed, and even some of those have had what we in our community call the balanced ration; they have had oranges and canned tomatoes. Their physique is not as good, perhaps, as if they had been fed differently—I do not know how—but they are coming to us in increasing numbers. Something is radically wrong. As to *acute* scurvy, of course, the result of this method of feeding is not scurvy—we see almost no *acute* scurvy. We do not see calcium deficiency and we get these results. The feeding of the mother is important. In Russia are the largest number of cases of acute scurvy among adults in the world, whereas the children of those parents have almost no acute scurvy. What is the answer?

EARLY ACTIVE MOTION IN INTRA-ARTICULAR FRACTURES*

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The suggestions of this paper are not entirely new. The principles on which it is based were propounded and practiced years ago. Overenthusiastic use and application of the methods in fields where their uses were mechanically contraindicated brought a fairly general condemnation of the procedures. And for a period of many years we have had no more than a mentioned disregard for the entire method (without retention of the features that are good in a limited application). We have fallen easy victims to the hard and fast rule of splinting firmly and permanently all fractures.

Our fracture literature has been filled with ideas as to the methods for fixation of the broken bone, with practically no consideration of the lesions in the surrounding soft parts, acquired at the time of injury or, more commonly and with more serious consequence, occurring during the period of prolonged fixation. Rest and protection are essential for repair. Too much rest and too prolonged rest under pressure bring not repair but degenerative changes, which remain as a permanent possession of the traumatized soft parts, and tend through diminished circulation to extend progressively into the remaining normal tissue of the organ.

During the last five years, Willems of Belgium and his satellites have attracted much deserved attention by their radical and successful active motion treatment in traumatized joints. The early foundation for this was set by work done previous to 1908 when he reported to a surgical congress thirty cases of hemarthrosis and traumatic hydrarthrosis treated by evacuatory puncture and immediate modilization. No one who saw the septic joint clinic at LaPanne, or who has been able to follow closely the requisites in the mobile treatment of these joints, can deny the many advantages of the proceeding. The propriety of the method has been unquestionably demonstrated. The many failures seen in the hospitals of the American Expeditionary Forces were due to too many changes in the care of the individual cases. Fractures into the joints were not contraindications to motion. Extensive lesions involving one or both epiphyses did not prevent careful mobilization.

PATHOLOGY

Any violence, direct or indirect, sufficient to produce a fracture within or into a joint, produces lesions in the surrounding soft parts. There is between each fascial plane a certain amount of hemorrhage. In the adjacent muscles, especially when there is a direct trauma or pulling injury, a certain amount of laceration results in hematoma formation within the muscle. This applies especially about the shoulder in the

* Read before the Section on Orthopedic Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

deltoid, and at the elbow to the brachioradialis and pronator teres. Rapidity of absorption of these hematomas determines the amount of residual new cicatricial tissue formation in the fascial plane and muscle. And the ratio is inverse. Any measure promoting absorption will give less permanent damage.

In the tendons so freely distributed about joints, especially the wrist and ankle, we have to deal usually, because of slight degree of vascularity, with a simple serous exudate (traumatic in origin) within the tendon sheath. Direct contusion or minor laceration of the tendon makes for an exudate richer in fibrin and hence more plastic in type. In the simple serous type. danger of adhesions within tendon sheaths is relatively slight. Too troublesome adhesions form in prolonged immobilization. The hemorrhagic and plastic exudates will often give practical obliteration of peritendon space. Even slight motion, if early, is a certain preventive measure.

As to the ligaments, the thickened portions of capsular ligaments are never torn across. The commonly called "ruptured ligament" is in reality torn from one of its attachments and carries with it periosteum and often a thin shell of cortex. Injury to the remaining thinner portions of ligaments is always parallel to the direction of fibers, a bursting between rather than across fibers. Normal motion will tend to proximate these edges.

The synovial membrane has before it the problem of handling a hemarthrosis. If the capsular ligament be torn at any point, as it always is in a linear fracture extending into a joint, the synovia shares the same good fortune. If this tear is sufficient to permit the intra-articular hemorrhage to be extruded into the surrounding soft parts very early, the work of the synovia is decreased. There will be less blood and hence less fibrin for an adhesive synovitis. If early motion can be permitted, extrusion of blood into surrounding parts will be accomplished more rapidly, and synovia can get back to its normal task of secretion rather than absorption of material foreign to its surface.

Residual fibrin, especially in the borders and pouches, in a week or ten days becomes so well organized as to cause uncomfortably firm adhesions between the adjacent synovial surfaces, and in eight or ten weeks, if undisturbed, gives permanent fixation of synovia. This is seen in limitation of motion in the stiff knee after fracture of the femur, in stiff elbows and fixation of the head of the radius after fractures in the arm or forearm. From 50 to 75 per cent. of normal range is regained, but no more, because of marginal adhesions.

There are two roads to travel: to prevent the formation of these adhesions or to break them up after the desired period of fixation is completed. The lack of success in manipulation of joints under an anesthetic is a too common experience, especially for the patient. Full range of motion, but with a joint persistently too painful for function, is a result disastrous (for the patient). Stiff joints may do work, but painful ones are worse than useless.

REDUCTION BY OPEN OPERATION OR MANIPULATION

Proper reduction of this type of fracture is as essential as in diaphyseal lesions. The nearest approach possible to anatomic reposition is desirable. Those cases with fragments rotated and seemingly blocked in malposition are at once classed in the open operation group. However, nothing is lost by two or three conscientious attempts at reduction by manipulation. Under complete anesthesia, gradual traction, manipulation with manual molding, will often give surprising results. Functional reduction, that is, normal contour of the part, with no obstruction to slow, gentle, passive motion through complete range of the joint, is sometimes obtained without anatomic reposition and with the control roentgenogram showing an apparently bad position. And this normal range of motion without marked external deformity is the aim of the best surgery. If this normal range of motion can be obtained without force under an anesthetic, the patient can, if given proper opportunity, duplicate that range within a relatively short time, and without pain.

When open reduction with fixation of fragments becomes necessary, no active motion of the patient will dislodge a properly fixed fragment, and hence there is no contraindication to early active motion. The earlier the reduction, the easier; and the earlier the fixation, the less the hemorrhage and swelling. The immediate reduction and fixation is as much an emergency as the "acute" abdomen. Waiting for the swelling to subside is poor surgery. In the open reduction, the presence of infected abrasions or lacerations must be the factor determining time of interference.

PROTECTION AND EARLY REPAIR

Protection of the injured joint is a necessity. This protection must be directed against further external violence, against fatigue from maintaining the constant position of the extremity, against increasing or continued swelling of the part, and against motion not limited by pain, as is necessary in the postether restlessness or in the delirious or insane. Splinting is essential, and protective rather than destructive splinting is desirable. Absolute immobility is neither necessary nor comfortable; at the shoulder a properly adjusted sling or aeroplane splint, at the elbow a well padded figure of eight with additional trusses holding the forearm in flexed and suppinated position is sufficient. Effective and comfortable elbow fixation can be made without including the shoulder or wrist, and leaving the hand and fingers for light duty tasks. Molded splints of plaster for the wrist, leaving the thumb and fingers free and moving, should be used.

At the knee, because of leverage of weight of the leg and foot, a long posterior splint or bivalved circular plaster is necessary; at the ankle, the molded plaster splints or again a bivalved circular plaster. All these are readily removable and replaceable, and give adequate fixation.

In the experience of each surgeon who has had to do with open reduction of fractures of any type from the third to the seventh day after injury, there is commonly discovered a surprising tenacity in the bridge of blood clot between the two fractured surfaces. A curet or periosteal elevator is practically always necessary in clearing the bone ends. In a properly reduced fracture in which the bone surfaces are in fairly intimate contact, this adhesive force of the fibrin layer is even greater, because of its decreased thickness and greater surface contact. At the end of three or four days, considerable force would be required to dislodge these fragments. In and about the joints, a force sufficient to put undesirable strain

on these parts will give rise to discomfort, and a force sufficient to cause the least motion in the fragments will give rise to pain.

Any agency that is antagonistic to repair demonstrates its presence by increased discomfort and pain. Any agency favoring repair shows itself by increase of comfort. Diminution of swelling makes for comfort. Increase in local circulation will cause earlier absorption of hematomas and exudates in soft parts. Very gentle, light massage is pleasing and comfortable to the injured part, and aids early restoration of normal superficial circulation. Deep massage is painful, and our fingers cannot well judge the prepain point for another. This is the ground for objection to the passive motion advocated by so many.

EARLY INSTITUTION OF ACTIVE MOTION

Careful removal of splints or bandages restraining motion can be done without discomfort. Active contraction of muscle groups can be accomplished with a little instruction to the patient. These are started in the dressings the second and third days. Slight active motion—from 5 to 10 degrees of the distal part—can be made the fourth or fifth day. From two to three movements are a sufficient start, and demonstrate to the patient his ability to move without pain. Dressings are replaced. The following day there will be a greater range, with from six to eight movements. Active muscle contractions are continued from time to time in the splint. Muscle tonus and volitional control are not permitted to be lost. By the tenth day motion is up to half normal, and the normal contour of the part is practically regained. No passive motion is attempted, no forced active motion and no active motion that is productive of pain. By the end of the third week, range of motion should be 90 per cent., and a little passive force produces only discomfort. Support is used for an additional week, but only at night and in irresponsible patients. In others, limited function is started; in four weeks active use without support; and the additional two or three weeks, usually required to "limber up" the extremity, is unnecessary.

The whole question is permitting the patient all motion that is not painful. Soreness or an aching arm is an index of too much work the preceding day. Failure to obtain diminution of swelling each day means poor judgment in determining daily limits.

DISADVANTAGES

These methods present the disadvantage of requiring more time and personal attention of the surgeon, either in the daily personal care or in the instruction of office assistants in requisite carefulness in treating the injured joint, and as to proper reapplication of splints or supporting bandages. It requires more time and attention of the patient, but for the time being he is disabled for duty, and his whole task is to get well as rapidly as possible.

ADVANTAGES

1. One great advantage can be seen early, in the mental relief to the patient when he sees the joint in motion. His vision of a stiff joint is dispelled early and cooperation is all the more hearty.

2. There is left little chance of danger from poorly applied or ill-fitting methods or fixation.

3. Ischemic paralyses with their diastrous outcome are avoided.

4. Muscle tonus and volitional control of muscles are maintained.

5. Temporary pathologic changes in muscles are more quickly overcome, and the persistent fibrous degenerations are avoided.

6. There will be less chance for the calcareous degenerations in muscles and ligaments about the joint.

7. There is less chance for a complication of plastic adhesive synovitis and the residual crepitating joint.

8. The absorptive changes in bone, the decalcification from disuse, are reduced to a minimum, if not entirely avoided.

9. There is less danger of ankylosis, fibrous or bony.

10. The method obviates the too frequent procedure of breaking up adhesions under anesthesia, with repeated injury to soft parts and increased functional damage.

11. The additional two or three weeks normally used in limbering up the joint and regaining strength of the part become unnecessary.

12. The shorter period of disability, complete and partial, is financially attractive usually to the patient, always to the employer, and often to both.

ABSTRACT OF DISCUSSION

Dr. Paul A. McIlhenny, New Orleans: There has been a revolution in the treatment of injuries into and near the joints brought about by the World War, but many surgeons find it difficult to get away from the old idea of prolonged limitation of motion in cases of fracture into a joint. This is a great failing, and we should try to eradicate it. Primarily, we should make a most careful examination, under anesthesia, of all joint injuries in which we believe there is a possibility of fracture. Early recognition and early reduction of displaced fragments will enable us to deal with the associated inflammatory condition in a much more comprehensive and common sense way. There should be exact reposition of displaced parts, and fixation or removal of all small, loose fragments, and active voluntary motion limited only by pain, no passive motion whatsoever. Light massage, also limited by pain, is of great benefit, stopping when the patient feels discomfort. Early functioning, not necessarily weight-bearing, voluntary motion of the joint, encouraging the patient, building up his morale by helping him to realize that he is going to get a much better functioning joint if he will help himself, will be found most useful. Keeping up muscle tone will prevent atrophy of the bone and soft parts, and instead of having a prolonged postoperative treatment of six months' duration, during which there will be almost continuous pain, the patient will be able to get back to his work in from six to eight weeks with a fairly good functional result.

Dr. Walter G. Stern, Cleveland: I would like to know where one gets justification for that "go back to work in six weeks idea." We all know that fractures near a joint or elsewhere require more than six weeks for the bone to heal firmly. The records of the medical department of the U. S. Army show that men with fracture of the shoulder joint as a rule go back to duty in twelve weeks; of the elbow joint, sixteen weeks; of the wrist, in eight weeks; of the shaft of the humerus, in twelve weeks; of the hip joint, in twenty weeks, and of the knee joint, in about sixteen weeks. I quite agree that active motion in that range of activity which is performed without much pain is absolutely legitimate, and the very best form of treatment for these fractures. As to open reduction of fractures near the joint: the surgeon must be the one who will say if open reduction is necessary in any given case, but if done it should be done at that time when the tissues are best able to take care of infection. If one operates immediately after an injury he is operating at the time when the vitality of the tissues is at the lowest ebb.

Animal experimentation has shown that the elbow joint and knee joint will stand operation several days after injury much better than when it is done immediately after the accident. So well is that understood that I know many surgeons who follow the dictum that one should not open the elbow joint or the knee joint in fracture cases until about one week after injury. Dr. Schrock states that the reason for the immediate operation when indicated is that after a week has elapsed one must use the leverage of an instrument to reduce the fragments. I take it then that he thinks that by operating at once the fragments can be reduced without leverage. If this is so, open operation should not be necessary at all. I rarely find a case in which the fragments are not so loose that even without an open operation, the fracture cannot be reduced without any instrument except the Thomas wrench, an osteoclast and the fingers, a padded wedge or an extension table.

DR. ALBERT H. FREIBERG, Cincinnati: In the treatment of fractures of the joints it is a very common practice to permit the effusion of blood in such cases where open operation is not considered necessary to become absorbed. That is a great error. After forty-eight hours the wisest thing to do is to aspirate the joint and remove the blood. I have seen a considerable number of cases in which there has been recurrence of trouble in the knee joint because of the blood that has been allowed to remain in the joint, particularly the knee, and in which I have found by arthrotomy the characteristic small particles resembling rice bodies which have resulted in repeated attacks of effusion in the knee joint by producing mechanical irritation.

DR. M. S. HENDERSON, Rochester, Minn.: As to the time of election for operating on fractures: We have been told that we should wait from five to ten days. For a number of years I have disregarded this advice, and have not hesitated to operate immediately. I cannot see any reason why we should wait.

DR. HARRY M. SHERMAN, San Francisco: It has been my experience that one may go into the knee or elbow at any time after the fracture has occurred without any more danger than if one were to wait a week or some other specified time. The thing is to get the fragments back by the means necessary as soon as possible. If that requires an open operation, do it.

DR. HORACE R. ALLEN, Indianapolis: I agree with Dr. Sherman. We have all had plenty of cases of compound dislocation and fracture of the ankle, for example, where the foot turned in or out and four or five inches of the tibia became driven into the dirt. First scrub all contaminated parts with soap and water, then use mercuric chlorid or the Carrel-Dakin method and always apply enough ether to dissolve out any fatty particles; then reduce the fragments. Under this treatment I have never known any rise of temperature to take place above 1½ degrees, and then subside promptly.

DR. EDWIN W. RYERSON, Chicago: Mobilization of fractures as soon as practicable is of great importance, and when feasible we ought to do it as soon as we can, but there are many fractures in which we cannot begin active mobilization very soon. Championnière was the originator and most ardent supporter of this method of treatment, and it is remarkable to note the successes that have followed the inauguration of active mobilization in those cases in which it is applicable, such as Colles' fracture, which has very little tendency to displacement after once being reduced properly. In cases of condylar fracture around the elbow joint it is also a valuable method of treatment. A good deal of motion can be made in such cases without in the least endangering the position of the fragments. Furthermore, we should not lose sight of the fact that actual bony union takes a very long time; it does not occur in six weeks in the case of the larger bones, in persons of average age or even in children. Allison made experiments in regard to absolute bony consolidation and found that the shortest time to consider fractures solidly united was about four months. We have all seen children who have sustained fractures of the femur and who have apparently a good solid union in two months, after which they have been allowed to go about without any splint or apparatus, and deformity has occurred in many such cases. Following the treatment of fracture in rachitic children I have seen deformity occur often. So do not forget that it takes time for bone to become solid and do not let stress be brought too soon on the bone that has been fractured. We should differentiate in these cases.

DR. WILLIS K. WEST, Oklahoma City: Every case of fracture of the neck of the femur which I saw treated in the Middle West recently by men known as orthopedic surgeons was treated by the Whitman method; every case of fracture of the neck of the femur treated by men who were general surgeons was treated by some other method, and I wondered why that was so. Perhaps the orthopedic surgeon understands best how to apply the plaster cast or he knows less about the other splints, or the general surgeon knows less about the plaster cast and more about the other splints. I believe that the Whitman method is the best method, and reduction should be made right away. But any one who attempts to use the Whitman method without bearing in mind every cardinal point that has been brought out by Whitman will have trouble. Some of the essential points are: First, he must have a Hawley or a similar table; second, there must be plenty of assistants in the operating room; third, the limb should be put in the proper position, the leg at right angles with the thigh; and, fourth, the patient should be in the cast eight weeks and in bed twelve weeks.

DR. ROBERT D. SCHROCK, Omaha: With reference to the time limit, I can cite two cases of men back at heavy duty in seven weeks. One man was shoveling coal in six weeks. He had had a linear fracture extending into the elbow joint. The question of instrumental reduction, I believe, was misunderstood. A common experience was mentioned, i. e., when operative intervention is necessary for reduction, it is a common experience to find the organized blood clot very firmly adherent to the bone surface. This was brought out to illustrate the strength of the cohesive force that we would obtain between well reduced fragments. This force is certainly sufficient to prevent motion of fragments in or about a joint after from forty-eight to seventy-two hours, when the adjoining segments may be permitted guarded active motion. The time of operative intervention in fractures was mentioned in those cases in which there was definite indication for open reduction. Dr. Stimpson's dictum was from seven to ten days after injury. In practically all these cases we find minor abrasions about the joint, little scratches on the surface. These superficial lesions were, I believe, the real reason for delay. In cases with no abrasions, where asepsis is possible, operate at once where open reduction is indicated. If this can be done at once, reduction of the fragments is much simpler, we get rid of a great deal of intra-articular blood, and we get rid of the later probability of the small residual fibrin bodies. Dr. Freiberg brought up the question of hemarthrosis. I believe aspiration of these joints in from forty-eight to seventy-two hours is advisable. Further hemorrhage after forty-eight hours is hardly to be expected. Going further than aspiration, irrigation with sodium citrate solution through a good sized trochar brought very satisfactory results. The mechanical effect in removing small clots already formed is more important than the coagulation delaying effect of the particular salt used. In the introduction of the paper, direct mention of the work of Lucas-Championnière was not made, but I referred to his work in making the statement that too wide an application of his methods had brought the method, as a whole, into disrepute. We should use the good that he proposed, and particularly is this true in intra-articular fractures when treatment can follow along those lines.

Saving the Babies.—In its campaign to save the babies the Children's Bureau is sending out a number of four page leaflets in promotion of the work. Among the subjects briefly treated in these leaflets are "The Care of the Mother," "Breast Feeding," "Milk," "Bottle Feeding," "The Preparation of Artificial Food," "Feeding the Child," "Good Books and Pamphlets on Child Care," and "Is Your Child's Birth Recorded? If Not, Why Not?" These are for free distribution to the public.

THE PHARMACOLOGY OF CHELIDONIN, A NEGLECTED ALKALOID OF CHELIDONIUM, OR TETTERWORT *

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The object of this paper is to call attention to the activities and usefulness of chelidonin, a neglected alkaloid, and to correct certain impressions in the literature. The root from which it is obtained was formerly official in the U. S. Pharmacopeia (1890) under the name *Chelidonium majus*. It belongs to the *Papaveraceae* and contains several constituents, of which the alkaloid chelidonin, however, is probably the most important. The plant yields a saffron-colored, acrid juice that formerly enjoyed considerable popularity as a corn and wart remedy. The rationale of this is not understood, unless it is based on the acridity of the juice, which is relatively high. The juice contains practically no chelidonin, which is found chiefly in the root. The plant grows wild in this country, chiefly in the New England states and in the Northwest, and has been recently cultivated by Prof. Henry Kraemer at the College of Pharmacy, University of Michigan. The yield of alkaloid from the root is about 0.03 per cent. *Stylophorum diphyllum* also contains chelidonin and has been used as a source of the alkaloid in this country.

Concerning the actions of chelidonin, the United States Dispensatory [1] says:

> Although both Peronin and Meyer (*Arch. f. exper. Path. u. Pharmakol.* **29**:397, 1892) asserted that chelidonin has distinct narcotic properties, the experiments of Hanzlik (*J. Pharmacol. & Exper. Therap.* **7**:99, 1915) throw grave doubt on their conclusions. The latter investigator found that its only physiological action was a paralyzing action on the unstriped muscle, and suggested its use in asthma and spasmodic colic.

This quotation contains some errors. The paper referred to is that of H. H. Meyer and not Peronin and Meyer. The results of my own work did not deny the possibility of narcotic effects reported by Meyer, and the experiments on smooth muscle showed this to be depressed and not paralyzed.

The first pharmacologic study of chelidonin was made by H. H. Meyer, who showed that chelidonin differs from morphin in several respects.

The narcosis from corresponding dosage was not nearly so pronounced and the depression was not later followed by excitation of the central nervous system. Meyer attributed the slowing of the pulse to vagus stimulation, but this is erroneous. In a previous publication, I showed that chelidonin depresses smooth muscle in all regions thus far tested, namely, in bronchi, uterus, intestine and blood vessels. This occurs independently of nerve connections. It also antagonizes the actions of pilocarpin, histamin, pituitary extract and barium on smooth muscle, and relaxes the bronchoconstriction of anaphylactic shock. From this it is seen that the effects of chelidonin resemble very closely those of papaverin.

The chemical formula for chelidonin, is $C_{20}H_{19}NO_5$, for papaverin $C_{19}H_{20}NO_4$, and both contain the benzyl isoquinolin ring. Hence, the similarity of their pharmacologic actions is to be expected.

Because of certain discrepancies in the work of Meyer and the economic advantages offered by chelidonin, I have investigated its pharmacologic actions in several directions. In this work an alkaloid of German origin (Merck's) and a specimen of American origin prepared by Prof. John Uri Lloyd [2] of Cincinnati were used. The sulphates were used exclusively. Only the sulphate and phosphate are soluble, the hydrochlorid being very insoluble. The actions of the American specimen agree entirely with those of the German. A summary of the effects observed is here presented, the full details being reserved for later publication in the *Journal of Pharmacology and Experimental Therapeutics*.

Chelidonin causes depression and narcosis without subsequent excitation of the central nervous system, differing in this respect from morphin. The respiratory rate is moderately slowed by large doses only, smaller or therapeutic doses being practically without influence. It causes a slowing of the pulse with fall of blood pressure, a fall in peripheral organ volume and increase in cardiac volume due to a direct depression of cardiac muscle, for similar changes occur after vagus section and paralysis of the vagi by atropin. This is contrary to H. H. Meyer, who attributed the slowing of the pulse to vagus stimulation. Chelidonin depresses the functional activity of smooth muscle in all regions (including ureter and bladder) and antagonizes several augmentors as indicated in the fore-part of the paper. Chelidonin also depresses frog's skeletal muscle directly, but does not appreciably affect the nerve trunk, even in high concentrations.

As a rule, the effects of chelidonin on cardiac muscle, excised intestine and blood vessels were found to be the opposite of those of morphin, which acted as augmentor.

The toxicity of chelidonin is rather low, the fatal dose being between 0.3 and 0.4 gm. per kilogram subcutaneously for white rats, mice, guinea-pigs, rabbits and frogs. In the cat the excitation ordinarily produced by morphin is very mild or practically absent with chelidonin. Owing to its low toxicity, chelidonin could be given to children with comparative safety, and might to a certain extent replace morphin in pediatric practice.

Therapeutic observations with chelidonin are as yet limited. The drug is undoubtedly worthy of trial. It has been used successfully in relieving the gastralgia of carcinoma. The drug should be useful against spasm of smooth muscle, as in angina pectoris, hypertonus, asthma and intestinal, uterine and ureteral colic, etc. The dosage used by Ribbing and Rumpf [3] for gastralgia and colic was from 1½ to 3 grains by mouth. It is suggested that when chelidonin sulphate is injected subcutaneously it should be dissolved in sodium sulphate of about 2 per cent. (anhydrous) strength. Physiologic sodium chlorid solution (0.9 per cent. NaCl) cannot be used, since the insoluble hydrochlorid is precipitated.

As to economy and availability, chelidonin offers advantages over papaverin, which, at present, is virtually unobtainable. Being obtained from a weed, which is also easily cultivated, it is apparent that this is a distinct advantage. Chelidonin, like papaverin, is

* From the Pharmacological Laboratory, Western Reserve University School of Medicine.

1. United States Dispensatory, Ed. 20, p. 1314.

2. I am deeply indebted to Professor Lloyd for furnishing me with a generous supply of the alkaloid.

3. Cited by H. H. Meyer.

also more easily and conveniently administered than the benzyl esters, which are disagreeable to many patients.

SUMMARY

1. Attention is called to the activity and usefulness of chelidonin, a neglected alkaloid, obtained from tetterwort or celandine, which was formerly official in the U. S. Pharmacopeia.

2. The actions of chelidonin resemble those of papaverin and the benzyl esters, but differ from morphin in several particulars. It possesses a relatively low toxicity.

3. Chelidonin causes depression and narcosis without subsequent excitation of the central nervous system, differing in this respect from morphin. It slows the pulse and lowers the blood pressure, owing to cardiac depression, relaxes smooth muscle in all regions, and depresses skeletal muscle without influencing the nervous connections.

4. Therapeutically, chelidonin is indicated in hypertonus, angina pectoris, bronchial asthma, intestinal ureteral and uterine colic, or spasm of smooth muscle anywhere.

5. Being obtained from a weed growing extensively in the United States, and which can also be easily cultivated, chelidonin offers a distinct economic advantage over papaverin which, at present, is virtually unobtainable. It is also more palatable than the benzyl esters.

THE TREATMENT OF GONORRHEA OF THE MALE URETHRA*

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Gonorrhea in the adult male is a self-limited venereal disease. Consequently, it is commonly considered an ignominious and unimportant disease, the treatment of which need not concern the mind of the well-educated practitioner in medicine.

But those who have had experience with the very slow and unsatisfactory improvement in urethral conditions due to gonorrhea under the treatment they received in the army and navy during the late war will doubtless agree that there is room for improvement in the treatment of this disease as conducted by the average practitioner.

The dissatisfaction with the results of our treatment of urethral gonorrhea has led me to interest myself very considerably in the pathologic conditions involved. From this interest there has arisen a classification of lesions and of the treatment of these lesions, notably in the case of chronic gonorrhea, which has been of assistance to me in helping such cases. Practical as these deductions seem to me, however, I find it almost impossible to translate them into words. I fear to mislead you, and in the hope of misleading you at least as little as possible, I place in the forefront of my remarks the following rule—the only rule in the treatment of gonorrhea to which I admit no exceptions:

All local treatment of urethral gonorrhea implies a certain mechanical violence. Even the gentlest injection or irrigation of the canal implies a trauma to its walls. Now, the success or treatment by local measures requires one of two consequences from this trauma. Either it must be in itself beneficial (e. g., by sounds and dilators) or at least the bad effect of the trauma must be counterbalanced by the good effect of other elements in the treatment.

The evidence that the other elements in the treatment are counterbalancing the bad effects of trauma is shown in general by an improvement in the local condition, a lessening in discharge and discomfort. There are, however, certain forms of local treatment employed specifically for the purpose of exciting an acute outbreak in a chronic condition, and other treatments employed with the knowledge that they are irritating and with the hope that they will prove beneficial in spite of that irritation. Under these conditions the improvement is, of course, not immediate. The patient suffers an acute exacerbation for a brief period following the more severe treatment. During this period he is treated by measures calculated to soothe the urethra, and it is expected that after a few days he will be in a better condition than he was before the severe treatment was given.

Under the foregoing conditions we may, therefore, lay down the absolute rule that a local treatment of urethritis that makes the urethritis worse is bad treatment, and as a corollary, that the treatment of gonorrheal urethritis will succeed in direct proportion to the gentleness of the manipulation.

TREATMENT OF ACUTE GONORRHEAL URETHRITIS

Hygiene.—Experience in the army, as compared with civil life, has left some practitioners convinced that the patients with acute gonorrhea should be put to bed and kept on a very light diet, while others feel that the patient's morale is better when he is permitted to be about, and that this reacts on the course of his disease. On the whole, it did seem that in the army the average case of gonorrhea was rather milder and of shorter duration than in civil life. If this is the case, it is doubtless due to the restrictions which forbade indulgence in alcohol and prohibited exercise, physical or sexual.

Such prohibitions are of the essence of the hygiene of the treatment of acute gonorrhea. The patient should also be prohibited from eating any highly seasoned food, since spices are passed through the kidney in an irritating form, as expressed by the familiar phrase that "what burns the mouth going in will burn the urethra coming out."

Medication.—Prevalent opinion as to medication may be classed under four headings:

1. The nihilist system, which gives no attention to general medication.
2. Diuresis, effected sometimes by drugs, but usually by making the patient drink as much water as he can
3. Alkalization, which some prefer to carry only to a moderate degree, while others prefer an excessive alkalization.
4. Balsamic treatment, which is, on the whole, the least popular form of treatment in the United States today.

The supporters of each of these methods of general treatment adduce clinical facts in support. I have no evidence to decide between them, though I incline to favor moderate alkalization, as obtained by the administration of about 2 gm. of sodium bicarbonate four times a day, and the drinking of six or eight glasses of water a day.

Local Treatment.—So great is the variety of local treatments applied to acute gonorrheal urethritis that

* Read at a meeting of directors of Massachusetts Venereal Disease Clinics, Boston, April 14, 1920.

one might almost say that no two practitioners employ exactly the same method. Manifestly the success of the treatment depends more on the method by which it is applied, the gentleness in the treatment of the acutely inflamed urethra, and the avoidance of mechanical trauma, than it does on the exact nature of the drug employed.

It has been my impression that the familiar permanganate irrigation treatment has the advantage of rapidly clearing up the discharge, but often fails to get at the gonococci in the deeper layers of the mucous membrane and often permits urethritis to become chronic. My best results have been obtained by the use of 10 per cent. argyrol, four times a day, and retained five minutes each time. The newer remedies—acriflavine and mercurochrome-220—have not been sufficiently tried out to warrant any definite convictions as to their value. It would seem, however, that we are at present obtaining excellent results by irrigating the anterior urethra with acriflavine, 1: 5,000, once a day, and, if this is not sufficiently efficient, adding one irrigation with potassium permanganate a day.

If the urethra is considerably inflamed, and the meatus swollen and urination painful, local treatment of any kind usually fails to control the attack until in the third or fourth week its intensity has begun to wane. The reason for this is the obvious fact that the infection has gone too deep for the antiseptic to reach it. In borderline cases the rule to follow is that the patient who is not rapidly improving under local treatment is actually soon going to get worse, and all local measures should be discontinued. Any increase in pain is also a signal for discontinuing local treatment.

TREATMENT OF ACUTE POSTERIOR URETHRITIS

If it is understood that acute infection of the posterior urethra often occurs without symptoms and evidenced only by the appearance of a little pus in the second urine passed, one will recognize such a posterior urethritis in a great proportion of gonorrheal cases. It certainly does not require that any instrumentation of the posterior urethra shall be attempted. Quite the contrary: the passage of any instrument through the acutely inflamed urethra is certainly contraindicated. The posterior urethra may be perfectly well medicated by injections into the anterior urethra. A little of the injection always trickles into the posterior urethra, and this is usually all the treatment required. If potassium permanganate is used, the tank is elevated and large quantities of the drug washed into the bladder and then urinated out again.

As in the case of the anterior urethra, if subjective symptoms of pain and frequency of urination appear or grow worse under treatment, this should be immediately stopped.

TREATMENT OF ACUTE PROSTATITIS

The physical evidence of acute infection of the parenchyma of the prostate consists in the appearance of pus in the second flow of urine, often accompanied by at least a slight swelling of the prostate, palpable by rectum; pus can also be squeezed from the gland. Severe palpation or massage of the prostate gland is to be discouraged for obvious reasons. Irrigation of the rectum with the double current tube and a quart or two of water about as hot as the finger can bear it is often very soothing in such cases. This should be continued even should the prostate apparently go on to suppuration. Indications for more active interference are three:

1. Retention of urine not relieved by the single passage of a catheter.
2. Continued fever.
3. Palpable gross suppuration as recognized by the finger introduced into the patient's rectum.

The treatment of such conditions is surgical. The pus must be evacuated. The suppuration in the prostate begins in the form of multilocular miliary abscesses. These subsequently break down and coalesce. Occasionally the impatient surgeon will get into such a prostate and will not obtain any gross pus. It is of course preferable to wait until gross pus can be evacuated. Discussion of the form of operation would lead us too far afield.

TREATMENT OF ACUTE EPIDIDYMITIS

The formula for the treatment of acute epididymitis is as follows:

1. The higher the testicles are elevated, the sooner the patient will get well. The best way to elevate them is by a good solid adhesive plaster bandage. None of the bandages to be bought in shops are sufficiently strong to achieve the elevation desired.
2. If the patient has any fever, he should be confined to bed until his temperature has been normal for forty-eight hours.
3. During the course of the epididymitis it is wiser to refrain from treatment of the urethral and internal genital inflammation.
4. If decubitus and elevation of the testicles do not promptly relieve the condition at the end of a week or so, operation according to Hagner's technic should be performed.

TREATMENT OF GONORRHEAL RHEUMATISM

Systemic gonorrhea is a rare complication of localized gonorrhea. It is not generally appreciated that the reason for the extreme susceptibility to recurrence of joint lesions with each gonorrhea, in a patient who has once had arthritis, is a susceptibility in the joint, not in the urethra. At its onset the use of vaccines or serum may be worth while. Two or three doses of antigonococcus serum at the moment when a joint is beginning to become inflamed may abort the infection, as may also a heavy dose of gonococcus vaccine; this usually by the systemic reaction produced.

But once the joint infection is established, vaccines are not to be relied on. I have tried all the specific and nonspecific forms that have been commended to me, including horse serum and typhoid vaccines administered intravenously. If these are employed in sufficient dose to give a systemic reaction, a temporary benefit may be obtained, and occasionally a permanent benefit. But the rule is that these treatments do not appreciably influence the course of the disease.

Vesiculotomy and vesiculectomy, both in my own hands and in the hands of the members of my staff at Bellevue Hospital, have been most discouraging. Good results are only occasional and are not to be relied on either as to completeness or to permanence.

On the other hand, we are now getting excellent results from the old-fashioned treatment of the affected joints with very heavy casts, so heavy that the patient is absolutely anchored to his bed. Under such treatment it takes from six weeks to three months to cure a joint, but this compares favorably with the other treatments, which in our hands have not cured them at all.

During the course of this cast treatment it is inconvenient to bother with the urethral gonorrhea, and the treatment goes along quite as successfully if nothing is done toward curing the local focus.

TREATMENT OF CHRONIC URETHRAL GONORRHEA

It is generally believed that the cause of chronic urethral gonorrhea is the persistence of the gonococci in the glands or scars or ulcerations about the urethra. Quite the opposite is the case. The persistence of the gonococcus is the effect of the chronic gonorrhea, not the cause of it.

Let me explain.

We may agree that gonorrhea is divided by its victims into two classes: the kind that gets well, and the kind that does not. Now, the kind that gets well is the gonorrhea in which the lesions due to the gonococcus have been so superficial as not to cause grave scars or to excite chronic catarrh. In other words, the gonococcus infection in such a urethra leaves the urethral glands and walls in a condition of good surgical drainage, wherein spontaneous recovery is possible.

On the other hand, the chronic gonorrhea, the kind that does not get well, is the gonorrhea in which the acute process has resulted in a stricture or an abscess or a grave involvement of the prostate or vesicles or other urethral glands, which are left with infiltration about the orifices of their ducts, and dilatation of their acini. In the ulcerations or scars or glands of such a canal the gonococci linger. But although the acute gonorrhea is the cause of these lesions, it is these lesions that are the cause of the chronic gonorrhea (whether the gonococci actually persist there, or whether they are replaced by other bacteria).

Such a doctrine may perhaps strike some as revolutionary; but I believe that it is a revolution in the direction of the hands of the clock, and that unless we get our minds set to look at the chronic inflammations of the urethra in this mechanistic way we shall not be in a position to treat them intelligently.

Chronic urethritis, whether or not due originally to gonorrhea, may be divided for purposes of diagnosis and treatment into two classes: the chronic urethritis in which the gonococci persists, and that in which they do not. We commonly speak of these two classes as gonococcic or nongonococcic chronic urethritis.

The treatment of these cases is the treatment of the urethral lesion plus that of the gonococci if these are present. As the presence of the gonococci often interferes with the treatment of the lesion, let us consider first the treatment of a case of gonococcic urethritis.

Treatment of Gonococci.—The presence of gonococci in the urethra, one may remark parenthetically, makes itself known by the fact that the urethra may not be tampered with. A chronic nongonococcic urethritis will, to be sure, resent trauma, if the trauma is violent enough. But a gonococcic urethritis will resent mild trauma and show this resentment by an acute urethritis, prostatitis or epididymitis, identified as gonococcic by the microscope and the complement fixation test.

In the treatment of gonococcic chronic urethritis, the first question to be considered is whether the patient is not in a fair way to get well of himself. It is surprising how often the consultant achieves brilliant results by simply (1) removing the irritating treatment that some enthusiastic physician has been employing; (2) improving the patient's general condition, and (3) diagnosing systemic chronic maladies, such as nephritis, diabetes or tuberculosis, that have a bearing on the patient's vitality.

If something more seems proper, we may profitably begin our acquaintance with the patient by a gentle massage of the prostate for diagnostic as well as therapeutic purposes, and by irrigating the urethra by gravity with a 1:4,000 solution of potassium permanganate daily, the massage being repeated not oftener than two or three times a week, and gently so long as there is a possibility of the presence of gonococci. If such a course of treatment does not hasten the parting guest, it is futile to continue it for an indefinite time.

Obstinate gonococci must be driven forth by more violent measures. The violence employed may be the passage of the urethroscope to locate the exact position of the lesions in the anterior and posterior urethra. More frequently one passes a moderate sized steel sound, not with the idea of overdilating the urethra, but with the belief that any foci containing gonococci are likely to be infiltrated if not sclerosed, to resist dilatation by the sound more than the surrounding canal, and therefore to be cracked and bruised by even the most gentle passage of this instrument. If the patient's urethra contains gonococci, one may expect that next day there will be a fine purulent urethritis. But one or two irrigations with potassium permanganate are likely to cure this. Then one jogs along with daily permanganate and twice a week massage of prostate (unless by chance there is no pus in this), and at the end of a week or so from the cessation of the acute relapse to the passage of the sound one passes another sound, not necessarily any larger, perhaps somewhat smaller, and solely with the idea of gently violating the refuge of the gonococcus. Three or four such treatments followed by three or four outbursts of acute urethritis should result in a cure, the first index of which is the fact that the acute urethral reaction does not follow the sounds. Of course, exceptionally such a treatment will result in an outbreak not in the urethra but in the epididymis, and if this has once occurred one may well fear to repeat the experiment. Under those circumstances I know no answer to the problem excepting that universal refuge of the physician, that is, sending the patient away to the country. Let him get a change of air, and a good rest, if his position in life permits that, and at the end of six weeks he will come home either well, or in a condition in which he can readily be rid of his gonococci.

DIAGNOSIS OF CURE OF GONORRHEA

So much for the gonococci, though perhaps one should add a word or two as to what indicates their absence from the urethra. First of all, put a negative reaction to the sound and urethroscope test. If you can pass these instruments into the urethra and the following day in whatever pus is collected find no typical aggregation of gonococci crowding the cells, there are doubtless no more gonococci in the urethra. You should control this observation by massage of the prostate with smear negative for gonococci, and a complement fixation test. The last is sometimes a little slow to become negative, and, especially if there have been systemic complications or epididymitis, may remain positive for months after the urethral gonor-

rhea has cleared up. Nevertheless, one does not feel justified in permitting a patient to marry unless he shows no reaction to local treatment, no gonococci in his urethral and prostatic smears, and a negative complement fixation test.

Let us delay a moment to compliment the gentlemen who are able to diagnose the presence of gonococci in the urethra by the finding of a few intracellular gram-negative cocci. Scattered organisms, whether intracellular or not, whether gram-negative or not, do not mean anything. Even when the cells are packed with gram-negative organisms, the certainty is not complete. These gram-negative organisms packing the cells may be staphylococci.

You note my doubts, both of the microscope and of the complement fixation test. We prefer that they should all agree, but we found our opinion on the clinical features of the case. Should clinic and laboratory disagree, the laboratory may be defied to cultivate the gonococcus. Positive gonococcus culture is positive proof of the presence of gonococci, and takes precedence over all other evidence. Unfortunately, for technical reasons it is extremely difficult to obtain this evidence; and if the clinic and laboratory agree, there is no need to attempt it.

On the other hand, should clinic and laboratory disagree and the cultivation of gonococci prove negative, this does not show that the patient has not gonococci in the urethra, but leaves the dispute open until the lapse of time shall reconcile it.

PRINCIPLES GOVERNING THE TREATMENT OF NON-GONOCOCCIC CHRONIC URETHRITIS

The patient is slow to recognize the difference between a chronic urethritis due to gonococcus and one from which the gonococci have disappeared or in which they have never been present. But to the hygienist or to the physician the difference is of the last importance. For purposes of treatment it is essential, first of all, to establish the presence or absence of gonococci. Once we are sure these are *not* present (as, indeed, they are not in the majority of truly prolonged cases), we may proceed to the treatment of the lesions which, as we have said above, are of the essence of chronic urethritis, undisturbed by the presence of the gonococcus.

Lesions of chronic gonorrhea are usually multiple and complex. For purposes of analysis they may be divided into three types, respectively, the lesions of the mucous membrane, the lesions of the submucosa, and lesions of the glands.

Lesions of the Mucous Membrane.—The mucosa may be infiltrated, eroded, ulcerated or the seat of granulations.

Infiltration is interesting chiefly as affecting the submucosa, and will be dealt with in that connection.

Erosions and ulcerations are revealed by the urethroscope, usually at points in the anterior urethra where there is considerable infiltration. The treatment of them is that of the infiltration.

Exuberant granulations are not often seen in the anterior urethra, but the posterior urethroscope commonly discloses them on the floor of the urethra in the region of the verumontanum. They have often been described as polypi or papillomas, and are usually present in chronic posterior urethritis, seemingly as an index of the catarrhal condition of the glands emptying into the posterior urethra.

Lesions of the Submucosa.—Infiltration is the gonococcic lesion of the submucosa. It may extend to the surrounding tissue, and in an acute condition result in phlegmon, abscess and gangrene. Under ordinary circumstances of chronic urethritis, the infiltration causes redness and perhaps erosion or ulceration of the mucosa of the urethra, and destroys the elasticity of the anterior portion of the canal so that the bulbous bougie detects a hitch as it passes over the infiltrated region. Such infiltration, existing for years, finally results in scar formation. Let us remember, however, that though scar is the result of chronic infiltration, the infiltration may be considerable, extensive and extremely obstructive without the formation of any scar. Consider the difference between a so-called traumatic stricture and a gonorrheal stricture. The former is all scar, and by definition cannot be treated by sounds; the scar will not stretch. But the gonorrheal stricture contains relatively little scar, and consequently it can, as we say, be stretched; i. e., it can be softened by the massage of sounds if that massage is conducted with such gentleness as to excite the absorption of the infiltration. There is no more excuse for brutality in the passage of sounds than for brutality in the passage of catheters. There is no more advantage in tearing a stricture open with a sound than in breaking up the so-called adhesions in an inflamed joint. The inflammatory lesions in either case can be better managed by gentle manipulation; the cicatricial lesion cannot be cured by mere brutality.

Lesions of the Glands.—Certain practitioners especially interested in urethroscopy recognize and treat inflammatory lesions of the glands of the anterior urethra to their satisfaction through the urethroscope. It has not been my good fortune, however, either to note such lesions frequently, or to have any success with the treatment of them excepting as they form one feature of the infiltration of the surrounding mucous membrane. This infiltration naturally obstructs the ducts of the glands and causes retention of purulent secretion within them.

In the posterior urethra, however, the prostate and seminal vesicles form a special problem of drainage in complicated gland structures. The infiltration of their ducts causes retention on a grand scale which we treat by the familiar method of prostatic massage.

Many of you, I am sure, have asked yourselves what prostatic massage accomplishes. It empties from the prostate a secretion which the microscope shows to be more or less purulent. It empties this secretion apparently rather less efficiently than does an emission or a constipated movement of the bowels. It is beneficial to some patients, though often not nearly so beneficial as regular sexual intercourse. The necessity, social or hygienic, for prohibiting sexual intercourse to sufferers from chronic infections of the prostate is one of the reasons why many of them are so hard to cure. We put the internal sexual organs into the most unphysiologic situation possible. We endeavor to bring the internal genitals back to a normal condition by the occasional pressure of a finger introduced into the rectum.

The elements of the problem have been suggested—the social and hygienic ones, of course, take precedence over the dictates of physiology. Nevertheless, the incongruities of the situation should be recognized, and dealt with as honestly and intelligently as possible in each individual case.

Massage should usually be gentle, for the gland is by definition inflamed. Occasionally, however, more severe massage will succeed when the gentler pressure fails. Generally speaking, there is no need to rub the patient's prostate in a way that scandalizes his nerves.

Prostatic massage is preferably not repeated oftener than twice a week.

In the foregoing paragraphs what has been said of the prostate applies to the seminal vesicles.

TREATMENT OF NONGONOCOCCIC CHRONIC URETHRITIS

Let it be noted that the essential pathologic lesion of the chronically inflamed urethra is an infiltration of its submucosa. On this depend the ulcers and granulations of the mucous membrane as well as the retention of pus in the urethral glands, and from it results the scar which is stricture.

The essential treatment of chronic urethritis is therefore dilatation—dilatation which shall be made to simulate massage as nearly as possible—dilatation applied both to the anterior and to the posterior urethra so far as the inflammation affects both portions of the canal. Dilatation should not cause bleeding; for bleeding is evidence of laceration, laceration is the occasion of infiltration, and infiltration is the lesion that we are seeking to relieve.

Dilatation should not attempt to stretch scar tissue, because scar tissue cannot be stretched.

The anterior urethra may profitably be dilated to from 28 to 32 F.; the posterior urethra (by means of the Kollman dilator) to from 33 to 38 F. The intervals between treatments should be from five to ten days.

The application of injections and irrigations, however antiseptic, to the surface of the urethral mucosa can have but little effect on its pathologic processes. A mild urethral discharge may be controlled by a mild injection, but it will be noted that for this purpose astringent injections of zinc sulphate and similar substances are far more efficacious than are the antiseptics. An astringent that will produce an infinitesimal diminution in an infinitesimal urethral discharge will cheer the patient, though it will not materially change the lesion.

It is customary to use such antiseptics, following treatment by sounds and massage. They may be used with discretion. If the treatments are gentle, it is often quite as well not to introduce any antiseptics into the urethra; but when beginning with a patient, or if there is any possibility of a reaction following the treatment, an antiseptic which washes out the major number of bacteria and tends to diminish the vitality of others is worth while.

Massage of the prostate and seminal vesicles is the best substitute the physician can offer for the processes of nature, and has the added advantage of being conducted in a relatively calm spirit. The need of rubbing the prostate and seminal vesicles until the last pus cell has disappeared from them has never been clear to me. It is often possible after a short time to reduce the amount of pus from these organs to such an extent that clumps of pus cells are uncommon in the expressed secretion. When this state is reached, patients may be dismissed, to return for observation several months later. If conditions have grown no worse, they may be disregarded.

The urethroscopic treatment of granulations in the posterior urethra by the application of chemicals has seemed to me most useful in cases that resist treatment by dilatation. But the urethroscopic treatment is not to be considered one of choice to replace dilatation—dilatation is always of the essence of the treatment of chronic urethritis.

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DUODENAL DIVERTICULUM WITH PYLORIC ULCER*

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The most recent contributions on the subject of duodenal diverticula are by Secher,[1] Basch,[2] Ritchie and McWhorter,[3] and Siegrist.[4] Secher reports the case of a diverticulum of the stomach found at necropsy, and one of the duodenum also discovered after death, the latter being situated near the papilla of Vater. The diverticulum found by Basch was at the beginning of the third part, while that described by Ritchie and McWhorter was in the first portion of the duodenum, and was further associated with a duodenal ulcer. The diverticulum of Siegrist, discovered at operation, was near the papilla of Vater, as was that of the first mentioned author. Siegrist quotes Linsenmayer, who states that "duodenal diverticula are found in two typical places: in 8 per cent. at the beginning of the duodenum and in 92 per cent. in the region of the papilla of Vater," and who also asserts that "the first are always congenital." The case here reported was like that of Ritchie and McWhorter, situated in the first part of the duodenum. In their search of the literature they could find reports of only seven such cases, as against ninety diverticula distributed in the second and third portions. This rarity makes the report of such cases of rather academic than clinical interest and importance, and it is further true that they may function normally, as shown in the present case. That applies, however, only to true diverticula, as opposed to the false variety.

REPORT OF CASE

History.—Nov. 6, 1917, L. B., a man, aged 32, entered the service of Dr. Frank J. Sladen in the Henry Ford Hospital, Detroit, complaining of pain in the stomach. His family history was negative. He had acquired syphilis in about 1909, and was given mercury for a year and then one intramuscular injection of arsphenamin. A blood Wassermann test a year before and also on his admission to the hospital was negative; likewise, spinal fluid Wassermann, cell count, Pandy and colloidal gold tests were negative. Finally, there were no clinical signs of syphilis. About the time of the syphilitic infection the patient was inclined to excessive alcoholism, but stopped drinking four years later. The present illness began three years before, with pains in the lower abdomen and obstinate constipation. After a short time epigastric distress appeared, with nausea, vomiting and pain, which was chiefly referred to the right lower abdominal quadrant and was related to meals. The symptoms increased steadily in frequency and severity up to the time of admission, when he was partially incapacitated for work. Except for very slight

* From the service of Dr. Frank J. Sladen, Department of Medicine, Henry Ford Hospital, Detroit.

1. Secher, K.: On Diverticula in the Stomach and Duodenum, Hospitalstidende **60**: 582 (June 13) 1917.
2. Basch, Seymour: Diverticula of the Duodenum, Am. J. M. Sc. **153**: 833 (June) 1917.
3. Ritchie and McWhorter: Duodenal Diverticula, Surg., Gynec. & Obst. **25**: 485 (Nov.) 1917.
4. Siegrist, Hans: A Contribution on the Case Reports of Duodenal Diverticula, Cor.-Bl. f. Schweiz. Aertze. **49**: 47 (Jan. 11) 1919.

tenderness in the epigastrium and moderate loss of weight, the physical examination was negative. Repeated urinalyses while on the medical service were quite negative; red and white blood cell counts, hemoglobin and differential counts were normal; lastly, chemical and microscopic examinations of the stool and gastric contents were normal.

Roentgenoscopy.—Two series of roentgen observations were carried out. In the first, started the day after admission, the stomach functioned normally, showing no filling defect or pain on pressure over the antrum, pylorus or duodenum. The latter had a small caliber in its first portion, from the lower wall of which, within an inch of the pylorus, the shadow of a saclike process, almond in size, was seen extending downward. When first seen the sac was described as an accessory pocket or duodenal diverticulum. It remained filled throughout the immediate examination and could not be emptied by manipulation over the abdomen, during which the deepest pressure was permitted without complaint of pain. A minimal amount of the opaque meal remained in the stomach at the five hour examination. At this time, as well as two hours later, the sac described above was not seen. After twenty-four hours, there was presented the unusual spectacle of a completely inverted cecum and ascending colon, the cecum beginning high in the right hypochondrium and extending down into the ascending colon to meet the transverse colon near the right iliac spine. Immediately under the right costal margin a pencil shaped shadow, about 3 inches in length, extended from the upper end of the cecum medially toward the pylorus. This was of course the appendix, and it had a break in continuity in its center with some dilatation distally. It was freely movable and not sensitive to pressure. The transverse colon was a little low throughout, but ascended a little on approaching the splenic flexure. The appendix remained filled for more than seventy-two hours, maintaining always its high position. About a week later, a second series was started, a thin emulsion of barium being used this time, and perhaps better visualization being obtained than in the first series. The picture seen then varied from the first series only in that the stomach was a trifle slow in emptying, and the pouch in the duodenum seemed larger, approximating the size of a silver dollar. At this examination the sac filled and emptied synchronously with the rest of the duodenum, as each wave of barium passed from the stomach; it was, moreover, quite easy to obliterate it by pressure on the abdomen. The interpretation of the sac at this stage was admittedly difficult, probably because of the rarity of all conditions or lesions which would be considered in the differential diagnosis. However, in an attempt to correlate the symptoms with the roentgen findings, it was thought that the sac might be a penetrating ulcer, although in retrospect the balance of evidence lay greatly in favor of a diverticulum. On the basis, therefore, of chronic appendicitis and suggestive evidence of peptic ulcer, operation was advised and performed by Dr. R. D. McClure, November 17.

Operation.—This description is taken from the notes of the operator, who found many adhesions between the duodenum, liver and gallbladder, the latter being otherwise normal. The inverted cecum and ascending colon were seen just as in the fluoroscopic report. There were no gross adhesions of the appendix, but it was found to be injected and distended, and contained a concretion. At the upper border of the pylorus there was a puckered area which seemed to be the base of an ulcer surrounded by induration, while along the lower border of the duodenum, just distal to the pyloric vessels, there was a pouch, larger in diameter than the duodenum itself, extending down directly over the surface of the pancreas. This pouch could be reached and considerably distended by passing the finger into it through the pyloric ring, and it had a fairly well defined neck. The pancreas was much indurated. In the choice of operative procedure, it was decided best under the circumstances to resect the pyloric end of the stomach and first portion of the duodenum, including the diverticulum, and perform a posterior gastrojejunostomy, and of course appendectomy. This was done, and while there was some bleeding which occurred in freeing the adhesions to the pancreas, the patient stood the anesthetic well and left the operating room in good condition, having lost comparatively little blood.

Postoperative Course.—The outstanding features were gradual increase in pulse rate, respirations and temperature, the latter reaching its maximum, 103.4 F., the fifth day. There was no vomiting after the second day, but later, on repeated gastric lavage, there was obtained coffee-ground material with a fecal odor. Restlessness and abdominal distention, which could not be relieved by the usual measures, increased. There was no leukocytosis and no evidence of pulmonic complications until a pleural friction was heard on the day of death. With the appearance of albumin and casts in the urine, the blood urea nitrogen content was found to be 86.9 mg. per hundred c.c. of blood. After passing from delirium into a state of stupor, the patient died the fifth day after operation. Necropsy was refused.

Microscopically, the duodenal diverticulum was found to contain all the layers of a normal duodenum, including the two types of glands. The dimensions were 3.5 cm. long by 2.5 cm. in diameter. The pathologic diagnosis of the appendix was chronic appendicitis.

COMMENT

This case is of interest chiefly from the standpoint of its rarity, as it represents the ninth case on record of diverticulum of the first portion of the duodenum. The structure of the diverticulum was that of a normal duodenum, and in contrast to the case described by Basch in which the barium was retained in the sac for more than ninety-six hours, there was no delay in emptying, which in itself suggested that this diverticulum did not enter into the production of symptoms. Secondly, inversion of the cecum and ascending colon is, according to Piersol,[5] distinctly rare. It is explained by arrest in migration from the fetal position, and may be influenced by a short ascending colon, as was the case here. More recently, Roberts[6] comments on the comparative rarity as well as the clinical importance of the failure of the colon to rotate. Finally, while no positive assertion is possible regarding the cause of death because of the failure to get permission for necropsy, among other things one interesting possibility was suggested: that of intoxication from obstruction or collapse of the duodenum. The extensive investigations by Whipple[7] and his associates have shown that there is a proteose intoxication in intestinal obstruction, which is accompanied by prostration, vomiting, diarrhea, rapid pulse and respirations and disturbance of the nonprotein elements of the blood, usually with a high urea nitrogen. In support of this theory as being the cause of death of our patient, the most definite evidence was the marked increase in urea nitrogen with negative evidence of other complications.

301 East Franklin Street.

5. Piersol: Human Anatomy, Philadelphia, **2**: 1663, 1911.
6. Roberts, Dudley: The Association of Obscure Abdominal Symptoms with Non-Rotation of the Colon, Am. J. Surg. **34**, No. 6 (June) 1920.
7. Whipple, G. H., et Al.: J. Exper. M. **23**: 123 (Jan.) 1916; **23**: 717 (June) 1916; **25**: 461 (March) 1917; **29**:397 (April) 1919.

Women Magistrates for Juvenile Courts.—Women magistrates for courts dealing with children's cases are advocated in a report just issued by the British Board of Education, according to information received by the Children's Bureau of the U. S. Department of Labor. The report recommends that every juvenile court, not only in the cities but also in the rural districts, which has to deal with any considerable number of offenders should have a children's probation officer. His duty would be to supervise cases himself and to secure the cooperation of teachers, scout masters, officers of boys' and girls' clubs, and other social organizations so that every child in his charge should be introduced to one or more of these agencies.

A CASE OF DIABETES MELLITUS AND MYELOGENOUS LEUKEMIA*

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The combination of diabetes mellitus and leukemia in the same individual has already been reported in two instances. I describe a third case, not only to call further attention to the rarity of coincidence between these two diseases, but also to record observations on a case of diabetes mellitus that was treated by abdominal roentgen-ray exposures and usual dietetic treatment.

In 1892, Rebitzer [1] reported the case of a man, aged 56, with a history of diabetes which had begun six years before the patient came under observation. Four months before entry to the hospital he had noticed the development of a splenic tumor. At entry the blood had 600,000 white corpuscles per cubic millimeter, and the urine contained much sugar. The patient died in typical diabetic coma eight days later. The necropsy revealed enlarged lymph nodes and a spleen which appeared characteristic of leukemia.

In 1905, Schwarz [2] reported the case of a boy, aged 13 years, who presented an enlarged spleen, a white count of 344,000 cells per cubic millimeter of blood, and a urine which contained 5 per cent. of sugar. From the patient's history it seemed probable that the leukemia was of longer duration than was the diabetes. The patient died after nine months' observation, and at necropsy gave evidence of pulmonary tuberculosis as well as of myelogenous leukemia.

REPORT OF CASE

History.—M. W. (East Medical No. 23568), a married white woman, aged 40, entered the Massachusetts General Hospital, March 20, 1920. She was born in Maine, but had lived in Massachusetts during most of her life. Her family history and habits were unimportant. Her general health was unusually good, except that she had been pregnant four times during twenty-five years of married life and had had three stillbirths. One child, however, was living and normal. In November, 1919, she had a sharp attack of tonsillitis, which kept her in bed for four or five days. At about that time she noticed that she had lost a great deal of weight. She consulted a physician at once, who told her that she had sugar in her urine and prescribed a diet low in carbohydrates. Since then she had had a trace of sugar in her urine on repeated examinations, but no other symptoms until recently. Last January she noticed a mass in her upper abdomen which was not tender and which she did not think was growing rapidly. About March 1 she became unusually thin and complained of polyuria and nocturia so that she began to drink about 2 gallons of water each day and to urinate four or five times at night. She finally returned to her physician, who advised her to enter the hospital for treatment.

Physical Examination.—March 20, routine examination was negative except for a blowing systolic murmur heard over the entire precardia, and for the abdomen, which was notably full. The left side below the umbilicus was filled by a firm mass concentric in shape, the right border of which was notched, and which moved with respiration. The white blood count was 147,000, the cells of which were mainly of the myelocytic type. The red cells showed a well marked secondary anemia. The urine contained 5 per cent. of glucose. The diagnosis of myelogenous leukemia and diabetes mellitus seemed clear. It was decided to treat the diabetes by diet, and the leukemia by roentgen ray. The patient was discharged greatly relieved after sixteen days in the hospital.

Treatment and Course.—It seemed of interest to attempt to follow the effect of abdominal roentgen rays on the pancreas in this case, bearing in mind the possibility that rays over the spleen might penetrate to the pancreas and stimulate or inhibit its internal secretion. For this purpose the patient was put in bed during her stay in the hospital and given a constant diet of 60 gm. of protein, 25 gm. of carbohydrate and 57 gm. of fat. This afforded approximately 1.25 gm. of protein per kilogram of body weight daily, and 20 calories. This diet was supplemented each day by 5 gm. of sodium chlorid, 600 c.c. of broth, and 300 gm. of thrice cooked vegetables.

The data obtained from the study of this case are tabulated herewith.

FINDINGS IN CASE OF DIABETES MELLITUS AND MYELOGENOUS LEUKEMIA*

Date 1920 March:	Body Wt., Kg.	Urine: Volume (Gm. per 24 Hours)	Urine: Nitrogen (Gm. per 24 Hours)	Urine: Sugar (Gm. per 24 Hours)	Urine: Sodium Chlorid (Gm. per 24 Hours)	Blood: Nitrogen (Mgm. per 100 Cc.)	Blood: Urea N. (Mgm. per 100 Cc.)	Blood: Sugar (Mgm. per 100 Cc.)	White Cell Count per C.Mm.	Basal Metabolic Rate	Comment
17	....	770	6.42	27.40	0.65						
18	....	500	4.62	15.00	0.55						
20	41.0	700	7.98	trace	1.09	43	14	280	147,200	....	
21	....	835	9.20	trace	0.83	..	..	...	138,400	+45	
22	....	950	8.25	trace	4.07	32	12	220	133,000	....	Roentgen-ray treatment of spleen
23	....	1100	7.43	trace	2.97						
24	....	1130	7.06	trace	3.39	37	19	210	100,000	....	Roentgen-ray treatment of spleen
25	....	970	7.26	trace	2.70	..	..	...	72,000		
26	....	1140	8.56	neg.	4.55	..	..	...	.....	+27	Roentgen-ray treatment of spleen
27	41.0	850	7.33	neg.	4.08	34	13	190	67,400		
29	....	1110	8.80	neg.	7.10	..	..	...	44,000	....	Roentgen-ray treatment of spleen
30	....	930	8.30	neg.	6.88	34	11	150	41,000		
31	....	1060	8.85	neg.	8.85						
April:											
1	....	2060	8.90	neg.	9.06	..	..	...	26,000	....	Roentgen-ray treatment of spleen
2	....	....	....	.....	....	30	8	130	.....	+4.5	

* The basal metabolic rates were determined by Dr. J. H. Means; the roentgen-ray treatment was under the direction of Dr. George Holmes.

COMMENT

The glycosuria cleared up promptly, disappearing after nine days of a fixed low caloric diet, and was accompanied by a rapid fall in the glycemia. Acidosis did not develop. There was no reason for believing that the five roentgen-ray exposures of the splenic region had any demonstrable effect on the internal secretion of the pancreas.

As was characteristic of myelogenous leukemia, the basal metabolic rate was increased, while the white cell count was high and returned to normal as the white cell count diminished. The lowering cell count and basal metabolic rate were accompanied by a diminution in the size of the spleen, although this organ was palpable at the time of the patient's discharge from the hospital.

Sodium chlorid, apparently, was not well excreted when the patient was first observed, but later was

* From the Medical Clinic of the Massachusetts General Hospital.

1. Rebitzer: Prag. med. Wchnschr. **8**: 356, 1892.
2. Schwarz: Wien. med. Wchnschr. **55**: 413, 1905.

excreted in amounts comparable to that ingested. Whether or not the roentgen ray stimulated the excretion of sodium chlorid is uncertain.

On the whole, this case shows that the two independent diseases myelogenous leukemia and diabetes mellitus rarely occur in the same individual. In this case the diabetes was mild and responded to dietetic treatment in usual fashion, and was not appreciably influenced by roentgen-ray exposure of the splenic region, which had a markedly beneficial effect on the leukemia.

THE PRECIPITIN TEST FOR GLOBULIN IN THE ARACHNOID FLUID IN GENERAL PARALYSIS *

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In a paper before the Chicago Pathological Society last June we pointed out that the arachnoid fluid in general paralysis gives a noticeably strong reaction with antihuman rabbit serum.[1] Antihuman rabbit serum is the serum of a rabbit immunized with albumin and human globulins, prepared in the usual way under the supervision of Prof. F. C. Koch in the Department of Physiological Chemistry and Pharmacology of the University of Chicago, were used as antigens. Rabbits were injected intravenously at four day intervals with increasing doses, usually 2, 4, 6 and 8 c.c. of the respective solutions, each representing twice the original volume of serum. The animals as a rule yielded serum of adequate potency about the seventh day after the last injection. In general this method is satisfactory, with the exception of a rather high death rate among the globulin rabbits after the third and fourth injections. We injected rabbits also with mixed arachnoid fluid from general paralytics, the quantities being 4, 6, 8 and 10 c.c., and obtained in this way as well a serum with specific antiglobulin precipitins.

As the antigens used in no case consisted of a single pure protein, the antiserums naturally contained precipitins for both serum albumin and the globulins; but the serum of a rabbit, injected with globulin solution, as a rule acts in higher dilutions of globulins than of serum albumin. That is they contain more globulin precipitin than albumin precipitin. This is true, too, of the serum of rabbits injected with the arachnoid fluid of general paralysis. In the case of the serum of rabbits injected with globulin solution, the precipitin

HIGHEST DILUTION OF ARACHNOID FLUIDS IN SALT SOLUTION GIVING PRECIPITATE WITH VARIOUS ANTISERUMS BY CONTACT OR LAYER METHOD AFTER ONE HOUR AT ROOM TEMPERATURE

Antiserums				Arachnoid Fluids																							
Nature	Titers			General Paralysis (5 cases)					Epilepsy (5 cases)					Dementia Praecox (6 cases)					Normal (12 persons)									
	Human Serum	Human Albumin Solution*	Human Globulin Solution*	1	2	3	4	5	1	2	3	4	5	1	2	3	5	6	1	2	3	4	5	6	7	8	9	10	11	12
Antiglobulin†	500	0	256	16	32	128	64	128	2	2	1	2	2	2	4	2	4	2	2	1	2	2	1	2	—	—	—	—	—	—
Anti-albumin	1,000	600	15	32	16	32	32	32	32	16	16	16	16	4	4	8	8	4	4	4	4	2	2	4	8	4	8	8		
Antihuman-serum	1,500	15	250	16	16	128	64	128	4	4	2	4	4	8	4	8	4	4	8	4	8	4	2	4	4	8	8	8	4	
Anti-arachnoid fluid, from general paralysis	3,000	15	1,500	128	256	512	512	512	8	8	8	16	8	16	8	8	8	4	4	4	4	4	8	8	16	8	16	16	8	

* The albumin and globulin solutions represent each twice the original volume of the serum from which they were obtained.
† Albumin precipitins removed by specific absorption.

human serum, as usually practiced in order to secure potent specific precipitin serum.[2] By determining the highest dilution of arachnoid fluid that gives a definite precipitate with an antiserum by the contact or layer method after one hour at room temperature, a definite index of the amount of protein in a fluid is obtained. We found that an antihuman serum of a titer of 1,000, that being the highest dilution of human blood in which it would cause a definite precipitate after one hour at room temperature, would cause a precipitate in what we accepted as normal arachnoid fluid diluted on an average about 1:3.7 with physiologic sodium chlorid solution, while it would form a precipitate in the arachnoid fluid of general paralysis in dilutions of the fluid on an average of 1:12.6 of salt solution.

Since a considerable part at least of the protein in the arachnoid fluid in general paralysis consists of globulins, we have made a special study of the action of specific antiglobulin and anti-albumin precipitins on arachnoid fluids, and results that seem to be of some practical value have been obtained. Human serum-

present for albumin may be removed by precipitation with albumin solution.

We have found by the study of arachnoid fluids from various sources — general paralysis, epilepsy, insanity, epidemic poliomyelitis, normal persons, etc.— with anti-albumin and antiglobulin serums prepared as outlined, that in the fluid of general paralysis both albumin and globulins are increased, but principally the globulins, while in the fluid of epilepsy the increase in protein noted in our first article[1] seems to be in the albumin. The details of the tests will be published later. Antiglobulin serum obtained either by injections of human globulins—we propose to study the effects of using the separate globulins later—or of paralytic arachnoid fluids have caused precipitates in paralytic fluids diluted from sixteen to 512 times with salt solution and even higher, while in fluids from other sources they caused precipitates only in lower dilutions, dilutions of from two to eight or sixteen times, the only exceptions so far in our experience being fluids from frankly inflammatory conditions. This statement covers the results of the testing of about fifty different arachnoid fluids from undoubted cases of general paralysis and a large number of fluids from other conditions. We have had no opportunity to study the arachnoid fluid of locomotor ataxia, cerebral syphilis in the usual sense, multiple sclerosis, etc. The general

* From the John McCormick Institute for Infectious Diseases and the Cook County Psychopathic Hospital.

1. Hektoen, Ludvig, and Neymann, C. A.: The Precipitin Index of the Cerebrospinal Fluid with Antihuman Serum, Tr. Chicago Path. Soc., to be published.

2. Hektoen, Ludvig: The Precipitin Test for Blood, J. A. M. A. 70: 1273 (May 4) 1918.

character of the results with different kinds of antiserum is illustrated in the accompanying table, which shows also that the most striking results, so far as general paralysis is concerned, have been obtained with the serum of rabbits injected with the arachnoid fluid from general paralytics.

On account of its simplicity, this test is well adapted to routine use. By using small tubes of a diameter of 5 mm. or so, only a small amount of antiserum needs to be placed under each dilution of arachnoid fluid. It is essential, of course, that the fluid be drawn without admixture with blood.

ACCURACY OF THE SCHICK REACTION

INFLUENCE OF VARIATIONS IN DIPHTHERIA TOXIN CONTENT IN SCHICK OUTFITS

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The rapid increase in the popularity of the Schick reaction as a method for determining the susceptibility or immunity of individuals to diphtheria is based on two factors: (1) the great reliability of the test, and (2) the ease with which it can be carried out.

Dr. Park and I have repeatedly emphasized the need of observing with care three points that are absolutely essential if the test is to be reliable. They are: (*a*) a standard toxin dilution of proper strength; (*b*) accurate technic in the injection by means of a good syringe and a suitable fine needle, and (*c*) an accurate interpretation of the reaction.

RELIABILITY OF THE SCHICK TEST

Accumulating experience and reports from many sources, and our own experience at the Willard Parker Hospital and in various other institutions during a period of seven years, have established the Schick reaction as a most valuable clinical test for determining immunity from diphtheria or susceptibility to the disease. Most striking, indeed, have been the results noted at the Willard Parker Hospital. Of several thousand scarlet fever patients, more than 2,200 had given a negative Schick reaction on admission to the institution. No prophylactic injections of antitoxin were given to these patients, as they were considered to be immune to diphtheria. They were carefully observed and, it is interesting to note, not one of these patients developed undoubted clinical diphtheria even though they were subsequently exposed to cases of diphtheria developing among some of the Schick-positive patients; indeed, many of them had become temporary carriers of virulent diphtheria bacilli during their stay in the hospital.

The great reliability of the test is further emphasized by our recent experience in several institutions in which outbreaks of diphtheria had occurred. The Schick test was made on all the children of the institutions, and only the positive reactors were passively immunized with antitoxin. In each institution the outbreak was thus promptly controlled, and no cases of diphtheria developed among the Schick-negative children, although they had received no immunization with antitoxin.

It is important from a practical standpoint to remember that individuals who are carriers of virulent or nonvirulent diphtheria bacilli may develop a septic sore throat due to the streptococcus or some other organism. Such carriers as a rule give negative Schick reactions and are therefore immune to diphtheria. The presence of a lesion resembling a diphtheritic exudate in these individuals, associated with a positive throat culture, would be sufficient evidence to many observers that the lesion was diphtheria. In several such patients, however, in whom we were certain that the negative Schick reaction was correct, antitoxin was not injected, although we were prepared to give it if the symptoms became worse. Repetition of the Schick test again gave negative results. Specimens of blood were taken from these patients and their antitoxin content determined. All these patients had from 1/10 to 2 units of antitoxin per cubic centimeter of blood serum which, according to von Behring, would be from ten to 200 times as much as was necessary to protect the individuals from diphtheria. Antitoxin, however, should always be given when the suspicion of the presence of diphtheria is strong, because there is always the possibility that there has been an error in the technic of the test or in its reading, and we are not justified in taking unnecessary risks. Failure of improvement in such a case after the administration of antitoxin will generally show that we are dealing with a nondiphtheritic sore throat in a carrier of diphtheria bacilli.

SOURCES OF POSSIBLE ERROR CONNECTED WITH THE SCHICK TEST

I have been informed by various observers of cases in which patients giving negative Schick reactions subsequently developed diphtheria. I firmly believe that in such cases one or more of the three factors enumerated above, i., e., the strength of the toxin, the technic of the injection, or the interpretation of the reaction, had been at fault. In several instances we were able to show that the technic itself was inaccurate. Errors in the reading or the interpretation of the test accounted for some of the poor results. At times a Schick reaction was read as negative after a superficial observation at the end of twenty-four or forty-eight hours, when a later reading would have disclosed a positive reaction. This was indicated by the definite pigmentation remaining at the site of the test and seen at a subsequent examination. Such pigmentation should have been looked for and would probably have been found in some of the cases that were reported as clinical diphtheria developing in Schick-negative children. To interpret and identify the pseudoreaction, moreover, it is necessary to make a control test with the heated toxin as I have recommended.[1] When a large number of very young children are to be tested, the control could often be omitted for the sake of economy in time, in view of the relative infrequency of the pseudoreaction in this age group.

The first essential condition for a reliable Schick test is to have a standard toxin dilution of proper strength. It is possible for the individual observer to guard against faulty technic and inaccurate reading of the reaction, but he is forced to depend on the outfits supplied by the various laboratories for a suitable toxin preparation. It is important to realize that individuals who give a strongly positive Schick reaction with standard dilutions of toxin may give only a

1. Zingher, Abraham: Methods of Using Diphtheria Toxin in the Schick Test and of Controlling the Reaction, Am. J. Dis. Child. **11**: 269 (April) 1916. The Pseudoreaction in the Schick Test and Its Control, J. A. M. A. **66**: 1617 (May 20) 1916.

faintly positive or *a negative* reaction with weaker dilutions.

Table 1 illustrates the effect of three different dilutions of toxin on groups of children who had given

TABLE 1.—EFFECT OF THREE DILUTIONS OF TOXIN*

Dilutions of Diphtheria Toxin	Groups of Children 1	2	3
1. Standard dilution, 0.2 c.c. = 1/50 M. L. D.	+	±	±
2. One-half standard dilution, 0.2 c.c. = 1/100 M. L. D.	±	± or −	−
3. One-quarter standard dilution, 0.2 c.c. = 1/200 M. L. D.	± or −	−	−

* The signs used in this and the following tables should be read thus: +, strongly positive Schick reaction; ±, moderately positive Schick reaction; ±, faintly positive Schick reaction; −, negative Schick reaction.

strongly positive, moderately positive and faintly positive reactions, respectively, with a standard dilution. Variations in the reactions shown by the same individuals to apparently the same dilutions of toxin can thus be explained by differences in the strength of the dilutions used in the test.

My attention was recently drawn to the possibility that some of the outfits supplied by commercial laboratories were below standard strength. A private physician reported that he had used a Schick outfit from a commercial laboratory on three children in one family and had obtained negative reactions in all the children. He suspected that something was wrong with the toxin dilution, and retested the three children with an outfit from the Research Laboratory. Two of the children now gave positive reactions and one a negative reaction.

TABLE 2.—RESULTS WITH OUTFITS OF COMMERCIAL LABORATORY 1

Schick Outfits	Children Tested A	B	C	D	E	F	G
Control (Research Lab.)	+	+	+	±	±	±	+
1	−	−	−	−	−	−	−
2	−	−	−	−	−	−	−
3	++	+	++	+	±	+	++
4	+	+	+	±	±	+	+
5	+	+	Not tested	+	±	+	Not tested

The importance of this observation prompted me to ask several commercial laboratories for a number of Schick outfits, which they manufacture for public sale, and to test them. These outfits were secured directly from the manufacturers so as to avoid the possibility that the outfits had deteriorated while in the hands of the retailer. A series of children who had given positive Schick reactions with the outfits furnished by the Research Laboratory was used for the tests. All the outfits from one laboratory were tested simultaneously on the same children, and at the same time a control test was made with one of the outfits of the Research Laboratory.

The results noted were very interesting and are of considerable importance in showing one of the great possible sources of error in the results of the Schick test.

RESULTS OBTAINED WITH COMMERCIAL LABORATORY OUTFITS

In reading Table 2 and the subsequent tables the vertical columns indicate the different reactions given by the various outfits on the same child, and the horizontal columns the reactions shown by one outfit on various children.

Table 2 shows that Outfits 1 and 2 were inactive and gave negative reactions in all children. It is important to note that not even a faintly positive reaction was noted in those children who had shown a strongly positive reaction with the control test. Outfit 3 gave reactions about twice as strong as those noted with the control test, while Outfits 4 and 5 gave reactions similar to those shown with the control test.

Table 3 shows that Outfit 1 gave a moderately positive reaction in one child showing a strongly positive reaction with the control test, and faintly positive reactions in two children giving moderately positive reactions with the control outfit.

Outfit 2 gave a faintly positive reaction in the child showing a strongly positive reaction with the control test, and very faintly positive reactions in the two

TABLE 3.—RESULTS WITH OUTFITS OF COMMERCIAL LABORATORY 2

Schick Outfits	Children Tested A	B	C
Control (Research Lab.)	+	±	±
1	±	±	±
2	±	±	±
3	±	−	−

children giving moderately positive reactions with the control outfit.

Outfit 3 gave a very faintly positive reaction in the child showing a strongly positive reaction with the control test, and negative reactions in the two children giving moderately positive reactions with the control test.

The directions for the tests given in the circulars of the outfits of this laboratory state that 0.1 c.c. should be injected. We injected 0.2 c.c. so as to make the area of the reaction conform to that of the control test, in which 0.2 c.c. is used. In Child E, Outfits 1 and 2 gave negative reactions when 0.1 c.c. was injected, but faintly positive reactions when 0.2 c.c. was injected.

The table shows that three of the outfits gave reactions similar to the control test in four children; the fifth child showed a faintly positive reaction with Outfits 1 and 2. Outfit 4 gave moderately positive reactions in three of the children who had strongly

TABLE 4.—RESULTS WITH OUTFITS OF COMMERCIAL LABORATORY 3

Schick Outfits	Children Tested A	B	C	D	E
Control (Research Lab.)	+	+	+	+	±
1	+	+	+	+	±
2	+	+	+	+	±
3	+	+	+	+	±
4	±	±	±	+	±

positive reaction with the control outfit. The capillaries containing the toxin in these outfits were of fairly thick glass, and one experienced considerable difficulty in breaking them to make the necessary dilution. The clinical results with the outfits of this laboratory corresponded quite closely to those noted with the control

outfit. It must be remembered, however, that we used twice the amount of diluted toxin directed by the circular in these outfits, and injected 0.2 c.c. instead of 0.1 c.c. in making the tests.

The contents of one capillary were also injected into a guinea-pig weighing 250 gm. Each capillary was supposed to contain one minimal lethal dose of toxin; therefore the animal should have died on the fourth day after receiving the injection. The guinea-pig showed local induration, lost in weight and became quite ill, but ultimately recovered. This result showed that the capillary contained less than one minimal lethal dose of toxin, the amount required to make the standard dilution for that outfit.

TABLE 5.—RESULTS WITH OUTFITS OF COMMERCIAL LABORATORY 4

Schick Outfits	Children Tested			
	A	B	C	D
Control (Research Lab.).....	+	±	±	+
1.....	+	±	+	+
2.....	+	±	±	+
3.....	+	±	±	+
4.....	+	±	±	+
5.....	+	±	+	+

Table 5 shows that the outfits of this laboratory gave results which corresponded quite closely to those noted with the control outfit. Outfit 5 was perhaps slightly stronger than the control.

RESULTS OBTAINED WITH RESEARCH LABORATORY OUTFITS [2]

In order to determine how uniform the outfits of the Research Laboratory are, several of them were tested in the same manner as the outfits supplied by the commercial laboratories.

This outfit is prepared at the Research Laboratory with a stable ripe toxin, of which the minimal lethal dose is 1/70 c.c. The capillary tubes of the outfits are filled by means of a 0.25 c.c. original record syringe (the Kny-Scheerer Company) the barrel of which is divided into fifteen equal parts. One subdivision of the syringe corresponds to 1/60 c.c., and this is the amount of toxin filled into each capillary tube. The contents of the capillary tube represent, therefore, a little more than one minimal lethal dose of toxin, the slight excess (about 14 per cent.) allowing for some deterioration of the toxin. When the toxin is diluted with the 10 c.c. of saline contained in the outfit, the solution contains 1/50 minimal lethal dose in 0.2 c.c., the amount recommended for the test. Allowing for wastage of some of the diluted toxin, one outfit will be sufficient for at least thirty-five Schick tests.

Table 6 shows that the first four outfits gave quite uniform results. Outfit 5 gave a moderately positive reaction in Children A and C, who had shown strongly positive reactions with the other outfits. A slightly deeper injection may account for these reactions.

Three guinea-pigs, weighing 250 gm., were each injected with the contents of one of the Research Laboratory outfits. One animal died of acute diphtheria intoxication between the third and fourth day, and the other two died between the fourth and fifth day.

2. Zingher, Abraham: A Simple Outfit for the Distribution of Toxin for the Schick Test, J. A. M. A. **65**: 329 (July 24) 1915.

The results noted with these outfits show a considerable degree of uniformity in the clinical tests. The animal tests also show that each of the outfits contained one unit of toxin, the amount required for a proper standard dilution.

It is evident, therefore, that it is possible to manufacture outfits for the Schick test on a large scale without sacrificing accuracy.

SUMMARY AND CONCLUSIONS

1. The accuracy of the Schick test depends on the strength of the toxin, the technic of the test and the interpretation of the reaction.

2. Errors in any of these may make the results of the test unreliable. It is possible to guard against a poor technic and a wrong interpretation of the reaction, but it is essential to be able to depend on the accuracy of the outfits for the Schick test obtainable on the market.

3. The outfits furnished by four commercial laboratories were tested. Of five outfits of one laboratory, two contained too small an amount of toxin to give a positive reaction in Schick-positive children. Of three outfits of the second laboratory, one was somewhat weaker and two very much weaker than the standard outfit, so that negative reactions were obtained in Schick-positive individuals. The outfits of the third laboratory compared fairly well with the control in the clinical test when twice the amount of toxin dilution prescribed in the directions on the outfits was injected. The animal test showed only about 85 or 90 per cent. of a minimal lethal dose in an outfit instead of one minimal lethal dose. The outfits of the fourth laboratory gave reactions similar to those noted with the control test.

TABLE 6.—RESULTS WITH RESEARCH LABORATORY OUTFITS

Research Lab. Schick Outfits	Children Tested				
	A	B	C	D	E
1.....	+	+	+	±	±
2.....	+	+	+	±	±
3.....	+	+	+	±	±
4.....	+	+	+	±	±
5.....	±	+	±	±	±

4. The outfits furnished by the Research Laboratory gave practically uniform results clinically, and the animal test showed full potency of the toxin.

5. It is practicable to manufacture outfits for the Schick test on a large scale, without sacrificing accuracy.

Substitutes for Arsphenamin.—A discussion of the use of sundry "substitutes" for arsphenamin in the treatment of syphilis will be one of the principal subjects of discussion at the All-America Conference on Venereal Diseases, held in Washington in December, under the auspices of the U. S. Public Health Service. The medical profession has been repeatedly cautioned against the use of arsenic preparations not belonging to the arsphenamin group. The Public Health Service declares that it is necessary to test these arsenic preparations carefully because of their toxic nature. If improperly prepared, they may be harmful, no matter how carefully they are used; on the other hand they may be entirely worthless. Some of the unlicensed preparations that have been foisted on the market were frauds, containing no arsenic or other curative properties.

TRANSFUSION OF DUODENAL CONTENT

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In this article I shall describe the extraction of duodenal content from a healthy donor and its insertion into the duodenum of a patient, as a therapeutic measure; cite the clinical indications for the procedure; mention the possible utility of transfusion of duodenal content in certain diseases, and suggest the possible research value of investigation of the results of such transfusion.

Extraction of duodenal content from the duodenum of a healthy adult is a simple procedure. That such fluid, containing bile, duodenal secretion and pancreatic secretion might be of value to persons suffering from lack of digestive mixture is obvious. That, in infections of the liver and pancreas, it might furnish nutrient powers over such period as to be in some cases a life saving measure seems plausible.

REPORT OF CASE

The case in which duodenal transfusion was made is one whose earlier clinical study was described by Stockton before the Association of Gastro-Enterologists, Atlantic City, in May, 1920.

In 1916, the patient was treated for hypochlorhydria. Following this there was a period of good health. In 1919, the patient returned for treatment and was found to have gastritis, achylia gastrica and enterocolitis. There was diarrhea. Jan 1, 1920, after an interval of improved health, the patient returned with jaundice. There was no fever at this time. A diagnosis of duodenitis was made. Later there was angiocholitis. It was believed that the gallbladder was not involved. There was irregular fever. Later there developed signs of pancreatic insufficiency. The stools were large and fatty, bowel movements were frequent, and either fasting or strict limitation of diet were necessary to control the intestinal disturbance. Jaundice was at times slight and at times intense. In May, 1920, the patient's weight was 91½ pounds. The blood showed moderate leukocytosis.

There was some evidence of improvement in that periods of fever were diminishing in length and the temperature was not so high as in the earlier weeks. Yet progress was slow, and any attempt to increase diet brought trouble. A protein diet produced putrefactive stools. Fat was not digested. Starches were incompletely taken care of, and excessive feeding of starch was contraindicated by the finding of a trace of sugar in the urine. Examination of the duodenal content disclosed very low ferment activity.

On some occasions bile of normal appearance was obtainable through the duodenal tube. Microscopically the specimens usually showed numerous pus cells, and on various occasions the microscopic field was filled with pus. Streptococci were numerous. No specimen was obtained which could be identified by dark color, as coming from the gallbladder itself. On one occasion fresh blood, possibly 1 or 2 c.c., was withdrawn through the tube.

Normally, fluid withdrawn from the duodenum contains bile, pancreatic secretion and duodenal secretion in uncertain proportions. Moreover, there is usually some emptying of gastric juice from the stomach into the duodenum. It is therefore a mistake to attempt either to make such exact determinations of ferment activity as are at times found in the literature on this subject or to attempt to locate with certainty the source of pus or blood. Whether abnormal cellular elements come from the duodenum itself, from the finer biliary ducts of the liver or the larger ducts, from the gallbladder or from the pancreas, it is not possible to determine. The pus or blood may have come through from the stomach. The identification of dark green infected bile from the gallbladder may in some cases form an exception to the statement of the uncertainty of attempts to locate definitely the site of an infection.

In the case under consideration, inefficiency of the digestive fluids as evidenced by the ferment tests (according to the method of Bondi) and the enormous undigested stools suggested that the patient needed an active digestive mixture. Such a mixture could be procured from the duodenum of a healthy individual by the use of the duodenal tube.

Transfusion of duodenal content was performed in the attempt to nourish the patient and thus to increase her resistance to infection.

It was believed that if the patient could digest even one meal a day, progress might be made. Since the action of enzymes is by catalysis, it was assumed that a little enzyme might go a long way, but there were practical difficulties in the way of supplying a large amount of human duodenal content.

PROCEDURE

The services of a healthy donor were procured. Each evening the duodenal tube was inserted and left over night. In the morning, before breakfast, duodenal content was extracted by syringe or siphonage. From 40 to 100 c.c. were obtainable in three quarters of an hour. A few sips of water were at times necessary to start the flow. After withdrawal of the content, the tube was withdrawn and the donor was free to go about his customary work. Trial of passing the donor's tube early in the morning, allowing from one to two hours for it to enter the duodenum, proved this method to be equally satisfactory to that of leaving the tube over night.

The patient had previously had introduced a duodenal tube, and this had entered the duodenum. It was allowed to remain continuously in position. The patient was given a rather liberal breakfast of cereal with cream and sugar, bacon and egg, toast and fruit. She was able to eat with the tube in position without great difficulty, though it was necessary to make liberal time allowance for proper mastication.

The fluid extracted from the donor was withdrawn at such hour as the patient would have completed her meal, and was promptly inserted by syringe into the duodenal tube of the patient. It was put in slowly, about one-half hour being occupied in the administration of 100 c.c. At noon the patient was allowed peptonized milk, and this was given every two hours for the rest of the day.

This course of procedure was continued for two weeks. Symptomatically, the patient showed improvement. Abdominal discomfort and distention were much diminished. The stools were still fatty, but smaller. Irregular fever continued, and a gain of a pound and a half of weight was but temporary. At the end of the two weeks of duodenal transfusion, the patient's weight was the same as at the beginning.

Shortly after discontinuance of transfusion, the patient was referred for operation. Drainage of the gallbladder was performed. It is of interest to note that the gallbladder, to all appearances, was normal excepting that it was pale. The further clinical course of this case will be described by Dr. Stockton.[1]

COMMENT

No general deductions can be made from apparent improvement through transfusion of duodenal content, in a single instance.

The possible application of the method in acute infection of the liver or pancreas is a matter for consideration. Its possible utility as one measure in preventing the acidosis of the accompanying starvation in these cases may well be kept in mind.

Transfusion of either gastric juice or duodenal content or both might be of interest in achylia gastrica and particularly in the achylia gastrica of pernicious anemia. Not only is the digestive effect of these juices to be considered, but also their value in that they contain hormones or activators of pancreatic secretion. The question arises as to whether the introduction of human digestive juices could have any effect on carbohydrate tolerance in diabetes.

1. Stockton: Ann. Med., to be published.

The administration of human digestive juices might be of value in the intractable intestinal disturbances of early childhood. Their introduction by capsule would be necessitated in the younger cases. In this connection it is to be remembered that the digestive juices of infants are of different composition than those of adults.

The therapeutic use of human digestive juices presents certain obvious difficulties, yet in suitably selected cases their value may well be sufficiently great to warrant the undertaking of transfusion of duodenal content.

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INSOMNIA FOLLOWING ACUTE EPIDEMIC (LETHARGIC) ENCEPHALITIS IN CHILDREN *

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Persistent insomnia in children is uncommon. It follows the acute infectious diseases, such as typhoid fever and pneumonia; it is one of the symptoms of severe chorea, and it is one of the manifestations of the neuropathic child. Under other circumstances it is rarely seen unless it is due to discomfort or pain. During the last few months we have observed a number of children who were brought to the hospital because of inability to sleep at night. From our observation of these cases we are convinced that persistent insomnia is a fairly common sequel of acute epidemic (lethargic) encephalitis in children. In this communication we wish to present the histories of six patients who manifested this symptom.

REPORT OF CASES

CASE 1.—A white boy, aged 4 years, who was referred to one of us, April 23, 1920, because of persistent insomnia, had been perfectly normal previous to the onset of his illness. On the night of January 16, he was unable to sleep, and since that time the wakefulness at night had continued. Because of his restlessness and activity he was thought to have chorea, a diagnosis that was not confirmed by the subsequent course of his illness. The mother said that the child would stay awake all night, spending the time in constant activity, talking, playing, singing, whistling, etc. Toward morning he would go to sleep and sleep a variable length of time, sometimes all day, sometimes only an hour or so during the entire twenty-four hours. The usual means to combat insomnia, such as wet and dry packs, sedatives, attempts to keep him awake and active during the day, and exercise, had no effect whatsoever. Paralyses had never been noted by the mother. The patient was under observation from April 23 to July 11. No definite abnormal findings were obtained by physical examination. The cerebrospinal fluid was normal. However, the behavior of the child was very striking. As nighttime approached he became very active, jumping up and down in bed and talking incessantly. At 10 or 11 o'clock at night he would be as wide awake as the average child in the middle of the day, and showed no inclination to sleep. He would stay awake all night, at times talking to himself, at other times whistling and singing, fretting and crying, but never still. When any one spoke to him he would enter into a lively conversation. His behavior at night differed from that during the day; for example, he would spit a good deal in the bed or on the floor. He would frequently wet and soil the bed and occasionally be found lying in feces, whereas during the day he would call the nurse. When excited, he would stammer. The greater part of the night would be spent in ceaseless activity. Toward morning he would fall asleep. As a rule he slept from three to twelve hours in the twenty-four. This always occurred between 5 a. m. and 6 p. m. The striking point about his sleep in the daytime was that it was very deep, and when awakened for meals he would fall asleep immediately, sometimes in the act of eating. It was very difficult to keep him awake during the morning. On awakening he would seem normal until evening, when the same abnormal actions would be repeated. Attempts to keep him awake and amuse him during the daytime had no effect on his nocturnal behavior. Continuous tubs and packs were unsuccessful in bringing on sleep. He was discharged, July 11, without any definite improvement in the insomnia.

At first we were puzzled as to the nature of the patient's condition. The nightly repetition of sleeplessness and excitability followed by deep sleep in the daytime suggested the possibility that it was the result of an acute (epidemic) encephalitis; but in the absence of a definite history of an acute illness with fever, ocular paralyses, lethargy, etc., we were unable to substantiate the diagnosis. Subsequently, however, we have had the opportunity to observe five children with insomnia following acute encephalitis, and the striking similarity of the latter cases to the foregoing would seem to verify the diagnosis. A brief description of these five cases is given.

CASE 2.—A boy, aged 9½ years, admitted to the Harriett Lane Home, Feb. 15, 1920, had been perfectly well until February 11. On this night he slept poorly. Two days later he complained of pain in his eyes. The following day (February 14) he had double vision, and the parents noted an internal squint of the right eye. He became very restless and delirious, and was brought to the hospital five days later. When admitted to the ward he was delirious, and so active that the frequent administration of sedatives was necessary. The temperature was 101 F. The physical examination was negative. The cerebrospinal fluid was under slightly increased pressure, contained 51 mononuclear cells per cubic millimeter, and the globulin reaction was positive. The Wassermann reaction was negative. After five days his restlessness and delirium had disappeared and the temperature was normal. He was discharged, March 5, apparently normal. The diagnosis of acute epidemic encephalitis was made on the acute onset with delirium, the ocular changes and the changes in cerebrospinal fluid. Two weeks later he was brought back because he was nervous and would not sleep at night. He would stay awake practically all night; he was very restless and tossed constantly from side to side, calling to his parents every few minutes. However, he was not delirious and there were no hallucinations. Toward morning he would become less active and go to sleep. Some days he would sleep eight or ten hours, but during the entire twenty-four hours he might sleep only an hour or two. Sometimes he would go to sleep eating a meal or standing up in bed. Attempts were made to keep him awake during the day so that he would sleep at night, but were unsuccessful. He had become very nervous and had developed various tic-like movements, such as clearing his throat continually, stretching out his arms, and putting his finger to his nose. He was readmitted, May 7, for three weeks' observation. During this period he slept practically none at night, but spent the night in constant activity, talking, clearing his throat, stretching his arms, tossing and jumping about the bed, and spitting a good deal on the floor. He slept well during the morning, and the sleep was deep and undisturbed by the noise of the ward. When seen, July 8, there was no improvement in his nocturnal behavior.

CASE 3.—A white boy, aged 7 years, was perfectly well until February 19, when in the night he became quite restless and delirious. The following day the delirium and restlessness were more marked, and muscular twitching was noted. The patient was thought to have chorea because of his excitability

* From the Harriet Lane Home, Johns Hopkins Hospital.

and constant movements. He then became stuporous and was brought to the Harriet Lane Home, February 24. On admission, the patient was dull and slept a good part of the time. The temperature was 103 F. The positive findings were drowsiness, sluggish extra-ocular movements, and exaggerated reflexes. The cerebrospinal fluid was clear, contained 36 mononuclear cells per cubic millimeter, and gave a positive globulin reaction. The patient remained in the hospital until April 5, by which time he had improved and his behavior seemed normal. He slept well at night. The diagnosis of acute epidemic encephalitis was made, based on the acute onset with fever and delirium, followed by drowsiness and the spinal fluid changes. The child did not do well after he returned home; he became very nervous and developed tic-like movements, such as wetting the forefinger and placing it in the cheek, etc. At night he was wakeful, in constant motion, jumping up and down in bed, singing, talking and sleeping very little until about 4 a. m., at which time he would sink into a deep sleep and sleep until noon. The disposition of the child had changed, and he had become untidy in his habits and would constantly spit on the floor. This condition has persisted, and when last seen (July 26) he was so active at night that one of his parents had to stay with him to prevent him from hurting himself. We allowed him to sleep when he chose during the day, for keeping him awake had no influence on his insomnia.

CASE 4.—A white boy, aged 6 years, was perfectly well until Feb. 3, 1920, on which day it was noted that he was restless and delirious and threw his arms about aimlessly. This excitable state lasted for three days and nights, and he was thought to have chorea. The boy gradually improved, and on February 20 the muscular movements had practically disappeared. At this time a tremor of the hands was noted and a change in speech, so that the child talked very slowly. No paralyses were noted, but insomnia developed and was persistent. He was admitted to the Harriet Lane Home, May 3. The physical examination was negative save for slow, scanning speech and a coarse tremor of the hands. The cerebrospinal fluid showed no increase in cells, but gave a positive globulin reaction. The Wassermann reaction was negative. The patient slept fairly well at night and was discharged, May 31. The diagnosis of acute epidemic encephalitis was made on the history of acute onset with delirium, choreiform movements, tremor, scanning speech and insomnia. Following discharge the tremor gradually disappeared and the speech became normal. Six weeks later (July 15) the father reported that the child was well except that he was unable to sleep at night. He would lie awake until 2 or 3 o'clock each morning, after which time he would go to sleep and sleep until noon the following day. Keeping him awake during the day failed to make him go to sleep earlier at night. He had therefore been allowed to sleep late in the morning, and he was doing well and gaining in weight.

CASE 5.—A white boy, aged 9½ years, had been perfectly well until February 27. On this day the parents noted a peculiar "staring" expression of the eyes. That night he was restless and would not go to sleep, and talked continuously. A left facial paralysis was noted by the mother four days later. Since this time he had not slept at night; he had remained awake until 5 o'clock in the morning and then slept part of the morning. Because of this persistent insomnia he was brought to the Harriet Lane Home, July 13. On examination there was a partial paralysis of the left side of the face, unequal pupils, and a bilateral internal strabismus. During the night he was restless and remained awake until midnight. He then slept brokenly for an hour, and after that stayed awake until 9 a. m., from which time he slept until he was awakened at noon. In this case the insomnia showed no sign of abating five months after the acute attack of encephalitis.

CASE 6.—A white girl, aged 5½ years, was brought to the Harriet Lane Home, July 6, because of inability to sleep at night. She had been well up to February 20, on which day she became excited, talked foolishly, and developed an internal squint. This excitable state lasted for two days, after which time she became rational and the squint disappeared, but from this time she had not slept well at night. She would stay awake for several days and nights, and then sleep heavily all day. She was taken to a hospital, where she remained six weeks. Sleeplessness at night was noted there. On her return home, June 21, she would stay awake until 3 or 4 o'clock in the morning; then she would sleep the better part of the next day. At times at night she would get very excitable and spit. She was admitted to the Harriet Lane Home, July 16, 1920, in order that her nocturnal behavior might be observed. The first night she slept all night; the second she was awake until 8 a. m., talking incessantly, tossing about, and waving her arms in the air. From 8 a. m. she slept until noon. She was then quiet until evening, when she again became very restless, excited and active, and remained awake until 3 a. m. She slept until breakfast, and following this slept nearly all day. During the night she was careless in her habits, and frequently soiled herself. Since her discharge, July 11, there has been no improvement in her condition, and she is allowed to sleep when she chooses during the day.

COMMENT

It will be observed that the duration of the insomnia in the first patient has already been more than seven months, in the second five months, in the third four months, and in the last three patients six months each. Insomnia following acute disease, such as typhoid fever, has never lasted so long as this in our experience. The sleep of the neurotic child may be broken and irregular and it is frequently disturbed by dreams and night terrors, which have not occurred in these patients. The neurotic child does not have the deep, undisturbed early morning sleep. His sleep is usually light, and the slightest noise serves to awaken him. Several of our patients early in the disease have been regarded as having chorea because of the "choreiform movements" observed in this stage. However, these movements have not persisted, and the disease, when we have observed it, has presented no close resemblance to true chorea. The movements that have sometimes appeared later have been repetitions and have been much more like those of severe tic than they have like those of Sydenham's chorea.

It is now well recognized that there are cases of epidemic (lethargic) encephalitis which do not show the symptomatology of an acute febrile onset, ocular paralyses and lethargy, and that there are well authenticated cases in which the paralyses may be entirely absent and lethargy may not appear. On the contrary, delirium, excitability and choreiform movements may be the predominant symptoms.[1] We feel that nocturnal wakefulness, excitability and restlessness, followed by deep sleep, almost stupor, during the morning, accompanied by a change of disposition and behavior during the waking period, persisting for several months, is a characteristic syndrome following acute epidemic encephalitis in childhood. We have no hesitancy in classifying the foregoing cases under the general group of encephalitis now prevalent. The term "lethargic" is unfortunate for several reasons, one of which that it tends to induce the overlooking of nonlethargic cases. It is important that this condition be recognized in order that the children may be regarded as sick children and that the parents may be assured that the insomnia and other peculiarities are not due to wilfulness and disobedience on the part of the child. The patients should be placed in a quiet environment, permitted to sleep when they choose, and not awakened in the morning for meals and bath. They should be given their noon meal and

1. Several of these cases are of the type described as "encephalitis choreiformis" by Dimitz and others. Although various writers have noted insomnia in the acute stage in these cases, insomnia persisting over several months has not been recorded.

their evening meal, and a third meal should be given at night. They require careful attention at night, and must be prevented from harming themselves. Sedatives, as a rule, are not necessary and are not satisfactory. We are unable to make a definite statement as to the prognosis, but we can only say now that there is no tendency to rapid improvement.

FURTHER STUDIES ON THE SPECIFICITY OF STREPTOCOCCI *

RUTH TUNNICLIFF, M.D.
CHICAGO

I. SPECIFIC PROTECTIVE ACTION OF SERUM AGAINST HEMOLYTIC STREPTOCOCCUS OF SCARLET FEVER

In a previous article 1 [1] reported that the serum of a sheep immunized with a hemolytic streptococcus from the throat in the acute stage of scarlet fever contained opsonins and agglutinins for the hemolytic streptococci that prevail in the throat and complicating lesions early in this disease, but not for hemolytic streptococci from other sources, such as erysipelas, mastoiditis, measles, influenza, diphtheria and the normal throat. The results of absorption tests also indicated that the hemolytic streptococcus from scarlet fever forms a distinct group, scarlatinal streptococci removing the opsonins and agglutinins for these cocci, while absorption with a hemolytic streptococcus from erysipelas has no such effect. These results suggested that the hemolytic streptococci of scarlet fever form a distinct group from the immunologic point of view. Bliss [2] reports similar results by means of agglutination tests with immune rabbit serum.

I now wish to report the results of certain experiments made to determine whether this immune sheep serum would protect mice against living hemolytic streptococci isolated from acute cases of scarlet fever and other sources. The sheep had been inoculated for six months, first with dead, then with living hemolytic streptococci from a scarlet fever throat, and the serum agglutinated the homologous streptococcus at a dilution of 1:2,000. The dilution at which opsonification ceased was 1:360. Normal sheep serum contained neither opsonin nor agglutinin for this streptococcus.

It was found difficult to raise the virulence of these cocci by animal passage, and as it was known that the intraperitoneal injection of 0.5 c.c. of a twenty-four hour old ascitic dextrose broth culture generally killed a mouse in twenty-four hours, this dose was chosen, but with full knowledge of the crudeness of the method.

The method of immunization was the same as the one used by Dr. Weaver [3] and myself in our study on antistreptococcus horse serum:

Five-tenths c.c. of serum was injected subcutaneously into mice, one half the mice receiving immune sheep serum, the other half, the controls, normal sheep serum, and twenty-four hours later the living cocci were injected intraperitoneally. While the intraperitoneal injection of immune serum has an advantage over the subcutaneous in more rapid absorption, it possesses the disadvantage of causing a migration of leukocytes into the cavity and so raising the resistance of the animal in a nonspecific manner to the subsequently injected cocci. For this reason the serum was introduced subcutaneously, allowing the cocci to be injected later into a normal peritoneal cavity. When the test is made in this manner, it would seem to afford a more delicate index to the specific protective power of the serum.

Fourteen control mice injected with normal sheep serum and later inoculated with living streptococci died in from twenty to twenty-four hours. Three lived forty-eight hours. Six of the nine mice injected with immune sheep serum and inoculated with streptococci from scarlet fever throats were only slightly sick and were alive at the end of three weeks; three lived two days, the controls dying within twenty-four hours. The eight mice injected with immune serum and inoculated with hemolytic streptococci from sources other than scarlet fever—erysipelas seven, mastoiditis one—all died in from twenty to twenty-six hours.

The immune serum, after having been kept in the icebox forty-three days, ceased to protect against the streptococci from scarlet fever, and it was found to contain neither opsonins nor agglutinins for the homologous coccus. This result was in accord with the previous observations by Dr. Weaver and myself that antistreptococcus horse serums rapidly lose their opsonic power. We observed also that the opsonic power could be largely restored by the addition of fresh human or guinea-pig serum, and that the protective power of the immune serums continued so long as they could be reactivated by fresh serum. I therefore attempted reactivating the old immune sheep serum with fresh normal sheep serum, and found that it could be restored in this way to its former power. I immunized mice with 0.5 c.c. of immune and normal sheep serum, equal parts, and found they were protected against the living homologous streptococcus as well as a heterologous scarlet fever throat streptococcus, but not against two strains of hemolytic streptococci from influenza. One protected mouse lived four days, the other two weeks; the four controls died within twenty-four hours. The mice injected with immune serum and inoculated with influenza cocci died the same day as their controls, twenty-four and forty-eight hours, respectively.

The experiment emphasizes the necessity of a guarantee of the activity of antistreptococcus serum, which may rapidly lose a large part of its protective power.

CONCLUSIONS

The serum of a sheep immunized with hemolytic streptococci from the throat in the acute stage of scarlet fever protected mice against cultures of hemolytic streptococci isolated from scarlet fever patients, but not against hemolytic streptococci from other sources, such as erysipelas, mastoiditis and influenza.

This antistreptococcus sheep serum rapidly lost its opsonic and protective power, which was restored by the addition of fresh normal sheep serum.

These experiments, together with the opsonin and agglutinin reactions, give additional weight to the conclusion that the hemolytic streptococci from the acute stage of scarlet fever form a distinct biologic group, apparently peculiar to scarlet fever.

II. IMMUNOLOGIC STUDY OF HEMOLYTIC STREPTOCOCCI OF ERYSIPELAS

Little study has been made of the immunologic relations of the streptococci of erysipelas since Fehleisen [4] isolated and demonstrated streptococci in the skin lesions of this disease. A change in hemolytic streptococcal opsonin during the course of erysipelas has been demonstrated by Ruediger,[5] Schorer,[6] Tunnicliff [7] and Boughton.[8] Schorer used only erysipelas streptococci

* From the John McCormick Institute for Infectious Diseases.

1. Tunnicliff, Ruth: Specific Nature of the Hemolytic Streptococcus of Scarlet Fever, J. A. M. A. **74**: 1386 (May 15) 1920.
2. Bliss, W. P.: Bull. Johns Hopkins Hosp. **31**: 173 (May) 1920.
3. Weaver, G. H., and Tunnicliff, Ruth: J. Infect. Dis. **9**: 130, 1911.
4. Fehleisen: Tr. New Sydenham Soc., 1886, p. 261.
5. Ruediger, G. F.: Further Studies on Streptococcus Infections, J. A. M. A. **46**: 108 (Jan. 13) 1906.
6. Schorer: Am. J. M. Sc. **134**: 728, 1907.
7. Tunnicliff, Ruth: J. Infect. Dis. **4**: 304, 1907; ibid. **5**: 268, 1908.
8. Boughton: Tr. Chicago Path. Soc. **8**: 24, 1909; J. Infect. Dis. **7**: 111, 1910.

in his experiments. I estimated opsonins with strains of hemolytic streptococci from erysipelas, but in two cases used hemolytic streptococci from scarlet fever and in another case tested also a strain from acute articular rheumatism and a *Streptococcus mucosus,* and found changes in opsonin for these cocci also. Boughton found the changes more marked for streptococci from erysipelas than for other streptococci.

The experiments reported below were made with the hemolytic streptococcus from erysipelas, as the question of its specific nature remained undetermined by the earlier work. This question seemed particularly interesting at this time on account of the recent observations on the specific nature of the hemolytic streptococcus of scarlet fever, in which I [1] demonstrated that the serum of a sheep immunized with such a streptococcus, isolated from the throat in the acute stage, contains opsonins and agglutinins for the hemolytic streptococci that prevail in the throat and complicating lesions early in the disease, but not for hemolytic streptococci from sources such as erysipelas, mastoiditis, measles, influenza, diphtheria and the normal throat. Similar results appear to have been obtained by Bliss,[2] by means of agglutination tests with immune rabbit serum.

In these experiments both opsonins and agglutinins were studied.

A sheep was immunized with a hemolytic streptococcus isolated from a blister on the face of a patient with a typical acute case of erysipelas. The sheep was inoculated intravenously with killed cultures, daily for four days, then at four day intervals for one month, and finally with small numbers of living cocci for one month more. This sheep gained in weight steadily during immunization, but produced antibodies irregularly, while a sheep immunized with hemolytic streptococci from scarlet fever lost weight rapidly, but produced antibodies fairly constantly.

For the opsonic experiments, the cocci were grown on goat blood agar twenty-four hours and suspended in physiologic sodium chlorid solution. Normal sheep leukocytes, collected in 0.2 per cent. sodium citrate solution and washed once in physiologic sodium chlorid solution, were used in the experiments. The serum, normal and immune, was heated for one-half hour at 56 C. to remove the thermolabile element, and then diluted to determine the point of opsonic extinction. The mixtures of serum, leukocytes and coccal suspension, equal parts, were incubated twenty-five minutes, smears stained with carbolthionin, fifty polymorphonuclear leukocytes counted, and the number of cells taking part in phagocytosis noted. Spontaneous agglutination of streptococci did not interfere with the opsonic determinations.

The agglutination experiments proved more difficult on account of spontaneous clumping of the organisms. The cocci were first grown for twenty-four hours in ascitic dextrose broth, one part of ascitic fluid to four parts of 1.0 per cent. dextrose broth, p_H 7.8. The cultures were centrifuged, the supernatant fluid removed, and the cocci washed once or twice in plain meat extract broth, p_H 7.8, and finally suspended in this medium. In the tests the serum dilutions were made with plain broth, the dilutions running from 1:25 to 1:5,000, an equal part of bacterial suspension was added to each tube of diluted serum, and the mixtures incubated for one hour at 55 C. Tubes containing suspended cocci in broth but without serum and with cocci in normal sheep serum diluted from 1:25 to 1:500 or higher were included in each test. The immunizing streptococcus was tested in each experiment to serve as a standard.

The following hemolytic streptococci were used: thirteen strains isolated from acute, typical cases of erysipelas (face, four; eye, five; nose, three; leg, one); twenty-four strains from cases other than erysipelas (scarlet fever, eleven; influenza, six; acute tonsillitis, two; wounds, two; blood lethargic encephalitis, one; pericardium puerperal sepsis, one; normal throat, one).

All of these strains were gram-positive streptococci, insoluble in bile and producing a wide zone of hemolysis (from 2 to 4 mm.) on goat blood agar plates, after twenty-four hours' incubation. The size of the colonies varied somewhat, but those from erysipelas, influenza and lethargic encephalitis were generally larger and flatter than the others.

All of the streptococci fermented lactose and salicin, but not mannite or inulin, and hence would be classed as *Streptococcus pyogenes.*[9]

Of the hemolytic streptococci isolated from erysipelas, all showed marked phagocytosis with the immune sheep serum, the point of opsonic extinction being from 1:150 to 1:3,000, 1:150 being the point at which phagocytosis ceased for the majority of the strains with immune serum; with normal sheep serum the point of extinction was 1 to 3.

Three erysipelas streptococcus strains agglutinated spontaneously and could not be tested. The other ten erysipelas strains were all agglutinated by the immune serum at a dilution from 1:100 to 1:2,000, 1:1,000 being the dilution at which the majority of the cocci ceased to agglutinate. Only one strain agglutinated with normal sheep serum, and it agglutinated at 1:50.

None of the hemolytic streptococci isolated from sources other than erysipelas were opsonified or agglutinated by the immune sheep serum in dilutions higher than by normal sheep serum.

Only one strain of hemolytic streptococcus from puerperal sepsis was studied. It would be interesting to test more strains on account of the epidemiologic relation of puerperal fever and erysipelas.

One reason why the results of these experiments indicate a greater specificity than my previous results with opsonins and the serum from cases of human erysipelas is probably the heating of the serum, which destroys the thermolabile element and so removes the general opsonic action.

Absorption experiments were made to determine whether the opsonins could be absorbed by the heterologous streptococci as thoroughly as by the immunizing coccus. In this case, agglutination tests were not made because the sheep was not producing agglutinins at this time.

Immune serum was treated with the homologous streptococcus and with two other hemolytic streptococci, one from the eye of an erysipelas patient, the other from a scarlet fever throat. Killed centrifuged organisms were suspended in the immune serum, which was incubated two hours and refrigerated for twenty-four hours; finally, the serum was removed by centrifugation. This process was repeated three times, and now the serum was found not to opsonify the immunizing coccus. Absorption with the two erysipelas streptococcus strains removed the opsonins for the thirteen erysipelas strains, but the scarlet fever streptococcus failed wholly to remove the opsonins for the erysipelas streptococci.

CONCLUSIONS

The serum of a sheep immunized with a hemolytic streptococcus from an acute case of erysipelas was found to contain opsonins and agglutinins for the hemolytic streptococcus of this disease, but not for hemolytic streptococci from other sources, such as scarlet fever, wounds, otitis media, influenza and puerperal sepsis. The results of absorption tests also suggest that the hemolytic streptococci from erysipelas form a distinct group, erysipelas streptococci removing the opsonins for these cocci, while absorption with a scarlatinal hemolytic streptococcus had no such effect.

It would appear from these experiments that the hemolytic streptococci in erysipelas belong to a distinct immunologic group, as determined by opsonification and agglutination.

9. Holman, W. L.: J. M. Res. **34**: 377 (July) 1916.

Clinical Notes, Suggestions, and New Instruments

TOWEL FOR UROLOGIC WORK*

CHARLES S. LEVY, M.D., BALTIMORE

A need for improvement in the technic of draping the penis for urologic work has long been felt. The towel employed after the penis has been cleaned is usually one with a hole in the center. Often the hole is either too small, leading to constriction of the penis, or too large, resulting in the carrying of pubic hairs into the operative field. The use of several towels round the base of the penis is just as unsatisfactory. The towel presented herewith for routine use in instrumentation and cystoscopy is recomended for better and cleaner technic.

The towel (Fig. 1) is so designed that it has a hole, to the edges of which is attached a conical pocket with a draw

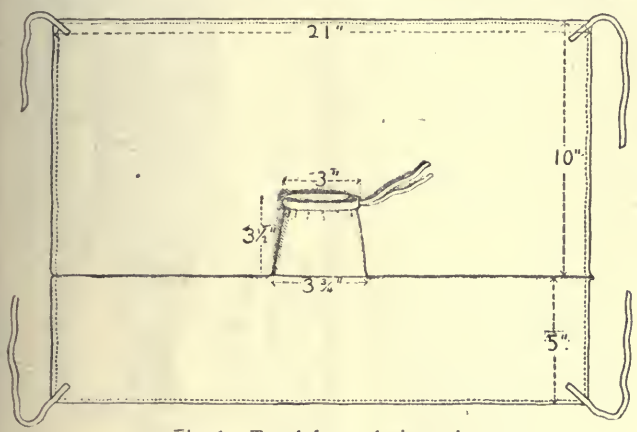


Fig. 1.—Towel for urologic work.

string at the apex. The measurements of the towel as found convenient at the Hebrew Hospital are given in the illustration. It is easily made by sewing together two corresponding pieces of material, and then making a band for the draw-string.

The penis is cleansed, and a sterile towel then placed over it. The first three fingers of one hand are introduced into the pocket; the glans penis is grasped and brought out. The

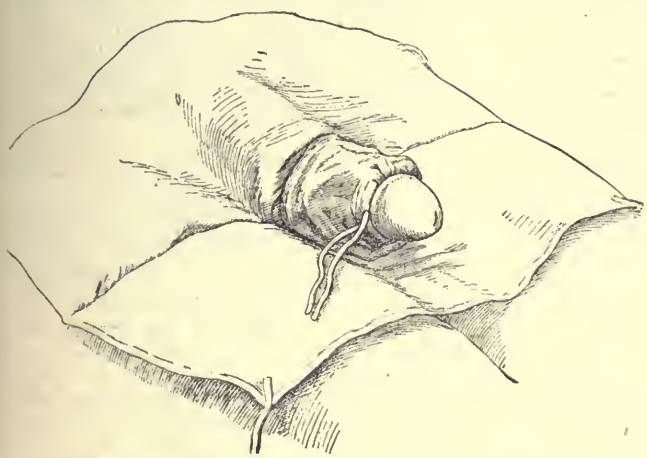


Fig. 2.—Towel in use; nothing but glans penis exposed.

draw-string is then tightened behind the glans in the coronary sulcus (Fig. 2). By this method nothing but the glans penis is exposed. The strings at the corners of the towel may be tied on each side beneath the thighs.

The towel has been employed successfully for circumcisions and for plastic work on the penis, as well as for instrumentation.

*From the Hebrew Hospital, Urologic Clinic.

A NEW TENACULUM

L. H. ZEUCH, M.D., CHICAGO

For those who are still using the snare for the removal of tonsils, I offer a tenaculum which gives the operator a firmer hold, so that he can more easily dissect the adherent gland from the pillars. The snare can be more easily slipped over this instrument than other forceps used for this purpose, and when traction is made, less likelihood of its tearing out

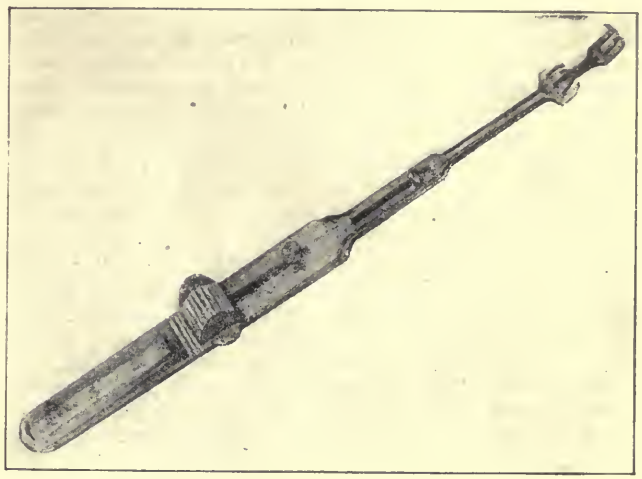


Fig. 1.—Tenaculum open, ready to lock.

occurs. This firm hold enables the surgeon to reach the base with his snare with greater facility. This instrument can also be used wherever volsella are indicated, i. e., for work around the uterus. It takes up less room and holds the uterus with a firm grip. It will be found useful also for the removal of neoplasms with a firm consistency, which require considerable dissection from the substructures, such as fibromas, sarcomas and sebaceous cyst capsules—in fact, any tumor or

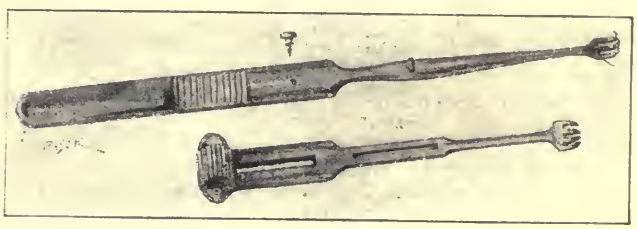


Fig. 2.—Segments, with set screw.

structure requiring removal in which a firm hold of the tissue to be extirpated is desired by the surgeon.

In removal of the tonsils the distal prongs are embedded in the gland just anterior to the posterior pillar. The gland is now pulled outward and the instrument deflected to the opposite side of the mouth and the proximal prongs are then locked into the gland. Care must be exercised before locking that the anterior pillar is not included in the bite. After removal the tissue is released by lifting the proximal prong by means of two alae on the lateral aspect of the elevation (which is used to facilitate the locking of the instrument), lifting it from the serrations on the inferior surface of the prong. A little experience enables the operator to release it within a few seconds. The accompanying illustrations of the segments will clear up the principle on which it was devised.

I am indebted to V. Mueller, instrument maker of Chicago, for valuable suggestions concerning the mechanics of the instrument. My colleagues at the hospitals have suggested changes which I hope to incorporate in subsequent modifications should I deem them expedient.

3014 Fullerton Avenue.

A CONTAINER FOR THE ADMINISTRATION OF FLUIDS *

JACOB BUCKSTEIN, B.S., M.D., NEW YORK

This container consists of (Fig. 1):

1. A nonbreakable vacuum bottle.

2. A rubber stopper with three openings for: (*a*) an air inlet tube; (*b*) a fluid outlet tube, and (*c*) a tube for connection with the graduate gage. This tubing is made of German silver. To tubes *b* and *c* are attached pieces of rubber tubing fitted with clamps.

3. A metal cover. This screws on over the mouth of the container, and in so doing prevents the rubber stopper from slipping out. As the container is turned upside down when the administration of fluid is to begin, this is an important precaution. The cover is supplied with a spring on the inside which accommodates itself to stoppers that project from the mouth of the container for varying distances. Externally, there are two metal projections which give the thumb a hold in screwing on the cover.

4 and 5. Two brackets that project from the collar that hugs the upper part of the container (the lower part as shown in the inverted position of the container). The opening at the extremity of bracket 4 is made for the insertion of the lower part of the gage (9). At the extremity of bracket 5 is an arrangement that has three openings. The topmost opening is threaded on the inside. This is made so that the thermometer (8) may be screwed in. To the lower opening

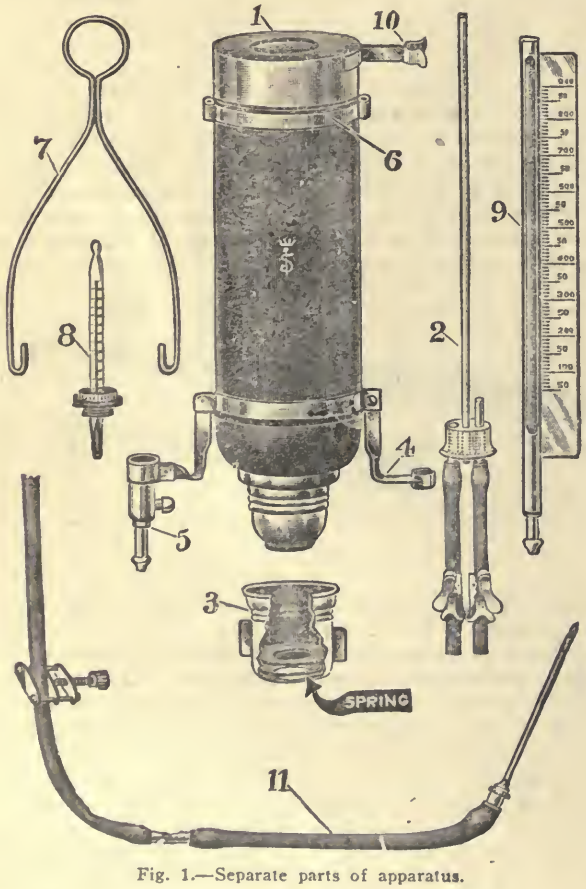


Fig. 1.—Separate parts of apparatus.

is attached the rubber tubing through which the fluid is to flow on its way out. To the opening on the side is attached the piece of rubber tubing leading from the fluid outlet tube inserted into the rubber stopper. Thus, the fluid on its way out from the container passes through the tube leading from it to the lateral opening of 5. It makes its exit by way of the lower opening and thus out through 11, which is attached to it. The fluid therefore in its escape from the container bathes the bulb of the thermometer (8). In this way the temperature of the fluid is registered.

6. A metal collar that hugs the base of the container. This is supplied with two lateral openings.

7. The hanger for suspending the container, hooked at each extremity. These hooks fit into these lateral openings of the collar. The upper rounded portion fits over a hook.

8. A thermometer, registering Fahrenheit. Near the bulb end, this is supplied with a washer firmly placed between two circular pieces of metal. The lower metal piece is threaded and screws into the larger, upper opening in 5. The bulb comes in contact with the escaping fluid.

9. A gage, graduated so that each division represents 10 c.c. The gage consists of metal, with the exception of a piece of inexpensive glass tubing inserted on the inside and cemented at its lower part. This glass is protected by a metal back which encases it about two thirds of the way. This minimizes the chances of breakage. Even if the piece of glass tubing should be broken, it can be replaced at very little cost, as the graduations are on the rectangular piece, which is made of metal. The lower end of the gage fits into the opening of bracket 4.

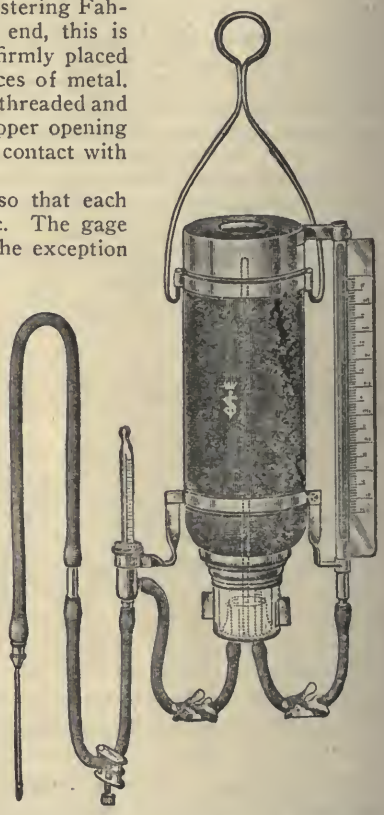


Fig. 2.—Apparatus with parts assembled, with needle for intravenous or hypodermic administration of fluids.

10. A projection from the base of the container. The outer extremity receives the upper end of the gage. The lower end of the gage is connected with one of the outlet tubes in the rubber stopper by means of a small piece of rubber tubing. It is thus possible to know the level of the fluid within the container, the quantity of fluid present, and the rate of flow.

11. Two pieces of tubing held together by a small piece of glass tubing. One end of the rubber is connected to the lower opening of 5. At the other end is attached a needle. The flow through the needle is controlled by means of a screw clamp.

Figure 2 shows the apparatus put together and ready for use.

Figure 3 shows the container used in conjunction with the apparatus for intestinal feeding and therapy, described elsewhere:[1]

1. Soft rubber tubing of 7 mm. outside diameter. One end is connected with fluid outlet tube. It is supplied with:

2. Hoffman's screw cut-off, for regulating the number of drops per minute through:

3. Glass drip bulb, small size.

4. Metal connection piece, slip joint, which connects the remainder of the apparatus with the intestinal tube when feeding is begun.

5. Metal end-piece at the proximal end of the intestinal tube.

The following parts of the outfit fit snugly into the end piece:

6. A solid metal plug. After a feeding has been completed and the intestinal tube cleaned, this solid plug is inserted. The proximal portion of this is ring shaped. Attached to this is an elastic band which fits around the ear.

* From the Medical Service, Hoff General Hospial, Fox Hills, Staten Island, N. Y.

1. Buckstein, Jacob: An Apparatus for Duodenal and Intestinal Feeding and Therapy, Mil. Surgeon **47**: 118 (July) 1920.

In addition, the slip joint (4) fits snugly into its lumen and also the tip of a Luer syringe.

The syringe is used for cleaning the tube before and after each feeding and for the removal of gastric and intestinal secretions.

7. A soft rubber intestinal tube (40 inches in length). This is perforated at the distal end for a distance of 1½ inches from the end for the purpose of minimizing occlusion. Longer pieces of tubing may be used when indicated.

8. A metal bucket. This is a gold-plated capsule-shaped bucket (size 23 French). It has two lateral openings about the size of the lumen of the intestinal tube, and above this two small holes on either side for sutures.

9. Suture. This is supplied in the form of one tube of catgut and one card of silk. When it is desired to permit the rubber tube to remain in the stomach or within the lumen of the intestine for a very short period, as in the removal of gastric or intestinal material or when it is to be removed after a sojourn of only a few days, the suture to be preferred is silk. When, however, the tube is to remain in the intestinal lumen over a prolonged period of time, catgut should be used as a suture. With the absorption of the catgut the bucket is detached and leaves the intestinal tract.

In addition, the outfit is supplied with one straight needle for suture and a wire stylet, 45 inches long, to aid in the introduction of the tube.

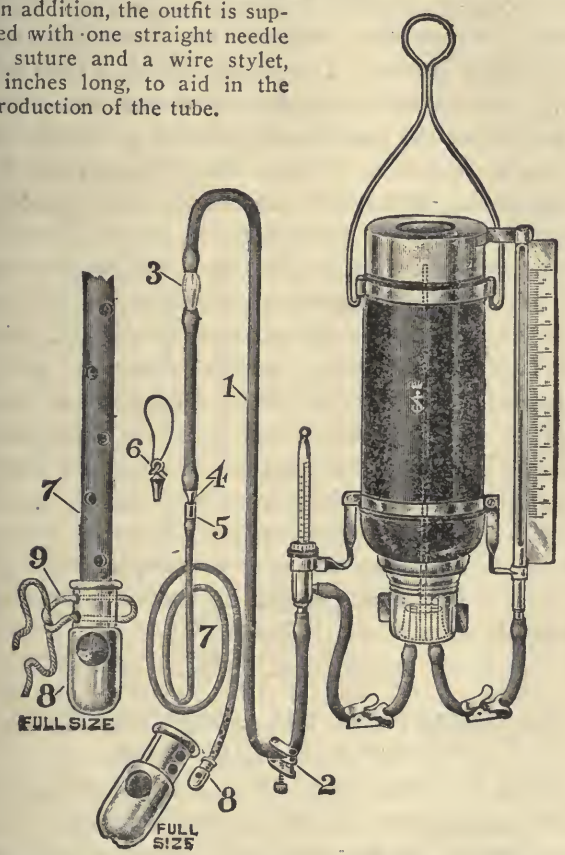


Fig. 3.—Apparatus used in conjunction with outfit for intestinal feeding and therapy.

ADVANTAGES

1. The container is readily sterilizable.

2. It is practically indestructible, with the exception of the thermometer and the inexpensive piece of plain glass tubing protected by metal on the inside of the gage.

3. It conserves the temperature of the contained fluid.

4. The temperature of the escaping fluid can be accurately registered.

5. By means of the gage, the exact amount of fluid and the exact rate of flow can be determined.

Such a container may be used for: (*a*) the intravenous administration of fluids; (*b*) hypodermoclysis; (*c*) proctoclysis; (*d*) duodenal and intestinal feeding and therapy; (*e*) transduodenal lavage, and (*f*) the administration of irrigating fluids, surgical solution of chlorinated soda (Dakin's solution), etc.

RAT-BITE OF THE FACE AND EYE

WALTER BAER WEIDLER, M.D., NEW YORK

A. E. T., a girl, aged 7 months, was sleeping in a baby carriage, when the mother awakened, turned on the gas-light and found a large rat on the baby's face. The lighting of the gas did not disturb the rat, and she grabbed it and threw it across the room, and saw blood streaming down the face of her child. The mother brought the baby to the Manhattan Eye and Ear Hospital the next day. I found about ten bites on the forehead, nose and left eyelid. These bites were not very deep, and this portion of the face was partly covered with dried blood. There was an abrasion about 2 by 4 mm. long on the inner portion of the cornea. The corneal epithelium and perhaps Bowman's membrane were stripped down and lay in a curled-up mass at the lower part of the abraded area. There was a slight pallor of the denuded tissue and the edges of the ulcer. There was also some injection of the bulbar conjunctiva, with photophobia and lacrimation. It was, of course, impossible to say that this condition of the cornea was a rat bite or whether it was the result of a scratch from the rat's foot. The child was immediately admitted to the hospital, and treatment was begun.

The eye was washed with warm boric acid solution every two hours. Atropin, 1 drop three times a day, was used. The rat-bites of the face were treated with zinc oxid ointment, and they all cleared up, as none showed any infection. The corneal abrasion smoothed out, and the opaqueness of the corneal epithelial layer disappeared after six days. There was no rise of temperature, and the child made a good recovery. The cornea was entirely clear and showed no diminution of vision. The visiting nurse, who has kept in touch with the child, reports that there has not been any fever since her return home.

137 East Sixtieth Street.

FOREIGN BODY IN NASOPHARYNX

OTIS ORENDORFF, M.D., CANON CITY, COLO.

Foreign bodies of various kinds are common in noses and throats but not so, perhaps, in the cavity between.

Last fall, Dr. F. R. Moore of Florence, Colo., brought a boy, aged 13 years, to the office who for some time had been complaining of the typical symptoms of adenoid obstruction, mouth breathing, snoring, nasal discharge and bad breath. The lad was well nourished and physically normal except for difficulty in breathing through the nose. In view of his age and healthy appearance, a malignant tumor hardly seemed probable nor an exhaustive examination necessary, although inspection of the throat revealed the soft palate to be slightly convex instead of concave, having the appearance of pressure from behind. This was supposed to be a case of large adenoids, for which an operation was at once performed. Much to our surprise, however, the curet brought away great masses of wax of the ordinary kind used in chewing gum, and only a small amount of adenoid tissue.

The patient was relieved at once and had no further trouble. Inquiry revealed the fact that he was an inveterate addict to chewing gum and would use an entire 5 cent package at a time, frequently going to bed with it all in his mouth. Sometimes it would be gone on awaking, but this did not cause any complaint, as he was supposed to have swallowed it during the night. Evidently, during sleep, he had somehow forced the masses behind the uvula and into the nasopharynx, where it remained until removed by the operation.

Diagnosis of Tuberculosis.—The tubercle bacillus is far from being always in evidence. For the diagnosis of tuberculosis, we cannot therefore insist on the production of tubercle bacilli as some would demand. Before the days of *Spirochaeta pallida* we diagnosed syphilis on clinical evidence with remarkable exactitude. Such evidence is abundantly available in tuberculosis.—Robert Philip, *Edinburgh M. J.*, July, 1920.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - - Chicago, Ill.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Five dollars per annum in advance

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SATURDAY, NOVEMBER 13, 1920

THE THEORY OF OXYGEN SECRETION BY THE LUNGS

The physiology of altitude and its medical aspects have acquired greatly enlarged importance through the growing prominence of aviation. High altitude or low barometric pressures, particularly when first encountered, may interfere with the well-being of man. There is no longer any doubt that the essential factor in the production of distress is the diminished supply of oxygen; it is also known that adjustments take place in the persons affected so that they suffer less. Residence or sojourn at high altitudes may bring about acclimatization. Among the known explanations of the latter result are the increased breathing, the increased blood flow due to circulatory changes, the increment in the number of red blood cells, and a higher percentage of hemoglobin in the blood. All of these changes tend to improve its oxygen-carrying capacity.

A further much debated factor in the favorable adjustment to lowered oxygen tension concerns the mode in which the blood is supplied with its indispensable oxygen under conditions that may tend to occasion imperfect aeration of the arterial blood. It has long been taught by most physiologists that the passing of oxygen from the alveolar air into the blood of the pulmonary capillaries is the result of a simple physical process of diffusion. The gas passes from a region of higher tension to a place of lower partial pressure until an equilibrium is attained. If oxygen passes from the alveoli only in this way, the pressure of the gas in the blood can never exceed that in the alveolar air. Studies made during the Anglo-American Expedition to Pike's Peak in 1911 seemed to show that often, and particularly after a sojourn at that altitude, the oxygen tension in the blood might be considerably higher than the alveolar oxygen pressure. The results thus pointed consistently to the conclusion that in acclimatization to high altitudes the lungs acquire the power of raising arterial oxygen pressure by actively secreting oxygen into the blood. Haldane of Oxford, who has been the leading champion of this view,[1] believed also that at sea level muscular work may furnish a powerful stimulus to secretory absorption of oxygen by the lung epithelium. Advocates of physical training have accordingly concluded that one advantage of indulging in vigorous exercise would be to "train the lungs in oxygen secretion."

Whether the pulmonary epithelium takes an "active" or physiologic part in contrast with a purely passive or physical one in the process of blood aeration has been debated for three decades. Where physical conceptions fail to explain observed facts there is always a temptation to assume some biologic or physiologic force or factor to account for the discrepancies. Barcroft[2] and his co-workers at the University of Cambridge have made a careful reexamination of the theory of oxygen secretion. Under a condition of anoxemia caused by living for six days in an atmosphere in which the partial pressure of oxygen fell to 84 mm., analyses were made of the alveolar air and arterial blood in man. The arterial blood in vivo contained less oxygen during both rest and work than did samples of the same blood exposed to alveolar air in vitro, at body temperature. One cannot avoid the conclusion that diffusion will account for the quantity of oxygen that must pass into the blood under the crucial conditions of the experiment. The observations of Krogh[3] of Copenhagen had already paved the way for this decision. The discrepancies in the inferences of the different schools are presumably due here, as not infrequently elsewhere, to false assumptions and inappropriate experimental technic. It is unfortunate when distinguished investigators disagree on fundamental problems. For the present, however, we believe that the burden of proof of the theory of oxygen secretion by the lung lies with its propounders. At any rate it should not longer be made the basis of therapeutic plans in the clinical field.

1. Excellent accounts will be found in: Manual of Medical Research Laboratory, War Dept., Air Service, Washington, Government Printing Office, 1918. Bohr: Nagel's Handbuch d. Physiol.: Art. Respiration. Barcroft, J.: Respiratory Functions of the Blood, Cambridge, 1914.

2. Barcroft, J.; Cooke, A.; Hartridge, H.; Parsons, T. R., and Parsons, W.: The Flow of Oxygen Through the Pulmonary Epithelium. J. Physiol. **53**: 450 (May) 1920.

3. Krogh, A.: Skandin. Arch. f. Physiol. **23**: 179, ff., 1910.

THE DEFEAT OF THE ANTIVIVISECTION INITIATIVE IN CALIFORNIA

For the first time in the history of the struggle to prohibit experiments on animals, a prohibition bill has been submitted to popular vote. Repeatedly in the past, efforts have been made to secure abolition of animal experimentation, or large restriction of it, before state legislatures. For more than a score of years such attempts have been made in the national Congress, Massachusetts, New York, Pennsylvania and elsewhere. In no instance has a law been enacted limiting the use of the experimental method in solving medical problems—a method which in physics and chemistry has transformed our knowledge of natural processes and placed their control in our hands. There has been universally a recognition that this method is

as applicable to problems of disease as it is to problems of electricity and chemical structure. Further, there has been universal appreciation of the great medical advances already secured, and of the certainty that more are to be secured, by the use of this method.

The submission to popular decision of a question so complicated and so closely bound with emotional elements as the use of animals for medical research offered possibilities of a serious check to medical progress. In the minds of those who have defended animal experimentation, there has never been doubt that with clear understanding of the ideals, the methods and the achievements of those engaged in medical research, the great majority of our population would stand firmly against restrictive measures. The only question was whether the misinterpretations and falsehoods commonly circulated by outsiders regarding the laboratory proceedings would be believed rather than the testimony of the laboratory workers themselves. The antivivisectionists in California followed their usual routine, so roundly denounced by the English Royal Commission, of widely circulating grave misstatements of fact and reckless charges of wanton cruelty. In the October number of the *Ladies' Home Journal* and in the *Country Gentleman* for October 16, there appeared articles making most atrocious statements regarding the treatment of animals in medical laboratories. These articles seemed to be nicely timed to affect popular opinion before the vote on November 2, and to preclude the possibility of reply. In one of the articles, the charge was made that "more than 800 stray dogs in St. Louis alone last year were garnered into the various medical establishments at low prices, there to be strapped to tables and carved or torn to shreds in the so-called 'holy name of science.' It was —and is—so, in nearly every city. The captured tramp dogs are hung up with spikes in them; their lips are sewed together to muffle their screams; and they are otherwise tortured; while grave-eyed scientists take copious notes on the effect of various forms of agony upon the victims' hearts and nerve centers." It is hardly necessary to answer a declaration of such abominable practices as these. An inquiry was made, however, in every medical laboratory in St. Louis, and it brought forth only indignant denial of the charges. The humane rules drawn up by the Bureau for the Protection of Medical Research of the American Medical Association are posted and carefully adhered to. What is true of St. Louis is true of establishments throughout the country.

It is well to remember that the propaganda of the antivivisectionists rests on two assumptions—wanton *cruelty* in the treatment of laboratory animals, and utter *uselessness* of the results of animal experimentation. Both lines of attack were worked elaborately by the antivivisectionists in California. Large amounts of money were contributed by eastern adherents to promote their cause, and newspaper space, posters and leaflets were used to the utmost. With limited means, the medical men and the university authorities put forth their opposing claims. It is greatly to the credit of the intelligence of the California voters that they saw through the falsehoods and misrepresentations of the antivivisectionists and registered their disapproval of the measure to abolish animal experimentation.

TWO NEW AMERICAN JOURNALS

With the advance of American medical science to an equality with European science in most fields and to a leading position in others, there has come a simultaneous development of the periodical publications which chronicle the researches, observations and achievements of American workers. During the last few years, special publications in the fields of neurology and psychiatry, surgery, cutaneous diseases and syphilis have been issued by the American Medical Association. Other scientific organizations have inaugurated new periodicals on psychobiology, on parasitology, on general physiology, on medical history, on immunology, on urology and on cancer research. Now come the announcements of two new publications, to be issued under excellent auspices, which should be of great service to American medicine.

THE JOURNAL has long conducted a department of Current Medical Literature which aims to present a survey of the best contributions in the medical literature of the world. Furthermore, most of our special periodicals have departments devoted to the literature of their fields. However, any one who wishes to ascertain the progress made in any special subject must gather his material from many sources unless he is fortunate to chance on a collective review prepared by an authority in whom he may have confidence. For example, the eminently successful lectures of the Harvey Society, founded in New York City for the diffusion of knowledge of the medical sciences, and more recently similar undertakings in Philadelphia and Chicago, provide résumés of this character with the added relish of competent criticism. These considerations have prompted the newest project of the American Physiological Society: *Physiological Reviews*.[1] The *Reviews* are intended to provide critical articles in which the more recent literature of biochemistry, biophysics, experimental pharmacology and experimental pathology will be compared and summarized in a brief but comprehensive manner. An editorial board consisting of W. H. Howell, Reid Hunt, F. S. Lee, J. J. R. Macleod, L. B. Mendel, H. G. Wells and D. R. Hooker will select subjects and assign them to authors for competent and balanced treatment. Such a publication should appeal not only to teachers and research workers but also and particularly to busy clinicians who,

1. One volume will be published a year and will appear quarterly in four parts. Subscription, $6 per volume of 500 pages, net, postpaid to the managing editor, D. R. Hooker, Johns Hopkins Medical School, Baltimore, Md.

find it well-nigh impossible to consult original sources and who need critical surveys of experimental research as a guide for practical work and teaching.

A journal of a different type is the *American Journal of Hygiene*,[2] which will be devoted "solely to the publication of papers representing the results of original investigations in the domain of hygiene, using the term in the broadest sense, to cover all applications of the mathematical, physical, chemical, medical and biological sciences to the problems of personal and public hygiene." It will also arrange for the publication of monographs, which because of their length or costliness could not be published in any of the periodicals already devoted to fields closely related to public health and hygiene. The new periodical is closely affiliated to the new School of Hygiene and Public Health of the Johns Hopkins University. It is to be edited by William H. Welch, and will be managed by Charles E. Simon. Its support is derived from the De Lamar Fund bequeathed to Johns Hopkins University in part specifically for the publication and dissemination of the results of medical study and research. The editors have also selected an assisting editorial board bearing the names of many distinguished workers in this special subject. The publication proposes to cover a progressive and interesting field in an up-to-date and progressive manner. Sanitarians and wide awake physicians who wish to keep informed of advances in the solving of hygienic problems will find it especially useful.

THE EXPERIMENTAL PRODUCTION OF CONGENITAL DEFECTS

A remarkable advance in the study and understanding of congenital abnormalities has been opened up in recent years by the methods of the experimental zoologists. We may recall, among others, the experiments of Stockard showing the influence of parental alcoholism on the physical development of animals, and the demonstration by Arlitt [3] of an equivalent psychologic deficiency in the offspring of alcoholized animals. By taking advantage of immunologic methods, Guyer and Smith [4] of the University of Wisconsin have recently demonstrated in a most striking way the possibility of producing selected intra-uterine lesions, which not only result in congenital defects but which so modify the offspring that the defect may then be transmitted for successive generations.

The procedure adopted was to immunize fowls by repeated injections of pulped lenses from rabbits' eyes, and then to inject the immune serum from the fowls, with its specific antibodies for lens proteins, into female rabbits about ten days after impregnation. At this time the optic vesicles of the fetus are well developed, and the development of the ectodermal elements into the lens is about to begin, the lens being relatively large and surrounded by a rich vascular supply by the thirteenth day. As a result of the injection of the specific antibodies, the formation of the lens is in many instances interfered with, so that in a considerable proportion of the new-born rabbits marked eye defects are found. These consist of opacity of the lens, which may also be much reduced in size, and often accompanied by abnormalities in the iris, decreased size of the entire eye to as little as one-fourth the normal dimensions, and even complete collapse of the eyeball, leaving no trace of pupil or iris. Other defects are coloboma and persistence of the hyaloid artery. In some cases the eye defect that was present at birth becomes even more marked as the other tissues of the animals develop. That these changes in the eye were produced by the lens antibodies seems to be established by their absence in rabbits born of mothers treated with the serum of fowls immunized with other tissues. Presumably the fact that only a small proportion (nine of sixty-one) of the young of rabbits injected with lens antiserum exhibited the eye lesions depends on the well known fact that immune bodies do not pass readily from the mother to the fetus, and so only a few of the fetuses received an effective dose. The mothers themselves showed no injuries in their own eyes, probably because in the adult animals the lens is avascular and would not come in contact with the injected antibodies. Furthermore, if the treated mothers were bred again, the later litters did not show offspring with defective eyes.

Perhaps the most interesting and important result of these experiments is the establishment of the fact that the eye defects, once secured, may be transmitted to subsequent generations through breeding. This has been done for six generations, with the imperfection tending to become worse and in a larger proportion of the offspring with each succeeding generation. Also, offspring which themselves do not show eye lesions may produce young with eye defects. The abnormal condition has in general the characteristics of a mendelian recessive. When defective eyed males or females are bred to normal eyed individuals from other stock, only normal eyed progeny result in the ensuing generation; but the defect may be made to reappear in subsequent generations if appropriate matings of this progeny are made. It is of particular significance that the defects may be transmitted through the male line, since this eliminates the possibility that it depends on the presence of the specific antibodies in the blood of the mothers of the later generations, and establishes the occurrence as a clear-cut case of inheritance of a specific modification produced by extrinsic factors. As yet it is not clear how the transmission of the defect through successive generations is to be explained; but the fact that two

2. At least six numbers, corresponding to a volume of 600 pages, will be issued annually. Subscription: $6 a volume; Johns Hopkins Press, Homewood, Baltimore, Md.

3. Arlitt, Ada Hart: The Effect of Alcohol on the Intelligent Behavior of the White Rat and Its Progeny, Psychological Monographs 26, No. 4, 1919.

4. Guyer, M. F., and Smith, E. A.: J. Exper. Zool. 31: 171, 1920.

normal eyed animals from the defective line may produce offspring with defective eyes indicates that, whatever its origin, the abnormality becomes a germinal constituent which no longer requires expression in the immediate parental body to call it forth. For the physician, the explanation of the phenomenon is probably of less immediate significance than the phenomenon itself. The fact that immune bodies in the blood of a pregnant female may produce congenital defects in the offspring is of immense practical importance, and that such defects may pass to subsequent generations when the proper mating occurs is indeed startling. It seems highly probable that these experiments will lead to a much greater knowledge of the pathogenesis of developmental defects than we have previously possessed.

Current Comment

MORE TRUTH ABOUT SACCHARIN

The proponents of the use of saccharin as a substitute for sugar have doubtless detected in a recent publication [1] an unusual opportunity to promote their efforts in the defense of the chemical. The assertion was there made that the ingestion of saccharin, as shown by animal experiments, produces a large increase in the content of catalase in the blood. Since the function of facilitating oxidations in the body has repeatedly been attributed by the same investigator to this enzyme, it is a ready inference that saccharin has a beneficial action on the body. This has been particularly emphasized for the diabetic. It has been pointed out repeatedly, however, that the alleged function of catalase in the body remains both improbable and unproved. Despite the enormous doses of saccharin used, Stehle [2] of the University of Pennsylvania was unable to duplicate the effects claimed; and now Becht [3] of the Northwestern University Medical School has likewise contributed the results of elaborate series of investigations which serve to remove the illusion about saccharin that may have crept abroad. Saccharin is neither a food nor a potent drug. Its usefulness in dietotherapy is limited to the function of taste; to increase its use aside from this restricted scope would be a misfortunte as, indeed, it often is a fraud.

ADDED DANGERS FROM ANTHRAX

The recognition of the association of human anthrax with the industries dates back to the latter half of the eighteenth century. In 1769, Fournier of Dijon drew attention to the occurrence of the disease in men who were handling raw hair and wool. The seriousness of the dangers attending the manipulation of infectious hides and fleeces has become increasingly apparent of late, particularly since some of the customary precautions against the menace have been relaxed because of the laxity prevailing during the period of the war. In the United States the disease has not been reportable in all of the states, so that dependable statistics of its comparative incidence and continuance are lacking. Nevertheless, in the years 1910-1914, seventy-nine fatal cases were reported, most of them among persons whose occupation evidently brought them into possibility of contact with infected materials. Latterly, unusual prominence has been given to human anthrax because of its demonstrated derivation from infected shaving brushes in well authenticated cases. A significant feature fraught with dangerous possibilities has recently been indicated by Gegenbauer [1] of the hygienic institute in Vienna, who points out that animals may harbor micro-organisms of anthrax on their hair without themselves becoming infected. This means that, in the industries, skins from demonstrably healthy animals may nevertheless carry the danger of infection, which may have been transmitted to them by contact with the secretions or excretions of sick animals. Furthermore, the same observer has noted that the anthrax bacilli can multiply readily on the hair, thereby increasing the chances of transmitting harm. These facts impose a new burden of watchfulness in the public defense against an insidious foe.

CATS AS DIPHTHERIA CARRIERS

The day has passed when the diphtheria patient was looked on as the only source of contagion of diphtheria. The menace of the human "carrier" of the infective micro-organism is becoming so well understood that provision against it is taken in the procedures of preventive medicine and in measures to maintain public health. Furthermore, there are many instances in which domestic animals, especially cats and dogs, have been considered to have spread diphtheria. It is obviously important to know whether or not we are continually surrounded with these unsuspected sources of danger, for our animal enemies must not be treated in the same category with man's animal friends. The difficulty in the way of accepting the charge against the dog and the cat, or even the horse, which has also been incriminated, lies in the lack of dependable information. Most of the instances of natural diphtheria in animals have lacked demonstration of the presence of the true etiologic agent of the human disease. Recently, however, Major Simmons [2] has isolated diphtheria bacilli virulent for guinea-pigs from two cats which were pets of a person who contracted a fatal diphtheritic pharyngitis. Stray animals of the same species caught in the environment gave negative cultures. These bacteriologically controlled observations, including the suspected human victim, lend a greater probability to the long heralded impression that cats may contract diphtheria from human subjects and that, in turn, these animals may communicate the disease to man.

1. Burge, W. E.: Science **47**: 549, 1918.
2. Stehle, R. L.: Some Data Concerning the Alleged Relation of Catalase to Animal Oxidations, J. Biol. Chem. **39**: 403 (Sept.) 1919.
3. Becht, F. C.: The Influence of Saccharin on the Catalases of the Blood, J. Pharmacol. & Exper. Therap. **16**: 155 (Oct.) 1920.

1. Gegenbauer, V.: Das saprophytische Wachstum von Milzbrandkeimen auf tierischen Haaren, Arch. f. Hyg. **89**: 202, 1920.
2. Simmons, J. S.: Virulent Diphtheria Bacilli Carried by Cats, Am. J. M. Sc. **160**: 589 (Oct.) 1920.

FLESH-FLY LARVAE AS HUMAN PARASITES

Human myiasis, a term used to denote infestation with the larvae or "grub" stage of dipterous insects, is scarcely familiar to American physicians. Several species of flies are known to deposit their eggs in wounds or mucous membranes. The larva known as the "screw-worm" issues in a few days and may burrow into the tissues. Analogous to the screw-worm fly, *Campsomyia macellaria* of the warmer parts of America, are the so-called flesh-flies, the larvae of which may appear as parasites of man. They have long been known, particularly in Russia. Recently Walker [1] has identified the presence of the larvae of the sarcophagid fly, *Wohlfahrtia vigil,* under the skin of young patients suffering from "sores" representing inflamed areas 1 or 2 cm. in diameter on the neck, chest, arms and palms. The mother of one of the children involved had described seeing "worms come from the pimples." The swellings usually contained from one to three larvae of the flesh-fly. These instances are unusual in that the penetration of the healthy skin by the young larvae has rarely been reported. Hence we may repeat the prosaic slogan: "Swat the fly!"

MEDICINE AND THE STATE

Our next President will not lack for intimate counsel on medical topics in his administration of the country. His father, Dr. George T. Harding, has been for many years a physician in Marion, Ohio, and a brother, Dr. George T. Harding, Jr., is a practicing physician of Columbus. Perhaps we may hope for a scientific administration—if there is anything in heredity, we may reasonably expect one.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

Typhoid Fever a Quarantinable Disease.—Typhoid fever has been added to the list of communicable diseases for which quarantine will be imposed in the state hereafter. While the quarantine will not be as rigid as in the case of some other communicable diseases, the patient and family will be kept under strict surveillance and a bacteriologic test will be required before the patient is released. A modified quarantine is provided for persons known to be typhoid carriers.

License Revocations Affirmed.—The superior court of San Francisco is reported to have affirmed the action of the California State Board of Medical Examiners in revoking the licenses of Drs. R. May Minaker and James E. Thompson, San Francisco, on the charge of procuring abortion. Dr. Minaker's license was revoked in October, 1919; that of Dr. Thompson in February, 1920. It is also reported that Dr. Thompson was sentenced to the Fort Leavenworth, Kan., prison on the charge of circulating literature regarding abortion through the United States mails.

COLORADO

Personal.—Dr. David A. Strickler, Denver, secretary of the State Board of Medical Examiners, was recently operated on for cholecystitis.

School of Tuberculosis.—To enable physicians who are not otherwise able to attend the Colorado Springs School of Tuberculosis, members of the last class collected $100 to be used for that purpose.

Sanatorium Association Will Hold Meeting.—The Denver Sanatorium Association will hold its first monthly meeting, November 23, at the National Jewish Hospital for Consumptives under the presidency of Dr. George W. Holman. Members of the research department will present special papers on the treatment of tuberculosis.

GEORGIA

Personal.—Dr. John H. Steed, Dalton, has been appointed pension examining surgeon to succeed Dr. John F. Harris, deceased.

Mental Hygiene Clinic to Be Continued.—A year of activity of the mental hygiene clinic operated by the Atlanta Anti-Tuberculosis Association at its headquarters, 23 E. Cain Street, Atlanta, having demonstrated the value of the experiment, it has been decided to continue the work indefinitely following a request of the Mental Hygiene Association of Georgia. The clinic will be open Tuesday and Thursday, from 3 to 4 p. m.

ILLINOIS

Fined for Violation of Practice Act.—It is reported that Willie Greer, East St. Louis, was arrested by representatives of the Department of Registration and Education for violation of the medical practice act. The case was heard before Judge E. E. Clark. Greer pleaded guilty and was fined $100 and costs.

License Revoked.—At a meeting of the Department of Registration and Education of Illinois, October 25, the license of Earl C. Rice, Peoria, was revoked for unprofessional conduct in regard to advertising. Rice was not a regular physician but had been licensed in Illinois among "other practitioners."

Chicago

State Starts Building of Hospital.—Construction work has been begun on the University of Illinois Medical School and Hospital, which is to occupy a site of 10 acres which has been the National League Baseball Park, and is in the vicinity of Cook County Hospital.

Society of Industrial Medicine.—At a meeting held recently in Hotel Sherman for the purpose of standardizing the practice of medicine and surgery, the Chicago Society of Industrial Medicine and Surgery was organized. Dr. Clarence W. Hopkins, Evanston, was elected president.

INDIANA

New Special Society Organized.—At a meeting, held October 29, the Indianapolis Ophthalmological and Oto-Laryngological Society was organized and the following officers were elected: president, Dr. Jacob E. Wright; vice president, Dr. Thomas C. Hood, and secretary-treasurer, Dr. Frederick V. Overman.

Tuberculosis Association Holds Meeting.—At the annual meeting of the Marion County Tuberculosis Association, held at Sunnyside Sanatorium, Indianapolis, October 27, Dr. Alfred Henry was reelected president; Mr. Sol Schloss was elected vice president; Mrs. M. R. Ault, secretary, and Mrs. A. S. Rasmussen, treasurer.

Revocation of Licenses.—It is reported that the State Board of Medical Registration and Examination has revoked the license of Mrs. Antonia Lenz, Whiting, a midwife charged with performing an illegal operation.——Conrad Lunde, Gary, is not properly licensed to practice medicine in Indiana, according to a decision of the board, as he obtained a license by manipulation, and the license was therefore revoked.

IOWA

Personal.—Dr. Edwin E. Hobby of the Iowa State University has been named director of physiotherapy at St. Francis' Hospital, San Francisco.——Dr. Wilton McCarthy, Des Moines, was recently beaten into unconsciousness by burglars who ransacked his home and later set fire to it. Dr. McCarthy regained consciousness barely in time to reach safety by jumping from an upper story window.

KENTUCKY

Physician's License Revoked.—A report from the State Board of Health of Kentucky states that the license of Dr. Thomas S. Green, Irvington, was revoked, June 5, for fraud in his application.

1. Walker, E. M.: Wohlfahrtia Vigil (Walker) as a Human Parasite (Diptera—Sarcophagidae), J. Parasitol. 7: 1 (Sept.) 1920.

Hazelwood Sanatorium Made State Institution.— In accordance with an act of the last legislature it is announced that Hazelwood Sanatorium in Louisville has been taken over by the state. Dr. Samuel W. Bates, Louisville, has been appointed superintendent, succeeding Dr. Arthur M. Barnett, who has been in charge under the Louisville Anti-Tuberculosis Association.

LOUISIANA

Hotel Dieu Appoints Staff.—By the appointment of a staff of thirty-five visiting physicians and surgeons, Hotel Dieu, the oldest private hospital in New Orleans, has made an important change in policy. Dr. Marion Souchon was elected president of the staff, and Dr. Henry W. E. Walthers, secretary.

State Tuberculosis Sanatorium to Be Organized.—According to plans formulated at a conference of the parish chairmen of the state antituberculosis league, held in New Orleans, October 27, a state tuberculosis hospital will be erected near Alexandria, on a site already owned by the tuberculosis commission. A percentage of the proceeds of the Christmas seal sale will be devoted to the erection of a suitable building.

MARYLAND

Physician Sentenced for Violating Prohibition Law.—Dr. Samuel Alexander Rosse, Crisfield, according to reports, was sentenced to jail for four months when he pleaded guilty in the United States district court at Baltimore to five charges of illegally prescribing whisky.

Medical Society Holds Smoker.—The Baltimore City Medical Society held a smoker at the Medical and Chirurgical Faculty Building, November 5. Addresses were made by Drs. John T. King, Jr., Eveleth W. Bridgman and Henry Lee Smith. Dr. Harvey B. Stone is president and Dr. Frank S. Lynn, secretary of the society.

MASSACHUSETTS

John White Browne Scholarship Award.—The John White Browne scholarship for advanced research of Harvard Medical School has been awarded to Dr. Alfred C. Redfield, Concord. Dr. Redfield will devote the winter months to physiologic research under Prof. R. E. Hill, Manchester, England.

Plague Prevention Measures Planned.—Dr. Eugene R. Kelley, commissioner of public health, has requested an appropriation of $25,000 for plague prevention measures in the seaport cities and towns of Massachusetts. As a result of a request made at a recent conference of the commissioners of health of Connecticut, Rhode Island, New Hampshire, Maine and Massachusetts that an officer of the U. S. Public Health Service be detailed as an adviser, P. A. Surg. L. L. Williams has been assigned to this work. Dr. Milton J. Rosenau, professor of preventive medicine at Harvard Medical School, has offered space for the necessary laboratory examinations.

MICHIGAN

Hospital Transferred to Public Health Service.—The base hospital at Camp Custer has been transferred by the War Department to the U. S. Public Health Service for the accommodation of sick and disabled soldiers, especially those suffering with tuberculosis, who are beneficiaries under the War Risk Insurance Act.

New Health Ordinances Passed.—The city council of Detroit recently passed important ordinances relating to communicable disease control on recommendation of the board of health. Hereafter all persons dying within the city limits from diphtheria, smallpox, scarlatina or poliomyelitis, must be buried privately. Physicians and relatives of persons suffering from communicable diseases are compelled to report the cases to the department of health. Persons desiring to practice midwifery must first pass an examination and obtain a certificate of qualification.

MISSOURI

Postgraduate Clinics.—The St. Louis postgraduate clinics will be held under the auspices of the St. Louis Medical Society, November 22-24.

Social Service School Opened.—Under the auspices of the University of Missouri, the Missouri School of Social Economy, designed to fill the need of trained social workers, opened for the fall term at St. Louis, September 20. Dr. George B. Mangold has been appointed director of the school.

Reserve Medical Corps Unit.—Formal application for the installation of a unit of the R. O. T. C., in line with the proposal of the War Department, has been made by Dr. Nathaniel Allison, dean of Washington University Medical School. Sixty students have already been enrolled in the Medical Corps Unit.

Robert Koch Club Planned.—At the meeting of the advisory medical staff of the Tuberculosis Society of St. Louis, held, October 23, it was decided to organize a Robert Koch Club as an auxiliary to the tuberculosis society. Monthly meetings will be held for the discussion of subjects pertaining to the control of tuberculosis.

MONTANA

State Health Week Announced.—By official proclamation, dated October 27, Governor S. V. Stewart has designated the week beginning December 5 as health week throughout the state. All industrial, social welfare, church and school organizations are urged to cooperate in the observance of the health program "to the end that a more intimate knowledge of the rules of health and hygiene may be generally disseminated and that a high standard of physique of our people may be maintained and perpetuated."

NEW JERSEY

New Board of Health at Montclair.—The Montclair Board of Health has been completely reorganized following the appointment of a new board consisting of Dr. James Spencer Brown, president, and Herbert B. Larner, S.B., health officer. The laboratory will be in charge of Miss Helen G. J. Jacobs, B.S., formerly with the New Hampshire State Board of Health.

Personal.—Dr. Edwin Field, chief of the staff of the Monmouth Memorial Hospital was presented with a pearl stickpin by members of the board of governors in recognition of his long faithful service to the hospital.——Dr. B. B. Ranson, Jr., Maplewood, has been appointed to the senior surgical staff of the Orange Memorial Hospital, succeeding Dr. John H. Bradshaw, resigned.

NEW YORK

Site Acquired for Police Hospital.—In furtherance of a plan to erect and equip a $3,000,000 hospital for the benefit of the police department of New York, a site has been secured on Eastern Parkway, Brooklyn, opposite the Brooklyn Museum of Arts and Sciences.

University Buildings Under Construction.—The hope for an adequate endowment fund for the University of Buffalo has been realized in the successful conclusion, October 17, of a campaign for an endowment fund, which resulted in a subscription of about $5,100,000. A scheme for a new campus has been chosen from competitive plans submitted by landscape architects, the style of architecture to be Georgian Colonial. The first building now in process of construction at an estimated cost of $400,000 will be occupied by the department of chemistry. The Liberal Arts, Library and Administration buildings will be erected next. The income from the remaining fund will be available for the use of the several departments.

New York City

Estate of Dr. Thomas Addis Emmet.—The estate of Dr. Thomas Addis Emmet, who died, Dec. 1, 1919, has been appraised at $299,754. A collection of Irish books valued at $2,695 was bequeathed to the American-Irish Historical Society.

Bronx Hospital Dedicated.—The Bronx Maternity Hospital, erected at the northeast corner of One Hundred and Sixty-Sixth Street and the Grand Concourse at a cost of $100,000, was formally dedicated, October 31. The institution provides forty beds.

Hospital Transferred to Public Health Service.—The Debarkation Hospital at Fox Hills, Staten Island, has been transferred to the U. S. Public Health Service and will be continued as a general hospital. The hospital has a capacity of about 500 beds. Dr. Julius O. Cobb will be in charge.

NORTH DAKOTA

Health Department Reorganized.—Dr. Edward C. Haagenson has been appointed city health officer of Grand Forks, following the reorganization of the city health department. Under the new plan all work relating to water analysis and milk inspection will hereafter be done under the supervision of the public health laboratory at the State University for which a special appropriation has been allotted.

OHIO

Professor Bordet Delivers Hanna Lecture.—Prof. Jules Bordet, director of the Pasteur Institute of Brussels, delivered a lecture on anaphylaxis in the Cleveland Medical Library, November 8, under the auspices of the H. M. Hanna lecture fund.

Personal.—Dr. Robert Lockhart, formerly with the state department of health, has been appointed district health commissioner for Cuyahoga County.——Dr. Henry L. Hall, formerly a member of the faculty of the Medical Department of the University of Southern California, has been appointed instructor in physiology in Western Reserve Medical School. ——Dr. Kenneth P. Blackfan has been appointed to the chair of the B. K. Rachford Department of Pediatrics in the University of Cincinnati, recently endowed by Mrs. Mary H. Emery.——Dr. Martin H. Fischer of the Medical College of the University of Cincinnati will deliver a series of lectures on chemical subjects in Europe in February, 1921. Dr. Edmund Baehr will temporarily fill Dr. Fischer's place at the college.——Dr. Irwin H. LeBarre has been appointed coroner of Richland County to succeed Dr. William S. Bushnell, resigned.

Illegal Practitioners Convicted.—The Ohio State Medical Board reports that the following individuals have been convicted of violations of the medical practice act: B. Jackson (colored), Cleveland, was fined $50 and costs, October 1; Mrs. Anna Schumm, Youngstown, registered midwife, was fined $50 and costs and given sixty days in jail for violation of the medical practice act, October 6; S. M. Van Orsdell, Youngstown, after being fined $50 and costs, October 3, promised to discontinue the sale of radio articles; Valka M. Toscek, Youngstown, licensed midwife, was fined $200 for selling remedies, half of the fine being later remitted; Tony Carr (colored), Dayton, unlicensed chiropodist, was fined $100 and costs and given 30 days in jail, October 12; Harry W. McFarren, Tiffin, manufacturer of patent medicines, has been arrested for illegal practice of medicine, three complaints being filed against him.

OKLAHOMA

Medical Examiners Pass on Licenses.—It is reported that the license of Dr. C. O. Hood, Tulsa, was revoked by the state board of medical examiners because of the alleged illegal dispensing of narcotics.——The license of Dr. John M. Leed, Tulsa, which was revoked at the last meeting of the board, has been restored, subject to probation for one year.

OREGON

Oregon Defeats Antivaccination Bill.—The referendum abolishing compulsory vaccination which was voted on in Oregon at the recent election was defeated two to one, the vote for the abolition of compulsory vaccination being approximately 50,000 and the vote against it over 100,000. The campaign against the measure was carried on by a joint committee of physicians and laymen.

PENNSYLVANIA

Physican Fined.—It is reported that Dr. Robert E. Redmond, recently convicted of violating the state law regarding the advertisement of cures for certain diseases, has been fined $100 and costs.

Held for Federal Court Trial.—"Dr." Leonard L. Parry, president of the Parry Medicine Co. of Pittsburgh, is reported to have been held for trial in the United States District Court on a charge of using the mails with intent to defraud.

Faith Healer Arrested.—J. W. Dedrick of Pittsburgh is reported to have been arrested recently charged with practicing medicine without a license. It is alleged that Dedrick is the head of an organization of faith curists who employ laying on of hands and prayer, and that he treats patients for $35 each per month.

Philadelphia

Illegal Practitioner Sentenced.—A report from the Bureau of Medical Education and Licensure states that Edward Parker Read was convicted of the illegal practice of medicine and was sentenced to six months in the county jail, October 29. The case has been appealed to the superior court.

School Hygiene and Health Course.—A new course in school hygiene and public health, to be open to the public, has been announced by the University of Pennsylvania. The first lecture will be given November 6, by Dr. Walter S. Cornell, director of medical inspection in the public schools on "The Objects, Aims and Results of School Medical Inspection."

Ward Health Councils.—A health council for every ward in Philadelphia is recommended by the Philadelphia Health Council and Tuberculosis Society following a survey of sanitary and health conditions in the city. It has been arranged to establish such councils in eight wards before the close of the year. The Bureau of Health, the Board of Education, Women's Medical College and National Congress of Mothers will cooperate. It is planned to conduct a clinic in each ward once or twice a month. The public education committee of the Civic Club will assist in organizing the ward health councils.

Personal.—Dr. Charles P. Noble, after a long illness, has resumed the practice of medicine.——Dr. William C. Ely has been elected to the obstetric staff of the Maternity Hospital.——Dr. Florence C. Child, superintendent of school medical inspectors of Philadelphia, has been appointed chief of the Division of School Medical Inspectors and Welfare Nursing at Trenton, N. J.——Dr. James P. Sands, provisional senior assistant medical officer of the Bureau of Hospitals has been appointed Director of Public Health and Charities.——Dr. William H. Imhoff has been appointed a resident physician in the Bureau of Charities and Correction to have medical charge of the children at Brown's Farm, the inmates of the Home for Indigent and the prisoners at the House of Correction.

RHODE ISLAND

Ophthalmologic and Otologic Society Elections.—At the annual meeting of the Rhode Island Ophthalmological and Otological Society, held in the University Club, Providence, October 13, the following officers were elected for the ensuing year: president, Dr. Alvah A. Fisher; vice president, Dr. Christopher J. Astle, and secretary-treasurer, Dr. Joseph L. Dowling, all of Providence.

SOUTH CAROLINA

Tuberculosis Clinic at Anderson.—A free tuberculosis clinic has been opened at the city hall, Anderson, under the charge of Dr. Clinkscales. The clinic was established through cooperation of the Chamber of Commerce, Rotary Club and Civic Association.

Personal.—Dr. John Mercier Green, health officer of Charleston, who recently underwent an operation for appendicitis at Baker Sanatorium, has resumed his duties.——Dr. Miles J. Walker, York, has been elected a member of the executive committee of the state board of health to succeed Dr. William J. Birdell, Lugoft, resigned.

SOUTH DAKOTA

Aberdeen Health Department Merged.—The Brown County Health Department, which was recently merged with the city health department of Aberdeen, has established offices in the Municipal building, Aberdeen. Dr. Bates, county physician, is in charge.

TENNESSEE

Social Council Elects Officers.—At the meeting of the Memphis Council of Social Agencies, held October 12, Dr. Marcus Haase was reelected president, and Dr. E. E. George, treasurer.

County Health Association Organized.—The Dyer County Public Health Association was organized at Dyersburg, October 15. Every civic organization in Dyer County is represented on the executive committee.

Personal.—Dr. William L. Vickers has been named superintendent of the National City Hospital to succeed Dr. William F. Fessey, resigned.——Dr. Thomas F. Staley, Bristol, has enlarged his private eye, ear, nose and throat infirmary to fourteen rooms.

TEXAS

Personal.—Dr. Ezra E. Dickason, Brownsville, has been elected post commander of John Hanson Post, American Legion.

Arraigned for Sixth Time.—At El Paso, Byron L. Black, chiropractor, was recently arraigned for trial on a charge of practicing medicine without a license. It is said that this is the sixth time within two years that Black has stood trial on similar charges.

WEST VIRGINIA

Convictions for Narcotic Act Violations.—It is reported that Dr. Stockley B. Hayes, Flemington, was fined $250 for issuing prescriptions for morphin indiscriminately, and that Dr. Bernard H. Kyle, Franklin, was fined $25 for failing to keep a proper record of orders for narcotics, at the Wheeling term of the United States Court for the northern district of West Virginia. W. O. Davis, a druggist of Grafton, was fined $500 and costs after entering a plea of guilty to a charge of violating the narcotic act.

State Tuberculosis Association Elects Officers.—At the annual meeting of the West Virginia Tuberculosis Association, held in the Waldo Hotel, Clarksburg, October 25, under the presidency of Dr. William W. Golden, Elkins, the following officers were elected: president, Dr. George H. Barksdale, Charleston; vice presidents, Mrs. C. O. Henry, Fairmont, Mrs. J. M. N. Downs, Buckhannon, Mrs. William Wilson, Weston, Mr. N. T. Frame, Morgantown, and Drs. Jones Ross Hunter and William W. Golden, Elkins, and treasurer, Mr. Ben Baer, Morgantown.

WISCONSIN

Personal.—Dr. John B. MacClaren, Appleton, sustained painful injuries to his back when his car overturned, October 10, near Plymouth.

Health Center Merged.—The health center of the American Red Cross at Appleton has been merged with the home service office and headquarters have been opened at 627 Appleton Street.

Tuberculosis Sanatoriums to Be Consolidated.—Consolidation of Milwaukee's Blue Mound Tuberculosis Sanatorium with Muirdale Sanatorium, hitherto maintained by the county, was recommended by the Milwaukee council public welfare committee, October 13. The merger was proposed by Health Commissioner Ruhland as a means of avoiding duplication and expense. The tentative plans suggest utilization of Blue Mound for incipient and convalescent cases while the Muirdale Sanatorium will be devoted to sufferers in advanced stages.

CANADA

Hospital News.—At the annual meeting of the corporation of the Women's College Hospital and Dispensary, Toronto, it was disclosed that patients are being constantly turned away for lack of accommodations. Accommodation is also needed for the nursing and domestic staff, and an obstetric wing is urgently necessary.

Smallpox in Ottawa.—Among the 111 cases of smallpox reported to the department of health, Ottawa, Canada, there was not a single patient who had been vaccinated during the last seven years. The board of health has empowered Dr. Lomer to appoint six or eight physicians in different districts of the city to afford every facility for vaccination.

University News.—Part of $5,000,000 expected to be realized from a campaign for McGill University, Montreal, will be devoted to a building to house the departments of pathology, medical jurisprudence, hygiene and psychiatry. It is estimated that such a building would cost at least $460,000, and its maintenance would require an endowment of $150,000.——The medical faculty of the University of Toronto has decided to hold regular monthly meetings of all engaged in the teaching of medicine and allied sciences and of members on the staff of the medical department.

Personal.—Dr. Alexander L. McKay, Toronto, has accepted an appointment with the Rockefeller Foundation Medical Research Committee.——Dr. Bryce McMurrich, Toronto, has been appointed superintendent of Ste Anne's Hospital, Ste Anne de Bellevue, Quebec, succeeding Dr. Kenneth Cameron, who is resuming private practice in Montreal.——The king of Belgium has conferred on Dr. Henri S. Beland, the title of Knight of the Most Distinguished Order of the Crown of Belgium for "generous, brave and devoted services given as physician at the hospitals of St. Elizabeth in Antwerp from the beginning of the great war until the day of his departure for long captivity in Berlin, Germany.

GENERAL

Appointment of Sanitary Engineer to Haiti.—Commander James M. Minter, M. C., U. S. Navy, at the Naval Hospital, Great Lakes, Ill., has been appointed sanitary engineer to Haiti, for the purpose of introducing an improved system of sanitation.

Science Association Meeting.—The annual meeting of the American Association for the Advancement of Science and Affiliated Scientific Societies will be held in Chicago, Dec. 27, 1920, to Jan. 1, 1921. Headquarters will be at the Congress Hotel.

War Risk Bureau Appoints Medical Director.—In conformity with a plan to organize an independent headquarters' medical staff for the War Risk Bureau, Director R. G. Cholmeley-Jones has appointed Dr. Lester B. Rogers, New York, as director of the medical division of the War Risk Bureau, and Dr. James L. Busby, Columbus, Ohio, as assistant director.

Tuberculosis Conference Elects.—At the Southern Tuberculosis Conference held in Jacksonville, Fla., October 13, the following officers were elected: president, Dr. James S. Lock, vice presidents, Mrs. R. S. Phifer, Mississippi, and Mrs. W. W. Scantin, South Carolina, and secretary, R. H. Hixon, Jacksonville. Arkansas was selected for the next annual meeting.

Medical Fraternity Holds Meeting.—The seventeenth national convention of the Phi Beta Pi Medical Fraternity was held at Boston, October 15, under the presidency of Dr. David S. Long, Harrisonville, Mo. The following officers were elected: supreme archon, Dr. Dale E. Turnacliffe, St. Paul; vice supreme archon, Dr. Henry W. E. Walther, New Orleans, and secretary-treasurer, Dr. Lawson G. Lowery, Iowa City.

Morton in the Hall of Fame.—The list of names of persons elected to the Hall of Fame in the quinquennial elections by the senate of the University of the State of New York, just announced, includes that of William Thomas Green Morton for the accredited successful demonstration of ether anesthesia. Dr. Morton is thus the first physician who has been elected to the Hall of Fame in recognition of a medical achievement.

Medical Veterans Form Organization.—At the annual reunion of the medical officers of the eighty-ninth division, recently held at Kansas City, Mo., a permanent organization was formed and the following officers were elected: president, Dr. Reginald H. Meade, Kansas City; and vice presidents, Drs. Czar C. Johnson, Lincoln, Neb., Harvey McCarthy, Kansas City, Claredon J. Combs, Oshkosh, Wis., and Monte L. Beloit, Clyde, Kan.

International Tuberculosis Society Formed.—A permanent international society for the prevention of tuberculosis, composed of representatives of all nations signatory to the League of Nations covenant and of the United States, was formed, October 19, at an international antituberculosis conference in Paris. Sir Robert William Philip, Edinburgh, was elected president of the International Society. The first meeting will be held in the fall of 1921 at London.

Venereal Disease Survey by Public Health Service.—A second survey is shortly to be made by the Public Health Service of work done in 444 large cities toward the extermination and prevention of venereal diseases. In the survey made last February the cities were graded according to the vigor of their campaigns, and were divided into four classes, according to population. The state boards of health will cooperate with the Public Health Service in making the survey.

Alvarenga Prize of College of Physicians of Philadelphia.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, amounting to about $250, will be made, July 14, 1921, provided that an essay deemed worthy of the prize shall have been offered. Essays submitted for competition may be on any subject in medicine, but must not have been previously published, and if written in a language other than English should be accompanied by a translation. They must be in the hands of the secretary of the college, Dr. John H. Girvin, 19 South Twenty-Second Street, Philadelphia, before May 1, 1921. No prize was awarded in 1920.

California Endorses Scientific Medicine.—The four so-called "medical measures" voted on in California at the recent election were all defeated, the people of the state strongly indorsing the position taken by the Medical Society of the State of California and the League for the Conservation of Public Health on these questions. The proposed antivivisection bill was overwhelmingly defeated. The antivaccination measure and the bill for the creation of a separate chiropractic board were voted down, and the efforts of the osteopaths to secure the right to prescribe drugs were also defeated. This is one of the first instances in which medical questions have been submitted to popular decision.

LATIN AMERICA

New Schools of Pharmacy.—Courses in pharmacy have recently been established in Panamá and Guatemala.

Antimosquito Campaign in Colombia.—The president of Colombia has ordered that rigid measures be taken for the extermination of mosquitoes with a view to the prevention of yellow fever and malaria.

Annex to School of Medicine of Chile.—The department of education of Chile has ordered the construction of an anatomic pavilion for the School of Medicine, which will cost 100,000 pesos (about $40,000).

Tuberculosis Campaign in Brazil.—The Brazilian Red Cross has initiated an intensive antituberculosis campaign throughout Brazil. Mrs. Pessoa, the president's wife, is taking an active part in this work.

Yellow Fever Disappears from Mexico.—Advices from the cities of Sonora reported to have been infected with yellow fever indicate that the disease is now well under control. The abatement of the epidemic is attributed to a marked drop in temperature throughout the state.

New Hospitals in Cuba.—Among the appropriations for public works recently made in Cuba there are several items for hospital construction, as follows: 40,000 pesos for a hospital at Bayamo; 300,000 pesos for repairs to the insane asylum, and 300,000 pesos for the completion of the hospital of Santiago de Cuba.

Central American Sanitary Conference.—An international sanitary conference was recently held at La Unión, El Salvador, to discuss methods of cooperation in the yellow fever campaign conducted by the Rockefeller Foundation. Dr. T. C. Lyster, formerly of the U. S. Army, is now in charge of the campaign in Central America.

University of Rio de Janeiro.—The medical school, the school of law and the polytechnic school of Rio de Janeiro have now been officially grouped as the University of Rio de Janeiro by a recent government decree. The rector of the university will be ex officio president of the superior council of instruction. There is great rejoicing in scientific circles in Rio.

Memorial to Hernández.—A national committee has been at work during the year since the death of Dr. J. G. Hernández of Caracas, and recently completed its labors by unveiling an oil portrait in the university, with memorial tablet, and also a monument in the cemetery, and founding a biennial prize in his name with a fund of 15,770 bolivars. The tablet and monument bear the inscription "Homenaje Nacional." The ceremonies included a large representative gathering and addresses, with music, in the university, and also ceremonies in the cemetery. The *Gaceta Médica* of Caracas devotes nearly its entire issue for September 30 to this tribute to the eminent physician, who was killed in an automobile accident in June, 1919.

Personal.—Dr. Delfor del Valle, Jr., has been appointed director of the Asistencia Pública y Administración Sanitaria at Buenos Aires.——Dr. J. J. Callejas of Honduras has left for a trip to the United States.——The Academia Nacional de Medicina of Rio de Janeiro, on the occasion of the recent visit of the king and queen of Belgium, paid tribute to the queen's work during the war in promoting medicine and hygiene, and unanimously elected her perpetual president of the Academy.——Dr. O. da Fonseca and his son of Rio de Janeiro have been sent to the United States on a scientific mission, mainly on behalf of the Instituto Oswaldo Cruz.——Dr. L. F. Calderón has been appointed rector of the Facultad de Ciencias Naturales y Medicina at Bogota to fill the vacancy left by the resignation of Dr. Pompilio Martínez.——Dr. Francisco Peña Trejo of Salvador is now traveling in the United States. While in this country Dr. Peña will study the methods for the treatment of tuberculosis in several sanatoriums.——Dr. E. M. Martín has been designated representative of Guatemala at the Sixth International Sanitary Conference of the American Republics.

Public Health Work at Santo Domingo.—The 1919 report of the Secretary of Sanitation and Beneficence of Santo Domingo reviews the public health work accomplished since the establishment of the military government in Santo Domingo in November, 1916. The new sanitary law creating a national department of sanitation and beneficence was put in force Jan. 1, 1920. This law requires all municipalities to appropriate from 10 to 15 per cent. of their income for public health work, the municipal health budgets being subject to approval by the secretary of sanitation. The practice of medicine, pharmacy, etc., is placed under the control of the Department of Sanitation. Some very important public health regulations were adopted during the year 1919, especially as regards the prevention, quarantine and control of communicable diseases. The construction of a national leprosarium was begun during the year. Among the reportable diseases, special mention should be made of "bubas" or yaws, 1,745 cases of which were reported. A commission of Harvard physicians is now investigating the disease. The national public health appropriation has increased from $5,000 in 1916 to over $180,000 in 1920; this is in addition to $190,000 to be spent by the municipalities.

FOREIGN

Course in Dietetics in Copenhagen.—An evening graduate course in dietetics and lavage of the stomach is being held by Prof. C. Jürgensen. The course is free to physicians.

China Medical Missionary Association Election.—Dr. Charles F. Johnson of the American Presbyterian Mission at Tsinan was elected president of the China Medical Missionary Association for a term of two years at the recent annual conference held in Pekin.

Personal.—The *Münchener medizinische Wochenschrift* states that Dr. O. Killiani, who until the war was at the head of the German Hospital in New York, has accepted the charge of the surgical department of Dr. W. v. Kaufmann's sanatorium at Partenkichen in upper Bavaria.

Physician at Head of Paris Hospital System.—M. G. Mesureur has been retired on a pension from his long service as director of the Assistance Publique, and he is succeeded by Dr. L. Mourier, member of the house of deputies and formerly undersecretary of state for the military medical department.

Dr. Steinach Goes to Stockholm.—The *Deutsche medizinische Wochenschrift* states that the Vienna physiologist, Prof. E. Steinach, is intending to remove to Stockholm, where he will continue his research on physiology and biology, including the "puberty gland." His work on the summation of single ineffectual stimuli as a general vital phenomenon was published in 1908. He is now 58 years of age.

Prizes for Medical Research.—The *Zeitschrift für Tuberkulose* of Berlin relates that the Selmar Solmitz Foundation offers four prizes of 2,000 marks each for the best work on radiotherapy of cancer; on the progress in treatment of wounds in peace; on infant feeding in the five years ending April, 1920; and on the best advice for a tuberculous man or woman, with two minor children, who has been dismissed improved from a sanatorium and has an income of 1,000 marks a month.

French Neurology Congress.—The next Congrès des aliénistes et neurologistes of French-speaking countries is to convene at Luxembourg in 1921 with Drs. Meige of Paris and Buffet of Luxembourg to preside. The following year the meeting is to be held at Quimper with Professor Lépine in the chair, and the year after that at Besançon. The three topics appointed for discussion at the approaching twenty-fifth meeting are the consciousness of the morbid condition in psychopathies; simulation of mental disease, and traumatic epilepsy.

Deaths in Other Countries

Dr. **Diógenes Decoud,** one of the leading surgeons and editors of Argentina, director of the *Semana Médica* of Buenos Aires, and for twenty-five years professor of surgery in the university until his recent retirement, member of the National Board of Public Health, and author of numerous medical works, of the prose poem, "La Atlantida," and a history of medicine in Argentina, published in 1893.——Dr. **A. Foges,** privat-dozent in obstetrics and gynecology at the University of Vienna.——Dr. **R. Villavicencio** of Caracas, a former professor of the Universidad Central of Venezuela.——Dr. **F. Wittrup** of Copenhagen.——Dr. **J. C. Güell** of Bogota, professor of surgery in the Facultad Nacional de Medicina at Bogota and of anatomy in the School of Fine Arts. At one time he was governor of the state of Bolivar and member of the national house of delegates, and was the founder of the Academia de Medicina.——Dr. **Zenón Solano,** director of hygiene at Bogota.——Dr. **Yves Delage,** professor of comparative anatomy and physiology at the Sorbonne, Paris, director of the *station biologique* at Roscoff, and author of numerous works on general biology.——Dr. **P. Spiess,** an orthopedist of Basel, lost his life in Alpine climbing.——Dr. **M. Valladão,** of S. Paulo, Brazil.——Dr. **Julia Gutiérrez C.** of Santiago, Chile, practicing both medicine and surgery and superintendent of the training school for nurses.

Government Services

Army Abandons General Hospitals

During the last year the Medical Department of the Army abandoned twenty-one of its thirty general hospitals; seven were turned over to the U. S. Public Health Service, and the others were closed. All told, 57,000 beds were released, involving the movement of only 3,776 patients. Practically all the patients who remained under the care of the Army after the World War have been discharged cured with the exception of a small number transferred to the Public Health Service.

Economic Loss from Venereal Diseases in Army

The Surgeon-General's Office recently compiled statistics on the cost of venereal diseases in the Army. During the calendar year ending Dec. 31, 1919, venereal diseases caused a loss of 1,923,420 days of duty among the troops. Since practically all of this time represents days spent in the hospitals under treatment for gonorrhea, chancroids or syphilis, and the estimated cost of such hospitalization is $7 per day, the direct loss to the Army from these diseases was $13,463,940.

Institute on Venereal Diseases

It is reported that favorable responses are being received from state boards of health and other medical organizations throughout the country to the invitations of the Public Health Service to attend the Institute on Venereal Diseases in Washington, D. C., beginning November 22. Most of the state boards of health will send official representatives and there will be many unofficial delegates. The Institute will last ten days and will be immediately followed, December 6, by a six-day session of the All-America Conference on Venereal Diseases, at which physicians, administrators and other experts of the western hemisphere will discuss the best methods of combating venereal diseases.

Inspection of Government Tuberculosis Hospitals

Surgeon-General Cumming has announced the completion of plans for the treatment of the 15,000 tuberculosis patients in the Public Health Service hospitals in the country. A committee of tuberculosis specialists not members of the Public Health Service, will visit the special hospitals to study the prevailing conditions with a view to standardization of the methods of treatment. Drs. David R. Lyman, Wallingford, Conn., Victor F. Cullen, State Sanatorium, Md., and Martin F. Sloan, Towson, Md., will make the inspections in the eastern states; Dr. George Thomas Palmer, Springfield, Ohio, in the central states, and Dr. Henry Hoagland and possibly others in the southwestern states.

Army Medical Department Notes

Surgeon-General Ireland has issued orders that the complement fixation test be uniformly employed in the military service for the diagnosis of tuberculosis. Medical officers are urged to apply the test especially in cases presenting suspicious clinical symptoms when the sputum is negative for the bacillus. The Army Medical School will supply an antigen for use in the test to the laboratories of all army general hospitals.—Manufacturers of medical equipment and dealers in medical supplies will hereafter be given an opportunity to test their products for use in the Army. An agency of experimental work, known as the Medical Department Equipment Laboratory, has been established for the purpose of cooperating in the development of the technical equipment and supplies of the Medical Corps.

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

DISTRICT OF COLUMBIA
Washington—Sinkinson, C. D., Jr.

ILLINOIS
Chicago—Blender, D. R.

INDIANA
Indianapolis—Hypes, F. E.

MASSACHUSETTS
Worcester—Dunphy, P. J.

NEW YORK
Syracuse—Rulison, F. C.

PENNSYLVANIA
Philadelphia—Skillern, P. G.

TENNESSEE
Chattanooga—Watson, R. B.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Oct. 15, 1920.

Crisis in Scientific Laboratories

A touching appeal for the cause of microbiologic research was recently made by Dr. Charles Nicolle, director of the Pasteur Institute of Tunis, in a letter published in the *Temps*. He had just completed a stay of two months in France, and he returned appalled at the conditions which he found. The country which has produced Pasteur, Duclaux, Laveran and Roux, to mention only a few of the more illustrious scientists, and which received Metchnikoff with open arms, without the least compunction is permitting the decline of a science that has given France a large part of her past glory and from which she has always derived the first benefits.

Nicolle admits that it would be unfair to demand that the state support the laboratories, especially at the present time. However, he thinks that it is not the teaching laboratories from which we should expect to see great discoveries come forth: he who teaches is an erudite, while the mentality of the research worker is entirely different, and it is through other than teaching institutions that all real progress in microbiology must come. The typical institution of this kind in France and the one most widely known is the Pasteur Institute of Paris, the parent establishment whose offspring may be found in France, the colonies and abroad. The Pasteur Institute is a private establishment and does not serve as a teaching medium. The members of its staff devote all their efforts to scientific investigations, and in the thirty-five years of their endeavors they have shown marked ability. The institute derives its income from the sale of biologic products and from donations, and today neither of these sources furnishes ample means. Not having the inexhaustible resources of the government back of it, it is now merely vegetating, and it is only by a miracle that more can be accomplished.

Nicolle, therefore, addresses to the public an appeal for support of the microbiologic laboratories, pointing out that the matter should be of special interest to the farmers, for instance, for it makes possible a continuation of the researches on aphthous fever, a disease that has been responsible for the loss of millions and constitutes a permanent menace to agriculture. On the other hand, Nicolle calls attention to the difficulty of inducing young men to enter the laboratories, for the small budgets make a career in a laboratory anything but profitable.

Census of France

A decree has been issued fixing March 6, 1921, for the taking of the population census under the charge of the mayors of towns. Although the census is normally taken every five years, the war prevented the enumeration scheduled for 1916, and there is therefore an interval of ten years between the last two counts of the population.

Membership in the International Surgical Society

At the last congress of the International Surgical Society, held at Paris in July under the presidency of Dr. W. W. Keen of Philadelphia, it was unanimously resolved to exclude the surgeons of the central empires from membership. The national Swiss committee has felt impelled to explain the motive underlying this action, as the daily press has completely misinterpreted the occurrence by pretending that the surgeons of the central empires were barred because of their professional conduct. The only reason advanced for exclusion of these surgeons was based on a condemnation of the

manifesto of the ninety-three intellectuals. In fact, the manifesto is generally considered an expression of the mentality of the German intellectuals, as its antiscientific principles have never been disavowed. The absence of German surgeons among the signatories to the manifesto demonstrates clearly that the action of the society was founded on a matter of principle and not on personal considerations or on questions affecting only the surgical profession. Representatives from neutral countries remarked at the committee meeting that the action of the congress should not create a permanent condition, to which the answer was made that there was no intention of continuing the war on the fields of science, but that after admission of the central empires to the League of Nations the decision to exclude them from the society would be revoked. By disavowing the principles enunciated in the manifesto, the representatives of the central empires would make it possible for their late enemies again to extend the hand of fellowship. An understanding based on mutual respect cannot be hastened by an untimely move, and it is best to trust the matter to future developments. It does seem singular, however, that the reconciliation of men of science should be longer deferred than in the commercial world; but it should not be forgotten that the intellectual bonds are rooted deeper than the material bonds and, once uprooted, they are difficult to revive.

The Rôle of the United States in the Antituberculosis Campaign

I have repeatedly referred to the excellent results that have been obtained through the collaboration of the United States in the public health campaign of France, especially in the campaign against tuberculosis. The Comité national de défense contre la tuberculose includes among its membership Professors Calmette, Letulle and Léon Bernard, as well as Dr. Linsly R. Williams, director of the American Commission for the Prevention of Tuberculosis in France (Rockefeller Foundation), and his assistants, Drs. B. L. Wyatt and A. Bruno, and Miss E. Crowell. Since the beginning of 1920 the Comité national has published a bimonthly *Bulletin* recording the transactions of the meetings of the committee and containing information relative to the antituberculosis campaign throughout the world. This journal is published through the cooperation of the American commission. The last number contains a plan for the departmental organization of the antituberculosis campaign and a description of the equipment of a social hygiene and tuberculosis dispensary.

Prevalence of Trachoma

The minister of hygiene recently directed the attention of the Académie de médecine to the frequency of granular conjunctivitis in certain regions of France, especially around Marseilles. Based on the results of a survey among the schoolchildren of Marseilles, it is estimated that the incidence of the disease is about 4 per cent., sufficiently high to call for energetic measures of control. Trachoma is prevalent in Algeria and in most of the French colonial possessions and protectorates, and ophthalmologists of Marseilles are agreed that it attacks especially the foreigners, and above all those coming from countries of the Mediterranean littoral. The war caused a considerable migration across France, and undoubtedly this is destined to continue for some years more. It follows naturally that this disease, of which the principal focus in France appears for the time limited to the surroundings of our most important Mediterranean port, where the foreign population (especially from the Levant) is most dense, threatens to extend with great intensity over the whole national domain wherever numbers of immigrants from the French protectorates are at present being directed. The various measures for limiting the importation and spread of trachoma can be effectively applied only if the disease is included among the reportable communicable diseases; with this purpose in view, the minister of hygiene has requested the Académie de médecine to study the question and to make appropriate suggestions.

French Congress of Surgery

The opening meeting of the twenty-ninth congress of surgery was held, October 4, in the amphitheater of the Faculté de médecine de Paris, under the auspices of Hon. André Honnorat, minister of public instruction. As an evidence of its respect for Belgium, the congress departed from provisions of its statutes by electing Dr. Depage, professor of clinical surgery at the University of Brussels, as president for this year. A large number of Belgian surgeons attended the congress. The inaugural address of Dr. Depage was devoted to an exposition of the modern conceptions of hospital organization. Hospitals, in the opinion of Depage, are afflicted with the one congenital defect that from earliest times they have been intimately associated with works of benevolence. Traditionally, the hospital is still a charitable institution; its whole organization is based on sentimental factors, and its chief support is derived from gifts. The costs of caring for the sick are paid out of the sinking funds, and it might even be in bad taste to consider the hospital as a potentially productive institution. Its administrative machinery reflects the demand for economic management; the director is charged especially with the internal discipline and the supervision of the servants, and the entire personnel is thus placed under the authority of an administrative head, to whom one can hardly attribute competence in medical matters. This point of view has really lagged behind our social development. It takes no account of the fact that each individual of a community represents a certain social capital which becomes nonproductive in time of illness, and that restoration to health represents an increase in productive capital. Society, therefore, derives a special benefit from the hospital if the maximum number of recoveries is obtained with a minimum loss of time. It is only a step from this conception to the industrial organization of hospitals. The expenses of treatment should no longer be considered as unproductive, for they are balanced by the "capital recoveries" returned to the community.

In proceeding on these principles, the administrative policy of the hospital should be radically changed along lines similar to factory organization. The director or hospital functionary of today should make room for a general business manager, perfectly conversant with hospital work and capable of assuming full responsibility. The prime duty of the general manager will be to watch the morale of the establishment, to eliminate the deadly routine, and to change, if necessary, the mental complexion of the personnel. After the various departments have been reorganized on a scientific basis, cohesion and cooperation should be established among them, as is necessary in any successful industry. In dealing with the hospital as with a factory, the atmosphere of altruism and benevolence, without which all material efforts would prove unavailing, should not be excluded.

Mobile Contagious Disease Laboratory

A mobile laboratory has recently been organized in Paris for the purpose of furnishing technical equipment and assistance to any district in the city whenever a communicable disease may be endangering the public health. On such occasions it will reinforce the local sanitary organizations if these are considered inadequate to face the exceptional circumstances, and when necessary it will coordinate and direct all preventive efforts. The laboratory is fully equipped to make all necessary bacteriologic examinations and to carry out all measures of disinfection and deratization.

BELGIUM

(From Our Regular Correspondent)

Oct. 15, 1920.

Fraudulent Substitutes for Neo-Arsphenamin

In the course of the last pharmacy inspection it was ascertained that neo-arsphenamin, which can enter Belgium only through fraudulent procedure, has been the object of serious substitution. In seven instances incompletely soluble substances were being sold as neo-arsphenamin. Even some of the soluble substitutes might provoke serious reactions, and it is necessary to observe certain precautions. For use in emergencies, M. de Myttenaere suggested to the Académie de médecine a series of qualitative and quantitative tests by which the purity of the products can be determined.

On the other hand, a standard dose of arsphenamin may prove toxic although its chemical composition does not vary from that of a safe product. Under these conditions a physiologic test is made. However, such a test is costly, and can be carried out only by the manufacturers. The scientific competence of the personnel and the adequacy of equipment of the producers is therefore considered a sufficient guarantee for the products of the manufacturers and importers.

In some countries the state enforces stringent regulations governing the chemical composition and physiologic action of these preparations, but in Belgium, the government will not be able to forego periodic examination of the factory products. Physiologic control being necessary, M. de Myttenaere proposed that the academy request that as an urgent measure the government regulate the sale of arsphenamin as it has done with antidiphtheritic serum.

The Prohibition Movement

Shortly after the armistice, a law was passed prohibiting the retail sale of alcoholic beverages; but this law has not been rigidly observed, and at present there is hardly a town or village where liquor cannot be readily procured. In order to assist in the fight against this evident danger, the Société médicale belge de tempérance has inaugurated a new campaign and has subscribed to the principles enunciated by the Ligue contre l'alcoolisme, which are substantially as outlined below:

IMMEDIATE MEASURES

The manufacture, transportation, wholesale and retail sale, keeping for sale, distribution and gratuitous disposal of alcohol for beverage purposes are prohibited except for industrial and pharmaceutic use.

The importation, transportation, wholesale and retail sale, keeping for sale, distribution and gratuitous disposal of wines containing more than 18 per cent. of alcohol and of beers containing more than 7 per cent. of alcohol are prohibited.

The importation of distilled alcoholic beverages and liquors is prohibited.

ULTIMATE MEASURES

The state shall have an exclusive monopoly of the manufacture and sale of potable alcohol necessary for the production of yeasts and for pharmaceutic purposes, as well as of industrial alcohol.

The state shall regulate the sale of wines and beers according to their alcohol content.

It shall limit the amount of alcoholic beverage to be sold.

It shall encourage all measures designed to assist the propaganda against alcoholism.

The section of sociology of the Solvay Institutes has made a careful study of the question of state control of alcohol and has prepared a preliminary draft of a law to regulate the sale of liquors. This law makes the traffic in alcohol, brandies and spirituous liquors a state monopoly and intrusts their purchase and sale to the excise office.

MADRID

(From Our Regular Correspondent)

Oct. 4, 1920.

The General Physician in the Epidemiologic Campaign

Dr. Marañon, the man in charge of the infectious wards of the general hospital of Madrid, the only hospital where contagious patients are admitted in Madrid, recently discussed the part that the general physician should take in the epidemiologic campaign. In his opinion the general essential in the control of infectious diseases is that the general physician should make an early diagnosis and, after diagnosing the case, report it immediately, as required by law. In the General Hospital of Madrid the cases cannot be separated, a condition which compels the thorough enforcement of all possible prophylactic measures. Marañon divides infectious diseases into those transmitted chiefly by the secretions of the upper respiratory and the gastro-intestinal mucous membranes; by direct contact by the skin; by intestinal secretions; by milk, and by parasites and insects. In the first group he places measles, scarlet fever, influenza, whooping cough, cerebral spinal meningitis and mumps. His experience has confirmed the contagiousness of measles and scarlet fever from their beginning so that he advises an early prophylaxis. In his opinion influenza is contagious only in the first few days, probably not beyond the third day. He mentioned a curious observation. During the influenza epidemic, when there were many patients with pneumonia and bronchopneumonia together in the wards, there occurred hardly any contact infections among the other patients. The patients with simple influenza without pneumonia never contracted the latter. However, the influenza epidemic had barely come to an end before there appeared another epidemic of typhoid fever. The wards became filled with typhoid patients. Apparently there was some pneumonia patient left from the influenza epidemic, and the result was a severe outbreak of pneumonia among the typhoid patients, with more than twenty cases, all of which but three ended fatally. Marañon does not believe that there is any sure prophylactic against the disease, but preventive vaccination offers some hope. He does not consider that protracted isolation for whooping cough has any scientific basis, and places his reliance on early diagnosis, the isolation of the child during the catarrhal period, and the careful disinfection of the patient's clothing and other personal objects. Cerebrospinal meningitis is also contagious only during the first few days, during the catarrhal period. He insists on the disinfection of all objects touched by the patients. He saw in Madrid a case in which the disease was almost undoubtedly transmitted by some infected clothing sent from Granada. He considers virtually useless and almost harmful the disinfection of the throat by means of gargles, and considers that local treatment with a very strong polyvalent serum is more logical. In all these diseases, as well as in mumps and poliomyelitis, he considers Milne's disinfection method of value. He states emphatically that lethargic encephalitis is a noncontagious process of perinfluenzal nature.

In the group of the diseases transmitted directly by the skin he mentions smallpox, chickenpox and erysipelas. In smallpox all the skin surface is highly contagious. This contagiousness begins early and lasts many days after the process ends clinically. Its germ is also the one that remains longer in the clothing and other objects touched by the patients. A letter written by a smallpox patient in the desquamation period carried the disease to a distant town, as observed personally by the speaker. He had placed erysipelas in the same group because he had become convinced of the important part played by objects contaminated by the streptococcus in the spread of the disease.

The third group is formed by those processes transmitted by intestinal secretions, such as typhoid fever and allied diseases, cholera and bacillary dysentery. In typhoid the patient as well as the carrier must be indicated. The physician, therefore, should not confine himself to the cure of the patient but must aim at ending the elimination of germs in the urine and the stools of the convalescent. In the ten years he has treated this kind of patients, amounting to nearly 2,000, he has seen only one case in which direct contact could be blamed for the spread of the disease with any degree of certainty. He did not dwell on the epidemiology of milk-borne diseases, a group represented by foot and mouth disease, though in some cases this disease can be transmitted by the blood, Marañon himself being an instance of this.

The last group of diseases includes typhus fever, malaria, plague, yellow fever, recurrent fever, kala-azar and trypanosomiasis. About typhus fever he contented himself with saying that if it spreads at all it will be the physician's fault for not making the diagnosis in time. He recalled that the delousing idea was originated by a Spaniard, Dr. Cortezo, in 1903. This is accomplished in Dr. Marañon's hospital by means of a hot soap bath, shaving of the whole body, and two daily applications of a 20 per cent. alcoholic solution of naphthalene. Lice must be destroyed in both the person and the clothing of those close to the patient. Clothes can be disinfected cheaply either in a closed room with sulphur or by being placed in a metal box with benzene.

VIENNA

(From Our Regular Correspondent)

Oct. 12, 1920.

Census of Cases of Venereal Disease

From November 14 until December 15 of this year, a census of all cases of venereal disease will be taken, in order to reduce the fight against it to a scientific basis. The ministry of public health has issued an order to all physicians and medical institutes, giving details of the intended investigation, and will supply census cards containing all the items to be filled out by the physician. Naturally, all precautions are taken to insure professional secrecy. The names of the patients will not figure on these cards, nor will the physician or the patient be subject to any inconvenience or discomfort. As there are at present 6,006 medical men entitled to practice or work in hospitals in Austria, the work entailed will not be too heavy a burden on the individual. It is planned to follow up, at the same time, the after-history of the cases, to keep apart the record of fresh cases from those of old standing, and to differentiate also the cases according to the treatment adopted and the result obtained. Precaution will also be taken against a double census, i. e., patients being treated synchronously by two or more physicians, or drifting from one man to another. Since the number of sexual cases is increasing to an alarming degree, and the danger offered by this problem is real, public sentiment is strongly in favor of this step by those who are in charge of public health work.

Outbreak of Enteritis Caused by Unwholesome Bread

The unsatisfactory nature of conditions prevailing here was recently illustrated by a peculiar incident that greatly alarmed the populace. From different parts of the city, reports reached the board of health that practitioners were observing many cases of gastro-intestinal trouble and skin disorder for which no apparent cause could be given. The persons affected comprised all classes of the population and all ages except infants. It transpired that the cause was to be sought in the composition of the bread sold to the people. Investigation disclosed that for about three weeks the flour supplied by the government to the bakeries consisted of a mixture of 40 per cent. wheat or barley flour, 30 per cent. maize (Indian corn) and 30 per cent. of dried potato flour. The maize was old and of unpleasant odor, and must have suffered from decomposition. As bread baking is still under control of the government, all bakeries were supplied with the same uniform mixture. The physicians noted a peculiar similarity of the symptoms of the present disease with those of mild pellagra: diarrhea, furunculosis (?) and dermatoses. Indignation ran high against the officials responsible for the use of bad maize. The excuse, that financial considerations required the use of the old stock, were of course not accepted, and the government hastened to quiet the people by promising to stop the practice. In future bread will be produced from a mixture of 70 per cent. wheat or rye flour, 20 per cent. good maize and 10 per cent. potato flour. During the war, even a higher percentage of maize and potatoes was used, without any ill effect, if the materials were of good quality. Such bread is coarse and crumbly, but still not deleterious to health, as proved in southeastern Europe, where maize bread is constantly used without any harm. But the enfeebled condition of the alimentary canal in the bulk of our population here caused a rather severe reaction to the ingestion of even small quantities of the unsuitable food.

Government Action to Reduce the Price of Medicines and Drugs

A large quantity of various remedies, comprising chiefly pharmaceutic articles like acetylsalicylic acid, caffein, iodin, morphin, cocain, codein and other alkaloids, has been procured by the government in foreign markets and distributed to the chemists and the dispensaries of this country, in order to lower prices. People are being informed that they will obtain these remedies at the low prices fixed by the government, and thus the profiteering in this line is being stopped. It must be mentioned that for a long while a prescription was an extremely expensive thing for the bulk of the city population, owing to the exorbitant prices charged for even simple pharmaceutic goods by the apothecaries. By means of a central apothecary board, the distribution of remedies takes place according to the demand, and the quality of these substances is now guaranteed by the fact that supervision is being exercised by persons in a position to know. Thus, the substitution of active medicines by less effective ones, or the contamination of drugs, will be done away with, owing to the careful control of the whole trade. It may be added that cod liver oil, a substance urgently wanted for our children, was not long ago precious and scarce. Gifts from the Anglo-American Society of Friends, as well as Scandinavian presents to the medical organization, comprising considerable quantities of this remedy, were received recently and are being used chiefly in the pediatric clinics. What small quantities are sold to the public are at a price meant only to cover the costs of manipulation.

Difficulties of the Medical Profession

One of the most urgent problems now confronting the medical profession is the conflict between the krankenkassen (panel or club institutes) and the physicians. The continued rise in prices (or the reduced buying power of money) has forced physicians to increase their fees and to demand larger payments from the corporations with which they have contracted for medical work. The krankenkassen have recently "regulated," that is, increased the salaries of their officers, clerks and servants, but omitted to take similar action in regard to their physicians. At present the best paid physician of a panel or sick club gets less than an unmarried office boy! According to the social-democratic principle, as it has been formulated here recently, manual labor is much more necessary than brain work and the salary scale has been

arranged accordingly in these clubs, which are exclusively under social-democratic control. As negotiations to increase the rate of medical fees to an adequate standard were futile, the organization served the krankenkassen with an ultimatum stipulating that unless the propositions of the physicians—100 per cent. increase of fees, payment of office rent and 25 per cent. of the yearly fees in addition for the purchase of articles of clothing—were accepted within a week, all physicians would stop treating the members of the krankenkassen, except as private patients at the rates of private practice. This was effective. At the very last moment an understanding was reached and 80 per cent. of the demands were conceded. But a few days later, the krankenkassen tried to alter the contract by conceding the 25 per cent. addition for this year only. Renewed conflict, which would find the profession in a rather indignant mood, will be obviated, for even the socialist government is enraged at the attitude of the krankenkassen. While this fight was going on, another attack on the profession was contemplated but successfully averted. The government had worked out a plan for an advisory board of health to which a number of nonmedical members would have been elected or nominated, with the probability that the medical members would be in the minority. Apart from that, the most important of our medical bodies, the "organization," had not been invited to take part in the discussions and deliberations, nor had it been informed officially of the plan. A serious conflict arose between the organization and the ministry, as the former refused to be a party of any board on which nonmedical men could decide in medical matters against medical opinion. At last, the representatives of the profession received the assurance that the board will be constituted in a manner that will obviate this difficulty.

Winter Semester at the Vienna University

The new semester (winter term) of the university began with the end of October and will last until March 1. Henceforth the regular courses and classes at the hospitals and institutes will be open to all students, without regard to nationality and creed. About 450 different lectures and courses will be delivered by the professors, privatdocents and assistants of the clinics. Special stress is being laid on so-called "privatissime" or classes limited to from two to four pupils, on the ground that such individual instruction is apt to give better results for graduate physicians. As a rule, the fee is about 2-3 kronen per hour for men not producing an autumn diploma; this fee has to be paid by the whole group taking the class, not by each pupil. Classes will be held in bacteriology, pathologic anatomy, otology, rhinolaryngology, materia medica, medical chemistry, ophthalmology, dermatology, and syphilis, surgery and diseases of children. The outpatient departments attached to each of the clinics are also at the disposal of the lecturers and their pupils, thus insuring a great amount of clinical material.

Marriages

CHARLES ELLSWORTH HENEBERGER, Atwood, Kan., to Miss Ruth I. Jones of Chicago, at Denver, October 20.

ARTHUR HERMAN FAHRNER, Joliet, Ill., to Miss Agnes Coulehan of Austin, Ill., October 16.

WILLIAM ROBERT BLACKMON, Rock Hill, S. C., to Miss Lila Howell of Clover, S. C., October 20.

JOHN RILEY MERRIMAN, Springfield, Ill., to Miss Dorothy Carroll of New York, October 27.

JOHN IRWIN TAYLOR to Miss Bessie Curd Nourse, both of Russellville, Ky., September 21.

FRANK WALLS YOUNG, Chicago, to Miss Ruth Rendleman of Cairo, Ill., October 16.

Deaths

Samuel James Meltzer ⊕ New York; University of Berlin, 1882; died, November 7, aged 69. His death resulted from pulmonary edema following an attack of angina pectoris. Dr. Meltzer was born in Courland, Russia, March 22, 1851, received his preliminary education at Königsberg, Prussia, and his college and medical education at the University of Berlin. He studied physiology under Prof. Hugo Kronecker, with whom he made early important studies on the deglutition reflex. He came to the United States in 1883, and engaged in the practice of medicine in New York, serving for many years as attending physician to the Harlem Hospital. Dr. Meltzer was a productive contributor to the literature of biology, physiology and experimental medicine. He made numerous studies on the physiology of digestion, respiration and the peripheral circulation, on the pharmacology of magnesium salts, on the vasomotor effects of epinephrin and on the relation of the pancreas to hyperglycemia and glycosuria with reference to diabetes. His investigations on the action of the magnesium salts led to the introduction of magnesium sulphate for the treatment of tetanus. In 1909 he introduced the method of intratracheal insufflation for the maintenance of artificial respiration and for the administration of anesthetics. The latter procedure made possible much of the detailed work on experimental thoracic surgery for which he was noted in his last years. In 1906 Dr. Meltzer was appointed head of the department of physiology and pharmacology of the Rockefeller Institute for Medical Research, and he retained this position until his death. He was active in many medical and scientific organizations, and founded the Society for Experimental Medicine and Biology, the American Association of Thoracic Surgery, and during the war, the Medical Brotherhood for the Furtherance of International Morality. He was sometime president of the Association of American Physicians, American Physiologic Society, Association for the Advancement of Clinical Research and Harvey Society; a member of the National Academy of Sciences, Association of American Pathologists and American Society of Naturalists, and other societies. In 1917, he represented the Section of the Practice of Medicine in the House of Delegates of the American Medical Association. Dr. Meltzer was commissioned major in the Medical Reserve Corps, U. S. Army, in 1917. As an enthusiastic research scholar his name was familiar to medical scientists throughout the world. He possessed an idealism peculiarly fitting him for intensive laboratory studies though perhaps not easily coinciding with the practical side of public life. His associates in scientific life regret the passing of a high minded fellow worker.

George S. Gerhard, Philadelphia; University of Pennsylvania, Philadelphia, 1870; aged 71; a member of the Medical Society of the State of Pennsylvania; one of the founders and for twenty-seven years physician-in-chief of the Bryn Mawr (Pa.) Hospital; died in that institution, October 27, from heart disease.

William Elbert Burt, Talladega, Ala.; Tulane University, New Orleans, 1906; aged 38; a member of the Medical Association of the State of Alabama; health officer of Talladega County and field agent, U. S. P. H. S.; died, September 30, from acute dilatation of the heart.

Thomas J. Whitten, Peoria, Ill.; Jefferson Medical College, 1867; aged 76; a member of the Illinois State Medical Society; a veteran of the Civil War; for more than half a century a medical practitioner of Peoria; died, October 31, from appendicitis.

Brock Edward Cohoon, Seattle; University of Oregon, Portland, 1911; aged 36; a member of the Washington State Medical Association; a specialist in diseases of the ear, nose and throat; died in Santa Monica, Calif., October 22, from heart disease.

Charles Spencer Kinney, Easton, Pa.; New York Homeopathic Medical College, New York, 1879; aged 65; a specialist in psychiatry; a member of the American Medico-Psychologic Association; died, October 27.

John Dexter Andrews, Chicago and Evanston, Ill.; Chicago Medical College, 1878; aged 66; for forty-three years assistant chief surgeon of the Chicago and Northwestern Railway; died, November 6, from myocarditis.

Domingo Bornio, New Orleans; University of Louisiana, New Orleans, 1882; aged 61; a member of the Louisiana State Medical Society; died, July 17, from carcinoma of the liver.

⊕ Indicates "Fellow" of the American Medical Association.

Edmund Calvin Park, Manning, S. C. (license, Illinois, 1877); aged 83; for nearly half a century a medical practitioner of Flora, Ill.; died at the home of his daughter in Manning, October 8.

Richard C. McCain, Kentland, Ind.; Louisville (Ky.) Medical College, 1875; aged 68; also a druggist; from 1905 to 1909 a member of the state senate; died suddenly, October 17, from heart disease.

Maurice L. Radin ⊕ New York; University of Kharkov, Russia, 1897; aged 49; assistant neurologist in Mount Sinai Hospital Dispensary; was accidentally asphyxiated at his home, October 28.

Lovelace Foster Jackson, Stallo, Miss.; Memphis (Tenn.) Hospital Medical College, 1904; aged 37; died in Newton, Miss., October 25, from knife wounds received a few days before.

Charles F. Newman, Brooklyn; Bellevue Hospital Medical College, 1881; aged 66; inspector in the Brooklyn Department of Health from 1887 to 1889; died, October 24.

Joseph F. Purviance, Jewett, Ohio; Philadelphia University of Medicine and Surgery, 1863; aged 84; a practitioner of Steubenville for half a century; died, September 4.

Edith Josephine Strong, Oakland, Calif.; Barnes Medical College, St. Louis, 1907; assistant physician at St. Anthony's Hospital, Oakland; died October 19, from botulism.

William Barrow Mann, Brockport, N. Y.; University of Buffalo (N. Y.), 1861; aged 82; surgeon on the receiving ship *Miami* during the Civil War; died, October 23.

John J. Kemp, Independence, La. (license, Louisiana); aged 80; a Confederate veteran; died at the home of his daughter in New Orleans, October 24.

James A. McGinty, Olyphant, Pa.; College of Physicians and Surgeons, Baltimore, 1904; aged 39; was struck by a train, October 22, and instantly killed.

Isaac M. Martin, La Harpe, Ill.; Hahnemann Medical College and Hospital, Chicago; aged 67; editor and founder of the *Quill;* died suddenly, October 18.

Benjamin Herbert Young, Amesbury, Mass.; Boston University School of Medicine, 1880; aged 66; died suddenly, October 23, from heart disease.

Jessie Harriet Simpson, Patton, Calif.; Hahnemann Medical College of the Pacific, San Francisco, 1905; aged 47; died in Banning, Calif., October 13.

Zina Edward Dawson, Wilsonburg, W. Va. (license, West Virginia, 1881); aged 69; died at the home of his son in Shadyside, Ohio, October 24.

Gilbert Gullickson Herm, Lake Mills, Iowa; Hahnemann Medical College and Hospital, Chicago, 1904; aged 50; died, October 20, from nephritis.

Edwin L. Fitch, Denver; State University of Iowa, Iowa City, 1885; aged 61; was found dead in his office, September 1, from cerebral hemorrhage.

Douw Lansing Van Derzee ⊕ Dannemora, N. Y.; Albany (N. Y.) Medical College, 1898; aged 48; died, September 16, from cerebral hemorrhage.

James L. Bell, Highland, Ark.; Medical College of the State of South Carolina, Charleston, 1897; aged 52; died suddenly, October 26.

Charles Horace Lusk, Oakville, Ont.; Victoria University, Cobourg, Ont., 1867; aged 84; died in Toronto, June 1, from senile debility.

Frank Wesley Nolan, Springfield, Mass.; Yale University School of Medicine New Haven, 1898; aged 52; died, October 14.

John Pfeninger, El Reno, Okla.; Medical College of Ohio, Cincinnati, 1866; aged 79; died, August 24, from arteriosclerosis.

Walter Guy Hudson ⊕ Yonkers, N. Y.; University of the City of New York, 1890; aged 51; died suddenly, October 30.

J. Martine Kershaw, St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1869; aged 74; died, October 18.

George Alexander Lyons, New Rochelle, N. Y.; Bellevue Hospital Medical College, 1877; died, October 12.

Karl Kanzler ⊕ Saginaw, Mich.; University of Munich, Germany, 1882; aged 62; died, October 12.

William M. Campbell, Cohoes, N. Y.; Albany (N. Y.) Medical College, 1889; aged 59; died, October 21.

Edward Stevens, Washington, D. C.; National University, Washington, D. C., 1887; died, October 15.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

PARATHESIN NOT ADMITTED TO N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.

W. A. PUCKNER, Secretary.

The local anesthetic ethyl paraminobenzoate was first introduced as "Anesthesin" or "Anæsthesin." Ethyl paraminobenzoate is not patented in the United States and it may be manufactured therefore by any firm which chooses to do so. In order that a common name by which to designate the drug might be available, the Council coined the name "Benzocaine," as being short and easily remembered, but yet suggestive of its composition and character ("benzo" to indicate its derivation from benzoic acid and "caine" to indicate its cocaine-like properties). As the term "anesthesin" had become a common name for the drug, the Council recognized this as a synonym for benzocaine.

One of the accepted brands of benzocaine is "Anesthesin" manufactured by the H. A. Metz Laboratories, Inc. (see New and Nonofficial Remedies, 1920, p. 33). However, on April 19, 1920, the Metz Laboratories requested that its product be recognized under the designation of "Parathesin." As the use of one substance under several names causes confusion and retards rational therapeutics, the Council's rules provide against the recognition of proprietary names for nonproprietary, established drugs. In view of this and because the legitimate interests of the manufacturer may be safeguarded by appending his name or initials to the common name, benzocaine or anesthesin, the Council voted not to recognize the designation "Parathesin."

HYPODERMIC SOLUTION NO. 13, IRON, ARSENIC AND PHOSPHORUS COMPOUND NOT ACCEPTED FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.

W. A. PUCKNER, Secretary.

Hypodermic Solution No. 13, Iron, Arsenic and Phosphorus Compound (Burdick-Abel Laboratory) is said to contain in each c.c.:

Ferrous citrate	0.06 Gm.
Sodium cacodylate	0.06 Gm.
Sodium glycerophosphate	0.1 Gm.
Chloretone	0.005 Gm.

The preparation is advertised as "the old reliable hematinic" which is "indicated in all forms of anemia, where both red and white cells are low." It is for hypodermic or intramuscular administration. The product is inadmissible to New and Nonofficial Remedies because:

1. It does not contain ferrous citrate as claimed. Instead the iron is in the ferric condition, apparently in the form of the unofficial and unstandardized "iron citrate green" for which there is no evidence of superiority over the official iron and ammonium citrate.[1]

2. Its name gives no information on the form in which the iron, the arsenic and the phosphorus occur therein. The term "arsenic" does not indicate whether the mild cacodylate or the potent arsenous oxid is being administered nor does the term "phosphorus" tell the physician that he is administering the practically inert sodium glycerophosphate.[2]

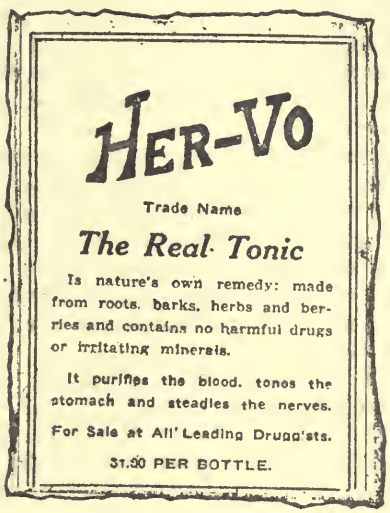
1. Iron Citrate Green, THE JOURNAL A. M. A., Jan. 12, 1917, p. 135; Reports Council Pharm. and Chem., 1916, p. 42.
2. Glycerophosphates, THE JOURNAL A. M. A., Sept. 30, 1916, p. 1033; Reports Council Pharm. and Chem., 1916, p. 32. Sodium glycerophosphates. Reports Council Pharm. and Chem., 1916, p. 52.

3. The preparation is unscientific because (*a*) it is irrational to prescribe iron and arsenic in fixed proportions; (*b*) there is no evidence that the hypodermic or intramuscular administration of iron has any advantage over its oral administration and (*c*) glycerophosphates have not been shown to have properties other than inorganic phosphates and hence the administration of sodium glycerophosphate as a constituent of a hematinic is illogical.[3]

MORE MISBRANDED PRODUCTS

Dr. Clifton's Brazilian Herbs.—Henry W. Clifton and Nancy A. Dix of Girard, Ill., shipped under the name of the Clifton Drug Company a quantity of this product in May, 1918. Analysis showed the preparation to consist essentially of a mixture of powdered vegetable drugs, among which were aloes, senna leaves, damiana leaves, uva ursi leaves, cascara bark and ginger. The nostrum was falsely and fraudulently represented as an effective remedy and cure for kidney, liver and stomach troubles, epilepsy, consumption, nervousness, rheumatism, etc. In January, 1920, the defendants pleaded guilty and were fined $50 and costs.—[*Notice of Judgment No. 7580; issued Oct. 8, 1920.*]

Her-Vo.—Seven dozen packages of this preparation consigned by the Her-Vo Mfg. Co., Camden, N. J., in May, 1919, were seized on the charge that they were misbranded. When analyzed by the Bureau of Chemistry, Her-Vo was found to consist essentially of cinchona alkaloids, strychnin, a laxative plant drug, essential oils, alcohol and water. The preparation was falsely and fraudulently represented as a remedy for asthma, bladder trouble, bronchitis, gastric catarrh, constipation, cramps, dyspepsia, flabby flesh, hysteria, night sweats, rheumatism, syphilis, vomiting of pregnancy, etc. In October, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product should be destroyed.—[*Notice of Judgment No. 7512; issued Sept. 24, 1920.*]



Acetylo-Salicylic Acid Tablets.—In November, 1915, Harry A. Jame and Irving H. Annis trading as Jame & Annis, late of Chicago, shipped a quantity of these tablets from Omaha into the State of Minnesota. Analysis showed the tablets to contain 7.74 per cent. of acetanilid, together with starch and sugar. The tablets were declared adulterated because while they were labeled as containing 5 grains of Acetylo-Salicylic Acid they did not contain any Acetylo-Salicylic Acid whatever. They were declared misbranded because they were represented as Acetylo-Salicylic Tablets which they were not and furthermore they failed to bear a statement of the quantity or proportion of acetanilid which they contained. In January, 1920, the defendants pleaded guilty and were fined $25.—[*Notice of Judgment No. 7576; issued Oct. 8, 1920.*]

3. Iron Solution for Intravenous Therapy, Perkins and Ross, THE JOURNAL A. M. A., Nov. 14, 1914, p. 1778; Reports Council Pharm. and Chem., 1914, p. 125.

Roentgen Rays in Service of Art.—It has been found that the paints used in the paintings of the old masters are more opaque than those in use since, and roentgenoscopy is revealing restorations, additions or copies in the antiques, to a surprising degree.

Correspondence

EIGHTY-FIFTH ANNIVERSARY OF THE FOUNDING OF THE CANTON HOSPITAL

To the Editor:—During the present year the eighty-fifth anniversary of the Canton Hospital is being commemorated. This institution is the oldest and one of the largest hospitals in China. It is also the oldest missionary hospital in modern times. The Canton Hospital, or, as it is called in Chinese, the Pok Tsai Ye Uen or Hospital of Diffusive Benevolence, was founded in 1835 by the foreign merchants of Canton in conjunction with the missionaries of all Protestant denominations with work in south China. It has always been a union and interdenominational institution. During the first twenty years of its existence the hospital was housed in a building lent by the senior Chinese hong merchant.

The first surgeon to the Canton Hospital was Dr. Peter Parker, who is said to have opened China at the point of the lancet. He was a graduate of Yale University and later served the United States government as Commissioner to China. Dr. Parker was succeeded by Dr. John G. Kerr, who for forty-five years developed the institution and its associated activities.

Dr. Thomas R. Colledge, senior surgeon to His Britannic Majesty's commission in China and to the East India Company, was the first president of the society, which founded and maintained hospitals and dispensaries in different places in south and central China. Shortly after the establishment of the Canton Hospital, the chief superintendent of British trade in China, in referring to this institution, stated that the surgeon's knife was better calculated to conciliate the Chinese than any weapons of war.

Modern medical science in all its phases, was introduced into eastern Asia at the Canton Hospital, including medical education, the training of hospital assistants, and the translation and publication of scientific medical textbooks in the Chinese language; and the first medical discoveries were made there. From its inception there has been cordial cooperation between Americans, British and Chinese in the maintenance of the hospital, on the board of directors and staff. The American and British consul-generals of Canton are trustees. During the last eighty-four years, more than two million patients have been treated in the Canton Hospital and its dispensaries.

That the Canton Hospital is an essential institution is evident from the fact that even at the present time there is only one hospital bed to more than 10,000 people in the province of Kwongtung. The Canton Hospital serves this and the neighboring provinces, with a population of forty million people, from which localities, through the great ports of Canton and Hong Kong, diseases prevalent there may be carried to all parts of the globe.

Dr. Sun Yat Sen, first president of the Chinese Republic, was a student at the Canton Hospital medical school. President Lei Yuan-Hung, and the present president of China were generous contributors to the hospital. Recently, in appreciation of its past and present services to the people of China, commendatory resolutions were passed by the China Medical Missionary Association, and its South China branch, the Canton Missionary Conference and its board of cooperation, and by the Protestant missions working in south China. During the last five years, the China Medical Board of the Rockefeller Foundation has contributed toward the maintenance of the hospital.

Cordial letters of appreciation have been received from the president of China, from H. E. Chengting Wong, China's

representative at the peace conference and to the League of Nations, the civil governor of Kwongtung, the Chinese chambers of commerce of Canton and Hong Kong, the National Medical Association of China, and other representative organizations and individuals. The American and British consul-generals, the British chamber of commerce of Canton and American business firms have also testified to the essential work done by the Canton Hospital, which serves a great purpose in helping to harmonize the East and the West.

In order to commemorate the eighty-fifth anniversary of the foundation of the hospital, to keep pace with rapidly changing conditions in the Orient, and with progress in modern medical science, the directors and staff hope to be able to erect new buildings, suitably equipped.

J. Oscar Thomson, M.D., Canton, China.

VOCATIONAL REHABILITATION OF PERSONS DISABLED IN INDUSTRY OR OTHERWISE

To the Editor:—The federal act (Public No. 236, Sixty-Sixth Congress) to provide for the promotion of vocational rehabilitation of persons disabled in industry or in any legitimate occupation, and their return to civil employment, approved, June 2, 1920, is one of the most important laws ever enacted by Congress. The purposes of the act are to restore to economic usefulness those of our citizens and the aliens among us who have become disabled by injury, accident or disease to such an extent that they need vocational rehabilitation to enable them to carry on in a remunerative occupation.

No organization or body, either collectively or individually, has been or now is more concerned and gratified over this legislation than the medical profession, for physicians and surgeons have had the need of this economic restoration brought to them by seeing suffering, sadness and the outlook for a dark future for these unfortunates and their dependents. This is a big undertaking, and without unlimited outside assistance the agencies charged with the administration of the act cannot possibly succeed. Every agency, profession and individual will be called on to render all assistance in their power to fulfil this moral obligation.

Individual members of the medical profession for many decades have, in their locality, carried on this work in a limited way, by lending every assistance in finding suitable employment for the physically disabled, following them in their work, and never losing an opportunity to encourage them. The larger industrial corporations realized the good to be accomplished, and began vocational rehabilitation in a well organized way. The encouraging results stimulated this natural trend and, no doubt, were the guiding principles in the federal and state legislation. We must not for a moment depreciate the value of the efforts of organized labor in bringing about this legislation, for it is primarily effected and concerned from a purely human standpoint.

Under the provisions of the act, the government, through the Industrial Rehabilitation Division of the Federal Board for Vocational Education, will allot to the respective states, in the proportion which their population bears to the total population of the United States, sums of money for the promotion of vocational rehabilitation of persons disabled in industry or otherwise and their return to civil employment. The states participating will expend at least an equal amount of money for the same purpose. The agency which has immediate jurisdiction over and is responsible for the carrying out of this program in a state is the state board for vocational education. The law provides that this board and the agency administering the Workmen's Compensation Law shall cooperate in every way that will insure the best results in this work. This provision is very necessary, for practically all the states have workmen's compensation laws that are administered by a board or commission. These agencies have jurisdiction over the award and payment of compensation to those injured, and as the Industrial Rehabilitation Act does not provide for maintenance and support, the compensation commission can, in most states, arrange the payments of compensation so that the beneficiary will have ample funds for support while taking the training arranged by the state board for vocational education.

As defined in the act, the terms "persons disabled" shall be construed to mean any person who, by reason of a physical defect or infirmity, whether congenital or acquired by accident, injury or disease, is or may be expected to be totally or partially incapacitated for remunerative occupation; the term "rehabilitated" shall be construed to mean the rendering of a person disabled fit to engage in a remunerative occupation. These definitions are subject to varied interpretations, and by the broadest interpretations would show such a stupendous task that serious doubt would exist as to the proper handling of the problem; but the proposition must be handled as any undertaking in which the unworked material has accumulated to such an extent that the actual primary reclamation will make very little showing in proportion to the entire load. This should not tend to discourage those lending assistance; rather, it should encourage them to know that the greater the individual effort, the sooner the excessive load is lifted and the current cases expeditiously taken care of.

The first object with the state boards will probably be the recent cases in which persons can soon be returned to suitable employment. This, no doubt, will be all that the state boards can properly handle, owing to the many problems that they will experience in their early existence and operation; but in the course of a few months they will be seasoned to this new work, and can take care of more and more of the accumulated cases.

The physicians and the hospitals are of first thought to those administering this act, as the disabled persons come under their observation first, and without their cooperation and assistance the fullest benefit of the act cannot be obtained. A few of the ways in which they can assist are:

1. Secure a knowledge of the work done in the state and assist in the promotion of Industrial Rehabilitation. (Bulletin 57, Industrial Rehabilitation Series No. 1, giving general information, will be sent, on request, by the Federal Board for Vocational Education, Washington, D. C.)
2. Bring the provisions of the act to all fellow members of the profession, business and industrial concerns and all persons who might be eligible for rehabilitation and such others as might render assistance in carrying out its purposes.
3. Assist in obtaining such legislation as will be beneficial to the disabled.
4. Encourage those of their patients who will probably need rehabilitation by telling them of the possibilities—keep up their morale and courage.
5. Make prompt reports of all possible beneficiaries to the state board for vocational education, giving all material information.
6. Obligate themselves to watch and assist the patient through training and on his new work.

By doing this the medical profession and hospital authorities will warrant the trust placed in them, by the whole people, to do those things necessary and beneficial to the physically disabled.

Frank Harrison, M.D., Washington, D. C.
Chief Medical Adviser, Industrial Rehabilitation,
Federal Board for Vocational Education.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

SOURCE OF CHAULMOOGRA OIL, AND ITS FIRST EMPLOYMENT IN LEPROSY

To the Editor:—Please give some information as to (1) the origin, source and preparation of chaulmoogra oil; (2) when and where it was first employed in the treatment of leprosy, and (3) the derivation and pronunciation of the word. FRANCIS RAMALEY, PH.D., Boulder, Colo.

ANSWER.—1. Chaulmoogra oil is obtained by expression from the seeds of a handsome East Indian tree, *Taraktogenos kurzii* King, of the Family *Bixaceae*. It is not obtained from *Gynocardia odorata* R. Brown, as is frequently stated. Closely related oils are obtained from *Hydnocarpus wightiana* Blume, and *H. anthelmintica* Pierre. This class of oils differs from other known oils in being composed chiefly of the glycerol esters of two unsaturated fatty acids named chaulmoogric acid and hydnocarpic acid. At ordinary temperature, chaulmoogra oil is a soft solid, having a characteristic odor and disagreeable taste.

2. In India, chaulmoogra oil has been used both orally and externally in the treatment of leprosy since prehistoric times. However, it is so irritant to the intestinal tract that the oral dosage can seldom be pushed to the curative point; and its external use appears not to have been very effective. Tourtoules of Cairo, as far back as 1899, used the oil subcutaneously but his work attracted but little attention (*Ann. de dermat. et syph.*, ser. 3, **10**:721, 1899). Dr. V. G. Heiser, while in Manila, appears to have been the first to use chaulmoogra oil (*Am. J. Trop. Dis.* **2**:295, 1914) for the treatment of leprosy by intramuscular injections. Independently, Dr. Leonard Rogers in India had used orally with some success a mixture of the fatty acids from the oil, which he called collectively "gynocardic acid." On learning of Dr. Heiser's results, Rogers was led to use the sodium salts of these acids subcutaneously (*Lancet* **1**:288 [Feb. 5] 1916) and later on intravenously (*Brit. M. J.* **2**:550 [Oct. 21] 1916. Hollmann and Dean (*J. Cutan. Dis.* **27**:867, 1919) have employed the ethyl esters of the fatty acids from the oil.

3. "Chaulmoogra" is of East Indian origin. It is pronounced tchawl-moog'rah.

VACCINES FOR COMMON COLDS

To the Editor:—Please advise me of the latest and best vaccine for common colds. L. J. SMITH, M.D., Wilson, N. C.
Health Officer, City and County Health Department.

ANSWER.—There is no scientific evidence that common colds can be prevented by the use of vaccines, despite the glowing recommendations of vaccine makers and the patter of the detail man. Colds characterized by catarrhal inflammation of the mucous membranes of the nose and throat are caused by various organisms, including a number of the commoner cocci and the bacillus of Pfeiffer. They are contagious, and spread rapidly from one person to another by the transfer of the bacteria concerned, so that small epidemics of colds are continually occurring in homes and communities. The organism concerned in one small epidemic may be different from that in another, and it is impossible to anticipate what organism is about to invade the household or community. The inoculation of mixed vaccines in the hope of providing against a number of possible invaders fails to produce immunity sufficient to prevent the infection of mucous membranes. Where completely controlled experiments have been made with large numbers of persons, colds have occurred among the inoculated in as large proportion as among the uninoculated. During the war, some evidence was obtained which indicated that preventive inoculation of troops with a vaccine containing large numbers of pneumococci reduced the incidence and mortality of pneumonia. In the case of superficial infection of the nasal and pharyngeal mucous membranes with diverse etiology, less can be expected, and practical results indicate that this skepticism based on theoretical considerations is well founded.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

CONNECTICUT: New Haven, Nov. 16-17. Sec., Eclectic Bd., Dr. James E. Hair, 730 State St., Bridgeport.

DELAWARE: Dover, Dec. 14-16. Sec., Reg. Bd., Dr. P. S. Downs, Dover.

FLORIDA: Gainsville, Dec. 6-7. Sec. Reg. Board, Dr. W. M. Rowlett, 812 Citizens Bank Bldg., Tampa.

ILLINOIS: Chicago, Dec. 6-7. Director, Mr. Francis W. Shepardson, Capitol Bldg., Springfield.

LOUISIANA: New Orleans, Dec. 2-4. Sec., Dr. E. W. Mahler, 1551 Canal St., New Orleans.

MARYLAND: Baltimore, Dec. 14. Sec., J. McP. Scott, 137 W. Washington St., Hagerstown.

OHIO: Columbus, Dec. 1-3. Sec., H. M. Platter, State House, Columbus.

TEXAS: Dallas, Nov. 16-18. Sec., Dr. Thomas J. Crowe, 617-20 Trust Bldg., Dallas.

VIRGINIA: Richmond, Dec. 14-17. Sec., J. W. Preston, 511 McBain Bldg., Roanoke.

New Jersey June Examination

Dr. Alexander Macalister, secretary of the New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, June 15-16, 1920. The examination covered 9 subjects and included 90 questions. Of the 36 candidates examined, 35 passed and 1 failed. Ninety-six candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Howard University School of Medicine	(1918) 84.6, (1919)	77.2
University of Maryland School of Medicine and College of Physicians and Surgeons	(1916) 89.5, (1917)	85.4
College of Physicians and Surgeons, Baltimore	(1913)	80.1
Maryland Medical College, Baltimore	(1913)	78.5
Harvard University	(1918)	90.3
Tufts College Medical School	(1914)	85
University Medical College of Kansas City	(1913)	90.2
Columbia University	(1915)	84.7
New York Homeopathic Medical College and Flower Hospital	(1918) 90.8, (1919)	87.6
University of Pennsylvania School of Medicine	(1878) (1917) 88.2, 90.2, (1919) 82.7, 85.8, 86.5, 87.3, 88.1	80.7,
Jefferson Medical College of Philadelphia	(1914) 82.7, (1917) (1919) 84.7, 86.2, 86.2, 87.6, 88.8	88.7,
Hahnemann Medical College and Hospital of Philadelphia	(1916) 82.8, (1917) 88.5, (1919) 79.1, 82.8, 89.3	
Medico-Chirurgical College of Philadelphia	(1916) 82.8, 75.5	
Medical Academy of Petrograd, Russia	(1904)	85.8
FAILED		
University of Heidelberg	(1893)*	

* No grade given.

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
University of California	(1902, 2)	California
Yale University	(1907), (1909)	Maine
Georgetown University School of Medicine	(1903) (1907), (1916)	Penna. Dist. Colum.
Howard University School of Medicine	(1910)	W. Virginia
	(1918)	N. Carolina
Hahnemann Med. College and Hospital of Chicago	(1905)	Missouri
Flint Medical College of New Orleans	(1901)	Oklahoma
Harvard University	(1916) Pennsylvania, (1916)	New York
Tufts College Medical School	(1919, 2)	Mass.
Atlantic Medical College, Baltimore	(1909)	W. Virginia
Baltimore Medical College	(1903) New York,* (1905)	Penna.
Johns Hopkins University	(1906), (1913)	New York
Maryland Medical College	(1912)	Maine
University of Maryland	(1905) New York, (1918)	Maryland
University of Michigan Medical School	(1906)	Utah
Kansas City Hahnemann Medical College	(1914)	Missouri
Albany Medical College	(1915), (1917)	New York
Columbia University	(1887) (1903), (1904), (1906, 2), (1914), (1915), (1916), (1917), (1918), (1919, 3) New York	Connecticut
Long Island College Hospital	(1913), (1917), (1918), (1919, 3)	New York
New York Homeopathic Medical College and Flower Hospital	(1911) Delaware; (1914), (1918)	New York
New York Med. College and Hospital for Women	(1916)	New York
University of Buffalo Department of Medicine	(1911)	New York
Eclectic Medical College of New York City	(1907) (1909) New York	New York
University and Bellevue Hospital Medical College	(1899), (1918), (1919, 9)	New York
Cornell University	(1907), (1913)	New York
Fordham University School of Medicine	(1919, 3)	New York
Leonard Medical College	(1897)	Maryland
North Carolina Medical College	(1916)	N. Carolina
Medical College of Ohio	(1897)	New York
University of Pennsylvania School of Medicine	(1912)	Maryland
Jefferson Medical College	(1903) (1906), (1907), (1911), (1915), (1916), (1918, 2) Pennsylvania.	New York
Women's Medical College of Pennsylvana	(1889) (1905) Pennsylvania.	Mass.
Hahnemann Medical College and Hospital of Philadelphia	(1900) Florida, (1919)	Mass.

Medico-Chirurgical College	(1904), (1913)	Penna.
Temple University Department of Medicine	(1916)	Penna.
University of Texas Department of Medicine	(1917)	Texas
Vanderbilt University Medical Department (1917) Kentucky.	(1912)	Tennessee
Memphis Hospital Medical College	(1904)	Tennessee
University of Vermont College of Medicine (1919) Vermont.	(1888)	Vermont*
Medical College of Virginia	(1916)	Virginia
Marquette University School of Medicine	(1913)	Wisconsin

* License not verified.

Texas June Examination

Dr. Thomas J. Crowe, secretary, Texas State Board of Medical Examiners, reports the written examination held at Galveston, June 22-24, 1920. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. One hundred and one candidates were examined, all of whom passed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
University of Louisville Medical Department	(1917)	78.1
Tulane University (1918) 91.2, (1919) 77.2, (1920) 85.2. 85.4,		87
Kansas City College of Medicine and Surgery (1919) 75*,		80.7
Columbia University College of Phys. and Surg. (1920) 88.3, 90.3,		91.6
University of Pennsylvania	(1919)	86
Vanderbilt University Medical Department (1920) 84.2,		88.1
Baylor University College of Medicine (1920) 75.8, 77.5, 81, 81.3, 81.6, 82.3, 82.8, 83.4, 83.7, 83.7, 83.9, 85.2, 86.1, 86.4, 87.4, 87.6, 88.3, 89.4, 89.6, 90.2, 90.8, 92.8.‡	(1919)	80.7,
University of Texas Department of Medicine (1920) 80.7, 81.2, 81.8. 81.9, 81.9, 82, 82.7, 82.9, 83, 83.3, 83.4, 83.9, 84.8, 85, 85.1, 85.1, 85.2, 85.2, 85.5, 85.5. 85.5, 85.7, 86, 86, 86.1, 86.1, 86.2, 86.3, 86.5, 86.5, 86.5, 87, 87.1, 87.3, 87.3, 87.3, 87.5, 87.7, 87.8, 88.1, 88.1, 88.2, 88.2, 88.3, 88.8, 89, 89.9, 90.1, 90.1, 90.3, 90.4, 90.4, 90.4, 90.7, 91, 91.1, 91.7, 92.3, 92.4, 92.5, 93.7.	(1919)	87.7,
University of Virginia	(1914)	88.1

* One per cent. allowed for years of practice.
‡ No grade given.

Colorado July Examination

Dr. David A. Strickler, secretary, Colorado State Board of Medical Examiners, reports the written examination, held at Denver, July 6, 1920. The examination covered 8 subjects, and included 80 questions. An average of 75 per cent. was required to pass. Of the 75 candidates who took the physician's and surgeon's examination, 35, including 8 osteopaths, passed, and 16, including 5 osteopaths, 1 chiropractic and 1 undergraduate, failed. Twenty-three candidates were licensed by reciprocity. One candidate was licensed on Army credentials. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
University of Colorado School of Medicine 80.6, 82.3, 82.7, 83, 83.4, 83.8, 84.9, 86.3, 87.3, 87.7, 87.9, 87.9, 88.1, 88.8, 90.4, 91.4, 93.	(1920)	80.3,
Bennett Medical College	(1912)	75
Eclectic Medical University of Kansas City	(1917)	84.9*
St. Louis College of Physicians and Surgeons (1919) 81.1, (1920) 86.8.	(1918)	85.6,
Kansas City University of Physicians and Surgeons. 83.6. (1920) 87.8.	(1919)	78.6,
Univ. of West Tennessee Coll. of Med. and Surg.	(1915)	75.3
FAILED		
Bennett Medical College	(1913)	58.2
Kansas City University of Physicians and Surgeons	(1920)	66.6
St. Louis College of Physicians and Surgeons (1919) 61, (1920) 57, 70.8, 71, 74.	(1918)	37.4,
Univ. of West Tennessee Coll. of Med. and Surg.	(1918)	41.5
Undergraduate		53.1

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
Cooper Medical College	(1905)	California
Georgetown University School of Medicine	(1906)	Dist. Colum.
Chicago College of Medicine and Surgery	(1917)	Wyoming
College of Physicians and Surgeons, Chicago	(1907)	Illinois
Hahnemann Med. College and Hospital of Chicago	(1889)	Utah
Rush Medical College (1878),	(1902)	Illinois
Kansas Medical College	(1913)	Kansas
University of Louisville (1904) Kentucky,	(1909)	Texas
Tulane University of Louisiana	(1911)	Mississippi
Boston University	(1896)	Mass.
Baltimore Medical College	(1910)	Mass.
Barnes Medical College	(1901)	Missouri
Washington University Medical School	(1917)	Missouri
Long Island College Hospital	(1895)	New York
Coll. of Phys. and Surg. in the City of New York	(1890)	Alabama
University and Bellevue Hospital Medical College	(1912)	New York
University of Nebraska (1902), (1920, 2)		Nebraska
North Carolina Medical College	(1912)	N. Carolina
Jefferson Medical College of Philadelphia	(1912)	Kansas

College	Year Grad.	Endorsement with
ENDORSEMENT OF CREDENTIALS		
Tufts College Medical School	(1909)	U. S. Army

* Graduation not verified.

North Carolina June Examination

Dr. H. A. Royster, secretary, North Carolina State Board of Medical Examiners, reports the oral, written and practical examination held at Raleigh, June 21-25, 1920. The examination covered 15 subjects, and included 100 questions. An average of 80 per cent. was required to pass. Of the 72 candidates examined, 70 passed and 2 failed. Forty-three candidates were licensed by reciprocity. One candidate was licensed by endorsement of certificate from the National Board of Medical Examiners, and two by government credentials. The following colleges were represented

College	Year Grad.	Per Cent.
PASSED		
George Washington University	(1917)	85.7
Atlanta Medical College	(1916)	80
Emory University	(1920)	86.2
Loyola University (1918) 81.1,	(1919)	83.7
University of Louisville	(1919)	83.1
Tulane University	(1917)	80.8
Harvard University	(1919)	86.2
Johns Hopkins University (1920) 84.7,		88.7
University of Maryland (1914) 84.5, (1917) 85.5, (1918) 84.4, (1919) 83.7, (1920) 84.5, 85.8, 88, 87.5		
North Carolina Medical College (1917) 84, (1918)		81.7
Columbia University	(1917)	85.1
University and Bellevue Hospital Medical College	(1917)	80.7
University of Cincinnati	(1918)	80.7
Jefferson Medical College (1917) 83.7, 87.7, (1918) 83.1, 85.8, (1920) 80, 81, 81.5, 82, 82.4, 82.5, 82.5, 84.2, 84.8, 85.1, 85.1, 86.4, 86.5, 88, 88.1, 88.7, 90.1, 90.1, 91.2, 91.5, 93.7		82.4,
Women's Medical College of Pennsylvania	(1920)	90
University of Pennsylvania 86.2, 86.5. 86.8, 88, 89.4, 89.7, 90.4	(1920)	85.1,
Meharry Medical College	(1918)	84.7
University of West Tennessee	(1910)	80
Vanderbilt University	(1920)	86
Medical College of Virginia (1914) 82.5, (1916) 80.1, (1918) 88.5, (1919) 80, (1920) 85, 88.4		92.2,
University of Virginia (1917) 84.7, (1918)		84.5
FAILED		
Meharry Medical College	(1911)*	(1918)*

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
George Washington University	(1915)	Dist. Colum.
Atlanta College of Physicians and Surgeons	(1911)	Georgia
Atlanta School of Medicine (1909),	(1912)	Georgia
University of Georgia Medical Department	(1915)	Georgia
University of Louisville (1913),	(1917)	Kentucky
Harvard University (1912) S. Carolina,	(1917)	Mass.
Tufts College Medical School (1906),	(1907)	Mass.
Baltimore Medical College	(1907)	Maryland
Johns Hopkins University	(1914)	S. Carolina
University of Maryland	(1913)	Maryland
University of Michigan (1918, 2)		Michigan
Barnes Medical College	(1902)	Missouri
Columbia University	(1915)	New York
Long Island College Hospital (1904),	(1911)	New York
New York University Medical College	(1897)	Missouri
Miami Medical College	(1903)	Ohio
Ohio State University College of Medicine	(1916)	Ohio
Starling Medical College	(1897)	Ohio
Hahnemann Med. Coll. and Hosp. of Philadelphia	(1906)	Penna.
Medical College of the State of South Carolina	(1915)	S. Carolina
Memphis Hospital Medical College	(1899)	Tennessee
University of the South (1907),	(1909)	Tennessee
University of Tennessee	(1917)	Tennessee
Vanderbilt University	(1917)	Tennessee
Baylor University	(1914)	Texas
Medical College of Virginia (1914, 2), (1916, 2), (1917,2) (1918) Virginia		Virginia
University of Toronto	(1891)	Canada

* No grade given.

College	Year Grad.	Endorsement with
ENDORSEMENT OF CREDENTIALS		
University of Pennsylvania	(1919)	Nat'l B'd Med. Examiners

College	Year Grad.	Endorsement with
ENDORSEMENT BY GOVERNMENT CREDENTIALS		
Washington University	(1918)	U. S. Army
North Carolina Medical College	(1917)	U. S. Navy

Mississippi Reciprocity Report

Dr. W. S. Leathers, secretary, Mississippi State Board of Health, reports that 16 candidates, including one osteopath, were licensed by reciprocity at the meeting held at Jackson, June 22, 1920. The following colleges were represented:

College	Year Grad.	Reciprocity with
Univ. of Alabama School of Med. (1911) Alabama,	(1907)	Alabama
Univ. of Louisville Med. Dept.	(1894) Kentucky, (1912)	Kentucky
Hospital College of Medicine, Louisville	(1902)	Kentucky
Tulane University of Louisiana School of Medicine. (1918) Louisiana, (1919) Louisiana, (1919) Louisiana.	(1915)	Louisiana
Barnes Medical College	(1904)	Illinois
Ohio State University College of Medicine	(1916)	Ohio
Jefferson Medical College of Philadelphia	(1900)	Oklahoma
Medico-Chirurgical College of Philadelphia	(1915)	Illinois
Vanderbilt University Medical Department (1916) Tennessee.	(1904)	Arkansas

Book Notices

PUBLIC HEALTH AND INSURANCE: AMERICAN ADDRESSES. By Sir Arthur Newsholme, K.C.B., M.D., F.R.C.P., Lecturer on Public Health Administration at the School of Hygiene and Public Health, Johns Hopkins University. Cloth. Price, $2.50. Pp. 270. Baltimore: The Johns Hopkins Press, 1920.

"After more than three decades of work in preventive medicine and public health, the opportunity has arisen, in connection with a year's visit to America, to take a panoramic view of public health in England, of the progress which has been secured, of the factors which have impeded progress, and of the pressing desiderata for more efficient future action." This, from the preface, indirectly sums up the scope of the book. It is made up of addresses delivered during the author's year in this country as lecturer on public health administration at the new School of Hygiene and Public Health of Johns Hopkins University. These addresses, delivered in various parts of the United States, form a historical review of practically the whole subject of public health and preventive medicine. The subjects are: "Public Health Progress in England during the Last Fifty Years"; "Historical Development of Public Health Policy in England"; "The Increasing Socialization of Medicine"; "The Medical Aspects of Insurance Against Sickness"; "Some Problems of Preventive Medicine of the Immediate Future"; "The Inter-Relation of Various Social Efforts"; "The Obstacles to and Ideals of Health Progress"; "Some Aspects of Poverty"; "The Causation of Tuberculosis and the Measures for Its Control in England," and "Child Welfare Work in England." The author's direct contact with public health work in England for a third of a century qualifies him to speak as an authority, and his intimate knowledge of conditions in this country, gained from personal observations, enables him to present his subjects to Americans as would not otherwise be the case. A book made up of miscellaneous addresses on related subjects usually contains much repetition of the same thoughts or facts, if not of verbiage. This criticism does not apply here; on the contrary, if it were not stated in the footnotes to the chapters that the addresses were delivered before such-and-such an institution or society, the reader might suppose that the material had been prepared for publication in the form in which it appears: there is a logical sequence of subjects. The book as a whole presents an account of the developments of health legislation in England in all its phases, of the mistakes that have been made, of the obstacles that have been and are yet to be overcome; in connection with his account, the author incidentally criticizes or praises what has been and is being accomplished in this country. While England has gone ahead in some respects, the United States has taken the lead in others. The chapter on socialization of medicine and that on health insurance contain facts and opinions that will be of special interest to many in this country at the present time. Evidently Sir Arthur, while favoring a certain form of health insurance, is of the opinion that the way the matter is working out in England is satisfactory neither to the medical profession nor to the insured. The book is full of facts, of information and of suggestions that make it of value to all in this country who are interested in public health and preventive medicine.

THE LETHAL WAR GASES: PHYSIOLOGY AND EXPERIMENTAL TREATMENT. An Investigation by the Section on Intermediary Metabolism of the Medical Division of the Chemical Warfare Service at Yale University under the Direction of Frank P. Underhill, Professor of Experimental Medicine, School of Medicine, Yale University. Published with the Permission of the Director of the Chemical Warfare Service. Cloth. Price, $15. Pp. 309. New Haven: Yale University Press, 1920.

This is a companion volume to the report of Winternitz from the same laboratory on the "Pathology of War Gas Poisoning," reviewed in these columns, June 19, 1920. Dr. Underhill takes up the study of the chief asphyxiating gases (chlorin, phosgen and chlorpicrin) used in the war, recounting the studies on their toxicology, and the treatment of their effects, that were carried out under the section of the medical division of the Chemical Warfare Service that was under his direction. These are given in the detail proper for a final report of so important and extensive a piece of investigation. While it is to be hoped that much of this work will become merely of historical interest, yet intoxication with irritating gases does occur in the pursuits of peace, and the lessons learned in war may be of value here as well as in other fields of medicine. The experimental studies with the asphyxiating war gases revealed that, among many observed effects, one of the most important is a well defined curve of changes in blood concentration, there being an initial period of from five to eight hours of decrease in concentration, followed by a stage of marked increase during which most of the fatalities occur. With recovery, the curve returns to slightly less than the normal concentration, which is eventually regained. Fatalities are attributed to failing circulation from concentration of the blood, rather than to asphyxia from the pulmonary edema, which had been the prevailing explanation of the fatal action of war gases. A system of treatment was developed on the bases of these observations, with the object of maintaining the blood concentration as near the normal figure as possible, by bleeding during the early stage when the blood is diluted, and by injection of saline solution during the stage of concentration, together with judicious use of oxygen when the concentration of the blood has been made as nearly normal as feasible. Although encouraging results were obtained in gassed animals, this method was not applied in man, as it was developed just before the armistice.

HUMAN PARASITOLOGY. With Notes on Bacteriology, Mycology, Laboratory Diagnosis, Hematology and Serology. By Damaso Rivas, B.S.Biol., M.S., M.D. Cloth. Price, $8. Pp. 715, with illustrations. Philadelphia: W. B. Saunders Company, 1920.

This book, which is one of the most extensive of the numerous recent works on the topic, opens with a general historical and biologic discussion, devotes separate parts to protozoan, metazoan and vegetable parasites, and closes with an appendix on gross and microscopic methods and technic, including hematology and serology. This feature of the work is new and will be welcomed by many; it might well have been developed more fully in its special relations to parasites. The work, as a whole, is fairly complete and up to date. Some features, however, will hardly commend themselves to most students of the subject. Thus, the grouping of worms according to organs inhabited may be defensible; but similar treatment of parasitic amebas leads to evident absurdities and its likely to mislead those not thoroughly familiar with these parasites. The author states that it is his plan to follow the rules of the International Commission on Zoological Nomenclature, but the text departs widely and unnecessarily therefrom. It shows also constant evidences of hasty and careless proofreading, and the resulting errors are sure to trip up students in other fields who go to it for authoritative information. It is unfortunate that so much material has been taken over bodily from other sources without a single word of acknowledgment. Many of the best illustrations are apparently reproduced from well-known authors, whose names are not attached to the legends.

THE CATARRHAL SUPPURATIVE DISEASES OF THE ACCESSORY SINUSES OF THE NOSE. By Ross Hall Skillern, M.D., Professor of Laryngology. Medico-Chirurgical College, Post-Graduate School, University of Pennsylvania. Third edition. Cloth. Price, $6.00. Pp. 418, with 300 illustrations. Philadelphia: J. B. Lippincott Company, 1920.

Skillern's work needs no introduction to the American rhinologist, and the third edition will be welcomed by this branch of the profession. This well known work, encyclopedic in its scope, has been enlarged and brought up to date by the incorporation in its text of new treatments and recent surgical procedures that have proved of merit. The subject matter has been divided into two main divisions, the first part, occupying fully one third of the text, taking up the general considerations involved in the study of the accessory sinuses, and the second division a study of the individual sinuses in detail. The work is an ideal textbook for graduate study, and as a reference volume is doubtless the most complete in the English language, the bibliography containing nearly 600 titles of original sources.

Miscellany

THE PHYSICIAN AS A FACTOR IN A STATE-WIDE COOPERATIVE PROGRAM FOR PROPHYLAXIS OF SOCIOLOGICAL DISORDERS

CHESTER L. CARLISLE, M.D.

United States Public Health Service Director, Oregon State Survey of Mental Defect, Delinquency and Dependency

EUGENE, ORE.

The community rôle of the physician as the diagnostician of medicopsychologic-sociological disorders is a very real and pressing actuality. Public health, social welfare, mental hygiene, sanitation and the whole field of health, normality of organ function and adequate conduct versus disease, inefficiency and failure are now recognized as definitely interrelated fields. The lesson of the draft findings is being carried into civil life.

In 1919, the Oregon legislature, realizing that there is "a large number of defective, delinquent and dependent people"; that "members of these groups are not only a source of weakness but a positive liability to the state and nation," that "these classes are a constantly increasing drain on the finances, health, morals and every other resource of the state . . . and contribute to social and political unrest . . . and . . . it is the duty of the state to promote the interests of the state," granted the University of Oregon authority to make such a survey, to report the result of its study with recommended legislation, and to conduct this study according to its own plan, the state not being asked for any appropriation for this purpose. The United States Public Health Service, long actively interested in all problems relating to physical, mental and child hygiene and public welfare generally, on the invitation of the state and university, endorsed by the state board of health, was glad to cooperate with the citizens of Oregon in their attempt to ascertain actual community facts of mental defect, delinquency and dependency. The Oregon State Survey of Mental Defect, Delinquency and Dependency is the response of a whole state awakened to the practical lessons of social hygiene.

The United States Public Health Service established headquarters for the survey with the extension division of the university. It acts as the directing and coordinating agent in collecting and collating all facts obtained. With no state appropriation for a paid staff, it was decided to utilize this apparent liability as an asset for social good. Hence, in order to carry the practical meaning of mental hygiene into the conscious awareness of every citizen having to do with the education and training of the children of the state, as well as to every citizen having to do with state, county, municipal and community welfare for adults, a state-wide plan of volunteer citizen cooperation was developed and is now in full operation. Every physician, educator, school and public health nurse, clergyman, lawyer and every officer of official and private community welfare groups in the state, including the Red Cross, was requested to act as a special volunteer assistant to the survey. The medical school of the university in Portland has taken an active part in bringing the object and scope of this project to the specific attention of its students, the university realizing that to the modern student in medicine must be given a much wider vision of his future professional activities than was formerly considered to be necessary. The entire newspaper-reading public was reached through the kindly assistance of the two hundred-odd newspapers of the state. The active interest of all citizens has been stimulated and enlisted in order that future legislation, based on the report of this survey transmitted through the Surgeon-General of the United States Public Health Service to the Oregon legislature, might be able to initiate a sufficiently broad and comprehensive plan of diagnosis, care, treatment and training of abnormal types, both in institutions and in community work, through the awakening of the whole state to the possibilities for social betterment and medico-sociological prophylaxis.

This state-wide census survey is in effect a referendum concerning mental defect, hampering physical disorder, delinquency and dependency—an important consideration in Oregon, where all important legislation is based on an actual referendum. It is apparent that before the people of a state can be asked to vote legislation having in view the improvement of statutory provisions in the field of mental and physical hygiene, the meaning and lessons of social hygiene must be already a part of their everyday point of view. All the assistants of the survey received a certificate under the seal of the state, over the signature of the director of the survey for the United States Public Health Service, giving them their authority to act. Thus was started an actual, state-wide citizen movement in mental hygiene based on "a sense of high citizenship and patriotism." The facts collected are recorded on special cards arranged by the director to care for any possible combination of medicopsychologic-sociological symptoms that any one person might show, characterizing him, for instance, as a blind, tuberculous dependent; a mentally defective delinquent; a crippled child who is bright, or a child over age for school grade on the normal expectation scale and hence a case of retardation. Each card has a space wherein the basic cause of the medico-sociological condition may be set down if ascertained.

In all of this it was planned to have every qualified physician in Oregon take the place to which he was entitled by reason of his special training and unique strategic situation in every local community problem of public health or social welfare. The medicopsychologic-sociological field of today is contemporaneous with the development of the modern aeroplane: both are phenix offspring of outworn social dogmas in flames. Mental and physical disease, defect or disorder not only presents symptoms of interest to the surgeon, internist, specialist or laboratory man, but takes every family physician of city, town and country into the company of those who would assist society in protecting itself from the inefficient, defective, delinquent, dependent conduct of the socially inapt.

The physician of today evaluates findings not only in terms of pathologic "lesions" but further in terms of foci for social infection. His scientific training fits him above all other professional groups to grasp the needs of the situation from both the individualistic physical side and from the community group point of view. Case histories, to be of scientific value, must include all the facts that have contributed to the constitutional make-up of the individual: the ensemble of all those factors in genetics, prenatal, maternal and environmental postnatal conditions and acquired disorders up to the very moment of onset of the symptoms (conduct). The needs of the patient and society alike demand investigation in all fields. With realization of the increased demands made on our profession, we will develop insight in the enormous field in prophylaxis.

In reviewing the health of schoolchildren, the investigation of causal factors and relief measures for overage-grade retardation includes something even more than outdoor classes, tooth brushes and vitamins. Surveys conducted by the United States Public Health Service into the cause of pupil retardation show that of 3,793 rural schoolchildren examined in New Castle County, Del., by Surg. E. H. Mullan, "five-tenths of one per cent. are definitely feebleminded and in need of institutional treatment, and an additional 1.3 per cent. of the total number were so retarded mentally as to be

considered probable mental defectives."[1] Surveys made by Asst. Surg.-Gen. Taliaferro Clark and P. A. Surg. W. L. Treadway show that in Porter County, Ind., "of the 1,087 girls and 1,098 boys examined in the rural schools, 0.6 per cent. of the former and 1.2 per cent. of the latter were so exceptionally retarded that their mental development at no time will be greater than that of a child."[1] Illustrating the necessity of making examinations and case histories inclusive of all fields of inquiry are the further findings of the same investigators, who demonstrated in this retarded group in Porter County that "28 per cent. of the exceptionally retarded girls were undersized; 42.8 per cent. had defective eyesight; 14.2 per cent. had defective hearing, and 2.9 per cent. had enlarged tonsils."[1] This demonstrates the interlocking of actual mental and physical "symptoms" and "conduct" which need treatment and care from both the physician and the educator if any real advance is to be made. Discriminating judgment based on accurate knowledge and adequate examination of the subject's whole output, "symptoms" and conduct must be the decisive factor in making a final diagnosis and social readjustment for either children or adults who as the "sick," the incorrigible, the delinquent, the inefficient dependent, or the whole combination as one patient, come before the physician and the community.

The report of the United States Bureau of the Census, 1919, shows the same thing from a nation-wide standpoint. This records that in institutions alone there were on Jan. 1, 1916, 394,991 individuals who were receiving care and treatment in 576 various institutions scattered throughout the United States suffering from these medicopsychologic-sociological maladies: feeblemindedness, insanity, criminalistic tendencies, epilepsy, inebriety, tuberculosis, leprosy, blindness, deafness, deformities, dependency and combinations of the foregoing, i. e., feeblemindedness and epilepsy; feeblemindedness, blindness and deafness; criminalistic tendencies with dependency, blindness and deafness, and blindness and deafness with dependency. The expenditure for maintenance and operation in 1915 was $81,048,990.93.[2] The most significant fact concerning this large group of social patients is that they represent only institution admissions and do not indicate the vast residue of similar persons to be found in each community who have as yet never appeared on public records, and never may because of lack of insight as to their needs on the part of the public generally. Such borderline cases are continually actual or potential medicosociological problems, and are always essentially social liabilities.

In addition to such data collected by the special voluntary assistants of the Oregon state survey, trained field investigators are making intensive studies of special groups: the mentally defective as a problem essentially of quantitative intelligence capacity loss; the delinquent as a problem in intelligence capacity, affective deviation and environmental influences; the dependent as a problem relating to public funds with special reference to causes, including constitutional make-up and environmental stress. Similarly, the problem of the over-age-grade retarded pupil in school is being investigated in selected districts. These special studies will assist in erecting a standard to which the figures obtained throughout the state may be compared. A comparative study of published findings in similar types surveyed in other states will be added. This is necessary to give background to local conditions in Oregon, where problems of terrain relating to wide expanses of thinly settled country are further complicated by difficulties inherent in floating and itinerant community groups incident to lumbering, hop rais-

FOR MALES **State of Oregon–Survey of Mental Defect, Delinquency and Dependency**

THE UNIVERSITY OF OREGON, directed by the U. S. PUBLIC HEALTH SERVICE, requests your cooperation in filling out this card for any case of mental defect, dependency or delinquency which comes under your observation. Please return promptly to Extension Division, University of Oregon, Eugene, Oregon

NAME · Surname — Given name — Birthplace (Specify county if in Oregon) — Age — Single / Married / Widowed / Divorced / Separated / Common Law — Occupation (or that of father if under 14) — Alias, if any — Reaction to sex matters

Legitimate — Illegitimate — Illegitimate children

RESIDENCE: County — Address, street or R.F.D. — Village, town or city — How long in U.S. — How long in Oregon — Citizen of what state or country — Religion — Race

PHYSICAL STATUS (Specify diseases) — Specify physical handicaps, as: { Blind—one eye both / Deaf—one ear both / Crippled or deformed — Specify Venereal diseases, if any — Wasserman Reactions taken

EMOTIONAL FIELD (Temperament) — Stable — Unstable (Tantrums) — Periodic upsets (Variation of moods) — Over-valuation of ideas Enthusiasms — Shut-in or seclusive type — Frank, open type — Other types

PERSONAL HISTORY (Check known facts)
Truant — Liar
Cruelty—Animals
Crimes—Property
Crimes—Persons
Sex pervert
Sex offender
Pyromania
Homicidal
Ungovernable child
Family deserter
Illicit consorts

SCHOOL HISTORY (Check known facts)
Attended school (check where)
City — Village (under 2,000) — Rural
PRESENT GRADE
How many school grades retarded for age?
Grade repeater 1, 2, 3, 4, times
No progress in grades
Education:
None — reads — reads and writes
Grammar school — High school — College

SOCIAL RECORD (Check known facts)
Steady worker — What — Weekly wage — Self-supporting
Intermittent worker — What — Weekly income — Self-supporting
Partial dependent — Public funds — Private funds — Cause
Complete dependent — Public funds — Private funds — Cause
Condition: Affluent — Comfortable — Poor — Squalid — Tramp
No anti-social conduct — Delinquent, never apprehended
Apprehended but not convicted — Sentenced
Sojourn in any institution—give dates and details

Does this person show symptoms of MENTAL DEFECT (feeble-minded) — Check—*Idiot* — *Imbecile* — *Moron* — *Borderline Intelligence Quotient* — *Subnormal Mental Age*
If Psychometric tests were made specify findings
Is he *Alcoholic?* (regular) (irregular) — *Epileptic* — *Insane* — (Diagnosis) — *Drug addict* (Specify)

HEREDITY
Father's name — Birthplace — Mother's maiden name — Birthplace
Father a citizen of what country — Has he first naturalization papers? — Has he completed naturalization papers?
Father's mentality — Temperament — Successful — Anti-social record
Mother's mentality — Temperament — Successful — Anti-social record
The family of this subject is composed of brothers and sisters, of whom males and females are living
Specify all mental and nervous disorders ANY relative of the family ever developed

CAUSES: State what you believe to be the cause of the subject's trouble

SUGGESTIONS as to needs:

DATE OF THIS RECORD — REMARKS: (Write additional information on the back of this card)

Card for males arranged to record any combination of medicopsychologic-sociological data that may be shown. For females a card of blue stock is used, with minor changes, such as "occupation or that of husband or father," and "how many legitimate children?" in place of "occupation (or that of father if under 14)" and "alias, if any."

1. Pub. Health Bull. 77.

2. Statistical Directory of State Institutions, etc., Bureau of the Census, 1919.

ing, cattle ranching and the like. The Oregon State Survey, in attempting to ascertain the medicopsychologic-sociological facts in an area covering 96,699 square miles and containing nearly a million people, represents the problem of the physician of today in the work of the world. He is the one really responsible diagnostician and therapist in the related fields of mental, physical and social hygiene.

Medicolegal

No Action for Anguish for Death on Operating Table

(Croom et ux. v. Murphy (N. C.), 102 S. E. R. 706)

The Supreme Court of North Carolina had here an action for damages that was brought against a physician by the parents of a child named Mildred Croom, who, as they alleged, "died suddenly on an operating table." Their allegations were that the death of the child was caused by the negligence of the defendant or his agents, in that he failed to make a proper examination of the patient before the ether was administered to her; in permitting a nurse, who was incompetent for that purpose, to administer the ether; in the negligent acts of the nurse, as his agent, in administering too much ether, or in administering it in a careless and unskilful manner; and in the failure of the defendant and his agents to observe the physical condition of the patient as indicated by her pulse and other symptoms while the ether was being administered and she was under its influence, one or the other or all of which acts proximately caused her death, by reason of which the plaintiffs had suffered and did still suffer great mental anguish, and had been damaged in the sum of $10,000. The defendant demurred to the complaint, principally on the ground that, the death of Mildred Croom being sudden and instantaneous, the plaintiffs had no right of action, the latter belonging to an administrator. The demurrer was sustained, and the complaint was dismissed. In affirming the judgment of the lower court, the supreme court says that the cause of action was for the wrongful death of Mildred Croom; the allegation of mental anguish was important only on the issue of damages, and the authorities in this country and in England are practically uniform that the action cannot be maintained.

Liability for What Is Done to Disease—Duty to Avoid Injuring the Weak

(Hanson v. Dickinson (Iowa), 176 N. W. R. 823)

The Supreme Court of Iowa affirms an award by the industrial commissioner of compensation for total disability during forty-four weeks in this case wherein the claimant was struck by a hammer on the inside of his left leg just below the kneecap, the blow causing a red spot and black and blue discoloration about it, while a roentgenogram taken about a month later revealed no fracture, but a disease of the bone and pus, a condition which a physician attributed to gonorrheal infection. The law, the court says, is well settled that one predisposed to disease which is aggravated or accelerated by a negligent injury is entitled to recover damages necessarily resulting from such aggravation or acceleration. In other words, the previous condition of the person injured cannot be invoked by the defendant for the purpose of escaping the consequences of his own negligence. The duty of exercising care to avoid injury to the weak and infirm is precisely the same as toward the strong and healthy, and when that duty is violated the measure of damages is the injury inflicted, even though the injury might have been aggravated or might not have happened at all but for the peculiar condition of the person injured. The workmen's compensation act dispenses with the necessity of any showing of negligence, contributory negligence and the like, and adopts as the standard or condition that the injury must have been personal and have arisen out of and in the course of the injured person's employment. The act does not purport to deal with the consequences save as these may fix the compensation to be paid by the employer, and there is no tenable reason for modifying the rule as to liability which obtained at the common law. It was urged in this case, however, that, under the definition of "personal injuries" in the Iowa statute, that "they shall not include a disease, except as it shall result from the injury," a pre-existing disease ought not to be considered, even though lighted up or accelerated by the injury. In the English act, as well as in the acts of most of the states, the remedy provided is for "personal injury by accident," and that is held to exclude diseases other than those in consequence of the injury. Manifestly the term "personal injuries" is of much broader significance than "personal injury by accident." It comprehends a great number of injuries. The manifest design of the general assembly in providing that the term "personal injuries" should not include a disease was to eliminate occupational diseases; that is, those which are incidental to or result from the occupation in which the employee is engaged. In a sense these may be said to "arise out of and in the course of the employment," but usually they are covered by increased compensation of the employee. Nor could it be said that the injury claimed for in this case included the disease with which the claimant was afflicted. What was claimed for was injury as inflicted by the accidental slipping of the hammer and the natural consequences flowing therefrom and traceable thereto, and this might have been found by the industrial commissioner to be the lighting up or accelerating of the dormant disease. The claim was not based on the disease, but on what the bruise did to the disease.

Validity of Law Empowering Board to Suspend Licenses—Sufficiency of Complaint and Evidence

(Suckow v. Board of Medical Examiners (Calif.), 187 Pac. R. 965)

The Supreme Court of California says that this was a proceeding begun in the superior court to review the action of the defendant board in suspending the license of the plaintiff, to practice medicine, for the period of one year. The statute under which the board had acted specifies, among other things which constitute unprofessional conduct, "the procuring or aiding or abetting or attempting or agreeing or offering to procure a criminal abortion." The complaint before the board charged that the plaintiff in this review case did in the county of Los Angeles, state of California, "procure, aid and abet, and attempt, agree and offer to procure, a criminal abortion upon a pregnant woman," naming a certain person. The plaintiff in this proceeding for a review argued that the action of the board was in excess of its jurisdiction; that the provision of the statute empowering the board to suspend or revoke a license to practice medicine, on finding the practitioner guilty of "unprofessional conduct," was unconstitutional. It was contended particularly that the statute was unconstitutional as an attempt by the legislaure to vest part of the judicial power of the state in a tribunal other than any that was authorized by the provision of the state constitution that all of the judicial power of the state is vested in the courts named and in such inferior courts as the legislature may establish. But the supreme court holds that the statute is constitutional, and affirms a judgment in favor of the board.

It must be conceded, the court says, that the power given to the board to revoke or suspend the license of a person duly admitted to practice medicine, on finding him guilty of charges of unprofessional conduct, as defined in Section 14 of the act for the regulation of the practice of medicine as amended in 1915, is judicial in its nature. The right to practice medicine is, like the right to practice any other profession, a valuable property right, in which, under the constitution and laws of the state, one is entitled to be protected and secured. The deprivation of such right without due process of law would be a violation of constitutional provisions. The meaning of this is that no one can be deprived thereof without notice and an opportunity for a hearing before some tribunal authorized to determine the question. That a board or tribunal so authorized exercises at least quasijudicial power in so doing is well established by the decisions of California. The determination that the plaintiff was guilty and that his

right to practice should be suspended comes clearly within the scope of the definitions of what the judicial function is. Nevertheless, it is now well established in California that tribunals such as the board of medical examiners or other boards empowered to revoke licenses which they have previously granted, for cause defined by the law, are not courts in the strict sense; they are not exercising "the judicial power of the state" as that phrase is used in the constitution conferring judicial power on courts, and that statutes creating such boards and conferring on them such powers are constitutional. It is also settled that, where a board has exercised quasijudicial power of the nature of that here in question, its decisions are subject to revision by way of certiorari.

Furthermore, the court does not agree with the contention that the complaint against the plaintiff, filed with the board, did not sufficiently state any cause for the revocation or suspension of his license, his contention being that the board could not have jurisdiction unless the charge was as specific and complete as would be necessary to an indictment under the provisions of the penal code defining the crime of abortion. Nor could it be said that there was no legal evidence in support of the decision of the board because the charges were sustained wholly by the testimony of persons who would in a criminal prosecution have been classed as accomplices in the act charged, whereas under the penal code no conviction can be had on the testimony of accomplices alone. The rules of pleading in criminal cases and the rules limiting the effect of evidence therein as fixed in the penal code do not apply to proceedings before the board of medical examiners.

Health Boards and Officers Not Empowered to Close Schools—Quarantine—School Boards

(Crane v. School District No. 14 of Tillamook County (Ore.), 188 Pac. R. 712)

The Supreme Court of Oregon, in affirming a judgment in favor of the plaintiff, holds that it was no defense to an action on a contract which he had made with the defendant to transport its pupils to and from its school for nine months, beginning in September, 1918, that the school was closed from about Oct. 14, 1918, to Feb. 10, 1919, it having been ordered closed by the county health officer, who was directed by the acting state health officer to close all schools, etc., in case of the appearance of an outbreak of influenza in the community. The court says that the statute provides that "the state board of health shall have general supervision of the interests of the health and life of citizens of the state," and that "it shall make and is hereby empowered to enforce, such quarantine regulations as seem best for the preservation of the public health." The statute also makes it the duty of county boards of health to enforce all rules and regulations of the state board of health, which may be issued from time to time for the preservation of the public health and for the prevention of endemic, epidemic and contagious diseases. But the power to make and enforce quarantine regulations given to the state board of health does not embrace or carry with it the authority to close public schools. In operation, quarantining is confined to specific persons who have or who may have been exposed to a contagious disease, and it does not apply to the public in general. Nor should the provision giving to the state board "general supervision of the health and life of the citizens of the state" be construed to mean that it alone has power to close the public schools of the state. Such authority would be very broad and far-reaching, and would have to be read into the statute by construction. If it had been the intent of the legislature to confer such a vast power on the state board of health, it should have used language far more specific and certain than it did use.

With regard to the power of school boards, a provision of the statutes that school boards may, "on account of the prevalence of any contagious disease or to prevent the spread of such contagious disease, prohibit the attendance of any teacher or scholar upon any school under their control," does not empower such boards to close schools. Such authority, if any, must be found in the provision that school "boards shall have entire control of the public schools of their districts." But that does not say that in case of an epidemic of a contagious disease the school board shall close the school. Under its general powers of control and supervision, the closing of the schools for any reason rests in the sound discretion of the school board, and therefore it is not a question of law. The legislature has rightfully assumed that in all such matters the school boards will work in harmony with the boards of health to prevent, suppress, control and regulate the existence and spread of contagious diseases.

In the present case the defendant specifically alleged that the school was closed in obedience to the order of the health officer, and not otherwise, and hence it must follow that the defendant's school was not closed by operation of law. Nor was it a sequence that the closing of the school would suspend the contract between the plaintiff and the defendant.

Society Proceedings

COMING MEETINGS

American Physiological Society, Chicago, Dec. 30.
District of Columbia, Medical Society of, Washington, Dec. 1.
Hawaii, Medical Society of, Honolulu, Nov. 18-20.
Medical Association of the Southwest, Wichita, Kan., Nov. 22-24.
Porto Rico, Medical Association of, Ponce, Dec. 13-14.
Radiological Society of North America, Chicago, Dec. 16-17.
Society of American Bacteriologists, Chicago, Dec. 28-30.
Southern Medical Association, Louisville, Ky., Nov. 15-18.
Southern Minnesota Medical Association, Mankato, Nov. 29-30.
Southern Surgical Association, Hot Springs, Va., Dec. 14-16.
Western Surgical Association, Los Angeles, Calif., Dec. 3-4.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Seventieth Annual Session, held at Harrisburg, Oct. 4-7, 1920

The President, DR. HENRY D. JUMP, Philadelphia, in the Chair

State Regulation of Medicine

DR. HENRY D. JUMP, Philadelphia: Year after year, advocates of unique forms of treatment ask for state registration. There should be uniform requirements of knowledge in the fundamentals for all who practice the healing art. There is a growing tendency to place medical treatment under state supervision, with the idea that physicians should be under salary and assigned to districts in which to practice. Such a provision would not be desired by the profession. We are justified from the standpoint of the people and the good of our own profession in resisting efforts to establish compulsory health insurance in this state.

The Physician and the Public Schools

DR. THOMAS E. FINEGAN, Harrisburg: A public school is an institution that is to serve every intellectual necessity of the people who maintain that school. We are not content, therefore, in teaching children the usual subjects that have been put in the curriculum, but one of the first and most essential things to be given consideration is the health of the child. Children should be protected in every way when they are placed in school. We are going to have in a short time a syllabus for public health instruction worked out which begins with the child when he enters school, and goes through the eight years of elementary school course and the four years of the secondary school course.

The Outlook of Chronic Nephritis

DR. JAMES M. ANDERS, Philadelphia: The rules of renal function in disease are not hard and fast. The classification of cases of chronic nephritis is imperfect. There are many atypical cases probably due to previous infections. The outlook in these cases is modified by the extent of fibrosis; when this is limited, life may not be shortened. Many of the arterial hypertension cases have endured for many years without appreciably deteriorating. Cases of cyanotic kidney due to cardiac disease showing albumin and casts clear up quickly when the heart improves. The prognosis in confirmed chronic parenchymatous nephritis is exceedingly grave, though not

altogether hopeless. In the interstitial cases, the outlook is at times guardedly favorable if recognized early.

DISCUSSION

DR. M. H. FUSSELL, Philadelphia: The recognition of some infection that is causative of nephritis will frequently prevent the dire results of a kidney lesion. It seems to me true that the loss of function in chronic nephritis is made distinctly more dangerous by the thoughtless use of so-called diuretics. It must be borne in mind that casts and albumin do not mean the death warrant, and their presence may be of no importance as to longevity. The functional tests are valuable both in prognosis and in treatment.

The Health of a Community

DR. JOHN D. MCLEAN, Harrisburg: A union of the medical care of a community with the powers of the state department of health brings about a lessening in the number of persons suffering from diseases. I want to plead with physicians to maintain the health of their communities, especially in rural districts, by reporting cases of typhoid fever at once.

DISCUSSION

DR. ROBERT A. KEILTY, Danville: In an epidemic recently, twenty-nine cases have materialized following the infecting of the water supply of a town of 7,000. It is up to us to protect that water supply. It is up to us in each one of our communities to correlate our work with that of the state department of health.

DR. THOMAS M. STAHLMAN, Pittsburgh: It seems to me that what is badly needed in rural communities is isolation hospitals. When treatment cannot be carried out at home, these patients should be sent to these isolation hospitals. One thing that impressed me in rural communities was the insanitary condition of school buildings.

End-Results in Peripheral Nerve Injuries

DR. W. WAYNE BABCOCK, Philadelphia, and JOHN O. BOWER, Wyncote: Operations for nerve injuries were performed in 608 cases. Operative exploration of nerves is harmless and usually helpful in the milder forms of injury. Results are much better in operative than in nonoperative treatment. Nerve grafting and lateral implantation give poor results and are rarely necessary. Accurate end-to-end suture is possible in nearly every case, despite long gaps. Regeneration is almost invariable after suture. The rate of regeneration is about one inch a month. The small muscles of the hand are the last to recover. If nerve function has not been restored within three months after healing of an injury, nerve suture should be resorted to.

DISCUSSION

DR. CHARLES H. FRAZIER, Philadelphia: According to the experience of European surgeons early in the war, there is only one operation that need be considered in any case of peripheral nerve injury with complete anatomic nerve block, that is, the end-to-end suture. The power of regeneration in the peripheral nerve is extraordinary, and quite as active as the process of repair and regeneration in other tissues. The peripheral nerve receives its blood supply from minute blood vessels throughout its entire extent; and, if the nerve is completely isolated for 12 or 15 cm. and cut free altogether from a large portion of its arterial supply, the likelihood of arterial regeneration for complete restoration of function is not great. Another point that we should bear in mind and always do is to get freedom from scar tissue. The more nearly we reapproximate the nerve according to its original condition, the greater is the likelihood of restoration of function.

A New Concept Relative to the Treatment of Malignant Disease

DR. WILLIAM L. CLARK, Philadelphia: Excision or other treatment of a primary malignant lesion, and block dissection of metastatic glands are not sufficient. Migratory cells in lymphatic ducts must also be taken into consideration, else they will drain into the tissues after glands are removed, and rapid progress of disease usually results. Lethal action of radium on malignant cells of all types has been proved in laboratory and in practice. At least one maximum radium treatment with accurate technic is advocated, preparatory to any other procedure, for the purpose of rendering benign the migratory cells in ducts, and to wall off glands with fibrous tissue. At least three radium treatments, averaging six weeks apart, should also follow any operative or other procedure. The folly of depending on operative surgery or other methods alone, in cancer with metastasis, and the wisdom of anteoperative and postoperative radium treatment is amply demonstrated by clinical evidence. The invaded glands not broken down will usually disappear under radium treatment, and excision will not be necessary. If degenerated in the interior, they will not disappear, but radium treatment will convert the capsule into benign fibrous tissue. Then the gland may be incised and drained with safety. Hollow, noncorrosive steel needles, containing radium salts representing a known quantity of radium element, inserted into malignant growths and glands, produce results that could not be produced by radium applied from the outside in capsules or plaques. The judicious combined use of operative surgery, electrothermic methods, radium and the roentgen ray will often clinically cure even very advanced and inoperable cases of carcinoma and sarcoma.

DISCUSSION

DR. G. BETTON MASSEY, Philadelphia: I do not see how the radium rays are so much more effective than roentgen rays when properly applied, and it is possible that some of the bad odor of the roentgen-ray treatment of cancer is due to a lack of use of the proper remedy at the proper time: that is, the lack of use of several remedies, the association of remedies, the knife possibly in some cases, but more particularly the electrothermic method which gets rid of the bulk of the accessible growth before the roentgen ray is applied. It has appeared to me that the roentgen ray has a special field in the subdermic diffusions. I have patients that are well at the end of from seventeen to twenty years from this electrothermic treatment, or, as it was then called, cataphoric destruction.

Obstetrics and the General Practitioner

DR. J. WHITRIDGE WILLIAMS, Baltimore: Many specialists tend to overlook the fact that at least 80 per cent. of all deliveries must be conducted by the family physician or by a midwife, and that the services of specialists are available only in large cities and towns. Expert knowledge of the niceties of pelvimetry cannot be expected of the average practitioner; all that can fairly be demanded is that he so treat his patients that they may be reasonably assured of a successful outcome, and the recognition of gross deformities. The patient should be taught to engage his services at an early period of pregnancy, that she may be assured of reasonable prenatal care and all that it implies, particularly in reducing infant mortality during the first year of life. Patients with gross pelvic deformity, as well as those in whom unrecognized disproportion has led to disastrous results in the past, should be sent to specialists for expert advice. Dublin has shown that of all maternal deaths in this country, 45 per cent. are due to infection and 26 per cent. to various forms of toxemia, while the remaining are due to other causes combined, such as dystocia and hemorrhage. Attention should be directed especially toward diminution of mortality from the first two causes. The remedies are aseptic technic and the greatest possible restriction of vaginal examination, which is replaced by abdominal palpation and rectal examination.

DISCUSSION

DR. BARTON COOKE HIRST, Philadelphia: There is a great future for the reduction of morbidity in women after childbirth. It is possible for the physician to cut off 61 per cent. of all diseases of women by attention to two factors: the repair of injuries and the prevention of retroversion. One cannot repair the injuries of childbirth immediately after delivery. By making formal intermediate operation, all the injuries can be repaired. Postural treatment during the puerperium will reduce displacements to about 3 per cent.

DR. WILLIAM N. BRADLEY, Philadelphia: In my work at the Starr Center in Philadelphia, I have had under my care for the last year 252 expectant mothers. Of this number, 131

have been delivered. Of the 131, we had two abortions and one premature labor with a living baby. The entire 128 living infants were being breast fed at the end of one month, which is an important point from the standpoint of the pediatrician. The importance of early consultation of the physician by pregnant women cannot be overestimated. I find that, in the class of women we have to deal with, the blood pressure during pregnancy rarely exceeds an average of 105. This group of women three months after delivery have a blood pressure of 115 or 120. We should not go to the extreme of underfeeding these women in pregnancy in order that they may have a delivery free from danger.

DR. PAUL TITUS, Pittsburgh: We have found that students who are on duty only eighteen days become proficient in rectal examination, and are able to avoid a large number of vaginal examinations. As regards the immediate repair of the perineum, with all respect to Dr. Hirst I differ with him. Certainly it does no harm to attempt repair. I believe that a certain amount of granulating suppurating surface is avoided by the closure of the perineum immediately after the birth of the child.

DR. J. WHITRIDGE WILLIAMS, Baltimore: Puerperal infection in the hands of the profession at large in this country causes as many deaths as it did thirty years ago. That is not my statement, but I got it from reading statistics. The consequence is that there is radical need of prevention of vaginal examination.

Altered Blood Pressure as a Manifestation of Imbalance

DR. DANIEL J. MCCARTHY, Philadelphia: Any fault in any one of the important endocrine glandular structures leads to an essential fault in the blood pressure mechanism, and any fault here leads to serious damage to the developing brain and nervous system. A common cause of this condition in children is tuberculosis in the parent. As the child grows to manhood, the increased mental reflexes give a hypersensitive individual with a tendency to introspection and dissociation of personality. In this group of cases, adolescent insanity is not infrequently seen.

JOINT MEETING WITH THE INTERSTATE ASSOCIATION OF ANESTHETISTS AND THE NATIONAL ANESTHESIA RESEARCH SOCIETY

Blood Pressure Guides in Anesthesia and Surgery

DR. ALBERT H. MILLER, Providence, R. I.: Despite opinions to the contrary, a working definition of the condition of surgical shock can be made and followed. The blood pressure is our most certain guide to the condition of the circulatory system. Most of the fatalities attributed to surgical shock are due to factors other than surgical traumatism which, if understood, might be controlled.

DISCUSSION

DR. E. I. MCKESSON, Toledo, Ohio: One who is interpreting blood pressure changes in a surgical operation must be keen; he must be watchful; he must be aware of what the anesthetist is doing from the anesthetic standpoint; he must know what the surgeon is doing, and he must have a clear conception of the patient in order properly to locate causes of depression.

DR. F. H. MCMECHAN, Avon Lake, Ohio: A new uniform anesthesia record sheet has been drawn up by a special committee of experts to assist all those who wish to protect their patients under anesthesia with blood pressure guides.

Third-Stage Ether Anesthesia: A Subclassification Regarding the Significance of the Position and Movements of the Eyeball

DR. ARTHUR E. GUEDEL, Indianapolis: My plea is for lighter and better anesthesia and for better teaching of anesthesia in our medical schools and hospitals. As long as we note any movement or eccentric position of the eyeball, aside from that which might be normal for the occasional patient, that patient has not had too much anesthetic; but after anesthesia has been well inaugurated, he has had quite enough. The upper part of the third stage, namely, the first stratum, is anesthesia entirely as satisfactory to the surgeon as the second, third or fourth stratum of the third stage.

The Anesthetic Problem in Lung Surgery

DR. JAMES T. GWATHMEY, New York: Nitrous oxid and oxygen are preferable to ether and air. A larger amount of oxygen can be given if preceded by an average in adults of ⅜ grain of morphin. Positive pressure of from 7 to 10 mm. of mercury must be maintained in the rubber bag. With this method, first-stage anesthesia is kept up throughout, as indicated by pink color, active lid reflex and rolling eye. The patient should not become cyanosed at any time.

DISCUSSION

DR. JOHN R. MCCURDY, Pittsburgh: I would emphasize the importance of the morphinization of the patient before any procedure is begun. Three-eighths grain of morphin administered in divided doses, as Dr. Gwathmey has advised, is not a dangerous dose in these cases. The morphin undoubtedly produces a much better respiratory condition; moreover, it gives the patient comfort and relief from pain irrespective of the anesthetic agent administered; that is not only humane, but assists materially both the anesthetist and the surgeon.

DR. R. PROCTOR MCGEE, Pittsburgh: Dr. Gwathmey gave anesthetics during the war for the most extensive chest surgery that has been carried on in modern times. He gave the anesthetic day after day in St. Mihiel and the Argonne, in a hospital that received nonportable casualties, and in every instance his patients seemed to sleep easily and to stand the operation with the best results. In fact, when Major Yates made his report on the low death rate that he had with his chest operations, it took a good deal of faith for many surgeons to believe that the work could be done so well; but Dr. Gwathmey deserves a large share of praise for what was accomplished in saving the lives of wounded soldiers with chest injuries.

DR. E. I. MCKESSON, Toledo, Ohio: I agree vigorously with Dr. Gwathmey's idea of maintaining a light analgesia in lung surgery. There is no necessity I know of for maintaining a deep anesthesia. In fact, I think it is quite distinctly more dangerous to do so. A good sized dose of morphin is of more value to the patient than the damage it might possibly do by lowering the blood pressure.

DR. F. H. MCMECHAN, Avon Lake, Ohio: The papers of Dr. Guedel and Dr. Gwathmey are based on research work that was conducted in the midst of strenuous campaigning in war. When this meeting was scheduled, the National Research Society offered a series of prizes for the best papers that would be presented on research subjects. The Committee on Prize Award has awarded a prize to Dr. Guedel, his paper being based on 10,000 anesthesias administered in France, and a second prize has been awarded ot Dr. James T. Gwathmey for his wonderful work in lung surgery, which Yates of Milwaukee said reduced the mortality to practically one-third or less than what it had been before Dr. Gwathmey arrived on the scene of action.

Nitrous Oxid-Oxygen Anesthesia for Tonsil and Sinus Surgery in the Forward Inclined Sitting Posture

DR. IRA O. DENMAN, Toledo, Ohio: For the last ten years I have used this position exclusively in my work, believing that it is the safest position for oral or sinus surgery. The field of operation is kept clean and free from blood and other fluids, and irrigation is facilitated if needed. Inspiration of blood or infected material is avoided. With this position, any procedure can be carried out under general anesthesia with nitrous oxid and oxygen.

DISCUSSION

DR. E. I. MCKESSON, Toledo, Ohio: I have administered many anesthetics for tonsil work with the various forms of anesthesia during the last years, but none gives me the pleasure and the confidence and the control of the patient that nitrous oxid does, particularly in this position. I have been much excited several times in trying to resuscitate a patient who had inhaled a pharynx full of blood. If there were nothing else to recommend the forward inclined posture, this would be sufficient.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

October, 1920, **53**, No. 3

*Antagonism of Inhibitory Action of Epinephrin and Depression of Cardiac Vagus by Constituent of Certain Tissue Extracts. J. B. Collip, Edmonton, Alberta.—p. 343.
Reciprocal Reactions in Cardiovascular System. E. W. Wickwire, New E. G. Martin, A. C. Franklin and C. Hield, Palo Alto, Calif.—p. 421.
Relation of Initial Length and Initial Tension of Auricular Fiber on Myodynamics and Cardiodynamics. R. Gesell, San Francisco.—p. 377.
*Rôle of Pancreas in Hyperglycemia from Ether. E. L. Ross and L. H. Davis, Chicago.—p. 391.
Physiologic Studies on Planaria. IV. Oxygen Consumption During Starvation. L. H. Hyman, Chicago.—p. 399.
Vasomotor Reflexes from Receptor Stimulation in Intact Animals. E. G. Martin, A. C. Franklin and C. Hield, Palo Alta, Calif.—p. 421.
*Studies in Placental Permeability. I. Differential Resistance to Certain Solutions Offered by Placenta in Cat. R. S. Cunningham, Baltimore.—p. 439.
Production of Intracellular Acidity by Neutral and Alkaline Solutions Containing Carbon Dioxid. M. H. Jacobs, Philadelphia.—p. 457.
Effect of Salt Ingestion on Cerebrospinal Fluid Pressure and Brain Volume. F. E. B. Foley and T. J. Putnam, Boston.—p. 464.
*Antagonism of Depressor Action of Small Doses of Epinephrin by Tissue Extracts. J. B. Collip, Edmonton, Alberta.—p. 477.
Sex Difference in Presence of Natural Hemolysin in Rat. Y. Suzuki, Philadelphia.—p. 483.
*Studies on Absorption from Serous Cavities. III. Effect of Dextrose on Peritoneal Mesothelium. R. S. Cunningham, Baltimore.—p. 488.

Effect of Tissue Extracts on Involuntary Muscle.—Extracts of various tissues were found by Collip to have definite stimulatory effect on isolated intestinal and uterine musculature. It is suggested that substances similar to those found in extracts of various tissues may be present in greater or less amount in all tissues.

Relation of Pancreas to Hyperglycemia.—The hyperglycemia induced by ether was measured by Ross and Davis on two series of dogs. One group had partial pancreatectomies and the other group had complete pancreatectomies. The effect of ether anesthesia on the urine dextrose was also measured in the case of the pancreatectomized dogs. The hyperglycemia induced by ether anesthesia of partially pancreatectomized dogs was the same as that of normal dogs. The hyperglycemia induced by ether anesthesia of completely pancreatectomized dogs was practically the same as normal. Comparing the dextrose output in the urine half an hour before anesthesia and half an hour during anesthesia showed a marked decrease in the elimination of dextrose. Comparing the rate mobilization of dextrose with and without ether showed that it was markedly decreased by the drug. The results lead the authors to conclude that the chief action of ether in causing a hyperglycemia in normal animals is to reduce the influence of the internal secretion of the pancreas on glycolysis.

Permeability of Placenta.—The principal facts demonstrated by Cunningham's experiments are the differences in the permeability of the endothelial and ectodermal layers of the placenta, and the differences in the resistance offered to the two experimental salts by the fetal ectoderm. It is evident that the placenta may be considered as two protoplasmic membranes which are directly applied to each other in such a way that they appear anatomically as a single membrane separating the two bloods, but have in reality entirely different physiologic properties.

Effect of Epinephrin on Blood Pressure.—Collip found that the fall in blood pressure produced by a small dose of epinephrin is antagonized by various tissue extracts. The rise in blood pressure produced by a definite dose of epinephrin is augmented and prolonged by administration of tissue extract. It is held that both these types of effects are of the same order.

Absorption from Serous Cavities.—Cunningham's experiments do not settle the question of the feasibility of using the peritoneal cavity as a route for the administration of dextrose; but they furnish certain evidence which is of value, both in regard to this practical application and to the general reactions of the peritoneal mesothelium. The experimental results which are favorable for the use of this method are: the general effect on the animals, the nature of the curve of absorption, the rapid recovery of the mesothelium, and the absence of adhesions. But the changes in the mesothelial cells cannot be considered as directly favorable, and may even prove a definite contraindication.

American Journal of Public Health, Boston

September, 1920, **10**, No. 9

State and Municipal Meat Inspection. J. Roberts, Washington, D. C.—p. 697.
Recovery of Streptococcus Hemolyticus from Restaurant Tableware. C. C. Saelhof and W. J. R. Heinckamp, Chicago.—p. 704.
On the Solution of Pneumococci by Bile. F. B. Kelly, Chicago.—p. 708.
City Health Bulletins: Their Use and Misuse, Necessity for Additional Mailing Privileges. M. J. Colton, Cumberland, Md.—p. 712.
Ideals in Organization of an Industrial Medical Service. E. R. Hayhurst, Columbus, Ohio.—p. 715.
Organization of Control of Pasteurization. F. O. Tonney, Chicago.—p. 716.
Public Water Supply Contaminated by an Interconnected Private Water Supply. C. M. Saville, Hartford, Conn.—p. 724.
Campaign Against Malaria in Cuba, 1918-19. F. Villuendas, Havana, Cuba.—p. 728.
Country Slaughterhouse; How to Build It. G. H. Parks, Washington, D. C.—p. 731.

American Journal of Ophthalmology, Chicago

October, 1920, **3**, No. 10.

Reticular Keratitis. W. G. M. Byers, Montreal—p. 717.
Phakoerisis. I. Barraquer, Barcelona, Spain.—p. 721.
Safest Method of Cataract Extraction. R. O'Connor, San Francisco.—p. 726.
Case of Intra-ocular Sarcoma with Unusual Operative History. E. C. Ellett, Memphis, Tenn.—p. 732.
Visual Field Findings in Case of Brain Tumor. W. R. Parker, Detroit.—p. 736.
Safety Procedures in Operation of Senile Cataract. H. W. Woodruff, Joliet, Ill.—p. 739.
Delirium Following Cataract and Other Eye Operations. W. A. Fisher, Chicago.—p. 741.
Postdiphtheritic Ocular Paralyses; Report of Three Cases. M. Lombardo, Brooklyn.—p. 747.
Prism Meter Measure for Use in Retinoscopy. J. N. Evans, Brooklyn.—p. 755.
Advancement by Means of Silver Screw Clamp. R. Von Der Heydt, Chicago.—p. 755.
Herpes Zoster Ophthalmicus. H. V. Würdemann, Seattle.—p. 756.

American Journal of Roentgenology, New York

September, 1920, **7**, No. 9

Value of Roentgen Ray in Study of Diverticulitis of Colon. A. W. George and R. D. Leonard, Boston.—p. 421.
Electrical Dangers in Roentgen-Ray Laboratories. J. S. Shearer, Ithaca, N. Y.—p. 432.
Radium Therapy. R. Matas, New Orleans.—p. 440.
New Method of Mounting Intensifying Screens. R. T. Morrison, Rochester, N. Y.—p. 446.
Stereofluoroscope. S. Heck, Salem, Ohio.—p. 448.
Roentgen-Ray Studies in Gout. E. D. McCarty, Boston.—p. 451.
Disc Attachment for Victor Serial Timer. H. B. Thompson, Seattle.—p. 459.
Case of Osteosarcoma of Tibia. C. Eastmond, Brooklyn.—p. 460.
Piece of Glass in Hand. A. R. Taft, Charleston, S. C.—p. 461.

Annals of Surgery, Philadelphia

October, 1920, **72**, No. 4

*Indications for Active Immediate Mobilization in Treatment of Joint Injuries. C. Willems, Liége, Belgium.—p. 425.
*Fractures of Forearm in Region of Wrist. A. Troell, Stockholm.—p. 428.
*Rôle of Cancellous Tissue in Healing Bone. T. W. Todd, Cleveland.—p. 452.
Recognition of Dead Bone Based on Pathologic and Roentgen-Ray Studies. D. B. Phemister, Chicago.—p. 466.
*Diagnosis and Therapy of Bone Typhoid. G. Bohmansson, Orebro, Sweden.—p. 486.
Surgical Aspects of Charcot Joint and Other Syphilitic Bone and Joint Lesions. F. J. Cotton, Boston.—p. 488.
Forward Dislocation of Astragalus and With It the Foot. R. H. F. Dinegar, New York.—p. 494.
*Adventitious Ligaments Simulating Cervical Ribs. A. A. Law, Minneapolis.—p. 497.
Spermatocele. E. T. Crossan, Philadelphia.—p. 500.
Varicocele Operation and Avoidance of Postoperative Induration. P. G. Skillern, Jr., Philadelphia.—p. 508.
Cutting Bone Flap in Cranial Surgery. H. C. Masland, Philadelphia.—p. 511.

Active Mobilization in Joint Injuries.—In a résumé of the actual state of the question, Willems estimates that active mobilization knows no contraindications by reason of extent

of bony lesions, or extent of destruction of the ligaments. He urges surgeons not to abandon the method at the first difficulty, but, on the contrary, to pursue it to the end, with the conviction that the functional result will be the more brilliant in the same proportion as the efforts to obtain it have been more energentic and tenacious. Bony lesions constitute no contraindication to active mobilization, and in such cases they give unhoped for success.

Fractures of Forearm Near Wrist.—Troell feels that his observations confirm the belief that the forearm fractures in the region of the wrist, which are the usual ones for individuals with incomplete bone development are, as a rule, with regard to manner of origin, compression fractures, or a combination of compression and flexion fractures.

Rôle of Cancellous Tissue in Bone Regeneration.—The regeneration processes of the cancellous tissue of human long bones as revealed by cases of chronic osteomyelitis were studied by Todd. He believes that cancellous tissue is one of the chief agents in regeneration of bone, and like the cambium layer of periosteum, should be treated at operation in the most conservative manner, consistent with thorough exploration and drainage. In regeneration the cancellous tissue nearest the midlength of the bone grows most rapidly, whereas that in or near the articular extremities shows less readiness to proliferate and fill the cavity. Septic bone cavities should be permitted to heal from the bottom, the wound in the soft tissues being kept widely open until this has occurred. The least possible mechanical disturbance of the cancellous tissue should be employed and no "disinfection" of the cavity attempted, for this simply kills the remaining tissue from which regeneration is expected. Regenerating bone is very sensitive to and easily affected by pressure, even of soft tissues, and by inefficient drainage. It is not adversely affected by the ambulatory method of treatment. Compact bone plays a very minor part in regeneration.

Bone Foci Lead to Diagnosis of Typhoid.—Bohmansson cites a case in which multiple typhoid bone foci led to a diagnosis of typhoid when no other symptoms aroused a suspicion of typhoid. A positive culture was made from a bone focus. Vaccine therapy was introduced, with doses increasing from 5,000,000 up to 5,000,000,000. The Widal reaction now was positive. Bohmansson considers that this argues in favor of a low virulence of the bacteria, and further emphasizes the already well known fact that the intensity of the primary disease does not appear to be of any importance with regard to an eventual appearance of pyemic bone typhoid.

Adventitious Ligaments Simulating Cervical Ribs.—In the cases of some of the shorter and more rudimentary ribs, Law found that the forward projecting tips of these ribs were occasionally attached by a definite ligament to the first rib or to the sternum. There was in the four cases seen by him the invariable angling over the ligament and the pinching of the nerves and artery between the ligament and the scalenus anticus muscle, just as these structures are pinched between the muscle and rib in the cervical rib cases. The ligaments were all tightly stretched, and while they all had their origin from the tip of the seventh cervical transverse process, they varied markedly in their point of insertion, for one was inserted with the scalenus anticus muscle into the scalene tubercle of the first rib, another into the costoclavicular ligament, the next into the sternoclavicular ligament, while the last was inserted well toward the midline into the interclavicular ligament close to the head of the clavicle. In none of the cases studied was there a tendency to dilatation of the subclavian artery distal to the ligament, and only in one was the pulse appreciably weaker on the obstructed side. In each instance, after operative intervention, while the neuralgia persisted for a while, it promptly became less severe and ultimate and complete relief was obtained.

Archives of Internal Medicine, Chicago

October, 1920, **26**, No. 4

*Blood Pressure in University Freshmen and Office Patients. W. C. Alvarez, R. Wulzen, F. B. Taylor and E. Starkweather, San Francisco.—p. 381.
*Method for Permanent Staining of Reticulated Red Cells. T. D. Cunningham, Boston.—p. 405.
*Behavior of Pyloric Sphincter in Normal Man. C. W. McClure, L. Reynolds and C. O. Schwartz, Boston.—p. 410.
*Heart in Scarlet Fever. H. A. Rosenbaum, Chicago.—p. 424.
*Hemolysins from Parasitic Worms. B. Schwartz, Washington, D. C. —p. 431.
*Method for Quantitative Determination of Protein in Cerebrospinal Fluid. W. Denis and J. B. Ayer, Boston.—p. 436.
*Blood Chemistry Studies in Influenzal Pneumonia. C. W. Wells, Des Moines, Iowa.—p. 443.
*Blood Chemistry of Pernicious Anemia. A. O. Gettler and E. Lindeman, New York.—p. 453.
*Xanthochromia; Report of Three Cases. L. A. Levison, Toledo, Ohio. —p. 459.
*Correlation of Basal Metabolism and Pulse Rate in Patients with Hyperthyroidism. C. C. Sturgis and E. H. Tompkins, Boston.—p. 467.
*Neuritis of Cranial Nerves in Lethargic Encephalitis and Differential Anatomic Diagnosis Between It and Acute Poliomyelitis. M. T. Burrows, St. Louis.—p. 477.

Studies on Blood Pressure.—A statistical analysis was made by Alvarez of the blood pressures in 8,737 University of California freshmen and 1,000 office patients. It is suggested that hypertension is based on a hereditary peculiarity. Its manifestations appear to be suppressed in women as long as the ovaries function well. From clinical experience it would seem that pressures over 127 in women, and over 130 in young men, are indicative of a hypertensive diathesis which is associated with many typical symptoms and findings. Fifty out of a hundred men will die of cardiovascular disease. This makes its appearance at different ages in the different men. Alvarez believes that careful examination would show the beginnings of such disease in childhood and youth, even in those individuals who are to round out a fairly long life. He believes that a hereditary predisposition is the most important etiologic factor.

Staining Reticulated Cells.—Permanent preparations are made by Cunningham by combining a vital with a Wright's stain. The reticulation is as clear, if not clearer, than by the older methods, and the Wright's stain retains all its differential qualities, except the polychromatophilia, which is not present. The ease and simplicity of this method brings the study of reticulated erythrocytes within the scope of routine blood examination. A small drop of a 0.3 or 0.5 per cent. aqueous or alcoholic solution of brilliant cresyl blue is placed on the end of a clean slide or the center of a cover glass and smeared around over an area 1.5 cm. in diameter. Next, a drop of fresh blood is placed on a clean coverslip and dropping it face down on one of the areas of dried stain. The stain goes into solution almost instantly. The cover glasses, or slide and cover glass, are now pulled apart as in making an ordinary blood smear and are permitted to dry. On drying, the blood turns a dirty greenish blue color. The slide or cover glass is then stained with Wright's blood stain. The preparation is dried in the usual manner and mounted in Canada balsam. The reticulum is stained a deep or light blue, depending on its density, and gives a striking picture in its contrast with the pink protoplasm of the cell.

Action of Pyloric Sphincter.—The conclusions reached by McClure et al. are as follows: Finely divided carbohydrate, protein or fatty foodstuffs begin to leave the normal human stomach within a comparatively few minutes after their initial ingestion. Under normal conditions the human pyloric sphincter opens regularly at the approach of each antral peristaltic wave, allows chyme to pass through into the duodenum during an appreciable length of time, and closes when the antral peristaltic wave has spent itself. The introduction of fortieth-normal, twentieth-normal or tenth-normal hydrochloric acid solutions into the first, second or third portions of the normal human duodenum either produced no effect on the opening of the pyloric sphincter as observed by means of the fluoroscope, or produced effects which were interpreted as the result of abnormal irritation of the duodenal mucosa. Neutralization of the contents of the first portion of the duodenum did not prevent the closing of the pyloric sphincter. The results obtained indicate that acid is not the principal factor controlling the opening and closure of the pyloric sphincter in man.

Heart Complications in Scarlet Fever.—Among 1,770 scarlet fever patients cardiac complications were observed in 106. This does not include instances of increased rapidity nor

occasional slight irregularity. Twelve of these had valvular defects antedating the scarlet fever. In the remaining ninety-four cases, a diagnosis of myocarditis was made in eighty-eight, of endocarditis in four and pericarditis in three. (One patient had both pericarditis and endocarditis.) Pericarditis was present in three cases, 17 per cent. Two of the patients died. Endocarditis was present in four cases, 0.22 per cent. Systolic murmurs of the apex were frequently present but were usually regarded as functional or relative. Rosenbaum suggests that the low percentage of endocarditis as compared with the percentage of several other series may be due to the milder type of scarlet fever in which the case mortality was less than 4 per cent. Unless very severe, old heart disease does not necessarily indicate a serious prognosis in scarlet fever.

Hemolysins from Helminths.—The view is upheld by Schwartz that parasitic worms secrete toxic substances that are absorbed by the host because it not only affords a better explanation of the toxic symptoms of helminthiasis than the theory of "reflex action," but also affords an explanation of certain aspects of the pathology of helminthiasis, which are inexplicable on the bases of any other view that has thus far been advanced.

Determination of Protein in Cerebrospinal Fluid.—A method is given by Denis and Ayer for determination of total protein in the spinal fluid, accurate to within approximately 5 per cent. It has the advantage that only a small amount of fluid is employed, that it is equally accurate with protein-poor or protein-rich solutions, and that a determination may be made in about ten minutes.

Blood Chemistry in Influenzal Pneumonia.—In most of the fatal cases in Wells' study an increase in blood uric acid was shown. The average uric acid found in thirty-nine nonfatal cases was 3.14 mg. per hundred c.c. of blood, while in ten fatal cases the average was 4.45 mg. Four patients in this series had uric acid values over 10.0 mg. All these patients recovered. The serious significance of the retention of over 5.0 mg. of creatinin per hundred c.c. of blood is cited. One patient gave findings of 148 mg. of urea nitrogen, yet recovered. Seven of the nonfatal cases, and three of the fatal cases gave findings of urea nitrogen over 40.0 mg. per hundred c.c. of blood. The carbon dioxid combining power of the blood plasma was noted in a few cases only, but Wells feels that the conclusion is warranted that a lowering of the carbon dioxid combining power of the blood plasma is very apt to be found in patients seriously ill, and particularly when there is also extensive pulmonary involvement or marked circulatory disturbance.

Blood Chemistry of Pernicious Anemia.—The results of the chemical and physical analysis of the blood in eighty-seven cases of pernicious anemia are reported by Gettler and Lindemann. The nonprotein nitrogen, urea and cretinin values are somewhat higher than normal. This is probably due, not to a permanent kidney lesion, but rather to the decreased amount due, not to a permanent kidney lesion, but rather to the decreased amount of circulating blood. The uric acid is much above normal. The amino-acid content is greatly increased due to excessive destruction of serum protein. The blood sugar is abnormally high. The alkaline reserve is subnormal. The last three point to the fact that in pernicious anemia the power of oxidation within the cell has been reduced to an abnormally low level. The refraction and specific gravity are both astonishingly low, indicating deficiency in serum albumin, serum globulin and fibrinogen. In most instances the freezing point is very near to normal. It is slightly raised in a small percentage of cases. This is due to the small increase of nonprotein nitrogenous substances and to the presence of normal or slightly increased amounts of inorganic salts.

Xanthochromia.—Levison is convinced that there are many conditions which may cause a yellow spinal fluid. The great variability in the disease processes in which xanthochromia has been found renders the color itself of no diagnostic value. A yellow fluid is always diagnostic of an organic lesion or infectious process with the exception of those cases in which serum has been injected intraspinously. The presence of the Froin syndrome is pathognomonic of an obstructive type of spinal lesion.

Pulse Rate and Basal Metabolism in Hyperthyroidism.—In a study of 496 basal metabolism determinations on 154 patients with hyperthyroidism made by Sturgis and Tompkins, there was a tachycardia of 90 or more to the minute, associated with a basal metabolism of plus 15 per cent. or more in all but 16 per cent. In seventy instances when the metabolism fell to normal there was a simultaneous fall in pulse rate in 78 per cent. to below 90. In fifty-two patients on whom a number of metabolism determination were made, the pulse rate gave an accurate idea of the course of the disease as compared to the basal metabolism in 85 per cent. In a series of 106 hospital patients with various diagnoses and normal basal metabolism only five had a heart rate of 90 or more to the minute. There is in general an interrelationship between the pulse rate and metabolism when a group of individuals are considered; that is, an extreme degree of tachycardia suggests a greatly increased metabolism while a slight tachycardia usually indicates a slight or moderate increase. The fact that a pulse rate at complete rest below 90 per minute is seldom and below 80 per minute is rarely associated with an increase in metabolism Sturgis and Tompkins believe to be of practical importance in the recognition of the large group of nervous patients who have symptoms similar to those occurring in hyperthyroidism.

Cranial Nerve Neuritis in Lethargic Encephalitis.—The three cases described by Burrows present the clinical and pathological picture that is now known as diagnostic of "encephalitis lethargica." The lesions noted in the central nervous system in these cases are those of an acute inflammation which in its histology is not different in many of its characters from that which is known to occur in acute poliomyelitis or infantile paralysis.

Boston Medical and Surgical Journal

Oct. 28, 1920, **183**, No. 18

*Use of Water in Diseases of Childhood. F. B. Talbot, Boston.—p. 503.
Cause and Prevention of Overstimulation of Modern American Child. E. St. J. Johnson, New Bedford, Mass.—p. 507.
Significance of Meningeal Symptoms. A. C. Eastman, Springfield, Mass.—p. 514.
Parental Responsibility. H. I. Bowditch, Boston.—p. 518.
Orchitis in Mumps. C. Wesselhoeft, Boston.—p. 520.

Use of Water in Childhood.—Talbot is of the opinion that the use of water in childhood is a subject which is overlooked too much by physicians. He discusses its use in diarrhea, pneumonia and intestinal intoxication.

Journal of Biological Chemistry, Baltimore

October, 1920, **44**, No. 1

Skimmed Milk as Supplement to Corn in Feeding. T. B. Osborne and L. B. Mendel, New Haven, Conn.—p. 1.
Respiration of Cereal Plants and Grains. C. H. Bailey and A. M. Gurjar, St. Paul.
II. Respiration of Sprouted Wheat.—p. 5.
III. Respiration of Rice Paddy and Milled Rice.—p. 9.
IV. Respiration of Frosted Wheat Plants.—p. 13.
V. Respiration of Wheat Plants Infected with Stem Rust.—p. 17.
*Occurrence of Diastase in Sweet Potato in Relation to Preparation of Sweet Potato Syrup. H. C. Gore, Washington, D. C.—p. 19.
Calcium Requirement of Maintenance in Man. H. C. Sherman, New York.—p. 21.
Production of Acetaldehyd by Certain Pentose Fermenting Bacteria. W. H. Peterson and E. B. Fred, Madison, Wis.—p. 29.
*Estimation of Chlorids in Blood. V. C. Myers and J. J. Short, New York.—p. 47.
*Rapid Colorimetric Methods for Determination of Phosphorus in Urine and Blood. R. D. Bell and E. A. Doisy, St. Louis.—p. 55.
Effect of Diet on Excretion of Indican and Phenols. F. P. Underhill and G. E. Simpson, New Haven.—p. 69.
*Biochemical Studies on Marine Organisms. I. Occurrence of Copper. W. C. Rose and M. Bodansky, Galveston, Texas.—p. 99.
Factors Which Interfere with Use of Yeast as Test Organism for Antineuritic Substance. G. de P. Souza and E. V. McCollum, Baltimore.—p. 113.
*Hematorespiratory Functions. VI. Alteration of Carbon Dioxid Ratio (H_2CO_3 : $NaHCO_3$) in Blood During Elevation of Body Temperature. H. W. Haggard, New Haven, Conn.—p. 131.
Nutritive Properties of Milk, with Special Reference to Reproduction in Albino Rat. H. A. Mattill and R. E. Conklin, Rochester, N. Y.—p. 132.
*Effect of Cooking on Water-Soluble Vitamin in Carrots and Navy Beans. E. W. Miller, Chicago.—p. 159.
*Water-Soluble B in Cabbage and Onion. B. K. Whipple, Chicago.—p. 175.

Can "Home Grown Rations" Supply Proteins of Adequate Quality for High Milk Production? H. E. B. Hart and G. C. Humphrey, Madison, Wis.—p. 189.
Preservation of Specimens of Blood Intended for Blood Sugar Determinations. W. Denis and M. Aldrich, Boston.—p. 203.

Diastase in Sweet Potato.—Gore found that sweet potatoes are high in diastatic power and it is possible to convert nearly all their starch into soluble carbohydrates by slowly cooking the potatoes in water. The pulp formed by mashing the cooked potatoes with hot water drains readily, permitting the easy recovery of the sweet juice.

Estimation of Chlorids in Blood.—A method of chlorid estimation in blood is described by Myers and Short in which the same picric acid filtrate employed for the estimation of sugar and creatinin, and the same solutions (diluted) ordinarily employed for the estimation of chlorids in urine are utilized.

Determination of Phosphorus in Urine.—Rapid colorimetric methods are described by Bell and Doisy for the determination of inorganic and total phosphorus in urine. While not so accurate as suitable gravimetric determinations, these methods are said to be much more convenient and are sufficiently accurate for many purposes. The method for inorganic phosphate appears to be more accurate and rapid than the usual uranium titration. Methods are also described for the determination of inorganic and acid-soluble phosphorus in blood.

Copper in Marine Organisms.—Analyses of twenty specimens of common fishes by Rose and Bodansky showed the presence of copper in every case except one, and the failure to detect it in this case they believe was probably due to the small amount of material available for analysis. The average copper content was approximately 2.5 mg. per kilogram. It is believed that copper is a normal—possibly an essential—constituent of marine animals, and not an accidental one due to the trace of this metal in sea water.

Hematorespiratory Functions.—Haggard states that rise in body temperature lowers the alveolar carbon dioxid tension and reduces the amount of carbon dioxid in solution in blood. No compensatory changes in the carbon dioxid combining power of the blood occurs. The alkali in use is not lowered in proportion to the decrease in dissolved carbon dioxid. The carbon dioxid ratio is therefore reduced and, unless there is some alteration in the dissociation constants of the blood, the C_H is presumably lowered. In vitro temperature affects the dissociation curve of blood solely by altering the solubility of carbon dioxid and concentration of carbonic acid. The concentration of carbonic acid which produces a certain amount of sodium bicarbonate at 17 or 20 C. produces the same amount at 40 C.

Vitamins in Cooked Carrots and Navy Beans.—Miller states that cooking carrots at 100 C. for thirty minutes caused no reduction in the vitamin. Neither was there any destruction when carrots were packed tightly in a jar and heated at 115 C. for forty-five minutes. Cooking navy beans at 120 C. for thirty minutes decreased the vitamin content 40.6 per cent. In this case the beans were somewhat overcooked. Cooking navy beans in 0.5 per cent. sodium bicarbonate solution for 1 hour and 10 minutes caused a loss of 37.5 per cent. of the vitamin. A large proportion of the vitamin, from 36 to 70 per cent., was present in the cooking water.

Vitamin in Cabbage and Onions.—Whipple claims that water-soluble B in cabbage is not destroyed by boiling for from thirty to sixty minutes or by boiling with acid or alkali. It is present in onions and is not destroyed by boiling. Not more than one half the water-soluble B is lost in the cooking water from cabbage or onions boiled for thirty minutes.

Journal of Infectious Diseases, Chicago

October, 1920, **27**, No. 4

*Relation Between Number of Bacteria and Acid Production in Fermentation of Xylose. J. A. Anderson, E. B. Fred and W. H. Peterson, Madison, Wis.—p. 281.
*Leprosy-Like Disease in Lungs of Mexican Parrot. W. B. Wherry, Cincinnati.—p. 293.
*Leptothrix on Conjunctiva and in Meibomian Glands. S. R. Gifford, Omaha.—p. 296.
*Rapid Method of Pneumococcus Typing. W. W. Oliver, Brooklyn.—p. 310.
*Inhalation Experiments on Influenza and Pneumonia, and on Importance of Spray-Borne Bacteria in Respiratory Infections. W. B. Wherry and C. T. Butterfield, Cincinnati.—p. 315.
Fate of Killed Nonhemolytic Streptococci Injected into Blood, and Resulting Cellular Changes. K. Nagao, Chicago.—p. 327.
*Occurrence of Hemolytic Streptococci in Stools of Scarlet Fever. W. B. Moody and E. E. Irons, Chicago.—p. 363.
Further Observations on Varieties of Streptococci with Reference to Hemolysis. B. J. Clawson, Grand Forks, N. D.—p. 368.
*Plague-Like Organisms in Wild Rats of São Paulo, Brazil. W. G. Smillie, São Paulo, Brazil.—p. 378.

Number of Bacteria and Acid Production.—The results of the investigations made by Anderson and his associates and those obtained by others show that the fermenting capacity of a culture is determined by the number and age of the bacteria present. The rate of acid production in the fermentation of xylose by *Lactobacillus pentoaceticus* is most rapid during the period of maximum growth of the bacteria. A decline in the rate of growth is accompanied by a decrease in acid production although a slow acid formation is noted for many days. In the first stages of growth, the curves of multiplication of bacteria and of acid formation are almost parallel although growth precedes the formation of acid in measurable quantities. The maximum number of bacteria occurs in the early stages of fermentation, usually within forty-eight hours after inoculation, while the maximum acidity is not noted for several days. In a xylose yeast-water medium the bacteria multiply more rapidly and reach a higher number if calcium carbonate is present. In old xylose culture of *Lactobacillus pentoaceticus*, the ratio between lactic and acetic acids may change. This is probably due to a secondary fermentation of the lactic to acetic acid. Apparently, acetic acid is the only volatile acid produced in the fermentation of xylose by *Lactobacillus pentoaceticus*. Direct count and plate count of the total number of bacteria give the same general results.

Leprosy-Like Disease of Lung of Parrot.—The lungs of the parrot examined by Wherry contained many scattered grayish tubercle-like nodules about 0.5 to 1 mm. in diameter. Smears stained by the tubercle method showed numerous acid-fast bacilli which resembled the tubercle or lepra bacillus. Many of these, however, were short or even coccoid. Sections showed that these tubercles were largely peribronchial. They were composed of epithelioid cells with vesicular nuclei. Some cells contained two nuclei. In the sections stained with hematoxylin and erythrosin the new growths appeared to be purely epithelial of epitheloid proliferations without any changes in the surrounding tissues and without leukocytic infiltration; nor did they show any connective tissue stroma or capsule. However, the surrounding tissues were greatly congested and in places there was extensive hemorrhage. In sections stained with carbol fuchsin, decolorized with 2 per cent. hydrochloric acid in 95 per cent. alcohol, and then stained with Unna's polychrome methylene blue, the epithelioid cells were seen to be filled with acid-fast bacilli lying at all angles. The picture was very much like that of human or rat leprosy. Cultures were negative.

Leptothrix on Conjunctiva.—A strain of leptothrix was found by Gifford as the only organism in smears and cultures from the conjunctival sac in a case of recurrent conjunctivitis. It was pathogenic for guinea-pigs and showed definite spore formation. A leptothrix was isolated from a case of chronic meibomitis. It showed definite spore formation, but was nonpathogenic for guinea-pigs, serologically distinct from the first strain, and presented cultural differences from it. What is probably a leptothrix was found in smears from a second case of chronic meibomitis. It apparently showed true spores. The group of leptothrices includes at least two, and probably more, distinct species. The literature is reviewed.

Rapid Method of Pneumococcus Typing.—The method described by Oliver is a rapid precipitin test of filtered pneumonic sputum, to which bile previously has been added. By this method a "typing" of the pneumococcus may be effected within half an hour after receipt of the sputum.

Sputum Sprays and Experimental Pneumonia.—When white mice, white rats and guinea-pigs were exposed to finely divided influenza sputum sprays by Wherry and Butterfield some died of a primary pneumonia, others of a general infection due to a strain of *B. enteritidis* (type M 5). As primary pneumonia could not be produced in mice when M 5 was

inoculated through the buccal or gastro-intestinal mucosa, the conjunctiva, subcutis or peritoneal cavity, but only when sprayed, it seems to the authors likely that something in the sputum sprays produced a change in the pulmonary tissues favoring such secondary localization.

Hemolytic Streptococci in Scarlet Fever.—Typical hemolytic streptococci were isolated by Moody and Irons from the feces of 30 per cent. of eighty-five scarlet fever patients. They occurred in the feces at irregular intervals wtih no definite relation to the age of the patient, character of the stool, duration or intensity of the illness. The number of colonies was small in comparison to the number of other organisms, such a *B. coli,* staphylococci, and green-producing streptococci, but when it is considered that only a small part of one loopful of the stool was studied it seems probable that hemolytic streptococci occur.

Plaguelike Bacilli.—Three strains of bacilli were isolated by Smillie from normal appearing rats of São Paulo, at a time when the city was in close proximity to and in constant danger from bubonic plague. It was proved by cultural methods and animal inoculation that these organisms were not plague but belonged to the closely allied pasteurellosis group. *B. enteritidis,* which may resemble *B. pestis* somewhat in morphologic and staining characteristics, was isolated from the kidneys of a normal appearing rat.

Journal of Orthopaedic Surgery, Lincoln, Neb.

October, 1920, **2**, No. 10

Abduction Method Considered as Standard Routine in Treatment of Fracture of Neck of Femur. R. Whitman, New York.—p. 547.
*Causes of Success and Failure in Tendon Transplantation. N. Dunn. —p. 554.
*Operation for Relief of Congenital Equinovarus Deformity. F. R. Ober, Boston.—p. 558.
Scoliosis. H. A. Pingree, Portland, Me.—p. 566.

Causes of Success and Failure in Tendon Transplantation.—Dunn is convinced that success or failure of tendon transplantation has depended mainly on one factor—the possibility of reeducation of the transplanted tendon to perform its new function. Other factors are that the transplanted tendon should run a direct course to its new insertion; it should be sutured under moderate tension, and should not be subjected to strain until union with the receiving tendon or bone is assured. Perfect asepsis is also necessary. Dunn suggests that two axioms in tendon transplantation should be: (1) That a single tendon or part of a tendon should only be used to replace one of its own group, i. e., one normally in action with it; (2) that a group of muscles but not an individual member of the group may be used to replace muscles not normally in action with it.

Operation to Relieve Equinovarus.—The operation employed by Ober is based on the pathologic anatomy of the structures chiefly concerned in holding the foot in a position of equinovarus. It is not employed in children under 2 years of age as it is very difficult to remove the periosteal ligamentous flap from the tibia and calcaneus owing to the fact that their bones are almost wholly cartilaginous in structure and consequently are easily injured in attempts to denude them of periosteum and ligaments. The operation is described fully.

Medical Record, New York

Oct. 23, 1920, **98**, No. 17

Mammalogy: Anatomic and Taxonomic Consideration of Group to which Man Belongs. R. W. Shufeldt, Washington, D. C.—p. 673.
Early Signs of Disease of Nervous System. T. A. Williams, Washington, D. C.—p. 684.
Radium in Uterine Hemorrhage. D. C. Moriarta, Saratoga, N. Y.—p. 684.
Skin Grafting. H. A. Baldwin, Columbus, Ohio.—p. 686.
Postoperative Recurrences of Anorectal Fistula; Causes and Prevention. A. A. Landsman, New York.—p. 688.

Oct. 30, 1920, **98**, No. 18

New and Successful Diagnosis and Treatment of Cancer. W. F. Koch, Detroit, Mich.—p. 715.
Outlet Pelvimetry. G. H. Pierce, New York.—p. 723.
*Traumatic Genu Recurvatum in Adult. S. Kleinberg, New York.—p. 726.
Recovery of a Needle from Tendon of Flexor Longus Hallucis. W. H. Barber, New York.—p. 728.
*Spinal Sign in Gastric Crises of Tabes. W. Browning, Brooklyn, N. Y. —p. 728.
Acquired Syphilis in Aged. B. P. Thom, New York.—p. 730.
Simple Everyday Science About Yeast. L. K. Hirshberg, New York. —p. 732.
Allergies in Chronic Diseases. J. B. Luckie, Pasadena, Calif.—p. 733.

Traumatic Genu Recurvatum.—As the result of wearing a rigid brace for some lesion in the hip, when the knee was permitted to sag backward, a recurvature was established. The deformity consisted of a knock-knee condition and hyperextension to about 20 degrees beyond the straight line. The knee was immobile. The roentgen ray showed that outward subluxation of the tibia produced the knock-knee hyperextension of the knee and fusion of the femur and tibia through a curved bar of bone extending between and uniting the internal condyle of the femur and the inner aspect of the tuberosity of the tibia. The articular surfaces of the femoral condyles and the tuberosity of the tibia were apparently undisturbed. The osseous bridge uniting the femur and tibia was removed and then the joint could be moved through an arc of about 30 degrees. The limb was manipulated and the deformity partly corrected. The final result was that the leg became quite straight and eventually a fibrous ankylosis occurred.

Spinal Sign in Gastric Crisis of Tabes.—The sign found by Browning consists of a point or small area of tenderness just to the left of the spinal column, corresponding to the fifth dorsal interspace or one at about that level. It is always to be found on the same side as the stomach. It may extend to more than one space, though usually most marked at a definite level. It rarely involves the other side, and then only in minor degree. An evident wince on the part of the patient or an expression of pain shows when the tender spot is reached.

West Virginia Medical Journal, Huntington

October, 1920, **15**, No. 4

West Virginia's Need of Better Vital Statistics Law. C. F. Raver, Charleston.—p. 121.
Prostatic Infection; Treatment. E. O. Smith, Cincinnati.—p. 127.
Serology of Syphilis in Relation to Pathology. F. C. Hodges, Huntington.—p. 130.
Mercurochrome 220: Its Practical Application in General Practice with Special Reference to Treatment of Empyema; Report of Cases. C. M. Bray, Morgantown.—p. 134.
Practical Biologic Prophylaxis. W. E. Vest.—p. 136.
Addison's Disease; Report of Case. E. F. Peters, Switchback.—p. 141.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, London

July, 1920, **8**, No. 29

Science and Surgery. J. Bland-Sutton.—p. 6.
*Duodenal Diverticula. E. I. Spriggs.—p. 18.
*Ritual of Surgical Operation. B. G. A. Moynihan.—p. 27.
*Rôle of Radium in Treatment of Malignant Disease of Bladder and Male Genital Organs. C. Morson.—p. 36.
*Acute Encysted Hydrocele of Spermatic Cord. R. Johnson.—p. 40.
Treatment of Inoperable Cancer with Selenium. E. Watson-Williams. —p. 50.
*Occurrence of Massive Cholesterin Deposits in Breast in Cases of Long Standing Mastitis. M. J. Stewart and J. A. C. Forsyth.—p. 59.
*Trap Door Operation for Empyema. A. N. McGregor.—p. 64.
Treatment of Tumors by Radium and Roentgen Rays. N. S. Finzi. —p. 68.
*Lymphatics of Tongue: Particular Reference to Removal of Glands in Cancer of Tongue. J. K. Jamieson and J. F. Dobson.—p. 80.
*Technic of Reamputation. A. H. Todd.—p. 88.
Effects of Gunshot Injury on Heart and Blood Vessels. G. H. Makins.—p. 107.
Flail Shoulder. F. F. A. Ulrich.—p. 133.
Transposition of Viscera Associated with Gall Stones and Hour-Glass Stomach. R. E. Kelly.—p. 137.
*Section of an Abnormal Ulnar Nerve in Forearm. A. K. Henry.—p. 139.
Sloughing Fibroid of Uterus which Ruptured Through Fundus into Peritoneal Cavity, Causing General Peritonitis: Hysterectomy. H. Drummond.—p. 141.
Division of Posterior Spinal Roots for Relief of Pain Due to Complete Disruption of Brachial Plexus. H. G. Barling.—p. 142.

Diverticulum of Duodenum.—Ten cases of single diverticulum of the duodenum, discovered in the course of more than 1,000 roentgen-ray examinations of the alimentary tract, are reported by Spriggs. Five were in the second and five in the third part of the duodenum. One case was observed at operation. In two of the cases the duodenum had been examined by a surgeon, but the diverticulum had not been detected.

In nine of these cases the symptoms were not connected with the diverticula. In one case, still under observation, this point is doubtful. The literature shows that such diverticula have, though but rarely, been the cause of disease.

Ritual of Surgical Operation.—Moynihan maintains that every operation in surgery is an experiment in bacteriology. The success of the experiment in respect of the salvation of the patient, the quality of healing in the wound, the amount of local or constitutional reaction, the discomforts during the days following operation, and the nature and severity of any possible sequels, depend not only on the skill but also on the care exercised by the surgeon in the ritual of the operation. The "ritualist" must not be a man unduly concerned with fixed forms and ceremonies, with carrying out the rigidly prescribed ordinances of the surgical sect to which he owes allegiance; but a man who, while observing with unfaltering loyalty those practices which experience and experiment have together imposed on him, refuses to be merely a mimic bound by custom and routine. He must set endeavor in continual motion, and seek always and earnestly for simpler methods and a better way. In the craft of surgery the master word is simplicity. The ritual of an operation commences before, sometimes long before, the incision is made, and may continue for a long period after the wound is healed. In the transition of a patient from ill health to sound health the operation itself is only one—though it may be the most important—of all the factors concerned in this fortunate event. All the details connected with the performance of an operation are discussed by Moynihan.

Radium Therapy of Tumors.—With the experience gained in recent years of the effect of radium on malignant disease, Morson says there is one outstanding fact—radium is local in its action. The removal of a growth by radium does not ensure an immunity from recurrence in other parts of the body. The experiments on mice, which showed that the cancer cell when irradiated with a sublethal dose had the power to confer immunity against the same strain of tumor, have as yet failed when put to the test in the case of human malignant disease. It is the type of growth which rarely gives rise to metastases that is most successfully treated by the rays of radium. Therefore, in cases of malignant disease of the bladder and prostate a good result may be expected, provided always that the remedy be applied with meticulous care, and with an exact knowledge of the effect of irradiation on the normal tissues of the body. Three cases of the acute form of encysted hydrocele of the spermatic cord are reported.

Encysted Hydrocele of Spermatic Cord.—Three cases of the acute form of encysted hydrocele of the spermatic cord are reported by Johnson. The mode of onset, the character of the swelling, and the presence of nausea or actual vomiting, combine to make the resemblance to strangulated hernia very striking. Johnson suggests that a sudden pressure on the part produced by a forcible muscular effort is sufficient to cause an effusion of fluid into the already present unobliterated portion of the funicular process.

Cholesterin Deposits in Breast in Chronic Mastitis.—The two cases described by Stewart and Forsyth are instances of long-standing subacute mastitis in which, owing to retention of necrotic débris, inflammatory exudate, glandular secretion, and effused blood over long periods, very extensive deposition of crystalline cholesterin had taken place. The histologic appearances in paraffin sections are most striking and characteristic, consisting of an enormous number of clefts, lying parallel to one another in large groups, or arranged in a pennate fashion. The crystals occupying these clefts have the optical and microchemical characteristics of cholesterin. The intervening stroma contains foreign body giant cells in large numbers, and many "foamy" endothelial cells, especially around the periphery of the main deposits. The foamy-cell areas contain in addition a large amount of acicular crystalline material which melts at temperatures well below 100 C., and which forms anisotropic globules on cooling (i. e., compounds or combinations of cholesterin and fatty acids).

Trap Door Operation for Empyema.—This operation is devised to provide an outlet for the pus of empyema without the use of a tube, by means of a positive pump action which insures that the pleural cavity is emptied in a very short space of time and the lung brought down to normal position. The object of the procedure advocated by McGregor is to provide a flap, rectangular in shape, composed of the whole thickness of the chest wall down to the level of the ribs, and to provide an opening by resection of part of a rib opposite the center of that flap, so that the pus leaves the chest cavity under the flap during expiration, and the movement of inspiration sucks the flap shut.

Lymphatics of Tongue and Cancer.—In early growths of the lateral border of the tongue, Jamieson and Dobson state a unilateral complete block dissection of the neck with intrabuccal excision of half the tongue, at one sitting, is indicated. This operation is quite satisfactory and not unduly dangerous. If, however, the patient is not in good condition, the intrabuccal operation may be done first and the gland operation at a later date. In quite early small growths of the tip and fraenum, or on the dorsum of the tongue, a unilateral block dissection with intrabuccal excision of the tongue at one sitting, followed by a block dissection of the other side of the neck at a later date, is required. The internal jugular vein should be preserved during the second block dissection. In more advanced growths of the lateral border, tip and frenum, and dorsum, and in all growths at the back of the tongue, an extrabuccal operation (Syme, or some modification) is essential, as is also a bilateral block dissection of the neck, preserving the internal jugular vein on one side. This is impossible at one sitting, highly dangerous even at two, and only to be done with any degree of safety at three sittings. It is difficult to induce patients to submit to a three-stage operation. In cases where the growth has spread from the tongue to the floor of the mouth, jaw, or tonsil, nothing less than a bilateral block dissection of the lymphatic glands will be "adequate," whatever be the nature of the operation on the primary disease.

Technic of Reamputation.—The best and easiest method of reamputation according to Todd consists in the excision of a conical piece of the end of the stump en bloc, without any dissection whatsoever. The cut passes through tissues which are practically normal, and heals by primary intention.

Abnormal Ulnar Nerve.—An example of the presence of a communicating branch in the forearm between the median and ulnar nerves is mentioned by Henry. The surgical importance of the abnormality is emphasized.

Edinburgh Medical Journal

October, 1920, **25**, No. 4

Two Medical Humorists. C. E. Doughlas.—p. 209.
Functional Mental Illnesses. R. G. Rows.—p. 228.
Interdependence of Sympathetic and Central Nervous Systems in Relation to Psychoneuroses. D. Orr.—p. 243.

Journal of Laryngology, Rhinology, and Otology, London

October, 1920, **35**, No. 10

Method of Lateral Pharyngotomy for Exposure of Large Growths in Epilaryngeal Region. W. Trotter.—p. 289.
Aqueduct of Fallopius and Facial Paralysis. D. McKenzie.—p. 296.

Lancet, London

Oct. 16, 1920, **2**, No. 5068

Medical Problems: Then and Now. W. Hale-White.—p. 775.
*Extrapleural Thoracoplasty in Treatment of Pulmonary Tuberculosis. P. Bull.—p. 778.
*Sugar in Blood: Microchemical Method of Estimation. R. L. M. Wallis and C. D. Gallagher.—p. 784.
*Relapsing Fever. W. K. Calwell.—p. 785.
*Pellagra and Pellagra Psychosis. R. S. Miller and A. C. Ismail.—p. 788.
Operative Treatment of Congenital Deformities of Lower Urinary Tract. R. Thompson.—p. 790.
Six Cases of Lethargic Encephalitis. R. S. McClelland and A. E. Keown.—p. 793.
Case of Hysterical Paralysis in Soldier. D. Forsyth.—p. 794.
*Case of Paratyphoid Infection. E. Wordley.—p. 794.

Extrapleural Thoracoplasty in Tuberculosis.—Bull has performed thirty-seven extrapleural thoracoplastic operations in pulmonary tuberculosis. The immediate mortality was about 10 per cent. Three deaths were due to infection. Seven patients died subsequently of their tuberculosis, one nearly four years after the operation. Twenty-five patients still

live. Of these, fifteen are considered as cured; they are entirely, or practically, fit for work, always afebrile, and tubercle bacilli can no longer be demonstrated in the sputum. They have no daily cough, but some of them are more liable to temporary colds than other people. Ten patients live, with symptoms of their pulmonary tuberculosis. Of the eighteen cases which were not so satisfactory, the operation was incomplete in three; in two Bull lacked sufficient experience, and in the third the patient's general condition before the operation was so poor that he could not bear it, and it, therefore, had to be interrupted and left incomplete. Bull contends that in unilateral, or mainly unilateral pulmonary tuberculosis, which is not cured by rational treatment (including pneumothorax), good results can be achieved by means of extrapleural thoracoplasty. The operation should only be performed after conference with the physician treating the patient, who must have had an opportunity, by observation during a considerable period, of forming a thorough opinion of the prognosis in the case concerned. Resection of the ribs should be carried out under local anesthesia through a paravertebral incision, so that the posterior part of the ribs from the eleventh, or, in any case, from the tenth to the first, inclusive, can be removed. If a cavity remains, it can be brought to collapse by means of intrathoracic transplantation of fat.

Estimating Blood Sugar.—Gallagher describes a microchemical method of estimation, based on the method of Folin and Wu, which, he says, provides an accurate, reliable and rapid method of estimation of blood sugar. It enables an analysis of the blood to be made with very little inconvenience to the patient, as also the determination of the glucose tolerance, and yields results of importance both as regards diagnosis, prognosis and treatment. Details of technic are given.

Treatment of Relapsing Fever.—An account of a series of 125 cases, with special reference to the Palestine type is given by Calwell. The treatment instituted consisted in the use of antiparasitic measures, salicylates and acetyl salicylic acid for relief of the pain, morphin for severe pain or delirium, cold sponging, diet and arsphenamin (kharsivan).

Pellagra Psychoses.—A study of 757 insane Egyptian pellagrins was made by Miller and Ismail. The various groups into which these cases were classified on admission were: acute confusional insanity (amentia), 320; mania, acute, recurrent, febrile, 115; melancholia, simple and recurrent, 113; dementia, 103; imbecility, 28; adolescent insanity, 26; drug insanity, 26; epileptic insanity, 23; general paralysis of the insane, 2; returned not insane, 1. Thus 320 cases, or 42 per cent., fall directly under the heading of amentia, the typical psychosis of the earlier stages. The subsequent history of these patients was: died, 240 (32 per cent.); discharged, 359 (47 per cent.); remaining, 158 (21 per cent.).

Parathyphoid Infection.—The two points of interest in Wordley's case are, apart from the difficulty of diagnosis, the unusual range of agglutination in a paratyphoid infection, and the fact that joint and bone complications in such infections are rare. With regard to the agglutination results, to attain a titer of $\frac{100,000}{7,000}$ in three weeks is most unusual in any case of infection of the enteric group.

Medical Journal of Australia, Sidney

Aug. 28, 1920, **2**, No. 9

Montessori's Contribution to Education. R. W. Stevens.—p. 189.
Manifestations of Rickets in School Children. H. Sutton.—p. 190.
Mental Deficiency. C. P. Stewart.—p. 193.
Treatment of Anthrax. R. J. Millard.—p. 194.
Fleeting Amaurosis in Children. J. W. Barrett.—p. 196.

Sept. 4, 1920, **2**, No. 10

Australasian Medical Congress, Brisbane, 1920. W. F. Taylor.—p. 209.
Naval and Military Medicine and Surgery. R. J. Millard.—p. 214.
Public Health and State Medicine. J. H. L. Cumpston.—p. 218.
*Report of Case of Hereditary Polydactylism. L. Crivelli.—p. 223.

Hereditary Polydactylism.—An interesting case of hereditary polydactylism, extending through five generations is cited by Crivelli. A woman has had three children. One girl, had an extra digit on one side only; one boy was without any extra digit; and one girl had the double deformity. The woman herself had the double deformity and she had three sisters who had it, three brothers without it and one brother with an extra digit on one foot. One of the sisters has a boy with the deformity. One brother has one or two children without it. The father of the woman had the deformity and so did her grandfather and her great-grandfather. She does not know of any other members of the family being affected.

Sept. 11, 1920, **2**, No. 11

Obstetrics and Gynecology, Australasian Medical Congress, 1920. F. Barrington.—p. 235.
Diseases of Children, Australasian Medical Congress, 1920. Community and Child. W. F. Litchfield.—p. 240.
Dermatology, Radiology and Medical Electricity, Australasian Medical Congress. E. H. Molesworth.—p. 242.
Rodent Ulcer of Arm. W. McMurray.—p. 244.
*Unusual Case of Intestinal Obstruction. J. Macarthur.—p. 244.

Sept. 18, 1920, **2**, No. 12

Congress Number.

Volvulus of Colon and Obstruction of Small Intestine.—A girl, aged 14 years, had severe abdominal pain and vomiting. The abdomen was distended. The distension was most marked in the center, the flanks being flat. The abdomen moved with respiration and, in the absence of pain, there was no muscular rigidity. Pains, much resembling labor pains, kept recurring at irregular intervals. Occasional peristaltic movements could be felt, but as each pain came on the abdominal muscles became taut and the patient doubled up. In the hypogastrium an indefinite doughy swelling could at intervals be felt. There was no other area of increased resistance. The pre-operative diagnosis made in this case was acute obstruction due to internal hernia, a Meckel's diverticulum, or even an intussusception, though the latter was considered unlikely. What actually occurred was the result of an abnormally movable ileocecal segment. The cecum and colon had a complete and unusually long mesentery. The twist had incarcerated the upper half of the small intestine. Eventually tightening itself and passing along the colon, it became locked at the fixed end of the small intestine, when symptoms of high obstruction occurred. The actual diagnosis was volvulus of the colon, with an associated obstruction of the small intestine.

National Medical Journal of China, Shanghai

June, 1920, **6**, No. 2

Latest Phase of Narcotic Problem. Wu Lien Teh.—p. 65.
Control of Hookworm Disease at Pinghsiang Colliery, Ngan Yuen, Kiangsi. F. C. Yen.—p. 71.
Bubonic Plague in Shansi. P. T. Watson.—p. 93.
Preparation and Standardization of Hypochlorite Solutions. A. J. D. Britland.—p. 97.
Toxic Goiter in Orientals. W. B. Russell.—p. 101.
Practical Considerations in Refraction. T. M. Li.—p. 108.
Iso-Agglutination Tests on One Thousand Chinese Bloods. J. H. Liu and H. S. Wang.—p. 118.
Medical Progress in China Since the Republic. W. Lien Teh.—p. 120.

Practitioner, London

October, 1920, **105**, No. 4

Prevention of Diabetes Mellitus. R. T. Williamson.—p. 233.
*Complete Recovery from Diabetes Insipidus. P. J. Cammidge.—p. 244.
Practical Application of Vaccine Prophylaxis and Treatment. E. C. Lowe.—p. 248.
Recent Work on Children's Diseases. H. Thursfield.—p. 266.
Heterophoria as Cause of Headache. R. T. Thorne.—p. 272.
Three Years Radiography at Base in France. W. Cotton.—p. 280.
Differential Diagnosis Between Duodenal Ulcer, Appendicitis and Disease of Gallbladder. J. C. Barker.—p. 292.
Spinal Therapeutics. J. R. Keith.—p. 298.
Case of Pemphigus Neonatorum. R. Cox.—p. 301.

Recovery from Diabetes Insipidus.—In Cammidge's case the symptoms rapidly subsided after spinal puncture. The patient is now in excellent health, and has been without any relapse for six years after the operation. It is suggested that in this case the symptoms of diabetes insipidus, from which the patient suffered, were the result of parasyphilitic changes at the base of the brain, which interfered with the passage of the secretion of the hypophysis into the cerebrospinal fluid. Withdrawal of some of the fluid, by the sudden change of pressure produced within the cerebrospinal canal, most likely broke down adhesions and opened a channel for its normal passage again.

South African Medical Record, Cape Town

Sept. 11, 1920, **18**, No. 17

Congenital Absence of Lower End of Ulna. E. O. Ashe.—p. 324.
Use of Nitrous Oxid and Oxygen, with Rebreathing, as General Surgical Anesthetic. G. W. B. Daniell.—p. 324.

Tubercle, London

October, 1920, **2**, No. 1

Child Tubercle According to Much. W. B. Christopherson.—p. 1.
*Viability of Acid-Fast Bacilli. S. R. Gloyne.—p. 12.

Cultures of Acid Fast Bacilli Alive After Six Years.—In July, 1914, Gloyne placed a batch of stock laboratory cultures of tubercle bacillus in the ice chest. War broke out shortly afterward, and these cultures were left untouched for nearly six years. During most of the time the chest was not replenished with ice. The culture tubes were capped with rubber. In the spring of this year Gloyne examined these cultures again. One stock culture of tubercle bacillus on Dorset's egg medium survived untouched for nearly six years, while two glycerin agar cultures had died out. The living culture was of feeble virulence, and owing to this fact it was not possible definitely to decide as to the type; but the lesions produced in a rabbit exclude the human type. A culture of *B. Phlei* remained alive for four years and was still strongly acid-fast, while a culture of Rabinowitch's bacillus of the same age was found to have died out, and to have lost to a great extent its acid-fast properties. In each case the Dorset's egg medium culture was the living one, and the dead agar cultures were characterized by marked pleomorphism and considerable loss of acid-fast properties.

Archives Médicales Belges, Liége

May, 1920, **73**, No. 5

Hysteria and Epilepsy from Military Standpoint. J. Lefèvre.—p. 371.
Manifestations of Diphtheria in Nose and Ears. Lambert.—p. 382.
The Ehlers-Milian Treatment of Scabies. Daubit.—p. 393.
Present Status of Treatment of Goiters. J. Voncken.—p. 398.

Bulletins de la Société Médicale des Hôpitaux, Paris

July 16, 1920, **44**, No. 26

*Tetany of Vegetative System. D. Danielopolu.—p. 1017.
*Auscultation During Rubbing. O. Crouzon and Béhague.—p. 1025.
Chorea Following Lethargic Encephalitis. Souques and Lacomme.—p. 1026.
*Lesions in Locus Niger in Paralysis Agitans. Souques and Trétiakoff.—p. 1027.
Contagion of Lethargic Encephalitis. A. Netter.—p. 1030.
*Reexamination Ten Years After Suture of the Heart. Proust.—p. 1035.
Myoclonus in Lethargic Encephalitis. F. Bosc.—p. 1042.

Hemivagotony.—In the case reported by Danielopolu the young man had had several attacks of tetany during a year of chronic cystitis and pyelonephritis, and lately attacks of profuse sweating restricted exactly to the left side for from thirty to sixty minutes, and then the right side sweated also. These attacks of hemivagotony seemed to be a kind of abortive tetany, without contracture or pain, merely phenomena on the part of the vegetative nervous system. The hemivagotony persisted to a slight degree between attacks, the maximal blood pressure being considerably higher on the right side and showing a higher increase under the influence of epinephrin by the vein. The oculocardiac reflex also indicated left hyperexcitability. Periods occurred during which the vagotony seemed general and then the preponderance of the left side returned.

Auscultation During Friction of Chest Wall.—Crouzon and Béhague report experiences which confirm recent assertions to the effect that auscultation of friction sounds enables one to gage the resonance of the subjacent lung.

The Locus Niger in Shaking Palsy.—Souques and Trétiakoff state that they found lesions in the locus niger in three cadavers after death in paralysis agitans. The globus pallidus seemed comparatively normal.

Remote Results After Suture of Heart.—Proust removed a bullet from the pericardium of a boy of 13, and now reports the present findings ten years later. The young man passed efficiently through the war in the artillery service, and he now plays football without getting out of breath and is in better health than ever. Auscultation is normal, and radioscopy shows the heart normal, the left ventricle a little overround, perhaps. In the discussion that followed Proust's report, Josué described the remote findings in ten cases after operations on the heart for war wounds. In four the electrocardiogram was normal, including three in which the left ventricle had been the seat of the lesion. In four others the left ventricle seemed to contract predominantly, and in three of these the right ventricle had been the seat of the lesion.

Gynécologie et Obstétrique, Paris

1920, **1**, No. 6

Cancer and Marriage. H. T. Deelman.—p. 493.
*Ectasia of Aorta in the Pregnant. Cleisz and Powilewicz.—p. 511.
*Diagnostic Pinching of Abdominal Cyst. C. Daniel.—p. 523.
*Obstetric Fracture of the Femur. J. Le Grand.—p. 526.

Ectasia of the Arch of the Aorta in the Pregnant.—Cleisz and Powilewicz report the fifth case on record of this complication of pregnancy. If allowed to draw conclusions from such a small number, the prognosis seems favorable if the dilatation of the aorta is simple ectasia. Otherwise the prognosis depends on whether there is compensation of the valvular or other lesion responsible for the dilatation. In their personal case, a rheumatismal panaortitis involved both the valves and ascending aorta. The valvular insufficiency had entailed hypertrophy of the heart with spindle-shaped enlargement of the aorta. About twenty cases of this combination have been published, actual aneurysm formation being the exception.

Diagnostic Pinching of an Abdominal Cyst.—Daniel holds the tumor firm with the left hand while with the right he takes up a fold in the abdominal wall, thus pinching the cyst, the sensation differentiating it from an effusion.

Obstetric Fracture of Femur.—Le Grand extols the advantages of extension of both legs stretched apart at right angles to the body, and fastened with elastic traction to a straight board extending beyond the feet. The infant can thus be handled and cleaned with ease, without interfering with the ideal healing of the fractures. The extension is done with adhesive plaster, the rubber band passing underneath the board. The extension is not needed for more than twenty-five days. The child does not seem to suffer from it, and after its removal the legs soon resume the normal position, while roentgenoscopy confirms the ideal healing.

1920, **2**, No. 1

*Tubal-Ovarian Tuberculosis. H. Hartmann and others.—p. 3.
*Dystocia with Double Uterus. M. Potocki.—p. 22.
*Postoperative Fistula into the Colon. V. Pauchet.—p. 32.

Tuberculosis of the Adnexa.—Hartmann, Bergeret and Remilly relate that 3 women whose tuberculous internal genitals had been removed are in perfect health now from two to three and a half years after the operation. In 4 others only one tube and one ovary had been removed, and one of the women is in good health a year later; the 3 others have all increased in weight but all have still a small fistula, two, eight and thirteen years after the unilateral castration. The fistula secretes occasionally in one, and, in another, blood oozes from the fistula during menstruation. Secondary tuberculosis was responsible for the death of 3 others. These 10 patients are the only ones that have been followed to date of their total 28 cases of tubal or ovarian tuberculosis, with 3 deaths soon after the operation. In 3 of the women the genital tuberculosis developed from a few weeks to two months after childbirth or miscarriage. In 27 of the cases the peritoneum or adjacent organs were involved, and in 20 cases the lesions were bilateral. The genitals were involved in only one of their 55 cases of nephrectomy for tuberculosis in women, while there were 3 cases of tuberculous epididymitis in 19 nephrectomies in males.

Dystocia from Retroflexion of Nongravid Half of Double Uterus.—Potocki does not know of any other instance like the one he describes in which cesarean section had to be done because the nongravid cornu had prolapsed into the pelvic cavity and become hypertrophied. But he cites four cases of dystocia from retroversion of the empty cornu, with final mechanical delivery by the natural routes.

Postoperative Fistula Into the Colon.—Pauchet warns not to attempt operative correction of a fistula into the colon

(from injury of the colon during a gynecologic operation), until three or fourth months have allowed a chance for spontaneous healing, as this occurs in 90 per cent. of the cases. With a large fistula, if an artificial anus above is not followed by spontaneous healing in two or three months, conditions then are much more favorable for correction of the fistula, as he describes with illustrations.

Journal de Radiologie, Paris

July, 1920, **4**, No. 7

*Combined Radiotherapy in Tuberculosis. A. Gunsett.—p. 289.
*Radiotherapy of Uterine Fibromyomas. IV. A. Béclère.—p. 297.
Radium Treatment of Cancer of Uterine Cervix. T. Nogier.—p. 305.
To Clean Electric Apparatus. Drevon.—p. 307; Belot.—p. 307.

Combined Radiotherapy of Tuberculosis.—Gunsett combines the usual roentgen-ray treatment with exposures of the whole body to the sunlight or the mercury vapor quartz lamp, and reports most gratifying results in all forms of tuberculous glandular, bone and joint disease and tuberculous pleuritis and peritonitis, and also in chronic circumscribed forms of pulmonary tuberculosis with a tendency to induration, and in tuberculous lesions of the urinary and genital organs in both sexes. The ultraviolet rays, he says, are a stimulus to repair and regeneration, and the quartz lamp is even better than the natural sunlight in many cases as it does not emit heat rays, and hence there is less danger of congestion and hemoptysis. He determines by a radiograph of the lung the points for exposure front and rear, applying 5 H units at each point, at two sittings, with an interval of two or three days, and then repeating after waiting for three weeks. If a tuberculous glandular lesion does not retrogress after eight exposures at three week intervals, the case must be regarded as refractory; this happened in from 3 to 5 per cent. of his cases. He regards the pigment as the agent transforming the actinic energy, and strives to induce as much pigmentation as possible over the whole body, while carefully avoiding any erythema. The mercury lamp used allows irradiation of the entire body, the patient lying undressed on a table, the eyes protected with black goggles. The first exposure is for three minutes, front and back, the lamp at a meter distance. The intervals are one day, and the exposures are lengthened to thirty minutes as the maximum; after this the lamp is brought closer to the body, but never closer than 50 cm. Then the exposures are prolonged, but he very rarely gave longer than an hour or hour and a half sittings.

Radiotherapy of Uterine Fibromyomas.—Béclère's article is a reply to the question asked by the Société de chirurgie whether the treatment of uterine fibromas should be handed over by the surgeons to the radiologists. His conclusion is "Quite legitimately, the treatment of fibromas is now passing from the surgeons to medical radiologists, and from year to year will pass thus in increasing proportions."

Lyon Chirurgical

May-June, 1920, **17**, No. 3

*Operations for Bladder Tumors. V. Rochet.—p. 293.
*Tardy Separation of Epiphysis. A. Broca and J. Murard.—p. 311.
*Operation for Severed Ureter. G. Tisserand.—p. 320.
Pathologic Physiology of Chronic Intestinal Invagination. P. Masson and R. Leriche.—p. 325.
Fracture of Olecranon. A. Chalier and M. Vergnory.—p. 344.
*Nerve Grafts. Jalifier.—p. 351.
Antigonococcus Serum in Arthritis. Langeron and Bocca.—p. 362.

Partial Cystectomy for Tumors.—Rochet reviews the general rules for operations on the bladder under various conditions, and adds that if the partial operation is more mutilating than anticipated, it is better to conclude with total cystectomy.

Tardy Separation of the Epiphysis.—Broca and Murard refer to separation of the radial or tibial epiphysis in young men, and give illustrated descriptions of one case of the latter and six of the former, in young men from 19 to 22 years old. In the radial cases the accident occurred from falling on the hand or while cranking a motor. In one in this latter group radiocarpal dislocation had been diagnosed and treatment applied on this basis with prompt recovery of function, but a complete return of the disturbances seven months later. It is practically impossible to distinguish the separation of the epiphysis from a simple fracture without radiography, but certain signs they describe may be useful aids.

Simplified Reconstruction of the Ureter.—In Tisserand's two cases one ureter had been accidentally severed during a complicated gynecologic or obstetric operation, and he restored its continuity by passing a ureter catheter into the bladder and inflating the bladder. Then the catheter was drawn up with forceps through a hole made for it in the bladder wall. The tip was cut off and the catheter was worked into the proximal stump of the ureter and sutured to it with fine catgut. The catheter was then drawn back into the bladder until the proximal stump projected for 1 cm. This stump was then sutured to the bladder wall. The retention catheter was removed the fourth day, and the twelfth day the ureter catheter was pulled out. This simple ureterocystoneostomy proved successful in both cases.

Nerve Grafting.—Jalifier applied Nageotte's method of heterografts in seventeen cases of old injury of nerves. The best results were obtained with the ulnar nerve; in two cases the implant was 5 cm. long. The failures were with the sciatic, median and in one case with the ulnar nerve. The interval since has been less than a year but regeneration is certain in three cases and probable in four others. The nerves grafted were from calf embryos, and the graft was separated from the old bed by suturing the latter to exclude it, leaving the graft embedded in intact muscle.

Lyon Médical

Aug. 25, 1920, **129**, No. 16

*Secondary Purulent Pleurisy. F. Leclerc.—p. 693.
*Parabronchitic Pleural Effusions. D. Petzétakis.—p. 696. Conc'n in No. 17, p. 746.
Abortive Lethargic Encephalitis. L. Genet.—p. 721.

Sept. 10, 1920, **129**, No. 17

Present Status of Radium Therapy. M. Durand.—p. 731.
Necessity for Urethroscopy in Chronic Urethritis. L. Phélip.—p. 763.

Purulent Pleurisy Accompanying Acute Infections of Pleura or Lung.—Leclerc refers to cases in which after defervescence the fever and the sharp pain in the side return and persist. There may be a cough and it may be painful, and the heart may be displaced. Exploratory puncture may have to be repeated again and again until the pus is located, and if grave infectious phenomena keep up the surgeon must be summoned without delay.

Parabronchitic Effusion.—Petzétakis found an effusion in 75 per cent. of fifty-four cases of ordinary acute bronchitis. Usually the amount of the effusion is so small that it diffuses by capillary attraction instead of settling down by gravity, but there may be 5 c.c. or even up to 20 c.c. The effusion is usually readily absorbed, and radioscopy is negative, as also cultivation of the fluid, as a rule, and the general health does not seem to be impaired. These reactions on the part of the pleura are common, and are liable to be mistaken for tuberculosis, particularly as the aspect of the fluid may be misleading.

Paris Médical

Sept. 4, 1920, **10**, No. 36

*Ophthalmology in 1920. F. Terrien.—p. 165.
Neutralization in Strabismus. A. Cantonnet.—p. 171.
*Retinal Complications of Diabetes. C. Coutela.—p. 173.
*Otorhinolaryngology in 1920. L. Dufourmentel.—p. 176.
*Treatment of Ranula. F. Bonnet-Roy.—p. 184.
Technic and Indications for Biopsy of the Larynx. G. Portmann.—p. 185.
*Stomatology in 1920. P. Fargin-Fayolle.—p. 188.
Indications and Technic for Blocking Inferior Dental Nerve. J. Bercher.—p. 193.

Ophthalmology in 1920.—In this annual review of a year's progress in ophthalmology as it affects general medicine, Terrien emphasizes the importance of microscopy of the living eye, and the research on the pathologic anatomy and pathogenesis of detachment of the retina. Morax has reported two cases of secondary glaucoma following detachment of the retina, in two young persons, and for which syphilis was probably responsible. Terrien induced in rabbits a gonococcus ophthalmia, and then attenuated the process and cured it by injection of 0.3 c.c. of antigonococcus serum into the anterior chamber twenty-four hours after the inoculation.

Exophthalmic goiter has been explained recently by Sajous as the outcome of some toxic action from teeth, tonsils, genital or digestive organs or elsewhere. This toxic action whips up the thyroid to exaggerated functioning, and an excess of thyroid hormone is poured into the circulation, and this in turn deranges the catabolism of tissues, degrading the fats, and especially the lipoids in the nervous system. It is the destruction of these lipoids that entails the striking nervous symptoms of the disease. There is thus a triple intoxication forming a vicious circle, and symptomatic measures, he reiterates, are futile. Ergot and quinin may be useful as vasoconstrictors to combat the excessive catabolism. Thyroidectomy or exposures of the thyroid to the roentgen rays, absolute physical and mental repose, a protein-poor diet, and alkaline and laxative medication may be needed also, beside removal of the primary factor in teeth, tonsil or elsewhere.

Retinal Complications of Diabetes. — Coutela insists that the failure in certain cases of operations for cataract must be sought in an underlying and possibly unsuspected diabetes. Lesions in the retina may be the first sign to call attention to the diabetes. He cites Onfray's statement that he found hyperviscosity of the blood in nine out of fifteen diabetic retinitis cases, and hypoviscosity in two. Hypoviscosity with high blood pressure invites retinal hemorrhage. He found the Ambard ureosecretory constant frankly bad in 57 per cent. of the cases, and uremia was thus unexpectedly imminent. Coutela adds that albuminuric retinitis has a more unfavorable prognosis than diabetic retinitis, but the outlook for vision is graver with the latter, and the two are frequently combined.

Otorhinolaryngology in 1920.—Dufourmentel reviews the great advances in this specialty during and since the war. Among others cited is Moure's method of continuous aspiration during operations on the nose, throat, etc., and Bar's warning that the external ear may be inoculated from a suppurating skin disease and spread from the ear to deeper organs. Armengaud has found that a rebellious fetid otorrhea may be the warning sign of tubercle bacillus invasion. Portmann advocates scraping out the diseased bone in ethmoid sinusitis, but Dufourmentel protests that, in less experienced hands, acute meningitis frequently develops in consequence. He has reported several such cases in recent years, and has lately encountered another case of this grave complication of surgical intervention on the ethmoid. Intratracheal medication and injection through a tracheal fistula have been studied considerably of late. The tracheofistulization is adapted for medication of grave pulmonary tuberculosis where powerful, continuous and prolonged medicinal action is desired. For cancer of the esophagus, radium has proved its usefulness in relieving pain and permitting eating, although a permanent cure does not seem to have been realized in the numerous attempts in this line, including some in Dufourmentel's own service.

Ranula.—Bonnet-Roy evacuates the sublingual cyst, fastens it to the lips of the incision, and cauterizes the walls of the cyst with 5 or 10 per cent. silver nitrate three or four times a week for two weeks, by which time healing is complete.

Stomatology in 1920.—Fargin-Fayolle cites a recent thesis to the effect that the teeth of the tuberculous are no better or worse than the teeth of the average of their class, but that when caries does develop it runs a much more rapid and painful course in the tuberculous. He concludes his review of the medical aspect of stomatology by calling attention to Fichot's statement that the oculocardiac reflex is abolished or dissociated by tardy toxic action from local anesthesia, and hence it offers an easy means to differentiate symptoms from this cause.

Presse Médicale, Paris

Sept. 8, 1920, **28**, No. 64

*Mesenteric-Duodenal Occlusion. H. Hartmann.—p. 625.
Tissue Grafts. J. Nagcotte.—p. 626.
*Epilepsy and Hysteria. L. Marchand.—p. 627.

Duodenal Occlusion and Acute Dilatation of the Stomach.—Hartmann has found that when acute dilatation of the stomach develops from compression of the duodenum by the mesenteric vessels, some preceding chronic tendency of the kind was apparent. By seeking signs of this chronic tendency we can be forewarned as to the danger of postoperative disturbance from this cause, and cases of acute dilatation of the stomach should be investigated as to a predisposition. The vomiting, collapse and dehydration must be combated by lavage of the stomach and saline infusion, with stimulants for the collapse and, possibly, gavage to start peristalsis in the stomach, but correction of the mechanical obstacle is the main thing. This may require the knee-chest or ventral posture or raising the pelvis. All of this set of measures must be applied at once and simultaneously. The chronic tendency may be corrected by duodenojejunostomy as has been reported by others, and Hartmann also applied this operation with success in one case.

Epilepsy and Hysteria.—Marchand has encountered a number of cases with associated epilepsy and hysteria, but maintains that treatment must be addressed to each separately. He reviews the literature on this combination and on simulation of epilepsy by hysterics, a number of communications on the subject having appeared during and since the war.

Sept. 11, 1920, **28**, No. 65

*Present Status of Radiotherapy of Cancer. S. Recasens.—p. 633.
*The Specific Wassermann Reaction. Durupt.—p. 636.
*Camphor and Emetin in Treatment of Hemoptysis. L. Cheinisse.—p. 637.

Radium and Roentgen-Ray Treatment of Cancer.—Recasen's experiences were reviewed in THE JOURNAL April 10, 1920, p. 1054.

Specificity of the Wassermann Reaction.—Durupt is a former chef de laboratoire at the Paris Faculté de médecine, and his experimental research over more than a year has demonstrated, he announces, that the Wassermann reaction is of a twofold nature. There is a nonspecific physical-chemical reaction and a strictly specific biologic reaction, the two combined forming the usual reaction as we know it. The liver antigen gives about 15 per cent. more positive reactions than other antigens, and he found that when liver antigen and heart antigen were used parallel, the reaction was always more pronounced with the former in case of active syphilis; when the reaction was about the same with both, this was a sign of the lack of the true biologic response, and the test was not specific. When the reaction is positive with the liver alone, and the heart antigen is negative, this may be interpreted as showing that the subject has merely inherited syphilis, or acquired syphilis that is yielding to treatment, or that after a negative phase the syphilis is flaring up again, or that he is a tabetic or that the syphilis is of very long standing. The advantages of using two antigens at least are thus evident.

Camphor and Emetin in Treatment of Hemoptysis.—Cheinisse discusses the rather conflicting literature on this subject. Colbert and Bazin have recently emphasized that an injection of 4 cg. of emetin lowers an abnormally high blood pressure and hence tends to arrest hemoptysis, but it has no effect if the blood pressure is within normal range. Zehner has called attention to the difference between hemorrhage from the lungs according as there is congestion or ulceration. With congestion, the blood is scanty, dark colored, and the pulse is small. Small doses of camphor, frequently repeated, correct the circulatory disturbance and mobilize substances favoring coagulation and thus tend to arrest the hemoptysis. With hemoptysis from ulceration, the blood is red and foamy, the pulse normal. Camphor here acts by its vasoconstricting action and hence must be given in large doses. He insists that camphor must be regarded as the sovereign remedy for hemoptysis, but Cheinisse warns that it must be given cautiously and not too long, as the oil vehicle may entail untoward consequences.

Progrès Médical, Paris

Aug. 21, 1920, **35**, No. 34

Manometer Compressor for the Eyeball. J. Roubinovitch.—p. 367.
Fracture of Forearm. R. Dupont.—p. 367.
Epilepsy and Anxiety. Laignel-Lavastine.—p. 368.
*Acute Suppurative Thyroiditis. J. P. Tourneux.—p. 371.

Acute Suppurative Thyroiditis.—Tourneux describes a case in a young man in which an abscess developed in the sound thyroid during typhoid fever and another in the perineum; both healed at once after incision. In a second case, gangrenous thyroiditis developed in a man of 35 with the thyroid previously sound. Both pneumococci and streptococci were cultivated from the lesion which had developed during convalescence from influenza.

Revue de Chirurgie, Paris

1920, **39**, No. 5

Treatment of War Fractures. A. Broca.—p. 321.
*Treatment of Pott's Disease. J. Calvé and M. Galland.—p. 340.
Technic for Amputations. P. Descomps.—p. 379.
*Surgical Anatomy of Nerves of the Thyroid. H. Alamartine.—p. 403.

Operative Treatment of Caries of Vertebrae.—Calvé and Galland write from their extensive experience at the Berck sanatorium to explain how Pott's disease is a kind of fracture of the spine; the caries of the body of the vertebra divides the spine into two segments, balancing on the diseased articulation. By supporting and resting the spine and averting all causes of aggravation, the lesion heals completely in children, in from three to five years, with the minimum of deformity. In adults, partial resumption of function is justified after two years of similar treatment, but relapses are frequent. The Albee or other graft, with a long implant, at the close of the two years of treatment of an adult is an excellent supplement to the treatment, insuring against relapse. But it is not needed at the close of the above treatment in a child, as the healing is complete, in sound tissue. They suggest, however, that it might be a useful adjuvant to the classic treatment of children to implant a short graft, limited to the diseased vertebrae, to hold the articulation immovable more perfectly than is possible by any other means. The classic orthopedic treatment should be applied just the same until repeated roentgenography shows that a complete cure has been realized. They describe further their method of slitting and turning back the base on each side, after wedge excision of the spinous processes, to form a huge raw bed for a long implant.

Surgical Anatomy of the Nerves of the Body of the Thyroid.—Alamartine's research on man, horses and dogs demonstrated that the great nerve center for the thyroid is the superior cervical ganglion, and there are innumerable anastomoses between the vagus and sympathetic systems, especially in the laryngosympathetic plexus and the sympathetic-recurrent plexus. The nerves form two pedicles above and below and do not parallel the vessel pedicles, but they join the vessels close to the thyroid, and it is here that they should be severed, to reduce the functioning of the gland. Ligation of the vessels should include the severing of the nerve pedicles, especially of the superior pedicle. The results of this angioneurectomy of the superior pedicle in exophthalmic goiter have been exceptionally fine and constant. According to our present knowledge, the sympathetic fibers are vasoconstrictors, the laryngeal fibers vasodilators, but the numerous anastomoses blend their action, the vasodilators predominating in the superior pedicle. Sympathectomy therefore does not seem logical when aiming to reduce overactivity of the thyroid, but with exophthalmic goiter it proves effectual by suppressing reflex action from centripetal fibers rather than by any direct action on the gland.

Revue Neurologique, Paris

May, 1920, **27**, No. 5

*Physiology of Antagonist Centers. L. Bard.—p. 417.
Histology of Acute Chorea. P. Marie and C. Trétiakoff.—p. 428.
Experiences with Intraspinal Treatment of Neurosyphilis. Belarmino Rodriguez.—p. 439.
*Progressive Lipodystrophy in Pharaoh. M. Ameline and P. Quercy.—p. 448.

Physiology of Antagonist Centers.—Bard explains the mechanism of the familiar fact that any peripheral sensory excitation causes the head and eyes to turn toward that side in normal conditions. He expatiates on the importance for physiology in general of the simultaneous action of antagonist centers, and the importance in pathology of the conflict between antagonist centers.

Progressive Lipodystrophy in Pharaoh.—Ameline and Quercy remark that since Boisonnas' statement last October in regard to the rarity of progressive lipodystrophy in adult males, a second case has been discovered. This is in the Pharaoh Amenophis IV, as deduced from the mural tablets of ancient Egypt. The special features of the disease, the loss of subcutaneous fat in the upper part of the body and the pronounced increase of fat deposits in the regions below the crest of the ilium, are portrayed in the pictures of this ruler, and have been recognized and diagnosed thirty-five centuries later. Thirteen mural pictures are reproduced, and the question is raised whether the anomalies portrayed may not have been due to pulmonary tuberculosis. Necropsy of the mummy might give interesting results.

Annali d'Igiene, Rome

June, 1920, **30**, No. 6

Control of Sterilization of Catsups, etc. E. Bertarelli and Marchelli.—p. 309.
*Neutralization of Sex by Serotherapy. R. Giuliani.—p. 323.
Typhus. A. Ilvento.—p. 327. Cont'n.
Etiology of Yellow Fever. G. Sampietro.—p. 333.

Neutralization of Sex.—Giuliani presents evidence as to the feasibility of inducing practical castration, without operative measures, by merely treating with substances known to have a specific destructive action on the testicles or the ovaries. This biologic castration with cytolysins was tried with orchitolytic serum on rabbits, the serum obtained from goats periodically injected with solutions of the nucleoproteins from rabbit testicles in increasing doses. Five rabbits were treated with the serum, from 1 to 4 c.c. being injected at intervals of from three to eight days. Two of the rabbits died at once; one was killed in two weeks, by which time the testicles showed considerable atrophy, the seminiferous tubules containing granular detritus. The two other rabbits were killed after an interval of thirty or forty days, and the microscope showed profound changes in the parenchyma, the tubules scarcely recognizable; the whole testicle looked as if it had been emptied of its contents.

Pediatria, Naples

September, 1920, **28**, No. 18

*Desensitization with Peptone After Serotherapy. L. M. Spolverini.—p. 841.
Bacteriologic Research in Influenza. Maria Sindoni.—p. 851.
Cerebral Diplegia and Little's Disease. R. Vaglio.—p. 856.

Desensitization After Serotherapy.—Spolverini reasoned that subcutaneous injection of peptone, which has proved so effectual in warding off anaphylaxis under other conditions might ward off the anaphylaxis from reinjection of an antiserum. His tests on twenty-nine children, from 2 to 6 years old, in the diphtheria ward at Rome confirmed these premises. He first injected horse serum, and nine or ten days later, by an intradermal injection of the same tested the degree of sensitization that had resulted. Positive findings were obtained in all but three, and with these exceptions all were given a subcutaneous injection of 10 or 15 cg. of dry peptone per kilogram, injected in a 5 per cent. isotonic solution. The intradermal test was repeated the next day, and two days after this the serum was injected in an amount suitable to bring on the attack of anaphylaxis if the children had not been desensitized. Ten controls, and tests with various other proteins confirmed the complete efficacy of the peptone in desensitization of the children. It thus seems possible, he says, to do away with the sensitization produced by repeated injection of serum by the simple expedient of a preliminary subcutaneous injection of peptone.

Riforma Medica, Naples

Aug. 14, 1920, **36**, No. 33

*Mammary Cancer. D. Giordano.—p. 733.
*Prophylaxis and Detection of Tuberculosis. G. Boeri.—p. 736.
*Poisoning with Carlina. E. L. Tocco.—p. 742.
*Syphilis and Tuberculosis. R. Giurato.—p. 745.

Bilateral Mammary Cancer.—Giordano gives an illustrated description of two cases of bilateral mammary cancer and of the piece removed from another case, and relates that of his three bilateral cases one of the patients is in good health

fifteen years after the operation and excision of a recurring nodule in the scapula region. Another woman died the night following removal of both mammae, and necropsy revealed an unsuspected metastasis in the brain.

Tuberculosis in Soldiers.—Boeri expatiates on the lessons that can be learned from the experiences in the army and among the prisoners of war in regard to prevention and treatment of tuberculosis. Chief among them is the necessity for not limiting the search for tuberculosis to those with active lesions or the suspects. Those predisposed to the disease can be recognized by their physical aspect, the vertical, pendulum or drop heart, movable ninth or tenth rib, asthenia, dyspepsia, low pressure, tachycardia, the morbid susceptibility of the respiratory apparatus, bronchial weakness, "respiratory claudication," and respiratory incapacity of the apex, but above all by the findings in tests of the capacity of the respiratory apparatus, hypotrophy and tenderness of the outer margin of the trapezius, and hypertrophy of the sternocleidomastoid, especially on the sound side. He says that the amyotrophy and tenderness of the trapezius are not consequences of but parallel the tuberculous process, as also the sinking in of the chest wall and the lesser excursions. They may even precede manifest lesions as they are a neurotrophic reflex, in the line both of nourishment and function, between the lung and the respiratory muscles. In radioscopy, special attention should be paid to the smaller size of the lung space above the clavicle, especially if unilateral, to its less distinct aspect, and to the lesser movability of the diaphragm. Echinococcus cysts, complicating malaria, apical localization of Malta fever, and other lesions which might be mistaken for tuberculosis must be excluded. Differentiation is rendered easier by the fact that in these other pathologic conditions the lesions are liable to change about and vary from time to time, while the tuberculous are comparatively stable.

Poisoning with Carlina.—Tocco describes the clinical picture of poisoning with *Carlina gummifera* as he observed it in four children, two of whom died.

Syphilis and Tuberculosis.—In the course of his study of the resemblance between certain syphilitic and tuberculous conditions, Giurato tells the story of the tuberculous patient to whom the pharmacist gave by mistake a mercurial ointment instead of the electuary prescribed by the physician. The patient took the ointment internally, small doses two or three times a day, and was soon radically cured of his "tuberculosis." Giurato insists that even if tubercle bacilli are found in the sputum, this does not exclude possibly complicating syphilis. The absence of fever, the persisting good general health, and the greater tendency to dyspnea hint of syphilis.

Rivista Critica di Clinica Medica, Florence

July 25, 1920, **21**, No. 21

Grocco's "Cap" Sign of Enlargement of Left Auricle. L. Siciliano.—p. 241.

Sept. 5, 1920, **21**, No. 25

*Intermittent Hydrocephalus. F. Schupfer.—p. 289. Begun in No. 24, p. 277.

Primary Intermittent Hydrocephalus.—The woman of 44 had had recurring periods of hydrocephalus since the age of 10. They developed about once a month or two months, usually independently of the menses. She had been pregnant nine times, bearing six children to term. The attacks of intense headache, vomiting, dimness of vision, inability to stand, and general agitation but no fever, lasted each for a few days, but gradually subsided by the tenth day without leaving a trace. The more recent attacks have been graver, bringing transient paralysis; the blood pressure is high, and the optic disk congested. Immediate lumbar puncture brings relief and seems to hasten the subsidence of the attack.

Archivos de Neurobiología, Madrid

June, 1920, **1**, No. 2

*Psychology in Choice of Occupation. E. Mira López.—p. 129.
*Tactile Space. R. Turró.—p. 148.
*Transformation of the Microglia. P. del Río-Hortega.—p. 171.
Lethargic Encephalitis in Spain. G. R. Lafora.—p. 209.
The Cerebrospinal Fluid in Lethargic Encephalitis. W. Mestrezat and Belarmino Rodríguez.—p. 226.

Psychology in Advising Choice of Occupation.—Mira López describes the system of tests, psychic, physical and both combined, which are applied at the Instituto de Orientación at Barcelona to aid in the choice of a trade or profession.

Tactile Space.—Among the examples illustrating Turró's remarks on the sense of space, he cites the sensations in the stump after amputation of a limb. If the limb is amputated higher up, at a second operation, the new plane is the source of the same illusions as before.

Rod Cells in Glia.—Del Río-Hortega's extensive study of the normal and pathologic microglia is accompanied with eleven fine plates showing the transformation of the branched glia cells into long drawn out, rodlike shapes and granule cells. The causes for this transformation are discussed. The most striking specimens of these long rods were from the brain cortex in a case of general paresis.

Semana Médica, Buenos Aires

May 20, 1920, **27**, No. 21

*Sarcoma of Sciatic Nerve Sheath. E. Rodríguez Villegas and P. Rojas.—p. 675.
*Research in Physiology. J. Guglielmetti.—p. 685.
*Food in Bad Condition. A. Marco del Pont.—p. 695.
Schools for Weakly Children. Garrahan and Pico.—p. 696.

Sarcoma of Sheath of Sciatic Nerve.—Rodríguez and Rojas give eighteen photomicrographs of the findings in the fibrosarcoma removed from the sheath of the right sciatic nerve of a woman of 32.

Original Research in Physiology in Argentina.—Guglielmetti reviews among others his own contributions to science, especially his research on the toxicity of emetin and the action of epinephrin on muscle.

Prevalence of Indicanuria.—Del Pont theorizes to explain the remarkable prevalence of indicanuria at Buenos Aires in the last few months. He is inclined to ascribe it to the bad condition of certain articles of food, probably refrigerated meats.

Siglo Médico, Madrid

July 31, 1920, **67**, No. 3477

Disease in Cauda Equina. J. M. de Villaverde.—p. 565.

Aug. 7, 1920, **67**, No. 3478

*Heated Ether. A. Morales.—p. 585.
Congenital Cyst Infected from Vincent's Angina. J. M. Barajas y de Vilches.—p. 587. Conc'n in No. 3479, p. 608.
Modern Campaign Against Tuberculosis. A. Espina y Capo.—p. 591. Begun in No. 3473, p. 489.

Excitement and Suggestion Under Ether.—Morales lauds the advantages of heating the ether for anesthesia, saying that he has applied this thermo-etherization in 8,951 cases since 1887, and with constant satisfaction. Suggestion during the phase of excitement from the ether has often proved very useful, and he has even proposed utilizing this "ether suggestion" in examining persons accused of crimes.

Acta Scholae Medicinalis Univ. Imp. Kioto

March 25, 1920, **3**, No. 3

Pharmacology of Chinese Remedy, "Sen-So." K. Kodama.—p. 299.
*Cocain Poison for Smooth Muscle. A. Gohara.—p. 321.
Influencing of Water Hemolysis by Aliphatic Narcotics. T. Yoshitomi.—p. 339.
Determination of Morphin in Urine. H. Oshika.—p. 351.
*Antagonism Between Epinephrin and Atropin. A. Gohara.—p. 363.
Pharmacologic Action of Dehydromorphin. H. Oshika.—p. 377.
*Effects of Thymotoxic Serum. H. Yamaoka and M. Ogata.—p. 391.
Embryology of Primitive Blood Vessel Cells in Amphibia. T. Yoshinaga.—p. 401.
*Antagonism Between Calcium and Magnesium. S. To.—p. 441.

Cocain a Poison for Smooth-Muscle Organs.—Gohara reports that experiments on surviving organs of rabbits and the human uterus demonstrated the incorrectness of the assumption that cocain acts on the sympathetic. It acts to stimulate in small doses and paralyze in large ones the motor functioning and the tonicity of almost all the smooth muscle organs, including the vessels.

Antagonism Between Epinephrin and Atropin in Smooth Muscle Organs.—Gohara's experiments seem to indicate that atropin paralyzes not only the parasympathetic nervous sys-

tem but also the stimulating sympathetic nerve elements. The inhibiting fibers seem to escape this action.

Action of Thymotoxic Serum on Young Dogs.—The embryologic, anatomic and physiologic independence between the thymus and the parathyroid glands is confirmed anew by these experiments on young dogs. The parathyroids developed apparently normally although the thymus had been practically destroyed by the action of the thymotoxic serum.

Antagonism Between Calcium and Magnesium.—The skeletal muscles seem to be paralyzed alike by these drugs, and their action is superposed. But their action differs on muscular organs, being antagonistic on the vessels.

Archiv für Gynaekologie, Berlin

1919, **110**, No. 3

*Eclampsia. F. Westermark (Stockholm).—p. 517.
*Biologic Adaptation of the Newborn. P. Lindig.—p. 545.
*Packing the Uterus for Postpartum Hemorrhage. M. Brütt.—p. 619.
*Pathogenesis of Uterine Hemorrhages. R. Schröder.—p. 633.
*Postoperative Cystitis. P. Esch.—p. 659.
*Radiotherapy of Cancer. K. Eckelt.—p. 685.
*Endocrine Malfunction in the Pregnant. A. Mahnert.—p. 743.
An Acardiac Monster Fetus. J.Pok.—p. 767.
Position of Fetus and Pressure on Spine in Breech Presentation. K. Warnekros.—p. 793.

Excision of Corpus Luteum in Treatment of Eclampsia.—Westermark argues that the source of the eclampsia poison is in the lutein substance. Hence treatment should remove this source and reduce the poisonous substances already circulating by venesection and evacuating the uterus. He has treated seven women with eclampsia by excision of the corpus luteum, including four pregnancy and three puerperal cases. In none of the cases was any influence apparent on labor contractions from the loss of the corpus luteum. The albumin content of the urine grew less while the output of urine increased, and the general effect warrants continuance of research in this line. Extract of corpus luteum from pigs and cows injected into rabbits by the vein displayed a very pronounced toxic action, the liver and other organs showing changes remarkably like those found in human eclampsia. The gravid animals were more susceptible to the poisonous action than males or nongravid females. In 5 of his 7 clinical cases the ovaries were found small, the corpus luteum forming a third of the whole organ. As the convulsions are merely a symptom of the intoxication, it is not to be wondered at that they were not always arrested at once by the operation, but in most of the cases there were no further convulsions and in the others the attacks were milder.

The Biologic Digestive Adaptation of the New-Born.—Lindig presents evidence that the serum of young infants is provided with proteases capable of digesting any kind of casein. One of the practical conclusions of his research is that every effort must be made to insure for the new-born child—at least for a time—its own mother's milk and especially the colostrum. Only by this means does the child acquire in the easiest manner the capacity for digesting albumin, human or cow's. The casein of cow's milk is digested by the serum from the child's umbilical vein almost as perfectly as by serum from pregnant women. Since it has been made a practice to pump out all the available colostrum from the mother's breast after suckling, and feed it to the child, there has been much less of the so-called physiologic drop in weight during the first week, and no "transition catarrh" has developed which otherwise often is observed the third to fifth day. The child's digestive apparatus is thus gradually trained to digest albumin from milk of any source.

Tamponing to Arrest Postpartum Hemorrhage from Inertia.—Brütt states that the hemorrhage was arrested in all of 100 cases (out of a total of 10,000 maternity cases) in which the uterus was tamponed to arrest hemorrhage from inertia of the uterus. In only one instance was the tampon soaked with blood, compelling repacking.

Pathogenesis of Uterine Hemorrhage.—Schröder ascribes abnormally profuse menstrual hemorrhages to any factors inducing hyperemia or muscular insufficiency of the uterus. The course of the anatomic menstruation cycle, as a functional unit, is intact. It may likewise be intact with metrorrhagia, but metrorrhagia may be traced to derangement of extragenital organs, the heart, lungs, kidney or nervous system, or to polyps, myomas or cancer in the genital organs, or to endometritis. In the great majority of metrorrhagia cases there is a well characterized functional anomaly, namely, a persistence of the mature follicles with lack of ovulation and hence of corpus luteum formation. This entails pathologic proliferation in the endometrium under the influence of the hormone from the ripe follicle. This proliferation, by the progressive necrobiosis in consequence of vascular thrombosis, is the cause of the bleeding. This characteristic functional anomaly develops mainly at puberty and at the menopause, a true hemorrhagic metropathy. Treatment of metrorrhagia should be based on the one of the above causes that is responsible for the hemorrhage in the individual case. Measures to promote the ripening of the follicle and ovulation may be required.

Postoperative Cystitis.—Among the measures recommended by Esch to ward off postoperative cystitis is the administration of a disinfectant for the urine before the operation, so that if the catheter has to be used there will be less danger of infection. Another point is to measure the output of urine after the operation, bearing in mind that after much loss of blood the output is small. The sensation of distention of the bladder may be due to pressure from a tampon or the attitude in bed. While giving hexamethylenamin to disinfect the urine, he does not restrict the patient to a vegetable diet as this reduces the acidity of the urine which is needed to release the formaldehyd. For a similar reason he does not allow much fluid, as this would dilute the formaldehyd in the bladder and cause it to be thrown off too rapidly. On the other hand, alkaline mineral waters and a vegetable diet are indicated for the subacute and chronic catarrhal condition following acute cystitis. Application of heat from the abdomen and vagina may prove useful for pericystitis. When the cystitis is restricted to the trigonum it may resist treatment until locally treated. For this he advises using a Landau uterus dilator dipped in a silver nitrate salve.

Radiotherapy of Genital Cancer.—Eckelt declares that notwithstanding the improvement in technic in the last few years, radiotherapy is still impotent to cure deep-seated cancers, especially of the uterine cervix. Radium also is ineffectual except where it can be used, as in the cervix, to have the effect of a surface raying.

Endocrine Malfunction in the Pregnant.—Mahnert applied a refractometer Abderhalden micromethod to determine the presence in the blood serum of ferments against ovarian, thyroid and suprarenal albumin in a large number of pregnant and nonpregnant women. His tabulated findings by this means demonstrate malfunction of the ovaries in 80 per cent. of the pregnant women, malfunction of the thyroid in 57 per cent. and of the suprarenals in 42 per cent., the latter predominantly in multiparae. In the nonpregnant women no ferments of the kind could be discovered. He refers parenthetically to Kraus and Saudek's finding of a ferment against testicle albumin with a male fetus and against ovarian albumin with a female fetus. The maternal serum in his tests showed no distinction of the kind.

Archiv für klinische Chirurgie, Berlin

March 26, 1920, **113**, No. 3

*Operative Treatment of Duodenal Ulcer. J. Hohlbaum.—p. 499.
*Pathology and Surgery of Lithiasis. C. Rohde.—p. 565.
*Constitutional Pathology of the Spine. E. Payr.—p. 645.
Insufficientia Vertebrae Not a Morbid Entity. E. Kirsch.—p. 699.
*Consequences of Severing the Vagus. M. Litthauer.—p. 712.
*By-Effects of Paravertebral Nerve Blocking. O. Wiemann.—p. 737.

Operative Treatment of Chronic Duodenal Ulcer.—The conclusions of this review of the ultimate outcome in fifty-nine cases of duodenal ulcer in Payr's service are rather pessimistic. The comparative frequency of peptic ulcer after conservative or even radical intervention, the inability to prevent and control hemorrhage and perforation, and the danger for the patient from resection render the outlook grave, while the nervous factor in the development of the ulcer and the good results reported occasionally from medical treatment justify considerable reserve in advising surgical treatment. Only when internal measures have failed, and visible or

occult hemorrhages persist or frequently recur, and when there is a tendency to stenosis, is operative treatment indicated; resection should be preferred.

Pathology and Surgery of the Bile Passages.—Rohde reports from Rehn's service the ultimate outcome in 107 operative cases of gallstones or inflammatory processes in the biliary passages. A complete cure seems to have been realized in 80.37 per cent. and in the others the condition has been much improved. No injurious effect from the cholecystectomy and T-drain was observed in any instance. Rehn is convinced that cholelithiasis represents a local process in the gallbladder, and hence that removal of the gallbladder is the only rational treatment when the gallstones are causing disturbance. In about 80 per cent. of all cases of cholelithiasis the gallstones never make their presence felt. In the total 107 cases, 10.28 per cent. developed jaundice, colics and fever later, traced to compression, adhesions or stenosis from pre-existing lesions except in two cases in which calculi had developed in the ducts, in one on a basis of a scrap of suture material.

Constitutional Pathology of the Spine.—Payr devotes over fifty pages to this study of constitutional weakness of the spine and its ligaments. The abnormality may be of the nature of asthenia or of infantilism. With the pains and fatigue in the back and legs, sacral pains and other complaints of typical asthenia, the children should be encouraged to exercise and play games that will strengthen the spine, not weaken it by giving them a brace or corset. They need psychotherapy to encourage them and make them forget and outgrow their spinal disturbances, not prostheses to confirm them in their neurasthenia. When there is actual malformation of vertebrae the sensitive organ must be spared during the more painful periods, but general strengthening measures should be kept up and the choice of a vocation supervised.

Consequences of Severing the Vagus.—Litthauer divided the vagus in his experiments at six different points. The experiments were made on dogs with special regard to the effect on the stomach. Severing the vagi did not seem to affect the secretion of gastric juice after a meal either quantitatively or qualitatively. When the vagus was divided above the diaphragm, the secretion kept up in the empty stomach. On the whole, the effects of the experiments coincided fairly well with clinical experiences.

By-Effects of Paravertebral Nerve Blocking.—Wiemann induced regional anesthesia the day before the operation on the thyroid in a number of cases to determine the exact mechanism of the occasional by-effects with this form of anesthesia. The phenomena observed confirm that paravertebral conduction anesthesia is liable to be followed by signs of paresis of the sympathetic and vagus nerves. Those of the sympathetic are not important, but the simultaneous arrest of both sympathetic and vagus functioning is liable to induce serious disturbance in persons with overexcitable autonomic nervous system. He found that these by-effects can be avoided by making the injection at the posterior portion of the transverse process. In some of the cases roentgenoscopy revealed paresis of the diaphragm on the same side but without subjective disturbance. The pulse was sometimes slowed and sometimes accelerated or not influenced. Some of the patients who presented by-effects at this preliminary anesthetization, did not have any at the actual operation next day, although at the operation the paravertebral technic was applied on both sides and with three or four times as much of the anesthetic. The ptosis or miosis noted in some cases was evidently due to paresis of the sympathetic, but it was briefly transient. The work issues from König's service at Würzburg.

Zeitschrift für Tuberkulose, Leipzig

December, 1919, **31**, No. 5

Influenza and Tuberculosis. E. Dorn.—p. 257.
*Classification of Pulmonary Tuberculosis. E. Fraenkel.—p. 267.
*Trauma and Tuberculosis. J. Orth.—p. 269.

Classification of Pulmonary Tuberculosis.—Fraenkel suggests to classify pulmonary tuberculosis as (1) acute miliary tuberculosis; (2) cheesy pneumonia; (3) subacute, disseminated small foci; (4) the nodular-cirrhotic form, chronic phthisis, with the three subdivisions: the hilus-apex process, the chronic progressive form, and the chronic stationary form; (5) the cirrhosis form of pulmonary tuberculosis, and (6) the obsolete form. The last two types include the inactive processes. The nodular-cirrhotic form includes the whole range of chronic focal destructive processes. This classification corresponds to the roentgenologic findings.

Trauma and Tuberculosis.—Orth here reproduces his testimony as medicolegal expert in five cases where workmen's compensation was claimed on account of pulmonary tuberculosis developing after trauma. These reports are being published serially.

Zentralblatt für Gewerbehygiene, etc., Berlin

March, 1920, **8**, No. 3. Only medical articles listed.

*Occupational Diseases in China Workers. F. Koelsch.—p. 41.
*What Locomotive Engineers Die Of. Guradze and Sternberg.—p. 50.

Occupational Pathology of China Workers.—Koelsch found catarrhal conditions in the air passages in 3.2 per cent. of 1,000 china workers examined, and very nearly 50 per cent. presented evidence of "dust lungs," confirmed by roentgenoscopy. These changes were more pronounced the longer the work had been continued. The swallowing of the dust is liable to irritate the stomach mucosa and induce ulceration. Complaints of rheumatism are common among china workers as they get chilled when they leave the heat of the workrooms, and some of the work has to be done with constant moisture. Actual skin disease is rare.

What Locomotive Engineers Die Of.—Guradze and Sternberg tabulate the causes of death in 635 locomotive engineers from 1913 to 1917. Heart disease was responsible in 10.7 per cent; phthisis in 10.5 per cent., the latter a typical occupational disease from the smoke. Pneumonia was responsible in a further 10 per cent., and "nervous disease" in 10 per cent.

April, 1920, **8**, No. 4

*Bladder Tumors in Workers on Chemicals. Schwerin.—p. 64.
Test for Aromatic Amido Compounds in Urine. A. Kuchenbecker.—p. 68.
Transformation of Aromatic Amido Compounds in the Animal Body. A. Kuchenbecker.—p. 69.
Hydrogen Sulphid Poisoning in Cleaning Tannery Vat. Tauss.—p. 74.

May, 1920 **8**, No. 5

Fate of Beta Naphthylamin in Dog Organism as Throwing Light on Occupational Bladder Tumors. Engel.—p. 81.

Bladder Tumors in Dye Workers.—Schwerin found in 100 cases of bladder tumors in workers handling chemicals that in 79 per cent. the chemical involved had been fuchsin (rubin) or benzidin or naphthylamin, the average years of work being from twelve to nineteen with the first mentioned, six with the benzidin group and eight with the naphthylamin group of 30 cases. Schwerin operated on one benzidin male worker for papilloma after scarcely three years' handling of this chemical. In 3 cases an interval of two, eight and twenty-three years had elapsed after nine, five and three years of handling of the chemical. The bleeding from the bladder then was misinterpreted by the physician consulted in some in this group. In 50 per cent. of the total cases an operation was done, but only 18 were cured; 66 per cent. died. Recurrences were observed after seven, eight and eleven years, as well as after a few months. Even the apparently most harmless tumors of this kind must be regarded as malignant as cancerous degeneration is frequent. The bladder should be opened wide for excision into sound tissue. If the case is already inoperable, he injects 1 to 5 per cent. resorcin solution. This cauterizes the bleeding vessels and the tumor temporarily subsides. In 8 of the total 100 cases, anilin dyes had been handled and in 8 others other bases, with palatine black in 2, and blau I and patent blau in 1 case each.

Mededeel. v. d. Burg. Geneesk. Dienst, Neth. Indies

1920, **2**. Parallel Dutch-English Edition.

*History of Sanitation in the Netherlands Indies. P. C. Flu.—p. 3.
Sex Ratio at Birth. A. Leber.—p. 15.
*Organized Medical Aid after the Kloet Eruption. A. J. Salm.—p. 17.
*Surgical Tuberculosis and Spirotrichosis Among Natives. T. Wieberdink.—p. 29.
The Psychosis of the Native in Relation to his Character. P. H. M. Travaglino.—p. 37.

Psychopathical Personalities. W. F. Theunissen.—p. 51.
*Leukocyte Count with Abscess of Liver. H. M. Neeb.—p. 67.
*Simplified Method of Registration in Behalf of State Medical Supervision in the Tropics. W. T. de Vogel.—p. 107.
*The Constitution in the Tropics. C. D. de Langen.—p. 153.

History of Sanitation in the Netherlands Indies.—This is the president's address at the opening of the first congress for natural and medical science in the Netherlands Indies. Flu reviewed the progress made in sanitation since Eijkman's pioneer researches there on the physiology of the tropics and the nature of beriberi, which laid the foundation for the study of deficiency diseases. "The hygienic work of the Americans," he continued, "in the isthmus of Panama is always held up as an example of tropical sanitation, but I, for one, while fully appreciating the important work done there by the Americans have greater admiration for the work of Schüffner, Kuenen and others here who have obtained a maximum of hygienic results with comparatively small means. For they had not, like their fellow workers in America, millions of dollars at their disposal for the sanitation of a piece of ground not even half so large as this one province of Batavia." Besides the several laboratories of the public health service, there is a college for training native physicians, organized in 1912. He referred among others also to pioneer work on the ameba and tetragenus, and to recent research which has determined the habits and habitat of the various species of mosquitoes in the islands.

Care of the Injured After the Kloet Eruption.—Salm reports how the military medical service organized relief work for the burned or otherwise injured by the eruption. It occurred in the night. There was a lake in the crater of the volcano, and the boiling water from this was forced up and out, the flood overwhelming several villages and reaching the town of Blitar in twenty minutes. Only fifty-two died of the 639 tended in the hospital units sent to twelve different points.

Surgical Tuberculosis Among the Natives.—Wieberdink relates that in forty-two cases of surgical tuberculosis among the natives given treatment at the Batavia public hospital in the last four years, he never succeeded in cultivating the sporothrix from the lesions, and in fact has never encountered a case of sporotrichosis among the 16,000 patients.

The Leukocyte Count Differentiates Hyperemia of the Liver from Amebic Abscess.—Neeb declares that the leukocyte count will distinguish between simple hyperemia of the liver in amebic infection and actual suppuration. With the latter, there is increasing leukocytosis but no eosinophils and scanty lymphocytes; the mononuclears fall off in numbers while the neutrophils increase, and there is considerable shifting to the left in the Arneth scale, and all these changes are progressive. With mere hyperemia, reverse conditions prevail and remain stationary. The findings in twenty-two typical cases are described.

Chart to Aid in Computing Vital Statistics.—De Vogel reproduces some huge folding charts which simplify registration in tropical regions where the majority of the populace are not in the habit of applying for professional medical aid when they are sick. The native health officials send in weekly reports of deaths and births. The system described is working well in Java and Madura, with their total 34,000,000 souls. This registration has shown, for example, that the north coast of Java during the dry season, August and September, has the highest mortality of the year, contrary to what would be expected from experiences elsewhere. Knowledge of such facts allows special precautionary measures to be taken.

The Constitution in the Tropics.—De Langen here brings down to date his theoretical considerations on the biochemical aspect of life in the tropics, and especially his assumption of the hypersensitivity of the sympathetic nervous system. He found that the cholesterin, other fats and calcium in the blood were below the normal level in European blood, but the sugar content was abnormally high. He ascribes the frequency of convulsions and spasmophilia to this deficiency in calcium. Experience has shown, in one hospital at least, that 3 gm. of calcium given daily to all the patients indiscriminately, seemed to hasten recovery and render it more complete. The uric acid content of the blood was found within normal range, identical with American values and perhaps a little higher than the European. He emphasizes that hypersensitivity of the sympathetic system does not necessarily imply a weakening of the antagonist system. The tonus of the latter may be normal, even although some of its effects may be dwarfed by the stronger sympathetic system. Klinkert's recent publications on eosinophilia (mentioned in these columns, Oct. 16, 1920, page 1103) are compared with these experiences in the tropics. There is some discordance between his views and the assumption of a tropical sympatheticonia which de Langen has found the rule.

Hospitalstidende, Copenhagen

Aug. 4, 1920, **63**, No. 31

*Double Thalamic Syndrome with Slow Onset. V. Christiansen.—p. 473.

The Thalamic Syndrome.—Christiansen reports a case which differs from the classic description in that the symptoms developed gradually and on both sides in turn, first the intense pains in the one arm and then in the other and later in the legs. Months later the athetoid movements appeared, and finally incoordination disturbances. From his analysis of the case he deduces that the pathologic process must be of the Parkinson's disease type, only instead of the usual location of the process in the lenticular nucleus, as in true shaking palsy, it is located in the thalamus. He does not know of any other instance on record of the thalamic syndrome involving both arms and then both legs to some extent. The onset with the latter is sudden, while in this man of 64 the course was insidious and progressive. It is the first case of the thalamic syndrome to be published in Denmark.

Aug. 11, 1920, **63**, No. 32

*Generalized Retrograde Amnesia. A. Wimmer.—p. 489.

Retrograde Amnesia.—In the case reported by Wimmer the young woman was brought to the hospital by the police, as she was found wandering with total loss of memory. It developed a week after an emotional shock, her unjustly jealous fiancé having repudiated her. Wimmer says that only about twenty such cases have been published, the patient like an infant, newly born, so far as the previous personal life is concerned, while the abstract, social, moral and daily life conceptions and perceptions are normal. All remembrance of the previous personal life is temporarily obliterated. In this case it returned in a dream in a day or two; when she woke, her condition was normal. No signs of hysteria could be discovered.

Ugeskrift for Læger, Copenhagen

Aug. 26, 1920, **82**, No. 35

Two Medicolegal Psychiatric Cases. G. E. Schrøder.—p. 1103.
Blood Pressure in Aviators. E. Grandjean.—p. 1112.

Sept. 2, 1920, **82**, No. 36

Results at Tuberculosis Sanatoriums. G. E. Permin.—p. 1129.
*Emphysema and Pendulous Abdomen. F. Teilmann.—p. 1135.
*Test for Bile Pigment in the Blood Plasma. H. C. Gram.—p. 1137.

Emphysema and Pendulous Abdomen.—Teilmann has found that treatment of enteroptosis will sometimes cure pains and other disturbances in the chest. These patients are stout, elderly working women and they usually are seated or reclining during the physician's examination. We are thus liable to overlook the connection between the pendulous abdomen and the symptoms in the chest. Patients of this class complaining of emphysema should be examined standing, and their symptoms relieved by mechanical or other means to correct the enteroptosis.

Test for Pigment in the Blood.—Gram remarks that the Meulengracht test for pigment in the blood serum enables the diagnosis of jaundice in dubious cases and oversight of the progress of the jaundice in established cases, while it also serves for the diagnosis of pernicious anemia. The precision of the test is somewhat impaired by opalescence in the serum, from platelets or fat. The fat can be avoided by taking the blood fasting, and the platelets can be centrifuged out, but this takes an hour's centrifuging with a powerful electric centrifuge. He describes how to apply the test with very little blood. The original technic was described in these columns, Jan. 3, 1920, p. 68.

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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, NO. 21 CHICAGO, ILLINOIS NOVEMBER 20, 1920

A METHOD OF TREATING CONGENITAL SYPHILIS*

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Owing to the manner in which congenital syphilis is conveyed to the fetus, no opportunity is afforded to employ abortive treatment, as in the acquired form of the infection. Practically all the tissues of the body are invaded by the spirochetes long before a way is open for the systematic use of specific remedies. It is, therefore, not difficult to understand why permanent damage may result to the delicate and vulnerable tissues of the fetus and infant during the time that intervenes from the date of infection to the earliest time in which it is possible to combat it.

Although we may be successful in destroying the invading organisms accessible to our remedies, a guarded prognosis as to future integrity of important organs should always be given. The percentage of cases in which the nervous system is implicated in congenital syphilis has not been determined by systematic examination of the spinal fluid. We are gradually accumulating data that may eventually illuminate this problem. In the meantime it may be assumed that the relative number of cases in congenital syphilis will not differ materially from that encountered in the acquired infection. Juvenile paresis, tabes and other types of neurosyphilis due to congenital syphilis are probably caused by early implantation of the spirochetes in the central nervous system. We are confronted with the same problem as in acquired syphilis, namely, the technical difficulty of bringing the specific drugs in contact with the invading organisms before irreparable damage has occurred. By persistent and well considered treatment we may hope to control the majority of cases in which the lesions can be reached by our specific remedies. Congenital neurosyphilis will continue to show the same resistance to drugs given by the usual channels, and will be followed by late degenerations unless better therapeutic methods can be devised than we at present possess.

In this preliminary communication we have purposely avoided the consideration of many problems related to congenital syphilis. We have endeavored to formulate a method of using specific drugs which, by its simplicity of application and results, may justify its further employment by those who have to do with these innocent and unfortunate victims of congenital syphilis.

* A preliminary report from the Department of Dermatology and Syphilology, Columbia University College of Physicians and Surgeons.

While it is recognized that the treatment should consist of some form of mercury and arsphenamin, no definite working plan has been formulated for treating secondary syphilis in infants with the precision and regularity employed in adults. Until a few years ago the old-fashioned method of inunction and the internal administration of mercury were almost solely employed. In a certain percentage of fairly well-nourished infants, involution of the cutaneous manifestations took place with improvement in the health and a gain in weight and strength, but there was little or no change in the serology. The infection persisted indefinitely, and as time went on it became more difficult to eradicate. In many of the new-born syphilitic infants with active manifestations, the infection was so great and the physical condition so poor that treatment, no matter how carefully carried out, was of little avail. In a few weeks or months the child succumbed to the disease or to some intercurrent infection. At the present time we do not see so many infants with severe infections or active lesions, because the maternity hospitals are making Wassermann tests on all prospective mothers as a routine measure, and are referring those with positive reactions for treatment. As a result, these women are treated either during the entire period of gestation or some portion of it, thus modifying in a degree the infection in the offspring.

Since the advent of the arsenical preparations, certain physicians have employed them by injection into the longitudinal sinus, the veins of the arm, scalp or neck, or intramuscularly into the gluteal region. While reports show a decided advance over the old methods of treatment, the technical difficulties have been so great that in the hands of the inexperienced more harm than benefit has often resulted. In our work at the Vanderbilt Clinic, therefore, we have undertaken to formulate, first, a method analogous to that employed in adults, i. e., to treat these patients intensively in the secondary stage, endeavoring to obtain a cure as quickly as possible, and, secondly, to make the plan workable and easy of application. The method described below is so simple that the general practitioner even with little technical experience, after he has witnessed the administration, will be able to carry it out with safety.

In the method in question, neo-arsphenamin and mercury are used intramuscularly with a special needle to insure the proper location of the drugs in the gluteal muscles. If the infant is very much under weight with a poor musculature, mercury alone is given at weekly or biweekly intervals until there is an improvement in the general condition, after which the injections of neo-arsphenamin are begun.

The mercurial employed is the mercuric chlorid put up in palmatin in individual collapsible ampules in doses of from $\frac{1}{10}$ to $\frac{1}{8}$ grain or larger for older

children. The object in giving a soluble mercury in oil is to favor slow absorption of the drug. In this form it requires about three or four days for absorption. The palmatin, which is in colloidal state, is semi-solid at room temperature and liquefies at 110 F. When ready for use, the syringe being still warm after its removal from the sterilizer, the contents of the ampule are expressed into the barrel, all the air removed, and if the oil has not liquefied from its contact with the hot syringe, the latter with the drug may be immersed for a minute in hot water.

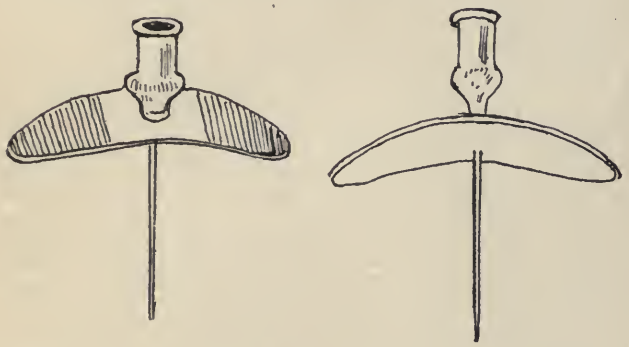


Fig. 1.—Needle for intramuscular injection of neo-arsphenamin and mercury.

An ordinary mercury needle of from 19 to 20 gage, cut down to from one-half to 1 inch in length, is used. After the buttock has been sterilized with iodin, the injection is given into the muscle about 1 inch from the intergluteal fold near its upper angle. The chief pain is that induced by the prick of the needle, as the children as a rule stop crying as soon as the treatment is completed.

In this way we are giving a definite dose of mercury to our patients and need not depend on an unintelligent mother for rubbing in an ointment, the amount of absorption of which varies in every case owing to differences in quality, strength and the length of time the child is rubbed. As compared with aqueous solutions of mercuric chlorid larger doses can be employed with an oily menstruum, absorption is less rapid, and the attendant pain of the injections not so great. The slower absorption permits longer intervals between injections. For the present we are giving from six to eight treatments at weekly intervals, followed by a rest period of from four to six weeks.

The neo-arsphenamin we have had put up in individual glass ampules containing from 0.1 to 0.2 gm. and large enough to hold 5 c.c. of solution, the object being to dissolve the drug in the original container. After the ampule has been immersed in alcohol to insure its proper sealing and sterilization it is dried with sterile gauze, the end broken off, and from 2.5 to 3 c.c. of cool sterile, freshly distilled water injected into it by means of a syringe. We then attach to the latter a Luer mercury needle long enough to reach to the bottom of the ampule and draw the fluid into the barrel, alternately expelling and drawing it up to hasten complete solution.

The complications following the intramuscular injection of neo-arsphenamin, such as abscesses and infiltrations, can be avoided if the drug is injected deep into the muscle. To prevent its leaking into the subcutaneous and adipose tissue, we have devised a special needle from ½ to 1 inch in length (somewhat longer for older children), of 19 to 20 gage, with an oval concave shoulder which fits snugly over the buttock, the shank of the needle being inserted flush with the under surface of the concavity (Fig. 1). This enables one to hold the needle in place, no matter how much the child moves. With the ordinary needle the slightest motion of the child changes its position, and unless the operator watches this carefully he injects the drugs into the subcutaneous and adipose tissue with unpleasant by-effects. After the injection, the needle is rapidly withdrawn and a cotton pledget held firmly over the site for a few minutes. The site of injection is the same as for the mercurial treatment; half of the solution is injected into each buttock previously cleansed with tincture of iodin.

Infants, on the whole, tolerate drugs well; it is surprising what large doses can be administered with safety. The amounts given by us are large when computed according to the weight ratio, but so far no untoward results have arisen, and it may be possible to employ even larger doses. We are now giving neo-arsphenamin in the following doses at weekly intervals: 0.075 gm. for infants from 3 weeks to 8 weeks; 0.1 gm. from 2 to 6 months; 0.15 gm. from 6 months to 1 year; 0.15 to 0.2 gm. from 1 to 2 years. These doses are employed in courses of from six to eight, followed by rest periods of from four to six weeks.

We have at present forty-five babies under treatment, twenty-one of them ranging from 3 weeks to 6 months in age, and the remainder up to 2 years. In no instance have we had any bad results from this method of treatment. In one or two of the very young



Fig. 2 (Case 1).—Appearance of patient with mucous patches and ulcerations about mouth and anus, squamous syphilid on face and body, and marked snuffles.

babies there was a slight infiltration following both the neo-arsphenamin and the mercury, which was absorbed in a few weeks and did not interfere with subsequent treatments. In no instance was there any abscess formation or other complication. All of the patients have shown such marked improvement following the

treatment that we feel justified in publishing this preliminary report.

Mention should be made of the variation in the Wassermann reaction in babies born of syphilitic mothers. The blood taken from the umbilical cord at the time of birth may be strongly positive; ten days later from the longitudinal sinus, jugular vein or veins of the forearm it may give a negative result. While for statistical purposes it is advisable to obtain blood at this time, one cannot place too much reliance on the result. In controlling our cases we make several tests at ten day intervals; and if they continue negative, in the absence of clinical evidence of the disease, we follow the child serologically for a year, lengthening the interval to from four to eight weeks. Careful clinical examination of these infants is also necessary as the blood is sometimes negative in the presence of the clinical infection, or it may fluctuate from negative to positive at different times.



Fig. 3 (Case 1).—Appearance of patient three weeks after treatment.

Below are given the histories of nine infants with the manifestations of a severe syphilitic infection, all of them very ill, and with a poor prognosis. They have all improved up to the time of this report. While we appreciate that it is premature to predict the final outcome, yet we feel that the present plan offers more hope than the old methods. We base this assumption on comparison with our past experience.

REPORT OF CASES

CASE 1.—Barbara F., aged 6 weeks, whose mother and father were serologically positive, was admitted, April 21, 1920, in a very cachetic condition with ulcerations and mucous patches in and around the mouth and anus, and a squamous eruption on the trunk. The palms and soles were desquamating; the child had marked snuffles. The Wassermann test was ++++ with alcoholic antigen, icebox fixation, and negative with cholesterin antigen. The infant weighed 5 pounds, 9 ounces, and presented the typical facies of congenital syphilis of malignant type (Fig. 2). Owing to its poor physical condition we decided to begin the treatment with mercury, and gave the treatment outlined in Table 1.

The response to treatment was immediate, involution of the lesions taking place after the first mercury. The photograph reproduced as Figure 3 was taken three weeks after treatment was begun and shows the improvement over the first one taken on the day of admission. July 8, she weighed 7 pounds, 2 ounces. The gain in weight in this infant has been very slow, owing partly to the severity of the infection, and partly to improper feeding. The Wassermann reaction, July 9, 1920, was negative with all methods.

TABLE 1.—TREATMENT IN CASE 1

4/21/20	Mercuric chlorid	1/10 grain
4/28/20	Mercuric chlorid	1/10 grain
5/ 3/20	Mercuric chlorid	1/10 grain
5/ 7/20	Mercuric chlorid	1/10 grain
5/10/20	Mercuric chlorid	1/10 grain
5/12/20	Neo-arsphenamin	0.05 gm.
5/19/20	Neo-arsphenamin	0.05 gm.
5/24/20	Mercuric chlorid	1/10 grain
5/26/20	Neo-arsphenamin	0.05 gm.
6/ 2/20	Neo-arsphenamin	0.035 gm.
6/16/20	Neo-arsphenamin	0.05 gm.
6/23/20	Neo-arsphenamin	0.05 gm.
7/ 7/20	Mercuric chlorid	1/10 grain
7/14/20	Mercuric chlorid	1/10 grain

CASE 2.—Daniel M., aged 5 months, whose mother and father had strongly positive Wassermann tests, was admitted April 21, 1920, with infiltrated palmar and plantar syphilids (Fig. 4), and with a papular eruption of the groin and thighs. The infant was very anemic and undernourished. The Wassermann test was ++++.

TABLE 2.—TREATMENT IN CASE 2

4/21/20	Mercuric chlorid	1/10 grain
4/28/20	Neo-arsphenamin	0.075 gm.
5/ 3/20	Mercuric chlorid	1/10 grain
5/ 5/20	Neo-arsphenamin	0.075 gm.
5/10/20	Mercuric chlorid	1/10 grain
5/12/20	Neo-arsphenamin	0.075 gm.
5/17/20	Mercuric chlorid	1/10 grain
5/19/20	Neo-arsphenamin	0.075 gm.
6/ 2/20	Neo-arsphenamin	0.075 gm.
6/ 7/20	Mercuric chlorid	1/10 grain
6/ 9/20	Neo-arsphenamin	0.075 gm.
6/16/20	Mercuric chlorid	1/10 grain
6/23/20	Neo-arsphenamin	0.075 gm.

Three weeks after the beginning of treatment there was no further evidence of the lesions. The child is gaining in weight slowly, but steadily. The Wassermann taken June 23, 1920, was still ++++.

CASE 3.—Madeline C., aged 10 months, whose mother and father were serologically positive, presented on admittance, April 21, 1920, an annular, infiltrated syphilitic eruption on the buttocks and thighs (Fig. 5), and eroded papules in the corners of the mouth and about the anus. The infant was very poorly developed.



Fig. 4 (Case 2).—Squamous syphilid of palm.

Treatment from April 21 to June 23 consisted of seven injections of mercuric chlorid, 1/10 grain, and six injections of neo-arsphenamin, 0.075 gm.

By May 17, the infiltrated lesions had entirely involuted, but pigmentation remained. There has been a very marked improvement in the physical condition, the baby now weighing 17 pounds, 10 ounces. The Wassermann test is still ++++.

CASE 4.—Lorraine I., aged 1 month, whose mother and father were serologically positive, was admitted May 5, 1920, from the Sloane Maternity Hospital, with a ++++ Wassermann test from the umbilical cord at birth, and ten days later a strongly positive test from the longitudinal sinus. Physical examination revealed a large liver and spleen, and a pseudoparalysis of the left arm and leg due to an epiphysitis. The weight, May 12, was 4 pounds, 14 ounces.

Treatment from May 12 to July 7 consisted of three injections of mercuric chlorid, 1/10 grain, and one injection of 1/20 grain. Six injections of neo-arsphenamin, 0.035 gm., and two of 0.075 gm. were given.

The liver and spleen are considerably smaller; the child moves its left arm and leg as well as the opposite side, and on June 16, 1920, weighed 6 pounds, 1 ounce. The Wassermann test was unchanged.

Case 5.—Ivy W., aged 6 weeks, whose mother's Wassermann test was strongly positive and whose father would not report for a test, was so ill when admitted, Dec. 31, 1919, that she was referred to Bellevue Hospital. Jan. 17, 1920, the following report was received from the hospital: "Keratitis of both eyes, enlarged liver and spleen, osteoperiostitis of femora, and destruction of upper end of diaphysis of right femur; peeling of soles of feet and clawlike nails; Wassermann test ++++. The baby is receiving mercurial (gray) oil, 0.01 gm., intramuscularly weekly."

March 3, the child returned to us still presenting the foregoing symptoms and weighing 8 pounds, 13 ounces.



Fig. 5 (Case 3).—Annular infiltrated syphilitic eruption on lower portion of trunk.

Treatment from March 10 to July 2 consisted of six injections of neo-arsphenamin, 0.075 gm., and seven injections of mercuric chlorid, 1/10 grain.

The keratitis has entirely disappeared, the liver and spleen are hardly palpable, the nail condition has improved, and there is no evidence of desquamation of the palms and soles. Up to the time of writing we have been unable to roentgenograph the femora. The child now weighs 16 pounds, 8 ounces. The Wassermann test continues ++++.

Case 6.—James C., aged 3 months, whose mother and father both had a strongly positive blood, the mother having a positive spinal fluid and the father not having been punctured, presented no clinical evidence of syphilis when admitted, Feb. 11, 1920, but its blood was ++++ and spinal fluid ++++ to 0.6 c.c. The weight was 8 pounds.

Treatment from February 18 to May 12 consisted of six injections of neo-arsphenamin, 0.075 gm., and five injections of mercuric chlorid, 1/10 grain. The weight at that time was 15 pounds. The baby then passed from observation, owing to the mother's departure to another city. She promised, however, to return the latter part of the summer to enable us to follow this case further.

Case 7.—Antoinette P., aged 1 month, whose mother and father were serologically positive, was admitted March 30, 1920, with marked snuffles. The weight was 5 pounds, 11 ounces; the Wassermann test ++++. The baby had such a poor muscular development that we deferred the injections and gave her calomel by mouth, 1/10 grain three times a day. In the light of further experience we began the treatment intramuscularly at once. On internal medication this baby by April 14 weighed 6 pounds, 8 ounces, but the snuffles persisted. From this date to July 7 she received six neo-arsphenamin injections, from 0.035 to 0.075 gm., and eight injections of mercuric chlorid, 1/10 grain. After the third treatment the snuffles entirely disappeared. July 10, 1920, she weighed 11 pounds, 7 ounces. The Wassermann test, July 14, as negative.

Case 8.—Baron S., aged 6 weeks, whose mother's test was ++++, and father's negative, the mother receiving treatment before the birth of the baby, was admitted March 3, 1920, for a Wassermann test, at which time it was negative; the child weighed 6 pounds, 15 ounces. A month later a second test was negative. May 20, the child presented a mass on the left side of the neck below the angle of the jaw about the size of a hen's egg. We believed this was syphilitic in nature and instituted antisyphilitic therapy.

From May 20 to June 5, five injections of neo-arsphenamin, 0.035 to 0.075 gm., and one injection of mercuric chlorid, 1/10 grain, were given. After the first treatment the mass was smaller, and by June 9 it had entirely involuted. Wassermann examinations, made May 25 and June 16, were still negative. The weight, June 16, was 8 pounds, 11 ounces. Although this case was serologically negative, we believe it was one of active syphilis.

Case 9.—Ernest B., aged 3 months, whose mother and father gave ++++ tests, was admitted, Feb. 8, 1920, with marked snuffles; the weight was 7 pounds, 10 ounces, the Wassermann test ±, one week later +. Because of the doubtful reaction we prescribed mercurial ointment for five weeks. This had no effect on the snuffles. The weight had increased to 9 pounds, 1 ounce.

From April 7 to July, eight injections of mercuric chlorid, 1/10 grain, followed by three of neo-arsphenamin, from 0.075 to 0.1 gm., were given. After the third injection of mercury the snuffles disappeared. July 7, 1920, the child weighed 11 pounds, 11 ounces. The Wassermann test is ±.

The remaining patients all had a strongly positive Wassermann reaction; none of them presented skin or mucous membrane lesions, but they were below normal weight. They are all being treated according to the method outlined. A detailed report will be incorporated in a future communication.

CONCLUSIONS

1. The earlier treatment is begun, the better are the chances of cure.

2. Systematic treatment with soluble mercury in oil and neo-arsphenamin given intramuscularly is so simple and the results are so gratifying that serologic cures may be anticipated within one year of interrupted treatment.

3. The Wassermann test taken at birth in the infant is not to be relied on. Ten days after birth is a better time for accurate interpretation of the serology.

4. A negative Wassermann test in the face of positive clinical manifestations may occur in congenital syphilis; therefore, careful clinical examination is very important, and antisyphilitic treatment may be instituted with negative serology.

5. We hope to publish later a more detailed description of the cases under prolonged treatment together with the serologic results obtained.

DISLOCATIONS OF THE CARPAL SEMILUNAR BONE*

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Of all the dislocations of the carpal bones, the dislocation of the semilunar is the most frequent; and uncomplicated by fracture, they are not so rare as the few references in the past medical literature would intimate. The more extended use of the roentgen ray (still commonly used too late for early diagnosis and successful reduction) has revealed this condition to be a not infrequent cause of persistent disability after previously undiagnosed injury to the wrist joint.

Another unwarranted fallacy is that these dislocations can rarely be reduced and held, and that reduction yields only mediocre functional results and that the immediate excision is preferable. This is true only of late, undiagnosed and neglected cases.

The cause for the more relative frequency of dislocation of the semilunar bones is to be found in the wedgelike shape of its posterior extremity. The dislocation is always anterior and is usually found in male adults. The immediate cause is a fall on the extended hand, or a sharp blow on the back of the wrist joint, as in Case 2.

Such accidents usually give rise to a fracture at the lower end of the radius (Colles' or reverse Colles'—automobile—fractures); but when the radius is more resistant to fracture and when the ligaments of the anterior surface of the carpus are ruptured, torn or slit by the divulsive strain, then the compressive force of the hypertension exerted on the tapering posterior wedge of the semilunar bone causes it to glide forward in its bed between the scaphoid and cuneiform and dislocate through the tear in the anterior carpal ligaments. During the process of dislocation the bone often turns around on its long axis.

The dislocation is sometimes complicated with dislocations of the os magnum and other bones of the wrist joint and sometimes with fractures of the semilunar itself, or fractures of the lower end of the radius, as in Case 3.

The symptoms are pain, tenderness, swelling and disability at the wrist joint. Uncomplicated with Colles' fracture, no silver fork deformity exists, but there is an undue prominence and a palpable tumor on the palmar aspect of the carpus.

The roentgenogram (which should always be used after any severe and painful injury to the wrist joint, or in suspected sprains when the symptoms persist for more than a day or two) reveals the exact diagnosis. Lateral views of the joint are, of course, necessary.

The immediate reduction of the dislocation (uncomplicated by fracture of the semilunar bone) has been so successful in my experience that a description of the manipulations in detail is herewith given. When available, the reduction can well be carried out with the aid of the horizontal fluoroscope.

With the patient completely anesthetized, a Thomas wrench, well padded with thick rubber tubing, or, better, a small size cushion tire, is carefully applied. The proximal blade is placed on the posterior surface of the forearm well away from the wrist joint, and the distal blade is made to impinge on the semilunar bone. The object of the rubber padding is to afford a broader surface on the bone so that it cannot easily slip out from under the blade of the wrench. With a moderate amount of corrective force applied to the handle of the wrench, the hand and carpus are forcibly overextended in order to widen the slit in the anterior ligament and enlarge the space into which the dislocated bone is to be forced (Fig. 2). When the hand is overextended to the utmost degree—and no force that we can use in the operating room will compare with that which was produced by the accident—the wrench handle is forced backward—dorsally



Fig. 1 (Case 1).—Dislocation of carpal semilunar bone: before reduction.



Fig. 2 (Case 1).—First step in reduction: pressure and hyperextension of carpus.

—until the reduction is partially accomplished. At this stage, without letting up on the reducing force of the wrench, the wrist is sharply flexed in order to widen the posterior diameter of the semilunar bed and to exert a wedging force on the palmar aspect of the bone (Fig. 3). If successful, the reduction is now complete and the hand should be put up in plaster of Paris in this hyperflexed position. The cast should not go beyond the knuckles, leaving the fingers free (Fig. 4). If unsuccessful, the process can be repeated, the pressure of the wrench being shifted from side to side or from above downward. By these means the rotation can usually be overcome and the dislocated bone slipped back into its bed.

After a week in plaster in the hyperflexed position, the cast may be removed and a bent metal splint applied (Fig. 5), and the usual massage and exercises begun. The wrist should not be overextended during exercising for several weeks.

When a Colles fracture exists, this can be reduced after the dislocation is overcome, the flexion manipu-

* Read before the Section on Orthopedic Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

lation and flexed position in the cast being the correct procedures for this condition, too.

When the dislocation cannot be reduced or when the semilunar bone is so badly fractured that it cannot be brought into position, it should be removed by open operation at the earliest opportunity.

I cannot give any estimate of how old the dislocation must be before reduction can be considered impossible. Case 3 was reduced ten days after the first attempt was made to reduce the fracture.

REPORT OF TYPICAL CASES

CASE 1.—*Simple dislocation of semilunar bone after fall on the outstretched hand* (Figs. 1-6).—There were symptoms of pain, tenderness and disability of the wrist joint; there was no silver fork deformity or preternatural mobility of lower end of radius. There was a moderate swelling and a palpable tumor in the palmar aspect of the wrist joint. Diagnosis was confirmed by the roentgen ray. Reduction by a Thomas wrench two hours after the injury was successful. The hand was put up in hyperflexed position in a plaster cast and held for two weeks; some stiffness of the fingers and wrist joint resulted. This disappeared under appropriate physiotherapy.

CASE 2.—A man, aged 32, was struck on the back of the right wrist by an auto crank driven by backfire of an automobile engine. There was immediate pain and disability. A diagnosis of sprained wrist was made by the attending physician and hot baths and massage were instituted. The symptoms did not subside, and on the third day roentgenograms revealed a simple dislocation of the semilunar bone, which was reduced by means of the Thomas wrench; the hand was then placed in plaster in the hyperflexed position and kept there for three weeks on account of the patient's absence from the city. After the cast was taken off, the wrist and finger joints were stiff; the patient refused physiotherapy on account of the pain. Six months later there was almost complete restoration of all motions of the wrist and finger joints.

CASE 3.—A man, aged 38, fell a distance of 16 feet, landing on the outstretched palm. There was immediate pain, and disability with silver fork deformity. A diagnosis of Colles' fracture was made. An attempt was made to reduce the fracture; this did not give a satisfactory looking result and the



Fig. 3 (Case 1).—Second step in reduction: pressure and extreme flexion.

roentgen ray was used by the attending physician for diagnosis. This revealed a dislocated semilunar bone in addition to the Colles fracture. Attempt at manual reduction was unsuccessful. The patient was seen by me ten days later and under gas anesthesia the dislocation of the semilunar bone was successfully reduced by means of the Thomas wrench; the deformity of the Colles fracture was overcome and the wrist placed in hyperflexed position. After a week the cast was removed and a removable metal splint applied; within six weeks the patient could resume his former occupation.

CASE 4.—A man, aged 45, fell from a scaffold a distance of sixteen feet, landing on both palms with immediate pain and disability in both wrist joints. A diagnosis of bilateral Colles' fracture was made and the "fractures" were set under ether anesthesia. Pistol splints were applied, and after six weeks the splints were removed and massage and passive motion begun. The left wrist made a complete and uninterrupted recovery. The disability of the right wrist persisted, and it



Fig. 4 (Case 1).—Fixation in plaster cast in extreme flexion.

was then noted that there was an extra fulness or hard tumor to be palpated over the anterior aspect of the wrist joint. Little was thought of this phenomenon by the attending surgeon, and about three months after the injury roentgenograms revealed the true condition, a simple dislocation of the semilunar bone of the right wrist. After operative removal of the bone, no attempt having been made at reduction, the patient soon regained satisfactory use of the wrist joint and was lost from observation.

CASE 5.—Since writing the foregoing, another typical case has come under my observation. A man, aged 32, fell a distance of 16 feet, landing on his hands. There resulted a fracture of the right magnum and scaphoid. On the left there existed a dislocation of the semilunar bone. Reduction of the dislocation was not accomplished during the "first aid," although an anesthetic was given. On the third day the right hand was almost free from pain, but the pain in the left hand was excruciating. Under deep anesthesia the dislocation of the left semilunar was easily accomplished and the hand put up in plaster in the flexed position.

SUMMARY

1. Dislocations of the carpal semilunar bone are not infrequent, and uncomplicated cases can usually be reduced if treated reasonably early.

2. More frequent use should be made of the roentgen ray in diagnosing injuries about the wrist joint. "Sprains" as well as outspoken fractures should be confirmed by this means.

3. Early cases should have attempts made at a bloodless reduction of the dislocation by means of overextension and the Thomas wrench under complete anesthesia.

4. The reduced semilunar bone should be held in place by fixation in extreme flexion.

5. Physiotherapy should be used early and persisted in until function is restored.

6. Old, intractable dislocations or severe fracture dislocations should be exercised.

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ABSTRACT OF DISCUSSION

DR. EDWARD S. HATCH, New Orleans: Any one who makes a roentgen-ray examination in a case of injury of the wrist could not miss such a fracture. I have seen many cases in which this was not done and the patient was treated for strain, etc. The correct diagnosis was never made.

DR. T. TURNER THOMAS, Philadelphia: Dr. Stern is right as to the causal mechanism of this condition, particularly as regards the part played by falling on the hand. He is also right when it comes to the reduction of the dislocation because he takes advantage of the mechanism of its production. For some years I have entertained a similar conception concerning the causal mechanism in those cases where there was dislocation of the semilunar, plus fracture of the scaphoid and that reduction could be effected under ether by reversing the fracturing force. Acting on that theory, I attempted reduction in one case under ether, and the next day roentgen-ray examination showed that the dislocation had not been reduced. The following day another surgeon, Dr. George Lane of the University of Pennsylvania, undertook to reduce it, then fixed it with a splint and bandages, and the next day roentgen-ray examination showed that it had been reduced perfectly.



Fig. 5 (Case 1).—Fixation in flexion with removable splint following plaster cast.



Fig. 6 (Case 1).—Condition after reduction.

DR. DEFOREST P. WILLARD, Philadelphia: Dr. Stern's paper treats of a condition which I supposed was rather rare. During the past winter I saw three cases quite close together. The roentgenologist told me that during the year he had seen a dozen cases of dislocation of the carpal semilunar bone. Two of my cases presented fracture of the bone as well as dislocation. The man who had a simple dislocation was first treated for sprain of the wrist, although the semilunar dislocation was showing plainly in the roentgenogram, and the tumor to which Dr. Stern has referred being very prominent. Ten weeks had elapsed before I saw him. I did not try Dr. Stern's method. The bone itself was perfect, but the cavity into which it should have fitted was entirely filled and it was absolutely impossible to reduce this perfectly normal looking semilunar bone even at the time of operation. I took it out, and almost immediately a severe median neuritis came on. Whether we started it by manipulating the part too soon I do not know, but after the long disability I thought we should manipulate it in order to induce motion of the tendons of the wrist. I believe the sooner manipulation is started, in spite of the danger of neuritis, the safer for the mobility of the hand.

DR. MELVIN S. HENDERSON, Rochester, Minn.: These cases are rather uncommon, and we usually get them too late. I have seen two cases in which the median nerve was pressed on by the displaced semilunar. There is to be noted a considerable loss of function of the hand in the inability to flex and extend the fingers. This is due to the increase in the thickness of the wrist; the tendons are put on tension. Removal of the displaced bone or its reduction when possible relieves this.

DR. WALTER G. STERN, Cleveland: I cannot say how long after dislocation has taken place one can consider the bloodless reduction of such a dislocation impossible, possibly ten days; but I believe that in the future I should try this method in the older cases before taking out the semilunar bone, for it can do no harm. The removal of the semilunar bone does not interfere with the function of the wrist joint. It is the long atrophy due to the tying down of the tendons that gives bad function in these neglected cases. As to the irritation of the median nerve, I have not experienced this complication; but it does seem that the tumor in front of the joint pressing on the vessels and nerves located anteriorly was the cause of the irritation of the median nerve in the case mentioned.

SURGICAL TREATMENT OF CHRONIC MAXILLARY SINUSITIS OF ORAL ORIGIN*

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On account of the great developments made during the last few years in oral roentgenography, and the frequency with which roentgenograms of the teeth and maxillae are made, maxillary sinusitis of oral origin is found to be a very common disease. For many years, rhinologists have felt that the maxillary sinus was surely their domain, as they have thought in the past that anywhere from 70 to 90 per cent. of all maxillary sinus infections were descending infections from the frontal or ethmoid or from the nose itself. I believe that the majority of the rhinologists today feel that there are more ascending infections from the mouth infecting the antrum than were formerly recognized, but that still the larger percentage of infections of the maxillary sinus come from above downward.

Most of my oral surgery friends, I think, feel that the percentage of antral infection of oral and nasal origin is much nearer 50-50. We, of course might say that the oral surgeon sees more of these cases originating from the mouth, and that the rhinologist sees more springing from the nasal accessory sinuses. In these days when so many patients are having their teeth roentgenographed as a matter of routine whether they are in trouble or not, latent antral infections are found, and many teeth are removed whose alveoli enter the antrum on gentle curettage. On the removal of many of these teeth, it is found that there is a chronic low grade infection present in the antrum that has been

* Read before the Section on Stomatology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

draining comfortably through the middle meatus for months. This mild infection has taken care of itself very nicely, and the condition has never become acute. We are today giving a great amount of thought to the peridental structures, to the maxillae and also to the mandible. We are ever on the lookout for bone cysts, neoplasms, necrosis and infected areas, etc. Few teeth



Fig. 1.—Models of superior maxillae with openings in alveolar process communicating with antrum. These were closed by flap operation.

today are extracted by the careful practitioner without being roentgenographed first. The condition of the bone is known and the bone is often curetted and rongeured *even though the antrum is opened.*

I have had many cases during the last year in the hospitals and in private practice in which I have had to make a wound in the maxillae that has caused the mouth to communicate freely with the antrum. In many cases, the antrum has been found to be infected.

When the operator has by force of circumstances made a good sized oral opening into the antrum, and has found the antrum diseased, there are two main factors in the subsequent treatment which should appeal to him. These are: (1) cure of the antral disease as soon as possible, and (2) closure of the communication between the mouth and antrum at an early date.

If we study the physiologic function of the maxillary sinus, and also its anatomy, we find that the antrum was intended to communicate normally with a comparatively clean cavity, the nose; that the nose and the antrum are lined with the same membrane, and that about the same bacteria are found in these two cavities, the nasal and the maxillary sinus. It is evident to the casual observer that nature never intended the mouth and the antrum to communicate, and never intended the mixing of their different bacteria and secretions.

It has been proved clinically that a permanent opening from the mouth into the antrum may produce an ascending infection into the maxillary sinus, later causing a pansinusitis; yet how often do we see the antrum, in these chronic infections of oral origin, irrigated for weeks through the opening in the mouth and packed with gauze? Why should a large oral opening into the antrum be permitted to exist? The mechanics of this treatment is wrong. It is analogous to the housemaid's sending her sweepings from the cellar through the parlor with its dainty hangings rather than sending the dust from the parlor, a comparatively clean room, through the cellar, generally not too clean, to the back yard. A gauze drain inserted into the antrum from the mouth often draws up secretions from the mouth by capillary attraction as does a wick in a lamp, and frequently reinfects the cavity one is trying to cleanse. Up to a few years ago, textbooks were advocating the extraction of a tooth through which to treat a maxillary sinus infection. These books did not stipulate the removal of a diseased tooth that was causing the antral infection, but often a healthy one for drainage purposes only. The sacrifice of a healthy tooth in the old days meant nothing, and the establishment of the communication between two cavities containing different secretions and bacteria was approved of. This method, known as Cowper's, is not advocated now by many authors, although it is often mentioned.

The etiology of maxillary infections in the past has not been carefully considered. Not a month ago, a well-known rhinologist sent me a case of maxillary sinusitis for which he had just performed a radical antral operation. I was told that there was "a sort of 'gum boil' over the second bicuspid," and was asked to treat it. My roentgenographic films disclosed a decided shadow extending to the antral boundary over the second bicuspid, which was a nonvital tooth. Under procain I removed the tooth, and the curet entered the sinus very readily. On exploring the so-called "gum boil" above the tooth, I found it led to necrotic bone. Most of the alveolus of the offending tooth was removed, and an area of dead bone as large



Fig. 2.—Model of superior maxilla with opening in alveolar process communicating with antrum.

as a penny was removed from the anterior wall of the antrum after a flap of the soft tissues had been turned back. I do not believe that this case was properly diagnosed in the beginning before the first operation. There was some diseased membrane over the end of the infected bicuspid, and I am quite sure that the antral infection would not have cleared up in many months, if ever, without some surgical treatments

being given to the infection of the alveolar process. The type of infection should be diagnosed early, before treatment is begun, and this cannot be done accurately without taking oral roentgenograms in conjunction with the anteroposterior plates showing the sinuses. If the infection is a descending one from the frontal or ethmoid sinuses the case naturally belongs to the



Fig. 3.—Outline of flap and also posterior palatine artery which supplies flap well with blood.

rhinologist, and in some cases to the oral surgeon, if he is familiar with these sinuses. If the infection is an ascending affair from the maxillary bones and teeth, it *cannot* be cured alone by the rhinologist unless he is familiar with the mouth and dental structures. In either of the foregoing cases, the cause of the infection must be removed; and if the case is a chronic one, the antrum must be cleaned by a gentle curettage and some times by removing the lining membrane and must be irrigated, and drained properly. In nearly all of these cases, the sinus should be irrigated with warm saline through an opening under the inferior turbinate, and if the infection is of oral origin, the washings drain downward into the mouth. If the case is not of oral origin and there is no opening into the mouth, of course the washings naturally return to the nose and are discharged through that cavity. I do not see why the mouth opening in the oral cases should be packed in any case more than a few days, even if the suppuration has not ceased and although the tissues around the oral opening are not in sufficiently healthy condition to bear sutures. In many cases, it is advisable to close mechanically the oral opening for a time on account of the suppuration. In these cases, the mouth and the maxillary sinus should be separated by a well fitting "saddle-plate" that does not press at all on the edges of the wound leading into the antrum. No plug or projection that enters the opening should ever be used. I cannot condemn too severely the use of any appliance that tends to establish a permanent opening between these two cavities. This plate is best made of rubber, and covers over the labial and palatal surfaces of the alveolar process, and is generally held by clasps. Of course, this is a temporary affair, and is to be worn only until the suppuration has subsided and the plastic repair of the opening can be accomplished. This plate, in a way, acts as the valves of the heart. It allows of drainage from the antrum downward with gravity under the plate into the mouth, but prevents the seepage upward of the oral secretions into the maxillary sinus. These plates, if constructed properly, never block the drainage, and keep the antrum cleaner than any gauze drain can possibly keep it.

In searching the literature, we find little mention of any operative procedure for closing off an opening from the mouth into the maxillary sinus. Little attention has been given to the fact that the mouth and the antrum are two very unlike cavities, that their secretions and their bacteria contents vary greatly, and that they are much better neighbors when they are separated by a barrier of healthy tissues. In cases in which the opening persists between the two cavities, the only permanent method of closing the communication is by means of a plastic operation. I have closed many openings into the maxillary sinus by undermining the soft tissues around the edges of the defect, and then drawing the tissues together. This procedure will suffice in some cases, but in the majority of cases in which the opening is of considerable size, this method will fail, as the sutures will slough out, owing to tension. Dean [1] has described an operation for closure of the opening between the mouth and the maxillary sinus. He does not make very clear the arrangement of his flaps, but explains in detail his method of suturing and the materials used.

Infections of the maxillary sinus are often not diagnosed by the dental surgeon and are frequently poorly treated. After all that has been written on this subject, it is pitiable to pick up a modern dental journal and to read in a recent number an article advocating the use of the rubber plug, and further to read that

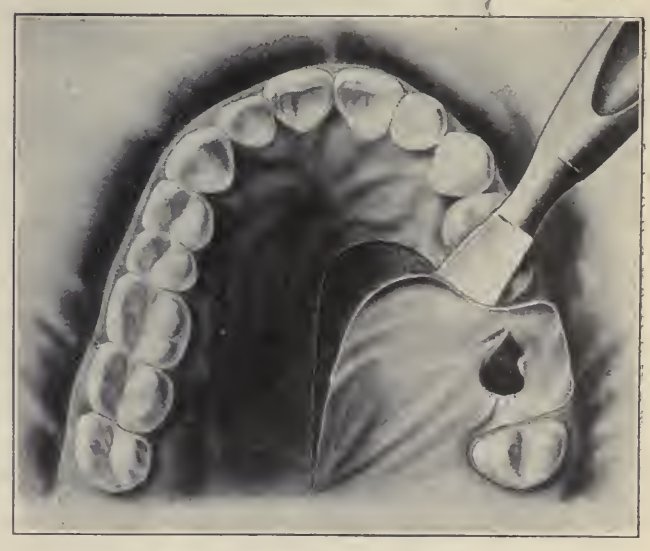


Fig. 4.—Releasing of palatal flap; orifice of typical mouth opening into maxillary sinus.

"the plug in the antral opening helps to hold the plate in place."

I once had a patient in the clinic who had suffered for years from a chronic maxillary infection and who had been treated in Vienna for this trouble. What the early treatment was in this case was vague, but for

1. Dean, L. W.: A Method of Closing a Sinus Between the Antrum of Highmore and the Mouth, J. A. M. A. **61**: 1613 (Nov. 1) 1913.

thirteen years he had been wearing a plate with a large plug projecting into the antrum. The condition of that antrum was remarkable. The cavity was almost obliterated by thick polypoid tissue, and, needless to say, it was badly infected. The lining membrane was more like leather than the normal tissue, and often the

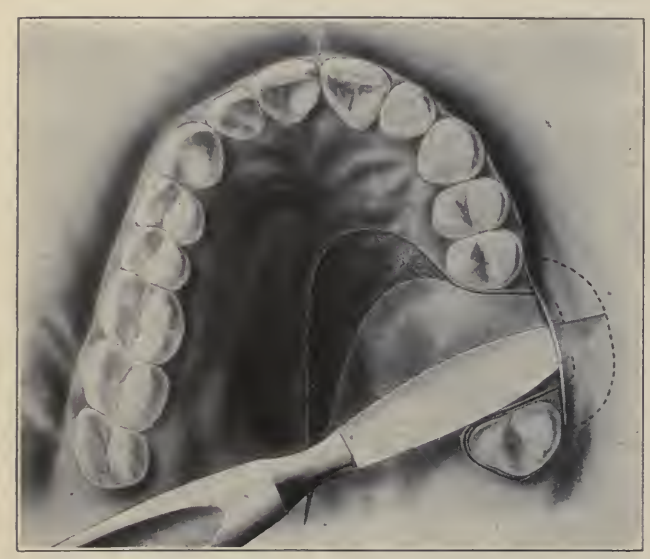


Fig. 5.—Palatal flap released and tucked under labial flap. This method insures a stronger union of the two flaps than the edge-to-edge procedure. The mucous membrane of the palatal flap must be removed when the flap is slipped under the labial fold.

patient had to relieve conditions by irrigating through the opening himself. He always carried a syringe with him, he told me. It was difficult to clean out this sinus, after it had been reinfected by the mouth for thirteen years, and the closure of the opening into the mouth was not easy.

For the closing of oral openings into the maxillary sinus, I advocate the operation described below, but I do not claim that it is original with me.

TECHNIC OF OPERATION

A flap operation was found to be the best, after several failures in trying to bring the tissues together. In closing over large openings I found that a flap from the labial tissues often was not very satisfactory, in that it was difficult to get enough tissue at times, and also that the tissue obtained was not very strong. The palate was turned to early in my experiments, and I am not sure whether I adopted the idea at Queen's Hospital, England, during my three months' stay there or not. It is now the only flap I use, and I feel that it is the most efficacious one. The tissue is thick and tough, and pares off evenly and easily. As shown by the illustrations, a palatal flap is taken, extending from the median line at the junction of the hard and soft palates anteriorly to about opposite the bicuspid teeth. The flap is thoroughly separated from the palate down to the periosteum, but the latter is not disturbed, as this allows for better granulating in of the defect caused by the sliding of the flap outward over the opening that is to be closed. The flap just described is very thick and, of course, is well nourished, as it has in its base the anterior palatine artery. The next step is to free the outer edge of the flap, and to free the opening to be closed of all soft tissue down to the bone. Any sharp edges of bone must be smoothed off, and often the alveolar process trimmed so that the flap will more than cover the opening without any tension, when sutured to place. The labial soft tissues are now very thoroughly undermined and freed, often upward to the extent of an inch or more on the anterior surface of the superior maxillary bone. The periosteum is not disturbed here either, and a very nice curtain of soft tissue is dropped to meet and overlap the original flap from the palate. Sometimes the anterior border of the labial curtain just dropped is freed so that a labial flap is thrown over the palatal one. This is done when the opening into the antrum is a large one. The palatal flap can be tucked under the foregoing labial curtain, or can be sutured over the curtain after the curtain has been sutured to place over the bony opening to be closed. It does not matter much which way one disposes of these flaps, if they are made to overlap each other like a double breasted coat and sutured securely. It matters little what material is used in suturing. I have used silk, horsehair and other materials, but prefer the horsehair and like it fairly heavy. The secret of success in this operation, as in all plastic operations, is to have plenty of tissue, no tension and good blood supply. I have not had one of these operations fail to close nicely the opening into the antrum, and it has become with me now the routine method of closing these annoying communications between the maxillary sinus and the mouth.

REPORT OF CASES

Case 1.—B. S., a woman, aged 23, with a large opening into the right antrum, due to extraction of the first molar, had had a large abscess of the first molar three months before coming to the clinic. The dentist removed the offending first molar and curetted freely the alveolar socket, leaving a large opening into the antrum. The antrum was very foul and the opening was packed with gauze intermittently for three months. The patient had had tuberculosis from three to four years before. Under local anesthesia I curetted gently the maxillary sinus, not removing the lining membrane, and irrigated the cavity daily for ten days. At the end of this time the antrum was quite clean, and a flap operation was performed. The wound healed immediately; there was no suppuration except around the sutures for a day or so. I irrigated through the nose three times to be sure of no accumulation of any infective material. Recovery was uneventful.

Case 2.—G. B., a man, aged 30, with infection of the maxillary sinus, had an abscess of the upper right second molar; the surrounding bone was diseased and there was a considerable area of necrosis. The second molar was removed but the antrum infection did not improve. This condition had

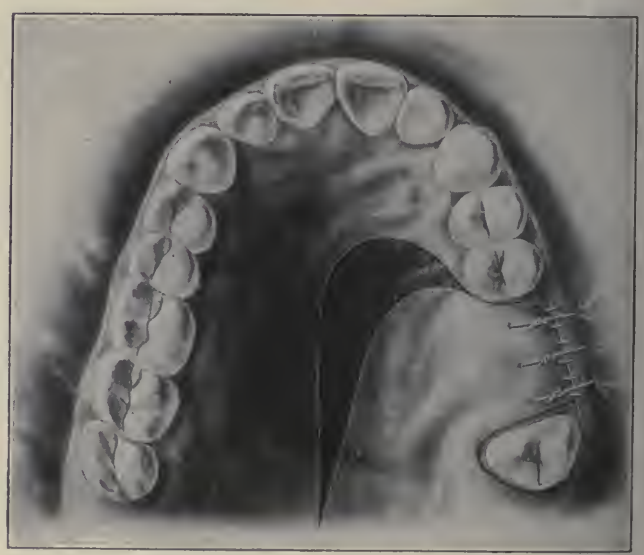


Fig. 6.—Flap sutured together, and final stage of operation.

continued for several months before the patient came to me. Under local anesthesia I thoroughly curetted the antrum, removing some polypoid tissue, but not removing the lining membrane. This was done through an incision over the canine fossae. The wound was sutured and then all necrotic alveolar process was removed with curet and rongeur. The antrum was closed by a flap operation. Several subsequent antral irrigations were given through the nose. The wound healed quickly. There was no infection.

CASE 3.—O. B., a woman, aged 40, with pain in the upper right jaw, had a slight discharge of pus through a small sinus in the first molar region. The patient had had some very poor bridge work inserted six months previous from the second molar to the first bicuspid. This bridge was always loose and painful and there was a discharge of pus from a small sinus under the bridge. Roentgenoscopy revealed a large area of infection over the second molar extending to the first bicuspid. The patient had always been poorly nourished and more or less ill. I removed the second molar, the first bicuspid and the canine with the bridge attached; laid back the soft tissues labially and from the palate; rongeured off much roughened bone, causing a large opening into the antrum over an inch in length; curetted the antrum thoroughly, removing much polypoid tissue; brought the soft tissues together as close as possible; inserted an iodoform drain, and irrigated and changed the drain daily for about ten days. The posterior part of the floor of the antrum was still wide open. The saddle plate was made to keep out food; the plate was worn for two months, with occasional washings through the nose. A flap operation was then performed, and it healed nicely. Two months' time was allowed to let Nature close off the opening as much as might be before operating.

CASE 4.—E. S., man, aged 50, with a large opening into the antrum in the region of the second molar, had had an abscess of the second molar about one year before. The tooth was extracted and its alveolus was curetted, leaving an opening the size of the end of a lead pencil into the maxillary sinus. This had been discharging for about ten months. No treatment except occasional packing with gauze had been given. Roentgenoscopy revealed much diseased bone. The past history was negative. I laid back the soft tissue and rongeured off much diseased alveolar process, opening the antral floor for about 1 inch. Through this opening I curetted the antrum thoroughly and removed much polypoid tissue. I irrigated and closed the antrum by the flap method. I washed through the nose occasionally. The wound healed nicely. The antrum was completely shut off.

CASE 5.—E. L., a woman, aged 25, with an opening into the antrum, had had an abscess of the second molar of the upper left side for six months previous to her coming to me. The alveolar process had been curetted, and there remained a persistent opening the size of the end of a lead pencil. The maxillary sinus had been infected but had been cured by the rhinologist who sent the patient to me. He had treated antral suppuration through the nasal route for forty-five months, but said that the opening into the mouth was not getting any smaller. The history was negative. As the maxillary sinus was cleaned and all the tissues were healthy a flap operation was performed at once. Healing took place virtually by first intention and the opening closed permanently, though mouth and antrum had been in communication for about six months.

CASE 6.—J. F., a man, aged 50, with an opening into the antrum, had an abscess in the upper first molar on the right side for about a year. The antrum was badly infected then, but by constant treatment by different men it became cleaner. The patient came to me with iodoform packing which had been used intermittently for eight months. He was a traveling man, and this was a great inconvenience to him. He carried his own outfit of gauze and instruments, and packed the cavity himself generally daily. He had always had bad teeth. I washed out the antrum daily for a few days through the nose and then performed a flap operation from the palate. I did not get my mucous edges arranged very well and had to perform a secondary operation to make the antrum tight. There persisted a little crack or slit through which the patient could force fluids. The secondary operation consisted in freshening the edges of the crack and suturing them together. The wound healed nicely.

CONCLUSION

In closing, I should like to make a plea for better diagnosis in these cases; to urge that drainage through the nasal route be used in the majority of cases, and that the communication between the antrum and the mouth be closed as soon as possible.

THE TREATMENT OF BLADDER TUMORS

WITH ANALYSIS OF SIXTY-TWO CASES *

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In spite of notable advances during the last decade, the treatment of tumors of the bladder continues to occupy a prominent place in the thought and problems of urologists. This is doubtless due to much dissatisfaction relative to the end-results in many of these cases, notably those of carcinoma; also to certain hopes entertained because of the promises of electricity and radium in recent years. Indeed, owing to the proclivity of even benign growths or papillomas to recurrence or adjacent surface implantation, even in



Fig. 1.—Carcinoma, Case 27, further illustrated in Figure 22. Figures 1, 2 and 3 are aero and bismuth cystograms employed to demonstrate the benign and the malignant character of bladder tumors. Figures 1 and 2 were taken by Dr. G. E. Pfahler.

the cystotomy wound itself, the results of incisional forms of treatment in the past were so discouraging as to make bladder tumor cases unwelcome in the practice of surgeons, and not infrequently altogether precluded conscientious surgical intervention.

It is generally recognized that the work of Beer, in 1910, in placing the high frequency cystoscopic treatment of papillomas of the bladder—defined as fulguration, electrocoagulation, desiccation, or what not—on a practical basis, has caused a complete revolution in the surgery of this type of tumor, marking a new epoch in the management of these troublesome bladder growths. The results of cystoscopic electrocoagulation of papillomas have easily measured up to expectations;

* Read before the Section on Urology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

* Owing to lack of space, this article has been abbreviated for publication in THE JOURNAL by the omission of a large table giving an analysis of the cases. The complete paper appears in the Transactions of the Section and in the author's reprints.

and although recurrences are quite common, they are not only less frequent than after incisional treatment,



Fig. 2.—Papilloma and beginning carcinoma, Case 60, further illustrated in Figure 24 *b*. The roentgen ray fails to disclose any shadow in the right trigon occupied by a large papilloma; in the region of the sphincter, suspicious shadows indicate early carcinomatous degeneration.

but when recurrence takes place, the condition is amenable to a repetition of similar treatment, whereas

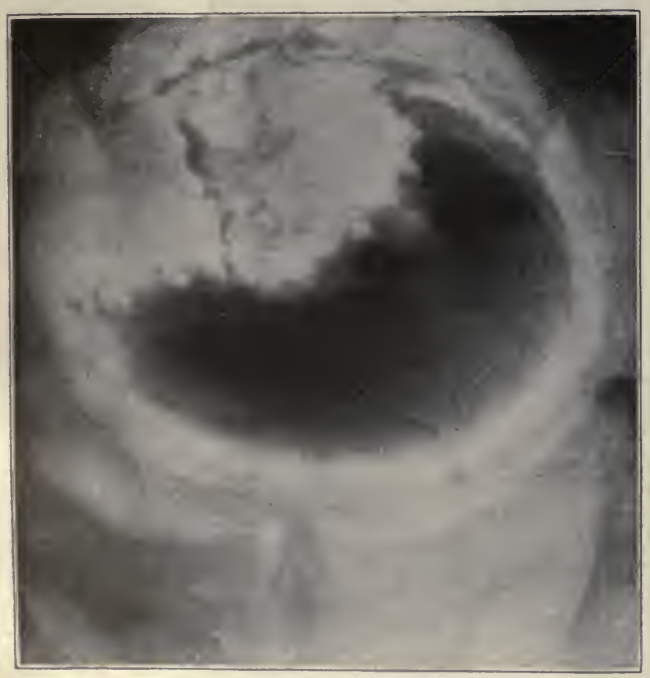


Fig. 3.—Papilloma, Case 47. Bladder first injected with air, and then a suspension of bismuth subnitrate. The air may be seen as the light zone surrounding the bismuth, the latter defining the fimbriated projections from the surface of the papilloma, also seen as deposits between the lobulations of the tumor.

the number of major surgical operations to which a patient can be subjected is assuredly limited.

On the other hand, if the tumor is malignant (carcinoma or sarcoma) and discovered early and situated favorably, any form of treatment other than radical operation should not be considered.

The primary, fundamental and all-important consideration as to the proper treatment of the various intravesical growths, benign or malignant, whether electrical, operative or palliative, should rest chiefly with the experienced cystoscopist, although, occasionally, indispensable assistance will be rendered by the cystogram (Figs. 1, 2 and 3), the histopathologic examination of an excised section of tissue (Figs. 4 5, 6 and 7) and the general physical condition of the patient. The importance of correctness in the differential diagnosis of these bladder growths cannot be too strongly emphasized, because thereon directly depends the proper line of treatment. This may be thus summarized:

1. If the tumor is a polyp, hemangioma or papilloma single or multiple (Figs. 8 to 19), the treatment *par*

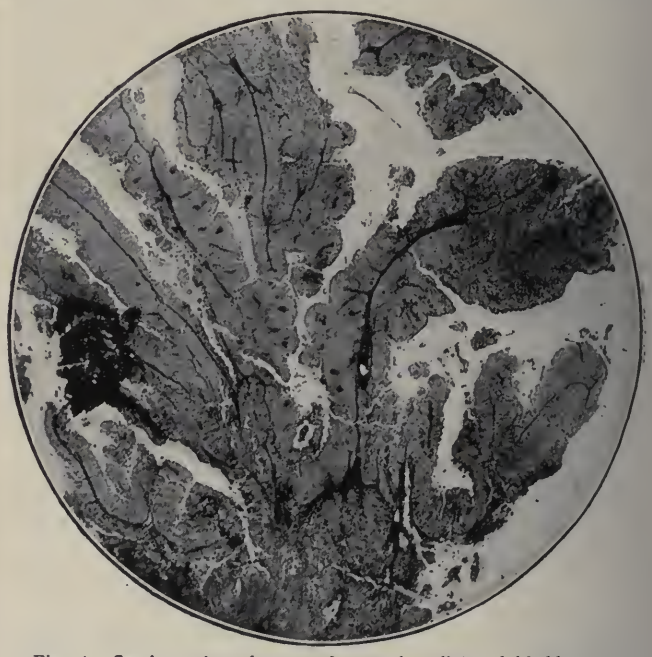


Fig. 4.—Section taken from surface and pedicle of bladder tumor, Case 60, showing benign and malignant states in respective areas.

excellence is cystoscopic fulguration or electrocoagulation, the Oudin or d'Arsonval high frequency current being employed. It should be observed in this connection that occasionally cases of papillomas are encountered in which cystotomy under local or general anesthesia, associated or not with transfusion, must be performed for the removal of clots, at the same time removing the tumor by the electrocautery or destroying it by fulguration; cases of vesical papillomas are also seen in which the growth involves the entire bladder (Fig. 14) or hematuria so marked or the urethra so small or supersensitive as to render cystoscopic treatment unsatisfactory and impracticable. The thought has arisen that in cases of multiple and recurrent papillomas it might be advantageous to supplement the high frequency destruction of the papillomas by radium applications, on the assumption that by virtue of the deeper penetration of the radium rays, recurrences would be less common, if not prevented entirely. I have practiced this procedure in a number of cases, but feel that deductions now are premature.

2. In selected cases of early malignant tumors, especially those involving the vesical orifice (Figs. 22, 24 *a* and 24 *b*) when complete resection of the tumor-bearing area is impossible, it is desirable, after cystotomy, to destroy the growth by fulguration and then to implant radium in the tumor bed, employing needles, each containing 12.5 mg. In conjunction with Dr. George E. Pfahler, I have treated a few patients in this manner, utilizing as many as eight needles or 100 mg., leaving them implanted in the base of the tumor for eighteen hours. Here, too, insufficient time has elapsed to judge of superior results.

3. In the case of malignant growths, favorably situated (Fig. 20) and not too far advanced, the first thought should be extraperitoneal resection or combined extraperitoneal and intraperitoneal resection of that portion of the bladder occupied by the carcinoma, one or both ureters being transplanted if necessary. Very rarely a case may be seen in which the vesical orifice is involved (Fig. 21) in an othehrwise exceptionally robust individual. In such a patient total cystectomy, preceded by bilateral nephrostomy, in preference to lumbar ureteral fistulization or bowel implantation, may be successfully performed. I have described and illustrated the technic of these operative procedures elsewhere.[1] With the bladder, as with other organs in the body, surgical intervention for carcinoma should always be supplemented by intensive roentgen-ray cross-fire.

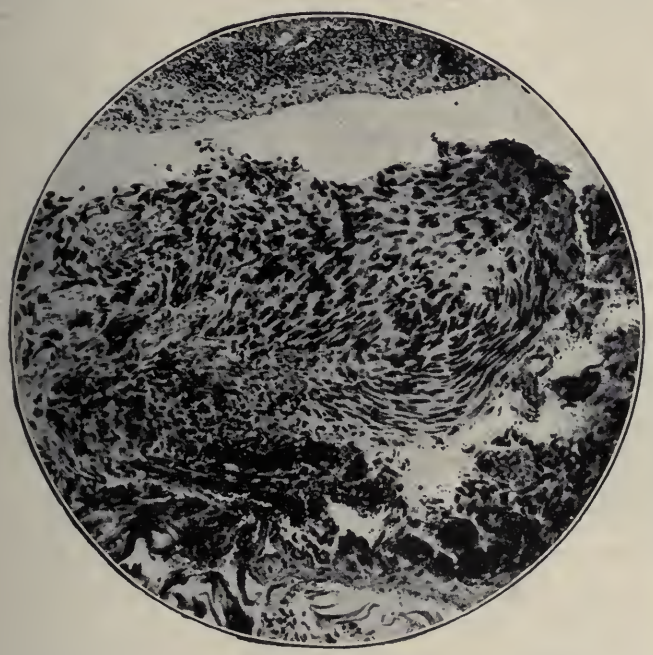


Fig. 5.—Another section from surface and pedicle of bladder tumor, Case 60, showing benign and malignant states in respective areas.

4. In that unfortunate group beyond the hope of cure by radical surgical procedures, we feel compelled to do something for the relief of distressing symptoms. During the last year surgical endeavor has received fresh impetus from the recommendation to employ multiple needles of comparatively small quantities of radium embedded in the growth. The method adopted by us has been first to destroy by fulguration all visible and palpable evidence of diseased tissue through the cystotomy opening, and then to implant the radium needles throughout the tumor-bed, allowing them to remain from six to eighteen hours before removal. There are two classes of patients in this deplorable group, the one, in which the procedure just described is applicable, the other, in which the organic condition of the patient is too precarious even to warrant cystotomy or cystostomy except to deviate the urinary stream in cases of retention, as a preliminary measure to death. In such cases, pain and hemorrhage may be relieved by a combination of roentgen-ray cross-fire and radium applied with carriers by urethra and rectum (Fig. 23).

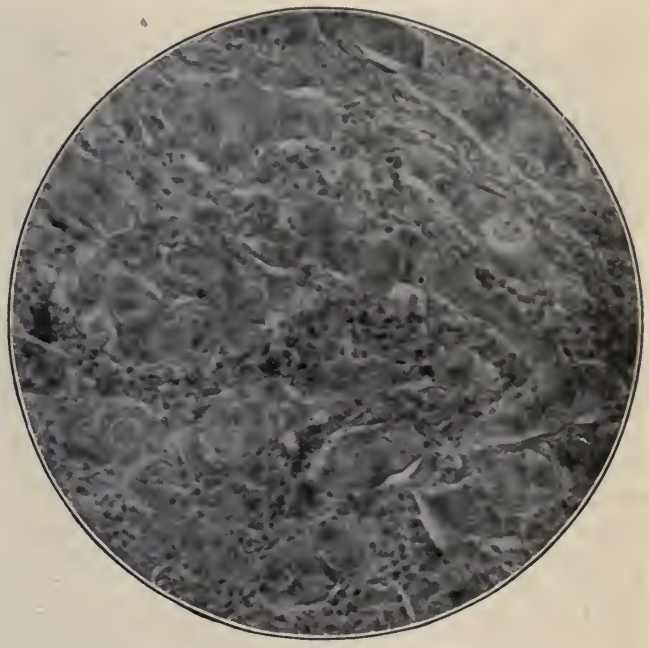


Fig. 6.—Typical carcinoma, Case 50.



Fig. 7.—Low power photomicrograph of section of tissue showing characteristic tuberculosis of bladder in an old man with persistent suprapubic fistula, who two months previously had been cystotomized erroneously for prostatectomy.

1. Thomas, B. A.: Technic of Operative Treatment of Bladder Tumors, Surg., Gynec. & Obst., August, 1915, pp. 135-150.

Our experience with the treatment of bladder tumors comprises sixty-two cases, thus divided: carcinomas, thirty cases; papillomas, twenty-five cases; polypi, six cases, and hemangioma, one case. In many instances the growths were multiple, so that the number of tumors treated easily doubled the cases represented. This analysis does not include four cases of gumma of the bladder, or a large number of tumors of the prostate involving the bladder. Men were affected about four times as often as women. Carcinoma occurred at all ages from 44 to 80; papilloma from 33 to 72; polypi from 38 to 77, and hemangioma at 70. Thus it is seen that age is of no importance as a factor in differential diagnosis. The duration of symptoms of the various growths varied from two weeks to twenty-five years. This is of importance only in its relation to the time the majority of these patients were treated medically, and hence deprived of the all important and urgent information to be obtained from competent cystoscopy, and, therefore, of the proper treatment that in many instances, if resorted to early, would prove to be curative. Such negligence or incompetence on the part of the patient or his physician frequently seals the fate of the misguided patient and leads him to a cancer death. Blood, pus, urinary frequency and dysuria constitute the quartet of danger signals from the urologic tract, and that physician who lightly and wilfully ignores those signals, unless he is convinced that the trouble is solely urethral and is satisfied to prescribe some urinary antiseptic for a few days and fails to have his patient thoroughly investigated to learn the source of the blood and pus, is guilty of a medical misdemeanor no less reprehensible than the crime of manslaughter. In this series, forty-two patients, or approximately two thirds, received nothing but medical treatment previously for months and years; only twelve patients had been cystoscoped before, and nine of these had had some form of surgical treatment, usually a cystotomy with attempted removal of the growth. Recurrence invariably occurred and not in a single instance was the procedure followed by permanent cure. In twenty-one cases of papillomas (including one of papillary carcinoma), nine of carcinoma, five of polypi, and one of hemangioma the patients were treated cystoscopically by the high frequency method (electrocoagulation, desiccation or fulguration). The number of treatments (Oudin, 90 per cent. and d'Arsonval, 10 per cent.) required to destroy the growths varied from one to nineteen. In this connection it should be stated that in many cases the growths were multiple—in one case no less than twenty-four papillomas were present, and in another case the



Fig. 8.—Polypi or polypoid formations at the vesical orifice.

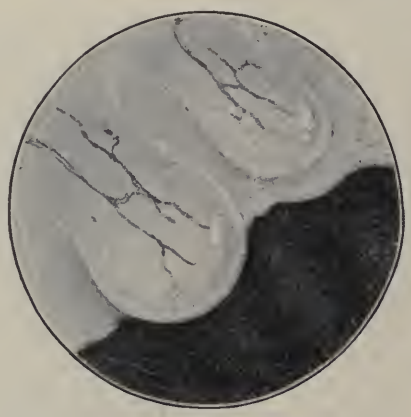


Fig. 9.—Polypi or polypoid formations at the vesical orifice.



Fig. 10.—Polypi or polypoid formations at the vesical orifice.

Figures 8 to 23, inclusive, illustrate types of bladder tumors as viewed through the cystoscope. Tumors of the types illustrated in Figures 8 to 19 are invariably successfully and best treated by cystoscope fulguration; those in Figures 20 to 23 should never be so treated.

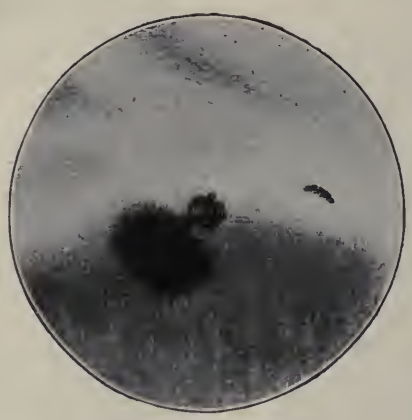


Fig. 11.—Hemangioma.

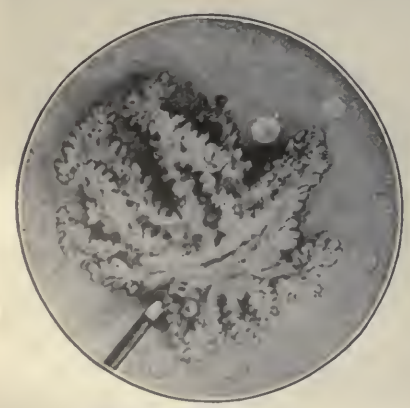


Fig. 12.—Single papilloma.

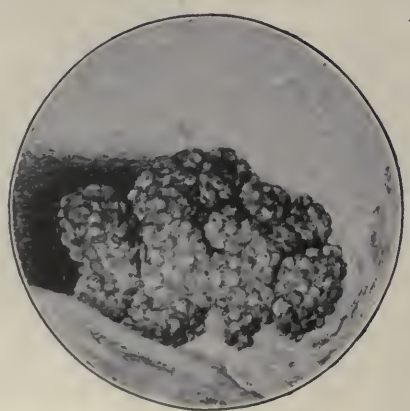


Fig. 13.—Single papilloma.

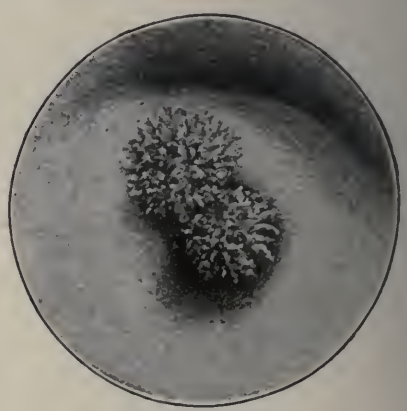


Fig. 14.—Multiple papillomas.

bladder was literally filled with the papillomatous growth. In approximately one half of the cases of papilloma there was recurrence, varying from two to ten times. In only one of the four cases of carcinoma thus treated was the patient benefited. This was the case of papillary carcinoma, or carcinomatous degeneration of a large papilloma, the pedicle remaining benign (Fig. 19). As was to be expected, the cases of polypi and hemangioma have been apparently cured without recurrence. In two cases of inoperable carcinoma, electrocoagulation was supplemented by radium by the urethra, but apparently without appreciable value. Recently, in cases of multiple papillomas, following their destruction by the high frequency current, we have placed 50 mg. of radium in the bladder, by the urethra, over the affected area for twenty-four hours, entertaining the hope and belief that by virtue of greater penetration of the radium rays, recurrence might be prevented.

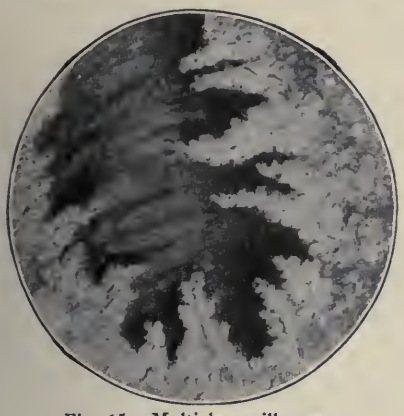


Fig. 15.—Multiple papillomas.

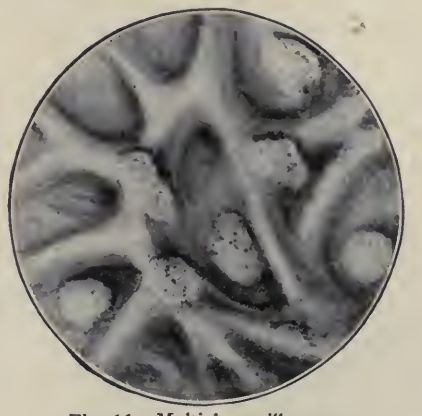


Fig. 16.—Multiple papillomas.

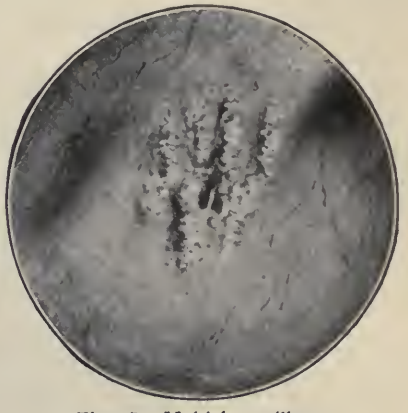


Fig. 17.—Multiple papillomas.

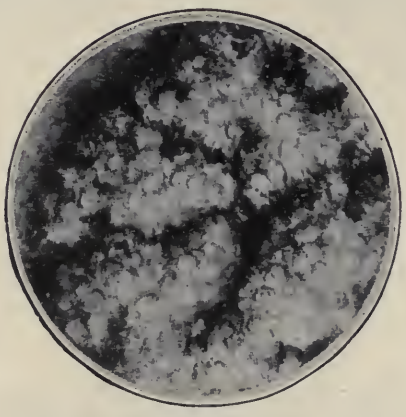


Fig. 18.—Papilloma growing from diverticulum.

Cystotomy was performed in ten cases—by compulsion in two cases of papillomas because of blood clots filling the bladder. In both of these cases preceding and following the operation, transfusions were removed by the electrocautery followed by radium, has been well and free from symptoms for five and a half years, we believe the rational procedure today with such growths to be destruction of the tumor mass by desiccation through the cystotomy wound, supplemented by the implantation of radium for from eighteen to forty-eight hours, preceded and followed by intensive roentgen-ray cross-fire. We refer here, obviously, to those cases of carcinoma in which resection of the bladder is not practicable. The implantation of multiple needles of radium of small amounts (12.5 mg.) throughout the carcinomatous mass, instead of its removal or destruction by the high frequency spark, followed by the embedment of large amounts of radium (from 50 to 100 mg.) has been employed so recently that comparative statements for superiority in treatments at this time are premature.

The cases in which resection of the bladder, with or without transplantation of the ureter, is practical and advisable are comparatively few. Our experience has been a mortality rate of 50 per cent., which is doubtless too high. When successfully accomplished it offers the patient the best hope of permanent cure. Total cystectomy is likewise a hazardous procedure, yet it has been successfully performed once in this series of cases.

From simple cystostomy or cystotomy combined with the roentgen ray or radium, like Coolidge tube cross-



Fig. 19.—Papillary carcinoma.

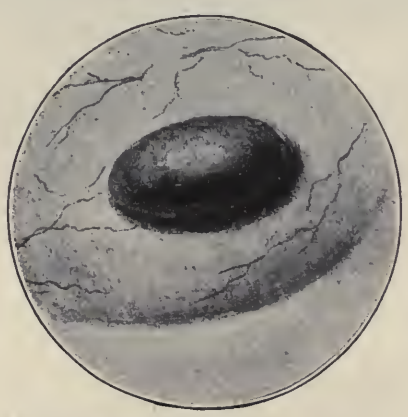


Fig. 20.—Carcinoma favorably situated for radical resection of bladder.

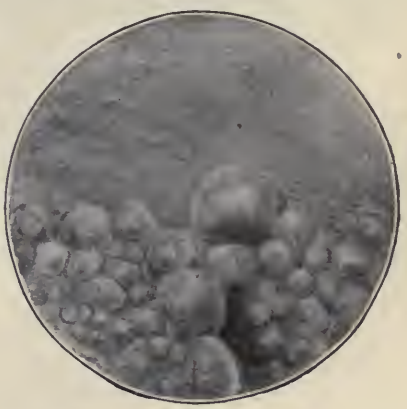


Fig. 21.—Polypoid degeneration of entire trigon and sphincter, cured by total cystectomy.

necessary. In the five cases of carcinoma, the cystotomy was associated with removal of the tumor desiccation through the cystotomy wound, supplemented in two of the cases with radium. Although one of these patients, in whom the carcinoma was

fire and radium suprapubically, perineally, by urethra and rectum, which are purely symptomatic measures, little need be expected and little will be realized in advanced, inoperable cases; nevertheless, they serve as a parting Esculapian effort prior to death's victorious toll.

Disregarding the inoperable cases in living patients, also the nontraceable incurable carcinomas in patients most of whom are dead, and those at present undergoing treatment, we find that there are fifteen known deaths, all due to carcinoma, save two who died from intercurrent disease years after cure of their papillomas. In the entire series of sixty-two patients, thirty-two are known to have been cured, either temporarily or permanently, twenty-one without recurrences and eleven with recurrences (two patients cured of papillomas subsequently died of intercurrent disease). Of these so-called cured cases, twenty-four were papillomas (one papillary carcinoma), five were polypi, and two were carcinoma and hemangioma. Of eighteen patients subjected to operative procedures supplemented or not with electricity or radium, nine, or 50 per cent., died in the natural course of their disease, excepting two operative deaths, a mortality of 14.3 per cent. Of the nine living patients who have been operated on, five had carcinomas, three had papillomas, and one multiple polypi. It is of interest to note that in three fatal cases of carcinoma the patients had been operated on elsewhere a few years previously for papillomas.

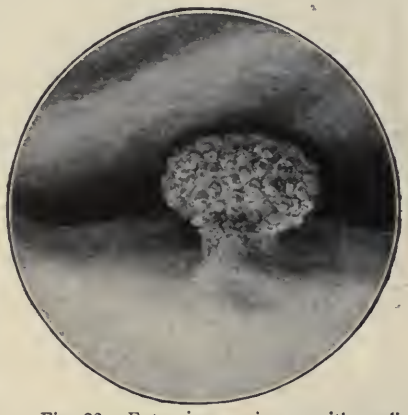


Fig. 22.—Extensive carcinoma with cauliflower outgrowth infiltrating entire lateral wall of bladder.

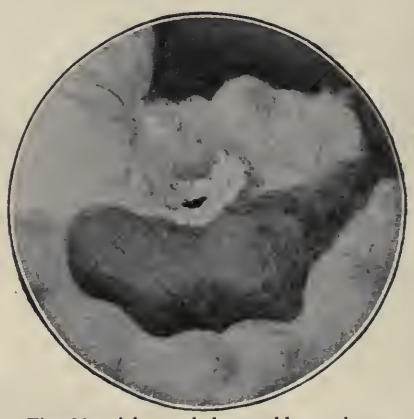


Fig. 23.—Advanced, inoperable carcinoma involving entire base and neck of bladder.

The period of observation of the living and apparently cured patients has extended from a few months to eight years. There have been about a dozen inoperable, rebellious, or thus far nontraceable cases of carcinomas, in which the patients have died without any treatment, and whose longevity has not yet been determined. In a later report I shall compare the life expectancy of these unfortunates with those victims of radically inoperable carcinoma who have had their dying days interrupted by operations, fulguration and radium implantations.

CONCLUSIONS

I must again emphasize that:

1. The cystoscope is all important in differentiating the various vesical tumors, their nature, location and extent, in order to determine the most appropriate and best form of treatment, and not the least as a periodic follow-up to detect and control as early as possible any evidence of recurrence.

2. In exceptional cases the differential diagnosis will depend on the histopathologic examination of an excised or removed section of tissue and on the cystogram.

3. The treatment, *par excellence,* of papillomas single or multiple, is the so-called cystoscopic high frequency fulguration, although rarely cases will be observed in which such treatment is impossible, necessitating cystotomy and other surgical procedures.

4. Resection of the bladder, with or without ureteral transplantation, is the only rational treatment for early and favorably situated carcinoma.



Fig. 24.—Types of early carcinoma of bladder involving the vesical orifice. These tumors are not favorably situated for radical resection of the bladder and may be best treated by cystotomy, intensive fulguration to destroy all visible and palpable evidence of diseased tissue, multiple implantations of radium needles in the bed of the growth, and intensive roentgen-ray cross-fire following the operation.

5. For malignant disease involving the neck of the bladder, total cystectomy, very exceptionally, may be performed.

6. In certain cases of carcinoma, unfavorably situated for resection or too far advanced for radical treatment, cystotomy followed by intensive fulguration, radium implantation and roentgen ray is on trial, with a promise to prolong life and possibly rarely to effect cure.

7. In advanced and inoperable carcinoma of the bladder, palliation consisting of cystostomy if retention

of urine exists, and roentgen ray and radium for relief of distressing symptoms, offers little consolation for the futile endeavors and vain efforts of the conscientious surgeon.

THE SURGICAL TREATMENT OF MALIGNANT TUMORS OF THE BLADDER

RESULTS OF OPERATIONS*

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The greatest danger and difficulty in radical surgery of the bladder such as is required for extirpation of a malignant neoplasm is infection in the field of operation. In the majority of cases the urine is loaded with organisms and usually there is an accompanying cystitis, and, in not a few cases, a pyelonephritis, conditions not only serious in themselves and often impossible to prevent from extending, but which also expose the operative field to the infection. The area from which a segment of bladder has been removed lies in a dependent pocket from which it is difficult to establish satisfactory drainage, so that it is imperative that the technic shall be carried out as accurately as possible, which necessitates large incisions with free exposures and ample protection to the uninvolved tissues.

Resection of the bladder is more difficult than resection of almost any other abdominal viscus; first, because of its inaccessibility beneath the pubic bone, which makes it hard to see the various steps of the operation, and secondly, because it is not covered with peritoneum. The bladder is more or less fixed in the pelvis, and an incision in its wall will not heal with the same rapidity and certainty as one in a viscus that has peritoneum for its outer coat.

Malignant tumors of the bladder are either papillary epitheliomas or carcinomas. Rarely some of the other forms of malignancy involve the bladder. Papillary tumors of the bladder may be either benign or malignant, and in some instances it is very difficult to distinguish one from the other. Such tumors produce the same symptoms and have the same appearance on cystoscopic examination. It may even be difficult to distinguish them histologically, but it is always advisable to have a microscopic examination made of a section of the tumor, as it may reveal its real nature.

The type of the papilloma is extremely important in determining the treatment, as it is generally conceded that very satisfactory results can be obtained in benign papillomas by fulguration, and in malignant papillomas that it is best to excise the tumor. If there is some uncertainty with regard to malignancy, and the tumor is small and such as ordinarily would respond to fulguration, it is best to try this treatment at least as long as it is evidently accomplishing something. Often fulguration may be a good test of the nature of papillomas as malignant papillomas, instead of being reduced by it, seem to be stimulated in their growth. If there is any uncertainty as to the pathology of a papilloma of the bladder, the growth should be observed most carefully during the fulguration, and the treatment discontinued if there is no response within a reasonable time. This, of course, must be determined by the physician giving the treatment; but the point should be emphasized that a number of patients have been observed in whom fulgurations have been continued for a year or more while seemingly the growth had been progressing. Such patients have little chance from operation. The results of any form of treatment for malignant tumors of the bladder are not entirely satisfactory, but the late stage of the disease at which operation is performed in many cases is apparently responsible for some of the unsatisfactory results. Fulguration gives very gratifying results when it is used in the proper cases.

Carcinomatous tumors of the bladder are of two types: first, the superficial ulcerating growth which has a tendency to extend on the mucous membrane and which does not often penetrate the wall of the bladder, and second, the large, hard, ulcerated carcinoma which penetrates the muscular coats of the bladder and often extends into the perivesical adipose tissue. The superficial carcinomatous ulcer has much the same appearance as an epithelioma of the lip. It is slow growing and very slow in metastasizing; complete excision gives the best results. The penetrating carcinomatous ulcer appears more like the carcinomatous ulcer common in the rectum. Even when the ulcer is small and seems to be of recent development, usually by the time treatment is begun it has penetrated all of the bladder musculature and involved the adjoining tissues. The depth of the tissue involved is often greater than the extent of the ulcer on the mucous membrane. In spite of the extension, however, this type of malignancy is comparatively slow in metastasizing to distant points or even in extending to the nearest lymphatics.

We have previously called attention to the fact that nearly all patients with cancer of the bladder also have extensive growths involving the perivesical tissues before there is any evidence of metastasis. This was a striking finding in our present series. In several of our cases in which necropsies were performed, the death was found to be due to local malignancy and infection and not to metastasis. In a few cases it was necessary to abandon the radical operation because of involvement of the lymphatics along the iliac vessels, but this has been rare. It is at least gratifying in performing radical operations in cases of vesical tumor to know that the possibility of a distant lesion is slight; this fact we believe justifies the radical procedure. It seems that under these circumstances the results of operation should be better. While local recurrence is very uncommon following radical operations for cancer of the breast, stomach and kidney, it is often found following operations for cancer of the bladder. If some method can be devised of reducing the local recurrences in these cases, the results will be better than those obtained by operations for cancer in other regions.

The operability of carcinoma of the bladder should be decided first by ruling out so far as possible all chance of distant metastasis. If the growth is attached to the rectum, or if it is a fixed, hard mass involving the base of the bladder, the prostate and the seminal vesicles, there will be little chance of eradicating the disease by excision, and it should not be attempted. It is often difficult to determine the extent of the

* Read before the Section on Urology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

malignancy by the cystocopic examination, as frequently there is extensive bleeding and sloughing. It is especially difficult to decide in cases of large papillary epitheliomas whether or not the growth is operable; the location of the growth is often a determining factor. If the region of the sphincter muscle is involved so that it is necessary to destroy the muscle in order thoroughly to remove the growth, it is best not to operate except in certain selected cases in which it seems advisable to remove the entire bladder. If the sphincter control is destroyed, it will be difficult to keep the patient comfortable.

Probably the most inoperable tumor of the bladder is situated at the vesical neck. About 90 per cent. of all tumors of the bladder originate close to the ureteral meatus; frequently the meatus is involved, and the ureter is completely or partially blocked by the growth. The ureter is usually not involved except at the meatus. Fortunately, this condition does not in

TABLE 1.—CASES OF MALIGNANT PAPILLOMA OF THE BLADDER IN WHICH OPERATION WAS PERFORMED BETWEEN JAN. 1, 1910, AND JAN. 1, 1919

	Number
Total	202
Hospital mortality	26
Of the remaining 176, received no reply	18
Of the remaining 176, received report concerning	158
Of the 158 replies, dead	94
Of the 158 replies, living	64

itself add greatly to the risk of the operation in which the meatus and as much of the ureter as necessary are removed. If it can be determined that any degree of kidney function remains, every effort should be made to reimplant the ureter into another part of the bladder. We have followed this plan in many cases and have seen a number of the patients several years later; in most instances the kidneys with transplanted ureters were functioning normally. In one instance, however, the kidney and ureter were removed nine years after the transplantation. At the time of the removal, the pelvis of the kidney and the lower end of the ureter were filled with stones and the kidney was functionless. The patient gave a history of having passed renal calculi before the resection. If the kidney is known to be functionless or if the malignant process involves the lower end of the ureter so that a portion of it must be removed, it is apparently sufficient to ligate with a permanent ligature and

TABLE 2.—LAPSE OF TIME SINCE PATIENTS NOW ALIVE WERE OPERATED ON

	Number
Number living 10 years	2
Number living 9 years	2
Number living 8 years	2
Number living 7 years	3
Number living 6 years	5
Number living 5 years	12
Number living 4 years	3
Number living 3 years	10
Number living 2 years	13
Number living 1 year	12
Total	64

allow the ureter to drop back into its normal position. In the many cases in which we have been obliged to carry out this procedure, we have been surprised by the slight effect it apparently had on convalescents. In two acute cases in which we knew that renal infection was present at the time of ligating the ureter, we later removed the infected kidney. In one case we removed the kidney because of infection four years after the ligation of the ureter. The complication of the involvement of the ureteral meatus can be met very satisfactorily. If the tumor is in the dome, it can

TABLE 3.—TIME OF DEATHS OF PATIENTS AFTER OPERATION

	Number
Died 7½ years after operation	1
Died between 4 and 5 years after operation	2
Died between 3 and 4 years after operation	1
Died between 2 and 3 years after operation	4
Died between 1 and 2 years after operation	23
Died between 6 months and 1 year after operation	22
Died within 6 months after operation	37
Date of death not known	4
Total	94

be removed completely without interference with function, and with an extremely good chance of ultimate cure. The results have been strikingly good in the cases of tumor of the dome in which we have operated. While this may be due partly to the fact that extension may be slow and less likely from this area, possibly if tumors in other areas of the bladder could be removed as successfully as those in the dome, the results would be better. Since carcinoma of the dome usually penetrates all of the bladder wall and the peritoneal coat, a part of the peritoneum must be excised. Transperitoneal operations are reserved for cases in which the peritoneum is involved. Although opening the peritoneum complicates the operation, it should be done if it is necessary to the performance of a complete operation; but it is not an aid in operating for the tumors of the base of the bladder, and there-

TABLE 4.—RESULTS ACCORDING TO TYPE OF OPERATION

Types of Operation	Cases		Mortality
	No.	Per Cent.	
Cautery excision of growths	38	18.8	4
Resection	26	12.9	5
Exploration (with or without cystostomy)	20	9.9	2
Resection and transplantation of ureter	18	8.9	3
Excision of area and cautery	13	6.4	1
Removal of tumor and Percy cautery	11	5.4	0
Resection and cautery	8	4.0	0
Excision of growths	7	3.5	1
Palliative cautery to growths	7	3.5	0

fore should not be made. A large incision down to the peritoneum, however, is very essential for exposure.

While the results obtained from radical operations for cancer of the bladder are not so good as we hope they will be in the future, they are not altogether discouraging.

For the purpose of this study, Dr. S. W. Harrington reviewed all of our cases in which operation was performed from January, 1910, to January, 1919. We have succeeded in keeping in touch with all except eighteen of the 202 patients. The hospital mortality in the entire group, from all causes, was 12.9 per cent. This is higher than the mortality in the last few years. The mortality may be greatly reduced by preparing the patients for the operation in much the same manner as patients are prepared for prostatic operations, since conditions are somewhat similar. If there is residual urine and much infection in the bladder and kidneys, it is always best to institute repeated or even permanent catheterization for some time before operation. Early in our experience we sometimes attempted to remove malignant growths which had extended into the surrounding structures so far that we were

obliged to abandon the procedure, and leave carcinomatous tissue. This, of course, added to the immediate mortality.

By proper attention before operative measures are undertaken, and by the selection of suitable cases for operation, the immediate mortality can be kept well under 10 per cent. The ultimate results are about the same as those following resections of the stomach and intestine for carcinoma. Twelve patients were operated on in 1910. Three (25 per cent.) are living and have no evidence of recurrence, two a little more than ten years, and one a little less than ten years after operation. In one of these cases, a complete cystectomy was performed and the ureters were brought out through the lumbar muscles. One of the patient's kidneys ceased to function after about two and one-half years, but the opposite kidney has maintained its function. The other two patients had transperitoneal resections of the bladder, one for carcinoma

TABLE 5.—RESULTS ACCORDING TO TYPE OF OPERATION

Types of Operation	Cases		Mortality
	No.	Per Cent.	
Resection of bladder and ligation of ureter	5	2.5	1
Resection, transplantation and cautery...	5	2.5	1
Complete extirpation bladder, transplant.	5	2.5	2
Resection and prostatectomy.....	3	1.5	1
Resection, transplantation, prostatectomy.	3	1.5	0
Excision of area, ureters not disturbed...	3	1.5	0
Cystostomy	3	1.5	1
Resection and cautery excision of growths	2	1.0	1
Resection, ligation and prostatectomy....	2	1.0	0
Cautery excision and prostatectomy.....	2	1.0	0
Excision of area, cautery and prostatectomy	2	1.0	0

of the dome, the other for carcinoma of the base of the bladder involving the right meatus; the right ureter was transplanted. Nine years later the kidney and ureter were removed for infection and stones.

Table 2 indicates the number of patients who are living more than one year after operation. So far as can be determined, they are free from any trouble at present. For the last few years we have endeavored to have all these patients at regular intervals return to us for examination of the bladder, or to have an examination at their homes.

Frequently, a long time after operation for carcinoma of the bladder we have noted suspicious-appearing areas and granulating spots; undoubtedly, some of them are recurrences. If they are discovered while

TABLE 6.—RESULTS ACCORDING TO TYPE OF OPERATION

Types of Operation	Cases		Mortality
	No.	Per Cent.	
Cautery excision and transplantation ureter	2	1.0	0
Suprapubic stab drain.....	2	1.0	0
Resection, cautery and prostatectomy....	2	1.0	0
Resection, transplantation, removal of tumor and cautery.....	1	0.5	1
Drainage of pocket.....	1	0.5	1
Resection one fourth right wall, excision area left wall, cautery.....	1	0.5	0
Resection, transplantation and excision of growths	1	0.5	0
Resection, transplantation and removal of seminal vesicle	1	0.5	1

they are small, they may be destroyed by repeated fulgurations. It is our opinion, however, that usually these granulations are not recurrences, since in a few instances an operation was undertaken for a supposed recurrence when the tissue proved to be only inflammatory. It is important that the patients should be followed closely for the first two years; after that, they should be reexamined at the first suggestion of further trouble. Most of the recurrences come within the first few months after operation; our statistics show that if the patient can survive the first year,

TABLE 7.—RESULTS ACCORDING TO TYPE OF OPERATION

Types of Operation	Cases		Mortality
	No.	Per Cent.	
Excision of area, ligation of ureter.....	1	0.5	0
Cautery excision, ligation of ureter.....	1	0.5	0
Excision of growths, transplantation of ureter	1	0.5	0
Excision of area of bladder, transplantation of ureter.....	1	0.5	0
Excision of diverticulum including bladder tumor	1	0.5	0
Cautery excision, enucleation of adenoma of prostate	1	0.5	0
Excision of area, cautery, transplantation of ureter	1	0.5	0
Perineal cystotomy	1	0.5	0

his chances to remain well are increased. One patient died of other disease after seven and one-half years; two lived four years; three lived three years; eleven lived two years, and fourteen lived one year. Forty-six patients died from six months to one year after the operation.

The operation for cancer of the bladder has been classified as excision when the lesions are small and necessitate the removal of little of the wall of the bladder. The entire thickness of the wall, however, was taken just as in the resections. Operations classified as resections usually involved the removal of at least one-fourth the entire bladder. Most of the operations were performed with the knife, and some with the cutting cautery; apparently the results are

TABLE 8.—SUMMARY OF RESULTS

Types of Operation	Cases		Mortality
	No.	Per Cent.	
Total resections	102	50.5	16
Total excisions	66	32.7	6
Total explorations and palliative operations	34	16.8	4
Prostatectomy done in connection with..	14	6.9	1
Transplantation of ureter in connection with	36	17.8	8
Ligation of ureter in connection with....	9	4.4	1
Cautery used in connection with.....	90	44.1	8
Removal of one or both seminal vesicles.	5	....	..
Diverticulum present	4	....	..

the same. We are rather surprised to find that a few patients in whom we could not remove the tumor but applied the Percy cautery have remained well for as long as six years. This is an indication that the Percy cautery should be used more often.

In all the patients who were cured, the functional results are very good. In many instances it has practically returned to normal. In some, frequency has persisted. If there is no recurrence, all symptoms subside rapidly, even when an extensive resection has been performed.

We have attempted to confine the report in the present series of cases to the results of surgical treatment. Thirty-four of the 202 cases were explored and no further surgery undertaken. These were the cases in which operability could not be determined before exploration. Some of the patients were treated later by roentgen ray and radium, and a number doubtless were benefited; but such treatments were not applied in the effective manner they are now being used. Radium, especially, if applied directly to the tumors, should have an effect as beneficial as it has in cases of carcinoma of the cervix of the

uterus, in which our results have been vary gratifying. Care must be taken not to allow the radium to come in contact with the normal mucous membrane, since it may produce a reaction resulting in the most terrific, painful spasms. Putting radium into the bladder indiscriminately not only fails to benefit in these cases but does actual harm. Our attempts to apply radium to the growth in these cases have not been entirely successful. If it can be shown that radium has the favorable effect on the epithelioma in the bladder that it has on epithelioma of the cervix, it will be best to perform a suprapublic cystostomy which not only affords drainage and relief of infection, but will make it possible to place the radium in direct contact with the epithelioma. In a few cases, we sutured the radium tube to the growth with fine catgut stitches. One of the arguments against the use of radium or fulguration is that both may be employed when a radical operation should be performed. We believe that radium should be reserved for the inoperable malignant tumors, and that fulguration should be reserved for the definitely benign tumors. If the radical operation is performed in suitable cases, the immediate and ultimate results should be very good.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. THOMAS, AND JUDD AND SISTRUNK

Dr. B. C. Corbus, Chicago: In cases of papilloma of the bladder Dr. Thomas stated that from the pathologist's view point it is difficult to differentiate a malignant from a benign growth. I agree with him. In one of our cases the mass covered the ureter. The tumor was burned by diathermy, and after the slough had disappeared, we found the ureteral opening about 4 cm. posteriorly and functioning. Syphilis of the bladder occurs during the secondary and tertiary periods. Reports have appeared describing discrete papules in secondary syphilis and gumma of the bladder. Much to my surprise I discovered tumor of syphilitic origin, identical with condyloma of the anus, which I have termed a vegetating syphiloma of the bladder. This tumor simulated a papilloma so closely that cystoscopically and macroscopically it was impossible to differentiate it from papilloma of the bladder. There was no history of syphilis. The Wassermann reaction was negative in our laboratory and slightly positive in another. The patient was greatly emaciated, weighing only 80 pounds. There was slight hematuria and dysuria. I operated and found the bladder wall pale and very thick, the bladder itself being much contracted. Examination of a section showed that it was not a malignant tumor. The patient was immediately put on antisyphilitic treatment. The mass disappeared entirely.

Dr. Victor D. Lespinasse, Chicago: The chief points of treatment mentioned have been fulguration, radium and resection, with the dictum that fulguration should be limited to benign tumors. Often we cannot tell whether the tumor is benign or malignant, but if we place a radium needle into the tumor mass, differentiation is not always necessary. I have used this method of treatment when the tumor was questionably malignant. It gives the advantage of radium application which is considered orthodox in the treatment of the malignant tumor and it also destroys the benign tumor. The technic is very simple. Put a good thread on the needle and pass it through a ureteral catheter. Usually the needles are a bit dull. By sharpening them they can be placed anywhere. More than one can be used, but it is not possible to place many at a time, for the original needle may be pulled out of the tumor.

Dr. Arthur B. Cecil, Los Angeles: We hear very little about the treatment of massive papilloma of the bladder. We are likely to regard these cases as almost totally hopeless. Several years ago Geraghty reported a case in which he had opened the bladder and used fulguration through the suprapubic wound in a general papillomatosis of the bladder. On more than one occasion in very extreme cases in which the patients were almost exsanguinated from hemorrhage from tumor of the bladder, I have opened the bladder and dipped out a large tumor mass and fulgurated the entire bladder wall. Although the wounds have necessarily been allowed to granulate, implantation did not occur. When the tumor mass fills the bladder and hemorrhage is constant, it is often advisable to open the bladder suprapubically, control the hemorrhage and carry out vigorous fulguration. Concerning ligation of the ureter in operating on tumors of the bladder, it must be understood that ligation is done only as a last resort as a method of handling the ureter. Ligation of the ureter must not be regarded lightly.

Dr. Abraham Hyman, New York: In the last eight years we have had in the service of Dr. Beer, at Mount Sinai Hospital, 180 cases of tumor of the bladder. For a number of years it was noted that approximately 75 per cent. of the tumors were papillomas; this percentage has been reversed of late, the majority of the growths seen being carcinomas. Not all cases of papilloma are amenable to fulguration treatment. In two types operation is the preferable procedure. In diffuse papillomatosis, in large growths encircling the sphincter, or in cases of tumor complicated by severe cystitis, the bleeding and pain produced by cystoscopy renders this form of therapy impracticable. It is advisable before subjecting a patient to a radical operative procedure or to radium therapy to roentgenograph the spinal column, so as not to overlook latent bone metastases. As regards implantation of tumor cells in the wound, I do not agree with Dr. Cecil. We have seen cases in which recurrences took place in the suprapubic scar after operation. In the operation for resection of the bladder described by Dr. Beer, especial stress is laid on the avoidance of wound implants. We have had two cases of total cystectomy for carcinoma of the bladder. In both instances the ureters were implanted in the anterior abdominal wall. One patient is alive and well seven years after cystectomy; the other died a few months after operation. Frequent cystoscopy after operation, whether for papilloma or carcinoma, is important. If possible, these patients should be cystoscoped at least every six months; recurrences, if present, can then be seen in an early stage and more easily handled. Our percentage of recurrence for papilloma after fulguration is not as high as Dr. Thomas'. Twenty-five per cent. of recurrences would be a fair estimate. Recurring papillomas occasionally manifest a tendency to undergo malignant changes. We have had two such instances, and others have been described in the literature.

Dr. Henry J. Scherck, St. Louis: Increasing experience with these growths of the bladder strengthens the conviction that it is important to handle these cases on the same surgical basis that we handle tumors elsewhere in the body. The choice of the proper procedure depends on the localization and determination of the type of the growth. I think we can assume that all papillomas of the bladder are potentially malignant. Therefore, the open operation, except when they are well pedunculated, is the operation of choice. Then we can do a complete excision or anything else that may be necessary. In the application of radium unless the bladder can be opened and the radium placed directly in the growth the procedure is dangerous. Papillomas are apt to recur. In the beginning of the fulguration treatment I was very enthusiastic about it, but the percentage of recurrences is increasing; therefore I believe now that the best method is the open operation, especially when the papilloma is situated around the neck of the bladder. Whether the growth is malignant or not is not of much importance. A microscopic study of these so-called benign papillomas will show that at least 25 per cent. are malignant.

Dr. Arthur H. Curtis, Chicago: What has been your experience relative to the symptoms and pathology on the part of the kidney after ligation of the ureter?

Dr. James A. Gardner, Buffalo: I once reviewed 1,702 cases of operations on tumors of the bladder performed by various operators. I found that a number of patients had been operated on once or twice by one surgeon and then passed

into the hands of another surgeon and even a third surgeon for more operations. Many operators reported that they had operated two or three times on the same patient. Dr. Keyes claims that the treatment of papilloma by intravesical high frequency current has given better results than any other method.

DR. HERMAN L. KRETSCHMER, Chicago: I was interested in Dr. Hyman's statement that he had seen bone metastases in cases of carcinoma of the bladder. We are usually taught that patients with bone metastases have carcinoma of the prostate, thyroid or breast, or hypernephroma. Recently I saw two cases of carcinoma of the bladder in which bone metastases were present. This is a rather unusual occurrence, but proves that carcinomas of the bladder may also produce bone metastases. Treatment of tumors of the bladder by fulguration is an easy and a good way to treat the largest number of papillomas. I agree with Dr. Hyman that it is wise to cystoscope these patients from time to time. It is this practice which has led to the more frequent discovery of recurrences. The results of treatment are not as good in the case of malignant tumors as in the benign growths. There are several reasons for this: first, the patients come in late in the course of the disease so that the growth is far advanced and radical operation is out of the question. Second, so many tumors are located around the neck of the bladder and ureteral orifice, and in all resection cannot be carried out. In several instances in which we resected the bladder containing the orifice the lower end of the ureter was ligated, as mentioned by Dr. Sistrunk, and we have not had any bad results; but in these instances the patients did not live more than a year, so that the remote results mentioned by Dr. Cecil did not have time to take place. If one knows the condition of the opposite kidney and is in a tight place, I can see no objection to ligating the ureter, if necessary. As to radium treatment: I cannot make any definite statements about our results because the patients have not been under observation long enough. I should like to mention, however, some of our unpleasant experiences with radium. In two instances, within a week or two after radiation patients have had severe systemic reactions; one patient died and the other recovered. There was no rise in temperature and it was assumed that as a result of the radiation there was an absorption of toxins, resulting in profound toxemia and which in the one instance led to death. In another instance a woman was given massive doses of radium and within three or four months she had a pelvis full of carcinoma, large glands in the neck and axillae, such as occur, for instance, in Hodgkin's disease, and we felt that these general metastases in that case were directly attributable to the use of radium. Transplanted tumors in the scar have been seen by us all. Not only is the benign papilloma transplanted into the scar, but there are cases on record in which the tumors removed were benign, and in which the recurrence in the scar was a malignant one.

DR. GEORGE E. PFAHLER, Philadelphia: A great deal of information may be obtained by infiltrating the bladder with air and then making a roentgen-ray examination. In only one instance have I failed to show the location and size of the tumor and the area of induration. The method is superior to cystoscopy. The technic is very simple. To my knowledge there has never been any harm or injury to the bladder. In some instances it will help to differentiate between malignant and benign growths because of the possibility of demonstrating the area of induration. In three cases we opened the bladder, destroyed the growth by electrocoagulation and then embedded the radium needles in the base of the tumor. It is my aim to destroy the tissues as long as they are hard. I believe that the best method is to implant radium needles into the base of the tumor after destruction. In advanced cases of carcinoma of the bladder the spine should be examined by the roentgen rays, especially when the patient is complaining of sciatica or pains in the back. In two instances the examination led to an examination of the bladder and the discovery of the malignant growth.

DR. ALBERT E. GOLDSTEIN, Baltimore: A patient who could not be cystoscoped satisfactorily was operated on for stone in the bladder, shown by the roentgen ray. Underneath the calculi, in the region of the left ureter opening, was a malignant papilloma about the size of a walnut. The condition of the patient was very poor so it was decided not to attempt any radical procedure. The bladder was drained for three weeks but he suffered a great deal of pain when urine passed through his urethra. On this account, a diversion of the urinary stream was decided on. I performed a ureterotomy on the right side, bringing the ureter into the groin. The patient improved somewhat. I expect to operate on the other side in ten days and then probably remove the bladder. By means of air inflation, one case of infiltrating carcinoma of the bladder was diagnosed roentgenographically. Operation verified the diagnosis. The tumor was resected and today the patient is free from his symptoms and doing very nicely.

DR. H. W. E. WALTHER, New Orleans: Pathologists aid us very little in coming to any conclusion as to the benign or malignant status of bladder tumors. Three weeks ago I applied the high frequency current to a single papillary tumor in the vertex of the bladder. The material from the tumor was examined and the pathologist made a diagnosis of benign growth. I cauterized the mass and fresh material was sent to the pathologist, who reported carcinoma. I immediately opened the bladder, did a complete resection, and the report came back carcinoma. One point not mentioned is the appearance of edema on the trigon following high frequency cauterization of these tumors. The literature does not contain any reference to this, but in several of my cases a bulbous edema developed following fulguration. I would like to corroborate what Dr. Corbus says about the advisability of having a Wassermann test made in all these cases of growths of the bladder. I had a case similar to the one he reports, with a strongly positive Wassermann reaction, and the "growth of the bladder" promptly cleared up on antisyphilitic treatment.

DR. A. J. CROWELL, Charlotte, N. C.: I wish to emphasize the point made by Dr. Kretschmer concerning the use of radium in these bladder tumors. It is quite important to keep in mind the possibility, or the fear, of systemic reactions following the use of radium. He reports the death of one patient following its use. I saw a very severe systemic reaction follow its use. Radium is one of the best remedies we have for bladder tumors or carcinomatous conditions of the prostate, but it should be used with caution.

DR. HERMAN L. KRETSCHMER, Chicago: Dr. Thomas showed a cystogram of a carcinoma of the bladder with a defect. The defects found in air distention are due to infiltration of the bladder wall by tumor. It just ocurred to me that when one has an extensive infiltration showing several defects, why cannot we recognize such cases with the cystoscope? In attempting to differentiate between a benign and an early malignant tumor we are in the habit of carefully examining the base of the tumor for the presence of edema or dilated vessels. I would like to know whether in the early cases, with the aid of the air cystograms, they were able to find changes which would lead to a diagnosis of a malignant tumor, changes that they could not demonstrate with the cystoscope.

DR. BENJAMIN A. THOMAS, Philadelphia: Whenever we are in doubt about the character of the tumor, we should always treat it as being malignant. Usually, we can be absolutely satisfied about the nature of the tumor by cystoscopy alone and can decide whether or not the condition is a papilloma. In more than 90 per cent. of cases you can decide by one or repeated cystoscopic examinations as to the benign or malignant character of the growth, just as well as by removing a section of tissue or by an air cystogram, provided that when in doubt the tumor be treated as carcinoma. I do not think it advisable to remove routinely sections of the tumor for examination; nor is it necessary, as a rule, to employ bismuth subnitrate to see the characteristic formation of the tumor. I am still convinced that the proper treatment in those cases which are not amenable to high frequency fulguration, as the papillomas and those tumors not suitable to radical operation, is not to resort to the use of radium by the cystoscope, but to do an open operation, if the organic condition is satisfactory, giving the patient the benefit of as complete a removal of the growth as may be by open inten-

sive fulguration, and then employing multiple radium needles much more extensively and effectively. If we have the entire tumor field under exact vision, palpation and complete control, we will get better results by this procedure than by working through a cystoscope with radium carriers that are in many instances unsatisfactorily applied and the applications not maintained to the best advantage. In respect to the use of radium, in the few cases I have treated I have observed remarkably mild reactions considering the intensity of the treatment. Invariably patients have passed through a mild convalescence. In no case was there a rise of temperature over 100 F. The point to be determined is whether 50 or 100 mg. should be left in for six, twelve or twenty-four hours. At the present time, this is to a certain extent a matter of empiricism.

Dr. Walter E. Sistrunk, Rochester, Minn.: As a rule, these tumors involve only the portion of the ureter which lies in the bladder wall and in many cases we have been able to transplant the ureter when it has been necessary to remove a small portion of it with the meatus and still have a good functioning kidney. I merely mentioned the fact that the ureter could be ligated because every now and then it becomes necessary to ligate it during the course of the operation, and we have found from a fairly large experience that this can be done in the majority of cases without too much risk. I cannot answer the question in regard to the late results following ligation of the ureter, but I do not remember any of these patients having returned for another operation, except the one I mentioned. I think that the reaction in man following ligation of the ureter is different from that seen in animals. Harrington, in the experimental laboratories in Rochester, found that ligation of the ureter in dogs is almost always followed by a pyonephrosis and death of the animal, but I am sure that this is not the case in man.

RECLAMATION OF THE PHYSICALLY HANDICAPPED *

HARRY E. MOCK, M.D.
CHICAGO

Orthopedic and reconstructive surgery, industrial and reconstructive surgery, rehabilitation of the tuberculous and similar groupings of specialties with reconstruction and rehabilitation have become quite prevalent during the last three years. The efforts of the medical department of the army to reconstruct and rehabilitate the disabled soldiers is responsible for this new nomenclature in medicine.

Prior to the war there were numerous examples of reconstructing or reclaiming handicapped individuals and of rehabilitating them for future usefulness. The work of many schools for crippled children where educational methods and vocational training were carried on during the period of treatment of the disease; the efforts of a few tuberculosis sanatoriums where vocational work, now known by the term of occupational therapy, was conducted for the convalescent cases, and other examples stand out as pioneer work in reconstructive medicine.

Industrial medicine and surgery in its broadest sense as applied in a few industries of the country furnished the best example of this type of practice. In these concerns handicapped employees received medical or surgical care until they had been functionally restored and were then placed at occupations suitable to their physical qualifications. Some of these employees even received vocational training in the plant for specialized jobs where they could be 100 per cent. efficient in spite of their handicaps. This work was not confined to amputations or other types of traumatic cases, but included those employees handicapped by heart disease, by tuberculosis, by nephritis, by nervous disorders, etc., as well. In fact, the examination of applicants for work, when carried out on a humane basis, was an outgrowth of this effort scientifically to place handicapped persons in suitable employment. Several years ago I developed this formula, which is a prime factor in that branch of medical economics known as rehabilitation of the handicapped patient:

Physical qualifications + Occupational qualifications = Job.

With the experiences gained from industrial medicine and surgery during the last decade, and with the impetus given to the work during the war, the profession is now viewing its results more and more in the light of the future economic usefulness of each patient. The physician who simply cures his patient without giving heed to the functional result obtained or to the future employment of the individual is falling short of his duty. The recognition of this truth is the great contribution of reconstructive medicine to our profession. It has caused us to link hands with the educator and with the personnel managers in industry to the end that all handicapped individuals may once more become productive units of society.

Statistics show that annually 875,000 men and women are disabled for more than four weeks as the result of accidents sustained in industry; that annually 76,000 people suffer loss of members, and at least 200,000 are otherwise permanently disabled by these industrial accidents, and that 28,000 of our people are annually killed by industrial accidents.

Because of the nonreporting of occupational diseases, it is impossible to obtain statistics; but it is conservatively estimated that at least 250,000 more people are annually permanently disabled as the result of occupational diseases, and the deaths from these reach into the tens of thousands. Thus, the total number of permanently disabled from industry can be placed at half a million. From the farms, from the streets, and from the diseases and accidents of everyday life there is certainly added another million of handicapped individuals annually. Each year the total of already existing cripples is being augmented by this new annual crop.

When we consider that 30 per cent. and more of our young manhood between the ages of 20 and 30 were found in 1917 to be handicapped, that many of these had greatly lowered efficiency or no productivity at all as the result of their disabilities, we are forced to recognize the truth—we have been a wasteful nation and have done little toward conserving our man power.

With the wholesale human wastage of war came the nation's awakening. From the President, from statesmen, from recognized leaders in the medical profession, from great educators and from shrewd, broad-minded business men went forth promises and words of encouragement to the disabled soldiers and to those who were still sound but liable to suffer the wounds of war.

The "Nation's Draft of Honor," our President called it, in promising complete rehabilitation to all disabled soldiers, or solicitous and tender care to those rendered helpless. Our Medical Department promised restoration as nearly to the maximum as possible, and our educators promised vocational training and refitting

* Read before the Section on Orthopedic Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

for suitable employment for all who needed this service, while thousands of employers promised jobs to the disabled soldiers, promised them the opportunity to make good in spite of their handicaps.

Conceived at the high tide of patriotism, "reclaiming the disabled" stands forth as one of the greatest ideals born of this war. Even though jealousies and duplications of effort between various bureaus of the federal government have prevented a complete fulfilment of these promises to the soldiers, yet the ideal still lives and is growing. The work of repaying this, "Our Draft of Honor," to those who sacrificed so much for us should have been taken out of the realm of politics and bureaucracy. But the ideal itself has been spread broadcast throughout the nation. From the salvaging of disabled soldiers has sprung the vision of applying these principles to the civilian disabled—to the great casualty lists from industry.

From the intensive study of reclamation and rehabilitation during the last three years there has developed a form of medical economics which involves a great cooperative effort between medicine, education and industry. No longer can medicine be content with a medical or surgical end-result that does not combine with it a good economic end-result as well.

This cooperative effort makes a well rounded reclamation service, or a Service League for the Handicapped, as we designate such an organization founded in Chicago. Its work can be divided into five closely coordinated activities: (1) prevention; (2) adequate hospital, medical and surgical service, combined with suitable convalescent care; (3) vocational training; (4) placement or employment service, and (5) supervision or follow-up. It is only by a union of all the agencies in every community working along these different lines that will make possible a comprehensive reclamation service. Let us study each of these divisions in their relation to the whole.

PREVENTION

No reclamation service is complete that does not provide means for the reduction of the number of handicapped. The prevention of accidents and of occupational diseases in a number of large industrial concerns has fully demonstrated that disabilities can be reduced: In some concerns, by safety appliances, educational propaganda against accidents, and above all by a close cooperation between the industrial surgeon and the safety engineer, major accidents have been reduced more than 80 per cent.

But injuries and diseases contracted while away from the workshop—in the streets and in the homes—are still responsible for a great wastage in industry, a great slowing up of production. A broad-visioned reclamation service must take the lead in a nation-wide prevention program, in industry and out of industry, if it is to approach the ideal.

The success of this prevention program in a few industries of certain communities has depended on the reporting to the safety engineers of every accident case coming to the surgeon. In order to extend this accident prevention work to every employee in industry, and to the accidents in the homes and on the streets, it is necessary for every community to form a central agency which will receive these reports of accidents from the physicians and the hospitals. This agency must have a safety department which will then immediately investigate the cause of these accidents and map out plans for the prevention of their recurrence.

By cooperating with the National Safety Council, the Service League for the Handicapped in Chicago is endeavoring to develop just such a local safety movement. In time this voluntary effort will be taken over as a function of the state and of the city government, and the reporting of accidents and a study of their cause and their prevention will be a definite function of the state public health department. A similar effort is being made to have all occupational diseases and other preventable diseases that cause permanent disabilities reported, and an equal effort for their prevention will be instituted. This is as logical a function of the health department as the prevention of communicable diseases.

Industry is being robbed of millions of future workers by the neglect of the coming generation. Consider the lack of prenatal care for the majority of mothers-to-be of the laboring class. Prenatal clinics and infant welfare clinics in a few large cities have ably demonstrated their value. Such clinics should be established in every county of every state of the Union. Only in this way can the wastage from infant mortality be reduced.

Consider the lack of care and the lack of educational training of hundreds of thousands of children disabled by infantile paralysis, by bone and joint tuberculosis, by congenital defects and loss of members due to accidents. It is estimated that more than 50,000 schoolchildren in New York and more than 20,000 in Chicago are afflicted with heart disease. By proper medical care, physical development and muscle training combined with specialized educational training, fitting them for work which they can do efficiently without further injury to themselves, these crippled and disabled children can be made effective, productive units. Under present conditions, with our superficial medical examinations of schoolchildren and our lack of provisions for specialized training and supervised physical development, the great majority of these children will grow up to become noneffective. The results of the draft examinations prove the truth of this statement. As reconstruction physicians, it is our duty to save these children for future workers.

The agencies in every community working on the problems of prevention of tuberculoss, of blindness, of insanity, of social diseases, should all be coordinated under this central reclamation service in order that the greatest efficiency will be developed in the entire prevention movement.

Inadequate medical and surgical care has been responsible for an appalling number of permanently handicapped individuals. Preventive medicine and preventive surgery, therefore, involve careful study of every case in order to arrive at proper diagnosis; the treatment of every case as serious from the outset, and an effort to prevent prolonged disability and permanent deformities. Physicians who persist in treating fractures as sprains, who refuse to use the roentgen ray to diagnose conditions and to check up their results, who by careless methods, such as leaving the aftercare of their patients to untrained assistants, persist in turning out injured workmen with permanent handicaps—such physicians must be reeducated or in some way barred from the practice of medicine. Industry and insurance companies are pursuing a very short-sighted policy when they employ physicians who

have failed to make good in private practice and who are willing to accept a full-time position for $150 or $200 a month. These cheap, untrained men are responsible for too many permanently disabled workmen, as most state industrial compensation boards can truthfully verify. True, many good men are doing this work chiefly for experience; but these low salaries will not hold them long.

Prevention, therefore, is the very foundation of this reclamation service.

HOSPITAL, MEDICAL, SURGICAL AND CONVALESCENT SERVICE

As has often been said, the best hospital and medical service in every community is available for only the very poor, who receive it as charity, or for the well-to-do, who can buy it. Medical economics demands the same service for the working men and women and for their children, not as a charity but as a service within their reach. Every industrial surgeon knows that there is a constant wastage in industry due to the sick employee remaining at home under inadequate medical care because the diagnostic and treatment facilities of the hospital are beyond his financial ability to meet. This is the strongest argument for health insurance, and health insurance will come unless we as a profession solve this problem, for it must be met. Too long have we evaded its solution. A great number of moderate priced hospital beds is the only solution.

Few hospitals to day are adequately equipped to care for the serious accident cases from industry. Take, for example, fractured femur; experience in the war proved that the mobilization method of treatment, namely, by the Balkan frame and the Thomas splint with extension, gave as good healing results as the old plaster cast method, and gave from three to six weeks' quicker functional result by avoiding the stiff knee and hip joint that follow the latter method. But the equipment for this treatment is, as a rule, not available. How many times do we postpone needed roentgen ray examinations because the injured patient is in no condition to be moved to the roentgen ray laboratory? Or, if we move him, how often is damage done to the injured part? The portable roentgen-ray apparatus will solve this difficulty, but few hospitals have provided one for the use of surgeons.

Again, physiotherapy departments in the hospitals with facilities for baking stiffened joints or contracting scars, or facilities for hydrotherapy and massage given daily will prevent many permanent deformities and will hasten recovery. Has your hospital provided you with these facilities?

There is a dearth of hospital beds in almost every community. Patients are discharged to convalesce outside to make room for more acute cases. Or if they are retained in the hospital during a long stage of convalescence, they are often ruined by hospitalization. Frequently these patients have only a cheap boarding house or other wrong environment for this period of convalescence. The lack of proper care during this stage of recovery often causes a relapse with return to the hospital, with all the needless economic loss which such a system incurs.

A *convalescent center* in some favorable location in the community, equipped for physiotherapy, occupational therapy, and gradual physical development will return these chronic cases to industry more rapidly, and mentally and physically poised for effective service at once.

VOCATIONAL TRAINING

It is during this period of convalescence that many patients can be retrained for suitable employment in some specialized line when their disabilities prevent their return to the old job. To neglect this retraining process, this refitting for future usefulness, is to neglect the cure of the patient from an economic standpoint—to relegate him too often to the scrap heap.

The Service League for the Handicapped in Chicago has secured the cooperation of the public school board, certain night schools, the University of Chicago and a number of industrial concerns, especially the smaller industries, in this angle of their work. These agencies have already provided the means for the vocational training of a number of handicapped persons, and as the work extends it is bound to prove the feasibility of this union between medicine, education and industry.

In St. Luke's Hospital in Chicago we have developed an excellent occupational therapy department, and education along specialized lines to refit the handicapped patient for future usefulness is a definite part of the work of this department. The spreading of this hope of future usefulness to the patients in the wards by the medical staff, the nurses and the workers in occupational therapy has resulted in a cheerfulness and morale among the patients not often seen in a hospital.

PLACEMENT

The inability of handicapped individuals in the past to find suitable employment has forced these unfortunates down and down until begging or dependence on relatives or the county has been their only goal. The study of the psychology and the cause of beggars and of human parasites reveals that at first they fought against those forces which subtly and surely pushed them into the ranks of parasites. The lack of understanding of the handicapped by the able-bodied; the refusal of job after job or the exploitation of the disabled by certain employers who hired them for a pittance; the first appeal to the Associated Charities or the first act of beggary; the gradual loss of self-respect as this habit of begging or dependence, like a drug, grew upon them—these, and many other correctable factors contributed to and helped make up the hundreds of thousands of human derelicts who are now the nonproducers at this time when more and more production is the cry of the hour.

The proper placement of the handicapped workman therefore becomes one of the most important divisions in this reclamation service. It is estimated that approximately 90 per cent. of the men and women injured in industry can be returned to useful employment by a careful selection of their occupations. Only about 10 per cent. of these need vocational training, although practically all of them can have their earning ability greatly increased by vocational training. Much of this training can be given directly in industry.

FOLLOW-UP

Supervision both medically and vocationally must continue in all handicapped individuals in order that this reclamation process may be completed. This will prevent the drifting from job to job and the danger

of increasing their handicapped condition by changing to a hazardous type of work.

CONCLUSIONS

1. Industrial medicine and surgery has in a number of large industries demonstrated the practicability of a human maintenance department which conserves the working force and reclaims the disabled.

2. The work of reconstruction and rehabilitation of the disabled soldiers, while not completed, has developed and proved broad principles of reclaiming the handicapped.

3. The knowledge that more than three times as many men and women were being disabled in industry annually as were disabled in our entire army has awakened the nation's conscience to the need of rehabilitating these unfortunates and of preventing such a casualty list.

4. In different parts of the country, volunteer and governmental agencies are endeavoring to solve this problem.

5. A reclamation service to be complete must combine the efforts of medicine, education and industry. It must include the following services:

(*a*) Prevention of accidents and disease.

(*b*) Improved hospital, medical and surgical services. As an adjunct to these there must be provided better convalescent care.

(*c*) Vocational training of the handicapped when needed.

(*d*) Proper placement of the physically and mentally handicapped on jobs where they can be efficient with "safety to themselves, to their fellows and to property."

(*e*) Their continued supervision until assured that this reclamation service is completed in every instance.

6. By a broader conception of our duty to handicapped individuals, and by a closer cooperation with the various lay agencies, the medical profession can render a great service in conserving and reclaiming the nation's man power.

122 South Michigan Avenue.

ABSTRACT OF DISCUSSION

DR. ALBERT H. FREIBERG, Cincinnati: This country, particularly in its central part, is dotted with small industrial communities in which large numbers of men are working and sustaining precisely the same kind of injuries that are being sustained in the large cities where it is easily possible for a group of men to get together and plan for improvement in the condition of these unfortunate men. At the same time, unless the matter is taken in hand by the state in a broad general way, the problem cannot be solved in anything like a proper manner. In the state of Ohio, with which I am best acquainted, there are many such industrial communities, small towns in some cases and comparatively large towns in others, but up to this time there has been no real provision made for what we speak of as physiotherapy. There is on the part of the doctor no knowledge of the need for it. It should be the part of the industrial compensation commission to see that adequate provisions are made for handling these patients according to the demands of modern medicine and surgery. Even though the conditions in Chicago and New York and other large centers be improved, the great mass of the problem is not yet attacked. It is unfortunate that, in view of the large promises which were made for the plans of the surgeon general's office at the beginning of the war, so little has come to us from the medical department of the army that can be passed on to the general practitioner. It is unfortunate that the original plans for curative work shops, for physiotherapy and for a more comprehensive method of reconstruction of the injured individual for usefulness, were abandoned, and that the management of the patient in the sense of physiotherapy and occupational therapy should have been placed in the hands of a group of men who were not doctors at all, and who were more interested in making extended psychic tests of the patient to see what his future industrial activity might be than in the immediate and necessary improvement of his physical condition. As a matter of fact, in spite of papers read which tell just what physiotherapy offers and what occupational therapy is, there is not today, as far as I know, a means of pointing directly to any results which can be used to demonstrate to the medical profession what may be accomplished by these methods of treatment and what has been accomplished by them. The accomplishments are out of all proportion to the machinery which was there to use. The machinery was there but the engineers were lacking, or the engineers were present and they were not allowed to work. There is no use, I suppose, finding fault afterward, but we might as well call a spade a spade. The medical department of the army fell down utterly in this respect, and it is not entitled to any credit for any other result in this connection.

DR. JOHN T. O'FERRALL, New Orleans: Unquestionably one of the most important things to be done in every state is to make a survey of just how many cripples we have. I have been able to start a foundation for such a survey in Louisiana, and I hope it will prove to be of some avail. After such a survey is made we will have something tangible to put before our legislative bodies in order to encourage them to give us the means to work with, and this is particularly true in Louisiana. We have not the remotest idea how many cripples are in Louisiana or of what types, whether crippled children or crippled from industrial injury. We have absolutely no means of caring for crippled children other than giving them their first operative or corrective treatment. We have no way of giving them physiotherapy or hydrotherapy or whatever else might be needed. We have no way of giving them any educational aids. All of us have had come into our clinics adult cripples who have no education, on the contrary, are absolutely illiterate. They not only have the physical incapacity brought about through injury, but are mentally far below par. Therefore, a survey would be very beneficial in helping us to get something from our legislatures with which to work out this problem. I thoroughly agree with Dr. Mock as to the inadvisability of the compensation insurance commission employing men who are below par surgically, and who certainly have not the orthopedic viewpoint, in charge of their cases. Unfortunately, New Orleans is, in my opinion, overloaded with free clinics, and every day we see coming into our clinic for treatment compensation cases which have in many instances been treated for months by industrial surgeons, many of them incompetent men. These patients are receiving compensation in sufficient amount to pay for the services of a competent doctor. Many times they are not allowed by their compensation physicians to seek the services of other physicians, despite the fact that the insurance company is obligated to see that they receive the best treatment.

DR. FRANK G. MURPHY, Chicago: The compensation laws of the various states place the burden of the rehabilitation of these industrial cripples on the industries. Not all of the industries are as enthusiastic about rehabilitation of the industrially crippled as might be supposed. They know that by law each industrial cripple can secure from them a certain amount for a specified injury, and they are therefore inclined to pay this sum and be through with the case, instead of instituting the appropriate rehabilitation treatment. In the recent war many soldiers were crippled, and the government has done much to rehabilitate and reeducate them; but when we consider that during each year for the last fifty years the industries of this country have produced more cripples than the world war has brought about among American soldiers, and when we further consider how little has been done for these industrial cripples by way of federal appropriations, we are startled. For the fiscal year ending June 30, 1920, Congress appropriated $500,000 for the rehabilitation of the industrial cripples of the United States, each state to receive such

proportion of this amount as its population bears to the total population of the United States. For the year ending June 30, 1921, $750,000 has been appropriated, and for the year ending June 30, 1923, $1,000,000. For all the industrial cripples of the United States this amount is not a drop in the bucket; in fact, it would not be sufficient for rehabilitation and reeducation in even one community.

Dr. H. Winnett Orr, Lincoln, Neb.: While we are criticizing those responsible for the breakdown of the program in the medical department of the U. S. Army, there is one individual who ought not to be overlooked, and that is the soldier himself. It has been found that one of the great faults of this whole program, especially with the British, is that we do not have a receptive individual, and that is one reason why we should emphasize the importance of taking care of these cripples when young. One service in the U. S. Government has done creditable work, and that is the reclamation service of the Forestry Department. They do not to any extent devote themselves to the problem of saving the old trees that are broken down; they plant new ones.

Dr. Clarence W. East, Springfield, Ill.: In Illinois a plan has been followed for more than three years for the purpose of retrieving as far as possible the results of epidemic poliomyelitis. We began the work by giving demonstration clinics before medical societies in thirty centers showing the early after-care of these cases. We were immediately urged to follow up this work, and we have twenty-four permanent field clinics for the special purpose of caring for this class of patients. Each year we are taking care of about 1,600 cripples, 70 per cent. of whom represent early, or recent, cases of poliomyelitis. We have established these clinics in this way: The county medical or local medical societies in each case have endorsed the movement and have really invited us to come into their field. We have also met with the local nurses, sometimes with the civic bodies and in one county with the board of supervisors. With a force of two doctors and four field nurses we have tried at least to supervise the carrying out of the recommendations that have been made in the clinics, and with the rallying of public health nurses and the support of interested people we have been able to do quite a comprehensive work in this respect. One of the most recent and significant signs which should tend to encourage us in our efforts is the interest in the movement that is beginning to be manifested by men interested in orthopedics in the various communities. It has been found that in a large number of cases we are able to prevent at least the more serious results of poliomyelitis. The best results achieved from the kindly interest of the profession in our work is the dragging of this class of patients out of the claws and maws of the quacks all over Illinois.

Dr. J. D. Griffith, Kansas City, Mo.: If this great body of medical men could be united in this country we could do anything we wanted to with Congress. There is not a county in this whole country whose county medical organization could not put a representative into the legislature of that state; there is not a district that could not put a congressman in Washington. One hundred and fifty thousand men who absolutely have the hold on the people that you have, a greater hold than has the minister of the gospel or anybody else, can influence each county and do what they please in the shape of rehabilitation. Unity is what you want.

Dr. William Colby Rucker, Washington, D. C.: This movement is a recognition of the principle that a man who is a nonproducer from any cause whatsoever is a menace to the health of the nation.

Dr. Paul B. Magnuson, Chicago: Since we have compensation laws we have a way by which we may get decent treatment in industry, if we have somebody at the head of the industrial commissions who has enough nerve to put it over. He will make himself very unpopular, but it can be done. In Illinois we have a law which provides that the compensation board can sustain the right of any insurance company to write compensation, so when we find that a man gets bad results repeatedly, shows poor surgical judgment repeatedly, and gets into trouble repeatedly with the board, we send for him and tell him that if this thing goes on we will have to request the companies doing business with him to discontinue writing insurance in Illinois. That is pretty severe medicine and probably would not have to be applied in many cases. The reason we do not get decent treatment in many cases is that most of these men are better business men than they are doctors; they take more interest in the business side, and that appeals to insurance people. The trouble with most efficient and scientific medical men is that they pay attention to the patient and not to the business side of the case, whereas the business-like doctor attends to the business aspects of the case and does not pay much attention to the patient. If we can manage things so that the patient will have proper attention in a first-class institution, and then have the man who is competent to give surgical care also furbish his business ability, we will be able to secure for industrial patients much more efficient treatment. We are starting to publish in the International Clinics every three months a series of cases from the industrial clinics of Illinois, in each case giving the history, criticizing it favorably or unfavorably as to the result, pointing out where the mistakes were made, if any, and wherein the measures adopted were carried out properly, if so carried out, and at the end pointing out in dollars and cents what it has cost. And in this we are not trying to cut down the doctor's bill. That is the only way you can talk to a business man because he is in business to make money.

Dr. J. S. Millard, Akron, Ohio: I am in charge of the medical and surgical work of the Goodyear Tire & Rubber Company, and I thought it might interest you to know how we are taking care of our injured employees. The Goodyear Company employs about 25,000 men. They have maintained a hospital since 1912 and now have two hospitals with about twenty-five beds available. We do not keep sick persons there at all, only surgical cases. We have a real physiotherapy department and a well equipped roentgen-ray department so that we can take care of all our severe injuries and fracture cases immediately. Every large industrial institution should maintain a hospital located in the plant.

Dr. Walter G. Stern, Cleveland: In the survey of cripples made in Cleveland in 1916 (I always speak of it as "the survey of sainted memory"), a résumé of which was buried in the *Journal* of the American Orthopedic Association two years ago, we found that the figures which have been given today were approximately true, and that 50 per cent. of all the cripples that we enumerated received their injuries between the ages of 15 and 45 years—that is, during the working age. So that approximately 50 per cent. of all the disabilities we found were those the cause of which can be found in childhood, and 50 per cent. occur during the working age. I have lived through a couple of surveys and they are usually not worth the paper they are printed on, because by the time the figures are tabulated and everybody satisfied and all pet theories that you would have liked to put in them are removed by those on whose toes you might be treading, your survey has been hopelessly emasculated. If we want to do anything constructive, you must do two things: First, educate the physicians, and here Dr. Magnuson's method would be appropriate. The only hope for the future lies in the coming generation of physicians. I do not think the teaching of the principles of casualty surgery is at present resting in the hands of the orthopedist who sees the thing clearly, but is resting in the hands of the general surgeon who looks at things far differently from us. Even the present generation of physicians coming out in the last five years, except those who have been through military service, does not appreciate the principles underlying the treatment of trauma, the diagnosis and treatment of fractures or of tendon wounds; they know nothing and care very little about the underlying principles that guide the orthopedic surgeon in his line of work. The second factor lies in securing the aid and cooperation of the labor unions. The injured workman's most dangerous enemy is a fellow workman who is strong in limb if not entirely sound in his principles. In the first place, when a man gets back to work and is evidently handicapped, he is jeered at and called a "crip." He is given the disagreeable jobs, and through the taunts and jeers of fellow workmen often falls down on his job. But the worst thing is that the crippled workingman is usually unable to earn the union workmen's wage, and if not,

the employer cannot afford to keep him in his service at the union wage rate. In one instance, the labor unions insisted that the employer would have to pay such men the regular wage or they would strike. He could not afford to do so, and he had to discharge two crippled men. If you ever can get the labor unions interested they will be able to dictate to the legislatures and industrial commissions just what they want. The law in Illinois certainly has made for good. The laws in some of the states have not been worded so that they can do the greatest amount of good. The industrial commissions seem usually to be imbued with the idea that they should get medical work done as cheaply as possible; hence they do not seek the best medical and surgical aid. In many communities the hospitals and surgeons are not properly equipped for the work, especially the smaller hospitals in the large communities; consequently these are chosen to do this work because they will do it cheaply. As to state health insurance, if this is going to be conducted on the parsimonious plan hitherto followed by the industrial commissions in most states, God pity all those mixed up with it, including the patients.

DR. HARRY E. MOCK, Chicago: I desire to call the attention of my friends in Louisiana to the fact that the doctor described by Dr. O'Ferrall was the old-fashioned company "Doc," and not an industrial surgeon as we conceive him today. We do not want him classified with the industrial surgeons. I agree with Dr. Freiburg that the formation of a service league or reclamation service in one community seems to touch only the edges of the problem. I am profiting from the experience gained in being one of the early men who developed industrial medicine. We have to begin in a small way. We must demonstrate its value in one, two, three or four industries, and then we shall make progress. The reclamation service must be demonstrated in different communities all over this country in order to bring about the broad conception of reclamation which has been visioned here today. In Illinois a law was passed for the rehabilitation of the disabled from industry. Similar laws have been passed in Pennsylvania, Rhode Island, New Jersey, California and other states. In Illinois I was one of the few who wrote to the governor of the state and asked that the rehabilitation act be not passed, or, if passed, that it be limited in its scope to the appointment of a commission to draw up a broad plan of what rehabilitation of the industrially disabled really meant. I did this because when the Smith-Hughes bill, which Dr. Murphy referred to, was up for hearing it impressed me as being "piecemeal" legislation. The evidence before that committee of the senate and house dealt only with vocational training of the injured, just about 10 per cent. of the job. In the army we passed through some of the things brought out as to how far the rehabilitation act had failed in its purpose, simply because vocational training in some hospitals became so great a feature that we could not see the other big problems of the reclamation service. So if those states which have passed the rehabilitation act devote their time only to the reeducation of the disabled, they are liable to meet with the same disappointments which we suffered in the army. In Illinois we have an appropriation of $10,000, and they have employed a good man to get in touch with the leaders of the state for the purpose of mapping out a program for the reclamation service which the state will apply a year hence. At first his idea was that a survey of cripples was the thing he was appointed for. However, his viewpoint has broadened and he has grasped this: The thing he must do is to prepare a program which the state can adopt and which involves the coordination in the state of all those agencies looking toward the reclamation of disabled men. And what are those agencies? We have set up in Chicago a little laboratory to prove what they are: Here is a tuberculosis group which aims to show what will happen as the result of proper care and training; here is the group fighting for the reeducation of the blind; another group is fighting for the prevention of blindness in the state; the industrial surgeons are working along lines of reclaiming the disabled and getting them back on the job. Then let the medical profession do just what Dr. Griffith suggested: Unite in one big union for the reclamation of all disabled men, and we will have every state and community in the nation falling into line behind this movement.

THE CAUSES AND OCCURRENCE OF FUNCTIONAL SCOLIOSIS IN COLLEGE MEN *

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In my capacity of consulting physician to Lehigh University, I have had the opportunity to take part in the physical examination of the entering freshman class each fall from 1912 to 1919, with the exception of 1918. Early in the routine procedure, I was struck by the surprising frequency with which a mild type of functional scoliosis was found. The men exhibiting scoliosis were consequently subjected to a more detailed examination with a view to determine the underlying causes. This has now been pursued for seven years, in which period a total of 1,856 men has been observed.

Functional scoliosis is held to be that form of lateral curvature of the spine in which no permanent bony change is apparent and which disappears with recumbency, i. e., on lying down. Two or three cases each year have shown structural curves, i. e., scoliosis that persists with recumbency. The functional scoliosis under discussion has been of a very mild type, the greatest deviation from the median line varying from 0.5 to 2 cm.

TABLE 1.—FREQUENCY OF SCOLIOSIS IN YOUTHS FROM 16 TO 20

Year	Per Cent.	Comment
1912	10.4	First examined by the physical director and scoliosis cases referred to the medical examiner
1913	11.8	
1914	9.5	
1915	11.6	
1916	11.8	
1917*	43.6	War-time—relative increase of unfit
1919*	21.2	

* All students examined by medical examiner.

The procedure of examination has been:

1. Routine physical examination. Those men exhibiting scoliosis were culled out and searched for obvious causes of the scoliosis, such as flatfoot, empyema drainage scars, defective vision, congenital deformities, and bone disease of the extremities, and questioned as to their previous occupation—military training, surveyor carrying a transit, etc.

2. Notation of the relative position of the shoulders and hips.

3. Determination whether the scoliosis disappears: (*a*) with support under foot; (*b*) on lying down.

4. Measurement of the lower extremities. The patient is placed prone on his back so that the line joining the anterior superior spines of the ilia is at right angles to the median line of the body. Any apparent difference in the length of the lower extremities, as shown by the difference in the level of the internal malleoli at the ankles, is noted. Also:

A. The distance from the anterior superior spine to the internal malleolus of each side is recorded.

B. The distance from the greater trochanter to the external malleolus is similarly measured.

C. The length of Bryant's line is determined.

It has been surprising to find that, instead of being an occasional isolated anomaly, scoliosis occurs with relative frequency in youths of 16 to 20 years of age.

* Read before the Section on Orthopedic Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

As all statistics of functional scolioses have shown heretofore, the most frequent curve is a long left lateral scoliosis; as high as 90 per cent. *left* curves have been reported in children.[1] The incidence of occurrence in these boys of college age has been recorded in Table 2.

TABLE 2.—COMPARATIVE FREQUENCY OF LEFT, RIGHT AND BILATERAL SCOLIOSIS

Year	Left, per Cent.	Right, per Cent.	Right and Left, per Cent.
1912	58.0	40.0	2.0
1913	84.0	4.0	12.0
1914	75.0	0.0	25.0
1915	70.0	3.7	26.3
1916	70.6	11.8	17.6
1917	63.0	11.3	25.7
1919	68.1	17.6	14.3

The causes of scoliosis have been classified by Lovett as:

A. Congenital scoliosis, i. e., malformation of spine, scapula or thorax.

B. Acquired scoliosis:

1. Anatomic:
   - (*a*) Torticollis.
   - (*b*) Pelvic asymmetry.
   - (*c*) Pelvic obliquity.
   - (*d*) Unequal vision.
   - (*e*) Unequal hearing.
2. Pathologic affection of vertebrae—as rickets, Pott's disease.
3. Pathologic affection of extremities.
4. Disease of soft parts—infantile paralysis, empyema, etc.
5. Occupational or habit.

On the basis of this classification, examination gave the results recorded in Table 3.

For the first five years, cases of scoliosis found during the routine physical examinations were referred for detailed study. In the last two examinations, the entire class has passed before the medical adviser. This accounts possibly for the higher incidence of scoliosis in the last two recorded years.

TABLE 3.—RESULTS ON BASIS OF LOVETT'S CLASSIFICATION

	1912 %	1913 %	1914 %	1915 %	1916 %	1917 %	1919 %
Congenital scoliosis	0	0	0	0	0	1.8	0
Acquired scoliosis: Anatomic:							
Pelvic asymmetry	0	0	0	0	0	2.7	6.6
Femoral inequality:							
Bryant's line short	26.3*	12.0	25.0	11.6	14.7	20.0	10.0
Shaft short	26.3*	36.0	25.0	16.0	14.7	21.6	33.3
Both Bryant's line and shaft short	0	0	0	0	3.0	6.1	11.0
Pathologic affection of vertebrae	0	0	0	0	0	0	0
Pathologic affection of extremities:							
Flatfoot	0	20.0	25.0	30.1	41.0	23.5	11.0
Disease of hip or knee	0	4.0	0	0	6.0	0	1.1
Disease of soft parts	0	0	0	0	3.0	0	0
Occupational	0	28.0	25.0	42.3	17.6	24.3	27.0

* Records incomplete; classification can be made only partially.

The variation in the percentages for the various causes of scoliosis is to be noted. No constant incidence of any type is apparent except that the total number showing some shortening by measurement, whether it be shaft, Bryant's line, or both, is fairly constant—about 50 per cent. of the total scoliotic.

Table 3 may perhaps be best studied in a condensed form (Table 4).

1. Lovett: Lateral Curvature of the Spine, Philadelphia, P. Blakiston's Son & Co.; Tr. Inter. Cong. Med., 1913, Sub-Section VII-A, Orthop., p. 33.

In pure functional scoliosis, pathologic affections of the extremities or of the spine or pelvis are rarely concerned, as they are usually accompanied by habitual or structural curves. Asymmetry of the pelvis, and cases of mild, unilateral atrophy and deformity from an old infantile paralysis form the chief components of the miscellaneous group.

Flatfoot is solely responsible for a considerable percentage of these scolioses, but is implicated in many in which other factors are also concerned. Apparently one fifth to one quarter of all cases of flatfoot produce, or are associated with, scoliosis.

A great many curves have been classified as occupational in which no definite etiologic factor could be determined, though many gave a direct history of right-shoulder weight-bearing, i. e., transit or gun. They were regarded as probably developmental in origin and as the result, possibly, of improper seating in school. The likelihood of a mild congenital curve in some of these must be considered.

That group especially merits consideration, however, which is associated with a shorter Bryant's line, or shorter trochanter-to-external malleolus measurement, which has been recorded above as exhibiting femoral inequality.

TABLE 4.—ETIOLOGY

	1912 %	1913 %	1914 %	1915 %	1916 %	1917 %	1919 %
Femoral inequality:							
Bryant's line short	26.3	12.0	25.0	11.6	14.7	20.0	10.0
Shaft short	26.3	36.0	25.0	16.0	14.7	21.6	33.3
Both Bryant's line and shaft short	0	0	0	0	3.0	6.1	11.0
Occupational	0	28.0	25.0	42.3	17.6	24.3	28.0
Flatfoot	0	20.0	25.0	30.1	41.0	23.5	11.0
Miscellaneous	0	4.0	0	0	9.0	4.5	7.0

SHORTENING OF BRYANT'S LINE

The shortening of Bryant's line may be due to:

1. Congenital dislocation of the hip—very mild type.
2. Acetabulum placed slightly higher on the shorter side.
3. Coxa vara from an old fracture of the neck of the femur.
4. Simple coxa vara of a very slight form.
5. A congenital, relatively more acute angle at which the neck of the femur joins the shaft, or simply a shorter neck—congenital coxa vara.

When this shortening was first discovered, it was attributed to a possible very slight dorsal dislocation of the hip, or an acetabulum slightly higher placed. In one or two cases, there has been sufficient prominence of the trochanter and deformity at the hip to suspect a partial dorsal upward dislocation of the hip; but in the absence of roentgenograms and with lack of impairment of function, in no case has this been proved. The difference as determined is rarely more than 1 cm., and is usually less. It seemed more likely that the difference between the two sides in the angle with which the neck of the femur joins the shaft would be sufficient to account for the slight difference in measurement. A slightly more acute angle on one side, a tendency as it were to coxa vara, would raise the height of the greater trochanter with respect to the opposite side, and would account for a shorter Bryant's line, and also a shorter lower extremity on that side, as demonstrated by the anterosuperior spine-to-internal malleolus measurement.

In none of these cases were there any symptoms referable to the scolioses, the hips or extremities, or history of trauma. The patients were all quite ignorant

of their deformity and unconscious of any postural abnormality. There was no restricted movement of any sort at the hips. The question as to whether the coxa vara of mild type—which, it seems reasonable to believe, accounts for the Bryant's line shortening—is congenital or acquired may be briefly considered. Roberts [2] has shown the variability of the femora of the same individual, which lends support to the congenital origin of this condition. On the other hand, many of these individuals are physically underdeveloped and have the earmarks of former rickets, Harrison's grooves, etc. Brown [3] has shown the high incidence of previous disease in college men exhibiting scoliosis. Hence, an acquired coxa vara, such as might result from the bending of a weak femoral neck by the rapid increase of weight-bearing in adolescence, seems more than a remote possibility. It has been impracticable to obtain roentgenograms of these men; the light that these might shed is thus denied.

SHORTENING IN GREATER TROCHANTER TO EXTERNAL MALLEOLUS LINE

Shortening in the greater trochanter to external malleolus line may be due to:

1. Shortening of the femoral shaft.
2. Shortening or excessive bowing of one tibia.
3. Shortening in both femur and tibia.
4. Unusual size or development of one trochanter.

The slight difference in length, and consequently in measurements, of the two femora and tibiae in the same individual has been recorded by Roberts. The frequency with which a shorter femoral shaft is responsible, in these cases, for the difference in measurements is probably high. In two of seven cases examined by Roberts, no shortening of the tibia was found. In twenty cases, in which control measurements from the anterosuperior spine to the upper margin of the patella were taken, in our series, a shortening for this distance was demonstrated. Measurements of the length of the tibia are very difficult to make accurately. In a few cases in which control observations were made on the length of the tibia, by measuring from the external intercondylar fissure at the knee to the external malleolus, no difference on the two sides was demonstrable. It seems fair to consider the femur largely at fault, though the tibia cannot be ruled out in every instance, and there are, unquestionably, cases in which both tibia and femur are short.

It cannot be denied that measurement from the trochanter to the external malleolus is exceedingly difficult to make accurately, and that an asymmetrical enlargement of the trochanter could influence this measurement, to indicate shortening when none is present. A few cases of unequal measurement may be accounted for in this wise.

SHORTENING OF THE TWO IN THE SAME INDIVIDUAL

When shortening of both Bryant's line and the trochanter to external malleolus in the same individual is observed on the same side, it is reasonable to suppose that both the angle of the neck with the shaft is more acute, and that the length of the femoral or tibial shafts is shorter on the shorter measured side.

Similarly, it is conceivable that a sharper angle of the neck may exist on one side and a shorter shaft on the other.

2. Roberts, J. B.: Philadelphia Med. Times **8**: 510 (Aug. 3) 1878.
3. Brown, L. F. T.: Am. J. Orthop. Surg. **15**: 774 (Nov.) 1917.

A short lower extremity has long been recognized as a cause of scoliosis, but I have been unable to find that attention has been directed to the difference in the femora, especially a shortening of Bryant's line, as an explanation for this type of functional scoliosis. To eliminate the occurrence of difference in measurements with scoliosis as a mere coincidence, a number of individuals without scoliosis were measured to ascertain if difference in lower extremity measurements could be detected. In a short series of twenty-five, no apparent difference and no measurable difference could be found.

The 137 cases of short shaft or more acute-angled femoral neck were further analyzed:

One hundred and seven, or 78.1 per cent., showed definite obliteration of the scoliosis by support under the foot of the side which seemed short as indicated by the apparent difference and measurement. As there has been noted a marked preponderance of left-sided scoliosis, so there is as great preponderance of short left femurs. Likewise, there was found to be a definite relationship between the scoliosis and the short side, the curve being always toward the short side with but seventeen exceptions. Seventeen left curves were associated with eleven short right shafts and six right coxa vara necks.

In thirty, or 21.9 per cent., the scoliosis did not disappear with a support under the foot, but did disappear on lying down; of these, seven had an asymmetrical pelvis, and six, flatfoot.

In twenty cases, or 14.6 per cent., flatfoot was found; in seven, this apparently changed the curve to the unexpected side; i. e., left flatfoot with a right short lower extremity produced a left scoliosis, when a right scoliosis is usual with a right short leg.

The high incidence, almost four out of every five, in which the apparent difference and shortening by measurement and the curve expected coincide, and in which, moreover, the scoliosis disappears with support under the foot of the short side, seems convincing that the shortening in the extremity plays the major rôle in the cause of that scoliosis. But there is a small group in which the shortening appears to bear no definite relationship to the scoliosis. Other congenital anomalies—asymmetrical pelvis, and flatfoot, and contralateral shortening of the neck and shaft—are apparently conditions that complicate the picture and nullify any influence the shortening might have.

THERAPEUTIC MEASURES

So far, at Lehigh, it has been difficult to inaugurate any systematic curative measures for these boys with scoliosis. For those with occupational or flatfoot curves, exercises designed to correct the scolioses and strengthen the proper leg muscles are demonstrated, and emphasis is laid on the necessity for daily carrying out of these instructions. They are required to take the regular gymnasium setting-up drill, but so far no special classes have been inaugurated in which these exercises may be taught and supervised. Those with short extremities are urged to wear a small pad under the heel in their shoe, but few apparently follow this advice for more than a month or two.

It has been impossible, with our small staff of instructors and the increasing size of the classes, to check up on the results in these cases—to ascertain whether those curves persist or are really corrected. A very small group, approximately twenty men, have

been seen in their senior year—after three years—and in all of them the curve remained the same.

Whether these curves are of serious portent is quite open to question, though, with the passing of years, the possibility of change to a structural scoliosis cannot be completely ignored.

CONCLUSION

Functional scoliosis has been shown to occur in from 10 to 20 per cent. of the men of college age, the left-sided curve predominating (70 per cent.). This scoliosis results chiefly from flatfoot, occupational or developmental peculiarities, and from shortening in one lower extremity. This shortening may exist in Bryant's line, or in a trochanter to external malleolus measurement. A mild coxa vara, and variation in length of the femoral, and sometimes the tibial shaft, have been suggested as the most likely explanation of this shortening.[4]

ABSTRACT OF DISCUSSION

Dr. Edwin W. Ryerson, Chicago: I have not had opportunity to examine very many men of college age. I have, however, had the opportunity of examining with a great deal of care a large proportion of the men of the Eighty-Ninth and Tenth divisions of the U. S. Army. The incidence of scoliosis was extremely high, and it was very surprising to me. In many cases we were able to find some definite cause; in others we were not. We had the advantage of being able to make roentgenograms in cases not to be diagnosed by other means, and it is to be regretted that Dr. Estes did not have a systematic roentgen-ray examination made in the cases under discussion. I should hardly consider that there was very much to discuss in cases in which there was a definite asymmetry in the limbs or a definite congenital anomaly of the vertebrae to account for the scoliosis present, for those conditions are obvious. But there are cases which do not show these abnormalities and in which more careful examination of the legs do not reveal the inequalities mentioned, in which no asymmetries can be detected. These are merely habit postures. One explanation of the very frequent inequality in the legs is that most people do not stand equally on both legs, but all throw the weight to one side or the other. This may have some influence on the growth of the bone. I do not believe that it can have any effect in bringing about this condition in the presence of ordinary nutrition; in the rachitic, however, bending of the neck of the femur may be caused in that way. I suggest that for the betterment of the race universal compulsory military training is the greatest thing for our young men, and I hope the bill providing for this will go through the Senate and House of Representatives.

Dr. Melvin S. Henderson, Rochester, Minn.: I have frequently seen scoliosis in young girls and women. We found the cause in some cases. Of course, in nonsyphilitic cases it is not very important whether anything is done. I have not realized, however, that scoliosis is so prevalent in young men as has been pointed out by Dr. Estes and Dr. Ryerson. The patients I have seen were young girls and women.

Dr. Harry M. Sherman, San Francisco: Dr. Estes' paper refers to pure asymmetry rather than to scoliosis. The scoliotic element is secondary to the question of inequality in the length of the legs. The length of the legs is part and parcel of that variation which exists all through animal life. We are not exemplars of bilateral symmetry, but of bilateral asymmetry. Bilateral asymmetry or variation is what makes for evolution. Evolution does not come because of the similarity of the different individuals of a given species, but because of dissimilarity. Each one of us is a unique individual, and can never be duplicated in every detail. The problem presented by Dr. Estes has carried us into the realms of biology and of evolution. It is part of these subjects.

Dr. William L. Estes, Jr., South Bethlehem, Pa.: The paper is really a review rather than a contribution of special interest to this section.

4. In addition to the references already given, the following will be found of interest:
Bradford and Lovett: Orthopedic Surgey.
Emslie: Tr. Inter. Cong. Med., 1913, Sub-Section VII A, Orthop., p. 41.
Serra: Chir. d'Org. di Movimento **1**: 380, 1917.
Savariaud: Méd. inf. **11**: 121, 1914.

THE MELTZER-LYON METHOD IN THE DIAGNOSIS OF INFECTIONS OF THE BILIARY TRACT*

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In 1918, Meltzer[1] made the interesting observation that a 25 per cent. solution of magnesium sulphate, applied to the duodenal mucosa, caused a relaxation of the sphincter of the duodenal outlet of the common duct, with possible contraction of the gallbladder musculature. Lyon applied this observation in a practical manner. Thereby a contribution of great value was made to our methods for diagnosing diseases of the biliary tract.

The method of application is very simple and thus its value is greatly enhanced. Lyon has described the method,[2] but further amplification is desirable. In our clinic we employ the following procedure: After a meal of shredded wheat biscuit and 10 ounces of water, we introduce the Rehfuss stomach tube, and gastric specimens are extracted every fifteen minutes until no food particles are seen. Then we have the patient turn on the right side with the left knee flexed over the right, thus depressing the duodenum to a lower level and facilitating the entrance of the bulb into the duodenum. Usually this takes from ten minutes to an hour and its passage is detected in several ways:

1. By the change in reaction of the aspirated fluid when the gastric juice is acid.
2. By the character of the duodenal juice—usually pearly fluid, limpid, alkaline, with floccules suspended in the fluid. Bile may be present.
3. By the presence of a slight tug, detected by gently pulling the tube.
4. By roentgen-ray examination showing that the bulb is past the pylorus.

Early in this work, we had considerable difficulty in feeling certain that the bulb was through the pylorus, and in the first fifty cases we employed the fluoroscope as a check.

There are certain difficulties that will be encountered, however. In a small group of our cases, we could not secure the passage of the bulb through the pylorus at the first trial, and in several cases as many as three trials were necessary. In a few instances, by direct fluoroscopic palpation we pushed the bulb through the pylorus. At times, the patient may become nervous and irritable; and after a reasonable wait of at least an hour, we have waited a day and repeated the attempt. In every case, with the exception of one of pyloric stenosis, this was successful after the third attempt. Allowing the patient to get up and walk around, changing the position, and giving drinks of broth or water, have also facilitated the passage in many instances. During the last eight months we have

* Read before the Montana State Medical Meeting, Helena, Mont., July 14, 1920.
1. Meltzer, S. J.: Am. J. M. Sc. **153**: 469 (April) 1918.
2. Lyon, B. B. V.: Diagnosis and Treatment of Diseases of the Gallbladder and Biliary Ducts, J. A. M. A. **73**: 980 (Sept. 27) 1919.

applied this procedure in 125 cases (totaling more than 200 observations), these being cases of suspected or of frank gallbladder disease. The majority have been women, many nervous and irritable; but in no case has the tube been refused, and many have willingly returned for further drainage when this was advised as a therapeutic measure.

This method of diagnosis of biliary tract disease has several phases of usefulness. I will not attempt to touch its field in the treatment of biliary tract infections, though I believe that this method will modify our present-day conception of medical treatment of cholecystitis and catarrhal jaundice.

In considering the application of the method in diagnoses of biliary tract disease, it is of prime importance to know the normal appearance and constituents of normal bile anl normal duodenal juice.

The normal duodenal junce is alkaline in reaction, and is a pearly fluid, with viscosity less than that of the gastric juice. Floccules are seen suspended in this fluid. On microscopic examination, a few micro-organisms are seen, and a very few cellular elements.

In pathologic conditions in which the duodenum is involved as a part of the infection, the duodenal fluid is turbid and is loaded with micro-organisms, with an increase of mucus; a bile admixture is frequently found. The pathologic picture presents various degrees of difference from the normal.

After being assured that the bulb is in the duodenum, we slowly inject 50 c.c. of sterile magnesium sulphate solution. This is injected warm, by means of a 50 c.c. syringe. After a few minutes, a light yellow bile appears in the syringe, gentle suction having been employed. We then disconnect the syringe and allow the tube to hang over the side of the bed, draining by gravity. The first bile appearing is an admixture of duodenal fluid, common bile, duct bile and magnesium sulphate solution. We usually withdraw most of the magnesium sulphate solution after douching the duodenal mucosa. After a variable period of from ten to thirty minutes, the bile becomes darker in color and more viscid. This is the gallbladder bile and is collected in separate sterile tubes for study. The amount varies from 25 to 75 c.c. When there is an excess of 80 c.c., we consider the gallbladder as presenting the condition of stasis. Finally the bile becomes lighter in color, a clear light yellow, less syrupy, and this is the liver bile, which may continue flowing for an indefinite period. The common duct bile is usually small in amount and clear (with perhaps a trace of mucus). The normal gallbladder bile varies from a deep golden yellow to a dark maple brown; it is moderately viscid, dropping easily in short lengths from a 1 c.c. pipet; it is clear. Small traces of mucus may be seen in apparently normal gallbladder bile, but this must be viewed with suspicion. Its reaction is neutral or faintly alkaline. Its specific gravity varies from 1.015 to 1.030; this may be increased to 1.035 in cases of biliary stasis and infections. Liver bile is thinner, and the specific gravity varies from 1.008 to 1.010.

On microscopic examination, the normal gallbladder bile shows a few epithelial cells, one or two leukocytes to a low power field, bile crystals and traces of mucus. A few bacteria are seen as contamination of duodenal contents. It is important, in the pursuit of this work, to have examined a large number of normal cases, for a proper understanding of normal findings aids greatly in interpreting diseased conditions.

Study of the abnormal bile presents several difficulties, but the positive findings obtainable permit a considerable diagnostic value to be attached to this method. It is as yet too recent a procedure, to know fully its possibilities, but a certain number of definite results have been obtained. We attempt to study the bile from several different angles, and future work along these lines will elucidate many interesting problems which now confront us. My work has been elementary, and because of lack of time and trained help, accurate bacteriologic and chemical analyses have been meager.

We have studied the aspirated bile according to:

1. *Gross Appearance.*—Color; viscosity; turbidity (which varies from a heavy, thick cloud to a very thin turbidity); clarity (which varies from a sparkling clear bile to a clear liquid in which are suspended flakes or clumps of mucus); presence of gritty sand.

2. *Microscopic Appearance.*—Cellular elements (as type and number of epithelial cells); presence of bacteria (whether loaded with bacteria or having many bacteria enmeshed in mucus); crystals; leukocytes and their approximate number.

3. *Bacteriology.*—Two cultures are taken of every specimen, in broth and nutrient agar.

I have had the opportunity of using this method in 125 cases (totaling more than 200 observations), thirty-three of the cases coming to operation. All of these were either suspected or clear-cut examples of gallbladder disease. They included:

Twenty-four cases of cholelithiasis, either verified operatively or else "textbook" cases including empyema cases.

Eleven cases of cholecystitis, verified at operation.

Four cases of obstructive jaundice due to stone or malignancy, involving the common duct, verified at operation or necropsy.

Twenty-two cases in which we made the diagnosis of cholecystitis, by clinical, roentgenologic and laboratory studies.

As a result of this work, we feel justified in drawing these conclusions as to the interpretation of the aspirated gallbladder bile:

1. A markedly gallbladder bile, with increased viscosity, which on microscopic examination shows the fluid to be swarming with micro-organisms, the presence of mucus and an increase of cellular elements, is pathognomonic of acute cholecystitis. When the leukocytes show great increase and are of the polymorphonuclear variety, the infection is of the suppurative type, or empyema is present. Cultures usually show staphylococci, streptococci or the colon typhoid bacilli, named in the order of their frequency as we have found them. At operation, we have found many of these cases to be acute exacerbations of a chronic cholecystitis.

2. A clear gallbladder bile, with increased viscosity and suspended flakes of mucus (which on microscopic examination are shown to be enmeshed with bacteria), a slight increase of leukocytes, from 6 to 15 (low power field), is highly suggestive of subacute or chronic cholecystitis. Positive cultures are usually obtained.

3. A clear, brilliant gallbladder bile, with normal or increased viscosity and usually sterile cultures, may be found in many of the cases of chronic cholecystitis, especially the "stone" group, or in absolutely normal gallbladders.

4. When repeated attempts to obtain the gallbladder bile are unsuccessful but the clear lemon-yellow bile is freely obtained, the presence of a cystic duct obstruction is highly probable. We have proved this seven times at operation.

5. When repeated attempts to obtain any bile are unsuccessful, the condition is pathognomonic of common duct obstruction, either by growth or by stone, showing clinically, of course, obstructive jaundice.

In this work, there are certain possibilities of error which must be taken into consideration:

1. The bile should be examined immediately after withdrawal, since oxidation takes place quickly, with clouding of the bile.

2. A yellowish, cloudy mixture may be obtained in the clear gallbladder bile, which is due to the mixture of bile and acid chyme of the stomach. This, however, is easily recognized.

3. Unless great care is used, gross bacteriologic contamination of the aspirated bile may occur, rendering bacteriologic studies worthless. By the employment of a sterile drainage and collecting tube, with duodenal lavage of a weak antiseptic solution, this contamination is reduced to a minimum.

I have not attempted to follow out bacteriologic studies in many later cases, as I have felt that this was not necessary in order to make a positive diagnosis of gallbladder infection.

We have used this method in eliminating the gallbladder as a focus of infection in several cases and believe that by this procedure as much accuracy is obtainable with the gallbladder as is now possible with the teeth and tonsils.

Future work on the chemical analysis of the aspirated bile, from the point of view of cholesterol pigment and bile salts concentration, when put on a practical basis, will no doubt provide valuable additions to the method of direct bile examination. This procedure may be of use in estimating liver function, by means of certain dye tests, as suggested by Rehfuss.

I have had no opportunity of using this method in suspected gallbladder infections in typhoid fever, or in the detection of typhoid carriers, but I believe it could serve a useful purpose in these fields. Nor have I had the opportunity of applying this procedure as a diagnostic measure in a case of ascending cholangeitis.

When starting this method, I was often asked by my associates what proof there was that I was obtaining gallbladder bile. I submit this:

1. Similarity of the aspirated bile, macroscopically and microscopically, to the bile obtained from the gallbladder at operation.

2. Similar bacteriologic findings, in many cases, in the aspirated and operated bile.

3. The fact that in one case with distended gallbladder, duodenal drainage caused a disappearance of the palpable gallbladder. This was repeated for three successive days.

SUMMARY

The direct examination of aspirated bile, by means of the Meltzer-Lyon method, is of great value in the diagnosis of early cholecystitis. This group is an important one, averaging 23 per cent.[3] of all gallbladder cases presented for examination. The fresh bile shows definite evidences of infection. Cultures are usually positive. The value of the bile examination grows less as the cholecystitis becomes more chronic. In the later lesions, the bile may present a normal appearance. Cultures are usually negative.

The diagnosis of the early acute cases is of extreme importance. These cases progress to the more pronounced gallbladder lesions, as, the strawberry gallbladder, empyema and gallstones.

The clinical signs and symptoms are usually slight in this early group. Vague gastric disturbances, chronic indigestion or minor colic attacks usually bring these cases to the physician.

The surgeon, on exploration, usually fails to incriminate this type of gallbladder. Absence of thickening, with no changes in color of the wall of the gallbladder, would seem to justify his conclusion. The finding of infected bile by duodenal drainage affords the surgeon the definite data that he needs when confronted with the operative solution of these problems.

3. Smithies: Surg. Clinics, June, 1910, p. 505.

AN EDEMA DISEASE IN HAITI

A PRELIMINARY REPORT*

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In Haiti there exists a rather puzzling pathologic condition having some points in common with previously recognized diseases, yet, on the other hand, presenting certain features that suggest the possibilities of a disease *sui generis*.

The clinical manifestations of this disease simulate beriberi, but no paralysis of the extremities has been noted, and the rate of the heart beat is slower than in beriberi. It likewise resembles "prison," "war" or "nutritional" edema, but the Haitian dropsy is apparently more rapid in development, the mortality rate is greater, and a change in diet and environments has not been observed to have any marked effect as a curative. The symptoms and the incidence of the condition under discussion correspond somewhat closely to "epidemic dropsy," and may be differentiated from it by the absence of fever.

CHARACTERISTICS OF THE DISEASE

Our observations comprised approximately 3,000 cases, with a study of more than 200 necropsies.

The edema disease is an acute or subacute condition of at present undetermined causation, characterized by the cardinal symptoms of edema, emaciation, weakness, diarrhea, subnormal temperature and a slow pulse rate. These symptoms, one or more of which may be absent, exist in varying proportion. The dropsical condition may appear and disappear at irregular intervals.

History.—According to our investigations, it appears that this pathologic condition has existed in Haiti for many years. One of our informants states that the disease has been prevalent for the last forty years. This statement was partly substantiated by the fact that this person gave a name by which the natives designated the disease, and further stated that the natives in the hills were accustomed to treat the swollen feet by puncturing the skin of the edematous area with red-hot wire.

Geographic Distribution.—The edema disease is well distributed throughout Haiti, being found inland as

* From the Service Médical, Gendarmerie d'Haiti.

well as in the seacoast towns. It is chiefly present in the prisons of Haiti. Cases have been noted outside the prisons, but, relatively speaking, such cases are rare. Our experience with the disease is necessarily limited to cases observed among the prisoners, especially the inmates of the prisons of Cape Haitien and Port au Prince. There are about fifteen larger prisons in Haiti, having from seventy-five to 600 prisoners. In some of these prisons the cases of the edema disease are rather numerous, and in other prisons, under almost identical conditions as to food and climate, the disease is either entirely absent or else very rare.

Exciting Causes.—The edema has a tendency to appear subsequent to trauma, such as sprain, lacerated wound, fracture, and even tooth extraction. It often follows acute diseases, such as lobar pneumonia. It usually appears without any discoverable exciting cause.

Predisposing Causes.—(*a*) Sex: In the first several hundred cases studied, this disease was limited to the males, and of a consequence, the females were considered immune until quite recently, when three females contracted the disease practically simultaneously.

(*b*) Age: This varies from 16 to 70 years; averaging 31. The old and feeble seem to be more susceptible.

(*c*) Length of Time Incarcerated: In the first series of cases studied the disease was limited entirely to those confined for less than three months. Recently there have been a few isolated cases noted among the long term prisoners. Edema has developed in several cases in less than fifteen days after confinement in the prison.

Etiology.—This is the most interesting aspect of the subject, and the major portion of our activities has been limited to the study of causation. From a material point of view, it was considered of primary importance to ascertain the causative factors in order successfully to combat this condition. The natural assumption is that the prison diet may be at fault, but the results of all our investigations and experimentations tend to indicate otherwise. A political prisoner developed edema of the feet eleven days after incarceration. This early appearance of symptoms would suggest that prison diet would not be likely to be an etiologic factor. This prisoner belonged to the better class of Haitians, and consequently faulty nutrition prior to confinement seems to be an improbable factor in the causation of the edema. The solitary confinement, under most satisfactory sanitary conditions, in a cell of nearly 4,000 cubic feet capacity, with an inlet of 3,888 square inches and an outlet of 800 square inches, would apparently refute the theory of defective hygiene and sanitation. The fact of his isolation would tend to refute the theory that the disease is transmissible by personal contact, and also would suggest that manual labor is not a causative factor.

We could easily present a great deal of additional data, both *pro* and *contra,* regarding the etiology of this malady. The etiology is still under investigation, and any remarks on this subject at this time may be regarded as premature. Our investigations, to date, of the causative factors have mainly been productive of negative evidence—disproving various theories, suppositions and conjectures. Caloric insufficiency, dietetic deficiency, food toxins and the possibility of the presence of infectious agents have been considered in our investigations. The various dietary experiments undertaken by us have repeatedly failed to produce any marked beneficial results, either as a curative or as a preventive. In conducting such experiments, due consideration has been given to the question of lack of vitamins as being one of the etiologic factors.

It appeared at first that the development of edema might show some relation to conditions existing prior to confinement; but investigations fail to support this theory. Forty men, all bandits, captured in the attack on Port au Prince, were examined and found to be in normal physical condition at the time of their confinement in the prison at Port au Prince. The first case of edema developed in twelve days, and within seven weeks about 25 per cent. of the bandits showed symptoms of edema. A few weeks later, nearly 1,000 bandits, from the same region, surrendered, and a physical examination of these failed to detect any cases of edema, which strongly suggests that there were no factors existing prior to confinement which were capable of producing the condition.

Symptomatology.—It is possible to group the clinical types of this disease into "wet," "dry" and "mixed" types. Many of the cases assume an acute pernicious form.

These notes are based on an intensive study of fifty cases. Edema, diarrhea, progressive weakness, and emaciation comprise the most common symptoms.

The occurrence of edema is the finding usually attracting attention to the disease. This usually begins on the dorsa of the feet and later is found over the tibiae. It is a typical edema, and pits on pressure. It may be first noticed in the face, about the eyes. Later all serous cavities may be involved, giving to the entire body a bloated appearance, in marked contrast to the emaciated patients. Edema is often discovered accidentally in the course of a routine inspection; it is frequently noted when a man appears at sick call with some other complaint, or it develops during the course of an acute or chronic disease, or following slight trauma. In several instances, cases of diarrhea, which had begun to improve, developed edema. In one day in the isolation ward three patients reported the diarrhea improved, but complained of swelling of the feet. Gnawing sensations over the gastric region are complained of occasionally. Slight anesthesia, presumably due to stretching of nerve fibrils, is sometimes present; more often the swollen limbs are tender to touch, and the patients do not care to move about. The edema may not involve more than the lower legs; others go on to general dropsy.

Diarrhea occurred at some time or other in twenty-eight of the fifty cases; in eleven it was concurrent, in nine it was noted before the edema, and in eight it appeared later. Diarrhea did not occur in twenty-two cases; of the eight patients in whom diarrhea was noted later, five died. The stool often consists of 5 or 10 c.c. of pus, not constantly associated with any one intestinal parasite. The number of movements varies from three to ten or fifteen daily, and is sometimes accompanied by tenesmus. Pain in the abdomen is infrequent. Constipation is rarely found, but does occur. Vomiting has never been noted.

Emaciation is found frequently, is usually progressive, and may be of an extreme grade. Edema intervenes, and almost over night the picture changes from emaciation to general anasarca. Weakness is often the chief complaint that brings the man to the sick bay; it is most marked in the diarrhea cases. The patient may not be able to get about. Jongck's test is frequently positive. Emaciation is often seen before

edema, and is found at necropsy without gross lesions. The temperature is subnormal, often with wide diurnal variations. Temperatures of 93 are common. The evening temperature may be 5 degrees higher than the morning temperature, and yet not exceed 98.6. The average is from 97 to 97.5 F. In contrast, temperatures were taken of 100 apparently healthy men at 10 a. m., and the average was 98.2.

The pulse rate is low; the average in eighty-eight cases was 57 per minute. In twelve of these, the rate was between 40 and 50, in ten between 50 and 60. The rhythm is normal, and in many instances the quality was remarkably good, considering the physical condition. The heart is not irritable.

In the fatal cases, the average time elapsing between the onset of the edema and the time of death is about twenty-five days.

The mode of death in all cases is essentially the same. Following a period of weakness, severe diarrhea, or a mild terminal bronchopneumonia, the patient gradually loses consciousness, the limbs become cold, and breathing deep, slow and stertorous; the pulse weaker and finally imperceptible at the wrist; there may be incontinence of urine and feces, and in from two to six hours the patient dies.

The prognosis as to the termination of the cases is sometimes confusing. Often a patient who appears to be severely ill will recover, while some of the cases showing only a mild degree of symptoms will suddenly prove fatal.

Necropsy Findings.—In typical "wet" cases at necropsy all tissues are edematous. In the thorax there is an amount of fluid varying from 200 to 1,000 c.c. The pericardial cavity contains an excess of fluid; the surface of the heart is edematous and may appear gelatinous. In the abdomen the omentum is very wet, especially in the region of the duodenum; ascites of varying degree is found—there may be a quart to several gallons of straw-colored fluid, clear and of low specific gravity. Other cases, those having emaciation as the most prominent feature, with little or no edema, are characteristically dry. The spleen is of normal size, or may be shrunken, with a wrinkled capsule, and presents considerable resistance to the knife. A slight to moderate amount of cirrhosis of the liver is generally found. The lungs are usually congested; many show a patch of bronchopneumonia. The heart is constantly found of normal size; the heart valves were normal in all necropsies but one, in which mitral vegetations were present. The kidneys are normal, grossly. Ulcerative colitis was found in three, in others a catarrhal condition, clearly insufficient to cause death.

Laboratory Findings.—Blood counts have shown a mild grade of secondary anemia, with a tendency to leukopenia. The average red count in eleven cases was 4,388,000; the average white count in nine cases, 7,270; the average hemoglobin (Tallqvist) in ten cases, 85 per cent. The urine in twenty-eight cases examined was negative for albumin. Malarial organisms have not been found. In forty feces examinations, twenty-one were negative; intestinal parasites found in the others were: *Ascaris lumbricoides,* 12; hookworm, 6; *Balantidium coli,* 1; strongyloides embryos, 2; *Trichuris,* 2, and flagellates, 3. Fifteen cases showed either blood or pus or both. Blood cultures have been negative.

Treatment.—The treatment has been chiefly symptomatic. Dietetic treatment has been given a rather extensive trial, with results that were not at all gratifying. In a few of the cases, arsenical preparations have appeared to exert some beneficial influence on the course of the disease.

SUMMARY AND CONCLUSION

In Haiti, there exists an edema disease, of undetermined causation. The incidence of this disease is most peculiar in that it is prevalent in some institutions, and in other similar institutions it is extremely rare or entirely absent.

ARTHRITIC CHANGES IN THE SPINE

THEIR RELATION TO THE ROENTGENOLOGIC STUDY OF THE GASTRO-INTESTINAL TRACT *

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It has always been well known that certain diseases of the spine, whether some inflammatory condition of the bone, joint muscle or even one of the more obscure disturbances of the nervous system, give rise to abdominal pain, which varies in intensity and extent according to the part involved. Some are quite definitely established; for instance, the gastric crises of tabes. Conversely, there are certain conditions of the digestive system that give rise to pain in the back, and no doubt are too often regarded as infallible evidence of some special disorder, particularly if the pain is well localized. Disturbances of the gallbladder or liver often have referred pain to the right shoulder and back, while a psuedo-angina will affect the left shoulder, arm and back.

Pain alone in any part of the body is likely to disturb the whole digestive system, and even medicines given for relief may prove an active factor.

Slight congenital deformities of the spine, such as the failure of the posterior arches to unite, most commonly noted in the lower lumbar spine, under certain circumstances, give rise to a wide reflex disturbance. This condition was observed in a number of men inducted into the army. Under normal conditions persons having such defects seek more favorable work and environment, where these defects pass unnoticed. But in the military life, where one was compelled to rank with the normal individual, such men "broke," and while complaining of a wide range of symptoms, most vague and indefinite, were often classified as malingerers.

In the active stage of Pott's disease, abdominal pain may be noted, which, after the acute process subsides, often disappears entirely even though the deformity is quite marked. In other words, the associated pain is noted during the active process.

These facts all tend to show a cross-relation between active disease in the abdomen and active disease in or about the spine, with regard to reflex pain and the great difficulty of localizing an active process from the seat of the referred pain.

The points to which reference has just been made are not new, nor have the changes of ostearthritis of the spine escaped unrecognized; but it does seem that the disturbance of the gastro-intestinal system due to the changes taking place have not been closely associated, particularly in the early cases. It is perfectly reasonable to believe that individuals suffering from

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

ostearthritic changes in the spine might be expected to present abdominal symptoms, because they suffer from what might be regarded as an acute process. While this is often slow in its development, it is at least active and progressive, involving the bones and joints of the spinal column, which, under other diseased conditions in which the structure of these parts is greatly altered, show a wide reflex disturbance.

In well developed cases of many years' duration, these changes in the bone and joints are not difficult to recognize from the roentgenogram and may be easily demonstrated. Is it not reasonable, therefore, to believe, although at present no one has referred to it, that patients suffer pain, in the formative stage, long before the process can be recognized by those well marked changes seen on the roentgenogram? And although the spine is a most difficult part to study on the ordinary roentgenogram, may we not hope that some one in the future may depict these early changes, especially since attention has been called to the long continued suffering which they cause?

The cases referred to in this article came under observation for the study of some condition of the gastro-intestinal tract, such as gastric or duodenal ulcer, appendicitis or cholecystitis. Some were believed to be psychasthenics, and in one instance a woman had passed through several operations without relief.

In some cases the pain was suggestive of the conditions mentioned, but in others, on close questioning, they described the pain as more localized in the back: an aching, not necessarily severe, and under some circumstances only slightly annoying. It was localized at times between the shoulders, or in the small of the back, and as a rule associated with this pain was the usual "sour stomach," belching, heartburn, and, naturally to be expected, constipation.

Most of these cases presented the whole gamut of signs and symptoms of the ordinary run of chronic indigestion with the usual history of treatment, which began by taking medicine from one physician and then another, often including a course in "patent medicine," to be followed by a course of treatment at various springs and health resorts, but without relief.

The victims are usually middle aged. They are not emaciated; on the contrary, the development of the body is good. They are often inclined to be stout, and for this reason and the vague character of the symptoms, are often classified as psychasthenics. Pemberton has done considerable work on absorption and elimination in relation to the alimentary canal in the various forms of arthritis, and regards the process as being due to the improper assimilation of food. He has accomplished some brilliant results by the regulation of the diet. From this standpoint he believes that the malassimilation from the gastro-intestinal disturbance is the cause of the arthritis.

If this is true, then the early recognition of it would spare many victims a long period of discomfort. Here attention is again directed to the fact that this spinal condition is not usually observed in those instances in which serious trouble of the gastro-intestinal tract is found, such as a gastric ulcer or an inflamed appendix of long duration which has escaped recognition. Nor is it to be confused with those cases of carcinoma associated with metastasis to the spinal column, although the coexistence of these ostearthritic changes and metastatic carcinoma was observed in a case referred some years ago by the late Dr. William L. Rodman. The general type of the case, the signs and symptoms, would exclude error from that source. At the same time the great majority of these arthritic cases present negative findings of the gastro-intestinal tract, from a roentgenographic standpoint.

The process is observed in a well marked case by the structural changes. About the bodies of the vertebra, small toothlike processes extending from the rim of the upper and lower surface and in most instances bending outward, are at times so numerous that they interlock. The usual length is from 2 to 4 mm., depending on their location, their width being from 1 to 3 mm. Sometimes the whole rim of the vertebra is involved, when it appears as a knifelike edge, with a base from 2 to 4 mm. thick with the general appearance of the bodies being somewhat mushroomed. In other words, the body from joint to joint is markedly concaved on its surface. There has been an excessive amount of bone deposit from the joint surface backward, and no change has taken place in the height of the vertebral body. This description is only of the well marked case—one not hard to demonstrate. But in the very early cases, when the process has not developed to the degree here noted, clear roentgenograms are needed, and these are at times difficult to obtain, owing to the development of the individual, and the difficulty of obtaining clear roentgenograms of the spine under normal conditions. A greater preference is shown for the dorsal portion of the spine for the development of this disease, while in the lumbar portion the osteophytes are usually less numerous and more widely scattered.

Associated with this condition appears to be the development of osteophytes on other bones, such as the os calcis and the rim of the pelvis. They usually extend outward along the course of the tendons; from the rim of the pelvis they extend downward 2 or 3 cm., and likewise from the os calcis into the plantar fascia. The length here is usually from 0.5 to 1 cm. They may be seen on other bones, but are not to be confused with osteophytes developing from other causes, such as trauma.

These changes are not to be connected with the so-called rheumatoid arthritis or those diseases closely allied to it, involving the joints of the hands, wrists, feet, ankles, etc. Usually, in these cases there is a rarefaction of the bone with absorption and a consequent destruction of the joint. Attention has been called to the fact that in these arthritic cases one virtually never sees one process alone; in one area there will be a bone building, while in the other there will be bone absorption. The osteophytes appear on the shafts of the bone and about the joints, yet the bone destructive process is in far greater proportion, even to the extent that large joints are destroyed. Here also is observed a marked degree of osteoporosis, and these processes are to some extent observed in the spines of these cases.

Quite in contrast are these cases of ostearthritis. Persons presenting well marked changes in the spinal column from this cause usually have well formed hands and feet, with their other joints in good condition, and there is no destruction of the joint surfaces.

It is not my purpose here to differentiate the various forms of arthritis, or to dilate on their supposed causes, but to call attention to a well marked condition that gives rise to a confused train of gastro-intestinal symptoms.

CONCLUSION

It is suggested that in those instances of chronic gastro-intestinal disease associated with vague pains in the back, the spinal column be closely studied, whereupon, no doubt, many of them will be explained.

ABSTRACT OF DISCUSSION

DR. JULIUS GRINKER, Chicago: Did you notice other phenomena beside pain in the abdomen in the cases of arthritis of the spine? Did the patients complain of so-called "intercostal neuralgia," or any other pains? Was there any stiffening of the spine as a whole, or of any other part? It seems very strange that changes such as were noted should result only in abdominal pain. There must have been something in the way of symptoms to attract attention to the spine other than the routine making of a roentgenogram—or the spinal finding stands in no relation to the abdominal pain.

DR. E. H. SKINNER, Kansas City, Mo.: A similar report was made by Blaine at one time. He found similar changes in the spine in cases referred for examination of the genito-urinary tract. Of course, there is nothing pathognomonic about these shadows in regard to the patient's gastro-intestinal symptoms. These are merely incidental findings in the course of the examination. Undoubtedly these patients had been referred without sufficient preliminary study; in fact, they overlooked a condition which is the result of a general infection, or it may be a metastasis from some focal infection.

DR. WILLIAM S. NEWCOMET, Philadelphia: I tried to make clear that these patients came for gastro-intestinal examination. Dr. Blaine found the same conditions in cases sent for examination for kidney stone. The true nature of the cause of symptoms had escaped notice. I believe that the early stages are not recognized, because so many appear to escape. Nor is it intended to infer that this is a method for recognizing ostearthritis.

DR. JULIUS GRINKER, Chicago: Dr. Newcomet did not understand my question. I want to know if other symptoms on the part of the nervous system have been looked for in the cases cited. Was any other examination made that might direct attention to the spine, outside the casual findings by the roentgen ray, so that neurologists could learn thereby when to look for trouble in the spine with certain symptoms to direct attention thereto?

DR. WILLIAM S. NEWCOMET, Philadelphia: You must remember that the spine is involved almost from the neck to the sacrum, and there would be a wide variation of symptoms. I cannot answer the question as to whether it would have been possible to make a diagnosis from symptoms alone. That would be an assumption on my part since it is not in my line. It seems, however, to be fertile field for careful study.

International Review of Epidemiology.—The first issue has been received of the new international quarterly founded at Warsaw by the Central State Epidemiologic Institute, of which Dr. L. Rajchman is director. The yearly volume is to have about 800 pages, and it is open to writers in various tongues, a summary in one of the congress languages being given with each article. Two colored plates accompany articles by Weigl of Lemberg and Anigstein of Warsaw. Weigl describes his technic for infecting lice with typhus by injecting leukocytes from the blood of typhus patients through the anus of the louse. The louse acts as an artificial culture medium, and facilitates study of the behavior of the rickettsia in cells and tissues. Lice thus infected with *Rickettsia prowazeki* invariably succumb. His results with a vaccine have been encouraging; all the vaccinated have been free from infection during the several months to date. Anigstein's plate shows the characteristic blood findings in typhus. The address of the institute is Langnerowska 2, Warsaw. The review is called *Przeglad Epidemjologiczny.*

THE PREFERRED BASE FOR ZINC OXID OINTMENT

TORALD SOLLMANN, M.D
CLEVELAND

The revision of the United States Pharmacopeia has raised the question as to the most suitable vehicle for zinc oxid ointment. Considerable dissatisfaction has been expressed with the official vehicle (benzoinated lard); and petrolatum or other bases have been extensively substituted. Fears have also been expressed that these modified ointments entailed a sacrifice of therapeutic efficiency.

The chairman of the Revision Committee having requested information on this subject, it appeared probable that the question could be answered without further experimentation on the basis of the existing experience of American dermatologists. These are ably represented in the membership of the American Dermatological Association. The officers of this association were accordingly approached, and cordially agreed to collect the information from its members.

QUESTIONNAIRE

The following questionnaire was sent to the members of the association, by its secretary, Dr. U. J. Wile:

The Committee of Revision of the U. S. P. has under consideration the subject of a suitable base for zinc oxid ointment, and has requested the cooperation of the members of this association for arriving at a decision. The base official in the U. S. P. IX is benzoinated lard. This tends to become granular and rancid. Petrolatum has therefore been substituted, resulting in an ointment that remains smooth. However, it has been questioned whether or not this ointment is equal therapeutically to the official ointment. It is claimed that the lard is absorbed by the skin, leaving the dry zinc oxid, while the petrolatum remains more oily. However, no data of the sort appear to have been published. Others again prefer as base a mixture of equal parts of petrolatum and lanolin (hydrous wool fat), which possibly adheres to the skin in a thicker layer.

The Committee of Revision would appreciate your reply to the following questions:

1. Which base do you use in zinc oxid ointment?
2. Have you had personal experience with zinc ointments made with other bases?
3. What differences have you found between them?
4. Do you consider these differences as important?

GRADING

Thirty replies have been received.[1] The preferences expressed in these for each were graded as: great advantage, +3; considerable advantage, +2; slight advantage, +1; indifferent, 0; undesirable, —1; very undesirable, —2.

Only the bases specifically mentioned in the replies were graded. The simple addition of these grades or "points" gives a good estimate of the relative preference for the various bases, except that it errs somewhat in favor of the official base. For when a correspondent

1. From H. E. Alderson, San Francisco; A. P. Biddle, Detroit; A. W. Brayton, Indianapolis; Randolph B. Carmichael, Washington, D. C.; G. D. Culver, San Francisco; C. N. Davis, Philadelphia; Howard Fox, New York; T. C. Gilchrist, Baltimore; Joseph Grindon, St. Louis; W. J. Highman, New York; H. G. Irvine, Minneapolis; J. E. Lane, New Haven, Conn.; David Lieberthal, Chicago; E. D. Lovejoy, Los Angeles; G. M. MacKee, New York; R. A. McDonnell, New Haven, Conn.; Howard Morrow, San Francisco; O. S. Ormsby, Chicago; W. A. Pusey, Chicago; J. F. Schamberg, Philadelphia; C. Morton Smith, Boston; John H. Stokes, Rochester, Minn.; H. P. Towle, Boston; C. J. White, Boston; H. H. Whitehouse, New York; James M. Winfield, Brooklyn, and Fred Wise, New York. Three further replies were unsigned.

indicates a preference for another base, it is clear that he must have discarded the official base as undesirable, and therefore as deserving a minus grade. Unless, however, he mentioned it specifically as unsatisfactory, I assigned it merely as zero (i. e., "indifferent") grade, so as to be on the safe side.

PREFERENCE FOR PETROLATUM

According to this scheme, the various bases ranged, in order of standing: petrolatum, 20 points; petrolatum-lanolin 1:1, 11 points (6 for 1:1; 1 for 3:1); benzoinated lard, 6 points; cold cream, 5 points; lard and lanolin, 3 points (2 for 2:1; 1 for 1:1); petrolatum and cold cream, 2 points (1:1); cold cream and lanolin, 1 point (1:3).

Petrolatum clearly leads all the others by a wide margin, and is evidently the base preferred by American dermatologists.

The reasons for this preference are discussed in the comments, which are appended. The gist of these is to the effect that the base is quite immaterial as concerns therapeutic results, and that in view of this the superior mechanical properties and keeping qualities of petrolatum cause it to be preferred.

Those who use the petrolatum-lanolin mixture do not appear to consider it materially superior to petrolatum, but prefer it rather as a matteer of custom. I myself believe that the more sticky consistency of the mixed base permits the application of a thicker layer, but evidently this advantage has not a great practical value, and does not offset the greater convenience of the plain petrolatum base.

LARD

Disadvantages.—The special drawback of lard consists in its odor, which is disagreeable to some persons even when the ointment is reasonably fresh, and intensely so to every one when the ointment is rancid, as it so commonly is or becomes. This odor is not effectively disguised or prevented by benzoination. The second drawback is the granular character which the official ointment acquires and which is very undesirable in an ointment.

It may be that these deteriorations do not occur under ideal conditions; but it is the evident experience of all prescribers that they are the invariable rule under the conditions of medical practice. These conditions might perhaps be changed if it were really worth the trouble, i. e., if the lard or similar base really had corresponding advantages. The replies, however, show that it has no real advantage.

Advantages Claimed for the Lard Base.—The advantage commonly claimed for the lard base is that it is said to be more easily absorbed, and would thus be followed by a "drying" effect.

However, as Dr. Pusey points out, there is no good evidence that lard is absorbed; and as he and other correspondents (Alderson, Stokes) remark, in using zinc oxid ointment, it is not desirable to have the base absorbed, but quite the contrary. An ointment of this type is used for protection furnished by the base quite as much as for the action of its other ingredients. Where "drying action" is desired, rather than an emollient effect, it would be better to use a dusting powder in place of an ointment.

Concerning the special absorbability of animal fats and lanolin from the skin, this seems to be largely a myth, based probably on confusion with the absorption of the medicinal ingredients of ointments.

In view of the paucity of facts in the literature, I started comparative experiments a year or two ago to determine the amount of animal, vegetable and mineral fats that could be rubbed into the skin so that it could not be wiped off with cotton. Some penetration doubtless occurred; but the results were so slight and inconstant that the investigation was dropped as unpromising.

When an ointment is simply smeared on, especially over a wet surface, penetration of the fat is almost inconceivable. Any diminution in the quantity of the ointment would be by absorption into the dressings. When hydrous wool fat is applied to the intact skin, partial absorption might be simulated by the evaporation of its water.

A second advantage claimed for the lard base is that it mixes better with tar, chrysarobin or ichthyol than does petrolatum. There is no reason why lard should not be prescribed for such special mixtures, instead of employing the petrolatum base, even should the latter be official. In fact, several of the correspondents believe that the lard ointments should always be prescribed and mixed extemporaneously.

The advantages of petrolatum are well expressed by Dr. Towle: "Cleaner; spreads better; less apt to irritate; keeps better."

The cost is an incidental advantage; but from the standpoint of the public, this is negligible.

Some correspondents (Grindon, Pusey) express themselves as dissatisfied with certain petrolatums that pass as of U. S. P. quality, and consider it necessary to specify the brands. This subject should be referred to the proper pharmacopeial committee with the inquiry whether the official standard could be improved.

CONCLUSIONS

The consensus among the leading dermatologists is distinctly in favor of petrolatum as the basis of zinc oxid ointment as being equal to lard therapeutically, and superior in consistency, keeping quality, and absence of irritation.

It is therefore recommended that this be made the basis of the official ointment.

Lard may have advantages as a base for compound ointments, in which case the entire ointment may be made up extemporaneously.

COMMENTS OF CORRESPONDENTS[2]

PETROLATUM

3. The petrolatum makes a more stable ointment, but it does not penetrate. I use this ointment principally for protection, anyway; why should one want a *penetrating* zinc ointment?

3. Mainly that of application. I often follow petrolatum with zinc oxid.

4. Not especially, but the petrolatum seems to be most popular with patients, as it is smooth and somewhat oily.

3. That made with benzoinated lard will grow rancid, also granular.

4. Quite so. Therapeutic results are far better with good zinc ointment than with a poor specimen.

4. Each prescription may be varied to suit the particular need, and with any base except petrolatum it is advantageous to have the ointment made fresh, which in most cases will not be done unless the ingredients are varied frequently. Look at the zinc ointment and Lassar's paste in the stock jar of almost any drug store.

Petrolatum is satisfactory.

For a stock zinc ointment I think petrolatum offers the best base because it makes a smooth ointment that does not become

2. The numbers refer to the questions in the questionnaire.

rancid. While you can get a well made cold cream that makes a nice ointment and one that is more soothing, it is not suitable for a stock base because it decomposes, and because it varies so much in quality. If it were true that benzoinated lard or lanolin mixtures were better absorbed than petrolatum, I do not know what superiority that would give. Ointments are used for protective purposes, not as a rule to get substances into the skin. It is, I think, however, entirely uncertain that these other ointment bases are absorbed to any materially greater extent than petrolatum. I am not certain, for example, that a petrolatum mercurial ointment is not just as good as any of the rest, the absorption ability of the mercury depending more on the consistency of the ointment and the minute division of the mercury than on the character of the base. On the whole, I think it would be highly desirable to make petrolatum an official base for zinc ointment.

4. My impression is that petrolatum would make a more satisfactory base.

3. The yellow petrolatum base is in my opinion very much better adapted to the dressing of open lesions, particularly varicose ulcers. The petrolatum ointment remains smooth indefinitely and is absolutely nonirritating. The purpose in this type of dressing is not to promote absorption but to serve as a protective. When we desire to use zinc oxid ointment for a vehicle for such ingredients as tar and chrysarobin we prefer the benzoinated lard base.

3. Petrolatum: cleaner; spreads better; less apt to irritate; penetrates exudates better; keeps better.

4. Important enough for me to write extemporaneous prescriptions calling for petrolatum base instead of writing "Ung. Zinc. Ox." and accepting the lard base. Am in favor of change in official base to petrolatum.

BENZOINATED LARD, FAVORABLE

Seldom hear of zinc oxid ointment becoming rancid, even if made with lard.

3. Benzoinated lard mixture is more softening, less fatty, can be finely spread, and is more cooling. Furthermore, there are some people whose skin does not tolerate petrolatum but takes kindly to benzoinated lard.

3. We find that crude coal tar, ichthyol and other preparations added to bases other than the foregoing do not mix well, particularly when petrolatum is used.

4. I use lard to get deeper penetration and better protection from the thicker substance.

3. Petrolatum too oily and acts more like a varnish. Petrolatum and lanolin adheres to the skin but does not seem to be absorbed.

3. Experience no trouble when freshly prepared in small amounts.

BENZOINATED LARD, UNFAVORABLE

3. Lard becomes rancid; ointment more drying.

3. The U. S. P. ointment has an odor of lard which to me is intolerable even when fairly fresh. The odor of a large part of the lanolin at present in the market is also objectionable.

3. Somewhat granular.

2. Yes. I have used petrolatum, petrolatum and lanolin, and rose water ointment as bases.

3. Therapeutically, very few, if any. The official zinc oxid ointment has proved irritating, at times, from rancidity.

Lard is granular and becomes rancid.

3. Preparations made with benzoinated lard become "grainy" and also tend to separate.

PETROLATUM AND LANOLIN

3. Lanolin and petrolatum will do instead of cold cream and petrolatum.

The addition of hydrous wool fat is unobjectionable *when made by a painstaking, competent pharmacist;* otherwise the two bases are not thoroughly incorporated. I do not think it is in any case very advantageous, as in zinc ointment the absorption is not a desideratum. Action is mechanical.

Occasionally I use an ointment base of equal parts of petrolatum and lanolin. Satisfactory when good lanolin can be procured.

4. Generally write prescription instead of ordering U. S. P. Petrolatum and lanolin is most satisfactory but expensive.

4. The chief use of zinc ointment is as as protective dressing, and I think the petrolatum and cold cream or lanolin, whether equal parts or less lanolin, makes a smoother preparation.

OTHER BASES

2. Gave up lard base years ago, because R. B. Wild, professor of pharmacology, Victoria University, England, who was on the British Pharmacopeia Committee, showed by experiment that cold cream and lanolin or petrolatum vehicle caused the base to be absorbed more. I followed Wild's deduction after a personal interview with him.

3. Lanolin and petrolatum too sticky; benzoated lard gets rancid, and none have the cooling effect of unguentum aquae rosae, owing, I believe, to the evaporation by the water.

ACTION OF MERCUROCHROME-220 AND OF MERCUROPHEN

A PRELIMINARY REPORT OF EFFECTS ON THE HUMAN TUBERCLE BACILLUS AND ON EXPERIMENTAL TUBERCULOSIS IN GUINEA-PIGS *

LYDIA M. DeWITT, B.S., M.A., M.D.
CHICAGO

Mercurochrome-220, prepared by Young, White and Schwartz, and mercurophen, made by Schamberg, Kolmer and Raiziss, are two organic mercurial preparations that have attracted unusual attention because of their high germicidal activity, their low toxicity, and their slight local irritating action. Young, White and Schwartz [1] showed that mercurochrome-220, which is a mercury compound of fluorescein, has a high and rapid bactericidal action in urine or hydrocele fluid on most of the ordinary bacteria, and that a 1 per cent. solution could be injected into the urinary bladder and retained for some time. Clapp and Martin [2] reported favorable results from its use in gonorrheal ophthalmia neonatorum, and Lancaster, Burnett and Gaus reported good results in conjunctivitis and also partly confirmed the earlier bactericidal laboratory results.

Mercurophen, or sodium oxymercury-orthonitrophenolate, according to Schamberg and his associates [3] is equal or superior to mercuric chlorid and other mercury compounds in germicidal activity, and maintains better its power in blood serum. It is a good disinfectant for instruments, which it does not tarnish, and for urine, pus, feces, sputum, catheters, rubber gloves and skin. It is less toxic for animals than other soluble mercurial compounds.

I have found that, while mercurochrome inhibits the growth of the tubercle bacillus completely in a dilution of 1:5,000, and partially at 1:10,000, mercurophen completely inhibits in dilutions of 1:50,000. Mercurochrome in a dilution of 1:100, but not in higher dilutions, killed tubercle bacilli in twenty-four hours so that they would not infect guinea-pigs. On the other hand, mercurophen, while it did not kill uniformly in less than twenty-four hours, did kill in dilutions of 1:10,000 in twenty-four hours; and the development of the disease in guinea-pigs inoculated

* From the Otho S. A. Sprague Memorial Institute and the Pathological Laboratory, University of Chicago.

1. Young, H. H.; White, E. C., and Schwartz, E. O.: A New Germicide for Use in the Genito-Urinary Tract: "Mercurochrome-220," J. A. M. A. **73**: 1483 (Nov. 15) 1919.

2. Clapp, C. A., and Martin, M. G.: Use of Mercurochrome-220 as a Germicide in Ophthalmia Neonatorum, J. A. M. A. **74**: 1224 (May 1) 1920.

3. Schamberg and others: J. Infect. Dis. **24**: 547, 1919.

with the exposed tubercle bacilli was generally delayed much longer than in the controls, even after shorter exposure to dilutions of 1 : 5,000 and 1 : 10,000.

In guinea-pigs inoculated with tuberculosis, treatment with either mercurochrome or mercurophen seemed to delay considerably the development of the disease; but marked generalized tuberculosis occurred in all the animals that lived long enough. Both drugs, if given by subcutaneous injection, caused infiltration, induration, necrosis and ulceration of the tissues around the point of injection. Apparently there was little absorption into the general circulation. Non-tuberculous animals treated in the same way showed no toxic effects, except the local effects described above.

While there seems to be but little beneficial action from either of these drugs in tuberculosis of guinea-pigs, it seems to me possible that mercurophen especially, because of its high bacteriostatic power, might be used with benefit in lupus and in ulcerating tuberculous conditions of the throat, larynx or bladder that are accessible for local treatment.

Clinical Notes, Suggestions, and New Instruments

BLUNT DILATATION OF THE VESICAL FISTULA IN TWO STEP PROSTATECTOMY

GUSTAV KOLISCHER, M.D., AND HARRY KATZ, M.D., CHICAGO

One of the advantages of the two step operation is the consolidation of the bladder with the surrounding structures, and the subsequent obliteration of the cavum Retzii and the other paravesical spaces. These favorable conditions may be impaired or entirely lost if the surgeon at the time of the enucleation of the prostate enlarges the sinus by a bloody incision, thus opening the way for complications that increase the danger of the interference, or at least adding to the length of time of the complete recovery. It is true that in many instances the surgeon will succeed by introducing first one and then two fingers into the sinus to stretch the opening sufficiently for the enucleating manipulations. But this maneuver will be successful only if the cicatrization is not of a firm character, and implies the danger of stripping off the bladder from its attachments to the abdominal wall. Insufficient widening of the sinus may cause the manipulations inside the bladder to tear loose the viscus from its retro-symphyseal conglutination, an incident that is particularly undesirable on account of reopening the cavum Retzii and thus producing a cavity that is prone to furnish hemorrhage and invite infection.

All these untoward results may be avoided by slow and systematic instrumental dilation of the vesico-abdominal sinus. The simplest method consisted in the employment of Tupelo or compressed sponge tents; but these being off the market now, other agents have to be used for this purpose. As a rule, sufficient dilatation of the sinus will be accomplished by the inserting of Goodell uterine dilators into the abdominal sinus. After the dilatation is thoroughly accomplished in one direction, an assistant fixates the dilator at the height of extension while the operator introduces a second one, the branches of the latter being held at right angles to the first introduced dilator. By using pressure on the handles of the last applied dilator, the dilatation of the sinus is carried up to the necessary extent. In case of rather rigid cicatrization around the circumference of the fistula, a preparatory treatment has to be installed in order to prevent tearing and to insure satisfactory stretching.

Twenty-four hours before the intended enucleation, a thick walled rubber tube exceeding the sinus about threefold in caliber is grasped at one end with the beak of 8 inch forceps, and by pulling the distal end upward the rubber tube is stretched to the utmost. The forceps now introduce one thinned out end of the tube deep into the sinus, and while the forceps are withdrawn, the tension of the tube is gradually lessened until the tube is entirely relaxed again. The tubing is left in place for twenty-four hours, and after the elapse of this time the abdominal fistula is not only considerably dilated but its walls are also softened to such an extent that the Goodell dilators will act without any difficulty.

A POLYCHROME METHYLENE BLUE STAIN FOR FRESH TISSUES

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As the staining and sectioning of fresh tissues removed at operations is being performed to a considerable extent in laboratories of surgical pathology, it was thought advisable to describe a method of making the polychrome methylene blue stain that is so extensively used in this work. A number of methods have been published, but they all require time for ripening. The shortest time (that described by Terry[1]) required six days. We have found that this period for ripening can be eliminated by boiling the mixture, the stain on cooling and filtering being available for immediate use.

FORMULA	Gm. or C.c.
Water (distilled)	100
Potassium carbonate	1
Methylene blue	1

The ingredients are boiled in a flask for fifteen minutes and allowed to cool. A slight precipitate may form. After filtering, the stain may be used at once. The precipitate should be allowed to dry on the filter paper. This may be dissolved off with 20 or 25 c.c. of 95 per cent. alcohol and added to the filtrate. This stain keeps well and, if anything, improves with age. The efficiency of the stain is considerably increased by the use of a mounting fluid made according to the accompanying formula.

MOUNTING FLUID	Gm. or C.c.
Water	75
Sodium chlorid	8
Resorcin	2
Glycerin	25

This efficiency depends on the resorcin, which sharpens up the red.

PASSING THE DUODENAL TUBE

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The increase of our knowledge of the physiology of the stomach and duodenum, and of the duodenal tube as a diagnostic instrument, has caused a widespread demand for its use. Owing to the flexibility of the tube and discomfort to the patient in "swallowing" it, much difficulty is experienced in passing.

After repeated trials of various methods of getting the tip into the stomach, I have found that the most efficient method is this: The patient is given a clear understanding of the procedure, in order to gain his cooperation, without which success is well nigh impossible. He is placed in a sitting position and allowed to compose himself. The tip is placed as far back as possible and the patient told to swallow. Then the tongue is raised, pressing the tube against the roof of the mouth. The tongue is now a grooved director, through which the tube can be gently pushed down the esophagus. Pressure with the tongue must be firm but not too firm to permit pushing the tube. In some cases it is necessary to insert the tip with forceps and give a few swallows of water, to enable the patient to swallow the tip. After the tip reaches the stomach it passes to the duodenum in the usual manner.

This method has not failed in a single case in which the cooperation of the patient could be obtained. It saves much time and causes virtually no discomfort to the patient.

1. Terry, B. T.: Increasing the Pathologist's Usefulness and His Rewards, with Directions for Preparation and Use of a Polychrome Methylene Blue Stain for Frozen Sections, J. A. M. A. 74: 1775 (June 26) 1920.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - - Chicago, Ill.

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Subscription price - - - - - Five dollars per annum in advance

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SATURDAY, NOVEMBER 20, 1920

IS HISTAMIN A NORMAL CONSTITUENT OF THE PITUITARY?

The pronounced physiologic activity exerted by extracts of the posterior part of the hypophysis cerebri, notably their stimulating action on smooth muscle fibers, is so thoroughly substantiated that it has justified the use of pituitary extracts in human therapy. Thus, possible fields for their use have been suggested in the management of postpartum hemorrhage and in certain conditions of uterine atony, since pituitary extracts tend to produce marked contractions of excised uterine musculature. The products have also been proposed as remedies in conditions of shock, in which their acknowledged pressor effects might be manifested to at least temporary clinical advantage.[1]

In their Pharmacology of Useful Drugs, Hatcher and Wilbert[2] point out the need of more comprehensive knowledge of the pharmacologic actions of pituitary preparations. According to these writers, the manufacturers of the numerous preparations are most optimistic regarding the therapeutic value of their preparations in a great variety of conditions, in some of which they are certainly useless, if not positively dangerous. For preparations to be used in uterine therapy, in particular, it has been urged that they should be standardized by comparison with pure beta-iminazolylethylamin (histamin), which has a comparable effect, though in much smaller dosage. Hatcher and Wilbert remark that, unfortunately, the various commercial preparations of the pituitary gland vary widely in their activity, and it should be remembered that tests based on the capacity for increasing the blood pressure or the secretion of urine afford no index of the activity on the uterus.

The difficulties and uncertainties of standardization and dosage would obviously be averted if the actual active ingredients of the hypophysis were isolated and identified. The problem seemed to be solved last year when Abel and Kubota[3] of Johns Hopkins University asserted that "histamin is the plain muscle-stimulating and depressor constituent of the posterior lobe of the pituitary gland." They actually isolated a small quantity of the compound in purified form from a large portion of dried gland substance. Unfortunately for this apparently definitive observation, Hanke and Koessler[4] of the University of Chicago maintain that perfectly fresh beef hypophysis does not contain histamin. They came to this conclusion by the examination of tissues collected at the abattoirs with great care to prevent any postmortem change. They are inclined to attribute the unquestioned finding of histamin in pituitary products to the action of micro-organisms on the proteins of the tissues from which it is readily obtainable by bacterial agencies acting on histidin. This amino-acid is furnished by virtually all proteins. As Hanke and Koessler point out, furthermore, the method used at the slaughter houses for preparing dried glandular products gives ample opportunity for changes, both autolytic and bacterial.

It is logical to wonder whether the alleged potencies of pituitary preparations are accordingly to be ascribed to indefinite admixtures of chance postmortem derivatives. The specific pharmacologic action of pituitary extracts cannot be so readily explained away. Undoubted differences between the hypophysis products and histamin in their physiologic behavior have repeatedly been pointed out. They appear, for example, in relation to the comparative bronchoconstrictor action.[5] Rowntree has observed in cases of diabetes insipidus (chronic polyuria) in man that the reaction of pituitary extract in suppressing the polyuria for days cannot be duplicated by injections of histamin. Furthermore, according to Sollmann and Pilcher,[6] the typical urticaria-like wheal produced on application of histamin to the scarified skin of man cannot be obtained with pituitary extracts. The question therefore still remains: "What is the potent constituent of the hypophysis?"

HEREDITARY TRANSMISSION OF THE EFFECTS OF ALCOHOL

The influence of ethyl alcohol on the human organism has not yet become of solely historical interest in the United States. We may be justified, therefore, in calling attention to some of the experimental evidence that has been obtained in recent years concerning the effects produced by alcohol on laboratory animals. The studies of Stockard on the guinea-pig have become widely known. He found that repeated exposure of guinea-pigs to alcohol fumes resulted in marked interference with their reproductive capacity. In his earlier experiments, from forty-two matings of alcoholic

1. New and Nonofficial Remedies, Chicago, American Medical Association, 1920, p. 206.

2. Hatcher, R. A., and Wilbert, M. I.: Pharmacology of Useful Drugs, Chicago, American Medical Association, 1915, p. 198.

3. Abel, J. J., and Kubota, S.: J. Pharmacol. & Exper. Therap. **13**: 243 (June) 1919.

4. Hanke, M. T., and Koessler, K. K.: Studies on Proteinogenous Amines, IX, Is Histamine a Normal Constituent of the Hypophysis Cerebri? J. Biol. Chem. **43**: 557 (Sept.) 1920.

5. Jackson, D. E., and Mills, C. A.: J. Lab. & Clin. Med. **5**: 1 (Oct.) 1919.

6. Sollmann, Torald, and Pilcher, J. D.: J. Pharmacol. & Exper. Therap. **9**: 309 (March) 1917.

guinea-pigs only eighteen offspring were born alive, and of these only seven survived more than a few weeks, five of them being physically defective runts. The effect of the alcoholism was the same whether the male or female parent had been alcoholized, showing that the detrimental effects had been produced by action on the germ cells. Subsequent studies corroborated and extended these observations, it being stated that "in the fourteen measured points considered, the offspring of the alcoholic series are below the normal control in thirteen cases, and apparently equal to the control in only one." [1] Other observers also have found that injection of minute quantities of alcohol into hen's eggs, or the exposure of the intact eggs to alcohol fumes, results in the production of a striking number of defective chicks with various sorts of malformations, particularly of the nervous system and eyes. Eggs of sea urchins and fish have been found to produce many monstrosities when developing in water containing a little alcohol.

The effect of alcohol given by mouth, and thus more nearly reproducing ordinary human practices, has been studied by Arlitt,[2] in white rats, which seem to be among the few animals that can be induced to take alcohol in their food. She found that even so small an amount as 0.25 c.c. of alcohol daily greatly reduced the rate of growth of the animals, and decreased the duration of life. This and larger amounts, up to 2.25 c.c. daily, also produced partial or complete sterility in both sexes, as well as a large proportion of still-births and a progeny with a high infant mortality, these defects being exhibited by surviving offspring in subsequent generations. There is also a retardation in growth rate in the offspring of alcoholic rats, as Stockard found with guinea-pigs. Examination of the bodies of the alcoholized rats detected no evident anatomic changes in any of the important viscera, with the exception of the reproductive tissues.[3] The testicles of the alcoholized rats were found to exhibit almost constantly marked degenerative changes, affecting the steps of spermatogenesis in inverse order to their occurrence, so that for some time before sterility and complete azoospermia result, the animal is producing spermatozoa with all possible degrees of abnormality and deficiency. The possible relation of this abnormal spermatogenesis to the production of defective offspring is obvious, and the significance of the studies of alcoholism in laboratory animals is enhanced by the fact that identical selective effects of alcohol on the human testicle have been frequently described and studied by pathologists.

The particular interest in Mrs. Arlitt's work, however, lies in the study of the alterations in psychology produced by chronic alcoholism. Experimental psychology has developed methods for estimating mental capacity in lower animals, and the psychology of the white rat has been extensively investigated by means of maze problems. The animals are required to seek their food at the far end of a maze, and the capacity to learn the shortest route and to follow this route without error gives a measure of at least certain mental functions. It was found that rats which had learned their way through the maze retained this capacity after subsequent alcoholism, the tests being made before rather than after each indulgence in alcohol. That is, alcoholism did not remove a mental function already developed. On the other hand, if the animals were first alcoholized for sixteen days and then trained in the maze, they showed much less than normal ability to learn the problem, taking more trials and longer time, and making more errors, than normal animals of the same age. This mental deficiency is transmitted to the offspring, equally well by either the male or the female parent, so that rats of the second and third generations are usually inferior to normal animals in respect to their capacity to learn their way

INCREASE IN ANNUAL DUES

Elsewhere in this issue appears the report of a special meeting of the House of Delegates of the American Medical Association called to act on a proposition submitted by the Board of Trustees to increase the annual Fellowship dues. The House of Delegates modified the by-laws, increasing these dues from $5.00 to $6.00, the new arrangement to be effective for 1921. As explained in the minutes of the meeting of the House of Delegates, this increase is made necessary by the greatly increased cost of material and labor in the printing trade. Considering merely the amount of material contained in THE JOURNAL each week, even at the new rate THE JOURNAL is lower in price by far than any other scientific periodical, medical or otherwise, in the world. The increase is 20 per cent.—very small as compared with the increase in the subscription prices of other periodicals, especially those published by scientific organizations. The British Medical Association recently has increased its annual dues, which means subscription to the British Medical Journal, from $10.50 to $15.75. It may be well to recall that the income from THE JOURNAL supports the Association's activities in the interest of the medical profession and the public: for instance, the work of the Council on Pharmacy and Chemistry, of the Chemical Laboratory, of the Council on Medical Education and Hospitals, of the Council on Health and Public Instruction, and of the Biographical and Propaganda departments. Thus, when a physician pays $6.00 he is not only paying for THE JOURNAL, but also for the above enumerated enterprises and other activities in behalf of the medical profession and the public.

1. Stockard, C. R., and Papanicolaou, G. N.: J. Exper. Zool. **26**: 119, 1918.

2. Arlitt, Ada H.: The Effect of Alcohol on the Intelligent Behavior of the White Rat and Its Progeny, Psychological Monographs **26**, No. 4, 1919.

3. Arlitt, Ada H., and Wells, H. G.: The Effect of Alcohol on the Reproductive Tissues, J. Exper. Med. **26**: 769 (Dec.) 1917.

through the maze. Such experimental observations recall the fact that students of abnormal human psychology have repeatedly called attention to the importance of parental alcoholism in accounting for juvenile deficiency, and the same influence has been frequently noted in groups of cases of congenital physical defects. In the human subject the question always exists as to whether the alcoholism is not the result of inherited mental defects rather than the cause; furthermore, the offspring of alcoholics suffer not only in their ancestry, but also in their environment. With the white rat, however, these factors do not come in to complicate the evidence, and the observed results can be unquestionably attributed to the alcohol. Evidently alcohol has a selective toxic action on the germ cells, and before this has resulted in complete sterility there is a period in which defective spermatozoa and ova are formed that still have the capacity to produce offspring of varying degrees of abnormality. Furthermore, the germ cells of the offspring also exhibit more or less of the same deficiencies for at least two or three generations. We recently called attention to the fact that eye deficiencies produced in early embryos by specific antilens serum may be transmitted to subsequent generations.[4] Injuries produced in the germ cells by alcohol seem to be similarly transmissible, at least in experimental animals, and the same thing has been found true for other poisons, notably lead.

TOLERANCE TO MORPHIN

Every physician is familiar with the great decrease in susceptibility which persons are likely to acquire toward certain drugs when the dose is frequently repeated. It is often referred to as acquired tolerance, and is commonly exemplified in the case of substances that lead through their frequent use to the formation of drug habits. Opium, alcohol and tobacco have furnished the classic illustrations. How this peculiar tolerance is developed has long been a perplexing problem. Most of the "explanations" are vague hypotheses which have not stood the test of scientific experiment. To say that "there is an actual decrease in the protoplasmic sensitiveness to the drug," as in the case of nicotin, merely locates the place where the tolerance is developed in the tissues themselves; it does not explain the subtleties of the matter in any way. In some cases it has been maintained that tolerance means increased oxidative activity, whereby the substance in question is more readily destroyed through heightened chemical reaction; there are, however, few authentic instances of augmented metabolism of this character, which has been somewhat fancifully described as a "strengthening of the defenses of the organism."[5]

The modern studies of immunity and so-called immune reactions, demonstrating the undoubted production by the organism itself of substances that can specifically detoxicate the toxins of bacterial origin, have given a trend to new suggestions in regard to drug tolerance. May we not be dealing with the production of neutralizing substances engendered in the organism through the stimulus of circulating foreign substances of various sorts? Is there not a sort of antibody formation in the defense against noxious drugs? An affirmative answer was offered more than twenty years ago by Gioffredi.[6] It would be alike interesting and helpful, if true. The use of a protective serum or substance might become possible.

Although the corroborative evidence brought together in the intervening years has not been convincing, the possibility of a biologic immunity to morphin has never completely been lost sight of. In his reports on immunization to alkaloids, Gioffredi stated that while it was impossible to obtain immunity against the effects of cocain and atropin, he was able to obtain a serum from a morphin-tolerant dog which protected a second dog from almost twice the fatal dose of morphin. Presently other antiaggressins were postulated. Working in the pharmacologic laboratory of the University and Bellevue Hospital Medical College, Pellini and Greenfield[7] have come to the definite conclusion that "no substance is formed in the blood serum of a human being who has acquired a high tolerance to morphin, which is capable of conferring any degree of immunity to the toxic action of morphin on an animal into which it is injected." Furthermore, they have been able to show that the blood of a tolerant animal does not contain any protective substance against morphin. These findings may be disappointing because of their negative character. Nevertheless, they harmonize with the current trend of researches in immunology which, to quote the New York investigators, tend to make it more probable that serum immunity is produced only by proteins, and that the tolerance established to certain vegetable alkaloids is of a totally different nature.

AN UNSUSPECTED OCCASIONAL MENACE IN LOW PROTEIN DIETS

Modern experimental studies of the etiology of glycosuria have shown that, whereas the ordinary healthy person has a large tolerance for carbohydrate food, there are occasional persons who have a decidedly lowered capacity to utilize this group of nutrients. They represent a type of latent diabetes. If we conceive of diabetes as attributable to a "weakness" of the pancreatic function—a view which prominent students of the disease have lately championed—the effect of over-

4. The Experimental Production of Congenital Defects, editorial, J. A. M. A. **75**: 1346 (Nov. 13) 1920.

5. Greene, C. W.: Handbook of Pharmacology, New York, William Wood & Co., 1914. p. 17.

6. Gioffredi: Arch. ital. de Biol. **28**: 402, 1897; **31**: 398, 1899.

7. Pellini, E. J., and Greenfield, A. D.: Narcotic Drug Addiction, I, The Formation of Protective Substances Against Morphin, Arch. Int. Med. **26**: 279 (Sept.) 1920.

taxing this weakened organ can readily be understood. In this instance, glycosuria is likely to result; and as a forerunner of this condition, the sugar content of the blood may be increased above the normal limits.

By the partial removal of the pancreas, Allen has produced conditions in animals wherein no signs of glycosuria may arise unless diets very rich in carbohydrate are administered. If this unfavorable regimen is continued, it often happens that a condition of severer diabetes arises and downward progress ensues. Improper diet has transformed a latent diabetes or a prediabetic state into a grave menace. The same situations and sequences are likely to arise in human cases. Joslin [1] summarizes his extensive observations with the remark that while various factors are undoubtedly concerned in the production of human diabetes, clinical observations indicate that diet is an important one. It is generally recognized that there is a higher incidence of diabetes among those races or classes of people who use an excess of carbohydrate. Joslin adds, as others have observed, that in persons who might otherwise go through life with no signs of diabetes, an excess of starch in the diet may serve as an exciting cause of diabetes, and the degree of such excess may help to determine the earlier or later onset and the milder or severer type of the disorder. In other persons of this sort, as in the corresponding type of dogs, the pancreatic function is able to deal safely with as much starch as can be digested, but a sufficient excess of sugar is an effectual cause of diabetes.

Those who accept this version of the possible "stirring up of a latent tendency" will find wisdom in the recent warning of a possible danger in the low protein diet sometimes employed for therapeutic purposes in various diseases. A notable instance is suggested by the proposal to restrict the protein intake in the management of certain cases of psoriasis. It is said that this plan, followed by Schamberg [2] and his co-workers, has been extended to other dermatoses. In order to supply adequate energy to the patient, the lack of protein calories is likely to be made good by increasing the carbohydrate component of the diet in the first instances. Michael [3] has recently pointed out a danger of thereby affecting unfavorably such persons as may represent the "prediabetic" state just discussed. As he expresses it, to continue a prediabetic patient on a diet composed of large amounts of carbohydrates is tantamount to condemning that person to diabetes. Cases have been cited which seem to justify this fear.

Although the absence of glycosuria is not always an "index of safety," modern diagnostic technic has not left us in the lurch in ascertaining where danger may be hidden. The estimation of the sugar content of the blood, particularly after the ingestion of the diets under suspicion, is likely to give a dependable clue. The potential diabetes will usually manifest itself in the character of the hyperglycemia. Michael reminds us that by frequent blood sugar estimations, a record can be obtained which will determine whether the campaign is to be maintained or abandoned. Prediabetic patients should be told of their condition, its control and dangers, so that they may not unknowingly adopt a diet that is fraught with danger to them. Above all, the physician must learn to recognize the possibilities that a special diet poor in protein and rich in carbohydrate may represent for the welfare of his patient.

1. Joslin, E. P.: Treatment of Diabetes Mellitus, Philadelphia, Lea & Febiger, 1917, p. 80.
2. Schamberg, J. H.; Ringer, A. I.; Raiziss, G. W., and Kolmer, J. A.: Summary of Research Studies in Psoriasis, J. A. M. A. **63**: 729 (Aug. 29) 1914.
3. Michael, J. C.: A Menace in the Low Protein Diet, Arch. Dermat. & Syph. **2**: 455 (Oct.) 1920.

Current Comment

ACID FACTORS IN THE PRODUCTION OF PNEUMONIC LESIONS

Studies of the nature of the lesions produced by the war gases, many of which were chlorin compounds, have indicated that, in their penetration of the cells of the body, hydrochloric acid is evidently liberated. One is thus led to suspect the significance of this derivative in the production of the harmful effects that arise. The character of the morphologic damage produced in the lungs by inhalation of war gases has been extensively investigated, notably by Winternitz [1] and his collaborators. They have recently supplemented the earlier observations by the significant demonstration that intrabronchial insufflation of weak solutions of hydrochloric acid, and indeed of other acids both inorganic and organic, can call forth the same phenomena: intense edema and congestion of the lung with hemorrhage, dilatation of the alveolar ducts and bronchioles, hyaline necrosis of the epithelium of these structures, and various types of consolidation which are more frequently serofibrinous, but may be hemorrhagic or even purulent. In the cases in which more superficial injury occurs, a sterile pneumonia ensues and repair of the pulmonary damage begins quickly. Formation of granulation tissue and organization of the exudate is accompanied by the proliferation of epithelium. The war is over, and it is hoped that the use of the deadly war gases has passed forever. Nevertheless, there is a special, more permanent interest in the study of their effects because the pathologic condition of the lungs just described as characteristic of both the poisoning with war gases and the insufflation with hydrochloric acid closely resembles that recorded for the lung lesions in influenzal pneumonia.[2] Whether the analogy of an acid irritant factor also exists in the latter case remains to be clearly demonstrated.

1. Winternitz, M. C., et al.: Collected Studies on the Pathology of War Gas Poisoning, New Haven, Conn., Yale University Press, 1920. Winternitz, M. C.; Smith, G. H., and McNamara, F. P.: Effects of Intrabronchial Insufflation of Acid, J. Exper. Med. **32**: 199 (Aug.) 1920; Epithelial Proliferation Following the Intrabronchial Insufflation of Acid, ibid., p. 205.
2. Winternitz, M. C.; McNamara, F. P., and Wason, I. M.: Pathology of Influenza, New Haven, Conn., 1920.

HYPERTROPHY OF THE THYROID

The fact that a number of clinically unlike conditions may be accompanied by enlargement of the thyroid structures has frequently caused confusion in the minds of students of the ductless glands. Such enlargements may be found in cases both of underfunctioning and of overfunctioning of these endocrine organs. In recent years it has been demonstrated anew beyond peradventure, notably by David Marine and his co-workers in the goiter region of the Great Lakes, that reduction in the size of enlarged thyroids can be secured by administration of simple iodids. This phenomenon has been susceptible of demonstration on a large scale in the studies of children of school age at Akron, Ohio. When a large portion of the thyroid structures is extirpated by surgical intervention, a compensatory hypertrophy presently ensues. Loeb,[1] of the Washington University School of Medicine, St. Louis, has recently demonstrated that administration of iodin does not diminish the intensity of such hypertrophic changes; in fact, it may even somewhat accelerate them. As iodin definitely prevents or cures hypertrophic goiter, it seems clearly demonstrated again that the enlarged gland condition known as endemic goiter, and compensatory hypertrophy of the thyroid are essentially different conditions. Perhaps the real hypertrophic gland found in exophthalmic goiter is in some respects analogous to the product of a true compensatory hypertrophy.

GRADUATE TRAINING IN THE SPECIALTIES

The present trend toward specialization makes it of particular importance that some means be established of ascertaining and certifying those who have attained training and skill in any particular specialty. The action of the Council on Medical Education and Hospitals in appointing committees to prepare suggestive minimum courses of training in the specialties is therefore not only opportune but meets an important need in medical education. The movement also is meeting with general approval, as evidenced by the promptness and enthusiasm with which physicians have consented to act on the various committees. Attention has already been called[2] to the action taken by the opthalmologists, who have prepared a minimum standard of training for those who wish to specialize in ophthalmology. They have established an examining board which is granting certificates to those who have completed the work and passed the tests of efficiency. More recently, and since the Council established its special committees, a report has been received from a committee composed of members of the several societies of otolaryngologists of North America, which has likewise prepared a minimum standard for physicians intending to specialize in otolaryngology. Instead of establishing an examining board and granting certificates, however, this committee suggests that a suitable degree be granted by graduate departments of universities to those who have proved their efficiency. On another page[3] appears a report of a preliminary conference on graduate medical education, with special reference to plans of procedure to be followed by the various committees. The final reports of the committees will not only provide minimum standards of training for specialists and throw an important side-light on the present undergraduate curriculum, but also aid in the development of graduate medical education. It is hoped that they will lead to a more rapid development of the abundance of clinical teaching material in many hospitals in this country which at present is unorganized and unused.

1. Loeb, Leo: Studies on Compensatory Hypertrophy of the Thyroid Gland, IV, The Influence of Iodine on Hypertrophy of the Thyroid Gland, J. Med. Res. **41**: 481 (May) 1920.
2. Graduate Courses for Training of Specialists, J. A. M. A. **75**: 1220 (Oct. 30) 1920.

WHAT IS ADIPOCERE?

Corpse wax, or adipocere, has been the subject of scientific controversy and discussion since the first description of the substance by Fourcroy in 1789. As is well known, it may be formed when dead bodies or parts of bodies are buried in moist places or are kept in contact with water, the muscles and soft parts being replaced by a mass made up of a mixture of fatty acids and their derivatives. The long defended view that adipocere represents the result of a direct postmortem metamorphosis of protein substance into fat has virtually been abandoned. Adipocere occurs almost exclusively in fat bodies, so that its formation from the original fats of the body now seems most likely. Part of the difficulty in determining the genesis of the product lies in the unlike composition that has been ascribed to samples from different sources. Ammonium and calcium soaps have been represented along with the fatty acids present. The quantity of residual nitrogenous components has been variable in the reports. A specimen analyzed by Ruttan and Marshall[4] consisted almost entirely (94 per cent.) of substances soluble in ether. More recently, Florence[5] has examined a sample of adipocere removed from a cemetery at Lyons, France, half a century ago. It contained about 10 per cent. of nitrogenous material apparently representing retained fragments of connective tissue of the muscles involved. The remainder of the muscle protein had disappeared. True fats, that is, glycerids of the fatty acids, were present in abundance. It would be easy to assert for the latter an origin from "metamorphosed protein," thereby suggesting an instance of fatty degeneration. It is equally logical, however, to assume the gradual disintegration and solution of the nonfat muscular parts of the original tissue whereby only the collagenous and adipose portions of the organs were left with some degree of integrity. More elaborate hypotheses are scarcely justified at present.

3. Graduate Medical Education: Conference of the Council on Medical Education and Hospitals, this issue, page 1443.
4. Ruttan, R. F., and Marshall, M. J.: The Composition of Adipocere, J. Biol. Chem. **29**: 319 (March) 1917.
5. Florence, G.: Etude d'un cas d'adipocire, Bull. de la Soc. chim. biol. **1**: 185 (Nov.-Dec.) 1919.

The Value of Radium.—It is now to be taken as proved that radium is of considerable value in certain forms of cancer, and that while surgery remains our chief reliance in this disease, radium in combination with surgery undoubtedly increases the prospective cure.—*Canad. M. A. J.*, November, 1920.

Association News

HOUSE OF DELEGATES

SPECIAL SESSION

CHICAGO, ILL., NOV. 11-12, 1920

First Meeting—Thursday Afternoon, November 11

The House of Delegates met in special session at the headquarters of the American Medical Association, Chicago, at 5 p. m., and was called to order by the Speaker, Dr. Dwight Murray of Syracuse, N. Y.

The Secretary stated that a quorum was present.

The Speaker declared the House of Delegates duly constituted and open for business. He stated that the only business which could be considered at this special meeting of the House was that specified in the call.

An emergency exists which makes it advisable to call a special session of the House of Delegates. The emergency is the necessity of changing Chapter XVII of the By-Laws so that it shall call for seven dollars as the annual dues instead of five dollars as at present.

The Secretary reported that along with the letter dated Sept. 15, 1920, issued on the authority and by the direction of the Board of Trustees, there was mailed to each member of the House as constituted at the New Orleans session one form for a vote by mail on the question of increasing the Fellowship dues, and another for requesting a special meeting of the House of Delegates. The letter of September 15 reads:

To the Members of the House of Delegates
of the American Medical Association:

In its report to the House of Delegates at the New Orleans meeting of the Association, the Board of Trustees incorporated these two paragraphs under "Increased Expenses":

> The steadily increasing cost of production is likely to cause serious concern if it continues much longer. As an illustration we might refer to the price of paper used in THE JOURNAL. A reference to the auditor's report for 1918 will show that paper for the THE JOURNAL that year cost approximately $162,000. Last year—1919—it was over $217,000—an increase over the preceding year of approximately $55,760. There was an increase in circulation, but this was small as compared with the increase in cost of paper. We entered this year with a still further increase; at the lowest estimate, our paper for the current year will cost in the neighborhood of $35,000 more than last year, even though there should be no further increase. Wages in the printing trade are still advancing; an increase that went into effect last February, 1920, adds at least $22,000 to the pay in the printing department. The increase in these two items alone—paper and labor in the mechanical department—will add at least $57,000 to the expense this year. In addition there is a steady increase in the wages for all the other help—stenographers, typists, clerks, etc.
>
> While there is no immediate cause for anxiety, it is well for us to realize that we must be prepared for whatever the future may have in store. It may be necessary either to increase the subscription price of THE JOURNAL—say $1.00 a year—or to reduce its size. However, this is for the future. Your attention is called to these matters that you may know the conditions that have developed and which are developing.

Although, during the last three or four years, there has been a steady increase in wages, in cost of paper and of everything used in the printing line, it was the earnest desire of the Trustees, and other officers of the Association, to get along without either raising the price of THE JOURNAL or reducing its size. However, since the preparation of the last report of the Trustees, from which the above quotation is made, there have been three increases in the cost of paper—one covering March and April, one covering May to August, and a third went into effect September 1. These increases amount approximately to a 25 per cent. increase since the first of March. Based on these increases, we estimate that our paper for this year will cost between $75,000 and $80,000 more than last year.

On August 25, there was another increase of $5.00 a week affecting compositors, linotype operators, pressman, pressfeeders, etc.; this makes an increase of $10.00 a week since the first of this year. Of course there also has been an increase in the scale for office employees. We cannot estimate the future from the past, but from present prospects no decrease in these expenses is to be expected.

Summarizing: Our paper today is costing 154 per cent. more than at the end of 1914; and labor in the mechanical departments has increased approximately 135 per cent. in the same time.

It is now realized that unless the price of THE JOURNAL is raised (two dollars is suggested) for 1921, it will be necessary to go very deeply into our reserve fund—and even this would not suffice for long if present conditions continue. It is, therefore, necessary that the situation be met immediately; the great majority of the Fellows remit during the first two or three months of the year, and if action on this matter is postponed until the Boston meeting it will mean that there will be practically no increase in receipts for dues or subscriptions during the year 1921, since any action taken at the annual session could not be made retroactive. The Trustees, therefore, are unanimously of the opinion that a special meeting of the House of Delegates should be called to consider modification of the following by-law so as to permit of increasing the dues and subscription, and that this meeting should be held in time to have the new rates promulgated not later than the first of December of this year:

> CHAPTER XVII.—Annual Fellowship Dues: The annual Fellowship dues shall be five [seven] dollars, payable in advance on the first day of January of each year, of which not less than four [six] dollars shall be credited to the subscription for one year to THE JOURNAL.

It is proposed that the following modification be made in the above Chapter:

> Change the word "five" in the first line to "seven," and the word "four" in the third line to "six."

If any further changes are considered necessary they can be presented at the meeting in Boston next June.

It is suggested that the opportune time for such a meeting of the House of Delegates would be in connection with the meeting of State Secretaries, which is to be held at the Association headquarters in Chicago, November, 11-12; at least ten of the state secretaries are also delegates. If the meeting of the House of Delegates were held at that time it would insure the presence of at least ten delegates, and it should, therefore, not be difficult to have a quorum in attendance.

Special sessions of the House of Delegates are provided for in Section 2, Chapter III of the By-Laws:

> Special sessions of the House of Delegates shall be called by the Speaker on written request of twenty-seven or more delegates, representing a majority of the constituent associations. When a special session is thus called, the Secretary shall mail a notice to the last known address of each member of the last House of Delegates at least twenty days before such special session is to be held, in which notice shall be specified the time and place of meeting and the items of business to be considered. No other busines shall be transacted at the special session than that specified in the call.
>
> QUORUM.—Twenty voting members of the House of Delegates shall constitute a quorum.

Enclosed will be found two slips—one for a mail vote on the proposition of modifying the by-laws to increase the annual dues; the other a petition to the Speaker of the House of Delegates to call a special meeting for the purpose specified. The petitions will he transmitted to the Speaker by the Secretary of the Association. As the time is short, if the meeting is to be called on the dates mentioned above, will you please act promptly? Stamped, directed envelope is enclosed for your convenience.

The mail vote on the proposition of increasing the annual dues is simply to obtain an expression of the opinion of all the members of the House of Delegates for the benefit of those who may attend the special session; it has no legal force.

This communication is issued on the authority and by direction of the Board of Trustees of the American Medical Association.

ALEX. R. CRAIG,
Secretary, American Medical Association.

FRANK BILLINGS,
Secretary, Board of Trustees of the A. M. A.

GEORGE H. SIMMONS,
Editor and General Manager.

VOTE SLIP AND PETITION

The form for the vote by mail and that for the request for a special meeting of the House of Delegates were as follows:

VOTE SLIP. I ..... favor modifying Chapter XVII of the By-Laws of the American Medical Association increasing the annual dues to seven dollars per annum, to be effective for 1921.

.....
Delegate Representing the Constituent Association of
.....

PETITION.—*To the Speaker of the House of Delegates, American Medical Association:* An emergency exists which makes it advisable to call a special session of the House of Delegates. The emergency is the necessity of changing Chapter XVII of the By-Laws so that it shall call for seven dollars as the annual dues instead of five dollars as at present. Please regard this as a petition for you to call a special meeting of the House of Delegates in Chicago, November 11-12, 1920, for the object specified.

.....
Delegate Representing the Constituent Association of
.....

The replies are itemized as follows: After the name of each member of the House of Delegates, "A" indicates a vote in favor of the modification of the By-Law; "N" indicates a negative vote, and "U" indicates that the vote was not signed. "P" means that the petition for the special meeting was signed; "O" indicates that the petition was not signed.

Alabama: S. G. Gay, N-O; S. W. Welch, A-P; F. W. Wilkerson, A-P. *Arizona:* John W. Flinn, A-P. *Arkansas:* William R. Bathurst, A-P. *California:* E. C. Fleischner, A-P; E. S. Kilgore, N-O; C. Van Zwalenburg, A-P. *Colorado:* J. N. Hall, A-P; Gerald B. Webb, A-P. *Connecticut:* J. E. Lane, A-P; Walter R. Steiner, A-P. *District of Columbia:* William Gerry Morgan, A-P. *Florida:* John S. Helms, A-P. *Georgia:* H. H. Martin, U-O. *Illinois:* R. J. Coultas, A-P; L. Hektoen, A-P; M. L. Harris, A-P; Charles J. Whalen, U-P; W. F. Grinstead, U-P; Hugh N. MacKechnie, N-P. *Indiana:* Joseph R. Eastman, A-P; Albert E. Bulson, Jr., A-P; Charles D. Humes, A-P. *Iowa:* M. N. Voldeng, U-O; W. B. Small, U-P. *Kentucky:* D. M. Griffith. A-P; A. T. McCormack, A-P. *Maryland:* Thomas S. Cullen, A-P; Randolph Winslow, A-P. *Massachusetts:* H. G. Stetson, A-P; F. B. Lund, A-P;

E. F. Cody, A-P; Gilman Osgood, A-P; J. F. Burnham, A-P. *Michigan:* A. W. Hornbogen, A-P; F. C. Warnshuis, A-P; Guy L. Connor, A-P; J. D. Brook, A-P. *Minnesota:* W. H. Magie, A-P; J. W. Bell, A-P. *Missouri:* Robert M. Funkhouser, A-P; Franklin E. Murphy, A-P; C. R. Woodson, A-P; S. L. Baysinger, A-P. *Nebraska:* Joseph M. Aikin, A-P; Le Roy Crummer, A-P. *New Hampshire:* D. E. Sullivan, A-P. *New Jersey:* G. E. Reading, N-O. *New York:* D. H. Murray, A-P; Frederic E. Sondern, A-P; J. Richard Kevin, A-P; Arthur J. Bedell, A-O; James F. Rooney, A-P; William F. Campbell, A-P; E. Eliot Harris, A-P; Nathan B. Van Etten, A-P; A. C. Prentice, A-P; T. C. Chalmers, A-P. *North Carolina:* John Q. Myers, A-P. *Ohio:* J. H. J. Upham, A-P; B. R. McClellan, N-(considers special session unnecessary); C. D. Selby, A-P; George E. Follansbee, U-P; Granville Warburton, A-P. *Oklahoma:* LeRoy Long, A-P; L. S. Willour, A-P. *Oregon:* J. A. Pettit, A-P. *Pennsylvania:* Edward B. Heckel, A-P; John D. McLean; A-P; William F. Bacon, A-P; George R. S. Corson, A-P; Herbert B. Gibby, A-P; Lewis H. Taylor, A-P; William B. Scull, A-P; William H. Mayer, A-P; Jefferson H. Wilson, U-P. *Porto Rico:* Jacinto Aviles, A-P. *Rhode Island:* Albert H. Miller, A-P. *South Carolina:* Edgar A. Hines, A-P. *South Dakota:* J. F. D. Cook, A-P. *Texas:* W. B. Russ, A-P; W. W. Ralston, A-P; J. Mark O'Farrell, A-P; Holman Taylor, A-P. *Virginia:* Southgate Leigh, A-P; W. E. Anderson, U-P; Joseph T. Buxton, A-P. *Washington:* D. E. McGillivray, A-P; S. E. Lambert, A-P. *Wisconsin:* H. M. Brown, A-P; Rock Sleyster, A-P; Charles H. Lemon, A-P. *United States Army:* Frederick F. Russell, A-P. *United States Navy:* Frank E. McCullough, A-P. *United States Public Health Service:* J. W. Schereschewsky, A-P. SECTIONS: *Surgery, General and Abdominal:* Raymond P. Sullivan, A-P. *Laryngology, Otology and Rhinology:* John F. Barnhill, A-P. *Diseases of Children:* Isaac A. Abt, A-P. *Pathology and Physiology:* E. R. LeCount, A-P. *Nervous and Mental Diseases:* Hugh T. Patrick, A-P. *Orthopedic Surgery:* John Ridlon, A-P. *Gastro-Enterology and Proctology:* Alois B. Graham, A-P.

No replies were received from the following: *Arkansas:* R. C. Dorr. *Georgia:* S. R. Roberts. *Iowa:* John C. Rockafellow. *Kansas:* W. S. Lindsay; C. W. Stahl. *Kentucky:* John G. South. *Louisiana:* W. H. Seemann; Clarence Pierson. *Maine:* B. L. Bryant. *Missouri:* E. S. Smith. *Montana:* E. W. Spottswood. *New York:* E. L. Hunt. *North Dakota:* E. A. Pray. *Tennessee:* L. A. Yarborough; E. T. Newell. *Texas:* E. H. Cary. *Utah:* T. J. Howells. *West Virginia:* Henri P. Linsz; Chester R. Ogden. *Wyoming:* H. R. Lathrop. SECTIONS: *Ophthalmology*—L. M. Francis. *Preventive Medicine and Public Health*—C. St. Clair Drake.

SUMMARY OF REPLIES RECEIVED

There were 103 replies: twenty-two members of the House did not answer. Ninety voted in favor of the proposed amendment; five votes were negative, and eight vote slips were returned unsigned. The petition calling for a special meeting of the House of Delegates was signed by ninety-six delegates, including delegates from thirty-three constituent associations; six delegates who replied did not sign the petition, and one delegate wrote on the form "not favorable to any change and therefore no necessity for a special session."

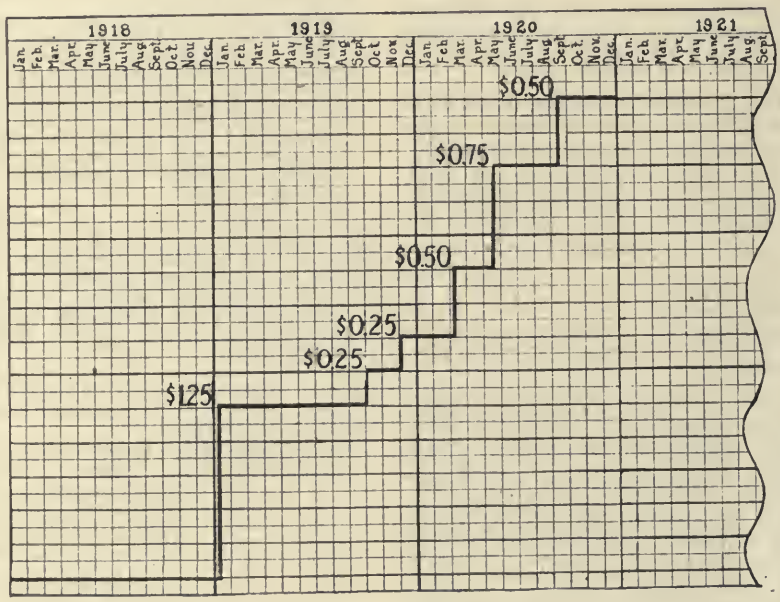
The Secretary further reported that the provisions of the by-law for the call of a special meeting of the House of Delegates had been complied with.

Dr. Billings, secretary of the Board of Trustees, stated that at a meeting of the Executive Committee of the Board that day Dr. Simmons, the manager of the organization, and he were authorized to present the matter, and asked that Dr. Simmons be heard first.

STATEMENT OF DR. SIMMONS

It is not necessary to tell those of you who read magazines, newspapers or periodicals that conditions in the publishing business have developed during the last six or eight months in a way that was never dreamed of, making it necessary for practically all periodicals to increase their subscription prices. I do not believe there is a periodical of any description published that has been sent out at as low a figure, considering its size, as has THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. In its report to the House of Delegates last April the Board of Trustees called attention to the increased cost of publication.

"While there is no immediate cause for anxiety, it is well for us to realize that we must be prepared for whatever the future may have in store. It may be necessary either to increase the subscription price of THE JOURNAL—say $1.00 a year—or to reduce its size. However, this is for the future. Your attention is called to these matters that you may know the conditions that have developed and which are developing."



INCREASE IN THE COST OF PAPER

This chart shows graphically the increase in the cost of paper during the last two years. Each two squares vertically represent a rise of 25 cents per 100 pounds of paper. The rises occur in multiples of 25 cents. A rise of 25 cents per 100 pounds equals $5 per ton. THE JOURNAL is using approximately 1,700 tons per year. *Hence each rise of 25 cents per 100 pounds means an added cost for twelve months of $8,500.* In January, 1919, there was a rise of $1.25 per hundred; in September, 1919, another rise of 25 cents per hundred and in December, 1919, another rise of 25 cents per hundred. In March, 1920, there was an increase of 50 cents per hundred; in May, 1920, 75 cents per hundred and in September 50 cents per hundred; thus, within six months during 1920, there was a rise of $1.75. The cost of paper for THE JOURNAL for twelve months at the present rate would be $59,500 more than it would be at the rate with which we entered 1920.

At that time the Board of Trustees had discussed the question whether they should not ask for an increase at once and it was decided to wait. [See charts for increase in cost of paper and labor since the report was prepared — February, 1920.]

We are now losing money and have been since the last two increases in the cost of paper and labor, although the proceeds during the first three months, that is, before the last two increases went into effect, will probably offset the losses which have occurred during the last three or four or five months; at the end of the year we hope that we will not be far or any behind.

During the last week we have been going over our financial condition very carefully to see if it is necessary to increase $2, as has been proposed, or whether $1 will be a sufficient increase. After studying the matter in all its phases, the Executive Committee of the Board of Trustees agrees that it will be better to increase only as much as is absolutely necessary now; and if it becomes necessary, to increase again later. The trustees, therefore, advise that the by-law be modified to increase the dues one dollar.

The American Pharmaceutical Association on November 3 increased their subscription price from $5 to $7.50. I read from a circular issued a month ago by the American Chemical Society:

At last it has become necessary to increase the Society dues. We are practically the only Society and have about the only scientific publication in the world that has not already done this. We have been able to put it off this long, solely owing to the rapid increase in our membership. The cost of labor and printing has now increased too rapidly for even the American Chemical Society to continue on its ten-dollar basis. Since 1916 the cost of the journals of the Society has more than doubled, and this year the Society's deficit is estimated by the Finance Committee at $27,000. The estimated expense per individual member for 1920, including all subscribers on the same basis as members and

including net advertising income, shows an expense per member of $14.97. These figures indicate at once the necessity of increasing our dues to $15.00, as was the practically unanimous vote of the Council at Chicago.

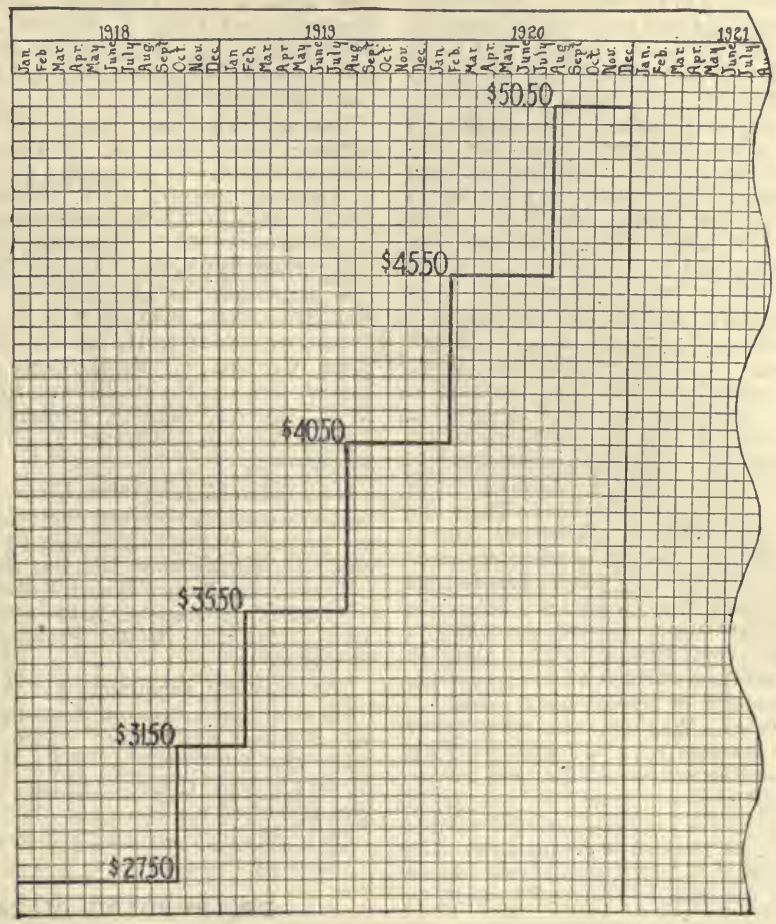
The American Chemical Society and the American Pharmaceutical Association increased their dues 50 per cent. We are proposing an increase of 20 per cent.

Some of you have received this telegram from the Wayne County, Michigan, Medical Society:

Whereas an effort is being made by the American Medical Association to raise the dues two dollars per annum and whereas as a perusal of the last financial report of sa'd association would tend to show that such an increase in dues is not necessary at this time, therefore be it resolved by the Wayne County Medical Society of Detroit, Michigan, that an increase of dues in the American Medical Association at this time is not justified; further that a copy of this resolution be immediately telegraphed to the delegates of the Michigan State Medical Society to the American Medical Association and to the President, Secretary and Board of Trustees of the American Medical Association. Passed at special meeting November 8, 1920. No sig.

Evidently the Wayne County Society based its action on the New Orleans report of the Board of Trustees to the House of Delegates. This report covered the year 1919. It was written late in February. The Wayne County Society did not appreciate that there were two big increases in the wage scale of printers, one for March and another for August, each for $5 per week, making an increase of the weekly wage scale in the printing trade of $10 within six months. It also did not take into consideration the increase in the price of paper during the year. In March, there was an increase of 50 cents; in May, an increase of 75 cents, and in September, an increase of 50 cents per 100 pounds. This increase may sound large or small as one looks at it. We are using approximately 1,700 tons of paper a year. Twenty-five cents per 100 pounds is $5 a ton, so that each 25 cent increase means $8,500 added to the paper bill for the year. From March to September the increase amounted to $1.75 a hundred pounds. This means that our paper bill would be nearly $60,000 per annum more than at the price we paid during January and February, 1920.

Some have wondered why we should have to raise just at the time when prices seem to be falling. The answer is that both labor and paper would have to come down a good deal, at least to the price of January, 1920, before we could hope to publish THE JOURNAL at $5 a year without a loss. The probability is that labor in the printing trade, which is very closely organized, will not come down, at least for many months ,and even if it does, we may not expect it to drop back to the price of January, 1920. From the general outlook in regard to paper pulp, we cannot hope for much reduction in the price of paper again, certainly not to what it was in January, 1920.



INCREASE IN THE COST OF LABOR

This chart shows graphically the increase in the cost of labor in the printing trades during 1918, 1919 and 1920. It is based on the average weekly wage received by compositors, press feeders and pressmen. Each two squares vertically represent a rise of $1 per week. In October, 1918, there was a rise of $4; in February, 1919, $4; in August, 1919, $5; in February, 1920, $5 and in August, 1920, $5. It will be noted that we entered 1920 with an average weekly wage for these three groups of $40.50. The rise in February, 1920, of $5 made the weekly wage $45.50, and the rise in August, 1920, of $5 made it $50.50 per week—the present wage. Estimating on the number of men employed in these three groups alone—[not including bindery workers, machinists, cutters, porters and general help in the printing department, all of whom have had proportionate increases]—the increase to compositors, press feeders and pressmen for 1921 would be $38,060 more than we would have paid at the rate with which we entered 1920.

MOTION BY DR. SONDERN

Dr. Sondern, New York, moved that Chapter XVII of the By-Laws, which reads as follows, "The annual Fellowship dues shall be five dollars, payable in advance on the first day of January of each year, of which not less than four dollars shall be credited to the subscription for one year to THE JOURNAL," be changed as follows: "The annual Fellowship dues shall be six dollars, payable in advance on the first day of January of each year, of which not less than five dollars shall be credited to the subscription for one year to THE JOURNAL." Seconded.

The resolution was referred to the Committee on Amendments to the Constitution and By-Laws, as constituted at the New Orleans meeting, for report the following morning.

The Secretary called the roll of the Reference Committee on Amendments to the Constitution and By-Laws as constituted at New Orleans as follows: Chairman, Rock Sleyster, Wisconsin, present; Texas, W. B. Russ, absent; South Carolina, E. A. Hines, present; Indiana, A. E. Bulson, absent; Pennsylvania, Edward Heckel, absent.

The Speaker made the following appointments in the place of the absent members: Dr. Holman Taylor of Texas, Dr. L. H. Taylor of Pennsylvania, Dr. C. St. Clair Drake of the Section on Preventive Medicine and Public Health.

STATEMENT OF DR. BILLINGS

Dr. Billings, secretary of the Board of Trustees, then made the following statement: In behalf of the Board of Trustees I desire to make a statement supplemental to that of Dr. Simmons. The Board of Trustees appreciated what it meant to call a special session of the House. It did not do this without thought. Indeed, this matter was discussed by the Executive Committee of the Board in August but no action was taken at that time. I presume you know that more than a year ago the Board of Trustees created an Executive Committee of three and that that Executive Committee meets in Chicago at

the Headquarters of the American Medical Association each month and goes over the business of the organization. The minutes of the Executive Committee are sent promptly to each member of the Board. The actions of the Executive Committee are confirmed finally by the full Board which has been in touch, therefore, with the business of the Association. The Executive Committee has had reports from the manager each month so that it has been able to appreciate the problems that it has had to contend with from time to time.

Some of you entertain the opinion that the American Medical Association is rich. It has a reserve fund, but you will remember probably that this House took action approving the rebuilding of the old building to the north of the building in which this meeting is held and that more than a year ago you authorized the Board of Trustees to go ahead and build. Accordingly, plans were drawn by architects and were submitted to the Board in October, 1919. These general plans were approved and the architects authorized to go ahead with the working out of blue prints and specifications for submission to the Board at its February meeting. At that meeting the architects submitted their final plans and specifications and estimated that the building would cost from $280,000 to $300,000. However, when the bids were received, the lowest cost was $420,000 and no assurance was given that this would hold if labor or material increased. Consequently, when these facts were presented to the Board, it decided to postpone building for the present. You have heard the statement of the manager of the Association and I hope you have appreciated what he has said about the cost of paper. Every economic measure has been used to carry on the business of the Association without loss. There are certain state journals that have been published by the Association press, but it was impossible to keep on with the printing of these and do justice to our own publications. There are those among you who wish to have an obstetrical journal published. The present facilities do not permit. We must have the reserve fund for a building for the future and we must give you THE JOURNAL as it was given to you before the high prices. If you have heard what the manager said, you will know that we have cut out reading matter to put in advertising matter to prevent loss, which is a bad thing to do. We had to adopt such a measure to prevent serious loss.

Why call you at this time? Why not wait until June? Because if the increase in the dues were postponed until the Boston session, the increased income would not be available until January, 1922. Therefore, if we would have the benefit of this increased amount of money for 1921, a special session of the House was necessary to pass on it at this time. The proposition has been presented to you now by your Board and by your manager after due thought and consideration, as a measure necessary to preserve the working capital of the Association and to carry on its business without loss.

On motion of Dr. A. T. McCormack, Kentucky, duly seconded and carried, the House adjourned until 8:30 Friday morning, November 12.

Second Meeting—Friday Morning, November 12

The House of Delegates was called to order at 8:30 a. m. by the Speaker.

The Secretary reported a quorum present.

Dr. Rock Sleyster, Wisconsin, Chairman, presented the following report of the Committee on Amendments to the Constitution and By-Laws:

In view of the large favorable vote by mail approving the raise in dues to seven dollars, and in view of the facts presented to this body by the manager and Board of Trustees,

Your Committee recommends the approval and adoption of the amendment to Chapter XVII of the By-Laws now before the House of Delegates and reading when changed according to recommendation as follows:

CHAPTER XVII.—ANNUAL FELLOWSHIP DUES. The annual Fellowship dues shall be six dollars, payable in advance on the first day of January of each year, of which not less than five dollars shall be credited to the subscription for one year to THE JOURNAL."

We recommend that the change be effective January 1, 1921. We further recommend that this action of the House of Delegates be given immediate and wide publicity by the Board of Trustees through THE JOURNAL and otherwise and that the secretaries of the constituent state associations be requested to aid in furthering this publicity.

E. A. HINES,
LEWIS H. TAYLOR,
HOLMAN TAYLOR,
C. ST. CLAIR DRAKE,
ROCK SLEYSTER, Chairman.

It was moved and seconded that the report of the Reference Committee be adopted.

A general discussion followed. Dr. C. J. Whalen, Illinois, and Dr. W. B Small, Iowa, spoke in opposition to the adoption of the report and Dr. Small moved that the report be laid on the table. This was seconded by Dr. Whalen, but the motion was lost. The discussion was then continued. The adoption of the report of the Reference Committee was supported by Drs. H. M. Brown, Wisconsin; Holman Taylor, Texas; J. H. J. Upham, Ohio; Randolph Winslow, Maryland; John Ridlon, Section on Orthopedic Surgery; W. C. Phillips of the Board of Trustees; Frederic Sondern, New York; Le Roy Crummer, Nebraska; A. T. McCormack, Kentucky, and Hugh T. Patrick, Section on Nervous and Mental Diseases. Drs. Whalen and Small spoke a second time opposing the proposition and Dr. Small called for the recording of the vote.

The ayes and nays were called and the vote was as follows: Ayes—Drs. W. R. Bathurst, Arkansas; W. G. Morgan, District of Columbia; R. J. Coultas, M. L. Harris, L. Hektoen, Illinois; A. T. McCormack, Kentucky; B. L. Bryant, Maine; R. Winslow, Maryland; J. F. Burnham, Massachusetts; F. C. Warnshuis, Michigan; E. W. Spottswood, Montana; LeRoy Crummer, Nebraska; D. E. Sullivan, New Hampshire; D. H. Murray, F. E. Sondern, A. J. Bedell, E. L. Hunt, A. C. Prentiss, New York; J. H. J. Upham, G. E. Follansbee, Ohio; L. H. Taylor, Pennsylvania; E. A. Hines, South Carolina; J. F. D. Cook, South Dakota; Holman Taylor, Texas; H. M. Brown, Rock Sleyster, Wisconsin; R. P. Sullivan, Surgery, General and Abdominal; H. T. Patrick, Nervous and Mental Diseases; J. Ridlon, Orthopedic Surgery—29.

Nays—Drs. C. J. Whalen, Illinois; W. B. Small, Iowa—2.

In attendance at the meeting held Thursday afternoon but not present at the Friday meeting: Drs. J. N. Hall, Colorado; H. MacKechnie, Illinois; W. H. Magie, Minnesota; J. H. Wilson, Pennsylvania; E. H. Cary, Texas; I. A. Abt, Diseases of Children; E. R. LeCount, Pathology and Physiology; C. St. Clair Drake, Preventive Medicine and Public Health—8.

The chairman announced that the recommendation of the Reference Committee on Amendments to the Constitution and By-Laws was adopted by the House.

Dr. Wendell C. Phillips of the Board of Trustees and Dr. G. H. Simmons, General Manager and Editor of THE JOURNAL, addressed the House.

On motion duly seconded and carried the House adjourned.

DR. RUDOLPH MATAS BECOMES VICE PRESIDENT

At the recent session of the Board of Trustees held in Chicago, Dr. Rudolph Matas, New Orleans, was elected vice president of the American Medical Association, succeeding Dr. Isadore Dyer, recently deceased.

CONFERENCE OF SECRETARIES OF CONSTITUENT ASSOCIATIONS

A conference of the secretaries of the constituent associations was held at the headquarters of the American Medical Association on Thursday and Friday, November 11 and 12, with thirty-five secretaries in attendance. Morning and afternoon sessions were held each day which were devoted to the discussion of measures for perfecting our organization, the consideration of possible disintegrating forces, the supervision of members in the county, state and national bodies, the *Bulletin of the American Medical Association* and suitable emoluments for state association secretaries. Graduate study work to be conducted in connection with the scientific programs of the county, district and state organizations was fully discussed in order to determine how this work can be developed in a practical manner. Reports were submitted of clinics, institutes and similar gatherings which are now being conducted by constituent associations either independently or in cooperation with medical schools, state boards of health,

organizations for the prevention of disease and societies having similar objects. A plan for further developing cooperation between the organization of the medical profession and other institutions having as its object the making available of graduate study to members of the medical profession was an interesting feature of the meeting. Economic and social opportunities and obligations of the medical profession were topics that were also considered.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Clinic Organized.—The organization of the Cooper Clinic has been announced, with offices at Fort Smith, under direction of Dr. St. Cloud Cooper. Other members of the staff are Drs. Marion E. Foster, Sidney J. Wolfermann, William R. Klingensmith, Aubrey C. Belcher, Holman B. Thompson and Davis W. Goldstein.

CALIFORNIA

Accused of Violating Medical Practice Act.—"Dr." C. E. Walker and wife of Grass Valley, Nevada County, were hailed into court recently to answer a charge of practicing medicine without licenses, according to report, The Walkers maintain that they do not practice or prescribe medicine but teach the rules of health by means of diet, exercises and baths.

Appointment of Health Officers.—Dr. Edwin E. Endicott has been appointed physician of Amador County, to succeed Dr. Alexander M. Gall, resigned.——Dr. J. Gordon Mackay, Auburn, has been reappointed as physician of Placer County. ——Dr. Henry C. Brown has been appointed city health officer of San Jose.——Dr. August Cavagnaro, Stockton, has been reappointed health officer of San Joaquin County.

CONNECTICUT

Unveiling of Yale War Memorial Tablet.—A memorial tablet erected by Yale University in honor of the 225 graduates who lost their lives in the World War will be dedicated by formal exercises in Woolsey Hall, November 21, at 3 p. m. President Hadley will make the invocation and Hon. Henry L. Stimson, former secretary of war, will deliver the principal address.

Joint Meeting of Medical Societies.—The Connecticut State Medical Society held a joint session with the Middlesex County Medical Association at the State Hospital in Middletown, October 15, under the presidency of Dr. George Blumer, New Haven. Dr. Clarence Floyd Haviland, superintendent of the State Hospital, was the host at a luncheon given to the visiting physicians.

FLORIDA

State Establishes Field Ambulatory Clinics.—Dr. Ralph N. Greene, state health commissioner, has announced plans for the organization of field ambulatory clinics which will carry the lesson of public health to every home in the state. The clinics will be thoroughly equipped to offer attention for eye, ear, nose and throat and dental diseases, as well as treatment for hookworm disease. Headquarters of the field organizations will be established at the different county seats where the clinics will be conducted with the cooperation of district health officers.

ILLINOIS

Chiropractor Fined.—A report from the Department of Registration and Education states that Karl J. Hawkins, a chiropractor at Bluffs, was recently arrested for practicing without a license. He pleaded guilty and was fined $35 and costs.

Personal.—The honorary degree of Doctor of Science was conferred on Dr. Henry Baldwin Ward, professor of zoology at the University of Illinois, by the University of Cincinnati on the occasion of the centennial anniversary of its medical college.

Chicago

New Hospital Wing Opened.—The increase in cases at the Cook County Hospital has impelled the opening of the new wing of the Muncipial Contagious Diseases Hospital.

Personal.—In connection with the centennial celebration of the founding of the Medical College of the University of Cincinnati, the honorary degree of Doctor of Laws was conferred on Dr. Ludvig Hektoen, and the degree of Doctor of Science on Drs. Dean D. Lewis and Edward Oakes Jordan. ——Dr. Henry W. Howe, who has been pursuing a special course at the General Hospital of Vienna for the last six months, is continuing his studies in Paris.

INDIANA

Greencastle Will Have County Hospital.—Putnam County citizens at the elections held November 2 voted to erect a hospital at Greencastle, at a cost of $95,000. The project had failed at a previous election.

Ford Hospital Changes Hands.—The Ford Hospital at Union City has been purchased by Dr. Robert W. Ried and after a general overhauling has been reopened for the reception of patients. Hereafter medical cases will be received as well as surgical.

IOWA

Sanatorium Dedicated — The Rohrbacher Sanitarium, founded at Iowa City by Dr. William M. Rohrbacher, was dedicated, October 19.

Northwest Society Holds Meeting.—At the semiannual meeting of the Northwest Iowa Medical Society, held at Sheldon, October 28, Dr. Herman Brackney, Sheldon, was elected president, and Dr. Jay Crawley, Rock Rapids, was reelected secretary and treasurer for the ensuing year.

KENTUCKY

Liquor Permits Revoked.—It is reported that the permits to prescribe liquor have been revoked by the state prohibition director, James H. Combs, from the following physicians: Drs. Oliver M. Reynolds, John Malcomb Beck, Griffith Carter Brannon, Arthur M. Robertson, Walter Scott Adams, Henry B. Beck, George H. Reid, Charles L. Cawein, Samuel C. Clowney, J. A. C. Lattimore and George M. Shaunty, all of Louisville.

Hospital Increases Capacity.—Construction work on the Murray Surgical Hospital of Murray whereby the capacity of the hospital will be increased from twenty-five to 100 beds is nearing completion. The institution will be a general hospital, instead of surgical as heretofore, and its name will probably be changed to the William Mason Memorial Hospital, in memory of the grandfather and father of the present chief of staff, Dr. William Herbert Mason, Jr.

MAINE

State Health Department Seeks New Building.—The urgent need for larger and more suitable quarters for the Maine State Department of Health has impelled Dr. Leverette D. Bristol, state health commissioner, to request an appropriation for the erection of a health building in the immediate vicinity of the state house, Augusta. The present offices of the health department are in a congested condition, endangering the safety of the vital statistics records and other valuable documents.

Waldo County Society Holds Meeting.—The Waldo County Medical Association held its annual meeting at Belfast, October 28, under the presidency of Dr. Eugene L. Stevens. Belfast. A banquet was served at the Windsor Hotel, at which officers of the Maine Medical Assocation and prominen physicians from Waterville, Skowhegan, Bangor and other cities were guests. The following were elected officers for the ensuing year: president, Dr. Elmer Small, Belfast; vice president, Dr. Sumner C. Pattee, Searsport, and secretary-treasurer, Dr. Carl H. Stevens, Belfast.

MARYLAND

Tuberculosis Lecture at Hygiene School.—Dr. Donald B. Armstrong, executive officer of the Framingham Community Health and Tuberculosis Demonstration, delivered a lecture at the Johns Hopkins University School of Hygiene and Public Health, November 9, on the methods of control and prevention of tuberculosis adopted at Framingham.

Personal.—Dr. Albert Peyron, director of cancer research work at the University of Marseilles and member of the Pasteur Institute, Paris, expects to come to Baltimore in January to study methods of treatment of cancer in local hospitals.——Dr. Valeria Parker, chairman of the National Committee on Social Hygiene of the League of Women Voters and assistant educational director of the American Social Hygiene Association, on her recent visit to Baltimore, addressed the Just Government League in support of the new country home for the Maryland Industrial Training School for Girls. As a result of her appeal, a resolution was immediately sent to Governor Ritchie, urging that the school be given its full appropriation. Dr. Parker also made addresses before the Maryland Branch of the Mothers' Congress and the Baltimore Child Welfare Circle.——Dr. Martin F. Sloan, superintendent of Eudowood Sanatorium, has left for an inspection of tuberculosis sanatoriums operated by the U. S. Public Health Service. He will be accompanied by Dr. Victor Cullen, superintendent of the State Sanatorium, and Dr. David R. Lyman of the Gaylord Sanatorium, Wallingford, Conn. They will visit sanatoriums at Greenville, S. C., Oteen and Biltmore, N. C., New Haven, Conn., and Markleton, Pa. During the absence of Dr. Sloan, Dr. William A. Bridges will be acting superintendent of Eudowood Sanatorium.

MASSACHUSETTS

Personal.—Dr. Frederick W. Johnson, Boston, has been appointed professor of clinical gynecology, and Dr. Louis E. Phaneuf, Boston, associate professor of gynecology at Tufts Medical School.——Dr. Robert N. Nye, Brookline, has been appointed research assistant in the pathologic department of the Boston City Hospital.

Cutter Lectures.—The Cutter Lecture on preventive medicine and hygiene will be delivered by Prof. Jules Bordet, director of the Pasteur Institute of Brussels, at the Harvard Medical School Amphitheater, November 15, on the subject of anaphylaxis. The lectures are given annually under the terms of a bequest of John Clarence Cutter, and are free to the medical profession and the press.

MICHIGAN

Tuberculosis Among Indians.—A recent survey among the Indians of the upper peninsula revealed the fact that 63 per cent. are either positive or suspected sufferers from tuberculosis. In view of these conditions the belief is entertained that the Indians will shortly be exterminated unless strenuous efforts are made to counteract the effects of the low standard of living.

Extension Clinics for Physicians.—The University of Michigan has organized extension clinics open to all practicing physicians. These clinics will be held on the second Wednesday of each month by members of the staff of the University Hospital, Ann Arbor, including Dr. Christopher G. Parnall, director of the University Hospital, Drs. Reuben Peterson, Hugh Cabot, Louis H. Newburgh and James G. Van Zwalenberg.

MINNESOTA

Tuberculosis Clinic Moved.—The monthly clinic heretofore conducted by Dr. Woolgate at the Aitkin-Crow-Wing Sanatorium in Deerwood will hereafter be held in the office of the county nurse in the Washington Block, Aitkin, on the third Saturday of each month.

Health Offices Combined.—In the process of reorganization, the division of hygiene in the board of education of Minneapolis has been placed into closer cooperation with the division of public health of the board of public welfare. These two functions of municipal government will be placed under one management, and the commissioner of health will also fill the position of director of hygiene.

MISSOURI

Lecture on Medicine in Korea.—At the regular meeting of the Jackson County Medical Society held at the Kansas City Medical Library, November 16, Dr. Oliver R. Avison, president of Severance Union Medical College of Seoul, Korea, delivered an illustrated lecture on "Medical Conditions in Korea."

County Society Offers Prize.—The Jackson County Medical Society announces a prize of $100 to the member presenting the best original paper before the society during the year from September, 1920, to June, 1921. Only members in practice ten years or less are eligible for the competition. The editorial staff of the society *Bulletin* will select the three most meritorious papers, and the final choice among these will be made by Dr. Edward J. Goodwin, editor of the *Journal of the Missouri State Medical Association.* It is understood the paper will be published in the state journal.

MONTANA

Public Health Hospital to Open Soon.—It is reported from Washington that the Public Health Hospital to replace Fort Harrison, near Butte, for the care of disabled veterans of the World War will be ready for occupancy, December 1.

Poliomyelitis in Ravalli County.—Six cases of infantile paralysis have been reported in Ravalli County since September, and four additional cases were recorded within a week recently. Only one of these proved fatal. The state board of health has notified physicians in Missoula and Ravalli counties to watch for early symptoms and to make prompt report of any suspected cases.

NEBRASKA

State Adding to Hospital.—The state is building an addition to its hospital for the feebleminded at Beatrice.

Personal.—Dr. Joseph M. Aikin, Omaha, underwent an abdominal operation, November 10, at the Methodist Hospital. Dr. Aikin is reported to be faring very satisfactorily.

NEW HAMPSHIRE

Public Clinic at Portsmouth.—A public health clinic has been organized at Portsmouth under the charge of Dr. George A. Tredick, physician of the board of health. Two sessions will be held weekly, on Tuesday and Friday evenings.

Child Welfare Clinic at Manchester.—A child welfare clinic has been established by the district nursing association at the fire station, on Somerville Street, Manchester. Dr. Benjamin Burpee is physician in charge of the clinic, which will be conducted every Wednesday and Saturday, at 9 a. m.

NEW YORK

Hospital Superintendent Resigns.—Dr. Harold Goodwin has resigned after thirteen years of service as superintendent of the Albany Hospital. William D. Rockefeller has been appointed to succeed him.

County Tuberculosis Sanatorium Opened.—The Broome County Tuberculosis Sanatorium at Binghamton was formally opened for the use of patients, October 20. Dr. Blinn A. Buell is superintendent of the sanatorium.

County Health Secretary.—Mrs. A. D. Roberts has been appointed health secretary of Livingston County. The work of this new office will be the coordination and development of all forms of health work, under the supervision of a committee consisting of the chairman of the public health committee of the board of supervisors, the chairman of the Livingston County Tuberculosis Association, and the district sanitary supervisor of the state department of health.

New York City

Harvey Lecture.—The third Harvey Lecture will be delivered by Dr. Nellis B. Foster of the Cornell Medical College at the New York Academy of Medicine, November 20. The subject of the lecture will be "Uremia."

Port Health Officer Lectures to Engineers.—Dr. Leland Cofer, health officer of the port of New York, delivered a lecture to the municipal engineers, at the Engineers' Building, October 27, on the subject of "Safeguarding Health at the Port of New York." He dealt with the activities of the Quarantine Station and the cooperative work of the New York City Department of Health.

Physician Sues for Whisky Blanks.—An equity injunction suit against Charles R. O'Connor, federal prohibition director for the state of New York, has been filed in the United States District Court by an attorney representing Dr. Melville A. Hays, alleging that when a book containing 100 blanks for prescribing whisky had been used the physician was refused a new one. He charges that his permit has not been revoked and therefore he is entitled to a new book, and asks for a mandatory injunction requiring the director to furnish a book.

Fifth Avenue Hospital Fund.—Contributions to the fund to construct the new Fifth Avenue Hospital amount to nearly $2,000,000. Among the contributors are Miss Ethel Barrymore (Mrs. Russell G. Colt) and Lionel and John Barrymore,

who gave $30,000 to endow a room in the new hospital in the name of the Barrymores for the benefit of stage performers. The new structure will be built in the shape of an "X," with all the 325 rooms outside rooms; the old ward system will be eliminated. No nurse of less than two years' experience will be permitted to attend a patient at the bedside. The hospital is already under construction and it will probably be ready for occupancy by July, 1921. Dr. Wiley E. Woodbury will be the director.

NORTH CAROLINA

Durham Child Welfare Clinic.—A child welfare clinic has been established in the Edgemont Baptist Church at Durham. A clinic will be held each Friday afternoon at 2:30 o'clock.

Free Tuberculosis Clinics.—In order to provide additional opportunity for free examination for tuberculosis the state board of health, American Red Cross and the North Carolina Tuberculosis Association have cooperated in the establishment of diagnostic clinics at points throughout the state. Hereafter where six or more persons desire an examination, a special clinic will be held. Dr. Joseph L. Spruill has been named the clinic physician under the auspices of the North Carolina Tuberculosis Association. Towns and counties desiring to hold clinics may secure appointment by applying to the North Carolina Sanatorium, Sanatorium.

OHIO

Dayton Mental Hygiene Clinic.—A weekly mental hygiene clinic will be conducted every Friday at 10 a. m., at the office of the Montgomery County Humane Society, Dayton, by Dr. Earl A. Baker, superintendent of the Dayton State Hospital.

Typhoid Epidemic at Salem.—Sewage which seeped into the tile pipe of the municipal water system at Salem caused the outbreak of more than 6,000 cases of enteritis and eighty-two cases of typhoid fever among the population of 11,000.

Medical College Centenary.—The centennial celebration of the foundation of the Medical College of the University of Cincinnati held, November 6, was the occasion for elaborate exercises which were attended by many leaders in the medical and educational world. Sir Auckland Geddes, British Ambassador, Hon. John Barton Payne, secretary of the interior, Dr. James R. Angell, president of the Carnegie Corporation, and Dr. Charles R. Stockard, Cornell University, delivered formal addresses at the banquet given at Hotel Sinton. Honorary degrees were conferred on twenty physicians and scientists including Drs. Joseph Ransohoff and Louis Schwab of Cincinnati. A life-size portrait of Dr. Christian R. Holmes, former dean of the college, was unveiled in the Holmes Memorial Library in the course of the anniversary exercises. Coincidentally appeared the first number of the new periodical, *University of Cincinnati Medical Bulletin*, published under an endowment initiated by Dr. Christian R. Holmes. It contains articles dealing with the history of medical education, hospitals, nursing, medical societies, and epidemics of Cincinnati, and incidents in the life of Dr. Holmes.

OKLAHOMA

Personal.—Dr. James Means, Claremore, has been appointed superintendent of health of Rogers County to succeed Dr. John C. Taylor, Chelsea, resigned.

Hospital Construction Plans.—A campaign to raise $100,000 for the construction of a hospital is being conducted at Hugo. ——The American Legion will apply to the state legislature for an appropriation of $1,000,000 for the erection of a hospital for disabled war veterans at Oklahoma City.——It is reported that the Methodist Episcopal Church, South, will erect a hospital at Oklahoma City from proceeds of the centenary fund.

OREGON

State Mental Defect Survey.—Returns of the survey of mental defects, delinquency and dependency in the state of Oregon which was conducted by Dr. Chester L. Carlisle, U. S. P. H. S., under the auspices of the extension division of the University of Oregon, show that these abnormal types are confined to less than 5 per cent. of the population of the state. The state survey was authorized by the legislature in February, 1919, and the task was assigned to the university without any appropriation to cover the costs. Success of the undertaking was due to special voluntary assistance of over 10,000 citizens.

PENNSYLVANIA

Personal.—Dr. Walter F. Donaldson, Pittsburgh, secretary of the Medical Society of the State of Pennsylvania, recently sustained painful injuries to the muscles of his back.

Sickness Census Planned.—A sickness census of Williamsport, conducted under the auspices of the state department of health and the Lycoming County Tuberculosis Society, will be completed November 20. This will be followed by a medical examination week to be held November 24-30.

Pittsburgh University Names New Chancellor.—It is reported that Mr. John G. Bowman, formerly for three years president of the State University of Iowa and since 1914 director of the American College of Surgeons, has been elected chancellor of the University of Pittsburgh, to succeed Dr. Samuel Black McCormick who has resigned because of ill health.

Harriman Hospital Inquiry.—Burgess C. L. Anderson has been authorized to appoint a committee of five representative citizens of the community to consult with the physicians, and to map out a comprehensive report on the condition of the Harriman Hospital at Bristol. The institution was established by the Emergency Fleet Corporation and was recently taken over under a lease for a year with an option of purchase.

Philadelphia

New Clinic Opened.—A neurologic clinic will be opened at city hall for members of the bureau of police. Dr. Hubley R. Owen, chief police surgeon, will be in charge and will be assisted by Dr. Michael A. Burns of Jefferson Hospital medical staff.

Health Insurance Conference.—The state health commission will meet, December 3, in Philadelphia for a series of addresses and discussions on the medical aspects of health insurance. The commission will meet in Harrisburg later in December to prepare its report to the next legislature after holding a series of hearings and meetings.

Personal.—Prof. Raymond Pearl of Johns Hopkins University delivered the annual Gross lecture of the Pathological Society on "Some Biological Aspects of Human Mortality."——Dr. Proctor C. Waldo has been appointed second assistant resident physician, Bureau of Hospitals.——Dr. Robert Grier LeConte has received the Navy Distinguished Service Medal in recognition of his services in the World War.

TEXAS

Plague Measures Resumed.—The finding of one plague infected rat in the business section of Port Arthur and two about 6 miles from Beaumont has caused the resumption of plague prevention activities of the U. S. Public Health Service in Jackson County.

Joint Hospital Endorsed by Medical Association.—The Dallas County Medical Association has endorsed the proposition for a bond issue of $225,000 to be floated by the city of Dallas in conjunction with an issue of a similar amount by the county for the erection of a joint county and city hospital.

Popular Health Chautauqua.—The Texas health chautauqua, an educational lecture campaign under the auspices of the Medical Evangelistic Chautauqua Company, opened its lecture series at the city hall auditorium, Dallas, October 31. Lectures are to be held weekly on Sundays, Mondays and Wednesdays and will be continued until February 1.

VIRGINIA

Norfolk County Health Board Reorganized.—Dr. Thomas A. Mann, Durham, N. C., has been appointed health officer of Norfolk County. The board of health has been reconstituted by the appointment of Drs. Archibald M. Burfoot, Fentress, Albert G. Horton, Ocean View, and Josiah Leake, Churchland.

State Medical Society Meeting.—At the fifty-first annual session of the Medical Society of Virginia, held at Petersburg under the presidency of Dr. Fletcher J. Wright, Petersburg, the following officers were elected for the ensuing year: president, Dr. Alfred L. Gray, Richmond; vice presidents, Drs. Edwin C. S. Taliaferro, Norfolk, Fletcher J. Wright, Petersburg, and Hunter H. McGuire, Winchester; secretary, Mr. G. H. Winfrey, Richmond (reelected), and treasurer, Dr. Hampden A. Burke, Petersburg. Lynchburg was selected as the place of meeting for the 1921 session.

WASHINGTON

New Health Officer in Cowlitz County.—Dr. Frank Davis, Kelso, has been appointed health officer of Cowlitz County succeeding Dr. Osmar K. Wolf, resigned.

Spokane Health Center.—A health center has been established by the Red Cross chapter of Spokane with headquarters at 706 Mohawk Building. The center will be open daily except Sunday from 9 a. m. to 5 p. m., and child welfare clinics will be conducted on Wednesdays and Fridays from 2 to 3 p. m. Health centers will also be established in Colville, Chewelah and Republic.

CANADA

Canada Medical Association News.—The fifty-second annual meeting of the Canadian Medical Association will be held in Halifax, N. S., July 5-8, 1921, under the presidency of Dr. Murdoch Chisholm. The new constitution and by-laws adopted at the last meeting provide for branch associations (the provincial societies), for affiliated societies (any federal medical or scientific body), for a council of fifteen members elected from the general membership, of delegates from the provincial branch associations, of representatives from the affiliated bodies, of two members elected by the council, the president, vice president, secretary and treasurer ex officio.

GENERAL

Rockefeller Foundation Physician Honored.—Dr. Bernard L. Wyatt of the American Commission for the Prevention of Tuberculosis in France, has been made a knight of the Legion of Honor of the French republic in recognition of his services in organizing the French campaign against tuberculosis.

Tuberculosis Association Offers Prize Cup.—The National Tuberculosis Association will award an intercity cup to the city enrolling the largest number of knight banners in the modern health crusade in ratio to the school enrolment for 1921. Another silver cup known as the interstate cup is awarded to the state having the largest number of crusaders. This was recently won by Iowa.

Association for Research in Nervous and Mental Disease.—The first session of the Association for Research in Nervous and Mental Diseases will be held in the New York Academy of Medicine, December 28 and 29. Following the presidential address of Dr. Walter Timme will come a complete discussion of the subject of "lethargic encephalitis" covering every phase of investigation of this disease. For information regarding membership or other matters, address Dr. Foster Kennedy, 20 West Fiftieth Street, New York.

Mississippi Valley Association Elects Officers.—At the annual meeting of the Mississippi Valley Medical Association recently held in Chicago, the following were elected officers for the ensuing year: president, Dr. Chauncey W. Dowden, Louisville; vice presidents, Drs. Ellsworth Smith, St. Louis, and John Rawson Pennington, Chicago; secretary, Dr. Henry E. Tuley, Louisville (reelected), and treasurer, Dr. Samuel C. Stanton, Chicago (reelected). St. Louis was chosen as the place of meeting for the next year.

Scholarships in French Universities.—Twenty-five fellowships for Americans who wish to secure advanced study in the various educational fields, including medicine, have been established in French universities. These are known as the American Field Service Fellowships and each will provide $200 in the first year and 10,000 francs each subsequent year. It is intended eventually to establish 127 such fellowships in honor of the 127 men of the Field Service in France who lost their lives in active duty during the World War. Applicants must be citizens of the United States, between 20 and 30 years of age; and (*a*) graduates of a college requiring four years of study based on 14 units of high school work, or (*b*) graduates of a professional school requiring three or more years of study for a degree; or (*c*) 24 years of age, with five years' experience in an industrial establishment in work requiring technical skill. Full information may be obtained from the secretary, Dr. Isaac L. Kandel, 522 Fifth Avenue, New York.

LATIN AMERICA

Smallpox in Haiti.—A recent cablegram from Haiti states that there is a smallpox epidemic on that island. In the city of Port-au-Prince, with 100,000 population, there are 400 cases. Thirty-five patients are being sent to the hospital daily. So far there have been no deaths, but the disease is gradually assuming a severe character.

Hospitalization of Venereal Patients.—The Department of the Interior of Chile has ordered that the Board of Public Charities proceed to carry out as soon as possible the provisions of a law adopted in 1918, ordering that prostitutes should be treated in hospitals until completely cured of venereal disease. In this connection the board has sent out questionnaires to the various hospitals inquiring whether they are observing the law, how many beds are reserved for prostitutes, the results obtained, and in case these measures are not being carried out whether special funds would be necessary to do so.

Death Rate Increase Among Colored People of Cuba.—In the last bulletin published by the Department of Sanitation of Cuba, Dr. George Le-Roy, chief of vital statistics, calls attention to the apparent increase in the death rate of the colored race, as shown by the vital statistics of the year 1916, just compiled. During that year the number of deaths among colored people exceeded by 2,713 the number of births; while among white people the number of births was 17,855 more than the deaths. According to the census bureau the population of Cuba in the year 1916 was 2,627,610, showing a gain of 108,580 in a year.

FOREIGN

Physician Appointed Minister of Public Health.—A Vienna exchange states that Dr. Prochazka of Prague, author of numerous works on hygiene, has been appointed minister of public health and physical training in the new government of Hungary.

Congress of Comparative Pathology.—The first international congress for comparative pathology was held at Paris in 1912, and Rome was selected for the place of the next meeting. After the intermission of the war, it is now announced that the second congress will meet in Rome next year. The leading Italian pathologists and internists form the committee of organization, with Professor Perroncito as president. A long series of topics have been appointed for discussion, including foot-and-mouth disease, cancer, regeneration of nerves, and the cycle of evolution of various parasites, etc. The secretary is Prof. M. Levi della Vida, Palermo, 58, Rome.

International Antiprostitution Conference.—At the conference held at Geneva, in September, of the Fédération Abolitioniste internationale, there were numerous representatives present from nearly all the European countries, and also from the United States and from Uruguay. The first meeting was opened by Yve Guyot of Paris who in 1876 was imprisoned for six months on account of his attacks on the government for its laxity. A delegate from the Netherlands presided at the second meeting. Nearly all the reports presented emphasized the vital necessity of combating syphilis. The conference voted that every form of compulsory management of venereal disease or regulation of prostitution must be done away with completely. The next conference is to be held at Rome in 1922.

Prizes for Neurologists.—Our German exchanges state that at the recent meeting of the German Neurologic Society the triennial Erb prize was awarded to M. Nonne of Hamburg and O. Foerster of Breslau for the best scientific practical work of the past six years in neurology. The Möbius prize was conferred on O. and Cecile Vogt of Berlin for their work on the anatomy of the brain, and on Nonne and Foerster for their works on syphilis, on the nervous system, on the estimation and treatment of war neuroses and on the diagnosis and surgical treatment of organic nerve diseases. As no prize was awarded during the war, there were thus two to be conferred from each foundation. Dr. Nonne was an invited guest of the American Medical Association at the annual session in 1909, and Professor Foerster in 1914.

CORRECTION

Fees at Ancon Hospital.—In an article by Dr. W. J. Mayo concerning Panama, THE JOURNAL, July 31, he said:

> Pay patients are admitted. The surgeons' fees go into the general fund of the hospital. Seven and one-half dollars a day is charged for a private room, and $2 extra for private bath. Nurses are supplied for $5 a day on an eight-hour-day schedule. Thus room and adequate nursing costs $24.50 a day. The people of average means cannot, of course, procure such attention, but they have access to the wards at $3.50 a day.

Col. L. T. Hess, superintendent of the Ancon Hospital, writes to point out that the maximum private room charges are $7.50 per day, including adequate nursing and all charges except roentgenology and operative work. Special arrangements may be made, however, for special service at increased cost, such as was described by Dr. Mayo.

Government Services

Association President Receives Naval Award

Dr. William C. Braisted, Surgeon-General, U. S. Navy, and President of the American Medical Association, has been awarded the Navy Distinguished Service Medal for meritorious service during the World War.

Award of Medal of Honor

The Congressional medal of honor has been awarded to four officers and two enlisted men of the Medical Corps of the Navy in recognition of heroic conduct during the World War. Those to whom the medal has been presented are Lieut.-Com. Alexander G. Lyle, Lieutenants Edouard V. M. Isaacs, Orlando H. Petty, and Ralph Talbot, the latter deceased, Pharmacist's Mate John Henry Balch and Hospital Attendant David Ephraim Martin.

Neuropsychiatry Section for the District of Pennsylvania and Delaware

The Public Health Service has ordered a board consisting of Dr. A. J. Ostenheimer of Philadelphia, Dr. T. Diller of Pittsburgh and the officer in charge of the Marine Hospital to convene in Pittsburgh and to arrange for the setting aside in the hospital of a section for the diagnosis of neuropsychiatric cases from the third district, comprising the states of Pennsylvania and Delaware.

Public Dispensary for Government Employees

A dispensary for government employees has been opened in Washington, D. C., by the U. S. Public Health Service, and Surgeon S. H. Christian has been placed in charge. Free medical attention will be given to all persons injured in line of duty in any of the government departments, to civilian employees of the Army and Navy, members of the police and fire departments of the District of Columbia, the coast guard, the Mississippi river commission and similar government commissions, War Risk Insurance bureau and men under training by the Federal Board of Vocational Training. This is the first effort to give medical assistance to all government employees or to furnish a dispensary where they could undergo treatment. The institution consists of an admitting office, eight examining offices, a surgical ward, an eye, ear, nose and throat ward, and departments of tuberculosis, physiotherapy, genito-urinary diseases, neuro-psychiatry, roentgen ray, pharmacy and orthopedics. The staff is composed of twenty-five physicians and six nurses and physiotherapy aids.

Progress of the Medical History of the War

At a meeting of the editorial board for the preparation of the history of the medical department in the World War, held at the Army Medical School, November 13, matters pertaining to the preliminary arrangements such as the lists of authors and subjects for the various volumes, the number of pages in each volume, the page size and style of composition were discussed in detail. It is expected that six volumes will be published this year, and as many more as the $50,000 appropriation will permit. These volumes will be: (1) Administrative Volume, Surgeon-General's Office; (2) Administrative Volume, American Expeditionary Force; (3) Tactical Volume, American Expeditionary Force; (4) Special Surgery; (5) Reconstruction, and (6) Neuropsychiatry. The administrative volumes are being prepared in the office of the editor-in-chief; the volume on special surgery is to be edited by Gen. J. M. T. Finney and Lieut.-Col. Roger Brooke; on Reconstruction by Col. Frank Billings and Major A. G. Crane, and on Neuropsychiatry by Col. Pearce Bailey and Col. Thomas W. Salmon. The officers of the editorial board in attendance at the meeting included Drs. George H. Brewer, Thomas W. Salmon and Hans Zinsser of New York; Dr. George E. de Schweinitz of Philadelphia; Drs. John M. T. Finney, William H. Welch and Thomas R. Boggs of Baltimore; Drs. Haven Emerson and James McKernan of New York; Brig.-Gen. Walter D. McCaw, Brig.-Gen. Jefferson R. Kean, Col. Charles Lynch, Lieut.-Col. Fielding H. Garrison, and Lieut.-Col. Joseph F. Siler, M. C., U. S. Army.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Oct. 22, 1920.

International Tuberculosis Society

The inaugural session of the international conference on tuberculosis was held, October 17, in the amphitheater of the Sorbonne, under the presidency of M. J.-L. Breton, minister of hygiene and social welfare. By his side were seated M. Léon Bourgeois, the president of the French senate and of the national committee against tuberculosis; the ambassadors of participating nations; Dr. Laveran, president of the Académie de médecine; Drs. Emile Roux, L. Martin and A. Calmette of the Pasteur Institute, and the delegates from foreign countries. In his inaugural address, M. Breton referred in glowing terms to the results already obtained by the Comité national, and he expressed gratitude to the Rockefeller Foundation for the assistance that it has rendered to the French antituberculosis organization.

The delegates of the different nations adhering to the program of the international conference elaborated the statutes for the organization of an international society. This society will have for its objects (1) the establishment of a federative bond between the various national institutions and campaigns and the coordination of the efforts of all antituberculosis societies; (2) the comparative study of the laws and regulations pertaining to tuberculosis and related problems of social hygienie; (3) the establishment of an international statistical bureau; (4) the initiation of a survey of the prevalence and transmission of tuberculosis by countries and races, and (5) the collection and publication of all possible information on matters relating to the campaign against tuberculosis. The headquarters of the society will be maintained in Geneva, and a meeting will be held annually in one of the capitals of affiliated countries. The membership will be divided into councilor members, to be named by the national antituberculosis organizations; titular members, to be elected by the council after nomination by the governments or national organizations of adherent countries, and honorary members, to be elected by the general assembly after nomination by the council.

Meeting of the Physicians and Surgeons of the Civil Hospitals of France

The first Congrès professionnel des médecins et chirurgiens des hôpitaux civils de France, held at the Paris medical faculty, October 4-6, was attended by a large number of members of hospital staffs. The main object of the meeting was to repress the abuse of hospital facilities, against which vigorous but ineffectual protests have been made for a long time. With this in mind, the congress expressed its opinion that the public hospital is intended for indigent patients for attendance on whom the physicians and surgeons are entitled to compensation commensurate with the services rendered and the exigencies of modern life. Patients in modest circumstances who cannot afford to pay the regular fees of the private practitioner should be made to realize that the physician is entitled to a fee proportionate to their means. This perspective of legitimate compensation will tend to correct abuses by eliminating unnecessary visits. No other class of patients has a right to free treatment.

The Cultivation of Medicinal Plants

The war and the subsequent difficulties in international relations having directed attention to the subject of our native vegetable drugs, an interministerial committee on medicinal

plants was appointed under direction of M. E. Perrot of the Paris pharmaceutical faculty. Thanks to the liberality of a group of druggists, pharmaceutical societies and manufacturers and of interested individuals, the Office national des matières premières végétales pour la droguerie et la parfumerie was able to undertake a systematic survey, organize an active propaganda, and inspire attempts at the cultivation of plants. Regional committees have been appointed throughout the country for the purpose of directing and coordinating local efforts, and numerous pamphlets have been distributed. Although it is premature to draw definite conclusions after only fifteen months of activity, it is safe to say that the government's efforts have not been unproductive.

Even before the war the production of certain medicinal plants was far from negligible, and some special drug houses had taken measures to fill at least part of their needs from native sources. It goes without saying that one should not expect to raise medicinal plants wherever cereals and grasses give large yields; but there are large areas in France and the colonies where the latter products cannot be raised but which are nevertheless suitable for the cultivation of medicinal plants. Every effort is therefore being made to encourage the growing of vegetable products where conditions are unfavorable for the exploitation of more hardy plants. In some sections where certain plants are abundant, as on our mountain sides where immense areas are covered by lavender, the intensive cultivation of the indigenous plants ought to be introduced.

Protest Against Burial at Sea

The population of Saïgon was greatly stirred some time ago on learning that the body of a young English woman who died aboard a steamer of the Messageries Maritimes was consigned to the sea despite the protests, entreaties and proffered compensation of her husband, who sought to have the body retained until the first port was reached. A petition was addressed to the governor of Cochin China, setting forth that burial at sea is a practice which originated in the period of sailing vessels when ships might remain becalmed for days, but that it is no longer justified now that voyages are much shorter and ocean travel has reached as great importance as traveling on land. By embalming the body or laying it in a coffin with suitable disinfectants, decomposition may be arrested for a longer time than is required for a trip from Saïgon to Marseilles. Some German vessels are equipped with cold storage rooms for the preservation of cadavers. The petitioners requested that steps be taken to see that all passenger vessels in the future have aboard a number of coffins of wood and metal, or at least the material to construct them, and that the custom of consigning bodies to the sea be discontinued except in special cases during an epidemic.

LONDON

(From Our Regular Correspondent)

Oct. 23, 1920.

Intellectual Reconciliation with Germany

The letter sent to German professors by a number of professors and other officers of Oxford, with the object of dispelling the prevailing animosities, has aroused a good deal of protest from the university. It now appears that it represents only a minority, and that a large majority refused to sign it. The list of signatories contains less than sixty names. In the faculty of theology there are ten names and five signatories; in the faculty of law, eight names, and no signatories; in the faculty of medicine, twelve names and no signatory; in the faculty of literae humaniores, fifteen names and nine signatories; in the faculty of modern history, fourteen names and one signatory; in the faculty of medieval and modern languages, fifteen names and no signatory; in the faculty of natural science, thirty names and one signatory.

The Causation of Printers' Phthisis

The hypothesis of Mr. E. H. Ross that the silica and iron contained in printers' "list" is the cause of the prevalence of phthisis among printers is challenged in a letter to the *Times* by Prof. Leonard Hill the physiologist, one of the Medical Research Council appointed to inquire into industrial tuberculosis. He points out that silica and iron are found in almost any common dust, and he considers that silica dust is harmful only when inhaled for a long period and in concentrated doses, as by the workers in flint, ganister, granite and quartz. The evidence also goes to show that large amounts of silica dust can be inhaled with impunity when mixed with coal or other dust of "edible" nature. Coal dust stimulates the cells of the air passages to clean up the lungs by phagocytic action. Pure silica particles, on the other hand, seem to have no such stimulating action and, collecting in the lung tissue, excite there a fibroid change, which finally ends in tuberculous infection. Mr. Hill points out that tuberculosis attacks the operative printers' assistants more severely than the compositors, and they do not handle the boxes of type. The air of printing shops is not particularly dusty, and it seems improbable that the inhalation of silica dust in such shops has anything to do with tuberculosis. The users of public roads, paved with granite or flint, in dry weather inhale clouds of silica dust stirred up by motorcars, but the exposure of road sweepers to the dust does not appear to produce silicosis of the lungs. What is required is daily exposure in such dusty, enclosed spaces as those in which the gritstone worker, mason, or tin and gold worker are confined. Printers' work takes place in warm atmospheres, and in sunless, artificially lighted places—conditions which lower the metabolism and vitality of the body, and predispose to phthisis.

Medical Secrecy Not Recognized by the Admiralty

The British Medical Association has recently decided that "a physician should not without his patient's consent voluntarily disclose information which he has obtained from that patient in the exercise of his professional duties." An admiralty order, just published, forbids such secrecy to naval surgeons when giving evidence at courts martial or courts of inquiry. The order states that "a naval medical officer's first duty is to the service, and in any service inquiry he is bound to give all the information he can, however that information may have been acquired. He must therefore answer any question material to the inquiry unless, at his request, for special reason to be recorded in the minutes of the trial or inquiry, the officer presiding relieves him from the obligation to answer."

Irish Health Administration Stopped by Politics

A peculiar situation has arisen with regard to Irish health administration. The assassination of police and other political outrages render the local authorities liable to pay compensation to the relatives of the deceased or to persons whose property has been injured. But they refuse to do so. The government therefore pays the claims, but to recoup itself withholds from the local authorities grants for health administration which it had been making. The Irish Public Health Council has made representations to the government as to the dangers to the health of the community due to the withholding of the grants. The treatment of tuberculosis, child welfare and other important services are suspended in the affected districts.

The Ratten Inquiry

The case of Ratten, whose diploma, alleged to be obtained from the defunct Harvey Medical College of Chicago, has been questioned by the Medical Council of Tasmania, has

come before the chief justice of Tasmania. The chief justice delivered his reserved judgment on the application of the council that a commission should be appointed to take certain evidence in Chicago and Texas. The application has been refused, and an order in favor of Victor Richard Ratten for costs has been entered. The chief justice based his decision on a consideration of the question whether the jury would be able to determine the credibility or otherwise of witnesses from evidence taken elsewhere. He had to apply the principles of law. If the commission should be issued, the evidence would be taken and the jury would have the opportunity of seeing the demeanor of the witnesses and of observing the way in which the various questions put in cross-examination were answered. He had arrived at the opinion that the present case was one particularly unsuitable for trial in this way.

First Report of the Ministry of Health

The first report of the chief medical officer of the ministry of health has been issued. There are eight departments of this newly constituted ministry: on general health and epidemiology, maternity and child welfare, tuberculosis and venereal disease, supervision of food supplies, general practitioners' services, sanitary administration in relation to infectious diseases, Welsh Board of Health, and medical officers employed for special purposes. The staff of physicians amounts to ninety-five. British consular agents in all parts of the world have been instructed to send regular returns of infectious diseases and special reports when necessary. It is stated that there are 22,000,000 insured persons in the country with 12,000 physicians to attend them. A maximum number of 3,000 for a single-handed practice has been fixed. The chief medical officer, Sir George Newman, declares that the full value of the service will not be obtained until the physician, in addition to treating obvious disease, (1) recognizes its beginnings and treats it effectually in the early stages, and (2) becomes an exponent or missionary of personal hygiene in its preventive aspects. In regard to the dangers of typhus fever, it is declared that this may present great obstacles to the reestablishment of satisfactory peace conditions with Russia and other areas. The tendency of the Mecca pilgrimage to start epidemics of cholera which pass to Russia and thence to Europe is discussed.

BUENOS AIRES

(From Our Regular Correspondent)

Oct. 12, 1920.

Second National Medical Congress

The executive committee of the Second National Medical Congress has decided that the chief subject for discussion shall be hydatid cysts, which are rather frequent in this country. It is intended to ask all Argentine men of science to collaborate in order to study the problem from all standpoints in order that the transactions may present a complete review of our present knowledge of this disease.

Surgery Institute

The president has approved the law ordering the immediate construction of a surgical institute for the chair in charge of Professor José Arce. Four hundred thousand dollars has been provided for this work.

New Schools of Medicine

After a protracted strike, the School of Medicine of La Plata has been operating again for the last few months. Discipline is still far from perfect, and the students possess the absolute power to choose and dismiss professors. On account of the resignation of Dr. Belou, who was the organizer of the school, Dr. Greenway has become its dean.

The new school of medicine of El Rosario has been in operation this year, and its installation is nearly complete. Some of the professors for the second year courses have already been appointed; these courses will be started next year.

Scientific Lectures

An unusually large number of scientific lectures have been given either by medical professors of this city or by foreigners. Among the latter may be mentioned Professors Krause of Berlin; Leotta, Rome; J. Dumas, Paris; Infantozzi, Montevideo; Salcedo, Santiago de Chile, and Reenstierna, Stockholm. The Academy of Medicine of Buenos Aires has made Professor Dumas an honorary member. He gave a course on psychology in the school of philosophy and letters, and two lectures on mental and nervous disturbances during the war.

Practice of Medicine by Foreigners

In our country, foreigners cannot practice medicine unless they pass the full series of examinations required of Argentine students, which takes two or three years. Unless this is done, they can practice their profession only in isolated regions where there are no national physicians. An obvious case of illegal practice which has made a distinctly unfavorable impression is the behavior of some foreign physicians, often renowned professors, who come to this country under the pretense of giving lectures, but devote themselves to practicing their profession, charging large fees, all of this being accompanied by active newspaper propaganda. Little by little there is developing an attitude of resistance to this illegal practice of medicine, some of these physicians having even refused to operate free of charge in our hospitals.

Spermatozoa and Inheritance

Dr. Victor Widakowich's investigations on the morphology of the sperm of syphilitic patients have attracted much attention. His studies indicate that there is a considerable number of abnormal spermatozoa in the sperm of these patients. He states that this permits a more accurate diagnosis of this disease than any other known method. This spermatic taint persists in many patients treated and giving negative Wassermann tests. If these results are confirmed, they will assume enormous importance in the explanation of hereditary syphilitic dystrophies, and will endow spermatozoa with an all-important rôle so far as inheritance is concerned.

Dr. Decoud's Death

Dr. Diogenes Decoud, academician, who retired recently as professor of the School of Medicine of Buenos Aires, died in this city, October 2. Dr. Decoud was born in Paraguay, but he had been educated in Buenos Aires, and was a noted surgeon. His scientific accomplishments were considerable, and special mention should be made of his persistent campaigns on behalf of spinal anesthesia.

BELGIUM

(From Our Regular Correspondent)

Oct. 22, 1920.

Reeducation Schools

Before the war there were two Belgian schools of reeducation, and these served as models for the great institution of Port Villez (Eure) where the disabled Belgian soldiers will be gathered. Despite the German occupation, these schools continued to function regularly; and now that peace has been reestablished, some account should be taken of the great good which they accomplished. It might be hoped that the example set by the provinces of Hainaut and Brabant may be imitated far and wide.

The school for cripples at Charleroi opened in 1907 with thirty-one students; by 1910 the number had increased to 107.

Since then the attendance has steadily grown larger to a point at which the provincial authorities felt impelled to increase its facilities. It should be added, by the way, that it was recently decided to admit crippled soldiers, and special appropriations were voted for this purpose. The school admits congenital cripples as well as those who have been maimed in industry. In its workshops it offers a number of industrial courses, such as shoemaking, bookbinding, basket making, carpet weaving, harness making, tailoring and bookkeeping, not to mention the general courses contributing to the increase of general and technical knowledge. The workshops are open all day. The students receive their lunch free of charge, and are paid for their work, just as in a commercial factory.

The Brabant provincial institute for cripples was opened in 1914, five years after the detailed proposals for its establishment were presented to the provincial council. The medical and orthopedic dispensary was opened in March, 1914. The institution was closed immediately after the outbreak of the war, and did not reopen until May, 1915, and then only with considerable difficulty. At the beginning of 1920, the register of the Brabantine institute included 509 cripples, besides forty-seven under medical treatment, and thirty-nine students in attendance on the shoemaking, orthopedic, bookbinding and basket weaving workshops. Since the opening of the harness making and tailoring shops, the number of students has been greatly augmented. The industrial courses are almost identical with those given at Charleroi.

Changes in Medical Education

Heretofore, the medical course in Belgium embraced six or seven academic sessions, the first two of which were devoted to the physical and natural sciences; the third and fourth to anatomy and physiology, and the last three to pathology, hygiene and the clinical subjects. In the course of his last three years at school, the student was expected to attend the hospitals and the special clinics. Two years' attendance at the clinics was prescribed, but attendance was obligatory only at the medical, surgical, obstetric and ophthalmologic clinics. Through some whimsical oversight in the regulations, a student could get his final diploma without studying dermatology, urology, otorhinolaryngology or any of the other specialties. This is no longer the case, however, and henceforth a candidate for the medical degree will have to present evidence of a theoretical and practical knowledge of urology, dermatology, venereal diseases, otorhinolaryngology and gynecology.

Death of Nuel

Dr. J.-P. Nuel, member of the Académie royale de Belgique, and emeritus professor of ophthalmology of the Liége medical faculty, died a few days ago. Dr. Nuel was counted among the great physiologists of the age, and made notable contributions to the physiology of vision, his most important publication being a manual on the physiology of the special senses. He had relinquished his professorship some years ago into the hands of Professor Weekers.

The Flemish Medical Congress

The Flemish scientific congress, which met at Ghent a short time ago, brought together many of the outstanding scientists of Flanders. The congress embraced three principal sections: medicine, the natural sciences and engineering. At the same time the philologists and jurists held their meetings in other cities. For some reasons it would not be surprising at this time, when the linguistic quarrel is so acute in Belgium, if this congress might not have been an attempted demonstration to unite all of the Flemish factions. Many visitors from Holland took an active part in the proceedings of the congress.

Marriages

HERBERT R. COLEMAN, Asst. Surg., Lieut. (j. g.), U. S. Navy, to Miss Odie Mary Powell, at San Francisco, October 29.

PERCY OCTAVE CHAUDRON, Dothan, Ala., to Miss Carrie Virginia Givens of Mobile, Ala., November 24.

ROYALL GRAVES CANNADAY, New York, to Miss Ramelle Burgess Smith of Albemarle, N. C., November 6.

MICHAEL JOSEPH EGAN, JR., Savannah, Ga., to Miss Elsie Frances Robider of Montreal, Que., October 2.

WILLIAM TECUMSEH SHERMAN THORNDIKE, Boston, to Miss Katherine Hunt of Auburn, N. Y., October 9.

EDWIN PORTER BUCHANAN, Pittsburgh, to Miss Marion Vesta Bayley of Lexington, Mass., October 16.

DAMON AMBROSE CRIST, Phillipsburg, Ohio, to Miss Helen Mannassau of Chicago, recently.

JOSEPH ABNER ABEL, South Bend, Ind., to Miss Theresa O'Donnell of Chicago, recently.

JOHN FRANCIS CURTAIN, Minneapolis, to Miss Mae Sandt of Winona, Minn., October 15.

J. ALEXANDER LIPNICK to Miss Ruth A. Berlin, both of Norfolk, Va., October 7.

FRANK H. HAGAMAN, Sardis, Miss., to Miss Edwina Short of St. Louis, October 31.

MAURICE P. SEIDNER to Miss Bertha Reisman, both of Chicago, recently.

SAMUEL J. GINSBURG to Miss Yetta Weiss, both of Chicago, recently.

Deaths

John Randolph Ham, Brookfield, Mass.; Bowdoin Medical School, Brunswick and Portland, Maine, 1866; aged 78; a veteran of the Civil War, assistant surgeon of the One Hundred and Fifteenth New Hampshire Infantry; a member of the New Hampshire Medical Society; died, October 31.

Willard Nathan Bell ⊕ Ogdensburg, N. Y.; New York Homeopathic Medical College, New York, 1882; aged 63; a specialist in diseases of the eye and ear; for ten years a member of the board of education of Ogdensburg; died, October 25, from pneumonia.

William D. Carter, Nashville, Ill.; Rush Medical College, 1862; Chicago Medical College, 1866; aged 83; a member of the Illinois State Medical Society; assistant surgeon of the Forty-Fourth Volunteer Infantry during the Civil War; died, October 27, from pneumonia.

Albert Freeman Snell, Jr., Cincinnati; Eclectic Medical College, Cincinnati, 1914; aged 32, associate professor of histology and embryology in his alma mater; lieutenant, M. C., U. S. Army, and discharged Feb. 26, 1918; died, October 29.

Edward Gray, Berkeley, Calif.; College of Physicians and Surgeons in the City of New York, 1875; aged 70; for twelve years resident physician at the Sonoma State Home, Eldridge, Calif.; died suddenly, November 3, from heart disease.

Stephen William Hayes ⊕ New Bedford, Mass.; Harvard University Medical School, 1870; aged 72; visiting physician to St. Luke's Hospital; at one time president of the South Bristol Medical Society; died, November 2.

Richard Thomas Holland, Castleberry, Ala.; University of Alabama, Mobile, 1890; aged 55; a member of the Medical Association of the State of Alabama; died, September 21, from general paralysis.

Edmond D. Mills, Memphis, Mich.; Michigan College of Medicine and Surgery, Detroit, 1896; aged 51; died at the State Psychopathic Hospital, Ann Arbor, October 19, from hyperthyroidism.

Richard H. Lull, Evanston, Ill.; Rush Medical College, 1883; aged 60; assistant chief surgeon of the Chicago, Milwaukee and St. Paul Railroad; died, November 11, from angina pectoris.

William Russell Palmer ⊕ Johnsonburg, Pa.; University of Buffalo, 1887; aged 57; was instantly killed, November 3, when the automobile in which he was riding plunged over an embankment.

⊕ Indicates "Fellow" of the American Medical Association.

John Albon Crowther, Savannah, Ga.; University of Virginia, Charlottesville, 1895; aged 61; a member and at one time president of the Medical Association of Georgia; died, October 10.

Christian Oswald Joerg, Brooklyn; University of Leipzig, Germany, 1870; aged 76; a member of the Medical Society of the State of New York; died, November 4, from myocarditis.

Clement A. Smith, Little Rock, Ark.; Meharry Medical College, Nashville, 1902; aged 46; a colored practitioner; died suddenly, October 26, from heart disease.

William P. Noble, Greencastle, Pa.; Jefferson Medical College, 1869; aged 75; a member of the Medical Society of the State of Pennsylvania; died, October 28.

William J. Coleman, Mineral, Va.; Medical College of Virginia, Richmond, 1879; aged 64; a member of the Medical Society of Virginia; died, October 31.

Charles Beamen Ballard ⊕ Pooleville, Okla.; Fort Worth (Texas) School of Medicine, 1905; aged 45; died suddenly, October 24, from cerebral hemorrhage.

Henry Winslow Boutwell ⊕ Manchester, N. H.; Harvard University Medical School, 1882; aged 72; at one time state senator; died suddenly, November 3.

Logan Stanley, Roachdale, Ind.; Indiana Medical College, Indianapolis, 1876; aged 74; a veteran of the Civil War; died, November 1, from uremia.

Barnard Lecherzack Bernard, Boston; University of Kazan, Russia, 1883; aged 57; a member of the Massachusetts Medical Society; died, October 28.

Christopher Columbus Baker, Fitzpatrick, Ala.; University of Nashville, Tenn., 1859; aged 80; a veteran of the Civil War; died, October 19.

Charles C. Morris, Rockville, Ind.; Jefferson Medical College, 1876; aged 72; coroner of Parke County; died, October 28, from heart disease.

Walter S. Ferguson, Toronto; Trinity Medical College, Toronto, 1890; aged 57; died suddenly, October 17, from cerebral hemorrhage.

George Edwin White, Sandwich, Mass.; Hahnemann Medical College and Hospital of Philadelphia, 1880; aged 71; died, October 20.

Edward Louis Drowne, Boston; Harvard University Medical School, 1904; aged 42; died, October 24, from valvular heart disease.

Joseph A. White, Dumas, Ark.; University of Tennessee, Memphis, 1886; aged 61; died, October 9, from cerebral hemorrhage.

Karl Herman Schmidt ⊕ Chicago; Northwestern University Medical School, 1911; aged 31; died, October 30, from pneumonia.

James Gerard Wiltshire, Baltimore; University of Maryland, Baltimore, 1869; aged 73; a Confederate veteran; died, October 28.

William John Gibson, Belleville, Ont.; Queen's University, Kingston, Ont., 1881; aged 72; died in Rochester, Minn., October 7.

William Joseph Fischer, Waterloo, Ont.; Western University, London, Ont., 1902; aged 41; died, August 15, from sarcoma.

Frank E. Brooks, Seattle; Bennett College of Eclectic Medicine and Surgery, Chicago, 1877; aged 70; died, October 21.

Gaetano De Marco, Somerville, N. J.; University of Naples, Italy, 1907; aged 38; died at Atena, Lucania, Italy, October 19.

Cornelia Bennett White Thomas ⊕ Rochester, N. Y.; Syracuse (N. Y.) University, 1895; aged 50; died, October 22.

Samuel Ernest Kaestlen, Cleveland; Western Reserve University, Cleveland, 1890; aged 56; died, October 30.

James Truitt Stephens, Mansfield, Texas; Bellevue Hospital Medical College, 1873; aged 72; died, October 15.

Isaac W. Newcomet, Stouchsburg, Pa.; University of Pennsylvania, Philadelphia, 1867; aged 77; died, October 31.

Thomas Featherstonhaugh, Duanesburgh, N. Y.; Albany (N. Y.) Medical College, 1877; died, October 27.

Frank Thompson, Cambridge, Iowa; State University of Iowa, Iowa City, 1882; aged 62; died, October 22.

John Mundell, Kingston, Ont.; Queen's University, Kingston, Ont., 1886; died, October 15.

Robert B. Lamont, Moosic, Pa.; Jefferson Medical College, 1873; aged 72; died, October 24.

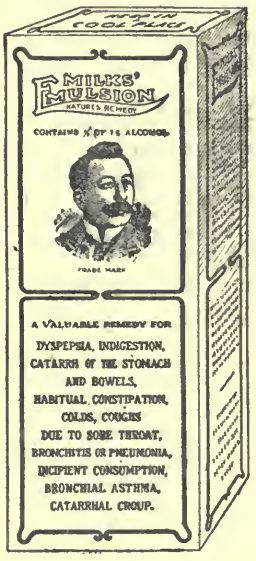
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

MORE MISBRANDED NOSTRUMS

Stearns' Santolods.—Frederick Stearns & Co., Detroit, shipped in July, 1918, a quantity of this product which was misbranded. The "Santaloids" were gelatin capsules which, according to the government chemists, contained oil of santal. The preparation was sold for the treatment of gonorrhea and the claims made for it were declared false and fraudulent. In November, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 7667; issued Oct. 29, 1920.*]

Milks' Emulsion.—Between May and September, 1919, the Milks Emulsion Co., Terre Haute, Ind., consigned over 3,000 bottles of this nostrum which the government held was misbranded. Analysis showed the preparation to consist essentially of petrolatum, with small amounts of glycerin, syrup and methyl salicylate. Fats were absent. The contents of those bottles that were labeled as containing 29 ounces varied in amounts from 19.9 ounces to 21.3 ounces. The so-called 12 ounce bottles actually held from 8.15 ounces to 9.15 ounces. The stuff was falsely and fraudulently claimed to be of benefit in incipient consumption, bronchial asthma, pneumonia, etc., and was recommended as of value for strengthening and "building up" children. Judgment of condemnation and forfeiture was entered and after the company had paid the costs of the case and had executed a bond for $2,500 the product was released to it.—[*Notice of Judgment No. 7668; issued Oct. 29, 1920.*]



Bliss Native Herbs.—Alonzo O. Bliss, Washington, D. C., shipped, in August, 1919, eighty-four boxes of this nostrum. The government seized this material on the charge that it was misbranded in violation of the Food and Drugs Act. Analysis by the Bureau of Chemistry showed Bliss Native Herbs to consist essentially of licorice, aloes, buchu and red pepper. The product was so labeled as to create in the minds of the purchasers the belief that it was a remedy for "intestinal indigestion," "rheumatism," sciatica, lumbago, etc., and that it would "correct the blood, dissolving acids that accumulate in the system." These claims were declared false and fraudulent and applied knowingly and in reckless and wanton disregard of their truth or falsity. In March, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 7638; issued Oct. 22, 1920.*]

Madame Dean Antiseptic Vaginal Suppositories.—Martin Rudy, Lancaster, Pa., shipped in December, 1918, a number of boxes of this preparation which were misbranded. The suppositories, according to the federal chemists, consisted essentially of cacao butter, bismuth and aluminum salts, sulphate, boric and tannic acids and a small amount of unidentified plant material. The packages, which bore the name of the "United Medical Co.," of Lancaster, Pa., contained claims to the effect that the product would relieve vaginitis, vulvitis, gonorrhea, "and similar Female Complaints." These claims

were declared false and fraudulent and in October, 1919, judgment of condemnation was entered and the court ordered the product destroyed.—[*Notice of Judgment No. 7645; issued Oct. 22, 1920.*]

Halz Tablets.—The Ed. Price Chemical Co., Kansas City, Mo., shipped in April, 1918, a quantity of Halz Tablets which the government authorities held were misbranded. Analysis showed the tablets to consist essentially of carbonates of calcium and magnesium, resins and plant material, including cubebs, rhubarb and aromatics. The tablets were sold under the claim that they would cure gonorrhea, leucorrhea, "unnatural discharges," etc. The purchaser was urged to use "Halz Injection" in connection with the "tablets." The "injection" has also been declared misbranded. The claims made for the tablets were held to be false and fraudulent and in March, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 7663; issued Oct. 29, 1920.*]

D. D. D.—This nostrum comes in two forms, "Ordinary" and "Extra Strong." In January, 1913, the D. D. D. Co., Chicago, shipped a quantity of both strengths, both of which the government held were misbranded. When analyzed the "Ordinary" was found to be a water-alcohol solution of chloral hydrate, methyl salicylate, salicylic acid, thymol, phenol, glycerin and yellow coloring matter. There was 32 per cent. alcohol by volume. The "Extra Strong" was essentially the same except that it contained 35.1 per cent. alcohol.



The claims made for the "Ordinary" were such as to lead purchasers to believe that it was an invaluable remedy for psoriasis, dandruff, erysipelas, etc., "when in truth and fact the said article of drugs would not be an invaluable remedy . . . nor any remedy whatsoever" for these conditions. The "Extra Strong" was sold under claims that would lead the purchaser to believe that it was a cure for all cases of chronic dry eczema of the body, arms or legs when as a matter of fact it would not do what was claimed but might in some cases prove harmful. The D. D. D. Company in March, 1920, entered a plea of *nolo contendere* and was fined $50 and costs.—[*Notice of Judgment No. 7669; issued Oct. 29, 1920.*]

Correspondence

UNSUCCESSFUL TREATMENT OF STAPHYLOCOCCAL INFECTIONS WITH PREPARATIONS OF TIN

To the Editor:—I was much interested in your answer to a query about Stannoxyl (The Journal, March 6, p. 629). I submit the following experience as a confirmatory note:

While serving with the Royal Army Medical Corps in Egypt, I for some time had charge of the medical division of a hospital in which most of the skin diseases occurring among soldiers in the district were treated. The most common conditions were boils and septic sores, chiefly due to staphylococcal infection, though several of the latter cases were diphtheritic. The treatment adopted was that in ordinary use, namely, incision and evacuation of pus, application of antiseptic dressings, and in most cases employment of the specific vaccine. It was possible to judge of the efficacy of any variations of treatment, as there were always plenty of cases undergoing the usual treatment with which the results could be controlled.

An available supply of Stannoxyl, a proprietary remedy consisting of a mixture of metallic tin and tin oxid, enabled me to give it a fair trial in full doses in eight cases of boils of average severity, in which culture revealed the infecting organism to be *Staphylococcus aureus.* The boils were treated locally as usual, but no vaccine was given. No improvement could be demonstrated in these cases that could not be shown in other cases similarly treated with the omission of Stannoxyl; in fact, three of the treated cases were much longer in clearing up than the untreated controls. Eight cases do not constitute a very large series from which to draw conclusions; but, if the preparation were as good as the descriptive literature would lead one to believe, one should have expected an evident result in at least one of these cases.

It has been stated that Stannoxyl does not inhibit the growth of staphylococci, but only renders the growth less virulent. It is known that a certain amount of tin may be absorbed from the intestine, and Salant, Rieger and Treuhardt have shown that in certain cases tin may be retained for some time in the skin; but it is questionable whether, when preparations of tin are given by mouth, any reaches the staphylococci in the boils, or at any rate enough materially to influence their growth or virulence.

In the cases treated by me the results did not at all suggest that Stannoxyl was a "specific for diseases of staphylococcal origin."

J. W. C. Gunn, M.A., M.B., Ch.B., Cape Town.
Professor of Pharmacology, University of Cape Town.

ELECTION OF MORTON TO HALL OF FAME

To the Editor:—A few months ago I sent out a plea for recognition of the medical profession in the Hall of Fame, and especially for Morton as perhaps the most outstanding figure in American medicine. This was published in many of our leading medical periodicals, and as yours was one which extended the hospitality of its columns to the cause, I am sure The Journal of the American Medical Association has in no small degree helped in the election of Morton's name. The outcome of the recent election must be gratifying to every American physician who is familiar with Morton's life, his struggles for recognition, and the sad experience he was made to undergo by those who attacked him during life and those who up to this time wished to withhold the credit for his work.

Our never-to-be-forgotten Osler, with his keen sense of justice, gave us the result of his profound study of historical medicine concerning Morton's share in the discovery and promulgation of ether anesthesia in the words: "William T. G. Morton was a new Prometheus who gave a gift to the world as rich as that of fire, the greatest single gift ever made to suffering humanity." And Professor Welch confirms the investigation of his life-long friend, and in one of his recent letters to me says: "Surgical anesthesia has been America's greatest contribution to medicine and surgery, and it would be a thousand pities not to have this recognized in the Hall of Fame. As only one name can be selected for this purpose, it is clear to me that this name should be Morton." Professor Welch was one of the electors, and his influence was doubtless an important factor in Morton's final triumph.

It will interest the readers of The Journal to know the exact outcome of this year's election of America's immortals for the Hall of Fame. Of the 178 names voted on, seven were chosen: Samuel Langhorne Clemens (Mark Twain), who received 72 votes; James Buchanan Eads, the engineer,

51; Patrick Henry, statesman, 57; William Thomas Green Morton, discoverer of ether, 72; Augustus Saint-Gaudens, the sculptor, 67, and Roger Williams, the minister, a leader in liberal religion and founder of Providence, R. I., 66. The only woman who received enough votes to place her name on the roll was Alice Freeman Palmer, the educator, who received 53 votes.

That Morton, together with our most beloved Mark Twain, should have received more votes than any other candidate is a particularly good omen for the medical profession, and it is to be hoped that in future elections the names of our other great pathfinders in medicine and surgery may not be forgotten. Such names as Ephraim McDowell, J. Marion Sims, Benjamin Rush and Walter Reed all deserve a place among the immortals in America's Hall of Fame.

S. ADOLPHUS KNOPF, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

THE TREATMENT OF SYCOSIS

To the Editor:—I have a case of sycosis vulgaris, nonparasitic, which seems to resist all forms of treatment. Can you or any of our readers suggest anything that might help my patient?

C. H. J. BARNETT, M.D., Philadelphia.

ANSWER.—Simple sycosis, as ringworm sycosis, is always very difficult of cure. The ordinary methods of treatment are epilation, antiseptic washes, such as mercuric chlorid solution, and antiseptic salves, such as ammoniated mercury ointment. The cure of a well established case of sycosis by such a method is difficult, and if successful requires unending persistence and patience. Sycosis can usually be cured quickly by using roentgen rays or radium to the point of causing epilation of the hairs in the affected bearded area. This is the only method that gives prompt results; but it must be used with caution so as not to overdo it. If so used, good results are obtained without damage to the skin.

"LEPSO"—EPILEPSY CURE

To the Editor:—Kindly tell me whether or not the preparation Lepso, prepared by the Lepso Company of Milwaukee, Wis., has been subjected to analysis and if so what it contains.

ERNEST COLE, M.D., Winchester, Ky.

ANSWER.—The Lepso humbug was dealt with in THE JOURNAL, June 12, 1915, and the matter has been reprinted in the pamphlet "Epilepsy Cures" (10 cents). Like most "epilepsy cures," Lepso was found by the Association's chemists to be essentially a bromid mixture. It was found to contain the equivalent of 51 grains of potassium bromid to the dose.

The Duct Sign in Mumps.—Attention has recently been drawn to the fact that in cases of mumps the orifice of Steno's duct becomes red and inflamed. This appearance was noticed in 96 per cent. of fifty-seven hospital cases. But to what extent this sign can be regarded as pathognomonic of the disease is still doubtful, for it may also be apparent in a certain number of normal individuals. Its value as a symptom would seem to be limited to confirming the diagnosis when specific parotitis is present. Observation, nevertheless, has shown that it develops and disappears under the influence of the disease, and that it appears early, sometimes before the enlargement of the gland has become manifest. The fact, however, that the symptoms of mumps are extremely typical, presenting but little difficulty in diagnosis, probably accounts for the failure hitherto to notice the changes in Steno's duct which are now held to be associated with the disease.—*Med. Press,* Oct. 20, 1920.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

DELAWARE: Dover, Dec. 14-16. Sec., Reg. Bd., Dr. P. S. Downs, Dover.

FLORIDA: Gainsville, Dec. 6-7. Sec. Reg. Board, Dr. W. M. Rowlett, 812 Citizens Bank Bldg., Tampa.

ILLINOIS: Chicago, Dec. 6-7. Director, Mr. Francis W. Shepardson, Capitol Bldg., Springfield.

LOUISIANA: New Orleans, Dec. 2-4. Sec., Dr. E. W. Mahler, 1551 Canal St., New Orleans.

MARYLAND: Baltimore, Dec. 14. Sec., J. McP. Scott, 137 W. Washington St., Hagerstown.

OHIO: Columbus, Dec. 1-3. Sec., H. M. Platter, State House, Columbus.

VIRGINIA: Richmond, Dec. 14-17. Sec., J. W. Preston, 511 McBain Bldg., Roanoke.

GRADUATE MEDICAL EDUCATION

Special Conference of the Council on Medical Education and Hospitals

A conference called by the Council on Medical Education and Hospitals was held at the University Club, Chicago, Thursday, Nov. 11, 1920, to discuss ways and means of providing minimum courses of graduate instruction in the various medical specialties. Thirty-three prominent medical educators and university representatives were present. In determining what the minimum course of graduate training in each specialty should be, it was decided that the work of each committee should be carried on largely by correspondence and that, after the ideas of all members have been obtained, a final report could be drafted either through correspondence or at a meeting of the committee.

In the discussion it was stated that of the 3,000 graduates each year about 10 per cent., or 300, would be required to meet the demand in all the specialties. It was believed that abundant facilities were available to train these men, although at present all these facilities were not well organized.

Two quite distinct needs were pointed out for each committee to consider; namely, the proper training for those preparing to practice the specialty, and the providing of short review courses for those already established in such practice. It was urged that the work be on the basis of genuine graduate instruction and that the student should be encouraged to do his work independently, so far as possible.

Rather than the establishing of definite courses of a prescribed minimum of hours, it was deemed important that the student should carry on continuous work for a period of months or years. The student should be encouraged by the instructor to work out clinical problems for himself; he should be given adequate assistance in acquiring skill in examinations and in the use of instruments; he should be drilled in the technic of operations, but, in particular, emphasis should be placed on recognizing the indications for operations.

Each committee was reminded that the standard of preparation desired was a minimum standard and not an impracticable ideal. Doubtless, many of the students would not be satisfied with the minimum but would voluntarily devote more time to special preparation. It was stated that the final reports of the committees would be presented at the annual conference of the Council, to be held in Chicago, March 7 and 8, 1921.

The attention of the conference was called by the Council to the minimum standard of training for otolaryngologists, reported recently by a special committee made up of representatives of the several American associations of specialists in otolaryngology.

Discussion was given also to the character of a certificate or degree to be granted to such physicians as should complete satisfactorily the course of training in any particular specialty. The conference was opposed to the multiplication of degrees, but voiced the opinion that the Master of Science (M.S.) degree might be granted with or without designating the medical specialty for which it was granted. It was

declared that the Doctor of Philosophy (Ph.D.) degree should be granted only to those physicians who have completed a prolonged course and have conducted some satisfactory research work.

Missouri June Examination

Dr. George H. Jones, secretary, Missouri State Board of Health, reports the written examination held at St. Louis, June 14-16, 1920. The examination covered 14 subjects, and included 100 questions. An average of 75 per cent. was required to pass. Of the 85 candidates examined, 84 passed and 1 failed. Twenty-five candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
University of Louisville Medical Department	(1920)	86.4
Harvard University	(1920)	85.5
Johns Hopkins University	(1917)	84.2
Barnes Medical College, St. Louis	(1903)	79
St. Louis College of Physicians and Surgeons	(1908)	81.9
St. Louis University School of Medicine	(1920)	80.5, 80.1, 81.2, 82.5, 82.1, 82.1, 83, 83.1, 83.1, 83.1, 83.4, 83.9, 84.1, 84.1, 84.3, 84.4, 84.6, 84.8, 84.9, 85.1, 85.1, 85.6, 85.8, 86.1, 86.1, 87.2, 87.2, 87.3, 87.8, 87.8, 88, 88.1, 88.1, 88.2, 88.4, 88.5, 89.1, 89.5, 90.4, 90.9.
Washington University Medical School	(1917) 84.1, (1918) (1920) 77.9, 79.1, 81.1, 81.4, 82.1, 82.4, 82.6, 83.9, 83.9, 84.1, 84.1, 84.5, 84.9, 84.9, 85.1, 85.1, 85.8, 85.9, 86.1, 86.2, 86.2, 86.4, 86.7, 87.1, 87.5, 87.5.	84.1,
Jefferson Medical College of Philadelphia	(1920)	85.6, 87
University of Pennsylvania School of Medicine	(1920)	86.9
Meharry Medical College	(1920)	75.9, 77.1, 80, 80, 80.5, 81.1
University of West Tennessee Coll. of Med. and Surg.	(1915)	75.4
University of Texas Department of Medicine	(1919)	81.6
FAILED		
St. Louis College of Physicians and Surgeons	(1918)	63.1

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
Tulane University of Louisiana School of Medicine	(1919)	Louisiana
Bennett Medical College	(1908)	(1915) Illinois
Rush Medical College	(1916), (1917)	Illinois, (1917) Kansas
University of Illinois	(1911)	Illinois, (1915) Iowa
State University of Iowa Coll. of Homeopathic Med.	(1887)	Iowa
Kansas Medical College	(1897)	Texas, (1905) Colorado
Univ. of Kansas Sch. of Med.	(1908), (1912), (1916, (1919)	Kansas
Hospital College of Medicine, Louisville	(1896)	Kentucky
University of Louisville Medical Department	(1913)	Indiana
University of Minnesota Medical School	(1918)	Minnesota
Kansas City Medical College	(1904)	Kansas
John A. Creighton Medical College	(1919)	Nebraska
University of Nebraska College of Medicine	(1909)	Nebraska
Meharry Medical College	(1913), (1907)	Kansas
Memphis Hospital Medical College	(1910)	Arkansas
University of Nashville	(1899)	Kentucky

Massachusetts September Examination

Dr. Walter P. Bowers secretary, Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, Sept. 14-16, 1920. The examination covered 13 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 52 candidates examined, 23, including 2 osteopaths, passed, and 29, including 11 osteopaths, failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
George Washington University	(1916)	85.5
Loyola University	(1920)*	77.1
Indiana University School of Medicine	(1917)	75
Drake University College of Medicine	(1907)	89.2
State University of Iowa College of Medicine	(1920)	86.1
College of Physicians and Surgeons, Baltimore	(1910)	81
Maryland Medical College	(1912)	75
Boston University School of Medicine	(1920)	75
College of Physicians and Surgeons, Boston	(1920)	76.5
Harvard University	(1920)	78.5, 85.3, 85.5
Tufts College Medical School	(1920)	75, 75.7, 76.6, 77.1, 78.1
Jefferson Medical College	(1919) 77.8, (1920)	80.3, 80.8
Meharry Medical College	(1913)	75
FAILED		
Emory University School of Medicine	(1920)	72.8
Chicago College of Medicine and Surgery	(1916)	65.8
Baltimore Medical College	(1902)	70.1
College of Physicians and Surgeons, Boston	(1919) (1920) 61.5, 56.7, 71.	64.8,
Middlesex College of Medicine and Surgery	(1917) (1919) 69.6, (1920) 63.2, 63.4, 71.9.	67.2,
Tufts College Medical School	(1919) 72.8, (1920)	68.7, 72.5
University of Vermont College of Medicine	(1920)	70
National University of Athens	(1908)	41.7‡
Queens University Faculty of Medicine	(1920)	71.9

* Diploma withheld until 1921, pending completion of internship.
‡ Graduation not verified.

Book Notices

TREATMENT OF THE NEUROSES. By Ernest Jones, M.D., M.R.C.P., President of the British Psycho-Analytical Society. Cloth. Price, $3.50. Pp. 233. New York: William Wood and Company, 1920.

This small book is more than a mere outline. The author has expanded in places and condensed in others in a manner that should stimulate the interest of the reader and lead him to a much more thorough conception of neuroses than is now the possession of most physicians. As the author says, neuroses constitute, perhaps, the most widely spread form of disease; hence the importance of the book. Jones has had ample experience with the neurotics. He has tried various means of treating them and has finally, as a follower of Freud, settled on psychanalysis. It is evident that the book is written, in part at least, as an answer to the critics of psychanalysis. An able, just and restrained answer it is, in view of the nature of the criticism aimed at the psychanalytic method. The treatment is approached from the psychic side, and those measures of a more material sort: rest, feeding and isolation (Weir Mitchell treatment), are appreciated because of their psychic influence. In the chapter on hysteria, which occupies the major portion of the book (135 pages), the author goes into the various standard forms of treatment, advocating psychanalysis after reviewing the others. This he is led to do because of the appreciation of the individuality of each patient. In emphasizing the need for individual consideration, he is expressing the idea of progressive physicians in their evolution toward a more intimate consideration of the patient as a man, not as a collection of separate organs and functions. The author's statement of the difficulties encountered in the treatment of the neuroses is comprehensive, and illuminates the entire problem of the mentally sick. Naturally, in a book of this size there is a paucity of examples. Besides the rather comprehensive chapter on hysteria, there are shorter chapters on anxiety neurosis, anxiety hysteria, neurasthenia, obsessional neurosis, hypochondria and fixation-hysteria, traumatic neuroses (including war shock), the prophylaxis of the neuroses, and a few pages on mental teatment of conditions allied to the neuroses.

QUATRE LEÇONS SUR LES SÉCRÉTIONS INTERNES. Par E. Gley, Professeur au Collège de France. Paper. Price, 7 fr. Pp. 154. Paris: J. B. Baillière et Fils, 1920.

This treatise on internal secretions differs from most works on the subject—it deals with general principles rather than with the individual organs that are supposed to produce such secretions; data in regard to the latter are presented chiefly to illustrate general principles. The work is a protest against loose, uncritical and unphysiologic habits of thought. This is well illustrated in the first lecture, on the historical development of the conception of internal secretions; the work of Claude Bernard, who proposed the term, is much more carefully and critically examined than is usual in works, even French works, on physiology. Gley shows that Bernard did not have the present-day conception of internal secretions; for him the dextrose produced from glycogen in the liver was the type of internal secretion, i. e., a chemical substance added to the blood which formed an essential part of this and having a nutritive rather than a dynamic function. The latter conception is due, according to Gley, to Brown-Séquard. In the second lecture, the author discusses the conditions that must be fulfilled before it can logically be asserted that an organ produces an internal secretion. One of these conditions, he states, is that the product of the gland must be detected by chemical or physiologic methods in the venous blood from the organ. This, however, is not considered sufficient: he believes that even if a characteristic product is found, but disappears rapidly and cannot be found in the arterial blood, the rôle of the gland as an organ of internal secretion is not demonstrated. He illustrates this point by a critical examination of the claims made for the suprarenal glands as organs producing epinephrin as an internal secretion; this has been one of the most generally accepted illustrations of an internal secretion. The author recalls that the investigation of these glands has passed

through three phases; first, the effects of the removal of the glands which simply showed that they were in some way essential for life; second, the phase when conclusions were drawn from the action of extracts of the glands, a method of study which may lead to erroneous conclusions as to the real function of an organ; and, lastly, the study of the properties of the blood coming from the glands. The author rejects both the theory according to which the maintenance of a normal blood pressure and the excitability of the vasomotor and other nerves are due to the secretion of epinephrin, and the so-called emergency theory, according to which the glands respond, under various conditions, with a secretion of epinephrin in amounts sufficient to be of real importance to the organism. He also believes that the conception of pathologic conditions in which there may be an excess or a diminution of the secretion of epinephrin is without foundation. In fact, he concludes that epinephrin is probably an excretion of the suprarenals without physiologic importance, and that it cannot properly be called a secretion at all; the real importance of the suprarenals for life he sees in the cortex of the glands. In the third lecture the author discusses the experiments made with organ extracts, believing that this method is of little value in answering the question whether a given organ produces an internal secretion; he protests against the rash theories and premature generalization so common in this field, and speaks somewhat ironically of much of the present-day opotherapy. In the fourth lecture he discusses the correlation in the activities of the organs brought about by chemical stimulants (the relation of carbon dioxid to the respiratory movements, of hydrochloric acid to the pylorus, of the thyroid to metabolism, the action of secretin, etc.) and finally, the relation of various organs to growth, development and differentiation. The book is written in an interesting style, and the recent American work on the subject receives rather more consideration than is often the case in foreign publications.

LAS AMPUTACIONES CINEPLÁSTICAS. Por el Dr. Guillermo Bosch Arana, Profesor suplente de Medicina Operatoria, Cirujano del Hospital Piñero. Con Prefacio del Dr. Diógenes Decoud, Profesor y Académico de la Facultad de Medicina de Buenos Aires, y Tres Cartas Documentadas del Profesor Giuliano Vanghetti, Médico Jefe de la Cruz Roja Italiana. Paper. Pp. 352, with 194 illustrations. Buenos Aires: La Semana Médica, 1920.

The author is the leading exponent in Argentina of the recent art of kineplasty, to which the war gave such a tremendous impulse. In his effort to cover the subject thoroughly, he has divided his book into three parts, one devoted to the surgical aspects of the question, another to prosthetic appliances, and the other comprising the personal contributions of Dr. Bosch Arana. The first chapter contains a brief but rather complete historical review of physical reconstruction, beginning with Celsus' attempts, until we come finally to Vanghetti's epoch-making work, which the author praises highly and justly. The abundant illustrations are interesting and show what the author has accomplished, not only with other physicians' methods and apparatus, but also with his own, particularly his ergograph to measure the emplitude and power of movements. Dr. Bosch Arana's book is an important contribution to a field in which he is undoubtedly a leader. Strange to say, however, in his extensive bibliography not one reference can be found to American or English authors, which seems a serious defect in a work of this character.

DE LA INQUIETUD A LA REVOLUCIÓN: DIEZ AÑOS DE REBELDÍAS UNIVERSITARIAS. 1909-1919. Por el Dr. Carlos Enrique Paz Soldán. Paper. Pp. 209. Lima. Biblioteca de "La Reforma Médica," 1919.

Dr. Paz Soldán, the Peruvian educator and medical journalist, has collected in this book the addresses on medical education delivered by him during the decade 1909-1919. This period embraces the educational crisis in Peru, which found its climax in the recent changes in the university personnel and teaching methods in that country. Dr. Paz Soldán studies several phases of this serious teaching problem, especially as regards his participation in the various steps in the conflict between professors and students. The book is in a way a chronological story of the movement, although its polemical and oratorical form detracts somewhat from its value.

Medicolegal

Practicing Without License Not Joint Offense

(State v. Mitchell et al. (Mo.), 219 S. W. R. 977)

The Springfield (Mo.) Court of Appeals says that defendants Bessie A. Mitchell and Ruby Lee Vinson were jointly charged in an information with having unlawfully practiced medicine and surgery, and with having attempted to treat the sick or others afflicted with bodily or mental ailments, without having a license from the state board of health. The trial resulted in a verdict of conviction and an assessment of a fine of $50 against each defendant. But the judgment of the lower court is reversed because the information charged an impossible offense, that is, an offense which could not be jointly committed. The practice of medicine is not in and of itself a crime and it becomes one in Missouri only through a personal default of the defendant who does not secure a license from the state board of health. It is a strictly personal offense, and not one that can be a joint offense.

Circumstantial Authentication of Roentgenogram—Admissible Evidence When Roentgenogram Is Lost

(Quinn v. Flesher (W. Va.), 102 S. E. R. 300)

The Supreme Court of Appeals of West Virginia says that, in this personal injury case, the roentgenologist, who made a roentgenogram of the plaintiff's injured hip, and another physician examined the plate after it was developed, and determined from the information received from the plate and from an examination of the injured leg that there was a fracture of the hip bone. After that the plate was mislaid, and it could not be found at the time of the trial, although thorough search was made for it. Still these physicians were permitted to testify that it disclosed a fractured hip bone. The defendants contended that this was error, first, because it was not shown that the roentgenogram was so taken as to represent correctly the object sought to be photographed; and, secondly, because the roentgenogram itself being secondary evidence and it being lost, no testimony could be offered based on a view of it. But the court holds that there was no error in either respect.

It is quite true that before a roentgenogram can be used as evidence it must appear that it was so taken as to represent correctly the object reproduced. Of course, it is not meant by this that some one must testify that it is in fact a correct representation. Manifestly, this would be impossible for the reason that the object thus photographed is not visible except with the aid of the roentgen-ray machine. What is meant is that it must appear that the machine was so placed as to reproduce correctly the object brought within the radius of its activity. Nor need this necessarily appear by a direct statement of the operator to this effect, although it may be, and ordinarily is, shown in that way. It may, however, as well be shown from a detail of the circumstances. In this case the physician who took the roentgenogram was shown to be an expert with large experience in this work. The picture was taken with a view of determining the nature and extent of the plaintiff's injury with a view to treating it, and treatment was administered for the relief of the injury which the roentgenogram disclosed, with favorable results. This might not prove absolutely that the plaintiff was injured as disclosed by the roentgenogram, but the fact that the injury sustained by her responded to the treatment ordinarily administered for the relief of an injury such as that shown by the roentgenogram was, to say the least, very strong evidence that her injury was of that character, and sufficiently authenticated the roentgenogram to justify its admission in evidence.

Was it proper for the two physicians who examined this roentgenogram to testify as to what it indicated? It seems to be very generally held that, where the original of a document is lost, a copy made from a copy may be introduced in evidence on a showing of the correctness of the first copy and the loss thereof. It is the best evidence obtainable. In this

case, if we treat the roentgenogram as but a copy of the then existing condition, we have the original, which was the condition of the bone at the time, lost by a change in the conditions due to a lapse of time and the treatment administered, the only reproduction of that condition is lost, and the best evidence obtainable as to what condition actually existed at that time is the impression made on the minds of the two physicians from their examination of the plaintiff's hip and the roentgenogram thereof. It was not error to admit this evidence.

Furthermore, the court holds that where, after the trial of an action to recover damages for injuries sustained from a broken bone has been entered on, the defendant requests that a roentgenogram be made of the injured member, and the plaintiff is willing that it should be done, it is not error for the court to refuse such request where no reason is given for not having made the same before the trial, and it does not appear how long the trial will be delayed by granting such request.

May Sue Insurers—Proper Charges of Surgeon

(Home Life & Accident Co. v. Cobb (Texas), 220 S. W. R. 131)

The Court of Civil Appeals of Texas, in affirming a judgment for $150 in favor of defendant Cobb, a physician, holds that, under the workmen's compensation law of Texas of 1917, physicians may sue the insurers of employers for medical services rendered to injured employees. The court says that this action was brought to set aside an award of the industrial accident board, it being a case in which a claim was made by the physician to recover on an alleged agreement, either implied or specific, to pay for services rendered to an employee whose employer was insured by the plaintiff, under the workmen's compensation law. It was found that the physician was called to administer surgical and medical treatment to the employee, either at the request of the employer or with the latter's knowledge immediately after the injury that he had been called, and that the employer notified the plaintiff insurer shortly after the accident of the injuries sustained by the employee, and that the defendant was treating the injuries, to which neither the plaintiff nor the employer objected; nor did either of them furnish any other physician to treat the employee. The court holds that the plaintiff had sufficient notice to render it liable for the defendant's services. Furthermore, the court holds that a cause of action was given directly to the physician by the provision of the law that "the employee shall not be entitled to recover any amount expended or incurred by him for said medical aid, hospital services or medicines, nor shall any person who supplied the same be entitled to recover of the association therefor, unless the association or subscriber shall have had notice of the injury and shall have refused, failed or neglected to furnish it or them within a reasonable time."

The plaintiff contended that there was error in rendering judgment against it for $150, because it appeared that the defendant had served the injured employee for a period of eight weeks, and that his charge for that service was $150, whereas the law makes the insurer liable for the medical bill for the first two weeks only. But the evidence showed that the treatment given was of a surgical nature; that that given after the first two weeks was only of an incidental character, and that the value of the services during the first two weeks was $150. The trial court found that, from a medical and surgical standpoint the injury was practically well at the expiration of two weeks; that while the patient remained in the hospital for about two months, the treatment after the first two weeks was only occasional and of an incidental character, for the purpose of seeing that the limb was in place and that no complications had arisen; that it is usual, in surgical cases like this one, for physicians to charge for the case, and not usual to charge for each visit or treatment; and that the fair and reasonable value of the services rendered by the defendant during the first two weeks was $150. Under these circumstances, the court of civil appeals holds that there was no error in the respect alleged.

Nor does this court think that there was error to the prejudice of the plaintiff in including in the judgment the sum of $25, as the reasonable value of the services of an assistant to the defendant. It was urged that in the evidence and allegations there was nothing to show that Dr. Cobb was the owner of any cause of action for $25 for the services of an assistant, or had the right to sue therefor, or that such sum had been paid or liability for it incurred by him. But this was Dr. Cobb's case, and he assumed the responsibility for the proper handling of it, and as a part of his duty he provided an assistant for the operation. It was necessary for him to have this assistant, but no charge was made against the employee or against the association for the same. This item was material only in determining the reasonableness of the defendant's charge. The court denied the plaintiff a rehearing.

Society Proceedings

COMING MEETINGS

American Physiological Society, Chicago, Dec. 30.
District of Columbia, Medical Society of, Washington, Dec. 1.
Hawaii, Medical Society of, Honolulu, Nov. 18-20.
Medical Association of the Southwest, Wichita, Kan., Nov. 22-24.
Porto Rico, Medical Association of, Ponce, Dec. 13-14.
Radiological Society of North America, Chicago, Dec. 16-17.
Society of American Bacteriologists, Chicago, Dec. 28-30.
Southern Minnesota Medical Association, Mankato, Nov. 29-30.
Southern Surgical Association, Hot Springs, Va., Dec. 14-16.
Western Surgical Association, Los Angeles, Calif., Dec. 3-4.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Seventieth Annual Session, held at Harrisburg, Oct. 4-7, 1920

(Continued from page 1369)

Rectal Drainage for Pelvic Abscess

Dr. Robert M. Entwisle, Pittsburgh: The drainage of a pelvic abscess through the anterior wall of the rectum is not meant as a substitute in any way for the accepted approach through the abdominal wall, but is reserved for the cases that do not do well following operation and in which there is found a large, bulging mass in the pelvis which obviously is not draining through the original incision. The operation is simple; the results, gratifying.

Abdominal Drainage

Dr. Arthur E. Crow, Uniontown: Little, if any, danger can come from the establishment of drainage in all our borderline cases in removal of the gallbladder. Too often the abdomen is closed and the mistake closed with it, when drainage would have saved the day. This happens more often in appendicitis than in any other abdominal trouble. Any penetrating wound of the abdomen certainly demands immediate operation and drainage.

Diagnosis of Chronic Appendicitis: Its Relation to an Enlarged Cecum

Dr. Richard J. Behan, Pittsburgh: Chronic infection in the appendix is frequently secondary to pericecal and periappendical adhesions rather than the result of such infection. The symptoms are those arising from dilatation of the bowel, which, in turn, interferes with neighboring organs; those resulting from toxic material, and those resulting from stimuli reflected to adjacent organs. These are pain or discomfort in the right iliac region and constipation; in the toxic types, pains in the limbs, thyroid enlargement, slight fever, rapid pulse, headache and exhaustion; in some cases, heartburn, vomiting and palpitation.

Appendicitis in Children

Drs. Emory G. Alexander and Walter B. McKinney, Philadelphia: In this series the ages run from 19 months to 15 years. The symptoms are more marked than in the adult. Diagnosis is more difficult as history and examination are less definite. Peritonitis is frequent as a complication. Rectal examination should never be omitted. Prognosis is good if recognized and operation performed early. Chronic appendicitis is encountered. The greatest mortality is due to

peritonitis and intestinal obstruction. The cases in which purgatives have been given furnish the highest percentage of morbidity and mortality.

DISCUSSION

DR. SILAS D. MOLYNEUX, Blossburg: Our records in abdominal drainage are not better because we do not drain rather than because we drain too much. When in doubt, one should drain. However, the type of infection will help to determine whether or not we should drain. In cases of tuberculosis, ordinarily it is a wise thing not to drain. In old gonococcal infections in the pelvis, or other types of infection of long standing, it is not always necessary to drain for the reason that the pelvic peritoneum will take care of infections so well. Ordinarily, we drain too much in the upper abdomen. When it is necessary to drain, I think we do not drain thoroughly enough. Several small tubes are better than one large tube, perhaps one in the pelvis, one in the cecum and one in the right kidney fossa. Two or three small tubes will carry off more pus than one large tube. It is better to leave the incision without any sutures at all than to close it up tight. In placing the drain it is important not to impinge on the small bowel. A drain here often causes bad adhesions and intestinal obstruction and consequently we should keep drains as far away as possible from the small intestine.

DR. CHARLES A. FIFE, Philadelphia: As a pediatrician, I object to the use of castor oil in appendicitis, and heartily endorse the plan to turn over to the surgeon every case suspicious of appendicitis in children. At Girard College the boys are encouraged to report at once to the infirmary for the slightest disorder, particularly so-called "stomach ache" and "bilious attacks." Dr. Wharton says that boys who have pain early in the morning are operated on at 11 o'clock, and in that time more than 90 per cent. of his cases require drainage, showing the rapid advance in children, particularly in the older children.

DR. WILLIAM L. ESTES, South Bethlehem: A mistake made frequently is that of diagnosing for appendicitis a case of pneumonia on the right side. Time and time again, cases of so-called appendicitis have been sent to me for immediate operation which I have found on more careful investigation to be cases of pneumonia. In reference to the drainage question, every case has to be judged on its own individuality. If pus is present, one should, as a rule, drain. A very small quantity of localized pus can be blocked off. I have always felt that when pus is present in the abdomen, it is necessary to protect the abdomen by drainage; and dependent drainage, where it may be had, is the proper drainage.

DR. F. HURST MAIER, Philadelphia: The old axiom, "When in doubt, drain," should be replaced by the more modern axiom, "When in doubt, do not drain." There are few cases of pelvic surgery in which it is necessary to drain. Drainage carries with it a great deal of morbidity. One of the greatest bugbears in surgery today concerning morbidity and also concerning the secondary mortality is postoperative adhesions, and they are more frequently the result of drainage than of any other factor.

DR. J. DE V. SINGLEY, Pittsburgh: The purpose of a drain is not to favor the outpouring or the withdrawal of the products of infection from the abdominal cavity. If the primary focus of infection has been removed or closed, a drain stimulates the throwing out of an inflammatory exudate which localizes the infection. The omentum is the best abdominal drain. The function of the omentum is to wall off and isolate areas of infection. The material used for drainage, when drainage is absolutely demanded, is of the greatest importance. I am strongly opposed to glass or rigid rubber tubes. They are a frequent cause of pressure necrosis, with, occationally, disastrous results. Rubber dam or a soft collapsible rubber tube is infinitely superior. Gauze of any type is one of the worst drains. It commonly results in fecal fistula.

DR. EMORY G. ALEXANDER, Philadelphia: I operated on a boy, 11 years of age, who walked into the hospital with a large pelvic abscess. He had been playing around all the week. I know of no condition so hard to diagnose as appendicitis in childhood. Especially is this true in cases in which there are symptoms of pneumonia. We have kept patients under observation in the hospital, with all the facilities for making examinations and laboratory tests, and have been unable to make a positive diagnosis for several days. In these cases it is much wiser to wait for symptoms to aid in making a correct diagnosis. In regard to drainage, I use rubber dam, cigaret drain, and rubber and glass tubes. If one wishes to drain, one must use a glass tube. It requires some nursing, there is a slight danger of its breaking, and according to statistics it seems to favor the formation of a fecal fistula. Our statistics, however, do not bear that out. We have had only one fecal fistula in 500 cases. If one puts the glass drainage tube into the pelvis, it stays there; put a rubber tube in and transport the patient back to bed, and frequently it becomes dislodged. We take out the glass tube in twenty-four or thirty-six hours and put a rubber tube in its place.

Acute Traumatic Surgery of the Abdomen

DR. LEVI J. HAMMOND, Philadelphia: Every injury to the abdomen, however slight it may appear at the time, should be considered and treated as if known to be grave, for death may ensue from apparently slight blows. About 10 per cent. of the serious injuries affecting the body involve the abdominal viscera. A blow which does not produce a visible injury to the abdominal wall may contuse or rupture organs within. The immediate and serious effect of these concealed injuries is hemorrhage and rupture of hollow viscera, with infection. Shock also occurs. Median laparotomy is the only certain means of ascertaining the extent of the injury and the source of the hemorrhage. In punctured wounds of the abdomen, the seriousness depends on the degree of injury to the viscera. Early operation is the safest rule to follow, even though the abdomen may, at times, be needlessly opened. Leukocytosis in hemorrhage is not, as held by some, a reliable factor.

DISCUSSION

DR. JOHN O. BOWER, Wyncote: I agree with Dr. Hammond that every abdominal injury should be considered a surgical case potentially. I have had a different experience with the leukocyte count in practical diagnosis. In every case that came into the hospital in the last ten years a leukocyte count has been made. In every instance the degree of hemorrhage has been commensurate with the amount of leukocytosis. There was only one case in which a leukocytosis was found in which operation was not done, and that was a case of ruptured spleen. The patient was treated expectantly for forty-eight hours. At the end of that time he was given a bottle of citrate by mistake, and within an hour his abdomen was filled with blood. In cases of rupture of hollow viscera in the abdomen we do not depend on the leukocyte count because that would cause delay. Abdominal rigidity is sufficient evidence for exploratory laparotomy. There is an advantage in operating under spinal anesthesia.

DR. SAMUEL D. SHULL, Chambersburg: In cases of penetrating wounds of the abdomen, an operation should be performed immediately if the patient can be taken to the hospital at once. Blows and contusions of the abdomen can be studied a little while longer than penetrating wounds.

DR. WILLIAM L. ESTES, South Bethlehem: I would emphasize the importance of opening the abdomen early. There is no doubt as to what ought to be done in a penetrating wound of the abdomen below the epigastrium, whether from gunshot or other object. There is always more or less injury to the contents of the abdomen. There will certainly be hemorrhage, and frequently very large perforations of the viscera. The leukocytosis varies much. I have made it a rule to have a leukocyte count made almost immediately; when there is a great deal of hemorrhage, there is a relative diminution of the number of red corpuscles and an increase in the white cells In some cases there is an almost immediate increase in the leukocytosis, but it varies so much that I have learned to disregard it almost entirely. If there is vomiting, and distention of the abdomen, with signs of shock, I should advise that the abdomen be opened at once.

DR. HUGH E. MCGUIRE, Pittsburgh: No man should receive morphin until we know what is wrong with him. If we find a small area of contusion and the temperature rises to 100 F.,

the abdomen is opened. If you wait until vomiting and all the symptoms of ruptured bowel set in, nine tenths of the patients are going to die. One can operate and obtain information. I would rather do this and be mistaken than have a patient die. I make it a rule to operate in the first six hours, if possible.

DR. JOHN P. GRIFFITH, Pittsburgh: One sign of peritoneal trauma is greatly reduced peristaltic action. The next valuable point in diagnosis is tenderness at or near the site of trauma. A hemorrhage that will diffuse over the peritoneal cavity may not produce much shock, but it will produce a cessation of peristalsis within five or six hours of the trauma.

DR. RICHARD J. BEHAN, Pittsburgh: One factor of value in diagnosis in traumatism of the abdomen is cessation of abdominal respiration. It comes on as quickly as does the rigidity of the abdominal muscles.

Early Diagnosis of Perforated Gastric and Duodenal Ulcer

DR. WILLIAM L. ESTES, JR., South Bethlehem: Early diagnosis of perforation of a gastric or duodenal ulcer can be made in the vast majority of instances by the severe, sudden pain, a history of previous indigestion, boardlike abdominal rigidity, and marked retraction of the upper abdomen sufficient to cause a transverse line just above the level of the umbilicus. In atypical cases, a roentgenogram of the abdomen for the detection of gas along the diaphragmatic line and a shifting tympany over the liver in the lower axilla may serve to identify a perforated digestive ulcer.

Gastro-Enterostomy

DR. HAROLD L. FOSS, Danville: Gastro-enterostomy, though one of the most valuable of operations, and, in point of results, the most satisfactory treatment for duodenal ulcer, yet occasionally is followed by disappointment, often because of faulty technic or mechanical defect in the operation. Among the commoner untoward results are vicious circle, gastrojejunal ulcer, reactivation of the original ulcer, the production of new ulcer, and malignant degeneration in a gastric ulcer already established. Of the mechanical defects, the commonest are to be found in the use of a button, bobbin or similar device for intestinal anastomosis; the formation of a long jejunal loop; the Roux or Y technic; such complex procedures as that of Ehrlich or Vulliet; use of the anterior operation; failure to locate the stoma properly; failure to make an opening of sufficient size: the use of nonabsorbable suture; failure to funnel the stomach through the transverse mesocolon properly; infection during the operation with formation of adhesions; the performance of gastro-iliostomy; failure to combine with surgery careful postoperative medical treatment; operation without sufficient lesion, or lack of thoroughness at operation, such as removal of remote sources of infection.

DISCUSSION

DR. CHARLES H. FRAZIER, Philadelphia: A point that ought to be emphasized is regulation as to the care of the patient after the operation is performed. Common sense dictates that a patient who has had an ulcer and a gastro-enterostomy cannot resort to the diet of a person who has a perfectly normal stomach. We are justified in recommending the administration of alkalis repeatedly throughout the day; and it is to the patient's advantage for a considerable period after the operation has been performed to restrain his diet in regard to quantity, and resort as far as possible to frequent feedings—light breakast, something between breakfast and lunch, something between lunch and dinner and then, perhaps, a little when the patient goes to bed. In other words, he should have, instead of three feedings, six, and the use of alkalis before each feeding and perhaps in the interval between.

DR. ROBERT T. MILLER, Pittsburgh: Mayo Robson estimated that of those patients who came to operation twelve hours after perforation, one third died within twenty-four hours, and of those who came after forty-eight hours, virtually 100 per cent. died. It is obvious that early diagnosis is essential. The difficulty is not with the surgeon; the difficulty lies with the man who first sees the patient and who temporizes, using a little morphin and a hot water bag, letting the family down easy. The surgeon operates as soon as he sees the patient.

DR. DONALD GUTHRIE, Sayre: Dr. Estes spoke of the early history as being a factor in the diagnosis of perforation of acute ulcer. I have noticed several times in my work that we had what I believed were acute and septic ulcers, not old chronic ulcers that had perforated, but acute septic ulcers that had perforated without any previous history of indigestion. I have not taken the patients' word that they had never had stomach trouble previously, because it is hard to get a history from one so acutely ill as they are; but I have gone to the families of these patients and tried to get a history of former stomach trouble. I have had six cases of this sort in my experience. One should not rely on the history of chronic indurated ulcer in order to increase his assurance that the case under consideration is a perforated duodenal ulcer. There is no class of cases in which the surgeon should cooperate with the internist more than in these cases. Perhaps the jejunal ulcer may be prevented by giving these patients large, frequent and heavy doses of alkalis immediately after operation, continuing these alkalis and being sure that the diet shall be regulated under the direction of a live, well informed medical man and that the alkalis be continued for many months following the operation.

DR. J. STEWART RODMAN, Philadelphia: I recall one case in which there was entire absence of shock, and that was the only one in the series. A soldier walked to his tent two hours after perforation; his pain continued, and he came to the hospital three hours after the perforation. He made a good recovery. In one case the shock was so severe that when the patient reached the hospital it was impossible to do anything. In perforation of a hollow viscus, loss of peristalsis is the almost infallible diagnostic sign. As far as one can lay down a rule, I believe it is better not to do a gastro-enterostomy in these cases. Gastro-enterostomy was first proposed as a palliative procedure, and it has remained that for gastric ulcer until the present time and always will. It is a curative procedure so far as duodenal ulcer is concerned; but unless it is combined with destruction of the ulcer, in gastric ulcer it is certainly nothing but a palliative procedure.

DR. W. WAYNE BABCOCK, Philadelphia: When a gastro-enterostomy is performed it cures about 85 per cent. of duodenal ulcer patients. When the ulcer is in the stomach and up along the lesser curvature, the percentage of cures by gastro-enterostomy drops very low. The normal antidote to the acid chyme is the bile. Owing to this fact, about a year ago I stopped performing gastro-enterostomies for ulcer, and planted the gallbladder into the ulcer-bearing area. If the ulcer was in the stomach, I excised the ulcer and implanted the gallbladder into the orifice that was left. Thus, a normal alkali was given which is supplied by the body for the rest of the patient's life. In several roentgen-ray studies we have found no food or bismuth regurgitating into this gallbladder. In about 200 cases the evidence during the first two years is that secondary complications are rare, and the patients live very comfortably with the bile running into the stomach. The patients show rapid improvement and get along just as well as they do after gastro-enterostomy, I rather think, better.

DR. MOSES BEHREND, Philadelphia: It has been my custom to perform a gastro-enterostomy in every case of perforation. Recently, I tried the operative procedure of not doing a gastro-enterostomy. The results were just as good, but time is still too short to compare these cases in which I did a gastro-enterostomy and those in which I did not do it. It seems that whatever method is used, with proper technic patients will recover. I do not believe that a nonabsorbable material is responsible for the gastrojejunal ulcer.

DR. EMORY G. ALEXANDER, Philadelphia: We have had fifty cases of perforative duodenal ulcer in the last ten years. The great majority of patients gave a distinct history of stomach trouble. The symptom we lay stress on is sudden onset and rigidity of the right rectum. Absence of liver dulness is of some value. The majority of surgeons, however, do not believe that to be of any marked value because they do not know the normal liver dulness for that patient.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, New York

October, 1920, **160**, No. 4

*Diagnosis of Gallbladder Disease. W. F. Cheney, San Francisco. —p. 469.
*Involvement of Auricle and Conduction Pathways of Heart Fololwing Influenza. W. W. Hamburger, Chicago.—p. 479.
*Determination of Need of Surgery in Peptic Ulcer; Gastro-Enterostomy. W. A. Bastedo, New York.—p. 491.
Principles Underlying Safe and More Rapid Evolution of Thoracic Surgery. W. Meyer, New York.—p. 504.
Surgical Treatment of Pleurisy. J. L. Yates, Milwaukee.—p. 512.
*Can the Gallbladder Biliary Ducts and Liver Be Drained Medically? B. B. V. Lyon, Philadelphia.—p. 515.
*Glucose as an Adjunct in Therapy of Pneumonia. H. J. John, Cleveland.—p. 542.
*Relative Toxic Effects Produced by Regional Radiation. W. Denis and Charles L. Martin, Boston.—p. 555.
Epidemic Encephalitis: A Review of 115 American Cases. A. D. Dunn and F. W. Healey, Omaha, Neb.—p. 568.
After-Care of Arrested Cases of Essential Epilepsy. L. P. Clark, New York.—p. 582.
*Virulent Diphtheria Bacilli Carried by Cats. J. S. Simons, Takoma Park, D. C.

Diagnosis of Gallbladder Disease.—The history, in Cheney's opinion is the most valuable aid in the recognition of gallbladder disease. When this is characteristic, it makes the diagnosis, no matter whether or not at a given time signs are found by physical examination, no matter what the stomach analysis shows, no matter whether the roentgen-ray report does or does not present any direct or indirect evidence. When the history is less characteristic, it still remains the most important factor in diagnosis; but physical examination comes next in value and may give signs that with the history serve to remove all doubt, regardless of laboratory and roentgen-ray reports. When the history alone makes one only suspect, all the clues to be had from physical signs, secretory disturbances and roentgen-ray shadows are needed to pass beyond the suspicion that the gallbladder is diseased. At last it is the history that settles the matter by introducing an attack of biliary colic. Thus, in the diagnosis of gallbladder disease, old and well tried methods are the most useful; careful and painstaking history and such facts as can be elicited by the unaided senses—by sight and by touch particularly. Cheney does not neglect any possible laboratory or instrumental aid, but he places most reliance on what the patient tells him and on what he sees and feels for himself.

Postinfluenzal Heart Complications.—Six cases of postinfluenzal myocardial involvement are reported by Hamburger, involving particularly the auricle and conduction pathways of the heart. From a survey of the literature, together with clinical and electrocardiographic studies, a grouping of postinfluenzal cardiac complications is offered as follows: (*a*) Fatal cases showing acute parenchymatous degeneration and vacuolization of the myocardium. (*b*) Nonfatal, acute cases, showing involvement of auricle and conduction system during height of infection, with complete restoration to normal cardiac mechanism with subsidence of infection. Duration two to six weeks. (*c*) Nonfatal chronic cases with arrhythmia and involvement of the auricle persisting and causing partial invalidism long after subsidence of acute infection. Duration: twelve to seventeen months plus. Suggestion is offered that acute respiratory infections (influenza, streptococcus) single out early the auricle and conduction pathways of the heart.

Surgical Treatment of Stomach Ulcer.—Given a thorough medical trial by some one competent to supervise the treatment, Bastedo considers those cases surgical which continue to show: (1) persistent or recurrent hemorrhage even small in amount; (2) pain; (3) nausea; (4) pylorospasm of such persistence as to simulate pyloric stenosis; (5) inability to ingest comfortably the ordinary whosesome foods permitted by the circumstances of the patient, this making the poor patient a surgical case earlier than the well-to-do patient; (6) inability to ingest comfortably enough food to maintain nutrition while living a normally occupied life; (7) recurrence after apparently a cure.

Drainage of Biliary Ducts.—A paper by Lyon published in THE JOURNAL, Sept. 27, 1919, p. 980, described his method of direct (hormonic?) stimulation of the contrary innervation of the gallbladder and the duct sphincter, to drain the biliary system, to actually empty the gallbladder, partially or wholly of its fluid contents and so segregate the several biles recovered in such a manner as to make it practically possible to make certain differential diagnostic inferences as to the state of health or disease of the several components of the biliary system in a scientifically correct manner.

Glucose in Treatment of Pneumonia.—John relates his experience with the intravenous injection of glucose in the treatment of pneumonia. More than two doses per day were rarely necessary. It made the patient comfortable; produced sleep and rest; reduced the temperature; increased the elimination through kidneys and skin, and slowed the heart and increased the pulse volume. Any febrile condition is an indication for its use. John used 250 c.c. of a 10 per cent. solution in physiologic sodium chlorid solution with morphin sulphate, 0.008 gm.; atropin sulphate, 0.00064 gm.; tincture digitalis, 1 c.c. All of the glucose is used for bodily nutrition. Repeated tests for sugar in the urine failed to show it in carefully collected specimens, except once when a trace was found. Practically all the medication can be supplied in the glucose, thus a much more accurate dosage can be depended on. The antipneumococcic serum Type I, the antistreptococcic serum or the antitetanic serum, can be administered in this glucose medium.

Toxic Effects Produced by Regional Radiation.—According to Denis and Martin a definite massive dose of roentgen-rays administered to the body of a rabbit produces a severe systemic reaction and death only when some portion of the intestinal tract lies within the irradiated area. It is possible to produce a definite acidosis (lowering of the alkali reserve) in rabbits by administering a heavy dose of roentgen-rays over the abdomen. Such animals give no evidence of suffering from a "roentgen-ray nephritis." The results suggest the hypothesis that acidosis may be a factor in "treatment sickness" following abdominal irradiation.

Diphtheria Carried by Cats.—A curious case is cited by Simmons. An elderly lady developed a fatal diphtheritic pharyngitis after close contact with a cat (A) which had been sick one week. A second cat (B) which had been in contact with the first cat (A) became sick and died ten days later. The patient had a grayish-brown pseudomembrane covering her uvula, tonsils and posterior pharynx. Cat A had a small yellowish-gray pseudomembranous ulceration in the left nasal passage and Cat B showed ulcerations of both vocal cords, covered with a grayish-white false membrance. Diphtheria bacilli of intermediate virulence for guinea-pigs were isolated from all three lesions.

American Journal of Public Health, Chicago

October, 1920, **10**, No. 10

Endemic Diseases vs. Acute Epidemics. M. P. Ravenel, Columbia, Mo.—p. 761.
What Can a Community Afford to Pay to Rid Itself of Malaria? L. M. Fisher, Columbia, S. C.—p. 768.
Status of State Bureaus of Child Hygiene. A. E. Rude, Washington, D. C.—p. 772.
Industrial Health Education: A Means and an End. J. Schevit. p. 780.
Truth in Advertising Drug Products. A. J. Cramp, Chicago.—p. 783.
Geographical and Seasonal Variations in Infant Mortality in the United States, 1917-1920. F. S. Crum, Newark.—p. 790.

Arkansas Medical Society Journal, Little Rock

October, 1920, **17**, No. 5

Evidence of Gastro-Intestinal Disease as Revealed by Roentgenologic Examination of Digestive Tract. D. A. Rhinehart, Little Rock. —p. 107.
Cancer; Early Recognition and Treatment. D. Gann, Jr., Little Rock. —p. 112.

Boston Medical and Surgical Journal

Nov. 4, 1920, **183**, No. 19

Interpretation of Wassermann Reaction. W. P. Boardman, Boston. p. 537.
Diagnosis of Primary Syphilis. H. D. Lloyd, Boston.—p. 540.

*Lead in Urine in Neurocirculatory Disturbances. C. A. McDonald and H. McCusker, Providence, R. I.—p. 543.
Review of Recent Work on Amebic Dysentery. W. Allan, Charlotte, N. C.—p. 545.
After-Treatment of Dslocated Elbow. E. T. Saeger, Boston.—p. 548.
*Use of Thermometer in Mental Diseases. E. D. Bond, Philadelphia. —p. 550.

Lead in Urine in Neurocirculatory Disturbances.—Twelve cases representing nervous disorders of many types are recorded by McDonald and McCusker. Not one of them showed signs of lead poisoning, Like the lead line, anemia, or stippling. It was only by making a routine urinary for lead in doubtful cases that the lead element was discovered. These cases are reported to stimulate corroboration or refutation of Chapman's standard, that 0.4 mg. of lead per liter of urine is sufficient to cause symptoms; and secondly, to argue for the consideration of lead as the etiologic factor, or one of the etiologic factors, in obscure cases presenting neurologic signs and symptoms.

Fever in Mental Diseases.—The relation of increased bodily heat to mental diseases is discussed by Bond. He believes that more fevers would be shown to occur in cases of mental disease if records were made more as a routine, and also if it did not take so much time and trouble to get records on disturbed and resistive patients. In seventy-one mental patients, fevers, slight or severe, transitory or chronic, occurred in over 50 per cent., a surprising result for consecutive cases. The diagnoses varied and show that fever occurred in imbecility, epilepsy, arteriosclerotic dementia, general paralysis, dementia praecox and manic depressive psychoses. Of nineteen manic depressive insanity patients, thirteen had fever and six did not. Of nineteen dementia praecox patients eight had fever and eleven did not, this being the only disease in which normal temperatures were found more often than the reverse. Bond records the results of an examination of the temperature charts found in these consecutive cases, singly and in groups.

Colorado Medicine, Denver

October, 1920, **17**, No. 10

Future of Medical Education in Colorado. C. N. Meader, Denver. —p. 254.
Need of Psychopathic Hospital in Colorado. G. A. Moleen, Denver. —p. 261.
Freud in 1920. C. S. Bluemel, Denver.—p. 265.
Work of Colorado State Board of Health. R. L. Drinkwater, Denver. —p. 268.

Endocrinology, Los Angeles

July-September, 1920, **4**, No. 3

*Classification of Disorders of Hypophysis. W. Engelbach, St. Louis. —p. 347.
Hemorrhagic Syndrome Cured by Thyroidin. L. P. Battaro and J. C. M. Fournier, Montevideo, Uruguay.—p. 366.
Pubertas Praecox with Especial Attention to Mentality. J. H. Leiner, New York.—p. 369.
Endocrine Secretion of Hen Feathered Fowls. T. H. Morgan, New York.—p. 381.
Pharmacodynamic Subepidermal Tests: II. Indirect Tests; (A) Thyroidin. M. Ascoli and A. Fagiuoli, Catania, Italy.—p. 387.
Disorders of Thyroid: Hypersensitiveness Test with Especial Reference to "Diffuse Adenomatosis" of Thyroid. E. Goetsch, Brooklyn.—p. 389.
*Hypopituitarism; Report of Case. H. H. Lissner.—p. 403.
Effects of Inanition on Suprarenals. S. Vincent and M. S. Hollenberg, Winnipeg, Canada.—p. 408.
Rôle of Endocrine Glands in Certain Menstrual Disorders; Primary Dysmenorrhoea and Functional Uterine Bleeding. E. Novak, Baltimore.—p. 411.
Effect of Subcutaneous Injections of Thymus Substance in Young Rabbits. A. W. Downs and N. B. Eddy, Montreal.—p. 420.

Disorders of Pituitary.—The classification made by Engelbach, based solely on the "hormonic" signs of hypophysial disease, groups the disorders of this gland into three divisions, dependent on whether one or both of the lobes were involved: (1) anterior lobe disorders, in which this lobe alone was involved; (2) posterior lobe disorders, in which this lobe, without clinical evidence of anterior lobe dyscrasia, was affected; (3) bilobar disorders, in which abnormal function of both lobes could be demonstrated. Each lobar division is subdivided into the activities prevailing, the anterior and posterior lobe disorders into the states of: (*a*) hypoactivity and (*b*) hyperactivity; the bilobar group into the states of: (*a*) hypoactivity, (*b*) hyperactivity and (*c*) heteroactivity. The last named (heteroactivity) comprises mixed cases, in which there were opposite secretory states of the individual lobes, such as hyperactivity of the anterior lobe, combined with hypoactivity of the posterior lobe, and vice versa. These activities are redivided into: (1) pre-adolescent and (2) post-adolescent varieties, dependent on the age incidence of the abnormal secretory state. A final division is made of the age incidence, into: (*a*) a-neoplastic and (*b*) neoplastic varieties. Under the pre-adolescent hypoactivity of the anterior lobe is grouped Lorain-Levi type of pituitary insufficiency. In the postadolescent hypopituitarism of the anterior lobe, Engelbach has grouped those female cases which have had some osseous changes indicative of early anterior lobe disorder, and which developed, after age of maturity, amenorrhea, metrorrhagia, or dysmenorrhea, dissociated from any local or general disease, that reacted completely to substitution treatment of anterior lobe extracts. Under the hyperactivities of this lobe are described the clinical syndromes of gigantism and acromegaly.

Hypopituitarism.—Lissner reports the case of a child, aged 23 months, which was normal to the ninth month, when he began gaining rapidly in weight. The onset occurred with convulsions of the flexor type continuing up to within the month of death. The family history showed no glandular trouble or diabetes. The eyes showed edema of the retina; the throat was negative. There was marked muscular dystrophy with profound facial cyanosis, diminutive external genitals, doubling of weight in the third year of life, low sugar tolerance and antemortem temperature of 107.5 F. Treatment consisted of pituitary extract, whole gland, from 2 to 40 grains daily, without any benefit. Thyroid extract seemed to irritate. Roentgenoscopy of the skull showed a small sella turcica. A necropsy report and the histologic report on various glands are included.

Indiana State Medical Association Journal, Ft. Wayne

Oct. 15, 1920, **13**, No. 10

Transverse Incision in Pelvic Operations. M. L. Curtner, Vincennes. —p. 337.
Physician; Triumphs and Dangers of Specialism. F. B. Wynn, Indianapolis.—p. 338.
Abuse of Catharsis in Infants and Children. M. K. Miller, South Bend.—p. 343.

Iowa State Medical Society Journal, Des Moines

Oct. 15, 1920, **10**, No. 10

Relationship of Fractures to Malpractice Suits. C. M. Dutcher, Iowa City.—p. 331.
Etiology of and Prophylactic Inoculation in Influenza. E. C. Rosenow, Rochester, Minn.—p. 335.
Influenza. E. D. Allen, Hampton.—p. 337.
Radium. H. E. Meyer, Hampton.—p. 340.
Physician a Sociologist. P. W. Van Meter, Rockwell City.—p. 341.

Johns Hopkins Hospital Bulletin, Baltimore

October, 1920, **31**, No. 356

*Value of Wassermann Reaction in Obstetrics. J. W. Williams, Baltimore.—p. 335.
Cells of Arachnoid. L. H. Weed, Baltimore.—p. 343.
Occurrence of Congenital Atrioventricular Dissociation; Case of Congenital Complete Heart Block. E. P. Carter and J. Howland, Baltimore.—p. 351.
*One Factor in Mechanism of Hemolysis in Hemolytic Anemia. II. M. Clark and F. A. Evans, Baltimore.—p. 354.
*Coagulation Time of Citrated Plasma on Recalcination. H. C. Gram, Copenhagen.—p. 364.
Origin of Hemangiectases. T. S. Moise, New Haven, Conn.—p. 369.
Chemical Structure and Physiologic Action. H. H. Dale.—p. 373.

Value of Wassermann Reaction in Obstetrics.—The significance of the Wassermann reaction in pregnant women. In 4,000 women delivered during a given period 449, or 11.2 per cent., presented a positive reaction during pregnancy. Its incidence was much greater in black than in white women, being 16.29 and 2.48 per cent., respectively. In other words, a positive Wassermann reaction was noted in every sixth colored woman, as compared with every fortieth white woman. About one baby in 100 (forty-three out of 4,000) will have syphilis even when the maternal Wassermann is negative, and consequently one is not justified in claiming that the most ideal prenatal care can entirely eradicate the disease as a cause of fetal death. Turning to the consideration of the significance of the fetal Wassermann at the time of delivery,

a positive result was obtained in thirty-eight of the 4,000 observations, approximately 1 per cent. This means that only a small fraction of the children born of mothers with a positive Wassermann present such a reaction. It should, however, be remembered that macerated children are not available for the test, as their blood is already "laked." Williams concludes that the information obtained by the Wassermann made from the fetal blood at birth is not commensurate with the time consumed nor the money expended in such investigations. From the routine microscopic study of the placenta made by Williams for years, he is convinced that the syphilitic lesions occurring in it are extremely characteristic, and afford more conclusive evidence of the existence of syphilis than the demonstration of a positive maternal Wassermann, and, in general, tally fairly closely with the necropsy findings in the child. In Williams' opinion, the possibility of spermatic infection and the admissibility of Colles' law have not yet been conclusively proven or disproven, and consequenlty should be regarded as still sub judice.

Protective Power of Blood Serum.—From the results of tests made of the protective power of human serum against hemolysis of guinea-pig cells by sodium oleate, Clark and Evans conclude that the protective power of the serum of normal persons and of patients suffering from a wide range of diseases without anemia is remarkably constant in degree. In anemias of various types the protective power of the serum is diminished. This diminution is most marked in anemias which are hemolytic in character and in conditions in which the spleen is involved in the disease process. In pernicious anemia, the diminution of protective power of the serum is very striking, both in degree and the regularity with which it its found. The protective power of the serum in cases of pernicious anemia varies greatly, but seems to parallel more closely the general condition of the patient than the blood picture at the time the titration is done.

Determining Coagulation Time of Citrated Plasma.—A method is described by Gram by which the clotting time of citrated plasma may be determined at 35 C. in tubes placed in an unsilvered Dewar flask. The procedure is a modification of Howell's principle of optimal recalcination, and may be performed on the same blood specimen as that employed for the Oluf Thomsen method of counting the platelets. It is shown that the variations in clotting time of optimally recalcinated plasma correspond with those of venous blood. The coagulation time of uncentrifugalized plasma is longer than normal in the hemorrhagic diathesis with platelet deficit, pernicious anemia, leukemia and various other diseases. In hemophilia, the coagulation time is very much longer than normal, although a perfectly normal number of platelets is present. The method is of importance for the diagnosis of hemophilia if combined with a determination of the platelet count after Oluf Thomsen's method. It may also reveal the existence of a hemorrhagic diathesis in the course of diseases of the blood. If hemophilia can be excluded, a prolonger coagulation time means that there is a numeral, or partially functional, deficiency of platelets, though the converse need not be true.

Journal of Bacteriology, Baltimore

September, 1920, **5**, No. 5

Fate of Bacteria of Colon-Typhoid Group on Carbohydrate Mediums. O. Ishii, Pittsburgh, Pa.—p. 437.
"Color Standards" for Colorimetric Measurement of H-Ion Concentration *p*H 1.2 to *p*H 9.8. Leon S. Medalia, Boston.—p. 441.
Action of Eight Strains of Abortivo-Equinus on Certain Carbohydrates. C. P. Fitch and W. A. Billings, St. Paul.—p. 469.
Bacteriologic Peptone in Relation to Production of Diphtheria Toxin and Antitoxin. Lewis Davis, Detroit.—p. 477.
Nomenclature of Actinomycetaceae. R. S. Breed and H. J. Conn, Geneva, N. Y.—p. 489.
Use of Some Mixed Buffer Materials for Regulating H-Ion Concentrations of Culture Mediums and of Standard Buffer Solutions. M. R. Meacham, J. H. Hopfield and S. F. Acree, Syracuse, N. Y.—p. 491.
*Mutating, Mucoid Paratyphoidbacillus Isolated from the Urine of a Carrier. Th. Thjøtta and O. K. Eide, Christiania, Norway.—p. 501.
*Bacteriologic Studies in Chronic Arthritis and Chorea. J. H. Richards, New York.—p. 511.

Paratyphoid Bacillus.—The urine of a patient suffering from cystopyelitis suddenly showed numerous colonies of an atypical bacterium, while the typical paratyphoid colonies were much reduced in number. The new microbe turned out to be a capsule producing mucoid paratyphoid strain. It grew in large, very wet, slimy colonies with a reddish gray hue. The bacilli, were small, the motility slight or lost. The agglutinability was specific, but the reaction was very slow, the maximum reached in a far longer time than was the case with typical strains. The absorption of complement took place exactly in the same doses and in the same time as in tests with the typical strain. The microbe showed the same resistance against normal human serum as the typical strain. Likewise, white mice were killed by nearly the same doses of the two strains. The microbe satisfies all claims that are necessary to establish a real transmutation of bacteria.

Bacteriology of Chronic Arthritis and Chorea.—Blood cultures were taken by Richards in 104 cases of chronic arthritis in which syphilis and gonorrhea could be ruled out and *Streptococcus viridans* was found in fourteen cases. Complement fixation tests with *S. viridans* antigens were done in all cases. Joint cultures were attempted in forty-four cases and *S. viridans* was obtained in four cases. These cultures were taken during an acute exacerbation, and an attempt was made to obtain fluid from the inflamed periarticular tissues as well as from the joint cavity. Streptococci were found in the feces by the Gram stain in forty-two cases, and were isolated and identified as *S. viridans* in five cases. Complement fixation with *S. viridans* antigen was found positive in sixty-eight cases. No foci of *S. viridans* infection were found in twenty cases, and of these twenty negative cases eleven gave positive complement fixation tests. In addition to these twenty cases, there were nine cases in which a streptococcus was seen in the Gram stain of the stool but it could not be obtained in culture for identification, and of these, seven gave positive complement fixation tests with *S. viridans* antigen. In four cases of chorea no focus of *S. viridans* infection was found. The complement fixation with *S. viridans* antigen was positive in thirteen cases and negative in three. The blood cultures showed *S. viridans* positive in five cases and negative in eleven cases. The feces cultures showed *S. viridans* in three cases, but Gram stain streptococci were found in nine cases. Other foci of *S. viridans* infection were found in the tonsils in nine cases; teeth, eight cases, and nose, five cases.

Journal of Experimental Medicine, Baltimore

Oct. 1, 1920, **32**, No. 4

*Chemotherapy Versus Serotherapy in Experimental Infection with Leptospira Icteroides. H. Noguchi, New York.—p. 381.
*Experimental Streptococcus Hemolyticus Pneumonia in Monkeys. F. G. Blake and R. L. Cecil, Washington, D. C.—p. 401.
*Local Autoinoculation of Sensitized Organism with Foreign Protein as Cause of Abnormal Reactions. J. Auer, New York.—p. 427.
*Experimental Syphilis in Rabbit. Affections of Skin and Appendages. W. H. Brown and L. Pearce, New York.—p. 445.
*Experimental Syphilis in Rabbit. Clinical Aspects of Cutaneous Syphilis. W. H. Brown and L. Pearce, New York.—p. 473.

Chemotherapy and Serotherapy of Leptospira Icteroides Infection. — Arsphenamin or neo-arsphenamin introduced intravenously into the body of the rabbit is present in some form in the blood serum drawn at the end of one hour. The substance present in such serum has a slowly operating injurious effect on *Leptospira icteroides*. The action of the drugs seems to be slower after passage through the animal body than before. If this phenomenon were to take place also in the infected body injected with these drugs, it is obvious that in a rapidly evolving infectious disease like yellow fever the progress of the infection will be too rapid to allow the drugs to exert their beneficial effect on the course of the disease. Anti-icteroides immune horse serum in a dose of 0.0001 c.c., or 1 c.c. of a 1 : 10,000 dilution, protected guinea-pigs from an infection with at least 5,000 minimum lethal doses of icteroides when injected simultaneously, but the same serum failed to exert any injurious effect on the organism when mixed in vitro in a concentration weaker than 1 : 2,000. A rapid disintegration resulted with a concentration of 1 : 20 and almost complete agglutination and degeneration in 1 : 200. The contrast between chemotherapy and serotherapy demonstrated with an immune serum is apparently of considerable practical significance.

Experimental Streptococcus Pneumonia. — *Streptococcus hemolyticus* can produce a primary pneumonia in monkeys

when injected intratracheally in sufficiently large amounts. It readily produces an extensive secondary pneumonia in monkeys when injected intratracheally in small amounts. Invasion of the lungs by *S. hemolyticus* in streptococcus pneumonia in monkeys is primarily by way of the interstitial framework of the lung and its lymphatics, and the disease does not appear to be primarily an infection of the terminal bronchioles. Although it seems probable to Blake and Cecil that invasion of the lungs by *S. hemolyticus* in streptococcus pneumonia in man may be by the same paths, they believe it is unsafe to draw this conclusion without qualification, since streptococcus pneumonia in man commonly occurs only as a secondary infection in the presence of a preceding inflammatory bronchitis.

Autoinoculation of Sensitized Organism.—While testing the sensitiveness of a number of dogs which had been treated with horse serum some years previously, and employing heavy doses of horse serum for the reinjections, Auer observed that a peculiar edema developed at the site of the operation wound in the inguinal region. In order to explain this peculiar type of edema, he assumed that the local reaction was anaphylactic. In these dogs a foreign protein (horse serum) was circulating, due to the reinjection, and therefore a certain amount of this protein ought to pass into the tissues adjoining the wound during the development of the ordinary wound edema which always follows an operation. Moreover, the amount of foreign protein acting locally would be increased by the oozing of blood, serum, plasma, and lymph into the wound from the severed blood and lymphatic capillary channels, all of which contain the antigen. As the dogs were sensitized to this foreign protein, the skin and adjoining tissues would also be sensitized and could respond by an anaphylactic reaction to this local autoinoculation of the horse serum. The experimental work done strongly supports this hypothesis. The details are given.

Experimental Syphilitic Skin Lesions.—From the study of a large series of rabbits with outspoken manifestations of generalized syphilis, lesions of the skin and appendages were found to constitute one of the largest and most varied groups of such affections. The conditions noted by Brown and Pearce consisted of alopecias, onychia and paronychia, and lesions of the skin proper. These lesions were divided into three classes: first, granulomatous lesions, second, infiltrations, and third, erythemas. The conditions described as cutaneous infiltrations included two general types of lesions, one a flattened and rather diffuse process, the other an elevated and sharply circumscribed papule. A third type of lesions resembling the macular erythemas of man was observed in a small number of animals, and while no definite proof of the specific origin of these lesions was obtained, the evidence available was strongly suggestive. In addition, several other cutaneous affections were noted which have not as yet been thoroughly investigated. It is suggested, however, that these processes may bear some relation to infection with *Spirochaeta pallida*.

Cutaneous Syphilis.—The cutaneous affection in the rabbit following local inoculation is a very characteristic one. The lesions themselves bear the marks of a varied but definite pathologic process identical in all respects with the reaction set up in the scrotum by local inoculation of *Spirochaeta pallida*. The character of the lesions and, withal, their great multiformity, the time relations existing between inoculation and the appearance of the cutaneous lesions, the occurrence of successive crops of eruptions, the relapsing course of the disease, and the preservation of a fixed order of distribution of the lesions, are highly suggestive of cutaneous syphilis in man, and it is believed that as more is known of the experimental infection and with better adaptation of organisms, the analogy will become even closer.

Journal of Medical Research, Boston

July-September, 1920, **42**, No. 1

*Behavior of Influenza Bacillus in Mixed Culture on Hemoglobin-Free Medium. J. J. Putnam and D. M. Gay.—p. 1.

Experimental Study of Mononuclear Phagocytes of Lung. H. H. Permar, Pittsburgh.—p. 9.

*Lack of Correlation Among Meningococci, Between Serologic Grouping and Lethal Effects on Rabbits. A. C. Evans, Washington, D. C.—p. 33.

*Congenital Aneurysm of Aortic Sinus of Valsalva. C. Goehring, Pittsburgh.—p. 49.

Life Cycle Changes of So-Called C. Hodgkini, and Their Relation to Mutation Changes in This Species. R. R. Melon, Rochester, N. Y.—p. 61.

*Compensatory Hypertrophy of Thyroid. V. Effect of Administration of Thyroid, Thymus Gland and Tethelin and Meat Diet on Hypertrophy of Thyroid in Guinea-Pigs. L. Loeb, St. Louis.—p. 77.

Removal of Particulate Matter from Pleura. H. T. Karsner and C. E. Swan-Beck, Cleveland.—p. 91.

Influenza Bacillus Dies in Mixed Culture.—A fairly representative group of strains of *B. influenzae* were inoculated by Putnam and Gay in mixed culture with *B. xerosis, B. diphtheriae, B. coli, M. pneumoniae,* and with staphylococci on a variety of blood-free mediums. The influenza bacillus not only failed to multiply under these conditions but the cultures died out after on or two days. On blood-free agar containing killed cultures of staphylococci and of *B. xerosis,* no growth of *B. influenzae* occurred.

Serology of Meningococci.—Judged by the time and manner of death, and by the lack of evidence of multiplication of meningococci within the body, Evans says, it would appear that death of rabbits saturated with meningococci was caused by disintegration of the organisms without multiplication or the elaboration of an exotoxin. Rabbits were protected against these poisons by previous injections of living meningococci without regard to agglutinin or tropin grouping. A strain of meningococcus, which had lost its power to produce tropins by long cultivation on agar, partially retained its power of immunizing rabbits against fatal doses of meningococci. These rabbits were shown to be protected without the presence of tropins in the serum.

Aneurysm of Aortic Sinus of Valsalva.—The case cited by Goehring was one of congenital aneurysm of the posterior aortic sinus of Valsalva with an anomaly of the aortic cusps. The aneurysm projected into the right auricle so as to produce a tricuspid insufficiency. This on admission was the chief clinical manifestation. Sudden progressive heart failure manifested by dyspnea, cyanosis, and the absence of the radial pulse, which lasted six hours (till time of death), was probably related to the rupture of the aneurysm. The aneurysm was entirely unassociated with an inflammatory process. Six cases of aneurysm of the sinus of Valsalva are recorded in the literature.

Effect of Feeding Thyroid, Thymus, Tethelin and Meat on Hypertrophied Thyroid.—In contradistinction to iodin, which does not inhibit compensatory hypertrophy of the thyroid gland in the guinea-pig, Loeb says feeding with thyroid tablets has a very marked inhibiting effect. This effect is a direct and specific one and it is not indirect effect, called forth by the loss of weight which is induced through thyroid feeding. Iodin preparations given simultaneously with thyroid tablets do not counteract the effect of thyroid. Feeding with thymus does not prevent thyroid hypertrophy. It is, however, possible that it diminishes the intensity and frequency of thyroid hypertrophy, although at present this cannot be stated definitely considering the variable factors which enter into the development of thyroid hypertrophy. Repeated injections of tethelin do not noticeably influence the degree of thyroid hypertrophy which follows extirpation of the greater part of the thyroid. A diet consisting principally, but not exclusively, of meat, given to guinea-pigs for three and one-half weeks, does not produce hypertrophic changes in the thyroid; such a meat diet does neither prevent nor noticeably increase compensatory hypertrophy of the thyroid in the guinea-pig.

Kansas Medical Society Journal, Topeka

October, 1920, **20**, No. 10

Duties of Full-Time Health Officer. E. G. Brown, Topeka.—p. 285.

Small Hospital. T. A. Jones, Hutchinson.—p. 289.

Case of Primary Carcinoma of Liver with Cirrhosis H. A. Gestring, Kansas City.—p. 293.

Surgical Treatment of Empyema. J. E. Wattenberg, Ithaca, N. Y.—p. 297.

Maine Medical Association Journal, Portland

October, 1920, **11**, No. 3

Congenital Pyloric Stenosis. F. H. Jackson, Houlton.—p. 89.

New York Medical Journal

Oct. 30, 1920, **112**, No. 18

Series of Foreign Bodies in Bronchi and Esophagus. H. L. Lynah, New York.—p. 653.
Acute Infections of Hand and Their Surgical Treatment. W. T. Coughlin, St. Louis.—p. 665.
Knife Cautery in Surgery of Thorax. J. F. Van Paign, Chicago. —p. 673.
Case of Carcinoma of Middle Ear. J. Guttman, New York.—p. 675.
Congenital Underdevelopment of Right Side in an Infant Three Months Old. B. K. Rachford, Cincinnati.—p. 677.
Recent Increases in Venereal Diseases. T. E. Satterworth, New York.—p. 678.
Instrument for Simplifying Tonsillectomy by Snare. I. F. Shapiro, New York.—p. 681.

Northwest Medicine, Seattle

October, 1920, **29**, No. 10

*Therapeutics of Thick Cereals in Disorders of Infancy. J. I. Durand, Seattle.—p. 249.
Pyloric Stenosis in Infants. E. H. Smith, Ogden, Utah.—p. 252.
Breast and Artificial Feeding. P. D. McCornack, Spokane.—p. 255.
Care of Baby. J. J. Tilton, Spokane.—p. 257.
Method for Prevention of Colic in Nursing Infant E. H. Current, Spokane.—p. 259.
*Excessive Hyperpyrexia in an Infant with Cerebrospinal Meningitis. J. B. Manning, Seattle.—p. 260.
Cases of Unknown Etiology and Diagnosis. J. B. Bildberback, Portland, Ore.—p. 263.
Routine Wassermann Test. J. G. Strohm, Portland, Ore.—p. 265.
Arsphenamin Mercury Intravenously. J. C. Klecan, Portland, Ore. —p. 266.

Thick Cereals in Disorders in Infancy.—Durand's experience with fifty cases has convinced him that the feeding of thick cereal mixtures with 10 per cent. and even 15 per cent. of starch is safe and often a most valuable therapeutic measure. In most cases he used Sauer's formula (farina, 2 tablespoonfuls; dextrimaltose, 2 tablespoonfuls; skimmed milk, 6 ounces; water, 8 ounces). The results have been satisfactory, especially in eleven cases of pyloric obstruction. Thick cereal mixtures are also of service in neurotic vomiting, certain types of malnutrition and particularly valuable to supplement breast feedings. The cereal mixtures, because of their action in allaying excessive peristalsis, are the most effective remedy for the treatment of colic in infancy.

Excessive Hyperpyrexia in Cerebrospinal Meningitis.—In the case cited by Manning the temperature by rectum registered 109 F. by three different thermometers. A lumbar puncture was done and a few drops of a turbid spinal fluid were obtained. Fifteen c.c. of Flexner's serum was given. Four hours later the temperature was 103.4 F. The baby recovered.

Oklahoma State Medical Ass'n Journal, Muskogee

October, 1920, **13**, No. 10

Diagnosis and Treatment of Cerebrospinal Syphilis. R. Bolend, Oklahoma City.—p. 353.
Pathology of Spinal Fluid in Cerebrospinal Syphilis. R. S. Campbell, Guthrie.—p. 357.
Obstructions at Bladder Neck. J. R. Caulk, St. Louis.—p. 367.

Pennsylvania Medical Journal, Harrisburg

October, 1920, **24**, No. 1

Epidemic (Lethargic) Encephalitis. M. H. Weinberg, Pittsburgh. —p. 4.
The "Ancient" and the "Modern" Kidney. J. H. Comroe, York.—p. 8.
Centenary of Florence Nightingale. J. Walsh, Philadelphia.—p. 13.
Remedies Applied from Outside as Important as Those Applied from Inside. J. M. Taylor, Philadelphia.—p. 16.

South Carolina Medical Association Journal, Greenville

October, 1920, **16**, No. 10

Goiter. S. O. Black, Spartanburg.—p. 242.
Malignant Tumors of Male Breast; Report of Case. G. Benet, Columbia.—p. 245.
Acute Conditions of Upper Abdomen. W. B. Sparkman, Greenville. —p. 249.

Texas State Journal of Medicine, Fort Worth

October, 1920, **16**, No. 6

Go On and Forget It. J. J. Terrill and G. F. Witt, Dallas.—p. 234.
Mental Crutches. J. A. McIntosh, San Antonio.—p 237.
Significance of Vertigo, Nystagmus and Past Pointing in Intracranial Diseases. J. Greenwood, Houston.—p. 239.
Vertigo. H. T. Aynesworth, Waco.—p. 243.
Surgical Aspects of Epilepsy. R. W. Noble, Temple.—p. 246.
Hydrophobia. M. A. Wood, Houston.—p. 247.
Myotonia; Report of Case M. M. Morrison, Denison.—p. 249.
Radical Excision and Sterilization of Certain Local and Glandular Infections. A. C. Scott, Temple.—p. 250.
*Treatment of Bubonic Plague. Analysis of Beaumont and Galveston Cases. M. D. Levy, Galveston.—p. 257.

Bubonic Plague in Texas.—Twenty-six cases of bubonic plague have occurred in Texas, with fifteen deaths, in eight of which no serum at all was received. Of the remaining seven patients, one died with anaphylactic symptoms, one after receiving a negligible amount of serum (35 c.c.) and two were apparently hopeless when seen. This leaves four cases in which serum was apparently without effect, as against eleven cases in which recovery was noted. These findings Levy says completely substantiate Seeman's earlier investigations as to the efficacy of antiplague serum when administered in large doses.

Virginia Medical Monthly, Richmond

October, 1920, **47**, No. 7

Importance of Musculofascial Plane in Rectovaginal Septum. J. W. Henson, Richmond.—p. 283.
Intussusception; Importance of Early Diagnosis. W. P. McDowell, Norfolk.—p. 288.
Hospital and Doctor of Today in Relation to Medicine of Present and Future. H. A. Christian, Boston.—p. 293.
Plea for Cesarean Section with Better Obstetrics. S. B. Moore, Alexandria.—p. 299.
Some Disturbances of Pituitary Gland. F. H. Redwood, Norfolk. —p. 301.
*Neglected Method of Treatment for Ulcerative Cystitis in Female. A. P. Jones, Roanoke.—p. 304.
Case of Eventration of Diaphragm. W. Allan, Charlotte, N. C. —p. 305.
Analysis of Anatomic Diagnoses of 699 Autopsies of Patients Dying of Tuberculosis. W. B. Blanton, Richmond.—p. 307.
Complete Abruptio Placentae in Twenty-Ninth Week of Pregnancy; Manual Delivery; Recovery. V. Harrison, Richmond.—p. 309.
Complete Circumcision in Chancroid Beneath Tight Prepuce and Multiple Chancroids on Prepuce. S. Newman, Danville.—p. 311.
Cesarean Section. M. J. Payne, Staunton.—p. 312.
"Dr. Geo. Ross, Our Patriarch." T. H. Hancock, Atlanta, Ga.—p. 315.
Case of Mastoiditis, with Necrosis of Bony Lamina Covering Sigmoid Portion of Lateral Sinus. T. W. Edmunds and G. B. Dudley, Jr., Danville.—p. 317.
Three Cases of Pneumonia in Which Pneumococcic Antigen Was Used. R. E. Mitchell, Richmond.—p. 317.
Case of Fracture of Pelvis with Necropsy Findings. N. F. Rodman, Norfolk.—p. 318.

Treatment of Ulcerative Cystitis in Female.—Continuous irrigation of the female bladder with sterile water by means of a two-way catheter Jones says is a simple and harmless procedure and is of great value in certain cases of severe ulcerative cystitis.

Wisconsin Medical Journal, Milwaukee

October, 1920, **19**, No. 5

Motherhood Among Ancients. H. M. Brown, Milwaukee.—p. 216.
Renal Infections. W. G. Sexton, Marshfield.—p. 226.
*Administration of Large Doses of Digitalis in Cardiac Disease L. M. Warfield, Milwaukee.—p. 235.
Anesthesia and Analgesia in Management of Dystocia. C. H. Davis, Milwaukee.—p. 242.
Doctor Who Was Willing to Go Into Service but Could Not Leave. J. M. Dodd, Ashland.—p. 246.

Digitalis in Heart Disease.—From a safe therapeutic standpoint it is suggested by Warfield that the method of Eggleston and that of Robinson be combined. To produce the best result, the dose of digitalis should produce slight nausea. The problem is to bring the patient to this stage at the earliest possible moment, then stop the digitalis. The procedure would be to calculate the maximal dose on the basis of 0.1 c.c. of tincture per pound of patient. Give a single dose from 10 to 20 c.c. If this produces nausea, that is the dose and no more is to be given. If no symptoms are produced, then give one-half the initial dose in six hours, a fraction of this (about one-half) in another six hours, and a fourth dose of the same amount as the third dose in six hours should no nausea be produced and no change in pulse be noted. This would correspond to 0.15 c.c. per pound, as Eggleston recommends. Great care and judgment must be used if the patient has had any digitalis for ten days previously. Minimum doses might be disregarded. Warfield urges caution in the administration of the large doses. Especially

important is the accurate knowledge of the character of the cardiac arrhythmia. He most emphatically urges doses of from 2 to 4 c.c., repeated at four hour intervals, until physiologic action begins. Then stop the digitalis. The action persists for days so that no more is needed once the tolerance has been reached. After a week or ten days one may then use the tonic doses, from 1 to 2 c.c., once or twice daily, for weeks. Patients have been known to take digitalis off and on for years. Often as small a dose as 10 minims, once a day, seems to keep them free from distressing symptoms.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Bristol Medico-Chirurgical Journal

September, 1920, **37**, No. 140

Famine Dropsy as a Food Deficiency Disease. J. A. Nixon.—p. 137.
Vesical Calculus in a Urinary Typhoid Carrier. D. Wood.—p. 148.
Poisoning by "Mustard" Gas. E. H. E. Stock and R. Rolfe.—p. 151.

British Journal of Children's Diseases, London

July-September, 1920, **17**, Nos. 199-201

*Case of Antenatal Intestinal Obstruction; Other Forms of Intestinal Obstruction in Infants. S. A. Owen and N. Lake.—p. 115.
*Hereditary Syphilitic Aortitis. E. J. Stolkind.—p. 126.
*Case of Suprarenal Sarcoma of Robert Hutchison Type. F. P. Weber.—p. 133.
*Stigmata of Predisposition to Bone and Joint Tuberculosis. W. C. Rivers.—p. 140.

Antenatal Intestinal Obstruction.—In the case cited by Owen and Lake the child at birth had marked abdominal distention, but otherwise appeared to be normal. On the following day the child vomited a greenish fluid, and the bowels expelled a plug of mucus. There was visible peristalsis, and distended coils of intestine could be felt. There was no evidence of free fluid in the abdomen. Heart and lungs were normal. The child passed urine naturally. No enlargement of liver or spleen could be detected. On rectal examination the anal canal and rectum were empty and the intestine appeared to end blindly at the limit of reach of the little finger. A diagnosis of intestinal obstruction, due probably to atresia of the colon, was made and an operation was performed. The obstruction was about one foot above the ileocecal valve and due to a band arising from the mesentery and descending to the upper surface of the bladder, where it appeared to blend with the urachus and so passed up to the umbilicus. There was little doubt that it was the remains of the vitelline artery of the embryonic circulation coming as a branch from the superior mesenteric. There was no diverticulum of the bowel. On dividing the band the underlying portion of the bowel was found to have a linear band of gangrene, with mucosa exposed. This was oversewn. The most distended coil of small intestine was punctured and a large quantity of gas and meconium liberated. The puncture was oversewn. The abdomen was closed without drainage with through and through fishing-gut sutures. The child stood the operation well, but a few hours later fecal vomiting set in and continued up to the time of death, which occurred on the day following the operation.

Hereditary Syphilitic Aortitis.—Stolkind has not been able to find in the literature a single case of proved hereditary syphilitic aortitis in older children, and especially in adolescents and adults.

Sarcoma of Suprarenal.—The case cited by Weber is one of primary malignant disease of the medullary portion of the suprarenal gland in a child, aged 5 years, with secondary, multiple, diffuse, more or less symmetrical metastases in the cranium—of the type of which Robert Hutchison, in 1907, collected ten examples. A remarkable feature of the case was the enormous, nearly uniform, enlargement of the whole liver, which during life not only completely masked and concealed the presence of the suprarenal tumor, but also, when considered in association with the history of the medicinal use of brandy, gave rise at one time to the suspicion of alcoholic hypertrophic cirrhosis. It was suggested that the child's blindness might be due to the brandy having been adulterated with methyl alcohol. But this suggestion was found to be wrong, when the remainder of the brandy which had been used was produced.

Stigmas of Predisposition to Bone and Joint Tuberculosis.—Rivers found that in cases of bone and joint tuberculosis red and reddish hair is nearly twice as frequent as in the ordinary population. As to the situation of the tuberculous lesion, perhaps in the red haired the spine was rarely attacked. Hardly more of them than of the others had multiple lesions of tubercle. Permanent freckling was a little commoner in bone and joint tubercle than is normal. The percentage of ichthyosis was 1.6. It is at least twice as frequent in bone and joint tubercle as in nontuberculous children.

British Medical Journal, London

Oct. 16, 1920, No. 3120

Atrophy of Liver. J. Miller and A. Rutherford.—p. 581.
Liberation of Energy During Interaction of Hypochlorous Acid and Living and Dead Organic Matter. G. S. Woodhead.—p. 586.
*Case of Osteomalacia Treated by Oophorectomy. J. B. Hellier.—p. 587.
*Blood Pressure in Exophthalmic Goiter. J. S. Goodall and L. Rogers.—p. 588.
Intratracheal Anesthesia by Nasal Route for Operations on Mouth and Lips. S. Rowbotham.—p. 599.
*Case of Cerebellar Tumor. R. T. Williamson.—p. 591.
Influenza in India, 1918-1920. H. G. Waters.—p. 591.

Oophorectomy in Osteomalacia.—About three years after the onset of the disease in a secundipara, aged 38, Hellier removed the ovaries. Twelve months later the patient seemed very much better in all respects.

Blood Pressure in Exophthalmic Goiter.—In ten cases occurring in women between the ages of 23 and 48, the blood pressure was below the physiologic value. The fall varied between 4 and 50 mm. The disease was well established and the histories showed that the onset had been gradual. The diastolic pressure remained approximately normal, and the pulse pressure consequently was low. The systolic blood pressure passes through three phases: (1) a short stage of primary hypertension; (2) a prolonged stage of hypertension, and (3) a stage of secondary hypertension. After operation on the thyroid, the systolic blood pressure tends to rise. This rise is not infrequently associated with cardiac acceleration and an irregularity of the pulse due to auricular fibrillation, and possibly in extreme cases followed by ventricular fibrillation resulting in death. A low systolic blood pressure, other factors being equal, indicates from an operation point of view: (1) little myocardial exhaustion; (2) a small postoperative rise in blood pressure, and consequently little liability to postoperative cardiac failure; (3) less hemorrhage. Diurnal variations in blood pressure are considerable, being relatively greater than in health.

Cerebellar Tumor.—The symptoms manifested by Williamson's patient were: severe headache; double optic neuritis; internal strabismus of the left eye; paralysis of the left external rectus muscle; diplopia; ataxic gait; definite tendency to fall backward and to the left when walking—the last symptom at the end of the illness was very well marked; also when standing or sitting the head was tilted or rotated so that the chin was directed or approximated, to the right shoulder. The necropsy revealed a cerebellar tumor. It was situated at the posterior part of the cerebellum, just under the tentorium. It affected the posterior half of the middle lobe (or vermis) and extended to the left lobe, affecting almost the whole of the posterior half of this lobe, but it only affected a very small portion of the right lobe, quite close to the middle lobe. The growth extended both to the upper and lower surfaces of the posterior half of the left lobe of the cerebellum, but it was most extensive in the central or middle portion of this lobe. The dentate nucleus was seen outside the growth on the right side. The growth occupied the position of this nucleus on the left side and the position of the roof nuclei in the middle lobe. The growth was a plexiform angiosarcoma, the cells being chiefly spindle cells.

Dublin Journal of Medical Science

October, 1920, **4**, No. 8

Two Mediastinal Tumor Cases. J. Spears.—p. 361.
Elbows Ankylosed and Flail. R. A. Stoney.—p. 367.

Glasgow Medical Journal

October, 1920, **12**, No. 4

*Undescribed Condition (Parathyroid Deficiency) of Infancy and Its Treatment. G. H. Clark.—p. 193.
Plea for Early Recognition of Syphilis. W. H. Brown.—p. 203.
Case of Ischemic Contracture of Forearm, Occurring After Fracture of Both Bones; Treated by Manipulation and Splinting A. Young.—p. 215.
Bergonie Chair: Apparatus for Producing Painless Alternating, Interrupted Electrical Current. W. F. Somerville.—p. 225.

Paratyphoid Deficiency.—The outstanding symptoms of the condition noted by Clark in two cases were: (1) idiocy; (2) depression; (3) fibrillary twitchings in the muscles; (4) jerking movements of the limbs; (5) convulsions, and (6) inability to balance. Clark fed these children parathyroid. Improvement began almost at once. After about three weeks the fits and twitching had ceased entirely and they never returned.

Journal of Neurology and Psychopathology, London

August, 1920, **1**, No. 2

*Histopathology of Carbon Monoxid Poisoning. R. M. Stewart.—p. 105.
Some Factors in Psychotherapy. W. Brown.—p. 117.
Ataxia, Asaphia and Apraxia in Speech. E. W. Scripture.—p. 124.
*Acute Confusional States in Psychoneuroses. W. Johnson.—p. 131.
Nature of Insomnia in Psychoneuroses. R. G. Gordon.—p. 142.
*Case of Torsion Dystonia, or Torsion Spasm. M. A. Blandy.—p. 148.
Epilepsy. W. A. Turner.—p. 156.

Histopathology of Carbon Monoxid Poisoning.—The histologic appearances described by Stewart confirm the observation that in fatal cases of gas poisoning the brunt of the damage to the tissues falls on the central nervous system. The evidence is in favor of the view that carbon monoxid exerts its influence in two ways: (1) indirectly, by altering the coagulative power of the blood, and diminishing the oxygen supply to the tissues; and (2) directly, by a specific action on the parenchymatous elements of the nervous system.

Acute Confusional States in Psychoneuroses.—The classification used by Johnson lays stress on a fairly distinct grouping which was observed. The cases appeared to group themselves into three fairly distinct types: (1) simple type with short confusional period; (2) severe type with pronounced, but temporary, state of confusion; (3) type associated with definite mental disorder. The majority of cases fell into Group 1. Johnson says that it is only by an appreciation of the fact that many cases—which are now being treated for vague subjective symptoms, mild forms of mental incapacity, etc.—have undergone definite periods of confusion in the early stage of their disorder, that proper prognosis and treatment become possible.

Torsion Dystonia or Spasm.—To the forty cases of this disease on record, most of which have been reported either in Germany or in America, Blandy adds one, the first of this curious condition to be observed in England. The patient was 8 years old. The onset of the trouble was six months after an attack of diphtheria.

Journal of Tropical Medicine and Hygiene, London

Oct. 1, 1920, **23**, No. 19

*Attempt to Explain Greater Pathogenicity of Plasmodium Falciparum as Compared with Other Species. C. C. Bass, New Orleans.—p. 237.
Leprosy at Rodrigues. E. Mangenie.—p. 238.

Pathogenicity of Plasmodium Falciparum.—The theoretical explanation offered by Bass for the greater pathogenicity of *P. falciparum* is that the shape of the parasite and the unyielding consistency of the substance of which it is composed result in parasites lodging in capillaries to a greater extent and there multiplying in larger numbers, more of which survive, than occurs in the other species. The ameboid activity is greater and the cytoplasm is less resistant to pressure in the other species, which is unfavorable to their lodging in capillaries, causing more of the segmentation to take place in the circulation where the merozoites produced are promptly destroyed. This theoretical explanation is based largely on the observation that artificially cultivated falciparum parasites are more resistant to pressure, that they have little or no ameboid motion in contrast with the other species and on the finding at necropsy of much larger numbers of capillaries obstructed by falciparum parasites.

Journal of State Medicine, London

October, 1920, **28**, No. 10

Harben Lectures, 1920. I. Antigens and Antibodies. M. Nicolle.—p. 293.
Incidence of Notifiable Infectious Diseases During 1919.—p. 305.
Carbon Monoxid Poisoning from Use of Petrol Engines. Experiences During War. D. D. Logan.—p. 306.

Medical Journal of South Africa, Johannesburg

August, 1920, **16**, No. 1

Anatomy, Physiology of Human Heart. W. E. Burrows.—p. 2.
Duration of Human Life in Different Parts of South Africa. C. Pijper.—p. 6.

Archives de Médecine des Enfants, Paris

October, 1920, **23**, No. 10

Retention of Breast Milk. C. Porcher.—p. 569. Cont'd.
Share of Physician in Infant Welfare Work. P. Rohmer.—p. 593.
Congenital Paroxysmal Cyanosis. G. Variot and P. Lantuéjoul.—p. 599.
Case of "Electric Chorea." C. Achard and L. Ramond.—p. 603.
*Congenital Malaria. A. Cuadra (Nicaragua).—p. 606.
Reestablishment and Development of Breast Milk. J. Comby.—p. 608.

Congenital Malaria.—The young mother had a history of malarial antecedents in Cuadra's case, and two days after the birth of the child she had a typical chill and fever. The temperature of the child ran up at the same time to 104 F. and *Plasmodium vivax* was cultivated from the blood of both mother and child. Under quinin preparations the temperature returned permanently to normal in both.

Bulletin Médical, Paris

Sept. 4, 1920, **34**, No. 43

Practical Urology. R. Le Fur.—p. 791. Cont'd.

Sept. 11, 1920, **34**, No. 44

Neurasthenia and Nosomania. P. Gallois.—p. 812.
*Acute Frontal Sinusitis and Ptosis. G. Liébault.—p. 815.

Ptosis with Frontal Sinusitis.—Liébault reports three cases of sinusitis as a sequel of influenza. It was accompanied by ptosis on the side affected, but the lumbar puncture fluid showed merely slight overpressure. Under medical measures to disinfect and reduce congestion in the nose, the acute phase soon subsided to complete healing in one case and to the previous chronic stage in the others. Surgical intervention during the acute phase would probably have whipped up the process and entailed sepsis.

Sept. 18, 1920, **34**, No. 45

*Mixed Lung and Joint Tuberculosis. A. Jacquemin.—p. 835.
Tertiary Syphilitic Ulnar Paralysis. P. Roblin.—p. 838.

Associated Lung and Joint Tuberculosis.—Jacquemin is physician at a hospital to which are sent mixed cases of tuberculosis of both lungs and joints. He discovered that the prognosis depends on which process began first, as the second process acts like a derivation or a fixation abscess, diverting the disease to this second point. When this second process occurs in the lungs, these vital organs soon become compromised, but when the process of derivation is on a limb, it does comparatively little harm, and this second process should be encouraged rather than suppressed. Hence the prognosis is comparatively favorable when the bone or joint process had developed secondarily to the pulmonary process. He cites a number of instances of each type, and also some cases to show the disastrous results when a secondary bone or joint process was operated on and cured, thus depriving the primary lung process of this outlet. On the other hand, benefit resulted when a primary bone or joint process was operated on and cured, the necessity for the lung's sacrificing itself thus being done away with.

Bulletins de la Société Médicale des Hôpitaux, Paris

July 30, 1920, **44**, No. 28

Pluriglandular Syndrome. Crouzon and Bouttier.—p. 1114.
Oxycephaly and Dwarf Growth. A. Isola and others.—p. 1122.
*Cough of Stomach Origin. G. Hayem.—p. 1129.
*Sacralization of Lumbar Vertebra. P. Merklen and others.—pp. 1135 and 1138.
Lesions in Spinal Cord with Cerebellar Ataxia, Friedreich's Disease and Spastic Paraplegia. C. Foix and Trétiakoff.—p. 1140.
*Albumin in Spinal Fluid with Psychoses. P. Ravaut and Laignel-Lavastine.—p. 1151.

*Primary Adenitis of Herpes Zoster. L. Ramond and R. Lebel.—p. 1157.
Recurring Paraplegia with Aorta Disease. C. Achard and others.—p. 1163.
Chronic Trophedema and Spina Bifida. A. Léri and Engelhard.—p. 1169.
Duodenal Tube for Serial Study of Stomach Content. P. LeNoir and M. Delort.—p. 1174.
Treatment of Typhoid Fever with Emulsion of Saprophyte Derived from Water (Mauté). A. Florand and P. Nicaud.—p. 1176.
*Polycystic Pancreas. A. S. Alivisatos.—p. 1181.
Liver Angioma Simulating Gastric Cancer. Alivisatos.—p. 1191.
Interpretation of Orthodiagram of the Heart. C. Lian.—p. 1197.

Cough of Stomach Origin.—Hayem's patient was a man of 53 who for twenty-five years had had vague dyspeptic disturbances for which he had taken pounds of sodium bicarbonate and other drugs in the course of the years. During the last six years he had been tormented with a cough and spitting of thick mucus from the stomach. Under treatment of the dyspepsia by lavage of the stomach and dieting, the cough disappeared. Hayem reiterates the necessity for seeking latent stomach disease with a puzzling cough, and also the necessity with chronic gastritis to restrict to two meals a day, with a nine hour interval, and kefir as the only drink at first.

Blunders in Differential Diagnosis of Pains from Deformity of Lumbar Vertebra.—Richards found "sacralization" of the fifth lumbar vertebra responsible for lumbar pains in 90 per cent. of sixty cases. In Merklen's case the pain came on suddenly, the man unable to stand. He had had two severe attacks of these lumbar crises, lasting a month and then two weeks. The pains spread to the umbilicus and inguinal regions and to the inside of the thigh. The only effectual treatment is to resect the enlarged vertebra which is pressing on nerves and other tissues.

Variations in Albumin Content of Spinal Fluid in Psychoses.—Ravaut and Lavastine found an exceptionally high albumin content of the spinal fluid during the height of a psychosis. The details of forty-seven cases are tabulated. Systematic investigation of the lumbar puncture fluid might reveal an organic origin for many conditions which we now regard as purely functional.

The Primary Adenitis of Herpes Zoster.—Ramond and Lebel say that the primary adenitis is probably the direct work of the still unknown virus causing the herpes zoster. It can be detected every time by palpation, and thus serves to differentiate true herpes zoster.

Polycystic Pancreas.—The complete details are given of a case of polycystic degeneration of the pancreas in a previously healthy woman of 25, with rupture into the abdominal cavity and penetration of the fluid into the right pleural cavity. There never had been any sugar in the urine or polyuria.

Lyon Médical

Sept. 25, 1920, **129**, No. 18

Sodium Cacodylate in Skin Disease. L. M. Bonnet and Morénas.—p. 771.
*The Wrist Sign of Tuberculosis. T. Astériades.—p. 774.

The Wrist Sign of Tuberculosis.—Astériades refers to a small synovial cyst in the wrist, usually on the dorsal surface of the radiocarpal articulation and causing no disturbance. These minute cysts have been explained in various ways, but had always been regarded as insignificant and harmless until Tixier noted that persons with a cyst of the kind almost invariably developed tuberculosis sooner or later, some joint process or pulmonary lesion. Sometimes the cyst developed in the course of tuberculosis, and then it was an index of the gravity of the disease. In the six cases of which he knows, including two personal cases, all were in women. In one consumptive, the cyst disappeared after she became pregnant.

Paris Médical

Sept. 11, 1920, **10**, No. 37

*Biologic Tests of Endocrine Imbalance. H. Claude and others.—p. 197.
*Exploratory Puncture of Normal Peritoneum. A. Carniol.—p. 202.

Biologic Tests of Endocrine Functioning.—Claude, Bernard and Piédelièvre have been studying for several years the response in different persons to intramuscular injection of from 0.05 to 0.15 gm. of extract of the posterior lobe of the pituitary or of from 1 to 5 c.c. of the 1:1,000 solution of epinephrin. The pituitary injection may induce pallor and contractions of the bowel and uterus, and the epinephrin injection tremor or palpitations, but the reactions to be noted in the tests are (1) the cardiovascular response: the pulse, and maximal and minimal blood pressure, noted at five minute intervals, for an hour or hour and a half after the injection; (2) the sugar content of the urine when the injection had been immediately preceded by a test meal comprising 100 gm. of bread, 150 gm. of milk, 50 gm. of sugar or 150 gm. of glucose. The sugar output for six or nine hours thereafter is measured; (3) changes in the blood count. The corpuscles are counted anew one and three hours after the injection. The findings with these tests in different cases of endocrine upset are compared, and the possible differential value is emphasized as interpretation of the findings becomes more reliable. Their results with treatment based on what has been already learned are encouraging. With ovarian insufficiency, the pulse increased by ten or twenty beats under pituitary treatment but there was no glycosuria. The reactions to epinephrin were the same as in the normal, that is, no change in the pulse or merely a slight and tardy acceleration, a distinct rise in the systolic pressure, and a constant glycosuria. The normal response to the pituitary test is a drop in the systolic pressure with slight if any change in the pulse or sugar content of the urine. With hyperactivity of the thyroid, the reactions are the same as in the normal, except that they are all much exaggerated. Hence exaggerated normal responses point to the thyroid. They urge the accumulation of data in this line, especially in diabetes and epilepsy.

Exploratory Peritoneocentesis.—Carniol refers to obtaining normal fluid from the peritoneal cavity to seek for possible evidences in the fluid of action on the peritoneum from an incipient pathologic condition in a viscus. The point found most accessible and convenient for the puncture is in the iliac fossa on a horizontal line passing from the anterior superior iliac spine to 2 or 3 cm. inside this spine, the patient reclining, the pelvis slightly raised, and slightly turned toward that side. The fluid may be aspirated or may be drawn up by mere capillary attraction, or be soaked into cotton wound on the tip of the needle, or 10 or 20 c.c. of physiologic solution may be injected and a few drops aspirated at once. Lymphocytosis in the fluid may suggest a tuberculous origin for symptoms elsewhere, confirmed by the course of the cases. One case was diagnosed as chronic malaria, although the blood was sterile, until the discovery in the woman of 35 of a tender point in the right iliac fossa, and peritoneocentesis showed polynucleosis with a few lymphocytes. The operation confirmed the assumption of chronic appendicitis. In another case the normal fluid turned the scale in favor of an ovarian cyst instead of salpingitis. In some cases of syphilis and in tuberculous infants, the peritoneal fluid presented the same lymphocytosis as in the spinal and pleural fluid.

Presse Médicale, Paris

Sept. 15, 1920, **28**, No. 66

*Pathologic Physiology of Jacksonian Epilepsy. R. Leriche.—p. 645.
*Plurality of Syphilis Virus. C. Levaditi and A. Maric.—p. 646.

Jacksonian Epilepsy.—Leriche has witnessed the development of an attack of jacksonian epilepsy while he was examining the brain, and he was impressed by the sudden spasm of the cerebral arteries, inducing immediate and pronounced anemia of the cortex. He found the cerebrospinal fluid under subnormal pressure in the men with jacksonian epilepsy following a war wound. The humeral artery on the side affected was also abnormally dilated in these cases, and ligation of this artery had a favorable influence on the morbid peripheral sensations. These facts suggest that sympathectomy might favorably modify the circulation in the brain in cases of jacksonian epilepsy. They suggest further the possible advantage of injection of small amounts of artificial serum, about 150 c.c. on alternate days, to maintain the proper pressure in the cerebrospinal fluid. It is likewise possible that systematic ligation of the humeral artery might aid in warding off the attacks; some of the men found out for themselves that wearing a constricting band around the arm and tightening it when symptoms develop, would often abort the jacksonian spasm.

Plurality of Syphilitic Virus.—Levaditi and Marie here reiterate their assertions in regard to the nonunity of the spirochetes responsible for syphilis. The neurotropic type differs from the skin and mucous membrane type. Rabbits inoculated with one are not protected against the other, and the course of their infection differs notably according to the type inoculated. "Just as we have typhoid and paratyphoid bacilli, we must assume a syphilis and a parasyphilis virus." They point to the instances on record in which all the men contaminated at the same source developed exclusively one or the other type of syphilis. In this communication they reply to criticisms of this view, but Sicard comments on their statements that it is absolutely rash, at the present stage of our knowledge, to apply to syphilis in man conclusions drawn from syphilis in rabbits.

Sept. 18, 1920, **28**, No. 67

*The Non-Urea Nitrogen in Uremia. H. Chabanier and A. de Castro Galhardo.—p. 653.
*Articular Pneumoserosa. J. Terracol and L. J. Colanéri.—p. 655.
Rôle of Proteins of Food in Etiology of Headache. R. C. Brown (U. S. A.).—p. 656.

Share of Non-Urea Nitrogen in Uremic Symptoms.—Chabanier and de Castro present evidence from fifty cases that the urea content of the blood may be high without this inducing appreciable symptoms. But let some intercurrent disease, general anesthesia or trauma intervene, or the urea content surpass 5 or 6 gm. then the unstable nitrogen metabolism becomes upset, and there is retention of residual nitrogen, and this is of a very grave prognosis. The urea content of the blood may keep at 5 or 6 gm. without much harm, but once this level is surpassed, the nitrogen metabolism becomes speedily compromised. This may occur with even normal urea content of the blood, explaining the cases in which grave uremia develops without any disturbance in kidney secretion.

Pneumoserosa.—Terracol and Colanéri expatiate on the instructive findings when air is injected into a joint for roentgenoscopy. It also serves a therapeutic purpose in some cases. They give some roentgenograms of the knee thus insufflated.

Progrès Médical, Paris

Aug. 28, 1920, **35**, No. 35

*Grafts of Organs. P. Mauclaire.—p. 377. Conc'n.
Therapeutic Organization of the Fight Against Syphilis. Queyrat. —p. 379. Conc'n in No. 36, p. 391.
What the War Has Taught Psychiatry. H. Damaye.—p. 381.
Early Caries of Upper Incisors. A. Feil.—p. 382.
Mucilaginous Laxatives. G. Faroy.—p. 383.

Grafts of Organs.—In this conclusion of his long review of the whole field of grafts of living tissue, Mauclaire discusses what has been accomplished to date in transplanting the lining of mucomembranous passages and reconstructing mucomembranous cavities and organs, partial grafts of the nose, the ear, and of segments of limbs in man. He remarks as the final word that grafting of all the different organs has been attempted, and with encouraging results in many, but there are many interesting fields for grafting work still unstudied, ready for concerted action by physiologists and surgeons.

Revue Neurologique, Paris

June, 1920, **27**, No. 6

The Excitomotor Syndrome of Epidemic Encephalitis. P. Marie and G. Lévy.—p. 513.
The Pseudo-Tapia Syndrome in a Tabetic. A. de Castro.—p. 537.
Chronaxia and Action of Progressive Currents in Case of Acquired Myopathy. G. Bourguignon.—p. 540.
*Tertiary Syphilitic Encephalopathy. P. Beaussart.—p. 547.

Tertiary Syphilitic Encephalopathy.—Beaussart describes what he regards as a unique case, a man of nearly 44 with old syphilis developing a set of symptoms suggesting a lesion in the thalamus with hemianopsia, visual hallucinations, generalized and jacksonian epilepsy with unconsciousness. The symptoms suggested general paresis but their tertiary character became manifest during the six months before death. A widower at 40, he had married a gay young wife at 42, and she had left him after six months.

Schweizerische medizinische Wochenschrift, Basel

Sept. 16, 1920, **50**, No. 38

Gonococcus Infection in Men, Women and Little Girls. Dind.—p. 833
*Syphilis Refractory to Arsphenamin. W. Lutz.—p. 838.
*Chloral in Cardiovascular Disease. A. Glaus.—p. 841.
Physiologic Changes in the Leukocyte Count. M. Schenk.—p. 845.

Syphilis Refractory to Arsphenamin.—Lutz describes two cases in which no benefit from treatment was apparent. The syphilis progressed to a rapidly fatal termination with symptoms of leptomeningitis in one; in the other, the conditions improved, but the repeated recurrence of the lesions demonstrated that the infection had not been materially modified. He is inclined to attribute the failure of arsphenamin in these cases to an inability of the cells to utilize the arsenic presented to them in this form. Others infected from the same source as the second patient did not display this refractory course, which seems to exclude an arsenic-proof strain of spirochetes. The second patient after proving refractory to arsphenamin and neo-arsphenamin was apparently cured with silver arsphenamin, but the interval since has been short.

Chloral in Treatment of Cardiovascular Disease.—Glaus reports that chloral has proved in several years' experience a very useful means to combat insomnia in patients with heart or vascular disease, especially with high blood pressure. In such cases the ordinary sedatives—outside of opium—often fail to relieve. The sedative action of chloral is supplemented by its vasodilating and its diuretic action. Some of the patients have been taking it for years. The usual dose is between 1 and 2.5 gm. By the mouth, it is given dissolved in 20 gm. water with 10 gm. syrup of orange peel. When given over long periods, it is preferred to give it in a small water or starch enema (30 gm.). Ten case reports are given from Jaquet's private clinic to demonstrate the advantages of this treatment under medical supervision. The output of urine in some cases, which had been under 700 c.c. under digitalis and other drugs, ran up to 1,400 or 1,600 under the chloral. Even when the patients did not sleep sound all night under these small doses, they were tranquil and free from dyspnea. Moderate degrees of cardiac insufficiency with signs of stasis in the lungs and swelling of the liver do not deter from this treatment, but severe degrees of cardiac insufficiency contraindicate it, and it is to the exclusion of such cases that Glaus ascribes the lack of unfavorable experiences with this treatment.

Sept. 23, 1920, **50**, No. 39

Pregnancy Toxicoses. P. Hüssy.—p. 857. Conc'n in No. 41, p. 918.
*Biologic Action of Fluorescent Rays. C. Amsler.—p. 865.
Hematoma in Gastrocolic Ligament. E. Hagenbach.—p. 868.

Sept. 30, 1920, **50**, No. 40

The Health Resorts of Switzerland. G. A. Römer.—p. 881.
Dropsical Appendix with Diverticulum. N. Enderlin.—p. 888.
Psychology of Disturbances in Gait. J. Kollarits.—p. 890.
Treatment of Seborrhea of the Scalp. H. Merz.—p. 891.

The Biologic Action of Fluorescent Rays.—Amsler brings down to date his account of his research on the sensitizing action of fluorescent substances on the surviving frog heart. Neither hematoporphyrin alone nor eosin nor exposure to electric light of 16 to 200 candle power alone affected the surviving frog heart injuriously. But the combination of either sensitizer with the light disturbed atrioventricular transmission of the impulse while later the ventricle was affected; the sinus last. The vagus does not seem to be involved in the disturbance.

Policlinico, Rome

Aug. 23, 1920, **27**, No. 34

Illumination of the Throat by Transparency. G. Bilancioni.—p. 915.
Auscultation During Forcible Respiration. P. Tilli.—p. 918.
The 1919 Malaria Campaign in Istria. M. Gioseffi.—p. 920.
Auditory Neuritis in Meningitis. G. Milesi.—p. 924.
Laceration of Thorax from Bite of Lion; Recovery. T. Boidi.—p. 927.

Aug. 30, 1920, **27**, No. 35

*Dysphagia with Disease of the Aorta. A. Nicotra.—p. 947
*Sugar Content of the Blood. S. Silvestri.—p. 950.
Traumatic Aneurysm of Temporal Artery. N. Novaro.—p. 955.

The Roentgen-Ray Findings with Aortic Disease.—Nicotra refers to difficulty in swallowing when there is aortitis, and explains that the trouble is due more to a motor neurosis

than to direct compression of the esophagus as is generally assumed. The motor neurosis of pharynx and esophagus entail hypertonia and hypokinesia, the movements of swallowing thus becoming incoordinated, and entailing dysphagia suggesting stenosis. Treatment for syphilis may improve conditions in the aorta, and thus cure the dysphagia.

The Sugar Content of the Blood.—Silvestri reviews the literature of the last few years on this subject, the behavior of the blood sugar in various diseases and especially with endocrine upset, adding in conclusion that all the data presented need confirmation by further research before decisive conclusions can be drawn.

Crónica Médica, Lima

July, 1920, **37**, No. 685

*Mycosis of Pharynx and Larynx. A. Flores.—p. 225.
Inflammatory Tuberculosis. M. Arias Schreiber.—p. 234.
*Pathogenesis of Cancer. C. Champy and F. Coca.—p. 236.
Congenital Serous Cysts. C. Villarán.—p. 249.
Pelvic Intraligamentary Hydatid Cyst. M. C. Castañeda.—p. 252.

Mycosis of the Throat.—Flores reports three cases in children, one in a woman of 70, and one in a young man, in all of whom an ulcerating lesion in the throat was mistaken at first for syphilis or tuberculosis or other pathologic condition until the improvement and usually promptly permanent cure under iodid treatment corrected the diagnosis to mycosis. This was not suspected in any instance until the negative tuberculin and Wassermann tests, the absence of pathologic antecedents and the inefficacy of mercurial treatment gave the clue, after weeks had been wasted. The fungus seemed to be *Discomyces pulmonaris* in one of the cases.

Pathogenesis of Cancer.—Champy and Coca describe with ten illustrations a small pedunculated tumor in the uterine cervix the cells of which showed typical epithelioma in the distal portion while the proximal portion showed merely adenoma. They cultivated some of the adenoma cells in vitro and witnessed the development from them of typical epithelioma cells. The phenomena observed seem to confirm, they say, that the property of malignant growth is due to the loss of some inhibiting action on the cells rather than to any special stimulating action. An adenoma may well suffice to induce this inhibiting action, explaining the malignant degeneration of such growths.

August, 1920, **37**, No. 686

*Reaction to Tuberculin Tests in Blastomycosis. E. Escomel.—p. 257.
Acute Thyroiditis of Malarial Origin. F. Wieland.—p. 259.
Case of Myiasis under Skin of Scrotum. N. E. Cavassa.—p. 262.
Chronic Intestinal Stasis. E. Bello.—p. 264.

Positive Reaction to Tuberculin in Blastomycosis.—Escomel relates experiences and cites those of Lozada Benavente which prove that the skin and intradermal tuberculin tests elicit positive responses in persons with blastomycosis entirely free from tuberculosis. He urges application of tuberculin tests to patients with leishmaniasis.

Semana Médica, Buenos Aires

June 3, 1920, **27**, No. 23

*Opium in Acute Dilatation of the Heart. D. T. R. Davison.—p. 749.
Diseases of the Conjunctiva. R. Argañaraz.—p. 750.
Psychophysiology of the Aviator. XI. J. A. López.—p. 762.

Opium Treatment of Acute Dilatation of the Heart.—Davison extols the benefit from opium as he observed it in an old case of aortic insufficiency in which compensation was lost as consequence of unusual severe climbing exercise. After failure of all other measures, the heart beat 224 per minute, the condition rapidly returned to the former state under a single injection of an opium preparation.

June 17, 1920, **27**, No. 25

Multiple Echinococcus Cysts. G. Arrizabálaga.—p. 803.
Organized Fight Against Tuberculosis in Argentina. G. Aráoz Alfaro.—p. 811.
*Nerve Blocking for Dacryocystectomy. R. R. Gil.—p. 817.
*Potassium Iodid by the Vein. A. Bergman.—p. 822.
Preventive Medicine. J. A. López.—p. 825.
*Diagnostic Painful Point in Malaria. R. Pagniello.—p. 830.

Nerve Blocking for Dacryocystectomy.—Gil gives illustrations showing the Seidel method of blocking the nerve for removal of the lacrimal sac, and then illustrates his own improved technic for the purpose. Instead of injecting the anesthetic through the eyelid and also through the skin below the orbit, as in the Seidel technic, he makes the single injection in the conjunctival sac, after cocain, just above and beyond the lacrimal caruncle, introducing the needle for 2.5 cm., following the inner wall of the orbit to a point back of the bifurcation of the nasal-ciliary nerve.

Potassium Iodid by the Vein.—Bergman's experience confirms that when there is intolerance for this drug by the mouth, it can be injected intravenously without much effect on the blood pressure.

Diagnostic Painful Point with Malaria.—Pagniello has practiced for thirty years in a malarial zone in Italy, and he calls attention to a painful point on pressure of the ninth left intercostal space, between the median and the posterior axillary line. The patient winces when the finger presses this point. In exceptional cases the pain may be more pronounced in the interspace above or below. He declares that this is a constant and characteristic sign of malaria, and when it is found there is no need to examine the blood for the malarial parasite.

Tohoku Journal of Experimental Medicine, Sendai

July 17, 1920, **1**, No. 2

*Change of Constituents of Urine After Section of Renal Nerve.—R. Yoshimura.—p. 113.
*Autolysis of Normal Serum. II. S. Yamakawa and K. Okubo.—p. 120.
*Salt Glycosuria. K. Naito.—p. 131.
*Internal Secretion of the Pancreas. T. Kumagai and S. Osato.—p. 153.
*Action of Serum of Nephritics. T. Kato and M. Watanabe.—p. 167.
*Epinephrin Mydriasis with Chronic Nephritis. T. Kato and M. Watanabe.—p. 187.
*Results of Operative Treatment of Exophthalmic Goiter. S. Sekiguchi and H. Ohara.—p. 192.

The Urine After Section of Renal Nerve.—Yoshimura's research confirms that the change in the urine after the renal nerve has been severed is due to acceleration of the circulation from loss of the vasoconstricting influence of the renal nerve. The article is in English.

Autolysis of Normal Serum.—Yamakawa and Okubo report an activating influence from phenol, resorcin, brenzcatechuin and pyrogallic acid on the autolysis of normal serum. Addition of toluene promotes phenol activation and also acetone activation. Addition of normal serum to the serum activated by phenol, inactivates it completely even after the serum has been heated to 55 C. for thirty minutes, but a temperature of 60 C. or more annuls this property. (In German.)

Salt Glycosuria.—Naito's experiments on rabbits after both splanchnic nerves had been severed disprove the hypothesis that salt glycosuria is due to increased permeability of the kidneys. Also that protection against chilling will ward off salt hyperglycemia. However, salt glycosuria is checked by it to a large extent. Inhalation of air rich in oxygen does not modify the hyperglycemia or the drop in temperature after the subcutaneous injection of the solution of sodium chlorid or magnesium sulphate, while it had a marked influence in reducing the glycosuria. (In German.)

Internal Secretion of the Pancreas.—Kumagai and Osato report evidence which testifies that the pancreas hormone passes into the blood by way of the lymphatics. Lymph from the thoracic duct obtained after injection of pilocarpin had an antiglycosuric action on dogs with pancreas diabetes. (In German.)

Action of Serum from Nephritics on Sympathetic Nerves.—Kato and Watanabe conclude from their extensive research that the active principle in the serum in cases of chronic nephritis is entirely different from the vasoconstricting principle in normal serum, and different from epinephrin. It is destroyed by standing, by heating to 56 C. and by desiccation, but stands exposure to cold. It is insoluble in alcohol and ether, disappears from the serum when the albumin content has been removed and does not pass into the dialysate. (In German.)

Epinephrin Mydriasis with Chronic Nephritis.—Kato and Watanabe state that the mydriasis which follows instillation of four drops of a 1:1,000 solution of epinephrin in the eye

in the course of five minutes in cases of chronic nephritis seems to parallel the blood pressure. It is rarely positive with acute nephritis. They ascribe the action to the active principle in the serum with chronic nephritis mentioned in the preceding abstract.

Results of Operative Treatment for Exophthalmic Goiter.—Sekiguchi and Ohara tabulate the blood findings before and after operative treatment in ten cases, and after medical and roentgen-ray treatment in five others. The number of polymorphonuclear leukocytes increases while that of the lymphocytes drops, but this is observed likewise after other operations on the neck, and is usually transient. The blood pressure declines, usually more after thyroidectomy than after ligation of the vessels. The symptoms generally disappeared more or less completely after operative treatment, and the impaired nutrition recuperated. (In English.)

Deutsche medizinische Wochenschrift, Berlin

July 1, 1920, **46**, No. 27

New Remedies. A. Holste.—p. 729.
Attempts to Improve Roentgenotherapy. F. Gudzent.—p. 732.
*Scarlet Fever in Infants. G. Dorner.—p. 734.
*Vaccine Treatment of Colitis Ulcerosa. Korbsch and Gross.—p. 735.
Pain Tracts of the Vegetative Nervous System. V. Hoffmann.—p. 736.
*Splanchnic Nerve Anesthesia. Nölle.—p. 737.
*Delayed Healing of Fractures Due to War Diet. U. Hammer.—p. 738.
*Intracardiac Injections. K. Vogeler.—p. 740.
*Fracture of Navicular Bone of Foot. Golliner.—p. 740.
Staining Method for Tubercle Bacilli. Konrich.—p. 741.
Interstitial Emphysema in Influenza. F. Schotten.—p. 741.
*Physiology and Pathology of the Hypophysis. M. Jacoby.—p. 742.
Rhinolaryngologic Hints for the General Practitioner. Finder.—p. 743.

Scarlet Fever in Infants.—Dorner reports in detail three cases to show the results of allowing mothers suffering from scarlet fever to continue to nurse their infants. The first two infants remained well, presenting no fever and no desquamation. The third child showed, seven days after the appearance of the first symptoms in the mother, a slight rise of temperature (37.6 C.), which returned permanently to normal the day after. Reddening of the throat or on the body could not be discovered. The tongue remained clean. Four days later a beginning desquamation was noted on the hands, which became distinctly lamellar, and later extended to the feet. It lasted four weeks, longer than in the mother. There was also a slight swelling of the lymph glands of the neck. There was no otitis, no albuminuria, and there were no complications. Following the addition of Soxhlet sugar to the milk there was a transient diarrhea, but this disappeared when milk-sugar was substituted. The child was naturally weak and gained only slowly in weight. In general, therefore, Dorner says that infants, during the first few months, are either immune to scarlet fever or, if they do get it, it takes such a mild course that careful examination is required to establish the fact. Infants may, then, be left safely with the mother, and if her condition permits she may even continue to nurse her child.

Specific Treatment of Colitis Ulcerosa.—Korbsch and Gross report that, since chronic bacillary dysentery in the form of colitis ulcerosa is produced and kept up by a continual infection with dysentery bacilli, they have been able to effect a cure by intravenous vaccination. Forster, Gillet, Stephan, Newman, Shivdas, Löwenthal, Ditthorn, Boehncke, and others, have also reported excellent success from vaccination in chronic cases of dysentery.

Splanchnic Nerve Anesthesia.—Nölle relates his unfavorable experiences with the intraperitoneal blocking of the splanchnic nerve by the Braun method, as described in No. 4 of the current volume of the *Wochenschrift*. A half hour after the injection of 0.02 gm. of morphin and 0.0005 gm. of scopolamin, an exploratory laparotomy for suspected cancer of the stomach was performed on a man of 59. After opening the abdominal cavity under local anesthesia, 100 c.c. of a 0.5 per cent. solution of procain and 0.5 c.c. of epinephrin solution (1:1,000) were injected retroperitoneally, in front of the body of the vertebra, on a level with the xiphoid process. No changes were found in the gastro-intestinal tract. During the operation the patient lay in a light twilight slumber. As the stomach and the transverse colon were lifted up he emitted a few slight groans. After the operation he had no recollection of it. Four hours after the operation the patient regained full consciousness, but his face took on an anxious, pained expression. The abdomen was distended. At a slight touch spasmodic jerks of the whole abdominal musculature occurred. A jerk could be noted every few minutes. Adjusting of the bedclothes or turning on the electric light elicited a jerk. The muscles of mastication and the muscles of the neck were not involved. A heavy sweat broke out on the face. The syndrome resembled that of tetanus. As a precaution antitetanic serum was injected in large doses subcutaneously and intravenously. The condition of increased reflex excitability lasted for two or three days. Various theories in explanation of the phenomena are discussed, but no definite conclusion could be reached.

Delayed Healing of Fractures Due to War Diet.—Hammer reports a series of fractures in which eight cases (28 per cent.) gave evidence of delayed healing apparently from lack of material to form callus. Various therapeutic measures were tried, none of which were unequivocally successful. Especially the administration of calcium and phosphorus proved of doubtful value. Often the only effect of the calcium preparations was to bring on an unusually refractory constipation. Hammer takes the poor effect of the calcium and phosphorus preparations as an indication that the bone affections were not due solely to the lack of these substances in the war diet—at least not directly—but that complicated metabolic processes were involved, in which the endocrine glands probably played a prominent part. Physicotherapy seemed to exert a more favorable influence than direct medication. Massage and, especially, hot air jets seemed to exert a decisive effect in some of the severe cases.

Intracardiac Injections.—Vogeler tells his experience with intracardiac injections of epinephrin in total collapse. Following an operation for appendicitis on a boy of 14, occlusion of the ileum occurred. During the operation thus necessitated the patient collapsed. The pulse ceased entirely and breathing stopped. The operation was hurriedly brought to a close, and stimulation of heart activity by caffein and heart massage was attempted. The pulse recovered for a short interval but again vanished; breathing was not restored, and the pupils became dilated. An intravenous injection was not possible, for the veins could not be reached. No heart tones could be heard with the stethoscope. Vogeler hereupon injected 1 c.c. of epinephrin (1:1,000 solution) directly into the heart, and the effect was astonishing. After about half a minute the pupils began to contract, the pulse could be felt, and at about the same time respiration was slowly begun. The patient regained consciousness, whispered first inaudibly, and then said to the nurse: "Now I am getting better." Further injections of caffein were given; also a subcutaneous infusion of sodium chlorid in the thighs. In six minutes the pulse again became imperceptible, breathing ceased and the pupils became dilated. A second injection of epinephrin revived the child in the same manner as the first injection, but in two minutes he sank back and died. There are a number of recorded cases in which injections of epinephrin into the heart have been made, for example, those of Szubinsky, Ruediger, Esch, Dörner, Latzko and Volkmann, usually with at least a temporary effect. There is one case of record in which Zuntz injected epinephrin into the heart of a woman suffering from operative shock and succeeded in thus saving his patient. Vogeler adds that intracardiac injections constitute the strongest and the most immediately effective method of heart stimulation known, and therefore deserve most serious consideration, not only with respect to their employment at the bedside of the patient but also as regards their further experimental development.

Fracture of the Navicular Bone of the Foot.—Golliner reports the rare instance of a patient (a railway employee) fracturing the navicular bone of the foot by "turning" his ankle when walking along a hard, level but unpaved road. Fractures of this bone seem to be rare and one authority (Hueter) states that they occur only by direct force from without. Massage, packs and flatfoot inlay caused the subjective symptoms to recede but slowly.

Physiology and Pathology of the Hypophysis.—Jacoby recalls that embryologically the anterior lobe and the pars intermedia of the pituitary, being derived from the buccal cavity, are to be distinguished from the posterior lobe, which is developed from the embryonic brain. Whereas the anterior lobe can be fairly well detached by operation from the balance of the gland it is not possible to separate distinctly the pars intermedia from the posterior lobe so that any conclusions in regard to the share that the two portions have in the functions of the organ must be reached indirectly. Only the anterior lobe and the pars intermedia can be regarded with certainty as endocrine glands whose secretions are indispensable for the activities of the other organs of the body. It seems that the other endocrine glands can function normally only so long as the hypophysis contributes its part to the work of the whole which agrees with the common experience that the glands of internal secretion stand in an innermost relationship to each other. Jacoby discusses the various theories that have been proposed in explanation of the various functions or supposed functions of the anterior lobe, the pars intermedia and the posterior lobe. Diuresis seems to be checked by the posterior lobe and promoted by the anterior lobe. The mode of functioning may be by nerve stimulation.

Münchener medizinische Wochenschrift, Munich

July 30, 1920, **67**, No. 31

*Significance of Stalagmons. H. Bechhold and L. Reiner.—p. 891.
Industrial Myopia. R. Schneider.—p. 892.
*Serum for the Treatment of Chancroid. J. Reenstierna.—p. 895.
*Albee Operation in Tuberculosis of the Spine. Görres.—p. 896.
*Blood Transfusion in Gynecologic Cases. R. Zimmermann.—p. 898.
Industrial Melanosis: Dry Batteries. A. Arnstein.—p. 902.
Etiology of Actinomycosis of the Tongue. C. Harms.—p. 903.
Nerve Blocking for Goiter Operations. W. Förster.—p. 904.
Pathologic Reaction to First Injection of Antitoxin. Busch.—p. 905.
Traumatic Nephritis. H. Sieben.—p. 905.
Arsphenamin Prophylaxis in Syphilis. A. Brun.—p. 906.
"Therapeutic Effects of Pneumoperitoneum." O. David.—p. 907.
Instruction in Physical Culture at Universities. Riesser.—p. 908.

The Surface Tension of Body Fluids.—Bechhold and Reiner recall that in certain diseases the surface tension of the urine is much below normal. To the substances that lower the surface tension they have assigned the term "stalagmons." They find that they belong to the colloids or semicolloids; that they are more finely dispersed than albuminous substances; that they are stable under variations in temperature; that they are slightly acid or amphoteric, and are easily soluble in water. As belonging to the stalagmons they found, especially, albumin decomposition products, such as oxyproteic acids, albumoses and peptones; in certain diseases also albuminous substances and elements of the bile. Determination of the "stalagmometric quotient" may have theoretic and practical value in infectious diseases. They are convinced that the increased sedimentation of the red corpuscles in blood plasma, as found by Fåhræus and Plaut in certain diseases, is effected by stalagmons.

A Serum for the Treatment of Chancroid.—Reenstierna prepares an antistreptobacillus serum by injecting intravenously increasing doses of killed and living streptobacillus cultures into large rams over a protracted period. Laboratory experiments to determine the immunizing qualities of the serum have not been performed as yet for lack of animals for experimentation, but the serum has been tried out therapeutically in about 100 cases of chancroidal buboes. In most cases chancroids were also present. When it had been shown by the first trials that the antistreptobacillus serum alone exerted a distinct effect on the process produced by the corresponding virus, Reenstierna decided to use a preparation consisting of a serum that was mixed with a definite quantity of killed febrifacient bacteria; for example, typhoid bacilli. With this preparation all cases of unopened chancroidal buboes except seven were cured in an unusually short time, in a little over a week, on the average. As for the seven apparent exceptions, cultures of pus derived by puncture showed staphylococci. The negative effect of the preparation in these seven cases points, therefore, to a specific effect of the serum on the chancroid bacillus. Chills and high fever; considerable sensitiveness, lasting several days, at the site of the injection (gluteal musculature), and occasionally transient sensitiveness in regional, inguinal lymph glands, are the untoward effects of this serum treatment.

The Albee Operation in Tuberculosis of the Spine.—Görres reports cases of spondylitis in which the Albee operation was performed between 1913 and 1918. Of the 35 reexamined personally, one patient still presented a fistula six years after the operation; the other 34 had been cured. They were free from pain; children were attending school and taking part in gymnastic exercises, while adults were able to perform the duties of their respective callings. Five of the cases reexamined had been abscess cases. The abscess had healed a short time after the operation and had not reappeared. In no case was there any considerable disturbance of the motions of the spinal column caused by the bone-graft. The portion of the spine that was bridged over was rigid, but the balance of the spine was more flexible. Görres, therefore, regards the Albee operation as a simple, almost harmless, form of intervention that brings numerous advantages without giving rise to later disturbances. He thinks it is indicated in almost all cases of tuberculosis of the spine.

Blood Transfusion and Reinfusion in the Severe Acute Anemia of Gynecologic Cases.—Zimmermann gives several case reports and concludes from the unfavorable outcome in certain instances that indirect blood transfusion by the sodium citrate method is not so free from danger as the accounts in the literature of recent date would have us believe, for which reason he does not intend to employ the method in the future. Intravenous reinjection of the extravasated blood in ruptured tubal pregnancy seemed to exert a favorable influence in one case, but the results were not absolutely convincing. In future he expects to resort to blood reinfusion only in case the pulse fails to improve following the operation. Here he thinks blood reinfusion has its chief indication and may have great value.

Therapeutische Halbmonatshefte, Berlin

July 1, 1920, **34**, No. 13

Pathogenesis and Treatment of Anemia. S. Isaac.—p. 341. Cont'd.
*Operative Treatment of Diffuse Colitis. R. v. Lippmann.—p. 346.
Artificial Heliotherapy in Lung Tuberculosis. Traugott.—p. 350.

Indications for Operative Treatment of Colitis.—Lippmann says that surgical treatment of acute, diffuse colitis and acute dysentery is indicated only in case of complication with peritonitis. In protracted dysentery and colitis suppurativa, surgical intervention should be confined to such cases as assume a distinctly chronic form. In chronic cases, provided dieting, medication and medicated enemas do not bring improvement, operative treatment may be resorted to if the patient is in relatively good condition—not markedly emaciated or anemic, and no edema.

Wiener klinische Wochenschrift, Vienna

Aug. 12, 1920, **33**, No. 33

Radium Therapy in Internal Medicine. Falta and Högler.—p. 723.
Studies on the Effects of Nuclein. IV. P. Habetin.—p. 726.
*Deglutition Symptoms in Intestinal Conditions. T. Bársony.—p. 729.
Bacillus Crassus (Lipschütz). E. Löwi.—p. 730.
Otosclerosis and Tetany. H. Frey and K. Orzechowski.—p. 734. Cont'n.

Distended Intestine Impeding Swallowing.—Bársony reports two analogous cases, in one of which, apparently, intestinal paralysis, that had followed an enteritis, had occasioned a dilatation of the colon, which, in turn, impeded the passage of the food into the stomach from compression of the esophagus below the diaphragm. Following a course of treatment at Carlsbad the dilatation of the colon was relieved and the deglutition symptoms disappeared. Bársony is convinced that a certain proportion of deglutition symptoms treated as of nervous origin come, in reality, under the head of pressure phenomena produced by stretched and distended loops of intestine.

Zeitschrift für Kinderheilkunde, Berlin

Aug. 16, 1920, **26**, No. 3-4

*Bacteria of the Normal Skin in Children. F. Loebenstein.—p. 99.
*Varicella. M. Stroh.—p. 120.
*Mode of Contagion of Scarlet Fever. E. Kobrak.—p. 137.
Wartime Diet and Lactation. Klotz.—p. 150.

*Repeated Attacks of Measles. B. Lewy.—p. 160.
*Importance of Initial Breast Feeding. H. Langer.—p. 163.
Tuberculosis Among Berlin Children. H. Davidsohn.—p. 178.
*Hemorrhagic Kidney Infarcts in Children. F. Oppenheim.—p. 192.

Bacteria of Normal Skin in Infants.—Loebenstein examined infants less than 6 months old at two institutions and found so few bacteria that the normal skin can be regarded as almost free from bacteria.

Blood Findings, etc., in Chickenpox.—The incubation time in the few of the 234 cases of varicella at the children's clinic at Frankfort in which the incubation could be traced, was thirteen or fourteen days. An enanthema in the mouth was noted only in twenty-nine cases. Severe gangrene developed in two children with coincident scarlet fever. In one case the varicella ran a hemorrhagic course with internal bleeding but final recovery. Nephritis developed in three of the 234 cases. The tabulated blood findings from various clinics are conflicting. As a rule, however, a reduction in the numbers of leukocytes at the height of the disease testifies in favor of varicella, while an increase points to variola.

Contagion of Scarlet Fever.—Kobrak's investigations in 87 cases of scarlet fever confirmed the importance of direct transmission of the disease from the sick to the well, and mainly by the nasopharyngeal secretions, not by fomites. The disease was frequently brought into a family by some outsider before the scarlet fever in the outsider had been recognized. The walking light cases are the principal source of infection. In the 50 families investigated with 227 members, the father who kept away from the sick member and the maids that took care of the room but who did not come into direct contact with the scarlet fever patient never contracted the disease. This testifies against transmission by food, stools or urine, and by healthy third parties. Contagion occurred more frequently in the well-to-do families with spacious homes, than in unhygienic conditions. This seems to confirm the dictum that overfed children—who as a rule are more inclined to throat infections—contract scarlet fever more readily than the undernourished. The comparative infrequency of contagion in the crowded homes of the poor speaks further against scales as the main carriers of contagion. The disease spread to 28 per cent. of the other members in 13 wealthy families; in 18 per cent. of 40 families with moderate nourishment, and in 0 per cent. of 4 undernourished families. In 9 overfed families, 75 per cent. of the other children were infected; in 42 with moderate nourishment, 48 per cent., and in the 4 undernourished families 0 per cent. The influence of overfeeding on the incidence of scarlet fever is shown in an inverse manner by the decline in the number of cases of scarlet fever as a whole during the war undernourishment period. In 1911 there were 6,772 cases recorded in Berlin and in 1918 and 1919 only 1,962 and 1,622. Diphtheria and measles have not shown any similar decline. It is possible that early enlargement of the spleen and liver during the incubation period may reveal impending scarlet fever.

Repeated Attacks of Measles.—Lewy's attention was attracted to this subject by the fact that his own child had two typical attacks of measles with an interval of three years. He has a record of 46 families in which there were 71 cases of measles and the incubation period could be determined with precision. It was ten days in 15; nine and eleven days in 12 each; eight in 10; seven in 5; twelve and thirteen in 5 each; six in 2, and from the fourteenth to the nineteenth day in one case each.

Importance of Initial Breast Feeding.—Langer's extensive research has demonstrated that in children getting breast milk strains of colon bacilli develop which have only slight proliferating power, while with artificial feeding strains with extreme proliferating power are found. The presence of these strains is an important factor in the development of dyspepsia. The importance of these feebly proliferating colon bacilli as the physiologic intestinal flora is restricted to the first months of life; after this the intestines seem to become immunized so that they do not develop dyspepsia from insignificant causes as before. The stronger colon bacilli are found in older infants and children as the physiologic intestinal flora. He gives the details of fifty-five cases with the colon bacillus index in each. This is determined by inoculating a set of bouillon typhoid cultures with the colon bacilli and transferring a loop to an Endo plate. The strains of the colon bacilli are classified according to the number of typhoid bacilli cultures which they allow to develop.

Hemorrhagic Kidney Infarcts in Infants.—Oppenheim discusses the pathogenesis and the etiology of total hemorrhagic infarction of the kidney in infants, and describes three cases in detail. There had been severe diarrhea in each case, actual dysentery in one child. Thrombosis of numerous glomerulus coils was manifest, but none of the larger renal vessels showed thrombosis. He ascribes the whole to toxic injury of the walls of the capillaries in the medullary substance of the kidney. The injured walls of the capillaries allowed extravasation of blood. The thrombosis was of the hyaline type, which testifies to toxic action. Infarction of the kidney must be more common in infants than generally recognized; Beckmann encountered ten cases in a recent nine months, Pollak twelve, and Oppenheim these three cases among 150 infant cadavers in two years. As a general thing, however, this infarction leads to inflammation, and the cases do not come to necropsy before the inflammatory stage has been reached. In conclusion he comments on the analogy between this toxic infarction of the kidneys with the purpura of the brain from arsphenamin poisoning to which attention has been called recently under the heading "Thrombosis of the Vena Magna Galeni Responsible for Salvarsan Fatalities." Oppenheim has had two salvarsan fatalities from hemorrhagic purpura but there was no thrombosis in the venae galeni. In arsphenamin poisoning, the relations between hemorrhagic purpura of the brain and hemorrhagic encephalitis are probably the same as between the hemorrhagic infarction and hemorrhagic glomerular nephritis in his cases in infants. One of the infants showed incipient glomerular nephritis.

Zentralblatt für Chirurgie, Leipzig

July 31, 1920, **47**, No. 31

Osteoarthritis Deformans Juvenilis Coxae, Osteochondritis Deformans or Coxa Plana? P. Frangenheim.—p. 946.
Apparatus for Estimating Scoliosis, etc. A. Brüning.—p. 948.
*Ligation of Four Thyroid Arteries. M. Madlener.—p. 949.
*Note on Operation for Harelip. H. Stettiner.—p. 952.

Tetany After Ligation of the Four Thyroid Arteries in Goiter Operation.—Madlener states that a number of surgeons of late have been ligating all four thyroid arteries, and, to judge from reports to date, without causing injury. During a seventeen-month period, Madlener performed 169 goiter operations, twenty-nine unilateral and 140 bilateral. In thirty-eight cases only three arteries were ligated, either because one artery was not fully developed or could not be located. In ninety-three cases the preliminary ligation of all four arteries was done. As a rule, an extensive resection was made on the side chiefly affected, a remnant from the size of a walnut up to that of a hen's egg being left. Less frequently a whole lobe was enucleated. The posterior portions of the goiter capsule were molested as little as possible. The recurrent nerve was never exposed. The isthmus was always removed. The results in the ninety-three patients so treated were, in the main, favorable. But in the spring of 1920 he operated on an apparently strong man of 38 with a bilateral goiter somewhat larger than one's fist, causing pressure symptoms. The four (very large) thyroid arteries were ligated and the right lobe was resected down to the size of a walnut, and the left lobe to a remnant half the size of a fist. Suppuration set in; for several days there was moderate fever. On the twenty-first day following the operation the patient was dismissed with a suppurating fistula but with no other bad symptoms. On the third day following, severe typical tetany developed, to which the patient succumbed six days later. The parathyroid glands could not have been removed or injured during the operation. The amount of thyroid substance left was greater than in many other cases that progressed favorably. Madlener thinks the ligation of the four arteries was responsible for the fatal result, all the more so since the first symptoms of tetany did not appear until the twenty-fourth day. Owing to the insufficient blood supply, the parathyroids could continue to function only a limited time and finally became necrotic. He now keeps within the bounds

of safety in bilateral resections by ligating, as in earlier years, only three arteries or, at the most, three and a portion of the fourth.

Harelip.—Stettiner opposes Drachter's view that in bilateral harelip the same operative method should be used as in the unilateral form, and that from six to eight weeks after the operation on one side the second operation on the other side should be done. Stettiner emphasizes that in all cases in which the middle portion of the lip between the clefts is too small—which is usually the case—skin tissue from either side must be taken to widen the lip. He doubts whether Drachter's method will give a good cosmetic result. He thinks the Hagedorn procedure is here the method of choice—possibly with slight modifications. If the incisive bone protrudes it should be set back by subperiosteal division of the vomer, as recommended by Bardeleben. As to the time for operating on harelip, that depends mainly on the general condition of the child. If the general condition is good, Stettiner has found the first week after birth, and more especially the fifth day, to be opportune. One big advantage of early operation is that the members of the family are relieved of the thought of the child having a deformity. However, it is possible to wait until the third or fourth month provided other indications such as cleft palate, malnutrition, tendency to bronchitis and bronchopneumonia, etc., do not demand earlier intervention.

Zentralblatt für Gewerbehygiene, etc., Berlin

June, 1920, **8**, No. 6

Prevention of Accidents with Circular Saws. A. Preuss.—p. 97.
*Occupational Poisoning with Hydrocyanic Acid. F. Koelsch.—p. 101. Begun in No. 5, p. 93.
*Recognition and Treatment of Bladder Tumors in Dye Workers. R. Oppenheimer.—p. 105.
The Female Factory Inspector. W. Pryll.—p. 107.

Occupational Poisoning with Hydrocyanic Acid.—Koelsch has found that workmen can stand for years the inhalation of minute amounts of hydrocyanic acid in the form of gas, up to 0.02 mg. per liter of air, without apparent harm. Some of the workmen had been in the occupation specified for fifteen years. The German government recently prohibited the use of hydrocyanic acid for extermination of vermin except in military circles and in scientific institutions, but since then has given a commercial company the monopoly for this form of extermination of vermin. Treatment must include inhalation of oxygen and artificial respiration, injection of epinephrin or possibly of atropin, with stimulants, etc., but in mild cases symptomatic treatment alone is all that is needed. As some of the hydrocyanic acid is eliminated through the stomach mucosa, lavage of the stomach may prove useful, possibly with hydrogen dioxid. Sulphur compounds may aid, such as subcutaneous injection of a 5 per cent. solution of sodium thiosulphate. This will yield up its sulphur and aid nature's efforts.

Bladder Tumors in Dye Workers.—Oppenheimer emphasizes the necessity for examining the urine of workers in synthetic chemicals for red corpuscles several times a year, and in all suspicious cases the cystoscope should be used at once. After operative or intravesical treatment of a bladder tumor in a dye worker, he should return for cystoscopic reexamination every three months at least.

Zentralblatt für innere Medizin, Leipzig

July 31, 1920, **41**, No. 31

Does the Recognition of Roentgenology as a Distinct Branch of Medical Instruction Exert a Harmful Effect on Clinical Subjects? O. David.—p. 537.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Sept. 4, 1920, **2**, No. 10

*Marriage and Cancer. H. T. Deelman.—p. 867.
Apparatus for Quantitative Determination of Small Urea Content of the Blood, etc. A. J. L. Terwen.—p. 875.
Outcome of Sanatorium Treatment of Weakly Children. G. J. Huët.—p. 880.
*Trigeminal Neuralgia. J. E. Schulte.—p. 883.
Cooperation Between Family Physician and Sanatorium Physicians. C. J. Brenkman.—p. 889.
The Milk Supply of Amsterdam. E. J. Abrahams.—p. 894.

Marriage and Cancer.—The records of Treub's service at Amsterdam show that in 601 cases of uterine cancer between 1896 and 1918, the average age was higher with cancer of the body of the uterus (61 years) than with cancer of the projecting portion of the cervix (49 years). There were thirty unmarried women to 571 married in the list. The proportion of unmarried to married women in the general population as a whole averages 120 to 480. Among the forty-eight women with cancer of the body of the uterus, 31 per cent. were unmarried and the average number of children per woman was 2.8 per cent. Among the 553 cervix cases there were only 5.2 per cent. unmarried and the average number of children per woman was 5. There were thus six times as many nulliparas among the corpus cancer cases as among the cervix cases, Göbel's statistics showed similar proportions: 33.9 per cent. nulliparas and 2.9 per cent. children among the corpus cancer cases, and 4.8 per cent. and 5.02 in the cervix cases, respectively. Fast found only 2.5 per cent. nulliparas in his 812 portio cancer cases, but 21 per cent. nulliparas in twenty-eight cancers of the body of the uterus. Deelman's impression is further that the unmarried develop fibromas in the uterus more frequently than the married, and that the chance for a sterile marriage is increased by a fibroma. Treub ascribes the predominance of cancer of the body of the uterus in nulliparas to the lack of the extensive "housecleaning" of the uterus which a pregnancy and childbirth represent.

The statistics of the city of Amsterdam show 153 bachelors to 2,134 married men who died from cancer of the stomach or liver, and 293 unmarried to 1,923 married women. With mammary cancer, 102 unmarried to 428 married women, and with cancer of the uterus, 106 unmarried to 987 married. Cancer of the digestive tract thus occurs in 25 per cent. more among the married than among the unmarried of both sexes, calculated according to the proportion of each in the population at large. With uterine cancer, the married show 100 per cent. more than the unmarried. The number of children does not seem to have any influence on the incidence of cancer of the cervix, only the fact whether there has been childbirth or not. (This article has been recently published in French in *Gynécologie et Obstétrique* **1**:493, 1920.)

Trigeminal Neuralgia.—Schulte reviews the recent literature on treatment of what the ancient Arabian physicians described as tortura oris, and concludes by commending roentgen irradiation as legitimate after failure of internal measures and electricity. If this fails likewise, then injection of alcohol; this can be repeated but not continued too long, with an operation on the nerve as the last resource.

Hospitalstidende, Copenhagen

Aug. 25, 1920, **63**, No. 34

*Radiology in Sweden. E. Collin.—p. 521.

Radiotherapy in Sweden.—Collin says that the history of radiotherapy in Sweden is the history of one man, Prof. G. Forssel, of the chair of medical radiology at Stockholm. Since 1911, when the Radium Home was founded, the annual number of applicants for treatment has increased from 332 to 1,541. The results with inoperable cancer, he says, have been such that they "not only justify further research but they make the application and development of radium treatment of cancer a bounden duty." Collin's review of the technic and results concludes with the statement that what has been accomplished there with radium is far ahead of what has been realized in Denmark, while the achievements with roentgen irradiation are about the same in the two countries, but Denmark is far ahead in the matter of light treatment. Forssel insists that no one man can master both roentgen diagnosis and roentgen treatment. He reports 28 per cent. of the cases of uterine cancer cured after a five year interval; the surgeons count only on 18 per cent. cured of the operable cases after the same interval. The cancers treated included 94 per cent. inoperable cases.

Correction: Ether in Whooping Cough.—In the abstract with this title on p. 1234, the dose of ether is stated too small. It should be 1 or 2 c.c. of ether at two-day intervals.

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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, No. 22 CHICAGO, ILLINOIS NOVEMBER 27, 1920

DIVERTICULA OF SMALL INTESTINE, OTHER THAN MECKEL'S DIVERTICULUM *

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Before the year 1912 it is not recorded that any case of duodenal diverticulosis had been discovered with the roentgen rays. Indeed, comprehensive search of the literature by Baldwin,[1] Buschi,[2] Wilkie,[3] Fischer[4] and others showed that the total number of known cases of diverticula of the duodenum did not exceed 100. Baldwin's Cornell series of fourteen cases of duodenal diverticula out of 105 necropsies was remarkable for the reason that so large a number as fourteen should be discovered among such a relatively small series. Diverticula of the jejunum and ileum had also been recorded in the anatomic literature, and at least one case discovered in the course of surgical operation, as recorded by Gordinier and Sampson. With an occasional exception these diverticula of the small intestine had been considered as merely of anatomic interest and without clinical import, for the majority of patients exhibited few if any evidences of pathologic interest in the diverticula other than their presence. There were some notable exceptions, which will be referred to later.

I presented my first series of four cases of duodenal diverticula discovered during the routine roentgen-ray examination of the gastro-intestinal tract, in the Scientific Exhibit of the American Medical Association in 1913. In September, 1915, I[5] reported further on these studies before the American Roentgen Ray Society. In 1919, I presented roentgenograms in the Scientific Exhibit of the American Medical Association, representing twenty-five new cases, and again called attention to the frequency with which diverticulosis of the duodenum is associated with sacculations of other portions of the digestive tube and of the urinary bladder.

In the present communication I have attempted to sum up my cases and to draw some conclusions regarding the treatment indicated. I find that in 6,847 complete barium meal studies (meaning the routine observation of the opaque meal in its passage from mouth to rectum, followed by a supplementary barium enema), I and my associates have recorded characteristic evidence of duodenal diverticulosis in eighty-five cases, diverticulosis of the jejunum in four cases, and diverticulosis of the jejunum and ileum in one case. As suggested in the title of this paper, we have not included in these statistics any case of Meckel's diverticulum, although several have been found.

Up to April, 1920, the only other reported cases of duodenal diverticulosis roentgenologically discovered were as follows:

1. Forssell and Key,[6] in 1915, reported the case of a woman operated on, May 13, 1914.
2. Basch reported a case in which Elsberg operated, Jan. 31, 1915.
3. Stewart,[7] in 1916, reported several cases, verified by operation, found with the roentgen rays in 1915 and 1916.
4. Ritchie and McWhorter,[8] in 1916, operated on a patient, June 30, 1916.
5. Reichmann,[9] in 1916, reported a case of duodenal sacculation discovered with the roentgen rays.
6. Roberts and Cole, in 1919, presented a series of cases at the 1919 meeting of the American Gastro-Enterological Association.

Doubtless there have been other cases; certainly in the future a large number will be found, now that the roentgen rays have made possible the early recognition of this interesting lesion.

As to diverticula of the jejunum and ileum, careful search has failed to reveal any reported case discovered roentgenologically and proved at operation. I believe my cases are the first on record. Two of my five patients have been operated on. In the other three the findings were so characteristically similar that no reasonable doubt can exist as to the diagnosis; but operative proof was not obtained.

DIVERTICULA OF THE DUODENUM

Frequency.—Necropsy reports quoted by Baldwin, Buschi, Davis,[10] Wilkie, Fischer and others give varying figures as to the frequency of duodenal diverticula

* From the Surgical Department of the Battle Creek Sanitarium.

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the latter will be sent by the author on receipt of a stamped addressed envelop.

1. Baldwin: Duodenal Diverticula in Man, Anat. Rec. **5**: 121.
2. Buschi: Beitrag zur Untersuchung der Duodenaldivertikel, Virchows Arch. f. path. Anat. **126**: 121, 1911.
3. Wilkie: Duodenal Diverticula and Duplicature of the Duodenal Wall, Edinburgh M. J. **11**: 219 (Sept.) 1913.
4. Fischer: Acquired Diverticula of the Bowel, J. Exper. M. **5**: 33, 1900.
5. Case, J. T.: Roentgen Observations on the Duodenum, with Special Reference to Lesions Beyond the First Portion, Am. J. Roentgenology **3**: 314 (June) 1916.
6. Forssell and Key: Ein Divertikel der pars descendens duodeni mittels Roentgenuntersuchung diagnostiziert und operativ entfernt, Nord. med. Arch. **48**, No. 2, 1915.
7. Stewart, W. H.: Roentgen Diagnosis of Obscure Lesions of the Gastro-Intestinal Tract, Am. J. Roentgenol. **3**: 202 (April) 1916.
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9. Reichmann: Berl. klin. Wchnschr., 1916, p. 1118.
10. Davis, N. S.: Diverticula of the Duodenum, Tr. Chicago Path. Soc. **9**: 1 (Feb.) 1913.

in man. One author claims as high a figure as 11 per cent. of all such sacculations of the alimentary tract. Linsmayer [11] found forty-five cases of duodenal sacculations in 1,367 necropsies (about 3 per cent.). Rosenthal [12] found three cases in 100 necropsies (3 per cent.). The Johns Hopkins Hospital statistics on 2,600 necropsies record thirteen diverticula other than Meckel's in the small intestine and eighteen in the colon. In my own series of 6,847 consecutive barium meal studies, duodenal diverticula were found in eighty-five cases (1.2 per cent., or in the proportion of 1 to 82. For comparison, it may be interesting to know that in the same series we found colonic diverticula in 138 cases, or approximately 2 per cent.

In Baldwin's Cornell series there were two diverticula in one case, the other thirteen being single. Buschi found thirty-five cases with a single diverticulum, thirteen with two, two with four, and two with five. In my series only one diverticulum was recognized in seventy-eight cases, the other seven cases showing from two to four diverticula.

Size.—The diverticula vary in size from a pea to a hen's egg. Baldwin's largest diverticulum measured 5 cm. in diameter. In my series of eighty-five cases, the shadow of the barium-filled diverticulum measured more than 4 cm. in fourteen cases, and in one of our ten operative cases the excised diverticular sac measured 5 cm. in longest diameter. The average size of the sacculations in my series was 2.8 cm.

Position.—In Baldwin's Cornell series the sac originated in the first part of the duodenum in two cases, in the second portion in seven cases, and in the third portion in six cases. In my series the diverticula were thus distributed: first portion, seventeen cases; second portion (including those cases thought to be dilatations of the diverticulum of Vater), forty-nine cases; third portion and duodenojejunal junction, nineteen cases.



Fig. 3.—Enormous diverticulum of third portion of duodenum (shown by arrows) in case in which operation was performed.

Sex.—In 61 necropsy cases, reported in the literature, where the age was known, 38 (62 per cent.) were in males, 23 (32 per cent.) in females. In the present roentgen-ray series of 85 cases, 34 (40 per cent.) were in males, 51 (60 per cent.) in females.

Age.—Acquired diverticula of the duodenum are most frequently found in later life. Buschi states that 80 per cent of such sacculations occur after the age of 50. Secher [13] states that they have been found in infants. Simmonds [14] says he has seen diverticula near the pylorus in very early childhood and therefore he concluded that they were congenital; he had seen them lower down in the small intestine only in old persons. In my series the average age has been 56 years.

Contents of the Diverticulum.—In two cases reported in the literature the sacs have contained gallstones, one in one instance, twenty-two in the other. Usually the contents are chymous. After an opaque meal, it is possible to find barium in the diverticulum for many hours and sometimes for several days. In one of my cases barium was still to be seen in the sac on the seventh day. Retention of barium beyond forty-eight hours is not unusual. The average emptying time of the sac in eighteen consecutive cases was eleven hours. The normal emptying time of the duodenum is from four to five hours.

Description of the Sac.—In the diverticula of our series which were removed surgically by Dr. J. H. Kellogg and myself, the muscularis was lacking over most of the sac in every instance. Of course we dealt only with large sacs, and it is entirely possible that study of smaller diverticula would have shown the presence of muscularis over the entire fundus of the sac. It would seem that the absence of muscularis over the larger sacs is due to the fact that this coat does not permit of sufficient stretching to cover the entire fundus, and it becomes thinned out or entirely missing at a short distance from the orifice of the diverticulum.

The opening between the duodenum and the sac may be large or small, rounded, fissure-like or irregular. When the opening is very large, it is naturally difficult to keep barium in the sac long enough to make roentgenograms showing the condition.

In many instances of diverticulosis of the second portion of the duodenum, the common bile duct and the pancreatic duct lie in very close relation to the wall of the sac, one or both sometimes traversing the lateral wall, or even emptying into the fundus of the diverticulum. In one instance of our series there was indubitable proof that barium taken by mouth found itself in a perivaterian diverticulum, possibly a dilatation of Vater's ampulla, and later passed into the gallbladder, visualizing gallstones which had previously been invisible to the roentgen rays.

I once saw at the Mayo Clinic a roentgenogram demonstrating the passage of barium from the duodenum into the hepatic ducts, beautifully outlining the larger biliary passages.

11. Linsmayer: Ueber Duodenaldivertikel, Verhandl. d. deutsch. path. Gesellsch. **17**: 445, 1914.
12. Rosenthal: Können Duodenaldivertikel eine klinische Bedeutung erlangen? Med. Klin. **4**: 1421, 1908.
13. Secher: Om Divertikler i Ventrikel og Duodenum, Hospitalstidende **60**: 582, 1917.
14. Simmonds: Verhandl. d. deutsch. path. Gesellsch. **17**: 445, 1914.

Pathology.—The subjoined report is typical for such diverticula as have been removed at operation:

A thin-walled sac, having the normal thickness of the intestinal wall for only 2 or 3 mm. about its orifice. Here it had all the layers of the normal intestinal wall; elsewhere the muscularis was missing. The mucosa and the muscularis mucosae were normal. The submucosa was thickened. There were occasional small groups of Brunner's glands; elsewhere the submucosa consisted of loose connective tissue richly supplied with blood vessels.

Numerous recently formed adhesions surrounded the diverticulum, which was freely movable when the adhesions had been divided. As already mentioned, the sac may contain one or more calculi. Pancreatic tissue may line the fundus. In the majority of cases there is no evidence of inflammatory change.

In a case reported by Akerlund,[15] operation revealed marked swelling of the duodenal wall bordering the diverticulum, while the sac itself held a mass of necrotic pancreatic tissue which had resulted from an extension of the diverticulitis into the pancreatic substance lying next to the sac. In the preoperative examination of this case there was seen a large spherical diverticulum of the third portion of the duodenum in addition to a barium residue at the site corresponding to Vater's ampulla. On a reexamination a week later it was impossible to visualize Vater's ampulla. Two days later acute epigastric symptoms set in, and five days later the patient submitted to operation with the findings given above.



Fig. 4.—Diverticulum of third portion of duodenum in case in which operation was performed.

Akerlund's case parallels one of my own, already reported,[16] in which at operation we were unable to excise the diverticulum because of its intimate adherence to the surrounding pancreatic tissue, where there was every clinical and gross pathologic evidence of a pancreatic involvement. In my case almost complete relief followed cholecystostomy.

There seems to be in some cases a suggestive connection between vaterian and perivaterian sacculations and chronic changes in the pancreas and biliary passages. Wilkie reported two cases in which such a diverticulum was in close anatomic contiguity with the common bile duct together with signs of stasis in that duct, without there being any intrinsic obstruction of its lumen. Rosenthal and Bauer [17] have each recorded cases of duodenal diverticula in which the diverticulum was the seat of severe inflammatory changes and simultaneously Vater's ampulla was swollen, even glued together with mucus, causing dilatation of the pancreatic and biliary ducts. Akerlund advances the following theory as to the relation between diverticula of the duodenum and pathologic changes in the pancreas and biliary tract: When a duodenal diverticulum, which is usually conceived as being of direct or indirect congenital origin but prone to become enlarged later in life, has reached a certain size, then retention of the duodenal contents is likely to occur. This may lead to a catarrhal diverticulitis of varying intensity and with alternating swelling and relief of swelling about the papilla of Vater. In certain cases, then, it is possible for a secondary dilatation of Vater's ampulla to occur, with an insufficiency of the sphincter of Oddi. During the periods of insufficiency, infectious material from the duodenum is likely to enter the ampulla, perhaps even the pancreatic or bile ducts, with ultimately an inflammatory change in the pancreas.

Bauer cites the case of a man, aged 52. During several months the patients had suffered severe vomiting spells coming on from two to three hours after meals. In spite of a gastro-enterostomy, the patient died from persistence of the vomiting. At necropsy there was found marked dilatation of the stomach and the first part of the duodenum, apparently due to two duodenal diverticula, one as large as a hen's egg, filled with yellowish gray masses of chyme and mucus, compressing the lumen of the second portion of the duodenum in much the same manner as that in which an esophageal diverticulum may compress the esophagus. In another necropsy case cited by Bauer a duodenal diverticulitis caused a duodenal catarrh with resultant swelling and occlusion of Vater's papilla and stagnation of bile. In his first case roentgen-ray examination made before operation failed to disclose the diverticula; in the second case no roentgen-ray study was made.

In the majority of cases recorded in the literature and in most of my cases confirmed at operation there was very little to indicate pathologic changes in the wall of the sac. That such may develop, however, is clearly shown by the foregoing recital of cases and it is therefore important that in every case in which roentgenologic study develops proof of duodenal diverticulosis the question of surgical intervention should at least be considered. This is usually not difficult to decide, for in most of the cases likely to be found with the roentgen rays there will be found evidence of some surgical condition of the pancreas or biliary tract which will make inspection of the duodenum possible. The data given relative to the position of the

15. Akerlund: Roentgenologiska duodenalobservationer, Hygeia **81**: 449, 1919.
16. Case, J. T.: Roentgen Observations on the Duodenum, with Special Reference to Lesions Beyond the First Portion, Am. J. Roentgenol. **3**: 314 (June) 1916.
17. Rosenthal and Bauer: Ueber das Duodenaldivertikel, Wien. klin. Wchnschr. **25**: 879, 1912.

fundus of the diverticulum should be recalled, however; for it will often prove a difficult matter to discover the diverticulum at operation, owing to its retroduodenal or retropancreatic location, and in many cases the inadvisability of making an extensive dissection to uncover the sac. When the sac lies ventral to the pancreas, its operative investigation will prove easy; when dorsal to the pancreas, mobilization of the duodenum is necessary.

Diagnosis.—As will be surmised from the foregoing, the diagnosis depends exclusively on the roentgen findings. So far as I know, no case has yet been recognized before operation except on evidence furnished by the roentgen study. It is therefore appropriate to devote space to a detailed description of the necessary technic. It should be remarked that in general such diverticula are found in the roentgen investigation of individuals presenting right upper quadrant symptoms, sent in from the internist with a tentative diagnosis of duodenal ulcer, gallbladder disease, or chronic pancreatitis.

I described this technic, already then in use by me for five years, at the 1915 meeting of the American Roentgen Ray Society.

The patient, standing erect before the fluorescent screen, swallows a third of a glass of water into which has been stirred a heaping teaspoonful of barium sulphate. The pyloric region is carefully watched for the behavior of the first of the opaque mixture to reach it. This barium-water mixture usually begins to pass at once into the duodenum, so that it is more or less well visualized from the very beginning of the meal. This is followed by the usual barium meal, which in our practice consists of 1 ounce of barium sulphate in a glass of hot malted nuts or hot malted milk, and 1 ounce in a glass of buttermilk given cold. A brief further observation is made with the patient erect. He is then placed on the horizontal fluoroscope, and, if any delays are necessary, he is asked to spend the time lying on the right side so that gravity may aid in filling niches or sacculations in the pyloric zone. When all is ready so that the observation can begin the moment the patient turns over, the observer, standing at the patient's left, with his gloved left hand makes strong pressure over the duodenojejunal junction, at the same time pressing toward the pylorus the contents of the stomach (Fig. 1). The patient is then asked to inhale, hold the breath and turn quickly on the back, special care being taken the while to maintain compression of the duodenum between the palpating hand and the spine, thus artificially producing an obstruction near the duodenojejunal junction, and incarcerating the duodenal contents (Fig. 2). A wooden spoon may be used in place of the hand, if preferred.



Fig. 5.—*a*, diverticulum of third portion of duodenum; *b*, visualized ampulla of Vater, in case in which operation was performed.

Only by the use of this special technic have we been able, except by accident, to discover the diverticula of the third portion of the duodenum near the duodenojejunal junction. Attention is called to the fact that this technic can be followed out only fluoroscopically. If one depends only on roentgenograms, the majority of the diverticula of the third portion will be hidden by the overhanging or overlying portion of the gastric shadow and escape detection.

Having discovered a diverticulum, one should note (*a*) its exact location: (*b*) its size and general shape; (*c*) the dimensions of its orifice, whether narrow or free; (*d*) its mobility under the examining finger, guided by the fluoroscope; (*e*) the degree of retention; (*f*) relation of the shadow to a point of abdominal pain on pressure; (*g*) caliber of the duodenum proximal and distal to the diverticulum; (*h*) emptying time of the stomach.

With diverticula of the first portion, the roentgen study should especially aim to settle the question of duodenal ulcer which so often occurs opposite and just caudad to the diverticulum. Diverticula lying to the outer side of the first portion of the duodenum or the upper part of the second portion are very likely traction sacculations associated with gallbladder disease.

Stasis in the diverticulum is significant. In the majority of first portion diverticula there were associated evidences of old ulcer or gallbladder region adhesions and relatively short retention in the diverticula. The emptying time of the stomach was, on the contrary, often prolonged, and in several instances, in our series, as in the cases reported by Ritchie and McWhorter and by Basch, gastro-enterostomy was all the surgery deemed wise, no attempt being made to excise the sac. In Ritchie and McWhorter's case the diverticulum was plicated. In diverticula of the second portion, the diverticular sacs being parivaterian or dilatations of the ampulla itself, the retention of barium beyond forty-eight hours was a frequent observation. In many of these cases we have found signs of a coexisting pancreatitis, with unusual patency and dilatation of the ampulla of Vater, as has been confirmed by Akerlund and others. Diverticula of the third portion do not retain barium unless the communicating orifice is small, the degree of retention depending on the size of the opening. In one instance a large sac measuring 5 by 3 cm. retained barium longer than forty-eight hours.

Usually there was no tenderness on pressure over the barium-filled diverticulum. In a certain number of cases, however, especially with retention in the diverticulum and a syndrome characterized by distention, feeling of fulness, aching pain coming on from one to three hours after meals and persisting for one or two hours, regurgitation of sour fluid, and occasional nausea and vomiting, there seemed to be a definite coincidence between the diverticulum and a point of abdominal pain on pressure.

From the standpoint of possible surgical treatment, it is most important to determine whether the diverticulum lies ventral or dorsal to the pancreas or within the substance of this gland. Stereoscopic roentgenograms have been helpful in some cases. Careful manipulation of the patient with screen observation of the shadow movements as the tube is shifted about under the table sometimes answers the question. But the most satisfactory data are obtained by manipulation of the abdomen with the gloved hand under screen guidance; if the manipulating fingers can move the diverticulum, changing its position or expressing its contents, it is usually easy to find the sac ventral to the pancreas at operation, and in properly selected cases to resect it.

Treatment.—Although in the majority of cases seen at necropsy there have been few indications that treatment was needed, this cannot be stated as generally applicable to diverticula of the duodenum discovered with the roentgen rays. The latter category of patients are suffering from some more or less chronic digestive complaints, usually suggestive of right upper quadrant trouble, and there is always the possibility that there may exist some well-defined connection between the diverticulum and the patient's symptoms. Sufficient evidence to warrant an operation on the duodenum or gallbladder may be found, in which case it will of course be in order to investigate the sacculation if possible, and to deal with it as may be indicated. It is further important to bear in mind that in order to make a roentgen diagnosis of duodenal diverticulum there must occur the entry and retention of duodenal contents into the sac. The cases already referred to in this paper have abundantly demonstrated that a duodenal diverticulum may cause severe and even dangerous symptoms, especially when retention occurs, giving rise to serious pathologic conditions developing in the diverticulum itself or in the contiguous tissues. This is increasingly apparent in direct proportion to the degree of retention. Duodenal contents were found in a diverticulum on the seventh day after an opaque meal in one of my cases. The evidence before us therefore strongly suggests that the diagnosis of a duodenal diverticulum may generally be considered as indicating surgical operation. This is more true when the roentgen findings indicate a diverticulum whose fundus lies ventral or caudad to the head of the pancreas, or in relation to duodenal ulcer or disease of the biliary tract; less true when the diverticulum is deeply situated, lying dorsal to the pancreas or within its substance.

When surgical treatment does not seem indicated, or for some reason cannot be carried out, one must be content with general hygienic care of the gastrointestinal tract with such special measures as will minimize the likelihood of inflammatory changes being set up by the retained duodenal contents, with resulting duodenitis and possible temporary occlusion of the papilla of Vater. With colonic multiple diverticula I have suggested the use of barium sulphate in dram doses three times a day one day of each week, in order to keep the diverticula filled with barium, thus occupying the space that might otherwise be filled with putrescible or infectious material of a more threatening character. In the majority of cases of duodenal diverticula it is not likely that any form of nonsurgical treatment can have any appreciable effect on the contents of the sac or its likelihood to menace the patient.



Fig. 7 (retouched).—Diverticulum of the jejunum (indicated by arrows), patient erect. Note fluid level with gas bubble above. Barium content of diverticulum. (To be compared with Figure 8.)

JEJUNAL AND ILEAC DIVERTICULA

Less frequently than in the duodenum, yet more often than most of us appreciate, diverticulosis does occur in the small intestine below the duodenojejunal junction. Seven of the eighty-five cases already cited as duodenal diverticula occurred at the duodenojejunal junction; possibly they should have been classified with the jejunal sacculations. In addition I have with the roentgen rays recognized five more cases of diverticulosis of the jejunum and upper ileum. Two cases have been confirmed at operation (Figs. 7, 8 and 9); the other three presented the same characteristic roentgenologic findings, and there can be little doubt as to the accuracy of diagnosis.

Constituting perhaps even less of a menace to a patient than duodenal diverticula, and certainly much less than the multiple colonic sacculations so commonly found, jejunal diverticula may nevertheless become dangerous as the result of an acute inflammatory process within or around the sac. This possibility is well illustrated by the case of Gordinier and Sampson,[18] reported in 1906:

> The patient was a woman of 45. One of the diverticula had become inflamed and a diverticulitis resulted, with partial obliteration of the intestinal lumen. As the diverticulum extended between the folds of the mesentery, the latter became inflamed, thickened and puckered, thus causing an

18. Gordinier, H. C., and Sampson, J. A.: Diverticula (Not Meckel's) Causing Intestinal Obstruction, J. A. M. A. **46**: 1585 (May 26) 1906.

angular bending of the intestine with obstruction. The local peritonitis arising as a result of this gave rise to the formation of adhesions between the mesentery of the small intestine and the transverse colon and its mesentery, and thus kinked the transverse colon.

At operation thirteen diverticula were found in 40 cm. of intestine. The size varied from 0.5 to 1.5 cm. They were all on the mesenteric border and extended between the folds of the latter. In every instance a blood vessel extended over the surface of the diverticulum. One of the diverticula had become inflamed, and its base occluded, its patent distal portion having been converted into an infected cyst.

The following is a brief summary of the other cases of jejunal or ileac diverticula (other than Meckel's) which I have been able to find in the literature:

Bristow,[19] in 1854, reported a case with a solitary false diverticulum of the ileum just above the ileocecal valve.

Wallman,[20] in 1858, found a case in which in a section of small bowel 48 cm. long there were thirty-seven diverticula, thirty of them lying between the folds of the mesentery.

Klebs,[21] in 1869, found multiple diverticula numbering at least twenty in the small intestine of an old man, the sacculations lying between the mesenteric folds.

Moore,[22] in 1884, reported a case of multiple diverticula of the small intestine in a man, aged 40, the sacculations lying at the mesenteric attachment and including all coats of the bowel.

Buchwald and Janicke,[23] in 1887, described a case of true diverticulum of the jejunum in a boy of 6 years, probably congenital.

Birch-Hirschfeld,[24] in 1887, reported a case in which the ileum contained multiple diverticula scattered throughout its entire length.

Virchow,[25] in 1890, described a case of multiple diverticula of the jejunum in which some of the sacculations attained the size of a hen's egg.

Edel,[26] in 1894, reported a case in which there were seven diverticula in the jejunum varying in size from a hazelnut to an apple. This case also exhibited multiple diverticula of the colon.



Fig. 8.—Resected jejunum containing several diverticula (see Fig. 7).

Seippel,[27] in 1895, reported a case of jejunal multiple sacculations.

Hansemann,[28] in 1896, reported a diverticulum in the upper end of the jejunum of a boy of 14. There was accessory pancreatic tissue at the apex of the sac. Hansemann also reported a case in which more than 400 diverticula could be counted in the digestive tract, most of them being located in the jejunum and upper part of the ileum.

In 1899, Jach[29] and Nichols[30] each reported a case of multiple diverticula of the small intestine.

Fischer,[31] in 1899, reported two cases: 1. In one, a piece of jejunum, 7.5 cm. long, showed a small oval diverticulum the size of a bean lying beneath the peritoneum between the folds of the mesentery. No other diverticula were found in the alimentary tract. Blood vessels ran over the serous covering of the diverticulum. 2. In the other case the first meter and a half of the ileum showed numerous large and small variously shaped diverticula, scattered along the mesenteric attachment. They varied in size from a split pea to half the diameter of the intestine. The larger sacs were often lobulated. There were large blood vessels running over their surfaces, the smaller ones looking as though blood vessels pierced their apexes or ran over their surfaces. There were signs of inflammation in the smaller diverticula. In all the sacs the muscular coat was very much thinned out, and in places entirely lacking.

Hodenpyl,[32] in 1901, presented a case in which the duodenum and the upper part of the jejunum exhibited a number of thin-walled cysts, originating in diverticula, the cysts varying in size from a pea to a hen's egg.

Gordinier and Sampson, in 1906, described a case which came to operation and which I have already referred to in detail.

Boker,[33] in 1912, reported a very interesting case with two diverticula of the duodenum, multiple diverticula of the colon and a pressure diverticulum of the urinary bladder, in addition to multiple diverticula of the small intestine. One of the small intestinal diverticula showed ulceration and necrosis of the wall with an encapsulated peritonitis resulting.

I have not found in the literature any case of jejunal or ileac diverticulosis (other than Meckel's) in which a diagnosis has been made with the roentgen rays; so far as I can learn, the five cases of my series, in two of which operation was performed, are the first recorded in which a diagnosis has been established with the roentgen rays, and two of them constitute the first cases in which the roentgen-ray findings have been corroborated by operative procedure. The three cases in which operation was not performed will not be given here; the other two cases follow:

Case 1 (No. 96388).—A man, aged 61, entered, April 25, 1915, giving a history of "indigestion" for the preceding ten months. He complained of a feeling of pressure and distention of the stomach coming on immediately after meals, causing much discomfort and distress, relieved somewhat by belching. There was no pain, no nausea, and no vomiting.

19. Bristow: Tr. Path. Soc. London **6**: 191, 1854.
20. Wallman: Virchows Arch. f. path. Anat. **14**: 202, 1858.
21. Klebs: Handbuch d. path. Anat. **1**: 271, 1869.
22. Moore, Norman: Tr. Path. Soc. London, 1884, p. 202.
23. Buchwald and Janicke: Ueber Darmcysten, Deutsch. med. Wchnschr., 1887, No. 40, p. 868.
24. Birch-Hirschfeld: Lehrb. d. path. Anat. **2**: 550, 1887.
25. Virchow: Verhandl. d. Berliner med. Gesellsch., 1890, p. 116.
26. Edel: Ueber erworbene Darmdivertikel, Virchows Arch. f. path. Anat. **138**: 347, 1894.
27. Seippel: Ueber erworbene Darmdivertikel, Diss., Zurich. p. 21.
28. Hansemann: Ueber die Entstehung falscher Darmdivertikel, Virchows Arch. f. path. Anat. **144**: 400, 1896.
29. Jach: Ueber Duodenaldivertikel, Diss., Kiel, 1899.
30. Nichols: Philadelphia M. J. **3**: 700, 1899.
31. Fischer: Acquired Diverticula of the Bowel, J. Exper. Med. **5**: 33, 1900.
32. Hodenpyl: Two Cases of Multiple Spurious Diverticula of the Intestine, Proc. New York Path. Soc., 1899-1900, p. 182.
33. Boker: Ein interessanter Fall von zahlreichen Divertikeln des gesamten Darmtractus und der Harnblase, Diss., Kiel, 1912.

He had occasional "heartburn" about 2 a. m. During the last six months he had a great deal of intestinal flatulence which he was not able to relieve.

Roentgen-ray examination, June 10, revealed a sacculation in the small intestine, located apparently a few centimeters below the duodenojejunal junction, wherein food collected, distending the bowel until its shadow was at least 5 cm. in diameter, and coinciding accurately with the seat of the patient's subjective pain. Even before the barium meal was given there was noted a definite gas accumulation in the small bowel occupying the left upper quadrant; and in the midst of this gas distention there could be made out a fluid level about 5 cm. in width surmounted by a gas bubble similar to the normal air pocket of the stomach. The emptying time of this sac was from eight to ten hours (Fig. 7).

June 15, at operation by Dr. J. H. Kellogg and myself, there were found in the upper jejunum perhaps a dozen diverticula, most of them pea sized, but including one large one measuring 5 cm. in diameter. The gallbladder, stomach, duodenum and pancreas all appeared to be normal. There were external signs of inflammation about the intestine in the neighborhood of the large diverticulum. We removed about 36 cm. of jejunum commencing 18 cm. below the duodenojejunal fold. The patient made prompt recovery from the operation, but it was several months before he admitted relief from the symptoms for which the operation was performed.

Dr. Warthin, in reviewing this specimen, reported changes indicative of chronic low-grade inflammation of the mucosa of the large sac, which was, however, devoid of muscularis. The sac was located between the folds of the mesentery and in close relation to the large blood vessels. It was interesting to note that this large sac was the last of a series of diverticula occurring in a relatively circumscribed segment of upper jejunum, 36 cm. in length, without any obvious signs of obstruction except the retention within the diverticulum itself. The segment of bowel removed is shown in Figure 8.



Fig. 9 (retouched).—Barium-filled multiple diverticula of jejunum, patient erect. Arrows point to gallstones clearly seen in original roentgenogram. Operative proof.

CASE 2 (No. 92181).—A man, aged 73, on entry, July 18, 1914, gave a typical history of gallbladder disease. Roentgen-ray examination revealed an extraordinary condition of the small intestine, twenty-five or thirty sacculations occurring throughout the jejunum and upper ileum. With the patient in the erect position the larger diverticula were characterized by numerous fluid levels, each surmounted by an air pocket. Following a barium meal these diverticula were beautifully accentuated (Fig. 9). Some of them measured 4 cm. in diameter. In addition there were shown multiple diverticula of the pelvic colon, and a large number of gallstones. This patient was later operated on at another institution, the gallstones removed, and the intestinal diverticula confirmed.

ABSTRACT OF DISCUSSION

DR. L. T. LEWALD, New York: I wish to corroborate what Dr. Case says about the difficulty of the surgeon always confirming the findings of diverticulum. I know of two cases, one in which the surgeon was unable to find the diverticulum, although there was no question of its presence, and in the other case, having been present at the time of the operation and following closely each step, he was able to disclose the diverticulum. In the one case the diverticulum was at the duodenojejunal junction. After carefully following the whole of the duodenum, and then the junction, the surgeon was able to identify the diverticulum. The question then arose as to what to do and nothing further was done than to confirm the finding of the diverticulum, inasmuch as there was no definite inflammation. Dr. Case, how do you arrive at the conclusion as to which cases are operative; also as to your ideas as to the etiology? You believe that the diverticula are congenital in the vast majority of the cases?

DR. L. J. HIRSCHMAN, Detroit: It is very important, after making a diagnosis of diverticulum roentgenologically, that every effort be made to confirm the diagnosis by operation. Several years ago when we did not know so much about how to disclose these small bowel conditions I came on a case with colon pathology in which I found a jejunal diverticulum, and an early commencing carcinoma involving the diverticulum. For that reason, I should urge that when a diverticulum of large size is found the case should be followed up and excision urged.

DR. A. A. STRAUSS, Chicago: One of the important factors in finding these diverticula at the time of operation is complete mobilization of the duodenum. Too many surgeons try to find these diverticula when they are located on the posterior wall of the duodenum, without mobilization. As to the treatment of such a lesion, amputation and inversion is the simplest, closing the defect produced by the excision, transversely to the long axis of the bowel, with interrupted sutures, and covering the area over with the free edge of the attached omentum. The symptomatology is similar to that of gallbladder disease or duodenal ulcer.

DR. W. H. STEWART, New York: As roentgenologists we are becoming more and more familiar with the findings in diverticula of the duodenum; consequently, there has been a very rapid increase in the number of cases observed. They are frequently detected incidentally during a gastro-intestinal examination. The majority of such cases apparently do not give any symptoms. I reported my first case in 1915; it was one of double diverticulum of the descending portion of the duodenum. In our early experience we found it quite difficult to differentiate between diverticulum and the ordinary perforating ulcer. The two important points to consider in differentiating these two conditions are: first, the history, and second, the presence or absence of deformity in the adjacent small intestine.

The question of dilatation of the ampulla of Vater is also important. Dr. Cole has reported a high percentage of cases of diverticula of the duodenum; this high percentage may be largely due to the fact that he included cases of dilatation of the ampulla of Vater under the heading of divericulum—I have never considered the former as a true diverticulum.

DR. FRANK SMITHIES, Chicago: The opinion has been expressed here several times this afternoon regarding the

symptomatology of intestinal diverticula that such resembles the symptomatology of ulcer, duodenal or gastric. When the history of some of these cases is carefully analyzed, I have never seen that the true symptomatology of ulcer was present. There was always the symptomatology of some vague upper alimentary tract disturbance, but it was not the clean cut ulcer dyspepsia type. The only sign that might be suggestive of ulcer is the possibility of an interference with the free progress of food, that is, an atypic form of stasis, out of harmony with the clinical history. I have seen many anomalies demonstrated by the roentgen ray as diverticulum of the duodenum or small intestine, but I think some of them were nothing more than localized spasms in dilated duodenums of jejuna. Also that some pictures exhibited as diverticula were nothing more than views of loops of small intestine overlapping other parts of the alimentary tract, and in these loops barium was retained longer than normally. Therefore, I think that Dr. Case is quite conservative when he insists that these cases should be followed through surgically and so proved up. Clinically, it seems to me that when one has such a type of bowel retention as I mentioned, the subject should be examined on several occasions in order to prove the constancy of these defects, and while studies are being made, he should be thoroughly saturated with atropin or belladonna to permit maximum relaxation of spasms of the intestine. Then if retention flecks are still present, we can properly assume the presence of some form of diverticulum.

DR. JAMES T. CASE, Battle Creek, Mich.: I emphasize all Dr. Smithies has said. These examinations should be repeated; I have repeated them as many as three or four times, at intervals of several days. I must insist that the examination be fluoroscopic, because with the fluoroscope one can turn the patient this way and that way and manipulate the bowel in such a way that we can demonstrate a definitely rounded shadow attached to, but not actually a part of the bowel, lying to one side and bearing a fixed relationship; we then know that we are dealing with a diverticulum. And in all cases in which we have operated, we have been able to find the diverticulum, unless it was one of those in the third portion buried in the pancreas substance. As to which are surgical cases: I believe they are all surgical. The patients come to us because they have symptoms. We may not be able to link the symptoms the patient exhibits with this condition; nevertheless, after a reasonable trial of other measures, when symptoms are not relieved, operation is indicated.

ACTINOMYCOSIS TREATED WITH METHYLENE BLUE AND ROENTGEN RAY

VIGGO W. JENSEN, M.D.
AND
C. W. SCHERY, M.D.
Intern and Pathologist, Respectively, St. Louis City Hospital.
ST. LOUIS

Methylene blue in the test tube is a specific for *Actinomyces*. Believing that it might prove beneficial when used in the human being infected with this organism, we used it in the case, a report of which follows. Furthermore, our experience induces us to urge the use of the roentgen ray when available, in this type of infection.

REPORT OF CASE

History.—A white woman, aged 24, pregnant, complained of an ulceration of the left side of her face. This began as a tooth-ache which followed picking of the teeth with broom-straws. An abscess resulted which was treated by extraction of the offending tooth. The swelling and pain in the gums extended to the cheek, from which, three weeks later, an ounce of pus was removed by an incision; but a second incision one week later failed to show more pus.

Physical Examination.—This was negative except for the finding of a full term pregnancy, and a lesion extending from the angle of the jaw about 2 inches into the neck, forward to the angle of the mouth, and upward to the maxillary process. It was copper-red, with multiple sinuses radiating from the center, and filled with pus. The jaw could be opened about 2 cm. There was an ulcerated area on the buccal membrane 2 cm. in diameter opposite the site of the first molar tooth, with marked induration but no sinuses or swelling of the gums and great tenderness only on pressure. The tongue could not be projected, but over its surface were many ulcerations and deep fissures.



Fig. 1.—Extent of lesion before treatment; triangular area, point of diagnostic tissue excision.

The urinalysis and repeated Wassermann tests were negative throughout the illness. The total white count averaged, during quiescence, about 8,000, with a normal differential count and no eosinophilia.

The roentgen-ray report by Dr. Sante read: "A dark area, which may be bone destruction, runs forward from the site of the extracted tooth, beneath the other teeth. This dark area may be definite bone destruction from an infective process. The cortex seems to have been involved and may be broken through further forward; however, periosteal irritation is lacking."

The presence of a fungoid infection was suggested by Dr. W. T. Coughlin, but a positive diagnosis was not made until scrapings from the sinuses examined for tissue excised for diagnostic purposes were repeatedly negative for *Actinomyces*.

Treatment and Course.—On the suggestion of Dr. Schery, methylene blue was given internally as well as being injected locally, the latter in 3 per cent. solution. The former was started with 2 grain doses three times a day, later increased to 5 grains four times daily. This therapy caused nausea, dizziness and weakness at first, but these symptoms soon disappeared. The local injection, though it apparently decreased the amount of suppuration, was hardly justifiable in view of the pain it caused, and furthermore it increased the outer zone of edema.

On the twelfth day of treatment the process flared up, involving the orbit and causing complete closure of the eye. The constitutional disturbance amounted to an average temperature of 101 F. for about four days, with a total white count of 12,000 and a differential count showing 96 per cent. polymorphonuclear leukocytes.

It was thought advisable to make use of the roentgen ray, and an erythema dose consisting of an exposure of two minutes to a 6 milliampere, 6 inch spark gap, with the skin target 10 inches distant without a filter except over the upper part, was used. This was followed by a cessation of the acute symptoms, and the local edema decreased. A few sinuses remained in the larger area, and two large abscesses formed just below the eye. These were incised and kept wide open. Eleven days after the use of the roentgen ray, the first sulphur granules were found, and the smear made from them was seen to contain *Actinomyces*.

The condition was thought to have reached its termination in both areas, when suddenly a second attack blazed forth. A second roentgen-ray treatment was applied with similar local and constitutional behavior, but the process receded so rapidly that on the forty-third day all treatment was stopped as all the sinuses, edema and induration had disappeared.

The copper-red color was gradually replaced by a yellow tinge. There then remained only a slight degree of contraction of the skin over the maxillary process. The patient at that time was able to open her mouth to nearly normal distance, and had no pain or other discomfort. The final roentgen-ray report stated that there was now no visible injury to the left lower jaw.

COMMENT

Dr. Schery suggested the use of methylene blue as the treatment in this case, hoping that it would be a specific in the human body, as it is for *Actinomyces* in mediums outside of the body. This advice was based on the statement [1] that one drop of a 1 per cent. methylene blue solution in 10 c.c. of broth culture kills the organism of *Actinomyces*. In order that this drug should be effective in vivo, it was decided that it should be given in a quantity theoretically large enough to be in the circulation in the same concentration as in vitro; and this was calculated to be about 5 grains. This concentration was kept so by intermittent administration four times daily. This was done on the assumption that all the drug given was absorbed, dissolved in the circulating fluid, and distributed equally in all the tissues. Attempts to measure the concentration of the methylene blue in the blood serum of the patient by colorimetric methods obtained at the end of the first, second and third hour after taking the drug proved negative. This serum was taken during the terminal stage of the treatment when the tissues must have been saturated, for the urine was constantly a deep blue, and the feces a deep green. The patient's skin was a peculiar shade of gray, which disappeared on the fourth day after the drug was discontinued. At this time the urine was still dark green, indicating that some of the dye was still retained by the tissues, and that during its circulation it was probably held in some



Fig. 2.—Spreading of lesion to the orbit on the twelfth day of treatment.

combination by the blood constituents and liberated by the renal epithelium. Blood agar plates made from the whole blood and cultivated with bacteria showed growth but no pigmentary changes. These cultures were controlled by normal blood agar plates. This indicates that the dye was not present in such a state or concentration as to prevent bacterial growth, and secondly that the dye, if present, could not be liberated by the bacteria used, a pure culture of *B. coli*.

It was planned to control the effect of the roentgen ray by exposing growths of the fungus to the ray; but unfortunately no growth was obtained from the sinus scrapings or from the granules. This may have been due to the germicidal effect of the methylene blue in the tissues. The effort to measure the effect of the dye by experimental means in this case failed. What were the effects as measured by clinical observation? The local injection appeared to have an inhibitory effect on the production of the sinuses, the number of which indicates the virility of the fungus This method proved too painful to be justifiable even for the results obtained, when used in a way to give results. To use it in any other degree would be trifling, as either way the patient deserves consideration. During the process of the dye medication alone, a flaring up of the lesion took place, the second exacerbation after the use of the roentgen ray. Apparently from this behavior alone, the action of the dye was not of that absolute action which one would desire to see in a specific remedy, but nevertheless it cannot be condemned as useless.



Fig. 3.—Condition of face on termination of treatment.

Reading the literature, one becomes doubtful as to the specificity of drugs, having in mind particularly the iodids. Abroad,[2] they are advised in large doses, consisting of 15 grains three times a day; but this apparently is not sufficient for the American variety of *Actinomyces*, for here [3] they are advocated to the limit of tolerance. Given alone they have proved unsatisfactory, and consequently combined treatment [4] with the roentgen ray has been resorted to and reported successful.

Copper sulphate has been suggested and used,[5] but it also apparently could not be trusted to fight the battle alone, for a combined treatment of copper sulphate and the roentgen ray soon appeared.[6]

The dissatisfaction with iodids by oral administration alone led one writer [7] to combine this with local injection of the same drug, with remarkable results; but experimental evidence that the mycelium is capable

1. Besson, A.: Practical Bacteriology, Microbiology and Serum Therapy. New York, Longmans, Green & Co., 1913, p. 660.

2. Dean, C. W.: A Case of Actinomycosis Treated by Vaccine, Brit. M. J. **1**: 82 (Jan. 20) 1917.
3. Ormsby, O. S.: Diseases of the Skin, Philadelphia, Lea & Febiger, 1916, p. 924.
4. Harris: Actinomycosis of the Neck, J. Cutan. Dis. **34**: 616, 1916.
5. Bevan, A. D.: Treatment of Actinomycosis and Blastomycosis with Copper Salts, J. A. M. A. **45**: 1492 (Nov. 11) 1905.
6. Zeisler, J.: Notes on a Case of Actinomycosis, J. Cutan. Dis. **22**: 510, 1906.
7. Sawyers, J. L.: Medical Treatment of Actinomycosis, J. A. M. A. **36**: 1314 (May 11) 1901.

of growing in 2 per cent. solutions of potassium iodid is not encouraging. The iodids, however, are not to be banished entirely, for recently [8] they have been combined with arsphenamin and reported successful in a case not yet terminated. The usefulness of the iodids may be due to the fact that not all lesions resembling actinomycosis are actinomycotic, and that few writers report a positive diagnosis. Furthermore, it is probable that not all actual actinomycotic infections are equally virulent.

Specific vaccines [9] have been reported efficient both here and abroad, although the utility of this method was doubted by earlier writers,[10] because they could demonstrate no antibody content of the blood.

More recently,[11] radium alone has been used in a number of cases with unquestionable efficiency. Keeping this in mind and remembering that treatments consisting of the roentgen ray plus some other agent, iodids or in this case methylene blue, have proved successful in a short time, our opinion is that the roentgen ray or radium alone will be the agent of choice in the future.

PATHOLOGY

The parasite belongs in the genus *Hyphomyces,* of which *Discomyces bovis,* among ten others which have been described, is the most common. The whole group is classified as streptothrices and belongs in the group of *Oosporidae.* They are fungi consisting of branched septate mycelia, and reproduction takes place by rounded conidia.

The parasite stains with basic anilin dyes, and is gram positive and acid fast. An important point in its morphology is that in the early stages clubs are not formed, and it is not until considerable resistance to its growth is manifest in the tissues of the host that clubs do form. Much confusion exists in the minds of most clinicians in regard to this parasite, owing to the error of supposing that the organism is isomorphic in man and animal. Most students are familiar with the classical textbook picture of the fungus with its radial fibers and clubs; but, as a matter of fact, bovine and human lesions differ in that the bovine lesion shows clubs and the human lesion does not. This undoubtedly is due to the partial immunity in the bovine and its absence in the human being. With these morphologic differences there are also those of its staining reactions. The filaments stain by Ziehl's and Gram's method. The clubs stain yellow with picrocarmin on a pink background of cells.

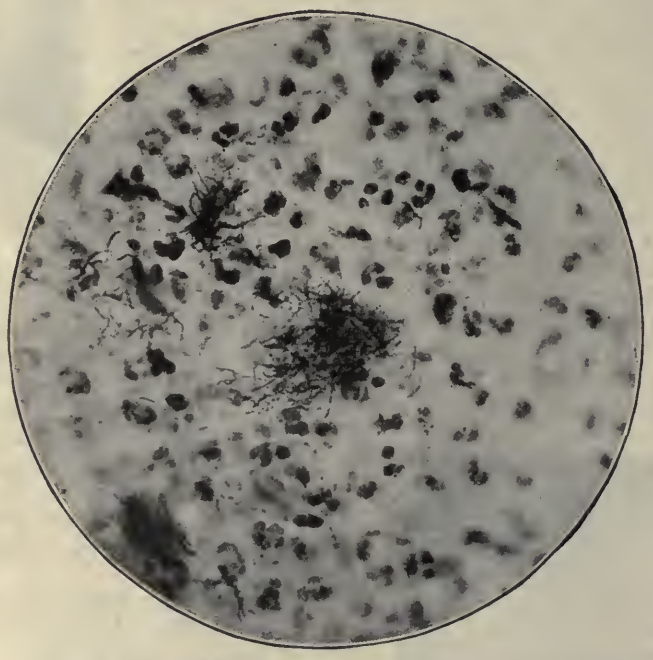


Fig. 4.—Photomicrograph taken from direct smear from sinus scraping; Gram's stain.

The lesions occur in the jaw in about 50 per cent. of the cases; in the abdomen in 20 per cent. and in the thorax in 15 per cent. The mortality in the jaw cases is stated to be between 25 and 40 per cent., and in the abdominal and thoracic cases from 70 to 80 per cent. Frequently the lesions are mistaken at necropsy for tuberculosis.

The material submitted for examination in this case was very scant, and staining methods were relied on exclusively for identification. The pus contained minute yellowish granules about 0.25 to 0.5 mm. in size. These were crushed between slides, which were then drawn apart. One slide was stained by Gram's method and the other by Ziehl's. The parasites were seen on both slides, but the Gram stain proved superior. The organism was seen as gram-positive septate mycelia, varying in length and mass, of which some branched. There was no clubbing, and there were no other organisms present.

More than twenty tubes of various mediums were inoculated. At this time treatment had already been started; the material for cultures was very scant; and because scraping of the sinuses was so painful, satisfactory material could not be obtained. All of the cultures proved to be negative, and almost all showed a luxuriant bacterial growth long before the parasite could have been expected to appear. The tissue removed for diagnosis was carefully examined by all means of staining, but the parasite could not be demonstrated. On examining the patient it was seen that the tissue had been removed from the center of the lesion, the least desirable site. *Actinomyces* could be demonstrated in the scrapings from the sinuses.

SUMMARY

1. Combined treatment, consisting of methylene blue and the roentgen ray, is new in the literature.
2. Combined treatment, of which the roentgen ray is a part, clears up the condition.
3. Either roentgen ray or radium is probably sufficient by itself as a curative agent.

8. Torres, O.: Actinomycosis Treated with Sodium Iodide and Arsphenamin, Brazil.-med. **33**: 361 (Nov. 15) 1919.
9. Wynn, William: A Case of Actinomycosis of the Lung and Liver Treated Successfully with Vaccine, Brit. M. J. **1**: 554, 1908. Kinnicutt and Mixter: Actinomycosis Treated with Vaccine, Boston M. & S. J. **167**: 90, 1912.
10. Harbits and Grondahl: Actinomycosis in Norway, Am. J. M. Sc. **2**: 395, 1911.
11. Heyerdahl, S. A.: Actinomycosis Treated with Radium, J. A. M. A. **73**: 1928 (Dec. 27) 1919.

Breathing Rock Dust.—The United States Public Health Service has made a survey of factories in the United States located at Niagara Falls, N. Y., at which abrasives, chemicals, gases, electrodes, carbon, metals, and aloids are made. In the course of this survey it was found that more than 200,000,000 particles of fine dust are breathed into the lungs and air passages with every cubic foot of air in such factories. Work under such conditions invites respiratory diseases and constitutes a real health hazard, and exposes the laborers to dangers which would eventually result in their becoming incapacitated. As a result of the survey, industrial hygiene engineers have devised means of removing the dust from the air and minimizing the fumes and poisonous gases.

THE DEVELOPMENTAL BASIS FOR CERTAIN VESICAL DIVERTICULA*

ERNEST M. WATSON, A.M., M.D.
BUFFALO

Concerning the causative factors involved in the formation of vesical diverticula, there is still much difference of opinion. One group of observers holds that these saclike appendages of the vesical cavity, varying in size from a small bean to several times the size of the urinary bladder, are always of congenital origin. The words of Cabot [1] express this view tersely: "The word diverticula is confined to those pounches, always of congenital origin, occurring most frequently in certain localities of the bladder, but occasionally seen in almost any portion and not due to defective development or lack of closure of any recognized structure." Another view places the causative factor of obstruction along the lower urinary tract of paramount importance in the etiology of vesical diverticula. Lower,[2] from his studies of numerous cases clinically, states that in his opinion these saclike evaginations are practically always acquired. Thomas,[3] in a study of the cases observed at the Mayo Clinic, holds that only in a few cases can a defective development account for the pathology, and further that acquired factors (namely, obstruction in 86 per cent. of his cases) seem necessary for the development of diverticula clinically.

From the present very definitely divided opinion as to the formation of vesical diverticula, it can be seen that further study is needed before a true understanding of their etiology can be reached. With this in mind the following observations are presented. In the last few years, in the study of the development of several portions of the lower genito-urinary tract,[4] it has been possible to observe the vesical cavity in its progressive development from early fetal life until birth. In the course of these studies, certain pictures of the bladder cavity have been of striking significance, and it appears that certain factors are present which may be of importance in determining the formation of diverticula.

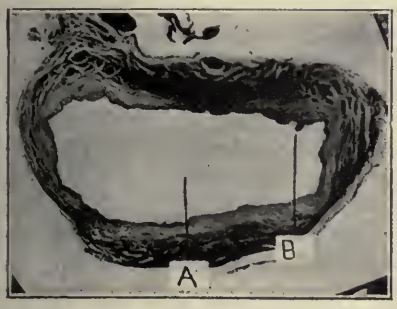


Fig. 1.—Cross-section of fetal bladder: *A*, bladder cavity; *B*, evagination of the bladder mucosa.



Fig. 2.—Cross-section of fetal bladder: *A*, outpushing of mucosa and submucosa along the lateral margin of the trigon; *B*, outpushing of the mucosa, submucosa and a portion of the muscular layer along the lateral margin of the trigon.

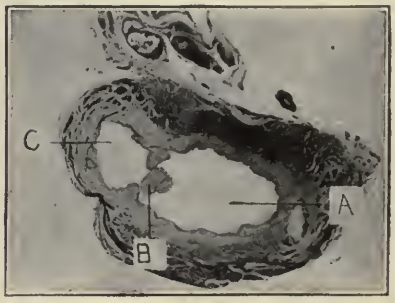


Fig. 3.—Cross-section of fetal bladder: *A*, bladder cavity; *B*, fold of mucosa and submucosa almost bridging the vesical cavity; *C*, cavity of a diverticulum in the process of formation.

The variation and inequality of the intrapelvic and lower abdominal pressure has been noted in a considerable number of fetuses studied. This has caused the bladder at times to become somewhat distorted and the inner walls of the bladder to become extremely irregular, with ridgelike elevations standing out prominently in several areas of the cavity, but more particularly in the zone about the lateral margins of the trigon. These irregularities, augmented by the general processes of growth, may project into the vesical cavity as definite finger-like invaginations, or the projections may remain as simple elevated ridges which never develop sufficiently to bridge the lumen of the bladder. If the intrapelvic pressure becomes of real significance early in fetal life, the probability of a bridging of the vesical cavity is much more imminent than when it develops

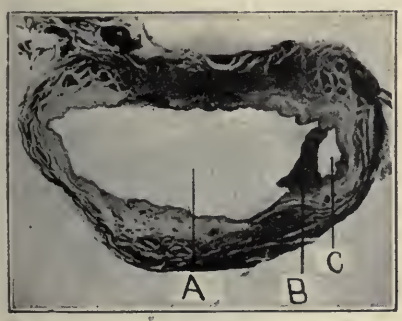


Fig. 4.—Cross-section of fetal bladder: *A*, bladder cavity; *B*, bridge of tissue composed of mucosa, submucosa and some muscular fibers bridging the vesical cavity and attached to the opposite bladder wall (outline of the mucous covering still intact); *C*, cavity of the diverticulum.



Fig. 5.—Cross-section of fetal bladder: *A*, bladder cavity; *B*, firm bridge of tissue spanning the vesical cavity; *C*, cavity of the diverticulum.



Fig. 6.—Cross-section of fetal bladder: *A*, bladder cavity; *B*, cavity of the diverticulum; *C*, evaginating mucosa within the diverticulum.

* Read before the Section on Urology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

* From the Department of Urology, University of Buffalo, Department of Medicine, and the Urological Service of the Buffalo City Hospital.

1. Cabot: Boston M. & S. J. **172**: 300, 1915.
2. Lower, W. E.: Diverticula of the Urinary Bladder, J. A. M. A. **63**: 2015 (Dec. 5) 1914.
3. Thomas: Surg., Gynec. & Obst. **33**: 378 (Oct.) 1916.
4. Watson, E. M.: Am. J. Anat. **24**: 395 (Nov.) 1918; Bull. Johns Hopkins Hosp. **29**: 241 (Nov.) 1918.

during the later months of intra-uterine life. Varying degrees of these irregularities have been demonstrated in the specimens studied, from a simple ridgelike elevation to those which traverse the entire vesical cavity and touch the mucosa of the opposite bladder wall. In certain instances, when the pressure is more lateral they may form bridges along the same side of the bladder from which they originate. When these fingerlike projections traverse the bladder cavity and touch the mucosa of the opposite side, certain regressive changes occur in the approximating mucosa, as indicated in the poor staining qualities of the epithelium and later by a disintegration of the lining cells which allows the mucosa and a portion of the muscularis of two portions of the blader wall to lie in apposition.

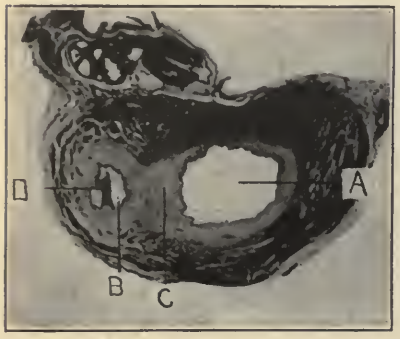


Fig. 7.—Cross-section of fetal bladder: *A*, bladder cavity; *B*, cavity of the diverticulum; *C*, firm bridge of tissue separating the bladder cavity from the cavity of the diverticulum; *D*, bridge of mucosa and submucosa dividing the cavity of the diverticulum, but not as yet attached to the opposite wall.

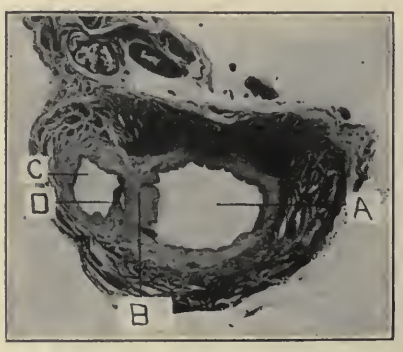


Fig. 8.—Cross-section of fetal bladder: *A*, bladder cavity; *B*, bridge of tissue traversing the bladder cavity; *C*, cavity of diverticulum; *D*, bridge of tissue dividing the cavity of the diverticulum and firmly attached to the opposite side.

The site of transition from the trigon, with its thick musculature and its covering of many layers of epithelial cells, to the lateral bladder wall with only two or three layers of epithelial cells is prone to produce a ridgelike demarcation which readily lends itself to the formation of an excess of epithelial tissue. The apposition then of two surfaces of the bladder wall denuded of epithelium, at a time when true formative growth is active, results first in adhesions and later in a true attachment of a bridge of tissue across a portion of the vesical cavity. The growing submucosa and muscularis become continuous from the fingerlike evaginations with that of the opposite side, and in the older specimens this ridge of tissue is shown to contain all three layers of the muscular coats of the bladder. The mucosa in its growth then becomes continuous from the fingerlike evaginations with that of the opposite bladder wall, and there is formed a true pocket within the bladder, the walls of which have all the essential elements of the true bladder wall, namely, the three muscular coats, the submucosa and the mucosa.

With the foregoing developmental setting there may be several factors which influence the size of the diverticulum at birth, namely, if true attachment occurs early in fetal life the size of the diverticulum at birth may be much larger, its lumen larger and its capacity greater than if the bridging of the vesical cavity occurred late in intra-uterine life. The finding of most diverticula in the region of the ureteral orifices, it seems, may be explained more as a relationship to the margins of the trigon than to the ureteral orifices themselves. The trigon during intra-uterine life is covered by from three or four to seven or eight layers of epithelial cells, some of which, as they become thinned out in their transition to join the lateral bladder walls, show a greater tendency to project as slight, ridgelike elevations than do any other portions of the bladder wall.

That it is possible to have a developmental basis for pouches of the urinary canal has been shown in the formation of certain valves of the posterior urethra which gives a pouchlike dilatation of the urethra in the prostatic portion, and which formations have been shown to have their origin from the attachment and continued growth of the tip of the verumontanum to the roof of the urethra. In view of these conditions, it seems not improbable that certain vesical diverticula may have a similar origin. It is believed, however, that their clinical recognition during adult life is hastened and their dimensions greatly increased by any of the factors that would bring about increased vesical distention or increased activity of the bladder musculature.

494 Franklin Street.

ABSTRACT OF DISCUSSION

DR. VICTOR D. LESPINASSE, Chicago: Dr. Watson's demonstration is the first I have seen of the development of bladder diverticula in the fetus.

DR. WILLIAM E. LOWER, Cleveland: This exhibition of Dr. Watson's is the strongest presentation of the development of bladder diverticula that I have ever seen.

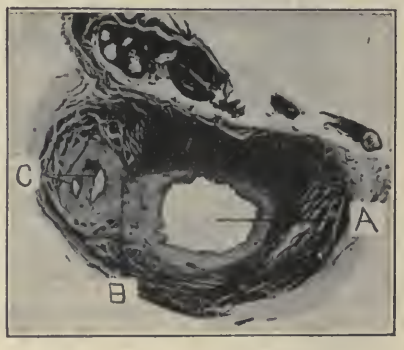


Fig. 9.—Cross-section of fetal bladder: *A*, bladder cavity; *B*, bridge of tissue containing mucosa, submucosa and muscular fibers now forming the lateral bladder wall; *C*, cross-section of two cavities, i. e., a diverticulum within a diverticulum.

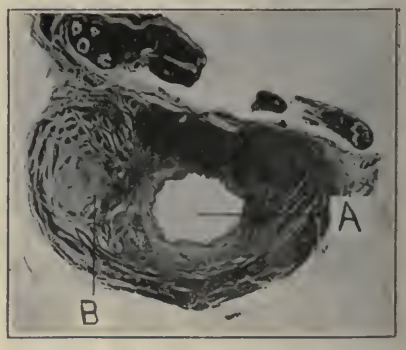


Fig. 10.—Cross-section of the preceding specimen below the level of the diverticulum: *A*, bladder cavity; *B*, area of fibrosis from the lower pole of the diverticulum.

DR. ERNEST M. WATSON, Buffalo: The question of determining the etiology of diverticula is one of considerable importance clinically. The presentation of this study seemed indicated in bearing out the opinions of certain workers that the congenital factors are of considerable significance. The reason for not finding more diverticula early in life is unquestionably because of the fact that their presence gives symptoms only when accompanied by other factors, which increase the size of the diverticula; namely, urethral obstruction or obstruction at the vesical orifice, and these later factors occur usually in adult life.

HEMORRHOIDECTOMY

A COMPOSITE OPERATION *

E. G. MARTIN, M.D.
Associate Proctologist, Harper Hospital
DETROIT

Time, that great indefinite period through which all things worth while have developed, has given us, through the agency and experience of many surgeons, a technic which I am pleased to call a composite operation.

In presenting this very simple technic, I wish to state frankly that there has been no hesitancy in incorporating or modifying steps that excel, from the technic of others, nor in using and advocating such a clever instrument as the battle ax forceps. Adverse criticism of the numerous and varied surgical methods is studiously avoided as unreasonable and unnecessary; the advocacy of the composite technic, with the very definite reasons for its various steps, discloses my preference. May it be suggested that this technic is as applicable in general as in local anesthesia. The local



Fig. 1.—Deep injection, or blocking off, is made through an iodin spot.

anesthesia is described as Step 1, since it is believed that with very careful antiseptic preparation, it is to be preferred for the great majority of patients.

Free catharsis and a light diet are prescribed during the twenty-four hours before entering the hospital, and a good night's rest is assured by a mild hypnotic after entering. Following an enema on the morning of operation, two doses of morphin, 1/8 grain, and scopolamin, 1/200 grain, are administered; the first, one hour, and the second, one-half hour prior to operation.

With the patient lying in the left lateral Sims position on a comfortable mattress, the buttocks, perianal and anal regions are thoroughly cleansed with soap and water, followed by the application of iodin, alcohol and sterile water.

PROCEDURE

Step 1: The buttocks are retracted by an assistant, and a 1 per cent. solution of sterile procain or its equivalent is injected under the skin, about 1½ inches posterior to the anus; the injection is continued as the 2½ inch needle penetrates deeply into the sphincter ani laterally, where about one-half ounce of solution is deposited; the needle is nearly withdrawn, and the opposite side of the sphincter is similarly injected. Again, with the needle nearly withdrawn, the subcutaneous and submucous areas are injected under the hemorrhoids and around the anal canal. This last injection, done deliberately, and without distending or distorting the field, is carried with the long needle laterally on each side of the anus to the anterior quadrant. If this technic is followed, the sensory nerves



Fig. 2.—Superficial perianal injection without distention through the same puncture wound.

supplying the anal sphincter, anal canal and perianal skin are desensitized, and anesthesia is complete. We now have an anal sphincter ready for any necessary dilatation, and an undistorted operative field presents the hemorrhoids for radical removal.

Step 2: After dilatation, which is a matter of choice and is used as an aid to further preparation, the rectum is thoroughly mopped out with a 0.5 per cent. cresol solution, a bivalve speculum having been introduced; following this a dry sponge is placed beyond the internal sphincter to prevent soiling of the operative field. An anal retractor may now be used if desired, to expedite better vision; the hemorrhoid is carefully grasped with the battle ax forceps and drawn out tensely, care being used not to traumatize unnecessarily the anal mucous membrane and skin.



Fig. 3.—Anal retractor inserted; hemorrhoid grasped and pulled out with hemorrhoid forceps.

Step 3: An artery forceps is clamped above the hemorrhoid: the battle ax is substituted for a sharp toothed dressing forceps to facilitate more accurate treatment, when the redundant part of the pile is cut away; again using the toothed forceps, all hemorrhoid tissue below the anal surface in this region is dissected out with pointed lateral curved scissors.

I differentiate the pile from the hemorrhoid in that the pile is the tumor, and the hemorrhoid the tumor plus any and all hemorrhoid structure below the anal surface.

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

Step 4: If the blood supply has not been controlled by the artery forceps, as evidenced after the removal of the hemorrhoid, a second pair of forceps is placed to control it before introducing and tying the catgut ligature above; this introduction is accomplished either with a blunt needle or ligature carrier, though it is permissible to use a sharp pointed needle, with the risk of puncturing a blood vessel. This ligature may be introduced with a ligature carrier after the pile is first grasped and drawn down and before the hemorrhoid is



Fig. 4.—Blood supply controlled by artery forceps; pile about to be excised with scissors.

removed. I have found that quite often with this method it is necessary to introduce a second suture to control bleeding, and suggest the forceps to assure hemorrhage control before ligation. It should here be noted particularly that no suturing is done for approximation. This technic is carried out and completed successively with each hemorrhoid, after which the parts are sponged, the gauze removed from the rectum, and a small rubber tube about one-fourth inch in diameter inserted through the anal canal into the rectum: this tube drains any accumulation of fluid from the rectum, and should be removed, for the patient's comfort, at the end of the day.

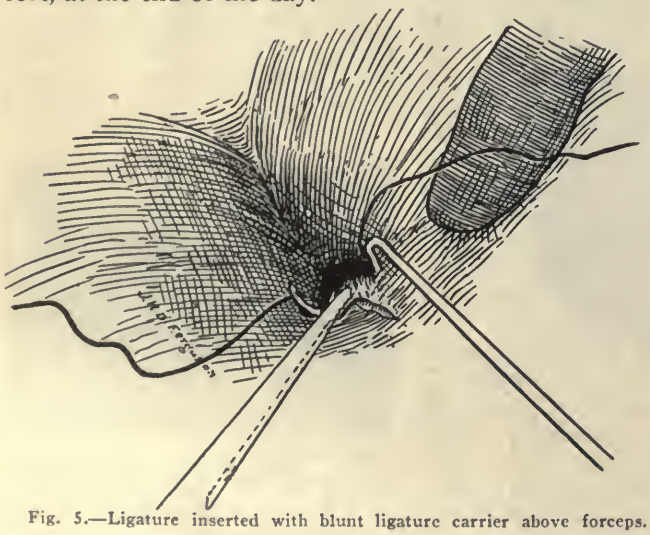


Fig. 5.—Ligature inserted with blunt ligature carrier above forceps.

AFTER-CARE

Postoperative pain is satisfactorily controlled by the hypodermic administration of morphin, ⅙ grain, repeated every three hours for six doses; and barring some contraindication, it is used as a routine. Light fluids are given for three full days, after which the bowels are opened by a warm oil enema, followed in one-half hour by a saline enema; soap is avoided. Following evacuation, hot sitz baths are of value and much appreciated by the patient. Daily saline enemas are prescribed until the anal distress moderates, after which mild cathartics are depended upon. The desirable stay in the hospital is five days.

In the composite operation, I would call attention to the one point of entrance for the local anesthesia: this reduces to a minimum the introduction of possible infection; the undistorted field of operation is also an advantage to be desired. Unnecessary traumatization of the tissues is of marked advantage in avoiding tags. The shutting off of both afferent and efferent blood vessels before removal of the hemorrhoid is believed to be effectual in preventing emboli. Nonsuturing for approximation avoids a possible abscess formation, with the occasional sequela phlebitis, since infection in an unsutured wound remains superficial and quickly heals.

This operation can be performed with accuracy, speed and safety—without trauma and without pain.

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ABSTRACT OF DISCUSSION

DR. JAMES A. DUNCAN, Toledo, Ohio: There is hardly any excuse for any of these operations. There is not an internal hemorrhoid that cannot be cured with the actual cautery,



Fig. 6.—Ligature has been tied and cut off; operation completed. A fissure was excised and the sphincter incised in the posterior quadrant as evidenced in the illustration.

without any anesthetic, either local or general, no matter of how long standing.

DR. J. RAWSON PENNINGTON, Chicago: The operation described by Dr. Martin is the ordinary ligature operation for hemorrhoids, though couched in a little different language. Since many cases of hemorrhoids are of the infective variety, any closed operation, whether it be the ligature, clamp and cautery, or what not, that closes in the infected base is not to be commended. Tonsils which are usually infective are removed by means of an open operation, and hemorrhoids which are also frequently infective should, for the same reasons, be removed by a similar method—an open operation.

DR. JOHN J. GILBRIDE, Philadelphia: There is an operation that has been performed by Dr. Laplace of Philadelphia for a number of years—suturing after excising the hemorrhoid. After the sphincter has been dilated with the patient under a general anesthetic, one picks up with forceps both the apex and the base of the hemorrhoid. Cut away the hemorrhoid and suture the mucous membrane. When the surfaces of the wound are apposed, there is no hemorrhage, and the results have always been splendid. The patient is allowed out of bed the day following the operation, and the day following that he goes home.

DR. EDWARD G. MARTIN, Detroit: The use of the cautery is an unsurgical procedure precipitating slow convalescence,

and its use is frequently followed by anal contracture, and so-called return of the hemorrhoids. Dr. Pennington's remarks disposing of the composite operation for hemorrhoids as a "ligature operation," discloses his preoccupation during its reading. The only ligature used is placed well above the hemorrhoid area and controls bleeding during and following the operation, as well as offering the only possible prevention of emboli being carried back through the blood vessels. Dr. Pennington, in his method of everting the anal mucous membrane by the use of clamps, unnecessarily traumatizes the tissues, and often with the result of very annoying postoperative tags. There is one good point in his technic—which I have adopted and emphasized in my paper—the opened areas are not sutured. "Enucleation," which he referred to, is an excellent word, and the technic was clearly described as a part of the composite operation. Postoperative pain is negligible if the described postoperative treatment is followed.

GONORRHEA OF THE LOWER GENITO-URINARY TRACT IN WOMEN

WITH SPECIAL REFERENCE TO THE GLANDS OF BARTHOLIN *

WILLIAM E. STEVENS, M.D.
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SAN FRANCISCO

There is probably no disease with which the human race is afflicted that is more often neglected than gonorrhea of the lower genito-urinary tract in women. The probable reasons for this are, first, the absence or mildness of subjective symptoms in its chronic stage and, second, the unsatisfactory results that so often follow the treatment of these cases. The statement has been made, and we believe it to be correct, that gonorrhea and syphilis are responsible for more deaths than tuberculosis and pneumonia; and when we stop to consider the enormous number of women suffering from gonorrheal infection and its far reaching and disastrous effects on male and female, there is surely sufficient incentive for a more determined effort to bring about its eradication. By curing these patients early while the infection is limited to the lower genito-urinary tract, involvement of the pelvic organs with its unfortunate sequelae will be prevented and, of still greater importance, much will be accomplished toward preventing the continual dissemination of this disease.



Fig. 1.—Normal gland of Bartholin.

Realizing these facts, Dr. William C. Hassler, health officer, with the consent of the San Francisco Board of Health, established a diagnostic clinic where prostitutes and other delinquents are examined, venereal clinics where those suffering from gonorrhea and syphilis may receive proper treatment without charge, and a large ward in the San Francisco County Hospital where the former patients are held under restraint until cured. As the period of detention depends on freedom from infection, a spirit of cooperation is manifested as a result of which an unusual opportunity is afforded us of observing the effects of systematic treatment.



Fig. 2.—Normal gland of Bartholin (duplication caused by a crease in the film).

To date, 3,439 examinations have been made and chronic gonorrheal infection found in 1,496, or approximately 43.5 per cent. In the first 2,375 cases the diagnosis of gonorrhea was based on the detection of the organism in the smears or the presence of a ++ or +++ positive complement fixation test, together with characteristic clinical findings. Many cases were doubtlessly overlooked even in those subjected to repeated examinations; for the difficulty of detection of gonococci in women, especially in chronic infections, is universally recognized, and the fallibility of the complement fixation test in its present form is likewise understood. In the last 1,064 examinations positive clinical findings were usually considered sufficient evidence of gonorrhea in these patients. The correctness of this assumption was justified by the discovery of the gram-negative organisms in approximately 95 per cent. of these patients at some time during their stay in the hospital. The infection was located in the cervix in approximately 47 per cent., in the urethra in 32 per cent., and in one or both Bartholin glands in 23 per cent. of these cases. Smears from the vagina were never positive in the absence of infection of the cervix. In the presence of cervical infection the complement fixation test for gonorrhea was positive in approximately 59 per cent., in urethral infection in 23 per cent., and in bartholinitis in 19 per cent. of these patients. In the last fifty patients examined, however, the complement fixation test was positive in every case regardless of the location of the infection. The same type of antigen was used in all.

Because of the fact that, unlike acute gonorrhea, chronic infection of the genito-urinary tract in women is seldom productive of subjective symptoms, reliance must be placed almost entirely on objective symptoms for a diagnosis. Very few cases of acute gonorrhea were found in this series of examinations.

ENDOCERVICITIS

As will be seen by the foregoing figures, gonorrheal infection was most frequently found in the cervix, this

* Read before the Section on Urology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

structure being involved in 47 per cent. of our positive cases. Smears were obtained after thoroughly cleansing the canal and compressing the anterior and posterior lips between the blades of a bivalve speculum. Gonococci are more frequently demonstrated following the traumatism caused by this procedure. In fifty clinically positive cervices in which gonococci could not be demonstrated at the first examination, staphylococci were the predominating organisms in thirty-six, various diplococci in twenty-nine, streptococci in nine, diplobacilli in two, and other bacilli in seven.



Fig. 3.—Dilatation of duct of Bartholin gland.

In the treatment of endocervicitis we have obtained good results in some cases following the application of 25 per cent. solution of silver nitrate twice weekly in conjunction with heat applied by means of prolonged vaginal douches, as much as 4 gallons of very hot water being used in this manner night and morning. Of much greater value, however, is proper cauterization of the cervix. This may be repeated two or three times if necessary, and in the absence of infection higher up may be depended on to cure the majority of cases. Sixty per cent. of our patients without demonstrable pelvic involvement were free from infection following this procedure. We have not used radium, but consider it worthy of trial in selected cases.

URETHRITIS

Gonococci were detected in smears from the urethra in about one third of our positive cases. Other organisms present were, in the order of their frequency, gram-positive diplococci, staphylococci, streptococci, diplobacilli and other bacilli. Of importance in this connection is the tendency of certain gram-negative organisms to change their staining characteristics and become gram-positive.

As Skene's or other glands near the meatus are usually infected, the necessity for a careful examination of these structures is important not only from a diagnostic but also from a therapeutic standpoint because of the fact that, following the elimination of these foci, the urethritis as a rule clears up rapidly. When no discharge is visible macroscopically, the two glass test and urethroscopy are of decided value in the diagnosis of urethritis, and advantage of these measures should be taken in all cases.

In the absence of complications, acute urethritis usually disappears rapidly under rest, bland diet, oil of sandal wood, large quantities of water internally, and drugs rendering the urine alkaline. Chronicity is usually due to glandular infection or stricture at the meatus or within the canal. The frequency of these complications is not generally appreciated, as the glands even when infected are not always easy to find, and examination of the urethra for strictures is often omitted. The skenoscope, which is a recent addition to our diagnostic armamentarium, is of great value in both the examination and treatment of Skene's glands, and a filiform bougie is useful in determining the location and depth of these structures.

Strictures at the meatus or within the canal are best detected by means of bulbous bougies. This complication, like infection of Skene's glands, occurs more frequently than is generally supposed. It was present in 58 per cent. of our cases.

In the treatment of chronic urethritis, instillation of from 1 to 3 per cent. solutions of silver nitrate, and local application of stronger solutions of the same drug through a short female endoscope are useful in the absence of glandular involvement or strictures; but acriflavine and mercurochrome, which at first seemed promising, proved of little permanent value. Infected ducts and glands should be destroyed, best by the actual cautery or fulguration electrode introduced through a skenoscope. Strictures should be dilated or incised.

GLANDS OF BARTHOLIN

The most interesting part of our work in this series of cases was in connection with the glands of Bartholin. These structures, homalogues of Cowper's glands in the male, although first described by Kasper Bartholin in 1677, have received comparatively little attention since that time. They are oblong tubuloracemose mucous glands situated in the lower portion of the labia majora between the superficial and middle aponeuroses. In addition to the superficial perineal fascia, their outer side is covered by the bulbocavernosus muscle, while the corpus cavernosus partly covers their upper portion. Their function is to lubricate the entrance to the vagina. They become atrophied after the menopause, and infection is consequently infrequent after that time. The ducts of these glands,



Fig. 4.—Dilatation of duct of Bartholin gland; small lobular portion of gland posteriorly.

which are about three-quarters inch in length and from one-sixteenth to one-eighth inch in diameter, run upward and inward to open on the inner surface of the labia minora in the sulcus between these structures and the hymen or its remains. Their orifice is but partly covered by an imperfect falciform valvular fold of mucous membrane, and they are lined with columnar epithelium. The latter is recognized as a favorite habitat of the gonococcus. Because of their position, the liability of these glands and their ducts to both primary and secondary infection is also increased. The gland, duct or both were infected in 23 per cent. of our cases, as previously stated. In addition to gono-

cocci, other diplococci, streptococci and staphylococci are often found.

Occlusion of the ducts is frequent, and results in the formation of an abscess or a cyst, depending on the presence or absence of infection in the gland. Strictures of the duct are also common. A filiform bougie is of more value than the probe in the diagnosis of both conditions.

Although it is usually impossible to palpate a normal Bartholin gland, an infected gland can be detected in the majority of instances. A palpable gland is usually infected; consequently its removal is advisable, notwithstanding failure to find the gonococcus on examination. Occlusion of the duct may be but temporary, and is not a contraindication to this procedure. An important factor in this connection is our observation, that, following operation for removal of one series of fifty-two palpable glands, the ducts of which were occluded or in the secretion from which no gonococci could be demonstrated, these organisms were found in twenty-nine cases in the secretion from the wound. It therefore seems probable that the infection may be dormant in this location for a long period of time, and reinfection of the urethra, Skene's glands or cervix with subsequent extension to the pelvic organs eventually occurs.

ROENTGENOGRAPHY OF THE GLANDS OF BARTHOLIN

Search of the literature having failed to reveal any mention of roentgenography of the glands of Bartholin, we experimented with a number of solutions and mixtures in order to obtain a suitable medium for injection. A 50 per cent. suspension of barium sulphate in liquid petrolatum was found most satisfactory and consequently was used in our work. This mixture is readily injected through a No. 19 Luer needle, the end of which has been blunted. Following the injection of from 1 to 1.5 c.c., roentgenograms are obtained on dental films which have been inserted into the vagina.

Even in the presence of patent ducts, it is impossible to obtain roentgenograms of the small, sclerosed, shotty glands resulting from chronic infection. Treatment by injection of a number of different solutions, including acriflavine and mercurochrome, proved of little or no value, and these were discarded in favor of excision, which is without question the procedure of choice in all acute and chronic pathologic conditions of the glands of Bartholin.

SATISFACTORY OPERATIVE TECHNIC

A 1-inch incision extending an equal distance above and below the posterior commissure is made in the labia majora. The superficial perineal fascia is incised and the sphincter vaginae muscle retracted to one side. The smooth, glistening capsule of the gland is usually recognized, but its detection is expedited by a finger in the vagina pressing the gland into the wound. A pair of Allis clamps is attached to the gland, and it is then freed from the surrounding tissues by blunt dissection, although curved scissors are occasionally required to sever adhesions. The anterior surface of the gland is first freed, next the outer side, then the base, and lastly the duct is ligated and cut close to the wall of the vagina. The proximity of the bulbus vestibuli to the upper end of the wound should be remembered, as puncture of this structure results in profuse bleeding. Button-holing of the vaginal wall should likewise be avoided, as any chance of healing by primary intention is lost if this accident occurs. Bleeding vessels should be tied and dead space obliterated. It is sometimes necessary to take several deep sutures to check the bleeding. Unless the gland has been punctured or pus encountered, no drainage is used; but if this becomes necessary, a counter-incision is made for this purpose one-half inch external to the lower angle of the wound. Healing by primary intention occurred in only eighteen, or 34.6 per cent., of the cases in our first series of fifty-two operations. If this result is achieved, the resulting scar is difficult of detection. Even when the wound breaks down the scar is not marked. If the primary incision is made in the cleft between the labium majus and minus, the resulting scar is not visible; but the chances of primary union are decidedly lessened because of proximity to the rectum and vagina.

CONCLUSIONS

Gonorrhea in women occurs more frequently than is generally appreciated, and should be accorded more attention than it has heretofore received.

The persistence of gonorrheal urethritis is usually due to glandular involvement or strictures at the meatus or within the canal.

Strictures of the urethra, usually at the meatus, are common and should receive appropriate treatment.

The ducts and glands of Bartholin are frequently infected by the gonococcus.

Injections are of little value in the treatment of infected glands.

Urethral glands must be destroyed and Bartholin glands excised.

The entire Bartholin gland must be removed; otherwise, subsequent abscess formation is liable to occur.

Neither absence of demonstrable gonococci nor occlusions or strictures of the ducts are contraindications to the removal of the glands of Bartholin.

ABSTRACT OF DISCUSSION

DR. E. G. BALLENGER, Atlanta, Ga.: This is something that we have paid very little attention to and Dr. Stevens' study of the gland of Bartholin doubtless will help to account for some cases in which we thought a cure of gonorrhea had been effected, but which proved to be infectious. It is quite rational to excise the gland as he has suggested. Nothing is more troublesome than some of these recurrent conditions. We employ the high frequency current to destroy the glands in the cervix. A small bulbous electrode is passed and held in various positions until the endocervical glands are destroyed. The treatment may be repeated in three or four weeks. A purulent discharge quickly changes to a watery discharge. No anesthetic is required.

DR. HERMAN L. KRETSCHMER, Chicago: The only way to treat the infections in Bartholin's glands is by excision. Unless the glands are excised a discharging sinus forms. In reference to Skene's glands, these are overlooked very frequently because we do not think of them, or we cannot find them very easily, but whenever they are infected I always open them up and cauterize them with the actual cautery. We should never neglect to examine carefully for infected Skeene's glands as well as infected Bartholin's glands.

DR. GEORGE H. DAY, Louisville, Ky.: I believe that very few women ever recover completely from a gonorrheal infection. Even the best class of patients look on this as a very ordinary matter, and they will not report regularly for treatment. There is never the same care about following instructions as there is with the men.

DR. ABRAHAM NELKEN, New Orleans: Gonorrheal infection in women is one of the gravest problems with which we have to deal. I agree with Dr. Day that a certain percentage of women who have gonorrhea never recover. I have often wondered just how important is what we may do in the way of local treatment. Some patients get well because they have serious complications accompanied by a severe systemic reaction and thus develop sufficient resistance to overcome the infection. Not a small percentage are cured by radical surgical operations which entail the sacrifice of most of their sexual organs. Dr. Stevens omitted the mention of gonorrhea

of the rectum. I have seen a fairly large number of cases of gonorrhea in women in which infection of the rectum was a complication. Gonorrhea of the rectum occurs much more frequently in women than it does in men, not as a result of depravity or uncleanliness, but solely because of the anatomic relations of the parts infected. Surprisingly little is to be found on this subject in textbooks. In my experience, most of these patients do well under routine irrigations and applications. I have under treatment one case in which, after nine months, gonococci are present in the rectal discharges, though they have long since disappeared from the genito-urinary tract.

Dr. A. J. Crowell, Charlotte, N. C.: Gonorrhea in women is becoming a very serious proposition. We are dependent on the negroes for our servants, and reproduction in the negro race is very rapidly disappearing. We have noticed that as the negroes come from the country to the city they at once stop bearing children. This is due to venereal disease. I believe that 100 per cent. of the negroes in the city are infected with venereal diseases. One great reason for this is neglect on the part of the physician. A negro woman has gonorrhea and the physician tells her to use the douche and sends her away. A white woman with gonorrhea is referred to a gynecologist, and he gives as little attention as he can, probably ordering a douche, and sends her away. It is time for urologists to look after cases of gonorrhea in women themselves instead of turning them over to the gynecologists. In our clinic one man looks after these patients. We have to educate the general practitioner as well as the gynecologist that the work of the urologist and genito-urinary specialist is to look after gonorrheal infection in both men and women. We have been neglecting our duty in this respect in the past.

Dr. William E. Stevens, San Francisco: We have tried the high frequency current as recommended by Dr. Ballenger in a few cases only. Therefore, I hardly feel competent to speak on this method, although we thought it was inferior to the actual cautery. Dr. Nelken spoke about gonorrhea of the rectum. As our paper was on gonorrhea of the lower genito-urinary tract, we did not touch on gonorrhea of the rectum. As Dr. Nelken and Dr. Day both say, many of these patients are not cured, and consequently they indefinitely disseminate this disease. This is partly due to the fact that gonorrhea of the lower genito-urinary tract in women is on the borderline between the specialties of gynecology and urology, and neither gynecologist nor urologist has taken sufficient interest in them. I agree with Dr. Crowell that the genito-urinary surgeon should give more consideration to this condition. In my opinion, pathologic conditions of the lower genito-urinary tract, kidneys, ureters and bladder in the female belong to the domain of urology and should be treated by the urologist rather than the gynecologist.

Blood Testing for Transfusion.—The great value of blood transfusion in cases of profound shock is diminished in the minds of many surgeons by the risk of the serious reactions which, according to Lee, are liable to occur when the donor's cells are agglutinated by the recipient's plasma. The danger of incompatible transfusion is greatly increased by the presence of infection, and, during the war, accidents following transfusion were much less numerous at the front than at the base hospitals. A rapid method of testing the compatibility of the blood of donor and recipient is described by Lee and quoted in Crile's book on anoci-association. One cubic centimeter of blood is collected from the patient and allowed to clot. One drop of the serum thus obtained is placed on a slide. A few drops of the donor's blood are then received directly into about ten times their volume of 1.5 per cent. citrate solution, and a drop of this suspension is mixed with the recipient's serum on the slide. If the bloods are incompatible agglutination appears in a few moments, but if the test is negative it is well to raise the cover-glass after making sure that the two drops are well mixed, and to examine the preparation again. The drop taken from the suspension of the donor's blood should be examined carefully before mixing it with the recipient's serum to exclude the presence of roulcaux, which after mixing, might be mistaken for agglutinated corpuscles.—*Med. Press*, Nov. 3, 1920.

ULCER OF THE BLADDER (HUNNER TYPE) *

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Frequency, urgency and tenesmus, with or without associated pain, localized or referred, are the cardinal symptoms of inflammation of the bladder, or cystitis. Modern urologic methods of diagnosis have taught us, however, that these symptoms are very often associated with or produced by other lesions within the urinary tract: lesions of the renal pelves, the ureters, the urethra and the trigon, as well as the prostate and seminal vesicles. Moreover, irritability of the bladder is associated with a variety of lesions outside the urinary tract, both inflammatory and non-inflammatory in character, involving neighboring viscera.

Hypersensitiveness of the vesical mucosa or irritability of the bladder may, therefore, be due to a variety of causes, all well known and often easily demonstrated by accurate and relatively simple means. Despite this fact, which has been so frequently emphasized that it has become trite, we still see altogether too frequently these patients treated for cystitis for weeks or months in a routine way by irrigations, instillations and internal antiseptics and sedatives without any serious attempt having been made to determine the exact nature of the trouble producing the disturbance. That cystitis is a relatively rare disease, except as secondary to some other lesion of the urinary tract, is a fact still not generally appreciated, at least in a practical way, except by urologists.

After excluding all the recognized causes of bladder irritability, there has remained a certain number of cases, chiefly in women, presenting all the symptoms of acute cystitis in which the ordinary routine examination has failed to show any evidence of inflammation of the bladder. In the absence of any demonstrable lesion to which these symptoms could be attributed, we have, until recently, put these patients into a group with the diagnosis of "neurosis of the bladder," "neuralgia of the bladder," or "neurasthenia with bladder symptoms." These terms signify little or nothing as to the real nature of the condition producing these symptoms, and they serve no purpose whatever in suggesting appropriate means of affording relief. Indeed, until recently, so little has been accomplished in the successful treatment of these cases that the unfortunate sufferers have wandered from one physician and clinic to another in the vain search for relief from their distressing complaints.

It is only during the last few years, largely as a result of Hunner's work, that our attention has been called to certain lesions of the ureter, bladder and urethra occurring in these patients. It has been shown that these lesions, previously overlooked or neglected, are responsible for the symptoms presented, and that a cure of the lesion has been followed by a disappearance of symptoms and a complete restoration to health of these patients. The result has been that at the present time cases are relatively rare in which no underlying cause for the bladder disturbance can be found. The group of bladder neuroses has been gradually broken up as the causative factor has

* Read before the Section on Urology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

been demonstrated in one small group after another. Thus, in an increasing number of these cases a definite pathologic basis for the symptoms has been demonstrated and an appropriate successful treatment for the condition has been established.

In one such group we now know that the symptoms are produced by a peculiar type of bladder ulcer. In this paper I wish to relate my experience with this distinct type of ulcer associated with irritable bladder. This form of bladder ulcer does not appear to have attracted the attention among urologists which its importance and probable frequency demands, if we are to judge by the number of articles on the subject so far published. By bringing the subject before this section for discussion it is hoped we may gather from the experience of others more definite information as to how frequently this condition has been observed, and particularly its occurrence in the male sex.

LITERATURE [1]

In 1914, Guy L. Hunner [2] reported a series of eight cases of "a rare type of bladder ulcer occurring in women." In this most interesting and extremely important contribution it was clearly demonstrated for the first time that, in a considerable group of cases of so-called "neurosis of the bladder," the symptoms depend on a definite, demonstrable, pathologic basis—an ulcer of the bladder. Cystoscopic appearance of this type of ulcer was clearly described, and its etiologic relation to the associated symptoms firmly established. A sound pathologic basis, therefore, was furnished for the rational and successful method of treatment described. In a subsequent paper, published in 1918, ten additional cases are described. While little that is essentially new is added in this later report, the subject is considered in greater detail. Incidentally, the report of ten additional cases observed in so short a time indicates that the condition is not so rare as at first supposed.

In 1919, C. A. L. Reed [3] reported five cases observed by him, in three of which the patients were operated upon. Reed records his obligation to Hunner for calling his attention to this condition. His conclusions, deduced from his experience in these cases, will be referred to later.

It is probable that all of us who have had these unfortunate sufferers referred for examination and treatment have observed the bladder changes so well described by Hunner in his original paper. But these changes, as revealed by cystoscopy, have appeared so relatively insignificant in comparison with the acute bladder distress and suffering that the association appeared only coincident. It seemed quite improbable that such apparently trivial lesions of the bladder mucosa could possibly cause such marked symptoms. It was not until the studies of Hunner revealed the true character of these lesions in which the pathologic condition is much more extensive than that revealed by cystoscopy, that the explanation of the symptoms produced became clear.

I have observed three cases of ulcer of the bladder of the Hunner type, all occurring in women. The first one was seen in 1916, before I was familiar with the pathology of the condition. Local treatment of various kinds, applied over a period of many months, gave the patient only temporary relief. Up to the present she has not consented to more radical treatment. The other two patients were operated on and the ulcer-bearing area excised. The results have been brilliant. The prompt and complete relief from the exquisite suffering and constant torture constitutes one of the most gratifying results to be obtained in surgery.

SYMPTOMS

These patients consult the physician complaining of the usual, but exaggerated, symptoms of cystitis: frequency, urgency and tenesmus, with pain. Frequency of urination is always a distressing symptom. This is present day and night. The call is imperative; the act is accompained by smarting and burning, and is followed by strangury and pain. Rest at night is interrupted, and normal social intercourse is prohibited by the necessity for waiting on the bladder. Pain of a sharp, cutting character is frequently complained of. This is referred to the bladder neck, along the urethra, the suprapubic area, or the perineum and rectum. The loss of sleep and almost constant suffering without relief quickly reduce these victims, otherwise healthy, to a pitiable state of chronic invalidism. It is small wonder that they become nervous wrecks.

There is one striking feature in the history of these patients: they have generally suffered for years and have undergone all sorts of treatment without permanent relief. Many of them have been operated on one or more times for various supposed lesions without benefit. Patient 3 in our series had undergone two major operations in an effort to obtain relief from her suffering which had been constant for six years. Nearly all of them have been subjected to prolonged local treatment for cystitis without permanent improvement.

EXAMINATION

While the history suggests inflammation of the bladder, the usual routine examination of the urine fails to detect any evidence of ordinary cystitis. Hunner emphasizes the fact that the urine is macroscopically clear, a centrifuged specimen showing only a few red cells and a few leukocytes. Infection is not present. In our three cases the urinary findings were somewhat different, and must be considered atypical in view of Hunner's larger experience. In Case 1 (in which the patient was not operated on), the bladder urine was slightly turbid, and contained numerous pus and red calls. Cultures showed infection with pneumobacillus. The kidney specimens were sterile and free from pus. Case 2 showed a bacillus infection with considerable pus and a few red cells. In Case 3 the urine was macroscopically clear, but streptococci were reported by the pathologist. As all these patients had been recently under prolonged treatment for cystitis, it is quite possible that infection had occurred while they were under treatment.

CYSTOSCOPY

In performing cystoscopy, the first thing to attract attention is the exquisite sensitiveness of the patient to any form of instrumentation. In spite of a liberal

1. Since this paper was written, another series of ten cases from the service of John G. Clark has been reported by Floyd E. Keene in Annals of Surgery (**71**: 479 [April] 1920), under the titie "Circumscribed Pan-Mural Ulcerative Cystitis." The lesion is beautifully shown by an illustration in colors, and the pathology is fully illustrated. From their experience in this series they conclude that this lesion is a distinct pathologic entity, and the best treatment is excision of the diseased bladder wall.

2. Hunner, G. L.: Tr. South. S. & Gynec. A. **27**: 247, 1914; Boston M. & S. J. **172**: 660, 1915.

3. Reed, C. A. L.: Irritable Bladder in Women, J. A. M. A. **72**: 332 (Feb. 1) 1919.

use of cocain, the passage of the instrument through the hypersensitive urethra is painful. Likewise, the bladder is hypersensitive and intolerant. Distention of the bladder produces marked distress, and is strongly resented. The working capacity is much reduced. Casual inspection of the bladder reveals little or nothing abnormal. On closer examination a small, circumscribed area of inflammation is found on the anterior wall. This small, irregular patch of localized cystitis may easily escape observation if one is not looking for it. Close study of this area shows it intensely congested and reddened, and elevated above the surrounding mucosa, from which it is sharply defined. In Case 2 this area looked as though an inflammatory patch had been laid on the normal bladder wall. The inflammation is more marked at the center, where the color is fiery red. Small tags of whitish material are often seen adhering to the center, and concealing a small ulcer. This was observed in two of our cases. In Case 1 the involved area was linear in outline. In the second case there were two distinct irregular patches of inflammation separated by normal appearing mucosa. I was able to make out a distinct abrasion or loss of substance in one of my cases. In the other two a local cystitis would better describe the cystoscopic appearance than the term ulcer.

PATHOLOGY

Sections from the two specimens obtained by operation show changes similar to those described by Hunner and illustrated in his second paper. The lesion is essentially a chronic inflammation involving all coats of the bladder wall. In Case 2 a considerable area of scarring surrounded the ulcer. With the bladder opened, the extent of this area was easily recognized by the blanched, glazed appearance of the mucosa, which was also slightly puckered. Small nodules could be felt beneath the surface. The appearance suggested that this change was the result of healing processes. The nodules were found on incision to be small cysts filled with a clear fluid. The largest of these was the size of a small grape. The ulcer itself was very small, and the mucosa about it was distinctly puckered. The area of involvement surrounding the ulcer was relatively large, measuring several centimeters in diameter. This extensive involvement of the bladder wall explains the severity of the symptoms produced, and also suggests the futility of local measures employed in the treatment of these ulcers.

DIAGNOSIS

The important point in diagnosis is to suspect the condition. The degree of bladder irritability, with its attendant suffering, is suggestive of some grave vesical lesion. The severity of the symptoms readily suggests tuberculosis. But this idea is quickly dispelled by the examination of the urine, which is macroscopically clear. In two of my cases, however, a uniformly turbid urine called for a differential diagnosis. Aside from the rather unusual cases of extravesical lesions producing such marked irritability of the bladder, the only condition that must be differentiated is chronic granular urethritis and trigonitis. This condition, in our experience, is much more common than is generally supposed. The symptoms in certain cases are strikingly similar to those of ulcer of the bladder. Indeed, it is not possible to differentiate the two conditions exactly by an analysis of the symptoms alone, although remissions are more common with granular urethritis, that is, good days follow bad days, while with ulcer the suffering is more constant.

Examination of the urine is not always conclusive. In general, a catheterized specimen in a patient suffering with granular urethritis is perfectly clear and microscopically free from pus and blood. But I have found repeatedly a considerable amount of pus in the centrifuged specimen from these patients, together with occasional red cells. These findings are confusing if we adhere to any hard and fast rule applicable to all cases. Further, it must be remembered that the two conditions often exist together. In any given case the differential diagnosis can be made only by cystoscopic examination. Extreme caution is necessary not to overlook a small, apparently insignificant, localized area of inflammation. If the bladder mucosa is normal throughout, an examination of the urethral mucosa will disclose the characteristic changes of granular urethritis. And the local application of silver nitrate through the endoscope will confirm the diagnosis by the prompt relief of symptoms.

TREATMENT

A correct understanding of the underlying pathology of this type of ulcer has furnished the basis for a rational method of treatment. It also explains, what clinical experience has abundantly demonstrated, the futility of any form of local treatment in giving permanent relief. Temporary amelioration of symptoms may follow local applications to the diseased area, but a tantalizing recurrence of the symptoms follows sooner or later. And any local treatment, involving, as it does, repeated instrumentation, is extremely painful.

Permanent relief is obtained only by excision of the ulcer-bearing area. Fortunately, the location of the ulcer on the anterior wall or at the vertex in most cases makes excision relatively simple. If the ulcer is located on the free wall of the bladder, the operation may be entirely extraperitoneal. More frequently, however, the involved area extends beyond the peritoneal reflection, and one may have to resort to a transperitoneal approach. It is only in exceptional cases that the peritoneum cannot with care and patience be stripped back sufficiently to uncover the area to be excised. The extent of the area to be removed naturally varies widely in different cases. While great care is necessary to include in the resection the entire area of bladder wall involved, there is little difficulty with the bladder opened in determining just how extensive this involvement is. It corresponds to the area of edema seen in the cystoscopic examination, and this is readily recognized when the ulcer is exposed.

Closure of the bladder is made in the usual way. In my two cases the bladder was closed tight, a small cigaret drain was placed in the space of Retzius, and the bladder was drained by a self-retaining catheter. The bladder was irrigated daily with a 1 : 10,000 silver nitrate solution.

RESULTS

Our personal experience has been too limited to justify any conclusions. However, the result in both cases has been extremely gratifying and strikingly similar to the results already reported. Certain it is I have never had more grateful patients. Permanent

relief from torturing pain and suffering, and complete restoration to normal health after years of chronic invalidism, is a result that neither patient nor surgeon can soon forget.

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ABSTRACT OF DISCUSSION

DR. ARTHUR B. CECIL, Los Angeles: In 1870 Lawson Tait reported four cases of what he considered simple ulcer of the bladder, and he likened them to perforating ulcer of the stomach. In 1896 Fenwick reported some cases of simple ulceration of the bladder in which he considered the characteristic features to be ulceration in the trigon, the rest of the bladder being normal, thus differentiating these cases from tuberculosis. Lefur, in 1901, clearly distinguished between ulceration due to tuberculosis, infection and neoplasm, and simple ulceration. Castagni had observed in one of his cases that the artery supplying that portion of the bladder near the ulcer was obliterated, and Lefur attempted to produce simple ulceration of the bladder by the ligation of the vesical arteries. Ulceration did not occur. He did produce ulceration of the bladder, however, by injecting bacteria into the blood stream after previously traumatizing the bladder. In 1913 Burger reported four cases of simple ulcer of the bladder. It is certain that all of these cases would not be considered to be of the Hunner type. One of the patients had had a tuberculous kidney removed, another had a *Staphylococcus albus* infection of the bladder, and the bacteriologic findings in the other two cases are not clear. Burger recommended fulguration as a method of treatment. Hunner's first contribution came out in 1914 when he described eight cases. In 1916 Geraghty described similar conditions in men. Dr. Fowler has gone over the clinical condition well. It would seem that the tendency would be to excise too little rather than too great an amount of the bladder wall, and in doing wide excisions I would like to call attention to the dangers of fantastic closures of the bladder, for if triangular flaps are made, diverticula will almost surely result, and a persistent infection will be kept up. The bladder should be excised in an elliptical manner in order that a direct line closure may be brought about.

DR. LOYD THOMPSON, Hot Springs, Ark.: I was surprised that Dr. Fowler did not mention syphilis of the bladder in this connection. Early this year I reviewed the literature and found fifty cases which I accepted as authentic. This should be mentioned in connection with the type of ulcer Dr. Fowler described in his paper.

DR. JAMES A. GARDNER, Buffalo: In a recent article the author suggested the use of quinin and urea hydrochlorid injections to change the form of inflammation from an injury to scar tissue. I wonder whether this treatment has been tried by any one else and what the results have been.

DR. C. M. HARPSTER, Toledo, Ohio: I have operated on an extensive ulceration of the bladder as large as a dollar just above the trigon. This man had suffered tortures for years but had never received any treatment. I attempted to use the knife, but on account of the extensive bleeding I had to resort to the use of the electric cautery knife to remove the ulcerated portion in that way. The man was practically cured of the suffering he had endured for so long a time.

DR. H. W. E. WALTHER, New Orleans: I have been looking for Hunner ulcers for a number of years, but have been unable to find any. It is difficult for me, when I can see nothing pathologic except an infection of the trigon, to differentiate Hunner ulcer, so-called, from trigonitis. I have been much interested in trigonitis, which was brought to our attention years ago by Garceau, and have had a certain amount of success in treating it with the high frequency method. Most of my patients have been women with granular urethritis, and silver nitrate has cleared up this condition. Dr. Fowler, what is the proportion of males encountered with this condition? Is it more common in females than in males? Dr. Hunner's patients, I think, are all females, and most of us who see mostly males have not seen these conditions. I have had patients referred to me with the diagnosis of Hunner's ulcer, in which it was impossible for me to determine any such condition. Lindeman has been using long flexible needles through the cystoscope to inject quinin and urea hydrochlorid into the bladder mucosa, particularly in connection with trigonitis, with some success. I have had one patient on whom I have used this method; the patient is still under observation and seems to be somewhat relieved. There has been some doubt in my mind as to whether this combination should be injected, on account of the necrosis, but these patients responded very well to 2 per cent. solutions.

DR. HARRY A. FOWLER, Washington, D. C.: The discussion has wandered somewhat from the particular type of lesion considered in the paper. I am glad Dr. Thompson referred to syphilis of the bladder. This is also a rare condition. But it should never be confused with the type of ulcer under consideration; the lesions are entirely different, and the symptoms are not confusing. Dr. Gardner asked about the use of quinin and urea in the treatment of these cases. In a recent paper the injection of quinin and urea has been advocated in the treatment of trigonitis. This form of bladder ulcer has nothing in common with trigonitis. I do not think this method of treatment has ever been tried in cases of Hunner ulcer. I do not believe it would be of any value. The ulcer is always located on the anterior wall, rarely in other parts of the bladder. And while the cystoscope reveals only an apparently superficial lesion, the pathology shows extensive involvement of all coats of the bladder. I do not see how any form of local treatment could be of any use in such extensive involvement. In considering this type of ulcer we have to remember three things: the lesion is found on the anterior wall; the cystoscope shows only a small circumscribed area of inflammation; the symptoms are intense. It is impossible to picture the distress of these patients. The symptoms have persisted, usually for years, and only temporary relief follows local treatment.

TREATMENT OF LEPROSY WITH THE DEAN DERIVATIVES OF CHAULMOOGRA OIL

APPARENT CURE IN SEVENTY-EIGHT CASES

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The Leprosy Investigation Station of the U. S. Public Health Service was authorized by act of Congress in 1905, and established in Honolulu and on Molokai, Hawaii, in 1906. The four principal scientists who successively resided and worked here were Brinckerhoff, Currie, McCoy and Clegg. By a strange fatality, three of those young men are dead—one of pneumonia and two of nephritis. The fourth, Dr. George W. McCoy, is now director of the Hygienic Laboratory in Washington. Those were the pioneers in modern leprosy research in these islands, where the disease has been endemic more than half a century, although now certainly on the decline. Their work was essentially fundamental and was pursued under many difficulties, not the least of which were the prejudices and suspicions of the leper patients themselves. In the course of time, however, those fears of "experimenting" were completely overcome.

Their earlier studies embraced a variety of topics, as shown by their papers, thirty-three in all, published by the government from time to time in a series of bulletins with the general title of "Studies Upon Leprosy." In several of these studies, some creditable

assistance in collaboration was rendered by Drs. Moore, Wayson, Reinecke, Hollmann and Goodhue in the chronological order named. During the period of the war, however, no scientific papers from this station could be published, the government printing office being occupied to capacity with special war work.

KALIHI HOSPITAL

Kalihi Hospital, with 150 beds, occupying a compound of more than 5 acres, owned, equipped and maintained by the Hawaiian Territorial Board of Health, is situated on Kalihi Bay, 3 or 4 miles from the business center of Honolulu. Adjoining it are the laboratories, library, offices, etc., of the Leprosy Investigation Station of the U. S. Public Health Service.

Leprosy patients brought to this hospital from all parts of the territory are entitled to a stay of at least six months for treatment, and longer if they show marked improvement, before being either paroled or transferred to the settlement, 50 miles away on the island of Molokai. For several years past, by an amicable arrangement between the bureau at Washington and the board of health, the director of the investigation station has had charge of the medical treatment of the patients in the hospital. At present we have 117 patients, fifty-three male and sixty-four female. The eldest is 62 years, the youngest 7, the average age being 22 years. We have twenty-four under 15 years of age. In no equal period of time in the whole history of compulsory legal segregation in Hawaii have we had so many voluntary surrenders as in the last year or two. They know they have leprosy, and instead of hiding, as formerly, they come and ask for admission and treatment, even waiving their legal rights for a special examining board.

CHAULMOOGRA OIL

This station has arrived at the conclusion that the nearest approach to a specific for leprosy lies in chaulmoogra oil, known also as oil of gynocardium. This opinion seems now to be shared quite generally by other workers also. The oil has been used in the disease for many years and is obtained chiefly from India, expressed cold from the nuts of a native tree of several closely related varieties, the best being *Taraktogenos kurzii*. It was formerly used here in its crude state, often with some beneficial results. Attempts at this station to modify it by combining with it various drugs, such as camphor, resorcin, iodin and guaiacol, resulted in a measure of success that has since been described,[1] and gave encouragement to the idea that a most valuable curative agent or active principle was there appealing to chemistry for its isolation or, at least, its identification.

In 1918, this station invited and fortunately secured, as college research work, the collaboration of Dr. A. L. Dean, president of the University of Hawaii, himself an expert chemist, who soon became intensely interested in the fascinating problem of extending the researches of Power and his co-workers into the field of therapeutics, and their practical application to the treatment of our patients in Kalihi Hospital. Power[2] had shown that the chaulmoogric fatty acid series, chief of which are chaulmoogric acid and hydnocarpic acid, contain two unique properties: (1) They are optically active, rotating the plane of polarized light to a notable degree, and (2) their atoms are arranged in a closed five carbon ring nucleus entirely different from any other known fatty acids. Here was an interesting and promising clue.

Dean originally separated the oil into four fatty acid fractions and then, on account of their insolubility, converted them into their ethyl esters, thus obtaining thinly fluid oils readily absorbable from intramuscular injection. The laboratory technic by which he effected this he has detailed elsewhere,[3] and it need not be repeated here. A group of patients was placed on each of these, but after several months' trial, all doing equally well, the separation into fractions was abandoned in 1919, after we were convinced that the therapeutic agent was inherent in the entire fatty acid series rather than in any separated fraction, and also that its virtue remained unimpaired by any of the chemical or physical operations to which it had been subjected, such as its treatment with acid, alkali, alcohol, lead acetate, etc., or even the use of more than 200 degrees centigrade of heat. At the same time we also entirely abandoned the Currie and Hollmann crude oil mixture for the new Dean derivatives.

Standard treatment then for weekly intramuscular injection became, and still continues to be, the ethyl esters of the entire fatty acids of the whole oil with 2 per cent. of iodin by weight chemically combined, the dosage of which begins with 1 c.c. and is increased by 1 c.c. at every second or third injection until we reach from 2 to 6 c.c., according to the age and weight of the patient. Internally, patients receive in capsule form the mixed fatty acids carrying 2.5 per cent. iodin in chemical combination; the fatty acids, rather than their ethyl esters, because they better conform to the normal digestive process which precedes fat absorption; we are therefore using by mouth a predigested oil or fat which is semisolid at room temperature, and, in capsule, very easy to take. Its dosage begins with one-sixth gm. per hundred pounds of the patient's weight, three times a day, an hour or two after meals. This is gradually increased every two weeks until the maximum of 1 gm. per hundred pounds of weight per dose is reached. Of these two forms of administration, we have gradually come to regard the injection as the vastly more important of the two. In fact, we had ten patients on injections alone for several months, and they seemed to do as well as those who took both injections and capsules. It should be said for the fatty acids, however, that we consider them the most efficient form of the oil ever devised for internal use. We go for weeks at a time without a single complaint of digestive disturbance. We are sometimes asked why we add the iodin, but confess that we find ourselves unable to furnish an especially substantial defensive reason. It was used by our predecessors here, as also by others elsewhere and was considered decidedly beneficial; it has an old and respectable reputation for effecting catabolic or retrograde metabolism, with a tendency to promote in the economy the absorption of inflammatory and hyperplastic products. Then, too, the fatty acids of chaulmoogra oil are unsaturated acids and therefore capable of taking up iodin to form chemical compounds having none of the irritating properties of free iodin. And yet, we suspect we could

1. McDonald, J. T., and Dean, A. L.: The Treatment of Leprosy, Pub. Health Rep. **35**: 1959 (Aug. 20) 1920.

2. Power and Gornall: The Constituents of Chaulmoogra Seeds, J. Chem. Soc. **85**: 838, 1904; The Constitution of Chaulmoogric Acid, ibid. **85**: 851, 1904. Power and Barrowcliff: The Constituents of the Seeds of Hydnocarpus Wightiana and of Hydnocarpus Anthelmintica; Isolation of a Homologue of Chaulmoogric Acid, ibid. **87**: 884, 1905. Barrowcliff and Power: The Constitution of Chaulmoogric and Hydnocarpic Acids, ibid. **91**: 557, 1907.

3. Hollmann, H. T., and Dean, A. L.: Chaulmoogra Oil in the Treatment of Leprosy, J. Cutan. Dis. **37**: 367, 386 (June) 1919.

well do without it. We have at present five patients on the ethyl esters of pure chaulmoogric acid and five on those of pure hydnocarpic acid without any iodin at all, and all ten seem to be doing as well as the others.

A valuable and timely contribution to the chemotherapeutics of chaulmoogra oil is that of Walker and Sweeney [4] of the Hooper Foundation, proving conclusively what was foreshadowed by Dean, that the bactericidal agent, a hundred times more active than phenol (carbolic acid) in the effective destruction of the lepra bacillus is no other than that same unique five carbon ring molecule in the structure of the chaulmoogra acid series. Thus have those skilled investigators absolutely proved by laboratory methods in vitro what I have been empirically demonstrating in vivo at this station for the last two years with the Dean derivatives.

INJECTIONS

Preparatory to injections, we sterilize syringes, needles, etc., for from thirty minutes to one hour by 15 pounds of steam in the autoclave. The site chosen is the upper and outer quadrant of the gluteal region, and a spot for the puncture is painted with tincture of iodin. We employ a 20 c.c. all-glass Paris syringe and ordinary antitoxin needles, one for each patient, inserted its full length to reach the musculature. While there have been reported from other sources rather frequent abscess formation as derogatory to intramuscular injection, I am happy to state that in 6,924 deep injections administered by me from Oct. 1, 1918, to the present time, I have had but one case of resulting abscess.

LEPROSY FEVER AND ERUPTIONS

A problem which confronts every worker in leprosy is that in connection with a group of symptoms known as leprosy fever. It is recognized and described by the authorities in all hospitals in endemic centers, but it is not very common. Since Oct. 1, 1918, in a total of 235 patients under our care, we have had but twenty-one cases, or less than 9 per cent., of greater or less severity. It would seem that it occurs only in those under treatment. Our house superintendent, Mrs. Clinton, who speaks Hawaiian fluently, has made many inquiries of the more observant and intelligent of our patients, and has been unable to find a single instance of its appearance before their entrance to the hospital. Although it has in its peculiar manifestations every symptom of a sudden and malignant exacerbation of leprosy, it gives us no discouragement whatever, as we have learned by experience that the patient not only sooner or later recovers from his acute illness, but shows a remarkably improved condition and a far more active progress toward recovery than before.

The attack is ushered in usually by chilliness, headache, loss of appetite, etc., while the temperature rises a degree or two and sometimes reaches 40 C., with daily remissions which occur rather irregularly. As a rule, the patient is decidedly ill and is entirely willing to remain in bed; there are others again who are on hand in the dining room for every meal and are not very sick. But the most striking feature of the attack is that within from twenty-four hours to two or three days there appear, usually on the face, forearms and hands, but sometimes elsewhere, a number of well-defined, circumscribed eruptions, usually irregularly circular, dull red, and raised from the level of the surrounding skin, thickest in the center, and hot and evidently more or less tender to the touch. They differ in size from that of a dime or less up to that of the palm of the hand or larger. As a rule, the eruptions begin slowly to recede soon after their maximum intensity has been reached, the patient gradually regaining his former status within two or three weeks. We have, however, attacks in all degrees of duration, of severity and of eruption. As to the character of the lesions, in spite of their close resemblance to the original leprosy nodes, I am of the opinion that they are not real nodules. It has been our experience that it is exceptional rather than the rule to find them containing the bacilli of leprosy, which we find in myriads in the slowly growing and slowly receding original nodules. Dyer [5] calls the outbreak papular leprosy, and says:

> In the various exacerbations of leprosy, particularly when the lesions begin to break down, when the toxins are liberated, or the masses of dead bacilli are sent into the circulation, there is frequently a rise of temperature, producing the "fever of leprosy," now regarded as an entity. With this process, a general eruption of lenticular papules appears. This is the only form of papular leprosy so far known, and it is questionable if it may properly be called papular leprosy, as the papule is really only an evanescent exanthem, disappearing with the defervescence of the attack. The papules are free of organisms and are purely exudative in type, inflammatory and hyperesthetic if the sensation is disturbed at all.

The etiology underlying the phenomenon of leprosy fever has been made the subject of considerable attention and study of late, and so far there is considerable unanimity of opinion that it is a sort of toxemia produced by the liberation into the lymph and blood streams of an excess of toxins produced by the bacilli which the body, temporarily at least, is not provided with sufficient antitoxin to meet and successfully combat; in other words, that the balance between toxin and antitoxin is for the time being seriously disturbed.

BEADED BACILLI

A subject of growing interest concerns the changes observed in the lepra bacilli during the course of our treatment. A bacteriologic slide made from a new patient discloses myriads of well-defined bacilli of even, homogeneous stain and of practically even length; in a word, there is scarcely any morphologic difference between the individual bacilli in a microscopic field. In striking contrast to the foregoing is the appearance presented by a specimen obtained from a patient who has for several months been under our intensive treatment with the Dean derivatives. Here we find the greater portion of the bacilli to have undergone a distinctive change which causes them to take the stain only in segments, the bacillus becoming simply a row of bright red dots. When a mass of them are crowded together as in the so-called lepra-cell, there is a characteristic granular appearance in which the rodlike aspects are entirely lost, and so we have become accustomed to record such findings as "b. and g."—beaded and granular.

This phenomenon has been observed in tuberculosis as well, having, it is said, been first described by Koch and named by him moniliform—like a string of beads. Later on, after additional months of treatment, they nearly cease to be acid fast and present in a microscopic field not a single normal bacillus, such findings

4. Walker, E. L., and Sweeney, Marion A.: The Chemotherapeutics of the Chaulmoogric Acid Series and Other Fatty Acids in Leprosy and Tuberculosis, J. Infect. Dis. **26**: 238 (March) 1920.

5. Dyer, Isadore: Leprosy, Reference Handbook of the Medical Sciences, New York, William Wood & Co. **5**: 881, 1915.

being regularly recorded by us as "b. d. o.," meaning bacillary detritus only. Row[6] of the Peel Island Lazaret, Australia, who obtained highly gratifying results with guaiacol, referring to beaded bacilli in an article published in 1909 says:

> How they are destroyed, I am not yet in a position to state definitely, but I am of opinion at present that such destruction is brought about by the removal of their fatty envelop by chemical action. Specimens taken from lepromata that are being absorbed under this treatment reveal the fact that the bacilli contained therein gradually lose their power of retaining the fuchsin stain, when treated with dilute mineral acids, and by examining fresh specimens at regular intervals it can be seen that the number of unevenly stained bacilli increase in proportion to the normally stained ones as absorption progresses, until at last the bacilli disappear altogether.

Sir Leonard Rogers[7] also at the recent Calcutta Leprosy Conference referred to the "active destruction of the innumerable bacilli in the lesions . . . until only a few granules of broken down bacilli remained which ultimately disappeared in favorable cases."

Professor Froilano de Mello of Nova Goa, Portuguese India,[8] has also had about a dozen cases under treatment with marked ameliorations and two cures. The interesting part of his paper, in this connection, is that in a series of five cases he counted the bacilli in a hundred microscopic fields to ascertain the relative numbers of the whole or homogeneous bacilli and those of the beaded and broken ones, half of the tests being made before the patients began treatment at all, the other half at the end of six months of treatment. This meritorious work, which he justly calls hard and wearisome (le dur et ennuyeux travail) he accredits to his assistant, M. Loreto de Sousa; this is undoubtedly the first record of its having been done in leprosy. As to the results of the counting, his figures all show a marked diminution in the number of the "homogenes" and in the disappearance of his "moniliformes," in one case the former being reduced in the six months from 2,236 to 675, the latter from 1,113 to 301.

In all of the earlier cases coming to Kalihi Hospital, it is the rule not to find any instances of the beaded and granular. When we do find them now and then, our interpretation of it is that Nature has begun the effort, feeble though it may be, to establish a defense. It is my opinion that the authors who refer to these forms as "dead bacilli" are correct. Certain it is that along with and in proportion to the amelioration of the clinical symptoms of our patients under our bactericidal treatment, the foregoing changes in the bacilli regularly take place and they finally disappear altogether. It is as yet impossible to say at just what point in this process of beading and granulation the bacteria are no longer viable. But we believe that further investigation will show that at some point after the bacillus loses its rodlike character it is dead, and the further slow processes of disintegration are features of the removal of the nonliving detritus.

NEURAL CASES

It is a well-known but inexplicable fact that the bacillus of leprosy, on gaining admission to the human body, shows a decided predilection for two distinct sites, namely, the skin and the nervous system, the former type by long usage designated "tubercular" or "nodular," the latter, "anesthetic," "nerve" or "neural" leprosy, while a combination of the two types has been termed "mixed." A still further interesting fact is that in the neural type, in the great majority of cases, it is the nerve trunks which send branches to the muscles of the forearm which are most involved. Of these, the ulnar is chiefly affected, the musculospiral and median being less often attacked. The result of this is that the forearm muscles, including the flexors and extensors of the fingers, with their nerve supply impaired, begin gradually to atrophy and slowly to cease to function until the patient partially or completely loses the use of one or both hands by permanent retraction and contraction of the fingers, often accompanied by extensive bone absorption of the phalanges, thus finally acquiring the *main en griffe*, or so-called "leper claw."

Next in order of frequency of attack comes the trifacial, resulting in partial paralysis of the orbicularis palpebrarum or orbicularis oris, or both, as well as several of the other muscles of facial expression. The peroneal and its branches are also frequently invaded, producing in the feet and toes deformities corresponding somewhat to those of the hands and fingers, but perhaps in less degree. Included here also are the plantar pedis, or trophic ulcers of the soles of the feet, so frequently encountered. The sweeping statement that the nasal mucous membrane in a great majority of cases is the site of the initial lesion of leprosy has not been confirmed by other observers. Brinckerhoff, at this station in 1909, conducted a thorough and exhaustive study of the subject and concluded that "the examination of the nasal septum and the nasal secretions is not of dominant value in confirming a diagnosis of leprosy in the early states of the disease."[9]

It will thus be seen that in these purely neural cases it is frequently impracticable to demonstrate the bacilli, as they are deeply seated in the nerve trunks where they have been repeatedly found in abundance at necropsy. On this account, it has often been maintained that it is unnecessary to segregate this type of patients on the assumption that they are not a menace to the public health, the probability of their imparting the disease to others being reduced to the lowest minimum. But this is only an assumption unsubstantiated by proof. We know from the clinical symptoms that these patients have leprosy, but we do not know yet how the bacillus is transferred from the diseased to the healthy individual, nor do we know how soon the purely anesthetic may change to a mixed type. We have recently had a striking illustration of this:

> About a year ago the leprosy officer brought in a boy, aged 13, with both hands nearly ruined, all fingers being shortened to less than half the normal length and greatly deformed. Not another stigma was to be found on the entire body, and the bacillus could not be demonstrated. The majority of the examining board decided against detaining him as not being a menace to the public health. A few weeks ago, after an interval of more than eleven months, the parents returned him to us begging that he be taken in, waiving their legal rights to another examining board. The change in the boy was startling. The case in the interim had taken on the nodular type, involving nearly the entire face with myriads of bacilli easily demostrable, and general skin lesions scattered over the whole body.

A HOSPITAL TREATMENT

Leprosy is such a slow, chronic disease, so insidious and sluggish in its attack and, heretofore at least, so

6. Row, L. E.: Notes on Leprosy, Brisbane, Outridge Printing Company, Ltd., 1909, p. 18.
7. Rogers, Leonard: The Treatment of Leprosy, Indian M. Gaz. 55: 125 (April) 1920.
8. Froilano de Mello: Notre méthode du traitement de la lèpre, read before the Medico-Pharmaceutical Association of Portuguese India, July 15, 1919.
9. Brinckerhoff, W. R.: Studies upon Leprosy.

stubbornly rebellious to therapy, that it taxes all the powers of patience and courage both of its victim and his medical attendant. Advantage has to be taken of every helpful measure for the maintenance of a steady, persistent and unflagging course of treatment which knows no faltering and no discouragement. As Dyer has aptly said, "Above all things individualize the patient; watch for improvement. If it does not show in three months, wait six months; wait a year, or longer. Keep on driving at the treatment until the patient dies or gets well." [5] And the only place for carrying out this eminently wise and sound advice is a leprosy hospital, and best of all one like ours, maintained by the state, backed by a wholesome segregation law which precludes quitting and going home on the whim of the patient, as now obtains in asylums in the Orient.

We receive letters from all over the world from individual patients asking for some of our remedies to "try," but our reply is that they are still in the experimental stage and not yet commercially available; that they constitute essentially a hospital treatment exclusively, where the patient is under constant observation and control; that they do not properly lend themselves to the practice even of the family physician; and that for self-administration, they are absolutely impossible.

There is a wonderful power in association. A group of fellow leprosy hospital patients forget all about the prejudice and horror with which the outside world regarded them. Here, one is as good as another and no one is sensitive about his or her appearance, and they lead a far more happy and contented life than they possibly could outside. They watch each other, compare notes, see the old-timers getting paroled out; they see some improving more rapidly even if their own case is rather slow, so they go patiently on, whereas an isolated patient would get discouraged, give the treatment a black eye, and abandon it. An attack of leprosy fever, which often confines them to bed for several days, our patients endure with the greatest fortitude, because they have learned from observing fellow patients that when they get over that flare-up they will be better than before. A private patient would say that his physician was poisoning him and would quit. Then, too, the material itself can be made only by experts in a well-equipped laboratory. Both Dr. Dean and Prof. Richard Wrenshall, head of the chemistry teaching staff, both of them Ph.D.'s of Yale in physiologic chemistry, have given months of intense study and enthusiastic experiment to it and have even procured special and costly apparatus for its manufacture. And yet I have had parties write to me for the prescription to have it made at the corner drug store.

It should therefore be distinctly understood and appreciated that our system of treatment here is one that cannot in its present stage of development be doled out indiscriminately at any price to isolated and private patients.

RESULTS

Since Oct. 1, 1918, there have passed the scrutiny of examining boards appointed by the Territorial Board of Health and been paroled as no longer a menace to the public health seventy-eight patients, not one of whom has thus far shown the first sign of recurrence. The dates of their release and numbers in each group have been: Dec. 24, 1918, four; Feb. 13, 1919, thirteen; August 12, three; November 12, twenty-eight; July 6, 1920, thirty. There were thirty-six males and forty-two females. Their average age on admission was 23½ years; there were forty-nine of the nodular type, twenty-four of the anesthetic or neural, and five of the mixed; fifty-five were bacteriologically positive on admission, and twenty-three negative; their average stay in the hospital under treatment was fifteen months.

COMMENT

It should be stated that there is a widespread notion that the leprosy law of Hawaii, of which Brinckerhoff himself was one of the framers, reads that the Hansen bacillus must be demonstrated to establish a diagnosis; this, however, is an error; the law simply leaves the diagnosis to the judgment and opinion of a medical examining board. In 1903, I said: "The microscope is the supreme agent of the final diagnosis of leprosy. No patient should be committed to a segregated colony without a bacteriologic demonstration of the disease.[10] With a more mature experience, I have been obliged to modify this view. Leprosy was an established clinical entity ages before its causative bacterium was discovered. As I have shown above, in many unmistakable nerve cases its detection is altogether impracticable. Experts in tuberculosis often make absolutely definite diagnoses long before a single bacillus can be found in the sputum. In doubtful cases of both diseases, however, the finding of bacilli is of course of the greatest diagnostic value.

Again, a greatly overworked symptom is the "bacteriologically negative" finding of authors reporting leprosy cures, as though a selected snip were a sample of the patient's skin, just as a sample of a few cubic centimeters in a test tube determines the presence or absence of an albuminuria. A hundred skin tests might be made from old lesions without finding a single bacillus, because not one of the tests happened to be applied to a point at which any of those few remaining bacilli lay. Of infinitely greater value is, for instance, the finding on the site of a preexisting nodule of a group of bacillary detritus which can be studied and which can give positive and definite information of the patient's status, whether there are any whole bacilli remaining or whether they are all broken and disorganized and scarcely able longer to retain the carbolfuchsin stain and, in a word, are destroyed and dead. Here, one has something definite on which to base a decisive opinion; finding nothing leaves one still in doubt and in the dark. A 14-year-old girl under our treatment for many months was one of our recent prospective parolers, the nodules on her face, the part originally chiefly affected, having entirely disappeared, leaving not even a stain. One, especially prominent on entrance, was on the right ala nasi, and from here a test slide was made. To our great surprise there were found here and there, among the débris of former bacilli, entirely healthy appearing ones of even stain and normal contour. Her name had to be taken from the list in spite of a disappointed mother in tears outside the gate. The child will remain some months longer, but will undoubtedly gain her parole in due time. Three others, adults, were stricken from our list for similar reasons. No one is ever recommended to the board for parole until we are convinced from a careful study of all physical signs and symptoms that the disease is absolutely arrested.

10. McDonald, J. T.: A Diagnostic Examination of One Hundred and Fifty Cases of Leprosy, J. A. M. A. **40**: 1569 (June 6) 1903

A POSITIVE WASSERMANN TEST IN NONSYPHILITIC PATIENTS AFTER INTRAVENOUS THERAPY

PRELIMINARY REPORT ON A STUDY OF ITS SIGNIFICANCE *

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Of the many epoch-making discoveries in medicine, few outrank the Wassermann reaction in their significance and in their usefulness. Not only is this reaction considered of essential importance in the diagnosis of syphilis, but it is regarded of great value, as an index of the effects of treatment and as a standard of cure. Not only is it of great service in the detection of the cause of obscure constitutional maladies, but it is relied on as a means of tabulating to what extent syphilis exists in any community.

The Wassermann reaction was first presented by Wassermann and his associates in 1906. It was first believed that this reaction was a specific one; but in 1907 several investigators demonstrated that the complement fixation in syphilis could occur with the extracts of normal tissues and even with certain chemical reagents. From that time to this, various investigators have made efforts toward the perfection of the Wassermann reaction. The introduction of the cholesterinized antigen by Browning and Cruickshank, soon confirmed by Walker and Swift in this country, the introduction of the acetone insoluble lipoid antigen by Noguchi, and a whole mass of data have made this reaction one of the most useful in medicine.

Although the Wassermann reaction was first described fourteen years ago, its interpretation still gives great difficulty. There is as yet no standard technic, no common modus operandi which all workers have adopted, and as a result the interpretation of this reaction is dependent on the individual laboratory worker. There are laboratory workers and clinicians who feel that this reaction is not delicate enough; they are in the vast majority; there are a few, however, who are of the opinion that this test is becoming too sensitive and too delicate.

In this work it was our good fortune to have the vast majority of the Wassermann reactions performed by Dr. John Kolmer, who made the tests without any idea or knowledge of what was being done. A few of these reactions were performed at the Jefferson Hospital laboratories by Dr. E. D. Funk, who also conducted these tests under similar conditions. It was our original intention to have these two workers perform the reactions at the same time and on the same specimens, but that was found impossible and had to be abandoned.

TECHNIC EMPLOYED

Because of the fact that the Wassermann reactions reported in this paper were performed in two different laboratories, we will in brief discuss the technic which each laboratory employed and indicate the interpretation of each investigator.

In the technic employed by Kolmer, the antigens used were cholesterinized alcoholic beef heart, plain alcoholic beef heart and acetone insoluble lipoids of Noguchi. The serums were inactivated and employed in the dose of 0.2 c.c. with each antigen. The antisheep system was used, and the primary incubation was carried out for one hour at 38 C. in a water bath.

In recording the results of the Wassermann reaction, Kolmer followed the scheme proposed by Citron:

++++ = Complete inhibition of hemolysis = strongly positive
+++ = 75 per cent. inhibition of hemolysis = moderately positive
++ = 50 per cent. inhibition of hemolysis = weakly positive
+ = 25 per cent. inhibition of hemolysis = very weakly positive
± = less than 25 per cent. inhibition of hemolysis = doubtful reaction
− = complete hemolysis = negative reaction

With the technic which Kolmer employed, he thus interpreted the results of the Wassermann reaction:

A complete inhibition of hemolysis, 75 per cent. inhibition of hemolysis, and 50 per cent. inhibition of hemolysis invariably mean syphilis. Twenty-five per cent. inhibition of hemolysis occurring with all three antigens probably means syphilis, but when this 25 per cent. inhibition occurs with the cholesterinized antigen alone, it is only suggestive but by no means conclusive of syphilis. Less than 25 per cent. inhibition of hemolysis means a very doubtful positive reaction, and its interpretation must depend on the treatment the patient received, his history and the clinical findings.

There were slight differences in the technic of the Wassermann reaction as employed by E. D. Funk at the Jefferson Hospital laboratories. The antigens were the alcoholic extract of syphilitic liver, acetone insoluble lipoids of Noguchi and the cholesterinized beef heart. Preliminary readings were made after the second period of incubation in the water bath, and final readings after the tubes had been in the ice chest over night. In recording the readings of the Wassermann reaction, E. D. Funk lays the greatest stress on the results obtained with the alcoholic extract of syphilitic liver antigen; and the results of the other antigens were more in the rôle of confirmatory evidence.

In his interpretation of the Wasserman reaction, E. D. Funk in nowise differed from the statements expressed by Kolmer.

THE PROBLEM

The problem which we present in this contribution is a study of the effect of intravenous injection of arsphenamin on the Wassermann reaction of individuals suffering from nonsyphilitic dermatologic affections. The problem suggested itself to one of us (Strickler) because of the comparatively large number of so-called Wassermann-fast patients that one finds in any large syphilitic clinic. In the syphilitic clinic at the Philiadelphia Polyclinic Hospital, and latterly with a similar clinic at the Jefferson Hospital, it was a fairly common observation to see a certain number of the patients clinically well, yet serologically presenting strong and moderately positive reactions, and all this in spite of an energetic arsphenamin treatment. The thought suggested itself whether, after all, some of these positive reactions might not be caused by the drug (arsphenamin) employed in the treatment.

* From the Department of Dermatology and Syphilology, Jefferson Medical College, and from the Dermatological Research Laboratories.

It was primarily to investigate this problem that we selected from the Jefferson Hospital Skin Clinic thirty patients, all males, of varying ages and suffering from varied and various skin affections. All these patients fulfilled these requisites: (1) The first Wassermann reactions were absolutely negative in every instance; (2) they presented a negative syphilitic history, and (3) their skin affections were definitely nonsyphilitic. The ages of these patients varied from 15 to 63 years. Included in this list were patients with eczema, psoriasis, acne vulgaris and rosacea, vitiligo, purpura, sycosis vulgaris and some of the rarer skin affections.

Our method of procedure was to give weekly injections of arsphenamin in doses of 0.5 gm. intravenously. Preceding each treatment, sufficient blood was withdrawn for a Wassermann reaction. Sterilized tubes were employed to receive the blood, and these tubes were immediately put on ice. The needles and syringes employed were washed with sterile water and sterilized by boiling after each treatment, so that there was no possibility of contamination or transfer of blood from one patient's tube to some other tube. The tubes were all numbered and the key to the names kept by one of us, so that neither of those who conducted the Wassermann tests had any knowledge whatsoever of whose blood it was that they were testing. It is felt that this research was conducted in the most ideal manner, owing to the fact that those who conducted these reactions were in absolute ignorance of what treatment was administered and whether these patients had syphilis or some skin affection.

In this problem we employed the brand of arsphenamin manufactured by the Dermatological Research Laboratories and also the salvarsan brand manufactured by the Metz Laboratories. By far the greater number of patients received the arsphenamin of the Dermatological Research Laboratories.

In all, twenty-four patients were treated with the Dermatological Research arsphenamin. Of this number sixteen, or 66 per cent., gave at least one positive reaction; fourteen, or 58 per cent., gave two or more positive reactions. The greatest number of positive reactions in one case was nine; in another case we obtained six positive reactions. If we consider 50 per cent. inhibition of hemolysis as indicative of syphilis, for this is the conception of the serologists, we can state that out of our total number the serums of nine patients, or 38 per cent., gave a + 2 or a greater degree of positive reaction; five, or 21 per cent., gave a +1 positive reaction; two, or 8 per cent., gave a very doubtful positive result; and eight, or 33 per cent., gave consistent negative Wassermann reactions.

It is rather interesting to note that the serums of a few of our patients continued to give positive results after the cessation of intravenous arsphenamin treatment.

The records of some of our patients present data of such great interest that we feel them worthy of comment:

ILLUSTRATIVE CASES

CASE 1.—T. H., a man, aged 52, with eczema of the legs of four months' duration, had a negative Wassermann reaction at the first test, and he received the first injection of arsphenamin, Dec. 20, 1919. He received weekly injections, and on Feb. 7, 1920, after seven injections of arsphenamin, his Wassermann reaction was reported + 1 (J.). The next week, February 14, his Wassermann reaction was negative; February 21, it was again + 1, + 1, + 1 (K.), + 1 (J.); March 2, it was + 3, + 3, + 3 (K.); March 9, + 2, —, — (K.); March 16, + 1, —, — (K.). March 24, one week after cessation of treatment, his Wassermann report was + 3, —, — (K.); April 6, three weeks after cessation of treatment, it was +3, + 3, + 1 (K.); and April 13, one month after cessation of treatment, it was + 1, + 1, + 1 (K.). His reactions continued to be negative for four successive weeks in the absence of intravenous treatment when, May 18, his Wassermann report was + 2, —, + 1. From that time until June 28, his Wassermann reactions have been negative. At no time was his eczema benefited by the intravenous treatment. In all, this patient received twelve injections of arsphenamin.

CASE 2.—S. P., a man, aged 27, who was married and the father of one child, had eczema of the legs and genitalia. He worked around gas engines. There was no venereal history. The first Wassermann reaction was negative. Treatment began, Feb. 14, 1920. The first positive Wassermann reaction was March 2, + 3, + 3, + 3 (K.); March 9, + 2 (J.); March 17, + 1, — — (K.); March 24, + 2, —, — (K.). Then followed four negatives in succession. April 9, one week after the last dose of arsphenamin, it was + 2, —, — (K.); April 13, + 1, + 1, — (K.). He then gave three more negative Wassermann reactions and disappeared from observation. After his fourth injection of arsphenamin this patient would develop urticarial lesions of the face and body immediately after receiving the treatment, and his eczema would become greatly aggravated so that we found it necessary to discontinue his treatments after he had received in all seven injections of arsphenamin.

CASE 10.—W. B., a man, aged 23, with acne rosacea of one year's duration, had a negative Wassermann reaction at the first test. The patient began treatment, Dec. 9, 1919. He received between that date and Jan. 17, 1920, four injections of arsphenamin. January 24, we began giving this patient neo-arsphenamin. The dose varied between 0.5 and 0.9 gm., at weekly intervals. February 7, his Wassermann report was + 2 (J.). He then gave two successive negatives when, March 2, he again gave + 2, + 2, + 2 (K.); March 9, his Wassermann report was + 2 (J.). He then gave ten straight negatives, during all this time receiving no treatment whatsoever and with no benefit to his acne rosacea.

In all, we treated six patients with the Metz salvarsan brand of arsphenamin. Owing to the severity of the reaction and hesitancy on the part of the patients to continue it, the injections with the Metz salvarsan were not carried out consistently. Between April 24 and May 15, 1920, no treatments were administered and no patient in this series received more than a total of nine treatments, and no more than seven consecutive treatments.

Out of this series, one patient gave a 100 per cent. fixation + 4, + 4, + 4 (K.); and another gave three doubtful Wassermann reactions, the first reaction occurring after the first injection.

CASE 1 (in this series).—H. K., a man, aged 21, with erythematosquamous eczema of the face of three years' duration, recurrent, had a negative Wassermann reaction at the first test. April 10, 1920, the patient received the first injection of salvarsan (Metz): one week later, April 17, he received his second injection; treatment was then discontinued until May 15, when his Wassermann reaction showed + 4, + 4, + 4 (K.). From that time until June 29, his Wassermann reactions have continued negative. He received in all nine injections of salvarsan. Clinically, his eczema showed no improvement.

THE PROVOCATIVE WASSERMANN REACTION

It appears timely to discuss the question of the provocative Wassermann reaction. This was first announced by Gennerich in 1910 as a procedure valuable in the diagnosis of obscure syphilitic infection and as a method of determining whether a patient is really cured of his infection. There are two views in reference to the provocative Wassermann. One group, led

by Pollitzer, King and others, feels that this reaction is likely to give misleading results and condemn it. Other observers, as Stokes and Nichols, are of the opinion that this reaction has a distinct and useful field of application.

As all our patients gave negative syphilitic histories, and since physical examination failed to disclose any scars or stigmas of syphilis; since these patients suffered from skin affections in the eitology of which syphilis plays no rôle; since the treatment did not favorably influence these lesions; in fact, the distinct tendency being toward an aggravation of their dermatologic affection; since their first Wassermann reactions were absolutely negative, and, what is most conclusive, the fact that the vast majority of the Wassermann reactions turned from a clear-cut negative to positive at an interval far beyond the time set for the appearance of the provocative Wassermann; and, what is also to be considered, that our patients were receiving weekly injections of arsphenamin—all these facts seem to us to prove conclusively that the Wassermann reactions we obtained cannot and should not be classified in the category of provocative reactions.

If we may theorize on the possible cause of the positive Wassermann reactions produced in our experiments, one is inclined to incriminate the arsphenamin as the causative agent. It was our impression in this research that of those patients who consistently were made ill after the treatments, their serums were most likely to show positive results. Of course, this observation was by no means the universal rule. In this connection the observations of Strathy and his associates on delayed arsenic poisoning following the use of arsphenamin is worthy of consideration. They report fifty-eight cases of delayed arsenic poisoning, eight of which were fatal. The symptoms in each case were similar. In all of the fatal cases and in thirty-nine of the nonfatal ones jaundice was a prominent symptom. The urinary findings were: albuminuria in twenty-eight cases; bile salts in thirty-five; increased urobilin and urobilinogen in sixteen.

In view of these findings, it is suggested that the arsenic in the arsphenamin in some way acts on the liver alone or on the spleen and bone marrow also; that one or all of these organs may as the result of the arsphenamin administered elaborate a lipoidal sub-

TABLE 1.—RESULTS WITH PATIENTS RECEIVING ARSPHENAMIN OF DERMATOLOGICAL RESEARCH LABORATORIES

Case Number*	Age	Diagnosis	Duration of Disease	Previous Venereal History	Result of First Wassermann Test	Number of Treatments to Produce 1st Positive Wassermann Reaction	Intensity of 1st Positive Wassermann Reaction†	Total Number of Treatments	Total Number of Positive Reactions and Their Degree of Intensity†
1. T. H.	52	Eczema	4 months	Negative	Negative	7	+1 (J.)	12	1. +1 (J.) 2. +1, +1, +1 (K.) 3. +3, +3, +3 (K.) 4. +2, —, — (K.) 5. +1, —, — (K.) 6. +3, —, — (K.) 7. +3, +3, +1 (K.) 8. +1, +1, +1 (K.) 9. +2, —, +1 (K.)
2. S. P.	27	Eczema	3 years	Negative	Negative	2	+3, +3, +3 (K.)	7	1. +3, +3, +3 (K.) 2. +2 (J.) 3. +1, —, — (K.) 4. +2, —, — (K.) 5. +2, —, — (K.) 6. +1, +1, — (K.)
3. R. B.	33	Eczema	.....	Gonorrhea, 1902	Negative	4	+1, —, — (K.)	9	1. +1, —, — (K.) 2. +2, +2, +2 (K.) 3. ±, —, — (K.)
4. H. H.	17	Acne vulgaris	3 years	Negative	Negative	1	+3, +3, +3 (K.)	11	1. +3, +3, +3 (K.) 2. +2 (J.) 3. +2, —, — (K.) 4. +3, —, — (K.) 5. +3, +3, +3 (K.)
5. W. R. T.	22	Acne vulgaris	6 months	Negative	Negative	2	+1, +1, +1 (K.)	12	1. +1, +1, +1 (K.) 2. +3, +3, +3 (K.)
6. J. V.	28	Purpura simplex	6 months	Negative	Negative	4	+2, +1, +1 (K.)	13	1. +2, +1, +1 (K.) 2. +1, +1, +1 (K.)
7. F. F.	21	Acne vulgaris	2 years	Negative	Negative	2	+2, +1, +1 (K.)	13	1. +2, +1, +1 (K.) 2. +1, +1, — (K.)
8. F. U.	19	Tinea cruris	3 days	Negative	Negative	1	+1, —, — (K.)	5	1. +1, — (K.) 2. +1, —, — (K.) 3. +2, +1, +1 (K.)
9. M. A.	30	Furunculosis	8 months	Negative	Negative	1	+2 (J.)	4	1. +2 (J.) 2. +1, —, — (K.)
10. W. B.	23	Acne rosacea	1 year	Negative	Negative	6	+2 (J.)	12	1. +2 (J.) 2. +2, +2, +2 (K.) 3. +2 (J.)
11. P. C. B.	24	Scabies and dermatitis	5 months	Gonorrhea, 1912	Negative	2	+1, +1, +1 (K.)	4	1. +1, +1, +1 (K.) 2. +2 (J.)
12. T. L.	33	Epithelioma	1 year	Negative	Negative	3	+2 (J.)	12	1. +2 (J.)
13. M. S.	33	Eczema	2 months	Negative	Negative	3	+1 (J.)	10	1. +1 (J.) 2. +1, —, — (K.)
14. T. S.	21	Acne vulgaris	2 years	Negative	Negative	1	+1, —, — (K.)	10	1. +1, —, — (K.) 2. +1, —, — (K.) 3. ±, —, — (K.)
15. H. McC.	41	Sycosis vulgaris	9 months	Negative	Negative	3	+1, +1, +1 (K.)	9	1. +1, +1, +1 (K.) 2. ±, ±, — (K.)
16. C. C.	51	Erythema perstans	18 years	Negative	Negative	3	+1, +1, ± (K.)	9	1. +1, +1, ± (K.)
17. T. S.	35	Eczema	6 years	Negative	Negative	Negative	.....	10	—
18. F. J. S.	15	Psoriasis	Unknown	Negative	Negative	None	.....	9	—
19. J. R.	17	Acne vulgaris	3 years	Negative	Negative	None	.....	10	—
20. M. S.	16	Acne vulgaris	18 months	Negative	Negative	None	.....	6	—
21. A. F.	30	Seborrheic dermatitis	3 months	Negative	Negative	None	.....	8	—
22. M. W.	63	Sycosis vulgaris	2 years	Negative	Negative	None	.....	10	—
23. W. J. T.	25	Rosacea et dermatitis	2 years	Negative	Negative	None	.....	8	—
24. C. M.	38	Vitiligo	7 years	Negative	Negative	None	.....	7	—

* All were male patients, and in all the clinical condition was unimproved.
† The tests made by Dr. Kolmer are indicated by K., and those by Dr. Funk at Jefferson College by J.

stance which, when it occurs in sufficient quantity in the blood stream, is capable of yielding a positive complement fixation test for syphilis. What the nature of this substance is and whether or not it is analogous to the lipoidal substance elaborated by *Spirochaeta pallida* we are in no position to answer. At present we are conducting chemical research in the department of chemistry, Jefferson Medical College, by means of which we hope to throw some light on the nature of the chemical change produced in the blood following the intravenous administration of arsphenamin, which is capable of yielding a positive Wassermann reaction.

COMMENT

As a result of these findings, the following suggestions relative to the diagnosis, prognosis and treatment of syphilis are advanced:

Diagnosis.—A positive complement fixation test for syphilis obtained with the serum of a patient treated with arsphenamin for some nonsyphilitic malady or some obscure disease should be interpreted with great caution and considerable reservation. In view of the fact that there are a number of affections, such as anemia, malaria, recurrent fever, pemphigus, psoriasis and septicemia, in which arsphenamin is recommended as a method of treatment, and because arsphenamin is employed at times in the treatment of obscure diseases and affections difficult to influence as a sort of last resort, it becomes the duty of the clinician and the serologist not to be over hasty or too dogmatic in pronouncing such an individual as definitely syphilitic. Only recently two such instances came under personal observation. One was a patient who presented a typical acne rosacea, and the other a patient who suffered from a Marjolin's ulcer of the left ankle. The latter patient received nine injections of arsphenamin and the former three injections before coming under our observation.

Treatment.—Because of our findings, it is our belief that at times too much arsphenamin is administered in the treatment of syphilis, and that this remedy may at times be responsible for the persistence of a positive Wassermann reaction.

The hope that has been aroused of a "therapia sterilisans magna," a rapid and radical cure of syphilis, has not been realized. The effect of arsphenamin on the initial lesions of syphilis, the mucous patches and the early and late eruptions of this malady are definite. Certainly arsphenamin silences syphilis, so that the danger of contagion is immeasurably diminished, and it is needless to dwell on the social importance of this result.

Notwithstanding the influence of arsphenamin, the logical treatment of syphilis consists in the judicious combination of arsphenamin and mercury. From the wild enthusiasm following the introduction of arsphenamin, the pendulum of experience is now reaching level, namely, the reduction of the total amount of arsphenamin administered and the thorough and early use of hydrargyrum, so that today the leading syphilographers are advocating three or four intravenous injections of arsphenamin given at short intervals (one or two days apart) instead of from eight to ten injections of this remedy at weekly intervals.

The general opinion is that today we are curing more syphilitic patients than we did when mercury alone was employed. No one can deny the great value of arsphenamin; but sight must not be lost of the fact that now we do not wait for the development of the secondary eruptions before beginning treatment. With our improved methods of diagnosis, we often begin our treatment for syphilis either during the stage of the initial lesion or during that of the secondary incubation.

The tendency of the leading syphilographers is to give arsphenamin at short intervals and fewer doses, and to push mercury with the same enthusiasm as we do arsphenamin. With this view we can concur as a result of our studies. It is our impression that with this mode of attacking syphilis we shall probably have fewer so-called Wassermann fast, in reality arsphenamin (arsenic) fast patients.

TABLE 2.—RESULTS WITH PATIENTS RECEIVING SALVARSAN OF METZ LABORATORIES

Case Number*	Age	Diagnosis	Duration of Disease	Previous Venereal History	Result of First Wassermann Test	Number of Treatments to Produce 1st Positive Wassermann Reaction	Intensity of 1st Positive Wassermann Reaction†	Total Number of Treatments	Total Number of Positive Reactions and Their Degree of Intensity†
1. H. K.	21	Eczema	3 years	Negative	Negative	2	+4, +4, +4	9	1. +4, +4, +4
2. F. J.	20	Furunculosis	3 months	Negative	Negative	1	±, —, —	7	1. ±, —, — 2. doubtful neg. 3. ±, —, —
3. D. B.	17	Acne vulgaris	10 months	Negative	Negative	...	.....	6	—
4. I. E.	22	Ulceration of tongue	2 years	Negative	Negative	...	.....	8	—
5. N. N.	33	Eczema	6 years	Gonorrhea, 10 years	Negative	...	.....	8	—
6. F. P.	24	Eczema	4 years	Negative	Negative	...	.....	8	—

* All were male patients, and in all the clinical condition was unimproved.
† The tests were made by Dr. Kolmer.

Curability and Prognosis.—The tendency among leading authorities on syphilis is toward intensive treatment; the general trend among leading serologists is to make the Wassermann reaction as sensitive as possible, by new innovations in technic and the use of more delicate antigens. These innovations in the treatment of syphilis and these refinements in the delicacy of the Wassermann reaction are tending toward a different conception of the Wassermann reaction as an index of the curability of syphilis.

What is agitating the leading syphilographers today is the question as to whether a syphilitic patient, clinically well, must continue to submit to treatment until he is serologically negative. At this juncture the studies of Udo Wile on the curability of syphilis, based on the Wassermann reaction as an index, are worthy of discussion. In his series of patients he proved conclusively that, given patients in the same syphilitic state, treated under similar conditions and with the same plan of procedure, the percentage of cures obtained varied with the technic of the Wassermann reaction which was employed.

We are convinced, with Udo Wile, that "in the presence of intensive therapy, a positive test does not necessarily mean living spirochetes and potential syphilis, any more than a positive tuberculin test in an individual who has had tuberculosis would indicate the presence of living tubercule bacilli."

In the light of our ignorance of the nature of this reaction, and particularly in the light which this study throws on the interpretation of at least some of our persistent Wassermann-positive reactions, we submit that serologic and clinical cures are not necessarily parallel. Energetic treatment that is directed toward the end of attempting to make a persistent positive reaction negative may be not only useless but also misdirected.

In this investigation, no subject received more than seven injections of arsphenamin in weekly succession. Those receiving more than seven injections were permitted to let two weeks intervene between treatments.

1408 Spruce Street.

Syphilis in Bronchitis with Emphysema.—In a recent critical study of chronic bronchitis, Dr. Dalsace draws attention to the frequency with which syphilitic infection rather than the commonplace tuberculosis may be held accountable for an apical pulmonary fibrosis. He argues that such a patch of fibrosis is very commonly to be found in patients with bronchitis and emphysema, and is inclined to connect the development of the two latter with the presence of the former. While admitting that the majority of these patients owe their apical fibrosis to infection with the tubercle bacillus, he argues that if the sputum is, as often happens, invariably free from tubercle bacilli, the diagnosis of "apical syphilis" should be made rather than that the sclerotic changes should be put down to a previous apical pneumonia or a healed tuberculosis lesion.—*Brit. M. J.*, Oct. 30, 1920.

NUTRITIONAL WORK IN PUBLIC SCHOOLS

A FURTHER REPORT OF WORK DONE UNDER THE SUPERVISION OF THE BOARD OF EDUCATION IN THE PUBLIC SCHOOLS OF CHICAGO

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CHICAGO

In July, a brief report [1] was made of the experiment in nutritional work in five of the Chicago public schools, made during the winter of 1919-1920. This work was done under the supervision of the Chicago Board of Education, to determine a practical method of teaching undernourished children of preindustrial age.

The accompanying tabulations of the work done and the results obtained are of value chiefly in indicating the possibilities of still more efficient work, and its practicability in public schools.

The development of the work was slow. This was largely due to the fact that it seemed more desirable to do careful, reliable work with a comparatively small number of children, than to reach larger numbers and have less dependable figures on which to base later studies.

The weighing and measuring was done at definite periods, and by the same nutritional worker for each

TABLE 1.—SUMMARY OF GAINS AND LOSSES IN FIVE CHICAGO PUBLIC SCHOOLS

	Number of Children in Class	Height Increase	Normal Height Increase	Per Cent. in Excess of Normal	Per Cent. Less Than Normal Increase	Net Gain in Weight	Normal Gain	Per Cent. in Excess of Normal	Per Cent. Less Than Normal Gain	Graduated: Number	Graduated: Per Cent.
Franklin School:											
1. Fresh air dept. class* (rest, supplementary food; period, 7 months)	26	37.7	31.0	21	..	176.9	137.3	29	..	13	50
2. Prevocational class (no rest, 12 oz. milk at 10:15 and 3; period, 3 mos.)	23	15.0	10.0	50	..	69.5	44.0	57	..	12	52
3. Prevocational class (no rest, no supplementary food; period, 5 weeks)	18	9.7	4.3	22	..	(0.7)	10.6	..	9	3	16
4. Overweight class (diet, 4 week period; height equal to age average)	19	5.7	3.1	84	..	13.0	Loss equals gain in this class				
5. Retarded in growth from 7 to 17% (height, weight, coefficient normal; period, 4 weeks)	14	3.7	2.6	42	..	(0.7)	7.2				
	Not totaled; different problems involved; groups not comparable										
Dante School:											
Prevocational Class 1* (12 oz. milk 10:15 and 3; period, 20 weeks)	10	6.0	8.8	..	31	69.2	28.9	139	..	5	50
Prevocational Class 2 (12 oz. milk 10:15 and 3; period, 12 weeks)	20	16.2	9.5	70	..	103.5	51.5	100			
Total	30	22.2	18.3	..	..	172.7	80.4	...	..	9	..
Average	..	....	....	21	..	.....	....	114	..	..	30
Haines School:											
Prevocational Class 1 (12 oz. milk 10:15 and 3; rest period)	18	11.1	7.7	44	..	33.7	37.0	..	9	4	22
Prevocational Class 2 (12 oz. milk 10:15 and 3; rest period)	21	8.9	10.8	..	17	28.0	39.7	..	29	6	28
Total	39	20 0	18.5	..	..	61.7	76.7	..	..	10	..
Average	..	....	....	8	..	.....	....	2	..	..	25
Wells School:											
Prevocational Class 1 (no rest; no supplementary food; period, 8 weeks)	18	8.2	5.2	57	..	34.8	21.5	62	†	†	†
Prevocational Class 2 (no rest; no supplementary food; period, 9 weeks)	17	6.7	4.2	59	..	28.5	26.2	9	†	†	†
Total	35	14 9	9.4	..	..	63.3	47.7	..			
Average	..	....	....	58	..	....	....	32			
Montefiore School:											
Prevocational Class 1 (no rest; no supplementary food; period, 16 weeks)	19	No comparative height record possible owing to change of scales				88.0	53.1	65	..	4	21
Prevocational Class 2 (no rest; no supplementary food; period, 3 mos.)	10	....	....	..	..	14.0	14.8	..	6	0	
Total	29	....	....	....	....	102.0	67.9	54	..	4	14

* Started in cooperation with Elizabeth McCormick Memorial Fund.
† Marked increase in height, the result of classwork; held to establish normal weight for additional height.

1. Rich, Katharine B.: Study of Nutrition and Mental Development in Childhood, J. A. M. A. **75**: 226 (July 24) 1920.

group. A variation in methods used by different individuals is always possible, and can easily result in vitiating the final statistics.

The personal element in the success of the work is very large. The nutritional worker who has an applicable knowledge of psychology will inevitably obtain the best results, other things being equal. The class of children, or their nationality, has seemed to make little difference. The school in the Italian quarter, however, had fewer children requiring our teaching, apparently because of the better balanced diet that was given them at home.

As will be seen from the tabulation, the class in the Open Air School, where rest periods, milk and a noon dinner were provided, gained less than those in the closed rooms. This raises the question as to whether or not the children who assume the responsibility for their own improvement will not do better than those for whom the effort is made by others. This assumption is strengthened by the fact that the classes in which the cooperation of the mothers was obtained only through the individual child showed results which were eminently satisfactory.

The development of the work indicates that the undernourished children may well be divided into three groups: (1) infants and young children up to the age of 6 years; (2) children from 6 to 13 years, and (3) boys and girls from 13 through the period of high school education.

The handling of the first two groups is an expensive undertaking, requiring the absolute cooperation of the parents, and consequently, many visits of a capable worker. Organizations outside the school system seem best able to cope with these groups.

The third group, on the contrary, is controlled almost exclusively through the proper presentation of the problem to the individual student, and through his own interested effort to become both physically and mentally fit. It is largely a question of psychology, and presents a great opportunity for character building.

The nutritional worker has little effort to expend in reaching the parents, as the children prefer to consider

TABLE 2.—PHYSICAL DEFECTS

	Defective Vision	Adenoids	Deflected Septum	Tonsils	Granular Pharyngitis	Carious Teeth	Hutchinson's Teeth	Defective Speech	Chronic Otitis Media	Enlarged Glands	Winged Scapula	Lateral Curvature	Tachycardia	Heart Valvular	Fatigue Posture	Flatfoot	Goiter	Roughened Breath Sounds	Specific	Grand Total	Number of Children in Class	Average Defectives per Child
Franklin School:																						
Fresh air dept. class	10	9	9	9	16	12	5	3	3	26	23	10	..	12	23	2	8	14	5	199	26	7.6
Prevocational class 1	5	19	2	18	..	13	3	4	1	23	19	10	..	11	19	..	4	5	3	159	23	6.9
Prevocational class 2	2	13	1	13	2	5	..	..	..	15	17	5	..	7	17	..	8	1	1	107	18	5.9
Overweight class	5	12	1	13	..	5	1	..	..	6	4	3	10	..	..	..	11	..	1	72	19	3.7
Retarded height class	3	7	..	7	..	10	..	2	2	2	7	4	..	5	7	..	..	2	2	60	14	4.2
Total	25	60	13	60	18	45	9	9	6	72	70	32	10	35	66	2	31	22	12	597	100	
Dante School:																						
Prevocational class 1	1	8	1	7	..	5	2	..	1	9	9	1	..	4	9	..	5	..	2	64	10	6.4
Prevocational class 2	5	12	1	12	1	6	2	..	..	13	11	2	..	5	11	..	1	7	2	91	20	4.5
Total	6	20	2	19	1	11	4	..	1	22	20	3	..	9	20	..	6	7	4	155	30	
Haines School:																						
Prevocational class 1	4	15	1	15	..	12	1	..	..	18	18	11	..	11	18	..	6	1	1	132	18	7.3
Prevocational class 2	7	15	1	15	2	14	..	..	..	16	17	7	..	3	17	..	4	2	..	120	21	5.7
Total	11	30	2	30	2	26	1	..	..	34	35	18	..	14	35	..	10	3	1	252	39	
Wells School:																						
Prevocational class 1	5	15	..	15	..	14	1	2	..	14	13	6	..	9	13	..	7	4	1	119	18	6.5
Prevocational class 2	6	9	..	9	..	7	..	..	..	13	13	7	..	6	14	..	6	2	..	92	17	5.4
Total	11	24	.	24	..	21	1	2	..	27	26	13	..	15	27	..	13	6	..	211	35	
Montefiore School:																						
Prevocational class 1	1	13	11	11	..	7	1	..	2	16	16	6	..	9	17	2	1	5	1	119	19	6.2
Prevocational class 2	..	5	..	4	..	5	1	..	..	7	10	4	..	4	10	..	3	2	1	56	10	5.6
Total	1	18	11	15	..	12	2	..	2	23	26	10	..	13	27	2	4	7	2	175	29	
Grand total	54	152	28	148	21	115	17	11	9	178	177	76	10	88	175	4	64	45	20	1,390	233	

TABLE 3.—SCHOOL EXAMINATIONS

	Physicals*	Snellen	Pediculosis	Hemoglobin	Urinalysis	Mental Tests	Wassermann Test	Excluded Symptoms‡	Miscellaneous	Grand Total	Weighing Weekly§	Weighed, 5, 6, 7, 8 Grades	Number Weighed
Franklin School	371	268	225	225	235	9	1	50	144	1,528	F.A.D. N.C.	Once Twice	194 380
Dante School	43	43	43	35	...	..	..	..	...	164	N.C.	Once	322
Haines School	37	37	37	38	...	..	..	..	...	149	N.C.	Once	322
Wells School	35	49	2	31	...	..	..	..	...	117	N.C.	Once	173
Montefiore School	27	29	29	21	...	..	..	..	...	106	N.C.	Once	197
Total	513	426	336	350	235	9	1	50	144	2,064			1,588

* Physicals: Entry does not include those made for work certificates. Nutrition work record only.
§ F. A. Dept., Franklin School: Transfers to closed window rooms; total enrolment weighed weekly. Eyes of kindergarten pupils not examined.
‡ Infectious and contagious diseases.

it their own business—their first real "job" in life—and get the cooperation at home when they feel the need of it. The problem in classes of this type, requiring fewer nutritional workers, as it does, is a much less expensive one, for each worker can take care of a larger number of groups.

While some of the classes for whom milk was provided made good gains, those who had no milk also gained will. As a school interest is further developed, it seems quite probable that fully as good results will be obtained without the necessity of providing milk during the school sessions.

No rest periods were provided for any of the classes during school hours. Rest periods, however, were

TABLE 4.—CLINIC AND DISPENSARY CASES

	Eye	Ear	Teeth	Skin	Wounds	Wounds Infected	Antitetanus Serum	Grand Total
Franklin School.....	108	28	155	6	47	28	1	373
Dante School.....	4	..	12	..	..	..	..	16
Haines School.....	3	..	7	..	..	..	..	10
Wells School.....	7	..	17	..	..	..	..	24
Total.....	122	28	191	6	47	28	1	423

taken at home, and early hours for retiring were observed, this being part of the responsibility that the class members assumed.

Many physical defects were corrected, the consent of the parents being obtained, in many cases, by the children themselves.

The reexamination recently made of two of last year's classes seems to justify the theory that boys and girls of the preindustrial age should be taught, primarily, by leading them to assume the responsibility of

TABLE 5.—MEDICAL RECORD: DEFECTS CORRECTED

	Tonsillectomy and Adenectomy	Adenectomy	Special Eye Examination	Glasses Fitted	Dental Care	Grand Total
Franklin School..	43	2	21	18	155	239
Dante School.....	8	..	4	4	12	28
Haines School....	..	..	3	2	7	12
Wells School.....	6	..	7	7	17	37
Montefiore School	5	..	..	..	...	5
Total.....	62	2	35	31	191	321

their own welfare. Not only have some of the members of these groups gained from 8 to 10 pounds during vacation, but also, on their own initiative, have had dental work done and tonsils removed. One boy assisted on a milk route in order that he might have 2 quarts of milk a day to drink.

31 North State Street.

Breast Nursing.—Nothing is more certain than that the employment of women in occupations away from home is conducive to infant mortality and to debility of their surviving offspring in later life. If we want to compensate for the losses we have sustained in the war, and to ensure that the next generation of men and women shall be strong and vigorous, we must see that there is a bounteous supply of mother's milk, and that the streams of that are not dried up at the source by conditions of labor that arrest and abolish the secretion of the mammary glands. The best ordered crèche is a wretched substitute for the maternal bosom.—Sir James Crichton-Browne, *Journal of State Medicine*, May, 1918.

A CASE OF RETROPERITONEAL CYST, PROBABLY ORIGINATING IN THE WOLFFIAN BODY

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Retroperitoneal cysts are of sufficient rarity to make the report of cases of some interest. They are to be distinguished from mesenteric and omental cysts, from echinococcus cysts, from dermoid cysts and from cysts of traumatic origin (encapsulated hematomas), any of which may be more or less retroperitoneal in location. Most cysts arising in the parovarium or epoophoron develop within the layers of the broad ligament, and are situated in the true pelvis. Should remnants of the wolffian body fail to descend to their usual site, however, a cyst developing from them may be situated higher, even up near the kidney.

PAROVARIAN CYSTS

The parovarium or epoophoron lies in the broad ligament between the ovary and the fallopian tube. It is formed by the remains of the wolffian body, and is composed of a longitudinal tube (Gärtner's duct) and transverse tubules which run from the hilum of the ovary to join the logitudinal tube. The hydatid of Morgagni, which is present in about 50 per cent. of females, is recognized as the lateral continuation of the longitudinal duct: it enters the broad ligament on its anterior surface between fallopian tube and ovary. Kobelt's tubules are the aberrant tubules of the wolffian body between the hydatid of Morgagni and those tubules which enter the hilum of the ovary. Any of these tubular structures may become the seat of cystic formation. Cysts arising from the hydatid of Morgagni and from Kobelt's tubules usually are small, are attached to the lateral border of the broad ligament by a more or less distinct pedicle, and seldom produce symptoms; they are to be distinguished from myxomatous and cystic degeneration of the fimbriae of the fallopian tube.

The typical parovarian cyst forms about 10 per cent. of all cases of ovarian cyst. It develops and spreads within the folds of the broad ligament (hence it is known as the "broad ligament cyst"), almost always unilocular, grows slowly, and seldom attains very great size. Its contents are clear, "like spring water," and the cyst wall is lined with a single layer of cylindrical epithelium. It is easily distinguished from an ovarian cyst because it is independent of the ovary, is covered by peritoneum, possesses a double layer of vessels on its surface (one belonging to the peritoneum and the other to the cyst wall), usually is easily nucleated (rarely forming adhesions), possesses no distinct pedicle, and almost invariably has the fallopian tube stretched out over its surface at some distance from the ovary.

REPORT OF CASE

History.—C. J., a woman, aged 26 years, who had one healthy child, living and well, was admitted to the Episcopal Hospital, July 31, 1919 (Dr. Ashhurst's Service). For the last three years she had had sharp pain in the right side of the abdomen, if she lifted a heavy weight, took a quick step up stairs or turned suddenly in bed. The pain was sharp, but not knifelike or excruciating, and was of only instantaneous duration. She had had no previous attacks of abdominal pain associated with vomiting, chills or fever, and no previous abdominal pain of any duration in her life. One week previous to entrance a mucopurulent vaginal discharge developed. (Her husband developed acute urethritis a few days later.)

July 31, 1919, at 10 a. m., while doing her housework as usual, the patient was taken with sudden severe abdominal pain, more severe on the right side. She went to bed, and

could not move, the pain was so severe. The pain was relieved by morphin given by the physician summoned. She vomited at the onset. She had no chill and did not feel feverish. She entered the hospital at 4 p. m., July 31.

Examination and Course.—There was pain and tenderness in the right abdomen, and spasm of the right rectus. A mass, the size of a lemon, was palpable in the region of the cecum. There was profuse mucopurulent vaginal discharge. Vaginal and rectal examinations were not made. An ice bag was applied locally with relief of pain.

August 1, no pain was present. There was slight local tenderness. Abdominal rigidity persisted. The mass was the same as on entrance. A vaginal examination was made, revealing retroversion and thickening of the tubes.

A diagnosis of chronic salpingitis and retroversion was made.

Operation and Result.—An operation was performed under ether. A mass was seen in the right iliac fossa, the size of a fetal head, rising above the umbilicus. Thinking an appendicular abscess was present, we made a transverse incision (15 cm.) at the level of the spine of the ilium. When the peritoneum was opened, a cystic mass appeared, feeling like a pregnant uterus but softer. The uterus was normal in size, retroverted and not adherent. There was salpingitis on both sides (subacute). The mass was retroperitoneal, extending from the brim of the true pelvis to below the kidney. The kidney felt normal. The mass had displaced the ascending colon and cecum to the right. The posterior parietal peritoneum slid over the cyst wall freely. The anterior parietal peritoneum was sutured to that which covered the cyst wall. The cyst was punctured, and fluid "like spring water" gushed out. The amount of fluid was more than 1 liter. The cyst wall was enucleated from the parietal peritoneum. There seemed to be no pedicle. The cyst wall was adherent at the point of eversion, and a ligature was applied here. A cigaret drain was inserted.

Smear and culture of the fluid disclosed no organisms or growth. Microscopic examination of the cyst revealed the cyst wall composed of fibrous tissue lined by a single layer of columnar epithelium.

August, 3, the drain was removed.

August 10, the incision was healed.

August 16, the patient was discharged from the hospital.

Six months later the patient stated that she had been free from abdominal pain since the operation, except for slight pelvic pain at the time of menses. A slight mucopurulent vaginal discharge persisted between periods.

ABSTRACT OF A SIMILAR CASE

LaPointe[1] recently reported a similar case in which there was a retroperitoneal cyst, the size of the head of a new-born baby, multilobulated but unilocular.

The wall was thin, almost transparent, like that of a parovarian cyst. In no point was there any solid tissue. He had removed this cyst from a woman, aged 34, who had undergone an abdominal hysterectomy ten years previously, for adnexal disease. The cyst was in the right flank, infringing on the iliac fossa by its lower pole and not quite reaching the false ribs by its upper pole. The mass was fluctuating, somewhat mobile, and dull to percussion. LaPointe thought at first that he had to do with a cyst developed at the expense of the right ovary, not removed at the former operation. But the true pelvis was perfectly free, and by pushing the tumor upward he found that it became prominent in the loin. He made a tentative diagnosis of hydronephrosis in a very low-placed movable kidney.

Accordingly he operated by the lumbo-iliac route, as if on the kidney; and up to an advanced stage of the operation he continued to regard the tumor as a hydronephrotic kidney. He had to traverse the fatty capsule of the kidney to expose the tumor and enucleate it. This was easily accomplished, except below and in front, where the cyst was adherent to the cecum and ascending colon, and to the neighboring peritoneum, which was opened and again closed. When enucleation was complete, the cyst fell out into his hands, for it had no pedicle. Then only did he perceive that it was not a case of hydronephrosis, but a retroperitoneal cyst; and he saw the normal kidney at the upper part of the cavity left by the removal of the cyst.

Although at this time no histologic examination of the tumor had been made, the diagnosis must rest between (1) a cyst of the mesonephron, or wolffian body, and (2) a cystic lymphangioma.

Later (p. 790) he reported that histologic examination of the cyst by Lecene showed it to be lined by cubical epithelium with slightly staining nuclei, and with protoplasm staining deeply with eosin. The appearance of the epithelium resembled closely that of the glomerules or canals of the wolffian body, as they are seen in the epoophoron or parovarium.

1. LaPointe: Bull. Soc. chir. Paris **45**: 728, 790, 1919.

INDOL TEST ON THE SPINAL FLUID FOR RAPID DIAGNOSIS OF INFLUENZAL MENINGITIS*

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Epidemics of influenza come periodically; but influenzal meningitis is endemic, and so far as is known has never acquired epidemic characteristics. It has been asserted by some[1] that, since the pandemic of influenza in 1918, there has been no increase in influenzal meningitis, as would be expected if *B. influenzae* were the etiologic agent. An increase in influenzal meningitis would not necessarily mean that *B. influenzae* is the cause of influenza, since various diseases follow in the wake of the later, as different kinds of pneumonia, and, in some of the army camps, epidemic meningitis.

Whatever may be the cause of influenza, gram-negative, nonmotile, hemoglobinophilic bacilli are found more frequently now than they were several years ago in normal throats and in the mouths of those with respiratory diseases. Whether this increase is actual or only apparent, owing to careful searching and better technic, cannot be decided now. The records of the Harriet Lane Home certainly indicate that in Baltimore, if not in other localities, there has been an increase in influenzal meningitis since the fall of 1918. During the six years preceding the pandemic, seven children with influenzal meningitis were seen in that clinic; since then—during two years—fifteen have been observed.

Jordan[2] was the first to demonstrate that certain strains of *B. influenzae* form indol. This work has been confirmed.[3] The last six strains of influenza bacilli isolated from the fifteen cases of influenzal meningitis mentioned above were found to be indol formers. This was a constant and striking feature, and early in the work it seemed possible that the test for indol might be used to make a rapid diagnosis of influenzal meningitis, as none of the other organisms usually causing meningitis, such as meningococci, pneumococci, streptococci or staphylococci, form indol. *B. coli,* which is an exceedingly rare cause of meningitis, is the only exception, and should not for obvious reasons be mistaken for *B. influenzae.* Later, six other meningitic strains of *B. influenzae* were obtained

* From the Department of Pathology and Bacteriology, Johns Hopkins University.

1. Jordan, E. O., in discussion on Irons, E. E.: Evidence For and Against the Use of Vaccines in the Treatment of Influenza With and Without Pneumonia, abstr., J. A. M. A. **74**: 623 (Feb. 28) 1920.

2. Jordan, E. O.: The Production of Indol by Certain Strains of the Pfeiffer Bacillus, J. A. M. A. **72**: 1542 (May 24) 1919.

3. Rivers, T. M.: Bull. Johns Hopkins Hosp. **31**: 50 (Feb.) 1920.

from New York laboratories, and five of these also were found to be indol formers.

Spinal fluids from four patients with influenzal meningitis have been examined a number of times. Ether extractions of the fluids were made and layered with Ehrlich's reagent (paradimethylamidobenzaldehyd, 4 parts; absolute alcohol, 380 parts; concentrated hydrochloric acid, 80 parts. An old rose color at the point of contact between the two fluids betrays the presence of indol). The test was negative when the fluids were first drawn; but, if the latter were incubated several hours, a faintly positive test was obtained. If the growth of the bacilli was aided by the addition of one drop of sterile blood to 10 c.c. of the spinal fluid before incubation, the reaction was accelerated and intensified, often strongly positive in three hours. If only a few bacilli and no blood were present, the test was weakly positive in twelve hours. Spinal fluids from other kinds of meningitis were tested as controls with negative results.

B. INFLUENZAE FROM CASES OF MENINGITIS AS INDOL FORMERS

No.	Source	Date of Isolation	Indol Formation
1.	Harriet Lane Home	1919-1920	+
2.	Harriet Lane Home	1919-1920	+
3.	Harriet Lane Home	1919-1920	+
4.	Harriet Lane Home	1919-1920	+
5.	Harriet Lane Home	1919-1920	+
6.	Harriet Lane Home	1919-1920	+
7.	Dr. A. Williams	1913-1914	+
8.	Dr. A. Williams	1913-1914	+
9.	Dr. M. Wollstein	1917	+
10.	Dr. A. Williams	1918	+
11.	Dr. A. Williams	1918	—
12.	Dr. A. Williams	1919	+

It might be of interest to note that the peritoneal exudates of animals killed by intraperitoneal injections of these meningitic strains of *B. influenzae* also gave a positive indol test.

SUMMARY AND CONCLUSIONS

1. Eleven of twelve meningitic strains of *B. influenzae* studied were indol formers.

2. An indol test on spinal fluids, as described, is a valuable aid in the rapid diagnosis of influenzal meningitis.

MUCOUS COLITIS *

WILLIAM H. STAUFFER, M.D.
ST. LOUIS

It is not my purpose to discuss all the factors that have to do with the etiology and treatment of this very interesting condition. With but few exceptions every department of medicine has made an attempt to relieve or restore the itinerant patient to health. Group medicine is a step in the right direction, and let us hope that a brighter outlook for the patient sufferer is not far distant. Every member of the group should tabulate his findings, but under no condition should such be communicated to the patient until all have been consulted and a definite treatment outlined. Failure to observe this precaution is responsible for the making of many neurotics.

Until the advent of the enteroproctologist, the neurologist had practically an undisputed field of endeavor. This fact was largely due to the inability of the general practitioner to make a definite diagnosis. Failing to relieve his patient permanently, he would either resort to sudorifics or inform him that his condition was a neurasthenia. This furnished the neurologist an opportunity for theorizing and an exhaustive tabulation of symptoms. Being a man possessed of an analytical mind and a born diplomat, he succeeded in giving the pilgrim much comfort, and prolonged his stay with him until a new fad or fancy claimed his attention.

Physiologically the alimentary canal should be considered as an organ of alimentation and elimination. This involves the problem of nutrition as applied to the individual under observation. Sufficient time should be taken to learn his idiosyncrasies and the influence of his environment. Elimination yields readily to treatment if the patient is properly instructed.

The diseases of metabolism should claim our first attention. All constitutional diseases, such as tuberculosis and syphilis, must be properly treated and their influence as diagnostic and prognostic factors considered. Any mechanical factor, either extrinsic or intrinsic, interfering with the peristalsis or lumen of the intestine must be corrected. Abnormal positions of the female pelvic organs and adhesions resulting from surgical operations interfere with proper function and consequent incomplete defecation.

Infection plus incomplete elimination are the causes of most cases of mucous colitis. This infection may be constitutional or from local foci. The teeth, nose and throat should be the first to be investigated. Gallbladder infections are by no means rare. A chronic appendicitis is the rule rather than the exception. The relation of an infected lower bowel to mucous colitis and appendicitis is worthy of notice. In a tabulated list of 200 patients with mucous colitis who had formed the enema habit, 150 had had their appendixes removed, while many of the remaining fifty would no doubt have profited by parting with theirs. No amount of dietetic or local medication will be of any permanent value until the infection is located and removed. Cathartics add insult to injury, and are mentioned only to be condemned.

The following outline of treatment modified to suit the individual needs has been of value in my work: A nonprotein diet is selected with the object of fecal residue of nonirritating bulk rather than coarse, undigestible food. Bran should be ground fine and thoroughly cooked. It should be given with other foods and never be employed as an exclusive diet. The petroleum oils, however administered, are of doubtful value. They do not empty the bowel properly, and often act as a local irritant. An enema of 1 quart of 10 per cent. solution of magnesium sulphate, preceded by an antiseptic rectal irrigation, should be repeated until the solution is returned without feces. After resting for several hours, the patient is placed in the elevated Sims' position and a 10 per cent. solution of the oil of eucalyptus in olive oil administered and the patient requested to remain in this position for at least two hours. Local treatment is administered through the proctoscope by the aid of compressed air, as indicated by the existing pathologic condition. Cooperation and perseverance will relieve all patients and permanently restore many to physical well being. A complete change of environment is a valuable factor in most individuals.

University Club Building.

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

ABSTRACT OF DISCUSSION

DR. BERTHA VAN HOOSEN, Chicago: During the past four years I have used postoperative rectocolonic hydrotherapy. Every patient on whom I have operated in the past four years has had two quarts of water introduced rapidly into the bowel (in not more than two or three minutes), while on the operating table. As soon as the patient has been placed comfortably in bed, three more quarts of water are put into the bowel, but more slowly. These patients have no intestinal irritability; they always retain all the water, and they do not have a bowel movement. They are comfortable; they sleep; they are not thirsty, and they are not troubled with gas pains.

DR. H. G. WALCOTT, Dallas, Texas: Unquestionably mucous colitis is an infection. In practically all of these cases there is retention of the feces, an irritation that sets up an inflammatory condition of the bowel, and leaves the bowel open to infection. I agree heartily as to the use of mineral oil. I have used agar-agar with much more benefit than the mineral oils. I have found so many of these cases secondary to chronic appendicitis. In the majority I have found a very spastic condition of the last portion of the transverse colon and of the descending colon. In fact, I have come to regard this as suggestive of chronic appendicitis. Explain to the patient that it is natural for some mucus to pass from the bowel, that a large quantity of it indicates a condition the same as an acute coryza. This relieves to some extent the anxiety, and has a psychologic effect which helps to bring about a cure.

DR. LOUIS J. HIRSCHMAN, Detroit: When a patient is referred to you with a diagnosis of mucous colitis, be absolutely sure that he has mucous colitis. The first symptoms of an early malignancy, or ulceration of the bowel, which may be either simple or specific, resemble closely those of mucous colitis, and many patients have been treated for "mucous colitis" until it was too late to operate for a malignant condition which really was the cause of the trouble. As far as mineral oil is concerned, the experiences of different men vary. As a very good substitute for mineral oil, and also for agar, let us rejuvenate old fashioned flaxseed tea. It is one of the smoothest, nicest things we can give our patients for mucous colitis. The use of agar-agar has not always been satisfactory to me. In such cases its use will result in the formation of hard boluses or there will be little masses of hardened agar-agar which look not unlike "soap" gallstones which we used to hear about some years ago, after the use of olive oil as a "liver cure."

DR. J. RAWSON PENNINGTON, Chicago: What was the nature of the infection? If mineral oil merely serves as a lubricant and passes through the system unabsorbed, does it not coat over the food and interfere with digestion?

DR. SIDNEY K. SIMON, New Orleans: The original conception of mucous colitis was that it was a neurosis of secretion, either of reflex origin, or due to some irritation of the neurons supplying the mucous glands of the large bowel. Distinction should be made between a so-called mucous colitis of this nature and a colitis with an excessive quantity of mucus, that is, an inflammatory condition. The treatment of each condition is entirely different. A pure mucous colitis should be treated along general lines as a functional disturbance. Let the lower bowel alone These individuals are usually highly neurotic; they have their minds centered on the lower bowel, and the constant irritation of irrigations of whatever nature, the repeated use of the proctoscope, aggravates rather than improves the condition. As in all other functional conditions, determination of the cause is of first importance. I have gotten very little result from local treatment of the lower bowel.

DR. RALPH W. JACKSON, Fall River, Mass.: If I mistake not, Dr. Stauffer said that, in his series of 200 cases, 75 per cent of the patients had been operated on for appendicitis. This is a reflection on the surgeon. The trouble is that they do not make an adequate examination of the rectum before or after the appendectomy, and in their anxiety to operate, they see only the appendicitis which is a result and a part of a general colitis, and not the cause of it. The removal of the appendix may or may not be justifiable, but the main condition is left unrelieved. A sigmoidoscopy would have prevented this and saved the surgeon's reputation.

DR. J. M. RECTOR, Columbus, Ohio: Proctologists suggest treatment of colonic and sigmoidal conditions by mouth, forgetting that the nearest direct route is through the rectum, and that all infections follow stasis, and that all colonic disease can be relieved, and elasticity, tone and function of the colon restored by colonic irrigation, and elasticity and tone of the colon restored by pneumatic gymnastics. These new methods of treating the colon directly by rectum are simple, but the technic must be understood to obtain results. The usual so-called high enema fills the debilitated colon with chemical and mechanical irritants, adding to the discomfort of the patient, and finally producing only partial incomplete evacuation of the colon. Colonic irrigation with the Turck rectal tube permits introduction, distribution and return of large amounts of physiologic sodium chlorid solution, bringing all stool and gas out through the tube. The treatment takes only ten minutes and leaves the colon clean and empty and the patient relaxed, warm and comfortable.

DR. FRANK SMITHIES, Chicago: It is difficult to distinguish cases of true colonic myxorrhea from cases of mucous colitis due to gross diseases of the colon. More than three years ago, I pointed out the fact that in many of these instances of chronic intestinal stasis, the sources of the trouble were localized patches of infection in the wall of the bowel itself, particularly in the intestine muscles, and these created local arrests in the proper peristaltic activity. It seems to me that in many of these instances the chronic appendicitis that has been mentioned as causing abnormal colon function is nothing more than an acute or subacute local manifestation of the infective process widely disseminated throughout the large bowel. Much of the so-called local treatment to the mucosa of the large bowel is not useful as it actually does not reach the place diseased, i. e., the muscle layer of the intestine. It only acts on a mucous membrane which is reacting to a deeper lying trouble. As to the "exercise treatments" suggested: If one wishes to "splint" an infected muscle to keep it still and so accelerate healing, it certainly is not a good plan to manipulate the affected parts by massage or by irritation by the rubber bag inflation. During the past six years I have had seven cases of cirrhosis of the large intestine due to syphilis, and the patients had been treated for mucous colitis for a long time without attempts being made to determine the cause of the colon disability. In syphilis, a spirochetemia, the virus lodges in the wall of the large intestine and may cause serious damage. We ought to protest against the widespread use of mineral oil by the layman, not because it may not help him, but because it often masks true conditions. It masks them so far, that, frequently, patients come to us for relief when they are beyond relief, as result of self-medication forced on them by advertisements printed in both the lay and the professional press. It is time to protest against this type of self-medication. It is dangerous. Advertisements of these "mineral oils" which are exploited in newspapers as "cure-alls" should not be permitted in ethical, medical publications.

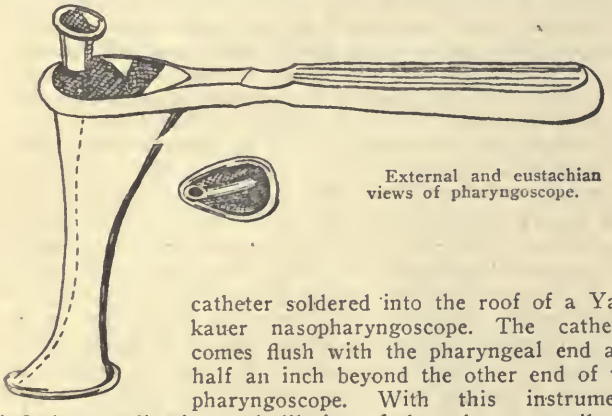
DR. WILLIAM H. STAUFFER, St. Louis: I am thoroughly in accord with the idea of a definite diagnosis for only by this means and by the proper interpretation of the pathology can we hope to get results by treatment. My object in suggesting a group diagnosis is to leave nothing undone. As to the nature of the infection: I have found the various streptococci and occasionally the colon bacillus. Constipation—a very relative term—is a symptom of some underlying condition, and will respond to treatment only when the pathology is removed. I am very much pleased with what was said with reference to mineral oil. I lose no opportunity in condemning the use of it. Olive oil is used only as a vehicle for oil of eucalyptus, and not for its therapeutic effect. As to the use of tubes, etc., I do not consider them safe, because you do not know the exact pathology and the lumen of the bowel, and in only 1 or 2 per cent. of cases can the tube be placed where it will be of any value. The dilator and the pack are unsafe, just as is the pneumatic proctoscope. It is a dangerous instrument. The local treatment should not be repeated frequently, and it should only be employed when there is actual pathology.

Clinical Notes, Suggestions, and New Instruments

CATHETERIZATION OF EUSTACHIAN TUBES THROUGH THE MOUTH

WILLIAM LAPAT, M.D., HOUSTON, TEXAS

Because of various nasal obstructions it is sometimes impossible to pass a eustachian catheter through the nostrils. To handle these cases I have had a 4-inch eustachian tube



External and eustachian views of pharyngoscope.

catheter soldered into the roof of a Yankauer nasopharyngoscope. The catheter comes flush with the pharyngeal end and half an inch beyond the other end of the pharyngoscope. With this instrument, inflation, medication and dilation of the tube can easily be accomplished through the mouth.

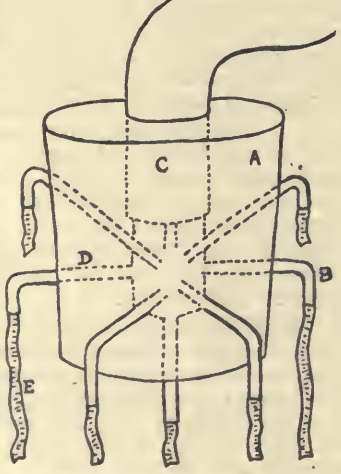
843 Kress Building.

UNIVERSAL MULTIPLE FAUCET ADAPTER

JOSEPH FELSEN, M.D., NEW YORK

This device will be found useful to pathologists, photographers and others. Its purpose is to provide many individual streams of running water, and it is at present used in my laboratory to wash pathologic tissues over long periods.

It consists essentially of a large stopper (*A*) of cork or rubber bored to accommodate a number of L-shaped and straight glass tubes (*B*). For ordinary purposes a No. 34-38 cork of xxx or xxxx quality will do. By means of a cork borer a hole (*C*) large enough to fit snugly over the faucet is made about half the length of the cork. The hole is then deepened by a tube of about two sizes less bore. This leaves a little shelf on which the mouth of the faucet rests and a cavity into which the various glass tubes dip to receive the water issuing from the spigot. Holes are then bored into the side (*D*) to accommodate as many glass tubes as the size of the cork will permit. One or more holes may also be made in the bottom of the cork. The most convenient size glass tubing is 5 or 6 mm. cut into 2½ inch lengths, bent at right angles at about 1½ inches. This leaves enough to be inserted into the cork and yet project a suitable distance to receive rubber tubing (*E*). The ends are smoothed in a flame.



Multiple faucet adapter.

With this simple device I have been able, with a rather large cork, to use from ten to fifteen individual streams of water from one spigot.

If necessary, the entire device may be paraffined to prevent slight leaks. However, this is rarely necessary if a good quality cork stopper is used.

Special Article

TYPHOID FEVER AT SALEM, OHIO

For the past month Salem, Ohio, has been suffering from what appears to be one of the largest typhoid fever epidemics that have ever occurred in this country. Salem is a manufacturing town of about 10,000 population. For five years prior to 1920 there had been almost no typhoid, with the exception of eight cases in the autumn of 1918, shown to be due to a contaminated milk supply. No case was reported between August, 1919, and August, 1920.

The general sanitary conditions of Salem are about what are generally found in towns of this size. The water supply, about 800,000 gallons daily, comes from several groups of deep wells. The water is pumped from the wells and is run by gravity lines to a covered reservoir, from which it is pumped into the city mains. Analyses had been regularly made by the state board of health, and the supply has been regarded as excellent from a hygienic standpoint.

The milk supply is distributed through half a dozen dealers, two of whom deliver pasteurized milk—about two thirds of the total supply. This is a very creditable showing for a city the size of Salem. The city sewage is treated on intermittent sand filters, from which it runs into Beaver Creek, a tributary of the Ohio River. To a certain extent and particularly on the outskirts of the city, privies are in use. There are about 400 of these. Dug wells are present on about 200 premises, but many have not been used for drinking purposes. It is believed that close to 100 per cent. of the population have access to city water at some time during the day.

During the latter part of August and the early part of September of this year, three cases of typhoid fever are now known to have occurred. Following a rainy period in the latter part of September and particularly during the first part of October, enteritis was prevalent in the town. It was estimated that more than half the population was attacked. The reporting of this epidemic of enteritis by the local health authorities to the Ohio State Department of Health, about the middle of October, led to immediate investigation of the water supply, which was found to be polluted. An emergency chlorinating outfit was installed, October 20. Notices advising the boiling of drinking water were also sent out. There was no realization at this time of what was in store for Salem. Typhoid fever reports soon began to come in, and on November 10 a complete sanitary survey was made by a group of citizens under the direction of the representatives of the United States Public Health Service and the state department of health then on the ground. About 3,000 premises were visited during one day, and information obtained concerning sanitary conditions and the prevalence of typhoid fever. Further investigation of the water supply had also been made by the state department of health, in which it was found that one of the gravity lines connecting one group of wells with the reservoir was polluted. This line was immediately cut off.

The data obtained from the sanitary survey and the water supply investigations were sufficient to acquaint the authorities with the general facts of the epidemic. Aside from the three early typhoid cases referred to

above, the first cases appeared about October 1. From this date the number rose, reaching a maximum of fifty-four new cases, November 1, the peak of the epidemic. Since November 1 the number of new cases has rapidly declined, reaching a minimum, November 20. The total number of cases to November 20 was 785, with twelve deaths. The general distribution of the cases throughout the community and the known pollution of the water supply pointed definitely to a water-borne epidemic. Full data were obtained regarding the distribution of the cases on the several milk routes, but no facts were obtained to implicate the milk supply. The water contamination appears to have occurred in one of the gravity lines, but the detailed circumstances under which pollution occurred are still under investigation. It is too early to determine the possible part played in the later cases by contact infection.

There may be more cases and more deaths, but it is hoped that the measures instituted by the representatives of the Public Health Service and the state department of health and by the county health commissioner will serve to keep down the numbers. In their investigation and protective measures the authorities have been aided by complete cooperation from all, both inside and outside the town.

These measures have been many. The important step of chlorinating the water supply was taken early. The first emergency outfit has been replaced by a permanent chlorinator purchased by the town. The present dosage is about a half part per million. The state health authorities have made frequent examinations of the water supply and, since chlorination began, have found it to be satisfactory, although boiling of all drinking water is still recommended as a precaution. The whole milk supply is now being pasteurized. Milk delivered to houses in which there is a typhoid patient must be done in containers furnished at the house. Houses in which there are typhoid fever cases have been placarded, not as a quarantine measure but as a protection both of the house against visitors, and of the visitors by warning them of possible danger. Through a group of citizens, printed circulars have been distributed to all houses warning against the use of unboiled water and giving information as to disinfection of stools of patients, of urine, of clothes and bedding and of hands of attendants, and also advising antityphoid vaccination. All wells, except those on premises not connected with the city water supply, have been treated with chlorinated lime. A group of volunteer business men have disinfected all privies with the same substance. Under state supervision a corps of regular and volunteer nurses has been organized, and all patients needing nurses, whether they can afford them or not, have been looked after. A state branch laboratory has been established which has been placed at the service of all physicians for Widal tests, blood counts, etc. Experts on typhoid fever from other cities have been on hand to aid the local medical men in the treatment of severe cases. All food handlers in stores have been placed under supervision. On account of the necessity of keeping these stores in operation, certain rules have been adopted. If a case of typhoid fever exists in the home of a food dealer, the patient must either go to the hospital or the merchant remain away from his business. Vaccination of all food dealers has been required. Vaccination of all persons has been recommended, and it is estimated that about one fourth of the population has availed itself of the opportunity. Through the citizens' committee transportation for nurses has been supplied and a central eating place maintained. The local Red Cross has been instrumental in fitting up four emergency hospitals, three of which are already operating at full capacity. The effluent from the sewage filters is being chlorinated in order to protect communities using Ohio River water and riparian owners on Beaver Creek below Salem.

This epidemic is a great disaster for Salem. While the peak, so far as new cases is concerned, was reached about three weeks ago, the effects of the epidemic are in progress and the town will be fortunate, indeed, if the death toll remains moderate. There will for some time be economic problems, particularly among the poor, which are being looked into by the Red Cross.

The lessons for other communities to be learned from this epidemic are not new, but they are frequently forgotten. The most important is the necessity for constant supervision of every water supply, however pure its origin.

The representative of THE JOURNAL wishes to express his appreciation of the courtesies shown him by the representatives of the Public Health Service and the Ohio State Department of Health, and by the county health commissioner.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

BENZYL BENZOATE (See New and Nonofficial Remedies, 1920, p. 49).

Benzyl Benzoate-Van Dyk.—A brand of benzyl benzoate complying with the N. N. R. standards.

Manufactured by L. A. Van Dyk, New York, N. Y.

Benzyl Benzoate-Van Dyk 20 per cent.—Each 100 Cc. contains benzyl benzoate (Van Dyk) 20 Cc. and alcohol 80 Cc.

Benzyl Benzoate-Van Dyk 20 per cent. Aromatic.—Each 100 Cc. contains benzyl benzoate (Van Dyk) 20 Cc., oil of orange 0.74 Cc., alcohol 79.26 Cc.

BENZYL ALCOHOL (See New and Nonofficial Remedies, 1920, p. 27).

Benzyl Alcohol-Ipco.—A brand of benzyl alcohol complying with the N. N. R. standards.

Manufactured by Intra Products Co., Denver, Colo.

Ven Sterile Solution Benzyl Alcohol 4 per cent. 2 Cc.—Each ampoule contains Benzyl Alcohol 4 per cent. in physiological solution of sodium chloride, 2 Cc. The ampoules are made of neutral ("non-soluble") glass.

VARGOL.—A compound of silver and a derived albumin containing not less than 20 per cent. of silver.

Actions and Uses.—See general article Silver Preparations under Silver Protein Preparations, Argyrol Type, New and Nonofficial Remedies, 1920, p. 310.

Dosage.—Vargol is employed in from 10 to 25 per cent., and even stronger solutions.

Manufactured by The Heyden Chemical Co., New York. No U. S. patent. U. S. trademark applied for.

Vargol is prepared by the interaction of a solution of derived albumin, with a solution of a silver compound. The product is subsequently purified by dialysis.

Vargol occurs as greenish-black or black lustrous scales which are hygroscopic and have a slight characteristic odor.

Vargol is easily soluble in cold water and the solution may be heated without change and is unaffected by the usual reagents for silver, such as sodium chloride, iodide, hydroxide, etc. Solutions of Vargol on standing should show at the most only a slight sediment of a light brown color. The compound is decomposed by the action of strong mineral acids, after which silver may be identified by the usual tests.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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Cable Address : - - - - "Medic, Chicago"

Subscription price : - - - - - - Six dollars per annum in advance

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SATURDAY, NOVEMBER 27, 1920

AN EXTENSIVE OUTBREAK OF WATER-BORNE TYPHOID

It is many years since so extensive an outbreak of water-borne typhoid has been reported as the one at Salem, Ohio, recorded in another part of this issue.[1] The attack rate at Salem seems to have been very high, amounting to nearly 10 per cent. of the total population. The incidence among the population using the public water supply is probably considerably greater than this, since a number of the Salem houses are supplied with water from their own wells. The proportion of cases to water users is thus very nearly, if not quite as high as in the celebrated epidemics at Plymouth, Pa., and Ithaca, N. Y.

The history of the outbreak presents many points of similarity to several classic water-borne epidemics. The appearance of typhoid in the community on a large scale seems to have been preceded by many attacks of gastro-enteritis, as were the water-borne typhoid epidemics at Rockford, Ill., in 1912 and Quincy, Ill., in 1913. The evidence obtained by officials of the state department of health and of the U. S. Public Health Service seems to place responsibility definitely on the water supply. Prompt action on the part of the Ohio Department of Health in installing a chlorination plant, October 20, appears to have been effective in promptly checking the epidemic, and the situation in Salem seems now to be well in hand.

The mode in which the water became contaminated is being subjected to thorough investigation, and the whole story will doubtless eventually be brought to light. The main outline of what happened seems, however, to be reasonably clear at the present time. The public water supply is derived from deep wells, and the water, on being brought to the surface, is stored in a surface reservoir. In passing from the wells to the reservoir, dangerous contamination seems to have occurred, and evidence from bacterial analysis has appeared in the Salem papers implicating one particular gravity line.

It is plain that in spite of the enormous improvements effected in the character of public water supplies in this country by chlorination and sand filtration, the danger of water-borne typhoid is by no means a thing of the past. At least three sources of water contamination have occurred with disturbing frequency in the last few years: First, irregularities in the conduct of the chlorination process leading to inadequate treatment of a contaminated water, no other safeguard being provided on account of the reliance felt on the chlorin treatment. Second, the use of a dual water supply system by means of which factories and office buildings are supplied, usually for fire protection purposes, with water from a contaminated source; the valves intended to separate the private system from the public water supply get out of order or fail to work at times of pressure change and so permit the mingling of the polluted water with the otherwise safeguarded public supply. Third, improper handling of a good deep well water after it is brought to the surface, thus allowing for accidental contamination during floods or other unusual conditions.

It is in the latter class, where a good deep well water becomes polluted during transmission to the consumer, that the Salem outbreak, like the well-known Rockford outbreak, belongs. The detection of possible sources of danger is not always an easy matter, but there is no doubt that not all existing deep well water supplies are being looked after as carefully as they might be. The Salem disaster seems to call for renewed vigilance in the supervision of deep well water supplies.

1. Typhoid Fever at Salem, Ohio, Special Article, this issue, p. 1498.

ECOLOGY AND MEDICINE

"All life is controlled by two great forces, heredity and environment, and ecology is the science dealing with the environment." Ecology has generally been considered as the special concern of botanists and zoologists; at least they have been the ones who have most used the term as applying to a distinct department of their sciences; but obviously, from the definition, it is related to every science that touches life. Physicians have always recognized environment as of fundamental importance in all problems of medicine, and hence have unconsciously been ecologists, much like the man who, on taking up in his later years the study of grammar, was astounded to learn that he had always been using it. Therefore we ought not to be surprised to find that the opening contribution in the newly established official publication of the Ecological Society of America is on "The Control of Pneumonia and Influenza by the Weather,"[1] and was written by a geographer rather than a physician. This deals with an analysis of deaths from pneumonia and influenza, as correlated with data on temperature and humidity for the same period. It has been pointed out by Greenberg[2] that in a group of eastern American cities, the number of deaths from pneumonia has a direct

1. Huntington, Ellsworth: Ecology **1**: 6, 1920.
2. Greenberg, David: Relation of Meteorological Conditions to the Prevalence of Pneumonia, J. A. M. A. **72**: 252 (Jan. 25) 1919.

relation to the outdoor temperature, and decreases systematically as the temperature rises. The same thing has been observed by Shaw in England with respect to influenza. Huntington also finds that the death rate from pneumonia and also from influenza, if the great epidemics are excluded, varies inversely with the temperature, which, of course, is merely an exact demonstration of the well known fact that these are cold weather diseases. Taken by and large, influenza begins with the frost, becomes severe when the temperature averages below freezing, reaches a maximum when the temperature is lowest, and then declines. It also seems that humidity has a pronounced influence, the pneumonia death rate being high when the humidity is low. "For outdoor temperatures of between 55 and 70 F., the death rate from lobar pneumonia remains at a rather uniform and comparatively low level so long as the relative humidity is not below 65 per cent.; but a drop of 20 per cent. from this humidity increases the death rate by at least one third." The health of Americans and Europeans is best with an average day and night temperature of 64 F. and relative humidity of 80 per cent.

Presumably, variations in climate may act on either the infectious agent or its victim. Seeking an explanation of epidemics, Huntington indulges in some interesting speculation based on the important studies of Woodruff on the life history of certain unicellular animal organisms, paramecia. These protozoa have the ability to multiply almost indefinitely without sexual reproduction, but the activity of reproduction occurs in distinct cycles. At the lowest point of the cycle there occurs a peculiar rearrangement of the cell structure, called "endomixis," which seems to serve as a stimulant analogous to conjugation, since its occurrence is followed by a marked increase in the rate of reproduction. Then, after a decided maximum has been attained, the stimulus wears off and the reproduction rate falls to a low ebb, after which a repetition of the same process of endomixis stimulates it again. The most striking feature of endomixis is the fact that it occurs simultaneously in unrelated races of paramecium even when they are kept under markedly different conditions of temperature and nutrition. This suggests that some unknown factor of the environment is responsible. As the paramecium has been found to be typical of living forms in general in many important respects, it may well be suspected that in this respect also it is typical of cell life. May not bacteria, which also multiply asexually, exhibit similar cyclic changes in reproductive rate that are responsible for the fluctuations in virulence that are such a striking feature of their behavior?

As for the modification of the incidence curves of endemic pneumonia and influenza in relation to changes in temperature and humidity, this presumably depends on the effects of the environment on the subject rather than on the parasite. And yet it is a strange fact that, unquestionable as is the lowering of resistance to certain infections under the influence of exposure to cold, the reason for such decreased protection has not been made clear. Foord [3] was unable to demonstrate that severe chilling of rabbits reduced either their capacity to form antibodies or the amount of existing antibodies in the circulating blood, nor did it cause hemorrhages or thrombosis in the lungs, which Aufrecht had supposed to be the explanation for the susceptibility of the lungs to infection after exposure to cold. The careful studies of Mudd and Grant [4] have demonstrated that chilling of the human body causes a reflex anemia of the mucosa of the mouth and pharynx with some fall of local temperature, rather than a hyperemia, as had been currently believed. Whether this transitory ischemia and lowered temperature of the mucous membranes can disturb the equilibrium between the host and bacteria sufficiently to permit of infection is, however, a matter that has not yet been determined.

MEDICAL REFLECTIONS ON THE TYNDALL CENTENARY

The question of a possible spontaneous generation of living matter from the lifeless has been an important one in the development of modern medicine as well as in the domain of biologic theory. Historically, it has involved the origin and function of the bacteria and similar micro-organisms that concern the welfare of man. Can these agencies, which may so profoundly affect his well-being, arise without relation to pre-existing life? In this inquiry the very fundament of the germ-theory of disease is involved. The correct answer gave the justification for the development of antiseptic surgery, with which the name of Joseph Lister is indissolubly connected. Accepting Pasteur's demonstrations that the septic properties of the atmosphere are due to organisms suspended in it and that these cannot arise de novo, Lister proceeded, about 1867, to exclude these noxious agencies in the practice of surgery.

Pasteur showed that all the evidence advanced by the advocates of spontaneous generation was due to faulty technic; when the defects were corrected, no evidence remained of the generation of life by lifeless matter. There is no spontaneous infection, no spontaneous suppuration. In medical circles, the deserts of Pasteur need no defense; it is not so generally appreciated, however, that he was ably seconded in this triumph over an ancient controversy by the brilliant investigations of a physicist whose centenary is being celebrated this year. John Tyndall, born in Ireland in 1820, had found it necessary in the course of his experiments in the domain of physics to secure what

3. Foord, A. G.: The Effect of Exposure to Cold on Antibody Production, J. Infect. Dis. **23**: 159 (Aug.) 1918.
4. Mudd, Stuart, and Grant, S. B.: Reactions to Chilling of the Body Surface, J. M. Res. **40**: 53 (May) 1919.

he termed optically pure air, that is, air from which all floating particles had been sifted. The story is told in Tyndall's "Floating Matter of the Air," a classic of scientific literature. It occurred to him that he might expose nutrient fluids to this particle-free air and nicely test the hypothesis of the spontaneous origin of life. The putrescible decoctions which he used showed no trace of spoiling or of organic life within them even after exposure of many months to the "pure" air of his apparatus, whereas they quickly decomposed when floating particles were admitted from the outside air. Spontaneous generation was again disproved.[1]

In a recent address at a meeting commemorating the Tyndall centenary, Prof. A. W. Smith[2] of the University of Michigan voiced the belief that an accident in the Alps may have turned Tyndall's mind directly to the investigations just referred to:

> Having taken a shower bath under the cascade of an Alpine stream, he was returning for his clothes when he slipped and the sharp granite pierced his shin. Dipping his handkerchief in the clear water of the stream he bound up the wound and limped to his hut, where he lay quietly for several days. There was no pain, and upon removing the bandage the wound was found to be clean and uninflamed. But it soon became inflamed, and he had to be carried on men's shoulders to Geneva, where for six weeks he was confined to his bed. About this time there was considerable dissension regarding the spontaneous generation of life, and Tyndall could not let such a question of fact pass by without adding his own clear logic to the discussion.

Tyndall also enriched bacteriologic technic by the method of sterilization by repeated heating. To most educated readers his name suggests the investigation of heat and other domains of physics; but physicians are mindful also of his achievements in the field of practical medicine.

1. The reader will find an interesting account of the classic experiment of Tyndall, together with a picture of his apparatus, in Locy, W. A.: Biology and Its Makers, New York, Henry Holt & Co., 1917.
2. Smith, A. W.: John Tyndall (1829-1893), Scient. Month. **11**: 331 (Oct.) 1920.

EAR TESTS FOR AVIATORS

The selection of men most capable of becoming fliers was a problem that faced the authorities of all armies during the war. The probability of the increase of flying during the coming years makes the problem still of interest. How important the medical side of the subject is may be judged from the official statement that while 2 per cent. of fliers were incapacitated by the enemy, and 8 per cent. by mechanical shortcomings in the machine, 90 per cent. represents the number of fliers who met disaster from accident due to the flier himself. The British at the end of the first year found that, of the total number of accidents to fliers, 65 per cent. were due to physical defects of the pilots. When this was recognized and to some extent remedied, the next year showed a decrease to 20 per cent., and the next to 12 per cent. The problems involved were not grasped by the Allies till forced to their attention by the loss of valuable fighting material.

It is generally agreed that physical fitness with normal sight and hearing is essential. But one with these qualifications does not necessarily become a good flier. Anatomic perfection is rare, and physiologic function is easily upset. What are the anatomic perfections to be required, what the physiologic instabilities to be guarded against? It is well known how this country by elaborate tests carried out by selected experts sought to choose the fit and eliminate the unfit. That this was a wise and praiseworthy endeavor there can be but one opinion. What now concerns us is whether or not the tests devised during the war period can be beneficially adjusted from the experience there gained: whether or not we overemphasized some points. The United States government published a volume[1] full of valuable information in which the complete examination of candidates for the flying corps is given. The chapter dealing with the aural examination is written with commendable prudence. The authorities acted wisely in giving the examinations used by their allies. It is by a comparison of methods that national shortcomings can often be recognized.

Not a few volumes and many articles, several semi-official, have appeared in various countries, in which attempts are made to answer the question, How best by medical examination can there be picked the men most likely to make good fliers? It is remarkable that where we should have expected unanimity of opinion—namely, as to the part played by the vestibular portion of the internal ear—unanimity of opinion is conspicuously lacking.

The American opinion is thus expressed:

> When flying through the air, on what does the aviator rely in order to maintain his equilibrium and that of the aeroplane? Can he rely on sight? Hardly, for when he is sailing through the clouds or darkness, his eyes cannot give him the slightest information about his position in space—not even whether he is right side up or upside down. . . . In order to preserve that wonderful accuracy necessary in controlling such a delicate mechanism as the flying machine, he relies preeminently on his ear-balance sense.[2]

The opinion of the English authorities is given by H. Graeme Anderson:[3]

> It has been assumed that a sound equilibration and muscle sense is essential in flying, so that the aviator would be conscious of his position in space, realize at once any deviation therefrom, and correct these quickly. But in a fog it has been found almost impossible to detect any deviation in a flight. Time and again aviators coming out of dark clouds or fog have found themselves flying one wing down, and it has been recorded that some have flown upside down without knowing it. Thus. it is obvious that most of the impressions which control balance in flying come through the eyes.

These are not the opinions of irresponsible individuals; the book from which the former is quoted has its preface dated from the office of the chief surgeon, Aviation Section, Washington, D. C.; the latter work has an introduction by the Secretary of State for the Royal Air Force.

1. Air Service Medical, War Department, Washington, D. C., 1919.
2. Jones, J. H.: Equilibrium and Vertigo, Philadelphia, 1918, p. 24.
3. Anderson, H. G.: The Medical and Surgical Aspects of Aviation, London, 1919, p. 33.

Not less unsatisfactory are the statements in regard to the testing of candidates:

> The turning test (nystagmus, past pointing and falling) quickly separate the obviously fit from the unfit. Candidates showing normal responses are accepted, candidates showing markedly subnormal responses are immediately rejected.[4]
>
> One who shows good responses in the turning chair shows good detection of movement in the air; one who shows poor responses in the turning chair shows poor detection of movement in the air.[5]

In his report to the English Air Investigation, Mr. Sydney Scott, F.R.C.S., concludes that "the reactions to rotation may be excessive in some individuals and suppressed in others, but in neither case do the reactions of the semicircular canals serve to indicate an airman's probable flying ability."

The French opinion is well expressed by Dr. Guilbert: "On the subject of proper equilibrium, it is especially custom which will give these qualities. Violent reactions and poor equilibration at the start will often disappear with training, for one becomes accustomed to sensations of being in the air, as to all others." He emphasizes the importance of the reaction time of the individual to visual, auditory and tactile impressions. "It is the instantaneous transformation of a passing sensation to precise muscular contractions, but of infinite variability, with the purpose of constantly reacting to the invisible movements of the atmosphere and with all the other difficulties which may occur. This capacity, as it seems to me, is, above all, the result of training." The Italians also lay stress on the reaction time [6] and, in their physical examinations, on nasal breathing.[7]

The necessity of rapid reaction to stimuli from peripheral organs of sense is recognized by all authorities, though possibly it is more emphasized by the French and the Italians. It is the training of these reactions to occur with greater rapidity and to become almost subconscious in their workings that is aimed at in various exercises and hoped for by preliminary flights. But still unanswered is the fundamental question, What is the rôle of the canals in flying, and how should our aviators be chosen?

Is this uncertainty due to a lack of appreciation of what constitutes equilibrium or balance? On the one hand, the ear is not a balancing organ, though it is an important part of the peripheral mechanism. It senses alterations of posture relative to gravity and automatically sets the motor (efferent) mechanism to work to rectify the displacements or to maintain the posture (equilibrium). Sight and the tactile sensations play also a part. Balancing results from the coordination of all these afferent impulses. The reactions from the labyrinth are normally automatic, and the information given may not reach consciousness. On the other hand, the English writers too readily belittle the rôle of the labyrinth. It is an important organ to sense displacement; and, whether or not we are conscious of its messages, these messages normally are effective. Are they not stressing the conscious knowledge of our relation to the outside world acquired by sight, forgetting the ever-present unconscious activity of the ear in maintaining our relation to the vertical? It would help clarify this unsatisfactory state of our knowledge were writers to formulate more definitely the physiologic factors involved, their coordination and their effective responses, together with the influence on this coordination of psychic factors.

4. Jones, J. H.: Equilibrium and Vertigo, p. 28.
5. Air Service Medical, p. 258.
6. Air Service Medical, p. 132.
7. Anderson, H. G.: The Medical and Surgical Aspects of Aviation, p. 32.

Current Comment

SEX AND BLOOD PRESSURE

It has long been realized that age is a factor which must be taken into consideration in giving an answer as to what constitutes the normal arterial blood pressure. There are also variations that seem to be associated with sex. In examining the numerous data collected by Alvarez [1] at the University of California, it appears that the women before the menopause represent almost exclusively a type endowed with a comparatively low blood pressure. There is far greater uniformity and less variation in the blood pressure readings of large numbers of them than is true of men at the same periods of life. Alvarez has therefore suggested that perhaps the ovary is in some way able "to cover up or hold latent the tendency to hypertension which we will presume the women inherit equally with the men." When the ovarian function fails, therefore, the natural tendency for the appearance of higher arterial pressures soon makes itself appreciated. Perhaps this hypothesis will help to explain the assertion sometimes made that hypertension often develops early in women who show signs of insufficient ovarian function, such as scanty and painful menstruation, sexual anesthesia, male distribution of body hair, infantile uterus, etc. At any rate, the phenomena of hypertension appear to be suppressed in women as long as the ovaries function well. On the other hand, the statistics show that the large increase in the incidence of hypertension comes ten years later in men than in women. Apparently, Alvarez concludes, a strenuous life has less to do with this disease than has the quieting down of the sexual functions.

ARE THE PARATHYROIDS AND THE THYROID INTERRELATED?

The identity of the parathyroid glands seems at length to be fairly well established, although their individuality and independent function still remain somewhat obscure. There was a time when they were looked on simply as embryonic thyroids. Even Gley, to whose investigations so much of our current knowledge of the parathyroids is due, long supported the

1. Alvarez, W. C.: Blood Pressure in University Freshmen and Office Patients, Arch. Int. Med. **26**: 381 (Oct.) 1920.

view that under suitable conditions, such as thyroid extirpation entailed, they could develop into thyroidal tissues. The possibility of a vicarious function between the thyroid and parathyroid structures was further suggested by the assertions of Vincent [1] and his collaborators. They based their belief on the apparent discovery that, after removal of the thyroid itself, enlargement of the parathyroids may occur with the formation of colloid material between the rows of cells. Vincent and Arnason [2] have recently reinvestigated carefully the problem at issue, without finding any experimental support for the view that parathyroids left behind after thyroidectomy become converted into thyroid tissue. Vesicle formation could not be detected. The complete functional distinction between parathyroids and thyroids may therefore continue to be maintained.[3] The so-called endocrinologists are eagerly, almost feverishly, searching at present for interrelationships between the endocrine structures. Thyroid-parathyroid correlations remain unproved; likewise the postulated relationships among the parathyroid, the pituitary and the suprarenal glands. Scientific medicine is liable to suffer by the experimentally unwarranted attempts to conjure with such obscure and undemonstrated interplays of endocrine function.

INFLUENCE OF ANTITYPHOID INOCULATION DURING MOBILIZATION ON THE GENERAL TYPHOID RATES IN THE UNITED STATES

In discussing the annual summary of typhoid fever in the large cities of this country for the year 1919, we [4] called attention to the likelihood that the army inoculations were probably responsible in a considerable degree for the relatively low typhoid death rate for 1919. This suggestion seems to receive confirmation from the information now becoming available. If such an effect existed, analysis should show that the rate in white men manifested greater proportionate reduction than the rate in white women between 20 and 35. The experience of the industrial department of the Metropolitan Life Insurance Company indicates that this is what has actually happened.[5] The typhoid death rate in 1919 for white men between 20 and 35 was 64 per cent. below that of the annual average for the same group in the six years 1911-1916, while the rate for white women showed a decline of only 47 per cent. The death rate for white men in this age group for the six year period 1911-1916 was 22.3, and for white women, 14.9 per hundred thousand. The rate in 1919 for white men was 8.0, and for white women, 7.9. Since a large proportion of the men had the benefit of army and navy antityphoid inoculations, and the women did not, the greater decline in the typhoid rate among these men must be ascribed to the army and navy antityphoid inoculations. It will be exceedingly interesting to observe whether the rate in this age group rises again after a few years, since, with even the most vigorous attempts to obtain a revaccination of these persons, it is hardly to be anticipated that more than a very small proportion will respond to the appeals for such revaccination.

1. Vincent, S., and Jolly, W. A.: J. Physiol. **32**: 65, 1905; **34**: 295, 1906.
2. Vincent, S., and Arnason, J. S.: The Relationship Between Thyroid and Parathyroid, Endocrinology **4**: 199 (April-June) 1920.
3. Paton, D. N., and Findlay, J.: Quart. J. Exper. Physiol. **10**: 214, 1916-1917.
4. Typhoid a Vanishing Disease, editorial, J. A. M. A. **74**: 678 (March 6) 1920.
5. Med-Mil. Rev. **3**: 106, 1920.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Hale County Appoints Health Officer. — Dr. Alexander MacKay, Toronto, Ont., has been chosen health officer for Hale County, with headquarters at Greensboro.

Sanatorium Fire Causes Casualties. — In a fire which destroyed Campbell Sanatorium at Bay Minette, November 14, two women were burned to death. The loss is estimated at $25,000.

Tuscaloosa Hospital Site Selected.—The committee on location of the Tuscaloosa City Hospital, for which a subscription of $80,000 has been raised and a municipal bond issue of $50,000 has been authorized, has selected a site in the rear of Smith Hall, at the university. The location was chosen so the University of Alabama may have ready access to the hospital.

CALIFORNIA

New County Hospital Completed. — The Solano County Hospital in Suisun Valley was formally opened by a public inspection, November 7. The building was recently completed at a cost of approximately $160,000 and will shortly be occupied by the patients now housed in the old hospital. A special building for the treatment of tuberculous patients and a pest house are included in the group.

Southern California Society Elects. — At the sixty-third semiannual meeting of the Southern California Medical Society, held in Los Angeles, November 5, under the presidency of Dr. Walter V. Brem, the following were elected officers: Dr. Charles L. Bennett, San Dimas, president; Drs. Edgerton Crispin, Los Angeles, and Lyell C. Kinney, San Diego, vice presidents, and Dr. William Duffield, Los Angeles, secretary-treasurer.

COLORADO

Vote on Initiative Measures. — Of the initiative measures submitted to the voters of Colorado, November 2, three were of special interest to physicians. The bill providing for an appropriation for a psychopathic hospital and the bill increasing the mileage tax for higher educational institutions were passed, while the bill to establish a separate licensing board for chiropractors was defeated.

DELAWARE

Medical Society Acts in Nurse Shortage.—At a recent meeting of the Medical Society of Delaware in Wilmington, a resolution was passed suggesting the more rapid advance of students to the grade of nurse after a less intensive course of study. The object of the resolution is to relieve the shortage of nurses.

ILLINOIS

Hospital in Danger of Destruction.—A large landslide from the edge of a 40-foot bluff threatens to precipitate the entire Southern Illinois Hospital for the Insane at Menard into an adjoining abandoned quarry. Work on the construction of an abutment to stop the slide has been begun by the state engineering department.

Personal.—Dr. James Warren Van Derslice, Oak Park, was elected president of the American Medical Milk Commission at the annual meeting held in Louisville, November 19.——Dr. Charles A. Robbins, Dixon, was elected grand master of the Illinois Odd Fellows at the annual convention held in Springfield, November 17.

INDIANA

Hospital Project Voted Down.—At a special election the proposition to erect a $100,000 hospital at Tipton was defeated by the voters of Tipton County.

Councilor District Society Meeting.—At the annual meeting of the Eighth District Medical Society held recently in Muncie, Dr. Charles L. Botkin, Farmland, was elected president, Dr. Charles A. Sellers, Hartford City, vice president, and Dr. Clay Ball, Muncie, secretary-treasurer. Dr. Ernest M. Conrad was appointed to serve as councillor to fill the vacancy caused by the resignation of Dr. General W. H. Kemper. The annual conference for 1921 will be held in Muncie.

LOUISIANA

Public Health Service Hospital Damaged by Fire.—A fire early in the morning of November 13 destroyed three wards, the kitchens and mess halls, the storeroom and offices of the United States Public Health Hospital at Camp Stafford, three miles north of Alexandria. The loss entailed is estimated at between $250,000 and $300,000. More than one hundred tuberculosis patients were removed without injury from the burning buildings to other wards.

State Tuberculosis League Plans Sanatoriums.—At a meeting of the parish chairmen of the Louisiana State Anti-Tuberculosis League, held in New Orleans late in October, it was resolved to undertake a campaign for the establishment of a chain of sanatoriums throughout the state. The various parishes were requested to apportion a percentage of the proceeds from the annual Christmas seal sales for the erection of a sanatorium in Rapides Parish on land now held in trust by the tuberculosis commission. Orleans Parish will concentrate efforts on the establishment of a hospital for the treatment of patients in the advanced stage of tuberculosis, a site for which has already been secured.

MAINE

Dr. Grenfell Addresses County Society.—At a meeting of the Cumberland County Medical Association held at Augusta, November 4, Dr. Wilfred T. Grenfell, medical missionary to Labrador, spoke on his work in the Labrador missions. A committee consisting of Drs. Stanley P. Warren, Owen Smith and John F. Thompson was appointed to solicit funds in furtherance of the work.

MARYLAND

Quarantine Station Returned to Government.—Preparations are under way for the remodeling and enlarging of the Quarantine Station near Curtis Bay in anticipation of the expansion of marine traffic in the port of Baltimore. The city authorities will shortly transfer the quarantine site to the federal government.

Diphtheria at Locust Point.—About forty-five houses at Locust Point are under quarantine for diphtheria. The disease is confined largely to schoolchildren, many of whom have been found to be carriers through examinations of cultures from infected throats and noses. Under instructions from Dr. John F. Hogan, assistant commissioner of health and chief of the Bureau of Communicable Disease, cultures have been taken from every child attending school at Locust Point, resulting in the detection to date of thirty-five carriers.

MASSACHUSETTS

Personal.—Dr. Joseph M. Scanlon has been appointed eye, ear, nose and throat specialist at the Tuberculosis Hospital, Lynn, to succeed Dr. Ernest P. Fuller, resigned.

Physician Fined for Performing Illegal Operation.—It is reported that Dr. Edward J. Frothingham, Boston, recently pleaded guilty to a charge of performing, about a year ago, an illegal operation and paid a fine of $750 in the superior criminal court in Salem.

MICHIGAN

Municipal Judge Requests Psychopathic Clinic.—Judge Harry B. Keidan has requested the city council of Detroit to appropriate $17,500 for the establishment and maintenance of a psychopathic clinic in connection with the new municipal court. It is contemplated to employ a chief psychiatrist and two assistant psychiatrists.

Typhoid Epidemic at Hillsdale.—During the week ending November 6, forty-five cases of typhoid fever were reported from Hillsdale. The source of contagion has been traced to milk delivered by a dealer afflicted with typhoid fever. The state health authorities are cooperating with the local health board in fighting the epidemic.

MINNESOTA

Southern State Association Meeting.—The annual meeting of the Southern Minnesota Medical Association will be held at Mankato, November 29 and 30, under the presidency of Dr. Herbert Z. Giffin, Rochester. Headquarters of the Association will be at the Elk's Club. The annual banquet will be given on the evening of November 29 at Masonic Hall.

MISSISSIPPI

City Electors Favor Hospital.—The voters of Brookhaven have registered approval of the proposal to issue city bonds to the amount of $40,000 for the building and equipping of a hospital.

Hospital Purchased by Methodist Commission.—At a meeting of the Mississippi Methodist Hospital Commission, held recently in Hattiesburg, it was decided to purchase the Kings Daughters' Hospital, Hattiesburg, which includes a site of about four acres and several hospital buildings. The commission plans to use the present buildings until the conference is ready to erect a more commodious structure. H. G. Hawkins has been appointed superintendent of the hospital.

MISSOURI

Personal.—Dr. William T. Coughlin, St. Louis, has been appointed director of the department of surgery of the St. Louis University Medical School.——Dr. Vilray P. Blair, St. Louis, was severely injured in an automobile accident, November 12.

St. Louis Postgraduate Meeting.—Dr. Harlow Brooks, New York, and Dr. Dennis R. Crile, Chicago, delivered lectures before the postgraduate meeting of the St. Louis Medical Society, November 22 and 23. The subject of Dr. Brooks' address was "Syphilis of the Heart," while Dr. Crile spoke on "The Conservative Treatment of Fractures."

Belgian Physicians Visit Medical School.—A party of distinguished Belgian physicians visited the Washington University Medical School, November 5 and 6, for the purpose of gathering data on teaching methods at that institution. In the party were Dr. Albert Dustin, professor of pathologic anatomy at the University of Brussels; Dr. Rene Sand, head of the social service work in the hospitals of Belgium and secretary of the Hoover Foundation for Medical Education in Belgium; Dr. Antoine De Page, the noted surgeon, and Dr. Jules Bordet, director of the Pasteur Institute of Brussels. They were accompanied by Dr. G. Canby Robinson, dean of the Vanderbilt University Medical School.

NEW JERSEY

Health Societies to Hold Meetings.—The forty-sixth annual meeting of the New Jersey Sanitary Association will be held in Lakewood, December 3 and 4, under the presidency of Dr. A. Clark Hunt. Headquarters will be at the Laurel-in-the Pines.——The annual meeting of the Health Officers' Association of the State of New Jersey will be held in Lakewood, December 3.

NEW MEXICO

County Health Officers Appointed.—Dr. Frederick H. Busby, formerly field director of the International Health Board, has been appointed full time health officer for Bernalillo County and city health officer of Albuquerque.

NEW YORK

Shortage of Help Hits State Hospitals.—The October report of the State Hospital Commission shows that the thirteen state hospitals, and particularly those in the metropolitan districts, are suffering from shortage of help. The reason for this is said to be because the state has fixed the salaries too low to command competent help and has failed to provide satisfactory housing. It is thought that these conditions are reflected in a decreased number of recoveries and an increased number of accidents. At the Brooklyn State Hospital it was found that recoveries had declined almost 8 per cent.

New York City

Tribute to Dr. McGinnis.—The Woman's Hospital Society gave a dinner in honor of Dr. L'H. McGinnis, November 16, at the University Club, in recognition of his many years of service in the hospital.

Personal.—Dr. David E. Hoag has been appointed associate neurologist of the New York Post Graduate Hospital and lecturer on nervous and mental diseases at the New York University and Bellevue Hospital Medical College.

Investigations at the Rockefeller Institute.—The following diseases will be made the subject of special study at the Rockefeller Institute for Medical Research during the coming winter, and patients suffering from these diseases will be admitted to the extent of the hospital facilities: acute lobar pneumonia and other acute pulmonary infections, measles, acute rheumatic fever, cardiac disease, nephritis. Physicians desiring to send patients suffering with these conditions may communicate with the hospital by telephone or by personal application to the resident physician.

NORTH CAROLINA

Medical Society Meeting.—The Seaboard Medical Society, composed of physicians of eastern North Carolina and tidewater Virginia, will hold its annual meeting in Elizabeth City, December 7, 8 and 9, under the presidency of Dr. Cyrus Thompson, Jacksonville. A popular public health meeting will be conducted in the high school auditorium in connection with the annual convention.

OHIO

Hospital Clinic Opened.—St. Elizabeth's Hospital, Dayton, has opened its new enlarged clinic for treatment of diseases of the eye, ear, nose and throat.

Smallpox at Tiffin.—More than half the public schools in Tiffin, including the high school, have been closed under orders of the state board of health owing to an epidemic of smallpox.

Personal.—Dr. Harold Higgins has been appointed assistant professor of pediatrics in the University of Cincinnati Medical College under provisions of the endowment fund recently donated by Mrs. Mary Emery.

Visiting Physician Addresses Academy.—At the meeting of the Academy of Medicine at Cleveland, held in the medical library auditorium, November 19, Dr. Hugh Cabot, Ann Arbor, delivered an address on the "Non-Tuberculous Infections of the Kidney."

Holmes Chair in Surgery.—It has been determined to establish a Christian R. Holmes chair of surgery at the University of Cincinnati Medical College, in place of the chair in medicine as originally planned. The medical college already has a chair in medicine in memory of Dr. Frederick Forchheimer, and as it is not desired to change its name, the chair of surgery will be established instead, under the endowment fund of $250,000 received early in the year from the Carnegie Foundation.

OREGON

Public Health Service Hospital Planned.—It is reported that a Public Health Service hospital for disabled veterans of the World War from the states of Oregon, Washington, Montana, and Idaho will be established at Portland in the hospital building started several years ago, but never finished. The building will be rushed to completion and will be turned over to the federal government.

PENNSYLVANIA

Health Clinic Opened.—Westmoreland Hospital, Greensburg, has equipped two rooms for a tuberculosis and general public health clinic to be conducted by the state department of health. Dr. James F. Trimble, county medical director, will be in charge of the clinic which will be open every Tuesday afternoon from 2 to 5.

Harrisburg Plans Welfare Federation.—Thirty-six welfare agencies and institutions, seven civic organizations, four public boards and commissions, and two public officials have been requested to join a proposed Harrisburg welfare federation. As practically all of these agencies conduct special campaigns for funds, it is proposed to conduct one joint campaign allowing the donors to designate the particular agencies that shall receive their gifts. A common council is provided under the federation plan.

Philadelphia

Appointment in Public Welfare Department.—Dr. Randolph Faries has been appointed physician-in-chief of the Department of Public Welfare, succeeding Dr. Blair Spencer, who resigned recently to become medical head of the Philadelphia Health Council.

Industrial Surgeons Meet.—Industrial surgeons and physicians have been called to meet in Philadelphia, December 17, for discussion of problems and prospective legislation relating to industrial medicine. This is the first time the conference has been held in Philadelphia.

Health Lecture Under University Auspices.—Dr. Henry R. M. Landis, director of the clinical and sociologic department of Henry Phipps Institute, delivered the third public health lecture of the course given by the School of Hygiene and Public Health of the University of Pennsylvania, November 20, on the subject of "The Reconstruction of Underdeveloped Children."

SOUTH CAROLINA

Tuberculosis Camp Assured.—More than $8,000 having been subscribed for the establishment of a tuberculosis camp in Cherokee County, a site has been obtained near Draytonville mountain and a building committee has been appointed to make arrangements for the early erection of the camp.

Hospital Notes.—The building known as the Spartanburg City Hospital of Spartanburg has been purchased by John B. Cleveland of Spartanburg and presented to the Georgia Cleveland Home for Aged Women. The purchase includes the nurses' home.——Construction work on the Joseph Thompson Memorial Hospital at Charleston is well under way and it is thought the hospital will be completed within several months. When ready for use the present Riverside Infirmary will be given over for use as a nurses' home. The new institution is being erected at a cost of $103,800 and will have forty-six patients' rooms, in addition to office and operating rooms.

TENNESSEE

New Hospital Opened.—The Elizabethton Memorial Hospital was recently opened for the reception of patients. Dr. John O. Woods is president of the institution.

City Hospital Appoints Superintendent.—Dr. Wilson L. Vickers, Nashville, has been appointed superintendent of Nashville City Hospital to succeed Dr. William F. Fessey, resigned.

TEXAS

Bubonic Plague Reported.—The eighteenth case of bubonic plague at Galveston since the discovery of the malady in June was registered with the death of a negro boy, November 13.

UTAH

Health Office Uses Contagious Disease Map.—A large map to be used for demonstrating health conditions in the city of Ogden has been hung on the wall at the city health office.

Personal.—Dr. George F. Harding, for many years a member and secretary of the State Board of Medical Examiners, has tendered his resignation to Governor Bamberger. It is the avowed intention of Dr. Harding to reside at Santa Monica, Calif.——Dr. Leslie S. Merrill, Ogden, has been reappointed as physician for the county public schools.

WISCONSIN

County Selects Tuberculosis Sanatorium Site.—A site has been selected for the proposed tuberculosis sanatorium at Hamilton according to an announcement of Dr. John W. Coon, advisor to the committee.

Public Lectures on Mental Hygiene.—Dr. Elizabeth Woods delivered a public course of four lectures on the psychiatry of the normal and subnormal mind, under the auspices of the Milwaukee Health Department and the state department of education. The lectures were held in the public library, Milwaukee, November 16, 19, 23 and 25.

CANADA

University Notes.—Dr. Herbert Eldon Roaf, Toronto, has been appointed to the chair of physiology at the University of London, England. Dr. Roaf held the Johnston Colonial Fellowship in the University of Liverpool, 1902-1905, and was for three years in charge of the pathologic laboratories at Cairo.——Prof. Irving H. Cameron, for many years professor of surgery in the medical department of the University of Toronto, has relinquished that chair, and Dr. Alexander Primrose has been appointed to succeed him temporarily.

Personal.—Dr. J. E. McCorvie, Toronto, has accepted a position with the Mayo Clinic, Rochester, Minn.——Dr. John

Hunter, Toronto, is spending the winter at Los Angeles, Calif. ——Much sympathy is felt by the medical profession of Toronto for Dr. Price Brown, for many years a specialist in diseases of the eye, ear, nose and throat. Six years ago Dr. Brown lost the sight of one eye, and last summer he submitted to an operation on the remaining eye. Unfortunately, hemorrhage set in and the eye had to be removed, leaving Dr. Brown totally blind.

GENERAL

Research Information Bureau.—The National Research Council has established an information service as a clearing house for scientific and industrial research. On request, information will be supplied concerning research problems, progress, laboratories, equipment, methods, publications, personnel, funds, etc. Ordinarily inquiries will be answered without charge, but in case of unusual difficulty in securing information, the inquirer will be supplied with an estimate of cost. Requests for information should be addressed, Research Information Service, National Research Council, 1701 Massachusetts Avenue, Washington, D. C.

Reserve Officers' Training Schools.—It is announced that officers' training schools will be established immediately at Washington University, St. Louis, Jefferson Medical College, Philadelphia, Rush Medical College, Chicago, and Johns Hopkins University, Baltimore. Officers of the Army Medical Corps will be appointed shortly to take charge of the course of instruction and the training of students for reserve commissions will be inaugurated as soon as they are assigned to these posts. Other colleges and universities will be added during the winter and efforts will be made to induce all medical colleges that can comply with the regulations to establish the military course.

United States Mortality Statistics.—A summary of the mortality statistics for the death registration areas of the continental United States shows that 1,096,436 deaths occurred in 1919, a rate of 12.9 per thousand population, the lowest rate recorded since the establishment of the registration area. Organic diseases of the heart accounted for 10.2 per cent of the deaths, tuberculosis in all forms for 9.8 per cent., and pneumonia and influenza for 17.3 per cent. The rate for diphtheria and croup, 1.1 per cent., was higher than for any other contagious disease. The rate for deaths from diarrhea and enteritis in children under 2 years was 44.2 per hundred thousand of population.

Rockefeller Foundation Gift to France.—The Rockefeller Foundation has given to France complete control over the elaborate antituberculosis organization established in the department of Eure-et-Loir at a cost of 4,000,000 francs. The organization consists of twenty-four dispensaries, four complete isolation services, a departmental sanatorium and laboratory. The system will serve as a model for similar organizations to be established by the government throughout the country. The Rockefeller Foundation is now assisting in the antituberculosis campaign in thirty-eight of the eighty-seven departments and it is expected that this work will be continued for two years more.

License Revoked.—The last act by which the medical profession has been cleared of a notorious imposter was enacted when, October 19, the California board revoked the reciprocal license which in 1915 it granted to Philip Dyment. When Dyment was licensed in Georgia in 1914, he claimed graduation from the Homeopathic Medical College of St. Louis in 1891. An investigation conducted by the Council on Medical Education of the American Medical Association revealed the fraudulent nature of his credentials. The fact that twenty-five years had elapsed after the date of graduation before he attempted to secure a license was in itself suspicious. His name was not found among either the graduates or the students of the college named. None of his supposed classmates remembered him. He held a certificate from a former dean but disclosures showed that on an earlier occasion this dean had issused a fraudulent certificate to one G. B. B. Larkeque, who, according to the evidence, was the one who hired a Dr. L. G. Wright to impersonate Dyment at the Georgia examination. A comparison of Dyment's writing with that on the examination papers further showed that someone else had written the examination for him. The final link in the evidence was secured through the wife of the physician who impersonated Dyment. Dyment was summoned to appear before the Georgia board in 1919 but failed to appear. Definite action was postponed to comply strictly with legal procedure, but, June 10, 1920, his license in Georgia was revoked.

LATIN AMERICA

Brazilian Child Welfare Congress.—The *Brazil-Medico* states that nearly 2,300 persons have already sent in their subscriptions for the first National Child Welfare Congress to be held at Rio de Janeiro next year.

Protest by Haitian Physicians.—The syndicate of the Corps de Santé of Haiti, consisting of physicians and pharmacists, has protested against the action recently taken by the National Public Health Service in prosecuting three physicians, charged with having failed to report cases of smallpox.

Sanitary Inspection of South American Ports.—Asst. Surg.-Gen. J. H. White, U. S. P. H. S., after the close of the sixth Sanitary Conference of the American Republics, to be held in Montevideo, Uruguay, will proceed to Valparaiso, Chile, and other points on the West Coast of South America, via Panama, for the purpose of investigating sanitary conditions at the various ports.

Prizes by Academy of Medicine of Havana.—The Academia de Ciencias Médicas of Havana announces the following prizes for the year 1921: President Gutiérrez' prize, 400 pesos, for the best work on the necessity of a National Formulary; Gañongo prize, 200 pesos for the best work on any medical subject; Gordon prize (physiology), a gold medal, for the best work on correlation of the endocrine glands. The papers must be sent to the secretriat of the academy (calle de Cuba, número 84-A) before March 31, 1920. They must be original, must not have been published before, and may be in Spanish, English or French.

FOREIGN

Septicentennial of the University of Montpellier.—The University of Montpellier was founded in the thirteenth century, and elaborate preparations are under way for the celebration of its approaching seven hundredth anniversary.

Spanish Medical Strikes.—Medical strikes are apparently becoming established custom in Spain. The last strike was declared by the medical society of the province of Zamora, because the municipal authorities were not paying the salaries of town physicians promptly.

Danish Ambulance for Poland.—The ambulance that has been organized at Copenhagen to go to Poland is nearly ready to start. The Danish committee sent a number of ambulances during the war to the different belligerent countries. Dr. P. N. Hansen is in charge of this one.

Poland Appoints Typhus Director.—Dr. Emil Godelowski has been appointed by the Polish ministry of health to take charge of the campaign against the typhus plague. He has been given the widest powers and the resources of the American Red Cross have been placed at his disposal in an endeavor to prevent further spread of typhus fever.

Hungary Excludes Foreign Students from Universities.—The *Deutsche medizinische Wochenschrift* publishes a notice from Prague to the effect that the minister of the interior has decided not to admit to matriculation in the universities applicants from Austria, Germany and the Ukraine, on account of the existing overcrowding of the universities and the dearth of housing facilities and of food.

The Masius Prize.—The Société médico-chirurgicale of Liége has founded a triennial prize in honor of the services rendered by the late Professor Masius at the University of Liége. The first award of 1,000 francs will be made at the close of 1923 for the best clinical or experimental work on internal medicine. For details address the secretary of the society at Liége, Dr. Delrey.

Bequests to Medical Organizations.—The will of the late Dr. Lloyd Roberts, Manchester, England, leaves £5,000 to the Royal Society of Medicine and to St. Mary's Hospital, Manchester; £3,000 to Manchester Royal Infirmary and to the Royal College of Physicians, London; £2,000 to St. David's College, South Wales, and to the Medical Society of London, and the residue of the estate to University College, Bangor.

Cholera in China.—Cholera is adding to the general distress of the famine-stricken provinces of China, including Chihli, Shangtung, Honan, and Shansi. It is estimated that between 25,000,000 and 30,000,000 inhabitants of China face death by starvation during the winter. In the town of Hwai-an, with a population of 100 families, three persons have died from cholera, and similar reports have been received from other districts. The number of suicides has greatly increased.

Choice of Profession. — The *Münchener medizinische Wochenschrift* relates that a series of addresses have been

made recently by representatives of different professions and trades to the pupils of the Dresden high schools, aiming to aid the pupils in their choice of a career. Dr. Faust spoke for the medical profession, his theme being "Who should become physicians? How can I become a physician? and, What prospects have I as a physician?" The third question gave him a chance to emphasize the overcrowding of the medical profession and the pecuniarily unfavorable condition of its members. He concluded with the words "Those seeking a means of support, keep away from the study of medicine. Those who believe themselves actually called to it, pitch in."

Deaths in the Profession in Other Countries

Dr. **E. Faivre,** professor of clinical medicine at the University of Poitiers and on the editorial staff of the *Gazette des sciences médicales* of Bordeaux.——Dr. **A. L'Huillier,** assistant at the laboratory of legal medicine at Geneva, Dr. **L. Delaloye,** a prominent surgeon at Monthey, and Dr. **P. Narbel** of Lausanne, Switzerland.——Dr. **J. A. Lagerman** of Stockholm.——Dr. **J. Crespin,** professor of hygiene, in the medical school at Algiers in Africa.——Dr. **Cailleux,** mayor of Ignaucourt, France.——Dr. **L. Vella,** president of the Trentino Medical Society.——Dr. **A. Benedetti,** docent of ophthalmology at Rome.——Prof. **E. Crissiuma,** professor emeritus of descriptive anatomy at the University of Rio de Janeiro and a successful surgeon, died in October while on a visit to Paris, aged 68.——Dr. **A. González Prats,** professor of medical pathology at the University of Barcelona.——Dr. **A. Guilhem,** professor of forensic medicine at the University of Toulouse.

Government Services

Public Health Service Tuberculosis Centers

Special facilities of the diagnosis and study of tuberculosis have been installed in the Public Health Service hospitals at Fort McHenry, Md.; Fox Hills, N. Y., and St. Louis. Other centers will be established as clearing houses for the placement of tuberculosis patients in a given section. At each of these centers tuberculosis specialists will be on duty.

Investigation of Hazards of High Temperatures

A country-wide investigation of the industrial health hazard of work under high temperature will be undertaken by the Public Health Service with the object of determining means for making conditions more endurable and for the prevention of diseases. A preliminary investigation was made three years ago, but the war compelled its postponement. The Surgeon-General has assigned the task to Mr. B. J. Newman, in charge of industrial hygiene.

Results of October Examination for Army Medical Corps

The October examinations for the selection of additional commissioned officers in the Medical Corps of the Army resulted in the passing of 115 candidates, whose names will shortly be made public through the office of the Adjutant-General, War Department. At the present time the Medical Corps requires 577 additional officers to complete its personnel as provided by the Army Reorganization Act passed last June. While the October examinations were considered successful, according to the Surgeon-General, there were not as many applicants as had been anticipated.

Public Health Service Hospital for Fifth District

U. S. Public Health Service Hospital No. 62 at Augusta, Ga., will be formally opened, November 20, when forty patients suffering with mental and nervous diseases will be transferred to the institution. After extensive alterations have been completed the capacity of the hospital will be 250. The hospital will serve the fifth district of the Public Health Service, including North Carolina, South Carolina, Tennessee, Georgia and Florida. A clearing house for military patients has also been established in the district at Public Health Service Hospital No. 48, Atlanta, where patients with mental and nervous diseases will be kept under observation before being assigned to the particular hospital that seems best suited in a given case.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 30, 1920.

The Nation's Health

The first annual report of the newly established ministry of health by the chief medical officer, Sir George Newman, constitutes an important survey of the problem of national health. The business of the ministry, he says, is not to build for today or tomorrow, but for the future. It represents a reform in central health government, the establishment of a means rather than an end. Moreover, the ministry is merely a part of an organized scheme for the national health which includes (1) a central supervising department; (2) local authorities or representative bodies for the carrying out of its policy; (3) voluntary societies and agencies, and (4) an educated people able and willing to practice the way of health. But these four factors depend on the advance of our knowledge of the science and art of medicine. Hence there is a fifth factor, the physician—in some ways the most important and essential. On him for several years the state has been steadily imposing specific duties with regard to the communal health, though it has been slow to associate him closely with its operations. One of the principal objects of a ministry of health is to secure his cooperation as an integral and active force in the physical well-being of the nation.

From a survey of the available data, Sir George Newman concludes that while here and there great gains have been made in the health of the nation, and though the death rate is declining, there remains a serious amount of preventable sickness and disablement, the tendency of which must be to undermine the physical stamina of the people, reducing their capacity and shortening their days. The broad deductions are: 1. There is a steadily falling birth rate, which in 1919 reached the figure of 18.5 per thousand. 2. There is a death rate of 13.8 which shows a steady decline at all ages. 3. The infant mortality (89 per thousand births) is one of the lowest recorded, but there is still much unnecessary loss of life of mother and child. 4. Although the number of cases of infectious disease exceeds half a million a year, the primary burden is relatively light, yet the ultimate results are grave. 5. Tuberculosis, measles, acute rheumatism and influenza are still prevalent and, with venereal disease, lead to much disablement and mortality. 6. There is also a large mass of disability and incompetency from relatively trivial sickness, much of which is neglected, and thus leads to more serious conditions. 7. The systematic medical inspection of schoolchildren has revealed a substantial degree of physical and mental impairment. 8. The expenditure on sickness and disablement benefit indicates that a serious amount of time is lost from employment, amounting to not less than 200,000 years per annum for the insured population alone.

The trend of the death rate in England and Wales is steadily downward. Previously to the nineties of the last century the decline, apart from infant mortality, chiefly affected the lower ages; but recently there has been an improvement in the middle years of life, which are economically of the most value. Typhus has almost disappeared; typhoid has greatly declined as a contributor to the death rate. But a heavy life tax is paid every year in tuberculosis, cancer and diseases of the circulatory, respiratory and nervous system. Smallpox showed 28 deaths in 1919, the highest number since 1905, when the number was 116. In 1919, 42 per cent. of the total deaths took place under 45 years of age. This is a matter largely within human control. It is impossible to assess exactly the relative value of the numerous

factors that have contributed to the remarkable fall in infant mortality, but improved sanitation in its widest sense, and particularly infant welfare work, has been a determining cause. The result cannot fail to bring with it a higher standard of national life and health. The remarkable decline in typhoid fever continues to constitute one of the hopeful signs of preventive medicine. In 1869, the year that this disease was distinguished from typhus, the mortality was 390 per million in England and Wales; in 1918 it had fallen to 26. The decline is attributed largely to improved water supply, sanitation, and the protection of food.

Sir George Newman lays stress on the need of adequate provision for the care of mothers and children. Much has been achieved, but the services which have been organized are not yet complete. The death rate of women in childbirth remains approximately what it was twenty-five years ago. There are upward of 3,000 deaths a year: a mortality almost entirely preventable. There is a large volume of abortion, miscarriage and stillbirth, and of ophthalmia neonatorum, much of it avoidable. A substantial number of the 700,000 mothers of 1919 were so injured or disabled in pregnancy or childbirth as to make them chronic invalids and bring them in large numbers to the gynecologist—an excessive burden of preventable invalidity. The problem can be met only by wide, continuous and persistent effort in every district. In addition to the supervision of pregnancy, midwifery, maternity homes, home nursing, health visitation, and infant welfare and institutions, it includes sound administration, and a wise use of maternity benefit. The state cannot afford to be careless or negligent of motherhood. There must come a time when civilization means that no child-bearing woman is without adequate and skilled assistance, and no infant without a birthright of health. That time Sir George thinks should come first in England among all nations. Much time last year was spent in inquiries and investigations preparatory to further organization of the attack on tuberculosis. More provision is urgently needed for the training and occupation of consumptives, and for village settlements.

Effect of Shorter Hours of Work on Output and Health

The annual report of the chief inspector of factories and workshops for 1919 shows that the shortening of hours, perhaps more than any other recent improvement in industrial conditions, has had a beneficial effect on operatives. Better time-keeping has been the result of discontinuing work before breakfast. There is also less absence for sickness and other reasons. In one large factory the average daily number of absentees numbered forty some years ago; now, with a forty-four hour week, the average number has dropped to ten. Less fatigue and overstrain are found in factories, and although more men are employed in the engineering and allied trades, the accident list has not increased. Increased leisure has been used by many workers for educational advantage. The reports of various inspectors disclose wide differences as to the effect of shorter hours on production. When the production depends almost entirely on the speed of machinery, as in cotton and woolen spinning, the output is reduced in a proportion nearly corresponding to the reduction of hours. In other machine operations which call for constant alertness, such as weaving, output has not suffered to this extent, and in exceptional cases has been scarcely affected. In a third class of processes, in which output is largely or entirely dependent on the exertion of the worker, there is frequently no loss in production. Indeed, in one wholesale tailoring establishment an increase of 40 per cent. was reported; but this was partly due to reorganization. In a boot factory in which the hours were reduced from fifty-two to forty-eight a week there was a considerable increase in output. Unfortunately, a few of the reports indicate an exceedingly unfavorable result in some work where the shortening of hours has been followed by a reduction in the hourly rate of production; and for this, no adequate explanation, as a rule, is given.

PARIS

(From Our Regular Correspondent)

Nov. 5, 1920.

Population Statistics of France

The *Journal officiel* recently published the population statistics of France for 1919, based on the complete figures for the seventy-seven uninvaded departments and those of the Ardennes, the Meuse and the Vosges. The departments of the Aisne, Marne, Meurthe-et-Moselle, Nord, Oise, Pas-de-Calais and Somme are not considered in the report.

The year was characterized by a great increase in marriages, a slight increase of births and a marked falling off of deaths, as will be apparent from the figures for the eighty departments, summarized in the subjoined table:

	1918	1919	Increase (+) or Decrease (—) Per Cent.
Marriages	177,822	458,363	+ 157
Divorces	8,121	11,933	+ 47
Births	399,041	413,379	+ 3
Deaths	788,616	635,694	— 19

To these figures should be added those from Alsace-Lorraine: marriages, 23,977; births, 28,192, and deaths, 25,556.

The Price of Quinin

Considerable astonishment was occasioned by the fact that during the month of June, when foreign exchange showed a decline of from 20 to 25 per cent., the price of quinin salts rose markedly. It was lately demonstrated that the cause for this lay close at hand. Up to June 15, 1920, the manufacturers of quinin salts were working for the government under control of the Service de santé militaire, on whose account they sold to the druggists the quinin salts necessary for the conduct of their business. These sales were made at prices fixed by the government, and were based on the purchase of great quantities of cinchona during the war when the foreign value of the franc was almost at par. Since June 15, the manufacture of quinin is no longer under state control, and cinchona is now being quoted at Amsterdam prices; and because of the unfavorable exchange rate, quinin will probably be quite expensive for a long time to come.

Poisoning by Barium Sulphate Given for Roentgenoscopy

Barium sulphate has almost completely replaced bismuth in roentgenology. Dr. Japiot of Lyons has called special attention to the fact that barium sulphate is not absolutely safe unless it is chemically pure. The presence of soluble salts is particularly dangerous in view of their toxicity. Thus, a man who had taken 200 gm. of barium sulphate, preparatory to a roentgenoscopic examination, within three hours had an attack characterized by chills and profuse sweats, retrosternal pain, swooning, and thready pulse. For twelve hours he was in a very restless state. Fortunately the greater part of the barium was vomited; the rest was evacuated within twenty-four hours. Analysis revealed that the barium contained a large percentage of soluble salts, especially chlorids and carbonates.

Two similar cases were reported a short time ago by Bensaude. A soluble barium product, consisting of the sulphid and carbonate, had been delivered by error; one patient died within ten minutes, the other within twenty-four hours. Although such serious accidents are comparatively rare, Japiot thinks that they impose on the physician the obligation to prescribe the chemically pure sulphate, and that the druggist should be absolutely sure of the purity of the product.

Death of Delage

French science has suffered a great loss by the death of Dr. Yves Delage, professor on the Paris faculty of science. He was born at Avignon, May 13, 1854, and started his professional education as a medical student in Paris; but the brilliant lectures of Lacaze-Duthiers at the Sorbonne won him over to zoology. He entered Lacaze-Duthiers' laboratory, and from the start gave evidence of painstaking proficiency in experimental research. He received the degrees of Doctor of Medicine and Doctor of Science almost simultaneously, and in 1883 joined the faculty of science of Caen as professor of zoology. After serving in this position for a short time he returned to Paris at Lacaze-Duthiers' request, and at the age of 32 succeeded his master as titular professor of zoology at the Sorbonne, later becoming associate director of the marine laboratories of Roscoff and Banyuls. It was not long before his work stamped him as a leader among contemporary zoologists. In his early investigations in morphology, Delage used the microscope almost to excess, and in 1895 the first symptoms of a serious eye disease made themselves felt. Delage's ardor and his love for science kept him from taking the complete rest which was necessary, and the ocular condition gradually became aggravated so that by 1904 he was almost totally blind. This did not restrict his scientific activities, however, but merely diverted his attention to other subjects. In 1895 his biologic publications began to appear, culminating in his great work on the structure of protoplasm in relation to the theory of heredity and to the major problems of general biology, which constituted a critical study of the main theories on the nature of life, contained an exposition of his own theory, and had a definite influence on future biologic investigations. Only lately he issued an extensive work on the psychology of dreams. Delage was a member of the Académie des sciences and president of the International Society of Biology.

BERLIN

(From Our Regular Correspondent)

Oct. 28, 1920.

The Campaign Against Tuberculosis

The enormous increase in the morbidity and mortality rates of tuberculosis has naturally induced our health authorities, physicians and welfare directors to renew their fight against this plague with great vigor. The mortality in some localities, especially the principal cities, is practically double that in 1913, when 95,000 persons died of tuberculosis. It is estimated that the present rate entails a loss of 160,000 lives annually from this disease.

Although 2,500,000 marks were appropriated in the national budget for various measures designed to combat the spread of the disease, this sum does not begin to suffice for the purpose, especially with the current increase in the cost of the necessities of life. Private donations are therefore expected to assist in the cause, though there is a considerable falling off in gifts to public welfare due to the shrinking of fortunes and the decrease of average annual income. The scientific investigations receive support from the "Robert Koch-Stiftung zur Bekämpfung der Tuberkulose," which has an endowment of approximately 1,250,000 marks. Grants from the income of this fund have made possible the continuation of the researches of several prominent investigators. Only a very few of the sanatoriums could afford to erect new buildings to meet the increased demand for accommodations. Germany now has 160 sanatoriums for pulmonary tuberculosis with 17,600 beds, 172 children's hospitals with 14,300 beds, 120 forest convalescent hospitals, seventeen forest schools, thirty-three other convalescent homes, eighty-two observation hospitals, and 317 special hospitals, special wards in general hospitals, invalid and nursing homes for the tuberculous.

The laboring classes have lately begun to take a very active interest in the campaign against this disease which is making heavy inroads in their ranks. Thus, the miners have agreed to work overtime and to donate their overtime pay to the funds for tuberculous children. At a recent general meeting of the committee for the prevention of tuberculosis the advantages of a proposed national tuberculosis act were freely discussed. Professor Neufeld, director of the Robert Koch Institute, emphasized the point that because of the chronic character of the disease, medical measures are far more important than purely administrative sanitary requirements. Only when it is desirable to eliminate a source of contagion should official compulsion be considered unavoidable, including obligatory notification and segregation, especially of persons whose occupations entail constant contact with children. Another speaker, a public health official, considered compulsory notification absolutely necessary, the more so as the prevalent overcrowding of homes greatly increased the possibility of contagion on all sides.

The Treatment of Pulmonary Tuberculosis

The first fall meeting of the Berlin Medical Society, held October 20, was characterized by the opening of a series of essays designed to be an extensive debate on the methods of treating pulmonary tuberculosis. The attendance was unusually large owing to a lively discussion of the results obtained from the Friedmann "cure."

The first speaker was Prof. F. Klemperer, director of the medical division of a Berlin hospital, who recounted his personal experiences with protein therapy, the partigen therapy of Deycke and Much, and the Friedmann "cure." Klemperer called attention to the fact that this last measure is based directly on the practice of injecting the tubercle bacillus from human cases, as recommended by Behring in the classic essay for which he was awarded the Nobel prize in 1901. This historic remark was made necessary by the attempted apotheosis of Friedmann by some of his uncritical followers, including Professors Dührssen and Schleich, not to mention the inspired daily press. These would acclaim Friedmann as the original discoverer and would rank him higher than Jenner in the history of medicine.

VIENNA

(From Our Regular Correspondent)

Oct. 28, 1920.

American Help for Medical Institutes and Medical Men

A sum of 7,000,000 kronen, collected by Dr. Lange of Chicago, was sent recently to Professor Paltauf of the medical faculty of Vienna, with the suggestion that it be used for the purpose of obtaining materials and apparatus for the institutes of pathologic anatomy, bacteriology and roentgenology. Dr. Lange, who for some time was president of the American Medical Association of Vienna, has promised to continue his endeavors to assist our rather handicapped scientific institutes. Another group of men showed their appreciation of the work done in the medical life of this city by helping to improve the economic conditions of university lectures and teachers of medicine in Vienna. A check for £10,000 was sent by a relief committee to Professor Pirquet, formerly a Johns Hopkins professor at the University of Baltimore, for this purpose. This grant was used by Professor Pirquet in the manner desired, and he at the same time conducted scientific research by means of it. The grant was used to supply articles of food to such families as were found on examination of the nutritional conditions by the nem system of Pirquet to be lacking in the necessary food supply.

About 200 families (nearly 700 persons) were examined. On an average, children lacked from 1 to 3 kilonems, and adults from 2.5 to 3 kilonems daily in the quantity of the food allotted to them by the state and obtainable only by the food tickets. The difference thus found was filled up by the grant. The quantity of foodstuffs thus distributed averaged 154 kilonems a month for each family and consisted chiefly in condensed milk, fat and lard, flour, beans, rice sugar and corned beef. After three months, controls were made with the result that an increase of weight varying between 4 and 8 kg. per person were observed. Care was taken that families with children under 14 years of age received more milk, as well as women who were pregnant or had infants at the breast.

Death of Professor Weichselbaum

After having completed recently his seventy-fifth year of age, Prof. A. Weichselbaum, the teacher of pathologic anatomy, succumbed to the attacks of a neoplasm from which he had been suffering for a few months. By his death Vienna loses one of its best known men, and medicine sustains a severe loss. He was a pupil of the old military medical school, from which so many eminent men originated, and turned his attention early to the study of morbid anatomy, a field at that time not too much favored by success. In the early eighties, Robert Koch published his general bacteriologic discoveries. Weichselbaum at once took the matter up in his enthusiastic manner, alone in Vienna, and with all his energy he became a defender of Koch. At that time, he discovered the cause of pneumonia (*Diplococcus pneumoniae*) and of the dreaded cerebrospinal meningitis, which he called *Meningococcus intracellularis*. One of the chief achievements of Weichselbaum was the anatomic and bacteriologic investigation of endocarditis, and the clearing up of the hitherto mysterious etiology of valvular disease. In his method of work he united the new system of the laboratories with the old descriptive anatomy, thus enabling the modern development of morbid anatomy. While especially interested in the study of pestilence and tuberculosis, he did not neglect the investigation of the changes caused by constitutional diseases and diabetes, and public hygiene owes to him a great measure of the progress achieved within the last decade. For more than thirty years he was "the" pathologist of Austria, a teacher of unequaled qualities to whom numbers of students from all countries flocked. He succeeded in forming a school of modern scientists, now distributed through all German-speaking universities, and his institute where excellent histopathologic and bacteriologic work was done in such high perfection is no doubt well known to numerous American physicians who have studied in Vienna.

Charge of Cruelty Among Military Medical Officers

The various dangers encountered by the members of our profession during the war are clearly illustrated by the report of the committee for investigation of "military misconduct" recently published. After the upheaval of the Austrian state, a number of committees were formed to seek persons guilty of gross misconduct toward subordinates, for the old military system had really treated the population "en canaille." Among others several prominent members of our profession, chiefly neurologists, psychiatrists and pathologists, were accused by former soldiers of having pronounced many men as fit for active service after having treated them with the utmost cruelty in the hospitals. Complaints were made especially about the electric treatment of malingerers, of "shocked" soldiers and similar conditions. After an exhaustive investigation and the hearing of numerous witnesses from both sides, the committee dismissed the charges with a verdict that all the accused physicians had done their duty with utmost reliability, humanity and according to their best abilities. The electric treatment was never proved to have been cruel, although in some cases some of the younger physicians had adopted it in a way not necessarily justifiable. The modern treatment by psychanalysis and hypnotism was not used as much as was deserved, in the opinion of the committee, and some representatives of these modern teachings were in distinct opposition against the use of faradic currents in "shock" or in detection of swindlers. Nevertheless it was clear that the physicians had to proceed according to certain rules laid down in their military instruction and to which they were bound by the compulsions of military service. These rules were not up to date when war broke out and they had not been adjusted to the progress of science.

Marriages

EDWARD FOY UZZELL, Atlantic City, N. J., to Miss Marion Elizabeth Gunter of Fredericton, N. B., September 8.

OSWALD EVANS DENNEY, Carville, La., to Miss Bertha Olive Harris, at New Orleans, La., October 27.

JAMES FRANKLIN HUGHES to Miss Lucy Pace, both of Osawatomie, Kan., September 9.

JOHN C. HOLZBERGER to Miss Elizabeth Laura Bartel, both of Brooklyn, November 2.

CHARLES LARKIN CONROY to Miss Florence E. Strassheim, both of Chicago, recently.

GEORGE D. J. GRIFFIN to Miss Edna Mary Healy, both of Chicago, November 17.

Deaths

Joseph Melanchton Aikin ⊕ Omaha, Neb.; State University of Iowa, Iowa City, 1887; aged 63; secretary-treasurer of the Nebraska State Medical Association and managing editor of the *Nebraska State Medical Journal;* delegate from that constituent association in the House of Delegates of the American Medical Association at several annual sessions; professor of nervous and mental diseases in the University of Nebraska, Omaha; a specialist in psychiatry; died at the Methodist Hospital, Omaha, November 18, following a second gastrojejunostomy for the relief of a practically complete stenosis of the pylorus. He was an unselfish, earnest worker in advancing the usefulness of the medical profession, and his life was dominated by high moral ideals.

Walter Benejah Chase ⊕ Brooklyn; Medical School of Maine, Brunswick and Portland, 1867; aged 77; consulting gynecologist and obstetrician to Long Island College Hospital, consulting gynecologist to Nassau and Jamaica hospitals, and surgeon to Bethany Deaconess Hospital; president of Kings County Medical Society in 1890; one of the founders and in 1892 president of the Brooklyn Gynecological Society; a member of the American College of Surgeons; who served in the One Hundred and Second Regiment, New York National Guard, during the Civil War; died; November 15, from cerebral hemorrhage.

Philander Davis Sims, Chattanooga, Tenn.; University of Nashville, Tenn., 1856; aged 92; a member of the Tennessee State Medical Association; at one time mayor and for many years health officer of Chattanooga; a veteran of the Civil War; for sixty-four years a practitioner of Chattanooga; died, November 8, from senile debility.

Edmund Franklin Bronk ⊕ Amsterdam, N. Y.; Albany (N. Y.) Medical College, 1884; aged 62; attending physician of the City Hospital; health officer of Amsterdam from 1901 to 1906; treasurer of Montgomery County Medical Society in 1907; a member of the board of health since 1895; died, November 2.

Clyde Francis Horner ⊕ Champaign, Ill.; Northwestern University Medical School, 1898; aged 45; Captain, M. C., U. S. Army, and discharged May 14, 1919; died, November 3, from a gunshot wound of the head, self-inflicted, it is believed, while despondent on account of ill health.

⊕ Indicates "Fellow" of the American Medical Association.

George H. Hoskins ⊕ Whiting, Ind.; Northwestern University Medical School, 1898; aged 48; coroner of Lake County, and secretary of the board of education of Whiting; died in Wesley Hospital, Chicago, November 3, following gastroenterostomy for stenosis of the pylorus.

Robert C. James, Lexington, Ky.; University of the City of New York, 1893; aged 55; formerly instructor in obstetrics in his alma mater, attending surgeon to Lying-In Hospital from 1895 to 1905, and obstetrician to Emergency Hospital, New York; died, November 14.

Theodore Goodell Wright, New York; University of the City of New York, 1865; aged 86; a member of the Connecticut State Medical Society, and at one time vice president of the Hartford County Medical Society; a veteran of the Civil War; died, November 1.

Archibald Thomas Perkins, South Otselic, N. Y.; University of Buffalo, 1891; aged 53; a member of the Medical Society of the State of New York; Lieutenant, M. C., U. S. Army, and discharged, July 10, 1919; died, November 2, from cerebral hemorrhage.

Earl Roy Nutter, Joes, Colo.; Lincoln (Neb.) Medical College, Eclectic, 1909; aged 40; a member of the Colorado State Medical Society; died at St. Mary's Hospital, Kansas City, Mo., November 5, from cerebral hemorrhage.

Henderson Suter, Washington, D. C.; University of Pennsylvania, Philadelphia, 1877; aged 62; a member of the Medical Society of the District of Columbia; died, November 6, from cerebral hemorrhage.

Samuel Henry Braude, New Haven, Conn.; Yale Medical School, New Haven, 1913; aged 32; Lieutenant, M. C., U. S. Army, and discharged Dec. 2, 1918; died in Allington, Conn., November 6.

Abraham Skversky ⊕ New York; University of Michigan, Ann Arbor, 1912; aged 32; Captain, M. C., U. S. Army, and discharged, Sept. 26, 1919; died, October 27, from accidental poisoning.

Franklin P. Blake, Yuma, Ariz., and Banning, Calif.; Kentucky School of Medicine, Louisville, 1876; aged 72; health officer of Banning; died suddenly, October 30, from heart disease.

Franz Gerzema, Peoria, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1893; aged 58; a member of the Illinois State Medical Society; died, November 11, from heart disease.

Sarah Hall Sawyer, Los Angeles; Starling Medical College, Columbus, 1880; aged 69; health officer of Los Angeles from 1911 to 1915; died, November 7, from heart disease.

Eleanor W. Rosan, Chicago; State University of Iowa, College of Homeopathic Medicine, Iowa City, 1894; aged 71; died, November 13, from organic heart disease.

Robert Appleton Stevens, Long Beach, Calif.; College of Physicians and Surgeons, Keokuk, Iowa, 1879; aged 76; died, about November 8, from cerebral hemorrhage.

Richard Byrd Sherrill, Hartsells, Ala.; University of Alabama, Mobile, 1890; a member of the Medical Association of the State of Alabama; died about October 30.

James O'Hagan, Detroit; Michigan College of Medicine and Surgery, Detroit, 1897; aged 62; died suddenly, November 1, from heart disease.

A. G. McAlister, Cash, Ark. (license, Arkansas, 1904); aged 60; a member of the Arkansas Medical Society; died, September 7, from dysentery.

Levi Joseph Denchfield, New York; Medico-Chirurgical College of Philadelphia, 1899; aged 65; died, November 4, from heart disease.

Jessie Benton Brown Dodds, Escondido, Calif.; Northwestern University Woman's Medical School, 1887; aged 63; died, November 15.

W. E. Josephine Woods, Los Angeles; University of California, Berkeley and San Francisco, 1885; aged 64; died, October 15.

Kaknsaburo Kurozawa ⊕ San Francisco (license, California, 1890); aged 56; died, November 8, from lobar pneumonia.

Herman Carl Jungblut ⊕ Tripoli, Iowa; Bellevue Hospital Medical College, 1891; aged 58; died, November 3.

Richard Jentzsch, Chicago (license, Illinois, 1897); aged 57; died, November 19, from cerebral hemorrhage.

John L. Wright, Erie, Pa.; Jefferson Medical College, 1881; aged 64; died in Nashville, Tenn., November 4.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

CHLORLYPTUS

Report of the Council on Pharmacy and Chemistry

The condensed report on Chlorlyptus which follows and also a complete detailed report[1] was sent to the proprietor, Jan. 9, 1920. In reply he requested that publication be postponed pending the submission of further clinical evidence. As after nine months this evidence had not been received the Council has authorized publication of its report.

W. A. PUCKNER, Secretary.

Chlorlyptus is manufactured by Chas. A. Weeks, trading as the Weeks Chemical Company, Philadelphia. It is prepared by chlorinating eucalyptus oil until it has bound 30 per cent. of chlorin, the chlorin being in relatively stable combination. It is claimed that Chlorlyptus is a new "chlorinated antiseptic," highly efficient as a wound antiseptic and at the same time nonirritant and nontoxic. Chlorlyptus is offered for use in the treatment of local infections of all types, as well as of burns, and also as an antiseptic in the alimentary and genito-urinary tracts.

The claims were based largely on reports of investigations made by Phillip B. Hawk and his collaborators. These reports the referee of the committee in charge of Chlorlyptus considered incomplete and unconvincing. Being advised of this, Mr. Weeks caused further investigations to be made. Some of the information was checked and extended by the A. M. A. Chemical Laboratory and by the referee.

The laboratory side of the investigation may now be considered as complete. The results show that Chlorlyptus is a feeble antiseptic of the aromatic oil type, considerably weaker than eucalyptus oil, both as to the therapeutic and toxic qualities. The chlorin contained in it is bound too firmly to have any action; in fact, the chlorination appears to have accomplished nothing more than a considerable destruction or weakening of the eucalyptus oil. So far as the referee can judge, this object could have been accomplished just as effectively by diluting ordinary eucalyptus oil with some indifferent solvent.

The manufacturer of Chlorlyptus contends that if the experimental findings are against his product, it should be judged by the clinical data. The clinical evidence, however, is not decisive. It shows that wounds healed and infections were prevented or successfully combated in cases in which Chlorlyptus was used in combination with good surgery, but it does not show how much of the result was due to the surgery and how much, if any, to the use of Chlorlyptus. Even were it granted as probable that the Chlorlyptus contributed to the favorable outcome, it would still be a question whether it equals other established antiseptics, or whether it possesses any material advantages over diluted eucalyptus oil. Until these points are established the clinical reports cannot offset the unfavorable results of the laboratory investigation.

The manufacturer has endeavored to obtain more convincing clinical reports, but the lack of success in this direction during the past nine months gives little encouragement that acceptable clinical evidence will be available within a reasonable time.

Believing that the information which has been obtained should be made available to the profession, the Council authorized publication of this statement and also of the detailed report. The Council voted not to accept Chlorlyptus for New and Nonofficial Remedies because of the unfavorable results of the laboratory investigation, but with the agreement that the product would receive further consideration should more convincing clinical data become available.

1. A copy of the detailed report will be sent if a stamped addressed envelop accompanies the request.

Correspondence

BUBONIC PLAGUE SITUATION AT HOUSTON, TEXAS

To the Editor:—Many inquiries have been received regarding the bubonic plague situation at Houston, Texas, since Houston is located midway between the Texas ports that are reported to be infected, namely, Galveston and Beaumont.

When it became known that bubonic plague existed in the Mexican Gulf ports, extra precautions were instituted at Houston to protect it from plague-infected rodents. The Texas state law regarding the breasting off of ships and the installing of rat guards, the tarring of lines, etc., was carried out to the letter of the law. The Texas state law requires that a ship breast off 8 feet and that no gang planks be allowed to connect from the deck of the ship to the wharf at night except one, and that to be well lighted and under guard.

When it became known in June that plague had appeared at Galveston and Beaumont, a rat extermination and examination campaign was started by the health department of the city. After the meeting of the public health commissioners in Galveston in August, a more vigorous campaign was started by the health department of the city of Houston, and the Texas State Board of Health.

An expert bacteriologist, chief rat trappers, and an efficient personnel were employed. It was the consensus of the various public health and state health officers at the conference in Galveston that all cities of the Gulf Coast should render an index of rats examined to the extent of 10 per cent. of their population. The city of Houston has completed this index; 15,027 rats have been trapped, classified, dissected and examined to date with no appearance of bubonic plague among any of them.

CLASSIFICATION OF RATS EXAMINED

Male Norway	2,852
Female Norway	4,518
Male Rattus	189
Female Rattus	201
Male Alexandrian	1,779
Female Alexandrian	2,357
Male mice	548
Female mice	635
Wood rats	1,185
Cotton	16

Since completing this index, we have decided to continue our rat survey, although not keeping so great a force as we had during the campaign.

The city of Houston has also maintained a quarantine inspection at the mouth of the ship channel, where our own employees have personally inspected every boat that enters the Houston ship channel, regardless of size. Also, we have inspected every freight car that has come from an infected city. This was made possible by the cooperation of the freight agents of the seventeen different railroads with the health department, the health office receiving daily reports of all cars that had been in an infected city. While this procedure has at times worked a hardship on the inspectors, it has been well worth the effort.

We expect to continue this rigid inspection and examination as long as there is plague, either human or rodent, in the coast country.

Regarding the expense of our campaign, it has cost Houston about 70 cents per rat to date. This estimate, I believe, is lower than that experienced by other cities.

ARTHUR H. FLICKWIR, M.D., Houston, Texas.
Health Officer, City of Houston;
Assistant Collaborating Epidemiologist, U. S. P. H. S.

"INTELLECTUAL RECONCILIATION WITH GERMANY"

To the Editor:—In connection with the recent invitation of the group of Oxford professors and doctors to various German and Austrian scientists to resume friendly relations, and the rather characteristic Prussian reply, the following excerpts are illuminating. They are, so far as possible, literal translations from the preface of Schwalbe's 1920 edition of "Lectures on the History of Medicine" (Jena, G. Fischer, 1920):

> Between the second and third edition of this book has come the World War and the terrible misfortune of our Fatherland. The rupture of international thought has even included the domain of science. Nevertheless, science remains a possession which can never be limited to one people or from which a people can never be excluded, as is shown by history. A proof of this will also be conclusively shown in the following presentation.
>
> The war, which, after the so-called peace, our adversaries are still continuing in other forms, and which is directed against Germanism and the German language, has opened the eyes of many who formerly did not concern themselves with statecraft. It places thereby new duties on German scientists. Among these I reckon above all a care to purify our scientific language as far as possible from foreign expressions. From this point of view the present edition of my history of medicine has been carefully revised.
>
> May our university (Rostock), together with its sister institutions of the German Empire (to which German Austria is approaching in a community of speech and thought) by means of unceasing labor toward the improvement of instruction, while holding fast to the dear possessions of German freedom in learning and teaching, aid in the reconstruction of the beloved Fatherland and bring to a successful conclusion the spiritual struggle against deception and against slander of German work, when, after heroic deeds which have never before been equaled, the victory of arms was granted to our people. German spirit is unconquerable!
>
> Rostock, 12 Nov., 1919.

This, it seems, brings a new significance to the adage, Audi alteram partem.

EDWARD B. KRUMBHAAR, M.D., Philadelphia.

"THE PRECIPITIN TEST FOR GLOBULIN IN THE ARACHNOID FLUID IN GENERAL PARALYSIS"

To the Editor:—In THE JOURNAL, Nov. 13, 1920, p. 1332, Hektoen and Neymann maintain that the precipitin reaction may be of diagnostic value in the examination of the spinal fluid obtained from paretics. In an article entitled "Examination of the Cerebrospinal Fluid Particularly with Reference to the Precipitin Reaction" (*Interstate M. J.* **20**:38, 1913), I reached the conclusion that "the precipitin reaction is too delicate for clinical purposes. Its use is still limited to those instances in which we wish to prove that a given fluid or serum is of human origin." It is to be hoped that Dr. Hektoen's recent findings will lead to another method in assisting the clinician in establishing a diagnosis of paresis.

OSCAR BERGHAUSEN, B.A., M.D., Cincinnati.

IMPROVEMENT IN COMPLEMENT FIXATION TEST FOR SYPHILIS

To the Editor:—The adoption of this variation in technic, applicable to any method of performing the complement fixation test for the diagnosis of syphilis, will do away with the necessity of reporting serums as anticomplementary:

At the time of reading the results, one-half unit of complement is added to all tubes (test and serum control) of those tests in which the serum controls have not cleared and which would ordinarily be reported as anticomplementary. Incubation at 37 C. is continued for ten or fifteen minutes, and if the control tubes have not yet cleared, another half unit of complement is added. This process can be continued to the point of hemolysis in the control tubes in every case, with the result that a reading can always be made.

This procedure is part of the regular technic of a raw serum method described by me in a paper entitled "An

Attempt to Improve the Sensitiveness of the Complement Fixation Test for Syphilis Without Loss of Accuracy," read before the American Public Health Association meeting in September, but not yet published.

W. H. KELLOGG, M.D., Berkeley, Calif.
Director, Bureau of Communicable Diseases and State Hygienic Laboratory, California State Board of Health.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 11. Sec., Dr. Samuel W. Welch, Montgomery.
ARIZONA: Phoenix, Jan. 4-5. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
COLORADO: Denver, Jan. 4. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
DELAWARE: Dover, Dec. 14-16. Sec., Reg. Bd., Dr. P. S. Downs, Dover.
DISTRICT OF COLUMBIA: Washington, Jan. 11-13. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.
FLORIDA: Gainsville, Dec. 6-7. Sec. Reg. Board, Dr. W. M. Rowlett, 812 Citizens Bank Bldg., Tampa.
HAWAII: Honolulu, Jan. 10-13. Sec., Dr. J. E. Strade, 1041 Alakea St., Honolulu.
ILLINOIS: Chicago, Dec. 6-7. Director, Mr. Francis W. Shepardson, Capitol Bldg., Springfield.
INDIANA: Indianapolis, Jan. 11. Sec., Dr. W. T. Gott, Crawfordsville.
LOUISIANA: New Orleans, Dec. 2-4. Sec., Dr. E. W. Mahler, 1551 Canal St., New Orleans.
MARYLAND: Baltimore, Dec. 14. Sec., J. McP. Scott, 137 W. Washington St., Hagerstown.
MINNESOTA: Minneapolis, Jan. 4-6. Sec., Dr. Thomas McDavitt, 539 Lowry Bldg., St. Paul.
NEW MEXICO: Santa Fe, Jan. 10-11. Sec., Dr. R. E. McBride, Las Cruces.
NORTH DAKOTA: Grand Forks, Jan. 4. Sec., Dr. George M. Williamson, Grand Forks.
OHIO: Columbus, Dec. 1-3. Sec., H. M. Platter, State House, Columbus.
OKLAHOMA: Oklahoma City, Jan. 11-12. Sec., J. M. Byrum, Shawnee.
OREGON: Portland, Jan. 4-6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.
PENNSYLVANIA: Philadelphia, Jan. 11-15. Sec., Dr. Thomas E. Finnegan, Harrisburg.
RHODE ISLAND: Providence, Jan. 6-7. Sec., Byron U. Richards, Providence.
VIRGINIA: Richmond, Dec. 14-17. Sec., J. W. Preston, 511 McBain Bldg., Roanoke.
WASHINGTON: Spokane, Jan. 4-6. Sec., Dr. William M. O'Shea, Spokane.
WEST VIRGINIA: Charleston, Jan. 13. Sec., R. T. Davis, Charleston.

Michigan June Examination

Dr. Beverly D. Harison, secretary, Michigan State Board of Registration, reports the written examination held at Ann Arbor, June 8-10, and Detroit, June 21-23, 1920. The examinations covered 14 subjects and included 100 questions. An average of 75 per cent. was required to pass. At the Ann Arbor examination, 74 candidates were examined, all of whom passed; and at the Detroit examination, 72 candidates were examined, all of whom passed. The following colleges were represented:

ANN ARBOR EXAMINATION

College	PASSED	Year Grad.	Per Cent.
Johns Hopkins University Medical Department		(1920)	87.6
University of Michigan Homeopathic Medical School	83.7, 84.2, 85.1, 86.7, 87.3	(1920)	83.4,
University of Michigan Medical College	(1919) 85.4, (1920) 79.4, 79.8, 80.9, 80.9, 81, 81.1, 81.5, 81.6, 81.7, 81.7, 81.9, 82.3, 82.4, 82.4, 82.4, 82.9, 83, 83, 83.2, 83.2, 83.3, 83.3, 83.4, 83.5, 83.5, 83.8, 83.9, 83.9, 84.2, 84.2, 84.2, 84.2, 84.1, 84.3, 84.3, 84.4, 84.4, 84.5, 84.6, 84.6, 84.7, 84.7, 84.7, 84.8, 84.8, 84.8, 84.8, 84.9, 85, 85, 85.2, 85.4, 85.8, 85.9, 86.1, 86.4, 87.2, 87.5, 87.9, 88.3		82.2,
Harvard University		(1920)	85.7
Eclectic Medical College, Cincinnati		(1920)	80.1
University of Tennessee College of Medicine		(1917)	84.4
University of Berne		(1917)	83.7
University of Rome		(1912)	75.2

DETROIT EXAMINATION

College	PASSED	Year Grad.	Per Cent.
Tulane University of Lousiana School of Medicine		(1916)	82.5
University of Illinois		(1920)	79.5
University of Michigan Medical College	(1920) 80.9, 81.1, 81.4, 83, 83.2, 83.3, 83.4, 83.5, 83.6, 84.3, 84.5, 85.4, 86.3, 87.1, 87.1, 87.6	(1919)	85.7,
University of Michigan Homeopathic Medical School		(1920)	84.2
Detroit College of Medicine and Surgery	81.3, 81.7, 81.7, 81.8, 81.9, 82, 82.1, 82.2, 82.3, 82.6, 82.8, 82.8, 83.2, 83.3, 83.3, 83.3, 83.4, 83.5, 83.7, 83.8, 84, 84.2, 84.2, 84.4, 84.4, 84.6, 84.7, 84.7, 84.8, 84.8, 85.7, 85.7, 86, 86.3, 87.1, 88.2	(1920)	80.2,
Washington University Medical School		(1919)	83.1
St. Louis University School of Medicine		(1917) 85.9, (1919)	84.2
Harvard University		(1920)	84.7
Eclectic Medical College, Cincinnati		(1920)	80.3
University of Pennsylvania School of Medicine		(1916)	87.5
Temple University Department of Medicine		(1920)	86.3
University of Edinburgh		(1911)	83.2
University of Toronto Faculty of Medicine	(1911) 75.8, 83.6, (1914) 85.7, (1916) 84.4, (1918) 81.8	(1905)	79.1,
Western University Faculty of Medicine		(1912)	80

Massachusetts July Examination

Dr. Walter P. Bowers, secretary, Massachusetts State Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, July 14-16, 1920. The examination covered 13 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 176 candidates examined, 144, including 3 osteopaths, passed and 32, including 10 osteopaths, failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of California Medical School		(1920)	86.8
Loyola University	(1918) 83.5, (1919) 76, 83.5,	(1920)	76.8
Northwestern University Medical School		(1920)	84.2
College of Physicians and Surgeons, Chicago		(1912)	75
Bowdoin Medical School	(1919) 78.6,	(1920) 82.3,	83.7
Johns Hopkins University		(1903)	84
University of Maryland		(1915) 78.1, (1920)	81.5
Harvard University	(1916) 85.7, 78.3, 78.9, 79.6, 80.2, 80.2, 81.2, 81.9, 82.2, 82.8, 82.8, 83, 83, 83, 83.4, 83.8, 84.2, 84.2, 84.6, 84.7, 84.7, 84.7, 84.8, 85.5, 85.6, 86.1, 86.2, 86.3, 86.4, 86.6, 86.7, 87.2, 87.8, 88.1.	(1920) 75.2	75.7
Boston University	(1920) 75, 78.3, 80.4, 82.5, 85.1,	82.5,	83
College of Physicians and Surgeons, Boston		(1917)	75.2
Tufts College Medical School	(1920) 75, 75, 75, 75.3, 75.4, 75.5, 75.7, 76, 76.1, 76.2, 76.3, 76.3, 76.5, 76.6, 76.7, 77, 77.1, 77.1, 77.2, 77.5, 77.5, 77.5, 77.8, 78.1, 78.1, 78.3, 78.4, 78.5, 78.7, 79, 79.1, 79.2, 79, 79.3, 79.4, 79.5, 79.8, 79.9, 80, 80.2, 80.3, 80.4, 80.5, 80.7, 80.9, 81, 81, 81.2, 81.2, 81.5, 81.6, 82, 82, 82.1, 82.2, 82.3, 82.4, 82.5, 82.8, 83.2, 83.4, 83.5, 83.7, 83.9, 84.			
Middlesex College of Medicine and Surgery	(1920) 75, 76.3, 78.8, 79.1, 83.5.	(1919)	78.4,
University of Michigan Medical School		(1920)	77.3
University and Bellevue Hosp. Med. College		(1920) 82.7,	84.3, 84.7
New York Homeopathic Med. Coll. and Flower Hosp.		(1920)	85.8
Columbia University		(1919)	80.8
Univ. of Pennsylvania School of Med.		(1916) 77.3, (1919)	80.7
Jefferson Medical College of Philadelphia		(1920)	77.9
University of Vermont College of Medicine		(1920) 76.2,	77.7
Laval University Faculty of Medicine		(1918)	81
Western University Medical School		(1913)*	79.7

College	FAILED	Year Grad.	Per Cent.
Tufts College Medical School	67.1, 70.2, 70.3, 72.6, 73.1, 74.1.	(1920) 64.9,	65.8,
College of Physicians and Surgeons, Boston	68.7, 72.8, 73.9.	(1920) 63.1,	65.2,
Middlesex College of Medicine and Surgery	(1919) 67.4, 70.7, (1920) 57.4, 69.9, 73.	(1917)	67.7,
Maryland Medical College, Baltimore		(1912)	69
Meharry Medical College		(1913)	68.9
Queen's University Faculty of Medicine		(1920)	73.2

* Graduation not verified.

South Carolina June Examination

Dr. A. Earle Boozer, secretary, South Carolina State Board of Medical Examiners, reports the written examination held at Columbia, June 22-24, 1920. The examination covered 17 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 30 candidates examined, 25, including 1 chiropractor, passed, and 5 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Georgia Medical Department		(1920)	75.6
Johns Hopkins University	(1917) 84.2,	(1920)	88.8
University of Maryland		(1918)	87.5
Bellevue Hospital Medical College		(1889)	85.5
Jefferson Medical College of Pennsylvania	(1915) 83.8, (1919) 84.	(1914)	84.7,
Medical College of the State of South Carolina	78.8, 80.2, 82.2, 83.2, 84, 85.5, 85.7, 87.3, 88.1, 88.5, 89.8, 89.8, 93.	(1920)	78.2,
University of Virginia		(1914)	94.5

College	FAILED	Year Grad.	Per Cent.
Atlanta Medical College		(1915)	74.3
Southern College of Medicine and Surgery		(1914)	70.1
College of Physicians and Surgeons, Keokuk		(1877)	71.2
Leonard Medical School		(1911)	69.7
University of Nashville		(1909)	75.6

Book Notices

X-RAY OBSERVATIONS FOR FOREIGN BODIES AND THEIR LOCALIZATION. By Captain Harold C. Gage, A.R.C., O.I.P., Consulting Radiographer to the American Red Cross Hospital of Paris. Cloth. Price, $1.75. Pp. 83, with 55 illustrations. St. Louis: C. V. Mosby Company, 1920.

This is largely a war product, being founded on war experience. The book covers several well known and some less well known localization methods, some of which were applied in the war zone with greater or lesser degrees of success. The presentation is concise and avoids the too oft excessive technical descriptions that carry one into the realm of higher mathematics, found in some publications. Its value, however, is more for war conditions than for civil practice, although several methods fall into the latter class. The author advocates the combined roentgen-ray and operative procedure for the removal of foreign bodies; this will receive the approval of many surgeons experienced in this particular form of foreign body localization and removal in the war zone. The Hirtz compass, which was so enthusiastically received by some of the American surgeons operating at the front, is given brief mention. From the text it seems evident that the author's understanding of this instrument falls short of a full appreciation of its real value as a localization apparatus and surgical guide for removal of the foreign body. If details of application were given, it is probable that it would serve to bring this method into greater use in civil roentgen-ray work and surgery. The profondometer method, which also received much notice during the war, appears under the title of "Cross Section Localization by Three Intersecting Lines." With the addition of anatomic chart tracings, this method is graphic and valuable in tissue orientation in the region of the foreign body. Such methods as these seem to be applicable to civil life hospital surgery. The author presents several of the less well known methods for bullet localization, each one of which will find supporters in accordance with their individual experiences. An old method of eye localization appears under a new name and apparently is credited as original to two French physicians. The author describes this technic at considerable length. The original description was published in January, 1899, in an English journal. The book closes with an interesting presentation on the value of direct roentgenograms on bromid paper, which may appeal to institutions where economy of roentgen-ray plates and materials enter into the roentgen-ray department management, though it is hardly probable that American hospitals will find it a necessary expedient.

VERGLEICHENDE ANATOMIE DES NERVENSYSTEMS. Erster Teil: Die Leitungsbahnen Im Nervensystem der Wirbellosen Tiere. Von Æ. B. Droogleever Fortuyn, Lector der Histologie, Reichs-Universität Leiden. Paper. Price, 12.50 Dutch guilders. Pp. 370, with 116 illustrations. Haarlem: de Erven F. Bohn, 1920.

It has long been recognized that the analysis of the intricacies of the internal structure of the human brain is greatly facilitated by study of the simpler schemata afforded by lower and more primitive types of nervous system. The literature of comparative neurology which can be drawn on for this purpose is voluminous; but it is widely scattered, and most of it is special and technical, and hence difficult of access by anatomists and physiologists in general. The utilization of this wealth of material will be greatly facilitated by the publication of the extensive work on the comparative anatomy of the nervous system, of which the book here reviewed is the first volume. The parts to follow, dealing with the nervous system of vertebrates, by Dr. Kappers of Amsterdam, are now in press. This volume, by Dr. Fortuyn of Leiden, makes no attempt to summarize all of the enormous literature on the nervous system of invertebrates, but reviews this field with the more restricted purpose of assembling what is known regarding the conduction pathways of these various and diversified forms. This survey is comprehensive and thorough and, since a description of the conduction pathways includes what is of greatest significance for both comparative anatomy and comparative physiology, the work comprises in condensed and accessible form a judicious selection of the most valuable data gleaned from an enormous mass of widely scattered publications on the nervous systems of all groups of invertebrate animals, including *Amphioxus*. It contains good bibliographies, and as a reference book will be of great service.

GRUNDRISS DER AUGENHEILKUNDE FÜR STUDIERENDE UND PRAKTISCHE AERZTE. By Prof. Dr. A. Brückner, Oberarzt, und Prof. Dr. W. Meisner, I. Assistent, der Universitäts-Augenklinik zu Berlin. Paper. Price, $2.43. Pp. 649, with 126 illustrations. Leipzig: George Thieme, 1920.

Germany has always been able to produce an abundant supply of comprehensive textbooks on ophthalmology. The authors of this volume began its compilation about eight years ago, but it was interrupted by the war. After its completion it was necessary, because of the changed economic conditions of the country, to sacrifice all nonessentials in the make-up of the book, in order to keep the price within the means of students. The text of the book is divided into four parts. As is to be expected in a German treatise, the most exhaustive single section is given to special pathology; the subject of the relationship between eye diseases and general systemic conditions likewise receives commendable attention. In the other three parts, the general subjects of anatomy, physiology, bacteriology, serology, functional testing, prophylaxis, and surgical and therapeutic treatment are much more briefly considered. In the make-up of the book itself, its excellent typography offsets, perhaps, some of its defects; but in its paper cover and insecure binding, and with a complete absence of colored plates to illustrate the various pathologic fundus conditions, which are so prominent a feature in several of the most recently published ophthalmic textbooks, this work probably will not appear especially attractive to students.

THE NERVOUS HOUSEWIFE. By Abraham Myerson, M.D. Cloth. Price, $2.25 net. Pp. 273. Boston: Little, Brown and Company, 1920.

Dr. Myerson tells in plain language what he has learned in his practice and by observation relative to the causes of nervousness in the modern housewife. As Oliver Wendell Holmes said in his "Autocrat of the Breakfast Table":

> Talk about military duty! What is that to the warfare of a married maid of all work, with the title of mistress, and an American female constitution which collapses just in the middle third of life, and comes out vulcanized India rubber, if it happens to live through the period when health and strength are most wanted.

The author shows that the nervous housewife has existed in America, not only since the time of Oliver Wendell Holmes but since the earliest days. He analyzes the causes for differences between husband and wife from both the mental and the physical points of view. He shows that the reaction to disagreeable and unexpected situations is the primary cause of conflict. In two chapters he cites typical cases of maladjustment, and in his final chapters considers treatment and the future of women in this country. Of course, he realizes the importance of prophylaxis, viz., that marriage should be guarded so that the grossly unfit do not marry. The book was written that the nervous housewife might know herself better. No doubt, nervous housewives would be benefited if they would read more of any thing and do less of some things. Certainly they will be benefited by reading such a sympathetic account of their trials and tribulations as Dr. Myerson has prepared.

A STUDY IN THE EPIDEMIOLOGY OF TUBERCULOSIS, WITH ESPECIAL REFERENCE TO TUBERCULOSIS OF THE TROPICS AND OF THE NEGRO RACE. By George E. Bushnell, Ph.D., M.D. Cloth. Price, $2.75. Pp. 221. New York: William Wood and Company, 1920.

The writer has collected a number of interesting facts and opinions regarding the distribution and racial relations of tuberculous infection. The incompleteness of our knowledge about tuberculosis in many tropical countries is emphasized by the data presented. The tuberculosis of the American negro and of the American Indian is also considered. Many suggestive facts are recorded; but the total outcome of the inquiry is inconclusive and the book must be regarded, as the writer evidently wishes it to be, as a collection of suggestions and implications, rather than a finished treatise arriving at definite conclusions.

Medicolegal

Cause of Hodgkin's Disease Not Considered Proved

(State ex rel. Johnson Hardware Co. et al. v. District Court of Carver County et al. (Minn.), 177 N. W. R. 644)

The Supreme Court of Minnesota reverses a judgment that was rendered, under the workmen's compensation law, in favor of the widow of a man who died of what was diagnosed as Hodgkin's disease. The court says that the man had followed the occupation of a tinner and plumber for more than twenty years and was employed in that capacity by the relator hardware company at the time he became ill. The trial court found that the disease which caused his death, known as Hodgkin's disease, resulted from ulcerations of the mucous membrane of his nose, and that these ulcerations were caused by inhaling the fumes of hydrochloric acid used by him while engaged in the performance of his duties as a tinner. These findings rested on the testimony of a physician who, in an examination of the man about four months before his death, found two ulcerated spots on the septum of the nose, one of which had already healed. The physician testified that, in his opinion, the ulcerations which he found were caused by inhaling the fumes of hydrochloric acid used in certain soldering operations, and that the Hodgkin's disease resulted from these ulcerations. But the physician's statement that in his opinion the man became afflicted with Hodgkin's disease because of the ulcerations of the mucous membrane of his nose, when taken in connection with the physician's further statement that he did not know how that disease originates nor what causes it, could be considered only as a mere guess. It was undisputed that medical science has not yet discovered how this disease is produced or what causes it, and no attempt was made to show that it follows traumatic injuries or that such injuries have any part in producing it. If the evidence had disclosed any facts from which a reasonable mind could legitimately infer a causal connection between the inhaling of the acid fumes and the disease which caused death, the finding of the trial court would be final. But the supreme court is forced to the conclusion that the evidence disclosed no basis of fact for the findings in question; that they rested wholly on conjecture, and, therefore, could not be sustained.

When Fees Are Subject to Approval of Industrial Board

(National Car Coupler Co. et al. v. Sullivan (Ind.), 126 N. E. R. 494)

The Appellate Court of Indiana, Division No. 1, holds that the industrial board was without jurisdiction to make an order that the claim of plaintiff Sullivan, a physician, be approved for $341 for treating injured employees of the defendant company, he having been employed by the defendants to treat the injuries of certain of the company's employees, arising by accidents out of and in the course of their employment with the company. The court says that Section 25 of the workmen's compensation act of Indiana, of 1915, which was in force when the services in question were rendered, provides that:

> During the thirty days after an injury the employer shall furnish or cause to be furnished free of charge to the injured employee . . . an attending physician . . . and in addition such surgical and hospital service and supplies as may be deemed necessary by said attending physician or the industrial board. . . . If in an emergency on account of the employer's failure to provide the medical care for the first thirty days, as herein specified, or for other good reason, a physician other than that provided by the employer is called to treat the injured employee during the first thirty days, the reasonable cost of such service shall be paid by the employer subject to the approval of the industrial board.

By the plain language of this section it is apparent that it was the intention of the legislature that only the fees of physicians called to treat injured employees in the emergency stated should be subject to the approval of the industrial board. But Section 65 provides that "fees of attorneys and physicians and charges of hospitals for services under this act shall be subject to the approval of the board." Was it the intention of the legislature, by the enactment of Section 65, to destroy the distinction made in the fees of physicians by Section 25, and to make all of such fees subject to the approval of the industrial board? The court thinks that it was not.

An employer, generally speaking, may become liable for the fees of a physician in one of two ways: (1) by contract, either express or implied, made with the physician; (2) by a physician treating an injured employee, when called to do so under an emergency, caused by the employer's failure to provide medical care, or for other good reason. In the way first named, the employer voluntarily assumes the liability incurred, and has an opportunity to protect himself against excessive charges by contract, and even to obtain such services at less than the prevailing charges, by special arrangements. But, in the way last named, liability, instead of being voluntarily assumed by the employer, is imposed on him by statute, under circumstances in which usually he would have no opportunity to protect himself against excessive charges. In view of this fact, and the well-recognized custom, among at least a portion of the medical profession, to base their charges for services in part on the ability of the one liable therefor to pay, the legislature evidently intended to make the fees of physicians, where services were rendered in the way last named, subject to the approval of the industrial board as provided in Section 25. In view of the rule which favors that construction of a statute which does not abridge the right to contract, and the absence of any harmful practice, at the time of the enactment of the workmen's compensation act, respecting charges for medical services, the court is led to believe that the legislature did not intend by Section 65 to enlarge the authority of the industrial board with reference to the approval of the fees of physicians beyond that provided in Section 25, since no good reason appears for believing that harmful practices would arise in that regard under such act, where the right to contract was left open to the employer.

Society Proceedings

COMING MEETINGS

American Physiological Society, Chicago, Dec. 30.
District of Columbia, Medical Society of, Washington, Dec. 1.
Porto Rico, Medical Association of, Ponce, Dec. 13-14.
Radiological Society of North America, Chicago, Dec. 16-17.
Society of American Bacteriologists, Chicago, Dec. 28-30.
Southern Medical Association, Louisville, Ky., Nov. 15-18.
Southern Minnesota Medical Association, Mankato, Nov. 29-30.
Southern Surgical Association, Hot Springs, Va., Dec. 14-16.
Western Surgical Association, Los Angeles, Calif., Dec. 3-4.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Seventieth Annual Session, held at Harrisburg, Oct. 4-7, 1920

(Concluded from page 1448)

SECTION ON SURGERY

Problems of Modern Chest Surgery as Met by Physiologic Drainage

DR. LEVER F. STEWART, Clearfield: In lung surgery, when infection is present, the pleural cavity should be kept drained and free from air. This is made possible by the use of the one-way valve used in the army box gas mask. It meets the physiologic requirements. This was first suggested to me by Yates, in 1918. I have attached this valve to the Brewer tube, modified its application so as to continue indefinitely the protection of the pleura from the air, and at the same time permit the use of surgical solution of chlorinated soda. To the distal end of the tube the gas mask is attached. The outer flange of the tube is placed under the skin, which is sutured over it with catgut.

DISCUSSION

DR. FREDERICK B. UTLEY, Pittsburgh: It is of more importance to determine whether the patient can take an anesthetic from the standpoint of the respiratory tract than to take the

measure of the circulatory system. It would seem wise to have all patients in the hospital a few days before operation. I have seen two or three cases this spring in which Dr. Stewart's method was used, and it was amazing to see how completely the pleural cavity had filled with the expanding lung.

DR. A. RALSTON WELLS, Philadelphia: All inhalation anesthesia makes the lung work to a fuller extent. It causes a passive hyperemia of that lung and gives a better opportunity for culture of any bacterium that happens to be present. Nitrous oxid is the least harmful of all the anesthetics administered by inhalation. Spinal anesthesia is moderately safe. Given by a person who is familiar with its use, it overcomes many of the difficulties experienced in chest surgery. The drainage tube of Dr. Stewart is very apt and will lessen our mortality to a great extent.

Postoperative Complications and Sequels of the Respiratory Tract

DR. H. RYERSON DECKER, Pittsburgh: On the average, one person in every forty-five operated on develops a respiratory tract complication, and one person in every 200 dies from such a complication. Pneumonia, chiefly the croupous type, is by far the commonest complication. In our series of 5,976 cases there were ten cases of pleurisy, seven cases of bronchitis, and two cases of embolism of the pulmonary artery. Latent tuberculosis may be lighted up, or an active lesion may be aggravated by operation, especially if inhalation anesthesia is used. Exposure of the patient before and after operation to unaccustomed conditions is an important predisposing cause of respiratory trouble, likewise various infections preexisting in the body.

Carcinoma of Breast

DR. WALTER E. SISTRUNK, Rochester, Minn.: In 218 consecutive cases in which primary radical amputation of cancer of the breast had been performed from five to eight years previously, the recurrences occurred largely in late cases, and evidently came because cancerous tissue was left in regions inaccessible to the knife, while the highest percentage of cures and the infrequent recurrence were found in those patients operated on early, before glandular involvement could be demonstrated. The end-results are probably better than those in any other type of cancer, except the basel cell epitheliomas of the skin and cancers of the lip. When the public is better educated as to the necessity of seeking surgical aid early for all breast tumors, and when it is generally recognized by the entire medical and surgical profession that the day of watching breast tumors is past, it seems likely that the formation of many cases of malignancy will be prevented and that 75 to 80 per cent. of patients with cancer will obtain from five to eight year cures.

DISCUSSION

DR. MOSES BEHREND, Philadelphia: In order to get results it is absolutely essential to clear out all diseased tissue, especially the glands.

DR. DONALD GUTHRIE, Sayre: If you will recall Dr. Sistrunk's statistics and see the great difference between the number of patients who remained well without axillary involvement as compared to the number who had recurrence following axillary involvement, it all means that the tumors must reach the surgeon earlier. Following the suggestions of Dr. Wainwright of Scranton, I have for the last few years been irradiating the field of operation before closing the skin. Roentgenologists believe that much of the ray is filtered out by the skin, and that a valuable way to attack cancer cells is at the time of operation before the skin flaps are closed.

DR. WALTER E. SISTRUNK, Rochester, Minn.: As to the preliminary treatment of these patients with the roentgen ray, I think that is good treatment. It would be a good plan to treat these patients with heavy doses of radium or roentgen ray before as well as after operation.

Treatment of Complicated Cleft Palate

DR. JOHN B. ROBERTS, Philadelphia: Delay in starting the operative treatment of congenital clefts of the oronasal partition beyond the first month or two of life is usually an error of judgment. If the child's condition does not permit completion of the operation, the harelip can be given attention about two weeks after the osteoplastic work has been done. The wire in the maxilla should not be disturbed for four or five months. In bilateral clefts the protruding intermaxilla is forced back into place, but it should never be removed. Two or more operations may be needed entirely to close the defect. No routine method of uranoplasty or staphyloplasty can be used successfully. Any residual defects may be corrected in the second or third year.

Bone Necrosis, with Special Reference to Tuberculous Lesions

DR. MARVIN W. REED, Bellefonte: Tuberculosis of the bone begins usually as an infection of the epiphysis and, while it may burrow through the cortex and periosteum and discharge as an abscess, the usual process is to extend into the joint. Early symptoms may be very indefinite. The treatment is hygienic, with active surgical intervention in suitable cases.

DISCUSSION

DR. ALEXANDER ARMSTRONG, White Haven: The infrequency of bone and joint conditions in tuberculous cases is notable. Among 300 cases of pulmonary tuberculosis are only five cases of bone or joint tuberculosis. With free pus, the sun bath with roentgen rays and violet rays will give astonishing results.

Diagnosis and Treatment of Carcinoma of Rectum

DR. DAMON B. PFEIFFER, Philadelphia: Carcinoma of the rectum is a common disease, ranging next in frequency to carcinoma of the stomach. The mortality of cancer of the rectum unoperated on is the same as that of cancer of the stomach, namely, 100 per cent. Yet strenuous efforts are made to diagnose and operate on cancer of the stomach, while general apathy exists concerning the disease in the rectum, in spite of the fact that chances of cure in the latter are better. Diagnosis is easy, but can be made only by examination. The index finger is the only instrument needed. Fully 90 per cent. of rectal cancers are readily palpable with the finger, and those higher up can be diagnosed by signs of obstruction. Operation is the only treatment.

DISCUSSION

DR. J. ELMER PORTER, Pottstown: An examination of the rectum with the gloved finger or speculum, or both, should be made of every patient coming with symptoms of rectal disease. The exploratory median abdominal incision, which permits an examination of the rectum and adjacent organs, also the liver for secondary involvement, is valuable.

Repair and Anastomosis of Bile Passages for Relief of Chronic Jaundice

DR. MOSES BEHREND, Philadelphia: Injury to the common duct can be prevented if during operation the structures within the gastrohepatic omentum are exposed to the eye. A careful operation shows that there are 25 per cent. of variations in the relation of the ducts to each other and to the blood vessels. When the common duct has been destroyed, the best procedure is the anastomosis of the hepatic duct to the duodenum or stomach. When jaundice is due to tumors of the pancreas or an irremovable tumor at the papilla of Vater, great relief can be given the patient by the anastomosis of the gallbladder or common duct to the stomach or duodenum. Every patient with chronic jaundice should be operated on as quickly as possible.

DISCUSSION

DR. JOHN J. GILBRIDE, Philadelphia: We should retain as far as possible the physiologic function and not anastomose the gallbladder to the stomach, except under extreme urgent necessity when one cannot anastomose the parts to the duodenum. Better results will be obtained by anastomosis of the gallbladder or duct directly into the duodenum. That is where the bile belongs and where it performs its function.

DR. MOSES BEHREND, Philadelphia: Sometimes mechanical difficulties are so great that it is safer to anastomose the

gallbladder to the stomach instead of to the duodenum. It is remarkable how the stomach will tolerate bile. In several of my cases, no vomiting occurred after operation.

Practical Aspects of Antenatal Hygiene

DR. EDWARD A. SCHUMANN, Philadelphia: Antenatal hygiene is divisible into three groups: (*a*) the sociological factors, housing, sanitation, food and occupation as applied to the pregnant woman, or, better, to the woman in whom pregnancy is a possibility; (*b*) eugenics and the care of the woman and her fetus from the standpoint of prevention of infection, recognition and treatment of disease, if present, and those prophylactic measures against toxemia which are so generally understood (*c*) the prevention of birth traumatism by careful estimation of the capacity of the maternal passages, the relative size of the pelvis and fetus, and the conduct of labor in such fashion as to secure the best possible results for mother and child. Maternal fever above 104 F. is highly dangerous to fetal life, so special care should be taken in febrile diseases to keep the temperature below this point. The pregnant woman should be seen and carefully examined by her physician early in pregnancy.

SECTION ON MEDICINE

Errors and Oversight in Use of Blood Pressure Apparatus

DR. GEORGE E. HEIN, Pittsburgh: Factors not necessarily due to pathologic changes in the anatomy of the cardiovascular system, but producing changes in the arterial tension, are often not sufficiently taken into consideration. Variations in pressure produced by mental reactions or emotion are especially liable to lead to the wrong impression. A vicious circle may be set up in a neurotic patient by the knowledge of changes in his or her arterial tension. A wider limit for normal is necessary for the interpretation of both systolic and diastolic pressure than is generally accepted. Each individual sets his own standard.

Treatment of Hyperthyroidism

DR. FREDERICK B. UTLEY, Pittsburgh: The normal function of the thyroid is believed to be its control over cell growth, calcium metabolism, catabolism, and antitoxic and immune bodies. The continued response of the thyroid to abnormal stimulation finally results in hyperthyroidism with its various symptoms. An early recognition of any abnormality of the function of the thyroid is essential, and all possible etiologic factors should be eliminated as promptly as the patient's condition permits. Surgical procedures should be directed toward the etiologic factors and not the gland proper, except in those cases in which it is expedient to spare the patient at once from the drive of the overactive thyroid when the removal of foci should follow the surgery on the gland. Further treatment consists of rest in bed with suitable surroundings and diet, and the administration, when indicated, of neutral quinin hydrobromid, calcium chlorid, sodium phosphate, intestinal antiseptics and syrup of ferrous iodid in small, properly guarded doses.

DISCUSSION

DR. LAWRENCE LITCHFIELD, Pittsburgh: If the usual treatment by suprarenal therapy and roentgen rays fails to give satisfactory results, we must advocate removal of part of the gland. In hypothyroidism we must feed thyroid gland or its derivatives. Roentgen-ray treatment should be well tried before submitting to the surgeon. It has been demonstrated that simple goiter in schoolchildren can be prevented and removed by the moderate use of the iodids.

Method of Distinguishing Those Micro-Organisms That Are and Those That Are Not Acted On by the Patient's Whole Blood

DRS. MYER SOLIS-COHEN and GEORGE D. HEIST, Philadelphia: When several micro-organisms are present in a culture, if they be incubated in the whole blood of that patient, some will disappear while others will grow luxuriantly. Evidence points to the existence in such a patient of a high degree of immunity to those organisms that disappear from his blood, and of susceptibility to those organisms that grow in it. These phenomena have been utilized in preparing autogenous vaccines that contain only those organisms that grow in the patient's blood and do not contain those organisms which the patient's blood already has the power of destroying or inhibiting.

Effect of Influenza Epidemic on Tuberculosis

DR. CHARLES H. MARCY, Pittsburgh: Among 533 patients known to have had tuberculosis prior to the onset of influenza, old quiescent lesions were reactivated in the majority of cases. In 34.3 per cent. of the series, the onset of tuberculosis dated from the influenza.

End-Results of Sanatorium Treatment for Tuberculosis

DR. H. R. M. LANDIS, Philadelphia: If the tuberculosis sanatoriums were confined in their efforts to those for which they were originally intended, that is, the care of early cases, the number of individuals progressing into the advanced stages of tuberculosis would be rapidly diminished and in this way the infection of others would be reduced correspondingly. As it is now, the sanatoriums contain chiefly advanced cases which are likely to relapse after leaving the institution. This leads many to conclude that sanatorium treatment is not very effective. If I were to single out the one great advantage which the sanatorium offers, I would unhesitatingly say "rest." The greatest disappointment from sanatorium treatment is the tendency of those so treated to relapse; but it must be borne in mind that one of the chief characteristics of tuberculosis is to relapse. Given the type of case which offers a chance of being improved, I think it can be said safely that the well conducted sanatorium does all that has been claimed for it.

Gastric Disease and Relation to the Glands of Internal Secretion

DR. TRUMAN G. SCHNABEL, Philadelphia: With dysfunction of the ductless glands there is sometimes found dysfunction and a pathologic condition in the stomach. The relationship of the ductless glands to the stomach has some evidence in its favor. Perhaps the internal secretions influence the stomach directly. Organotherapy should be tried in gastric disease, especially of the functional type; it may be successful in a small number of cases.

Diagnosis of Functional Capacity of Kidneys in Various Types and Stages of Nephritis

DR. ROY R. SNOWDEN, Pittsburgh: Urinary findings in nephritis are no indication of functional capacity of the kidneys. Large amounts of albumin, casts and even blood may be present, and yet the kidneys may be excreting all waste products normally. On the other hand, cases in which there is serious retention may show only a trace of albumin and a few casts. One must never judge the functional capacity of kidneys on evidences found in the urine alone. Diagnosis of the ability of the kidneys must rest on (*a*) clinical symptoms and (*b*) functional tests. Functional tests are the best indexes of excretory ability, as they reveal early changes which precede the development of clinical symptoms. Clinical symptoms are also of importance, especially since their significance is now well understood in the light of modern chemical metabolic knowledge.

Apoplexy

DR. CHARLES S. POTTS, Philadelphia: Many physicians believe that the lesion of cerebral apoplexy is always hemorrhage. This is not the case. By apoplexy we mean the occurrence of sudden paralysis, sometimes accompanied by unconsciousness, due to a lesion of the vascular system. This may be hemorrhage, the blocking of a vessel by a thrombus or an embolus, or closure due to spasm or to lacunar degeneration. Thrombosis or embolism is more common than hemorrhage. Sometimes it is impossible to determine the nature of the lesion. The fact that apoplexy is not infrequent in early life does not seem to be generally recognized. It is more frequent during the first decade of life than any other except the fifth. Syphilis is a frequent cause in young adults. Hemiplegia is not always present in apoplexy, as regions of the brain other than the motor may be involved.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

November, 1920, No. 5

*Polyneuritic Syndrome Resembling Pellagra-Acrodynia (?) Seen in Very Young Children. A. H. Byfield, Iowa City.—p. 347.
*Study of Blood and Its Circulation in Normal Infants and in Infants Suffering from Chronic Nutritional Disturbances. K. Utheim, Christiania, Norway.—p. 366.
*Amyotonia Congenita. N. O. Pearce, Minneapolis.—p. 393.
*Amyotonia Congenita (Oppenheim). Report of Case with Full Histopathologic Examination. J. B. Holmes, Baltimore.—p. 405.
*Lesions in Midbrain; Report of Case. J. H. M. Knox, Jr., Baltimore.—p. 436.
*Concerning Direct Smears in Diphtheria. A. Bleyer, St. Louis.—p. 445.

Pellagra-Acrodynia; Polyneuritic Syndrome.—Seventeen patients, all under 4 years of age (five of them being less than 1 year old), who have been seen by Byfield, manifested a group of signs and symptoms out of the ordinary. The resemblance of their malady to pellagra was striking, but so many points spoke against such a diagnosis, that it was necessary to think of the presence of some other disease. The disease picture was a complex one, the nervous system and the skin being most involved, while the respiratory tract and the digestive tract appeared to be less affected. According to the anamneses, infection rather than dietary error seems to play the more important rôle as an exciting factor. A postmortem examination in one case (complicated with tuberculosis) showed involvement of an occasional anterior horn cell of the spinal cord, gliosis about the central canal and edema of the sensory roots. It is suggested that the disease is a postinfluenzal radiculitis or sensory polyneuritis.

Blood and Circulation in Well and Sick Infants.—It was found by Utheim that the serum protein in normal infants is from 6 to 6.5 per cent. and remains at this level until the tenth or eleventh month, when the protein begins to rise, and by the fifteenth month it has reached the same level as found in adults, that is, about 8 per cent. Infants suffering from various diseases show, with the exception of exudative diathesis and nephritis, no remarkable change in blood protein concentration, while infants with acute diarrhea or vomiting have a high per cent. of protein, the result of blood concentration. Premature infants and athreptic infants show a low protein percentage in blood, in many cases as low as 4 per cent. In some cases this seems to be due to lack of power on the part of the organism to build up protein, in other instances to the overfeeding with carbohydrates. The high water content of the organism in both premature and athreptic infants is an important factor in the low immunity they show, thus predisposing these infants to multiple infections. Athreptic infants also show a very low rate of blood flow which in some instances is due partly to the diminished blood volume, in other instances to constriction of the peripheral small vessels in order to accomplish the distribution of the blood to the internal organs. The low blood flow is not usually accompanied by a lowering of blood pressure. Experiments on rabbits have shown that during complete starvation with deprivation of fluid, the blood volume falls below the normal value for the body surface as a result of water loss from the blood. However, by giving only enough food and water to prevent further weight loss, the blood volume is rapidly restored and quickly reaches a value above normal for the body surface.

Amyotonia Congenita.—Of the five cases reported by Pearce, one is of interest largely because of the classical symptomatology and the results of the exhaustive metabolism study carried out. The second and third cases and the fourth and fifth cases are believed to be the first authentic instances reported of twins suffering from the disease. Literature reveals only one other instances in which twins have been mentioned; one twin died intrapartum.

Amyotonia Congenita.—The case described by Holmes conforms in all essential details to the condition known as amyotonia congenita (Oppenheim). The disease was present at birth. There was no lasting amelioration, and the child died of the usual pulmonary complications at the age of 18 weeks. The significant lesions were found in the spinal cord and in the muscles. The spinal cord was relatively large for the age of the child; the anterior roots were diminished in size as compared with the posterior roots. There was no disturbance of the contour of the cord in cross section. Microscopic examination showed complete absence of any acute, or chronic, inflammatory process, and no evidence of recent degeneration. Myelinization was normal. Cells of Clarke's column were of normal size and well preserved. The histopathologic findings are best explained on the assumption of a delayed or retarded embryologic development affecting certain motor cells of the anterior horns and certain groups of developing muscle cells (fibers). No anomaly of the peripheral nerves, muscle spindles, or blood vessels is recognized.

Tubercle of Midbrain.—Knox's patient was a colored boy, 3 years of age, who manifested general weakness and trembling and drooping of the eyelids. Roentgenoscopy of the head showed a moderate internal hydrocephalus and a probable tumor above the sella turcica. At the necropsy dissection of the brain stem disclosed a large tubercle the size of a hickory nut which took the place of the upper surface of the midbrain. The anatomic diagnosis was solitary tubercle of the midbrain and right parietal lobe; tuberculous meningitis.

Direct Smears in Diphtheria.—Bleyer emphasizes that a bacteriologic diagnosis of diphtheria can be made by direct smear as well as by culture. Contrary to widespread belief this is available to the clinician not possessed of any unusual skill or training in this sort of work and affords a simple and very exact aid to the diagnosis of diphtheria. In the series reported this occurred in one in about five or six cases. Bleyer suggests that probably the unpopularity of direct smears in diphtheria is due to expecting too much of them rather than because of any difficulty inherent to the method.

American Journal of Ophthalmology, Chicago

November, 1920, 3, No. 11

Rupture of Cornea by Contrecoup from Bullet Wound of Orbit. H. Gifford, Omaha.—p. 787.
Two Cases of Kroenlein Operation. V. P. Blair, St. Louis.—p. 789.
Physiology of Accommodation in Eye of Bird. J. R. Slonaker, Stanford, Calif.—p. 798.
Function of Protein in Lacrimal Secretion. C. F. Charlton, Pasadena, Calif.—p. 802.
Blows on Eyeball in Region of Ciliary Processes: Their Medicolegal Aspect. G. H. Burnham, Toronto.—p. 805.
Case of Retinal Glioma Treated with Radium. S. B. Chase, Fort Dodge, Iowa.—p. 806.
Apparatus for Testing Light and Color Sense. C. E. Ferree and G. Rand, Bryn Mawr, Pa.—p. 812.
Spontaneous Luxation of Eyeball. T. E. Oertel, Augusta, Ga.—p. 814.
Case of Chronic Glaucoma, with Results Following Operation. C. C. Rush, Johnstown, Pa.—p. 816.
Pigmented Hairy Mole Involving Cornea. O. Wolfe and F. L. Wahrer, Marshalltown, Iowa.—p. 818.
Case of Peripheral Communicating Vessels Between Retina and Choroid. H. S. Gradle, Chicago.—p. 818.
Marked Clearing of Vision in Unoperated Eye Following Operation for Cataract. E. N. Robertson, Concordia, Kan.—p. 820.

American Review of Tuberculosis, Baltimore

October, 1920, 4, No. 8

*Studies on Immunity to Tuberculosis. A. K. Krause and D. Peters, Baltimore—p. 551.
*Results of Virulent Reinfection into Tuberculin Reacting Areas (Skin) of Tuberculous Guinea-Pigs. A. K. Krause and H. S. Willis, Baltimore.—p. 563.
*Effect of Artificial Pneumothorax on Pulmonary Tuberculosis in Rabbit. H. J. Corper, S. Simon and O. B. Rensch, Denver.—p. 592.
*Hypernephrectomy and Experimental Tuberculosis. G. B. Webb, G. B. Gilbert, J. B. Hartwell and C. T. Ryder, Colorado Springs.—p. 605.
*Epinephrin Hypersensitiveness in Definite and Unproved Pulmonary Tuberculosis. F. H. Heise and L. Brown, Trudeau, N. Y.—p. 609.
*Study of Goetsch Test. R. McBrayer, Sanatorium, N. C.—p. 616.
*Pulmonary Findings Due to Circulatory Changes. J. S. Pritchard and M. A. Mortensen, Battle Creek, Mich.—p. 620.

Immunity in Tuberculosis.—A description of graphic records of the local allergic and immune reactions to tuberculous reinfection in guinea-pigs is given by Krause and Peters. The essence of the Koch phenomenon is a rapid ulceration followed by a slough and healing wound at the point of reinoculation of tubercle bacilli. Inasmuch as animals in which the phenomenon occurred were observed to

contract relatively little or no tuberculosis in consequence of their reinoculation, it was supposed that the phenomenon was a manifestation of immunity. This conception the authors hold is undoubtedly correct.

Virulent Reinfection in Tuberculosis.—The problem discussed by Krause and Willis is (1) how to get a skin inflammation that would resemble as closely as possible an intracutaneous reaction, and (2) once this was obtained, how it would influence infection performed directly into it. The results of their observations are given in many lengthy tables.

Effect of Artificial Pneumothorax on Pulmonary Tuberculosis.—Corper and his associates found that one-sided artificial pneumothorax or compression of one of the lungs of the rabbit by means of fluid, artificial hydrothorax, has no visible macroscopic influence on the number or type of the tuberculous lesions resulting from the intravenous injection of virulent human tubercle bacilli, regardless of whether the compression is occasioned on the right or on the left side, or whether it is occasioned a day before or a day after the intravenous injection of tubercle bacilli. These results disagree with those found by Shaw who maintains that compression favors the development of the tuberculosis in the compressed as compared to the other lung. No differences between the number or type of the tuberculous lesions were noted in animals with one lung compressed as compared with normal animals, not compressed, although the differences between the different animals of the same series receiving the same intravenous injections of tubercle bacilli was greater than the differences found between the two lungs of the same animal. Suspensions of Prussian blue, scarlet R and starch, injected intravenously into rabbits shortly (within one-half hour) after a right-sided closed pneumothorax, were found uniformly distributed throughout the lungs immediately after injection and up to two hours thereafter. The gradual disappearance of Prussian blue within that time occurred uniformly on both sides and would not tend to support Bruns, who mainained that the circulation was lessened in the compressed lung as opposed to Cloetta who maintained an equal (or even better circulation) in the pneumothorax lung as compared with the other lung.

Relation Between Suprarenal Function and Tuberculosis.—The relation between suprarenal function and tuberculosis was investigated by Webb and others. Removal of one suprarenal gland apparently did not make any difference in resistance to tuberculosis, though the primary palpable enlargement of inguinal nodes appeared a trifle sooner on the average in the operated pigs than in the controls. There was the usual compensatory hyperplasia of the remaining suprarenal gland. This suggests a demand for increased suprarenal function in tuberculosis.

Epinephrin Hypersensitiveness in Tuberculosis.—A study of cases of pulmonary tuberculosis and of cases in which a diagnosis of pulmonary tuberculosis had been made which showed a hypersensitiveness to injections of epinephrin was made by Heise and Brown. The epinephrin reaction was twice as frequent in the nontuberculous as in the tuberculous cases (14 and 29 per cent., respectively). Activity of the pulmonary focus, as determined by symptoms, played little, if any, part in occurrence of the reaction. Presumptive inactivity, as interpreted by roentgenoscopy, was accompanied by epinephrin hypersensitiveness about two and one-half times as often as when activity was present. The occurrence of tubercle bacilli seemed to be associated with a less frequent reaction than when tubercle bacilli were absent (10 and 17 per cent., respectively). No patient with a history of pleurisy with effusion reacted to epinephrin. As the extent of the disease becomes greater, the tendency to react to epinephrin apparently diminishes (27 per cent., 15 per cent., 9 per cent.). Tuberculous colitis apparently does not promote epinephrin hypersensitiveness.

Study of Goetsch Test.—The results of the study made by McBrayer suggest that the differential diagnosis of tuberculosis and hyperthyroidism will be made easier when after the subcutaneous injection of epinephrin between fifteen minutes and one hour and thirty minutes after the injection, there occurs: (1) a rise in systolic blood pressure of ten or more points and remaining above normal for fifty-five minutes or more; (2) increased pulse rate of ten or more points per minute, proportionate to the systolic rise; (3) an increase of pulse pressure of thirty-five or more points; (4) pulse irregular and varying in volume; (5) an increase in respiratory rate of four or more points per minute; (6) varying pupillary changes.

Circulatory Conditions with Lung Pathology.—Myocardial embarrassments of different types, Pritchard and Mortensen state, produce pulmonary signs and symptoms which are often misinterpreted. In many cases of bronchitis, where doubt of the cause exists, the use of digitalis results in the diminution of symptoms and physical signs, thereby making this drug of value in diagnosis as well as a therapeutic agent. In many cases with bronchial symptoms, such as are present in protracted colds, circulatory degeneration should be considered as a possible causative factor as well as upper respiratory affections and pulmonary tuberculosis. Râles due to circulatory causes are not always basal and may be found over other parts, even one or both apices.

Canadian Medical Association Journal, Toronto

October, 1920, **10**, No. 10

Medicine and War. G. Adami.—p. 881.
Plea for Better Obstetrics. R. Ferguson, London, Ont.—p. 901.
Treatment of Hemorrhage in Medical Diseases. A. H. Gordon, Montreal.—p. 905.
*Treatment for Early Syphilis. G. O. Scott and G. H. J. Pearson, Ottawa.—p. 916.
Syphilis of Central Nervous System; Its Early Recognition and Treatment. A. R. Robertson, Seattle, Was.—p. 924.
More Recent Developments in Use of Roentgen Rays in Commerce. J. D. Morgan, Montreal.—p. 930.
*Significance of Calcium-Ion in Cell; Experimental Tetany. J. B. Collip, Edmonton.—p. 935.
*Roentgen-Ray Treatment of Case of Leukosarcoma with Mediastinal Involvement. H. H. McIntosh, Vancouver.—p. 946.

Treatment of Early Syphilis.—A course of treatment is described by Scott and Pearson to aid the general practitioner to avoid the dangers of inadequate treatment of syphilis on the one hand and of producing medicinal intoxication of the patient on the other. Continued treatment with mercury and potassium iodid, alternating with rest intervals, with occasional injections of arsphenamin is regarded as the most effective method of controlling the disease. General tonics should be administered during the rest intervals to combat the toxic effects of the antisyphilitic treatment and to raise the antibody production of the patient. This is as important as the actual treatment itself. Treatment for early primary syphilis should be continued for two years. Treatment for late primary and generalized syphilis should be continued for, at least, three years.

Calcium Ion in Motor Nerve Cells.—From the results reported by Collip it would appear that a decrease in the relative concentration of the calcium ion in the motor nerve cells acts as a stimulus and a tetanic seizure results. Collip suggests possible that "muscle cramp" manifested at time in swimmers and runners is due to a temporary alkalosis following excessive respiration.

Roentgen-Ray Treatment of Leukosarcoma of Mediastinum.—A widespread lymph node involvement in McIntosh's case disappeared rapidly after roentgenization, but the general condition of the patient became worse and death ensued.

November, 1920, **10**, No. 11

Goiter. F. N. G. Starr, R. R. Graham and W. L. Robinson, Toronto.—p. 977.
Goiter: Its Medical Treatment. J. M. Pearson, Vancouver.—p. 983.
Corelation of Results of Treatment of Goiter by Surgical and Roentgen-Ray Methods. G. H. Binghan and G. E. Richards, Toronto.—p. 988.
*Myelogenous Leukemia; Treatment by Benzene and Roentgen Ray. H. A. Lafleur, Montreal.—p. 996.
Diagnostic Value of Roentgen-Ray Examination in Pulmonary Tuberculosis. W. A. Wilkins, Montreal.—p. 999.
Thomson-Curtin Operation for Detached Retina; Report of Two Cases. L. De V. Chipman, St. John.—p. 1007.
Laboratory Diagnosis of Syphilis. W. S. Lindsay, Saskatchewan. p. 1011.
Carcinoma of Colon: Report of Three Cases. E. W. Allin, Edmonton.—p. 1021.
*Botulism in the Yukon. J. A. R. Glancy, Toronto.—p. 1027.

Benzene and Roentgen Ray in Myelogenous Leukemia.—A case is cited by Lafleur in which benzene (benzol, C_6H_6), with roentgen-ray treatment, unquestionably produced a marked improvement not only in the blood picture but on the patient's

general health, without inducing any of the untoward effects that in some cases have followed the administration of the drug.

Botulism in Yukon.—Glancy describes in detail the symptoms he noted when afflicted with botulism, analyzes twelve fatal cases and the histories of seven patients who recovered. The length of time before symptoms manifested themselves varied from twenty-six hours to five days—those who died being from twenty-six to thirty hours, which was the time in the majority of all cases, and those who lived being from twenty-six to seventy-two hours—with one exception which was five days. It was the right side throughout, which was affected to the greater extent in almost every case. The forearms were affected most often—the left in a general way—the right in distinct muscle groups—the weakness of the extensors of the forearm and hand being common to almost every case. There were no griping pains in the abdomen, and vomiting and diarrhea were not common symptoms. There was little deviation from normal in temperature or pulse rate, except when the patient was approaching death—and then only immediately before death. Somewhat regular irregularity as to good and bad periods—particularly during the convalescent period—was common to all. Both the intrinsic and extrinsic eye muscles were affected in practically every case. Every man (including those who died) had perfect control of mentality at all times. Headache was usually occipital; if parietal, it was usually left sided. Of those who survived, the author's was the only case in which there was extreme difficulty in breathing, and where the feeling of suffocation was so extreme for so long a period—also where there was intense pain over the aortic and pulmonary areas at the base of the heart.

Medical Record, New York

Nov. 6, 1920, **98**, No. 19

Arteriosclerosis. C. E. Nammack, New York.—p. 757.
Use of Fresh Vaccines in Whooping Cough. R. G. Freeman, New York.—p. 762.
Botulism; Report of Fifteen Cases. G. M. Randall, New York—p. 763.
Feeding of Normal Infants. S. McLean, New York.—p. 765.
Surgical Jaundice; Case of Primary Carcinoma of Pancreas. R. H. Fowler, Brooklyn.—p. 767.
Mesenteric Lymphadenitis. A. O. Wilensky, New York.—p. 770.
*Iodoform Poisoning from Gauze Packing Following Mastoid Operation. M. Grossman, New York.—p. 772.

Iodoform Poisoning from Gauze Packing.—In Grossman's case the symptoms were strongly suggestive of a meningitis. Rigidity of the neck and cranial nereve palsies were the only features lacking. The Kernig sign appeared twenty-four hours after the first iodoform packing was introduced. There was still some evidence of it fourteen days after the packing had been removed. There were associated with it frontal headache and a hyperesthesia so marked that the patient suffered agonizing pains with the slightest movement of the body. Active delirium did not develop, but the patient at times was confused and bordering on the point of active hallucinations and delusions. These periods were followed by dulness, apathy, and marked irritability. High fever was present and the pulse rate was correspondingly increased. The tongue was dry and had a brownish coating. Striking pallor and emaciation were present early, and there was marked weakness with hypotonia of the muscles. The deep reflexes were diminished almost to the point of disappearance—the knee jerks more than the ankle jerks. The patient was nauseated and refused all food. Vomiting did not occur until four days after the removal of the gauze. A discrete papular eruption appeared.

Nov. 13, 1920, **98**, No. 20

Prevention of Respiratory Diseases. C. Lynch, Washington, D. C.—p. 799.
Epidemic Encephalitis. I. H. Pardee, New York.—p. 804.
*Mendelianism of Migraine. J. A. Buchanan, Rochester, Minn.—p. 807.
Nasal Deformities Due to Submucous Operation. Their Prevention and Treatment. W. W. Carter, New York.—p. 808.
Aural Aftermaths of Influenza. A. Bardes, New York.—p. 810.
Vaccines in General Practice. A. G. Huegli, Detroit.—p. 813.
Management of Malignancy by Combination of Methods. J. T. Stevens, Montclair, N. J.—p. 815.

Mendelianism of Migraine.—Of 1,300 persons suffering from migraine whose histories are reviewed by Buchanan, the families of 127 were investigated as to the question of heredity. In 100 families, either the father or the mother had migraine, with 143 migrainous children and 488 nonmigrainous children, or a ratio of 3.13 to 1. Among seven families, in which the parents were migrainous, ten children had epilepsy alone or a migraine-epilepsy syndrome; thirty-seven children had neither epilepsy nor migraine, a ratio of 3.7 to 1. Seven families were tabulated as crossing of persons with dormant migraine, the migraine was not present in the father or the mother of the family, but was present in the brother, sister, father or mother of the parents of the families studied. In this group, thirty children had migraine and eighty-five did not have migraine, a ratio of 2.83 to 1. Three families were studied in which the presence of migraine in both parents was carefully investigated. All of the fifteen children of this group had migraine. The total number of children concerned in ths study by Buchanan was 198 with migraine and 610 without, a ratio of 3.08 to 1. He states that this places migraine in the mendelian ratio and definitely established the hereditary nature of the affection. There is no medication known that will alter its course; it is a distinct part of the patient's economy, and it will have no harmful influence on longevity.

Military Surgeon, Washington, D. C.

October, 1920, **47**, No. 4

Directions for Making Triple Typhoid Vaccine. F. F. Russell, H. J. Nichols and C. O. Stimmel, Washington, D. C.—p. 359.
War Experiences with Face and Jaw Injuries. V. P. Blair, St. Louis.—p. 379.
Report of Department of Health and Sanitation of United States Shipping Board for Period Nov. 16, 1917, to Nov. 15, 1918. P. S. Doane, Chicago.—p. 389.
American Red Cross Assistance to United States Medical Departments in United States. C. H. Connor.—p. 407.
Pediatric Conditions in France. E. M. Cole, Jr.—p. 418.
Foot Abnormalities and Their Management in Light of Army Experience. T. S. Mebane.—p. 428.
Medical History of General Scott's Campaign to City of Mexico in 1847. L. C. Duncan.—p. 436.
Recurrence of Influenza in a Regiment. S. Bradbury.—p. 471.
Resection of Elbow Joint. H. A. Phillips and E. M. P. Seward.—p. 473.
History of Medical Activities of Office of Provost Marshal General Under Selective Service Act. F. R. Keefer.—p. 475.

Modern Medicine, Chicago

October, 1920, **15**, No. 4

What to See in Montreal, the Beautiful. E. H. Eaton.—p. 251.
Suggestions for Community Hospital Program. C. E. McCombs, New York.—p. 257.
Small Southern Hospital. C. W. King, Shreveport, La.—p. 260.
New Roentgen-Ray Laboratory at the Albany Hospital. J. M. Berry, Albany, N. Y.—p. 264.
Uses for Wall Paper and Paper Dolls. M. H. Barker, Worcester, Mass.—p. 266.
Keeping Records at Englewood Hospital, Chicago. R. T. Olsen, Chicago.—p. 269.
Hospital Ventilation. K. Meier, Winterthur, Switzerland.—p. 272.

Nebraska State Medical Journal, Norfolk

October, 1920, **5**, No. 10

Heart Cases. R. B. Adams, Lincoln.—p. 289.
Treatment of Bronchopneumonia in Infancy and Childhood. W. O. Colburn, Lincoln.—p. 289.
Obstructions of Lower Urinary Tract. E. G. Davis, Omaha.—p. 292.
Adynamic Ileus. C. C. Johnson, Lincoln.—p. 296.
Management of Cystic Duct in Gallbladder Disease; Report of Case of Perforation. A. C. Stokes, Omaha.—p. 298.

New York Medical Journal

Nov. 6, 1920, **112**, No. 19

Endocrines in Gynecology. W. P. Graves, Boston.—p. 697.
Obstetric Department of a Modern School. B. C. Hirst, Philadelphia. p. 701.
Treatment of Displacement of Uterus. P. B. Bland, Philadelphia.—p. 702.
Diseases of Cervix Uteri. A. Heineberg, Phildelphia.—p. 706.
Amputation of Cervix Uteri. J. N. West. New York.—p. 710.
Cervical Laceration, Cystocele, Prolapsus Uteri and Multiple Fibromas. W. P. Fowler, Rochester, N. Y.—p. 712.
Rôle of Rectal Examination in Obstetrics. W. E. Parke, Philadelphia.—p. 716.
*Cesarean Section for Eclampsia. E. G. Langrock, New York.—p. 718.
Repair of Injuries to Pelvic Floor. W. C. Cummings, Oklahoma City, Okla.—p. 718.
Female Pelvic Ureters. D. W. Tovey, New York.—p. 720.
Value of Abdominal Exercises Before and After Delivery. H. Koster, Brooklyn.—p. 722.
Periodic Headaches of Ovarian Origin. G. K. Abbott, Sanatorium, Calif.—p. 724.

Cesarean Section for Eclampsia.—The interesting features of Langrock's case were: (1) the treatment of the eclampsia by cesarean section, the patient having no convulsions after the delivery; (2) the edematous condition of the tissues in eclampsia which must be taken into consideration in placing the sutures; (3) the fortunate outcome of the case in spite of the possibility of peritonitis.

New York State Journal of Medicine, New York

October, 1920, **20**, No. 10

Radical Abdominal Operation for Cancer of Cervix. R. Peterson, Ann Arbor, Mich.—p. 313.
Radium Treatment of Uterine Cancer. C. F. Burnam, Baltimore. —p. 316.
Surgery of Uterine Fibroids. E. J. Ill, Newark, N. J.—p. 319.
Treatment of Uterine Fibroid and Uterine Hemorrhage by Means of Radium and Roentgen Rays. G. E. Pfahler, Philadelphia.—p. 321.
Special Points in Surgery of Gallbladder and Ducts. G. W. Crile, Cleveland.—p. 333.

Philippine Journal of Science, Manila

May, 1920, **16**, No. 5

Corrosion of Iron in Sulphuric Acid. Effect of Chromium Compounds. G. W. Heise and A. Clemente, Manila.—p. 439.
Identity of Aegiphila Viburnifolia Jussieu. E. D. Merrill, Los Banos. —p. 449.
Some Aspects of Salt Requirements of Young Rice Plants. R. B. Espino. Los Banos.—p. 455.
Higher Basidiomycetes from Philippines and Their Hosts. O. A. Reinking, Los Banos.

Psychobiology, Baltimore

December, 1920, **2**, No. 6

Integration of Movements in Learning in Albino Rat; Adjustment of Organism to Environment. J. L. Ulrich.—p. 455.

Public Health Journal, Toronto

September, 1920, **11**, No. 9

Rôle of Laboratory in Control of Venereal Diseases. R. H. Mullin. —p. 339.
Control and Rehabilitation in Connection with Veneral Disease Problem. E. F. Murphy.—p. 405.
Plan for More Effective Federal and State Health Administration. F. L. Hoffman.—p. 413.
Coordination of State and Private Enterprises in Public Health Work. W. H. Hattie, Halifax, N. S.—p. 418.

October, 1920, **11**, No. 10

Rôle of Voluntary Socities in Care of Public Health. J. Riddington. —p. 437.
Nursing Standards. H. Randal.—p. 444.
Preventive Medicine and General Practitioner. W. E. George.—p. 450.
Plan for More Effective Federal and State Health Administration. F. L. Hoffman.—p. 455.
Public Health Conference. J. J. Middleton.—p. 458.
Social Background. Present Need of Tuberculosis Campaign in Canada. J. H. Holbrook.—p. 461.

Southern Medicine, El Paso, Tex.

September, 1920, **4**, No. 9

Local Anesthesia. T. B. Smith, Morenci, Ariz.—p. 1.
Botulism; Report of Cases. W. G. Randell, Florence, Ariz.—p. 9.
Migratory Consumptive as Financial Burden to Southwest. A. H. Williams.—p. 13.

October, 1920, **4**, No. 10

Functional Nervous Disability. P. E. McChesney, El Paso.—p. 1.
Successful Treatment of Tuberculous Meningitis. F. H. Rederwill, Phoenix, Ariz.—p. 8.

Southwest Journal of Med. and Surg. El Reno, Okla.

August, 1920, **28**, No. 8

Management and Treatment of Peripheral Nerve Injuries. F. R. Teachenor, Kansas City, Mo.—p. 133.
Mixed Vaccines Necessary in Treatment of Pneumonia. G. H. Sherman, Detroit.—p. 137.

Tennessee State Medical Ass'n Journal, Nashville

October, 1920, **13**, No. 6

Displaced Uterus. J. F. Gallagher, Nashville.—p. 201.
Lethargic Encephalitis. E. R. Zemp, Knoxville.—p. 205.
Treatment of Empyema W. C. Dixon, Nashville.—p. 208.
Preventive Medicine. J. G. Eblen, Lenoir City.—p. 211.
Treatment of Gonorrhea. T. D. Hall, Nashville.—p. 215.
Debt of Public to Medical Profession. L. M. Freeman, Granville. —p. 217.
Gastro-Intestinal Carcinoma. R. A. Barr, Nashville.—p. 220.
Vivisection. S. D. Hubbard, Nashville.—p. 222.

United States Naval Medical Bulletin, Washington, D. C.

October ,1920, **14**, No. 4

Surgical Activities at Naval Hospital, New York, for a Period of Eight Months—p. 511.
War Wounds of Joints. L. Delrez, Liége, Belgium.—p. 537.
The Founders of Naval Hygiene. Lind, Trotter and Blane.—p. 563.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Tuberculosis, London

October, 1920, **14**, No. 4

Hospital School for Treatment of Surgical Tuberculosis in Children. T. H. Martin.—p. 145.
Principles Involved in Selection of Occupations for Consumptives. P. C. Varrier-Jones and G. Woodhead.—p. 154.
Racial Differences in Susceptibility to Tuberculosis. S. L. Cummins. —p. 160.
Tuberculosis of Ear. D. Guthrie.—p. 164.
Campaign Against Tuberculosis in Wales. D. W. Evans.—p. 166.

British Medical Journal, London

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Psychotherapy. T. A. Ross.—p. 619.
Defensive Value of Normal Mucus Formation, and Theory of Catarrh. F. G. Crookshank.—p. 627.
Case of Lethargic Encephalitis Treated by Hexamine. S. Crawshaw. —p. 628.
Two Cases of Intestinal Tumor: Operation: Recovery. W. Balgarnie. —p. 629.

Oct. 30, 1920, **2**, No. 3122

Surgery Good and Bad. C. F. M. Saint.—p. 649.
Present Position of Cancer Research. J. A. Murray.—p. 653
*Secondary Forms of Polycythemia Rubra; Ayerza's Disease, etc. F. P. Weber.—p. 658.
Action of Chemiotherapy. J. E. R. McDonagh.—p. 660.
Effects of Emotions on Gastric Secretion and Motility in Human Being. T. I. Bennett and J. F. Venables.—p. 662.
*Case of Castellani's Acladiosis. R. W. Mendelson.—p 664.
Gunshot in Appendix. R. H. Hall.—p. 664.

Secondary Forms of Polycythemia Rubra.—Certain conditions accompanied by erythrocytosis (erythroblastic reaction) which may be mistaken for erythraemia—that is, for polycythemia rubra of unknown cause, apparently due to primary hyperplasia of the erythroblastic tissues, are classified by Weber. (1) So-called polycythemia hypertonica, or hypertonia polycythemica (Geisbock, etc.). In these cases there is no obvious splenomegaly and the brachial systolic blood pressure is high (usually 180 mm. Hg, or higher), whereas in true cases of erythemia the blood pressure is not high (usually from 120 to 150 mm. Hg), unless chronic interstitial nephritis is present as a complication. (2) Splenomegalic polycythemia rubra connected with tuberculosis of the spleen. Tuberculosis, or other disease of the splenic pulp, may occasionally in some way upset the normal function of the organ, and thus (somewhat as splenectomy does) produce a rise in the erythrocyte count, quite apart from that due to the activating effect of small quantities of tuberculin in the circulating blood on the erythroblastic elements of the bone marrow. (3) Secondary polycythemia rubra (of longer or shorter duration), with splenomyegaly, connected with a condition of visceral blood stasis of chronic thrombotic origin in the splenic and portal veins. (4) Chronic "cardiopulmonary" cyanosis, with secondary polycythemia rubra ("cardiacos negros" of Ayerza—"Ayerza's disease" or "Ayerza's syndrome"). Mostly males, between 30 and 50, form this clinical group. They suffer from chronic cyanosis (varying in degree from time to time), with marked dilatation of the blood capillaries and venules (telangiectases) of the face. Diffuse chronic bronchitic sounds are present, with evidence of pulmonary emphysema, dilatation of the right side of the heart, and passive congestion of the liver, which reaches down below the ribs. All these signs vary in degree from time to time, and the active bronchitis may temporarily disappear. The spleen, though it may be enlarged in some cases, can seldom be felt below the costal margin by ordinary palpation. The fingers are sometimes clubbed. The brachial systolic blood pressure is not raised (is relatively low rather than high) in cases not associated with chronic interstitial nephri-

tis. Mostly the patient gives a history of having suffered for many years from "asthma" or from recurrent attacks of bronchitis. At last dyspnea occurs on any slight muscular exertion or becomes continuous, and exacerbations of bronchitis are frequent; the cyanosis becomes deeper, of a dark purple color; subcutaneous edema, and often also more or less ascites, develop; signs of carbonic acid poisoning ("bronchite noire") and failure of the right side of the heart precede death. Hypertrophy and dilatation of the right side of the heart are found on postmortem examination; the wall of the right ventricle is sometimes as thick (or nearly so) as that of the left ventricle.

Castellani's Acladiosis.—A Chinese coolie, working in a rice mill, first noticed a small red spot below the left knee; there was a very slight amount of itching but no pain, and within a month this spot had increased in size and developed into an ulcer. Several other spots appeared within the neighborhood of the first one and passed through the same stages. At no time was there much discomfort, and only a very slight amount of itching. On close examination, lesions that very closely resembled yaws were observed on the left leg. They were covered with a thin yellow scab, which revealed on removal a collection of thick creamy pus. After thorough cleansing the lesions presented, instead of the mulberry appearance of yaws, a sharp depression of a red granulating tissue. The borders of these ulcers were clearly defined, with a rounded surface of normal tissue. There was no gland involvement whatever, and the rest of the body was free from any skin trouble. The blood examination was negative, except for a slight leukocytosis. The urine examination was negative. The physical examination except for the skin trouble was also negative. Microscopic examination of cultures on carrots, potatoes and glucose agar showed the presence of fungus growing in symbiosis with a coccus, which could with difficulty be separated from it. The fungus had all the morphologic and cultural characters of *Acladium castellanii* (Pinoy, 1916).

Indian Journal of Medicine, Calcutta

July, 1920, **1**, No. 11

*Use of Copper Margosate in Cancer. K. K. Chatterji.—p. 41.
Influenza Epidemic in Calcutta. B. Majumdar.—p. 46.
Influenza Epidemic in Calcutta. T. Sur.—p. 57.
*Treatment of Tetanus by Subcutaneous Injection of Magnesium Sulphate. M. L. Kundu.—p. 70.
Two Probable Cases of Anaphylaxis. A. R. Chakravarti.—p. 74.
Cytology of Opalina Scalpriformis, Ghosh. E. N. Ghosh.—p. 78.
Case of Hemiplegia (Fat Embolism) with Gangrene of Leg Following Incision of Swelling over Tibia. R. B. W. V. Kane.—p. 85.

Copper Margosate in Cancer.—Weekly injections of copper margosate combined with ethyl ester margosic, three-eighths grain of the former and 0.5 c.c. of the latter, was the treatment given by Chatterji in a series of cases of sarcoma and carcinoma. Good results are reported.

Treatment of Tetanus.—The treatment of tetanus adopted in the Rangoon General Hospital consists of (1) a dose of antitetanic serum 1,000 to 1,200 units, immediately on admissions; (2) free opening of the wound but no application of strong antiseptic; (3) subcutaneous injection of a sterilized solution of chemically pure magnesium sulphate, 10 c.c. of a 20 per cent. solution for an adult, repeated every four hours, until spasm diminishes; (4) injection of one-quarter grain morphin tartrate, if patient is sleepless, and 25 grains bromids internally, every four hours, without any chloral; (5) no attempt is made to feed the patient by the mouth or by the nasal tube, as that is liable to excite spasms which would be distinctly harmful to the patient. In some cases rectal feeding with 4 gm. glucose or extract of malt, dissolved in 6 or 8 ounces of physiologic sodium chlorid solution, is administered, and medicines are also administered by the same route; (6) careful nursing, which is the last but not the least consideration.

Japan Medical World, Tokyo

Sept. 18, 1920, **10**, No. 38

*Treatment of Cholera. S. Ichikawa.—p. 815.
Experimental Kakke-Like Disease and Barlow's Disease. K. Kumagaya. p. 816.
Production of Lipochrome in Renal Tubular Epithelium of Dog by Injection of Phosphorus. T. Onda.—p. 816.

Physiologic Sodium Chlorid Solution in Cholera.—Ichikawa commends the treatment of cholera by intravenous injection of physiologic sodium chlorid solution, plus 5 per cent. sodium bicarbonate solution, in equal amounts, 100 c.c. The quantity for one injection is determined by observing the recovery of the patient from cyanosis and anguish. Several thousand cubic centimeters may be injected at one operation.

Sept. 25, 1920, **10**, No. 39

Disinfection of Japanese Room. S. Toda and K. Fujiwara.—p. 839.
*Use of Diphtheria Serum in Treatment of Influenza.—T. Gomibuchi. —p. 840.

Diphtheria Antitoxin Treatment of Influenza.—Diphtheric antiserum was injected by Gomibuchi in doses of 3 c.c. for cases in an initial stage of infection or on the first or second day of the manifestation of symptoms. In a serious case or a case with bilateral pneumonia, 10 or 12 c.c. of the serum was injected for the initial injection and then on the fourth day 5 c.c. was given. After that 3 c.c. was injected every fourth day as long as the symptoms lasted.

Journal of Tropical Medicine and Hygiene, London

Oct. 15, 1920, **23**, No. 20

*Chaulmoogra Oil in Leprosy. T. A. Henry.—p. 249.
*Six Cases of Castellani's Bronchomoniliasis. I. Jacono.—p. 250.

Chaulmoogra Oil in Leprosy.—Henry states that the evidence at hand seems to indicate that it is the acids of the chaulmoogric series to which chaulmoogra and hydnocarpic oils owe their value, and that possibly the lower homologues are the more active members of the series. Whether this action on the bacillus of leprosy and other acid fast bacilli is, as the work of Walker and Sweeney in California suggest, specific to acids of this type or is merely a special case of a more general action on such bacilli exerted by low melting unsaturated acids or their esters, as appears to be indicated by recent work by Rogers and others, only further research can determine.

Bronchomoniliasis.—The monilia fungi which Jacono isolated in his cases belong to the *Monilia balcanica* Castellani group, *Monilia krusei* Cast. group, *Monilia tropicalis* Cast. group, and *Monilia guillermondi* Cast group.

Lancet, London

Oct. 23, 1920, **2**, No. 17

Birth and Growth of Science in Medicine. F. W. Andrewes.—p. 829.
Causes of Nervous Diseases. E. S. Reynolds.—p. 834.
Medical Requirements for Air Navigation. M. Flack.—p. 838.
*Food Values in Tuberculosis. H. De C. Woodcock and A. G. Ruston. —p. 842.
Symptoms Resembling Tabes Dorsalis, Arising After Antityphoid Inoculation. J. S. Bury.—p. 844.
Surgical Treatment of Malignant Disease of Lip and Jaw. P. P. Cole.—p. 845.
Senecio Disease, or Cirrhosis of Liver Due to Senecio Poisoning. F. C. Willmot and G. W. Robertson.—p. 848.
*Family History in Case of Angioneurotic Edema. C. Cameron.—p. 849.
"Acidosis" Following Bee Stings. J. O. Beven.—p. 850.

Food Values in Tuberculosis.—Woodcock and Ruston state that tuberculous patients require more food than the average amount needed by the ordinary laborer outside. The diet must be rich in protein and fat: protein, from 4 to 4½ ounces per head per day; fat, 4 ounces per head per day. The fat should be largely animal fat, particularly in the form of milk and milk products. If margarin is used, it should be as oleomargarin and not made from vegetable fats. Eggs should be in the dietary, and when they are not supplied, their place should be taken by an extra amount of meat given according to accurate calculation. Whole meal bread, beans, peas and lentils should always be used, together with a plentiful supply of fresh fruits and vegetables grown in the sanatorium grounds. Two pints of milk per day is the amount suggested for each patient.

Familial Angioneurotic Edema.—In the case cited by Cameron the condition was familial, and was traceable to the patient's paternal grandmother. In all the members the outstanding signs have been those of "bilious attacks." These invariably appeared in childhood, and at a later period, usually coincident with the age of probable puberty, edema

signs manifested themselves. Both males and females participated in the transmission and were equally affected by the condition. The edema never appeared without accompanying gastric symptoms, but the gastric symptoms appeared without the edema. The onset of edema seemed to cut short a bilious attack, and in one member of the family this seemed to guarantee a longer period of immunity from such attacks. In Cameron's patient the periodicity of the attacks suggests a menstrual relationship, but she is positive that in other female members of the family the attacks have been too frequent to have any such relationship.

Oct. 30, 1920, **2**, No. 18

*Nature of Ovarian Function. W. B. Bell.—p. 879.
Parliament and Public Health. F. E. Fremantle.—p. 884.
*Myth of "Atypical" Enteric Fever. R. P. Garrow.—p. 886.
*Hereditary Factor in Tuberculosis. K. Pearson.—p. 891.
Treatment of Oriental Sore by Roentgen Rays. F. C. Ormerod.—p. 893.
*Celiac Infantilism: Its Fat-Digestion and Treatment by Bile Salts. R. Miller, J. Webster and H. Perkins.—p. 894.
Unusual Complications in Pneumonia. H. W. Hales.—p. 897.
*An Unusually Large Renal Calculus. H. B. Mylvaganam.—p. 898.

Results of Ovarian Grafting.—Of ninety-eight cases of ovarian grafting in the human subject done by Bell, sixty-seven are analyzed. In fifty-seven of these cases menstruation was possible, but menstruation occurred in only thirty-eight. No menopausal symptoms were present in nine cases. They were present in ten cases. Menstruation was impossible owing to supravaginal or complete hysterectomy having been performed in ten cases and in seven of these menopausal symptoms did not occur. Functional results were obtained in fifty-four cases. In one case, a small graafian follicle retention cyst developed, and this led to continuous bleeding from the uterus. In two other cases painful swelling in the graft associated with rather profuse menstruation was observed for some months. The longest period during which any patient menstruated regularly is four years. Other patients are still menstruating regularly—that is, with no longer interval than eight weeks—for over three years. His experience leads Bell to advocate very strongly the practice of ovarian grafting in suitable cases, as a measure of necessity, which can never be weighed in the balance against the preservation of the natural connections of the normal ovary.

Enteric Fever Runs True to Type.—Enteric fever (typhoid and paratyphoid) says Garrow, far from being the "protean disease" it is usually represented to be, is remarkably constant in its clinical manifestations and true to type. This applies to the inoculated and to the uninoculated. "Atypical" enteric fever is a myth, in the creation of which two chief factors have operated, namely: (*a*) Smallpox occurring in the vaccinated is so modified as to be frequently diagnosed as the milder disease, chickenpox. While that may be good reason for expecting that enteric fever in the inoculated should be similarly modified in severity, it does not support a belief that it is so modified in character as to resemble such divers diseases as malaria, trench fever, and dysentery in their classical forms. (*b*) A far more important factor has been a lack of cooperation between workers in the wards and in the laboratory, and failure to coordinate their findings. When clinical and laboratory findings have conflicted the latter have prevailed, because laboratory investigation of disease has been generally regarded for some reason to be more "scientific" than bedside observation. The truth, however, is gaining ground that science in medicine is not confined to the laboratory. The bedside has its victories no less than the bench. The flimsiest piece of evidence from the laboratory has often been accepted as proof of enteric infection in the face of bedside evidence which renders such a diagnosis untenable. The physician has thus allowed himself to be completely dominated in the matter of diagnosis by the pathologist. Diagnosis is the function of the physician; the pathologist's duty is to supply certain of the data for diagnosis. Anti-enteric inoculation is the gift of practical bacteriology to preventive medicine, and is probably the greatest victory known to preventive medicine since Jenner's discovery of vaccination against smallpox. It would be a strange irony if the full fruits of this victory were lost amidst the clinical chaos resulting from the undue domination of bacteriology (and especially academic bacteriology) over clinical medicine.

Heredity in Tuberculosis.—The main point made by Pearson is that the theory of an inherited resistance is not affected in any way by the well known fact that isolated groups of mankind have little resistance to tuberculosis; it is rather what we should expect on the theory of evolution by natural selection with the transmission of hereditary characters. The "hereditary" transmission of syphilis is not "heredity" in the modern sense at all, and the sooner the term is discarded the clearer will be medical and popular ideas on the topic of inheritance.

Celiac Infantilism.—The evidence presented by Miller and others suggests, that during the stages of fatty diarrhea in celiac cases bile salts may cause an improvement in fat absorption; while in the quiescent stages, when the stools are comparatively normal, their action is much slighter. On the further question as to whether the fatty diarrhea of celiac disease may be attributed to a failure in the secretion of bile salts, many more observations are evidently required before this opinion could be proved correct. In the one case examined it was not possible to detect the presence of cholalic acid in the feces before bile salts were given; but the clinical effects of the use of bile salts were certainly not sufficiently striking or complete to prove this view, which Miller thinks will ultimately be found to be correct. It is possible that the excessively fatty contents of the intestine may set up a transient catarrhal enteritis, which itself may limit further the absorption of fat. Over this, bile salts would have no immediate effect. A case is reported in which at the age of 7 years rickety changes occurred in the long bones, a condition not previously recorded in connection with celiac infantilism. In every case the figures obtained were considerably heightened when bile salts were being given. In the case of the higher figures the test no longer gave quite such clear cut results as in the lower range of figures. The authors were not able to reproduce the alteration in the diastase number by adding a trace of bile salts artificially to a urine whose urinary diastase number was known.

Large Kidney Calculus.—A calculus weighing 3 pounds was found in a kidney pelvis by Mylvaganam in a case without manifesting any clinical sign or symptom in its early stage. On account of its rapid growth during the last six months the hardness of the tumor, absence of renal colic from the commencement, the presence of blood in the urine during the early stage, and rapid emaciation, the tumor was thought to be of malignant nature. The possibility of a renal calculus was never entertained.

Medical Journal of Australia, Sydney

Sept. 25, 1920, No. 13

Red Cell Refusion in Production of Therapeutic Serums. W. J. Penfold.—p. 307.

Oct. 2, 1920, **2**, No. 14

Evolution of Otorhinolaryngology. H. J. Marks.—p. 331.
Two Intestinal Parasites (Ancylostoma and Iodameba) in Pigs. F. W. O'Connor.—p. 337.
Neuroses. D. M. McWhae.—p. 337.

South African Medical Record, Cape Town

Sept. 25, 1920. **18**, No. 18

Wassermann Reaction: Its Uses and Abuses. C. Lundie.—p. 342.
*Senecio Disease or Cirrhosis of Liver Due to Senecio Poisoning. F. C. Willmot and G. W. Robertson.—p. 346.

Senecio Disease.—In 1918 certain cases of sickness of obscure causation occurred in the George district of the Cape Province. Whole families had suffered from time to time from a complaint the chief symptoms of which were abdominal pain and vomiting, with ascites. It was suggested that the disease was of dietic origin, and samples of meal and wheat, bread from which was known to have been eaten for some time by affected persons, were examined. Investigations showed that the plants known as Senecio ilicifolius and Senecio burchelli grow as weeks in the wheat fields at George, and that when the wheat is threshed the seeds and portions of these plants frequently remain behind and are sold with the wheat. Experimental animals fed on portions or seeds of these plants developed symptoms and manifested postmortem appearances similar to those noted in man. Willmot and Robertson report five cases and give the details of animal experiments.

Bulletin de l'Académie de Médecine, Paris

Oct. 5, 1920, **84**, No. 30

*Infants of Tuberculous Mothers. L. Bernard and R. Debré.—p. 86.
*Operative Cure of Angina Pectoris. T. Jonnesco.—p. 93.
Two Nails and a Knitting Needle Driven into Brain in Futile Attempt at Suicide. H. Reynès.—p. 102.

Infants of Tuberculous Mothers.—Bernard and Debré conclude from 123 cases that the infant of a tuberculous mother does not inevitably contract the disease at once; some were saved even after from eight days to three months of contact with the tuberculous mother. None of the infants failed to contract the disease with over six months of contact. The contaminated infants almost all died within a month after being taken from the mother, even those that seemed healthy at first. Hence if the infant taken from a tuberculous mother survives the second month, there is reason to hope that it will survive, but only a series of negative tuberculin skin reactions will confirm that the child is sound. They commend boarding out these infants in country families. Only 18 children survived of the 58 with mothers with bacilli in the sputum, but 57 survived of the 65 mothers with "closed" tuberculosis.

Operative Treatment of Angina Pectoris.—Jonnesco applied in 1896 total resection of the cervical sympathetic, including the first thoracic ganglion, in treatment of epilepsy and exophthalmic goiter, and he later applied the same treatment to glaucoma and to migraine. He here reports that he performed the same operation in 1916 to relieve angina pectoris in a man of 38, a syphilitic, inclined to abuse of alcohol and tobacco. He had five extremely severe attacks of angina pectoris in four months, and the aorta and heart were enlarged. Jonnesco assumed that the resulting irritation of the cardio-aortic plexus induced by reflex action the symptoms of angina pectoris, and that the reflex arc could be broken up by interrupting the communication between this plexus and the nerve centers involved in production of the angina pectoris. There has been no further attack during the four years to date, nor any symptoms remotely suggesting it. The symptoms had been limited to the left side, and the resection was on that side alone. There is no atrophy of the muscles of the face although there is some asymmetry from the eyeball's sinking in and the contraction of the pupil, but the man expresses great gratitude for having been freed from his *horrible maladie*.

Bulletin Médical, Paris

Sept. 25, 1920, **34**, No. 46

General Principles of Endocrine Therapy. L. Hallion.—p. 853.
*Thyroid and Pituitary Organotherapy. E. Coulaud.—p. 859.
*Suprarenal Organotherapy. P. Pruvost.—p. 861.

Thyroid and Pituitary Treatment.—Coulaud says that although benefit from thyroid treatment is constant in myxedema, the benefit is inconstant but occasionally excellent in eczema, ichthyosis, asthma and migraine, and alone or plus ovarian treatment in scleroderma, and that there is one form of chronic rheumatism in which a thyroid origin seems probable on account of the benefit under thyroid treatment. It may also prove effectual when there are signs of hypothyroidism in pemphigus, chronic urticaria or trophedema, psoriasis, alopecia, hay-fever, constipation, rachitis and chronic nephritis, and even when deficient thyroid functioning alternates with exaggerated functioning. He says that as a rule goiters retrogress under thyroid treatment, but at the same time severe symptoms develop with cachexia. Even greater caution is required with exophthalmic goiter. But notwithstanding the mishaps sometimes observed, there have been cases displaying such distinct improvement as to justify the use of thyroid treatment under careful surveillance, especially of the cardiovascular system. This should avert all danger. He denounces it for the tuberculous, saying that he has witnessed flarings up of the disease coinciding with resumption of thyroid treatment. In concluding his remarks on pituitary treatment, Coulaud states that the suprarenals were found considerably hypertrophied in animals that had been given pituitary treatment for some time. He regards this as suggesting the necessity for this treatment in all cases of asthenia of suprarenal origin and in Addison's disease. The great contraindications for pituitary treatment are arteriosclerosis and nephritis. The results of pituitary treatment on nutrition, physical development and coagulation of the blood have been vague and inconstant to date. Probably the symptoms which we have been ascribing to the pituitary are in reality the result merely of compression of neighboring organs by the pituitary tumor. Even at its best, a pulverized glandular organ is not the product of the secretion of that organ, and we cannot expect that it will take the place completely of the latter.

Suprarenal Treatment.—After giving a long list of indications for suprarenal treatment, Pruvost cites as absolute contraindications arteriosclerosis, aneurysms, and high blood pressure, not only in persons with chronic kidney disease but also in the tuberculous when the fibrous process has entailed relative hypertension, exposing to danger of cerebral hemorrhage as well as to hemoptysis.

Bulletins de la Société Médicale des Hôpitaux, Paris

Oct. 8, 1920, **44**, No. 29

*Primary Typhoid Meningeal Symptoms. Delaret and Marcandier.—p. 1211.
*Interlobar Pleurisy. Dumitresco-Mante.—p. 1215.
*Acute Amebic Hepatitis. A. Panayotatou.—p. 1217.

Typhoid Meningeal Symptoms.—In the case reported the meningitic symptoms, lethargy, fibrillary tremor, jerking, ptosis, etc., suggested epidemic encephalitis, but serologic tests for typhoid were positive. Recovery followed intraspinal injection of 15 c.c. of the patient's own serum from blood drawn the day before.

Fetid Interlobar Pleurisy.—Rapid recovery followed neoarsphenamin by the vein, supplementing artificial pneumothorax, in a case of circumscribed suppurating interlobar pleurisy.

Blood Count in Acute Amebic Liver Disease.—In three cases the amebic liver disease subsided under emetin alone; in twenty-eight others operative measures became necessary. The leukocytes ranged from 18,000 to 35,000 in the suppurative cases, with from 72 to 80 per cent. polymorphonuclears, with two exceptions in which the leukocytes were 12,700 and 13,800. Emetin is useful to prepare the soil for the operation, even if it fails to cure alone the more extensive processes.

Journal de Médecine de Bordeaux

Oct. 10, 1920, **91**, No. 19

Flaring Up of Syphilis During Malarial Attack, with Localization at Site of Old Trauma. P. Noel.—p. 515.
Pathogenesis of Deformity of the Leg. G. Jeanneney.—p. 516.
*Correction of Exstrophy of the Bladder. H. L. Rocher and Lasserre.—p. 518.
The Medicine of Tomorrow. R. Cruchet.—p. 520.

Exstrophy of the Bladder.—Rocher and Lasserre tunneled the penis of the boy of 5½ with complete exstrophy of the bladder and epispadias, passing a large trocar and making the passage ample with the bistoury. Two tunnels were thus made, 5 mm. from the median line. Each ureter, previously isolated and tied over a sound, the ends of which had been cut off, was brought down through one of the tunnels and sutured to the mucosa of the penis. The operation took an hour and ten minutes but proved a complete success. Nearly a month later, after catheterizing the ureters, the bladder was excised and the defect covered with Indian flaps. The ureters function practically normally. A prosthesis is to be worn to protect against rubbing.

Presse Médicale, Paris

Sept. 22, 1920, **28**, No. 68

*Medical or Surgical Ulceration of Body of Stomach. L. Meunier.—p. 665.
*Congenital Dislocation of Hip Joint. F. Calot (Berck).—p. 666.
*Pathologic Repetition of Words. E. Schulmann.—p. 669.

To Distinguish Medical from Surgical Gastric Ulcer.—Meunier has found that fresh blood in the stomach content indicates an ordinary acute ulcer or erosion from the stomach tube, and calls for merely medical measures. But the finding of old, digested blood testifies in favor of an anatomically established ulceration, and for this, surgical measures are necessary. With fresh blood the hemoglobin dissolves in water, but with digested blood the hematin and the mucus coating it are insoluble in water, but dissolve readily in ammonia water. After two days of a test diet without meat,

the contents of the fasting stomach are aspirated. Then a glass of distilled water is poured through the tube into the stomach, the patient reclining. This is aspirated anew, and then through the same tube a glass of ammonia water (10 drops of official ammonia to 200 c.c. of distilled water) is poured into the stomach and this is aspirated. If there is no evidence of blood in the fluid either time, ulcer is excluded. If the first fluid shows most blood, the presumption is that it is fresh blood and the lesion amenable to medical measures. If the second fluid shows more blood than the first, this is a sign of digested blood, and this in turn indicates a surgical affection.

Recent Progress in Treatment of Congenital Luxation of the Hip Joint.—Calot cites as three important acquisitions: (1) The discovery in young children that the true acetabulum in 90 per cent. of the cases belongs to the ischium and not to the ilium portion of the hip-bone. (2) The discovery that the position to be given to the head and neck of the femur must be horizontal and transverse throughout the whole treatment, the rotation exactly equal to the angle of torsion of the upper end of the femur, and the abduction exactly equal to the angle of the slope of the neck. (This is the complement of the angle made by the axis of the neck with a straight line passing from the center of the head to the center of the bicondyle axis of the knee.) (3) The criterion of the cure by the appearance in the roentgen-ray picture of a large and solid horizontal vault of bone at the point of the true roof of the original acetabulum, that is, at the upper limit of the Y cartilage. This bone vault begins to form in the plaster cast. Twenty-two illustrations accompany the article, and a table showing abduction to correspond to different angles of the slope of the neck.

Pathologic Repetition of Words.—Schulmann describes a case of palilalia with palikinesia accompanying left hemiplegia and dysarthria in a woman of 76.

Sept. 25, 1920, **28**, No. 69

Visual and Pupil Disturbance with War Wounds of Spinal Cord. Mme. Dejerine and M. Regnard.—p. 673.
*Detection of Superfetation with Radiography. A. Schwaab.—p. 677.
Iodin Internally in Internal Disease. L. Cheinisse.—p. 678.

Superfetation.—Schwaab gives the roentgenograms of a pair of twins which apparently show by the development of the ossification centers that one twin was at term while the other twin was far from term, although both were born together. Another woman was delivered of twins not long after, one of which weighed 800 gm. less than the other, but the roentgen-ray findings were the same in each, confirming that both twins were of the same age. He accepts the first case as an instance of superfetation.

Sept. 29, 1920, **28**, No. 70

*Alkaline Salts in Pathogenesis of Edema. L. Blum.—p. 685.
*Intrapulmonary Injections of Antipneumococcus Serum. H. Sloboziano.—p. 688.

Alkaline Salts and Edema.—Among the conclusions from Blum's years of research on the rôle of the alkaline salts in the pathogenesis of edema, is the efficacy of potassium chlorid as a diuretic in certain cases of kidney disease with dropsy. In moderate doses it may supplement the action of other diuretics in other pathologic conditions. But this salt is far from harmless. With unstable heart or high blood pressure it is liable to induce serious and alarming symptoms, as well as minor disturbances, diarrhea, colics, chilliness and weakness. Hence it must be given very cautiously. In a case of nephritis with dropsy, described in detail, this drug was the only one that increased diuresis and reduced the weight. The patient took up to 25 gm. in twenty-four hours with no appreciable by-effects except slowing of the pulse and hypertonicity of the pneumogastric so that pressure on the vagus arrested the heart action. In certain other patients, however, various untoward effects were observed even with merely 10 gm. a day.

Injury from Direct Injection of Antipneumococcus Serum Into the Lung.—Sloboziano writes from Bucharest to describe the grave pathologic anatomic lesions found in the lungs of dogs after intrapulmonary injection of the antiserum. Even as little as 5 or 6 c.c. induced lacerations, hemorrhages, and edematous and congestive conditions.

Progrès Médical, Paris

Sept. 4, 1920, **35**, No. 36

*Tendon Transplantation in Treatment of Radial Paralysis. II. P. Achard and J. Jarkowski.—p. 387.
The Appendix as an Active Gland. E. Savini.—p. 390.
*Streptococcus Pleurisy. Marthe Giraud and others.—p. 393.

Tendon Transplantation for Radial Paralysis.—Achard and Jarkowski extol the ease and simplicity of this operation and its successful application in some clinical cases. They warn that it should not be attempted until absolutely sure that regeneration of the nerve is out of the question. War experiences have shown that when all is favorable the central stump grows toward the periphery at the rate of 1 or 2 mm. a day. To bridge a gap of 40 cm. would thus require from 200 to 400 days. Sometimes cicatricial tissue prevents the nerve fibers from reaching downward and this will have to be corrected before regeneration can occur. By pressing on the end of a regenerating nerve there will be a sensation of formication in the region innervated by this nerve, and as the end of the nerve pushes farther downward, this formication changes its site. By this means it is sometimes possible to trace the progress of the regenerating nerve. A muscle that has not responded to electric stimuli for a whole year or year and a half must be regarded as irremediably lost. The integrity of the median and ulnar nerves must be beyond question or it is useless to do the tendon transplantation for radial paralysis. Before operating, massage should be applied to the entire arm to get it in a hypervitalized condition, the skin and the joints supple. They work through three vertical parallel incisions, one on the median line in front and one on the median line at the back, all 12 cm. long. This gives ample access, enabling the tendons of the muscles innervated by the median and ulnar nerves to be sutured to the previously shortened extensor tendons. The details of the technic can be readily learned by any surgeon, they add, but at the best the results do not compare with regeneration of the nerve, and hence it should be only a last resource. The cast can be removed in two weeks and massage, mobilization, electricity and reeducation complete the functional recovery. By shortening the extensor tendons in the forearm, it is not necessary to make an incision in the back of the hand. There is also less danger of adhesions when the transplanted tendons run under the skin instead of being embedded in muscles.

Streptococcus Pleurisy.—The pleurisy developed during the decline of scarlet fever. Recovery followed three simple evacuating punctures, streptococci being found each time in the serofibrinous fluid.

Schweizerische medizinische Wochenschrift, Basel

Oct. 7, 1920, **50**, No. 41

The Importance of the Medical Decisions for the Success and the Usefulness of Social Insurance. G. Haemig.—p. 905.
*Right and Wrong Ways to Study the Psychology of Animals. W. Neumann.—p. 912.
Changes in Valves with Syphilitic Aortitis. N. Lupu.—p. 915. Cont'd.
*Pregnancy Toxicoses. P. Hüssy.—p. 918. Begun in No. 39, p. 857.

The Psychology of Animals.—Neumann has made a special study of the trained horse and dogs for which remarkable reasoning powers were claimed, ability to do mathematical examples, etc., the animals tapping out a kind of Morse alphabet. His conclusion is that it is absolutely impossible for animals to comprehend even language. Tone and gesture are what they obey.

Pregnancy Toxicoses.—Hüssy concludes this long study of the different pregnancy toxicoses by emphasizing that one explanation fits them all, namely, that they are the consequences of the passage of proteinogenous amins or their cleavage products into the blood stream. This variety throws light on the variety of the pathologic conditions liable to result. The amins come from the placenta or from the bowel, or from the endocrine glands, especially the pituitary-suprarenal system and the thyroid. His assertions are based on extensive personal research at the Hospital for Women at Basel and on the research of others, demonstrating the presence of these amins in the blood and seeking to trace them to their source. He presents evidence that the amins

of protein origin which get into the blood during pregnancy are probably of the histamin type. They are promptly inactivated by the liver, but when the liver becomes exhausted by the excessive work imposed on it, the nonmodified amins have a toxic action, and this is felt predominantly in organs which are constitutionally less resistant in the individual. The presence of the toxins can be easily confirmed by biologic tests, rabbit ear, surviving animal intestine, etc. These tests demonstrate the presence of a vasoconstrictin in the blood stream; then come edema, functional upset in the kidneys, with resulting high blood pressure, and hypertonia in general. If the retinal vessels feel the spasm, there is disturbance in vision; if the cerebral vessels are most affected, we have eclampsia. Edema, nephropathy and eclampsia are merely different degrees of the same disturbance. Eczema is never encountered as a true pregnancy dermatosis. The latter is traceable to derangement of the circulation. With prolonged vasoconstriction there is liable to be pruritus. If ergot is given for some time pruritus is liable to develop, and we know that the active substances in ergot are amins. In the uncontrollable vomiting of pregnancy, if the blood contains the vasoconstricting amins, the course is likely to be grave, but not in the absence of the vasoconstrictin, and the latter vanishes from the blood in the grave cases as improvement sets in.

Policlinico, Rome

Oct. 4, 1920, **27**, No. 40

*Serodiagnosis of Syphilis. F. Marcora.—p. 1107.
*Protein Therapy in Pneumonia. U. Monguzzi.—p. 1114.

Serodiagnosis of Syphilis.—Marcora obtained parallel results with the Wassermann and the Sachs-Georgi tests in 93.6 per cent. of 301 serums examined.

Protein Therapy in Pneumonia.—Monguzzi remarks that it is more than probable that the benefit supposed to be derived from the colloidal metals in therapeutics was due merely to the protein in the vehicle. The various theories explaining the efficacy of protein therapy are discussed and compared, and the experiences with it in nineteen cases of pneumonia are cited as quite satisfactory on the whole. General and local improvement was the rule, but there were exceptions to this. The protein injected was milk or gonococcus vaccine or both.

Semana Médica, Buenos Aires

June 24, 1920, **27**, No. 26

*Bile in Peritoneum. N. D. Rosso.—p. 835.
*Lower Segment of Pregnant Uterus. III. E. A. Boero.—p. 840.
Traumatic Sarcoma of Testicle. C. Cacciatore.—p. 850.
The Dietary for the Adult Man. L. Binet.—p. 852.

Bile in Peritoneum and Rabies.—In Rosso's case the boy of 14 developed rabies 108 days after he had been bitten by the rabid animal. He had been well until the last week when he had complained of severe pain in the side and the rabies symptoms soon followed. Necropsy disclosed that the peritoneum was full of bile, but no perforation of the gallbladder could be discovered. The viscera were laved in bile, and this explained the pain in the abdomen, and the shock from this may have been responsible for the rabies which otherwise might not have developed.

The Lower Segment of the Uterus.—Boero's profusely illustrated thesis is mainly a study of dystocia.

Archiv für Kinderheilkunde, Stuttgart

Aug. 31, 1920, **68**, No. 1-2

*Consolidation of Lung in Children. O. Herbst.—p. 1.
*Infectious Diseases in Origin of Feeblemindedness. Schott.—p. 10.
Vaccination of the Pregnant and Newly Born. H. Mensching.—p. 24.
Extensive Amyloid Degeneration in Boy of Eleven. C. Iseke.—p. 48.
Microscopic Capillary Picture of Intradermal Tuberculin Injection. O. Lade.—p. 58.
*The Oculocardiac Reflex in Children. E. Jenny.—p. 64.
Poisoning from Petrolatum Oil Vehicle. F. Tebbe.—p. 83.
*Operative Treatment of Pylorospasm in Infants. H. W. Fuchs.—p. 90.
*The Hypercholesterinemia with Nephrosis. H. Beumer.—p. 105.
Congenital Hypertrophy of Half of Body. Wyss.—p. 117.
*Roentgen-Ray Injury of Human Fetus. E. Aschenheim.—p. 131.
*Earliest Age for Tetany. B. Wolff.—p. 141.
*Familial Cirrhosis of Liver in Children. Olga Schuscik.—p. 144.

Catarrhal Consolidation of the Lung in Schoolchildren.—Herbst refers to consolidation of part of the lung during a mild bronchial catarrh with scarcely any impairment of the general health. The discovery of extensive consolidation and its long persistence are a surprise, but complete restitution finally follows. He advises to keep the child in bed until the lung clears up, unless warmth and quiet can be guaranteed in letting the child up in the room. No benefit from drugs was apparent, but deep breathing exercises seemed to help. A hot bath once a week, gradually increasing the temperature to 104 or 105.8 F. also proved useful, with a daily alcohol rub of the whole body in bed, for two weeks, and after this a rub with a towel wrung out of cool water. In one of the cases he describes, the consolidation of the left lower lobe had recurred twice, and there were still traces of it after 114 days. The cause seems to be obstruction of some bronchus by a peculiarly tenacious secretion in the absence of virulent bacteria.

Infectious Diseases as Factor in Feeblemindedness.—Schott found that in 6.36 per cent. of 1,100 feebleminded children, the parents or physician attributed the mental impairment to some infectious disease. He reviews this material in detail.

The Oculocardiac Reflex in Children.—Jenny has been applying the compression of the eyeball test to 250 children from 3 months to 15 years old at the Basel clinics. Disagreeable by-effects were observed in only two cases, vertigo and tinnitus in one and transient unconsciousness in a nervous girl with asthma. The pulse slowed down in all but 4.4 per cent. This negative group included five cases of tuberculous meningitis and two of diphtheria. The practically constant positive response indicates that the oculocardiac reflex is physiologic in children. He ranks it with the knee-jerk for testing the vegetative system, and especially for testing the heart, and found it particularly instructive as a control of digitalis treatment. Latent digitalis intoxication is revealed by the response to pressure on the eyeball. This test seems to be a substitute in children for test pressure on the vagus in the neck.

Pylorospasm in Infants.—Fuchs protests against comparing the outcome of internal and surgical treatment of stenosis of the pylorus in infancy as the cases seldom reach the surgeon until after the failure of long courses of internal treatment during which the debility may have become extreme. He regards the submucosa plastic operation on the pylorus, covering the gaping incision with omentum, without suturing the lips together (Weber-Rammstedt), as opening a new era in treatment of pylorospasm. He cites sixty-seven cases on record and describes a personal case, the results in all justifying the acceptance of this simple operative treatment by pediatrists who have hitherto shrunk from operative measures. Even when conservative measures have finally succeeded, the long period of disturbances leaves an indelible imprint on the child's development, manifest by nervous disturbance, motor insufficiency of the stomach, hyperacidity, etc., in later years.

Cholesterin Content of the Blood with Kidney Disease.—Only in nephrosis did Beumer find hypercholesterinemia; it seemed to be independent of edema, fever, etc., and could not be influenced by restriction of fat and lipoid in the diet in the few cases tested.

Roentgen-Ray Injury of Fetus.—Aschenheim describes the case of an imbecile boy, with sunken, nearly blind eyes, unusually small head, and occasional convulsions, which, he says, is the first authentic instance of roentgen-ray injury of the fetus. The otherwise healthy mother, then 37, was given deep roentgen-ray treatment for myoma of the uterus, with four or five exposures. Conception must have occurred about a month before the treatment was begun.

First Appearance of Tetany.—Wolff cites an instance of tetanoid manifestations in an infant only 7 weeks old.

Cirrhosis of Liver in Child.—The necropsy of the infant of 15 months showed hypertrophic cirrhosis of the liver. Two other children, also girls, had died in infancy with symptoms of acquired jaundice. No alcohol had ever been given the children. The family was otherwise healthy, the one boy having never shown signs of jaundice.

Deutsche medizinische Wochenschrift, Berlin

Aug. 19, 1920, **46**, No. 34

*Digitalis Therapy. T. Brugsch.—p. 933.
Pharmacologic Tests of Digitalis Preparations. Joachimoglu.—p. 935.
Auricle Expansion and Digitalis Medication. Pietrkowski.—p. 937.
*Diabetes Insipidus and Myxedema. L. Strauss.—p. 939.
Complicated Fractures of the Lower Leg. W. Budde.—p. 939.
Late Results in Penetrating Wounds of Lung. Alsberg.—p. 940.
Treatment of Gonorrhea in Women. Graebke.—p. 941.
*Angina Ludovici. G. Neugebauer.—p. 942.
Silver Arsphenamin and Sulphoxylate Arsphenamin. Meyer.—p. 943.
Otologic Hints for the General Practitioner. G. Brühl.—p. 944.

Digitalis Therapy.—Brugsch says that in a general way digitalis is indicated in cases in which an improvement of the circulation can be brought about by a lengthening of the diastole. A pronounced effect of digitalis is obtainable only with an insufficient, hypertrophied heart (left or right ventricle or both ventricles) as found in all forms of hypertonia, heart defects, idiopathic hypertrophy and hypertrophy of various origin (goiter, myoma, overexertion in sports, etc.). In cases of insufficiency we have more or less pronounced stasis, on which a lengthened diastole exerts a decided influence, or we have subnormal diastole which is made normal by digitalis, and at the same time there is an accelerated pulse rate which becomes normal through the stimulation of the vagus. In insufficiency of one or both ventricles without hypertrophy, and in vasomotor paralysis the situation is different. Insufficient but nonhypertrophic hearts show no slowing of the pulse following digitalis; especially is this noticeable in acute cardiac insufficiency as the result of myocarditis in infectious diseases; vasomotor paralysis is usually present. In all such cases no effect of digitalis therapy can be noted. As to judging the clinical effects of digitalis, blood pressure is of little value. Of much greater importance is pulse frequency. If the pulse becomes normal it is an indication of successful digitalis therapy. Doing away with stasis is always a very favorable sign.

Diabetes Insipidus and Myxedema.—Strauss reports a peculiar case of diabetes insipidus in a boy of 9. The volume of urine amounted to 7 liters daily. The boy became emaciated and suffered from intense thirst. But in spite of these symptoms he remained mentally alert and made good progress in his school work. At the age of 11 the quantity of urine and the extreme thirst gradually abated, but he became mentally inactive and fell behind in his studies at school. He became unduly fat, stopped growing, was often drowsy and would fall asleep over his work. At 15 he presented the picture of myxedema, whereas the volume of urine had become normal, indicating that he had recovered from the diabetes insipidus. He was given thyroid tablets. His drowsiness disappeared, his appearance became normal, he began again to grow and was able to fill an office position satisfactorily. He died at the age of 20 from pneumonia. Strauss was unable to find a similar case reported in the literature. He theorizes in explanation of the association of the two diseases.

Angina Ludovici.—Neugebauer reports two cases of angina ludovici in two women aged 72 and 73, which took a severe course and ended fatally, the one in three and the other in eight days from the onset of serious symptoms. Streptococci and staphylococci were present in large numbers in both cases. The two women had been much together.

Monatsschrift für Geb. und Gynäkologie, Berlin

August, 1920, **52**, No. 2

*Quinin as Oxytocic with Abortion. H. Hintzelmann.—p. 81.
*Medicolegal Import of Precipitate Delivery. J. Brock.—p. 85.
*Experiences with Contracted Pelvis. W. Wortmann.—p. 94.
Fatal Nonpuerperal Sepsis in Childbed. W. Schmitt.—p. 117.

Quinin as Oxytocic.—Hintzelmann found that quinin by the vein acts only when labor is already under way, that is, when the uterus is already sensitized. But it aids in dilating the os with incomplete abortion.

Precipitate Delivery.—Brock reports five cases of precipitate delivery, in two of which the mother had been accused of infanticide. He was able to show by the characteristic fracture of the vertex of the skull and the torn edges of the umbilical cord that the death of the child was explained by the fall on the floor.

Experiences with Contracted Pelvis.—Wortmann compares with minute details the experiences at the Bonn maternity from 1902 to 1912 with those from 1912 to 1919 a total of 657 cases of contracted pelvis in 8,417 births in the first period, and 691 to 7,114 in the second period. The modern methods of managing such cases allows longer expectant treatment so that the number of spontaneous deliveries increased by 17.6 per cent. in the second period, while the mortality of the children was less by 5.6 per cent.

Münchener medizinische Wochenschrift, Munich

Aug. 6, 1920, **67**, No. 32

Motility of Spirochæta Pallida. F. W. Oelze.—p. 921.
Histochemistry of Central Nervous System. F. Groebbels.—p. 923.
Even Dosage in Deep Roentgen Therapy. H. Holfelder.—p. 926.
*Determination of Mercury in the Urine. Autenrieth and Montigny.—p. 928.
War Observations on Thrombosis. A. Dietrich.—p. 931.
Demonstration of Spirochetes in Tissues. F. Jahnel.—p. 932.
Simplified Nutrient Mediums. Marx and Eichholz.—p. 933.
Right Lung More Often Involved in Tuberculosis. Mayer.—p. 935.
Radiotherapy and Variations in City Current. H. Martius.—p. 936.
The Supporting Function of the Lungs. A. Brunner.—p. 938.

The Determination of Mercury in the Urine.—Autenrieth and Montigny find that the quantitative determination of mercury in the urine by the colorimetric method is simple and sufficiently accurate for practical purposes. Owing to the manner in which mercury is employed, it is seldom excreted in the urine in other than very small quantities, so that the colorimetric method is especially appropriate. But this method is applicable only in case no other metal precipitated by hydrogen sulphid, such as lead, copper, silver, tin and bismuth, is present. It is just as accurate as the gravimetric method of Schumacher and Jung, and is not much inferior, if any, to the electrolytic method of Buchtala, and has the advantage of not requiring a delicate scale for its application such as is needed in the Buchtala method.

Therapeutische Halbmonatshefte, Berlin

July 15, 1920, **34**, No. 14

Pathogenesis and Therapy of Anemia. Isaac.—p. 373. Begun in No. 13, p. 341.
Protein Therapy. H. Sachs.—p. 379. Conc'n in No. 15, p. 405.
Strictures of Esophagus Due to Corrosives. Schilling.—p. 385.
Case of Luminal Poisoning. J. Stein.—p. 387.

Aug. 1, 1920, **34**, No. 15

*Treatment of Disturbed Pancreatic Function. W. Stepp.—p. 409.
*Morphin in Pneumonia and Dysentery. Aufrecht.—p. 412.

Treatment of Disturbed Pancreatic Function.—Stepp states that it is important from the therapeutic standpoint that defective absorption of fat is not due, as might be supposed, to a disturbance in the fat-splitting function. Therefore, diminished fat absorption has nothing to do with the external secretion of the pancreas but must be regarded as the result of a disturbed internal secretion. Further evidence of this is the fact that if the excretory duct is artificially closed, thus excluding the pancreatic secretion from the intestine, marked steatorrhea does not result. Steatorrhea may give the stools the appearance of being covered with butter, or it may be evident only with chemical analysis. He emphasizes that in severe cases of disturbed pancreatic function with marked derangement of fat absorption, practically nothing can be accomplished by even large doses of pancreas preparations, although disturbed protein digestion can be much relieved. But in milder disturbances pancreatic preparations produce wonderful results. The fatty stools disappear, the number of striped muscle fibers in the stools is much decreased, and the weight and general health improve. Either the gland itself or preparations of the gland may be administered. Fresh pig or beef pancreas may be given, either ground fine in the form of an emulsion or chopped fine and seasoned with salt, etc. From one fourth to one half of a beef or pig pancreas may be given daily. The gastric secretions, especially the volume of hydrochloric acid, should be studied as they affect the activities of the pancreas. The diet must be carefully regulated, and only easily digested food eaten; especially fats that are not easily assimilated should be avoided.

Uses of Morphin.—Aufrecht states that subcutaneous injections of morphin accomplish wonders in alleviating the almost

unbearable pains in the side that frequently accompany the onset of pneumonia and permit only very shallow inspiration, thus leading to marked dyspnea. For patients in middle life he uses not less than 0.015 gm. He verified the great value of the remedy also in his own individual case. The pneumonia began with such severe pains in the side that he resorted at once to morphin. A few minutes after the injection of 0.02 gm. the pains had disappeared. He has been using morphin for this purpose for many years, and has no need of cupping or ice-bags. In dysentery, he says further, the view still seems to prevail that a cathartic (usually castor oil) should be administered the first thing. The indications for such treatment were based on the old theory that dysentery was the result of the decomposition of the ingested food. Now that we know otherwise the use of the cathartic is no longer indicated. He treated many cases of dysentery and a few of typhoid successfully with small internal doses of morphin (from 0.01 to 0.015 gm. once or twice a day), together with proper regulation of the diet. He cites one case particularly in which the patient was referred to him in an exhausted condition three weeks after onset. A morphin injection of 0.015 gm. was given. The pains ceased, control of the stools was regained, and the pulse grew stronger. The next day another injection was given, following which the patient recovered.

Wiener klinische Wochenschrift, Vienna

Feb. 26, 1920, **33**, No. 9

Hypoplasia of the Testes in Adolescence. J. Kyrle.—p. 185.
Investigations on War Wound Secretions. E. Jeckl.—p. 189.
Lethargic Encephalitis. K. Gross.—p. 192.

March 4, 1920, **33**, No. 10

Relation of Retrobulbar Neuritis to Nasal Cavity. Meller.—p. 205.
Retrobulbar Optic Neuritis and Multiple Sclerosis. Marburg.—p. 209.
Physiology and Pathology of Bladder Function. VI. O. Schwarz.—p. 210.
Simulation by Epidemic Encephalitis of Surgical Diseases in the Abdominal Cavity. C. Massari.—p. 214.

Aug. 19, 1920, **33**, No. 34

Gold Reaction in Secondary Syphilis. Kyrle and others.—p. 745.
Protein Therapy, Particularly in Syphilis. K. Schreiner.—p. 748.
*A Diagnostic Procedure in Heart Disease. J. Tornai.—p. 750.
Tissue Injury from Black Italian Thread. O. Sachs.—p. 752.
Relations Between Otosclerosis and Tetany. H. Frey and K. Orzechowski.—p. 754. Begun in No. 32, p. 697.

A Diagnostic Procedure in Heart Disease.—Tornai states that with the patient lying on the abdomen or chest the heart and its large vessels are brought nearest to the anterior chest wall. In this position, also, the filling of the ventricles, especially the left; is greatest, in which connection he recalls the well-known fact that the pathologic sounds occurring in valvular defects are produced for the most part by the blood flowing through the left ventricle. In order to make the patient accessible to auscultation he has him assume the knee-elbow position, in which the patient supports himself on the knees and the palms of the hands, with the chest in a horizontal position. He uses a short stethoscope.

Zentralblatt für Chirurgie, Leipzig

Aug. 7, 1920, **47**, No. 32

*Healing by Second Intention. T. Escher.—p. 970.
*Influence of Anesthesia on Inflammation. A. W. Meyer.—p. 974.

Healing by Second Intention.—Escher feels that more emphasis should be placed on healing by second intention. Under hydrophilous dressings the smaller wounds often heal without unfavorable reactions and produce good scars, but in all large, open wounds, if they are covered with absorbent gauze applied direct to the wound without other protection, certain phenomena arise that are without doubt brought about by a continuous irritation of the wound and the surrounding tissue, the cause of which in the past many have not taken sufficiently into account. Escher emphasizes that, by the continuous contact of the hydrophilous dressings, more especially the gauze, with the wound, the wound secretions are completely absorbed and dried up. To remedy this condition he applies strips of gutta percha tissue to the edges of the wound and the adjoining granulations. When the dressings were changed it was significant that it caused the patient no pain. Under these strips the young cells gradually assumed a more normal appearance, and the ridges along the edges of the wound, without the use of any other means, sank down to the level of the scar. He secured good results also from covering over the whole granulating wound surface. Applying his treatment later to fresh wounds he found that all the irritating effects of the gauze were avoided; the wounds remained moist, covered with a sparse, serous secretion. No edema appeared, no troublesome infiltration of the bed and the edges of the wound. The wound remained soft and pliable. The granulations developed naturally, being of normal consistency, color and volume; did not bleed; did not check the formation of scar tissue nor the rapid union of the edges of the wounds after they became spontaneously cleansed. It was found also, when the supply of gutta percha tissue became exhausted, that parchment paper, if made pliant by dipping it in a solution of mercuric chlorid, served the same purpose.

Effect of Local Anesthesia on Inflammation, Especially Erysipelas.—Meyer relates disappointing experiences with injections of a 1 per cent. solution of procain and epinephrin in the treatment of erysipelas. The injections were made subcutaneously and intracutaneously about 1 cm. distally from the advancing erysipelas border. He thinks that checking of inflammation by local anesthesia, at least in progressive forms of erysipelas, is to be viewed with caution.

Zentralblatt für Gynäkologie, Leipzig

Aug. 7, 1920, **44**, No. 32

So-Called War Amenorrhea. A. Nilsson.—p. 876.
*Transverse Avulsion of the Sigmoid Colon. F. Michel.—p. 883.
Cervical Atresia Intra Partum. H. Hisgen.—p. 885.
*Amputation of Gravid Uterus. W. Nacke.—p. 886.

Sigmoid Colon Torn from Rectum in Curetting.—Michel reports a case of avulsion of the sigmoid colon in a woman of 26 referred to him by another physician. The latter, suspecting retention of remnants of an abortion, had performed a curettage, but instead of the expected placental tissue he drew forth a loop of the large intestine, torn off straight across. He closed the lumen of the rectum with a catgut suture and referred the case to Michel, who, as he did not see the case until ten hours after the injury, thought it unwise to perform a radical operation at once, as he would have done could he have operated immediately after the injury. Instead, he inserted a large rubber drain into the Douglas pouch. The next morning he made an artificial anus in the cecum as a prophylactic measure. On the third day, as no flatus had passed and the abdomen was rather distended, he opened up the artificial anus. The day following both stool and flatus passed through the vagina also. Seven days afterward the patient got up, as the artificial anus was then functioning adequately. Four weeks later, after thorough cleansing of the rectum, a longitudinal median incision was made. Loose adhesions between the small intestine and the uterus were broken up. The bladder was freed from adhesions and the parametrium opened up, following which the uterus, together with the adnexa, was removed. The distal stump of the rectum seemed too much shriveled to mobilize. Accordingly, the mobilized sigmoid stump was drawn down through the distal end. Through the Douglas pouch the two telescoped portions of the rectum were fastened by sutures. A moist gauze wick was laid in the Douglas and brought out through the vagina. Regular and natural passage of the feces occurred from the fourth day on, and the patient recovered rapidly and completely.

Supravaginal Amputation of a Gravid Myomatous Uterus.—Nacke reports a case of supravaginal amputation of a myomatous uterus in a woman of 42 during the fifth month of her first pregnancy. On the posterior side of the cervical stump a myoma about the size of a walnut was left at the operation because it was feared that its enucleation would make it more difficult to manage the refractory parenchymatous hemorrhage in the deeper tissues between the rectum and the cervical stump. Although no fever was present, eight weeks after the primary operation an excessive growth of the myoma nodule that was left led to serious manifestations of ileus. At a secondary operation this myoma, the size of an apple, was enucleated; it had become gangrenous. Thirteen days after the second operation the patient was able to

leave her bed and felt well in every way. While admitting that possibly the patient might have stood total extirpation of the gravid myomatous uterus just as well as the supravaginal amputation, Nacke emphasizes that supravaginal amputation is the easier and more rapid form of intervention, and in spite of the severe late complications arising in this case he prefers supravaginal amputation to total extirpation in the presence of serious deep hemorrhage, if the patient is anemic or weakly, or if the operation is complicated by extensive adhesions with the intestine or omentum, or by tumors of the adnexa. In uncomplicated cases total extirpation would likely be indicated.

Zentralblatt für innere Medizin, Leipzig

Aug. 7, 1920, **41**, No. 32

*Determination of Total Blood Volume. Boenheim and Fischer.—p. 553.

Aug. 14, 1920, **41**, No. 33

Progress in Ophthalmology in 1919. Koeppe.—p. 569.

Total Blood Volume.—Boenheim and Fischer refer to Löwy's article on the determination of the total blood volume in living subjects, an abstract of which appeared in the current volume of The Journal, p. 1104. They report that the Bang micromethod used by Löwy for determination of the sodium chlorid content is not sufficiently accurate to secure even approximately accurate results in regard to the total blood volume. For this reason they deny the clinical value of Löwy's method by this technic, although approving the principle of the method.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Sept. 18, 1920, **2**, No. 12

The Fundamental Shape of the Stomach, and Megacolon. L. Bolk.—p. 1073.
*Fat Content of Blood. J. C. Schippers.—p. 1081.
The Meinicke Serologic Test in Syphilis. B. Luza.—p. 1087.
Care of Nervous and Mental Disease. J. L. van Lier.—p. 1092.
Prophylaxis of Tuberculosis. C. Metzlar.—p. 1099.

Low Fat Content of Blood in the Exudative Diathesis.—Schippers queries whether the unusually small fat content of the blood in infants with the exudative diathesis may not throw light on the nature of this anomaly. He found in other infants, healthy and sick, and in older children that the neutral fat in the blood was close to 0.1 per cent. but in children with the eczema of the exudative diathesis it was less than half of this. The cholesterin, ester and phosphatid content was approximately the same in the different groups except that the esters content was nearly twice as high in older children. His tests showed no appreciable influence from fat in the preceding diet on the fat content of the blood. He adds that infants with the exudative diathesis are known to run a higher temperature than others as a rule, and possibly this may be due to the greater avidity of their tissues for fat and its more rapid oxidation in them.

Hospitalstidende, Copenhagen

Sept. 1, 1920, **63**, No. 35

*Syphilis in Java. N. A. V. Sørensen.—p. 537.
*Syphilitic Disease of Nasal Accessory Cavities. V. Schmidt.—p. 544.
Conc'n in No. 36, p. 553.

Unusual Forms of Syphilis in Java.—Sørensen had occasion in seven instances during his service in Java to change the recorded diagnosis of pulmonary tuberculosis to pulmonary syphilis. The first case of the kind had been sent to the hospital to die as an advanced case of phthisis. No tubercle bacilli could be found in the sputum but hemoptysis was frequent. The casual discovery that the tuberosity of the tibia was swollen gave the clue to the syphilitic nature of the disease, and under mercurial treatment the "phthisis" disappeared. The patients were all Dutch soldiers except one, and there were no other signs or history of syphilis. He has later encountered some cases of the kind in Holland. In four other cases, recruits presented a continuous fever of 40 and 40.5 C. (105 F.). Their general condition was not bad enough to correspond to this high temperature. All the palpable lymph glands were enlarged and hard, but not tender. Agglutination for typhoid was negative but the Wassermann reaction was positive. Under mercury the fever declined and full diet was allowed. In another case of the kind the fever had kept up for thirty-five days before syphilis had been suspected.

Syphilitic Disease of the Nasal Sinuses.—Schmidt reports some long misinterpreted cases which have taught him the necessity for suspecting syphilis in all cases of disease of the air spaces accessory to the nose. Among his eighty-one cases of sinusitis, over 17 per cent. were syphilitic. Omitting those with syphilitic manifestations elsewhere, there were 9.9 per cent. with the syphilitic disease in the sinuses alone.

Hygiea, Stockholm

Sept. 16, 1920, **82**, No. 17

*Empyema of the Chest After Influenza. G. Vidfelt.—p. 545.
*Spurious Whooping Cough. W. Wernstedt.—p. 559.

Sept. 30, 1920, **82**, No. 18

Influenza. H. Bergstrand.—p. 584.

Purulent Pleurisy After Influenza.—Vidfelt found the streptococcus responsible for 70 of his 127 cases of empyema in two recent years, and the mortality in this group was 35.7 per cent. The diplococcus was responsible in 43 cases; mortality 7 per cent., and mixed infection in 2 cases, both fatal, while all recovered of the 7 patients with sterile empyema under puncture and aspiration alone. A thoracoplastic operation was necessary in the 6 chronic cases, all with favorable outcome. The prognosis in the 3 bilateral cases seemed to be determined by the bacteriologic findings, the streptococcus case being the only one to terminate fatally. One practical conclusion from his experience is that a preliminary thoracocentesis in the streptococcus cases, with secondary thoracotomy, gives much better results than a primary thoracotomy.

Spurious Whooping Cough in Spasmophilia.—Wernstedt has noted that a cough in children is more likely to be of a spasmodic character the more pronounced the response to the galvanic current. An ordinary catarrhal "cold" in a child inclined to spasmophilia may induce a cough which it is impossible to distinguish from that of true whooping cough. In a recent epidemic of this spurious pertussis in a children's institution, no possibility for contagion with true pertussis could be discovered, and those children alone were affected who were known to have typical spasmophilia. The importance of mistaking the true for the spurious type is evident, and to aid in the distinction he describes with minute detail a case which he is convinced is a pseudopertussis in a 5 months infant with spasmophilia. During the five months the child was under observation, the severity of the spasmodic coughing varied parallel to the severity of the spasmophilia, and the whooping paroxysms could be brought on or banished at will by feeding the infant whey with or without protein. The child did not begin to cough until it had been for two months in the institution.

Ugeskrift for Læger, Copenhagen

Sept. 9, 1920, **82**, No. 37

*Transfusion in Nitrobenzene Poisoning. S. Hindse-Nielsen.—p. 1157.
Influenza in Greenland. J. Bichel.—p. 1163.

Nitrobenzene Poisoning.—The artificial oil of bitter almonds, or nitrobenzene, is occasionally taken, or used by mistake for benzaldehyd, but the resulting symptoms are liable to be mistaken for potassium cyanid poisoning. The odor of the breath is the same, but with the latter the complexion is natural while with nitrobenzene poisoning there is intense cyanosis. Early differentiation is important, as transfusion of blood may prove life saving, with nitrobenzene poisoning, as in a case described, while this would be irrational with the other, as the blood is ready to give up its oxygen but the tissues have lost the capacity of taking it up. The stomach must be freely rinsed out with nitrobenzene poisoning, concluding by pouring through the tube 0.5 gm. of calomel, or better yet, a saline purge, as this would prevent absorption. Castor oil, oil, milk, and alcohol must not be allowed, as they help to dissolve the poison further. A warm bath with a cold douche proved extremely beneficial in three cases. Nitrobenzene destroys the erythrocytes, transforms the oxyhemoglobin into methemoglobin, irritates and then paralyzes the central nervous system, and has a dilating effect on the heart.

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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, No. 23 CHICAGO, ILLINOIS DECEMBER 4, 1920

BLOOD CONCENTRATION CHANGES IN INFLUENZA

WITH SUGGESTIONS FOR TREATMENT *

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SIMILARITIES BETWEEN WAR GAS POISONING AND INFLUENZA

Pathologic.—From the pathologic point of view, influenza presents a striking similarity to the respiratory complications induced by the lethal war gases chlorin, phosgen and chlorpicrin. An extensive experience with both influenza and war gas poisoning has served as the basis for the statement of Winternitz [1] and his associates that:

> In both there is, first, the acute diffuse involvement of the lung, initiated by, or occurring simultaneously with, an acute tracheobronchitis, and presenting clinically, dyspnea, cyanosis, blood stained, abundant sputum, and even interstitial emphysema; next the tendency for the pneumonic process to localize and to necrotize; and, finally, if the acute period is survived, organization of the pneumonic and bronchiolar exudates with resulting bronchiolitis and bronchiectasis. With even more minute comparison, the resemblance is sustained. The initial or early dilatation of the ducti alveolares, so characteristic in gas poisoning, also occupies the foreground of the histological picture in influenza. These dilated structures are the more prominent on account of the red, ribbon-like strands that cover the surface and often involve the walls. Similar necrotization, varying in its depth even to involve the whole of the alveolar walls, occurs in both of these conditions. Similar hemorrhages in the early stage, rupture of the alveolar wall with interstitial and subcutaneous emphysema, necrotization, gangrene and organization in the same localities characterize the two lesions, and are not found with the same uniformity in any other type of respiratory disease.

In both gas poisoning and influenza there are two features that stand out prominently, namely, pulmonary edema and a pneumonic process. In both, the edema may be regarded as the response to an intense inflammatory reaction resulting in a loss of the normal protective mechanism of the upper respiratory tract, thus allowing bacterial invasion of the lung. "Similarly, gas and influenza damage the pulmonary parenchyma itself, so that the bacteria of the air and of the mouth which find their way into the damaged lung initiate processes and produce complications which may not be distinguished." [1]

Physiologic.—It has been shown by Underhill [2] and his associates that, in acute poisoning by the lethal war gases, edema of the lungs is accompanied by marked changes in the concentration of the blood. The first stage of acute gas poisoning (phosgen being selected as a typical gas) is associated with a notable decrease in the concentration of the blood. This is quickly followed by the second stage, which is characterized by a rapid concentration of the blood far above the normal level. Most of the fatalities occur in this period. From a large amount of experimental data it may be concluded that in acute gas poisoning the prominent features include edema of the lungs, a highly concentrated blood and an evident need of oxygen in the tissues. In the later stages of gas poisoning the picture presented resembles strongly that characteristic of a pneumonic process.

The cause of death in acute gas poisoning is usually attributed to pulmonary edema. It has been said that death is caused by an individual literally drowning in the water of his lungs. On the other hand, Underhill [2] and his associates ascribe death to the increased concentration of the blood rather than to the accumulation of fluid in the lungs.[3] Blood concentration means a failing circulation, an inefficient oxygen carrier, oxygen starvation of the tissues, fall of temperature and, finally, suspension of vital activities. Therefore, although it is recognized that edema of the lungs is indirectly concerned in death from acute gas poisoning, the immediate cause must be assigned to blood concentration. In those cases in which the victim survives the acute period, that is, the period of pulmonary edema, but finally dies, death is usually due to an infection, namely, pneumonia.

BLOOD CONCENTRATION CHANGES IN INFLUENZA

From the foregoing considerations one is immediately confronted with the questions: "In influenza are there changes in blood concentration at all analogous to those existing in gas poisoning?" "If so, is there any relationship between blood concentration and the gravity of the disease?" "Will determination of changes in blood concentration serve as a means of following the progress of the condition and give any information relative to prognosis?"

During the recent epidemic of influenza an opportunity was afforded through the cooperation of Dr. George Blumer and his staff to give at least a partial answer to some of these questions from a study of forty-three patients admitted to the medical service of the New Haven Hospital.

* From the Department of Experimental Medicine, Yale University School of Medicine.

1. Winternitz, Wason and McNamara: The Pathology of Influenza, New Haven, Conn., Yale University Press, 1920.

2. Underhill, F. P.: The Physiology and Experimental Treatment of Poisoning with the Lethal War Gases, Arch. Int. Med. **23**: 753 (June) 1919; also Harvey Lectures 1917-1919, Philadelphia, J. B. Lippincott Company; Lethal War Gases, New Haven, Conn., Yale University Press.

3. Winternitz and Lambert: J. Exper. Med. **29**: 537 (June) 1919.

The investigation with these subjects enables us to state definitely that in the fulminating cases of influenza there is a marked increase in the concentration of the blood resembling closely that observed in the acute stages of gas poisoning. Whether there is an initial period of dilution similar to that seen in gas poisoning cannot be stated at present. An example of the actual changes in blood concentration [4] is given in Chart 1.

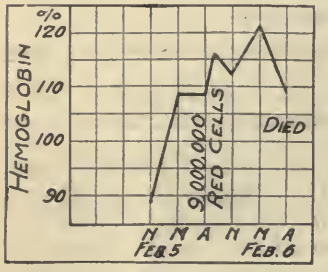


Chart 1 (Case 5).—Blood concentration in influenza. In the charts, *N* signifies night; *M*, morning, and *A*, afternoon.

In Chart 2 may be seen average "death" and "recovery" curves from a large number of experiments in gas poisoning. Plotted in a similar manner in Chart 3 are three individual "death" curves obtained in influenza, and for comparison two "recovery" curves from the same source. The resemblance in character of concentration changes in the two sets of "death" curves is noteworthy. The "recovery" curve is of special interest since clinically there is little in the incipient stages of the disease to differentiate the fatal from the nonfatal case. In this direction blood concentration estimations are of great assistance.

From the data in the accompanying table it may be seen that of the forty-three cases under observation, twenty-eight patients died. Of these twenty-eight fatal cases, eleven were uncomplicated influenza and all showed marked concentration of the blood. Two of the remainder with complications (pregnancy and empyema) also displayed markedly increased concentration of the blood. The remaining fifteen deaths could as well be attributed to complicating factors, such as pregnancy, septicemia, cardiorenal disease or syphilis, as to influenza per se. In none of these cases was there a significant increase in the concentration of the blood. It should be emphasized that certain patients die rapidly without any evidence of increased blood concentration and without obvious complications sufficient to account for death. According to our point of view, death may be induced by two factors: (1) intense concentration of blood, which may be called the mechanical cause, and much less frequently (2) rapid elaboration of toxins which apparently do not give the organism an opportunity to defend itself. In acute gas poisoning, both types of reaction may be seen also.

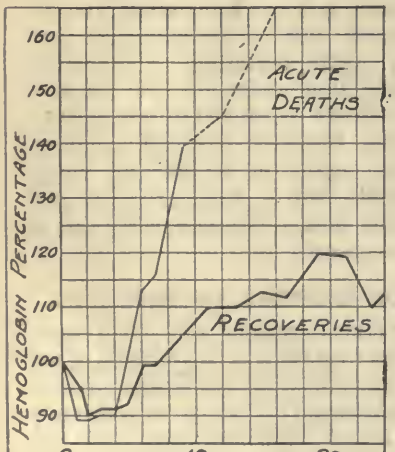


Chart 2.—Blood concentration in phosgen poisoning; concentration of phosgen, from 41 to 50 parts per million of air. (From Underhill: Lethal War Gases.)

Returning to an inspection of the table, it is evident that death invariably followed a marked increase in blood concentration. Again, of the patients who recovered, in not a single instance was there evidence of a significant increase in blood concentration. Two apparent exceptions to this statement are at once obvious, namely, Cases 29 and 30. These patients, however, received special treatment and will be given due consideration later.

It has been shown above that in the fulminating type of influenza the blood becomes markedly concentrated. Moreover, there is a distinct relationship between the gravity of the case and the concentration of the blood. Furthermore, the determination of hemoglobin affords a rapid, accurate method for noting changes in blood concentration in influenza.

BLOOD CONCENTRATION CHANGES IN INFLUENZA EXPRESSED IN TERMS OF HEMOGLOBIN PERCENTAGES

Case	Days in Hospital	Leukocytosis	Organism Present*	Clinical Diagnosis†	Clinical Prognosis	Hemoglobin: First Observation	Hemoglobin: Highest Value	Hemoglobin: Later Value
Fatal Cases, with No Complications								
1‡	9	7,400	S. H.	G. B. P.	Fatal	140	140	
2	11	.....	.....	G. B. P.	Fatal	137	139	
3	11	12,000	.....	G. B. P.	Fatal	113	113	110
4‡	7	10,400	IV	G. B. P.	Doubtful	120	120	111
5	9	4,800	IV	G. B. P.	Fatal	87	122	110
6	5	.....	.....	G. B. P.	Fatal	125	125	113
7	10	7,100	S. H.	G. B. P.	Fatal	85	109	102
8	8	12,400	S. H.	G. B. P.	Doubtful	116	131	122
9	9	12,400	IV	G. B. P.	Doubtful	95	126	102
10	8	4,000	.....	G. B. P.	Fatal	122	122	104
11	..	.....	.....	G. B. P.	Fatal	123	123	107
Fatal Cases, with Complications (Cardiorenal, Septicemia, Pregnancy, etc.)								
12	4	5,600	.....	G. B. P.	Fatal	95	105	105
13‡	11	7,400	IV	G. B. P.	Fatal	65	85	85
14	4	8,400	.....	G. B. P.	Fatal	86	86	
15	13	13,400	III	G. B. P.	Fatal	100	100	75
16	8	5,400	IV	G. B. P.	Fatal	75	83	83
17‡	8	7,500	.....	G. B. P.	Fatal	83	83	83
18	7	11,600	III	G. B. P.	Fatal	79	94	62
19‡	6	104,000 92,000 75,000	IV	G. B. P. myelogenous leukemia	Fatal	97	103	103
20‡	21	3,600 14,600	IV	G. B. P.	Doubtful	80	102	102
21	3	6,400	.....	G. B. P.	Doubtful	82	94	
22	24	6,600 14,200	S. H.	G. B. P.	Fair, good, fatal	80	90	90
23	20	12,600	IV	G. B. P.	Very poor	66	70	66
24	13	18,000	.....	G. B. P.	Fatal	102	102	96
25	10	15,200	S. N. H.	P. L. P.	Fatal	83	83	83
26	9	7,600	.....	G. B. P.	Fatal	75	80	80
27	24	7,300 34,000	S. H.	G. B. P.	Fair, fatal	70	75	75
28§	26	11,600 23,400	S. H.	G. B. P.	Very poor, doubtful, fatal	75	110	80
Recoveries								
29§	37	8,000 21,000	IV	G. B. P.	Fatal	85	106	80
30§	11	11,000	.....	G. B. P.	Fatal	82	101	74
31	17	26,000	IV	P. L. B. P.	Very poor	90	99	80
32	15	13,000	III	P. L. B. P.	Doubtful	98	98	80
33	21	7,400	IV	G. B. P.	Fatal	88	100	82
34	26	14,400 26,600 10,700	1	P. L. B. P.	Doubtful	100	103	100
35	34	8,000 22,000	IV	G. B. P.	Doubtful	110	112	90
36	11	8,000 37,000	.....	Patchy B. P.	Doubtful	88	96	90
37	13	3,200 7,000	.....	Patchy B. P.	Doubtful	95	99	85
38	9	24,800	IV	P. L. B. P.	Doubtful	70	63	65
39	9	8,800	IV	Patchy B. P.	Good	85	87	87
40	7	11,400	I	L. P.	Fair	102	103	100
41	17	7,000	III	D. B. P.	Fatal	88	88	85
42	10	11,800	IV	Patchy B. P.	Doubtful	88	99	80
43	39	14,000 34,000	IV	Patchy B. P. with organisms	Doubtful	93	93	63

* In this column, S. H. indicates Streptococcus hemolyticus, and S. N. H., Streptococcus nonhemolyticus.
† In this column, G.B.P. indicates generalized bronchopneumonia; P. L. B. P., pseudolobar type of bronchopneumonia, and P. L. P., pseudolobar pneumonia.
‡ Clinical diagnosis confirmed at necropsy.
§ These patients received special treatment, as mentioned in text.

4. The changes in blood concentration are followed by accurate hemoglobin estimations, the method employed by us being that advocated by Cohen and Smith (J. Biol. Chem. **39**: 489 [Oct.] 1919). Hemoglobin content has been checked in man in influenza by total solid determinations and red cell count, and these respective values follow similar if not exactly parallel curves. In gas poisoning the same relationship holds for total solids and hemoglobin (Underhill, F. P.: Lethal War Gases).

As a rule, the development of changes in blood concentration in influenza does not occur so rapidly as it does in gas poisoning. In the latter instance it is at most a matter of a very few hours, whereas in influenza a much longer period from the onset elapses before there is evidence of concentration. This fact is of considerable importance in allowing time for a study of the blood and for treatment. On the other hand, once concentration begins, its course is very rapid.

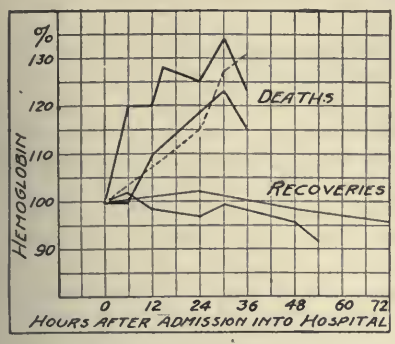


Chart 3.—Blood concentration in influenza.

SUGGESTIONS FOR TREATMENT IN INFLUENZA

In offering suggestions for treatment it is realized that the evidence for the efficacy of the therapeutic procedures advocated is based on a paucity of cases. The reason for this is that by the time a sufficient number of cases had been studied to establish the occurrence of blood concentration, the epidemic of influenza was on the wane. However, from experience with treatment of the same condition, i. e., concentrated blood, in gassed animals it seems logical to apply the same principles of treatment to influenza when it is actually demonstrated that such procedure is indicated in a given case.

In considering treatment from our point of view it should be made clear at once that no claim is made that the method proposed is a specific for influenza. It should be clearly understood that while blood concentration is an exceedingly important factor in producing death, we do not consider this necessarily to be the only cause of death in influenza. On the other hand, we do believe that extreme blood concentration is incompatible with life, and that if blood concentration can be maintained within reasonable limits, the organism has a much better opportunity to combat the other toxic effects of the disease.

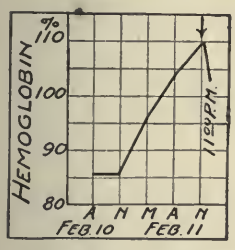


Chart 4 (Case 7).—Influence of late treatment on blood concentration in influenza. At point indicated by arrow, 340 c.c. of blood was withdrawn. Patient died before noon, February 12.

Indications for treatment are obtained by following hemoglobin content by an accurate method, as pointed out earlier in this paper. It is obvious that such estimations made as soon as possible after the onset of the disease possess the advantage of giving one an idea of the normal hemoglobin level of the individual. This is of great importance; for blood concentration is, within rather wide limits, a relative rather than an absolute figure. On the other hand, this knowledge is not absolutely essential, since one's experience with the hemoglobin of patients, together with the high figures for hemoglobin obtained in influenza, leads him to decide quickly even in the first examination whether the blood is approximately normal or above. As examples of proof of this reasoning may be cited Cases 1 and 2 of the table. In the first instance the preliminary and only hemoglobin estimation yielded a figure of 140; in the second case, 137 was the valuation found for hemoglobin content. It is obvious that such figures could never be mistaken for normal hemoglobin values.

Nevertheless, too much emphasis cannot be laid on the importance of obtaining blood concentration data as early as possible in the course of the disease, for if the prescribed treatment is to be of value it must be practiced at the optimal time. In the early stages of the disease, hemoglobin estimations should be made at least four times daily in order that any hint of concentration may be detected. If incipient concentration is in evidence, hemoglobin estimation is to be repeated in an hour. If concentration is still mounting, treatment should be instituted at once. The treatment should always be given before blood concentration has reached 125 per cent. of the individual's normal hemoglobin value. Once this level has been attained, the prescribed treatment is of less value; for, even though continued blood concentration may be inhibited or the normal level more nearly reached, death follows.

The treatment consists of venesection and the introduction of fluid into the body, by way either of the mouth or of the vein. The volume of blood withdrawn varies with the level of the blood concentration. In general, if the concentration is just beginning, it is most advantageous to withdraw about 250 c.c. of blood. This allows repetition of venesection at least twice. On the other hand, when blood concentration has reached a level approximately 125 per cent. of the normal, venesection to the extent of from 500 to 700 c.c. is indicated. After venesection, fluid introduction should be pushed. Usually the ingestion of large quantities of fluid (water) is not difficult, the patients exhibiting a great thirst. In certain instances, however, water drunk causes nausea and vomiting. Under these circumstances, ice cracked in small pieces should be given, and usually it is borne well. In one case in our series the patient consumed twelve large bowls of cracked ice during the night.

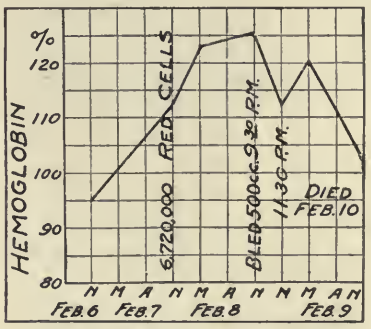


Chart 5 (Case 9).—Influence of late treatment on blood concentration in influenza.

Assuming that venesection and water introduction have been practiced in the early stages of blood concentration, hemoglobin estimations are made at intervals of one hour. Should blood concentration not continue rapidly, further treatment is not necessary. On the other hand, if blood concentration shows a persistent rise, a second bleeding of 250 c.c. should be carried through. Usually two or three bleedings, supplemented with a sufficient intake of water, will inhibit blood concentration from attaining a dangerous height.

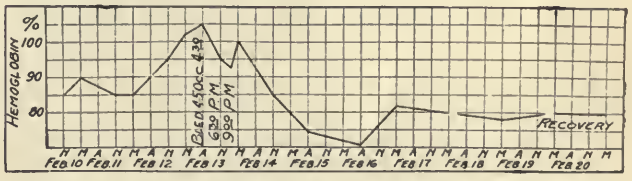


Chart 6 (Case 29).—Influence of early treatment on blood concentration in influenza.

If water introduction by mouth is impracticable, equally beneficial effects may be secured by slow intravenous infusion of isotonic salt solution in volume equal to the blood withdrawn. Administration of fluid, whether by mouth or by vein, without previous venesection is valueless.

Examples will be given of the response to the foregoing treatment, (1) when bleeding is practiced after blood concentration has attained a high level, and (2) when venesection has been carried out at an earlier stage of concentration. In the first two instances (Charts 4 and 5, Cases 7 and 9), even though blood concentration was appreciably reduced, death followed. Quite different is the result with the cases represented

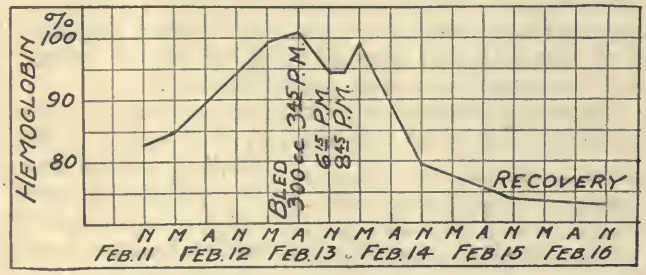


Chart 7 (Case 30).—Influence of early treatment on blood concentration in influenza.

in Charts 6 and 7, for ultimate recovery followed. These patients (Cases 29 and 30) were both given a fatal prognosis, and to each had been administered the last rites of the church. Case 28 (Chart 8) presents features of interest. This patient, in an advanced stage of pregnancy, was given the treatment indicated on the chart. Blood concentration was immediately lowered and the clinical picture was also much better. February 15, she suffered a relapse, and blood concentration again rose. During this entire period, fluid introduction was pushed. Blood concentration slowly descended toward normal. February 16, abortion took place, and on February 24, death resulted from septicemia. From the point of view of influenza it must be accepted that

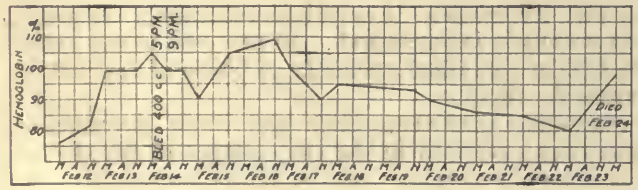


Chart 8 (Chart 28).—Influence of early treatment on blood concentration in influenza.

the treatment caused a distinct improvement in the patient's condition, and prognosis was good.

The ideas and data detailed above are presented with the view of stimulating investigation relative to influenza and its treatment. With the new points of view indicated, it is hoped that greater progress may be made in gaining a clearer conception of the fundamental principles underlying the physiologic and pathologic reactions induced by the disease.

SUMMARY

Pathologically, influenza and acute phosgen poisoning present strikingly similar effects on the respiratory tissue. In each, pulmonary edema is a prominent feature.

In acute phosgen poisoning, death is due to a marked change in the concentration of the blood. Extreme blood concentration is incompatible with life.

In influenza, the blood becomes greatly concentrated. This constitutes a factor of the greatest importance in the fatal outcome.

Pathologically and physiologically, then, influenza and acute phosgen poisoning bear striking resemblances.

A method of treatment evolved for acute phosgen poisoning has been applied with success in a few cases of influenza. The method consists in the maintenance, under carefully controlled conditions, of blood concentration as near the normal level as possible by venesection and fluid introduction.

Changes in blood concentration in influenza, followed by hemoglobin estimations, allow the grouping of cases into those demanding the prescribed treatment immediately, and those that either do not need this type of treatment at once or do not need it at all.

By following blood concentration changes, prognostication is greatly aided.

THE ROENTGENOLOGIC DIAGNOSIS OF GALLBLADDER LESIONS*

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It is the common belief that only about 10 or 15 per cent. of gallstones can be visualized, and that the demonstration of the pathologic gallbladder is largely chimerical. This belief is based on the character of roentgenographic work that was possible several years ago, and is untenable at the present time in view of the advances that have been made in technic which bring out "soft part detail." It is true that the making and interpreting of gallbladder roentgenograms is an extremely laborious undertaking, but the importance of the subject can hardly be exaggerated, in view of the frequency of diseases of the gallbladder and the uncertainty of their clinical diagnosis in a large proportion of cases.

The present pessimism arises from the mistaken notion that the lime content of the majority of stones is so small that their visualization is absolutely impossible. It is not generally appreciated that few gallstones are devoid of a lime-containing layer, and even these few may be shown, given adequate detail, because they are less dense than the surrounding tissues or the fluid in which they lie and hence will cast negative shadows. There are at present insuperable obstacles to the visualization of all gallstones, but as the technic is developed and simplified the roentgen diagnosis of gallstones will be put on a thoroughly practical and reliable basis, with only a negligible proportion of unavoidable errors. The enlarged gallbladder can easily be visualized, but at present it seems that there will be a small residue of cases of chronic cholecystitis without stones or dilation which cannot be determined by roentgenography. In view of the large percentage of known stones which we have been able to visualize, the importance of negative findings cannot be lightly dismissed. One cannot properly estimate the importance of negative findings

* Owing to the impracticability of reproducing detailed roentgenograms of the gallbladder region satisfactorily, illustrations have been omitted. Reprints will be furnished by the author on request, accompanied with a set of illustrative reductions.

on the basis of the percentage of failures in a demonstrated series because the failures occur in heavy subjects. The importance to be attached to negative findings depends on the character of the roentgenograms secured. In some cases the results do not warrant a negative opinion; in others the results may be fairly satisfactory and make it improbable that stones are present; but the perfectly satisfactory series, that is, an adequate number of roentgenograms showing a wealth of detail, may warrant a negative diagnosis of stones or enlarged gallbladder.

SATISFACTORY GALLBLADDER ROENTGENOGRAMS

The satisfactory roentgenogram for gallstone diagnosis shows sharp, clear-cut lines of the hepatic flexure which indicate perfect stillness and in addition a detail of soft structure that is difficult to describe. Certainly the entire outline of kidney should be very clear, even the indentation of the hilum being obvious. The liver edge is always very evident, and serves as a guide in the search for the gallbladder. Each exposure covers a small field, but the entire area from well above the ninth rib cartilage to the crest of the ileum must be roentgenographed. The plate or film darkened by "body rays" is lacking in contrast, as seen particularly by the failure of the lowermost ribs to give bone detail.

EXPOSURE TECHNIC

Three closely interrelated problems present themselves in gallbladder roentgenography: how to prevent motion during the exposure, how to avoid overpenetration, with consequent loss of fine gradations of density, and how to prevent the blurring of the roentgenogram with rays other than those which arise at the focal point of the target.

Absolute stillness during the exposure is essential for the visualization of all except about 20 per cent. of stones, as the density of the shadow in the path of the rays decreases directly with the extent of its excursion during the exposure. The stone with a calcium layer only one thirty-second inch in thickness casts a perfect and unmistakable ring shadow if it is perfectly stationary, but will be half as dense if it moves one thirty-second inch. The patient must be watched and drilled in sustaining forced expiration during the exposure, and the results must be carefully studied to make sure that not the slightest movement is shown. Furthermore, the exposure must be as short as is consistent with satisfactory work. The shorter the exposure, the less chance of motion. Some subjects must be roentgenographed in an extremely short time regardless of the loss of detail, because they cannot cease respiration for more than a fraction of a second. Overpenetration and lack of detail results from speed. Fine gradations of density can be secured only by the least possible penetration, sufficient time being used to give the desired density of the roentgenogram. Duplitized films and fast double screens have made possible the use of rays of low penetrating power, which was entirely impossible with unscreened plates that required many times the exposure. The use of duplitized films and two intensifying screens we regard as the most important advance of recent years; and as still more sensitive screens are developed gallbladder roentgenography will be made more uniformly successful.

The exclusion of "aberrant" rays from the tube is accomplished best by the use of a small lead diaphragm, a long cylindric cone and a filter of 0.5 mm. of aluminum. The best results have been secured with a fine focus hydrogen tube. The exclusion of rays that are generated in the body of the patient has not yet reached a practical stage, and we must depend on lower voltage currents, which are less prone to generate such rays even though the time of exposure in heavy subjects is so long that many exposures are rendered useless by slight respiratory movements.

Our most satisfactory results are secured with a fine focus gas or hydrogen tube, a plate target distance of from 28 to 30 inches, a small diaphragm and long cone giving an exposure field of only 5 or 6 inches. A parallel spark gap of 2½ to 3½ inches is regularly used, and a milliamperage of from 20 to 30 in the tube. Exposures are made with the patient prone on the cassette during forced, sustained expiration. The effort is made to underexpose the film slightly and push the development short of causing fog or stain in the effort to bring out detail.

THE INTERPRETATION OF GALLBLADDER ROENTGENOGRAMS

With increasing detail the percentage of stones that are definite at a glance is greatly increased, but the majority of stone diagnoses are safely reached only by prolonged study and comparison of different exposures. The reducing camera has come into routine use in the study of all doubtful cases, as the results it gives in the concentration of images are extremely valuable.

Indirect suggestive evidence of a gallbladder lesion is frequently given by the study of the stomach, duodenum and hepatic flexure of the colon at different intervals after the ingestion of an opaque meal. Antrum and cap distortion not characteristic of ulcer may be extremely suggestive of gallbladder adhesions, and the constant concavity on the inner side or above the hepatic flexure may serve to locate a dilated gallbladder which subsequently is intensively studied. The greatest care must be exercised in drawing conclusions from these apparent distortions. On the whole, we feel that the chief reliance must be placed in direct evidence.

The recognition of gallbladder lesions from the roentgen standpoint depends on either the visualization of the gallbladder or the demonstration of stones or both.

Gallbladder Shadows.—From clinical and experimental studies of removed gallbladders and bags containing various solutions and specimens of bile we have reached certain conclusions that have an important bearing on interpretation of gallbladder roentgenograms:

1. A bag of fluid in the upper abdomen can be visualized more or less distinctly, according to its anteroposterior thickness or mass.

2. The density of the image of such a fluid bag varies imperceptibly with fluid. One might expect that differences in specific gravity would result in differences of roentgen-ray density, and this would be true were the mass sufficiently great. We have been unable to discover that any pathologic bile casts a shadow that is denser than an equal mass of water or normal bile. It is in our opinion futile to talk of a pathologic gallbladder casting a recognizable shadow because it contains abnormal bile.

3. Pathologic tissue, such as new growth or a thickened gallbladder wall, may indeed be visualized as is the kidney if its mass is sufficiently great, but it is a rare gallbladder wall that is sufficiently thickened by inflammation to give rise to a definitely recognizable image. Its density is no greater than the walls of the

surrounding hollow viscera, which in themselves are certainly not demonstrable. New growths of the stomach are only visualized indirectly by the effect they cause on the opaque cast of the hollow viscus.

4. The visualized gallbladder is one sufficiently dilated and increased above the normal in its mass to give a definite image. The contention of George that the visualized gallbladder is a pathologic gallbladder seems in general to be correct, although it is extremely probable that the normal gallbladder will sometimes be so placed that its visualization will be definite. Just as at operation the size of the organ is a criterion of the condition of the organ, so from the roentgen aspect we must be prepared to express an opinion that a gallbladder is or is not pathologic on the basis of its apparent size.

5. Fluid in general is more dense than gallstones with a low content of lime salts. Experimentally we find that stones immersed in fluid and roentgenographed cast a positive or a negative shadow or no shadow at all, according to the density of the stones and the thickness of the layer of fluid. When a removed gallbladder is roentgenographed, stones show if there is little fluid, regardless of their composition; and if fluid is injected into the bladder until it is actually dilated, the stones tend to disappear as the fluid is increased. Evidently not all stones can be shown in the living subject, because they lie in too much fluid. Stones may show in the neck of the bladder and not show at all in the fundus where the fluid mass is greater.

Characteristics of Gallbladder Shadows.—In view of the fact that fluid in a gallbladder may obscure stones, and a dilated gallbladder without stones is fully as important as stones, it is necessary that the roentgenographic appearance of the gallbladder be carefully studied.

The gallbladder is sharp in its outline and suggests a flaccid bag. Normally it lies in a broad hollow on the under surface of the liver, the fundus reaching about to the liver edge. From the fundus it extends upward, backward and inward. Usually it is within an inch of the right side of the spine. The variations from this average course and location of the bladder are many. Sometimes its long diameter is across the abdomen, the fundus reaching almost the extreme right side of the liver. In the enteroptotic type it is normally vertical because the front part of the under surface of the liver is vertical. Normally it is plastered on the under surface of the liver; but with a gradual increase in the amount of its contents it tends to become sessile. Depending on the manner in which it is bound down, either the fundus is elongated or the long lower surface bulges downward. In an anteroposterior roentgenogram the image of the gallbladder will be determined by its size and extension. It may be caught on its long axis, giving rise to a round, dense area, or it may be shown in its entire pear-shaped profile. Accurate gallbladder recognition is extremely difficult, and the only safe interpretation is to exclude as gallbladder shadows all suggestive dense areas in this region which have not the peculiarly definite, sharp rounded contour. The sharply visualized kidney is easily mistaken for a gallbladder, particularly when it lies almost transversely below the liver, as is frequently the case in women. The greatest difficulty is encountered in the study of those roentgenograms in which the shadows of liver, right kidney and gallbladder are superimposed. The dilated gallbladder also may cast a shadow through the liver tissue which overlies it, and the combination must be worked out by prolonged study.

Variety of Stones and Their Roentgenographic Characteristics.—A knowledge of the principal varieties of stones and the kind of shadows they cast is a great help in interpretation. In the subjoined classification of stones, which is a combination of the descriptions given by Naunyn and the later one of Aschoff and Bacmeister, we have connected the roentgenographic findings with the chemical and structural peculiarities of each class.

1. The Radial Cholesterin Stone: This rare type of single stone occurs in gallbladders that show evidence of dilatation without inflammation. Its structure is peculiar, in that it is composed of pure cholesterin crystals that radiate from the center to the surface. This stone is less dense than all surrounding tissue, and can be visualized only as a negative shadow, that is, a round or oval dark spot.

2. The Combination Stone: When inflammation develops in a gallbladder that contains a radial cholesterin stone, the inflammatory exudate causes a deposit of lime salts on the stone, and this layer shows as a ring or oval shadow. It sometimes happens that the lime is unequally deposited and only a segment is visualized.

3. Cholesterin-Bilirubin Calcium Stones: This rather common type is fairly large, from two to five in number, frequently faceted and nested in the neck of the gallbladder or the cystic duct. They are usually not layered, and the calcium salts are equally distributed through the mass of the stones so that they do not show as rings or triangles, but as solid spots or an elongated finger-like dense area due to the nesting of the stones. The percentage of lime is very small, and the shadows are lost by the slightest movement or overpenetration or darkening by "body rays."

4. Common Multiple Faceted Stones: As this group represents nearly half of all stones, familiarity with their size, structures and roentgenographic characteristices is most important. Their number is usually great, seldom less than twenty, frequently several hundred. They are usually small, faceted and very irregular in shape. They are composed of cholesterin and bile salts with very little intermixed lime, but with a thin coating on some facets of some of the stones in a considerable percentage of collections. The visualization of some of these stones is exceedingly easy because of the dense lime coating, which gives rise to an irregular mosaic. The greatest detail is necessary to visualize the majority, and one must learn to recognize the faint mosaic of the gallbladder filled with such stones. This mosaic or spotted appearance is due either to the slight coating of stones with lime salts or to negative shadows made by the readily penetrated stones outlined by the denser bile. When the gallbladder is crowded with relatively soft stones, the mass is sometimes sufficient to cast a definite faint shadow of a gallbladder in which no individual shadows can be seen. These negative shadows are hard to interpret as stones because their outline is diffuse. No matter how great detail we are ultimately able to obtain in this work, fully 15 per cent. of stone diagnoses must be made by recognition of this persistent spotty appearance made by these soft stones in the fluid gallbladder contents. At present it is impossible to secure evidence of this type of stones in heavy subjects, and allowance must always be made for this fact in making negative diagnoses.

5. Pure Bilirubin Lime Stones: These occur either as small seed-sized, soft black granules, or as several larger stones. While they are extremely soft and friable, they contain a definite admixture of lime, and only their small size makes their recognition impossible.

6. Calcium Bilirubinate Stone: This stone is usually single and of flinty hardness throughout, and consequently it gives rise to solid, unmistakable shadows. It unfortunately represents only about 5 per cent. of all gallstones.

CASE SERIES

Statistical studies of diagnostic results are extremely unsatisfactory, as chance enters so largely, particularly if the series of cases is small. Negative findings and corpulence tend to postpone confirmation of diagnosis by exploration, and total percentages of results are hard to reach. Two striking facts, however, are evident from a survey of our experience of the last year and a half, during which the present technic has been a routine. First, in a "known series" all stones have eventually been visualized. Second, while several times we have been led into stating that there were probably stones in cases in which no stones were subsequently found, we have not failed to find stones in any case that was studied for stones when subsequent operation demonstrated that stones were present. Nevertheless, this true statement is misleading, as in three cases in which operation has not yet been performed, stone shadows could not be found because of the size of the patient and consequent unsatisfactory results, although we feel certain that they are present.

SERIES 1.—*Known stone cases.*—At the Woman's Hospital, New York, in eighteeen patients in whom stones had been found and not removed because of the length of the pelvic operation, our subsequent roentgenographic study has eventually demonstrated the stones in each case as shown on the operative notes. In this series three were extremely easy to visualize and three extremely hard, requiring several attempts to secure adequate detail. By chance alone the heavy patients had fairly dense stones, or the results would not have been 100 per cent. Eventually this series will be large enough to determine the percentage of stones that can be visualized when of a size sufficient to be felt through a lower abdominal incision.

SERIES 2.—*Suspected stone cases.*—In a recent consecutive series of seventy cases intensively studied because of a definite clinical history of gallbladder disease, the roentgen findings have been positive in forty-five and negative in twenty-five cases. Thirty of the positive and nineteen of the negative cases have been explored. Three of the positive cases were incorrect, two mistakes being due to the accidental use of the same defective screen in every one of a short series of exposures, and the third showing a shadow due to calcification of undetermined site outside the gallbladder. No stones were found in any of the negative cases, but three on removal showed chronic catarrhal cholecystitis without dilation. No stones could be visualized in three cases in which operation had not been performed, in which there certainly seemed to be stones.

SERIES 3.—In the Woman's Hospital Clinic it has repeatedly happened that young mothers have been referred for a diagnosis of upper abdominal complaints that seem very definitely to be gallbladder inflammations without stones. The group has been an exceedingly definite one, and interesting in that we have been unable to visualize the gallbladder. This experience in such a large series of cases has convinced us that the catarrhal unobstructed gallbladder is not demonstrable, and that the normal sized gallbladder can rarely be demonstrated. For early diagnosis of gallbladder inflammation we must rely on the clinical picture and possibly the examination of extracted bile, as suggested by Einhorn.

CONCLUSIONS

1. The roentgenologic diagnosis of gallstones and the dilated gallbladder with a small percentage of failures is possible at the present time.

2. Negative diagnosis has a value that is proportionate to the intensity of detail and sharpness of image secured in the given case. Negative diagnosis has very little value in subjects so heavy that satisfactory roentgenograms cannot be made. Subjects of slight or medium body thickness can be roentgenographed with an intensity of detail that justifies an experienced interpreter in a negative diagnosis of stones or a dilated gallbladder.

3. The roentgenologic diagnosis of gallstones necessitates such an expenditure of time and money in the taking of satisfactory exposures, and so much experience in the interpretation of intensely detailed roentgenograms, that it is not at present a safe and practical method of diagnosis for general adoption. Ten or fifteen per cent. of stones can be plainly visualized even by an extremely poor equipment and technic; but under such conditions the importance to be attached to negative findings is negligible.

4. Gallbladder roentgenograms of satisfactory detail can be made only with direct rays of low penetrating power, and duplitized films with fast screens.

5. An insuperable limitation of roentgenologic diagnosis of gallbladder lesions is the apparent impossibility of securing roentgenographic evidence of chronic cholecystitis without dilation or of new growth of the gallbladder and biliary ducts.

270 Park Avenue.

NONTUBERCULOUS LUNG CHANGES FOLLOWING PNEUMONIA *

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The great prevalence of pneumonia during recent years, more especially during the pandemic of influenza, and its prominent rôle in the diseases of our soldiers, has caused a notable increase of the incidence of this disease among the people.

TABLE 1.—DEATH RATE PER HUNDRED THOUSAND POPULATION IN THE REGISTRATION AREA *

	1914	1915	1916	1917	1918
Tuberculosis (all forms)	146.8	145.8	141.6	146.4	149.1
Diseases of the heart	141.8	147.1	150.1	153.2	152.3
Pneumonia (all forms)	127.0	132.7	137.3	149.8	284.3

* Mortality of Statistics, Bureau of the Census, 1920.

A comparison of the death rates of the three chief causes of death in the United States shows the increasing mortality due to pneumonia (Table 1).

During 1918, influenza, pneumonia and other respiratory diseases caused 17.33 per cent. of the total hospital admissions in the United States Army, and 82 per cent. of the total deaths.[1]

* Read at a Meeting of the Albany County Medical Society, April 13, 1920.

1. Report of Surgeon-General of the Army **1**: 50, 1919.

To the total figure of pneumonia incidence should also be added the innumerable cases of bronchopneumonia erroneously diagnosed "acute bronchitis."

It is quite inconceivable that all these respiratory infections could entirely clear up and leave no damaged lung tissue behind them. Indeed, insurance statistics show that following the epidemic of influenza in 1891 the mortality rate of respiratory diseases markedly increased.

In view of these facts it should be borne in mind that during the next few years a great many chronic nontuberculous lung changes will be encountered. Their recognition is important because of their similarity to pulmonary tuberculosis, and their confusion with it.

That mistakes in diagnosis are easily made even among the advanced tuberculous is shown by the figures of Ash,[2] and McCrae and Funk.[3] Ash, in 551 necropsies on supposedly tuberculous subjects, found sixty-one nontuberculous, of which eleven were pneumonic sequelae. In McRea and Funk's studies of 1,200 hospital admissions for advanced tuberculosis, seventy-two were found nontuberculous, of which nine were pneumonic sequelae, eight due to a bronchiectasis, and six due to chronic bronchitis.

These mistakes in diagnosis do not give a high percentage for the postpneumonic conditions; but when it is recalled that the nontuberculous processes were found in the dead and the dying, the difficulty of their diagnosis in the earlier stages is easily appreciated.

A study, then, of the nontuberculous changes in the lungs occasioned by pneumonia and its accompanying pleurisy may help in the correct diagnosis of these residual conditions.

PATHOLOGY

The pneumonias of mixed type have been the predominating ones in the last few years. The streptococcic pneumonias of our soldiers, and the pneumonias of the influenza epidemic, have largely been of lobular distribution and have outnumbered the true lobar type. In an acute pneumonia of any type the consolidation is overcome in two ways—either by the absorption of the inflammatory exudate, or by the organization of the exudate into fibrous tissue. The exudate in lobar pneumonia practically always resolves, while the exudate of the lobular pneumonia, especially in cases caused by the streptococcus, will frequently organize—sometimes within from ten to fourteen days. The pneumonia in soldiers, as described by MacCallum,[4] showed a rapid organization of the inflammatory exudate everywhere. The alveoli and bronchi in the affected areas were replaced in part by connective tissue, resulting in interstitial new growth. This new growth not only thickened the alveolar and bronchial walls, but also involved the adventitia of blood vessels, and the interlobar septums. The lymphatics also became organized and occluded by fibrous tissue. This gave an elastic consistency to the lung.

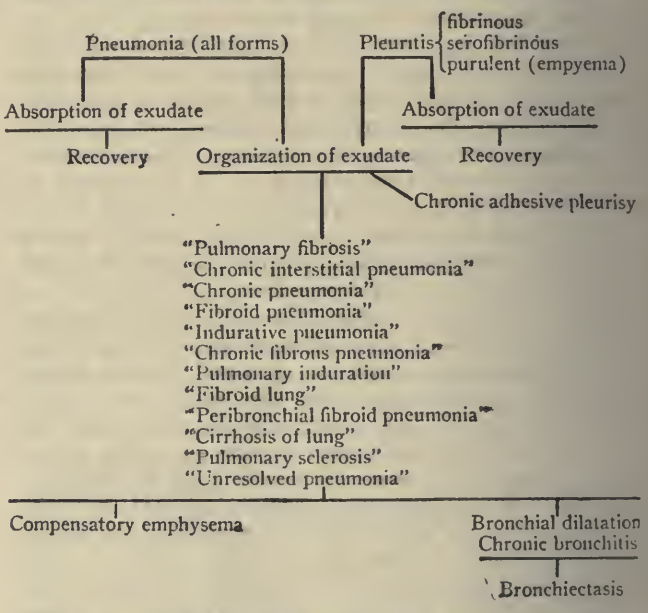
In these necropsies the pleurae were practically always involved, and very frequently an effusion was present. In 106 necropsies after influenzal pneumonia performed by Bakwin,[5] in France, a pleuritis was present in forty-four, although "all pleural cavities contained some fluid." The pleural exudates are rich in fibrin, and organize quickly, forming permanent adhesions between contiguous surfaces and limiting the respiratory movements on the affected side.

These necropsies reveal that the areas of consolidation in the pneumonias of recent years are largely lobular in distribution—a type more prone to organize than true lobar; and that pleuritis with or without an effusion is a very frequent accompaniment.

COMPENSATORY AND DEGENERATIVE CHANGES

The postpneumonic fibrosis formed in lungs and pleurae may not be of clinical importance, and its existence may be revealed only by careful examination, or by the roentgenogram. When, however, the fibrosis is extensive, there may be further pulmonary changes—partly compensatory, partly degenerative.

TABLE 2.—FIBROUS CHANGES AND THE COMPENSATORY AND DEGENERATIVE SEQUELAE OF PNEUMONIA



The replacement of lung tissue by fibrous tissue, and the limitation of movement by pleural adhesions, may cause a compensatory emphysema of the unhampered lung. In time this structural change will have its effect on the contour and movements of the chest. In the well marked cases the fibrosed side will appear flattened and its motion restricted, while the "good" side will be full and rounded and move vigorously. Emphysema frequently accompanies pulmonary fibrosis, and is to be looked on as a normal change to compensate for pathologic conditions.

On the other hand, degenerative changes may take place, namely, dilatation of the bronchial tubes. Whenever there is an overgrowth of fibrous tissue in the lungs, this dilatation takes place. It may be slight and unrecognizable, or large with definite bronchiectatic cavities. The mucous membrane lining these degenerated tubes usually becomes inflamed and infected, causing a chronic bronchitis. Although there may not be profuse and foul expectoration, yet in most instances we are dealing with a true bronchiectasis. The border line between these two conditions—chronic bronchitis and bronchiectasis—is difficult to determine. The former may be but an early stage of the latter disease. It is the chronic cough and expectoration

2. Ash, J. E.: The Pathology of the Mistaken Diagnoses in a Hospital for Advanced Tuberculosis, J. A. M. A. **64**: 11 (Jan. 2) 1915.
3. McCrae, Thomas, and Funk, E. H.: The Diagnosis of Chronic Pulmonary Tuberculosis, J. A. M. A. **73**: 161 (July 19) 1919.
4. MacCallum: Rockefeller Institute monograph.
5. Bakwin, H.: Am. J. M. Sc. **159**: 435 (March) 1920.

caused by these degenerative changes that frequently brand a man tuberculous.

The various steps are roughly outlined in Table 2, showing the fibrous changes and the compensatory and degenerative sequelae of pneumonia. In the central column are the terms used by different authors to designate pulmonary fibrosis of varying degree and extent. As etiologic factors the pneumonias are here given, but, of course, there are other causes of fibrosis, such as tuberculosis and pneumonoconiosis.

SYMPTOMS

When the pneumonic sequelae become clinically manifest, the chief symptoms are cough, expectoration and shortness of breath. Occasionally there is streaked sputum or even a small hemoptysis. These symptoms are usually due to the compensatory and degenerative changes accompanying pulmonary fibrosis, but are frequently misinterpreted as being tuberculous in origin. According to the extent of these changes, the symptoms may be slight or marked. In the more advanced cases in which the bronchial tubes are dilated, the cough may be paroxysmal and the expectoration profuse and foul. When fibrosis is extensive and emphysema marked, dyspnea may be the prominent symptom. Such symptoms may exist for many months, or even years, before the correct diagnosis is arrived at. Few of these patients give histories of periods of fever or successive breakdowns. Their nutrition is good and their appearance belies the extensive chest findings. The postpneumonic empyema cases, on the other hand, often have the appearance of the advanced consumptive.

PHYSICAL SIGNS

Complete resolution usually takes place in lobar pneumonia, but in bronchopneumonia resolution is frequently uncompleted. The areas of organized consolidation are, as a rule, located around the hilum and downward and outward toward the periphery, although rarely apical organization takes place. So also the accompanying pleurisies are in the dependent portion of the pleural sac. The physical signs of permanent damage will be found most often in the lower half of the thorax, in contradistinction to tuberculosis, and in this region especially one would look for structural changes in the lungs.

The signs of unresolved pneumonia are most frequently found around the angle of the scapula. Such cases will show a limitation of movement of the ribs of the affected side: a diminished lung excursion; increased or decreased tactile fremitus (depending on the amount of pleural thickening); a dull percussion note; bronchial breathing with bronchial whisper, and often small or large moist râles.

The less marked the fibrous changes, either pulmonary or pleural, the less marked the physical signs. But the finding of a slightly diminished movement of the costal angle on one side, and lessened lung excursion in the pleural sinus, together with marked bronchovesicular breathing and bronchial whisper at the angle of the scapula, should not be passed over lightly, especially when there is a history of pneumonia followed by chronic cough and expectoration.

When compensatory emphysema has supervened upon a fibroid lung, a hyperresonant percussion note will obtain over the healthy parts of the chest, and a smooth high-pitched inspiration with prolonged expiration. With disease at the base, this type of breathing may be especially loud at the apexes.

Attention should be drawn to a fact not sufficiently emphasized, namely, that in emphysematous chests there is frequently found at the apexes, especially on the right side, a dull percussion note so definite in comparison with the hyperresonance elsewhere that with the emphysematous breathing and sometimes increased voice conduction in the dull areas, an erroneous diagnosis of apical tuberculosis may be made. This is one of the pitfalls of diagnosis into which it is easy to slip. The apical findings, linked with a history of cough and expectoration, may blind the examiner to the basal changes.

But care is necessary not to overlook a possible apical tuberculosis which may lie hidden by the emphysema—the emphysema masking the underlying morbid condition. Repeated sputum examinations and the roentgen ray are absolutely essential in differential diagnosis. Tuberculosis, adhesive pleurisy, postpneumonic fibrosis, emphysema and bronchiectasis may all exist in the same lung at the same time.

Clubbed fingers are often associated with pulmonary fibrosis, and when observed should lead the examiner to a careful study of the chest.

ROENTGEN RAY

In pulmonary fibrosis the roentgenogram may show abnormal shadows following the bronchial tree from the root outward; or heavy root shadows coursing downward and outward, unilaterally distributed; or the opacity of an unresolved pneumonia. Of great importance is the fact that in practically all of the nontuberculous cases the apexes remain clear, regardless of the shadows elsewhere.

CONCLUSIONS

1. On account of the recent high incidence of pneumonia, a great many chronic lung changes will be encountered in the next few years.

2. The signs and symptoms of the compensatory and degenerative changes following unresolved pneumonia often mislead in diagnosis.

3. The apical findings in an emphysematous chest often mislead—sometimes simulating a tuberculous lesion, sometimes masking a real tuberculosis.

4. With the overgrowth of fibrous tissue in the lung there is also bronchial dilatation and frequently infection (chronic bronchitis, bronchiectasis).

5. These permanent changes, unlike tuberculosis, are almost always basal.

6. "Abnormal physical signs at one apex should be considered as due to pulmonary tuberculosis, until proved not to be; while those at the base should be looked upon as not tuberculous until definitely proved so" (Lawrason Brown).

105 Main Street.

Evils of Slum Life.—The physical evils of slum life arise chiefly from lack of fresh air and sunlight, and it is the children who suffer most. Witness the enormous child mortality of the slums. Even if slum-bred children grow up, it is to form but a stunted, palefaced, wizened race. If flowers cannot grow in the shadow of the slums, we can hardly expect the young human being to thrive there. Children should be reared in the country, and allowed to run wild in the fields and the woods. Adults—especially elderly adults—are much more tolerant of slum conditions; to the children it is only less than death.—*Med. Press,* Sept. 1, 1920.

STUDIES ON GASTRIC AND DUODENAL ULCER *

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In previous studies on ulcer of the stomach and duodenum, I [1] presented experimental evidence to the effect that two factors are necessary for the experimental production of chronic ulcer in the dog: (1) a temporary lowered body resistance, and (2) a temporary pathologic mucous membrane manifested by hypo-acidity or achylia.

A review of the literature shows that numerous views have been expressed, and supported by evidence, concerning the etiology of chronic gastric ulcer. The chief theories held at present concerning this problem are: 1. Infection of the mucous membrane through the blood by specific or nonspecific bacteria from a focal infection is the primary factor and the source of reinfection. 2. The corrosive action of gastric juice on mucosal cells that have had their normal resistance against acid-peptic digestion diminished in some way prevents healing. 3. A localized trophic disturbance is responsible for the chronicity of the ulcer. 4. A general condition of autolysis plays the initial rôle.

This multiplicity of theories suggests that either there are many factors concerned in the genesis of chronic ulcer, or the true factor, or factors, has not yet been discovered.

Most investigators of this problem agree with Bolton[2] that chronic gastric ulcer originates from an acute lesion, and that most of the acute lesions heal rapidly. Only a few of the investigators, however, have claimed to have produced chronic ulcers. Bolton,[3] and Friedman and Hamburger,[4] were able to delay the healing of experimental acute ulcers by producing partial pyloric stenosis. (This observation, I believe, states a fact, as I have repeated their experiments with the same general results.) Turck [5] reported the occurrence of perforating ulcers of the duodenum and stomach on feeding cultures of *B. coli*. Durante,[6] by ligating and cutting the splanchnic nerves, reported the production of chronic ulcers. Rosenow [7] has reported the production of gastric and duodenal ulcers that "tend to become chronic, to perforate and to cause hemorrhage" by intravenous injection of alleged specific streptococci.

It was found that animals in which it was possible to delay healing of an acute lesion of the gastric mucosa and to cause it to assume signs of chronicity were diseased and cachectic, and showed no free acid in their gastric juice or contents. This absence of free acid made it possible for bacteria swallowed or administered to become implanted in an abrasion of the mucosa. Further, it should be pointed out that an infected or noninfected lesion in a pathologic mucous membrane—for the mucosa of the stomach is pathologic when it is not secreting normal gastric juice—is more likely to assume signs of chronicity and to become chronic than a lesion in a normal mucous membrane. (The relative importance of infection and of noninfection on the healing time of an abrasion of the pathologic gastric mucosa is being studied at the present time.) Therefore, given an abrasion of a pathologic gastric or duodenal mucosa, a general lowered resistance by disease or disturbed nutrition accompanied by a hypo-acidity, we have factors that make it possible for bacteria swallowed or in the blood stream to become implanted in the abrasion and to produce local inflammation, induration, congestion and edema, and a chronic ulcer. Further, it is reasonable to believe, as observed in one animal, that after the edges and base of the acute lesion have become inflamed and indurated—normal blood supply being diminished thereby, the mucous membrane receiving a rich blood supply as all highly differentiated tissues do—the general condition of the patient may improve or become normal, and yet the ulcer remain chronic—because of local diminution of blood supply and edema—and even become more indurated or chronic in type owing to the mechanical irritation of coarse foods and tonic gastric activity associated with the action of acid-pepsin on the devitalized tissue in the base and about the edges of the ulcer.

In order that more conclusive data might be obtained, that the ulcer might be observed daily during its process of development, and that other alleged and possible factors might be studied separately and under conditions more subject to experimental control, an operation [1] has been devised for the production of a pouch of the pyloric portion of the stomach. A report will be made at this time of observations on (1) the effect of prolonged exposure of the entire mucous membrane of the pyloric antrum to the exterior; (2) the effect of manipulation and infection of an acute ulcer on its healing time, and (3) the occurrence of duodenal ulcer following gastroduodenostomy in the dog.

EFFECT OF PROLONGED EXPOSURE OF MUCOSA OF PYLORIC ANTRUM TO THE EXTERIOR

The gross appearance of the mucous membrane after it has been exposed from six to ten months is normal in every respect. Abrasions frequently occur, but heal rapidly without scarring. Complete eversion of the pouch in one animal has been present for twelve months now without any gross damage to the mucosa. Microscopic examination of four pouches that had been made from six to ten months disclosed no changes. These findings are significant only that they point out that the altered anatomic and physiologic position of the pyloric portion of the stomach causes no pathologic disturbance.

EFFECT OF MANIPULATION AND INFECTION OF ACUTE ULCER OF PYLORIC MUCOSA ON HEALING TIME IN HEALTHY DOGS

Normal.—The time of healing of an acute ulcer, from 1 to 1.5 cm. in diameter, of the mucosa of the pyloric antrum in the intact stomach varies from twelve to eighteen days. The time of healing of a similar ulcer of the exposed mucosa of a "pyloric pouch" [1] varies from fifteen to twenty days as judged from the observations on ten ulcers. The acute ulcers were made with 1 c.c. of 5 per cent. silver nitrate injected submucosally and by excision of the mucosa.

* From the Department of Physiology, Pharmacology and Therapeutics, Loyola University School of Medicine.
* Read before the Section on Gastro-Enterology and Proctology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Ivy, A. C.: Contributions to the Physiology of the Stomach, LII, Studies on Gastric Ulcer, Arch. Int. Med. **25**: 6 (Jan.) 1920.
2. Bolton: Ulcer of the Stomach, London, 1913.
3. Bolton: Proc. Roy. Soc., Lond. **82**: 236, 1909.
4. Friedman, J. C., and Hamburger, W. W.: Experimental Chronic Gastric Ulcer, J. A. M. A. **62**: 380 (Aug. 1) 1914.
5. Turck, F. B.: Ulcer of the Stomach: Pathogenesis and Pathology, J. A. M. A. **46**: 1753 (June 9) 1906.
6. Durante: Surg., Gynec. & Obst. **22**: 399 (April) 1916.
7. Rosenow: J. Infect. Dis. **19**: 333 (Sept.) 1916.

The healing of acute ulcers has been thoroughly described by Griffini and Vassale [8] and by Bolton.[2] My observations add nothing of import to their findings. The healing of an acute ulcer of the gastric mucosa, I believe, should be divided into two stages, *the first stage* consisting of (1) the retraction of the muscularis mucosae, which folds the edges of the mucous membrane toward the base (this is also produced by contraction of the muscular coat); (2) the proliferation of the mucosal cells on the raw surface of the edge; (3) the proliferation of connective tissue cells in the submucosa about the ulcer, these three processes reducing the diameter of the ulcer, and (4) the binding of the edge of the ulcer to the connective tissue base, thereby making possible the initiation of *the second stage,* consisting of (1) the growth of a layer of cells over the connective tissue base of the ulcer; (2) the formation of the ducts of the glands, and (3) the complete formation of the mucous membrane.

The first stage in the healing of an ulcer of the pyloric mucosa consumes from five to seven days, and the second stage from seven to ten days up to the formation of ducts, from three to four weeks being required for the complete regeneration of the mucous membrane. Scar formation is very slight; in some instances, after complete regeneration, it is difficult to find the site of the previous ulceration.

Manipulation.—Manipulation of the ulcer consisted in massaging twice daily the edges and base of the ulcer with bread crumbs, dry cotton or the fingers until marked congestion and some bleeding occurred, each massage lasting from ten to fifteen minutes.

By manipulation of this degree, the healing time of the ulcer varied from thirty to fifty-two days in eleven ulcers so treated. This shows a delay in healing time from two to about three times the normal. Scar formation was marked, three to five lines of cicatrization being formed.

The delay in healing time caused by these manipulations is similar to the delay observed in partial pyloric stenosis with acute experimental ulcer, as reported by Bolton,[3] Friedman and Hamburger,[4] and myself.[1]

The delay in healing time is due chiefly to interference with the fourth step of the first stage and to some extent the first step of the second stage. In other words, the manipulation prevents the proliferating mucosal cells at the edge of the ulcer from getting a foothold on the base. The healing process, or "Nature," finally tends to prevent the disturbance of the junction between the edge of the mucosa and the base of the ulcer by the production of marked inversion of the mucous membrane which protects the junction from the trauma of the massage. In this condition, in order to observe the line of transition between the base and the mucosa, the inverted mucosa must be pulled back with forceps or everted with gauze. Traumatization of the base of the ulcer by the massage with necrosis and excessive production of connective tissue is the cause of the delay in the second stage of healing. Traumatic congestion and edema may also be a factor in the delayed healing worthy of consideration.

Manipulations and Infection.—In order to test out the effect of infection and manipulation on the healing time of ulcer, the manipulations described above were carried on with the addition of pus and bacteria from slant cultures to the ulcer during the massage with an attempt to infect directly the edges and base of the ulcer. This procedure has been tried on four ulcers. In two cases of *Streptococcus viridans* and in the other two *Staphylococcus aureus* from subcutaneous abscesses in the dog were used. *Streptococcus hemolyticus* from a case of septicemia was also used. The virulence of the organisms was tested out in dogs.

The healing time of the acute ulcers under this condition of manipulation and infection was from thirty-three to forty-one days for the four ulcers studied; that is, the healing time of the ulcer was not influenced by this direct exposure to infection.

Although this point was demonstrated by Littauer [9] and supported by Bolton,[2] it might be said that in their experiments the bacteria were killed by the acid gastric juice and hence infection could not occur, these investigators attempting to infect the edges of artificial lesions in the stomach with bacteria. But the results of my experiment, there being no acid gastric juice to destroy the bacteria, show that if the edges of an acute lesion in the mucosa of the stomach of a healthy dog are exposed to direct infection, delayed healing does not result.

OCCURRENCE OF ULCER FOLLOWING GASTRODUODENOSTOMY IN THE DOG

Gastroduodenostomy with pylorectomy has been performed in forty dogs. (The duodenum in the dog is much more free than it is in man.) In this series five duodenal ulcers occurred, three of the acute perforating type and two of the chronic type. The three acute ulcers of the perforating type occurred in animals that had been operated on only from two to five weeks. These animals were healthy before the operation, after which they became cachectic and emaciated and died as a result of peritonitis due to the perforating ulcer. These animals vomited frequently, but necropsy revealed the gastro-enterostomy sufficiently patent to allow the passage of large bones (1 inch in diameter), which were observed undigested in the feces. These animals did not respond to a diet of milk which was instituted following the observation of undigested material in the feces. The chronic ulcers occurred in two dogs which had been operated on and observed for some time, one for eight months and the other for eleven months. For brevity the protocols of the two animals may be thus summarized: Three months following the operation the dogs, healthy and well nourished, were removed from individual cages to general cages where careful attention was not given to the feeding. Within six weeks the animals became emaciated and began to vomit. Blood was observed in the feces of one of the animals. They were then removed to individual cages and fed milk and bread. In four weeks they had regained their original state of nutrition. They were then returned to the general cages, where they became emaciated. One was found dead of pneumonia (operated on eight months before), the other was removed to an individual cage, but did not respond to diet and died (operated on eleven months before) of cachexia associated with decubital ulcers and an infected fistulous joint that would not respond to treatment.

None of the five ulcers occurred at the suture line.

Numerous cases of jejunal ulcers have been reported to occur in man following gastrojejunostomy, and I

8. Griffini and Vassale: Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's) **3**: 425.

9. Littauer: Virchows Arch. f. path. Anat. **195**: 317, 1909.

report these cases only because they are of comparative interest, especially when it is recalled that ulcers, both acute and chronic, of the stomach and duodenum of the dog are very rare. Although these meager and uncontrolled observations seem to point toward emaciation and cachexia as being the etiologic factor, they do not show whether the emaciation preceded the ulcer or vice versa. Since more attention has been given, however, to the proper feeding of the animals that had been operated on, and since intestinal or gastro-enterostomy clamps have been used merely for the approximation of the stomach and intestine and not as hemostats, I have not had a duodenal ulcer occur following gastroduodenostomy.

SUMMARY

Exposure of the mucous membrane of the pyloric antrum to the exterior for ten months causes no anatomic or physiologic [10] change. Manipulation (of the degree described above and in a healthy dog) of an acute ulcer of the mucosa of the pyloric antrum causes a delay in healing time amounting to from two to three times the normal healing time. The healing time of an acute ulcer of the mucosa of the pyloric antrum of a healthy dog is not influenced by direct exposure to infection. Duodenal ulcer occurs following gastroduodenostomy in the dog associated with emaciation, vomiting and cachexia, the ulcers being located along the course of the blades of the clamp (clamp line) and not at the site of the suture line. Attention is called to a possible injudicious use of the gastroenterostomy clamp as related to the genesis of jejunal ulcer.

A CRITICAL REVIEW OF FIVE HUNDRED CASES OF GASTRIC AND DUODENAL ULCER *

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During the last few years but few medical problems have been more freely discussed than peptic ulcer. It is a subject equally interesting to the internist and to the surgeon. Much has been written that is interesting and instructive concerning the etiology, diagnosis and treatment of this troublesome disturbance, without definite solution of the problem, particularly with reference to etiology and treatment.

Statistics are not wanting; but, unfortunately, they are so at variance as to cause some distrust as to their reliability. No doubt the decided variation in the percentages of different authors is due largely to the difference in time of collecting the information. Statistics dealing with any phase of peptic ulcer, if prepared before the advent of the roentgen ray as an aid in the differential diagnosis of right upper quadrant lesions and location of ulcer in relation to the pyloric sulcus, are, compared with present day observations, notoriously unreliable. As many medical authorities are still referring to statistics prepared in the late nineties or in the first decade of the present century, it is essential that further studies be made and that our statistics be reviewed in accordance with the information derived from such effort as that carried out by the Association of Life Insurance Directors, under the direction or Arthur Hunter, working on the clinical material of the Mayo Clinic. The investigation just referred to was for the purpose of determining the mortality in peptic ulcer cases after operation, and it is to be hoped that an equally careful investigation may be undertaken relative to other phases of the problem.

Hoping to bring out some additional information, I have attempted a review of 500 cases of peptic ulcer that have been carefully selected from the records of patients under observation in the Battle Creek Sanitarium. In this study I have excluded cases occurring prior to 1912, as I am convinced that before this time the study of ulcer was not made in conjunction with the roentgenologist, and feel that the possibility of error in diagnosis was so great as to rob the statistics of much of their value.

In addition, I have endeavored to eliminate every factor that might in any way be responsible for incorrect conclusions. The cases were first very carefully selected and when there was a reasonable doubt as to diagnosis in any instance, the case was rejected. The questionnaire was prepared to obtain such information as would permit of no doubt as to possible recurrence of symptoms or failure of treatment to accomplish a cure. The results have been rather unexpected and in some respects disappointing, which may allow of their being of greater value to this section. The 500 cases under discussion go back over a period of six years, and in all cases more than one year has elapsed since their dismissal from treatment.

Moynihan, in his monograph on duodenal ulcer, whose work did so much to call attention to the frequency of peptic ulcer, particularly ulcer of the duodenum, and whose statement that chronic hyperacidity was in practically all cases definite indication of duodenal ulcer, has led some to believe that the diagnosis of peptic ulcer is a simple matter. This, unfortunately, we find is not the case. While it is true that an uncomplicated case of early duodenal ulcer usually exhibits a characteristic history, the more chronic cases cannot be detected in this way. We now recognize that a number of abdominal disturbances reflexly disturb the function of the stomach and its chemistry, and cause symptoms that closely simulate those of duodenal ulcer. For this reason a diagnosis of peptic ulcer should not be made without exceedingly painstaking study. Not only should a careful history be taken and a thorough physical examination made, but in addition, the patient should have the benefit of laboratory study, and whenever possible, a thorough roentgen-ray study of the gastrointestinal tract. Even then a small percentage of unavoidable error will result.

Of the 500 cases covered by this review, 415 were classed as duodenal and eighty-five as gastric. I am aware that this proportion is decidedly at variance with other published statistics. Baetjer and Friedenwald,[1] reporting on a study of 743 cases of peptic ulcer, divided their cases into three groups. In the first group there were 185 cases in which the diagnosis was verified by roentgen ray and definitely proved by operation. In this group they report 46.2 per cent. duodenal, 36.0 per cent. gastric and 11.5 per cent. pyloroduodenal. In the second group of 323

10. A preliminary report on the physiology of the secretion of this portion of the stomach is given in the Proceedings of the American Physiological Society, Baltimore, April, 1919.

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Baetjer, F. H., and Friedenwald, Julius: Bull. Johns Hopkins Hosp. 29: 177 (Aug.) 1918.

cases, presenting typical clinical symptoms corroborated by roentgen ray, they report 43 per cent. duodenal, 40 per cent. gastric and 14 pyloroduodenal.

Haggard [2] places the ratio of duodenal ulcer to gastric ulcer at 3:1. W. J. Mayo [3] states that the statistics of the Mayo Clinic showed twenty-seven of gastric ulcer to seventy-three of duodenal. Eusterman,[4] in reporting on a series of 383 cases of ulcer that were demonstrated surgically in the Mayo Clinic, found 38 per cent. gastric and 72 per cent. duodenal. In 37 per cent. of the cases the histories did not designate between gastric and duodenal ulcer. In 3.6 per cent. a diagnosis had been made of appendicitis, when the trouble was due to ulcer. Moynihan,[5] over a series of years finds for every gastric ulcer four or five duodenal ulcers and five or six cases of cholelithiasis. He further states [5] that gastric ulcer should be considered a rare disease and that its diagnosis should never be accepted on the basis of clinical findings alone, but these must be corroborated by roentgen-ray or operative findings. He is authority for the statement that more mistakes are made in the diagnosis of gastric ulcer than in any other abdominal disorder.

PENETRATING ULCER

More than 10 per cent. of our gastric ulcers were found to be what we have chosen to designate as penetrating ulcer, using this term in contradistinction to chronic perforating ulcer. A penetrating ulcer is one that has burrowed through the posterior stomach wall into the neighboring organs or tissues, usually liver or spleen. In a sense it is a perforating ulcer, but is so surrounded by adhesions as to prevent the serious conquences which, in perforating ulcer, follow the escape of stomach and duodenal contents into the abdominal cavity. That this tendency to burrow into the surrounding tissues is much more typical of gastric ulcer is indicated by our study. The penetrating ulcer is distinguished clinically by the greater severity of pain, greater local tenderness, and the absence of relief after the ingestion of food and alkalis, as is found in the typical simple ulcer. It is in this type of ulcer that we find the patient refraining from food, fearing the pain that results from its ingestion. It would seem that the active peristalsis set up following the ingestion of food is as largely responsible for the pain as is the increased acidity. With the stomach empty, the patient suffers but little inconvenience.

The symptomatology of simple gastric ulcer we have found to be quite similar to that of duodenal ulcer, except that the pain occurs early during the cycle of digestion and is aggravated by a hearty meal or by coarse foods, which may not be the case in duodenal ulcer. In all our cases in which the patient complained of persistent boring or piercing pain, a penetrating ulcer was reported by the roentgenologist and corroborated by the surgeon. J. N. Hall [6] found that in 116 cases in which operation was performed, eight ulcers had perforated acutely, and that, in addition, there were many instances of chronic perforation. Case [7] has called attention to the frequency of duodenal diverticula, the etiology of which has not been definitely determined; but the probability of their resulting after the wall of the duodenum has been weakened as the result of an ulcer is very suggestive.

HEMORRHAGE

History of hemorrhage was obtained in 19 per cent. of our total number of cases. This does not include cases showing only a slight trace of blood in the stool or in the vomitus, but cases in which copious hemorrhage had occurred. Had we included those cases in which blood had been determined by chemical or macroscopic examination of the stool or lavage contents, this precentage would have been considerably higher. As frequently the small amount of blood found in the feces may result from lesions in the lower part of the colon, and after vomiting or the use of the lavage a small amount of fresh blood is discovered, which in the great majority of cases is of traumatic origin, we felt that these cases should not be included.

Intestinal hemorrhage is prone to occur in certain ulcer cases in which the presence of ulcer can be definitely proved by roentgen-ray observation. It also occurs from the stomach or duodenum when the clinical symptoms are not suggestive and when neither the roentgen-ray nor the surgical observations are able to locate the lesions. In these cases it is supposedly of gastrotoxic origin. W. J. Mayo [3] found that hemorrhage occurred in 17 per cent. of cases of gastric, and in 15 per cent. of duodenal ulcer.

This complication, which is most alarming to the patient and annoying to the physician, rarely proves fatal. Covering a period of twenty years, including the cases under review and in addition all cases suggestive, there has been only one case of fatal hemorrhage resulting from a bleeding ulcer. The more serious result is the secondary anemia, which in some cases has been difficult to combat on account of the danger attendant on forced feeding. With the perfection of safe methods of blood transfusion, the effects of severe hemorrhage can be more readily relieved. Nor is this tendency always remedied by operative procedure, for in our surgical cases—usually gastro-enterostomy—hemorrhage occurred in 11 per cent. some months or years after operation.

Case 1 illustrates definitely the incidence of duodenal ulcer with a resulting hemorrhage early in life:

CASE 1.—The patient had suffered from a profuse hemorrhage at the age of 3, a large quantity of blood being vomited. The second hemorrhage occurred at the age of 17, the third at 23 and the fourth at 32. All of these were profuse. Following the fourth hemorrhage, the patient was referred to the surgeon, who found a large indurated duodenal ulcer. A gastro-enterostomy was performed with an infolding of the ulcer, and the patient has been free from trouble up to the present day, a period of three years.

While repeated hemorrhage is one of the conditions demanding surgical interference, yet a study of our cases leads us to believe that a simple gastro-enterostomy is not sufficient to bring about the relief of this troublesome complication. One of our patients who had suffered two hemorrhages prior to a gastro-enterostomy has since had profuse hemorrhage on three occasions. While it is not my purpose in this paper to discuss appropriate surgical procedure, it would seem, in cases in which hemorrhage has occured, that in addition to the gastro-enterostomy the ulcer should be resected, cauterized or infolded together with an infolding of the omentum. Eusterman [4] reports that in the Mayo Clinic, in a group of 383 cases, there was 25 per cent. of hemorrhage.

2. Haggard, W. D.: Southern M. J. **10**: 137 (Feb.) 1917.
3. Mayo, W. J.: Gastric Ulcer, J. A. M. A. **65**: 1069 (Sept. 25) 1915.
4. Eusterman, G. B.: New York State J. M. **17**: 88 (Feb.) 1917.
5. Moynihan, B.: Brit. M. J. **2**: 765 (Dec. 13) 1919.
6. Hall, J. N.: Med. Rec. **92**: 353 (Sept. 1) 1917.
7. Case, J. T.: Diverticula of the Small Intestine Other than Meckel's Diverticulum, J. A. M. A. **75**: 1463 (Nov. 27) 1920.

In the management of cases of acute hemorrhage in which the hemorrhage has been of gastric origin, in practically all cases immediate lavage has been practiced. Following this, the use of epinephrin locally, the use of normal serum hypodermically or intravenously, and latterly transfusion (which accomplishes all that can be expected of normal serum, and, in addition, when there has been an extreme loss of blood) provides some immediate relief from the distressing secondary anemia.

RESULTS OF TREATMENT

In 156 cases which had been treated medically and in which a period of at least three years had elapsed since the disappearance of their symptoms, 113, or 72 per cent., reported no return of symptoms, and forty-three, or 28 per cent., reported recurrences. In the 113 cases showing no recurrence, 80 per cent. were ideal cases for medical treatment in that the patients were well nourished, had no pyloric stenosis, and had no indications of tendency toward perforation. The other 20 per cent. showed delay in motility due to stenosis of such a degree as to prolong the emptying time of the stomach from six to eighteen hours, as determined by the barium meal. Where the stenosis is of inflammatory origin and not due to scar tissue, we do not believe it is necessarily an indication that proper medical treatment may not be successful.

The average time of institutional treatment of those cases in which no relapse occurred after a period of three years was five weeks. Each patient at the time of dismissal was told that in all probability, although he was entirely relieved of his distress, his ulcer was not entirely healed, and that it was most essen- that he should follow out specific suggestions relative to diet and mental and physical activity, and that he should avoid cathartics and other gastric irritants. The patients were followed up from time to time by correspondence and were urged to report any recurrence of their former symptoms.

The average length of time under treatment of patients showing a recurrence of their former symptoms was three weeks. I think this is a very significant observation. A great many patients with peptic ulcer are difficult to control. With a relief of their symptoms they rebel against the dietetic restrictions essential to complete ulcer healing, and will not remain in bed or even restrict their physical activities to any extent. This type is illustrated by Case 2:

Case 2.—S. S., a man, aged 67, who came under my observation in 1912, had the typical symptoms of duodenal ulcer with partial pyloric stenosis. This was confirmed by roentgen-ray study, the emptying time being reported as longer than sixteen hours. Under appropriate medical treatment he was able to return home at the end of eight weeks entirely free from symptoms, and with the emptying time of the stomach four and one-half hours. When I met the patient four months later he was happy to inform me that his stomach was absolutely fine and that he could eat and drink anything he desired. I learned by observation that his desires were not particularly modest. At the end of one year he came to me again with a definite return of his old symptoms, but with much less stenosis than he originally showed. Another period of treatments extending over eight weeks served to relieve him entirely of symptoms, but he was still unconverted, dietetically speaking. After six months he had to return for a third period of treatment, and it was thought advisable to recommend surgical interference, because of the stenosis. His hospital experience, following operation, so impressed him that he has observed greater care, and after three years remains well.

White [8] recommends a follow-up system that would serve to keep the patient under observation for years following either medical or surgical treatment.

CHRONICITY

To determine in any case just how long an ulcer has been present is a rather difficult matter. Frequently the patient will say that his indigestion has existed from infancy. Definite inquiry elicits the information that two or three times a year he is troubled with definite discomfort which he associates with an empty stomach, and that the periods last from four to eight weeks. Since in many similar cases an indurated ulcer may be definitely demonstrated at the operating table, we are compelled to believe that they often do exist for years.

In the group I am reporting, every effort was made to determine the length of time definite ulcer symptoms had persisted and to differentiate from simple indigestion—if there is such a condition. Some of the patients gave a history of having suffered from profuse hemorrhage as many as fifteen or twenty years previous to our observation. The average chronicity of this series was seven and one-half years. Very few had a history of trouble for less than one year. Particular interest attaches to this group of cases because of this fact. It has been stated by Gruber [9] that 75 per cent. of duodenal ulcer patients never consult a physician, that their cases are never diagnosed, and that peptic ulcer is one of the most common causes of "indigestion." This is substantiated by the tremendous sales of such nostrums as Bell-ans, Stuart's dyspepsia tablets and many others whose only virtue in providing relief is the alkalis they contain. If in addition to the number using these preparations we add those who periodically have to resort to "baking soda" for relief, we have a great army who are suffering from some organic abdominal trouble, and it is altogether probable that at least 30 per cent. of these suffer from peptic ulcer. Because of the frequency of this trouble, and since a goodly proportion of those suffering from digestive trouble neglect medical treatment for a considerable time, this group, composed largely of decidedly chronic cases, affords us an opportunity to determine to some extent the results of therapeutic endeavor.

INCOMPLETE HEALING

There is no organic trouble which responds so readily to treatment as does peptic ulcer. In the cases reported, more than 85 per cent. of the patients who had been under treatment for more than two weeks reported complete relief from symptoms indicative of ulcer. The relief may continue from a few days to several months in cases in which the after-history proves quite conclusively that the relief was not the result of complete healing. Many of the statistics of the earlier writers are of little value in determing the percentage of cures, as they mistook this period of quiescence for complete healing. Some authors even yet contend, and I may add that I am not referring only to internists, that a period of six months during which there is absence of indigestion, occult blood, etc., indicates that the case may be considered cured. In the event of a recurrence of symptoms, they are inclined to the opinion that this is due to a new ulcer

8. White, F. W.: M. Clinics N. America 2: 1431 (March) 1919.
9. Gruber, G. B.: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1912, lxxxii.

rather than to relapse of the original one. The roentgenologist has dissented from this view, and has, I think, quite satisfactorily proved that a period of months or years may elapse without complete healing and that the recurrence of symptoms is due to relapse of an incompletely healed ulcer rather than from ulceration in some other portion of stomach or duodenum.

TYPE OF TREATMENT USED

In the great majority of cases a modification of the Sippy method was used: rest in bed for from one to three weeks, especially with all cases of gastric ulcer, and small and frequent feedings with moderate amounts of a mixture of sodium bicarbonate, bismuth subcarbonate and magnesium oxid. When there was any decided delay, alkaline lavage just before retiring was continued until pain during the night disappeared and stasis was relieved. The use of fomentations, and the moist abdominal bandage worn constantly during the early days of treatment, we find to be of decided advantage in relieving pain. Every possible effort was made early in the course of treatment to discover and relieve any possible focal infection. We have not been able to determine a greater incidence of focal infections in these cases over that of other organic troubles.

There is every reason to believe that one great cause for failure of medical treatment is carelessness with reference to diet. A considerable number of patients who have suffered from digestive troubles requiring a restricted diet are not satisfied until they are able to return to their old habits of diet, which may have been a great factor in causing their trouble originally. In all cases of peptic ulcer, the patient must understand that he is to follow a restricted diet not only during the time he is under the immediate care of his attending physician, but for months or even years afterwards. And not only should this apply to the medical case but to those treated surgically as well.

TUBE FEEDING

Our experience with duodenal feeding as introduced by Einhorn has been very satisfactory. A group of eighteen patients with duodenal ulcer had no relapse during the first year following treatment. Eleven of these were heard from after a lapse of two years. Of these eleven, one had gallbladder symptoms; one had some intestinal stases; three had a slight return of former symptoms, and six had no recurrence whatever. Relief from pain occurred in practically all cases of tube feeding within the first thirty-six hours after the regimen had been instituted. The patients tolerated the tube very nicely after the first day or two and were not at all anxious to discontinue this form of feeding at the expiration of the time previously decided on. In two of these cases the emptying time of the stomach was longer than twelve hours. Following treatment it was found to be less than five hours. Patients in whom the nutrition was below par showed satisfactory gain in weight, and their condition at the end of the tube feeding showed decided improvement. Moynihan [5] speaks enthusiastically of tube feeding in which the tube is inserted in the proximal limb of the jejunum below the duodenojejunal flexure in cases in which gastro-enterostomy has been performed in "Y." Through this the patient is fed exclusively for months in those cases in which the ulceration is so extensive that a partial gastrectomy is impossible. The principle is similar to the use of the duodenal tube by mouth. In my opinion the period of treatment is entirely too brief, and if continued for sufficient time, complete cure might be accomplished, when other forms of medical treatment fail.

SURGICAL TREATMENT

Forty-seven of the patients whose cases are included in this group had either previously submitted to surgery or were operated on subsequently. At least three years had elapsed in all cases since the operation and prior to our obtaining definite information as to their condition. It was found that twenty-one, or 44 per cent., had been entirely free from digestive trouble after the operation; seventeen, or 36 per cent., experienced a recurrence of their old trouble; three were dead; and six could not be traced.

Unfortunately, there is still some lack of agreement as to the limitations of medical treatment and when surgical measures are to be invoked. As the surgeon is likely to base his judgment as to treatment on the observations of that class of cases referred to him, he concludes at times that all cases should be surgical. He see only a small percentage of the cases demanding treatment, and fails to realize that the great majority respond satisfactorily and permanently to medical measures. It would seem that there should be no disagreement in the matter of choice of treatment.

It is not the province of this paper to discuss the most favorable type of treatment to be employed, but rather to report our observations as to results of treatment in this series of cases. From the results of this study we are compelled to conclude that all cases of duodenal ulcer in which there is marked pyloric stenosis that fails to yield promptly to medical treatment, and those in which there have been repeated hemorrhages or penetrating ulcers, should be treated surgically. Of the gastric ulcers, since in certain cases they appear to undergo malignant degeneration, all those tending to chronicity and of considerable extent, penetrating or otherwise, and those situated at some distance from the pylorus, would probably be best treated by surgical procedure.

It is to be regretted that we are not able to promise our patients permanent cure after a simple gastro-enterostomy, the operation most frequently performed in the past for the relief of duodenal ulcer. Unfortunately, in a number of our cases there has been recurrence of previous symptoms very typical of ulcer following this operation. Hemorrhage occurred in 12 per cent. of the operative cases, but in all these cases there had been previous history of bleeding. Profound diarrhea subsequent to operation occurred in two or three cases, while in still others there were definite disturbances of nutrition. These surgical cases were not from any one clinic, but were those in which operation had been performed by several surgeons of international reputation. A considerable number of patients who submit to surgical intervention seem to obtain the idea that with their discharge from the hospital they may consider themselves completely and permanently cured and at liberty to return to their previous dietetic habits. This, no doubt, is responsible for failure of cure in many cases of gastro-enterostomy. We know from roentgen-ray studies that in a short time after operation, even in cases in which there is marked pyloric stenosis, food

begins to pass through the pylorus and probably long before the ulcer is healed. The beneficial neutralizing effects of the bile and intestinal juice may, in these cases, be entirely offset by irritation of a mechanical, thermal or chemical character incident to dietetic indiscretions.

There is still a question after gastro-enterostomy as to whether a cure has been accomplished or the patient rendered symptomless with a persistence of ulcer. Moynihan [5] states that he is averse to performing gastro-enterostomy except in cases of obstruction or threatened obstruction in duodenal or pyloric ulcer, and further, that surgeons who perform gastro-enterostomy alone for the relief of gastric ulcer insist on a protracted period of dietetic restriction, of rest, and of the administration of such drugs as the "triple carbonates," and that he has little faith in the physiologic action of gastro-enterostomy. Balfour [10] states that 12.7 per cent. of the patients operated on for duodenal ulcer who had hemorrhage before operation had hemorrhage after, and that 0.9 per cent. who had not had hemorrhage before operation had hemorrhage after. Eight per cent. of those with hemorrhage from gastric ulcer before operation also had hemorrhage after, and 0.3 per cent. who had had no hemorrhage before operation had hemorrhage after. When gastro-enterostomy is combined with excision, cauterization or infolding of the ulcer, it is undoubtedly of great benefit in providing, in properly selected cases, complete relief. When possible, a partial gastrectomy would seem to offer the most satisfactory and permanent results. But even the prognosis must be guarded, as Case 3 illustrates:

CASE 3.—C. O. N., a man, aged 46, who came under observation, April 4, 1916, had digestive disturbances dating back three and one-half years. His original symptom was a gnawing pain coming on two hours after meals, which was relieved by soda. Six months after his digestive disturbances began he must have developed pyloric stenosis, as he began to vomit, and still continued to do so up to the time he presented himself for examination. In the majority of instances, however, vomiting was induced to relieve distressing symptoms. The physical examination gave no information as to the cause of the trouble. The chemical examination of the stomach contents disclosed a mild hyperacidity. Roentgen-ray observation at this time revealed a definitely enlarged stomach with marked gastric stasis, more than fifty hours being required to empty the stomach of the barium meal; there was an irregular filling defect on the lesser curvature proximal to the pylorus, which was reported as a large indurated ulcer with possibility of malignancy. The patient was under observation at intervals until June, 1916, before submitting to operation. At this time a partial gastrectomy was performed by the Polya method. The specimen was sent to the pathologic laboratory at the University of Michigan, and the pathologist reported that the ulcer did not show any conclusive evidence of malignancy, and a nearby gland that showed some enlargement was also reported as showing no evidence of malignancy. The patient made an uneventful recovery and was under observation at frequent intervals for the next three years. In February, 1919, his condition for the first time showed a decided change and an examination revealed extensive carcinoma of the stomach. He succumbed to this disease shortly after this date. As to whether this was a beginning malignancy that was overlooked by the pathologist, or cancer secondary to ulcer, is difficult to determine. In all probability it was a primary malignant tumor. Otherwise we should be discouraged in advocating the removal of gastric ulcer to prevent later malignant degeneration.

10. Balfour, D. C.: Surgical Treatment in the Bleeding Type of Gastric and Duodenal Ulcer, J. A. M. A. **73**: 571 (Aug. 23) 1919.

CHEMISTRY

In practically all cases reported, a study was made of the gastric contents. In the majority of cases the Ewald test meal was employed; in a few cases the fractional estimation. In 73 per cent., a hyperchlorhydria was found; in 11 per cent., a hypochlorhydria; 14 per cent. were normal, and in 2 per cent. there was an achylia. We are not enthusiastic over the results of chemical examination as an aid in arriving at a diagnosis of ulcer. As a hyperchlorhydria is found in so many different organic abdominal troubles, and may be found in the absence of any organic trouble, we feel that it has by far the least value of any of the procedures supposed to throw light on this condition. The presence of blood is frequently of traumatic origin and is not a significant finding. The presence of undigested food ingested some hours previously may be taken to indicate a possible stenosis; but as this can be much more satisfactorily determined by the roentgen ray, it is not the present method used to determine stasis. The information obtained from analysis of the gastric contents is far more valuable as an aid in outlining treatment, and for this reason its use in cases of gastro-intestinal trouble is, no doubt, justifiable. Moynihan states that during the years of the war he made practically no use of the examination of the stomach contents as a diagnostic procedure, since he found that in more than 40 per cent. of ulcer cases there was no hyperchlorhydria, and in from 10 to 20 per cent. there is reduction in the gastric acidity.

MORTALITY

Tracing all cases as closely as possible, the mortality percentage was only 2.2, which included cases referred for operation. This is a rather significant finding, and would lead us to conclude that the life expectancy of the person suffering from peptic ulcer is exceptionally good. If, as reported by Wilensky,[11] less than 2 per cent. of all gastric ulcers develop malignancy, our advice relative to treatment in uncomplicated cases should be decidedly influenced by the fact that the patient is not in great danger of succumbing to his trouble. In following up some of our cases in which hemorrhage of a grave character, which seemed to threaten the patient's life, had occurred as long as fifteen years before the date of review, we found in a number of instances that there had been no recurrence, and the patient had resumed the normal activities of life. Following the profuse hemorrhage, the symptoms, which had persisted for some years prior, entirely disappeared and, so far as the patients were able to determine, they were perfectly well.

CONCLUSIONS

1. If peptic ulcer, particularly duodenal ulcer, is observed early in its history, and if the patient will submit to a carefully planned course of treatment for a reasonable time and will follow up this treatment by a carefully regulated dietary regimen over a period of some months, one can be sanguine of obtaining complete cure.

2. In uncomplicated cases of long standing, proper medical treatment provides relief in at least 70 per cent. of the cases.

3. In the great majority of cases in which the symptoms disappear during a course of medical treatment and there is later a return of the symptoms, the fault is due to dietetic carelessness.

11. Wilensky, A. O.: Ann. Surg. **67**: 215 (Feb.) 1918.

4. Surgical treatment is to be preferred for the cases complicated by pyloric stenosis not yielding readily to medical measures, cases showing repeated hemorrhage, penetrating or perforating ulcers, and for cases in which a prolonged medical course is impossible.

5. Simple gastro-enterostomy fails to provide permanent relief in a considerable number of cases, and should be supplemented by resection of the ulcer, cauterization, infolding or partial gastrectomy.

INTUBATION AND VISUALIZATION OF THE DUODENUM WITH THE DUODENAL TUBE

A DIAGNOSTIC PROCEDURE IN DUODENAL ULCER AND PERIDUODENAL ADHESIONS: SUMMARY OF THE FINDINGS IN THREE HUNDRED AND SIXTY-ONE ESTABLISHED CASES *

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In 1914, I [1] described the technic of visualization of the upper intestinal tract by the conjoint use of the duodenal tube and the roentgen ray for the purpose of studying the course of the entire duodenum and the commencing jejunum. It was emphasized then that by this method displacements and angulation of the duodenum, as the result of periduodenal adhesions, could be detected, which is not always possible by the usual fluoroscopic and roentgen methods. The procedure, briefly, is as follows: After the duodenal tube has passed into the jejunum and several specimens of duodenal contents are obtained for the physical, chemical and microscopic examinations, it is filled with a suspension of barium, and plates are then taken in the erect and prone positions. The patient then drinks half a glass of the barium suspension, and plates are again taken in both postures. Care must be taken to have the roentgen-ray tube at right angles to the patient and the latter placed flat against the plate. The course taken by the duodenal tube along the lesser curvature of the stomach, in the duodenum and in the commencing jejunum is shown on the plate as a horseshoe shaped curve (Fig. 7). The tube along the lesser curvature is normally about 2 to 3 inches above that in the transverse part of the duodenum. In periduodenal adhesions and often in peripyloric adhesions, the course of the tube is usually altered. It should be mentioned that Dr. Max Einhorn [2] of New York attempted to visualize the duodenum by a specially devised delineator, which he later discarded owing to difficult manipulation. The new intestinal delineator [3] and the intestinal tube [4] which he later devised for visualization of the entire intestine, owing to their extreme length, are not adapted for visualization of the duodenum.

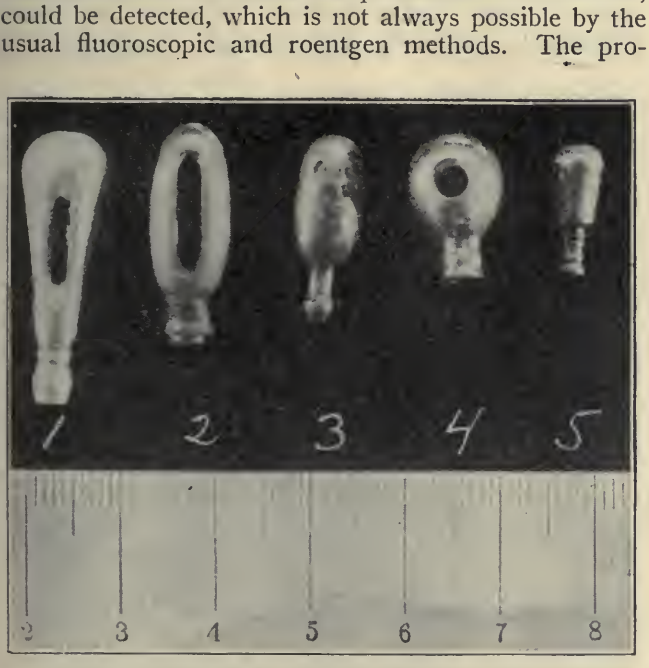


Fig. 1.—Relative size and weight of the metal tips of five duodenal tubes: 1, Lyon's, 61 grains; 2, Rehfuss', 66 grains; 3, Einhorn's, 33 grains; 4, the author's, 105 grains; 5, Jutte's, 21 grains.

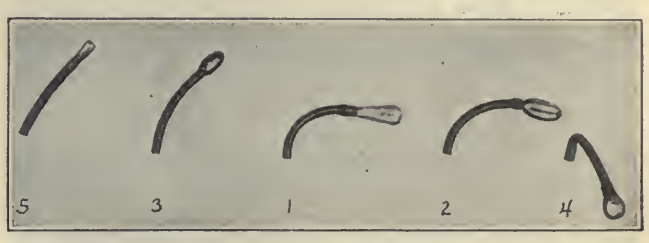


Fig. 2.—Relative sinking power of the metal tips when suspended from an equal length of tubing. The tip of the author's tube alone sinks below the point of suspension. It is due to this sinking power that the tube can be brought to the pylorus immediately after its introduction.

Is duodenal intubation and visualization an essential diagnostic procedure? It must be remembered that not all ulcers can be detected under the fluoroscope or by the plate-taking method, and the identity of the character of the pathologic process causing a deformity is often difficult and not infrequently impossible. Smithies,[5] in discussing the clinical findings in 1,000 operatively proved gallbladder cases, remarks on the apparent difficulty of differentiation of the roentgen findings, such as deformity, stenosis, altered persistalsis and motility, from those of duodenal ulcer. According to Carman,[6] not only deformity but also a six hour gastric residue which, in his experience, is the most frequent sign of duodenal ulcer, may be caused also from adhesions incident to gallbladder infection. With this he evidently agrees with L. G. Cole,[7] who states that "a positive differentiation between postpyloric ulcer and adhesions from gallbladder infection cannot always be made from roentgen findings," and who further states that defective filling of the first part of the duodenum may also be caused reflexly from lesions in the ileum and cecum. Studying my cases with both clinical and roentgen methods, I have often observed instances in which the existence of a pathologic condition in the duodenum was correctly suggested from

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* Read before the Section on Gastro-Enterology and Proctology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

* Of the cases reported in this paper, 105 were examined at the Montefiore Home and Hospital, and sixty-seven at the Harlem Hospital from the surgical service and gastro-enterologic clinic.

1. Palefski, I. O.: Med. Rec., April 18, 1914.
2. Einhorn, Max: Med. Rec., June 21, 1913.
3. Einhorn, Max: Med. Rec. **95**: 509 (March 29) 1919.
4. Einhorn, Max: New York M. J. **110**: 456 (Sept. 13) 1919.
5. Smithies, Frank: Pericholecystitic Adhesions, J. A. M. A. **71**: 1804 (Nov. 30) 1918.
6. Carman, R. D.: Radiologic Signs of Duodenal Ulcer, J. A. M. A. **62**: 980 (March 28) 1914.
7. Cole, L. G.: Lancet, May 2, 1914.

clinical investigations, which could hardly be suspected from the results of the roentgen observations. It is, however, from the character of the pathologic findings of the 1,000 gallbladder cases reported by Smithies that the diagnostic significance of visualization of the duodenum by the duodenal tube is strongly emphasized. In nearly 50 per cent. of his cases, pericholecystic adhesions were found in which the duodenum was usually involved either alone of with the neighboring organs. The displacement of the duodenum by these adhesions, in my experience, can now be clinically recognized by the duodenal tube.



Fig. 3.—Jutte's tube, fifteen minutes after its introduction with the aid of the stylet. The tube is coiled up in the cardiac end of the stomach.

At this juncture, a few remarks as to the relative merits of the various duodenal tubes will not be amiss. Some of the claims are based on purely theoretical grounds. I never could verify through roentgen observations the truth of the assertion that the Jutte tube can be passed into the duodenum within a few minutes after its introduction. It invariably remains in the stomach from two to four hours, and passes into the duodenum, as any other tube, by peristalsis (Figs. 1, 2 and 3). In transduodenal lavage, the irrigating salt solution, prepared and introduced according to the Jutte method,[8] is observed to pass first into the stomach, whence it flows into the intestine within two or three hours (Fig. 4). It will be recalled that both Jutte[9] and M'Donald[10] obtained similar results with two different types of tubes. The immediate introduction of a duodenal tube into the duodenum in the adult is impossible owing to the right-sided position and the distance of the pylorus from the operating hand at the lips of the patient. The Rehfuss tube also has its drawbacks. The tip, owing to its insufficient weight, often remains at the cardia or above the dependent part of the stomach (Fig. 5). The complete emptying of the stomach is then impossible. For similar reasons, its passage into the duodenum is often prolonged. Its use, however, is preferred to the Einhorn tube or the recently modified Lyon[11] tip, which weighs still less and is much longer. The tube best adapted for duodenal intubation, however, is one with a small, heavy tip which can be brought toward the pylorus immediately after its introduction with the aid of gravity (Fig. 6). I have used this type of tube in all my investigations.[12] It is introduced on the empty stomach to the 15 inch mark in the sitting posture, and then to the 20 inch mark with the patient on the right side. A specimen of gastric contents should then be aspirated to determine whether the tube was properly passed toward the pylorus. The patient then assumes the recumbent posture, with the foot of the couch raised about 9 inches, for a period of two to three hours during which time the tube is swallowed, gradually, to the 30 inch mark and several specimens are obtained for examination as the latter passes the pylorus and duodenum. Roentgenographic examinations are then made with the tube in situ. It should be mentioned that nearly all observers have been guided in the localizing of the tube by the "duodenal tug" sign and the obtaining of duodenal contents. The former may also be felt when the tube is coiled up at the cardia, while the obtaining of duodenal contents is not convincing evidence that the tube has passed beyond the first part of the duodenum. In duodenal alimentation or lavage, the tube must pass beyond the first part of the duodenum or the injected contents will invariably regurgitate into the stomach. In my experience, the best test next to the fluoroscope and the roentgen ray is by slowly inflating through the tube; and if it has passed into the jejunum, the lower abdominal quadrants will become distended and tympanitic. The patient will neither belch nor complain of discomfort.



Fig. 4.—Transduodenal lavage according to the Jutte method (thirty minutes after). Note both the Jutte tube (*J*) and the barium irrigating salt solution in the stomach (*S*) whence it flows into the intestine.

8. Jutte, M. E.: Med. Rec. **92**: 499 (Sept. 22) 1917.
9. Jutte, M. E.: New York M. J., March 16, 1912.
10. M'Donald, E.: Med. Rec., July 18, 1914.

11. Lyon, B. B. V.: A New Metal Tip Possessing Obvious Advantages for Use on Gastric or Duodenal Tubes, J. A. M. A. **74**: 246 (Jan. 24) 1920.
12. The tube may be obtained from the Kny Scheerer Company, New York.

Of the cases I observed during the last few years, the results of the examination of 361 cases are here given. The diagnoses of these were established either by laparotomy or by combined clinical and roentgen investigations, supported by subsequent



Fig. 5.—Rehfuss' tube in stomach immediately after its introduction. Tip is above dependent part of stomach.

events in each case. They may be grouped as in the accompanying table.

SUMMARY OF FINDINGS

Failure of the Tubes to Pass into the Intestine.—In a previous communication [1] I emphasized that as a result of spasm or organic obstruction, the tube may remain at the pylorus or in the first part of the duodenum for a day or even longer, although to all appearances it is supposed to have passed into the intestine. My records show twenty-seven such cases in which

FINDINGS IN THREE HUNDRED AND SIXTY-ONE CASES

	No. of Cases
1. Failure of the tube to pass beyond the first part of duodenum	27
2. Duodenal ulcer	49
3. Chronic gallbladder disease with or without cholelithiasis	58
4. Those clinically simulating chronic galibadder disease or duodenal ulcer	76
5. Postoperative	51
6. Visceroptosis, intestinal stasis and dilatation of the duodenum	32
7. Nongastro-intestinal cases	68

pyloric or duodenal ulcer or adhesions were later found. In nearly all of these, the injected barium regurgitated partly or wholly into the stomach. This fact should be borne in mind before beginning duodenal feeding. From this group of cases, it may be concluded that failure of my duodenal tube to pass the jejunum within four hours after its introduction signifies the existence of a pathologic condition along the pyloroduodenal path, whether supported by roentgen findings or not.

Duodenal Ulcer.—The clinical findings of the forty-nine cases comprising this group, in order of their frequency, were:

Forty-one showed either macroscopic, microscopic or occult blood in the duodenal contents.

Forty showed high total and free gastric acidity.

Thirty-eight showed a normal duodenal curve on visualization with the duodenal tube in the jejunum.

Thirty-seven gave a history suggestive of duodenal ulcer.

Twenty-six showed definite roentgen findings of duodenal ulcer.

From these, the conclusion may be drawn that the association of blood in the duodenal contents, high acidity, normal duodenal curve and a history suggestive of a duodenal ulcer are pathognomonic evidence of duodenal ulcer whether supported by the results of roentgen examination or not. I do not wish to underestimate the value of roentgen examination in duodenal ulcer, but it must be conceded that many duodenal ulcers are overlooked when their recognition is dependent on roentgen examination alone. The value of duodenal intubation and visualization was particularly emphasized in several of these cases. Seven patients were appendectomized shortly before examination on the strength of negative roentgen findings of duodenal ulcer. Patient D. C. (referred by Dr. Benjamin Koven, Brooklyn) was laparotomized six times with resection of the cecum for supposedly intestinal stasis. The duodenal tube revealed an ulcer which was confirmed by the seventh laparotomy. Gastro-enterostomy brought prompt and permanent relief of the gastrointestinal symptoms and neurasthenia.

Chronic Gallbladder Disease with or without Cholelithiasis.—The difficulty of clinical recognition of chronic gallbladder disease, particularly of the nonstone type, is reflected from the experiences of this group of cases. In only twenty-three of these was this condition suspected before examination, while the others were variously treated for gastric and duodenal ulcer,



Fig. 6.—The author's duodenal tube immediately after introduction. Note tip at pylorus, and the injected barium passing into the intestine. The patient lies on the back.

neurasthenia, intestinal stasis, high blood pressure, defective teeth and pelvic disturbances. Several of them were even appendectomized. The outstanding features of the pathologic findings were that periduodenal and peripyloric adhesions were found by

laparotomy in forty-two cases, while gallstones were present in only seventeen. It was the detection of these adhesions by the duodenal tube that suggested the probable underlying condition, namely, gallbladder



Fig. 7.—Normal course of duodenum as shown by duodenal tube in situ: *S, S,* tube along lesser curvature; *D,* duodenum; *D J,* duodenojejunal junction; *J,* commencing jejunum.

infection. The clinical findings of the fifty-eight cases, in order of their frequency, were:

Fifty-four gave a history of gastric distress and dyspepsia.
Fifty-one showed normal or subnormal gastric acidity.
Forty-nine complained of constipation.
Forty-seven showed tenderness in the right hypochondrium.
Forty-four showed distorted duodenal curve, with the duodenal tube in situ (Figs. 8 to 13).
Thirty-four showed negative roentgen findings except for altered motility.
Eleven showed roentgen findings indistinguishable from duodenal ulcer.
Nine showed definite roentgen findings of periduodenal adhesions.
Six showed gallstone shadows (33 per cent. of the stone cases).
Five showed traces of occult blood in the duodenal contents.

From this, it may be accepted that a history of gastric distress and constipation associated with tenderness in the right hypochondrium with distorted duodenal curve with usually negative roentgen findings may be considered pathognomonic of chronic gallbladder disease and periduodenal adhesions with or without cholelithiasis.

Cases Clinically Simulating Gastric or Duodenal Ulcer or Chronic Gallbladder Disease.—This group comprises seventy-six such cases in which another condition was finally revealed responsible for the gastric and abdominal symptoms. These were, in order of their frequency, chronic appendicitis, subacidity and achylia gastrica and secondary anemias, pulmonary tuberculosis, pericolonic adhesions and colitis, gastric crises, diabetes mellitus, floating right kidney, lead colic, gastric hernia and intestinal fibroma. Of these, only nine showed distorted duodenal curves with the duodenal tube, and in four occult blood was found in the duodenal contents. The significance of negative findings of duodenal intubation and visualization was forcibly emphasized in several of this group. In patient F. S. (Montefiore Home and Hospital) the roentgen findings suggested a penetrating duodenal ulcer. Duodenal intubation disclosed no blood in the duodenal contents, and duodenal visualization revealed a normal duodenal curve. Several months later, exploratory laparotomy revealed a partially gangrenous appendix. Its removal was followed by complete relief of gastric symptoms. Another instance is that of patient V. D. (referred by Dr. William H. Luckett, New York), who for eight years prior to the examination suffered from frequent attacks of severe abdominal cramps and vomiting which clinically resembled cholelithiasis, and she was so advised by several clinicians. Physical, clinical and roentgen findings were not suggestive of an organic condition. Duodenal intubation detected no blood, and duodenal visualization revealed a normal duodenal curve. Laparotomy by Dr. Luckett at the Harlem Hospital revealed an elongated, edematous appendix distended with fecal concretions. The patient has been in good health since the appendectomy. Still another instance was that of a stout woman, A. S. (referred by Dr Weizenhoffer, New York), who suffered for six weeks with attacks of nausea and colicky pain which began in the epigastrium and radiated to the umbilicus which closely simulated cholelithiasis. Roentgen examination was negative. Duodenal intubation and visualization also gave negative results. Laparotomy revealed a small intestinal fibroma. From the experience of this group of cases, it may be accepted that borderline cases giving negative results



Fig. 8.—Penetrating gastric ulcer (?) in patient R. F. Compare Figure 9.

by duodenal intubation and visualization argue against involvement of the duodenum and gallbladder.

Postoperative Cases.—It was of interest in this group of cases to note the frequency and ease with which the presence of periduodenal adhesions were revealed as a

probable cause of the recurring gastric and abdominal symptoms, as well as the frequent discrepancies of the results of examinations between the established roentgen method and by the duodenal tube. By the



Fig. 9.—Distorted course of duodenum, disclosed by duodenal tube in situ: *S*, lesser curvature; *D*, duodenum; *J*, jejunum. Operative findings (by Dr. W. H. Luckett, Harlem Hospital): perigastric, periduodenal, cholecystic adhesions; chronic cholecystitis.

former method, twenty gave negative results; sixteen, duodenal ulcers; twelve showed periduodenal adhesions, and in five the findings were doubtful. By the latter method, thirteen were negative, six showed duodenal ulcers, and thirty-two, periduodenal adhesions. The frequent occurrence of periduodenal adhesions in appendectomy cases should be emphasized. This observation is in accord with daily experience that in many instances chronic appendicitis is often associated with chronic gallbladder disease, frequently overlooked when appendectomy is performed. It has been my invariable custom to investigate the duodenum and gallbladder by the duodenal tube in all cases of chronic appendicitis, before submitting them to surgical interference.

Visceroptosis and Intestinal Stasis.—Visceroptosis and intestinal stasis as possible mechanical factors in the kinking and obstruction of the duodenum were pointed out by Connor,[13] Bloodgood,[14] VanderHoof [15] and Kellogg.[16] Six of this group of thirty-two cases, in which no other cause could be assigned for the gastro-intestinal symptoms, showed an angulated duodenal curve but no evidence of duodenal obstruction. In another series of eight cases with fair motility of the bowels, showing dilatation of the first and second parts of the duodenum, a distorted duodenal curve was found in all, suggesting periduodenal cholecystic adhesions. This would seem to bear out the contention of Case [17] that duodenal obstruction is not commonly caused by visceroptosis.

13. Connor: Am. J. M. Sc., 1907.
14. Bloodgood, J. C.: Dilatation of the Duodenum in Relation to Surgery of the Stomach and Colon, J. A. M. A. **59**: 117 (July 13) 1912.
15. VanderHoof, Douglas: Dilated Duodenum, J. A. M. A. **69**: 510 (Aug. 18) 1917.
16. Kellogg, E. L.: Surg., Gynec. & Obst. **28**: 174 (Feb.) 1919.
17. Case, J. T.: Am. J. Roentgenol. **3**: 313 (June) 1916.

Nongastro-Intestinal Conditions.—This group of sixty-eight cases was examined at the Montefiore Home and Hospital in the early part of this work. Each of the patients suffered from an organic disease not involving the gastro-intestintal tract, such as diabetes, chronic endocarditis, arthritis or tabes. Few of these showed blood in the duodenal contents or a distorted duodenal curve.

CONCLUSIONS

1. The duodenal tube offers the best means of visualizing the course of the entire duodenum. This is best accomplished with the heavy tip.
2. Failure of this tube to pass beyond the first part of the duodenum within four hours is indicative of spasm or organic obstruction.
3. The "duodenal tug" and the obtaining of duodenal contents are not always reliable tests for the localization of the tube in the duodenum.
4. A high acidity, blood in duodenal contents and a normal duodenal curve, with the duodenal tube in situ, are pathognomonic evidence of duodenal ulcer.
5. A normal or subnormal acidity, absence of blood in the duodenal contents and a distorted duodenal curve are pathognomonic evidence of periduodenal adhesions, usually the result of gallbladder infection.
6. The duodenal tube offers a better means of recognition of duodenal ulcer and periduodenal adhesions than the ordinary roentgen methods alone.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. IVY, EGGLESTON AND PALEFSKI

DR. A. J. OCHSNER, Chicago: The normal stomach is an efficient machine, splendidly arranged to do a certain quality



Fig. 10.—Filling defect in first part of duodenum in patient C. Z. Duodenal ulcer (?). Compare Figure 11.

of physiologic work. The cardiac portion represents a cavity in which can be accumulated what food is needed for nutrition for a number of hours, and while this is being carried about by the individual, the gastric juices are prepared and mechanically mixed with it by the regular contractions of the gastric muscles. Presently, when the mixture has been

accomplished, the food is carried down into the lower portion where it is ground, and when it has been ground sufficiently fine and properly mixed, it is carried out through the pylorus in small portions and placed in another mixing machine, the duodenum. Here it is mixed with bile and pancreatic juice.



Fig. 11.—Distorted course of duodenum, shown by duodenal tube in situ: *S*, lesser curvature; *D*, duodenum; *J*, jejunum. Operative findings (by Dr. W. H. Luckett, Harlem Hospital): periduodenal, cholecystic adhesions and chronic cholecystitis.

When it has been mixed properly, it passes on into the jejunum, where it is absorbed. So long as conditions are normal this represents an ideal mechanism for the purpose of utilizing food by the human body. In case an operation is performed for the cure of duodenal or gastric ulcer, it does not make a particle of difference what you do with this machine surgically; the result will be a mighty poor substitute for the original, and that is why I fully agree with Dr. Eggleston that a large proportion of these patients can be and should be relieved without surgical intervention. After the patient has been restored to normal without operative intervention, a very much better machine is left than would be the case with the best operation. I believe that in 70 or possibly 90 per cent. of all duodenal and gastric ulcers, if treated properly before severe obstruction has resulted from induration, the patient can be put in a position in which his stomach and duodenum will be a better machine than you can ever make surgically. One must, however, bear in mind that after the ulcer has healed without or with surgical aid, this machine is not nearly as good as it was to start with, and that if the patient abuses the repaired machine the way he abused it before the production of his primary ulcer, of course, it is very much more likely to be injured again than it was in the first place. Consequently, one must tyrannize over these patients after their recovery. We must take care of these patients after they are well so that they do not go back to the previous bad habits which caused the ulcers. In a certain number of cases the stomach sometimes drops down into the pelvis. The stomach tries to empty itself, but by pressure a kind of valve is formed which closes the pyloric outlet and prevents emptying. When this happens a gastro-enterostomy must be done. This condition occurs only in cases in which there is marked obstruction of the pylorus. The best man to treat a bad stomach is the man who is not only a good diagnostician, a good gastro-enterologist and a good surgeon but also a good physiologist, because if he is not all these, he will fail to produce satisfactory results. After you have substituted this poor repaired machine for an originally good one, you must tyrannize over your patient ever afterward and provide a plan of action so that when the patient abuses his stomach, he will not try to repair it by taking this or that medicine, but must give his stomach a rest by at once adopting a suitable diet so that it can recover from the effects of the abuse. These directions should be given to the patient in writing so that he will know what to do when that time comes.

DR. CHARLES H. NIELSON, St. Louis: The time has come when we must ascertain the production of gastric and duodenal ulcer. No two ulcers are alike. Statistics prove nothing. Statistics can be juggled. I am not a believer in the gastro-enterologist, so-called, doing his own surgery. The gastro-enterologist should be a man who makes the diagnosis, and the surgeon should take care of the after-treatment. But they should work hand in hand.

DR. SIDNEY K. SIMON, New Orleans: We now have fairly definite criteria to enable us to base a diagnosis on the results of the physical examination, the clinical history, the roentgen-ray examination and the other subsidiary methods of examination. The prognosis depends, first of all, on the etiology. Success in treatment depends more or less on a recognition of the individual etiologic factor and its removal. There is no longer any controversy or conflict between the surgeon and the internist in regard to the treatment of a peptic ulcer. The surgeon unfortunately has his field. I say "unfortunately," because I am firmly of the belief that whenever the surgeon is called to take charge of a peptic ulcer, that case has drifted into a complicated state, owing usually to the formation of fibrous tissue in various forms, either through the failure to diagnose the case sufficiently early, or because of the neglect of the doctor to treat the case once the diagnosis has been made. The surgical indications for peptic ulcer are, in fact, really complications of the disease, and do not affect the primary lesion, which is curable by medical measures. Many clinicians believe that a mere restriction of diet, with the administration of small doses of bismuth, constitute the treatment for ulcer of the stomach or for ulcer of the duodenum. The treatment of peptic ulcer requires just as much skill in a medical sense as it does in a surgical sense.



Fig. 12.—Obstructed and dilated duodenum in Patient A. S. Compare Figure 13.

The patient must be placed in bed under an individual diet, selected for his needs, and should be subjected to as thorough daily observation as if it were a postoperative case which would engage the serious attention of the surgeon under some trying condition. Six months or even one year is not too long a time to hold the patient under close surveillance, to insist

on a proper regulation of diet in order that a new ulcer may not develop, because the same conditions, whatever they may be, that produced the ulcer originally can operate after an ulcer has been healed thoroughly by medical measures, and produce a new ulcer. The need for the removal of psychic influence, nervous strains, worry, etc., is self-evident. The control of symptoms must not be a criterion for the cure of the disease.

DR. J. S. HORSLEY, Richmond, Va.: The gastro-enterologists should emphasize that gastro-enterostomy is not, as a rule, a satisfactory cure for gastric or duodenal ulcer. Dr. Eggleston reported only 42 per cent. of cures. Why? If the reaction of the contents of any viscus is changed from normal alkaline to acid, the physiology of that viscus is altered. So when the acid juice of the stomach is poured into an unprepared jejunum, which has been accustomed to an alkaline content, sometimes an ulcer forms, but more frequently there is a hyperemic irritation that causes symptoms. In about 4 per cent. of the cases of gastro-enterostomy a jejunal ulcer develops. Is it not probable that ten times more cases occur in which there is a hyperemia or some other change which will produce symptoms? The best results clinically from gastro-enterostomy are in the cases in which there is pyloric stenosis. I think it is because no acid gastric juice goes through the pylorus, and the alkalinity of the contents of the jejunum is preserved to its maximum, whereas if it were open the alkalinity would be reduced by the gastric juice. Consequently this high alkalinity protects the jejunum at the gastro-enterostomy opening. Dr. Ochsner says that a gastro-enterostomy does not give as good results as a normal stomach. He says, too, that after a gastro-enterostomy you must "tyrannize" over your patients because the machine is not as good as it was. If a pyloroplasty is done, however, the gastric physiology is not altered. You merely convert the stomach into an organ which can empty easily. You do not destroy the pyloric sphincter. What is the cause of the dilatation of the stomach after pyloric or duodenal ulcer? It is probably due to the obstruction at the pyloric opening either from stenosis or spasm. Is it not better surgery to remove the cause of this obstruction, the thing that initiated the dilatation, and so bring back a physiologically normal organ, than to create a crippled mechanism?

DR. MILTON M. PORTIS, Chicago: The sort of work that Dr. Ivy has reported on will help to solve the question of the cause of ulcer. I heartily endorse the work of statistics of the right sort. Careful analysis of large groups of cases brings out facts that can be gotten in no other way. Careful roentgen-ray work would mean more in the way of proper diagnosis than the use of a duodenal tube. Taking out that 5 per cent. of cases that the roentgenologist or the gastro-enterologist does not diagnose, does not prove anything at all. The 95 per cent. are diagnosed. I do not believe that any internist can keep up with the problems of today and with the medical literature and also do surgical work.

DR. JOHN J. GILBRIDE, Philadelphia: We must make a correct diagnosis, first of all. The successful treatment of gastro-intestinal disease requires special knowledge. Take a patient with so-called indigestion; if one cannot read the language of the gallbladder or of the appendix but treats the patient for indigestion, that is, stomach disease, the result is inevitable failure. You must know how to make a gastric analysis. Familiarize yourself with the stomach and its functions, and then you will know where you stand. The reason the surgeon takes command of many cases eventually is that they are surgical and due to a diseased appendix, gallstone disease or ulcer. Gastro-jejunal ulcer following operation is, I believe, due to the technic of the operation, by failure to properly appose the mucous membrane in the anastomotic opening and perhaps to the use of a nonabsorbable suture. If the man who sends a patient to the surgeon is not sufficiently familiar with these diseases to be able to carry on a high grade, scientific treatment after operation, it is for the surgeon to instruct him, and that makes it necessary that the surgeon be equipped to give such directions.

DR. J. A. STORK, New Orleans: In the last five years, I have seen three cases induced by traumatism. They emphasize the importance of traumatism as a factor in gastric ulcer.

DR. ALFRED STRAUSS, Chicago: I fully agree with the men who have outlined the indications and medical treatment for duodenal ulcer. I must, however, differ markedly about the medical treatment of ulcers of the lesser curvature of the stomach. Willensky and Thalheimer made serial sections of lesser curvature ulcers, and found many laboratory specimens which were diagnosed benign, on single microscopic section, to be malignant on serial sections. It is a well known fact that it is impossible to tell from the clinical history, from the laboratory findings, from the roentgen-ray and fluoroscopic examinations, or even from the gross appearance, whether the ulcer is benign or malignant. The only real test is by serial microscopic section. If this is true, then gastric ulcer is definitely a surgical condition. I do not believe that there is a medical man here who is willing to put himself on record as willing to treat a malignant ulcer medically. Until medical men have some fine laboratory or chemical test, by which a benign ulcer can be differentiated from a malignant ulcer, I believe it should be treated surgically.



Fig. 13.—Angulated duodenum (*D*) shown by the duodenal tube in situ. Operative findings (by Dr. L. Friedman, Harlem Hospital): periduodenal, cholecystic adhesions and chronic cholecystitis.

DR. J. M. RECTOR, Columbus, Ohio: When the patient comes to the doctor he wants to be relieved. One cause must be considered, the great American disease, constipation, or bad drainage. No animal or plant can live in an acid medium for very long and be healthy. The stomach must be considered the pump for the digestive tube. If you reverse this pressure relation and cause a back pressure from the pipes below the pump, then the pump has too much to do; there is back pressure, retention, fermentation, putrefaction, gas, all the symptoms which we ordinarily call indigestion. This always precedes erosion or ulcer, and destruction of the tissues due to the lowered resistance of mucosa. When this back pressure or reversal of pressure relations takes place, restoration must be made by restoring the drainage below the stomach. It is my experience that when this drainage is restored the stomach will not dilate, it will not retain the food too long, but it will again regain its ability to deliver the food at the proper interval, and the symptoms referable to the stomach will be relieved without much direct gastric treatment. When gastro-enterostomy is done you must be careful to protect the duodenum against acid secretions. The loss of food value by retention in the stomach and constipation will bring on all of the symptoms of indigestion. Relieve the back pressure, let the stomach have the opportunity to work and empty

itself, restore normal pressure relations in the alimentary canal, and you get away from many distressing symptoms which may go on to further complications of ulcer and cancer.

DR. FRANK SMITHIES, Chicago: How much more roentgenologically does the duodenal tube tell than can be revealed by fluoroscopic examination in this type of patient?

DR. A. C. IVY, Chicago: Drs. Nielson and Portis are correct when they call attention to the fact that I have as yet not pointed out anything tangible concerning the etiology of ulcer. They are also correct in calling your attention to the fact that I have not arrived at any definite conclusion. If you look over my previous work and recall what I have just read, you will find that I have not drawn any definite conclusion concerning the etiology of gastric ulcer. I am continuing my work on that problem. I am a physiologist, and I heartily agree with Dr. Gilbride's remarks to the extent that it has been my experience that gastro-enterologists are ignorant of recent advances in the physiology of the gastro-intestinal tract. They have a physiology of the gastro-intestinal tract all their own, and all of the symptoms that they see they explain according to their physiology. Such work as that is not going to get us very far in understanding the pathologic physiology of the gastro-intestinal tract. If I am not presuming too much, I might advise the gastro-enterologists to familiarize themselves with the recent advances in physiology of the gastro-intestinal tract. It has been advanced by clinical men as well as laboratory men.

DR. ELMER L. EGGLESTON, Battle Creek, Mich.: It is very easy for the internist to conclude that he has cured all of his cases of gastric or duodenal ulcer since there is no type of trouble which responds so readily to treatment. But unless you follow up your cases from time to time you are very apt to arrive at wrong conclusions. It is very essential in arriving at some definite idea as to what is being accomplished, that you carefully collect statistics which will allow you to determine whether the cure was permanent or whether it was only temporary relief. Dr. Ochsner is very liberal in his opinion of this matter. He is one of the few surgeons who have not "thrown a brick" at the gastro-enterologist or internist relative to the medical treatment of peptic ulcer.

DR. I. O. PALEFSKI, New York: Fluoroscopy in periduodenal adhesions may not show any pathology at all, momentary interference with the flow of barium, persistently impaired filling and deformity of the duodenum simulating duodenal ulcer. Infrequently, also, it shows dilatation of the duodenum or antiperistalsis proximal to the point of adhesions. The displacement of the duodenum by periduodenal adhesions is not usually demonstrable by fluoroscopy either in the erect or prone posture. Two points should be emphasized. First, the distorted duodenum as shown by the duodenal tube is pathognomonic evidence of periduodenal adhesions, even in the absence of any other corroborative evidence. Second, the presence of blood in duodenal contents, while it must be considered in conjunction with other findings, as this may be found also in gastric ulcer, duodenitis and, infrequently, in cholecystitis, is strongly suggestive of duodenal ulcer. In periduodenal adhesions without ulcer, there is usually no blood. Ordinarily, stereograms cannot be obtained satisfactorily of the second and third parts of the duodenum and the commencing jejunum, as these are either partly filled or overlapped by the barium filled stomach in the course of roentgen-ray examination. Indeed, it is due to this fact that visualization of the duodenum with the duodenal tube in situ is a useful diagnostic procedure. I use atropin whenever it is indicated, but in periduodenal adhesions the filling defect in the duodenum is not due to spasm. I do not wish to be understood as advocating the exclusive use of a procedure as my observation of patients always includes clinical, fluoroscopic and roentgen-ray studies. however, I do not hesitate to state that no man or group of men will correctly diagnose duodenal lesions in 90 or even 80 per cent. of cases without the aid of duodenal intubation and visualization. Of the forty-two cases of which I showed roentgenograms, all but one were. seen before by other clinicians and roentgenologists. The true conditions were not revealed until the patients were examined by the duodenal tube.

PLASTIC SURGERY

ITS INTEREST TO THE OTOLARYNGOLOGIST*

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It is sufficient for the purpose of this paper to state that the centuries elapsing from early antiquity until the outbreak of the great war had witnessed spasmodic attempts at rhinoplasty and the amassing of much uncorrelated knowledge of the subject in various parts of the world. A decade before the war, Nélaton



Fig 4.—Epithelioma of right ala; tubed pedicle flap containing temporal artery

evolved a technic embodying the essential principles of success and closely approached present procedure. At this date we find evolved the three main types of plastic flaps, the recognition of the necessity of covering raw surfaces in the repair of cavities and the use of autogenous supporting substances. These are the underlying principles of all facial and jaw repair.

Recent years have produced brilliant contributions on the transplantation of bone, cartilage, skin, fat, fascia, etc., which are too numerous and too well known for consideration in this brief paper.

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

All of this material existed at the outbreak of the war, but was unorganized and known to so few that operators passed through months of discouragement and failure before the wheat was separated from the chaff—before the procedures of value could be fully assayed and supplemented by original contributions to produce a flexible technic based on sound principles. Brilliant among these contributors were the otolaryngologists and oral surgeons. It may be fitting in this connection to note that the entire British and Canadian operating staff of the Queen's Hospital at Sidcup during my duty there were surgeons representing these specialties.

The essentials of success in plastic surgery of this region are sound surgical training, a proper temperament, imagination, courage and tenacity. The principles involved admit of widespread application and variation.

It is my purpose to review briefly and to criticize the types of procedure as applied to the nose, throat and ear, and to offer several original procedures for your approval.

THREE METHODS

Three general methods cover all types of plastic operations on soft parts:

A. *"French Method."*—This consists of sliding or stretching of the flap with little twisting or torsion of the pedicle, and is widely used alone or combined with other types for repair in all parts of the body. The essential characteristic is masking a loss of substance. It should never be used in large partial or total losses of the nose, because rapid flattening and deformity result. Its use in repair of a cavity always demands a lining of mucous membrane or skin.

B. *Interpolation.* — 1. Flaps from the immediate neighborhood, either single or double, with a pedicle which is rotated, twisted, bridged or tunneled. This is the Indian mutilation type of flap. The pure Indian flap was raised from the forehead, rotated on a pedicle and used without lining for nasal repair. This flap is the method of choice for nasal covering and the method of necessity in covering large losses of the cheeks and lips.

2. Flaps from a distance with a tubed pedicle. Tubing of the pedicle is a valuable modification by Major Gillies. This consists in suturing the raw edges of a long pedicle, thus doing away with danger of infection by including the raw surface and furnishing a certain blood supply to a flap at its distal end. Perthe's method of outlining, dissecting and resuturing the flap in its original bed is usually combined with this procedure (Fig. 1).

3. Free flaps or grafts. These may be skin, fat, fascia, bone or cartilage.

4. Flaps transferred on a "carrier," usually the arm. This is essentially the "Italian method," which was primarily proposed for rhinoplasty. It consists in fashioning a pedicle on the arm and later transferring it to the nose with the arm immobilized on the head until new blood supply is established.

In the light of present knowledge, the method has nothing to recommend it in facial repair, and many things to condemn it. The position is torture to the patient, there is danger of emboli in the superficial veins of the arm, infection readily occurs from contact with the nose, and dressings are difficult. Its supporters can only claim that it prevents scarring of the forehead. This is offset by the fact that the texture of the skin is such that its contrast with the face and scalp is very marked.

If forehead skin is not available, chest skin should be supplied by use of Gillies' tubed pedicle.

C. *Retrenchment.*—This covers operations for reduction of excess tissue and production of a more pleasing cosmetic result.

RELATIVE MERITS OF ORGANIC AND INORGANIC SUPPORTING SUBSTANCES

Organic.—A. Periosteum. This had a brief popularity, based on the theory that it possessed osteogenic properties and would produce bone of a desired shape. Its use has been abandoned.

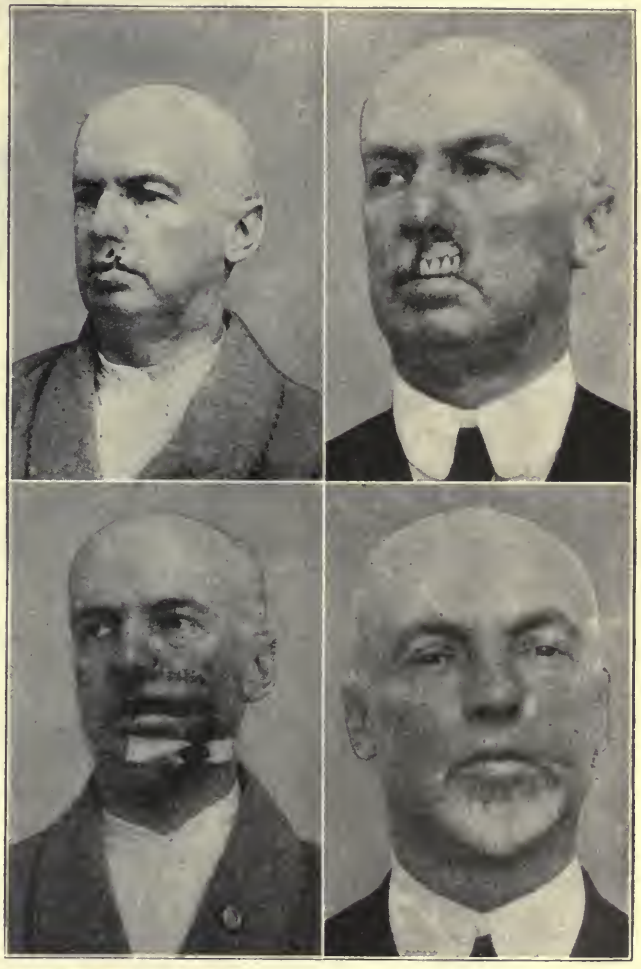


Fig. 7.—Carcinoma of lip and alar border.

B. Bone. Free plants of bone with or without periosteum into the soft tissues are slowly absorbed. Bone which is turned with a flap without separation of its periosteum but unattached to other functioning bone is partly or wholly absorbed, leaving a dense scar which furnishes some support. The difficulty in shaping or handling bone under these conditions practically excludes it as a means of support.

C. Cartilage. Cartilage has no blood vessels and lives easily by lymph absorption with or without its perichondrium. It probably grows when its perichondrium remains attached. The cartilage of choice for most requirements is the chondral cartilage from the seventh and eighth ribs. The supply is ample to meet

any need, it is easily available, and is readily modeled to meet any requirement. More than the total amount required should be secured at one time and the excess planted under the skin of the chest or abdomen, where it is readily available.

Cartilage does not unite with bone, but is held in position by fibrous adhesion. It is the ideal supporting substance.

4. Fat. Fat should be planted in excess of requirement without pressure, in a single sheet if possible, and lightly sutured to its bed. It is only of value in filling small depressions.

Inorganic Supports.—A. External prostheses have a very definite and valuable function in furnishing temporary supporting framework for the repair of soft parts which are later to be supplied with organic support.

With these principles and facts as a working basis, and restored function with pleasing cosmetic results as an inspiration, there is presented a large, new field of vitally essential and true surgery in one's daily practice.

SOME APPLICATIONS OF PLASTIC PROCEDURES

The distress, both mental and physical, occasioned by various malignancies of the nose is too frequently noted to merit discussion. The failure of local treatments of various sorts and of both the roentgen ray and radium in many of these cases is notorious. The knife is usually the last resort. This entire cycle should be reversed. These patients should have preliminary exposure to the roentgen ray or radium, early operation, and further exposure to the roentgen ray or radium.



Fig. 8.—Syphilitic saddle.

B. Internal prostheses. A century of experience with all kinds of inorganic substances planted in soft parts has served to prove that only exceptionally is a foreign body kindly borne by the tissues: gangrene, skin atrophy or expulsion of the piece has been the usual experience. Recent workers make different claims for celluloid, and there are still enthusiastic supporters of hydrocarbon preparations; but, after all is said, both are foreign bodies.

Among other innovations resulting from military practice, Major Gillies' ingenious new principle in placing the cartilage support in rhinoplasty has greatly simplified the whole problem and rendered possible the accurate treatment of the covering flap. The shaped cartilage is planted upside down, with its distal end superior, under the skin in the glabellar region instead of being placed in position under a carefully measured flap as proposed by Nélaton. It is later turned down with a liberal flap of skin as a pedicle, the skin forming part of the nasal lining. The scalp flap may then be cut to an accurate pattern and placed without regard to an included supporting substance, which must occupy the center line (Fig. 2).

CASE 1 (Fig. 3).—Perforating rodent ulcer of the root of the nose, treated over a period of nine years with escharotic pastes, curettage and the roentgen ray. Perforation through nasal bone one-quarter inch in diameter. Skin ulcer the size of a dime. Skin area widely excised, right nasal bone removed and actual cautery used on borders. Repair in three stages. Lining from ulcer edge and covering flap from forehead. Microscopic pathology, active rodent ulcer.

CASE 2 (Fig. 4).—Epithelioma of right ala. Wide excision. Actual cautery. Lining taken from cheek by use of hinged flap. Covering from forehead, using tubed pedicle containing the temporal artery; the entire flap, except the distal end used in actual repair, being cut in the hair bearing areas.

CASE 3 (Fig. 5).—Basal-cell carcinoma. Patient, aged 36. Free excision of distal half of nose, septum and anterior halves of turbinates. Actual cautery to remaining skin and mucous borders. Large doses of radium are being applied before repair is begun.

CASE 4 (Fig. 6).—Squamous cell carcinoma complicated by tertiary syphilis. Patient, aged 65. Invasion of distal two thirds of nose, septum, turbinates and center of lip. Free excision of nose, internal structures and major portion of lip. Actual cautery, radium. Repair of the lip to form an abutment for the nose, and the planting of costal cartilage in the

glabellar region, constituted the second procedure. Lining, secured by using hinged flap supporting the cartilage and similar flaps turned from each lateral border. Indian type of flap to cover. Last stage consisted in return of the pedicle to the forehead and Wolff grafting the deficiency.



Fig. 9.—Saddle following abscess of septum; rib cartilage repair.

CASE 5 (Fig. 7).—Perforating squamous cell carcinoma of lip and cheek adjacent to the left ala. Patient, aged 55. Seven years of radium treatment in the hands of a skilled dermatologist. Excision of a wedge of cheek, with the base at the left angle of the mouth, and three fourths of the lip. Lining secured from adjacent skin by use of a hinged flap, covering from hair bearing skin on chin and cheek by use of a rotated flap and the vermilion border from the remaining lip and cheek.

Another large group of cases causing grave mental distress, whether the etiology be specific or traumatic, is the saddle nose. Numerous procedures for correction of this deformity in syphilitic cases have been practiced in all parts of the world. The failure to secure a pleasing result may be attributed to a lack of recognition of the loss producing the saddle and the effort merely to raise the skin with some supporting substance. The obvious loss producing the scar with its attendant contraction follows gummatous ulceration of the mucosa, bone and cartilage. This must be the first point of attack. The scar is freely excised, either through the nostrils or through an opening under the



Fig. 10.—Traumatic saddle; lining from borders; Wolff graft covering; rib cartilage support.

lip, and the raw area skin grafted over a supporting splint, which may be fastened to the teeth or wholly confined within the nose. After the skin is thoroughly organized in its new position, cartilage support may be placed either in the ridge or columella or in both.

Recent cases, in which the scar is not well organized, and in which the loss does not wholly destroy the lining, may be immediately treated with supporting cartilage. Such cases result from simple abscesses and trauma.

CASE 6 (Fig. 8).—Syphilitic saddle following submucous resection for correction of a gummatous deformity. Loss of the entire septum and columellar cartilage. Scar removed through opening beneath the lip. Skin grafted over splint. Costal cartilage in ridge and columella.

CASE 7 (Fig. 9).—Saddle in young woman (four months pregnant) following a septal abscess during an influenzal infection. Repaired five weeks following cessation of suppuration. Costal cartilage in ridge.

the required size and its elastic fibers are allowed to contract it, the opportunity for absorption of nourishment is greatly diminished. Cut such a graft exactly to pattern, suture it accurately, maintain a light even pressure, and success will usually reward the effort. The same plan applies to skin flaps.

My new technic for the surgical treatment of the chronic maxillary antrum has been absolutely satisfactory in fourteen such cases. The purpose of the radical operation is to eradicate the disease and leave a cavity which is free from future trouble. Its lining, after weeks of irrigation or packing, is scar or scar and some mucous membrane.

My present method follows the Denker technic for eradication and is supplemented by the application of a Thiersch graft in one or two pieces to the carefully dried walls of the entire cavity. A small, soft balloon on the end of a No. 20 catheter is inserted through



Fig. 12.—Carcinoma of larynx and esophagus; reconstruction of the esophagus.

CASE 8 (Fig. 10).—Traumatic saddle following gunshot wound. Removal of scar. Lining secured from border skin by use of hinged flaps. Covering supplied by Wolff graft. Later insertion of costal cartilage in ridge.

At this time I wish to call attention to several points in the use of skin grafts and to dispute the soundness of the universal practice of cutting free, full thickness grafts larger than the size of the area to be covered.

The success of any graft depends largely on its even application in a state of normal skin tension. A gentle pressure should be evenly maintained to prevent the collection of any exudates and insure the proper nourishment of the graft. Thiersch grafts do not include elastic fibers—the skin maintains its normal tension—and such grafts grow well even in the presence of oral secretions and pus when these points are observed. These are the essentials of success in the Esser method. A full thickness graft must live by absorption of lymphatic and serous secretions until it becomes part of the local vascular system. If it is cut larger than

the nose, inflated to produce gentle, even pressure, the hose tied off just external to the nostril, and the wound in the canine fossa closed. The bag is deflated and removed on the fifth or sixth day. One week later the cavity is gently irrigated to remove desquamated skin. This irrigation is repeated at such intervals on two or three occasions. The result is a smooth skin-lined cavity. The advantages to both patient and surgeon are obvious.

The same technic has been used satisfactorily in the frontal duct in two cases.

Grafts applied on a mold, made with dental molding compound, to the middle ear after radical operation have produced certain and beautiful results. A loop of braided silk is included in the mold to facilitate its removal on the fifth or sixth day.

An entire canal and tympanum graft over a rudimentary stapes in a case of congenital absence of these structures has recently been successful. This graft was made by use of a molding compound form after the technic of Esser.

I wish to call attention to the repair of frontal deformities, resulting from injury or surgical interference, with strips of chondral cartilage (Fig. 11).

Finally, I wish to present for consideration three original plastic procedures about the larynx, trachea and esophagus.

CASE 9.—Tracheal stricture following long residence of tracheotomy tube. Stricture rapidly recurred after a previous removal of scar. The trachea was split for a distance of 2 inches, the scar carefully dissected, and a mold of the raw tracheal surface made with molding compound. A rubber tube was so included in the substance of the mold that one end appeared in the trachea and the other left the side of the mold to emerge from the neck. This mold was covered with a single Thiersch graft and inserted in the trachea. The trachea above the wound was packed with bismuth paste gauze. The mold was removed on the eighth day and the wound permitted to close. This offers a simple, prompt and efficient method of dealing with these cases.

CASE 10.—Plastic vocal cord following operation for carcinoma. This patient was operated on, Feb. 29, 1917, and the case reported[1] in 1919. The plastic cord lies in the cadaveric position, gains some slight motion from its attachment to the arytenoid cartilage, and furnishes an excellent abutment for the functioning cord. The patient has good speech and still maintains a position as manager of a large home for old people.

CASE 11.—Woman, aged 63, with carcinoma of larynx and esophagus. For several days prior to operation the patient swallowed liquids with great difficulty, and suffered constant pain from the laryngeal tumor.

Stage 1 consisted in a classical laryngectomy and removal of 3 inches of the esophagus. The hypopharynx was closed and the neck wound kept open with packing.

Stage 2 consisted in making a tubed pedicle flap from the neck and chest with its base under the angle of the jaw and its distal end sutured to the edge of the wound. The raw surface of the flap was approximated to the depth of the wound by packing.

In Stage 3, after the blood supply was established through the distal portion of the flap, the pedicle was cut and returned to the neck. The edges of the flap in the neck wound were sutured to produce a skin lined tube, the esophageal stump and hypopharynx sutured to its ends, and the neck skin approximated (Fig. 12).

Finely divided food was readily taken by mouth. It passed through the new portion largely by gravity and without difficulty until the sixth week, when a contraction ring began to close the union with the hypopharynx. No difficulty was experienced at the union with the esophagus. The patient gained 25 pounds in weight and was in excellent spirits.

During the process of repairing this stricture five months after operation, the patient contracted influenza and died in two days.

1. Smith, F. N.: Lancet **1**: 108 (Jan. 18) 1919.

Pellagra and the Family Income.—The U. S. Public Health Service, from the results of its study in cotton mill villages of South Carolina, concludes that the pellagra incidence varies inversely with the family income. As the income falls, the incidence of the disease rises and there is an increasing tendency for members of the same family to be affected. Differences among households of the same income class are attributable to the proportion of income available for the purchase of food, to the intelligence and ability of the housewife in utilizing the income, and to the availability of food supplies from the family cow, poultry and garden. Differences among villages where households are economically similar are attributable to the character of the markets, the produce of adjacent farms, and marketing conditions. The most potent factors influencing pellagra are low family incomes and unfavorable conditions regarding the availability of food supplies, particularly of milk and fresh meat.

A STUDY OF MERCURY INJECTIONS BY MEANS OF THE ROENTGEN RAY*

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The intramuscular route of mercury administration has been popular for many years in the treatment of syphilis. If properly and carefully used, the method is cleanly and efficient, and does not lead to detection by outsiders. Nevertheless, the intramuscular method has its faults, the most important being uncertain, uneven and delayed absorption of the mercury, especially when insoluble preparations are being used. Consequently, insoluble injections have been responsible for most of the fatalities reported from the use of mercury in the treatment of syphilis. Thus, Wolffenstein,[1] in 1913, reviews all the cases of therapeutic mercury fatalities that could be found in the literature since 1883, some 108 in number. Of these deaths only one was the result of oral medication due in that case to five pills of 0.06 gm. each of mercury. There was one fatality from inhalation and there were nineteen from inunctions. Of the fatalities, the author reported that seven were from soluble injections and seventy-eight from insoluble, thirty-one of the latter being due to the use of gray oil, oleum cinereum.

Notwithstanding the importance of the subject, there are few data as to the course of the absorption of insoluble mercury injections; and the few available data are far from satisfactory. It therefore seemed desirable to make a thorough clinical study of the absorption of these injections. This succeeded by the use of roentgen-ray plates, which gave perfect pictures of the unabsorbed insoluble mercury preparations in the tissues. By taking these at proper intervals, the absorption can be ascertained as closely, as often and as long as desired.

We were not aware that any attempt along this line had been made in the past. Subsequently, however, we found that Fournier[2] reports that Oudin and Barthelemy made roentgenograms of gray oil injections. They found it to be disseminated in the muscles in long spindles made up of globules, the spindles being from 1 to 4 cm. in length. In forty-eight hours these spindles were broken and shorter, and on the fourth day scarcely any traces of the metal were left. We may say at once that this is not confirmed by our results. As we have not seen the original data, we shall not undertake to explain the discrepancy.

Our investigation was made with the usual clinical doses, using a sufficient number of patients to avoid experimental accidents and difficulties. Some patients would pass out of our control before their series was

* This work was done in part under a grant from the Council on Pharmacy and Chemistry of the American Medical Association.
* Read before the Section on Dermatology and Syphilology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.
* From the Departments of Dermatology and Syphilology of the Western Reserve University School of Medicine, and of the Lakeside and Cleveland City Hospitals; and from the Department of Pharmacology, Western Reserve University School of Medicine.

1. Wolffenstein, W.: Berl. klin. Wchnschr. **50**: 1904 (Oct. 13) 1913.
2. Fournier, A.: Treatment of Syphilis, English translation, New York, Rebman Company, 1906, p. 143.

completed; some others did not give clear negatives because they were too fleshy, etc. There was also the difficulty of obtaining successive exposures from the same angle. However, it will be seen that the number of cases that remain is ample to justify conclusions, especially as the results are so nearly uniform.

The investigation included both insoluble and soluble injections, mercuric chlorid being generally in doses of about one-eighth grain and red mercuric iodid in doses of from one-sixth to one-third grain; mixed with albumin or serum a shadow is thrown when the mercury is precipitated, as with the mercuric chlorid; but not in the absence of precipitation, as with the red mercuric iodid. In other words, only insoluble mercury compounds throw a shadow. With intramuscular injection, neither the mercuric chlorid nor the red mercuric iodid throw a perceptible shadow undoubtedly because even the mercuric chlorid precipitate is rapidly redissolved by the tissues. In other words, roentgen-ray method is not suited to the study of the absorption of soluble injections.



Fig. 1.—Mercuric salicylate, 2 grains: 1, fresh in lumbar muscles; 2, two days later; 3, seven days later; all absorbed.



Fig. 2.—Calomel, 2 grains: 1, fresh in buttock; 2, six days old; 3, eighteen days old; no shadow.

the insoluble injections of calomel and mercuric salicylate in doses of from 1 to 2 grains; and 40 per cent. gray oil in doses of from 0.125 to 0.25 c.c.

Muscular men were found the most suitable subjects; only a few women were used, as the adipose tissue in the buttocks gave imperfect pictures.

RESULTS WITH SOLUBLE MERCURY SALTS

Solutions of red mercuric iodid or mercuric chlorid do not in themselves throw a marked shadow. When

In six different patients we obtained negative results five times; and in one man a faint shadow showed in the arm following an injection of red mercuric iodid. It went away, however, in twenty-four hours. In still nother patient who had received red mercuric iodid injections into the buttocks over a long period of time no shadow was revealed by the roentgen ray.

MERCURY OINTMENT INUNCTIONS

We made several roentgenograms of mercury inunctions on the skin, but they show nothing.

INSOLUBLE INJECTIONS

Insoluble injections gave very definite and quite unmistakable shadows. The mercuric salicylate injections show on roentgenograms as a long streaked blotch. With the calomel this blotch is even sharper. With the gray oil one is able to make out the separate metallic globules of varying sizes. After a time there is a tendency of the globules to spread out and even to obey the laws of gravity and settle down in the tissues somewhat.

MERCURIC SALICYLATE

In our first experiments, mercuric salicylate was used as a 10 per cent. suspension in liquid petrolatum. With most of them, however, we employed a 10 per cent. suspension in lanolin emulsion, as suggested by Nitardy,[3] which keeps the powder in a much more permanent suspension, and at the same time avoids the danger of paraffin tumors. To this was added camphor and creosote, which materially diminish the pain and soreness. The combination has now been used on a large number of patients without any ill effects, and appears to be a material improvement over the usual mixture.

With twelve different patients receiving a dose of mercuric salicylate of from 1 grain to 1½ grains in the buttocks, we found that the roentgen-ray shadow had

FORMULA FOR PERMANENT AND ANESTHETIC MERCURIC SALICYLATE SUSPENSION

	Gm. or C.c.
Anhydrous lanolin	40
Distilled water	10
Sweet almond oil	150
Calomel or mercuric salicylate	29
Phenol or creosote	20
Camphor	40

Dose: 1 c.c. equals 0.09 gm. (1½ grains) of mercuric salicylate or calomel.

3. Nitardy: J. A. Pharm. A. 8: 961, 1909.

entirely disappeared in a space of 4, 4, 5, 4, 4, 10, 7, 3, 4 and 4 days. In two of the twelve patients the drug was almost gone in three days and one day, respectively, when the patient disappeared, making a mean of 4 days and the extremes of 4 and 10 days.

With twenty-two patients, the injections were made into the deep *lumbar muscles*. From these, the mercuric salicylate had disappeared in 11, 9, 10, 2, 7, 8, 17, 8, 4, 14, 4, 8, 4, 11, 7, 7, 11, 11, 4 and 13 days, and in two of the twenty-two it was practically gone in 12 days and 24 days, making a mean of 8½ days and the extremes of 2 to more than 24 days. The combined mean for the mercury salicylate is 7 days.

The unmistakable faster absorption from the gluteal injections is worthy of note. It is perhaps due to the natural massage of pressure and position.

An average of 3½ satisfactory plates were made per patient.

CALOMEL

Twenty-five patients received injections of calomel, all into the buttocks. An average of 5.4 plates was made per patient. The shadow had disappeared in 18, 4, 8, 7, 9, 15, 19, 7, 6, 14, 14, 12, 19, 12, 17, 18, 15, 26, 19 and 11 days; and in three of the twenty-five patients at the end of 34, 37 and 39 days over half the calomel was still not absorbed, and in one patient it was not quite absorbed in 19 days. This gives the mean as 15 days and the extremes as 4 to over 39 days.

GRAY OIL (MERCURIAL OIL)

Twenty-seven patients received injections, all into the buttocks, with doses of from ⅛ to ⅙ c.c. of the 40 per cent. suspension. The observations were continued as long as the patients could be kept under observation, namely, for the following number of days: 54, 75, 44, 25, 28, 32, 37, 60, 47, 33, 25, 25, 71, 75, 42, 66, 16, 20, 74, 20, 38, 45, 60, 21, 61 and 125 days, a mean of 43 days and extremes of 16 and 125 days. Fourteen plates were used on one patient and 169 plates were used for the twenty-seven patients, an average of 6¼ plates per patient. In no instance with the gray oil did we find absorption completed at the end of this time, and in practically every case at least one half of the metallic globules were still present in the muscular tissue.[4]

These facts are in striking contrast with the deductions that have been made from chemical estimations on animals, by Schamberg, Kolmer and Raiziss.[5] However, they based their conclusions on a single experiment with each drug, and on doses that were about a hundred times as great as those used clinically; doses so large that even with the salicylate, 46 per cent. was unabsorbed after forty-five days.

4. Professor Todd, head of the Anatomy Department of Western Reserve University School of Medicine, informs us that they often find globules of metallic mercury in the buttocks of subjects in the dissecting room. This quite agrees with our findings.

5. Schamberg, Kolmer and Raiziss: J. Cutan. Dis. **33**: 819-838, 1915.

PRACTICAL APPLICATIONS

The results of these investigations make the intramuscular mercury injections appear in a rather different light.

The fact that the major part of the mercury of gray oil remains unabsorbed for four months, and presumably for indefinite periods, means that it is both ineffective and dangerous—ineffective, because the amount absorbed is ordinarily very small; dangerous, because the absorption may become temporarily improved, for instance, by accidental massage in sitting, etc.

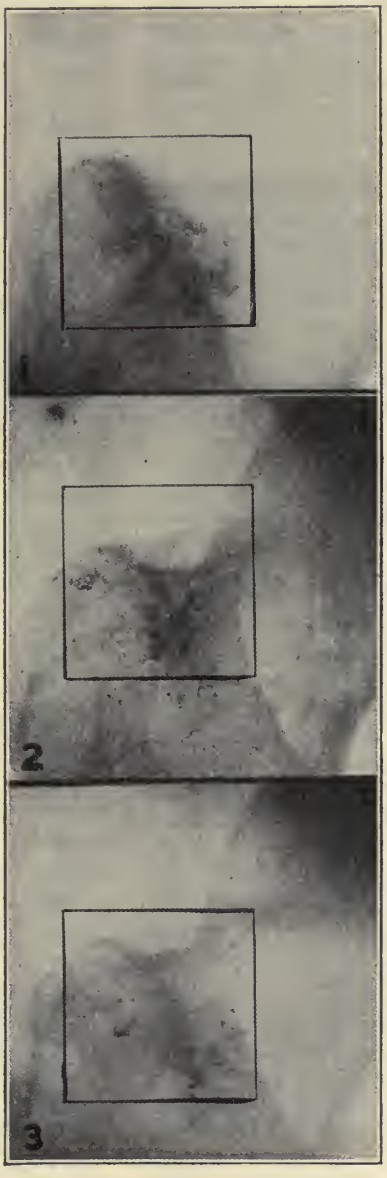


Fig. 3.—Calomel, 2 grains: 1, fresh in buttock; 2, ten days old; 3, nineteen days old; still unabsorbed.



Fig. 4.—Gray oil (40 per cent. mercury), 0.25 c.c.: 1, fresh in buttock; 2, four days old and globules beginning to spread; 3, 125 days old; still unabsorbed.

Repeated injections would increase the surface and thus the rate of absorption, and therefore both the efficiency and the dangers. The most important point is that with the present method of gray oil administration, the patient is loaded with a large store of mercury which does no good and may easily do harm. This is undoubtedly bad practice. If the use of gray oil is to be continued at all it should be given in very much smaller doses, so as to avoid the accumulation. It is

doubtful whether a sufficiently even absorption or an adequate dosage could be secured by this means. In the meantime, however, we feel that the use of gray oil injections should be discontinued.

With calomel injections, the conditions are somewhat more favorable. However, the absorption of the ordinary doses requires on the average two weeks and sometimes five weeks, so that cumulative effects must occur when the injections are repeated with shorter intervals. This agrees with the clinical experience that calomel injections are one of the most efficient methods of mercury administration, but that there is also much danger of cumulative poisoning. Moreover, calomel is such a painful drug when used in injections that it is hardly necessary to bring it into the sphere of this paper, so far as recommending it for general use is concerned. It may perhaps have a restricted use in exceptional cases, but must be watched with the greatest care.

Mercuric salicylate, on the other hand, has stood the test very well. The absorption of the usual dose, from 1 to 2 grains, is completed on the average in four days when injected into the buttocks, and in nine days when injected into the lumbar muscles. It is therefore effective. The injections may be safely repeated with these intervals. However, the absorption is not uniform in all cases, so that even with the salicylate, the patient must be watched carefully for any toxic manifestations.

In treating a case of syphilis, we must remember that mercury is a very powerful drug and a dangerous poison, especially for the kidneys. Any patient who is receiving this drug should have the teeth and gums examined frequently by the physician, at least once a week. The physician should inquire as to symptoms of diarrhea and of griping pains in the bowels, and the urine should be examined weekly. On the appearance of the least trace of albumin in the urine the use of the insoluble mercury preparation should be stopped at once. When these precautions are taken we feel that mercuric salicylate injections are quite safe. We would recommend that they be employed according to the formula that we have mentioned.

CONCLUSIONS

1. The absorption of "insoluble" mercury preparations from intramuscular injections can be followed admirably by roentgen-ray shadows. The method is not applicable to soluble preparations.

2. An extensive study of clinical cases gave the following as the time when absorption is completed:

Mercuric salicylate: By gluteal muscles, mean, 4 days; extremes, 4 to 10 days. By lumbar muscles, mean 8½ days; extremes, 2 to beyond 24 days.

Calomel: Mean, 15 days; extremes, 4 to 39 days.

Gray oil: Unabsorbed during entire period of observation, a mean of 43 days; extremes of 16 to 125 days.

3. These findings indicate that gray oil injections are both inefficient and dangerous, and their use should be abandoned.

Calomel injections are also dangerous.

Mercuric salicylate injections, especially into the gluteal muscles, give a satisfactory absorption and present relatively little danger.

We have recently seen a case of poisoning from gray oil injections in which none of the drug had been received for four months. Roentgen-ray examination revealed large masses of metallic mercury globules.

INDICATIONS FOR SPINAL DRAINAGE IN CERTAIN MENTAL DISEASES

PRELIMINARY REPORT OF MANOMETRIC READINGS, WITH RESULTS OF TREATMENT IN TWENTY-FIVE CASES

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With a view to determining the variations in intracranial pressure, its relation to general blood pressure, and the results of spinal drainage in various types of mental diseases, under the direction of Dr. J. Allen Jackson, superintendent of the State Hospital for the Insane, Danville, Pa., I have made observations on twenty-five patients, the series, as shown in the accompanying table, comprising cases of epilepsy, paresis, cerebral arteriosclerosis, manic-depressive insanity, dementia praecox and melancholia of involution.

ARTERIAL AND INTRACRANIAL PRESSURE IN TWENTY-FIVE PATIENTS

Case No.	Disease	General Condition	Special Condition	Blood Pressure, Mm.	Intra-Cranial Pressure, Mm.
1.	Epilepsy	Demented	Status	150/120	14
2.	Epilepsy	Slight deterioration	Mania	154/126	16
3.	Epilepsy	Demented	Status	144/106	12
4.	Epilepsy	Slight deterioration	Stupor	122/ 84	18
5.	Epilepsy	No deterioration	Status	184/152	26
6.	Epilepsy	Slight deterioration	Status	128/ 96	12
7.	Epilepsy	Demented	Convulsion	170/140	28
8.	Paresis	Third stage	Apoplectiform convulsion	164/132	22
9.	Paresis	Third stage	Cachexia	120/ 90	8
10.	Paresis	Second stage	Euphoria	124/ 96	7
11.	Paresis	Second stage	Depressed	122/ 95	7
12.	Paresis	Third stage	Cachexia	118/ 76	6
13.	Paresis	Third stage	Apoplectiform convulsion	150/124	18
14.	Cerebral arteriosclerosis	Right hemiplegia	Apoplectiform convulsion	140/116	20
15.	Cerebral syphilis	Terminal stage	Stupor	144/120	13
16.	Cerebral arteriosclerosis	Right hemiplegia	Stroke	180/152	26
17.	Cerebral arteriosclerosis	Left hemiplegia	Stroke	162/130	22
18.	Cerebral arteriosclerosis	Aphasia	Confused	180/144	18
19.	Cerebral arteriosclerosis	Right hemiplegia	Stroke	150/120	22
20.	Manic-depressive insanity	Delirium	Confused	120/ 90	28
21.	Manic-depressive insanity	Stupor	Confused	116/ 80	22
22.	Manic-depressive insanity	Manic	Unclouded	122/ 84	7
23.	Manic-depressive insanity	Depressed	Unclouded	120/ 90	6
24.	Melancholia of involution	Depressed	Unclouded	118/ 80	6
25.	Dementia praecox	Excited	Unclouded	122/ 80	8

Analysis of the table shows that:

1. In epilepsy, during periods of status epilepticus, furor and stupor, general arterial and intracranial pressure are relatively increased.

2. In paresis, there is no increase in the pressure of cerebrospinal fluid save during and shortly after apoplectiform convulsions, at which time there is increase both in intracranial and in general blood pressure.

3. In cerebral arteriosclerosis, intracranial pressure is raised in proportion to that of general arterial pressure, which increase is decidedly marked in cerebral hemorrhage and thrombosis.

4. In manic-depressive insanity, dementia praecox and melancholia of involution, unaccompanied by

marked clouding of consciousness, delirium or stupor, and in which there is no increase in general arterial pressure, the intracranial pressure remains normal, while in those cases in which delirium or stupor are marked, intracranial pressure is greatly increased, and this increase is out of proportion to the general arterial pressure.

It would seem rational therapeusis to reduce, if possible, increased intracranial pressure with a view to the reestablishment of the normal equilibrium between the cerebrospinal fluid and cerebral circulation. Accordingly, complete drainage of the spinal canal was carried out in each of the cases in which increased pressure was shown to exist, and the results have proved very gratifying.

Cases of status epilepticus responded promptly to this method of treatment. Following the withdrawal of the fluid, the convulsions at once became less severe and the interval longer, with complete cessation established in from twenty to forty minutes. Epileptic furor or mania showed marked benefit.

Case 2 is especially interesting:

A man, aged 20, had suffered from epilepsy since infancy. In addition to frequent seizures, grand mal in type, he had had periods of postepileptic confusion at intervals of from four to six weeks during the last year, with decided manic reactions. During these periods, which would last for from ten days to two weeks, he gave evidence of delusions of persecution based on auditory and visual hallucinations, was given to self mutilation, and showed homicidal tendencies. Drugs and hydrotherapy were virtually without effect, and the patient was continually in restraint during these periods of furor. At the height of one of these periods (three days after the onset) the spinal canal was completely drained at 4 o'clock in the afternoon. Two hours later, the patient was resting quietly, restraint was removed, and he slept throughout the night. On the following morning, while consciousness was somewhat clouded, he was cooperative and so remained until the following morning, when he again became excited, markedly confused and hyperactive. The cerebrospinal fluid was again removed and the patient rapidly regained his usual condition, and in four days after the first drainage was up and about the ward. On two similar occasions the operation has since been resorted to with uniformly good results.

Complete drainage immediately following apoplectiform convulsions in cases of paresis was followed by a clearing up of the existing paralysis and a return to the usual mental condition within twenty-four hours. It would therefore seem that the period of unconsciousness and paralysis in these cases may have been definitely shortened, although some cases may clear up within a like period without interference of any kind.

Very encouraging have been the results of complete drainage in cases of cerebral arteriosclerosis with thrombosis and hemorrhage, when the operation has been performed within a few hours after the stroke. In all cases the patient is rendered more comfortable, general arterial pressure is lowered, and in some instances life has been prolonged for an indefinite period.

Case 16 represents a patient with right hemiplegia of several years' duration, who suffered a sudden paralysis of the muscles of speech and deglutition. Twelve hours later he was comatose, cyanotic, temperature 105, pulse 160, respiration Cheyne-Stokes in type. Complete drainage was followed in thirty minutes by return to consciousness, temperature 104.1, pulse 140, respiration 40. Twelve hours later the temperature was normal, the pulse 100, respiration 22, systolic blood pressure 140, diastolic 100. The patient was fully conscious and has so remained. The paralysis persists, but life has been prolonged, distressing symptoms relieved, and much added to the general comfort of the patient.

Patients with manic-depressive insanity, in whom marked clouding of consciousness was present, together with psychomotor excitement and increased intracranial pressure, showed a response to withdrawal of the fluid by a lessened confusion and decreased excitement and, when this treatment was combined with hydrotherapy, the acute period was greatly shortened.

High general arterial pressure was lowered in all cases following complete drainage of the spinal canal.

The method pursued in the study of these cases is one that can be followed without difficulty and which, with the observance of ordinary precautions as to asepsis, is unattended with danger. The spinal canal is regarded by many as sacred ground; and, while it should not be invaded as a mere matter of routine, when withdrawal of fluid is indicated for diagnostic procedure or when the question of increased intracranial pressure is involved, no hesitancy should be experienced in entering the canal. In more than 1,000 cases in which I have performed lumbar puncture no death has occurred. Furthermore, it is a mistaken idea that only a few cubic centimeters of fluid may be removed with safety; on the contrary, results of spinal drainage are most satisfactory when the canal is completely emptied.

In determining intracranial pressure, the manometer devised by Dr. J. H. Landon was used, while general arterial pressure was recorded by the Tycos sphygmomanometer. For the purpose of accurate manometric observations of cerebrospinal fluid pressure, the patient should be in a lying position with the cerebrospinal axis as nearly as possible in a position horizontal with the table or bed, placed on the side with the spine well arched by flexing the neck and thighs. The point of introduction of the needle may be easily located by placing the little finger on the crest of the ilium and allowing the hand, with fingers separated, to fall naturally on the back of the patient in a straight line between the crest and the spinal column. The thumb will almost invariably cover a point between the transverse processes of the fourth and fifth lumbar vertebrae, at which point the spinal canal may be entered without danger to the spinal cord. Local anesthesia is generally unnecessary, as the needle, if quickly passed through the skin and subcutaneous tissues, will cause virtually no discomfort, and if passed upward and toward the median line, will enter the canal without difficulty, its passage through the dura being easily perceived by a sensation conveyed to the hand similar to that felt in pricking an inflated bladder with a pin. With the appearance of the first drop of fluid, connection should be made with the manometer and the intracranial pressure determined. It is highly important in reading the pressure that the patient be kept perfectly quiet; movements of the body, raising the head, etc., will alter the registration. Hence in epilepsy, when the patient is resistive, the operator must avail himself of a momentary period of relaxation to interpret his findings. If the intracranial pressure is normal, the mercury will record a pressure of from 6 to 8 mm. which, as shown above, may be increased markedly in pathologic conditions. If the pressure is above 10 mm., the indication is drainage and drainage until the last drop has been withdrawn. Lesions of the poste-

rior fossa should, of course, be handled with care; and, while complete drainage may be contraindicated in these conditions, determination of the intracranial pressure may be made with impunity, as manometric readings may be made with the loss of less than 1 c.c. of fluid.

CONCLUSIONS

1. There exists a direct relation between intracranial pressure and general arterial pressure.
2. Increased general arterial pressure may be markedly lowered by complete spinal drainage.
3. Increased intracranial pressure exists in many diseases of the brain and nervous system, and the intracranial pressure should be determined in all cases of delirium, stupor, or where general arterial pressure is high.
4. Status epilepticus will yield to complete spinal drainage.
5. Withdrawal of cerebrospinal fluid should not be limited to diagnosis and intraspinal medication, but should be employed in all cases, save perhaps those presenting lesion of the posterior fossa, in which intracranial pressure is increased; and in these cases, drainage should be complete.

MILKY ASCITES IN HEPATIC SYPHILIS

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This record of a case observed at the beginning and end of a ten-year period, in 1908, by Dr. A. A. Goldsmith—to whom I am indebted for that part of the record—and again in 1918 by myself during the terminal illness, is presented as an illustration of the clinical difficulties of an earlier period when the Wassermann reaction was not yet a routine measure nor had gained for itself the relative reliability it now possesses. It is furthermore an instance of a rare complication of hepatic syphilis—namely, a pseudochylous peritoneal effusion.

REPORT OF CASE

The Illness of 1908.—History: A chauffeur, aged 21, complained of bilateral swelling of the neck, for which he sought relief. Otherwise, he felt fairly well. Two years previously, the left cervical nodes became enlarged and were incised. A little later, the nodes on the right side of the neck also increased in size. About 1905 he had been under treatment for some kind of eye affection that had left him with adequate vision for the occupation he was engaged in. He had had measles, mumps and varicella in childhood; "swollen knees at 14"; scarlet fever at 16. Venereal infection of any kind was denied. His father had died of an unknown cause; at one time he had suffered from some variety of joint affection. His mother was living and well. He had two sisters and one brother, who were living and well, and, his mother stated, the patient was the only one of her four children who had never been quite robust. Otherwise there was nothing of note. There was no tuberculosis or malignant disease in the collateral family branches.

Examination: On first coming under observation, June 30, 1908, there were enlarged lymph nodes, varying from the size of a pea to that of a hickory nut, on the right side of the neck, one collection being in the submental, another in the posterior cervical triangle, and a third collection above the clavicle on the left side. There was a scar, 3 inches long, in the upper portion of the left posterior cervical triangle. Moderate opacity of both corneas was also noted, but otherwise physical examination was negative. The white count was 8,000, temperature 99 and weight 120.

Subsequent History: The patient was placed on systematic tuberculin treatment, which was continued intermittently for nearly two years. During this period there was abnormal temperature, intermittently, never exceeding 100 F.; yet he gained 6 or 7 pounds. Early in 1910, while still under treatment, the lymph nodes in the right axilla became enlarged and in the aggregate attained the size of a small orange. This mass was neither painful nor tender. The cervical lymphatic apparatus simultaneously increased in size. About this period the patient again had trouble with his eyes, for which he was treated, though unfortunately—and hereon hinges, at least in part, one of the moot points of this case—no record of the oculist's opinion could be obtained, when years afterward this again became of acute interest.

In April, 1910, he passed from under observation and was fairly well until 1913, when he began to have backache. He had in the meanwhile fallen into other hands, his backache persisted, until, in 1915, operative relief was promised him. This resulted in an Albee operation on two different parts of the vertebral column.

Immediate Past History of 1918: He had become slightly jaundiced almost immediately after the operation on his back, and suffered from very mild dyspeptic disturbances, with a little swelling of the abdomen from time to time. About January, 1918, he became markedly icteric and remained so. The icterus was not intermittent and, if anything, his family stated, became deeper as time went on. When about the beginning of February, 1918, he came under my observation, he was intensely icteric and complained of abdominal swelling and the discomforts incident to both of these conditions.

The Illness of 1918.—Examination: The patient was a sparely built man, aged 30, who did not appear older. He had suffered much in the previous week from dyspnea and a troublesome itching, of which he bore the scratch marks. There was slight opacity of both corneas, which, however, did not materially interfere with such vision as he required. Both cervical and inguinal lymph nodes were distinctly enlarged on both sides; otherwise the findings about the neck were as previously recorded. No palpable enlargement of the axillary lymphatic apparatus could be noted. There were the two semilunar scars on the back as well as the longitudinal scars over the tibiae, bearing witness to his operation of three years before. The abdomen was distended and the liver was palpable a hand's breadth below the costal arch, both surface and edge feeling smooth. At its normal site, the full, tense and sensitive gallbladder projected from below the liver border, and so raised the abdominal wall below the latter that its identity was unmistakable. The spleen was not palpable, nor was there any dulness in the flanks, and the presence of free fluid, although carefully sought for, could not at this time be established. There were no suspicious scars anywhere, except as previously noted. Venereal infection was again vigorously denied.

Further Course: The patient was put to bed and placed on practically a milk and cream diet and given some salines. He was given tuberculin subcutaneously up to 0.5 mg., with a negative result. The blood examination at this time revealed 2,686,000 red corpuscles, 19,600 white corpuscles, the leukocyte formula being: neutrophils, 68 per cent.; lymphocytes, 29 per cent; large mononuclears and transitionals, 3 per cent. At the same time blood was obtained for a Wassermann test, and without waiting for a report on this, he was given inunctions of mercury and 6 gm. of potassium iodid daily. Urine examination revealed a specific gravity of 1.010, the presence of albumin and bile, and the absence of sugar. There were no casts at this time. Presently, the Wassermann reaction having been reported positive, syphilitic treatment was somewhat pushed, with the apparent result that the abdominal swelling increased and the presence of free fluid could now be established. The abdominal swelling increased to such an extent that the patient became very uncomfortable, and he was accordingly tapped the first time, February 24, and 84 ounces of a milky, viscid, semigelatinous fluid were withdrawn. The specific gravity of this fluid was about 1.005. It contained

approximately 4 per cent. of albumin, gave a definite bile reaction, and the few cells that could be found in the centrifugate were leukocytes. Moreover, no bacteria could be found in a smear.

This was followed by considerable relief and he felt very comfortable for about a week, when the fluid began to reaccumulate, and continued to such an extent that tapping was again resorted to, March 5, and 72 ounces of an apparently purulent and bile-stained fluid were withdrawn. However, up to the time of the second paracentesis, there had never been any elevation of temperature above 98.6; on the contrary, even during the period of the diagnostic tuberculin injections the temperature was frequently subnormal. It was believed at first that the peritoneal cavity had been infected, but examination of the fluid disclosed that it contained relatively few leukocytes, and its specific gravity was below 1.010. Furthermore, on standing, there was no separation of the fluid into layers, and altogether it was difficult to reconcile the continuous absence of elevated temperature and other peritoneal symptoms with the theory of an accidentally introduced infection.

In order to determine the possible source of this unusual ascitic fluid, the chemical examination of the first puncture fluid was undertaken through the courtesy of Professor Kendall, with particular reference to the sugar content, which was 60 mg. per hundred c.c., and to the relative lecithin content with respect to the total nitrogen present. There were 500 mg. of lecithin in 300 c.c., and 392 mg. of total nitrogen per hundred c.c.

On the day following the second tapping, for the first time a temperature of 99.4 was recorded, and the patient continued from this time on to show some elevation of temperature. At the same time the second puncture wound became reddened. After the second tapping a troublesome cough developed, for which no adequate cause could be found. The pulse rate rose abruptly, with rapid refilling of the abdomen, which was tapped a third time, March 9, when 127 ounces of a turbid, yellow, this time surely purulent fluid were removed, which, however, resembled the fluid removed neither the first time nor the second.

Rapid reaccumulation of the fluid having again taken place, with undoubted signs of a peritoneal infection, exploratory laparotomy was made, March 13, by Dr. Emil Ries, who thus recorded his findings:

"The abdomen was found filled with a turbid, yellow fluid in which many fibrinous flakes were seen floating. The serosa visceralis was red everywhere. The gallbladder contained no stones; neither did the ducts. The lower edge of the liver was rounded, the liver surface studded with small, whitish nodules, and the edge showed notches, two to the left and at least one to the right of the gallbladder. There were extensive fresh adhesions over the convexity of the liver. No tumor was found in pancreas or bile ducts."

The abdomen was closed and drained.

Postoperative History: The temperature dropped to normal and subnormal. The pulse, however, remained rapid. The general condition was excellent, and the resumption of syphilitic medication was postponed pending an effort to improve the nutrition. However, March 24, the temperature rose suddenly to 104 and the chest became filled with diffuse rhonchi. March 26, the patient died. There were certain blood-findings for which no adequate explanation could at that time be found. March 22, the total white count was 23 800, with 16 per cent. of eosinophils. Several differential white counts were made during the course of the illness, but eosinophilia was observed only once.

Postmortem Examination (F. R. Zeit): Both pleural cavities contained firm adhesions, the right more than the left. There was an old scar at the apex of the right upper lobe. The left lung weighed 490 gm. and showed a terminal septic edema. The right lung weighed 340 gm. and, in addition to the change noted before, revealed a beginning pneumonia of the lower lobe. The cardiac valves were competent, but the myocardium showed the characteristic changes of brown atrophy. The arch of the aorta contained a few sclerotic patches.

The abdominal cavity contained a large quantity of turbid, bile-stained fluid in which fibrin flakes were floating. The intestine was distended, and the peritoneum was covered with much fibrinous exudate. The spleen was markedly enlarged, its consistency decreased, its capsule wrinkled and thickened, its pulp prominent and a dirty, grayish red. Trabeculae were invisible. A diagnosis of acute septic splenic tumor, chronic splenitis and perisplenitis was made.

The liver was adherent to the diaphragm, covered by fibrinous exudate, and much increased in size and consistency. Its capsule was thickened and similar in character to that of the spleen. The body of the organ contained numerous whitish nodules, from the size of a pea to that of a marble. There was diffuse increase in interstitial tissue throughout, with beginning lobulation due to contraction. The gallbladder was adherent to the colon, of normal size and texture, and the biliary tract contained no stones. A diagnosis of chronic perihepatitis and syphilitic cirrhosis was made. The right kidney was small and atrophic, and adherent to the liver. The left kidney was large and presented the changes of a chronic parenchymatous nephritis. Gram-positive diplococci were recovered from the peritoneal exudate.

RETROSPECT

This case has been reported in some detail for several reasons:

1. While the very rapid development of gummatous syphilis lesions has been frequently referred to, the converse of this—very slow development, extending over a period of at least five years, without treatment of any kind—is also apparently a possibility. Despite the necropsy findings of healed tuberculosis, the coexistence of chronic adenopathy and a recurrent unlabeled corneal lesion raises at least a strong presumption of syphilis. Moreover, syphilis and tuberculosis do not diagnostically exclude each other.

2. In view of the clinical history, this patient in all human probability had syphilis in 1913, possibly even before that. His liver at that time had been actively attacked by both a diffuse interstitial infiltrating process and by inflammatory perihepatic changes. Either was sufficient to account for the persistent backache on account of which he was subjected to a needless Albee operation, which chanced to be the beginning of the end. Pain in the back, due to intraperitoneal conditions, is not a new or an infrequent observation. R. Schmidt [1] accounts for it on the basis of a relatively sudden increase of tension within Glisson's capsule, but maintains that many intraperitoneal lesions, aside from the common ones of the right upper quadrant, may likewise produce dorsal pain. An interesting point in this connection is the absence of pain, occasionally noted in diffuse carcinomatosis of the liver, explained by a uniformly diffuse and gradual increase in tension which gives the visceral peritoneum adequate time to adapt itself.

3. The definite, clear-cut, unmistakable enlargement of the gallbladder, noted at the time of the first examination in this man's terminal illness, and its subsequent disappearance are, in the light of the postmortem findings, difficult of explanation. However, would it appear irrational or too theoretical to ascribe so prompt a recession of a gallbladder hydrops, which left little in its wake to account for it, to the influence of iodids on fresh deposits of gummatous material about the cystic duct? The occurrence of eosinophilia in connection with a milky ascites had been previously noted by

1. Schmidt, Rudolph: Pain: Its Causation and Diagnostic Significance in Internal Diseases, Ed. 2, Philadelphia, J. B. Lippincott Company, 1911.

Boston.[2] In lesions of the upper abdomen generally Neusser and Cabot [3] regard this occurrence as weighing for syphilis and against carcinoma.

4. The striking phenomenon which, of course, attracted the greatest attention related to the unusual character of the ascitic fluid. Polyakoff,[4] in 1900, collected three previously recorded instances in connection with hepatic syphilis, and added one case observed by himself. A fairly careful search of the literature since 1900 nets but one other authenticated instance—in many respects a parallel case to the one herewith detailed—reported by Rebatu and Faujas.[5] Such cases thus become rarities, although the better known and relatively more frequent occurrence of milky ascites in the course of so-called Laënnec's cirrhosis—as well as certain other circumstances—would appear to lend some weight to the old suspicion that the absence of the syphilitic element in the atrophic cirrhosis of the pre-Wassermann period has "not been proved."

The source and the classification of milky ascitic fluids dependent thereon have been the subject of a considerable and in part polemic literature which deals in the main with the immediate cause of their physical appearance. Since Quincke first suggested the still prevailing classification, the only clinical class of cases about which unanimity of opinion appears to have existed is that in which the etiologic element for the presence of true chyle in quantity is obvious, as, for example, in traumatic rupture of the thoracic duct. It was to these and these alone that Ketly suggested that the term "chylous" be restricted. But concerning the remaining larger group of milky, supposed nonchylous, pseudochylous and variously other termed effusions there has been much controversy and confusion, despite the efforts of Senator,[6] Leydhecker and Bargebuhr to discover some common elements and some means of differentiation. In recent years, two attempts have been made to lay the foundation for a rational terminology based on pathogenic considerations—the one by Wallis and Schoelberg [7] and the other a little later by Gandin.[8] Both had the opportunity of observing several cases, and those of the former authors were subjected to exhaustive investigation by all available physicochemical, anatomic and physiologic methods. They were, however, unable to get beyond the theory originally proposed by Bernert [9] and subsequently supported by Joachim [10] and Ghedini—namely, that the cause of the milky appearance of chyle-like but supposedly nonchylous effusions lay in a pseudoglobulin-lecithin combination, held in suspension by inorganic salts, concerning the ultimate mechanism of origin of which the latter physiologic chemists did not concern themselves. Wallis and Schoelberg,[7] too, regard this as unexplainable at the present time.

Gandin,[8] however, after a critical analysis of the entire literature of the subject—to which it forms the largest and most comprehensive single contribution—undertaken in connection with a careful study of three cases observed by himself, objects to the terms chyliform, pseudochylous, etc. on the ground of their having no pathogenic significance, and furthermore finds no differences justifying the present classification. While not denying the presence of a lecithin complex, he concludes that milkiness of serous fluids generally—with the exception of an atypically milky small group immediately to be noted again—is due solely to the presence of finely emulsified fat; that it has never been satisfactorily demonstrated that this curious appearance could be due to substances other than finely emulsified fat; and, chyle being the only known source of finely emulsified fat in the body, all such fluids properly should be designated "chylous." Gandin would except only that small group of opalescent fluids which lack the typical appearance, and in which fat is present in droplet form, and for these would reserve Quincke's term "adipose."

Finally, however, Gandin very casually and disappointingly concludes that effusions of chyle—in cases in which an anatomic break in the continuity of the chyle tract is not demonstrable with present-day methods—depend on very complicated, little understood processes, which leaves the crux of the matter quite as before. But it suggests a fascinating problem for clinical investigation when these rather uncommon opportunities offer themselves. Nor are these limited to hepatic disease or to abdominal syphilis, but they extend to a fairly wide variety of abdominal conditions, which as a rule have an intrinsically unfavorable prognosis.

25 East Washington Street.

2. Boston, quoted by Wells, H. G.: Chemical Pathology, Ed. 3, Philadelphia, W. B. Saunders, 1918.
3. Neusser and Cabot, quoted by Neufeld: Inaug. Diss., Bonn, 1908.
4. Polyakoff: Berl. klin. Wchnschr **49**: 38 (Jan. 1) 1900.
5. Rebatu and Faujas: Lyon méd. **120**: 1015, 1913.
6. Senator: Charité ann. **10, 20.**
7. Wallis and Schoelberg: Quart. J. Med. **3**: 301, 1910; **4**: 153, 1911.
8. Gandin: Ergebn. d. inn. Med. u. Kinderh. **12**: 219, 1913.
9. Bernert: Arch. f. exper. Path, u. Pharmakol. **49.**
10. Joachim: München. med. Wchnsch., 1903; Wien. klin. Wchnsch. **19**: 1168.

DIAGNOSIS AND TREATMENT OF AMEBIC ABSCESS OF THE LIVER

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This paper is based on observation of fifty cases of liver abscess treated at Santo Tomas Hospital, Panama, over a period of three years, prior to August, 1917. The study was interrupted by the war. Not all the data desired are available, but it is believed that the observations made were sufficiently interesting to justify reporting.

Nearly all our patients came from the interior of the republic. Only a few were residents of the terminal cities of Panama and Colon. By no means all gave a history of dysentery, and of those that did, in many cases the attacks had not been severe. Only a small percentage had dysentery at the time of admission. From our observations it would seem that there is usually an interval of freedom, which may amount to years, between the acute dysentery and the beginning development of the abscess. The amebas undoubtedly had been present in the intestinal tract all this time in a latent state, and careful examination of the stools revealed their presence in most cases. The freedom of women and children from abscess of the liver is noteworthy. There were no cases in our series, and there have been only two cases occurring in women in the records of the hospital.

Amebic abscess usually takes the form of a large solitary abscess, most commonly located in the right lobe of the liver. The pyogenic abscesses are usually

small, multiple, and scattered through the entire liver. The reason for this difference is hard to explain, as the mode of entrance of the infection must be through the portal veins in both cases—probably in the form of small emboli which are dislodged from thrombosed areas.

In the three years covered by this report, only two cases of multiple pyogenic abscesses occurred in this hospital; one followed a gangrenous appendicitis and the other a gangrenous gallbladder. Rupture of amebic abscesses into the surrounding structures is not uncommon. In our series, rupture occurred in the order of frequency into (1) the abdominal wall; (2) subdiaphragmatic space; (3) pleural cavity; (4) lung, and (5) intestinal tract. Rupture into the free abdominal cavity is described, but none occurred in this series, except accidental rupture at the time of operation.

It was found that liver abscess may give rise to several well-marked clinical pictures depending on the location and size of the abscess. In the most frequent form there was a history of dull, constant pain over the liver for several months before admission. Along with this, the patients have an irregular fever. They lose weight and feel miserable. They have a distressed look, and deep breathing or a jar over the liver causes severe pain. In fact, the most characteristic symptom is the marked tenderness elicited by tapping over the liver. They are usually not jaundiced. Jaundice in our experience has been rather against a diagnosis of liver abscess, particularly anything more than a very slight scleral tinting. The liver is enlarged, usually disproportionately upward. The temperature is variable. Some cases seem to run an afebrile course, but if watched closely will usually show a rise of temperature at some time during their course. In the majority of cases, however, there is an irregular, septic temperature. Nearly all of our cases showed a definite leukocytosis, averaging 18,000 and varying from 12,000 to 30,000.

Another rather frequent form of liver abscess probably represents the early stage of abscess formation. In these cases, while there is liver tenderness, enlargement is often difficult to demonstrate. The patients also usually have a fever and have often undergone prolonged quinin treatment under the mistaken diagnosis of malaria. The presence of liver tenderness, fever and leukocytosis in a case like this should always suggest a careful examination of the stools. If this is negative, needling may confirm the diagnosis. These are the types of cases in which emetin may be effective, and in several cases I have seen the patient promptly relieved after several injections of emetin, and without operation.

A third type of case may simulate a chest condition, empyema or pleural effusion. This type of case is usually the result of a large abscess located in the dome of the liver. The diagnosis may be further obscured by the actual existence of a pleural effusion consequent to irritation of the pleura. In these cases we find dulness and absent breath sounds over the lower part of the chest. Usually the real condition can be detected by noting that the dulness does not follow the usual S line of the pleural effusions. This is the type of case in which roentgenogram makes the diagnosis. A roentgenogram showing the right leaf of the diaphragm pushed up several spaces, with the preservation of the costohepatic angle, taken together with the clinical findings of liver tenderness, irregular fever and leukocytosis, means either one of two things, liver abscess or a subdiaphragmatic abscess.

A fourth type of case may simulate gallbladder disease. The symptoms are produced by the presence of an abscess on the under surface of the liver, together with the peritoneal adhesions that may occur secondarily. Diagnosis is difficult, and in the two cases observed, the diagnosis was made at operation. The diagnosis might be suspected from the dull, constant pain, more marked liver tenderness and irregular temperature, together with absence of acute attacks of colic and of jaundice.

The mortality of liver abscess is high. In our series of fifty cases we lost more than a third. The high mortality was due to the poor condition of patients on admission. In four instances the patients were moribund on admission. With early diagnosis and the vigorous use of emetin, in some instances, operations might be avoided, and in the remainder, the mortality should be low, as the operation is technically simple.

As a means of arriving at earlier diagnosis, more extended use of liver puncture is recommended. This method was employed in all cases of suspected liver abscesses in this hospital, and no harm resulted. It is simple and in many cases has undoubtedly saved the patient several weeks' wait before the diagnosis was made. As a matter of precaution we made all punctures in the operating room with the patient prepared for operation. When pus was found, we operated immediately.

Liver puncture also furnishes valuable evidence as to the best manner to drain the abscess. It is much better than the custom of routine right midrectus incisions for diagnostic purposes. Through this incision it is often impossible to reach the abscess, and the wound must be closed and another incision made. In examining for the abscess by this method, protective adhesions are frequently broken and superficial abscesses have been ruptured into the abdominal cavity. By liver puncture the exact site of abscess is determined and the most direct method of approach employed. When possible, the transthoracic mode of approach is preferable. Several inches of a rib are resected, the pleural cavity closed off, and the abscess opened with a hemostat. A large size rubber tube is then introduced. When approach is not possible through the chest, a rectus or Kocher gall incision may be employed.

In after-treatment of our cases, irrigations of fluidextract of ipecac in saline were employed after the first week. The patient was also given a course of emetin injections.

Lovell General Hospital.

Protecting Adhesive Plaster from Secretions or Ointments.—In cases in which adhesive plaster has been applied and it is desired to protect it from natural or pathologic secretions that may flow over it and tend to loosen it prematurely, I have found that the adhesive will hold better or longer by painting it over with a few coats of flexible collodion. The collodion will harden more rapidly if it is fanned with a towel, or if compressed air is blown on it. Collodion rather effectually waterproofs or oilproofs the adhesive (when ointments are applied near the plaster) and prevents its coming loose. In removing plaster fastened in this manner, benzin usually suffices, but occasionally ether must first be used.—Samuel Iglauer, M.D., Cincinnati.

Clinical Notes, Suggestions, and New Instruments

AN EASY METHOD FOR THE DISTINCTION AND ESTIMATION OF LACTOSE AND GLUCOSE IN URINE*

A. P. MATHEWS, PH.D., CINCINNATI

Recently a physician brought to the laboratory a sample of urine of a young woman, seven months pregnant and in good health. This urine reduced Fehling's solution very strongly, and a hasty estimation of the reducing power showed it to be equivalent to a 2 per cent. solution of dextrose. The physician desired an immediate answer to the question whether this was lactose or glucose or a mixture of the two, and how much there was of each sugar, if it was a mixture. It was found impossible to answer this question without waiting several hours for the fermentation test. Cole's method[1] was tried, but failed as there was in the laboratory no charcoal of the absorbing power for lactose, described by Cole as pertaining to Merck's blood charcoal. His method consists in heating the urine with a small quantity of good charcoal, filtering, and determining the reducing power of the filtrate. Lactose up to 0.5 per cent. should be retained by the charcoal, whereas glucose is not. Since the charcoal at the disposal of a physician is usually of too poor a grade to absorb this amount of lactose, this method is likely to lead to erroneous conclusions, and I believe it should be discarded.

It was naturally supposed that the sugar was lactose for the greater part, but a definite proof was desired, which, when obtained, showed the sugar to be glucose. After some experimentation a method was worked out that is very simple, requires little apparatus, is sufficiently accurate for clinical work, and will give an answer in less than an hour to all the questions asked. It will show not only whether the substance is lactose or glucose but also, if it is a mixture, how much there is of each.

The essential basis of the method is to ferment the urine with a *large amount* of yeast. The glucose is quickly fermented away and its reducing action is destroyed, while the lactose remains unaffected in the filtrate. The main thing one wishes to know in such a sample of urine is whether the substance is glucose. This has a serious significance if present, whereas lactose present in small amounts in the urine of pregnant women is not rare and is supposed to have no pathologic significance. Yeast has a very specific relation to the sugars, fermenting only dextrose and levulose of those sugars that may be present in urine. These two sugars have practically the same significance. The fermentation becomes evident at once by the gas evolved, and with a little practice a very good approximation can be made in ten minutes by the rapidity of evolution of gas as to the approximate amount of these sugars present. No other reducing substances ferment with yeast.

DETAILS OF METHOD

The urine having been tested in the usual way by Fehling's solution or Benedict's solution and found to contain a reducing substance, and the usual specific gravity and reaction tests having been applied, 10 c.c. of urine is measured into a test tube and one quarter of a cake of compressed yeast (Fleischmann's) is added to the urine, the test tube closed with a cork or the thumb and thoroughly shaken until the yeast is uniformly distributed and there are no longer any separate lumps. The uncorked tube is then placed in an inclined position at about an angle of 45 degrees in a beaker or pan of water heated to between 40 and 43 C., the tube being immersed in the water above the level of the urine. The tube is so placed that the upper surface of the slanting tube can be easily observed. There will be a little air in fine bubbles which became mixed during the shaking. This will come to the surface and ascend the slanting side of the tube, but this will cease in a minute if there is no fermentation. If glucose or levulose is present, there begins within a couple of minutes a fermentation, the bubbles of gas rising to the slanting upper side of the test tube and passing along it upward. With less than 1 per cent. dextrose the fermentation is hardly visible, but with more than this a steady stream of bubbles is given off. With 3 per cent. or more, the fermentation is stormy. I know of nothing that so strongly brings home to one the extreme speed with which sugar is fragmented by the proper agency as this rapid evolution of gas. By this evolution of gas one can say at once that there is more than 1 per cent. of dextrose present. Five or ten minutes will give a perfectly certain answer. If there is no visible evolution of gas, it is certain that the amount of dextrose is less than 1 per cent., it is is present at all.

In this way, then, if only a cake of compressed yeast is handy, and the physician has a test tube and some warm water, he can determine in a few minutes whether a urine has dextrose in it. If it is the urine of a pregnant or lactating woman and strongly reduces Fehling's solution but does not give off gas with yeast, it is certainly not dextrose and is most probably lactose, although it cannot be positively identified as lactose by this negative test.

In order to make the method still more precise, the urine is permitted to stand in contact with the yeast for fifty minutes at the temperature of from 40 to 43 C., then removed from the water bath, the yeast filtered off, and the filtered urine tested with any of the usual tests for reducing power, such as Fehling's or Benedict's solution. If it still reduces, it shows that there is some reducing substance there other than dextrose, and in the urine of a pregnant woman it is most probably lactose. Lactose is not destroyed or affected by the yeast treatment. Dextrose, even up to 6 per cent. in the urine, is completely destroyed by this amount of yeast at this temperature in fifty minutes. Thirty minutes will be enough to destroy all dextrose in 10 c.c. of urine at this temperature, and with this amount of yeast up to 5 per cent. of dextrose.

This experiment illustrates the accuracy of the method:

Twenty c.c. of normal urine was placed in each of three test tubes. To Tube 1 was added 0.8 gm. of air dried, powdered dextrose; to Tube 2, 0.8 gm. of powdered dextrose and 0.1 gm. of powdered lactose; to Tube 3, 0.1 gm. of lactose. The amount of sugar in each tube was estimated by the Munson-Walker Bertrand method, 1 c.c. being taken for the estimation. Tube 1 reduced 78.51 mg. of copper, corresponding to 38.2 mg. of dextrose, or 3.82 per cent.; Tube 2 gave 83.66 gm. of copper, corresponding to 40.8 mg. of dextrose; Tube 3 gave 10.32 mg. of copper, corresponding to 4.85 mg. of lactose.

Ten c.c. of each sample was taken and mixed with one quarter of a cake of yeast in each tube, placed in water at 42 C. and allowed to ferment for thirty minutes. The tubes were taken out once at the end of fifteen minutes, and each inverted to stir up the yeast which had settled to the bottom and replaced in the bath. At the end of thirty minutes they were removed from the bath and each at once filtered through a dry, folded filter paper. As soon as a few cubic centimeters had run through, 2 c.c. was taken from each tube of filtrate and the sugar determined. The result was: Tube 1 (4 per cent. dextrose only), no reducing power. The dextrose had been completely destroyed by the yeast. Tube 2 (4 per cent. dextrose + 0.5 per cent. lactose) reduced 17.77 mg. of copper, corresponding to 10.4 mg. of lactose in 2 c.c., or 5.2 mg. in 1 c.c, or 0.52 per cent. lactose. The dextrose here had been destroyed, leaving the lactose entirely unaffected. Tube 3 (0.5 per cent. lactose only), 2 c.c. reduced 17.2 mg. of copper, corresponding to 9.8 mg. of lactose, or in 1 c.c., 4.9 mg. This is 0.49 per cent. lactose, showing again that the lactose is not adsorbed or destroyed by the yeast.

A similar experiment showed that when 6 per cent. dextrose was taken, the yeast destroyed 49.3 mg. per cubic centimeter, that is, 5 per cent. approximately, in thirty minutes, and that after fifty minutes the whole of the dextrose had been destroyed and the lactose unaffected. The visible fermentation ended after forty-seven minutes. There was no visible reduction of the copper in the urine after fifty minutes.

* From the Biochemical Laboratory, University of Cincinnati College of Medicine.

1. Mathews: Physiological Chemistry, Ed. 2, p. 943.

To make a quantitative determination of the amount of dextrose and lactose present, the total amount of reducing action of the urine considered as glucose is first determined by titration by the Benedict method. Then 20 c.c. of the urine is mixed as described with half of a cake of yeast, and placed in a beaker of water at 42 C. for fifty minutes, the tube being inverted to mix the yeast twice during this period. At the end of that time it is removed. All glucose will now have been destroyed by the yeast. Filtration is performed through a dry, folded filter. The filtrate will probably be opalescent, but this does not interfere.

If the filtrate still gives a reduction with Fehling or Benedict solution, the lactose in 10 c.c. of the filtrate is determined by titration with Benedict solution or by any of the other standard methods.

The difference between the figures for the titration before and after fermentation will give the amount of dextrose present.

By this means it is possible in about one hour to state not not only whether the sugar is or is not dextrose but also how much there is of dextrose and how much of some other reducing substance.

To identify the lactose positively, it will be necessary to make the osazone in a small portion of the urine after it has been treated by the yeast and the dextrose destroyed in the manner indicated.

CASE OF PURPURA FULMINANS

P. A. Lommen, M.A., M.D., Austin, Minn.

History.—F. R., a boy, aged 11, came into the hospital in collapse, having been seriously ill for one day with severe pain in the legs, associated with extensive ecchymoses. Aside from an attack of acute tonsillitis lasting ten days, three weeks before, the past and family history was practically negative. For a few days the boy had been complaining of slight pains in the legs, with some swelling of the right knee and both ankles, when suddenly he was seized with excruciating pain in the legs, and the parents found marked subcutaneous hemorrhages. Vomiting occurred once. There were no bloody stools or urine at any time. A few more ecchymoses appeared later, and as the patient went into collapse, he was brought into the hospital, dying there thirty-six hours after the onset of the trouble.

Physical Examination.—The boy was somewhat undernourished, extremely pale, and though in a state of partial coma, very hyperesthetic. The temperature was subnormal at all times; the pulse varied from 120 to 180, and the respirations were somewhat increased. The tonsils were large but not inflamed. The gums were pale and firm and were bleeding slightly. The heart and lungs were entirely normal. There was marked tenderness over the upper part of the abdomen, and no enlargement of the liver or spleen could be made out by palpation or percussion. There was no adenopathy.

Both legs were swollen, tense, and very tender, especially below the knees. A large subcutaneous hemorrhage involved the whole left leg from the knee down to the ankle, the ecchymotic area being covered with large blebs containing a serosanguineous fluid. The same condition was present over the whole internal aspect of the right leg. Ecchymoses were also present in small numbers over the thighs and hips.

The urine showed merely an increased number of leukocytes. The hemoglobin was 50 per cent.; the red count, 3,020,000, and the white count, 57,600, of which there were 83 per cent. polymorphonuclears; 3 per cent. large lymphocytes; 7.5 per cent. small lymphocytes; 3 per cent. transitional forms; 2 per cent. myelocytes, and 1.5 per cent. eosinophils. There was a moderate poikilocytosis, a slight polychromatophilia, and a few nucleated reds, including 2 megaloblasts. The blood platelets were definitely decreased. The blood pressure was 80 mm. systolic; the diastolic was not obtainable on our instrument.

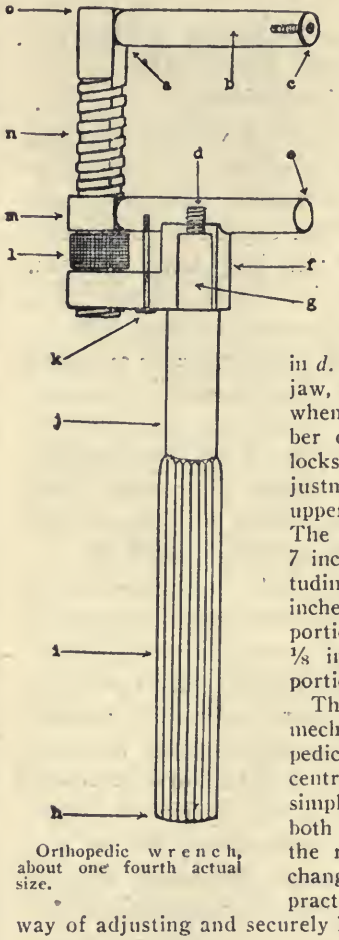
COMMENT

The case is interesting from the standpoint of etiology, which in this instance can be possibly traced to infected tonsils. There was no opportunity for bacterial examination of blood or of the contents of the blebs, and no necropsy was held, so that conclusions as to bacterial etiology cannot be definite. Though there is much discussion in the literature as to the exact causes and pathogenesis of purpura, yet it seems fairly well settled that all of the fulminating cases are infective in origin. The high leukocytosis in this case points to an overwhelming infection, and if we are to consider purpura merely as a symptom of a disease, the underlying process here was probably septicemia from a septic tonsillitis or perhaps an endocarditis, although there were no evidences of the latter.

ORTHOPEDIC WRENCH

Edward A. Cayo, M.D., San Antonio, Texas

In the accompanying diagram the orthopedic wrench is shown about one-fourth actual size. The measurements of the full-size wrench are: length *o-h*, when the jaws are closed, 13½ inches; length of the jaws *a-c*, 3¾ inches; spanning capacity of the jaws *c-e*, from contact to 4 inches. Each jaw is cylindric, and its diameter is ¾ inch. Jaw *b* has a washer, *c*, to hold on the rubber covering. The handle, which is hollow and cylindric throughout its whole length, passes through pinion-block *f*, as shown by *g*, and screws into jaw *m*, as shown in *d*. By this arrangement the lower jaw, *m*, is easily freed to apply or, when necessary, to renew the rubber covering. Reenforcing bolt *k* locks jaw *m* to pinion block *f*. Adjustment-nut *l* sets and holds the upper jaw, *b*, securely in position. The distal portion of the handle, 7 inches, is slightly grooved longitudinally, and its diameter is 1¼ inches. The remaining or proximal portion, 3 inches, is smooth and is ⅛ inch smaller than the grooved portion.



Orthopedic wrench, about one fourth actual size.

This wrench combines the three mechanical essentials of an orthopedic wrench, namely, open jaws, central leverage, and secure and simple spanning adjustment. It has both jaws constructed so that the rubber covering can be easily changed. The adjusting-nut is a practical as well as simple and quick way of adjusting and securely holding the jaws in position.

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SATURDAY, DECEMBER 4, 1920

CAN AMMONIUM SALTS REPLACE PROTEIN AS A SOURCE OF NITROGEN FOR THE TISSUES?

It has long been a dictum of physiology that the nitrogenous needs of the body cannot be supplied by all types of compounds of nitrogen or even by a considerable variety of them. The organism, continually enveloped in an atmosphere rich in gaseous nitrogen, makes absolutely no use of it in its chemical life. The experience and scientific observations of many decades have narrowed the sources of physiologically available nitrogen to the proteins or to their immediate cleavage products, the amino-acids. These are the indispensable nitrogenous foods which the body is evidently unable, for the most part, to construct anew. For some of the amino-acids, no adequate substitute in protein construction in the organism has yet been discovered.

Several years ago, Grafe [1] and his co-workers at Heidelberg ventured the belief that protein might be synthesized in a more simple manner. They maintained animals on diets rich in carbohydrate and fat supplemented with ammonium salts. A notable retention of nitrogen occurred, and this fact was corroborated by Abderhalden. The results have been subjected to severe criticism, notably by Underhill and Goldschmidt [2] at Yale, who pointed out that in any consideration of the influence of ammonium salts on intermediary metabolism, a distinction must be recognized between ammonium salts of organic acids and those of inorganic nature. The ability of the organism to dispose of these two types of salts is radically different. Ammonium chlorid, for example, may become "a distinct detriment to nutritional rhythm, whereas there may be some storage of nitrogen when organic salts like ammonium acetate or citrate are fed as indicated."

It is conceivable, of course, that ammonium salts might in some way protect body protein from disintegration. In other words, if when they are fed along with carbohydrate they do not lead to a direct production of amino-acid complexes, the ammonium salts perhaps "spare" or prevent the usual extent of tissue breakdown in some way. There is a method by which this can be ascertained. True protein contains sulphur as well as nitrogen. The sulphur is none the less important because we usually happen to place the greater emphasis on the nitrogenous component. Organic sulphur is qualitatively as indispensable as is organic nitrogen to the organism. When protein disintegrates, catabolites containing both nitrogen and sulphur appear in the excreta. Hence physiologists are wont to speak of the parallelism of the two elements in metabolism. If ammonium salts lead to protein sparing, the loss of sulphur from the organism should be correspondingly decreased. According to recent investigations of Gessler [3] at Heidelberg, this is not the case. The hypothesis of the advantageous rôle of ammonium compounds in nutrition must be definitively abandoned. It would simplify the solution of many problems of far-reaching importance if we could dispense with the expensive proteins built up for us so laboriously by animals and plants and replace them by a product—ammonia—which the ingenuity of man can derive from the omnipresent air. The answer is: "Not yet!"

1. Grafe, E., and Schläpfer, V.: Ueber Stickstoffretentionen und Stickstoffgleichgewicht bei Fütterung von Ammoniaksalzen, Ztschr. f. physiol. Chem. **77**: 1, 1912.

2. Underhill, F. P., and Goldschmidt, S.: Studies on the Metabolism of Ammonium Salts, III, The Utilization of Ammonium Salts with a Non-Nitrogenous Diet, J. Biol. Chem. **15**: 341, 1913.

3. Gessler, H.: Zur Frage des Wesens der Stickstoffretention bei Fütterung mit Ammoniaksalzen, Ztschr. f. physiol. Chem. **109**: 280 (April 15) 1920.

4. Pohl, J.: Arch. f. Exper. Path. u. Pharmakol. **31**: 286, 1895.

5. Methyl—Wood—Alcohol and Its End-Products in the Body, editorial, J. A. M. A. **74**: 33 (Jan. 3) 1920.

6. Autenrieth, W.: Ueber den Ameisensäuregehalt des Harns, normalerweise und nach Eingabe verschiedener Substanzen, München. med. Wchnschr., Aug. 1, 1919, p. 862.

FORMIC ACID IN THE BODY

One of the scientific consequences of the menaces to human health which have arisen from the alarmingly frequent cases of consumption of methyl alcohol, or wood spirits, has been the more careful study of the behavior of this toxic substance in the organism. Methyl alcohol, CH_3OH, is not completely burned up to simple end-products in the organism; one of the products of its metabolism is formic acid, HCOOH, as Pohl [4] demonstrated many years ago. The excretion of formic acid thus becomes an indicator of the fact that methyl alcohol has been taken into the body.[5]

It would be a comparatively simple plan to examine the urine for the presence of formic acid whenever information is sought as to possible instances of poisoning with wood alcohol. It happens, however, that formic acid has been known for many years to occur in the urine of persons living under supposedly normal conditions. Autenrieth [6] found that the daily output may approximate 0.25 gm. so that, without a quantitative measurement of the formic acid in the urine, definite conclusions as to its source and origin could not be drawn. The mere test for the presence of formic acid will not suffice to point to methyl alcohol as its predecessor.

Substantiation of this general conclusion has now been afforded by Stepp [7] at the Medical Clinic in Giessen. He has detected formic acid as a frequently recurring if not ever-present constituent of human blood. Fifty years ago the Berlin physiologic chemist Salkowski [8] reported the presence, in this fluid, of a substance that was identical in behavior with formic acid, but the observation received little if any further experimental consideration. Among the persons whose blood was examined by Stepp were several diabetics. These afforded the surprise of yielding negative results. Little if any formic acid could be detected in their blood which gave evidence of pronounced hyperglycemia. As the destruction of sugar is profoundly disturbed in such cases, Stepp has offered the tentative suggestion that formic acid may be a stage in the usual metabolism of carbohydrates—a stage that might not be represented when the normal transformations of the latter are interfered with. Thus, the problem of the physiologic significance of the traces of formic acid commonly present in both blood and urine of man has become a by-product, so to speak, of the investigation of the toxicity of methyl alcohol.

THE RIGHT TO STRIKE

The employees of a small railway that furnishes the sole access to a town at the head of a valley go on a strike and demand an absolute acceptance of their terms. As this shuts off all supplies from the local hospital, its directors institute a motor truck service to meet the needs of the institution. On the first day of this arrangement, a car is overturned by a steel wire stretched across the road, and the newly wedded doctor, son of the local practitioner, is killed on the spot. Under the leadership of the chief surgeon of the hospital, an agreement is made by which all medical service is withheld from the strikers and their families. The wife of the leader of the railway strike has an obstructed labor which the physician in attendance (who has declined to side with his professional colleagues) is unable to handle. The surgeon, who is a close friend of the young physician who is killed, declines to aid in caring for the woman who is in labor until he is appealed to by the widow of his dead friend, when he accedes to her importunities and goes to the assistance of the wife of the leader of the railway strike.

This is the plot of a play, by Mr. Ernest Hutchinson, which has been appearing at the Garrick Theater, London. It has created general public interest probably more because it portrays an interesting sociological possibility than for its exceptional histrionic merit. The *Lancet* concludes a not very flattering criticism of the play as a dramatic effort with the statement that it "may be helpful to those members of the body politic, whether medical or no, who cannot otherwise picture the results of withholding their professional services." In a later issue, the *Lancet* publishes letters from Dr. Arthur Cox, medical secretary of the British Medical Association, and from Dr. Alfred Welply, general secretary of the Medico-Political Union, commenting on the subject of the plot of the play.

Dr. Cox says:

> I have always held that in this country a *real* strike by doctors is almost unthinkable. The idea of witholding service from one's own patients—people you may possibly have known since birth—revolts every professional instinct. . . . But I do not say that a refusal to serve would in *any* circumstances be wrong. If I were practicing in a country cursed with a set of bloodthirsty scoundrels who had temporarily got the upper hand and who declared their intention of wiping out the "bourgeois" class to which I belong, I should think it quite right to decline to give my services to anybody expressing that intention. In the words of Clough, "Thou shalt not kill, but needst not strive officiously to keep alive." . . . No medical man who remained amongst his own people could, I think, persist in refusing his services if faced by a real emergency such as occurred in the play. It would be illogical to give then, for "what is sauce for the goose is sauce for the gander"; but, after all, logic has very little to do with most of our actions.

And this from Dr. Welply's letter:

> I think that the title is appropriate on the ground that the right to strike applies equally to all sections of the community; but it is difficult, in my opinion, to apply the word "strike" to a withholding of services for no other reason than a reprisal. . . . Whatever may be said of their action in combating the strikers, it comes as some surprise to learn that the dependents—many of whom might already be suffering through the stoppage of work—are to be vicariously punished. Such an attitude of mind is not generally associated with the medical profession, and I feel that it does not reflect our outlook on men and things. . . . In the fact that the striker endeavors to reach his purpose by imposing suffering or loss upon others is to be discovered the disfavor in which he is so generally held:
>
> 1. He threatens his employer with financial ruin by rendering idle his capital, plant or machinery, and by undermining the stability of his market.
> 2. He threatens the public by depriving it of a necessary commodity or of an indispensable service.
> 3. He may use the language of intimidation toward imported labor if he does not give employment to illegal violence.

If we are in accord with the three foregoing definitive paragraphs, it would seem clear that the action taken by the physicians in the play was not a strike but a measure of reprisal. According to Dr. Welply's definition, there is nowhere record of a strike by the medical profession. Under the ethics of our profession, it is doubtful whether there ever will be. Physicians recognize the right to refuse or terminate attendance on a patient under certain circumstances. In the Principles of Medical Ethics of the American Medical Association is a definite statement regarding this subject: A physician is free to choose whom he will serve. He should, however, always respond to any request for his assistance in an emergency or whenever temperate public opinion expects the service. Once having undertaken a case, a physician should not abandon or neglect the patient because the disease is deemed incurable; nor should he withdraw from the

7. Stepp, W.: Ueber den Befund von Ameisensäure im menschlichen Blute, Ztschr. f. physiol. Chem. **109**: 99 (March 1) 1920.
8. Salkowski: Virchows Arch. f. path. Anat. **50**: 174, 1870.

case for any reason until a sufficient notice of a desire to be released has been given the patient or his friends to make it possible for them to secure another medical attendant. This question must be determined between the individuals who are primarily interested. It cannot be settled on the basis of principles governing the ethical relationships of groups.

NEGLECTED POSSIBILITIES OF DIETOTHERAPY

"Please God we shall see no more sunken and hollow-cheeked typhoid cases reminding one of the Cuban reconcentrados or subjects of the Indian famines." This optimistic hope, expressed by a recent writer [1] on dietotherapy, represents the growing attitude at the present day toward the problem of nutrition in typhoid fever. The belief incorporated in the dictum, "Feed a cold and starve a fever," can be traced back almost to the days of Hippocrates. In harmony with it has grown the assumption that the digestive capacity of the organism is greatly impaired in febrile disease, so that ingestion of more than small allowances of food, and particularly of diet of a "substantial" character, would menace the bodily welfare. For decades, attention was focused primarily on the direct or indirect control of the abnormalities of temperature and circulation, the nutrition of the patient being, as a rule, left to take care of itself. It would not be difficult to find printed directions to furnish a meager thousand calories or less to a febrile patient who was demonstrably losing his store of energy at the rate of 4,000 or more calories a day.

What are the facts about the alimentary capacity of patients with typhoid fever? It has been shown by direct clinical experiment, contrary to inherited tradition, that they can utilize carbohydrates and proteins in large amounts quite as well as do healthy persons. If the absorption of fats is not so complete as usual in the early stages of the disease, at any rate later in its progress enormous amounts of these nutrients can be retained. More than 300 gm., representing over 2,700 calories a day, have been fed with success.

The story of high-calory feeding in typhoid has been told so frequently that the practice has rapidly gained popularity, and rightly so. It represents a classic instance of introduction of a revised therapy on the basis of accurate scientific clinical investigation. The physician, the biochemist and the dietitian have collaborated in the great reform in treatment. There is a tendency in many quarters to belittle the originality and the scientific accomplishments of American physicians. It may be pardonable, therefore, to exhibit a national pride in the fact that these fundamental advances in dietotherapy have been inaugurated in our own country.

1. Carter, H. S.; Howe, P. E., and Mason, H. H.: Nutrition and Clinical Dietetics, Philadelphia, Lea & Febiger, 1917, p. 518.

Recently, signs of changing practice have made their appearance in other quarters. In Pirquet's clinic for children in Vienna, von Gröer [2] has recorded the beneficial effects of liberal diet in the domain of infectious diseases. He has found that even in cases of pronounced severity, including scarlet fever, measles, pneumonia, typhoid and influenza, it is possible to regulate the food intake so that the frequently occurring loss of weight is not encountered, and even progressive gains are accomplished. In fact, favorable results of this sort were actually secured in cases of severe dysentery.[3]

The success of dietary undertakings of the character reported depends in no small measure on a knowledge of food requirements. The quantitative aspects of nutrition must be cultivated to a larger degree than heretofore, and with greater personal enthusiasm and appreciation, if progress is to be made in practical dietotherapy. It is futile to speak of calories or nems or fuel value or nutrient units so long as they convey no concrete idea to the medical mind. Nor do grains and drops and diopters avail so long as they remain mere words in the physician's vocabulary. Nutritive needs must be realized in terms of edible foods, else they will mean little more than glass lenses do to those untrained in ophthalmology. There is room for education, and there is also great promise of success from the application of such learning.

Current Comment

A FACTOR OF SAFETY IN THE LIVER

Unless human bile is decidedly unlike that of other species, it can under certain conditions be the cause of significant damage to the liver. Whenever the secretory channels of the liver are completely occluded so that bile finds its way back into the liver cells, harm inevitably ensues. The character of the hepatic lesions, the preponderance of necrotic changes or the development of cirrhosis seems to depend on the relative involvement of the liver circulation, owing to local pressures, as well as on the inability of the bile to escape by its normal paths. As a recent writer has expressed it, the character of the connective tissue changes is determined by the path of escape of bile from the collecting system, which in turn is largely conditional on secretory activity, while this again is dependent on blood flow. Complete biliary obstruction is, however, a phenomenon of rare occurrence in man. The interference with bile outflow is commonly local in character. The stasis involves only a small portion of the entire hepatic mass. Many students of liver pathology have assumed that what is true of the organ as a whole, when complete stasis occurs, applies in corresponding degree to lesser areas of

2. Von Gröer, F.: Ernährungsversuche bei infektionskranken Kinder, Ztschr. f. Kinderh. **23**: 125, 1919.

3. Von Gröer, F.: Mastkuren bei Kinderruhr, Ztschr. f. Kinderh. **23**: 221, 1919.

interference. Thus, it is generally assumed that the severity of jaundice is directly proportional to the amount of liver tissue in stasis. Small hepatic lesions have accordingly been charged with responsibility for its clinical occurrence. Rous and Larimore [1] have demonstrated that, in uncomplicated biliary obstruction in a part of the liver, this organ exhibits what Meltzer designated a few years ago as a large "factor of safety" for the organism. In some of these experiments less than a quarter of the liver of the animals studied—and there is no reason to suppose that the results would not be approached in man—sufficed to keep the organism free from clinical jaundice and healthy when the remainder of the liver had its ducts ligated. As these investigators point out, the vicarious elimination thus illustrated is of great importance for regions of local stasis by keeping the blood relatively free from bile, thus preventing resecretion into such regions and facilitating exchange from them into the body fluids. It is well to know what the defenses of the organism are.

THE MUSCLES AND THE FLUID REGULATION OF THE BODY

The excretion of water by the skin averages about a quart a day under the usual routine of living, and the sweat produced consists of more than 99 per cent. of water. However, the amount of the latter leaving the body by perspiration varies within rather wide limits, depending essentially on the heat produced within and the temperature of the environment. In other words, the extent to which sweating occurs is determined mainly by the need for regulating the temperature of the body. The immediate source of the water poured out through the sweat glands is, of course, the blood. In ultimate analysis the comparatively large drafts on the circulating fluid of the body which may be made within rather brief periods of vigorous perspiration must be compensated for by movements of water from other tissues, unless they are promptly replaced through the channel of the alimentary tract from the fluid intake. At any rate, it is unlikely that a pronounced concentration or incipient desiccation of the blood will be tolerated for any considerable time, as marked changes of this sort are usually occasion for undesirable responses on the part of the nervous tissue. Cohnheim [2] and his collaborators have observed a noteworthy decrease in hemoglobin and an increase in the serum proteins in the blood following vigorous muscular exercise that is attended with profuse perspiration. The change in the concentration of the blood pigment may amount to 10 per cent. or more after the loss of 300 c.c. of sweat. Evidently the blood quickly becomes diluted with fluid to replace that lost by sweating, and there is frequently an overcompensation leading to an actual dilution, as exhibited by the diminished hemoglobin content. Return to normal soon ensues. The question has been raised as to whether this phenomenon is due to an "expulsion" of fluid into the blood as a result of the contractions of the muscles and is thus really independent of the process of sweating, or whether the perspiration is the primary act which leads to a subsequent transport of water from the muscular tissue to the depleted blood stream. That the latter is actually the case has been shown by Cohn,[3] who ascertained the composition of both blood and muscles after sweating without exercise (in a hot air chamber) and after muscular exercise without visible perspiration. Only when sweat was freely given off did the dilution of the blood occur, and only under this circumstance did the muscles show a detectable loss of water. It is important to realize that the muscular tissue represents a reservoir, so to speak, which helps to some extent to distribute water under critical conditions.

1. Rous, Peyton, and Larimore, L. D.: The Biliary Factor in Liver Lesions, J. Exper. Med. **32**: 249 (Aug.) 1920.
2. Cohnheim, O.; Kreglinger and Kreglinger: Ztschr. f. physiol. Chem. **63**: 426, 1909. Gross and Kestner: Ztschr. f. Biol. **70**: 187, 1919.
3. Cohn, E.: Ztschr. f. Biol. **70**: 366, 1919.

ADMIRAL STITT SURGEON-GENERAL OF THE NAVY

Rear-Admiral E. R. Stitt, at present director of the United States Naval Medical School, has been appointed Surgeon-General of the Navy, as announced elsewhere in this issue, succeeding Rear-Admiral Braisted, who is retiring in conformity with his own urgent request. The acceptability of the apppointment should make certain its ratification by the Senate. For thirty-one years, Admiral Stitt has given himself wholly to the service whose uniform he wears. He is perhaps personally known to ninety-nine out of a hundred men in the Naval Medical Corps. He is also well known to the physicians of the country as an educator, as a man of remarkable attainments in laboratory research, as the author of several standard medical textbooks, and as an inspiring leader in medical science. In the Navy he has held appointments representing the service on many general committees and boards. He has cooperated frequently with other government departments and with scientists in civil life. In a word, he is peculiarly adapted for the high office to which he is now appointed. He may be assured of the full support of the medical profession of the country in any work which he may undertake for the development and the advancement of science in the Medical Corps of the Navy. Meanwhile Rear-Admiral Braisted steps out of the position of Surgeon-General with an excellent record for faithful service and good work. He was at the head of the Bureau of Medicine and Surgery of the United States Navy during the ordeals and trials of the great war, in which the Navy took no small part. His bureau came through with honor and credit and with the good will of the physicians who served during the war.

Municipal Hygiene. — Municipal hygiene has steadily enlarged its borders and the municipality is now assuming increased responsibility for the conditions under which the people as a whole live and work. Health and strength are incompatible with an unwholesome environment, and it is recognized that such matters as housing and town planning, or the supply of pure milk, affect the entire community and should not be left to the chance decision of individuals who may or may not have the best interests of their fellow citizens at heart.—*J. State Med.*, July, 1920.

Association News

THE BOSTON SESSION

Organization of the Local Committee on Arrangements

The Local Committee on Arrangements for the annual session to be held in Boston, June 6-10, 1921, has been organized as follows: chairman, F. B. Lund; secretary, Richard H. Miller. Subcommittee on Finance: chairman, Hugh Williams; secretary, Channing Frothingham; treasurer, A. William Reggio. Subcommittee on Sections; chairman, William H. Robey, Jr.; secretary, H. Archibald Nissen. Subcommittee on Exhibits and Printing: chairman, D. F. Jones; secretary, George Gilbert Smith. Subcommittee on Hotels: chairman, John T. Bottomley; secretary, Stephen Rushmore. Subcommittee on Entertainments: chairman, C. A. Porter; secretary, A. W. Allen. Subcommittee on Registration: chairman, A. S. Begg; secretary, Samuel R. Meaker. Subcommittee on Clinics: chairman, J. C. Hubbard; secretary, R. S. Eustis.

All communications for the attention of the Local Committee on Arrangements or any of its subcommittees should be addressed to the proper officer at the Boston Medical Library, 8 The Fenway.

COUNCIL ON HEALTH AND PUBLIC INSTRUCTION FORMULATES ITS SOCIAL PROGRAM

The House of Delegates of the American Medical Association, at its recent meeting in New Orleans, directed the Council on Health and Public Instruction to make a report at the next annual meeting on the relation of the medical profession toward the public. At its meeting, November 11, the Council considered this matter and in doing so asked to sit with it Dr. Frank Billings of Chicago, Dr. Hugh Cabot of Ann Arbor, Dr. Wadsworth of the New York State Department of Health and Dr. F. E. Sampson of Creston, Iowa.

The Council considered the following subjects and took action as stated below:

1. The Council believes it highly desirable that the nature and transmission of communicable diseases should be taught in the public schools of the country. This is already a legal requirement in a few states. In other states such instruction is confined to tuberculosis. The secretary of the Council was requested to gather such information as he may be able to find bearing in this matter and to have framed a model bill for introduction into the legislatures of the states which do not already provide for such instruction.

2. The Council believes that teachers in our public schools should know something about the communicable diseases and what should be done with pupils under their charge developing these diseases. The Council believes that a course in epidemiology should be required in all normal schools and in schools of education in our universities; in short, that no one should be licensed to teach without having had instruction in epidemiology. The secretary of the Council was requested to have formulated a model bill bearing upon this subject.

3. The Council is of the opinion that there should be a closer cooperation between the medical profession and laymen who are interested in public health, and the Council recommends that sections on public health and sanitation be organized in state and local medical societies, and that laymen interested in public health be admitted as associate members of this society and referred to the sections. In the opinion of the Council, this matter should be discussed more fully at the next meeting of the Council in March, 1921.

4. In the opinion of the Council, it is highly desirable that the American Medical Association should, as soon as possible, begin the publication of a popular, up-to-date journal on sanitation and epidemiology, which should give to the public the latest, most complete and most scientific information concerning the prevalent and communicable diseases. It is the wish of the Council that this matter be referred to the Board of Trustees of the American Medical Association.

5. The Council on Health and Public Instruction believes that the American Medical Association should take steps to secure the following results:

(*a*) To assist local medical practitioners by supplying them with proper diagnostic facilities.

(*b*) To provide for residents of rural districts, and for all others who cannot otherwise secure such benefits, adequate and scientific medical treatment, hospital and dispensary facilities and nursing care.

(*c*) To provide more efficiently for the maintenance of health in rural and isolated districts.

(*d*) To provide for young physicians who desire to go to rural localities, opportunities for laboratory aid in diagnosis.

(*e*) The Council believes that these results can be best secured by providing in each rural community a hospital with roentgen-ray and laboratory facilities to be used by the legally qualified physicians of the community. The secretary of the Council was requested to study the laws of the different states bearing upon this subject and to prepare a model bill to be studied more fully at the meeting of the Council in March, 1921.

VICTOR C. VAUGHAN, M.D., Ann Arbor, Mich.
Chairman, Council on Health and Public Instruction.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Physician's License Revoked.—It is reported that at a recent meeting of the California State Board of Medical Examiners the license of Dr. E. R. Hoffman was revoked on the ground that he had been convicted in the federal courts of violating the espionage act.

Railroad Will Erect Emergency Hospital.—The Southern Pacific Railroad Company has awarded contracts for the erection of an emergency hospital at Bay Shore. The institution will fill a long felt want in the vicinity of South San Francisco, where railroad yards and switching activities entail a large number of minor accidents.

Society Meetings.—At the annual meeting of the Southern California Medical Society, held in Los Angeles, under the presidency of Dr. Walter V. Brem, Los Angeles, the following were elected officers for the ensuing year: president, Dr. Charles L. Bennett; vice president, Dr. Edgerton Crispin, and secretary, Dr. William Duffield (reelected), all of Los Angeles.——At the annual meeting of the Pomona Valley Medical Association, held at Pomona, November 16, Dr. Frank W. Burns was elected president to succeed Dr. Paul W. Newcomber, and Dr. William H. Eaton was reelected secretary-treasurer.——Dr. Samuel J. Mattison was elected president of the Pasadena Medical Society at the annual meeting, held November 10. Dr. R. L. I. Smith was elected vice president and Dr. Caroline McQuiston-Leete, secretary-treasurer.

CONNECTICUT

County Society Elects Officers.—At the semiannual meeting of the Tolland County Medical Association, held recently in Stafford, the following officers were elected: president, Dr. Charles T. LaMoure, Mansfield; vice president, Dr. John P. Hanley, Stafford Springs, and secretary, Dr. John E. Flaherty, Rockville.

Personal.—Dr. Daniel E. Shea, Hartford, has been appointed director of the bureau of social hygiene of the state board of health.——Dr. Francis J. O'Brien, Middletown, was elected secretary-treasurer of the Central Connecticut Medical Association at its seventy-third annual meeting, to suceed Dr. Sheldon S. Campbell, who declined reelection after serving almost three years.

GEORGIA

Personal.—Dr. James W. Papez has resigned as professor of anatomy and neurology at Emory University School of Medicine, Atlanta, to accept an assistant professorship of

neurology at Cornell University Medical College.——Dr. Hugo Robinson, Albany, has been named district health officer of Dougherty County to fill the unexpired term of the late Dr. Horace C. Robles.

ILLINOIS

Rock Island County Sanatorium.—At the recent general elections, the vote on appropriations to establish a county tuberculosis sanatorium in Rock Island County resulted in the casting of 58,117 votes in favor and 4,273 in opposition.

Southern Illinois Society Elects.—At the annual meeting of the Southern Illinois Medical Association, held at Carbondale, early in November, the following officers were elected: president, Dr. Charles E. Eisele, East St. Louis; vice presidents, Drs. Harry C. Moss, Carbondale, and Heber Robarts, Belleville, and secretary-treasurer, Dr. Alonso B. Capel, Shawneetown. The next annual session will be held at Belleville.

Chicago

Medical History Activities.—Dr. Edward C. Streeter, Boston, delivered an illustrated address at the Art Institute, Tuesday, November 30, on "The Historical Relations Between Art and Anatomy in Northern Italy in the Fifteenth Century." Members of the Society of Medical History were the guests of the Art Institute for the occasion.——The Society of Medical History will hold a meeting at the City Club, at 8 p. m., December 10. Papers will be read by Drs. George H. Weaver, A. Levison and A. A. Small.

Health and Sanitation Exposition.—From November 24 to November 29, inclusive, a Health and Sanitation Exposition was held at the Coliseum. The exposition, which was the conception of Dr. John Dill Robertson, commissioner of health of Chicago, was under the auspices of the Chicago Department of Health and the Municipal Tuberculosis Sanitarium, cooperating with various other health agencies in Chicago. The object of the exposition was to popularize public health in the community. Various commercial agencies, whose products or activities have a bearing on the public health, exhibited, as did also a large number of scientific and educational organizations. Among the latter were the American Medical Association, the Chicago Tuberculosis Institute, Chicago League for the Hard of Hearing, Chicago Department of Health, Illinois State Department of Public Health, Illinois Social Hygiene League, Illinois Society for the Prevention of Blindness, and the United States Public Health Service. In addition to the exhibits, there were given a number of public health talks, many of them illustrated by motion pictures and stereopticon slides. There were also daily "round table" meetings, at which the more technical problems of health promotion were discussed. The attendance at the exposition was heavy, more than 100,000 people visiting the exhibit during the five days.

KENTUCKY

Physician Fined for Violation of Harrison Act.—It is reported that Dr. Samuel H. Martin, Covington, recently pleaded guilty to an indictment charging violation of the Harrison Narcotic Law. After surrendering a quantity of drugs and his permit to prescribe narcotics, Dr. Martin was fined $100 and costs.

Changes in Fulton County Health Office.—Dr. John A. Phelps, Jordon, has resigned as health officer of Fulton County, to accept a similar position at San Diego, Calif. Dr. Charles T. Curlin has been appointed to succeed him and Dr. John M. Alexander has been chosen assistant health officer. Hereafter Fulton County will employ four public health nurses, one at Hickman, one at Fulton and two for general work in the county. A sanitary inspector will also be appointed.

LOUISIANA

Appointment to Board of Medical Examiners.—Dr. Joseph E. Knighton, Shreveport, has been appointed a member of the State Board of Medical Examiners.

Plans for Tuberculosis Hospital.—The Louisiana Anti-Tuberculosis League has inaugurated a campaign for $100,000 for the erection of a hospital for the care of patients in advanced stages of tuberculosis. A site for the hospital has been donated by the board of the Milne Home, and includes a 300 acre tract on Bayou Saint John.

Narcotic Clinics to Continue Temporarily.—At a conference, held November 26, between members of the Louisiana State Board of Health, Governor Parker, representative of the United States Department of Justice and of the Internal Revenue Bureau, it was decided not to close the narcotic clinics for ambulatory treatment of habitués at New Orleans and Shreveport until January 15. Another meeting will then be held to decide what steps can be taken to organize an institution for the scientific care and treatment of drug addicts.

MARYLAND

De Lamar Lecture.—One of the series of De Lamar lectures in hygiene of the Johns Hopkins University School of Hygiene and Public Health, was delivered by Dr. Charles V. Chapin, superintendent of health, Providence, R. I., on "The Evolution of Preventive Medicine."

Mental Deficiency Survey in Schools.—The study of mental deficiency among public schoolchildren will constitute an important part of the state wide survey being conducted under direction of Dr. William Burgess Cornell, representative of the National Committee for Mental Hygiene.

Student Nurses Sought by Hospital.—To overcome the shortage of student nurses, a campaign has been launched by the University Hospital to increase the number from fifty-six, the number now enrolled, to 100, and alumni of the Medical College of the University of Maryland and graduate nurses have been asked to assist. Increases in the allowance of student nurses in the first year to $5 a month, in the second year to $10, and in the third year to $15 a month went into effect December 1.

Survey of State Hospital for Insane.—At the semiannual meeting of the state lunacy commission with the boards of managers of the state hospitals for the insane and feebleminded, held November 17, at the Hotel Rennert, Baltimore, Governor Ritchie proposed a survey of the state institutions and suggested the following as members of a survey committee: Drs. Hugh H. Young and A. P. Herring, president and secretary, respectively, of the lunacy commission; Dr. W. B. Cornell, New York, who is making a study of mental deficiency in Maryland; Mr. A. H. Wehr, state purchasing agent; Dr. J. Hall Pleasants, president of the supervisors of city charities, and one representative from the board of managers of each of the five state hospitals.

MASSACHUSETTS

Free Clinic for Schoolchildren.—A clinic for schoolchildren whose parents cannot afford to pay for the proper medical treatment has been established at the Child Welfare Office, 35 Jackson Street, Lawrence, under the auspices of the board of health. The clinic will be open on Tuesday of each week, from 4 to 5 p. m., and school physicians will be in attendance.

Tuberculosis Society Organized.—The Northern Essex County Tuberculosis Association was organized, November 5, at a meeting held in Haverhill of representatives of welfare organizations from Merrimac, Amesbury, Newburyport, Ipswich, North Andover, Methuen and Haverhill. Dr. Israel J. Clarke, Haverhill, was elected president, Dr. Edward H. Ganley, Methuen, vice president, Miss Harriett A. Baxter, Merrimac, secretary, and Mrs. F. E. Sweetser, Merrimac, treasurer.

MICHIGAN

Loyola Medical School Recognized.—A letter from the secretary of the Michigan State Board of Registration in Medicine states that at a recent meeting of that board it was voted to grant recognition to the Loyola University School of Medicine, Chicago.

Typhoid Fever at Hillsdale.—Up to November 13, a total of fifty-six cases of typhoid fever were reported in the epidemic of Hillsdale. Dr. S. Rowland Hill, Bancroft, assistant physician of the state board of health, has been aiding local health officers in the control of the epidemic. The disease has been traced to contaminated milk.

Grand Rapids Has New Clinic.—A free clinic has been established by the Knights of Columbus welfare board at St. Mary's Hospital, Grand Rapids, in charge of Dr. Stephen L. O'Brien, chief of staff of the hospital. The clinic is located in the hospital building, 217 Lafayette Avenue, S. E., and will be open to the public every week day from 11 a. m. to 2 p. m.

MINNESOTA

Southwestern Society Elects Officers.—At the fifty-fifth annual meeting of the Southwestern Minnesota Medical Society, held at Pipestone, the following officers were elected: president, Dr. Frederick G. Watson, Worthington; vice president, Dr. Frank W. Metcalf, Fulda, and secretary-treasurer, Dr. Eugene G. McKeown, Pipestone.

MISSOURI

County Society Makes Presentation to Legion Post.—The Jackson County Medical Society will present a banner to the Fitzsimons Post, American Legion, which was named in honor of the late Dr. William Thomas Fitzsimons, a member of the Jackson County Medical Society, the first American officer killed in the World War.

MONTANA

Tuberculosis Clinic at Great Falls.—A tuberculosis clinic has been opened at Great Falls under the auspices of Dr. F. T. Foard, health officer of Great Falls and Cascade County, in additional rooms acquired by the health department in the Stanton Bank Building.

Fined for Harrison Act Violations.—It is reported that Dr. Guy D. Bryant, Butte, recently pleaded guilty to a charge of violation of the Harrison Narcotic Law and was fined $500 in the federal court of Butte. Quong Chong, a Chinaman, entered a similar plea to a like offense and was fined $200.

NEW JERSEY

County Society Meetings.—At the annual meeting of the Hunterdon County Medical Society, recently held at Lambertville, the following officers were elected for the ensuing year: president, Dr. A. Arling Heil, Milford; vice presidents, Drs. Edgar Lane and Francis A. Apgar, Oldwick; secretary, Dr. Obediah H. Sproul, Flemington, and treasurer, Dr. Edward W. Closson, Lambertville.——The Cape May County Medical Society, at its annual meeting held at Cape May, elected the following officers: president, Dr. Frank R. Hughes, Cape May; vice president, Col C. M. Gandy, M. C., U. S. Army; secretary, Dr. Eugene Way, Dennisville, and treasurer, Dr. Henry H. Tomlin, Wildwood.

NEW YORK

Tuberculosis Sanatorium Superintendent Transferred.—Dr. Patrick J. Hirst, Middle Grove, for several years superintendent of the Saratoga County Tuberculosis Hospital, has resigned to accept a position as superintendent of the tuberculosis hospital of Herkimer County.

New York City

Home for Drug Addicts.—The Salvation Army has opened a home for drug addicts at Tappan, with accommodations for 250 men for periods of from two to five weeks. The men will be committed to the home by the State Narcotic Board.

Harvey Society Lecture.—Dr. Carl J. Wiggers of the Western Reserve University will deliver the fourth Harvey Society Lecture at the New York Academy of Medicine, December 11, on "The Present Status of Cardiodynamic Studies on Normal and Pathologic Hearts."

Poliomyelitis in New York.—The *Weekly Bulletin* of the New York City Department of Health for November 20 calls attention to the fact that 119 cases of poliomyelitis have been reported in the city during 1920, as compared with thirty-one cases in 1919; of these 119 cases, ninety were recorded in September and October.

County Society Elects.—The Medical Society of the County of New York, at its one hundred and fifteenth annual meeting, November 22, elected the following officers for the ensuing year: president, Dr. George Gray Ward; vice presidents, Drs. Orrin S. Wightman and Arthur F. Chace; secretary, Dr. Daniel S. Dougherty; assistant secretary, Dr. John Milton Mabbott, and treasurer, Dr. James Pedersen.

Academy of Medicine Meeting.—The New York Academy of Medicine, at its stated meeting, November 18, elected the following officers: president, Dr. George Edward Stewart (reelected); vice president, Dr. Edward L. Keyes, Jr.; corresponding secretary, Dr. D. Bryson Delavan (reelected), and treasurer, Dr. Seth M. Milliken (reelected). The anniversary discourse was delivered by Mr. James M. Beck of the New York bar, on "One Cause of the World Neuroses."

Industrial Clinic Formed by Consolidation.—Through consolidation of the Clinic for Functional Reeducation with the Demilt Dispensary the "Industrial Clinic" has been established for the treatment of industrial accidents and diseases by the methods found effective in the treatment of disabled soldiers. The activities of the clinic will be continued for the present at its old location, 5 Livingston Place, Stuyvesant Square. As the work has outgrown the present quarters, efforts will be made to obtain funds for a larger building.

OHIO

Typhoid Epidemic at Salem.—Up until 8 p. m., November 29, sixteen deaths from typhoid fever were reported in the epidemic prevailing at Salem.

Emergency Hospital at Cambridge.—The new emergency hospital erected at the tin mill of the American Sheet and Tinplate Company was recently completed and is being equipped for the proper care of emergency cases. The physicians of Cambridge have been invited to attend the formal inspection and opening.

Northern Medical Association Elects.—The Northern Ohio Medical Association at its annual meeting held in Tiffin, October 27, elected the following officers: president, Dr. Charles W. Moots, Toledo; secretary, Dr. Wilson C. Pay, Bellefontaine, and treasurer, Dr. Richard J. Morgan, Van Wert. Toledo was selected as the place for the 1921 meeting.

Venereal Disease Dispensaries Combine.—It has been planned to combine the Columbus city dispensary for the treatment of venereal diseases, now located at 342 South Grant Avenue, with a similar institution maintained at the Ohio State University. The municipal council has approved the ordinance authorizing the combination, at the suggestion of Dr. William L. Dick, city health officer.

OREGON

Portland Academy Meeting.—Dr. Charles H. Frazier, Philadelphia, delivered the Thomas H. Joyce lecture on neurologic surgery before the Portland Academy of Medicine at a meeting held at the Benson hotel, November 11. A complimentary dinner to Dr. Frazier preceded the meeting. The following officers were named for the coming year: president, Dr. Noble W. Jones; vice presidents, Drs. Joseph B. Bilderbach and Charles E. Sears; secretary, Dr. John Earl Else, and treasurer, Dr. Stuart H. Sheldon.

PENNSYLVANIA

Course of Nursing in University of Pittsburgh.—With the opening of the fall term, the University of Pittsburgh initiated a new course in public health nursing under the auspices of the Public Health Nursing Association and the School of Economics. The course will extend over eight months.

Physician Honored on Retirement.—On the retirement of Dr. William L. Estes as surgeon in chief of St. Luke's Hospital, Fountain Hill, a special tribute was given him at Bethlehem in connection with the graduation exercises of the nurses' school. A testimonial luncheon was served in his honor at which representatives of all the classes of nurses since 1887, and almost all the interns since 1890 were in attendance. Dr. Delbert K. Santee presented a humidor on behalf of the physicians, and Miss Marie S. Brown presented a bouquet of thirty-three American beauty roses on behalf of the thirty-three classes of nurses.

Chester Valley Hospital at Coatesville.—Under plans formulated at a meeting of Coatesville physicians, Drumpelier Private Hospital will hereafter be conducted as a public charitable institution. The hospital now contains twenty-eight beds, but will shortly be enlarged. Physicians identified with the movement include Drs. Arthur Carmichael, John H. Davis, Michael Margolies, Henry E. Porter, William H. Emery, Charles Cahn, David P. Rettew, Thomas A. Monahan, Donald L. Maddox, and William B. Carter. Members of the medical profession of Coatesville and surrounding towns including Parkesburg, Downingtown and Honey Brook have been invited to cooperate. The hospital will be known as the Chester Valley Hospital.

Philadelphia

Federation of Charity Organizations.—A committee of seven has been appointed to act as the central committee of the proposed welfare federation of all responsible social agencies in the city. The executive board will consist of twenty-six members of the federation; twenty-one of these are to be chosen by the central board of delegates, and the remaining five will be paid executives elected by the executives of the participating agencies.

Plan for Hospital Drive.—Dr. George H. Meeker, dean of the Graduate School of Medicine of the University of Pennsylvania, was the guest of honor at a dinner given by the faculty of the school at the St. James Hotel, at which plans for a $200,000 drive for the benefit of the school were made. Among the speakers were Dr. Edgar F. Smith, former provost of the university, Dr. Josiah H. Penniman, acting provost, Dr. Jay F. Schamberg, and Dr. Judson Daland.

SOUTH CAROLINA

Tuberculosis Sanatorium Dedicated.—The Palmetto Tuberculosis Sanatorium, which has recently been completed for the use of negro patients at State Park, about 1 mile from the South Carolina Sanatorium, was formally dedicated, November 3. The building is on grounds owned by the state and will be under the supervision of Dr. Ernest A. Cooper, Columbia.

County Health Journals.—Two new county health journals, issued by the health departments of several counties of South Carolina, have recently made their appearance. *Community Health* is published periodically by the Charleston County Health Department under the editorial supervision of Dr. Leon Banov, health officer. *Lee County Health Journal* is issued monthly from Bishopville, under the editorial supervision of Dr. Earle Paul Knotts. Both contain valuable information on subjects related to public health and sanitation and are circulated free to the public.

SOUTH DAKOTA

Conviction for Performing Criminal Operation.—It is stated that Mrs. Louisa Meyers, at a recent term in court in Brown County, pleaded guilty to a charge of performing a criminal operation and was sentenced by Judge Frank Anderson of the Aberdeen circuit court to a term of eighteen months in the penitentiary.

Health Office Reopened.—The health office of Aberdeen has been reopened in the municipal building under the joint control of the city and county. Dr. Willard A. Bates has been appointed health officer, and Dr. J. C. Golden of St. Luke's Hospital has been placed in charge of the laboratory pending the selection of permanent officers.

TEXAS

Fourth District Society Meeting.—At the annual meeting of the Fourth District Medical Society of Texas, held at San Angelo, November 12, Dr. John M. Nichols, Bangs, was elected president to succeed Dr. Samuel N. Aston, Coleman; Dr. J. William Blasdell, Ballinger, was elected secretary, and Dr. Joe E. Dildy, Brownwood, was reelected councilor.

Tuberculosis Hospital for War Veterans.—As the result of the successful outcome of the tag day drive by the American Legion the construction of a tuberculosis hospital for ex-soldiers at Kerrville is assured. Sufficient funds have been pledged to complete the hospital as originally planned and the first unit, with a capacity of 100 beds, will be completed by January 1.

WISCONSIN

Hospital Changes Name.—The Jefferson County Tuberculosis Sanatorium, located at Jefferson, will hereafter be known as Forest Lawn.

District Medical Society Elects.—The annual meeting of the West Wisconsin District Medical Association was held at Eau Claire, November 10, under the presidency of Dr. Johan Mathiesen of Eau Claire. Dr. Mathiesen was reelected president, and Dr. Herman F. Derge, secretary.

Presentation of Portrait of Dr. Miller.—In appreciation of his long and faithful service as professor of anatomy at the University of Wisconsin, Madison, the colleagues, medical friends and former students of Dr. William Snow Miller recently presented his portrait to the university at formal exercises held at the medical amphitheater of Science Hall. Dr. Miller came to Wisconsin from Clark University in 1892, and since that time has been connected with the university, first with the chair of histology and neurology in the biologic department and later with the chair of anatomy in the medical school.

CANADA

Apportionment of Rockefeller Foundation Fund.—The Rockefeller Foundation has announced the preliminary apportionment of the fund of $5,000,000 in aid of medical education in Canada as follows: McGill University, Montreal, and University of Toronto, each $1,000,000; Dalhousie University and University of Manitoba, each $500,000; University of Alberta and Université de Montréal, each an annuity of $25,000 from the income on $2,000,000.

Hospital Notes.—The Speedwell Military Hospital at Guelph, Ont., formerly the Ontario Reformatory, has been restored to the Ontario government and will be used for housing the criminal insane. It is said to be the purpose of the government to develop the hospital along lines similar to the Matteawan Institution in New York State. While extensive alterations are under way the hospital inmates have been accommodated at the Christie Street Hospital in Toronto.

Life Protection Organization.—The Life Protection Association of Canada, Limited, has just been incorporated in the province of Ontario with a capital of $400,000. The purpose of the organization is to provide the means for periodic examinations of members and to distribute information designed to improve the public health. Four examinations a year are proffered, and if the examined is found to be diseased, or bordering on disease, he will be referred to his regular physician for treatment.

Physicians and the Narcotic Act.—As many physicians in Canada have not complied with the request of the Federal Department of Public Health to register if they are engaged in the sale or distribution of narcotics, the medical press of Canada has been asked to give publicity thereto. Failure to comply with the act within a reasonable time involves a penalty ranging from $200 to $1,000. All physicians who obtain narcotics in any quantity to administer directly to their patients come under the provisions of the act.

Special Meeting of Ontario Medical Association.—A special meeting of the Ontario Medical Association has been called for Toronto on December 7 and 8, for the purpose of acting on articles of incorporation, on reports of the committees on venereal diseases, education, and interrelations of the public and the profession, and on the question of increasing the annual membership fee to $5. In conjunction with this meeting there will be a meeting of the district represented by the counties of Peel, York, Ontario and Simcoe under the auspices of the Academy of Medicine, Toronto.

GENERAL

Southern Surgical Association Meeting.—The annual meeting of the Southern Surgical Association will be held at Hot Springs, Va., December 14-16, under the presidency of Dr. Willard Bartlett, St. Louis. Headquarters will be at the Homestead Hotel.

Association of Women in Public Health.—Fourteen national women's organizations have cooperated in the formation of the American Association of Women in Public Health. At the first meeting of the association, recently held in Washington, D. C., Miss Gertrude Seymour of the U. S. Public Health Service was elected president.

Hospitals for World War Veterans.—Hearings on the appropriations requested by the U. S. Public Health Service are being conducted by the appropriations committee of the House of Representatives. The Public Health Service is seeking additional funds for the construction and maintenance of new hospitals in various parts of the country to care for World War veterans.

Ohio Valley Society Meeting.—The annual meeting of the Ohio Valley Medical Association was held at Evansville, Ind., November 9 and 10, under the presidency of Dr. Virgil H. Moon, Indianapolis. The following officers were elected for the next year: president, Dr. Charles T. Souther, Cincinnati; vice presidents, Drs. Lewis W. Bremerman, Chicago, and Sidney J. Eithel, Evansville, Ind.; secretary, Dr. Leon L. Solomon, Louisville, Ky., and treasurer, Dr. Benjamin L. W. Floyd, Evansville, Ind.

American Hospital Seeks Aid.—An appeal is being made for support of the American Hospital of Paris. The present hospital has thirty-two beds and is unable to care for the many Americans in France who need hospital treatment. The American Hospital was the parent of the American Ambulance Hospital, and was afterward known as American Military Hospital No. 1. It is intended to establish the new American Hospital as a permanent memorial of the Ambulance Hospital. Headquarters of the American committee are at 1 Park Avenue, New York.

Southwest Medical Association Meeting.—At the fifteenth annual meeting of the Medical Association of the Southwest, held at Wichita, Kan., November 22-24, under the presidency of Dr. Ernest F. Day, Arkansas City, Kan., the following officers were elected: president, Dr. Edward H. Skinner, Kansas City, Mo.; vice presidents, Drs. William W. Rucks, Oklahoma City, John T. Axtell, Newton, Kan., Herbert Moulton, Fort Smith, Ark., and Robert H. Needham, Fort Worth, Texas, and secretary-treasurer, Dr. Fred H. Clark, Oklahoma City. The next meeting will be held in Kansas City, Mo., October, 1921.

Medical Staff of the Bureau of War Risk Insurance.—Dr. Haven Emerson, former commissioner of health of New

York City, has been appointed medical advisor and assistant director of the Bureau of War Risk Insurance, on the recommendation of R. G. Cholmeley-Jones, director of the bureau. During the last year Dr. Emerson has been engaged in the organization of the Department of Hygiene and Preventive Medicine of Cornell University and in the direction of the hospital and health survey of Cleveland under auspices of the Cleveland Hospital Council. The appointment is in conformity with the policy of the Bureau of War Risk Insurance to select its headquarters' medical staff from the civilian medical profession.

Bequests and Donations.—The following bequests and donations have recently been announced:

St. Joseph's Hospital, $10,000, and Alexian Brothers' Hospital, Chicago, $5,000, by the will of Mrs. Angela C. Gormully.

The Society for the Prevention of Cruelty to Children, a gift of property in Fifth Avenue, New York, for the erection of new buildings, and an endowment fund for their maintenance, valued at more than $3,000,000, by Mr. and Mrs. August Heckscher.

Protestant Episcopal Hospital, $5,000, and Children's Hospital, Philadelphia, $2,000, by the will of Miss Mary Coles.

Presbyterian Hospital, Chicago, $10,000, by the will of George R. Nichols.

University of Colorado for the construction of a medical school and hospital for the poor, a gift of $700,000 by the general education board of the Rockefeller Foundation.

Michael Reese Hospital, Chicago, $10,000, and a trust fund of $50,000 for "charitable and medical purposes," by the will of Joseph G. Snydacker.

St. Joseph's Hospital, Philadelphia, $5,400, by the will of Alice Lawless.

Home for Incurables, Philadelphia, $6,950, by the will of Bella M. Wonderly.

Arequipa Sanatorium, Fairfax, Calif., a trust fund of $25,000 by the will of Mrs. Jeannette A. Jordan, first president of the board of managers of the institution.

Hebrew Orphan Asylum, Home for Aged and Infirm Hebrews, Montefiore Home, Hospital for Deformities and Joint Diseases, First District Dental Society, New York, and the Consumptive Relief Society of Denver, each $1,000, by the will of Dr. Morris L. Chaim.

Federation of Jewish Philanthropic Societies, New York, $100,000, by the will of Jacob Wertheim.

LATIN AMERICA

Addition to Argentine Hospital.—The Hospital Italiano of Rosario, Santa Fé, Argentine, recently started the construction of a new pediatric pavilion, which will have a medical clinic and a surgical clinic. These clinics will be in charge of Drs. Ernesto Trucchi and Marcos Steinsleger, respectively. After the addition is finished, the Hospital Italiano will have over 300 beds and will embrace two medical clinics for men, one medical clinic for women, two surgical clinics for men and one surgical clinic for women, opthalmologic clinic, otorhinolaryngologic clinic, and dermosyphilitic clinics, and six dispensaries. Dr. Guido Butti is chief of the hospital.

Reorganization of Public Health Service in Brazil.—The newly organized Departamento Nacional da Saude Publica, created by act of congress last year, assumed office, October 1, with Dr. C. Chagas as executive head. Provisions have been made for a sanitary fund to promote the work of the service. The service forms part of the national department of justice. There are nine sections, and the directors of these have been appointed. They include Drs. B. Penna, chief of the department of rural prophylaxis; Dr. P. Barbosa, tuberculosis inspector; Prof. E. Rabello, venereal disease section; Prof. Leitão da Cunha, terrestrial prophylaxis, and Dr. Figueiredo Rodrigues, maritime service.

FOREIGN

Spanish Urologic Congress.—The Fifth Spanish Urologic Congress met last month at Madrid with Dr. Barragan in the chair. The opening address was by Dr. De Sard of Paris on "Traumatism of the Kidney."

Dentistry in French Schools.—The French senate is now considering a bill which provides for inspection and treatment of the teeth of schoolchildren to supplement medical inspection of all the public schools.

Epidemiology of Lethargic Encephalitis.—The French government has ordered a comprehensive survey of the epidemiology of lethargic encephalitis, and the Académie de médecine has appointed a special committee for the purpose.

Retirement of Criado y Aguilar.—Having reached the age limit of 60 years, Prof. F. Criado y Aguilar of the Madrid medical school retires with this semester. He was professor of children's diseases, chief of the children's clinic, and dean of the faculty.

Monument to Welander Unveiled.—A monument to Edward Welander of Stockholm was recently unveiled with much ceremony. Among those taking part in the proceedings was a group of children from the Welander Lilla hemmet which he founded for children with inherited syphilis.

Prize for Popular Work on Tuberculosis.—The Swedish Nationalföreningen mot tuberkulos offers a prize of 3,000 crowns for a popularly worded pamphlet on personal hygiene and civic hygiene. Competing articles must be in Swedish and be sent in anonymously with name in sealed envelop, to the society, Birger Jarlsgatan 22, Stockholm, before April, 1921.

Alvarenga Prize Awarded.—The recipient of the Alvarenga prize awarded by the Swedish Medical Association this year was Dr. E. Hammarsten for his work describing the isolation from the pancreas of a "coupled" nucleic acid. R. Feulgen, the protein research worker, has confirmed this discovery of a chemically defined new substance. In fact, Feulgen's publication of it came first, November, 1919, although Hammarsten's main discovery dated from January, 1919.

New Medical Publications in Spain.—Among the new Spanish medical publications, the last to reach this country are the illustrated *Estudios Médicos*, published by the Royal Academy of Medicine of Murcia, and the *Anales de la Facultad de Medicina* of Zaragoza, published by the School of Medicine of that town. Both are almost exclusively devoted to the publication of articles by members of the school. Another recent Spanish publication is *Archivos de Medicina, Cirugía y Especialidades*, which publishes only abstracts.

Infroit Another Martyr to Science.—Dr. C. Infroit, the roentgen-ray pioneer of the Salpêtrière at Paris and one of the most prominent radiologists of the last decade, has finally succumbed to his long martyrdom from roentgen-ray injuries. He has undergone over twenty-four operations and for the last year has been working and lecturing with two artificial arms. One of his latest publications was on calcified spots in the lungs which deceptively simulate foreign bodies on roentgenoscopy. Very thick sheets of lead might have saved him from further injury after he had first learned the potency of the rays, but he refused to protect himself thus as it interfered with the delicacy of his work.

International Congress of Military Medicine.—The Service de Santé of the Belgian army announces the organization of an International Congress of Military Medicine and Pharmacy to be held at Brussels in June, 1921. Physicians and pharmacists who served in the armies of allied and neutral countries or are affiliated with them are invited to participate. The subjects named for discussion include the treatment of fractures of extremities, the antituberculosis and antivenereal campaigns in the armies, the secondary effects of poisonous gases, and the general organization of the medical service of armies. Registrations, communications, and papers should be addressed to the secretary-general, Dr. Jules Voncken, Hôpital Militaire de Liége, Belgium.

French Commission on Mental Hygiene.—Toulouse describes in the *Informateur des Aliénistes* the purposes of the newly organized Comité d'hygiène mentale which aims to include in its scope not only mental hygiene as conceived by the American national committee on mental hygiene, but also the study of psychology as applied to the different forms of social activity. The various psychiatric and neurologic associations combined to secure the creation of the ministère d'hygiène, de l'assistance et de la prévoyance, and Dr. Breton was appointed chief of the department. In turn he has organized this comité d'hygiène mentale, which includes in its aims the detection of the psychopathic predisposition before it has become manifest, and efforts to modify conditions so that the psychopathy will never materialize.

International Pharmacopeia.—The *Nederlandsch Tijdschrift* states that representatives from Sweden, Norway and Denmark met recently at Stockholm to discuss the advisability of publishing a pharmacopeia in common. A final decision was not reached, but the desire seemed to be general that the three Scandinavian countries should unify their pharmacoepeias. It adds that this raises the question anew whether an international pharmacopeia is practicable. In 1864 the pharmacopeias of England, Scotland and Ireland were unified and in 1914 it was proposed to issue a pharmacopeia for the whole of the British empire. The United States joined with other countries at the international conference at Brussels in 1902 to unify the preparation of the heroic drugs and the abbreviations of the names of drugs. But local customs and preferences for certain drugs would make it necessary to include so much in a truly international pharmacopeia, that the size would be prohibitive.

Government Services

Admiral Stitt Nominated Surgeon-General of the Navy

It has been announced that the President will transmit to the Senate the nomination of Rear Admiral E.-R. Stitt as Surgeon-General of the U. S. Navy, to succeed Rear Admiral W. C. Braisted, who will retire at his own request after more than thirty years of service. Born at Charlotte, N. C., in 1867, Dr. Stitt received his collegiate education at the University of South Carolina and his medical training at the University of Pennsylvania, where he graduated, M.D., in 1889. He was commissioned assistant surgeon, U. S. Navy, March 27, 1889, passed assistant surgeon three years later, surgeon in June, 1900, and reached his present grade of medical director with rank of rear admiral, Oct. 15, 1917. Dr. Stitt is an authority on tropical diseases, to the study of which he has devoted the major part of his professional career. He was for several periods professor of bacteriology and pathology at the Naval Medical School, Washington, D. C., where he organized the chemical and bacteriologic laboratories, and has served as director of the school since October, 1916. His investigations on the diseases of the warm climates date back to 1902 when he was assigned to a station in the Philippine Islands. In 1905 he pursued special studies at the London School of Tropical Medicine, receiving a diploma with distinction, and in the same year was appointed a medical member of the Nicaraguan Canal Commission. Later he occupied the chair of zoology at the University of the Philippines in connection with his tour of duty as commandant of the hospital at Cavite. Since 1909, Dr. Stitt has been almost continuously a member of the faculty, and during the last four years director, of the Naval Medical School, and at the same time lecturer on tropical medicine at Georgetown and George Washington universities and the Jefferson Medical College. He is a member of the National Board of Medical Examiners, of the advisory board of the Hygienic Laboratory, of the committee for the tenth revision of the United States Pharmacopeia, and president of the examining board for medical officers of the Navy. A textbook on practical bacteriology, now in its sixth edition, and a manual on the diagnostics and treatment of tropical diseases, the fourth edition of which is in preparation, are his most noted contributions to the literature of scientific medicine.

Wellcome Prize Essays

The following medical officers have been awarded medals in the annual competition for prizes given by Henry Wellcome of London for the best essays on medicomilitary subjects: Capt. Mahlon Ashford, M. C., U. S. Army, Asst. Surg. W. C. Rucker, U. S. P. H. S., Lieut.-Col. E. B. Vedder, Col. James L. Bevans, and Capt. Carl M. Bowman, M. C., U. S. Army. The distribution of the medals is made through the Association of Military Surgeons. The annual competition is open to medical officers of the Army, emergency and reserve officers who served during the World War, and medical officers of the National Guard. The subjects assigned for essays in 1921 are (*a*) the part played by the Medical Department in maintaining military discipline, and (*b*) the hygiene, training and treatment of American schoolchildren in the light of experiences from the military draft for the World War.

Appointments in Army Medical Reserve Corps

Appointments in the Medical Reserve Corps of the Army were resumed October 4, on which date there were 10,200 officers in the Medical Department Reserve. Of this number about 6,000 are members of the medical section, the remainder being in the dental, veterinary and medical administrative sections. Under the authority of the act of June 4, it is planned to organize a sanitary section for the enrolment of scientific and technical officers, including psychologists, sanitary engineers, food and nutrition experts, statisticians and chemists.

Immigration and the Public Health

For the purpose of conducting an exhaustive investigation into the public health problems connected with immigration to the United States, Surg. J. W. Kerr, U. S. P. H. S., has been ordered to visit the various countries of Europe to ascertain conditions under which immigration is proceeding.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 9, 1920.

Onodi's Collection of Nasal Anatomy

The collection of dissections on nasal anatomy, made by the late Professor Onodi of Budapest and described by Arthur Keith as the finest collection on this subject in the world, has been bought for this country and will probably find a home in the museum of the Royal College of Surgeons, where it will be a worthy companion to the great collection of Toynbee and Cheatle on the anatomy of the ear. It contains no fewer than 450 specimens. It has been acquired by Sir St. Clair Thomson and Mr. Philip Franklin for the moderate sum of $1,500, with the idea of handing it over to the college when the money has been collected.

Epidemic of Scarlet Fever and Diphtheria

London is suffering from the greatest epidemic of scarlet fever it has ever known, but fortunately the cases are of a mild type. No particular reason can be given, but at this time of the year the number of cases of the disease is usually at its height. October 26, the number of cases in the various fever hospitals was 7,458, and the number admitted in one week was 1,805. Visitations of increased epidemicity have in the past been observed about every seven or eight years. At the same time diphtheria, as is usual at this season, is prevalent; the number of cases in the hospitals amounts to 2,219.

Nostrum Venders Dislike Disclosure

In previous letters, the bill that has been introduced to control the trade in nostrums has been described. The subjoined resolution has been adopted by the Incorporated Society of British Advertisers:

> That the executive of the I. S. B. A. [which is representative of many of the largest advertisers and manufacturers in Great Britain], while expressing its approval of the general principles of control indicated by the Proprietary Medicines Bill now being promoted by the Ministry of Health, regards as unnecessary and entirely inexpedient the clause demanding deposit of formula. Moreover, the view is expressed that the useful end desired by the ministry may be attained in other ways than in the method proposed, which involves an unwarrantable intrusion into, and a possible confiscation of, valuable trade secrets on which considerable capital has been expended in many cases.

The Prevention of Venereal Disease

Lord Gorell, president of the National Council for Combating Venereal Diseases, gave evidence before the Joint Committee of the two Houses of Parliament appointed to consider the criminal law amendment bills and the sexual offenses bill. To remedy certain evils at the docks and harbors he suggested that all ships within the territorial waters of the United Kingdom should be brought under the provisions of the criminal law amendment act in regard to premises used as houses of ill fame. The position at the docks that were not enclosed and properly supervised was horrible. Foreign and colored seamen were the worst difficulty. He would prefer that subjects of venereal disease should be dealt with under a public health act. It should be made an offense to communicate the disease knowingly.

Great Hospital and Medical School at Cairo

The Egyptian government has decided to build at Cairo what is officially described as "the finest and most complete medical school and hospital in the world." It is to contain 1,225 beds and will have accommodations for 3,000 outpatients each day. Attached will be a completely equipped medical school, which will be connected with the projected university. The staff of the hospital will be both British and Egyptian.

The existing Kasr el Aini Hospital, built by Mohamed Ali early in the last century, has become inadequate to the needs of the city. Mr. John W. Simpson, president of the Royal Institute of British Architects, who was engaged as consulting architect, selected the site and formulated the requirements in consultation with the government, and drew up conditions for an international competition. His recommendations were accepted, and invitations to architects to compete will shortly be issued in English, French, Italian and Arabic. The work will be one of the largest and most important in the world. The site selected consists of 48 acres in the northern part of Roda Island, which is south of the main city of Cairo. It is thus free from the dust of the desert stretching east of Cairo, and commands a magnificent prospect.

The Effects of Alcohol on Work in Normal and Fatigued Conditions

The Medical Research Council has published an interesting report on experiments performed at the Psychological Laboratory, Oxford, by Dr. William McDougall, F.R.S., and Miss May Smith, M.A. Three methods of measuring the effect of alcohol were employed. One was the marking (with a pen) of red circles and (with a mechanical device) of blue circles, printed on a continuous band of paper tape, which was made to pass at the rate of 5.8 circles a second behind a window in the top of the desk. In another test the subject was required to reproduce in correct sequence a list of forty words previously dictated at the rate of thirty a minute. Each pair of words had some association, the appreciation and recollection of which formed an important part of the mental test. The third test was the counting of the rate of reversal of the apparent direction of rotation of the shadow of a "laboratory windmill." It was found that alcohol increased the mean number of errors from 80 to 97 after 10 c.c. had been swallowed, from 77 to 109 after 15 c.c., and from 70 to 97 after 20 c.c. In the memory tests, alcohol caused a well-marked loss of the power to recall. But the taking of the alcohol was followed in all the tests by a subjective feeling of ease and the erroneous conviction that the work done was unusually good. It was also found that when the same amount of alcohol was taken in different dilutions, the errors were greater after the stronger solution. Thus, the errors after taking 20 c.c. in 10 per cent. solution were increased by 22 per cent., while in 33 per cent. solution they were increased by 160 per cent. The period that had elapsed between a meal and the ingestion was found to have an important effect. Thus, when 30 c.c. diluted to 60 c.c. was taken directly after a meal, the increase of errors was 6 per cent. The same dose taken from two to eleven hours after a meal gave an increase of errors of 118 per cent. These results agree with those previously published by Dr. Vernon Harcourt. On the other hand, it was found that in fatigue alcohol might have a beneficial effect. A subject was fatigued by voluntarily cutting down for three nights the usual amount of sleep. It was found that during the first three days the average errors became fewer, but during the succeeding thirteen days they became much higher than normal, the return to normal being somewhat irregular. In the first two phases of this cycle the increase in the number of errors after alcohol was well marked, but toward the end of the fatigue cycle (thirteenth and fourteenth days) the number of mistakes was considerably diminished after taking 15 c.c. of alcohol. In the nonfatigued state, too, a few instances were encountered in which a decrease in the number of errors followed taking alcohol. But before the test the statement was recorded that, with one exception, the subject felt "very tired." Thus, in certain stages of recovery from fatigue the taking of alcohol appeared to improve the capacity for work. The experimenters suggest that if these results are not purely personal, probably one reason for the uncertain and contradictory results recorded with alcohol is the varying condition of the body with regard to fatigue.

PARIS

(From Our Regular Correspondent)

Nov. 12, 1920.

Meeting of the Members of the Corps of Instruction of Medical Schools

The general assembly of the association of the corps of instruction of medical schools was recently held in the halls of the Faculty of Medicine of the University of Paris, under the chairmanship of Prof. X. Arnozan of Bordeaux, who is the president of the association. The assembly demanded that courses in physics, chemistry and the natural sciences in general, intended for medical students, shall be taken out of the hands of the science faculties and restored to the medical faculties in the several medical schools. It also demanded that the regular medical course, including the year devoted mainly to the study of physics, chemistry and general science, shall be covered in six years, and that the future régime of medical studies shall take as its basis the old régime as established during the years 1897-1914, together with one or two semesters of graduate study. A more practical spirit should be injected, in a general way, into the whole course of medicine, and periods of hospital experience must be regarded as indispensable. The assembly demanded that theoretical medical study shall be divided into four categories: (1) a premedical course in elementary science (physics, chemistry and natural science); (2) two years of thorough scientific training, including instruction in elementary pathology; (3) two years of pathology and clinical study, and (4) one year of applied medical science, during which students may be allowed a certain liberty of choice (this to include the semester of graduate study). The assembly, taking account of the large number of hospital courses imposed on students, passed a resolution that, whenever possible, a type of double course be arranged which will permit students, at certain times during their medical course, to take part in certain special clinical instruction along with their regular studies in medicine and surgery. The assembly also demanded that the custom of requiring a doctor's thesis of graduates in medicine be maintained.

Pharmaceutic Service of French Army During the War

The declaration of war overtook the Army Medical Service during the process of transformation and reorganization. The two central pharmaceutic establishments, namely, the Pharmacie centrale de l'armée, located in Paris, and the Réserve des médicaments, in Marseilles, and likewise the pharmacies of the various hospitals had very small stocks of drugs on hand, the month of August being the usual period for restocking. In order to remedy so critical a situation, the pharmaceutic service was forced to create without delay two other central establishments; also sixteen regional pharmacies and twenty-four warehouses. These establishments, in spite of the difficulties and the dangers growing out of the investment of Paris, which paralyzed the drug trade, were stocked within a few weeks. Thanks to this reorganization, the pharmaceutic service was able to supply the needs of our armies and even to furnish considerable quantities of drugs to the allied armies.

As a result of the ravages caused by malaria in Macedonia in 1916 it became necessary, in order to meet the needs of prophylaxis, to supply the demands for quinin of not only the French Army of the Orient but also of the Greek and Serbian armies. In 1917 the government of the Netherlands prohibited the importation into France of cinchona barks destined to serve in the preparation of quinin. After long

and tedious negotiations, the French government succeeded in concluding a contract that guaranteed an annual supply of barks sufficient for the manufacture of 90 tons of quinin sulphate. The Army Medical Service divided the barks among the four French manufacturing establishments according to the capacity of each.

The maximal consumption of quinin before the war was 20 tons annually. The demand continued to increase, reaching its maximum (90 tons) in 1918, 40 tons of which were supplied to the Army of the Orient, 15 tons to the Greek army, 8 tons to the Serbian army, and 10 tons to Algeria and to other French colonies, while 17 tons were reserved for the continental army and the civil population.

The central establishments of the pharmaceutic service furnished also all the material required in the bacteriologic, physical, chemical and roentgenologic services, and equipment for surgical ambulances, operating rooms, and for electrotherapy and mechanotherapy. In this connection it is significant to note that the pharmaceutic service found it necessary to establish a special factory for the manufacture of medical thermometers. This factory made use at first of the German prisoners of war who were specialists in this line of work, since Germany had, before the war, enjoyed a monopoly in this branch of manufacturing. It was able to furnish the major part of the thermometers needed by the Army Medical Service, and became a center of professional instruction where manufacturers could send their workmen for special training, and where they themselves could come to gather information and get experience necessary to establish in France an industry that up to that time had been controlled exclusively by the Germans. The thermometer factory is to continue in operation, and the work will be done by women and partially disabled soldiers.

Death of Prof. Théodore Flournoy

From Geneva comes the announcement of the death, at the age of 76, of Dr. Théodore Flournoy, formerly professor of physiology and psychology at the university of that city. He was especially known for his works on psychic activitiy, more particularly on dual personality. In his curious volume entitled Des Indes à la planète Mars, he gives in detail a report of the case of a cultivated young woman who through her "second personality" thought she stood in an intimate relationship with the Martians, whose alphabet, language and manner of living are described. Later she took on the identity of a Hindu princess of a remote period of history, in which connection she told of a strange life of adventure, making use of Sanskrit and Arabic characters.

BELGIUM

(From Our Regular Correspondent)

Nov. 2, 1920.

Sterility in the Male

Dr. Gravez recently communicated to the nineteenth congress of Flemish physicians, held at Ghent, the results of a series of interesting investigations to discover whether the absence of children in many homes may not be attributed to the husband rather than to the wife. He thinks that an old case of gonorrhea frequently causes either aspermia or azoospermia. Now that, among the evils following war, gonorrhea has increased to a considerable extent, this problem becomes a matter of prime importance. While at the Belgian front, Gravez found an opportunity to examine the sperm of a considerable number of subjects. His method of securing specimens for examination is as follows: The subject assumes a gynecologic position; the examiner inserts his finger in the anus, and by exerting pressure above the prostate causes the seminal vesicles to evacuate their contents. The seminal fluid is thus carried into the urethra, whence it is transferred to the slides. Of fifty subjects so examined, thirteen were suffering from recent infections of gonorrhea (cases less than 3 months old). In eight of these thirteen cases spermatozoa were found, and in five they were not present. Thirty-seven of the fifty subjects examined had chronic gonorrhea (the cases being from 4 months to 6 years old). Of these thirty-seven cases thirty presented spermatozoa in normal numbers; while seven were apparently sterile.

The Gheel Colony for the Insane

One of the principal institutions, or colonies, for the insane in Belgium is located at Gheel, in the province of Antwerp. The increasing importance of this colony for the insane is attracting the attention of many alienists. Dr. Meeus, the director of the institution, recently published an article on the history of the colony, which proved very interesting, dealing, as it did, with its medieval and monastic origin.

In the early day the monks were in the habit of practicing exorcisms. They kept a daily record of clinical observations, in which the condition of the patients, the various symptoms and the changes they passed through were carefully noted. The recovery of patients was a signal for public festivities. The activity of the canons, or prebends, extended not only to the patients in their own institution, but also to the patients of the whole parish or commune. Persons able to pay were put in private families, where the best of care was given them. The communal authorities also appropriated funds for rational relief. Insane persons were protected in their rights and guarded against the accidents of fortune. Quite contrary to the then existing feudal law, the possessions of deceased insane persons at Gheel passed into the hands of rightful heirs.

Thus, it is rather surprising to learn, there existed during the middle ages a hospital for the insane, which continued to improve century after century. Even at this remote period the monks had pronounced views in regard to the significance of mental disease. In Saint-Dave Church there is a painting by Van der Heyden in which is represented an evil spirit coming out of the head of an insane person. The Maison des malades was the origin of the present body constituted to administer the funds appropriated for the relief of the insane at Gheel. At present the colony numbers nearly 2,000 patients. One fact worth noting is that sexual improprieties are very rare. Among the 2,000 insane persons of both sexes there may be such a case every four or five years. The insane persons do not seem to form friendships with the members of the families with whom they dwell, but rather with their neighbors. At Lierneux there is a similar organization. Here there are about 1,000 insane patients lodged with private families.

The Belgian Method of House Ventilation

Professor Spehl has just published an important work, in connection with the campaign against tuberculosis, in which he emphasizes the necessity of good ventilation in all dwelling places. It would seem to be an established fact that displacement of air in a vertical direction must be regarded as a defective arrangement. He urges that the Belgian system of natural, horizontal aeration—so-called differential aeration—be generally adopted. This Belgian system was recommended before the war by M. Knapen and has already been made compulsory by the hygienic regulations of Paris. The Knapen method of ventilation, then, provides for openings of varying size in the walls of the several sides of the building, whence the term "differential aeration." These openings thus located at various points avoid harmful currents of air, for two reasons: In the first place, the openings do not penetrate the walls horizontally, but obliquely; that is, beginning on the

exterior wall they incline upward as they approach the interior wall. The result is that the force of the air is broken, so that it does not fall on one in such "brutal" fashion. The air is tempered by striking the walls of the ventilating conduit before it enters the dwelling. Furthermore, the openings that admit the air from outside are not of the same size as the interior openings, as already stated. That is the main point. The currents of air that enter the rooms, instead of being sucked in through conduits of the same size throughout, are tempered by the fact that the exterior and the interior openings are of different dimensions and are located at different levels. Consequently, in place of a draft that is feared, a slight but constant mixing of the air is produced, by which means a regeneration of the whole atmosphere is brought about, as the fresh currents pass through from the north to the south or from the east to the west.

The Belgian system of differential, horizontal ventilation is, at this time, the best method of ventilating all classes of apartments, as it replaces automatically the foul, dead air. Then again, it has the great advantage that it does not bring quantities of dust into the apartments, as does the opening of windows and most ventilators. This may be regarded as one of the outstanding features of the invention.

MADRID

(From Our Regular Correspondent)

Oct. 4, 1920.

Antituberculosis Vaccination

The reading of a paper on the "Scientific Paradoxes of Tuberculosis and Practical Results of Their Explanation," given recently, was attended by several members of the royal family, including the queen, who presided in her capacity as president of the Spanish League Against Tuberculosis. The paper, by Dr. Ferrán, was read by Dr. Pulido. Ferrán says that in 1882, when Robert Koch discovered the tubercle bacillus, it was considered as the germ of spontaneous tuberculosis. All the investigations carried out by the most prominent scientists were based on this bacillus, but none of them ever explained the reason for their failure to cure the disease. He asserts that in spite of much seeming evidence which stigmatizes it as the cause of the white plague, Koch's bacillus is only the result of the evolution of other microbes, abundant in nature, which cause a large number of pathologic conditions that lead to tuberculosis. This happens whenever the usual bacteria that cause such states become virulent bacilli inside the organism infected by such bacteria. The result is that tuberculosis will not occur if the body is immunized against the bacteria that cause the diseases preceding tuberculosis. He advises, therefore, the use of powerful immunizing vaccines, such as were employed recently at Alcira and Alberique to check the tendency to this disease. This procedure is the same as that followed in many orphan asylums of the Argentine Republic, and should be extended to cows and calves, as is already being done in Holland and Switzerland.

Lecture by the Head of the Sanitation Service

Dr. Martín Salazar, the inspector general of public health, spoke on "Our Sanitary Backwardness and Means to Correct It." He pointed out that the lack of hygienic knowledge among all social classes was the determining cause of the sanitary backwardness. He criticized the resistance that even the most elementary principles of hygiene and public health meet on the part of owners of urban and country real estate. He praised the creation by the Council of the League of Nations of a permanent international body charged with the duty of studying sanitary problems. He says that the most urgent problems to be solved in Spain are: (1) the struggle against infectious diseases; (2) the sanitation of dwellings, and (3) infant welfare and the strengthening of the race. The first problem will be solved when congress approves the pending bill on public prophylaxis. For the second, municipal action is required. For the third, it will be necessary to protect the child from the prenatal period until he reaches his full physical and intellectual development.

Infant Welfare in Spain

During medical week at Santander, recently, Dr. Martinez Vargas, dean of the School of Medicine of Barcelona, discussed the Spanish infant problem, which he declared was most urgent and pressing. In this country babies are born underweight, their environment is unfavorable, and they are not worthy representatives of that Spanish race that conquered Europe and fought so many nations. Public health in Spain is at a very low ebb. He considers that the first duty of the government is to promote sanitary work, on the ground that the causes of the undue infant mortality may be found in inheritance, ignorance and poverty.

An Advocate of Medical Strikes

In one of the sessions of the "medical week," the public health inspector of the province of Albacete, Dr. Bardají, discussed medical provision. He asked for legislation similar to the English statutes on workers' insurance. The real importance of this address lay in the fact that from the same rostrum from which the king denied the possibility of a physicians' strike, a physician forming part of the administration claimed on behalf of the physicians the right to go on strike, and advised the exercise of this right in case it should be necessary to defend the health and life of physicians' children and wives, now in jeopardy through municipal authorities' disregarding the payment of physicians' salaries.

Results of the Medical Week at Santander

With the medical week now a thing of the past, it may be well to summarize its results. The king, showing his interest in all national problems, attended personally to the issuance of two governmental decrees, one which compels municipal authorities to devote to public health work one tenth of the increase in consumption taxes, and another allotting an appropriation of 500,000 pesetas (about $80,000) to conduct a campaign against malaria. These two practical results will serve to keep alive the memory of the medical week at Santander.

Marriages

JOHN CLARK THOMPSON, Lincoln, Neb., to Miss Florence Secord of Clay Center, Neb., at Lincoln, September 29.

UEN SAMUEL HARRISON, Neligh, Neb., to Miss Ruth Boerster of Chanute, Kan., at Omaha, September 8.

FREDOLPH A. POLLACK, Norfolk, Neb., to Miss Laura Esswein Stanton, at Blair, Neb., September 8.

CHARLES E. SMITH, Amhurst, Wis., to Miss Anna C. Hildebrand of Oshkosh, Wis., September 8.

GEORGE H. BARKSDALE, Charleston, W. Va., to Miss Mildred Mason of Salem, Mass., September 8.

PAUL M. WALTER, Bethlehem, Pa., to Miss Elizabeth Mock of Philadelphia, November 17.

ARTHUR LEWIS ROOT to Miss Edith Dow Merrill, both of New York, November 17.

OTIS MARTIN, Omaha, to Miss Naomi Gray of Columbus, at Omaha, September 29.

W. EUGENE WOLCOTT, Omaha, to Miss Alice Becker of Peoria, Ill., recently.

CLIFFORD BELL LULL to Miss Grace Hall, both of Philadelphia, November 20.

ISAAC D. KELLEY to Mrs. Lacy Love, both of St. Louis, November 3.

Deaths

Harry Fisk Hull, Commander, M. C., U. S. Navy ⊕ Las Animas, Colo.; Albany (N. Y.) Medical College, 1899; aged 45; who entered the Navy as assistant surgeon, April 12, 1904, was graduated from the Navy Medical School, Washington, 1905; executive officer of the Bremerton Naval Hospital in 1912; of the U. S. Naval Hospital, Great Lakes, Ill., from 1917 to 1919, and of the U. S. Naval Hospital, Fort Lyon, Colo., at the time of his death; died in the latter institution, October 30, from angina pectoris.

James Belden Gere, New York; Bellevue Hospital Medical College, 1896; aged 48; a member of the Medical Society of the State of New York; assistant neurologist to the Presbyterian Hospital and attending neurologist to University and Bellevue Hospital Medical College Clinic; professor of psychanalysis at Cornell Medical School; captain, M. C., U. S. Army; died suddenly, November 19.

Joseph H. Wilson, Bellefontaine, Ohio; Homeopathic Hospital College, Cleveland, 1871; aged 76; a member of the Ohio State Medical Association; president of the Logan County Medical Society; who served with the One Hundred and Thirty-Fifth Ohio Volunteer Infantry during the Civil War; died, September 16, from paralysis.

Alanson Webster Hawley ⊕ Seattle; Rush Medical College, Chicago, 1890; aged 54; a specialist in diseases of the eye, ear, nose and throat; a member of the Pacific Coast Oto-Ophthalmological Society and Puget Sound Academy of Ophthalmology and Oto-Laryngology; died in Kalamazoo, Mich., October 25.

Frederick H. Bates, Elmhurst, Ill.; Rush Medical College, 1878; aged 63; surgeon for the Chicago and Northwestern, Illinois Central, and Aurora, Elgin and Chicago Electric railroads; at one time a member of the school board of Elmhurst; died in Biloxi, Miss., November 27.

Filipp Kreissl ⊕ Chicago; University of Vienna, Austria, 1885; aged 61; a specialist in urology; a member of the American Urological Association; professor of genito-urinary surgery in Loyola University, Chicago; died, November 23, from endocarditis.

James B. Blair, Decatur, Ill.; University of Louisville, Ky., 1910; aged 37; was instantly killed, September 18, near Lafayette, Ind., when the automobile in which he was riding fell over an embankment and overturned.

John Frank Pratt, Binghamton, N. Y.; University of Buffalo, N. Y., 1878; aged 64; a member of the Medical Society of the State of New York; aural surgeon to Binghamton City Hospital; died, November 3.

John R. Wells, Chester Springs, Pa.; University of Pennsylvania, Philadelphia, 1882; aged 61; a member of the Medical Society of the State of Pennsylvania; died, August 29, from hemorrhage of the spinal cord.

William C. Swain, Dallas, Texas; University of Texas, Galveston, 1897; aged 48; for four years a member and at one time president of the Texas Board of Medical Examiners; died, September 29.

Edwin Cyrus Thorn, Jr. ⊕ Deerfield, Mass.; Baltimore Medical College, 1898; aged 46; vice president of the Franklin District Medical Society; died suddenly, November 11, from heart disease.

Larkin Seymour Rogers, West, Miss.; Tulane University, New Orleans, 1885; aged 61; state treasurer and at one time a member of the legislature of Mississippi; died, October 14, from gastritis.

James Otis Rountree, Vidalia, Ga.; Atlanta (Ga.) College of Physicians and Surgeons, 1913; aged 32; a member of the Medical Association of Georgia; died in Rochester, Minn., November 1.

George Burnet Orr ⊕ Cincinnati; Medical College of Ohio, Cincinnati, 1869; aged 79; for fifty-one years a practitioner of Cincinnati; died at the home of his daughter in New York, November 8.

Robert S. Bolton, Johnson City, Tenn.; Bennett College of Eclectic Medicine and Surgery, 1890; aged 58; a member of the Illinois State Medical Society; died, November 10, from pneumonia.

Allen Carter Jones, Newport News, Va; Medical College of Virginia, Richmond, 1878; aged 63; a member of the Medical Society of Virginia; died, November 9, from pneumonia.

⊕ Indicates "Fellow" of the American Medical Association.

John P. Myers, Twin Falls, Idaho; Northwestern University Medical School, Chicago, 1904; aged 46; a member of the Oregon State Medical Association; died, November 11, from peritonitis.

Stanislaw Joseph Lukaszewski, Detroit; American College of Medicine and Surgery, Chicago, 1906; aged 46; a member of the Michigan State Medical Society; died, September 11.

Isaac D. Howard, Harvard, Neb.; Eclectic Medical College of Pennsylvania, Philadelphia, 1870; aged 80; a member of the Nebraska State Medical Association; died, August 26.

Moses Kahn, Brooklyn; University and Bellevue Hospital Medical College, 1903; aged 39; a member of the Medical Society of the State of New York; died, September 11.

Addison King Kirkpatrick, Eckmansville, Ohio; Miami Medical College, Cincinnati, 1897; aged 49; a member of the Ohio State Medical Association; died, September 11.

Sylvester Parker Bishop, Delta, Ohio; Bellevue Hospital Medical College, 1865; aged 80; president of the Fulton County Medical Society in 1871; died, August 15.

Thomas Henry Donlon ⊕ Chicago; Northwestern University Medical School, 1910; aged 48; died, November 23, from injuries received when struck by a street car.

Oscar Boone Edmonson ⊕ Peoria, Ill.; University of Illinois, Chicago, 1907; aged 44; assistant physician of Peoria County; died, November 12, from diabetes.

Charles H. Vilas, Madison, Wis.; Hahnemann Medical College and Hospital, Chicago, 1873; aged 74; regent of the University of Wisconsin; died, November 22.

Walter Stevens Morden ⊕ Saline, Mich.; University of Michigan, Ann Arbor, 1880; aged 65; for thirty-three years a practitioner of Saline; died, November 8.

James McMorris, Belle Plaine, Iowa; Rush Medical College, 1872; aged 84; a practitioner of Belle Plaine for half a century; died suddenly, November 5.

Thomas C. McSwain, Bingham, S. C.; College of Physicians and Surgeons in the City of New York, 1884; died in British Guiana, August 7, from dysentery.

Gaetano Frank Samarelli, New York; University of Naples, Italy, 1898; a member of the Medical Society of the State of New York; died, September 12.

John Dennison Colt ⊕ Litchfield, Ill.; Western Reserve University, Cleveland, 1865; aged 80; a veteran of the Civil War; died, November 2.

Horace Lamar McWhorter ⊕ Fairfield, Ala.; University of Alabama, Mobile, 1913; aged 31; died, November 15, from pernicious anemia.

William Brigham Parkinson, Logan, Utah; University of Louisville, Ky., 1892; aged 68; died, November 9, from cerebral hemorrhage.

John Faber ⊕ Jersey City, N. J.; University of Erlangen, Germany, 1875; aged 73; a specialist in tuberculosis; died, November 18.

John M. Tomlinson, Archdale, N. C. (license, North Carolina, 1888); aged 84; died, November 10, from cerebral hemorrhage.

Morton Guthrie Douglas ⊕ Warrenton, Va.; University of Maryland, Baltimore, 1895; aged 51; died suddenly, November 14.

Louis B. Fishman, Chicago; Marion-Sims College of Medicine, St. Louis, 1897; aged 53; died, November 23, from heart disease.

George William A. Gregory, Corpus Christi, Texas; University of Tennessee, Memphis, 1892; aged 59; died, November 7.

Elias B. Rees, Lexington, Ga.; University of Georgia, Augusta, 1873; aged 79; also a clergyman; died, November 8.

John W. Scott, Tallahassee, Fla.; Chicago Medical College, 1876; aged 62; died, October 27, from cerebral hemorrhage.

Anthony Francis Booth, Medford, Mass.; Boston University School of Medicine, 1893; aged 52; died, November 6.

Sylvester J. Shetler, Cleveland; Cleveland College of Physicians and Surgeons, 1883; aged 66; died, September 5.

William Lebo, Valley View, Pa.; Jefferson Medical College, 1872; aged 73; died, November 10, from heart disease.

Harry Francis Worley ⊕ San Francisco; Keokuk (Iowa) Medical College, 1896; aged 46; died, November 13.

John C. Tarpley, Stithton, Ky.; University of Louisville, Ky., 1868; aged 77; died, November 11.

John S. Dukate, Alford, Ind.; University of Louisville, Ky., 1857; aged 95; died, November 11.

Correspondence

"PROMOTIONS IN THE MEDICAL RESERVE CORPS"

To the Editor:—Under the heading "Promotions in the Medical Corps" (The Journal, Oct. 16, 1920, p. 1078) we are told that the Surgeon-General has appointed a board "to draw up regulations governing promotions and to obviate the difficulty arising from the stipulation that no applicant may receive a higher grade than that held by him during the war." In the same issue, page 1082, is the notice of Dr. Isadore Dyer's death, in which we find the statement: "He was discharged from the service with the rank of major and shortly afterward accepted a commission in the new reserve corps as colonel."

This is not the only instance in which the jump from major to colonel was made, in spite of the "stipulation" referred to on page 1078, and there are many cases of promotion to the grade above that held during the war. The stipulation apparently worked intermittently, as it were, being called in force when the office of the Surgeon-General did not wish to promote applicants, and sinking into innocuous desuetude when promotion was favored.

I have heard a large number of ex-service medical men who have not gone into the reserve corps discuss the matter. There are several reasons that have influenced them. Some were disgusted with what they saw of the service, and many resented the intolerant attitude of the regular officers to the emergency men. I believe, however, that the average man does not care so much for the actual rank given as he does for the fact that he knows that other men who never did a day of what can be called military service, nor sacrificed anything of comfort or income, have been given promotions, two grades in some instances, while in other cases the "stipulation" above referred to is called into play, though the applicant may have gone through a training camp, given arduous and honorable service, and received a high rating for efficiency from his superior officers.

Many gross injustices, some of which may have been unavoidable, occurred during the war, and nepotism was only too evident in the office of the Surgeon-General. There is much distrust of that office abroad in the ranks of the medical profession. If the present Surgeon-General can assure the profession of impartial treatment, and the banishment of politics from his office, I am sure that he will find the medical men of the country ready and glad to go into the reserve corps.

There are obstacles in the way, but they can be overcome by square dealing. Many follow Holy Writ in doubting the ability of the Ethiopian to change his skin or the leopard his spots, but these can be convinced.

Mazyck P. Ravenel, M.D., Columbia, Mo.

PHYSICIANS AND THE HARRISON NARCOTIC LAW

To the Editor:—A decision recently rendered by the U. S. Circuit Court of Appeals for the Second Circuit, affirming the conviction of a physician and two druggists for violation of the Harrison Narcotic Law, should be of interest to your readers. The opinion, which will presumably be published in due course in the Federal Reports, was handed down, November 16, in the case of *Solomon Rothman et al.* v. *United States.*

Several points of more or less technical legal interest were decided, but the feature of the decision which is of particular importance to physicians and druggists relates to the power given by the Harrison law to the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, to make rules and regulations. The court held that this gives no authority to make rulings interpreting the law; that a physician relying on any interpretation of the law made in a departmental ruling does so at his peril, and cannot plead that he was misled by it if the courts should subsequently decide that the ruling was wrong.

I enclose a copy of the opinion, from which you may desire to quote, and I think it is important that physicians should be informed of this decision. I am told that after the Supreme Court decisions on the Harrison law were rendered, in March, 1919, the officials of the Internal Revenue Bureau were subjected to great pressure from physicians and others desiring interpretations of the law, and were not only urged to issue general rulings but received innumerable requests from individuals for advice on their particular problems. This decision may help to impress on physicians that if the text of the law in any particular is not sufficiently clear to enable them to decide safely what their rights and duties are, they should either have the question tested in the courts or else try to have the law amended so as to make it clear. Appealing to administrative officials for an interpretation is of no benefit, and reliance on such interpretations may prove dangerous.

Arthur D. Greenfield, New York.
Attorney and Counselor at Law.

[We quote two paragraphs from the Court's charge to the jury:]

The defendants are to be judged by the interpretation accepted by the constitutional authorities and given to the Harrison Narcotic Law in the years 1917 and 1918, and if the defendants, in the conduct of their business, complied with the decisions and orders of the Treasury Department, through the Bureau of Internal Revenue, as the same were issued in the years 1917 and 1918, under the provisions of the Harrison Narcotic Law, then these defendants must be acquitted. They cannot be judged by an interpretation of the law after the filing of this indictment which reverses or is contrary to that adopted and duly promulgated during the times mentioned in the indictment.

Assuming that these Treasury Decisions conflicted and that Decision No. 2200 was wrong and Decision No. 2879 was right and in accordance with the decision of the Supreme Court in *Webb and Goldbaum* v. *United States* 249 U. S. 96, the trial judge was bound to disregard No. 2200; the meaning of the act is authoritatively determined by the court and not by the Treasury Department. Ignorance of the law excuses no one. It could be no excuse that the defendants relied on a Treasury Decision which was wrong. In the Webb case it was authoritatively settled that if a practicing and registered physician issues an order for morphine to an habitual user thereof, the order not being issued by him in the course of professional treatment in the attempted cure of the habit, but for the purpose of providing the user with morphine sufficient to keep him comfortable by maintaining his customary use, such order is not a physician's prescription under exception (*b*) of Section 2 of that act. The instruction given by the court conformed to the ruling of the Supreme Court and there was no error in refusing the instruction requested.

"INTELLECTUAL RECONCILIATION WITH GERMANY"

To the Editor:—Apropos of Dr. Krumbhaar's letter in The Journal (Nov. 27, 1920, p. 1513) may I say a word? The sentences of Professor Schwalbe which he quotes are doubtless the utterances of a 110 per cent. German, and as such are interesting. The chauvinistic spirit that prompted them is unfortunately not confined within the limits of any one country. We have many 110 per cent. Americans whose utterances must sound much the same way to foreign ears. As members of a profession whose science is actuated by a desire to alleviate the suffering of humanity, we ought to do all we can to make the world a more comfortable place to live in, and this cannot be done by antagonism. If we as workers in the science of medicine cannot be generous to our erstwhile enemies, who are also striving to help mankind and extend to our colaborers in a common cause the hand of fellowship in our mutual endeavors in the relief of suffering, then who can be expected to do it? As victors we should take the first step.

John Ruhräh, M.D., Baltimore.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

SUPPLY OF NURSES

To the Editor:—Can you tell me what methods are being used by hospitals in meeting the shortage of pupil nurses?

T. F. B., Huntingdon, Pa.

ANSWER.—One method that has been widely used is to raise the pay of pupil nurses to a point that will attract them. Among the hospitals that have used this plan are the Los Angeles County Hospital and the Charity Hospital of New Orleans. The former now pays student nurses $20 a month for the first year, $25 a month for the second year and $30 a month for the third year, with maintenance, uniforms, textbooks and thermometers. The latter hospital pays pupil nurses $12 a month during the first and second years, and $15 a month during the third year. The provision of adequate and pleasant housing for pupil nurses is receiving attention all over the country.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 11. Sec., Dr. Samuel W. Welch, Montgomery.

ARIZONA: Phoenix, Jan. 4-5. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

COLORADO: Denver, Jan. 4. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DELAWARE: Dover, Dec. 14-16. Sec., Reg. Bd., Dr. P. S. Downs, Dover.

DISTRICT OF COLUMBIA: Washington, Jan. 11-13. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

FLORIDA: Gainsville, Dec. 6-7. Sec. Reg. Board, Dr. W. M. Rowlett, 812 Citizens Bank Bldg., Tampa.

HAWAII: Honolulu, Jan. 10-13. Sec., Dr. J. E. Strade, 1041 Alakea St., Honolulu.

ILLINOIS: Chicago, Dec. 6-7. Director, Mr. Francis W. Shepardson, Capitol Bldg., Springfield.

INDIANA: Indianapolis, Jan. 11. Sec., Dr. W. T. Gott, Crawfordsville.

MARYLAND: Baltimore, Dec. 14. Sec., J. McP. Scott, 137 W. Washington St., Hagerstown.

MINNESOTA: Minneapolis, Jan. 4-6. Sec., Dr. Thomas McDavitt, 539 Lowry Bldg., St. Paul.

NEW MEXICO: Santa Fe, Jan. 10-11. Sec., Dr. R. E. McBride, Las Cruces.

NORTH DAKOTA: Grand Forks, Jan. 4. Sec., Dr. George M. Williamson, Grand Forks.

OKLAHOMA: Oklahoma City, Jan. 11-12. Sec., J. M. Byrum, Shawnee.

OREGON: Portland, Jan. 4-6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia, Jan. 11-15. Sec., Dr. Thomas E. Finnegan, Harrisburg.

RHODE ISLAND: Providence, Jan. 6-7. Sec., Byron U. Richards, Providence.

SOUTH DAKOTA: Pierre, Jan. 18. Director, Division of Medical Licensure, Dr. H. R. Kenaston, Bonesteel.

VIRGINIA: Richmond, Dec. 14-17. Sec., J. W. Preston, 511 McBain Bldg., Roanoke.

WASHINGTON: Spokane, Jan. 4-6. Sec., Dr. William M. O'Shea, Spokane.

WEST VIRGINIA: Charleston, Jan. 13. Sec., R. T. Davis, Charleston.

WISCONSIN: Madison, Jan. 11-13. Sec., Dr. John M. Dodd, Ashland.

INSURANCE COMPANIES AND PUBLIC HEALTH MEASURES

Life insurance companies are in a position to appreciate the value of vaccination, animal experimentation and other public health measures in the prolonging of human life. Recently several large insurance companies created the "Association of Life Insurance Medical Directors," to keep in touch with the agencies at work in various states to secure and retain laws and measures which are clearly in the interests of public welfare. This association rendered excellent service in showing the dangers if vaccination, animal experimentation, etc., were prohibited in California, as provided for in measures submitted to popular vote. Ten days before the election in Oregon, a prominent newspaper editor telegraphed the association stating that a constitutional amendment was to be submitted to the voters providing for the abolishment of vaccination, etc., and asking an opinion as to the effect the measure would have on public health. The telegraphic reply stated that the association opposed the amendment and advised that an overwhelming negative be registered at the polls. This argument was added: "In view of the universal experience of the human race and the virtual stamping out by vaccination of a pestilence which formerly at frequently repeated intervals decimated the population, failure to continue the protection of the public health which vaccination affords would be criminal. In every instance in which vaccination has been abandoned, outbreaks have occurred usually promptly. Millions are living today who would not be alive but for vaccination, and to discard the use of this simple, safe and sure preventive would be foolish in the extreme."

COLLEGE ENTRANCE EXAMINATIONS IN 1920

The systematic manner and efficiency with which the College Entrance Examination Board conducts its work and the large numbers examined are of special interest and may suggest methods which may be adopted in the development of the work of the National Board of Medical Examiners. A report just received from the College Entrance Examination Board shows that in 1920, examinations were held in 215 different cities in forty-nine states and territories, three United States dependencies and twenty foreign countries. Altogether 15,266 individuals were examined who handed in 48,449 answer books. To prepare questions required eighty-three examiners, and to grade the papers 502 readers were employed. The total expenditures for these examinations and the maintenance of the board for the year 1920 were $111,049.

Oregon July Examination

Dr. Urling C. Coe, secretary, Oregon State Board of Medical Examiners, reports the written examination held at Portland, July 6-8, 1920. The examination covered 13 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 46 candidates examined, 39 passed and 7 failed. Nine osteopaths were examined, but failed. Four candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Number Passed
College of Medical Evangelists		(1920)	1
Yale University		(1919)	1
Northwestern University		(1909) 1, (1919) 1	2
Rush Medical College		(1884) 1, (1910) 1, (1914) 1, (1920) 2*	5
University of Illinois		(1905)	1
College of Physicians and Surgeons, Keokuk		(1894)	1
Johns Hopkins University		(1915) 1, (1918) 1, (1919) 1	3
University of Minnesota College of Med. and Surg.		(1902)	1
University of Minnesota Medical School		(1917)	1
Missouri Medical College		(1895)	1
St. Louis College of Physicians and Surgeons		(1918)	1
University of Nebraska		(1920)	1
Univ. of Oregon Med. School		(1918) 1, (1919) 3, (1920) 10	14
Willamette University Medical Department		(1905) 1, (1913) 1	2
Hahnemann Med. College and Hospital, Philadelphia		(1917)	1
University of Pennsylvania		(1920)	1
University of Tennessee College of Medicine		(1913)	1
University of Toronto Faculty of Medicine		(1913)	1
	FAILED		
National Medical University Chicago		(1894)	1
Northwestern University		(1910)	1
University of Louisville		(1916)	1
Eclectic Medical University, Kansas City		(1917)	1
Southwest School of Medicine and Hospital		(1916)	1‡
University of Pennsylvania		(1918)	1
Nippon Special Medical School, Tokyo		(1919)	1‡

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Medical Evangelists		(1918)	California
College of Physicians and Surgeons, San Francisco		(1915)	California
University of Pennsylvania School of Medicine		(1917)	Idaho
University of Toronto		(1892)	Idaho

* Diploma withheld until 1921, pending completion of internship.
‡ Graduation not verified.

Book Notices

ELECTRIC IONIZATION. A Practical Introduction to Its Use in Medicine and Surgery. By A. R. Friel, M.A., M.D., F.R.C.S.I., Aural Specialist, Ministry of Pensions, London District. Cloth. Price, $2.50. Pp. 78, with illustrations. New York: William Wood and Company, 1920.

To the average physician, the terms for measurement of electricity learned in the college course of physics are now only vaguely familiar, and new definitions have come to the fore. To those who desire an understanding knowledge of "electric ionization" in its present day relation to therapy, the booklet by Dr. Friel should be most welcome. Cumbersome technical discussion does not clutter up the four chapters which compose the treatise, but sufficient information is incorporated to serve as an adequate working basis in the field of electrotherapy. Ionization and electric current, equipment, and the effect of different ions are discussed in the first three chapters. The fourth chapter, on the details of treatment, is optimistic in tone, as might be expected from any worker in his pet field; but the author is plainly aware that "ionization is not a panacea. . . . It does not contraindicate the simultaneous employment of other agencies dealing with other factors of the condition. Rather does it render their use possible and give them a better chance of acting successfully." It is evident that Dr. Friel has no use for the charlatan who has capitalized the mysterious and spectacular forces of electricity for personal gain, but does believe in close cooperation between the family physician and the electrotherapeutic specialist.

DISEASES OF NUTRITION AND INFANT FEEDING. By John Lovett Morse, A.M., M.D., Professor of Pediatrics, Harvard Medical School, and Fritz B. Talbot, A.B., M.D., Instructor in Pediatrics, Harvard Medical School. Second edition. Cloth. Price, $4. Pp. 384. New York: The Macmillan Company, 1920.

The object of the authors in the first edition was to present the general pediatric literature on infant feeding, and to give a description of the method of infant feeding taught in the Harvard Medical School. The exceptionally complete review of the literature covered in the first edition has now been brought down to April 1, 1918. It is of exceptional value for a detailed study of the scientific basis for infant feeding. The more important additions to the previous text are on gastric motility, protein needs of infants, vitamins, the relation of salts to edema and diarrhea, and the metabolism of the newborn and starvation. They have also added considerable material to the bacteriology of the stools. New chapters have been added on spasmophilia and acidosis, and extensive additions have been made to the chapter on scurvy. The detailed citation of many unverified experiments in the chapters on diseases of nutrition, many of which have been disproved, while of interest to some readers, may have a tendency to confuse the student as to the exact status of the subject. The book is an excellent treatise, and is to be recommended as necessary to a complete library on infant feeding.

X-RAY OPERATION. By R. P. Kincheloe and A. G. Drury, M.E. Price, $5. Pp. 121, with illustrations. Cincinnati: X-Ray Consulting Bureau, 1920.

This loose leaf book gives a practical presentation of the technic of roentgen-ray exposure and all factors entering into the making of a roentgenogram. It is admirably adapted for roentgen-ray technicians and assistants, as well as for the physician who has to do his own roentgen-ray exposing, developing and other work. Chapters on roentgen-ray machine details enable one to locate trouble and detect faults in the transformer or tube circuits. The handling of the Coolidge tube is set forth so that the busy man can easily understand its mode of operation. Different controls for different roentgen-ray shadow values are clearly described, with illustrations. Proper positions of exposures of the several anatomic regions, with correct exposure formulas, are given and illustrated; this will prove of great value and should bring about a more uniform technic if generally adopted by roentgen-ray manipulators and technicians.

A TEXT-BOOK OF OPHTHALMIC OPERATIONS. By Harold Grimsdale, M.B., F.R.C.S., Ophthalmic Surgeon and Lecturer on Ophthalmic Surgery to St. George's Hospital, and Elmore Brewerton, F.R.C.S., Consulting Ophthalmic Surgeon to the Metropolitan Hospital. Second edition. Cloth. Price, $4.75. Pp. 438 with illustrations. New York: William Wood and Company, 1920.

This book covers the field of operative ophthalmology in twelve chapters, each devoted to one class of operations: for example, muscle operations, cataract operation and the operative treatment of glaucoma. The surgical procedures in each chapter are first classified according to the basic principles involved; and in each of these groups are placed what the authors believe to be the most worthy examples of that particular type of operation. This is followed by a description of each operation, giving first the instruments needed and then detailing concisely the steps. The illustrations are plentiful and, being diagrammatic, are of the greatest help. Brief comment is made on the relative adaptability of the different classes of operation to the varying conditions met in the same type of case. Operative technic is described clearly and in an understandable way.

AN EPITOME OF HYDROTHERAPY FOR PHYSICIANS, ARCHITECTS AND NURSES. By Simon Baruch, M.D., L.L.D., Consulting Physician to Knickerbocker and Montefiori Hospitals. Cloth. Price, $2 net. Pp. 205, with illustrations. Philadelphia: W. B. Saunders Company, 1920.

Dr. Baruch gives not only a concise review of the facts underlying hydrotherapy, but also a sufficiently detailed exposition of the technic to render the book a sufficient guide for pupil nurses or medical students—were they required to have such a guide. Unfortunately, hydrotherapy is given little consideration in nurses' training schools, and still less in medical colleges. The book will therefore probably not find the use it deserves. To the physician who feels the lack of training in this important branch of therapy, this little book can be unreservedly recommended, as throughout the evident aim has been to simplify hydrotherapy so as to render it accessible so far as possible to the general practitioner. One of its unique features is a chapter on hydriatric instalment in which the author not only describes the equipment he has found useful, but also cites examples of faulty installations that he has observed. He finds that many sanatoriums and health resorts, which have regarded it a sine qua non of being up to date to install costly hydriatric equipment, are unfortunately content with the mere possession of these facilities, without using them. The polemics in which Dr. Baruch indulges here and there would be out of place in a book of this character, were it not for the singular neglect, by the medical profession, of one of the oldest remedies of mankind, and for the false teaching in many otherwise excellent textbooks on medical practice.

TASCHENBUCH DER AUGENHEILKUNDE FÜR ARZTE UND STUDIERENDE. By Prof. Dr. Curt Adams, Privatdozent für Augenheilkunde an der Universität Berlin. Fourth edition. Cloth. Price, 66 marks. Pp. 440, with 77 illustrations. Berlin: Urban & Schwarzenberg, 1920.

This "pocket manual of ophthalmology" was evidently written to fit into the modern style of bellows pocket, for it is too lengthy and complex for the "student and general practitioner"; but it is too condensed for the specialist. However, as an intermediary, it is an excellently written and well printed book. A systematic arrangement of subjective and objective symptoms of ocular diseases enables the student to arrive at a diagnosis with comparative ease, and the treatment indicated by the diagnosis is dealt with at length. Especially good is the chapter on external diseases of the eye, as well as the commoner injuries to the eyeball and the requisite treatment. The chapter on glaucoma leaves much to be desired, although the table of differential diagnosis between glaucoma and symptomatically similar diseases is good. Professor Adams seems to have overlooked entirely some American work that is of major importance to the class of physicians for whom this book is designed, namely, focal infections in relationship to the eye. Another etiologic factor of ocular diseases to which but little attention is paid is disease of the accessory nasal sinuses. At the close of the book are prescriptions for some two hundred odd remedies used in ophthalmology, a feature that always appeals to the beginner.

Social Medicine and Medical Economics

THE CARDIAC CLINIC OF THE LENOX HILL HOSPITAL

WALTER F. BOPP, M.D.
Adjunct Pediatrician, Lenox Hill Hospital; Chief of Cardiac Clinic, Lenox Hill Dispensary
NEW YORK

Almost immediately after our children's pavilion was opened, it became evident to us that some provision would have to be made for the after-care of our cardiac patients. Twenty-five per cent. of all the children admitted to the wards were affected with some form of heart disease. These unfortunates would stay in the hospital for weeks and at times months, until compensation was established; then they would return to their homes only to be readmitted after a few weeks in as bad a condition as before, owing to lack of care and attention on the part of the parents, and to poor home surroundings. Something had to be done to break this vicious circle and, with the help of Dr. A. L. Goodman, a clinic for the after-care of cardiac children was established.

PLAN OF ORGANIZATION

The work was organized on the basis of (*a*) the ward proper; (*b*) the dispensary clinic, which included (1) the cardiac class and (2) the nutrition class; (*c*) the school for cardiac children; (*d*) social service, and (*e*) country homes for cardiac children.

At the outset it was decided to include all patients with chorea, rheumatism and its allied diseases, grouping these together as potential cardiac patients. All were treated in the wards in the usual manner, except that those severely affected with chorea received the intraspinal autoserum injection. All cardiac and potential cardiac patients, on discharge, were referred to the special class in the dispensary for after-care.

The staff of this clinic consists of three physicians, a nurse and a corps of social workers who in part assist in the clinic, and in part take charge of the social service and field work. The clinic is held on three afternoons a week, two being devoted to the heart cases proper, and the third to a class on nutrition. The hours are from 2 to 4 in the afternoon. A special chart consisting of two parts is kept for each patient, one sheet being devoted to the physical findings and the physician's directions, and the other to an extensive family history and social service notes on home conditions, personal hygiene, the preparation of food, etc. Both sheets are kept in an individual folder, together with all correspondence relating to the case. These folders are kept in a special cabinet devoted to the cardiac cases. In addition, a special card is kept as a dispensary record at the request of the dispensary officials. Two rooms are devoted to the work; in one, the nurse interviews the parents, makes her reports, etc.; in the other, the examinations are made.

ROUTINE OF THE CLINIC

A child, on entering the dispensary, is referred to the children's department. If, on examination, it is found to be affected with chorea, rheumatism or heart disease, it is at once transferred to the cardiac clinic. Here it receives a card stamped with a serial number and marked with a red heart, so that on future visits it will be sent to the proper room at once. The nurse now takes a complete social and family history from the mother, and enters the facts on the social service chart. The medical history is then taken and a medical chart is started. The child is stripped, and a trained worker takes the pulse, temperature (rectal), weight and height, and enters them on the chart. Child and charts are now sent to the examining room, where a complete physical examination is made and dictated to a social worker, who enters the findings on the chart. Defects requiring attention are noted, and the child is sent to the special departments in charge of a worker with a note specifying the treatment needed. Ear, eye, nose, throat and teeth receive special attention. Roengtenograms are taken when indicated, and the reports entered on the chart. The case is classified and the worker takes down the medication ordered, the instructions given the mother, the diet and the exercises ordered; also the date when the patient is to report again. All these data are entered on the chart. A few days before the time to report, a post card is sent to the mother reminding her to bring the child to the clinic. If the child does not report, a worker is sent to the house to find out the reason for the absence. The parents are warned that cooperation on their part is absolutely necessary; if they are unwilling to give this, the case is dropped.

All patients are reexamined at regular intervals. The home conditions are investigated by a social worker, who enters her report on the chart. An attempt is made to correct bad home surroundings. Children living on the upper floors are advised to change their quarters. An attempt is made to teach the mother the proper selection and preparation of food by referring her to the class on nutrition, which meets on Mondays. This class is in charge of a physician assisted by a nurse, a dietitian and two volunteer workers; it was organized too recently to justify the reporting of any results. An attempt is made to regulate school work and to secure the cooperation of the teacher, so that unnecessary stair climbing is avoided and the child excused from fire drill and other strenuous exercises. Any patient showing signs of a beginning decompensation is at once sent to the ward. An effort is made to keep the children interested and secure regular attendance by arranging little parties, Christmas celebrations and picnics for those who attend regularly.

SCHOOL FOR CARDIAC PATIENTS

The cardiac school has been in operation for the last year with very satisfactory results. It is conducted as an annex to Public School No. 70, and is held in the rooms of the Lenox Hill Settlement House in East Sixty-Ninth Street. The settlement has placed at our disposal a large, light room with a southern exposure. It is reached by an elevator so that all stair climbing is obviated. There is a large roof suitable in favorable weather for use as a playground. Meals are furnished by the settlement under our direction. The board of education has given us the fullest cooperation, furnishing a teacher, school supplies, cots, blankets and transportation, when indicated. Dr. Edson, assistant superintendent of education, and Miss Smith, director of manual training, have helped us wholeheartedly in this work.

The children report at the school at 8:45. Those whose condition does not permit any exercise are called for and delivered at the school by the board omnibus. On their arrival, the nurse takes the pulse and temperature, and all children having a temperature of 100 F. or higher are sent home and the clinic is notified. Class begins at 9:15 and lasts till 10:30. Then comes a rest period of half an hour during which the children receive a cup of warm milk or broth with bread and butter. Study is then resumed until 12:30, when a dinner is served. This consists of a soup, fresh vegetables, and potatoes or eggs in some easily assimilable form; at times, rice pudding or some other harmless dessert is substituted. After dinner comes the rest period, which lasts from thirty to forty-five minutes; during this time every child must rest on the cots provided for this purpose. These cots really resemble steamer chairs with adjustable back rests.

During this time, perfect silence must be maintained. At the conclusion of the period, study is resumed till 3 o'clock, when the class adjourns to the roof, where a playground teacher assumes charge. Selected games, adapted to the condition of each child, are played; at frequent intervals, rest periods are given. At 5 o'clock the class is dismissed, the omnibus taking home those children who need transportation.

SOCIAL SERVICE

The social service department is of the utmost importance. It consists of a nurse and a trained social worker, assisted by a group of volunteer workers. The workers take charge of the clerical work and assist in the clinic; the cases are followed up and the homes visited; when indicated, help is given the families, milk supplied, and an attempt made to rectify bad home surroundings. The workers make their reports to the nurse in charge of the social service; she is the central authority and is responsible for the entire working staff. She assigns the workers, arranges the schedules, takes care of the correspondence, and sees to it that all the children are placed in proper homes in the summer.

COUNTRY HOME

The final link in the chain is the country home. As we have none of our own, we are dependent on the courtesy of other institutions and have always received the fullest cooperation. Among the best of these institutions we have found the Burk Foundation at White Plains, the Zinn Home for Cardiacs, the Mineola Home for Cardiacs, and the Campbell Cottages.

CONCLUSION

Our results have been most gratifying. The children all show marked improvement, there is a distinct gain in weight, the school attendance is much better, and the days spent in the hospital are decidedly lessened. There can be no question that the cardiac clinic has proved its value and that every large hospital should have such an organization.

59 West Eighty-Ninth Street.

Medicolegal

Evidence and Indictment Under Harrison Narcotic Law

(Reeves v. United States (U. S.), 263 Fed. R. 690)

The United States Circuit Court of Appeals, Fifth Circuit, in affirming a judgment of conviction of defendant Reeves for a violation of the Harrison Narcotic Law, says that he assigned as an error the admission of expert testimony as to the proper mode of treating addicts to the morphin habit. During the progress of the trial the government tendered as witnesses three physicans of New Orleans to testify as experts as to the proper method recognized by the medical profession for the treatment of narcotic addicts. The defendant objected to such expert testimony, on the tender of each of those witnesses, on the ground that expert testimony was inadmissible, and that the facts only as to what the defendant did in the practice of his profession, in the treatment of addicts, under the indictment, was admissible. This was the only objection shown in the record to any testimony given by either of the three witnesses. The defendant was a physician and was indicted under the Harrison act for illegally dispensing the drugs. He contended that the drugs were dispensed in the course of his practice as a physician. The general objection stated was properly overruled. The defendant was on trial, charged with having illegally dispensed the drugs mentioned. It was material and proper for the jury to be informed of the method recognized by the medical profession for the treatment of drug addicts, and this method could have been detailed only by men skilled in medicine; otherwise, any physician could dispense the forbidden drugs in any quantity to persons not his patients, and thus defeat the purposes of the act. The issue being whether the drug was dispensed in the legitimate course of the defendant's practice as a physician, the evidence was admissible on that issue. This court can therefore see no merit in the objection urged to this ruling.

Nor was there error in overruling the demurrer to the indictment. The indictment charged that E. W. Reeves, "then and there a physician and a person engaged in dealing in," etc., "did unlawfully, wilfully, knowingly, and feloniously sell, barter, and exchange to one V. J. Allin," stating the exceptions contained in the state, "Not in pursuance of a written order of said Allin, on a form issued," etc., "4.8 grains of a certain derivative of opium, to wit, morphine sulphate, which said morphine sulphate was not then and there dispensed or distributed by the said E. W. Reeves as a physician in the course of his professional capacity only," etc. The Harrison act prescribes how physicians may dispense opium and its derivatives, and the indictment in this case specifically negatives the method. This court fails to see how the charge could be made plainer. The fact that the accused was a physician practicing his profession did not authorize him to sell or dispense opium or its derivatives in any manner other than in the course of his professional practice, or in the ways laid down in the statute. The contention which seemed to be relied on in the demurrer, that a physician is exempt from operation of the act, is untenable.

Construction of Statute as to Itinerant Vendors

(J. R. Watkins Medical Co. v. Hunt et al. (Neb.), 177 N. W. R. 462)

The Supreme Court of Nebraska, in holding that a contract relative to a sale of medicines, extracts, and other articles manufactured by the plaintiff was not void as against public policy, as a surety contended that it was, says that he based his contention on Section 2726 of the Revised Statutes of Nebraska of 1913, which reads:

> Any itinerant vendor of any drug, nostrum, ointment or appliance of any kind intended for the treatment of any disease or injury, or who shall by writing, printing or any other method, publicly profess to cure or treat diseases or injury, or deformity, by any drug, nostrum, manipulation or other expedient, shall be deemed guilty of a misdemeanor. . . .

It was argued that this section described two classes of offenses, one for vending, and another for publicly professing to cure. But the court questions that construction. The wrongdoes must "profess to cure," etc. The third "or" in the section renders construction difficult. The word "vendor" appears to be the subject of the sentence. If the language before the word "or" is interpreted to include all vending or itinerant vending of drugs, etc., then the qualifying phrase following the word "or" would seem to be superfluous, because the word "who" must refer to "itinerant vendor of any drug," etc. It would seem difficult or impossible to make the section read as if it commenced: "Any person who is an itinerant vendor of drugs," etc. The title of the act and its contents show that it was not intended to deal with "patent" and proprietary medicines, but merely to "regulate the practice of medicine." Wherefore, the court holds that to constitute the offense described, the accused, an itinerant vendor, must "publicly profess to cure or treat diseases," etc.

Practicing Medicine Without License as a Nuisance

(State v. Johnson (N. M.), 188 Pac. R. 1109)

The Supreme Court of New Mexico says that this action was brought by the state to enjoin the defendant from the practice of osteopathy and medicine without having a license. The complaint was in two counts. By the first it was charged that the defendant was engaged in practicing osteopathy in the county of Bernalillo without having first obtained a license as required by law, and that such practice constituted a nuisance, and was dangerous, detrimental and injurious to the health of the inhabitants of that county. The second count was the same as the first in all respects except that it was charged that the defendant was engaged in the practice of medicine without having first obtained a license as required by law. To the complaint the defendant demurred on the

ground that it failed to state facts sufficient to constitute a cause of action. Examining the complaint, the supreme court finds but one fact stated, namely, the practice of osteopathy or medicine without a license. The allegations that such practice was a nuisance, or was detrimental, dangerous and injurious to the public health were merely conclusions of the pleader. Practicing osteopathy or medicine without a license is not a nuisance per se, or in and of itself. "Averments of mere conclusions are insufficient, and so, where the thing complained of is not a per se nuisance, the facts which make it such must be averred, and a mere averment that it is or will be a nuisance is not sufficient." Therefore, the judgment of the lower court sustaining the demurrer and dismissing the complaint was correct, and it is affirmed.

Liability of Hospital in City Ambulance Service

(Murtha v. New York Homeopathic Medical College and Flower Hospital (N. Y.), 126 N. E. R. 722)

The Court of Appeals of New York says that the plaintiff, while riding in a taxicab, was run down and injured by the defendant's ambulance. The legislature has created for the city of New York a board of ambulance service, with authority to establish ambulance districts and to contract with any hospital corporation for ambulance service therein. The defendant, a hospital corporation, undertook to supply such service in return for a yearly payment, and was fulfilling its undertaking at the time of the collision. It admitted that its driver was negligent, yet it asked to be absolved from liability. Its claim of exemption did not rest on its character as a public charity. The rule is now settled in the state of New York that a hospital, though public, is liable to strangers, that is, to persons other than patients, for the torts or wrongful acts of its employees committed within the line of their employment. The claim put forward by the defendant was that it was doing the state's work, and that it shared the state's immunity. The court finds the claim untenable. The state is not liable for the torts of its agents and contractors unless such liability has been assumed. The exemption has been extended to the civil divisions of the state, its counties, cities, towns and villages, when engaged, as the delegates of the state, in the discharge of governmental functions. But agents and contractors, though unable to impose liability in such circumstances on the state or its divisions, remain liable themselves, and this whether they act in person or by subagents or servants. The defendant was neither the state nor a civil division of the state. Its position was the same as that of any other contractor. If the keeper of a livery stable or of a motor garage had undertaken a like service, there would be little obscurity about the resulting liability. Not different is the plight of the hospital whose servants by their negligence have worked an injury to strangers. Liability did not rest on the circumstance that the hospital in this instance was serving for pay. One traveler run down through the negligence of another is not concerned to inquire whether the offender has gone forth on the highway for the love of man or of money. The defendant, were it not for the acceptance of the money, might have declined without wrong to enter on the work at all. That is not important now. It set its hand to the task, and must answer for the doing. Judgment in favor of the plaintiff is affirmed.

Another Court Favors Charitable Hospitals

(Nicholas v. Evangelical Deaconess Home and Hospital (Mo.), 219 S. W. R. 643)

The Supreme Court of Missouri, Division No. 1, holds that the defendant, under its articles of association, is a charitable organization, and, being such, is not liable for injuries caused to its patients by the negligence of its trustees, servants or employees. Nor was it to be held otherwise as to the plaintiff because she was not a charity patient, but paid for all the services rendered, and supplies and medicines furnished to her. Wherefore, the court affirms a judgment in favor of the defendant, which was sued for damages for injuries which the plaintiff alleged that she had sustained from having had carbolic acid, instead of alcohol, applied to her back for a rubbing or massage.

Society Proceedings

COMING MEETINGS

American Physiological Society, Chicago, Dec. 30.
Porto Rico, Medical Association of, Ponce, Dec. 13-14.
Radiological Society of North America, Chicago, Dec. 16-17.
Society of American Bacteriologists, Chicago, Dec. 28-30.
Southern Surgical Association, Hot Springs, Va., Dec. 14-16.
Western Surgical Association, Los Angeles, Calif., Dec. 3-4.

PHILADELPHIA COUNTY MEDICAL SOCIETY

Regular meeting, Nov. 10, 1920

The President, Dr. Herman B. Allyn, Philadelphia, in the Chair

SYMPOSIUM ON "THE DOCTOR AND THE DRUG ADDICT"

Hospital Experiences with the Drug Addict

Dr. Joseph McIver, Philadelphia: When the Harrison Narcotic Law went into effect, many drug users applied for admission to the Philadelphia General Hospital. The methods of treatment most used were gradual withdrawal and the Lambert method. In most cases the immediate withdrawal of the drug was not a difficult matter. It is not difficult to render a drug addict free from symptoms of drug starvation. Nowhere outside a well regulated institution can a drug addict be kept under the absolute control necessary for treatment. After dismissal at the end of the thirty day period of treatment it was found that many of the patients returned for another treatment. Experience led to the belief that these people did not desire a cure. Nearly all of the patients had been living in the lowest walks of life, and many had long criminal records. They must have been weak misfits in life.

DISCUSSION

Dr. Joseph C. Doane, Philadelphia: I am interested because at the time when these experiences were happening Dr. McIver and I were working together and were hopeful of solving the problem so far as the Philadelphia Hospital was concerned. Our experiences there, and my experience since, have been with the lower class of drug users. We recognize that there are two different classes. The criminal class comprises those who find their way into the city hospital, and the class with more mental stability is treated in more select institutions or sanatoriums. In the Philadelphia Hospital we have treated in the neighborhood of 3,500 cases. Between 3,400 and 3,500 cases have relapsed since that treatment. Hospital physicians who meet this class of patients soon learn the frivolous and playful ways of the drug addict. The average physician who endeavors to treat a drug addict is a great deal more trustful of his patients than he should be. The private physician who endeavors to treat a patient by withdrawal while the patient is about his work is either a superphysician or a Simple Simon, or else he is illegally evading the law. I do not believe it can be done successfully.

Psychology of Drug Addiction

Dr. John H. W. Rhein, Philadelphia: Any effort to correct the evils of drug addiction must be based on a thorough understanding of the psychologic factors underlying the cause. I do not believe that mental deficiency is a cause of drug addiction, nor do I believe that the proportion of mental defectives is high among drug addicts. I believe that improper prescribing of opium, morphin or heroin by physicians, while responsible in some degree, is only incidental in drug addiction. I mean by this that the cause of development of the habit is inherent in the individual. The drug addict is a psychopath before he acquires the habit. He is a person who cannot face, unassisted, painful situations; he resents suffering, physical, mental or moral; he has not adjusted himself to his emotional reactions. The most common symptom that requires relief is a feeling of inadequacy: an inability to cope with difficulties. These conditions call for an easy and

rapid method of relief which is found in the use of drugs. It is simple enough to cure the victim of his craving temporarily, but the difficulty is in preventing a return to the habit. To cure a drug addict means to reconstruct and reeducate his personality so that he can adapt himself to his emotional reactions.

Scope of Therapeutics in the Relief of Narcotism

Dr. Alexander Lambert, New York: The real therapeutic care of the patient is begun only when, successfully unpoisoned from his particular narcotic, he is being built up and regenerated in body and mind. Treatment must vary not only with the kind of narcotic taken, but, to a certain degree, with the amount and length of time it has been indulged in; also, with the cause which prompted the choice of narcotic. Some plan of unpoisoning a patient is an absolute essential. The principles of the belladonna treatment are the reduction of the narcotic in a few days during which there is given hourly day and night a mixture of belladonna, hyoscyamin and xanthoxylum up to the physiologic limit of belladonna, with vigorous catharsis during the treatment. After four or five days the patient no longer craves the drug. The physostigmin (eserin) and pilocarpin method I have found useful in heroin addicts. Ambulatory self-reduction in the majority of patients is a dishonest and useless method doomed to certain failure. It is the method under which the trafficking and disreputable physician cloaks his practice. Its hopelessness and uselessness should be universally appreciated and condemned. The great public health problems of narcotism are today centered around the cocain and heroin addicts who constitute nearly four fifths of the addicts. This is the group whose personalities are not adequate, the result being that they offer a grave social problem. In treating the narcotic patient it must always be remembered that the morbid process is a functional poisoning resulting in perversion of the functions. To be successful, one must recognize these various perversions and nervous inhibitions.

DISCUSSION

Dr. Hobart A. Hare, Philadelphia: The society is exceedingly fortunate in having Dr. Lambert read this paper tonight, because in the majority of instances, papers of this kind are read by neurologists or psychologists who do not look at patients in the way we humble general practitioners are prone to observe them. It has also been fortunate because all the profession knows that Dr. Lambert has been peculiarly and particularly interested in this class of patients and because he has devised methods of treatment which are to a large extent his own and which have given large bodies of people more benefit than any other method of treatment with which I am familiar. Some years ago at a dinner of a medical society in Boston, a clever clergyman stated that he supposed that his function was to keep people out of hell, whereas the function of the physician was to get hell out of people; but I think that neither the ecclesiastic on the one side nor the physician on the other has been peculiarly successful in this process of elimination, judging from my own observation. I confess I have not used the physostigmin and pilocarpin treatment. I have frequently used the hyoscyamin treatment, and I believe it is the most valuable in the morphin habitué. I know of nothing that approximates it. In my experience the patient can be made perfectly comfortable. I have never known it to do harm in one-tenth grain in twenty-four hours, excepting under two circumstances. In my comparatively limited experience in these cases there are two classes: (1) those fundamentally rotten by inheritance, and (2) those who are not fundamentally rotten by inheritance, but men and women, like any one of us, who, through illness, have come to be dependent on morphin, codein or possibly even heroin. These people are easily cured in my experience, and they separate themselves from the true morphin habitué, who says: "Doctor, for God's sake save me!" and does not mean it. These people say: "Doctor, I am not going to take any more of that narcotic"; they mean it. There is a difference in the morale and courage of the two classes. Twenty years ago I did not have much faith in the cure of any morphinism. Increasing experience has taught me that there are many persons, men and women, men who have had prolonged bladder trouble, or women who have had prolonged pelvic trouble and who have gradually slipped into the habit of using these drugs. With a little care and help they can be made to emerge from their difficult position. I would like to utter a protest against part of the campaign that is being carried on against narcotic drugs. I think that a large number of people are being deprived of relief from hypnotics by the crusade that is being made to save a whole lot of "rotters" who would be better off if they were dead, both for themselves and for their relatives. Recently I received a letter from the Treasury Department in reference to a bill to be introduced into Congress to wipe heroin off the map, and to forbid its importation into the United States. I wrote back that there was a danger of depriving the medical profession in its struggle with misery and disease of a valuable drug. For every person saved from the heroin habit there will be thousands of honest souls deprived of it. In some cases with a cough heroin acts without producing the disagreeable side symptoms that the other derivatives of opium will cause. Heroin will do it without any of the nausea and depression that morphin produces. I use little in the way of narcotic drugs, but, if the United States were to pass a law forbidding the importation of heroin, I would see that I was stocked up with enough heroin to last my lifetime, not for myself but for my patients. Many physicians of my acquaintance consider heroin one of their most useful drugs. The very fact that it is abused by the degenerate is a sign that it has power for good when prescribed by the physician for the patient who really needs it. In postoperative conditions it is a valuable nervous sedative.

Dr. James M. Anders, Philadelphia: The subject of the therapeutic treatment of drug addiction is an important one. Virtually all of the advances made in our knowledge of this subject, in the last decade at least, have come from Dr. Lambert. It seems to me that opium is often used, as Dr. Lambert intimated, for the purpose of fortifying the personality when about to face some painful or unusual situation. I knew a physician, a prominent member of the medical profession, who invariably before addressing a large body, which he was in the habit of doing, would resort to a dose of heroin. I know of other instances in which this has been done. I have also resorted to hyoscyamin as a method of treatment in these cases, but I have not found it quite so satisfactory as Dr. Hare seems to have done, and for the reason that it did, or very often did, at least, seem to upset the patient mentally and to a disturbing degree. The withdrawal phenomena have been produced in normal animals by the injection of the serum of the blood of a tolerant person or animal. If this be true, then it seems to me that active elimination of the drug by means of vigorous purgation must constitute an important element of the treatment. I would have liked to hear more about the particular physiologic effect of these remedies, as to the basis for the use, for example, of belladonna. We know that the chief physiologic action of belladonna is to depress the sensory filaments and I am inclined, or rather tempted, to ask Dr. Lambert whether the use of belladonna is based on this physiologic effect of the belladonna. When, about ten years ago, Dr. Lambert first published his special method of treatment of these cases, I thought it was rather heroic, rather severe and I did not accept it immediately. About five years ago I had under my care a woman of high social position who was an alcoholic addict, and I made little headway and decided to send her to an institution using his method. She went and obtained a cure. About the same time I learned of a couple of morphin habitués, confirmed cases, who were also cured. I believe that it is the most effective method of which we have any knowledge today. It not only overcomes the withdrawal symptoms which are annoying, but it seems to obliterate the craving for the drug temporarily at least. The heroin habitué is much more difficult of cure and much more liable to relapse, possibly because he belongs to a different class of society, as a rule, than the morphin habitué. The physical upbuilding and moral regeneration so necessary to prevent a relapse is a long and tedious process, as I know from personal experience. It requires patience, skill and perseverance. I feel, however, that it is perfectly possible in many cases, at least where sufficient watchful care is exercised in connection with all the hygienic and therapeutic mea-

sures to which Dr. Lambert referred in his paper, to restore these people to a normal condition of health and of mind.

MISS SARA GRAHAM-MULHALL, New York: Heroin has been only nine years in this country, and during that period of its existence it has reached the most tremendous magnitude in the habit of drug addiction. In New York state 95 per cent. of the addicts are heroin addicts. We are manufacturing and importing into this country more heroin than any other country in the world. I want to say that it is the most baneful drug that the medical profession has in its pharmacopeia.

DR. THOMAS S. BLAIR, Harrisburg, Pa.: There are literally thousands of physicians who have stopped the use of heroin. The year 1919 showed a per capita usage of physician in Pennsylvania dispensing heroin approaching about 16 grains a years—a little less than that. I think I am justified in saying (although the 1920 report is not out) that the per capita for this year will hardly go over 2 grains. Philadelphia uses the larger proportion in the state of Pennsylvania, closely followed by Lancaster, Oil City and Reading. The city of Pittsburgh uses very little. We do not have the trouble with heroin addiction in Pennsylvania that they have in New York City, and three heroin addicts in this city are using today more heroin than all the public hospitals of Philadelphia used in 1919. Consequently I am justified in saying that the professional usage of heroin in Pennsylvania is not 1 per cent. of the total use of heroin. There are two things I can say from our records: Cocain is going out with the dentists; they are not using it, they are using procain; heroin is going out with the doctors.

Experiences in the Control of Drug Addiction in New York State

MISS SARA GRAHAM-MULHALL, New York: When I took office in April, 1919, as first deputy commissioner in the state department of narcotics drug control, prescriptions for from 40 to 90 grains of morphin or heroin were frequent; now it is exceptional to find prescriptions for more than 10 grains of morphin; cocaine is restricted to a few grains per month, and heroin has been practically eliminated. In May, 1919, there were sixty-five narcotic prescribing physicians. No time was lost in bringing pressure to bear on this group. One of these physicians had prescribed in one month 68,382 grains of heroin, 54,097 grains of morphin and 30,380 grains of cocain; after supervision he prescribed in one month 18,000 grains of morphin, no heroin and no cocain. By November, 1920, the number of narcotic prescribing physicians had been reduced to four. Under this practice the addict is treated by the ambulatory method; however, the consensus among all those who have given careful study to the problem condemns this method. A clinic and a hospital were established for handling these cases, but experience proved that both these resulted in failure. The hospital provided for a six weeks course of treatment; about one third of the addicts in New York passed through, but the majority relapsed. In spite of the failure of the clinic and the short-term hospital, they have served a useful purpose in pointing the way to the only possible solution of drug addiction, that is, the colony plan for the rehabilitation of the addict physically, mentally and morally.

Present and Contemplated State Legislation, Relative to Drug Addiction

DR. THOMAS S. BLAIR, Harrisburg, Pa.: It is evident that largely unnecessary supplies of narcotics are coming into the country. The 1919 report of the Bureau of Drug Control of Pennsylvania shows that the per capita coming into this state through legitimate channels, figuring all educts on the basis of opium, was 24 grains a year. The average consumption in public hospitals is only 3 grains a year. Thus it is seen that legislation is needed to curb this menace; this should be national in scope. Any state laws should be cooperative in nature. From the point of view of the Internal Revenue Office, the Harrison Narcotic Law is a very good piece of legislation; but from the point of view of the physician, druggist, dentist and veterinarian and those concerned in its enforcement, it is insufficient. It entails a great degree of annoyance and bookkeeping on professional persons. If the distribution of these drugs was placed in the hands of the U. S. Public Health Service, a large amount of this would be unnecessary. The narcotic law of Pennsylvania needs revision in such a way as to increase the police power. A large tract of land has been purchased by the state to be used in the establishment of an institution for the treatment of drug addicts; but that is as far as the matter has gone. A survey of what has been done in this direction by the various states in the way of institution treatment of drug and alcohol addicts shows that in virtually every case such efforts have resulted in failure. The reason for this is chiefly that the patients, on discharge, revert to their old habits. Therefore, there is little encouragement to open such an establishment.

DISCUSSION

DR. ALEXANDER LAMBERT, New York: One thing struck me this evening: Each one was talking about the group with which he was most familiar and had most to do. I think that there is no question that Dr. Doane and Dr. McIver are correct as to ordinary hospital rounders of hardened habit. You begin with the low grade in which life is not worth living without some form of drug to help the labor and the joys of these persons; without it, they insist that life is not worth while. It is almost impossible to do anything with that group. Take the other group that you meet, the morphin habitués suffering pain; they are anxious to get off, and they stay off. They are not generally known as such, and they are only too anxious to be rid of their addiction. There is a different kind of cough in Philadelphia, the one spoken of by Dr. Hare. I have not yet seen it in New York, and I think it will be worth investigating. I think that with greater investigation on his part he will come to the same conclusion reached by the rest of us have who have suffered from the waste of time struggling with the heroin habit. Heroin is an unmitigated curse. You can do just as much without it. A person will get over his cough in the end just as well. What is the physiologic action of belladonna? So far as I can watch it, it is an action of cutting off the exaggerated action of the extended vagus in general. It is a curious fact that when you are giving the belladonna in the early stages, the pulse becomes slower and slower; this, you will say, is not cutting off the vagal endings of the heart. But there is some other action there that slows the vagus. The diarrhea of sudden cutting off is prevented. I think it has something to do with that. This is my own theory, and like all theories is subject to change without notice on the accumulation of new facts.

SOUTHERN MEDICAL ASSOCIATION

Fourteenth Annual Meeting, held at Louisville, Ky., Nov. 15-18, 1920

The President, DR. E. H. CARY, Dallas, Texas, in the Chair

Direct Aspiration of Contents of Biliary Tract Through Duodenal Tube

DR. SIDNEY K. SIMON, New Orleans: Among the thirty cases in which I have employed this method to date, in ten there was a prompt amelioration of pain and other local symptoms, along with the removal of toxic features. In one case, the temperature fell from 103 F. to normal after the second aspiration. In a case of chronic arthritis a ten days' nonsurgical drainage of the biliary tract produced immediate and apparently permanent relief.

Treatment of Neurosyphilis

DR. ALBERT KEIDEL, Baltimore: Failure of general intensive treatment to cure neurosyphilis may be due to the degree of perivascularitis present at the time treatment is begun, which explains the greater success in that form of treatment early in the disease. The application of intraspinal therapy should be restricted to those early cases that prove refractory to treatment by the ordinary routes early in the infection, and to all cases with organic pathologic changes. In estimating the degree to which intraspinal treatment should be employed, one should be guided by the differential diagnosis and by the amount and rate of response to ordinary treatment.

Neutrophilic Myelocytes in Cerebrospinal Fluid in Myeloid Leukemia

DR. LEWELLYS F. BARKER, Baltimore: In no other case thus far reported has the presence of leukemic cells in the cerebrospinal fluid been described during life. Their presence probably indicates a leukemic infiltration of the leptomeninges. The majority of nervous complications in leukemia are not due to a leukemic leptomeningopathy, but to epidural infiltration, to infiltration of the nerve roots or of nerve ganglions, to infiltration of the nervous axis itself, or to hemorrhages, degenerations or inflammations.

Importance of Eye Examinations in Nephritis

DR. ADOLPH O. PFINGST, Louisville, Ky.: I would emphasize the frequency of retinal involvement in nephritis. The use of the ophthalmoscope in all cases in which kidney trouble is suspected should be encouraged, as well as a careful inspection of the retina of every presbyopic patient who presents himself for the correction of refractive errors, as early retinal changes are often visible in general arteriosclerosis and chronic nephritis even before a urinalysis would reveal anything to indicate a kidney lesion. In the well developed cases of retinitis with effusions, with or without hemorrhages, an ophthalmoscopic examination is important on account of the prognostic significance of nephritic retinitis, as regards both the life of the patient and the ocular function.

Nephritis in Childhood

DR. L. R. DEBUYS, New Orleans: Two factors stand out in the treatment of chronic nephritis in children: (1) to treat the etiologic factors so as to eradicate the cause or retard the disease, and (2) to remove the conditions that predispose to the acute exacerbations. In those cases in which dropsy is present, a salt-free diet is indicated. The other symptoms are treated as in the acute cases. In cases resisting treatment and growing progressively worse, decapsulation of the kidney may be practiced. This is often followed by relief which, however, is liable to be only temporary.

Thrombosis of Coronary Arteries

DR. J. E. PAULLIN, Atlanta, Ga.: Early diagnosis is of the greatest importance. Absolute rest in bed for days and weeks is necessary. The only hope for recovery lies in securing for the infarcted area as rapidly as possible an adequate supply of blood through its collateral circulation. The ability to do this depends on the condition of the unobstructed artery, the extent of the anastomosis, and the size of the infarct. By the administration, intravenously or hypodermically, of strophanthus or digitalis, we help the heart to establish this collateral circulation. I have seen no good result from the use of nitroglycerin or the nitrites. Morphin in sufficient dosage to relieve pain is absolutely necessary.

Early Diagnosis of Gastric and Duodenal Ulcers

DR. SEALE HARRIS, Birmingham, Ala.: The diagnosis of ulcer of the stomach and duodenum is often delayed for years by operation for chronic appendicitis. It is almost the rule for chronic ulcer patients to give a history of operation for chronic appendicitis, without relief or with only temporary amelioration of the symptoms for which the operation was performed. The surgeon is remiss in his duty when he removes an appendix in which there are no demonstrable macroscopic lesions, without extending the incision and exploring the gallbladder, stomach, pancreas and kidneys. Operation for gastric or duodenal ulcer should in no case be performed until the patient has had dietetic and medical treatment for a month or six weeks without relief of symptoms; but the person of cancer age should have the benefit of an early exploration of the abdomen, if medical treatment fails to give complete relief in a few days. If there is a recurrence of symptoms, an exploratory operation should be performed.

Chronic Myocarditis and Its Management

DR. HENRY A. CHRISTIAN, Boston: The guiding signs for the treatment of chronic myocarditis lie mainly in the effects on symptoms, edema, pulse and respiration. Physical examination of the heart is the least important guide in treatment. A course of treatment should not be ended until the patient is free from edema. Eventually the heart will give out, for it is a progressing disease. Relapses are inevitable.

Ligation of Superior Thyroids in Patients with Exaggerated Toxic Symptoms

DR. EDWARD G. JONES, Atlanta, Ga.: The plan of ligating a part of the thyroid pole with the vessels is somewhat more popular than any other plan. Probably as good results follow ligation outside the pole. It is apparently not necessary to use nonabsorbable ligature material or to sever the tissue between ligatures. A completely satisfactory explanation of the remarkable improvement is lacking.

Incidence of Kidney Infections in Acute Appendicitis

DR. R. M. HARBIN, Rome, Ga.: Some metastatic infections of the appendix and kidneys seem to have a selective action, and point to the existence of some common focus. Extreme caution should be practiced before excluding the diagnosis of appendicitis in the presence of evidence of a pathologic condition of the kidneys. In the absence of violent symptoms of appendicitis, there may be cases of doubt in which it is prudent to deliberate for from twelve to twenty-four hours for additional leukocyte readings, which are usually progressively higher in appendicitis.

Appendicitis in Children

DR. FOY ROBERSON, Durham, N. C.: All abdominal pain in children should be looked on with suspicion, and the physician should be careful about administering purgatives as a routine before the diagnosis is established. The prognosis is very favorable if the diagnosis is made early and the operation is performed early; but after the first twenty-four hours, the prognosis is more serious.

Kondoleon Operation for Elephantiasis

DR. W. E. SISTRUNK, Rochester, Minn.: The best results are obtained in patients treated by two or three weeks' rest in bed, with elevation and firm bandaging of the limb preliminary to operation. A large amount of skin, subcutaneous fat and aponeurosis must be removed in order to obtain the best result. It is necessary that the limb be bandaged when patients are up and about for an indefinite period, and oftentimes permanently, following the operation. Before operating, a definite understanding should be come to with patients regarding the fact that the operation is to be performed for the purpose of controlling a disease which, if left alone, usually grows progressively worse; that a perfectly normal limb is not to be expected as a result of the operation, and that it will be necessary for bandages to be worn after the operation.

Acute Diffuse Septic Peritonitis

DR. A. L. BLESH, Oklahoma City: It is imperative to withhold purgatives in all cases suspicious of intra-abdominal inflammation from the very beginning. The treatment is surgical, and must be clean and incisive. It consists in simple drainage without fumbling and mauling of the tissues.

Factors That Lower the Mortality Rate of Suprapubic Prostatectomy

DR. GEORGE R. LIVERMORE, Memphis, Tenn.: The two-step operation should be performed in every case because the bladder will be cleaner than when drained through a retention catheter, thus diminishing the possibility of sepsis; the kidneys are better prepared to stand the removal of the prostate, as the back pressure is entirely relieved and is prevented from recurring as the drainage is continuous; the bladder is at rest and has become accustomed to the suprapubic tube; the congestion of the prostate has been relieved, thus diminishing the hemorrhage and making its control easier; through the suprapubic wound there is a certain amount of absorption of toxins, and hence by the antibodies thus produced, the patient is rendered less susceptible to infection.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Roentgenology, New York

October, 1920, **7**, No. 10

*Instantaneous Roentgenograms of Human Heart at Determined Points in Cardiac Circle. J. A. E. Eyster and W. J. Meek, Madison, Wis.—p 471.
*Cardiospasm. P. F. Butler, Boston.—p. 478.
*Case of Xanthoma Showing Multiple Bone Lesions. A. S. Merrill, Boston.—p. 480.
Unfiltered and Filtered Roentgen-Ray Dosage. W. D. Witherbee and J. Remer, New York.—p. 485.
Effect of Different Filters on Radium Radiations. E. H. Quimby, New York.—p. 492.
*Experimental Study of Duration of Artificial Pneumoperitoneum. L. T. Le Wald, New York.—p. 502.
Value of Roentgen Ray in Study of Diverticulitis of Colon. A. W. George and R. D. Leonard, Boston.—p. 505.

Instantaneous Roentgenograms of Heart.—A method is described by Eyster and Meek for making rapid shadowgraphs of the human heart with a casette changing mechanism allowing two exposures within the same cardiac cycle. By recording a simultaneous electrocardiogram, the exact incidence of these exposures in the cardiac cycle is determined, and their position may be chosen quite accurately by listening to the heart sounds and closing a key by hand. The changes in shape and size of the normal human heart during its cycle are described on the basis of observations made up to the present time. The most important points made are: (1) The movement of no single border of the heart is an accurate index of the extent of its contraction. The whole outline is necessary for such estimation. (2) The mechanism of ventricular filling would seem to be very similar to that which physiological experimentation has constituted in the dog, especially in that the major part of ventricular filling occurs shortly after the ventricle goes into relaxation and is in large part completed before the subsequent auricular contraction, systole of this chamber playing little rôle in adding blood to the ventricles.

Congenital Cardiospasm.—A case of congenital cardiospasm in a man, aged 34, is cited by Butler. The patient had difficulty in swallowing as far back as he could recall.

Xanthoma a General Condition.—The findings in his case, Merrill says suggests, or rather confirm the previous belief, that this disease is a systemic condition in which many of the body tissues may be involved, of which the predominant skin lesions are only a striking surface manifestation, and in which the bones may share in the process with the other tissues.

Duration of Artificial Pneumoperitoneum.—Le Wald states that the presence of gas in the peritoneal cavity after the injection of oxygen can be demonstrated as late as eight days after the original injection. A very moderate amount of gas is sufficient for diagnostic purposes. A proportion of about 2 c.c. of gas to 100 gm. of body weight appears to answer this requirement. The withdrawal of the gas appears advisable unless a rapidly absorbable gas, such as carbon dioxid is used. The use of a more readily absorbable gas than oxygen appears desirable.

Boston Medical and Surgical Journal

Nov. 11, 1920, **183**, No. 20

Review of Untoward Effects Following Arsphenamin and Its Derivatives. W. P. Boardman, Boston.—p. 561.
Argyrol. W. B. Lancaster, Boston.—p. 565.
*Relation of Food to Infantile Eczema. E. S. O'Keefe, Boston.—p. 569.
Observations of an Anesthetist. B. Rapoport, Boston.—p. 573.
Longings of Pregnant Women, Viewed in Light From East. A. Ela, Boston.—p. 576.

Dietetic Infantile Eczema.—Seventy cases of eczema influenced by diet are reported by O'Keefe. The plan followed was, first, a general physical examination, then a careful consideration of the child's diet, or of the mother's diet in the breast fed infants, and finally cutaneous food tests. Forty-one per cent. of the patients gave a positive reaction to one or more of the food tests; 12 per cent. showed a doubtful reaction, and the remainder were negative to any of the proteins tried. Egg proteins, gave a positive reaction in 30 per cent. of the cases in which they were used, potato in 20 per cent. casein in 16 per cent., cod fish in 12 per cent., lactalbumin in 11 per cent., wheat in 9 per cent. and corn in 5 per cent. The mother in no instance showed sensitization to the protein to which her child reacted. Ten nurslings were negative to the proteins of human milk. Nearly 20 per cent. of the series gave a history of asthma, eczema, or urticaria in some other member of the family. In several of the families one child after another developed eczema as soon as it was weaned. An exacerbation of the eczema was in many instances coincident with the eruption of a tooth. The treatment was dietetic and serologic, i. e., sensitization was tried in some cases.

Florida Medical Association Journal, St. Augustine and Jacksonville

October, 1920, **7**, No. 4

Hematuria. J. C. Vinson, Tampa.—p. 55.
Obstetrics as Related to Hygiene, Therapy and Surgery. C. D. Rollins, Jacksonville.—p. 56.
Hay Fever; "Rose Cold." F. J. Walter, Daytona.—p. 61.

Journal of Cancer Research, Baltimore

October, 1920, **5**, No. 4

*Response of Animal Organism to Repeated Injections of an Active Deposit of Radium Emanation. Intravenous Injections in Dogs. H. J. Bagg, New York.—p. 301.
Study of Oxidase Reaction with A-Naphthol and Paraphenylendiamin in Tumors. M. L. Menten, Pittsburgh.—p. 321.
*Peroxidase Reaction in Three Cases of Multiple Myeloma of Bones: Nosologic Position of These Tumors. P. F. Morse, Detroit.—p. 345.
Influence of Certain Diets on Tumor Susceptibility and Growth in Albino Rats. K. Sugiura and S. R. Benedict, New York.—p. 373.

Response to Intravenous Doses of Active Radium Emanation.—Bagg states that large intravenous doses of an active deposit of radium emanation produce a reduction in the number of leukocytes, of as much as 80 per cent. of their total number, from the effects of an initial dose; the red blood cells are reduced about 25 per cent. Repeated doses, amounting to a total of 338.4 cm., distributed in four intravenous injections, apparently produce a very marked decrease in the number of circulating lymphocytes of the blood. Digestive disturbances, such as severe vomiting and diarrhea, followed large doses of the radioactive solutions, and were associated with a considerable reduction in the body weight. In several cases, a rise in body temperature followed the treatments, suggesting an adaptive reaction on the part of the animal organism to meet the toxic condition produced by the relatively sudden destruction of a considerable amount of cellular material. The metabolic changes showed that the larger injections of the radioactive solutions were followed by very decided increases in the total nitrogen content of the urine, the urea, creatinin, uric acid and the total phosphates. Relatively small or moderate doses of the radioactive solution produce definite changes in the urine, indicative of destructive changes within the organism. Considerable congestion was present in the principal viscera. When the active deposit of radium emanation is used intravenously as a therapeutic agent, great care should be taken to grade the dose in accordance with the general physicial condition of the patient, which should be determined by frequent urine and blood analyses; and if more than one dose is given during the treatment, the second dose should be made smaller in accordance with the strength of the original dose.

Plasma Cell Myeloma.—Three cases of nonoxidase reacting myeloma are reported by Morse. The histogenesis of these tumors is discussed, and data presented which is interpreted to support the theory that the so-called "plasma cell" type of myeloma is not of myeloblastic origin and has no relation to the leukemic group. It is suggested that the "plasma cell" myeloma springs from a series of cells whose specific function is bone absorption, and that the myeloma cell may be a heteroplastic "osteoblast." The myelocytes, "plasma cells," and other abnormal cell types, together with varying degrees of leukocytosis and disturbances of the percentage relationships of the various normal leukocytes, are adequately accounted for by the condition of malignancy accompanied by widespread bone marrow involvement, and is found in non-myelomatous conditions.

Journal of Experimental Medicine, Baltimore

Nov. 1, 1920, **32**, No. 5

*Experimental Syphilis in Rabbit. V. Syphilitic Affections of Mucous Membranes and Mucocutaneous Borders. W. H. Brown and L. Pearce, New York.—p. 497.
*Endothelial Cell in Experimental Tuberculosis. N. C. Foot, Boston.—p. 513.
*Endothelium in Experimental Pulmonary Tuberculosis. N. C. Foot, Boston.—p. 533.
Enzymes of Pneumococcus. O. T. Avery and G. E. Cullen, New York.
*I. Proteolytic Enzymes.—p. 547.
II. Lipolytic Enzymes: Esterase.—p 571.
*III. Carbohydrate-Splitting Enzymes: Invertase, Amylase and Inulase.—p. 583.
*Epinephrin Content of Suprarenal Glands in Anaphylaxis. M. I. Smith and S. Ravitz, Omaha.—p. 595.
*Experimental Studies on Yellow Fever Occurring in Merida, Yucatan. H. Noguchi and I. J. Kligler, New York.—p. 601.
*Immunologic Studies with a Strain of Leptospira Isolated from Case of Yellow Fever in Merida, Yucatan. H. Noguchi and I. J. Kligler, New York.—p. 627.

Experimental Syphilis Studies.—In a series of more than 200 rabbits in which generalized lesions were observed following local inoculation with *Spirochaeta pallida,* there were a number of animals in which characteristic lesions were noted on mucous membranes or along mucocutaneous borders. These lesions were distributed with about equal frequency between the nose or nasolacrimal system and the eyelids on the one hand, and the genital and anal regions on the other. The lips and buccal mucosa appeared to be less subject to localized infections. The resulting lesions differed according to their location and the character of the reaction in the individual case.

Endothelial Cell in Experimental Tuberculosis.—There has been much dispute concerning the origin of the component cells of the tubercle. The epithelioid cells are said by some to be of endothelial origin, by others of purely connective tissue or fibroblastic parentage, while a third group of investigators traces them to a lymphocytic source. Foot claims that the epithelioid cell is of definitely endothelial origin. The only reliable means of identifying and tracing this cell is, at the present time, a colloidal suspension of carbon, injected intravenously. Benzidine dyes will not accomplish this if used alone. There is little evidence that the local tissue elements take an active part in the process of tubercle formation, until after the lesion is formed; the reaction is, in a sense, exudative, since the lesion is produced from cells which migrate to the site of inflammation.

Endothelium in Experimental Pulmonary Tuberculosis.—By means of the injection of a colloidal suspension, or sol, of carbon into the veins of a living animal, as recommended by McJunkin, Foot was able to trace the so-called epithelioid cells of the pulmonary tubercle from its origin in the vascular endothelium to the lesion. It appears that experimental tubercles are formed in the lung, as in the liver, primarily by cells originating in the capillary endothelium. In response to infection, they proliferate in the capillary walls in the vicinity of the invading organisms, migrate in steadily increasing numbers, and, arriving at the site of the infection, further multiply and to some extent fuse to form the syncytia known as giant cells. The epithelial cell takes no active part in the process; its proliferation tends to repair denuded surfaces and is regenerative rather than combative or phagocytic in nature. The cells of endothelial origin not only phagocytose tubercle bacilli, but carry them into the tissues, for example, into lymph nodes, by way of the lymphatics, or into other lung lobules by way of the air passages, in which they are readily demonstrable.

Enzymes of Pneumococcus.—The intracellular nature of the proteolytic enzymes of pneumococcus, the influence of hydrogen ion concentration, the effect of age and concentration of the enzyme on activity, and the relation of these enzymes to the virulence of the organism and to the mechanism of bile solubility are discussed by Avery and Cullen.

Carbohydrate Splitting Pneumococcus Enzymes.—A method is described by Avery and Cullen for the preparation of an active enzyme containing solution of pneumococci, in which no living cells are present. These enzymes are capable of hydrolyzing sucrose, starch and inulin. The invertase and amylase of pneumococcus are active within the limites p_H 5 to 8, with an optimum reaction of about p_H 7. This reaction range corresponds closely with limiting hydrogen ion concentrations which define growth of the organism in the presence of carbohydrate. These studies indicate that the enzymes described are not true secretory products of the living cell, but are of the nature of endoenzymes, since their activity can be demonstrated only when cell disintegration has occurred.

Epinephrin in Suprarenals Unchanged in Anaphylaxis.—Smith and Ravitz claim that the epinephrin store of the suprarenal glands remains unaltered in guinea-pigs and rabbits which have been sensitized to ox serum, or subjected to varying degrees of anaphylactic shock by the reinjection of the foreign protein.

Study of Immunology of Yellow Fever.—If man's degree of susceptibility to leptospira is comparable to that of the guinea-pig, Noguchi and Kligler state it may reasonably be assumed that the injection of the anti-icteroid serum at an early period of the disease will have a beneficial effect, similar to that observed in the treatment of the experimental infection in guinea-pigs. The mode of administration should be intravenous, and, if necessary, the injection should be repeated at short intervals (four hours).

Anti-Icteroides Immune Serum in Identification of Leptospira of Yellow Fever.—Identification of the leptospira isolated from a case of yellow fever in Merida was accomplished by Noguchi and Klinger by means of an anti-icteroides immune serum prepared in a horse with several Guayaquil strains of *Leptospira icteroides.* The immune serum showed a protective action of high titer against the Merida strain, thus establishing its efficacy as a therapeutic agent against this strain. Polyvalent anti-icteroides immune serum prepared in the horse or monovalent anti-icteroides immune serums prepared in the rabbit had a definite devitalizing action on the Merida strain, while immune serums similarly prepared with strains of icterohemorrhagic leptospira had no perceptible effect on the Merida strain. Serums from yellow fever convalescents in Merida gave a positive Pfeiffer reaction with the Merida strain of *Leptospira icteroides.* The reactions between the Guayaquil strains (Nos. 1 and 5) and two of these serums from convalescents varied from definitely positive to doubtful, owing probably to the diminution of active immune principles in the serums during the prolonged and unfavorable conditions of their transportation.

Journal of Laboratory and Clinical Medicine, St. Louis

October, 1920, **6**, No. 1

*Experimental Investigation of Certain Features of Pharmacologic Action of Arsphenamin. D. E. Jackson and G. Rapp, Cincinnati.—p. 1.
Chemical Cnanges in Blood in Disease. VII. Chlorids. V. C. Myers, New York.—p. 17.
Preparation and Standardization of Polyvalent Antipneumococcic Serum. N. S. Perry and E. Blanschard; Detroit.—p. 23.
Experiences with Epidemic Respiratory Diseases in Army; Methods of Control. E. D. Kremers, Fort Sheridan, Ill.—p. 25.
Modifications of Van Slyke's Titration Method for Estimating Alkali Reserve of Blood. H. D. Haskins and Edwin E. Osgood, Portland, Ore.—p. 37.
*Comparison of Three Methods of Examining Sputum for B. Tuberculosis. L. R. Jones, Greenville, S. C.—p. 41.
Estimation of Chlorids in Whole Blood. J. R. Rieger, Detroit.—p. 44
Stability of Drawn Blood. H. L. White and T. Watson, Los Angeles.—p. 45.
Bacterial Vaccines; Chloretone Solution as a Vehicle for Their Administration. R. G. Owen, F. A. Martin and W. L. Brosius, Detroit.—p. 47.

Pharmacology of Arsphenamin. — Jackson and Raap's research shows that first class preparations of arsphenamin have almost no direct action on the bronchial musculature of the dog. It seems obvious that acute symptoms resembling anaphylactic shock, or the so-called "nitritoid crises," it produced by good preparations of arsphenamin cannot be due to a spasmodic contraction of the bronchioles. When the pulmonary pressure had been greatly raised by arsphenamin, injections of epinephrin tend to lower this pressure and also to restore the excursions of the pulmonary pressure due to the respiratory movements of the lungs, when these had been previously greatly reduced by the arsphenamin. Jackson and Raap believe this results mainly from a mechanical shifting

of the blood from the action of the epinephrin on the systemic vasculature. When solutions or arsphenamin are injected into the general circulation by way of the femoral artery, the pulmonary blood pressure is still raised by the drug, but the rise in pressure is less than if the drug were injected by the femoral vein. When solutions are injected into the portal vein and are thus carried through the liver before passing into the general circulation, then the drug produces but little, if any, effect on the pulmonary pressure, although if the dosage is very large the pulmonary pressure may be raised slightly apparently only as the result of an increased volume of fluid in the vessels. Toxic doses thus injected tend to lower the pulmonary pressure. Jackson and Raap believe that this action of the liver is brought about by a precipitation of the drug in the capillaries and arterioles of the liver. This apparently does not correspond to the ordinary detoxicating action of the liver as manifested on many poisons. This precipitation in the liver takes place quickly and it does not prevent some portion of the drug from passing on into the general circulation, for the systemic pressure may fall to a proportionately much greater degree than does the pulmonary pressure.

Examination of Sputum for Bacillus Tuberculosis.—Of a total of 153 examinations by the direct method made by Jones three were negative, of a total of 170 by the antiformin method eight were negative, and of 170 examinations by the autoclave method only two were negative. The autoclave method kills all the tubercle bacilli and the material is subsequently easy to handle and quite safe so far as the danger of disseminating the infection is concerned, and where large number of specimens are to be examined the method is most convenient.

Journal of Orthopaedic Surgery, Lincoln, Neb.

November, 1920, **2**, No. 11

Operative Treatment of Old Hip Disease. M. H. Rogers and C. W. Peabody, Boston.—p. 589.
*Bone Tumors: Central in the Phalanges of Fingers and Toes; Chondroma; Myxoma; Giant Cell Tumor. J. C. Bloodgood, Baltimore.—p. 597.

Chondroma and Myxoma of Phalanges.—Bloodgood is of the opinion that it is of practical importance to differentiate chondroma from myxoma. The myxoma seems to demand more radical treatment. A patient with central chondroma of the lower end of the femur which had been subjected twice to curetting followed by radium, is well with good function three years after the last treatment. A second case of apparently pure chondroma involving the knee joint has recurred. Most thorough radium treatment had no effect. Amputation through the thigh was done. There was no positive evidence of myxomatous tissue, yet, how differently this chondroma, apparently more completely removed, behaved as compared with the one in the lower end of the femur which was only curetted and treated with radium.

Michigan State Med. Society Journal, Grand Rapids

November, 1920, **19**, No. 11

*Case of Lethargic Encephalitis in Pregnant Woman with Necropsy Findings. M. D. Haag, Ann Arbor.—p. 483.
Too Late and Too Early in Abdominal Surgery. A. I. Lawbaugh, Laurium.—p. 487.
Civic Activities in Public Health and Public Health in Civic Activities. D. Littlejohn, Ishpeming.—p. 489.
Gallbladder Disease. C. D. Brooks, Detroit.—p. 494.
*Cure of Cancer of Cervix by Radical Abdominal Hysterectomy. R. Peterson, Ann Arbor.—p. 499.
Tonsillectomy for Focal Infections. R. D. Sleight and W. Haughey, Battle Creek.—p. 503.
Conservative Nasal Surgery. H. W. Peirce, Detroit.—p. 507.

Lethargic Encephalitis in Pregnant Women.—Haag's patient was seven and one-half months pregnant. Throughout the entire course of the disease, she at no time showed any signs which would indicate that she was attempting to abort, in spite of the fact that the temperature was running as high as 104 F. The fetus remained alive until the day the patient died. A review of the literature shows only ten other reported cases complicating pregnancy.

Abdominal Hysterectomy for Cervix Cancer.—The end results in forty-seven cases operated on five or more years ago are detailed by Peterson. There have been fourteen recurrences after the radical operation for cancer of the cervix, nine out of the fourteen recurrences taking place the first two years after the operation. A rare case of recurrence occurred six years after operation.

Minnesota Medicine, St. Paul

November, 1920, **3**, No. 11

Socialism and Practice of Medicine. J. C. Litzenberg, Minneapolis.—p. 511.
*Gastrojejunal Ulcer. G. B. Eusterman, Rochester.—p. 517.
Selection of Substandard Lives. C. N. McCloud, St. Paul.—p. 526.
Work of Rockefeller Commission in France. G. E. Brown, Miles City, Mont.—p. 534.
*Hereditary Factors of Epilepsy. J. A. Buchanan, Rochester.—p. 536.
Epidemic Cerebrospinal Meningitis at Hospital Center, Kerhuon, France. E. J. Engberg, St. Paul.—p. 538.

Gastrojejunal Ulcer.—Eighty-two cases are reported by Eusterman. Forty-seven cases followed gastro-enterostomy performed in the Mayo Clinic for benign duodenal or gastric ulcers; in thirty-six cases the primary operation was done elsewhere. The cause of this lesion is largely due to technical error or mechanical defect in the operation itself. In one third of all the cases retained unabsorbable suture material was a highly probable causative factor. The symptomatology closely approached that of benign ulcer in 87 per cent., which comprise the regular and irregular ulcer types. Eighty-eight per cent. of the patients, including those who obtained incomplete or no relief, had a recurrence of symptoms within one year after the original operation. Late painful recurrence is frequently due to a gastrojejunal ulcer. Other possibilities to be ruled out are reactivation of the original partially healed ulcer, new ulcer, and malignant degeneration in a gastric ulcer. Clinical features of diagnostic importance are as follows: (1) gross gastric retention, (2) small movable mass in the region of the umbilicus, (3) postoperative pain assuming a lower level, (4) gastrocolic fistula, (5) bleeding, gross or occult with associated anemia in the absence of preoperative hemorrhage, and (6) a progressive course and lack of satisfactory response to medical treatment. Exact preoperative localization of the ulcerative process is only possible through the cooperation of the roentgenologist. The roentgenologic examination furnished reliable direct or contributory evidence in 65 per cent. of all cases. Careful operative technic, combined with immediate and continued postoperative medical management, should greatly reduce the incidence of the lesion. Medical participation under any circumstance in addition to the removal of foci of infection insures satisfactory surgical end results.

Heredity in Epilepsy.—Of 128 cases of essential epilepsy analyzed by Buchanan all the patients had normal or approximately normal blood pressures and negative Wassermann tests, and all had negative roentgenograms. The examinations of the eye grounds were negative; in doubtful cases examination of the spinal fluid was made and found to be negative. In none of the cases was a cause for the convulsions found. Seven (5.4 per cent.) of the patients had had convulsions when infants; 10.9 per cent. of the patients had a direct or indirect history of epilepsy in their families. One only had a child that was epileptic. Migraine was present before the onset of epilepsy, and alternated with or continued with epilepsy in eighteen (14 per cent.) of the cases studied.

Missouri State Medical Association Journal, Chicago

November, 1920, **17**, No. 11

Social Medicine S. P. Child, Kansas City.—p. 437.
Artificial Anus. W. T. Coughlin, St. Louis.—p. 442.
Single Light-Stroke Percussion Method. S. T. Lipsitz, St. Louis.—p. 446.
Practical Therapeutics in Dermatology. W. D. Hammond, St. Louis.—p. 447.
*Case of Merycism Associated with Appendicitis. F. G. Nifong, Columbia.—p. 452.
Five Years' Experience with Stock Vaccines. J. J. Gaines, Excelsior Springs.—p. 454.
Conservatism. F. W. Bailey, St. Louis.—p. 456.
Choice of Treatment in Uterine Fibroids. R. E. Wobus, St. Louis.—p. 460.

Appendicitis and Merycism.—The appendicitis in the three cases cited by Nifong was of the chronic type. There were no very acute attacks, and one patient had an acute attack.

Constipation was a marked symptom in one one case notwithstanding the pericolic condition, and all of the patients enjoyed very good health. The regurgitation of food was the most annoying and prominent symptom in all of them. All of the patients had a pericolic membrane and a fibrous bound-down appendix.

New York Medical Journal

Nov. 13, 1920, **112**, No. 20

Placental Gland and Placental Extract. S. W. Bandler, New York.—p. 745.
*New Aspects of Menstruation. J. Oliver, London.—p. 750.
Differential Diagnosis Between Disorders of Pelvic Organs in Women and of Abdominal Viscera. E. E. Montgomery, Philadelphia.—p. 752.
Recent Advances in Obstetric Practice. J. O. Polak, New York.—p. 754.
Complete Forceps Operation. E. P. Davis, Philadelphia.—p. 756.
Severe Pelvic Infection Following Hysterectomy. F. W. Langstroth, New York.—p. 758.
Treatment of Puerperal Infection. C. G. Cumston, Geneva, Switzerland.—p. 760.
Treatment of Persistent Vomiting of Pregnancy. K. Cyriax, London.—p. 761.
Prenatal Care from Viewpoint of Hospital. L. S. Cogill.—p. 763.
Importance of Prenatal Care. M. Lobsenz, New York.—p. 765.
Early Diagnosis of Pregnancy. D. Lazarus, New York.—p. 766.
Diagnosis of Pregnancy. M. B. Root, Syracuse, N. Y.—p. 767.
Ileocecal Tuberculosis. A. O. Wilensky, New York.—p. 768.

Analysis of Menstrual Fluid.—Menstrual fluid, amounting to 70 ounces, was preserved for examination with thymol and was obtained from a girl, aged 18, who had never seen her menses because the hymen was imperforate. Quantitative examination disclosed the following: specific gravity, 1.031, water 87.13 per cent., and solids 12.87 per cent., consisting of organic material 95.02 per cent. and ash 4.98 per cent. Further analysis showed: serum albumin 12.49 per cent., serum globulin 16.56 per cent., mucin 3.37 per cent., and fat 0.0051 per cent. The inorganic ash contained sodium, potassium, calcium, magnesium, phosphorus and iron and the salts present were principally sodium chlorid and sodium carbonate with small amounts of phosphates and sulphates. After repeated testings it was determined that if iodin was present the amount was so small that it could not be estimated. It contained no arsenic. Microscopically large numbers of red blood corpuscles and some leukocytes were seen together with small crystals of hemoglobin enclosed in a colorless matrix. Oliver sees no justification for clinging to the belief that menstrual fluid is purely and simply blood poured out by vessels which have been opened into in consequence of a degeneration and disintegration of the mucous lining of the uterus.

Southern Medical Journal, Birmingham, Ala.

November, 1920, **13**, No. 11

*Differential Diagnosis of Tuberculosis and Hyperthyroidism: Study of Goetsch Test. R. McBrayer, Sanatorium, N. C.—p. 783.
*Early Case of Cerebrospinal Syphilis. D. D. V. Stuart, Jr., Washington, D. C.—p. 766.
*Pulmonary Syphilis. J. H. Gibbs, Columbia, S. C.—p. 788.
*Gummatous Epididymitis and Gummatous Osteoperiostitis of Humerus. L. F. Barker and J. A. Ward, Baltimore.—p. 794.
Infant Feeding. J. H. M. Knox, Baltimore.—p. 796
Relation of Physician to Health Department C. E. Low, Wilmington, N. C.—p. 802.
Termination of Pregnancy for Theraeputic Reasons. F. W. Griffith, Sheville, N. C.—p. 807.
Surgical Intervention in Acute Intracranial Injuries. Y. C. Lott, Albany, Ga.—p. 809.
*Removal of Parotid Gland for Malignant Growth. M. J. Payne, Staunton, Va.—p. 813.
Goiter: A Clinical Study. A. Brenizer, Charlotte, N. C.—p. 815.
Surgery of Inguinal Region with Special Reference to Local Anesthesia. D. C. Donald, Birmingham.—p. 822.
Chronic Suppurative Otitis Media. W. H. Brannon, Anniston, Ala.—p. 824.

Value of Goetsch Test.—If future studies substantiate the findings thus far obtained by him, McBrayer says the differential diagnosis of tuberculosis and hyperthyroidism will be made easier for the general practitioner when, after the subcutaneous injection of epinephrin, he finds, between fifteen minutes and one hour and thirty minutes after the injection: (1) A systolic blood pressure rising ten or more points and remaining above normal for fifty-five minutes or more; (2) increased pulse rate of ten or more points per minute proportionate to the systolic rise; (3) an increase of pulse pressure of thirty-five or more points; (4) pulse irregular and varying in volume; (5) an increase in respiratory rate of four or more points per minute; and (6) varying pupillary changes.

Early Cerebral Syphilis.—In Stuart's case the cerebral involvement manifested itself about nine weeks after the institution of treatment and eleven weeks after the appearance of of the chancre. The patient had received what would ordinarily be considered an adequate course of treatment. The objective findings were: irregular left pupil; ataxia of gait and station; exaggerated deep reflexes, with unequal knee jerks; voice disturbance; mental impairment. Vigorous systemic treatment was followed by marked improvement. Stuart emphasizes the importance of routine spinal fluid examinations in the earliest stages of the disease.

Pulmonary Syphilis.—A chronic pulmonary disease, physically indistinguishable from the common types of chronic pneumonitis and producing a symptomatic picture similar to that of pulmonary tuberculosis, is not infrequently associated with a positive Wassermann reaction, and the favorable change in general and local conditions following antisyphilitic treatment is so striking as to lead to the opinion that the syphilitic process is at least in part responsible for the pulmonary pathology. Gibbes cites seven cases.

Syphilis of Epididymis.—Though syphilis may attack any part of the human body there are certain regions that are relatively less often affected than others. Among these relatively immune regions is the epididymis. The globus major is most often involved, the lesion appearing as a firm nodular mass, which forms a cap for the end of the testicle, the latter resting, as it were, in a clam shell. The French describe the epididymis appearing as a "helmet crest" for the testis. The absence of pain is a characteristic feature. The epididymis and the testis have several times been unnecessarily removed in syphilitic epididymitis because of wrong diagnosis, the condition having been mistaken either for tuberculosis or for neoplasm. The importance of a general diagnostic survey for the purpose of differentiating between the different forms of enlargement of the epididymis and testis is emphasized by Barker and Ward. Gummatous epididymitis clear up quickly under intensive antisyphilitic treatment. A case is reported by Barker and Ward.

Malignant Disease of Parotid.—Four cases of malignant disease of the parotid are reported by Payne. He urges that removal of the parotid for malignant growth should also include the removal of the submaxillary gland and the lymphatics lying along the inferior maxillary border to the midline.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

China Medical Journal, Shanghai

September, 1920, **34**, No. 5

"The Blind Sorrow of China." G. M. Harston.—p. 467.
Diseases of Conjunctiva in Tsinan. J. B. Neal.—p. 475.
*New Methods in Treatment of Leprosy. W. W. Cadbury.—p. 479.
Treatment of Empyema with Surgical Solution of Chlorinated Soda. J. R. B. Branch.—p. 486.
Cerebrospinal Meningitis. P. H. Stevenson.—p. 492.
*Unusual Case of Intestinal Obstruction W. H. Pott.—p. 500.
Study of Chinese Foods. S. D. Wilson.—p. 503.
Dislocation of Ankle with Fracture of Fibula. A. I. Ludlow.—p. 509.
*Foreign Body in Left Bronchus. A. M. Dunlap.—p. 510.
Case of Leprosy with Elephantiasis. M. Mackenzie.—p. 511.
Standard Digitalis in China. B. E. Read.—p. 512.
Insane in China: Examination Hints. R. M. Ross.—p. 514.
Chinese Students Generally and Medical Profession. C. V. Yui.—p. 518.

Treatment of Leprosy.—In the majority of cases treated by Cadbury, weekly injections of chaulmoogra oil mixture were followed in from two to six months by rapid improvement of tubercles and macules, and more gradual improvement of anesthesia. This improvement usually continues for one year. After this time relapses may occur even during active treatment, or the disease may remain quiescent while treatment is continued, but it shows a tendency to recur shortly after treatment is stopped; or, finally, the case may show continued improvent over one, two, or three years. Sodium gynocardate given intravenously has been disappointing in

his hands. Sodium gynocardate A, given intrancnously, proved unsatisfactory because of the rapid obliteration of the veins. Given intramuscularly in the buttock it appeared to be quite as effective as the oil mixture. Sodium morrhuate has been employed for only a short time. The constitutional as well as the local reaction is much less severe than after using the other preparations. Definite improvement has been noted in two or three cases after two or three injections only. Cadbury is of the opinion that while in most cases of leprosy the various remedies tried have definite therapeutic value, unless the patients are cared for in a sanatorium, given proper food, together with baths and attention to personal hygiene, a complete cure can hardly be looked for. Where these conditions are unobtainable the weekly injections offer the only hope for improvement.

Intestinal Obstruction.—Pott's patient weathered an acute intestinal obstruction for ten days which finally resulted in rupture of the intestine. Three abdominal operations were performed, the peritoneum being opened twice. Taking into consideration the filthy condition of the abdominal wall and the proximity to the fecal opening, Potts deems it justifiable to conclude that the peritoneum was possessed of unusual resistance to infection, especially to the colon bacillus. The patient's food assimilation was carried on entirely by the small bowel for ten weeks, and this, aside from his loss in weight, did not seem to alter greatly his general condition.

Foreign Body in Bronchus.—The wooden mouthpiece of a toy balloon was discovered by Dunlap just inside the left bronchus which it was filling completely. The accident occurred fifteen days previous to entrance into the hospital, and aside from slight dyspnea the child had had no distressing symptoms.

Indian Medical Gazette, Calcutta

October, 1920, **55**,, No. 10

Newer Interpretation of Pathogenesis, Prophylaxis and Treatment of Influenza. C. E. de M. Sajous.—p. 361.
*Minimum Curative Dose of Quinin in Treatment of Malarial Fever by Intravenous Method. U. N. Brahmachari.—p. 366.
Surgical Tuberculosis. B. Singh.—p. 370.
Functional Aphonia in Case of Homicidal Cut Throat. F. D. Bana. —p. 373.

Minimum Dose of Quinin in Malaria.—In recurring benign tertian and recurring quartan infections, Bana says 10 grains of quinin must be given intravenously for, at least, seven successive days to bring about complete sterilization. The reason why several intravenous injections of quinin have to be given to bring about complete sterilization is explained by the fact that quinin is quickly eliminated by the kidneys after intravenous injection and the whole of it may be excreted before all the parasites have been destroyed.

Journal of Laryngology, Rhinology, and Otology, London

November, 1920, **35**, No. 11

Early Diagnosis of Carcinoma of Oral and Laryngeal Pharynx. E. D. D. Davis.—p. 321.
Endolaryngeal Hemorrhage During or After Thyro-Fissure in Removal of Vocal Cord for Intrinsic Cancer of Larynx; Chief Vessel Concerned, and Its Control. I. Moore.—p. 326.
Tumor of Acoustic Nerve; Operation; Recovery; Subsequent Death. E. P. Poulton and W. M. Mollison.—p. 333.
Aqueduct of Fallopius and Facial Paralysis. D. McKenzie.—p. 335.

Lancet, London

Nov. 6, 1920, **2**, No. 19

Renal Function: Determination of Its Degree. J. B. Leathes.—p. 933.
Unity of Medicine. C. O. Hawthorne.—p. 935.
*Psychologic Repression. H. Yellowlees.—p. 937.
*Psychology and Medicine. J. W. Springthorpe.—p. 940.
*Case of Human Glanders. F. H. Jacob, H. M. Turnbull, J. A. Arkwright and G. M. Dobrashian.—p. 941.
European Children in Tropical Highlands. M. MacKinnon.—p. 944.
*Vaccine Treatment in 1918 Epidemic of Pneumonia. H. T. Gillett.—p. 945.
*Traumatic Aneurysm of Leg. J. A. C. MacEwen.—p. 946.
Polya's Operation Under Local Anesthesia. S. T. Irwin.—p. 947.
Case of Developmental Tracheo-Esophageal Communication. E. R. Ormerod.—p. 947.

Psychanalysis.—The suggestion is offered by Yellowlees that if the authorities on psychanalysis could see their way to expounding the essentials of their subject with a little more simplicity and patience, much good would result and much criticism be disarmed.

Course in Psychology.—Springthorpe pleads for instruction of medical students in psychology. He deems it strange that medical education, with its high standards of requirements and constant effort after extension, remains silent and almost immovable in dealing with man from above, as well as from below—psychologically as well as physiologically. He suggests including psychology in the curriculum of each medical school, the establishment of a psychologic department in every teaching hospital, and drawing the special attention of the medical profession generally to the need for its study and practice in the interests of all concerned.

Human Glanders.—The patient, a man, aged 31, was a farmer. He attributed the origin of his complaint to infection from the diseased udder of a cow. The udder of this cow was affected with a series of small lumps, which broke and "discharged water and matter." The man who previously milked the cow had a few spots on his arm, said to have been exactly the same as those from which the patient suffered. The patient then took over the milking of the cow; the original milker got quite well, but he himself became infected. The primary lesion was an ulcer which reached the size of about half-a-dollar, discharged a great deal of pus, and took about three weeks to heal. Lesions appeared later on the tonsil, soft and hard palate, buccal surface of cheek, and around some teeth, uvula, eyelids, conjunctivæ, in the glands, in the neck and elsewhere. The histologic picture was that of an intense, acute, vascular and perivascular hemorrhagic necrosis with fibrinous exudation and purulent infiltration. The appearances suggest bacterial embolism, but with the exception of one gram-positive bacillus in a section stained by the Weigert-Gram method, and one bacillus in a section stained with Twort's mixture, the four methods for the demonstration of organisms proved negative. Numerous spirochetes were stained brightly in the portion of syphilitic liver employed as a control to Levaditi's method. Treatment was without effect. The patient died from a terminal bronchopneumonia.

Vaccine Treatment of Pneumonia.—Gillett used a streptococcus vaccine in eight successive cases of pneumonia. The vaccine was obtained from a throat culture made from an influenza patient. There were seven recoveries and one death; the death was probably due to the fact that it followed a mixed infection of streptococcus and *Staphylococcus pyogenes-aureus*. In four cases, the temperature fell to normal within the forty-eight hours following the administration of the first dose of vaccine. In two cases, two doses of vaccine were required before the temperature settled to normal, but one patient had albuminuria badly and yet recovered, while the second patient apparently did not take to her bed till the third day of the pneumonia. One patient was very toxic; he showed definite improvement three days after the first dose of vaccine, which was given on the fifteenth day of illness.

Aneurysm of Leg.—MacEwen reports two cases: A small aneurysm at the bifurcation of the popliteal, which had ruptured and an aneurysm of the posterior tibial artery. In neither of these cases was there the slightest pulsation, and, no doubt, partly on this account diagnoses of rheumatism and sarcoma were suggested.

Quarterly Journal of Medicine, London

October, 1920, **14**, No. 53

*Congenital Steatorrhea. R. Miller and H. Perkins.—p. 1.
*Source of Uric Acid Excreted in Urine After Atophan. G. Graham. —p. 10.
*Blood Sugar in Diabetes. D. V. Pickering.—p. 19.
*Diagnosis of Diseases of Pancreas; Diastase in Urine. R. L. Wallis, London.—p. 57.
*Effect of High Protein Diet on Albuminuria and Blood Urea in Nephritis. E. Wordley.—p. 88.

Congenital Steatorrhea.—A clinical analytical study of a case of congenital steatorrhea is reported on by Miller and Perkins, and it is compared with the only previous example of the condition as yet reported. The term steatorrhea, which has sometimes been used to cover all cases in which an obvious excess of fat is passed in the stools (fatty diarrhea,

diarrhea alba), is here used in its more correct and restricted sense, namely, as indicating a passage from the bowel of separated liquid fat which congeals on cooling (Butterstühle). The patient passed separated liquid fat since birth, and persisted in doing so, except on a diet markedly low in fat content. Yet this failure in the absorption of fat did not result in any definite stunting of the child's stature by the age of 3 years. Although the power of fat splitting was somewhat impaired, more especially on diets rich in fat, the failure in fat utilization did not appear to be merely dependent on this factor. The urinary diastase figure was normal; Loewi's pupil test was negative. More particularly, there was found no microscopic evidence of failure in protein digestion. The authors agree with Gartod that there is an "inborn error of metabolism probably due to the absence of a normal enzyme, presumably a pancreatic enzyme. It is difficult to believe that there is any real disease of the pancreas."

Salicylate Preparations in Gout.—Cinchophen, sodium salicylate, acetylsalicylic acid or sodium benzoate, Graham says, should be given to gouty persons for two or three days each week.

Blood Sugar in Diabetes.—Fifty cases of diabetes of varying severity are the basis of the observations reported on by Pickering. The blood sugar was almost invariably raised in diabetes and tended to increase with the duration of the disease. It varied directly with the clinical severity, but in mild cases with albuminuria or a history of heavy consumption of alcohol or tobacco it is often high. It is reduced by fasting. Judging by the carbohydrate tolerance, the reaction of the blood sugar to dietetic treatment is of more importance than its height. A blood sugar persistently above normal, in spite of treatment, is not invariably a bad sign, for the blood sugar does not always fall to normal when the urine is kept sugar free for a long time. If the course of the blood sugar be compared with that of the carbohydrate in the food and with that of the glycosuria, it will be found to correspond more closely with the former in mild cases and with the latter in severe cases. The amount of carbohydrate in a meal taken from one and one-fourth to two hours beforehand appeared to have no effect on the blood sugar. A high renal threshold does not appear to be an unfavorable sign.

Value of Tests for Pancreatic Insufficiency.—To prove the individual and collective value of certain functional tests for the diagnosis of diseases of the pancreas has been the main object of Wallis' work. No one test so far devised can be said to be pathognomonic of pancreatic insufficiency. The association of positive results in three tests, the increased diastase content of the urine, the Loewi epinephrin mydriasis test, and the presence of glycosuria, affords strong evidence that the pancreas is at fault. If there is in addition creatorrhea and steatorrhea the suspicion of pancreatic insufficiency is confirmed. The results of an investigation of cases of diabetes mellitus have been negative, in that the tests have not supplied any evidence of gross disturbance of pancreatic function in this disease. A review of the recorded cases reveals the fact that certain tests in their present form are of no value in the diagnose of pancreatic disease, and should, therefore, be discarded. This applies more particularly to the methods of estimation of trypsin and diastase in the oil test meal and feces, the Sahli test, Kashiwado's modification of Schmidt's test, and the Cammidge "pancreatic" reaction. To this list may be added the "sajodin" test of Winternitz in view of its doubtful utility.

Effects of High Protein Diet in Nephritis.—Experiments undertaken by Wordley to show the effect of variations in the amount of protein in the diet, using a strictly accurate method of estimation of the protein in the urine, are reported on in this article. It appears that variations in the amount of protein in the diet have no effect on the amount of protein excreted in the urine. In fact, such increases in the diet do not increase albuminuria; if only percentage figures are taken, they may decrease it, owing to the diuresis produced by a rich protein diet. The amount of protein in the urine examined at different times of the day shows wide variations. It appears to be lower in the urine secreted during sleep. It is shown that the blood urea varies very considerably with the diet, and that an estimation of the blood urea is of much less value in appraising the impairment of kidney function than Maclean's new urea test. Further, the blood urea may be within normal limit, and yet all the manifestations of uremia be present. The plasma protein may be below normal in cases with no edema, and thus cannot always be a cause of edema, as is often stated.

Tubercle, London

November, 1920, **2**, No. 2

Prophylaxis in Tuberculosis. A. Calmette.—p. 49.
*Plea for Tuberculinization of Babies. R. C. Holt.—p. 54.
Treatment of Tuberculosis with Sodium Morrhuate. G. R. Tambe.—p. 58.

Tuberculinization of Babies.—Clinical observation shows that children and older persons acquire tuberculosis when intimately associated with persons who are "delicate." Two such cases are cited by Holt. In one case, that of a child, aged 6, a small dose of tuberculin, hypodermically administered, gave a skin reaction, but no general reaction. The child returned home, and, after several injections, recovered its normal vigorous health, and became insusceptible to a fairly large dose of tuberculin. The second patient was a woman, aged 58, who had a lupus erythematosus merging into an excavation of the left eyelid, gave a history of having lost five of the nine children she had borne; one from meningitis, two from bronchopneumonia, one from wasting and one from measles, all below the age of 3 years. She does not remember having been under the care of a doctor, except for her confinements, until the lupus commenced three years ago. Apart from the lupus she was normal in general appearance, but her lungs showed signs of old progressive disease, and she was very sensitive to tuberculin. Infants under 1 year old may be infected. Tuberculin can restore them to health even while they remain with the source of infection. Four such cases are cited. Holt points out that the systematic use of tuberculin in infancy would fulfil two objects: first, as a test, it would show how many babies were infected, and, secondly, it would be the first instalment of treatment to those already infected. In order to make this use of tuberculin practicable, he suggests that reliance should be placed on a skin reaction, and in those cases where a reaction appears, further graduated injections should follow until a reaction fails, but in all cases a register of the weight should be kept as an index of the tuberculin effects. By such means reasonable assurance would be had that every child 1 year old was free from tuberculosis. Probably, a second test would be necessary for those remaining under infecting conditions. Holt states that the method is simple, safe and free from any remote danger. He suggests injecting one-fifth of one-millionth of 1 c.c. for an infant aged 3 months. Most tuberculous babies show a rise of temperature of about 2 degrees during the first six hours succeeding the injection.

Bulletin Médical, Paris

Oct. 2, 1920, **34**, No. 47

*Testicle and Ovary Organotherapy. A. Bauer.—p. 879.

Testicle and Ovary Endocrine Therapy.—Bauer says of testicle organotherapy that the results obtained in children seem to indicate that it has a tonic and stimulating influence, especially at puberty to combat "growing pains" near joints and to combat the anemia and weakness common at this time. He regards it as indicated also in cases of infantilism, particularly when the functioning of the interstitial gland or of several glands seems to be at fault. Ovarian treatment has a much wider field, and he cites statistics from the literature showing its favorable action in the natural or artificial menopause, in the vomiting of pregnancy, in amenorrhea and dysmenorrhea, in obesity, chronic rheumatism, overactivity of the thyroid, and metritis. The benefit from ovarian treatment is restricted to the cases in which malfunction of the ovaries is evidently a factor, but Jayle, Jacobs, Spillmann and others have reported a large proportion of successes, and Charrin's experimental research has confirmed the restoration to normal of the oxidations and of the reaction of the blood in gravid animals under ovarian treatment. Carnot suggests

that ovarian treatment begun at once might ward off the obesity which so frequently follows castration, the menopause, etc. Ovarian treatment has to be kept up for weeks, often for months, until the endocrine balance has been restored.

Oct. 9, 1920, **34**, No. 48

*Operations on the Obese. R. Bonneau.—p. 893.
The Social Pathology of the Day. Jaguaribe and Regnault.—p. 895.

Operations on the Obese.—Bonneau explains that the greater difficulty of palpating the internal organs is one of the reasons why operations are especially dangerous on the obese, as this renders the diagnosis less clear. The preparation of the field is more difficult on account of chafing; the incision has to be longer to allow access through the thicker walls; it is particularly necessary to ligate vessels separately in the obese, but it is difficult to expose them without tearing the veins. As the gloved fingers are constantly lubricated with the fluid grease, it is hard to tie a knot. We should be especially on the alert not to allow any chilling of the air. When the layer of adipose tissue is very thick, he sometimes resects it and invaginates the skin in the depths. His experience has convinced him that it is better not to drain, regardless of oozing of fluid fat, unless conditions are such that he would drain anyway. The obese are especially liable to have stasis at the base of the lung and they may have to have cups applied and be got up in a chair the same evening or the next day after a laparotomy.

Lyon Chirurgical

July-August, 1920, **17**, No. 4

*Transplantation of Bone. R. Leriche and A. Policard.—p. 409.
*The Metaphysis of Long Bones in Children. R. Tillier.—p. 433.
*Operation for Gastric Ulcer. A. Kotzareff and P. Balmer.—p. 449.

The Biologic Laws of Transplantation of Bone.—Leriche and Policard assert that the term "graft" cannot be applied to transplantation of bone because the transplant inevitably loses its individual vitality. All bone transplants die, but a fresh autotransplant provides the best material for regeneration provided it is embedded in receptive connective tissue. The war experiences have demonstrated that bone does not form where there are polynuclears present. Hence, where there is pus, new bone will not form. The presence of metal has the same impeding influence to a lesser extent. Bone marrow in the transplant does not play any appreciable part, and the severing of a nerve above does not seem to influence the reconstruction of the bone. The transplant itself does not grow—it is the surrounding tissues which ossify as the absorption of the transplant progresses. If these surrounding tissues are fibrous and avascular, there will be no reconstruction of bone. The transplant gradually disappears completely, while in its place a new bone shaft is reconstructed by the effect of the intrahaversian new formation and the soldering of this to the adjacent metaplastic bone. This takes from twelve to fifteen months with bone-periosteum transplants and with the Albee transplants. Still longer is required with other methods.

As soon as absorption has begun, the functional use of the limb is the best of all stimulants for the regeneration process. The finest success yet realized by the writers in treatment of pseudarthrosis of the tibia was in two cases in which walking was allowed a month after the transplantation. The biologic data summarized teach the necessity for selecting a transplant with periosteum, the bone only slightly compact, so that it will be readily permeable for the sprouting connective tissue and vessels. It is a biologic blunder to transplant a hard, solid bone in the hope to have a stronger support. The transplant must be fitted in close contact with well vascularized bone, and over as long an extent as possible. The aim is to insure the absorption of the transplant in the shortest possible time. There is no advantage in fitting the ends together, compact bone against compact bone, periosteum against periosteum; this would be useful if the transplant behaved like a true graft, but we know that this is never the case. The transplant can be held in place with catgut passed through the bone and the transplant, fastening them closely and solidly together. The ends of the shaft should be well freshened, and the chances for success are better with a spongy bone. It is better to ligate the vessels as needed than to work below a constricting band. In conclusion they record the histologic findings in fifteen transplants and the ultimate outcome in nineteen cases. Bone-periosteum transplants can be used with gaps of 12 to 15 cm. but in these cases it might be wiser to use a bunch of bone-periosteum slices rather than a single block. They add, "Whatever Albee may say to the contrary, fine new bone shafts have been realized by this means." The only contraindication is when a solid support is needed as possibly with the humerus or tibia; otherwise it is the preferable technic, as it conforms most perfectly to the biologic laws of bone repair. Their results with the Albee technic were excellent, although not for the reasons Albee advances, as his assumption of a living graft is not tenable. But the Albee implant of spongy bone in a very vascular bed ideally fulfils the desired conditions. When a strong support is indispensable, it might be advisable to combine with a solid dead compact bone some slices of fresh bone and periosteum. It might be possible to utilize dead spongy bone cut by the Albee technic. The failures hitherto with dead bone may be explained by the fact that too compact bone has always been used for the dead implants.

Radiography of the Bones.—Tillier calls attention to a difference in structure of all the long bones toward the lower end, showing that a long bone consists of the diaphysis, the epiphysis and this metaphysis. The line of demarcation parallels that of the epiphysis.

Resection Versus Gastro-Enterostomy.—This communication from Bircher's service is presented as an argument in favor of resection of the stomach whenever an ulcer calls for operative relief. One man of 47 had gastro-enterostomy done for a supposed inoperable lesion of the pylorus, but this resulted in the complete cure of the lesion. Another chronic ulcer developed, however, on the lesser curvature, and this required operative measures also, and this time three fourths of the stomach were resected with smooth recovery. Bircher has never had new lesions develop in the stump after extensive resection, while frequent have been the cases in which a second operation became necessary, as in this case, after mere gastro-enterostomy.

Médecine, París

October, 1920, **2**, No. 1

*French Surgery in 1919-1920. P. Mathieu.—p. 5.
*Occlusion of Duodenum Below the Vater. R. Grégoire.—p. 13.
*Transplantation of Bone. G. Cotte.—p. 15.
Nitrous Oxid for General Anesthesia. J. Okinczyc.—p. 20.
*Surgical Applications of Vaccine Therapy. Robineau.—p. 22.
Operative Indications with Gastric Cancer. P. Mathieu.—p. 27.
*Essential Trigeminal Neuralgia. T. de Martel.—p. 32.
*Share of Micro-Organisms in Certain Forms of Shock. L. Bazy.—p. 34.
*Pott's Disease in Adults. J. Calvé.—p. 38.
Present Status of Treatment of Scoliosis. L. Lamy.—p. 43.
*Sporotrichosis from Surgical Standpoint. P. Moure.—p. 45.
Atypical Resection of Upper Jaw. F. Bonnet-Roy.—p. 52.
*Calculus in Ureter. E. Papin.—p. 57.
*Pyelography. L. Papin.—p. 62.

French Surgery in 1920.—Mathieu comments on the advantage for industrial accidents of the lessons learned in the war. Immediate suture after the wound has been cleared out is the rule now, when the surgeon sees the case early enough. Wounds of the skull and joints, and compound fractures are among the current accidents which are reaping the greatest benefit from this practice. He quotes a warning in regard to the modification of the composition of the nitrogen in the urine and the oliguria which follow an oil purge, and hence the inadvisability of a purge of the kind before an operation when the liver or kidney functioning is below par or the system exhausted. The successes reported from vaccine treatment of surgical pathologic conditions are beyond counting, especially in acute osteomyelitis of adolescents, but Mathieu adds that surgical measures must not be neglected in connection. He says of gastric ulcer that resection is growing less and less grave while the functional results are remarkable in most cases and the cure is permanent.

Duodenal Occlusion.—Grégoire says that chronic occlusion of the duodenum below the ampulla of Vater presents rather a vague set of symptoms, but the roentgen rays give the explanation.

Transplantation of Bone.—Cotte expresses his preference for Delagenière's method of bone-periosteum transplants, reserving the Albee transplant for very extensive defects. These two methods give results far surpassing all others, especially for pseudarthrosis of the tibia. He reiterates that "bone grafts abhor the vicinity of metal plates and wire."

Surgical Applications of Vaccine Therapy.—Robineau recalls that the staphylococcus is readily destroyed by a vaccine; furuncles yield to it in two or three days, and carbuncles in ten days even with no more than a simple incision. Rebellious furunculosis has been arrested by vaccine treatment. Antigonococcus vaccine often fails, but acute urethritis sometimes yields to it in ten or twelve days, and orchitis and cystitis have healed up quickly under it, as also ophthalmia neonatorum. But the finest results of the vaccine treatment have been realized with gonococcus arthritis: attenuation of the pain at once and subsidence of the swelling, with retrogression in one or two weeks. He has never had a failure with lipovaccines in gonococcus arthritis. The war has demonstrated that the streptococcus is a more powerful enemy than previously realized. But even with this, vaccine therapy has sometimes proved successful, especially in grave erysipelas and puerperal infections. In an environment where there had been several fatal cases of the latter, there were no further cases after systematic vaccine therapy. He advocates for the physician remote from medical centers a vaccine of associated streptococci, staphylococci and the pyocyaneus. This causes a lively local and general reaction which seems to have a salutary action. He adds that vaccine therapy does not compete with surgery; it supplements it.

Trigeminal Neuralgia.—De Martel regards the severing of the nerve back of the gasserian ganglion as one of the finest acquisitions of the surgery of the last twenty years. This is a delicate and long operation but it can be relied on to cure if the trigeminal neuralgia is relieved by injection of alcohol. When there is no relief from injection of alcohol, it is dubious whether even this operation will aid. The preliminary treatment with alcohol may suffice without resort to operation, and it has the further advantage that by-effects from the neurotomy are less liable thereafter. However, the patient should be warned of the possibility of anesthesia in the domain of the trigeminal and paralysis of the muscles of mastication on that side.

Bacterial Poisons as Factor in Operative Shock.—Bazy presents evidence that toxins from preexisting and possibly latent infection may be responsible for operative shock in certain cases. It is possible to detect this predisposition by an intradermal test with the bacteria suspected. If there is a positive response, the injection of a vaccine against these bacteria might ward off trouble from this source. If the response is negative, the operator can proceed with confidence. He mentions the case of a young woman who died in less than twenty-four hours after an interval appendicectomy, and nothing could be found to explain the fatality except this assumption of microbian toxic shock. The operation, by releasing the bacteria, had the same effect as injection of the substance which induces experimental anaphylaxis. The anaphylaxis might have been warded off in this case if a colon bacillus vaccine had been injected preliminary to the appendicectomy. Since he has been making a practice of this, he has found that when there was a lively local reaction, there was always an active process in the appendix and the convalescence was often far from smooth. But when there was no local reaction, even extensive operations proceeded and healed without disturbance.

Pott's Disease in Adults.—Calvé reiterates that we must not forget that an adult with Pott's disease is tuberculous, with a grave focus, and is liable to develop other foci of the same nature, and that general treatment is the main thing. After the two or three years of reclining and extension, a celluloid corset should be worn to hold the spine in lordosis and prevent the trunk from bending forward. He prefers the Albee transplant for what he calls the interior prosthesis for the lumbar region. Elsewhere he prefers Delagenière's bone-periosteum flap, but insists that after either operation the patient must recline for another six months, and must wear the corset afterward for two or three years. In four cases he tried to evacuate the abscess in front of the spinal cord, responsible for the paraplegia, by working a curved trocar through the intervertebral foramen, curing in one case and improving two others, but failing in the fourth.

Sporotrichosis.—Moure says that sporotrichosis is a *noli me tangere* for surgeons as there is a specific medical remedy for it in potassium iodid. The difficulty for the surgeon lies in the differential diagnosis as the lesion resembles so closely a syphilitic or tuberculous lesion, first hard, then soft, then ulcerating, and then the fistula. The only feature which suggests the mycosis nature is the polymorphism when the lesions are multiple, showing specimens of the four stages at once. The adjacent glands may be infected, as well as with tuberculosis. No one should diagnose a "cold" abscess as tuberculous without bacteriologic evidence. In one case a supposed chronic osteomyelitis of the tibia, which had persisted for three years in spite of four operations on the focus, healed up in a month under potassium iodid. "Suspect sporotrichosis whenever there are multiple suppurating lesions in bones, joints, muscle or synovia, particularly when the lesions follow the course of the lymphatics from a peripheral ulcerating lesion. Suspect it also when cuts and pricks on the hands suppurate interminably. But do not forget that the lesion may be single, and that the syphilitic and the tuberculous are as liable to develop sporotrichosis as any one else." One case is described in which the lesions were treated as for syphilis. A few months later the diagnosis was changed to tuberculosis, there being among other lesions twenty-eight fluctuating nodules between knee and groin. The laboratory then showed the true cause, and under iodid treatment the cure was complete in a month. The open lesions always show mixed infection, and cultivation is difficult, so that negative findings do not exclude sporotrichosis until after agglutination tests. In any event, a course of iodid treatment does no harm and may clear up the diagnosis.

Calculus in the Ureter.—Papin discusses the technic for exploration for a suspected calculus, saying that calculi can usually be dislodged by catheterization or injection of hot glycerin.

Pyelography.—Papin uses a 30 per cent. solution of sodium bromid for the contrast fluid, tinted with methylene blue. No sedative should be given, as the patient's sensation of pain is the warning that the pelvis has been filled. He always radiographs before the pyelography as the contrast fluid may mask a calculus. He has never had any accidents in hundreds of cases, the fluid entering by atmospheric pressure alone.

Presse Médicale, Paris

Oct. 2, 1920, **28**, No. 71

*Modern Procedures for Esthetic Suturing. R. Passot.—p. 693.
*Rarity of Jaundice in Typhoid. H. Godlewski.—p. 695.
The Cellular Electron. A. Leprince.—p. 697.

Invisible Scars.—Passot has long been making a special study of the *suture esthétique* and he enumerates a number of points which aid in rendering the scar invisible. The individual tendency to keloid growth can be tested beforehand with a small incision somewhere else; six weeks would decide. This tendency is least when traction is perpendicular to the longitudinal axis of the integument. A stencil can be used to mark beforehand the sites for the stitches. Then after the local anesthesia, incision, etc., the symmetrical points can be coapted with precision although dragged far out of shape. The esthetic suture he illustrates is taken under the skin, weaving back and forth far into sound tissue on each side, using a needle curved to form a complete semicircle only 2 cm. in diameter. After the suture is complete, he lays over it a small oblong of transparent celluloid and applies three long strips of extra-adhesive plaster across the whole, not sticking it to the celluloid, but reenforcing the strips with a cross bar of plaster toward the ends. A gap is cut in the middle of each of the adhesive strips, that is, over the incision, and the two ends of each strip are brought up and sutured together, thus shortening the strip by 1 or 2 cm. and exerting an even, extensive traction on the skin on each side far beyond the incision, thus crowding the lips of the incision

together as can be seen through the transparent shield. Nine illustrations show the technic.

Rarity of Jaundice in Typhoid.—Godlewski's data confirm that while typhoid and paratyphoid bacilli may thrive in bile, the spirochetes of infectious jaundice and the pneumococcus are injured by it. The bile seems to be attracted by them into the blood by an actual chemotactic action. On the other hand, these micro-organisms act on the erythrocytes and the blood-producing organs and induce hemolysis, but in their turn they are acted on by the bile which they attract into the blood stream.

Schweizerische medizinische Wochenschrift, Basel

Oct. 14, 1920, **50**, No. 42

*Cancer Mortality in Relation to Operation. J. Aebly.—p. 929.
Exaggeration of Knee-Jerk with Psychoneuroses. L. Schwartz.—p. 935.
Frequency of Tuberculids in the Aged. S. Bollag.—p. 939.
Syphilitic Aortic Valve Disease. N. Lupu.—p. 940. Conc'n.

Cancer Mortality in Relation to Operative Treatment.—Aebly tabulates from various standpoints the cancer mortality in Switzerland between 1900 and 1915 and a previous twenty-three year period, comparing the life expectancy of the cancer patients given operative treatment with those not operated on, the expectancy estimated from the very first symptoms. The deduction seems to be that operative treatment either reduces the life expectancy or else that it has such a slight influence on the expectancy that it may be regarded as negligible. He says that operative treatment is like a lottery; a few get the big prizes but all the rest pay out more than they get back.

Policlinico, Rome

Sept. 6, 1920, **27**, No. 36

The Sachs-Georgi Reaction in Syphilis. P. Pincherle.—p. 979.
*Arsenic in Paralysis Agitans. Carlotta Porru.—p. 984.
*Acute Obstetric Mercurial Poisoning. G. Massimi.—p. 985.

Arsenical Treatment of Paralysis Agitans.—Porru has been applying in seven cases of shaking palsy the large doses of sodium cacodylate which Lhermitte and Quesnel have been advocating recently. Slight if any benefit was the rule and it was transient in all but one case. This patient had had symptoms of Parkinson's disease for six years. He was given 10 gm. of the drug in the course of six weeks, and then the daily dose was increased until he had taken 15 gm. in two weeks. Improvement was evident not only in the general condition but also in the stiffness, and the man is now able to dress himself and do field work, the improvement having persisted to date. In all the others the former status returned by the end of two weeks after the treatment.

Acute Obstetric Mercurial Poisoning.—The syphilitic quintipara had had excessive hemorrhages at a preceding abortion and to prevent this, the impending abortion at the third month was hastened by injection into the lower zone of the uterus of 1.5 liters of a 1:3,000 solution of mercuric chlorid. The fluid did not come in contact with the walls of the vagina and the flushing procedure was complete in less than two minutes, but acute mercurial poisoning followed, with anuria, diarrhea, stomatitis and general depression, the condition persisting grave for over a month, with final recovery. The woman had been in the habit of using vaginal douches with a 1:4,000 solution of the chlorid, and had never displayed any intolerance for mercury before. The fetal membranes did not rupture for several hours after the injection; the fetus showed signs of maceration.

October, 1920, **27**. Medical Section No. 10

*Protein Therapy of Infectious Diseases in Children. F. Valagussa.—p. 361.
*Auto-Anaphylaxis from Chilling in Paroxysmal Hemoglobinuria. F. Schiassi.—p. 397. Begun in No. 9, p. 346.

Protein Therapy in Acute Infectious Diseases in Children.—Valagussa entitles his long study of this subject "Paraspecific Antigen Therapy," and reproduces the temperature curves of the various groups treated with different proteins. In 51 children from 14 months to 12 years old, all with typhoid fever, the intramuscular injection of peptone according to Nolf had a very favorable influence on the course of the disease in the majority. In 31 cases of influenza in children, he injected various serums and antiserums, and when this serotherapy was early, intense and continued, the results were excellent. There were only 3 deaths in this group of 31 severe cases of influenza. His experimental research on the autolysates of beer yeast in colloidal suspension confirmed their efficacy in increasing opsonins, etc., and this was sustained in 33 cases of pneumonia or typhoid while no effect was apparent in 3 cases of whooping cough.

The three types of antigens represented by peptone, horse serum and organized ferments behave alike; the only difference is in the intensity of the phenomena induced. The yeast autolysates are the weakest and slowest in their action, but all serve to reenforce the organism in its fight against the infection. There are no symptoms of anaphylaxis with the yeast aside from the local reaction and the effect on the temperature, and he commends this as a harmless means to activate and augment the cataphylactic powers of the organism in any and every bacterial infection. "With this extract of the cells of the saccharomyces we provide a poly-antigen therapy, and we cannot go amiss in treating a disease by augmenting the natural index of resistance and the defensive forces."

Paroxysmal Hemoglobinuria.—Schiassi could bring on the paroxysm of hemoglobinuria at will by chilling the extremities. A mere foot bath at 10 C. for forty-five minutes not only brought on the hemoglobinuria but also oliguria which lasted for a week, with nausea, diarrhea, headache and rise in blood pressure. The woman was given a course of mercurial treatment, and during the five years since has had no return of the hemoglobinuria. The paroxysms had been frequent during the preceding two years. Schiassi's conclusion is that treatment as for syphilis should always be given a trial with paroxysmal hemoglobinuria. During the induced hemoglobinuria the coagulation time of the blood was reduced, with extreme leukopenia, followed in a few hours by leukocytosis. With slight chilling, a partial attack could be induced without hemoglobin in the urine, the symptoms being merely leukopenia, nausea and fever.

Anales de la Facultad de Medicina de Lima

July-August, 1920, **3**, No. 16

*Adams-Stokes Disease. E. Odriozola.—p. 5.
*Diagnosis from the Blood. E. Escomel.—p. 12.
*Tendon Transplantation for Radial Paralysis. L. de la Puente.—p. 21.
Relapsing Fever in Peru. E. del Prado.—p. 26.
Mental Capacity of Lima Schoolchildren. F. Chueca.—p. 46.
Rotch Percentage Method in Infant Feeding. R. Eyzaguirre.—p. 58.
*Uterine Cancer at Lima. E. Ruiz Rolando.—p. 64.
Pharmacologic Study of Myroxylon Peruiferum Lin. Fil. A. Maldonado and N. Esposto.—p. 79.

Adams-Stokes Disease with One Heart Beat per Minute.—When the young man with heart block was first seen, the pulse was only 8, and by the next day there were intervals of fifty and fifty-eight seconds between the beats. The response to the Wassermann test was dubious, but the tuberculin reaction was positive. There was no fever and no history or signs of syphilis. Necropsy the third day revealed two gummas in the auriculoventricular septum; they had destroyed the bundle of His. The heart weighed 430 gm. Aside from the epileptiform seizures the complaints had been mainly of intense pain in the stomach. Odriozola gives a colored plate of the findings, and says that he knows of no other case on record in which the bradycardia was so extreme that there was only one heart beat in the minute.

Diagnosis and Prognosis from the Blood.—Escomel expatiates on the importance of ascertaining whether the blood is free from bacteria before attempting an operation, and also as an element for the prognosis, as well as for the diagnosis. The bacteria may be proliferating in the blood or just using the blood as a vehicle, but they should be got rid of before an operation as we clear the urine of albumin before attempting any but emergency surgery. To examine the blood he dissolves out the erythrocytes by squirting the blood from the syringe into a centrifuge tube containing 15 c.c. of a 1 per cent. solution of glacial acetic acid, and mixing well. The fluid is then centrifuged for a minute, the supernatant fluid decanted, and some of the sediment is spread on slides. Then physiologic serum is poured into the tube which is

centrifuged anew, thus rinsing the leukocytes, bacteria, and other parasites, and they are then ready for staining, etc. By this means we have complete oversight of the condition of the leukocytes, of the presence of bacteria, and also of protozoa. He suggests the term "hematitis" to express the condition of active parasitism of the blood, with "microbiemia" for the occasional presence of the parasites in the blood although their lurking place is in some organ, and "blood carriers" for those with the parasites not doing any harm at the moment, but dangerous for others and for the subject himself when the vitality becomes depressed.

Tendon Transplantation for Paralysis.—De la Puente gives colored plates showing the technic with which he corrected the radial paralysis of a man of 29. The wrist drop in this case was the result of an injection of quinin in the arm over nine months before, the injury of the nerve from the needle having been aggravated by caustic action from the drug. A course of electric treatment having produced no effect, the brachial plexus was blocked, the dorsum of the hand and wrist turned back in a U flap, and the two tendons of the palmar muscles were brought up and sutured to the abductor pollicis and the extensor pollicis while the tendon of the anterior ulnaris was sutured to the extensors of the fourth and fifth fingers. The various tendons were then sutured to hold them in their respective positions. In a few days the man could begin to move his fingers, and the aspect and functioning of hand and wrist are now practically normal. The tendons had been mobilized through a preliminary U flap on the anterior wrist.

Uterine Cancer in Lima.—Ruiz Rolando's statistics show that the mortality from uterine cancer has ranged from 2.10 to 4.22 per ten thousand inhabitants since the beginning of the century. Two thirds of the total deaths from malignant disease were in women and 50 per cent. of these were in the uterus. In only three of the eighty-one cases of uterine cancer he has personally examined was there a suspicion of heredity.

Brazil-Medico, Rio de Janeiro

Sept. 11, 1920, **34**, No. 37

*Chemotherapy with Acid-Resisting Bacteria. A. Lindemberg and B. Rangel Pestana.—p. 603.
The Heart Size Index. J. A. G. Fróes.—p. 609.
Differentiation and Growth of Long Bones. Vialleton.—p. 611.

Chemotherapy with Acid-Resisting Bacteria.—Lindemberg and Pestana became convinced that the active principle of chaulmoogra oil is in its acids, as they found it effectual in treatment of leprosy when only a 2 per cent. solution of the acids was used in the form of sodium salts. In the course of their research in this line they discovered that the non-saturated acids in chaulmoogra and other oils possess the property of inhibiting the growth of acid-resisting bacteria, and check the proliferation of the leprosy bacillus and the tubercle bacillus. They ascribe to this the benefit from chaulmoogra oil in leprosy and of cod liver oil in tuberculosis. These oils, they say, act as direct chemotherapeutic agents and not as stimulants for phagocytosis or as tonics. They tabulate the findings with various oils with which they treated cultures of various acid-resistant bacteria. The chaulmoogra was the only oil which constantly prevented the development of the various micro-organisms. Chaulmoogra oil derived from *Taraktogenus kurzii* was most potent. Patients with active pulmonary tuberculosis reacted to its acid salts as to tuberculin. The destruction of the bacteria in the tissues floods the system with toxic products from the dead bacilli so that the condition may apparently grow worse This is less liable in leprosy as the bacteria are not so toxic. This is true also of cod liver oil in mild forms of gland, bone and joint tuberculosis.

Gaceta Médica de Caracas

June 30, 1920, **27**, No. 12

Parenteral Injection of Milk in Infants. J. de D. Villegas Ruiz.—p. 145.
Some Points in Medical Ethics. L. Razetti.—p. 148.

Aug. 15, 1920, **27**, No. 15

Atmospheric Influence in Surgery. Argimiro Gabaldón.—p. 185.
Cholelithiasis. Idem.—p. 186.
Treatment of Tuberculosis. Idem.—p. 189. Conc'n in No. 16. p. 204.

Aug. 31, 1920, **27**, No. 16

*Spirochetal Jaundice. R. Pino Pou.—p. 199.
Hydatid Cysts in Neck and Chest. Argimiro Gabaldón.—p. 205.

Spirochetal Jaundice in Venezuela.—Pino Pou gives a photomicrogram showing the spirochete isolated from the first case of icterohemorrhagic spirochetosis recognized in Venezuela. The patient was a woman of 45 with no history of liver disease, and the disease proved fatal in a week. The spirochete in question seems to be a common parasite of Caracas rats. In conclusion he mentions two similar cases of spirochetal jaundice under observation about three years ago, retrospectively diagnosed from comparison with the present case. At the time the diagnosis had been yellow fever, and he thinks it probable that many cases of supposed yellow fever or catarrhal jaundice were in reality instances of this spirochetosis. None of the contacts in this last case developed the disease.

Deutsche medizinische Wochenscrift, Berlin

Aug. 26, 1920, **46**, No. 35

The Causative Agent in Influenza. F. Neufeld.—p. 957.
Clinical Pathology of the Mid-Brain. E. Leschke.—p. 959. Cont'd.
*Artificial Pneumothorax in Children. H. Eliasberg.—p. 961.
*Case of Raynaud's Disease; Multiple Cavernous Angiomas in New-Born Infant. Proskauer.—p. 964.
Success of Arsphenamin in Quartan-Like Fever. Von Teubern.—p. 964.
Chemotherapeutic Treatment of Influenza. A. Alexander.—p. 965.
Practical Value of Steinach's Procedure. J. J. Stutzin.—p. 966.
Traumatic Etiology of Pseudosclerosis. F. Fränkel.—p. 966.
*Duodenal Ulcer. Ehrlich.—p. 969.
Periostitis Rheumatica Acuta. R. Lehmann.—p. 970.
Tourniquet for Intravenous Injections and Venipuncture. Kopf.—p. 970.
Difficulties of Freudian Psychoanalysis. C. M. Braunschweig.—p. 971.
*Exophthalmic Goiter. Klewitz.—p. 971.
Otologic Hints for the General Practitioner. Brühl.—p. 973.

Artificial Pneumothorax in Tuberculosis in Children.—Eliasberg reports the experience of the Berlin Universitäts-Kinderklinik, during the past six years, with artificial pneumothorax in the treatment of pulmonary tuberculosis in children. She says it is too early to say whether or not absolute and permanent cures can be thus effected, as the time of observation has been too short, but that it is already evident that the lives of many children have been lengthened by several years and that many have been made more comfortable and freer from pain. She describes in detail the technic used.

Raynaud's Disease.—Proskauer reports a case of Raynaud's disease in a child of 3, the favorable course of which showed that the disease in children does not necessarily offer a bad prognosis. A hot foot bath, although it was somewhat painful, had an immediate salutary effect. There were, however, four recurrences during the course of two weeks, all of which yielded to the hot foot bath but to nothing else.

Multiple Cavernous Angiomas in New-Born Infant.—Proskauer reports also a peculiar case in which an infant at birth presented six angiomas, three of which were slightly cavernous. One on the occiput grew very rapidly, having in a few days a diameter of 5 cm. and an elevation of 2 cm. Also the others increased in size. At the same time, there appeared on the surface of the whole body punctiform angiomas, which also grew rapidly. As the surface of the angioma on the occiput began to necrose it was removed surgically along with the other larger angiomas. The rest were cauterized or removed with corrosive paste. As the father had been a syphilitic before marriage (negative Wassermann at time of marriage), the child was given tentatively yellow mercurous iodid, following which (whether also because of which, is another question) the angiomas ceased to appear. A Wassermann test on the child at 3 months was negative. The child at 4 months presented a sturdy appearance and showed no symptoms of disease.

Early Diagnosis and Treatment of Duodenal Ulcer.—Ehrlich comments on Mendel's article on duodenal ulcer, an abstract of which appeared in THE JOURNAL, page 139, of the current volume. He refers to Mendel's statement that the painful area usually disappears in four or five weeks, and adds that if this were true and we accepted further Mendel's finding that the painful spot grows smaller as the ulcer diminishes in size and disappears when it is healed, we must conclude that the ulcer is cured in from four to five weeks.

whereas we know that from twelve to eighteen months are required. The disappearance of the painful spot does not furnish definite evidence that the ulcer is cured. Recurrences are to be regarded as developing from latent ulcers and not from healed ulcers. Ehrlich recommends the Glässner's bile acid treatment, as he has used it in several hundred cases with pronounced success. Previously he had used the Leube treatment, which resembles the Mendel treatment. Of late years, as the bile acid was not obtainable, he has been using pills of fel bovis instead. One great advantage of the Glässner treatment is that the patient can usually continue his regular employment. Freedom from pain and tenderness can usually be brought about in from five to eight days. The stools are free from occult blood in from two to three weeks. The pills are commonly well borne. The patients generally gain in weight from the start. The manner in which patients react to a meatless and fishless diet, continuing for a period of four or five days, furnishes an excellent prognosis as to recovery. If the pains cease or are much relieved by such dieting, the ulcer is sure to heal if the patient follows instructions carefully.

Nonoperative Treatment of Exophthalmic Goiter.—Klewitz states that at the Universitätsklinik at Königsberg nonoperative treatment is not considered for exophthalmic goiter when malignant degeneration is suspected, or colloidal or cystic degeneration, or the goiter is causing symptoms from pressure on the trachea or esophagus, and in general, in old, chronic cases. The cases selected for nonoperative treatment are the abortive cases (formes frustes), the acute and subacute cases, cases with cardiac insufficiency or other complications that make operative intervention seem inadvisable, and, finally, cases in which an unsuccessful operation has already been performed or operation has been absolutely refused. Some have reported good results from using the serum of thyroidectomized rams, the meat of thyroidless animals or the serum of myxedema patients, but more have reported failures. Klewitz thought he saw good effects from the serum of thyroidectomized rams when combined with other measures, but he thinks that deep roentgen therapy may possibly establish a claim to be causal treatment. There is a difference of opinion as to how roentgen irradiation "works." Some think that it checks the functioning of the cells of the thyroid and thus prevents an overproduction of the glandular secretion. This view seems to be borne out by the slight biologic effect of irradiation on goiters with cystic or colloidal degeneration as compared with the marked effect on parenchymatous goiters. Some surgeons raise objections to roentgen irradiation on the ground that the results are uncertain and that irradiation produces adhesions, which make later surgical intervention more difficult. While regarding roentgen irradiation as the most important therapeutic measure, Klewitz attaches great value to auxiliary methods based on well known principles. In taking over a new case he may apply irradiation the first two days, and, at the same time, employ mild hydriatic procedures; for example, carbon dioxid baths. Galvanization of the sympathicus is performed daily. Bromid is given to nervous patients, and arsenic, often combined with iron, to weak and anemic patients. Cold compresses over the heart region for from one to two hours daily; also cold compresses on a hypervascular goiter may be of value. Serum of thyroidectomized rams may help in some cases. Such a course of treatment covers a period of five weeks. A second irradiation may be given just before the patients are dismissed, should this prove necessary. If further irradiations should be required, patients may be given ambulant treatment.

Jahrbuch für Kinderheilkunde, Berlin

1920, **93**, No. 2

*Roentgenography of the Head in Epilepsy. G. Anton.—p. 69.
*Epituberculous Infiltration of the Lung in Tuberculous Infants and Children. H. Eliasberg and W. Neuland.—p. 88.
*Congenital Stenosis of Pylorus and Duodenum. K. G. Faber.—p. 98.

Pathogenesis of Epilepsy.—Anton enumerates the long list of pathologic conditions which may entail genuine epilepsy, from fetal or infantile encephalitis to the lack of proportion between the brain and the skull, interference with the normal escape of cerebral fluid and normal circulation in the venous system, hydrocephalus, and hypertrophy of the cerebellum. Roentgenography of the head has shown surprisingly often that the cerebellum is abnormally large in epileptics. The roentgenograms in the case of a boy of 8 are reproduced; the hypertrophy of the brain and cerebellum had induced the clinical picture of a brain tumor. Puncture of the corpus callosum gave transient relief, and still greater relief followed opening the occipito-atloid ligament. Fluid escaped and the brain began to pulsate at once. Anton describes the roentgen-ray findings in fifteen epileptics showing that relative hypertrophy of the cerebellum is by no means rare, and that any abnormal size of the cerebellum can be readily recognized with the roentgen rays. The clinical picture from hypertrophy of the cerebellum has not been studied as yet although that from defective development is comparatively well known. The results of injury of the tentorium during birth should also be studied with the roentgen rays with a view to epilepsy. Decompressive operations have a field in true epilepsy. Reinike has compiled thirty-one cases treated by puncture of the corpus callosum after failure of other measures. In twenty-three of the cases there were no further seizures or they were much milder. In the other eight cases adhesions, striking thickening of the meninges, or hydrocephalus explained the failure. The amount of fluid released by the puncture was usually small, not over 5 or 10 c.c., but even this was enough to restore pulsation in the brain. Anton adds that the surplus of fluid may assemble at the back of the neck and can be released there by puncture or can be massaged out of the skull. When this cannot be accomplished, the crowding of the cerebellum might be relieved by slitting the tentorium of the cerebellum. The otologists have done this to relieve intolerable tinnitus, pushing the cerebellum to one side and dividing the auditory nerve. Anton suggests that with severe epileptic seizures for which the overlarge cerebellum seems to be responsible, we might consider incising the dura mater of the tentorium and thus relieving from pressure the parts of the brain in the posterior cranial fossa.

Epituberculous Infiltration.—Eliasberg and Neuland use this term to express the findings sometimes encountered in the lungs of young children who present evidence of tuberculosis elsewhere, but the lung proper is intact. The cough, etc., suggest a tuberculous process in the lung, but the clearing up of the focus and subsidence of symptoms show that the cause was merely a curable infiltration. The longest persistence of the symptoms followed by retrogression was nine months, but in two of the children they have persisted for fifteen and eighteen months to date. As the infiltration ultimately subsides spontaneously, no treatment is necessary beyond measures to promote resolution and resorption. They applied protein-shock treatment in some of the cases, giving the children a subcutaneous injection of normal horse serum every day, but no appreciable benefit was realized with this nor with alpine sun lamp treatment.

Congenital Stenosis of the Pylorus and Duodenum.—In this exhaustive study of this subject, Faber reiterates that congenital stenosis if not relieved in time inevitably leads to enlargement of the stomach, the effects of which may be felt all through life.

Mittheil. a. d. Grenzgebieten d. Med. und Chir., Jena

1920, **32**, No. 1

*Pleural Complications in Influenza. E. Liebmann and H. R. Schinz.—p. 1.
*Chronic Gastroparesis. E. Schlesinger.—p. 30.
*Dysentery. O. M. Chiari.—p. 49.
*Surgical Manifestations in Influenza. H. v. Haberer.—p. 73.
*Postoperative Proctitis and Colitis. F. Bierende.—p. 85.
*Empyema in Influenza. A. v. Beust.—p. 94.
Injury of Diaphragm by Gunshot Wounds Penetrating Pleura and Abdominal Cavity. G. B. Grüber.—p. 129.
*Paralysis of Diaphragm. G. Leendertz.—p. 140.

Pleural Complications in Influenza.—Seven cases, fully described and discussed, show uniformly the presence of parietal, encysted empyemas, the discharge from which always localized itself laterally and outwardly. The heart was displaced. The differential diagnosis was very difficult, as the clinical picture was almost identical with that of

intralobar empyema, and even radiograms proved uncertain. The prognosis is favorable, and healing may occur spontaneously by perforation toward the lungs. In most cases puncture gives relief and continued radioscopic observation indicates focus. Operation is indicated mainly by a sudden rise of temperature or continued failure of relief by puncture. Pneumothorax also occurs in persistent cases of influenza, and the following types may be recognized pathogenetically: (1) originating from perforation of an empyema toward the lung; (2) caused by disintegration of a necrotic, subpleural focus; (3) caused by rupture of healthy pulmonary parenchyma as a consequence of convulsive coughing; (4) originating from the rupture of interstitial emphysematous vesicles. Cases are described of each of these forms.

Chronic Gastroparesis.—The pathologic picture of chronic total gastroparesis develops gradually, often in connection with deep-seated tumors of the lesser curvature, and consists in a paralytic debility or relaxation of the wall of the stomach, far exceeding atony, so that the pylorus becomes opened to its utmost and wholly insufficient for outflow as well as for retrograde passage. The spastic phenomena commonly occurring with ulcer become reduced or disappear. The peristaltic and peristolic functions in severe cases are reduced to the minimum. Paresis of the muscles and insufficiency of the pylorus, especially against reflux into the stomach, cause a considerable stagnation of the stomach contents, in one case of more than six days' duration. In severe ulcer of the lesser curvature the motility is impaired by the involution of the curvature and by the infiltration of the epigastrium. The diagnosis must not be attempted by the usual roentgenoscopy only, but additional exposures must be made from the right side (half turn) or in the ventral position.

Dysentery.—A critical reconsideration of the whole subject, based on an analysis of 178 recent publications. Dysentery is a group of diseases, some caused by amebas others by the bacillus of Schmitz (1917) or by streptococci (Czaplewski). In all cases toxemia ensues, with infection and ulceration of the colon, in some cases also of the small intestine. Operations now in use are: appendicostomy, cecum fistula, artificial anus connecting with large or small intestine; the formation of anastomosis. The advantages of each procedure are considered in connection with the numerous complications possible. Attention is called to the intricate pathologic picture presented by recent discoveries in which specific organisms have been located in the lymphatics, the blood, the spleen or even the blood in the heart. Thus the dysentery-group may be recognized more and more as a general infection and the treatment be extended accordingly.

Surgical Manifestations in Influenza.—Among the cases in which surgical operations were affected by influenza infection, is a group of operations for thyroid enlargement. After a series of successful strumectomies there occurred suddenly a succession of cases where severe suppuration set in, and recovery became protracted and difficult. These operations were done by one and the same assistant, who was suspected of defective asepsis. Author thereupon operated personally, with good results. The entire staff fell under suspicion of carelessness. At last four of the struma cases resulted in death, and the necropsy showed multiple abscesses in both lungs, suppurative pleuritis, hemorrhages of the intestinal mucous membrane, hematogenous pyonephrosis, bilateral metastitic empyema—the pathologic picture of an influenza pyemia. A critical review of all suspected cases showed that influenza had occurred within three months before operation. Thereafter no thyroid operation was undertaken unless influenza infection were either absent or had definitely ceased at least four months previously. No further complications occurred.

Postoperative Proctitis.—Roessle had suggested that glycerin injections before and after operations might, in sensitive subjects, give rise to a lesion in the mucous membrane of the intestine through a disturbance of the local circulation and localized anemia, which would cause necrosis of isolated areas. This is denied, and the explanation given that the intestine suffers a temporary paralysis by any operative intervention, the immediate cause being a reduced contractility of the capillaries owing to a paralyzed state of the vasomotors. The result is a stasis, which favors the development of necrotic, diphtheroid proctitis and colitis. To avoid this it is advised to avoid protracted use of laxatives before laparotomies, and to reduce the preoperative treatment of the intestine to a thorough draining on the day before. Peristaltic hormones have been used postoperatively, likewise hot-air treatment (Gelinsky).

Empyema in Influenza.—Empyema induced by influenza occurs mostly at the ages of 21-30 years. The anamnesis is not indicative of its occurrence. The typical symptoms are severe cyanosis and dyspnea, which set in earlier than the other clinical symptoms. Another complication is multiple subcutaneous abscesses with streptococci, occurring mostly about the upper thighs. A long continued febrile condition, persisting from a few days to several weeks, was common even where no radiographic evidence could be found of an empyema. Many cases are given. Most of them showed unusual virulence and corresponding high mortality. Bülau drainage is indicated, likewise thoracotomy with resection of ribs to remove pressure.

Paralysis of Diaphragm.—Relaxation of the diaphragm is evident by the "paradoxic" movements of the affected half, visible by deep inspiration and by free access of air to the lung. A case is cited where deep inspiration caused an ascending movement in the affected side, while the healthy right side made the opposite movement. By deep inspiration these movements were reversed. The mechanism of these movements was studied by experiments on patients and comparison of these with respiratory phenomena in healthy subjects, in accordance with the Müller-Valsalvi methods. The typical movements are similar to those of a double-armed lever, the turning point of which is located somewhat toward the paralyzed side. Complications with pleurisy, etc., in which adhesions involving the diaphragm occur, produce no distinct paradoxic movements. Diaphragmatic hernia is diagnosed by radiographic pictures of alternate Müller and Valsalva respiration tests.

Münchener medizinische Wochenschrift, Munich

Aug. 20, 1920, **67**, No. 34

Present Status of Clinical and Operative Surgery. Sauerbruch.—p. 977.
Diet in Tuberculosis. W. Stoeltzner.—p. 981.
Significance of Changes in Resistance and in Cellular Performance for Infections and Neoplasms. P. Lindig.—p. 982.
Silver Arsphenamin in Multiple Sclerosis. L. Stern-Piper.—p. 985.
Hernia of the Diaphragm and Gastric Ulcer. Hoffmann.—p. 986.
Vaccination Against Smallpox in Bavaria (1917). Groth.—p. 988.
Luminal and Epilepsy. F. Brühl.—p. 990.
Benzin Poisoning. A. Korbsch.—p. 990.
Gastrophilus Larvae in Human Skin. W. A. Collier.—p. 991.
*Tamponing the Uterus with Nonabsorbent Cotton. Barfurth.—p. 991.
Note on Blood Coagulation. R. Stephan.—p. 992.

Tamponing the Uterus with Nonabsorbent Cotton.—Barfurth has been using nonhydrophilous (untreated) cotton-wool as tampon material in hemorrhages of the uterus. He corroborates the findings of Sachs, and states that refractory hemorrhages were stayed at once, and whereas with gauze tampons there was often a seepage, this did not occur when the untreated cotton-wool was used. He has the nonabsorbent cotton wrapped in gauze to form a strip 5 or 10 cm. wide and 5 meters long, the gauze tacked to the cotton with a few cross stitches.

Therapeutische Halbmonatshefte, Berlin

Aug. 15, 1920, **34**, No. 16

Active Component Parts of the Pituitary. H. Fühner.—p. 437.
*Neo-Arsphenamin for Gangrene of Lung. W. Reichmann.—p. 442.
*Stomach Lavage in Whooping Cough. M. Wilhelm.—p. 443.
*Fatal Case of Tertiary Amyl Alcohol Poisoning. Jacobi and Specr.—p. 445. Comment. S. Loewe.—p. 448.

Treatment of Gangrene of Lung with Intravenous Injections of Neo-Arsphenamin.—Reichmann reports a case of gangrene of lung in which the administration of various remedies and the application of inhalations had proved inefficacious. He then gave the patient 0.6 gm. of neo-arsphenamin intravenously. Although the next day the expectoration and the cough were increased, beginning with the second day the cough and expectoration abated. By the eighth day expectoration had ceased and the cough was very slight. No reac-

tions followed the injection. The patient's appetite improved, and he slept well, whereas before the injection he had been troubled with sleeplessness. He gained 11 pounds, his strength improved and he was getting stronger every day. Reichmann thinks that, judging from the publications on the subject and his own experience, in the presence of gangrene of the lung neo-arsphenamin should be administered at once without spending a long time trying other remedies.

Stomach Lavage in Whooping Cough in Children.—Wilhelm found that in whooping cough in young and delicate infants and children, marked and persistent anorexia sometimes assumed threatening aspects, since weight and strength became much impaired. In such cases she resorted to feeding through a tube, in which connection she discovered that large quantities of thick, hard mucus and foul-smelling milk remnants came up out of the stomach. Following this observation she rinsed out the stomach systematically with physiologic sodium chlorid solution to rid it of its foul-smelling contents before giving food or feeding with the tube. This measure often had the surprising effect that the children had a good appetite for the next meal. In emaciated children it usually required only a few repetitions of the lavage treatment and the artificial feeding before the appetite returned. She has used stomach lavage successfully also in older neuropathic children who vomited at every spell of coughing. Lung complications are not necessarily a contraindication. If the introduction of the tube brings on an attack of coughing, it is withdrawn at once, until the coughing has subsided. Lavage is continued until the water returns clear.

Fatal Case of Amylene Hydrate Poisoning.—Jacobi and Speer report what, as far as they know, is the only case of fatal tertiary amyl alcohol poisoning on record. Six grams of amylene hydrate as an enema had been prescribed for an epileptic aged 22, as he was having series of seizures that did not respond to bromids or other remedies. Twenty-two hours later, it was discovered that through a mistake of the nurse the patient had been given 35 c.c. in place of 6 gm. The twenty-fourth hour edema of the lung and cardiac insufficiency were present. After the forty-second hour, gastric hemorrhage occurred (about 1 liter of a black, coffee-ground-like substance). Shortly afterward the reflexes returned, beginning with the plantar reflex. The intoxication seemed to be overcome, but seven hours later death occurred, accompanied by rise of temperature. Anker reported in 1892 a woman's attempt at suicide by taking 27 gm. of amylene hydrate, approximately the same amount that this patient received. The woman recovered, and the writers think that their patient would in all probability have recovered from the intoxication if it had not been for the severe complication of influenzal pneumonia.

Zeitschrift für Kinderheilkunde, Berlin

Oct. 8, 1920, **26**, No. 6

*Epidemic of Scurvy in Schoolchildren. Harriette Chick and Elsie J. Dalyell.—p. 257.
*Proteins in Infant Feeding. E. Nassau.—p. 270.
*The Water Test in Children. J. Ohlmann.—p. 291.
*Univitelline Twins. F. Rohr.—p. 304.
*Albumin Milk in Infant Feeding. K. Coerper.—p. 309.
Laws of Size of Newly Born. H. Baltz.—p. 327.
Congenital Lymphangioma of Anterior Mediastinum. A. Schmincke.—p. 331.

Scurvy in Children.—Chick and Dalyell here relate that forty of the sixty-four children between 6 and 14 in the tuberculosis ward of the Vienna Children's Clinic (of which Pirquet is director) developed scurvy in April, 1919, and it was found that for four months at least the antiscorbutus vitamins had evidently been destroyed in the cooking. They say that the experiences described suggest the necessity for more care in preparing certain foods. For example, instead of cutting up the vegetables for soup and boiling them together for three or four hours, they advise to add the chopped cabbage and tomato only a short time before the soup is served, to reduce the heating of these vegetables to the minimum. When it is difficult to obtain fresh fruit or vegetables, the turnips and carrots might be grated and the juice expressed and set aside, adding the grated vegetables to the soup to cook ad libitum but pouring in the expressed juice only just before the soup is served. Cabbage and cauliflower might be steamed instead of boiled; this would reduce the time of cooking and would retain in the leaves the vitamins which otherwise would be lost in the water. They add that the advantages of germinated pod vegetables, when fresh vegetables are not available, cannot be too strongly emphasized. They wash the beans or peas and soften them in water at room temperature for twenty-four hours. They are then placed on a kitchen sieve or other porous material in a layer not more than 5 or 7 cm. deep, and are occasionally sprinkled to keep them moist, exposed to the air, for two or three days. By this time, 1 cm. sprouts should be in evidence, and the legumes should be cooked at once, not allowed to dry out. They should be cooked only long enough to make them soft and palatable. From fifteen to twenty or thirty minutes is usually enough. It was remarkable that during the epidemic of scurvy described, beans, peas and other legumes had formed an important part of the dietary but the long cooking had deprived them of their antiscorbutic potency.

Proteins in Infant Feeding.—Nassau reports experiences which show that it is possible to bring infants whose weight has long kept stationary on a diet with apparently abundant protein calories to thrive and increase in weight by giving four times as much protein as they had been getting. The failures were only in infants with acute intestinal derangement. There was no indicanuria even under this increased protein intake so long as the bowel functioning was regular. The indicanuria subsided also when it proved possible to correct the intestinal derangement by further increase of protein, such as with a two-thirds milk mixture, addition of 2 per cent. of some commercial albumin preparation, to an amount corresponding to 6 gm. of protein per kilogram of weight. The physiologic proportion with natural feeding is 1.8 per kilogram. The findings with large groups of infants are tabulated. They demonstrate that the term *eiweissnährschaden* does not apply to such cases.

The Water Test in Children.—Ohlmann applied the water test, that is, ingestion of 200 or 400 c.c. of water, fasting, collecting the urine at intervals thereafter, to thirty-four infants and to twenty children up to the age of 10. In another series of tests the fluid given was a 0.7 per cent. solution of sodium chlorid. In both series of tests the peculiar avidity of the infants under 9 months old for both water and salt was most striking. While the older children voided from 113 to 175 per cent. of urine in proportion to the fluid ingested, the infants voided only from 69 to 92 per cent. of water and from 27 to 49 per cent. of the saline. The salt is retained in infants in far greater proportions than in older children. Infants react to introduction of salt with the same retention as the adult with kidney disease. This avidity of the infant organism for salt and for water is especially noticeable when compared with the figures in older children, from 87 to 107 per cent. of the intake.

Univitelline Twins.—Rohr describes the peculiar similarity in the clinical findings and course of digestive disturbance and infection in two twin infants, the phenomena exact duplicates. He thinks that this points to a remarkable similarity of structure and predisposition in univitelline twins.

Experiences with Albumin Milk.—Coerper reports experiences with albumin milk in feeding of 293 infants up to 2 months old. They justify the choice of this milk for infants with the exudative diathesis but especially for infants that are under weight or have chronic disturbance. His experience emphasizes further that it is not well to continue for long any single form of infant feeding in institutions. Another group of 255 infants up to 8 months old were fed with part breast milk and part albumin milk for more than three weeks, and they gained in weight from 11 to 18 gm. daily. The highest gain was in eight prematurely born infants.

Zentralblatt für Chirurgie, Leipzig

Aug. 14, 1920, **47**, No. 33

*Habitual Dislocation of the Shoulder. R. Eden.—p. 1002.
*Parathyroid Grafts in Postoperative Tetany. H. Flörcken and G. Fritzsche.—p. 1005.
Decortication of the Lung. Brix.—p. 1007.
*Artificial Closure of the Pylorus. J. Sickmann.—p. 1008.

Operative Treatment of Habitual Dislocations of Shoulder.—Eden emphasizes that there is no one method of procedure that is suitable in all cases of habitual dislocation of the shoulder but that the method to employ will depend in each case on the pathologic findings in the joint. The problem is to prevent recurrence of dislocation by some simple, if possible, extracapsular check without weakening the function of the joint. This goal has not been reached as yet. He describes, however, a method that he has used in several cases since 1917. He transplants a strip of bone from the tibia to the anterior glenoid margin. This bone strip, from 2.0 to 2.5 cm. wide and from 4.0 to 5.0 cm. long, and covered with periosteum, is inserted under the loosened periosteum of the neck of the scapula, so that it extends from 0.5 to 1.0 cm. beyond the anterior edge of the socket. It is fixed by sutures to the periosteum, the glenoid ligament and the capsule or it is nailed to the neck of the scapula. Shortening of the capsule prevents the recurrence of the dislocation until the transplant has healed. For the first three weeks a splint, with slight abduction forward and a middle position between outer and inner rotation, is employed. Two patients so treated three years previously had had no recurrence and had suffered no disturbances of function in the injured shoulder. One roentgenogram shows the technic.

Transplantation of Parathyroids in Postoperative Tetany.—Flörcken and Fritzsche report a case of tetany following a bilateral goiter operation in a girl of 12. After suffering eleven years, especially during the months from January to May, from serious tetany symptoms, a goiter operation was performed on a patient of about the same age (23), and the right, superior parathyroid and a portion of the thyroid from the region of the right, inferior parathyroid were implanted in the right obliquus internus muscle of the tetany patient. Previous to the transplantation parathyroid tablets had been prescribed, but following the operation all medication was discontinued. While the patient cannot be said to be cured, she has been much benefited. The parathyroid tablets may have had some effect, but the good results can hardly be due entirely to their use, as severe cramps in the arms had occurred after the parathyroid tablets had been administered for several weeks, whereas after the transplantation the cramps ceased although the tablets had been discontinued.

Technic for Artificial Closure of the Pylorus.—Sickmann says that the main requirements of any technic are absolutely tight closure, simplicity of execution and freedom from danger. He describes the method that he has used in twenty cases with good results. After gastro-enterostomy has been completed, the gastrocolic and the hepatogastric ligaments are divided for a short distance. Through the gaps so made a knitting needle is passed behind the stomach, and with this knitting needle the pylorus end of the stomach is lifted up. The lifted-up portion is then seized close beneath the knitting needle with a long narrow clamp (Graser), which thus clamps both the front and the rear wall in one grasp. The stomach walls are then sutured together, passing a straight needle and silk back and forth through the slits in the clamp. The fold of the walls over the clamp is then sliced off and cauterized. After removal of the clamp, the stump consists of the four squeezed-together walls of the stomach, and after ligation of the bleeding vessels the serosa on both sides of the stump is drawn up and sutured over it. Control roentgenoscopy months afterward has confirmed the complete impermeability of the pylorus. The article is illustrated.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Sept. 11, 1920, **2**, No. 11

Pellagra in Surinam. P. J. de Kock and C. Bonne.—p. 965.
*Extrapyramidal Motor Disturbances. H. C. Rümke.—p. 972.
*Tremor in Children. J. C. Schippers.—p. 983.
*Spurious Appendicitis in Malaria. P. H. van Roojen.—p. 988.
The Milk Supply at Amsterdam. B. H. Sajet.—p. 990.
The Incapacitated after Industrial and Other Accidents. D. Brock.—p. 1000.
Healthy Tubercle Bacillus Carriers. H. van der Tak.—p. 1004.

Extrapyramidal Motor Disturbances.—Rümke is assistant at the clinic for nervous and mental disease at Amsterdam, and his discussion of the literature and his own experience on this subject show that conflicting opinions prevail. The only point on which all seem to agree is that the corpus striatum is an important factor. Some rank the striatum with the cortex in this respect. A wide field for research has been opened here, and the clinic must record the sequence of the phenomena with shaking palsy, chronic chorea, double athetosis, etc. It must be learned whether the motor disturbances can occur without stiffness of muscles, what the relations are between chorea, athetosis and rigidity of the muscles, and what part the tonic element plays here. It must also be ascertained in what cases disease of the thalamus induces rigidity of muscle. As Hunt has suggested, the output of creatinin in these diseases must be measured, which so far has not been done, to Rümke's knowledge. Experimental research with minute lesions in the tract, to estimate striatum functioning, may also prove instructive. It may be possible to test different parts of the nucleus ruber to confirm Kleist's and Wilson's theoretical assumptions. Above all, we must learn more in regard to the relations between the striatum and its environment.

Tremor in Children.—Schippers emphasizes the information to be derived from this rare symptom in children. When it occurs alone it may give the clue to incipient meningitis or other disease of the central nervous system so that the advisability of lumbar puncture should always be suggested with acutely developing tremor in a child. In the first of his five cases, two boys of 6 and 8 and their sister, 14, presented a hereditary, familial tremor. In two other cases infants about a year old presented the acute cerebral slow tremor with wide excursions in neck and limbs; it persisted during sleep, and was exaggerated by excitement. Sometimes it is restricted to one side or to the arm or leg, and there may be spastic phenomena, paresis or ataxia. In 1916 eighteen cases had been published, but it is probably of more frequent occurrence, as Schippers' two cases and De Lange's two at Amsterdam seem to show. This tremor was always preceded by pneumonia, measles or enteritis, but it subsided in from two to twelve weeks; one case is on record in which the child grew up feebleminded. In Schippers' fourth case the tremor was the first symptom to call attention to sporadic meningitis. In his fifth case the year old infant presented tremor in the arms when excited, and as it seemed sick, lumbar puncture was done, which confirmed the assumption of pressure on the brain. The child soon died with symptoms of meningitis, and necropsy revealed hydrocephalus with suppuration in the ventricles. Tremor as an early and single sign of meningitis is rare, but Göppert has reported a case in an infant of 11 months with vomiting, spasm and fever, and tremor of head and arms with wide excursions. Necropsy revealed epidemic meningitis. The monosymptomatic tremors in children are thus highly instructive.

Abdominal Disturbance in Malaria.—In both of Van Roojen's two cases the symptoms indicated acute appendicitis, and the patients were on the point of being operated on when the symptoms subsided for a day. They returned the next day even more intense, but examination of the blood then revealed the malaria parasite.

Hospitalstidende, Copenhagen

Sept. 8, 1920, **63**, No. 36

Bilateral Peripheral Facial Paralysis; Two Cases. V. Askgaard.—p. 558.

Sept. 15, 1920, **63**, No. 37

*Head Nystagmus in Man. G. V. T. Borries.—p. 569.
*The "Alcohol Reaction" in the Wassermann Test. H. Boas.—p. 578.

Head Nystagmus in Man.—Borries reports the case of a young recruit with acute vertigo and intracranial nystagmus, and extremely sensitive vestibular apparatus, heat and rotation inducing nystagmus of the head. The diagnosis and interpretation of the anomaly are discussed.

Alcohol as the Antigen in the Wassermann Test.—Boas relates that no reaction was obtained with either heart antigen or alcohol antigen in 652 control serums, while seventy-one of 796 syphilitic serums reacted positively to the alcohol alone as well as to the heart antigen, while nine reacted exclusively to the alcohol.

1607

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, NO. 24 CHICAGO, ILLINOIS DECEMBER 11, 1920

THE RELATION OF MEDICAL ZOOLOGY TO PUBLIC HEALTH PROBLEMS*

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BALTIMORE

When the School of Hygiene and Public Health of the Johns Hopkins University was organized, medical zoology was selected as one of the basic sciences underlying public health work. To train students successfully and to add to our knowledge of the subject by appropriate investigations required a survey of the relations of medical zoology to public health problems, and it is my intention to outline some of the results of this survey.

SUBDIVISIONS

Medical zoology comprises only those phases of the study of animals that are most closely associated with the health of mankind. Most of the animals in the animal kingdom are thus excluded, and those that remain are almost entirely restricted to three large groups: (1) the protozoa, (2) the parasitic worms, and (3) the insects and their allies.

Medical zoology may therefore be divided into three sections: protozoology, helminthology and medical entomology. It is clearly recognized, however, that these three subjects have much in common and must be intimately associated. Thus, in addition to comprehensive courses in protozoology, helminthology and medical entomology, a course also in animal parasitology is given which includes work in all three subdivisions. The aims and content of these courses are stated in the catalogue and announcement of the school.

PROBLEMS IN PROTOZOOLOGY

The most important groups of protozoa parasitic in man are the intestinal amebas. the intestinal flagellates, the hemoflagellates, the hemosporidia, the coccidia and the intestinal ciliates. In addition to these, the spirochetes might be included; but it seems best for the present to leave out of consideration organisms of such doubtful systematic position. What problems do these groups present that have a bearing on public health? It is impossible, of course, to answer this question satisfactorily in a short paper; but certain lines of investigation may be indicated that seem particularly interesting.

The war has brought into prominence the importance of intestinal protozoa. Among the best known species are *Endameba histolytica, Giardia intestinalis, Trichomonas intestinalis, Chilomastix mesnili, Isospora hominis* and *Balantidium coli.* Many other species have been described; but they are apparently less abundant, and some of them are not yet well established. One problem that involves all of these species is that of pathogenicity. Parasitic protozoa frequently occur in healthy persons as well as in many who are suffering from dysentery and diarrhea. Are these intestinal disorders due to the presence of these organisms, or are these organisms present because the disordered intestinal tract is a good environment in which to live and multiply? There are several ways of studying this problem. It is possible to cultivate in suitable mediums both intestinal protozoa and the tissues which they are supposed to attack. If organism and tissue are brought together, we may be able to observe the effects of the parasites on the living cells and thus obtain an answer to our question.

Animal experimentation offers another method of attacking this problem. By inoculating laboratory animals, such as kittens and rats, it should be possible to follow the relations of the protozoa to the intestinal tract by postmortem examinations at various intervals after infection. Careful microscopic study should reveal whether or not the invasion of the tissues is due to the activities of the parasite or is simply made possible by the previous aggression of some other organism.

We do not yet know how widely distributed or how abundant the different species of intestinal protozoa are. The results of many protozoan surveys have been published, especially since 1914, and these for the most part indicate a high percentage of infection both among patients with intestinal disorders and among persons apparently in perfect health. These surveys have a bearing on the pathogenicity of the species studied, provided the history of the individuals is obtained. Work of this sort also adds to our knowledge of the group of intestinal protozoa as a whole, since new species are constantly being added to the list of those already known, and new facts are being contributed regarding previously known species.

Recently the homogenicity of certain species of intestinal amebas has been brought into question, and it now seems probable that races of *Endameba histolytica, E. coli* and *E. nana* exist that differ from one another in the size of their cysts. Thus far, no differences have been discovered between the relations of these various races to their hosts; but the problems involved are not yet fully solved.

There are also many public health problems concerned in the control of intestinal protozoa. We believe we know that these organisms are disseminated in the cyst stage and enter new hosts in contaminated water or food, but our data on this subject are most inadequate. Additions to our knowledge of the effects of

* From a paper read before the Congress of the Royal Institute of Public Health, Brussels, May 23, 1920.

environmental factors on the viability of the cysts are much needed. Especially desirable are experimental data regarding the effects of temperature, moisture and chemical substances that may be employed for destroying cysts and thus preventing soil pollution. It is possible that certain of the intestinal protozoa are common to man and lower animals, and that the latter act as reservoirs and distributors of their cysts. This is especially true of such forms as *Giardia, Balantidium* and *Coccidia.*

That our present methods of therapy are not considered satisfactory is evident from the large number of studies on this subject that are constantly appearing in our medical journals.

Only when we contrast our knowledge of the intestinal protozoa with what we have yet to learn do we realize how little we know about them, and how many problems that involve the health of mankind remain to be solved.

The more important blood-inhabiting protozoa are the malaria organisms, trypanosomes and leishmanias. Malaria has always been and still is one of the most important of all tropical and subtropical diseases, and some of the most brilliant investigations in the field of medical zoology have resulted from its study. Nevertheless we do not know for certain in what form the malaria parasite exists in the body of a malaria carrier; we have no adequate method for the detection of carriers, and are not able to agree on the best methods of therapy.

Relapse in malaria is probably due to the renewed activity of parasites that lie dormant in the body. We need to know in what part of the body these dormant parasites are segregated and in what stage of their life cycle they exist. This problem can perhaps best be solved by studies of bird malaria—such studies as have in the past helped so much in the elucidation of malarial problems in man. Doubt has also been expressed regarding the significance of exflagellation and the fertilization process; and the question as to whether the parasite is intracorpuscular or extracorpuscular has not been answered conclusively.

To control malaria effectively we must eliminate the reservoirs of infection. This can be done only on the basis of more information than we now possess. In certain parts of the United States, at least, the mosquitoes apparently do not carry the infection over winter, and man seems to be the only reservoir. The possibility, however, that certain lower animals may serve in this capacity has not been excluded. One of the main problems now seems to be to perfect a method of detecting human carriers. The history method and blood examination are not satisfactory, and some process, such as serum diagnosis, is much to be desired.

Opinions differ widely regarding the dosage necessary for the sterilization of carriers. If man is the only or the principal reservoir of the malaria organism, it is evident that by proper therapy the organisms he carries can be eliminated. Many investigators are at work on this problem and are carrying on researches that may lead to the discovery of therapeutic agents that may supplement quinin, and of better methods of applying these remedies.

Trypanosomes are more widely spread among lower animals than are the malarial organisms; but those pathogenic to man are more restricted in their distribution, although very important wherever prevalent. The species problem has here attracted considerable attention—a problem of great difficulty because of the slight variations in morphologic characteristics and the polymorphic condition of the pathogenic species. A method of attacking this problem that promises results is to inoculate laboratory animals with single specimens, and then by statistical procedure to determine the extent of variation in the descendants when cultivated in different hosts of the same species and in hosts of different species. I have found striking and constant differences in size in the trypanosomes of the newt taken from different hosts, and a comprehensive program of carefully controlled experimental work is under way in our laboratory to test the relation between heritable characteristics and environmental influence on pure lines of these organisms. The solution of this species problem will be of great assistance in locating the animal reservoirs of the pathogenic trypanosomes.

Another problem concerns the effects of various reagents on trypanosomes; improved methods of chemotherapy will undoubtedly result from such studies. Life history investigations are also much needed, since we cannot apply control measures intelligently until we know the complete life cycle of an organism and can select the critical stage in its life cycle for attack.

The most pressing problem presented by the leishmanias is probably the methods of their transmission. *Leishmania donovani,* the organism of kala-azar, may enter the body with contaminated water or it may be distributed by the bedbug, flea, mosquito, sand fly, house fly, louse or tick, but our evidence against these arthropods is not sufficient to convict any one of them. The data we have regarding the organism that causes infantile kala-azar, *L. infantum,* incriminates the flea but is likewise not complete enough for conviction. Possible vectors of the organism of oriental sore, *L. tropica,* are the house fly, bedbug, stegomyia mosquito, sand fly and tick, but none has yet been determined with certainty.

The question of specific differences, as in the trypanosomes, needs further investigation. Perhaps when we know more about the distribution of these parasites within the human body, and have worked out in more detail the cytologic phenomena that accompany division and other stages in their life cycles, we may be able to separate the species by morphologic differences. The parasites of this group that cause human diseases in America, *L. tropica, L. americana* and *L. braziliensis,* are considered by some to be of doubtful specific rank. We are not even certain that the leishmanias of man do not belong to the same species as those of the dog, of insects and of other lower animals.

PROBLEMS IN HELMINTHOLOGY

The parasitic worms form several well defined zoological groups; many of them are more or less harmful to man, some being widely spread over the earth's surface and others of local distribution. Thus, the importance of the various species from a public health standpoint depends on the part of the world under consideration. We may separate the parasitic worms into three divisions—the trematodes, cestodes and nematodes. To indicate the rôle these organisms play in human welfare we may mention among the diseases produced by trematodes, bilharzia disease of Egypt, and paragonimiasis, clonorchiasis, and schistosomiasis of the Orient; among those caused by the cestodes, the disease due to the presence of hydatids; and among the diseases produced by nematodes, the hookworm disease and filariasis. Not until our knowledge

is much more complete than at present can we expect to control effectively these and similar parasitic worms.

There is much still to be learned regarding the life cycles of the various species. For example, the first intermediate host of *Paragonimus ringeri* is still in doubt; the method of infection of *Hymenolepis nana* is not fully understood, and the life history of the eye nematode needs further investigation. The development of our knowledge of the parasitic worms of man has depended largely on additions to our knowledge of the species that occur in lower animals. The parasitic worms of domestic animals are very important in animal husbandry and are more easily studied than those of man. Comparative helminthology must therefore be regarded as a subject of fundamental importance to the advancement of public health work. Much of our present uncertainty with respect to life histories and classification in general is no doubt due to the fact that the data are contained in many small contributions of a fragmentary nature, resulting from investigations due to chance discoveries. Comprehensive monographs of the more important groups are much needed.

Another phase of helminthology that requires emphasis is that of pathogenicity. The results due to the presence of certain species are well known, but many other species are of doubtful importance, and properly directed efforts for their control await the accumulation of further information. In what way injurious effects are produced is another problem that needs solution. Are the diseases due to toxins or to some other activity of the parasite? This question involves a study of the interactions of parasite and host, and can be answered only by serologic investigations.

Any investigator who is interested in the relation of parasitic worms to public health will find countless problems on which to work. The recent studies of the paths of migration of ascaris larvae in the body of the host, and their relation to diseases of the lungs of children, has renewed interest in this form, and similar researches are required in other types of worms. The problem of the specificity of intermediate hosts and its relation to the spread of parasitic worms into new areas is particularly interesting, since forms, such as *Schistosoma,* are continually being introduced by Orientals into California and other states and will become of public health significance if they succeed in finding suitable intermediate hosts. The periodicity in the migrations of certain larval nematodes, such as those of *Filaria bancrofti* and of *Loa loa,* is most remarkable and affords a very attractive field for investigation. The prophylaxis and treatment of diseases caused by parasitic worms are susceptible of considerable improvement, and offer opportunities for work that would be of immediate practical application.

The most important parasitic worm is the hookworm. Those who are undertaking campaigns for the eradication of this parasite are continually hindered in the application of control measures by a lack of knowledge of their biology. Incomplete information concerning the length of life of the larvae in the soil, the depth from which the larvae can reach the surface, the migration of larvae in the soil, and the resistance of eggs and larvae to various agents renders many expensive and time consuming efforts of doubtful value. It is expected that these and other studies of soil pollution in relation to the spread of the parasitic worms of man will soon be undertaken by the department of the School of Hygiene which I represent. Such work must include extensive investigations of the conditions under which the eggs and larvae of these parasites live in the soil, the methods by which they are spread, and the means of destroying them.

PROBLEMS IN MEDICAL ENTOMOLOGY

The groups of animals that are usually included in the field of medical entomology are four classes of arthropods: the crustacea, arachnida, myriapoda and insects. Only a comparatively small number of species belonging to these groups are of importance in public health work. Some of these, however, are the sole vectors of many of the most deadly disease germs. A few species, such as scorpions, black flies and ticks, are directly injurious; but most of them are indirectly harmful because they disseminate parasitic protozoa, pathogenic bacteria and parasitic worms. Thus, among the crustacea, *Cyclops* and other entomostraca are instrumental in the transmission of the broad tapeworm; among the arachnida, the mites and ticks are of particular importance as vectors; and among the insects, the bugs, lice, mosquitoes and other blood-sucking flies, the house fly and other nonbloodsucking flies, and the fleas are of the utmost epidemiologic significance.

It is evident to every one that the control of certain diseases, such as malaria and yellow fever, the germs of which are transmitted by only one or a few species of insects, may in many cases most easily be effected by campaigns directed against these insect vectors. The relations of mosquitoes to malaria are well known, but certain problems connected with practical field operations for their elimination are still in need of solution. Within recent years the International Health Board of the Rockefeller Foundation has carried out extensive field investigations for the purpose of discovering methods of mosquito control that would be inexpensive enough to be financed by the inhabitants of small communities and sparsely settled rural districts.

Any new facts about the biology of insect vectors may be of immense importance in the application of control measures. Among problems of this kind may be mentioned the effects of temperature and humidity on the life cycle of insects and on the parasites they harbor; the behavior of the adults and young stages with respect to light, odors, food and atmospheric conditions; the natural enemies of the eggs, larvae, pupae and adults, and their usefulness as agents of reduction; and the relations of the parasites themselves to their insect hosts. Each locality presents conditions similar to those that prevail in other localities, and in addition certain problems peculiar to itself. Thus, every campaign becomes an investigation in applied entomology, and provides unique circumstances that make the work of continued interest to the field director.

Another problem of great significance to public health is that of the relation of insects to soil pollution. We know that bacteria and the cysts of protozoa are carried by flies and other insects, but our knowledge is very deficient regarding the species of insects principally concerned, their degree of culpability, and the exact methods of transmission.

I have mentioned several diseases, such as kala-azar, whose germs are probably disseminated by insects. These and many other diseases cannot be controlled effectively until the entomologist, carrying on his work from the biologic standpoint, has provided us with

the data necessary to determine the insect vector concerned, the critical point in its life cycle when it can successfully be attacked, and the method of reduction best suited to the various conditions under which it exists in different parts of the world.

ANIMAL PARASITES OF UNCERTAIN SYSTEMATIC POSITION

The organisms that I have considered thus far may all be assigned to definite zoological groups; but certain others of great significance to public health are of uncertain systematic position and still others have never been seen and are known only by the diseases they produce. The spirochetes are considered bacteria by certain authorities, and protozoa by others. They actually possess characteristics belonging to both the bacteria and the protozoa, and seem almost important enough to be treated as an independent group of organisms and to have a science named for them — the science of spirochetology. Recent evidence indicates that yellow fever is a spirochete disease, and how many other diseases of obscure etiology are due to the presence of spirochetes we can only conjecture.

Various other organisms that fall within the province of medical zoology are not so well known as are the spirochetes. Not only are we in doubt as to their systematic position, but we are not absolutely certain of their relations to the diseases they appear to produce. In this group may be mentioned *Bartonella bacilliformis*, the probable organism of Oroya fever, and the species of *Rickettsia* which are possible etiologic factors in typhus fever, Rocky Mountain spotted fever and trench fever. There may be included here also the filtrable viruses which cause such diseases as dengue fever, phlebotomus fever and verruca peruana. Certain bodies that occur in patients suffering with such diseases as vaccinia, variola, scarlet fever and hypdrophobia may or may not be protozoan parasites. The name *Chlamydozoa* has been proposed for this group. These organisms of a doubtful nature are more difficult to work with than those about which our knowledge is more nearly complete, but their importance to public health is as great as are the obstacles presented by their investigation.

CONCLUSIONS

In this review I have presented only a few of the problems in medical zoology that are related to public health work. Many of these are of world wide interest, whereas others concern for the most part the United States of America; but those mentioned justify the statement that in many parts of the world, especially in the tropics and subtropics, animal parasites and the animal carriers of disease-producing organisms are of far-reaching significance to the welfare of the inhabitants. Better methods than are now available for eradicating or controlling these parasites and their vectors cannot be expected until the medical zoologists have made more thorough studies of the life cycles, biology and relations to environment of the organisms concerned.

At the School of Hygiene and Public Health of the Johns Hopkins University we are at work on problems representing both "pure" and "applied" science. It is impossible to separate entirely these two kinds of research; but the type of investigation that leads to results of no obviously immediate practical use may be called pure science, and the type that has a direct bearing on some public health activity may be called applied science. For example, investigations are now in progress in our laboratory on the classification, morphology, physiology, life histories and reproduction of blood-inhabiting and intestinal protozoa, trematodes and nematodes, and mosquitoes and house flies. From the results of these studies we may or may not obtain data that can be utilized in instituting control measures; but we are certain to add to our knowledge of these groups, and no one can predict when and to what degree this knowledge will become of practical value. Other investigations now in progress have more definite practical aims. We are attempting to aid in the solution of the soil pollution problem by improving methods of fecal diagnosis; by studying such phases of the biology of the hookworm as the viability of the eggs and larvae in the soil; by determining the effects of the larvae of parasitic worms during their migration through the tissues of their hosts; by attempting to discover the thermal death point of protozoan cysts, the effects of moisture and chemicals on them and the relations between them and the insects that may be their vectors; by studies of relapse in malaria; by serologic investigations of this disease, and by biologic researches on mosquitoes.

These are all laboratory studies; but a rather intimate association with the International Health Board makes it possible for us to see the results of this work put into almost immediate practice, and we thus become, as it were, a part of the campaigns for the control of these organisms in the field. Frequent excursions are made by the laboratory men for the purpose of studying field conditions, and the field directors reciprocate by spending part of their time with us in the laboratory.

Finally, medical zoology has an important function in public health education. The ordinary physician has usually had but little training in public health subjects, and this generally does not include studies in medical zoology. Since most health officers are selected from among the physicians, the result follows that few public health officers are acquainted with the animal parasites of man and it becomes one of our duties to better this situation in every way practicable. Fortunately, the liberal bequest of the late Capt. Joseph R. DeLamar to Columbia, Harvard and Johns Hopkins universities has made it possible to bring before the physicians and laymen of the United States through public lectures, magazines, bulletins and other publications the latest knowledge in public health.

310 West Monument Street.

Evolution in Medical Science.—The doctrine of evolution has scarcely received the attention it merits as a factor in modifying the opinions of medical science. So long as it was believed that the body, with all its natural functions, had been created from the first in its present condition, there was little room for inquiry into the origin of those functions, and still less into that of morbid processes. Darwin has changed all this, as a single instance will suffice to show. Metchnikoff's studies on the comparative pathology of inflammation have taught us that this is not a diseased state but a purposeful reaction against injury, gradually perfected in passing up from the lower to the higher animals. Almost without our being conscious of it, the idea of evolution has gradually effected a great change in the standpoint from which we view a large number of diseases, the symptoms and morbid changes in which we now understand as efforts of the body to maintain its integrity in face of the injurious agencies which threaten it.—F. W. Andrewes, *Lancet*, Oct. 23, 1920.

SUGGESTIONS REGARDING POSTMORTEM TECHNIC *

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To add anything novel or as an improvement to the methods of making postmortem examinations is obviously difficult, owing to the fact that where they have been made daily for many years, virtually all possible routes of approach for exposing and examining viscera and other important structures have been tried.

In Austria and Germany, the technic for the postmortem examinations made as a part of medicolegal inquiries was many years ago enacted into statutes which prescribe even such details as the instruments to be used, the assistants, and the form of the protocol.[1] To a large degree, such methods have served as standards not only for medicolegal, but also for all other postmortem examinations, both in the countries mentioned and in America as well, modified, of course, by requirements which all agree are needed at times to suit the conditions of disease encountered.

It is of interest, therefore, to note that Westenhoeffer [2] opens his small atlas [3] of postmortem methods with the statement that "in Germany there is no generally recognized method for making postmortem examinations peremptory for all schools." The failure to have legal provisions in the United States for the methods for making medicolegal postmortem examinations, which would also state when and under what conditions such should be made and by whom, has always been and is still responsible for inefficient and inadequate prosecution of crime, injustice in civil prosecutions, and incorrect interpretation of disease. Moreover, the absence here of standards such as statutory regulations would provide has deprived postmortem examinations made for other than legal inquiries of the thoroughness and precision necessary to a proper knowledge of disease. This is well illustrated by the postmortem examinations made at times in all of our hospitals, both large and small, during which the head is not opened or other restrictions carried out, simply the curiosity of a clinician, frequently a surgeon, being satisfied, and by the failure to secure for postmortem examinations, those especially trained for such inquiries.[4]

For these reasons and also because I have employed for a number of years a method of making postmortem examinations which in most respects has been outlined by Letulle [5] and consequently is less widely known, it is hoped that a brief statement regarding it may prove an additional help.[6]

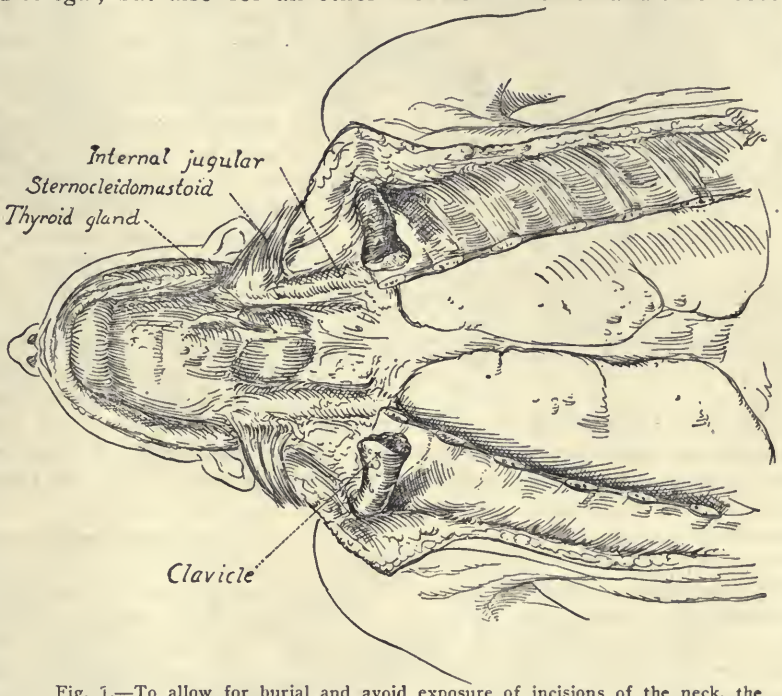


Fig. 1.—To allow for burial and avoid exposure of incisions of the neck, the midline incision is continued out on each side obliquely, all so as to be easily covered in dressing the neck and to allow a "cuff" to be dissected from the front of the neck and laid up on the face; this cuff remains on the face as soon as the dissection is far enough to lay bare a little of the lower part of the front of the mandible. By continuing this dissection so as to expose all of the front of the mandible, and sawing the mandible through in the midline and spreading the two parts widely apart, the examination of the mouth and nasopharynx is still more satisfactorily made, the mandible subsequently to be wired together in the midline. In this illustration, as well as in Figures 3, 4 and 5, conditions are represented as seen with the examiner on the right side of the necropsy table.

DETAILS OF METHODS

The head is opened first after a full description of the outside of the body,[7] and in these respects the methods commonly in practice have been followed. With the exposure of the middle ears, that part of each internal carotid artery which courses within and through the petrous portion of the temporal bones is usually partially or wholly exposed and should be examined carefully; with syphilis they may be diseased or both diseased and thrombosed. Examination of the interior of the nose and accessory nasal sinuses is conveniently carried out by sawing the lower half of the cranium sagittally down to the pars basilaris of the occipital bone, which is then split in the median line [8] with a chisel, when the two lateral halves may be spread apart.[9] These are later apposed and wired. This does not mar the features, and the only caution is that the sphenoidal and ethmoidal sinuses, hypophysis and body of the sphenoid bone be examined before the lower half of the cranium is sawed and split apart.

The trunk is then opened as usual with a midline incision in front (Fig. 1), unless it is desired at this time to remove the spinal cord. The upper end of the trunk incision is extended out obliquely on each side parallel with the lower border of the mandible and so low on the neck that, following repair of the body, the incision will be easily covered as a part of the usual preparation for burial. These incisions are continued to the back margin of the sternomastoid muscles or slightly beyond and, when necessary in

* From the Pathological Laboratory of Rush Medical College.

1. Virchow, Rudolph: Prussiches Regulativ für das Verfahren der Gerichtsärzte bei den gerichtlichen Untersuchungen menschlicher Leichen, Die Sections Technik, Berlin, 1893, p. 97.
2. At this time pathologist at the Moabit Hospital in Berlin.
3. Westenhoeffer, M.: Atlas der pathologisch-anatomischen Sectionstechnic, Berlin, 1908.
4. Ewing, J.; Wells, H. G., and Albert, H.: Report on the Teaching of Pathology, Tr. Assn. Am. Med. Colls., 1920, p. 136.
5. Letulle, M.: La pratique des autopsies, Paris, 1903.
6. A number of those assisting me subsequently made postmortem examinations after the methods to be described in cantonment hospitals during the war and, judging by reports which reached me, to the pleasure, in some instances, of capable pathologists casually present.
7. Charts useful not only as controls for the protocol but also valuable as graphic records may be procured from the American Medical Association.
8. Letulle splits the base of the skull a little to the right of the midline.
9. Harke: Ein neues Verfahren, die Nasen und Rachenhöhle mit ihren pneumatischen Anhängen ohne äussere Einstellung frei zu legen, Virchows Arch. f. path. Anat. **125**, 1891.

order to examine the lesions of the side of the face or back of the neck, they may be connected with the ends behind the ears of the coronal incision made to reflect the scalp and still be relatively inconspicuous when repaired. In this way the edge of the cuff is made (Fig. 2) which should be reflected up over the face.

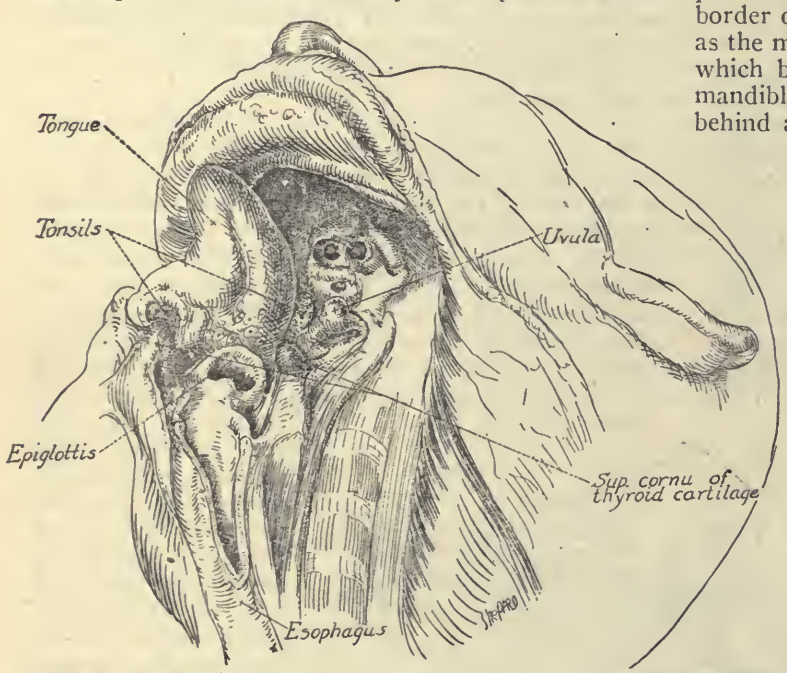


Fig. 2.—The floor of the mouth is opened from the left angle of the mandible forward to or slightly beyond the midline. Then all of the structures of the neck are cut away from the front of the cervical vertebrae and turned to the right, the mouth, nasopharynx, tonsils, etc., examined, and the pharynx opened in the midline from above downward. The neck structures are all easily returned to their former position and held in place by a subcutaneous stitch or two at the left angle of the mandible.

The usual preliminary examination of the cavities of the trunk and viscera of the abdomen, thorax and neck is then made in the order indicated.

It is important to keep in mind the ease with which clots washed free from large veins and lodged in the pulmonary artery, or clots formed there, may be loosened and dislodged in handling the heart or neighboring structures. For this reason a vertical cut in the pulmonary conus continued out into the artery is carefully made soon after the sternum is removed, and the presence or absence is determined of autochthonous antemortem clots or of clots the result of embolism of the intrapericardial portions of the pulmonary artery. It is the rule also at this time to ascertain the condition of the aortic isthmus by cautiously inserting the finger into a vertical cut preferably made one quarter of the way from the left and toward the right margin of the front of the intrapericardial part of the arch. Both of these examinations of these two large blood vessels are made with all of the organs except the brain or brain and cord still in situ.

Following examination of the thymic body, the innominate, jugular and subclavian veins, and the thyroid gland, the trachea is incised by a vertical cut median in front, and the incision carried up through the larynx, when these passages are cautiously examined for occlusion by foreign bodies or as the result of disease.

All of the organs and other structurues of the neck are then loosened (Fig. 3) from the left side of the neck and rolled over to the right. In order to accomplish this they are first cut away close to the lower border of the left side of the mandible as far forward as the midline in front or a little beyond by an incision which begins well back toward the left angle of the mandible. This incision is continued backward and behind all of the left tonsil, the uvula and the tissue between them, by following close to the back of the hard palate. When the structures of the neck are thus loosened at their cephalic end they are cut loose from close to the cervical vertebrae, beginning on the left side. In this manner they may be so turned over to the right that the pharynx and upper part of the esophagus lie uppermost; they are really turned with their backs to the front.

There is brought into plain view in this manner the entire front of the cervical vertebrae, the nasopharynx, roof of the mouth and pharyngeal openings of the eustachian tubes; if desirable, the vertebral arteries as they course upward in the cervical vertebrae may be exposed and opened. When examination of the neck has been completed, the structures still attached in a normal way, with the exception perhaps of the thyroid gland removed for weighing, are turned back when the body is repaired, into their former position; and with a few stitches in the deep tissues close to the left angle of the mandible, they are sewed into position.

If a still larger view of the mouth and pharynx is desired, the neck structures may be cut loose also from the lower border of the right side of the mandible; and with the tongue and floor of the mouth turned down a little way toward the thorax, then by sawing the mandible in the midline and spreading the two halves thus made widely apart, such a result is obtained, the mandible repaired by wiring or

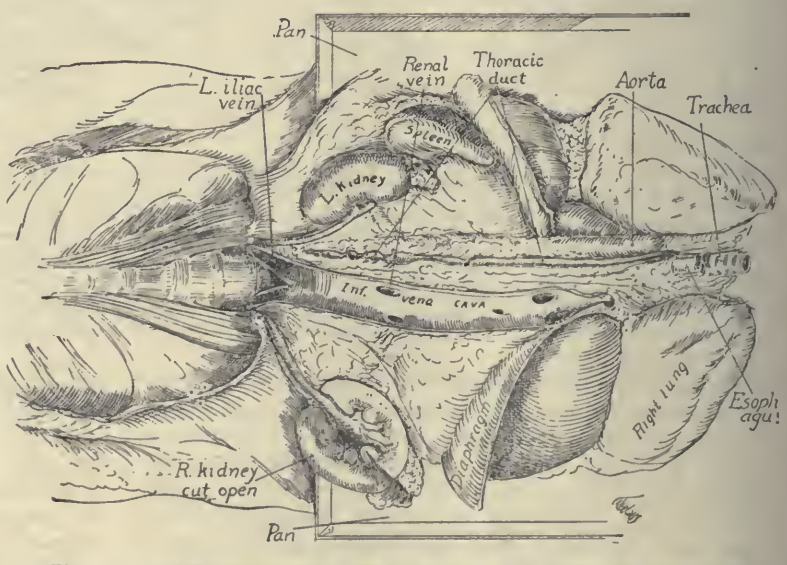


Fig. 3.—A graniteware or copper pan is laid across the thighs, and the organs of the trunk are dissected loose en masse and "turned down" on the pan with their posterior surfaces uppermost. In loosening them from the spine, especial care is exercised to bare the front of the spine; and in this way the receptaculum chyli and thoracic duct are not injured. The last mentioned are best opened from below upward because of valves, and the examination from behind begins with this duct and periaortic and iliac lymph glands, then the suprarenals, kidneys, ureters, inferior vena cava, renal, ovarian (spermatic) and hepatic veins, etc.

sewing through holes made in the bone, and the neck structures returned to position, as described.

The structures of the neck are then cut across at the root of the neck by first lifting the right lung out of the thorax and inserting the point of the knife close to the spine on the right side and at about the level

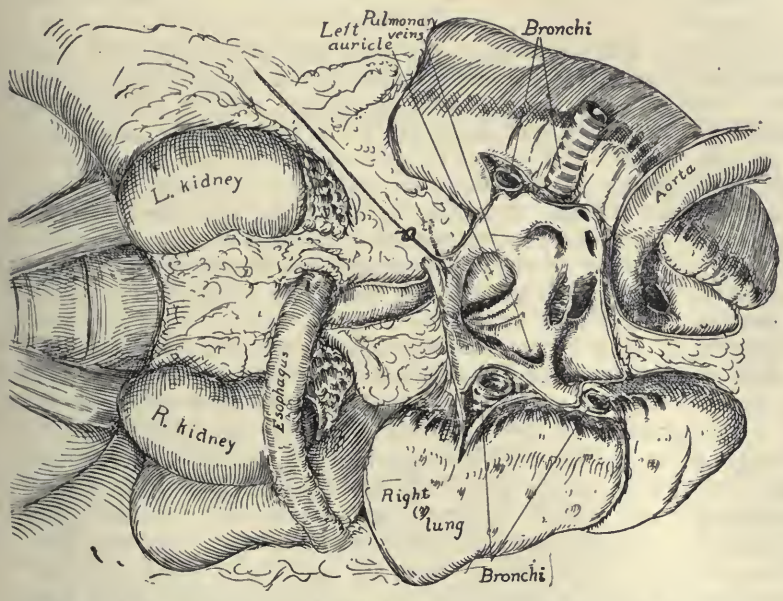


Fig. 4.—After the inferior vena cava and iliac veins (the latter not represented here) are opened, the aorta and iliac arteries slit lengthwise and reflected cephalad. The esophagus examined and laid caudad, and after the trachea, bronchi and tracheobronchial lymph glands are examined and the pulmonary artery and its branches far out into the lungs—all from behind; then the left auricle is opened as represented here, and the pulmonary veins are examined by opening them far out into the lungs. Then from the opened inferior cava, a cut is made straight up through the right auricle in the midline into the superior cava, in its turn laid open in the middle behind, when the right auricle may be examined as was the left.

of the first thoracic vertebra and cutting forward and obliquely across the neck cephalad to the mouth of the thoracic duct so that all of the duct remains with the trunk organs. The diaphragm is then cut loose from close to the thorax on each side, the thorax organs cut loose from close to the thoracic vertebrae, and with all of the thorax organs held up at first vertically, they are gradually turned down over and on to a pan placed across the thighs by continuing to dissect the abdominal organs in their turn away from the spine so far downward (caudad) that the back wall of the as yet uncut common iliac veins comes plainly into view (Fig. 3). In doing this, special care is required to keep close to the spine where the crura of the diaphragm are attached so as to avoid opening the receptaculum chyli unwittingly.

I have then usually followed this order of examining the trunk organs: the thoracic duct and its abdominal cysternae, the azygos veins, inferior vena cava, hepatic,[10] iliac, renal and ovarian or spermatic veins, suprarenal glands, perirenal fat, kidneys and ureters, periaortic and iliac lymph glands, and the aorta and its branches below the diaphragm as well as other structures, e. g., celiac ganglions, vagus nerves, etc. Then the esophagus may be dissected loose from the tissues about it and turned caudad, and, if desirable, the iliac arteries and aorta in a similar way dissected from their connections and turned cephalad (Fig. 4). Then the examination is continued, still from behind, of the thorax organs, beginning with the tracheobronchial lymph glands, the trachea and main bronchi, pulmonary artery and veins, all of these (bronchi, arteries and veins) being opened as far out into the lungs as desired. Following the opening and examination of the left auricle, which is done with the opening of the pulmonary veins, the median incision behind in the inferior vena cava is continued up through the back of the right auricle into the superior vena cava, so that in its turn it is opened in its median wall behind.

Returning now to the abdomen, the fingers of one hand are slipped from the right side through the foramen epiploicum (of Winslow); and the inferior vena cava, still being uppermost, is cut across where it forms the back part of that ring. In this manner the ligamentum hepatoduodenale is exposed (Fig. 5) and the structures it contains are examined, beginning with the biliary and peripancreatic lymph glands, the bile ducts, the portal vein and its tributary veins, and the hepatic artery; then the gallbladder and its duct connections, the pancreas and the pancreatic ducts are examined.

The organs of the thorax and abdomen, still with nearly all of their mutual normal connections still intact, may then be returned to the cavity of the trunk and their examination continued from in front after the methods usually described in most accounts of postmortem technic, methods which include finally their removal for weighing and more particular examination and description as separate organs. These

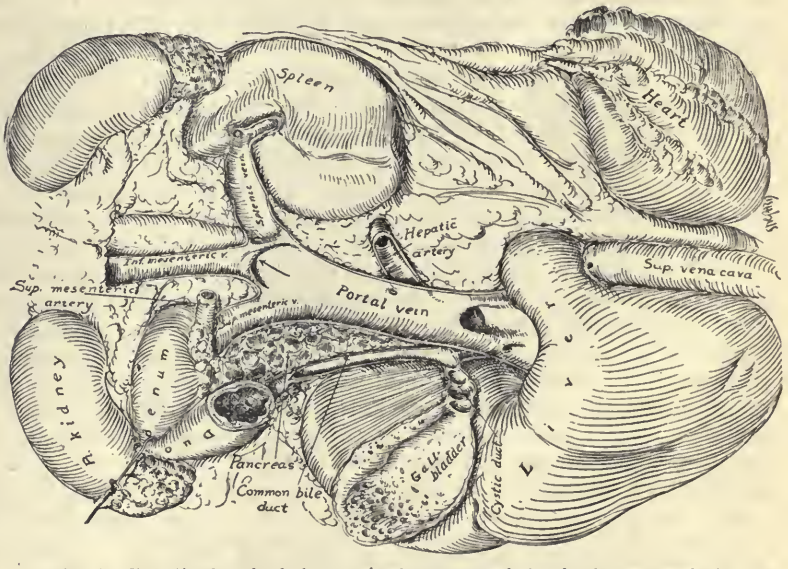


Fig. 5.—The distal end of the proximal segment of the duodenum, made by the cut across the duodenum, lies underneath the distal part of the common bile duct represented as open. The heart has "rolled out" from its median position underneath. After the structures uppermost in this figure are examined, the arteries from the celiac axis are opened, then the pancreatic duct and stomach; or, if desired, the latter may be examined from in front after return of the organs of the trunk, all still with their normal attachments in the main intact, to the body cavities from which they were "turned down," over the thighs.

details are so generally known that no description of them is called for here.

Before the trunk organs are turned down over the thighs, the entire bowel mesentery and mesocolon, with

10. The statement by Hoover (J. A. M. A. 74: 1753 [June 26] 1920) with regard to the failure to examine the hepatic veins as a "routine at necropsy" is, in my opinion, too sweeping.

the exception of the extraperitoneal parts of the duodenum and rectum, may be removed in one piece for separate examination if so desired; they may also with equal advantage be examined in the usual way after the trunk organs are returned to the body; at times their preliminary removal is an advantage; at other times, with extensive disease of the abdomen, such as tumors or thrombosis or embolism of mesenteric blood vessels, it is advisable to allow them to retain their normal connections with other organs as long as possible.

Instructions usually given for the detailed examination of the pelvic organs from in front may be followed; or, before the trunk organs are turned down (Fig. 3) over the thighs, the pelvic organs can be loosened from the pelvis and with the perineum—and in the male with the testes and vasa deferentia—all, together with the trunk organs in one piece, may be lifted out of the trunk for examination. This has the advantage of allowing repair of the body to be begun by an assistant on an adjacent table when time is important.

ADVANTAGES OF THE PROCEDURE

It is assumed that the examination, as outlined, of the trunk and neck organs from behind is to be used, not to replace other methods, but rather to supplement them. There are many advantages to the procedure which will be apparent to all who are already accustomed to making postmortem examinations and who perchance may not have already become as familiar with the approach from behind. These aids afforded are mainly connected with the greater ease of thorough examination of the large blood vessels and their branches which lie so deeply in the trunk. The minute details of thrombosis of the iliac veins and ovarian veins, of embolism or thrombosis of the mesenteric or renal blood vessels and of the portal vein, as well as the condition of the lymph glands along the aorta and esophagus or about the trachea and bronchi, are all easily ascertained.[11]

It also offers exceptional opportunity to learn the conditions with pulmonary embolism when the emboli are too small to occlude either the main pulmonary artery or its first divisions, but instead lodge in branches of the third or more distal subdivisions; moreover, with the organs turned over and out on the thighs, the front of the spine and inner surface of the cavity of the thorax are exposed quite thoroughly. The one great advantage is that the examination can be made as indicated and at the same time the normal connection of the trunk viscera to each other maintained until it is decided when and at what point their severance is desirable, and also that such cutting of them apart is not liable to lessen in any way the opportunity to understand and properly interpret either disease or its absence.

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11. In this connection, the reader may consult Nuzum, Frank: Retro-Aortic Left Renal Veins, J. A. M. A. **62**: 1238 (April 18) 1914. LeCount, E. R.: Epibronchial Pulsions Diverticula of the Oesophagus, Tr. Path. Soc., Chicago **10**: 35, 1915.

Age Incidence in Cancer.—There is a widespread error in believing that cancer is rare before the fortieth year. Cancer is common at 40, and exceptional in patients under 20; but 12.5 per cent. of all recorded cases of breast cancer have made their appearance between the twentieth and thirty-fifth year of life. I have read reported cases of cancer in the breasts of girls of 11, 12, and 15 years of age.—W. Doolin, *Med. Press,* April 28, 1920.

THE ROENTGENOLOGY OF APPENDICAL OBLITERATION

A PATHOLOGIC OR A PHYSIOLOGIC PROCESS*

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The purpose of this contribution is to postulate that the filling of an appendix lumen in an adult at least 30 years of age with an opaque meal is sufficient to nominate such an appendix as the seat of chronic disease. The degree of such chronicity and the question as to whether such an appendix demands immediate or remote attention, and as to whether such an opaquely filled appendix is a cause of symptoms, are matters of shadow analysis, case history analysis, and the elimination of other lesions by differential roentgen and clinical analysis.

The history of appendical roentgenology is not as pertinent to this effort as was originally supposed. It may be well to state certain startling features which mark successful appendical roentgenology. There seems to be little doubt that the use of the fermented milk opaque meal is an essential. Previous to its general use in America, there were only isolated and meager reports of appendical shadows. The most successful accomplishment of appendical shadows occurs in laboratories where the fermented milk meal is used as a routine. I have succeeded repeatedly in securing appendical shadows by a fermented milk meal in cases that refused to give similar shadows with a carbohydrate meal of thick cereal or thin malted milk. It might be well to state as an axiom that for determination of motility, carbohydrate opaque meals are best, and for deformity shadows, the fermented milk meal is essential.

The second item of historical interest rests in the elective time after the meal of determining appendical shadows. Various authors give this as being from the sixth to the twenty-fourth hour. I have always maintained that the forty-eight hour period is the best time for the critical analysis of the shadows. In fact, I am inclined to believe that this point has served best to bring me to a point of view possibly too arbitrary and warranted to arouse criticism.

It is difficult to agree with those who find valuable appendical shadows in chronic appendicitis at the sixth to twenty-fourth hour, because I am confident that the appendix, especially when chronically involved, fills by antiperistalsis. Of course, certain appendixes will fill by position and sedimentation or by reason of the fact that they are unusually patent; and these will fill early. But the best percentages of fillings are obtained at the forty-eight hour interval. This late filling is an argument itself in favor of filling by antiperistalsis.

Usually at the twenty-four hour period, the colon is well delineated by the opaque meal and the appendix may show a filling or not. But antiperistalsis of the colon does not have an opportunity of exerting its influence on a given meal until after the twenty-four hour interval of its ingestion, and it is during this second twenty-four hours that antiperistalsis gradually and effectually forces the opaque material into a patent appendix.

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

It is agreed by most investigators that the following points are pertinent in the analysis of appendical shadows:

1. Interrupted filling shadows, caused by the presence of old nonopaque fecaliths or residues.
2. Narrowing of the lumen at the cecal end or along the appendical canal.
3. Bulbous end and narrowed neck.
4. Adhesions which kink, bind or distort.
5. Residues in the appendix after the cecum has relieved itself of opaque shadows.
6. Distinct tenderness over the appendical shadow.
7. A fixed appendical shadow in any part of its outline except the cecal end.

It is easy to agree to all of the preceding points, and there has been ample and sufficient surgical and pathologic proof of these points. But there is not agreement that the mere filling of an appendix, after the individual is 30 years of age, is sufficient evidence to establish it as pathologic, the degree of pathologic interest depending to a great extent on the points as outlined in the preceding paragraph.

Imboden and Cohn state that the probable reason the normal appendix is not always visualized is that it fills and empties between observations, and that the mere presence of some of the opaque mediums in the appendix is no indication of chronic disease. George and Gerber state that they succeed in demonstrating the appendix in about seven out of every ten cases examined, and add that in many cases the normal condition was verified at a later operation for other purposes

On the other hand, we find that Case states that barium in the appendix is an abnormal phenomenon. Groedel states that the appendix which can be demonstrated by this method is pathologic (only three cases). Squires thinks we are justified in saying that the cecal contents do not normally pass into the lumen of the appendix.

It is quite certain that the appendixes of children fill easily. The appendix may be filled even by enema in children. The adolescent appendix usually fills by meal and may fill by enema. The adult appendix rarely fills by enema, and then only if widely patent, favorably situated, or lacking muscular tone through disease or paralysis.

When we come to the normal appendix—30 years of age—we come to the mooted question of this argument.

My contention is that the normal appendix in an individual over 30 years of age is in a process of obliteration which is physiologic, and that it no longer functions and, therefore, no longer accepts colonic contents.

Necessarily, this argument rests on certain hypotheses:

1. Is the appendix an organ of physiologic involution terminating in obliteration?
2. Is the appendix a lymphoid structure with a function?
3. Does the appendix approximate and parallel the tonsils in its normal life history?
4. May the appendix be considered an abdominal tonsil?

It may be well to discuss these questions in another order from their setting above.

1. *Is the appendix a lymphoid structure with a function?*

This necessarily eliminates the possibility of the appendix being a vestigial organ. Berry, the Dublin anatomist, furnishes excellent studies to support the position that lymphoid tissue is the characteristic feature of the cecal apex, and it assumes the function of a lymphatic gland; that it is is not equally functional throughout the whole life but that it develops and functions during the first half of life and then declines in functional activity. Berry states that the appendix obliterates as a pathologic process, and yet as one reads his complete writings on the subject, his arguments appear to prove the opposite, when he states that "lymphoid tissue is, therefore, a tissue of the growing animal" and "the functions of the human appendix are the same as any other collection of lymphoid tissue in any other part of the body."

2. *Is the appendix an organ of physiologic involution terminating in obliteration?*

Three types of appendical obliteration are possible: (*a*) physiologic, (*b*) pathologic and (*c*) congenital. The congenital may be dismissed as an anomaly. The pathologic may be the result of cicatricial changes developing as a consequence of previous inflammations. The physiologic obliteration may be the natural and normal development of the life cycle of the appendix. The lymphoid character of the appendical tissues, the function of the appendix and the diseases of the appendix seem to indicate that physiologic obliteration is the normal cycle of an appendix.

The appendix may be looked on as the abdominal tonsil. When one so considers the appendix, it is quite easy to parallel its physiology and pathology with the faucial tonsil. The faucial tonsil normally—that is, without the history or occurrence of inflammations and in the absence of chronic inflammatory remnants, such as cicatrices, thickenings, hypertrophy and crypts—proceeds to a physiologic obliteration at the age of about 30 to 35. The age of obliteration may vary normally, and may be delayed or hastened by slight inflammatory reactions. The function of the faucial tonsil may be denied by many; but investigation of the literature and clinical research indicate an influence of tonsils on bronchial unrest; and growing individuals without tonsils frequently suffer from a miserable, chronic bronchitis. It is granted that the functioning appendix and tonsil are not an essential but a contributing factor to excellent health.

The arguments against physiologic obliteration of the appendix have been developed by pathologists or others working intimately with surgical clinics. The principal American sources are McCarty of the Mayo Clinic and Pfeiffer of Deaver's clinic.

The arguments supporting physiologic obliteration originate in anatomic laboratories under such names as Ribbert, Zuckerkandl and Oppenheim.

Two questions immediately present themselves to the investigator, to wit:

1. Has the idea of physiologic obliteration obtained in the dissecting room where the material was the natural run of humanity?

2. Has the idea of pathologic obliteration found support among those attached to clinics where the specimens are obtained only as the result of intrinsic appendical disease or in the course of other abdominal operations? Is it not logical to accuse such appendixes of being pathologic? It would be surprising if a pathologic condition could not be shown. This is not an accusation of pathologists' skill, but a compliment to surgical judgment in their removal.

Therefore, may the argument be restated: The appendix is an organ of physiologic function, and

obliteration occurs as a natural consequence of its tissue characteristics. An appendix filling by opaque meal in an individual over 30 years of age is sufficient evidence of its pathologic persistence beyond the physiologic limits. The mere presence of such shadows does not indicate any necessity of surgical intervention without careful analysis of the character, duration, extent of such opaque filling, and clinical study of the given case. In the absence of other demonstrable disease and even possibly in the absence of direct clinical symptoms, an opaquely filled appendix in an individual over 30 years of age is an indication of its chronicity and should be as carefully considered as the focal origin of gastro-intestinal symptoms, as the faucial tonsil and teeth in other systemic disease.

My study of this subject leads me to believe that:

1. The appendix is a functioning organ.
2. It is a lymphoid structure.
3. It receives and expels colonic contents normally during childhood and adolescence.
4. It proceeds to physiologic obliteration in adult life.
5. This obliteration is normally accomplished at about the age of 30.
6. Opaque filling of the appendix is easily secured in childhood and adolescence by meal and enema.
7. Appendical filling is a matter of sedimentation, widely patent os and antiperistalsis. The three operate in childhood and adolescence. Antiperistalsis filling is more apparent with increasing years, and is the essential element in the filling of appendixes that are not obliterated after the age of 30.

ABSTRACT OF DISCUSSION

DR. R. WALTER MILLS, St. Louis: The aid afforded by the roentgen ray in the diagnosis of appendicitis is not yet definitely established. The determination of the existence of a definite gastric lesion is proof of a clincal pathology, but the demonstration of a pathologic appendix is not proof positive of a clinical condition, a situation without precedence in abdominal diagnosis. Dr. Skinner finds confirmation for his idea that most appendixes are abnormal. Pathologists teach that there are no normal appendixes. The fact that the majority of appendixes are tender to pressure further suggests that we are dealing with an abnormal organ. Physiologists claim that it is impossible for an appendix to be inherently tender. I can say positively that the inflamed appendix is inherently tender. The propaganda of referred pain with reference to the appendix will not stand the test of extensive observation. Roentgen-ray aid in the diagnosis of appendicitis must be associated with clinical findings. An appendix may be structually normal from a roentgen-ray standpoint, yet be dangerous clinically.

DR. MARSH PITZMAN, St. Louis: There is no such condition as surgical appendicitis without an organic stricture of the lumen. Appendicitis may exist from a pathologic standpoint, then stricture is absent. For example, in typhoid fever and presumably in any infection of the cecum there is an associated catarrhal inflammation of the appendix, which, however, does not call for surgical intervention. While everybody has recognized the causative relationship between organic stricture and surgical appendicitis, the negative has never, before my publication, so far as I can find out, been definitely stated and maintained. The stricture may be located flush against the cecal wall and the pathologist would naturally report appendicitis and never realize that a stricture had been the cause. It is only by cooperative study that we can find and eventually determine the truth.

DR. D. F. JONES, Boston: I agree with Dr. Pitzman in his views on appendicitis. Many years ago McBurney said that appendicitis was a question of drainage of the appendix. This is in agreement with Dr. Pitzman's idea.

The term chronic appendicitis should be limited to those cases in which the appendix must be removed to relieve the patient of symptoms. The roentgenologist, surgeon and pathologist are at present in a vicious circle, as the roentgenologist makes a diagnosis of chronic appendicitis, the surgeon removes what is to all appearance a normal appendix, the pathologist examines it and reports a chronic appendicitis. The appendix may show a minute healed ulcer, and, perhaps, a slight increase of round cells in its wall. It is not at all probable that that was what the roentgenologist saw, and in many cases the condition was not sufficient to cause the symptoms of which the patient complained, so that both have been making a diagnosis on insufficient data. Would it not be well for the roentgenologist, surgeon and pathologist to get together and decide whether the condition found at operation was shown by the roentgen ray, and whether it could cause the symptoms manifested?

DR. W. H. STEWART, New York: I have been able to visualize the appendix more often on the ninth than on the forty-eighth hour. As a matter of fact, frequent fluoroscopic observations at different times are often necessary before the appendix can be outlined. Any definite information in regard to the condition of the organs in the right iliac fossa can only be obtained by fluoroscopic examination, which must be done in such a manner that one can get right down in the lower right quadrant and manipulate the appendix. The question of obliteration at the thirtieth year I think is rather doubtful, for in at least 60 per cent. of my cases at all ages, during one period or another of the examination, the appendix has been visualized. There are certain points in the recognition of pathology of the appendix that roentgenologists must observe. First, the immediate information obtained by direct palpation under the screen in which we look for kinks, adhesions or unusual sensitiveness; second, observations covering the function of the appendix. In my opinion, any appendix which retains barium for three days is pathologic. In one of my cases the barium was retained in the appendix for forty days. I have not had the experience Dr. Mills described in reference to the tenderness. Frequently no tenderness is present, or indication of pathology. In reference to emptying, in at least three of my cases, the appendix partially or completely emptied itself while observations were being made on the fluoroscopic screen.

DR. I. O. PALEFSKI, New York: Several points require emphasis in connection with the roentgen-ray diagnosis of chronic appendicitis. It is not merely the visualization of the appendix, but the prolonged retention of the barium within its lumen after the cecum is almost or completely empty that is suggestive of mechanical interference with the drainage of the appendix. I agree, therefore, with Dr. Skinner that the proper time for the examination of the appendix is beyond the twentieth hour after the oral administration of the opaque meal. It is best to examine the patient at six hour intervals to determine the emptying time of both the cecum and the appendix. The demonstration of the appendix by the barium enema is hardly of diagnostic significance as it is probably brought about by overdistention of the cecum. The visualized appendix, if due to an inflammatory process, must be associated with abdominal tenderness corresponding to the location of the appendix. I recall only one instance as an exception to this rule. Different degrees of pressure in the right iliac region may have to be employed to elicit such tenderness. Finally, when two or more attempts fail to demonstrate the appendix, although there is persistent tenderness in the right iliac region on repeated examinations, a retrocecal appendix is strongly suggested.

DR. EDWARD H. SKINNER, Kansas City, Mo.: Two expressions have been brought up in this discussion which I prefer not to see used: One is "roentgen-ray diagnosis" and the other is "visualize." The roentgen ray simply provides certain findings which must be correlated with the clinical study of the case, hence we should not use the term "roentgen-ray diagnosis" so indiscriminately. As to the term "visualize": a better word would be to "visiblize" the appendix, because

to "visualize" is to get an idea. I am not at all impressed with appendiceal shadows which can be demonstrated at an early period in the examination. It is difficult to study the appendix shadow when the opaque meal is in the cecum and ileum, and the information obtained at that time might help you in your report on the findings when the appendix itself is seen more clearly, that is, when that part of the colon and the small intestine in the right iliac fossa is not occupied with other opaque shadows. As to the question of the emptying of the appendix while it is being viewed under the fluoroscopic screen: I have not been able to parallel the findings of many other reporters on this. In only a few cases have I been able to move the shadows in the appendix by manipulation, and then the appendix was large and boggy.

It really does not make a great deal of difference in the interpretation of the appendiceal shadows whether the appendix does obliterate itself.

WHAT ARE THE CONTRAINDICATIONS TO PROSTATECTOMY?

OBSERVATIONS BASED ON A SERIES OF ONE HUNDRED AND NINETY CASES OF ADENOMATOUS PROSTATE WITH OPERATION BY THE TWO-STEP METHOD*

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BUFFALO

Prostatectomy for benign enlarged prostates has long since passed the experimental stage. As the operation has been more or less standardized, the risk and results can be better determined. No hard and fast law can apply to operating on a man. The mortality of the general surgeon throughout the country is about 25 per cent. for prostatectomy. This percentage decreases with the ability of the surgeon to less than 1 per cent.

First, let us consider the various important causes of mortality to ascertain which, if any, are necessarily a cause of death. The principal cause is lack of kidney function, 60 per cent. of the mortality being occasioned by uremia. The condition is brought about principally by the back pressure arising from the obstruction by the enlarged prostate. A nephritis may also complicate the condition. We know that if the obstruction is removed the function will improve. This can be accomplished temporarily by (1) an indwelling catheter; (2) frequent catheterization, or (3) cystotomy.

An indwelling catheter is borne well only by a few. Because of the congestion of the prostate, the catheter usually becomes so irritating that three days is about the limit of endurance.

Frequent catheterization needs the attention of a physician or a specially trained nurse. The greatest care must be given to gentleness as well as asepsis. Usually after a few days the congested urethra rebels, and bleeding follows each catheterization. False passages may result. Epididymitis is a common complication of both this and the former procedure.

Why not do the cystotomy primarily? Under local anesthesia it can be performed in fifteen or twenty minutes with no more pain to the patient than he frequently experiences from a catheterization, and without any shock. Under local anesthesia a surgeon can take all necessary time in selecting the highest point of the bladder for opening. With the cystotomy finished, more than half of the operation has been done. The patient can then comfortably wait a week or a month while being prepared for the second operation. Why is this method not more frequently used? I quote a prominent surgeon in reply: "Local anesthesia I have had no experience with, my time being too much occupied by numerous operations to permit wasting any of it in practicing this form of anesthesia." This attitude I believe is the secret of the difference between success and failure. These old, anemic, feeble men need more care and attention than the ordinary surgical case, and it is the careful preparation before and the watchful attention afterward that spell success or failure. It would be better if the surgeon who has only a few minutes at his disposal in the operating room to give to these cases and then turn them over to an assistant to care for should select younger patients for his operating. If the chief will outline the procedure for the preparation of the patient and follow up the after-care to the minutest detail, the assistant or any one with a fair knowledge of surgical technic can perform the technical operation. I make this statement only to emphasize that the important stages in a prostatectomy are before and after the actual removal of the gland.

Now that the back pressure has been relieved temporarily, we proceed to stimulate the kidney function by sweat baths, bowel washes, bladder washes and also by crowding fluids, the only contraindication of forcing fluids being some cardiovascular complication. We have the phenolsulphonephthalein test to guide us as to excretion, and blood nitrogen as to retention. As a rule, these excellent functional tests balance, the exceptions being few. Time being given, these men will all improve to a point at which they are safe for operation. The average time is about a week, although in some cases it may be prolonged to three months.

Shock is next in order as the chief cause of death. If the bladder is drained a sufficient time the patient, although very weak when first seen, will improve to such an extent that he can withstand the short general anesthesia of five to eight minutes without any shock.

Freyer has laid stress on the importance of a short general anesthetic. He believes this the most important factor in reducing his mortality. In the early days from one-half hour to an hour was frequently occupied in enucleating the prostate. Now from five to ten minutes is considered ample time for the anesthetic. By the two-step method more than half of the operation is performed under local anesthesia when time is not a factor, and the patient suffers no shock. At the second operation the original wound is stretched open and the prostate enucleated under a very short general anesthetic.

Hemorrhage was more commonly a cause of death in the past, when continual irrigation was kept up, because there exists no way of knowing the extent of the bleeding. The patient lost a large quantity of blood without its being realized. Frequently, patients who were thought to have died from shock really died from hemorrhage. Hemorrhage is more likely to occur with a one-step operation than with a two-step. As I have pointed out in a previous paper, at the second operation it is unusual to find that a large, congested prostate has shrunk to one-half its former size. Packing may be used to fill the prostatic cavity, but I prefer the Pilcher modification of the Hagner bag. One should select the proper size bag for the cavity.

*Read before the Section on Urology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

Patients who present themselves with a poorly balanced cardiovascular system, showing low pulse pressure, are much improved when the back pressure on the kidney is temporarily relieved. Any of these patients can withstand the slight reaction of a cystotomy, after which with rest and appropriate treatment their hearts will pick up, and any of the cardiovascular conditions will improve sufficiently under drainage and rest so that the second operation can be performed without risk.

In only exceptional cases should a surgeon attempt operation until he has personally examined the bladder with a cystoscope, so many important factors may be overlooked. The examination of the prostate by rectum may not show any enlargement, yet the cystoscope will demonstrate a median lobe, calculi in the bladder, or a diverticulum. If the patient has a clear urine of low specific gravity under 1.005, he is a poorer operative risk than the patient with an infected bladder. It usually means that he has a contracted kidney in addition to his enlarged prostate. When a large calculus or numerous smaller ones are discovered by cystoscope they can be removed at the time of the cystotomy and will permit the accompanying cystitis to be treated during the interim. If a diverticulum is present it should be carefully investigated to discover whether or not it contains a calculus, which is a frequent occurrence.

The size of the diverticulum should be determined by cystogram. As a rule it is best to operate on these patients in two sittings, first the prostatectomy and later the diverticulum. The length of time necessary for both operations requires too much anesthetic for safety with most of these old men, and I have found it wiser to postpone the operation for diverticulum until the patient has somewhat recovered his strength.

The urethra frequently has been torn so badly in attempting to catheterize that it is very difficult or impossible to pass a catheter or cystoscope. It may also be the site of stricture. After an indwelling catheter has been used, there is usually more or less of a urethritis, which sometimes becomes very marked.

A large, adenomatous prostate is very much easier to enucleate than a smaller, fibrous one.

Advanced age is no contraindication for the operation. I have successfully operated on a patient 95 years old. The young man of 50 or thereabouts who has an obstruction, as a rule, is a poorer surgical risk than a man fifteen or twenty years older.

A patient with a distended bladder wants immediate relief; the method is not of much importance to him. After he has recovered from his operation, if he has not regained normal control or a fistula remains, his appreciation and regard is changed to fault finding, and the entire community hears it.

In my own experience with two routes—infrapubic or suprapubic—I have had by the infrapubic a few cases of incontinence and a few with fistula that would not heal. With the suprapubic route there has been no loss of control, and the longest time a fistula has remained open has been ten weeks. The operation from above is posterior to the sphincter, and unless the surgeon is rough or careless, there is little excuse for injuring the sphincter.

The advantage of suprapubic and perineal operations, respectively, which have been frequently discussed, may be thus summed up:

The average functional results of the suprapubic operation are better than those of the perineal. Because of its simplicity, general surgeons with little experience have used the suprapubic method, and their mortality has made the relative mortality of the suprapubic operation slightly higher than that of the perineal. The perineal operation is attempted only by skilled urologists, which accounts for the relatively lower mortality. I believe that the suprapubic operation performed in two steps, with careful attention given to the preoperative and postoperative care, is the operation of choice.

In a consecutive series of 190 unselected cases in which the two-step method was used for removal of the adenomatous prostate, there occurred but one death.[1] This patient died of an embolus two weeks after his operation. The longest period necessary between the first and second operation was ten weeks. The average time was seven days. The average length of time from the cystotomy to the healing of the wound and the voiding by urethra was thirty-four days.

It has been said that the only safe place for an appendix is in a jar of alcohol. The same adage applies equally to an enlarged prostate causing residual urine. With proper preparation and after-care, I believe there are no contraindications to prostatectomy.

504 Electric Building.

ABSTRACT OF DISCUSSION

Dr. Herman L. Kretschmer, Chicago: Dr. Gardner said that most of the deaths in these cases are due to renal insufficiency. That has been my experience also. I was glad to hear him say that these patients did not bear the indwelling catheter well. Sometimes we find one who can bear it for weeks, but, as a rule, it sets up pain and bleeding. We were told that in New York patients wear the indwelling catheters for weeks at a time without distress. Such has not been my experience. Most of the patients who die of shock are those who succumb to hemorrhage. It is now generally recognized that following the preliminary operation the prostate shrinks and is very much smaller than at the time of the first operation. The cardiovascular symptoms have given much trouble in patients with myocarditis and high blood pressure. I have noticed in taking the blood pressure before and after operation that there has been a marked change in the systolic blood pressure. The largest drop I remember was sixty. I do not remember just what Dr. Gardner said about the cystoscopic picture, but in some of my cases the cystoscope has not shown so very much change in reference to the neck of the bladder. In many of these cases I have used the old oblique vision cystoscope which can be used as a urethroscope, and very frequently I have been able to demonstrate the presence of intra-urethral nodules.

Dr. Arthur B. Cecil, Los Angeles: In my opinion the method of drainage plays a great part. Suprapubic drainage is in some instances followed by serious consequences. The comfort or discomfort of a retention catheter depends very largely on how the catheter is cared for and even how it is fastened in. In the matter of diverticula, it seems to me very doubtful as to whether it is advisable after a good recovery from prostatectomy to remove diverticula at a later date. The mortality rate which Dr. Gardner reported is certainly not bad. Some points in regard to prostatectomy which have not been sufficiently considered. We are inclined to think that a prostatectomy has been surgically well done if the patient is able to void urine freely, but it has been my experience to see a number of men on whom a suprapubic prostatectomy had been done and who continued to have considerable distress with burning bladder and discomfort on urination. In my opinion, one of the causes for this dis-

1. Aug. 20, 1920: Since reading this paper, I have operated on eighteen additional patients successfully.

comfort is the immobilization of the bladder high up to the abdominal wall. The tug on the bladder is well evidenced by the depth to which the suprapubic wound is many times found to be drawn, and the tugging of the bladder on the abdominal wall must play a great part in the continuation of cystitis and bladder discomfort. Gynecologists are very careful to close the abdominal wall in such a manner as to prevent the bladder from being caught in the abdominal wound, and yet we take the bladder and attach it to the abdominal wall in doing suprapubic prostatectomy. Perineal fistula does not follow Young's perineal prostatectomy when this operation is done in a scientific manner. I have not seen a single case. In regard to incontinence of urine, I have studied this question with a great deal of interest. It is very definite that the external sphincter muscle alone can perform all the functions of normal retention of urine. Incontinence of urine never follows the punch operation in which the internal sphincter may be divided. It is also definite that the internal sphincter muscle, if uninjured, can control the urinary function. This is evidenced by the fact that incontinence of urine never follows division of the external sphincter muscle in external urethrotomy. Thomson Walker was perhaps the first to point out that the internal sphincter muscle may be rendered incompetent by the growth of an adenomatous prostate within it. This incompetence was later confirmed by Hyman, and Wallace and Page, who demonstrated the incompetent internal sphincter muscle by injecting the bladder with collargol after prostatectomy. It is, therefore, perfectly clear why incontinence of urine should follow the Mayo type of median perineal prostatectomy, for in this operation the external sphincter muscle is cut, and the internal sphincter in many instances is rendered incompetent by the growth of the tumor within it. Incontinence of urine does not follow Young's perineal prostatectomy because the external sphincter muscle is preserved.

DR. E. G. BALLENGER, Atlanta, Ga.: Generally speaking, the two-stage operation is preferable to the one-stage operation. At first I reserved it for those who were in bad condition, but I now employ it in every instance. The first stage can be done under local anesthesia and carries the patient so far along toward recovery that even in the case of a man who is considered a good risk it is a wise plan to follow. My experience has not coincided with that of Dr. Cecil in regard to the burning pain that follows some of the cases he described. I do not see how there could be a tugging or dragging on the abdominal wall by the bladder sufficient to pull this tissue in. I think that it is the contraction of the scar. In my experience, the results from this operation are most satisfactory, and, as a rule, the patient is not kept in the hospital more than a month, or possibly five weeks, and he is out of bed much of this time.

DR. HARRY A. FOWLER, Washington, D. C.: In listening to the paper and the discussion I have been impressed with the uniformly good results obtained by the various operative methods described. It occurs to me that after all the various technical details described are not so important, since each gives equally good results in the hands of different operators. If certain general principles are scrupulously observed, the minor details of technic are not so important. It is curious to hear of the difference in sensitiveness of the urethra in different parts of the country. We have heard that in St. Louis, New York and now in Los Angeles the urethra is very insensitive, but in Buffalo, Chicago, and, I may add, Washington, the urethra is very sensitive. We have not been able to secure drainage by the retention catheter for any considerable time without producing a good deal of discomfort; so we are in the habit of doing a preliminary cystotomy under local anesthesia, as described by Dr. Gardner. This is a simple procedure and is painless, except in cases of small contracted bladder. As Dr. Gardner has pointed out, all contraindications to operation are relative and can usually be removed. A patient had such marked myocarditis that an operation was considered inadvisable, and he was put on intermittent catheterization. This patient catheterized himself for a period of four years, when, as usually happens, an emergency arose—we were unable to pass a catheter. I did a two-step prostatectomy and saved the patient. In regard to packing: Squier tells us that packing is unnecessary and that he never loses a patient from hemorrhage. I rest very much more comfortably if I know that the hemorrhage is controlled by packing. I have never resorted to the use of a bag because gauze is always handy. I do not find the removal of the gauze pack as painful as some would have us believe, and hemorrhage is controlled by a good solid packing. There is one minor objection to the two-stage operation and that is, that in an obese patient after the preliminary cystotomy the abdominal wall is more rigid and resistent at the second operation. It is then somewhat more difficult to reach the deep-lying prostate comfortably. However, this slight objection should not weigh against the advantages of the two-step operation.

DR. JOHN J. GILBRIDE, Philadelphia: Dr. Gardner did not discuss infection as a phase in the mortality, yet he seems to have eliminated it.

DR. A. J. CROWELL, Charlotte, N. C.: Dr. Gardner's results are nothing more than we should obtain regularly if we give the time and attention to preoperative and postoperative care. That is the keynote to success. We should not lose patients following prostatectomy, except from some unusual accident. Dr. Gardner reports 190 cases with one fatality, the prostatectomies being for adenomatous growths. I have had 145 cases with one death, and I can include carcinomatous as well as adenomatous glands. As to drainage, it is important to drain for some time before operation. It is true, as Dr. Fowler has said, that it seems that the urethra shows an undue sensitiveness in different parts of the country. In North Carolina we have practically no trouble, except in the carcinomatous cases, and that means about 20 per cent. We do have some trouble in draining the bladder with the carcinomatous gland. Otherwise, the indwelling catheter gives very satisfactory drainage. It is important that the catheter be placed at the right distance into the bladder. I think tolerance is largely dependent on that.

DR. WILLIAM E. LOWER, Cleveland: Prostatectomy should never be considered an emergency operation. Relief can be given for retention without doing an immediate prostatectomy. The preliminary operation and the preoperative and postoperative care are of the greatest importance in these cases and are largely responsible for the splendid results which are being obtained. In all cases in which there is a large amount of pus in the urine, and it does not clear up readily by irrigations, it is advisable to make a roentgenogram of the kidneys and see whether or not there may be an infection from stone which keeps up the suppuration, or whether diverticula of the bladder cause it. On several occasions I have found the cause of the pus to be an infection of the kidney with calculi and I have been obliged to operate for their removal. I have not found much difficulty with indwelling catheters. One can usually tell within a day or two whether the catheter is going to be tolerated by the amount of reaction that follows. If it is not tolerated, a suprapubic cystotomy should be done. In many of the cases, however, it is not necessary to do a cutting operation, a suprapubic puncture is sufficient for the insertion of a catheter. Dr. Gardner did not speak of what may happen when a very much overdistended bladder is released. In such cases the patient sometimes collapses, and an acute congestion of the kidney results followed by suppression. With a suprapubic puncture, the release of a distended bladder can be made much more gradual. I believe that most of the so-called shock cases have been due to hemorrhage. It is most important that hemorrhage should be checked before the patient is sent back to the ward. I never send a patient back to his bed until I feel sure that the hemorrhage is stopped. This takes a few minutes longer, but it is much better than to try to stop a hemorrhage in the ward. It is a mistake to put on a large dressing over the wound for a rather extensive hemorrhage may occur before it can be discovered. One kind of case in which we do not get the results that the patient hopes for is the one in which there has been atony of the bladder following a prolonged distention. In such cases residual urine may still continue after the prostate is removed. The route chosen for removal

of the prostate depends on the operator. I use the suprapubic route because it seems to me to be the best method of completely removing the obstruction and also for caring for any other intravesical condition which may need attention. The mortality rate is being constantly reduced, and the preliminary operation together with the preoperative and postoperative care are bringing the results.

Dr. Victor D. Lespinasse, Chicago: In considering the mortality among patients that have been operated on for prostatectomy by the suprapubic operation, one of the points that has been overlooked in this discussion is the infection that is practically always present. If we operate on these men by the suprapubic route, we open up new tissues to infection in two situations, suprapubically and at the prostate site. When we do the suprapubic operation, we accomplish two major things: the patient is vaccinated, as it were, to his own infection by the infection of the suprapubic wound. Thus he is rendered more resistant to this same infection later when the prostate is actually removed. Edema and congestion of the prostate itself goes down while the suprapubic drainage is functioning. Consequently, when we actually remove the prostate, the clinical course is very much smoother and frequently afebrile.

Dr. James A. Gardner, Buffalo: I have questioned in my mind whether uremia is the most common cause of death or whether it is hemorrhage. I am inclined to believe that it may be hemorrhage. In the old days when we used the continual flow to take care of hemorrhage, or when we permitted the use of such thick dressings that the patients sometimes bled to death in the dressings, we did not realize how much loss of blood there was. Since we have paid more attention to the bleeding at the time of the operation we have had much better results. The size of the bag which fits the cavity should be selected carefully. If it is too small the torn edges are not pulled in and the bleeding continues. I have found that filling the bag with water is more satisfactory than using air, as Dr. Hagner has suggested, because I can tell at the time that I release the water whether there has been a leak. The indwelling catheter proposition is interesting. I have found that patients in our section do not stand it so well before operation as has been reported from other districts. I had an assistant who informed me that he had always used an indwelling catheter before operation and that his chief frequently permitted patients to go home and remain two or three months while getting in shape, but in my office there was the usual complication of epididymitis with such painful urethritis that the indwelling catheter had to be discontinued. I agree with Dr. Lower that there are many cases in which a diverticulum is present, and if after the removal of the prostate the bladder drains well enough there is no necessity for operating on the diverticulum. Many diverticula hold sufficient residual urine that they keep up an infected bladder and then it is necessary to operate. I stopped using the perineal route because after doing it as well as I knew how, I had a certain number of fistulas which would not heal, and while patients were grateful for the relief while they were in the hospital, they had trouble after they went home. Some of them were only incontinent when they laughed or coughed. With the suprapubic route I have seen no fistulas that would not heal. With the use of local anesthesia, the great majority of patients have no pain at the time of operation. Patients with a fat abdomen are the ones that complain. The pulse rate following local anesthesia will rarely increase more than five beats. The men who do the two-step operation but do the first step under general anesthesia miss the important point. The first step under local anesthesia saves the patient from shock. Probably the reason I have no trouble from suddenly reducing the internal pressure at the time of doing the first step is that I have a large drainage tube. As a rule, I do the first step the day after the patient enters the hospital, and I have seen no serious results. After each operation, the lower limbs are thoroughly massaged each day and the patient is sitting up in bed and out in a chair on the third or fourth day. Getting them up early helps them mentally as well as physically. They do not lose their strength, they get over their soreness sooner and they sleep better at night. Following the removal of the Hagner bag and the large Marion tube we put in a drainage tube size 30 F and the abdominal wall is strapped tightly around it. If we keep the wound dry, there is little chance of infection. I change to a smaller tube every few days until the wound is tight around a size 16 F. At this time the abdomen is strapped only as an indwelling catheter is put in for a few days. I was much interested in Dr. Crowell's report. I have felt that it was very difficult to estimate how much reserve strength these patients with malignancy have. Frequently, we see patients in whom the growth is so far advanced that they are inoperable. Because of their frequency of urination and pain, a suprapubic drain is inserted for temporary relief. Many of them live but a few weeks, demonstrating how little reserve strength they have.

VINCENT'S ANGINA INFECTION

ITS PREVALENCE, MANIFESTATIONS, BACTERIOLOGY AND TREATMENT: REPORT OF FIFTY-SIX CASES

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Vincent's angina, first described by Professor Vincent in 1898, is important because it is very likely to be mistaken for diphtheria. There was considerable frequency of this infection among the allied troops serving in France, and it was likewise seen to a varying degree in the camps in this country and in civilian practice. There are no statistics that would show the extent of the prevalence of the disease in this country, as it is not made reportable by the health departments. Unless this is done and a careful bacteriologic examination of the diseased mouths and throats is made, nothing exact can be known. It seems that under military conditions, the incidence was greatly increased.

Oral sepsis plays a very important part, as many patients showed decayed teeth and a high percentage of want of oral cleanliness. Frequently the mouth toilet is discarded on account of the pain and bleeding excited. General debilitating conditions, such as fatigue, chills, insufficient or improper food, excessive alcoholic consumption, excessive use of candy, excessive smoking or chewing, or the presence of debilitating diseases, markedly influence the instance of the infection of Vincent's angina, and locally acting influences are likewise important.

Frequently the organism of Vincent's angina has been found in smears taken from the inside of the mouth-pieces of pipes and cigaret holders. However, the foregoing explains the occurrence of the infection in only a certain percentage of the cases. All the cases reported in this paper were among soldiers.

SEASONAL VARIATIONS

J. D. Rolleston published a paper on thirty-two cases of Vincent's angina observed in children, and found the disease commonest in spring and rarest in autumn. From the reports of cases observed at the Queen Alexandria Military Hospital, during the year 1916, the condition was commonest during the winter months. The accompanying chart shows the incidence of Vincent's angina, according to months, observed at the base hospital, Camp Devens, from April, 1918, to July, 1919. It will be observed that the number began to increase in August, rose slowly to September,

remaining stationary to December, with a rapid rise in February, and a decline to below that observed in the previous September. The curve does not reach the zero mark as was observed in July, 1918.

EXCITING CAUSES

Since the discovery of the cause of this disease, there has been considerable discussion as to whether the specific organism, the fusiform bacillus and the accompanying spirochete or spirillum were two distinct organisms, living in symbiosis, or simply one, the fusiform bacillus, the spirochete or spirillum being merely evolutionary forms of the former, but always present with the bacillus. The latter (single organism theory) seems to have been definitely proved by Tunnicliff, Wright and others.

Tunnicliff isolated organisms from cases of Vincent's angina on slants of ascites agar (1:3); those from cases of gingivitis and noma on blood agar. The material was smeared on series of slants. Usually in the second tube the colonies of fusiform bacilli could be found after three or four days' incubation at 37 C.

Cultures were grown anaerobically, according to the method of Wright, by saturating cotton stoppers with a strong solution of sodium hydroxid, and closing the tubes with closely fitting corks and sealing them with paraffin. Subcultures were made from single colonies. The colonies are delicate and whitish and resemble colonies of streptococci, but are rather smoother and softer, especially when grown on blood agar. When colonies are quite isolated, they sometimes obtain considerable size (0.3 cm. diameter). The organisms show no progressive but considerable vibratory motion, spirilla retaining their spiral form. They grow on ascites agar, Loeffler's blood serum, blood agar (dog, sheep, goat, rabbit and human), and horse and human serum agar. Best spirilla are most frequently found in medium of agar 5 c.c. and twelve drops of equal parts of goat's or sheep's blood and 2 per cent. sodium citrate solution in physiologic sodium chlorid solution. An offensive odor is given off in all successful cultures. As the organism dies out rapidly, it is necessary to transplant large numbers of organisms to obtain successful cultures. The organisms are extremely polymorphous. During the first twenty-four hours' growth they are usually delicate, pointed rods, from 3 to 10 microns in length, straight or slightly bent. Spores are often seen during the first days of growth. Filaments of various lengths may appear in from twenty-four to forty-eight hours, or later. When filaments are present they can often be seen to be made up of strings of bacilli. They frequently contain deeply staining bodies, sometimes round, more often like bands. Vacuoles are sometimes seen in the filaments. Occasionally on the first day of the growth, but usually a few days later, spirals with from one to twenty curves are observed, sometimes in large numbers. As a rule they stain uniformly, but often it can be seen that they too are made up of rods. Spirilla sometimes contain vacuoles similar to those seen in smears made from tissues of Vincent's angina and noma. Sometimes for several generations only fusiform bacilli will be found in cultures; but, on changing the medium, filaments and spirilla will again be formed. Organisms stain best with heated 1 per cent. solution of alcoholic gentian in 5 per cent. phenol (carbolic acid) solution. Spirilla appear thicker when so stained than spirilla seen in smears from lesions that have first been fixed with heat and then stained; however, when such specimens are stained deeply by the foregoing method, spirilla often appear just as thick as that artificially cultivated. Spirilla may also be seen to good advantage in India ink preparations. Organisms do not stain by Gram's method. Animal experiments have been unsuccessful; the animals used were the dog, guinea-pig, rabbit, white rat and pigeon. Sterile animal tissues from the dog and the guinea-pig were also inoculated but with no growth of organisms.

Tunnicliff's conclusions were that strains of fusiform bacilli isolated in pure culture from the normal mouth, ulceromembranous angina and gingivitis and noma appear culturally and morphologically the same organism. Cultures show that bacilli and spirilla are different forms of one organism. Whether spirilla formed from fusiform bacilli are the same as those found in lesions themelves cannot be decided because of inability to reproduce lesions in lower animals.

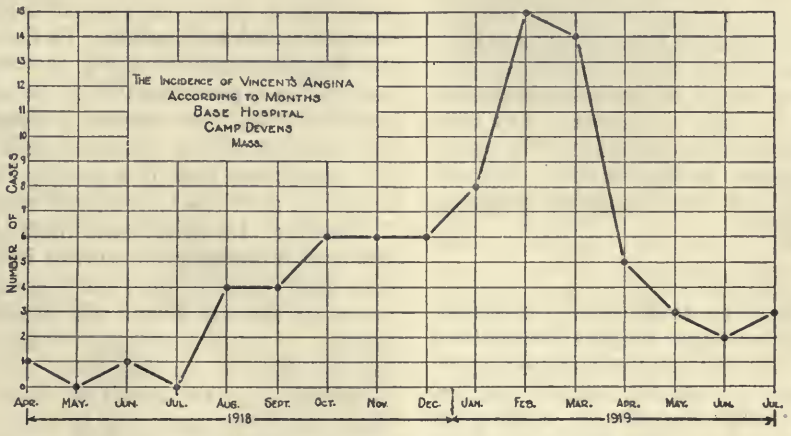


Fig. 1.—Incidence of Vincent's angina at Camp Devens.

As already shown, the predisposing causes are: (1) insanitary conditions of the mouth; (2) gingivitis, recession of the gums, pyorrhea and decayed teeth; (3) diminished resistance due to poor food, lack of fresh air and rest, overcrowding and filth; (4) infections; and (5) fusiform bacilli, which have been found in smears taken from inside the mouth-pieces and holders of pipes, cigarets, gas masks, and other articles coming in contact with the mouth.

EXPERIMENTAL LABORATORY WORK

Smears were taken under the direction of the author from the mouths of fifty normal individuals with one positive result for spirilla and fusiform bacilli. Twenty-five smears from the teeth of normal individuals were examined and four were found positive for fusiform bacilli and spirilla resembling Vincent's organism. Smears from diseased teeth which were taken in the dental clinic resulted in 90 per cent. showing the foregoing organism. A guinea-pig was inoculated with 1 c.c. of a suspension containing spirilla and fusiform bacilli from a definite case of Vincent's angina with an absolutely negative result. All our attempts to grow the organisms anaerobically, using Wright's method, were negative. Blood agar and nutrient broth were used as mediums.

LOCATIONS AND APPEARANCE OF LESIONS

The typical lesion consists of a heavy, dirty looking membrane covering one or both of the tonsils, although it will make its appearance any place on the naso-pharyngeal or buccal mucous membrane. It may even extend as a single membrane over most of the surface of the upper respiratory tract, as was reported by Horace Greeley. If the membrane is upon the tonsil, it commonly either shows a crater-like and excavated center or is so necrotic that slight pressure, as with the end of a covered probe, breaks through and the probe will sink for a variable distance. The ulcerations of the disease often cause considerable destruction of tissue and consequent scarring. Sometimes one will find a tendency to a chronic moderate tonsillitis or gingivitis with an occasional severe attack and typical lesions. Spillman reported a case of gangrene of the vulva and perineum caused by this infection. Noguchi has reported a case of ulcer of the labia due to it. Vincent himself reported several cases of gastro-enteritis, in which postmortem examination revealed large numbers of typical organisms in the intestine. Corbus and Harris have described ulcerative balanitis due to this organism, and they called it the "fourth venereal disease." In this the infection is mistaken for chancroid, but the finding of the causative agents helps in the differential diagnosis. It has also been reported as involving the mucous membrane of the respiratory tract, producing cough and physical signs of bronchopulmonary congestion with loss of weight. In noma it has been shown that this condition was caused by the same organism, and the difference in the lesions is but one of degree. Vincent has considered hospital gangrene as a form of this infection.

SYMPTOMS

In the study of the cases reported below, we considered the nationality, color and age; whether the patient was in domestic or overseas service; the duration, question of contact, number of attacks, onset, malaise, headache, backache, degree of the pain on swallowing, temperature, pulse, respiration, enlarged and tender cervical lymphatic glands, and the condition of the teeth, gums, buccal membrane, palate and pharynx. Likewise a Wassermann test was performed in each case as well as a throat culture and a stained smear and a dark field study. The breath and habits of the patient were also noted.

Nationality and Service: In a series of fifty-six cases, fifty-one of the patients were American, one German, one Canadian, one Italian and two Swedes. Fifty-two were white and four black. The average age was 24½ years. Thirty-six were in domestic service, nineteen overseas and one German prisoner.

Contact: Eight of the fifty-six patients gave evidence of being in contact with others who had similar symptoms; forty-eight were negative. Fifty-one gave a history of having but one attack, two had two attacks, one, three recurrent attacks, and two, one recurrent attack.

Onset: Forty-one gave a history of sudden onset.

Malaise: Thirty-six complained of malaise of varying degree, while eighteen were negative for malaise.

Headache: Thirty-three had headache of varying degree, five severe, and eighteen were negative for headache.

Backache: Seventeen had backache of varying intensity, two severe, four moderate, and thirty-two negative.

Pain on Swallowing: Eighteen complained of slight degree of pain on swallowing, eight moderately bad, twenty-six had severe pain, and four were negative.

Enlarged Tender Cervical Lymphatic Glands: Thirty-nine patients complained of enlarged and tender cervical lymphatic glands. Nine were on the right, seven on the left, twenty-three bilateral, and seventeen negative.

Objective Symptoms.—Teeth: Five with very bad teeth were found. In two cases the teeth were classified as poor, fifteen moderately poor, eleven slightly decayed, and twenty-three good.

Gums: Sixteen had congested gums; ten, ulceration of varying degree; there were eight with bleeding gums, seven showing recession; one, painful; four, sordes, and twenty-five, negative.

Buccal Membrane: Forty-nine were negative. In three cases the buccal membrane showed bilateral involvement with a membrane and superficial ulceration. In two there was involvement of the right side, in one the left, and in one case the buccal membrane was spongy. In one the right buccal membrane was red and congested but with no membrane. There were no cases of noma (gangrene).

Palate: Forty-four cases were negative. In two cases there was a superficial membrane over part of the uvula and soft palate. In three cases the soft palate was involved, in three the uvula; there was one case with a typical membrane over the soft palate above the pillars, and one showed a membrane over the superior portion of the faucial tonsil. In three instances the membrane was of a patchy character and may be described as whitish, yellowish and a dirty pearly gray.

Tonsils: In thirty-two instances the tonsils were involved bilaterally; in eleven instances the left tonsil was involved; in thirteen instances the right. The extent of the membrane and ulceration was of varying degree. At times the membrane varied from a thin veil-like film to a large patch or extensive membrane spreading over the tonsil or tonsils onto the posterior pillars; and the ulceration in some instances was superficial and again deep, and frequently as much as two thirds of the tonsil was eaten away. At times it would begin on the one side and rapidly spread to the other. The tonsils were frequently very friable and easily penetrated. In other instances they were very swollen and enlarged, and occasionally peritonsillar abscesses developed.

Pharynx: In thirty-seven cases the pharynx was negative; in five there was bilateral involvement; in one there was a general extension over the pharyngeal walls; in three instances, on both sides of the pharynx; in three, the right side; in five, the left and in two the posterior portion of the pharynx.

Wassermann Reaction: In fifty-one cases the Wassermann reaction was negative; three were strongly positive (coincidental). In one instance in which the Wassermann reaction was positive, the infection was bilateral on the posterior pillars of the tonsils and over the pharynx; in another instance, bilaterally on both tonsils, the right one being the worse. In one instance, when positive, the infection covered both tonsils and the posterior pillar. A yellowish, patchy membrane was seen between the tonsil and the posterior pillar. The membrane over the right tonsil was of a thin, filmy character. In another instance the left tonsil was adherent to the posterior pillar and covered by a pearly membrane which extended over the posterior pillar to the uvula. On the right side the anterior and posterior

pillars had patches, and a thin veil-like film covered the right tonsil and up over the palate. In a third instance, the infection was unilateral, involving the left tonsil and consisting of an oval ulcer extending up on the posterior pillar, the membrane being adherent and yellowish.

From all these cases smears were taken and affirmed by dark field illumination with the finding of the typical Vincent's fusiform bacilli and spirochetes (differentiated from *Spirochaeta pallida*).

Urinary Analysis: In ten cases there was a very small trace of albumin; forty-six were negative. Specific gravity averaged 1.0225. The average white blood count was 8,475; the differential count: small and large lymphocytes, 23 per cent.; transitionals, 2; eosinophils, 2; neutrophils, 73 per cent.

Complications: The complications consisted of several cases of follicular tonsillitis; quinsy, five; influenza, one; chronic interstitial nephritis, one; nasopharyngitis, two; otitis media, one and one case with *Streptococcus hemolyticus* septicemia. One case was diagnosed as Vincent's angina, as the smear was positive but the throat culture was positive for Klebs-Loeffler bacilli. The infection started on the outer side of the uvula on the left, and extended to the hard palate like a fan. The membrane was of a dirty hemorrhagic appearance; but when it reached the hard palate, it became whitish. There was considerable loss of tissue and some deposits of membrane on the posterior pharynx. In another instance the throat culture was positive for diphtheria as well as having a positive smear for the Vincent organism. This patient had just convalesced from scarlet fever. Twelve cases developed acute follicular tonsillitis. Nine presented no complications. In another instance the case started with an acute quinsy attack, and the peritonsillar abscess was first noticed between the left tonsil and the posterior pillar.

Breath: In twenty-two instances the breath was quite fetid; in thirty-two, moderately so, and two were negative.

Habits: None gave a history of excessive use of alcohol; ten were moderate users; six were very moderate. Eighteen did not use tobacco in any form, eight used pipes, thirteen used cigarets, fourteen smoked cigars and cigarets, and one used chewing tobacco. Twenty-six gave a history of using candy and sweets to excess; twenty-two stated that they ate large quantities of protein food, such as meat.

Stained Smears: The smears of the fifty-six were positive for the fusiform bacillus and spirochete by the stained method and by the dark field method.

Throat Cultures: Fifty-four had negative throat cultures, while two were positive for diphtheria.

Temperature and Pulse: The average temperature during the course of the disease was from 99 to 100 F. The average pulse rate was 84.

Duration: The average number of days in the hospital for the fifty-six patients was ten and a half.

DIFFERENTIAL DIAGNOSIS

In the majority of cases the diagnosis can be made with reasonable care from the clinical appearance alone; but to be on the safe side, a direct smear should always be stained and examined. The presence of coexisting diphtheria and syphilis must never be lost sight of.

Syphilis.—Fusiform bacilli and spirochetes may be found in syphilitic ulcers, but the ulcer has not a clinical feature of the true Vincent's angina. The lymphatic glands are not enlarged and tender, and the Wassermann reaction of the blood will help settle the question.

Diphtheria.—In diphtheria we have a membranous formation, accompanied by: (1) severe constitutional symptoms; (2) affection of both sides of the throat (usually); (3) not much pain on swallowing; (4) relative absence of tenderness of the submaxillary lymphatic glands; (5) membrane difficult to remove; (6) albumin frequently present in the urine, and (7) Klebs-Loeffler bacillus present in culture.

Vincent's Angina.—The chief clinical features are: (1) slight constitutional disturbance; (2) temperature rarely over 100 F.; (3) pain on swallowing; (4) submaxillary lymphatic glands enlarged and tender; (5) disease often unilateral; (6) the membranous exudate usually easily removed, leaving a raw, bleeding surface; (7) urine rarely albuminous, and (8) presence of fusiform bacilli and spirochetes.

INTERESTING CASES

CASE 1.—A man, aged 22, with no evidence of contact, suddenly developed a sore throat and headache with a subsequent acute bilateral follicular tonsillitis. He suffered with malaise, headache and backache, and a slight degree of pain on swallowing. His temperature averaged from 98 to 104; the pulse, from 76 to 124. The whole chain of lymphatic glands in the left cervical region became enlarged and painful but nonsuppurative. The teeth were in good condition; there was no evidence of any trouble with the gums, buccal membrane or palate. On the left tonsil there was a very characteristic membrane with moderately deep ulceration characteristic of Vincent's angina. There was no involvement of the pharynx. The Wassermann test was negative. The urine showed a trace of albumin. The adenitis, referred to above, developed seven days after his admission to the hospital; and five days after the onset of the complication, he developed arthritis at the right and left elbow, and then in the left shoulder and jaw. The knees and ankles were painful but not swollen. Blood culture was positive for *Streptococcus hemolyticus*. The patient died two days after the onset of the arthritis, and a culture from the synovial fluid of the left shoulder and left elbow was positive for *Streptococcus hemolyticus* as well as the spleen and heart's blood. The white blood count averaged from 13,800 to 16,000; neutrophils, 74 per cent.; large mononuclears, 22; transitionals, 2; basophils, 2.

The Vincent's angina, of course, did not cause the septicemia; but it is illustrative as to how one organism can so reduce the resistance of a part as to establish a portal of entry for other organisms which under certain conditions become highly virulent, gaining direct admission into the blood stream.

CASE 2.—Another interesting example of this infection was in a case of chronic interstitial nephritis which presented low specific gravity of the urine (1.006); excessive nocturnal elimination of urine; presence of albumin and casts; systolic blood pressure, 160; diastolic, 120; functional test of the kidney by the phenolsulphonephthalein method, from 13 to 14 per cent. in two hours. Examination of the eyes revealed sclerosis of the retinal arteries and bilateral hemorrhages (old and new). Vincent's angina affected the left tonsil, eating away two thirds. It spread over both buccal membranes, the gums became badly ulcerated, and it pained him more severely than the throat. The onset was sudden and severe; the patient complained of malaise, headache, backache, and a very slight degree of pain on swallowing. The temperature was 99.4, the pulse from 60 to 100. There was very slight enlargement and tender lymphatics.

TREATMENT

It is of the greatest importance to have the teeth well attended to, as very frequently fusiform bacilli and spirochetes will remain in the cavity of a tooth and

cause a recurrence of the infection. The teeth should be cleansed daily and a mouth wash used at frequent intervals. Excessive use of tobacco should be avoided as well as other predisposing causes enumerated elsewhere.

The author desires to emphasize strongly the value of the use of arsphenamin locally in the form of a 10 per cent. solution in glycerin or, for practical purposes, 0.6 gm. of arsphenamin dissolved in 2 fluidrams of glycerin. It does not seem to disintegrate in this way, and if dissolved in sterile water or salt solution and neutralized with sodium hydroxid, the preparation will become useless in a short while after being prepared. The author believes also that it is better to mix all the powder with the glycerin at one time rather than to dissolve just enough for the particular application; there is no serious objection to this method. The parts to be treated should be thoroughly cleansed and dried, and then the arsphenamin solution applied by a small cotton swab and the material thoroughly rubbed into the lesions. It is surprising to see the good results by applying this treatment twice a day. The duration of the disease is shortened materially, and it seems also to lessen the pain associated, which is particularly prevalent when the gums are involved. It is also indicated in those cases in which the gums are primarily involved and there is infection about the teeth, such as pyorrhea, as the author has found that about 90 per cent. of such cases show fusiform bacilli and spirochetes resembling Vincent's organism.

The next substance that gave good results was 2 per cent. solution of chromic acid applied in the same manner or sprayed on with an atomizer. Some observers have used tincture of iodin, colloidal silver, flavine, and a mixture composed of vinum ipecacuanhae, one-half ounce, glycerin, 1 ounce and liquor arsenicalis, 1 ounce; *also powdered methylene blue;* but in the author's experience, none has given such good results as the solution of arsphenamin.

CONCLUSIONS

1. It seems to be definitely proved that the fusiform bacillis and the accompanying spirochete are one and the same, the latter being an evolutionary form of the former but always present with the bacillus.

2. The author believes that Vincent's angina is much more common than is at present realized, and that it is not recognized because of the failure to take a smear, and that furthermore it is frequently mistaken for diphtheria and syphilitic ulcers.

3. It is also probable that the considerable use of candy or proteins with the subsequent lack of oral cleanliness predisposes markedly to this infection; likewise, that poor teeth harbor the organism and that it will manifest itself in its characteristic lesions whenever a suitable opportunity is given. It seems to be more frequent during the winter months.

4. The use of arsphenamin dissolved in glycerin is strongly advised in the treatment of Vincent's angina and infections in which the fusiform bacilli and spirochetes resembling Vincent's organism are found.

220 Kelker Street.

Human Engineering.—To this new specialty, usually termed "Industrial Medicine," I prefer to give another name, one that more clearly defines the real scope and possibilities of what the work offers, the name of "Human Engineering," for it clearly covers fields usually thought to be far removed from that of medicine.—F. L. Rector: *Pub. Health Rep.*, Jan. 9, 1920.

THE ALKALI RESERVE IN EPIDEMIC INFLUENZA AND BRONCHO-PNEUMONIA*

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During the recent epidemic of so-called influenza and bronchopneumonia, the relation between the clinical course, the prognosis and the alkali reserve of the blood was made the subject of investigation in the wards of the Cincinnati General Hospital. The results point to a definite alkali depletion as a clinical factor, and serve as a basis for a rational alkali therapy.

The "acidosis" of influenza has been recognized by Eli,[1] Davidson,[2] Madden [3] and others, on the basis of the course of the disease, and they recommend elimination and alkali therapy on this supposition. The actual cause of the commonly noted cyanosis in influenza is still problematic, and its possible relation to acidosis is of clinical importance. Harrop [4] noted that the oxygen content and oxygen unsaturation of the blood showed normal values in uncomplicated influenza cases or in the nonfatal cases of bronchopneumonia. Oxygen inhalations did not relieve the cyanosis, although the possibility of diminished oxygen-carrying power of the blood may have been a factor. This feature is significant when we consider that the reduction of alkali may be associated with diminished oxygen-carrying power of hemoglobin, Mathews [5] having noted that alkaline hemoglobin is a better oxygen-carrying agent.

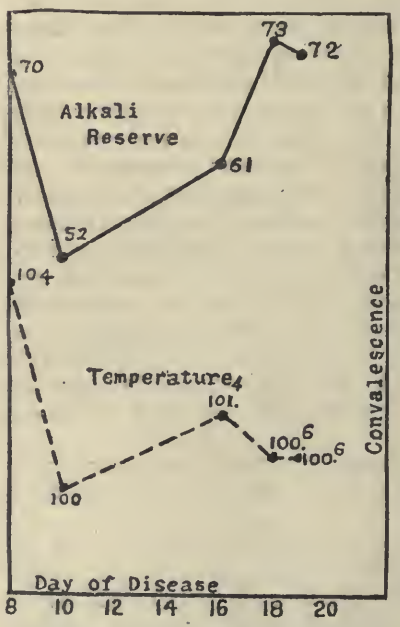


Chart 1.—Alkali reserve and temperature in Case 1.

The cases were of epidemic influenza and influenzal bronchopneumonia in the services of Drs. Mark Brown and H. B. Weiss, under the direction of Drs. R. J. Erickson and E. E. Bishop. There was no special selection, the patients (men) being studied as they came to the wards. In each case the blood for alkali

* From the Department of Medicine, University of Cincinnati, and the Cincinnati General Hospital.

1. Eli, T. C.: Alkali Treatment Applied to the Acidosis of Epidemic Influenza, New York M. J. **109**: 573 (April) 1919.
2. Davidson, Anstruther: Alkalis in the Treatment of Influenza, J. A. M. A. **71**: 1603 (Nov. 9) 1918.
3. Madden, L. S.: Influenza Treated by Sodium Bicarbonate Intravenously, J. M. Soc. New Jersey **16**: 160 (May) 1919.
4. Harrop, G. A., Jr.: Behavior of Blood Toward Oxygen in Influenzal Infections, Bull. Johns Hopkins Hosp. **30**: 10 (Jan.) 1919.
5. Mathews, A. P.: Physiological Chemistry, Ed. 1, New York, 1915, p. 494.

reserve was taken with a syringe from the median veins at the elbow, and transferred to a tube containing 5 drops of a 20 per cent. solution of potassium oxalate. The blood was taken at the same time during the morning in all cases, and the estimations were made within the same period of time. The method of Van Slyke [6] was used to determine the bicarbonate content of the blood plasma in terms of the percentage by volume of carbon dioxid. Where the blood sugar was determined, the method of Benedict [7] was followed.

Out of forty-six determinations in twenty-one patients, taken during different stages of influenza and bronchopneumonia, those whose alkali reserve dropped below 46, in spite of alkali therapy by mouth, died. The alkali given consisted of sodium citrate, 2 gm., and sodium bicarbonate, 2 gm., four times a day. Death took place in these cases from within a few hours to thirty-six hours. Patients showing an alkali reserve from 46 to 52, while receiving alkali therapy by mouth, had a doubtful prognosis, a fatal termination by bronchopneumonia being forecast by a drop in the alkali reserve, while a rise accompanied improvement. When death was due to meningitis, the alkali reserve was not always a significant clue, as was noted in two cases. A favorable prognosis was noted in cases having an alkali reserve of 53 or above, except in cases of complicating meningitis. Generally a drop in temperature with a drop in alkali reserve was associated with a poor condition clinically. A rise of temperature, associated with a rise in alkali reserve, often accompanied a more hopeful condition. A drop in tempera-

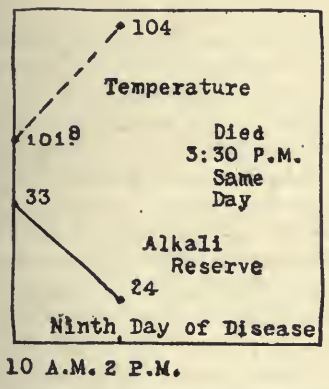


Chart 2. — Alkali reserve and temperature in Case 5.

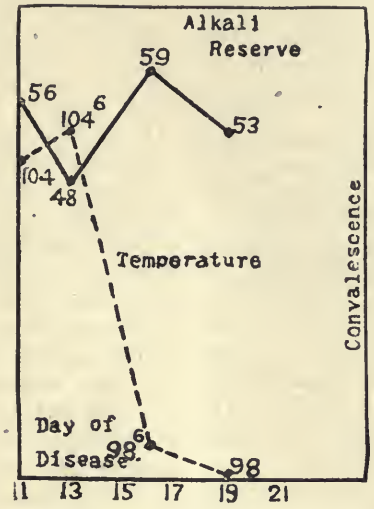


Chart 3.—Alkali reserve and temperature in Case 7.

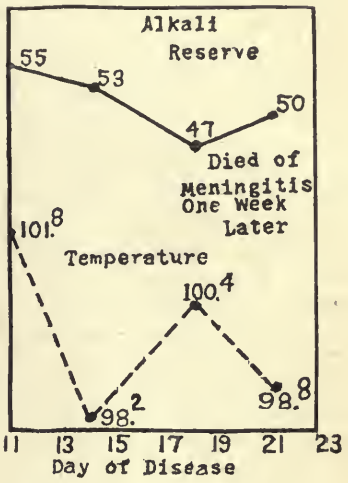


Chart 4. — Alkali reserve and temperature in Case 10.

6. Van Slyke, D. D.: Method of Determining Carbon Dioxide and Carbonates in Solution, J. Biol. Chem. **30**: 347 (June) 1917.
7. Meyers and Fine's modification of Lewis and Benedict's method for the determination of sugar in the blood.

FINDINGS IN TWENTY CASES

	Case	Day of Disease	Temperature	Respirations	Alkali Reserve	Blood Sugar, per Cent.	Results	Comment
1	(E-1008)	8	104.0	22	70	0.10	Recovered	Bronchopneumonia; received alkalis intravenously; later developed empyema
		10	100.0	26	52	0.134	33 days	
		16	101.4	36	61			
		18	100.6	40	73			
		19	100.6	36	72			
2	(E-1195)	5	101.2	28	71	0.13	Recovered, 11 days	Disease was of short duration
3	(E-1072)	13	101.0	28	44	0.12	Died 15th day	Bronchopneumonia
4	(E-1338)	8	103.2	60	45	.....	Died 8th day	Delirious on admission; bronchopneumonia
5	(E-1477)	9	104.8	32	33	0.12	Died 11th day	Bronchopneumonia; comatose
		4 hours later	104.0	36	24			
6	(E-1489)	9	98.4	20	62	.....	Recovered, 30 days	Bronchopneumonia
7	(E-960)	11	104.0	24	56	0.124	Recovered, 47 days	Bronchopneumonia; developed mastoiditis
		13	104.6	36	48	0.124		
		16	98.6	24	59			
		19	98.0	28	53			
8	(E-1514)	4	101.6	36	56	.....	Recovered, 10 days	No complications
9	(E-1760)	2	102.0	24	55		Recovered, 15 days	Cyanotic; bronchopneumonia
10	(E-1305)	11	101.8	60	55	.....	Died 30th day	Bronchopneumonia; later developed meningitis
		14	98.2	58	53			
		18	100.4	60	47			
		21	98.8	40	50			
11	(E-1453)	6	103.6	40	46		Died 7th day	Cyanotic; bronchopneumonia
12	(E-1563)	18	102.4	26	48	.....	Died 20th day	Delirious, comatose (encephalitis); had bronchopneumonia
		19	100.4	34	57			
13	(E-1300)	15	99.2	28	55	.....	Recovered, 32 days	Bronchopneumonia
14	(E-1454)	15	100.6	28	68	.....	Recovered, 34 days	Had bronchopneumonia
		17	99.6	28	76			
15	(E-1485)	13	101.8	44	52	.....	Died 17th day	Cyanotic; bronchopneumonia
16	(E-1128)	?	99.8	22	50	.....	Recovered	Irrational on entrance; had bronchopneumonia
		3d day	101.6	22	46			
		5th day	98.8	22	58			
17	(E-1095)	16	98.0	20	62	.....	Recovered 31st day	Uncomplicated
18	(E-1567)	15	98.0	26	38	.....	Died 15th day	Bronchopneumonia; chronic alcoholic, under influence for five days previous
19	(E-1531)	5	98.8	30	60	.....	Recovered 12th day	Also had chronic bronchitis, asthma and chronic myocardial degeneration
		8	98.2	26	69			
20	(E-1537)	8	102.2	44	56	.....	Recovered	Cyanosis and dyspnea on entrance; developed double acute mastoiditis; uneventful recovery
		9	104.8	36	53			
		10	102.8	36	57			
		13	98.4	24	51			
		15	98.6	20	58			

ture, accompanied by a rise in the alkali reserve, marked convalescence. A rise in temperature with a drop in alkali reserve was of bad prognostic significance. The accompanying charts show these points.

The blood sugar remained fairly constant during wide ranges of alkali reserve and of temperature, even with approaching death. Case 7 of our series showed an alkali reserve of 56, with a blood sugar of 0.124. Two days later he showed an alkali reserve of 48, with the blood sugar 0.124. Case 1 showed an alkali reserve of 70, with a blood sugar of 0.10. Two days later the alkali reserve dropped to 52, while the blood sugar rose to 0.134. Alkali reserves in some of the other cases varying from 71 to 33 had blood sugars that were practically the same, ranging from 0.10 to 0.14.

Chart 1 illustrates another point relative to the efficacy of alkali therapy by mouth. There was a consistent drop in the alkali reserve in the beginning, in spite of 16 gm. of alkali a day, given by mouth. There was rapid improvement following intravenous medication. In Case 1 an intravenous injection of from 500 to 600 c.c. of Fischer's solution (sodium bicarbonate, 0.371 per cent.; sodium chloride, 1.4 per cent.) was always accompanied by rapid improvement in the clinical condition, with quieting of the dyspnea. Evidently there is some process in the disease which causes a rapid depletion of the alkali reserve, and influenza can be considered, strictly speaking, as accompanied by "acidosis," the term being used to express a low alkali reserve. In one fatal case (Case 5) there was a drop in alkali reserve from 33 to 24 in about four hours.

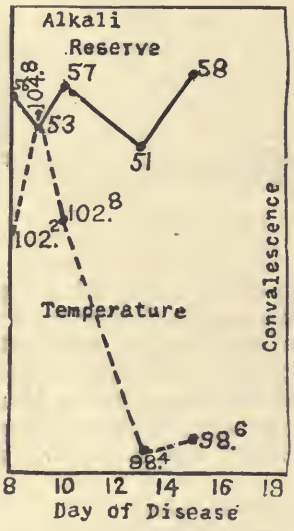


Chart 5.—Alkali reserve and temperature in Case 20.

There was no definite relation between the degree of cyanosis and the alkali reserve. There was a gradual decrease in the cyanosis as the alkali reserve increased, but this also accompanied improvement in the other symptoms. There was no immediate disappearance of the cyanosis after alkaline therapy intravenously. No definite relation was noted between the respiration rate and the alkali reserve.

It is appreciated that the series is not very extensive, but the similarity in the results suggests that the conclusions are justified. The series will be amplified as occasion permits.

SUMMARY AND CONCLUSIONS

1. So-called influenza and influenzal bronchopneumonia are accompanied by a depletion in the blood alkali reserve.

2. The depletion may be rapid or gradual, and is not much influenced by moderate doses of alkali by mouth.

3. The alkali reserve, when compared with the temperature, serves as a prognostic sign, and is a definite indication for the method of treatment.

4. An alkali reserve of 46 or below (in spite of moderate alkali therapy by mouth) was found in conditions in which the prognosis was bad; from 46 to 52 when the prognosis was doubtful, and 53 or above when the prognosis was good.

5. The alkali reserve does not give a clue as to the occurrence of complications.

6. The blood sugar is not markedly influenced by the variation in the clinical course of the disease.

7. There is no definite relation between the amount of cyanosis and the alkali reserve.

DEFINITIVE PERCUSSION AND INSPECTION IN ESTIMATING SIZE AND CONTOUR OF HEART

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Percussion of the thorax is employed to detect modifications of the sound over resonant parts, and also to define the area and contour of nonresonant bodies which lie within the thorax. The former may be called sonorous, the latter definitive percussion. Definitive percussion is, by all methods, the goal in view in percussion of the precordial area.

The modern innovation of the roentgen ray has lessened the significance of precordial percussion to such a degree that, in many teaching hospitals, percussion of the heart is done perfunctorily and inaccurately, because the roentgen-ray silhouette is respected as the only dependable guide. Many practicing physicians, because they have caught the spirit of this mental attitude on the part of the clinics, have neglected to learn the art of definitive percussion, and they either impose on their patients an unwarrantable expense for the use of a roentgen-ray appartus, or despair of defining the precordial area when such apparatus is not available.

HISTORY

Corvisart, Piorry, Skoda and Wintrich all proclaimed the importance of detecting resistance to the percussing fingers, and united in saying that "the finger that feels is quite as important as the ear that hears"; but in spite of such teaching, their writings fail to reveal accuracy of instruction in how to employ the aid of palpation in percussion. They all failed to differentiate clearly between the aims and methods of sonorous percussion and those of definitive percussion.

In view of the modest aims and the simplicity and directness of its methods, the very modern origin of the art of percussion is surprising. Auenbrugger published his "Inventum Novum" in 1763, but the invention was ignored and its author found no imitators among his contemporaries. Forty years later Corvisart translated Auenbrugger's work into French and added many observations to the original work. He said that during his student and hospital career he never saw a physician employ percussion. In reading the work of Auenbrugger and Corvisart, we wonder why the accuracy of their percussion did not keep pace with the gross pathology of their time. The instruction given by them was to percuss with the palmar surfaces of the extended and approximated fingers, and furthermore, the stroke should be gently applied. But Auenbrugger either percussed over the tightly drawn shirt of the patient or wore an unglazed glove to obviate a sound from the impact of bare hands on the patient's naked skin. This in itself is very significant for the vigor of the method.

The modern reader is perplexed to understand why the pioneers in percussion did not attain more accurate

results, until he comes to a Paris thesis by Chevalier, a pupil of Piorry (1833). The latter had introduced mediate percussion (1828), and had also criticized the direct method of Auenbrugger and Corvisart as "painful and dangerous to the patient," a statement which is surprising in view of the impression their writings give. Chevalier heads his dissertation with a motto that would serve equally well for a modern thesis on the same subject: Ceci tiens plus choses qu'on ne pense (This subject contains more things than one may think). Chevalier says, "Percussion, which everybody practices today, is so far from always giving what one should learn by it that the great majority of people who employ it only hear and do not touch. They neglect the most beautiful part of their method." In discussing the direct or immediate percussion as employed by Corvisart, Chevalier says: "The procedure has the great disadvantage of often producing painful sensations, and is always objectionable to the paitent." On page 11 of his thesis is found the highly illuminating statement: "Some of my comrades have at times been good enough to permit themselves to be percussed mediately by me, but they would never allow the direct method. The first stroke which I gave quite disgusted them with the method, although they employed their best will and I employed all the care of which I was capable."

Chevalier further criticizes Corvisart's method by saying that "direct percussion with the palm of the hand sets such a large area into vibration and is attended with such adventitious sounds from the impact of the hand that one can scarcely detect the character of tone elicited from the underlying organ. A moderate dulness of slight extent and also very pronounced but limited areas of dulness escape percussion with the flat of the hand."

From such criticism by the contemporaries and followers of Corvisart, it is quite clear why the immediate methods of Auenbrugger and Corvisart did not give more accurate results in definitive percussion. Apparently using the Auenbrugger method was much like etching a fine border with a blunt instrument.

But how did definitive percussion fare in the hands of Piorry and his followers who advocated mediate percussion? They were far more interested in sonorous percussion, as were Skoda, Wintrich and Williams, whose work was chiefly directed toward interpretation of the character of note which was emitted by the lung and tracheobronchial column of air in disease.

METHOD

The very criticism against the Auenbrugger method which we read in support of Piorry's mediate method is valid against the latter, namely, it is not definitive because too large an area of the thoracic wall is included in the pleximeter. To employ the mediate method properly, the pleximeter finger must be firmly fixed on the thoracic wall, and this fixation procedure will include a comparatively large thoracic wall area in the pleximeter, however light the percussion stroke may be. By this method the best results are obtained for sonorous percussion, but it defeats the purposes of definitive percussion, which are sought in outlining the area of precordial resistance.

There is no sharp boundary between the heart and surrounding lung. From the upper and left borders the lung encroaches over the precordial area as a wedge-shaped body. If the examiner is to define the border of the heart, he must employ the smallest possible pleximeter area and at the same time he must be able to penetrate the overlying lung to detect the resistant heart which lies beneath. Direct or immediate percussion best serves these purposes. The stroke should be made with the palmar surface of the terminal phalanx of the extended middle finger or ring finger. The blow should be made by firmly stroking the part as if the examiner were seeking to penetrate the underlying tongue of lung. One should not imitate the stroke of a piano hammer, which is made with a quick recoil to prevent damping of the string. The object of the firmly applied stroke is to damp the thoracic wall, and so far as possible eliminate it from sharing in the pleximeter.

Why should percussion be made with the finger extended? If the examiner is to employ his sense of resistance to detect the underlying heart, then the muscular sense through which the resistance is perceived is best served by maintaining the long flexor muscles of the fingers in an extended position. If the fingers are flexed and percussion done with the tips of the fingers, the muscular sense is partially sacrificed. It is like percussing, so to speak, with a frozen forearm. The sense of resistance is best served by holding the fingers extended with the muscles in what may be termed a fluctuant or mobile state. As the percussing finger arrives at the border of precordial projection along the intercostal spaces from the left, the examiner will feel an increase of resistance and hear an elevation in pitch and a shortened duration of the note. This suffices to mark the position of the left border. What may be the character of the percussion note over the precordial area is unimportant so far as the size of the heart is concerned.

In the performance of direct or touch percussion, the soft parts over the bony thorax should be smoothed out and drawn taut, because any lax tissues which may intervene between the chest wall and percussing finger will give a false result. Another important detail of the procedure is to have the patient in a sitting posture. In the lying position the heart very often recedes from the anterior thoracic wall, so that the demonstrable area of precordial dulness is much less than it is found to be in the erect position. It is not uncommon to find the area of dulness extend three fingers' breadths farther both to right and left when the patient assumes the sitting position.

The left cardiac border having been located from the third intercostal space downward, the examination is continued by locating the upper border of heart resistance in a line midway between the sternum and the nipple line. Beginning at the first intercostal space, with the finger held parallel with the ribs, the examiner percusses the intercostal and costal spaces successively downward, until he encounters the characteristic change in note and resistance which locates the upper cardiac border. In normal cases this may be anywhere from the second interspace to the top of the fourth rib.

THE RIGHT BORDER

Ability to locate the right border of the heart is a good test of skill in percussion. In textbooks on physical diagnosis, the right border is generally treated in a light manner which betrays the difficulties of the problem. When the left border is found in a normal position, the right border is inferentially located at the right sternal border; but if a normal heart is displaced in toto either to the right or to the left, or if the right ventricle and auricle are enlarged and the left side is not, then accurate percussion is demanded to locate

the right border. A sharply defined border cannot be located with a blunt device. For definitive percussion, the pleximeter must be reduced to a minimum area. If mediate percussion is employed, the pleximeter finger must be firmly applied to the thoracic wall, and the large sternum with its inserted ribs is unavoidably included in the pleximeter; consequently a broad pleximeter is used to define the border of an underlying resistant body, and when the percussion stroke is made, a considerable area of the neighboring lung is set in vibration. Futhermore, how can one estimate fine shades of resistance by the mediate method? Certainly they are not perceived by the pleximeter finger, for that is firmly applied to the chest wall—a procedure which eliminates employment of the muscular sense of the flexors of the pleximeter finger; and certainly not by the percussing finger, for the intervention of a pleximeter will dull its perception of intrathoracic resistance; moreover, the flexed position in which the percussing finger is held impairs the use of the muscular sense of its long flexors. The long flexor ceases to be a receptive instrument for afferent muscular impulses, and the flexed finger becomes a passive instrument attached to the hand. Every feature of this method is devised to defeat the perception of fine shades of resistance. In fact, it defeats both the sonorous and the definitive qualities of percussion as employed in finding borders of the heart.

The history of percussion of the right heart reveals an evasive treatment of the subject from Corvisart up to the publications of Ebstein of Göttingen. Corvisart said he could define the cardiac resistance under the lower half of the sternum, and he was credited by his pupils with being able to define with accuracy the size of the right and left sides of the heart; but his own writings fail to give satisfactory evidence to support this statement. After Piorry's publication, mediate percussion gradually displaced the direct, and virtually all subsequent contributions to the subject were based on the former, until Ebstein of Göttingen developed a technic of direct percussion of the precordial area, in which he employed both change of resistance and change in the audible note to define the cardiac borders. In his book (1907) he says that with the prevailing mediate percussion one cannot go far in defining the right cardiac border. My personal experience confirms Ebstein's statement. His method was known to me in my student days only through a brief statement by one of my greatly revered teachers, Prof. Friedrich Kraus, who at that time was a clinical assistant in Vienna (1890-1894). Kraus always employed mediate percussion, and seemed to attach little importance to the claims of Ebstein. In the toilsome progress of learning percussion, I developed a direct method of defining the right border of the heart, which has served me quite as well as Ebstein's method served him.

In Ebstein's method the fingers are held in extension and flexed at the metacarpophalangeal joint, and the stroke has more of a poking character and less flexibility than in the method I employ. However, this impression is derived purely from his writings, as I have never seen Ebstein or any of his pupils percuss. To define the right border, one should percuss in each intercostal space from the second to the fifth in succession, beginning at the midclavicular line and ending at the sternum. At the second interspace, the note and resistance are not changed in normal cases until the sternal border is reached, and then the change is slight. In the third, fourth and fifth interspaces, there are marked changes in both resistance and note as the percussing finger arrives at the sternal border. To confirm the retrosternal resistance and dulness from the right heart, the sternum is percussed from the manubrium downward, and in the descent along the right half of the sternum the note becomes less resonant and the resistance increases at the level of the third rib, or at the level at which the upper border may have been located to the left of the sternum. Should the heart in toto be displaced toward the left, the absence of the heart beneath one half or the whole breadth of the sternum can be demonstrated by the direct method. By the mediate method I have found it impossible to locate the heart under half of the breadth of the sternum, and in a great part of normal cases mediate percussion will not define the substernal resistance and dulness of the heart. Enlargement of precordial dulness to the right of the sternum is due to enlargement of the right auricle. The atrioventricular sulcus of the right heart virtually coincides with the right sternal border from the third to the sixth rib. Enlargement of the right ventricle does not move the base of the right ventricle to the right of the sternum, but is manifested by forward projection of the body and conus arteriosus of the right ventricle and extension toward the left.

When the right auricle is enlarged, there is a semilunar area of dulness to the right of the sternum, with its maximum extent in the fourth interspace and less in the third and fifth spaces. This should be confirmed by percussing downward from the third interspace to the fifth space in a longitudinal line which passes through the right border of auricular dulness in the fourth interspace. In this line the third and fifth interspaces will reveal more resonance and less resistance than is found in the fourth space. This procedure confirms the acute cardiohepatic angle of cardiac enlargement described by Dr. Roach of Boston in 1878.

THE INFERIOR BOUNDARY

Our discussion thus far has dealt only with the upper and lateral boundaries of the heart. The posterior aspect of the heart is inaccessible. The anterior aspect is accessible to inspection and palpation, but this phase of the subject is not included in the present thesis. Only the inferior aspect of the heart remains for discussion. Heretofore the only sign employed to recognize the downward enlargement of the heart has been hepatic displacement in a downward direction. This sign is demonstrable only in great enlargements of the heart. We can, however, detect flattening of the subcardial portion of the diaphragm in its entire extent, and we can also detect comparative flattening of the subcardial diaphragm to the right and to the left of the median line. The roentgen-ray silhouette gives evidence of this phenomenon only in very severe cases. Moderate flattening and comparative flattening of the right and left portions of the subcardial diaphragm are not demonstrable by this means. The sign referred to is due to alteration in the balance of control of the movement of the costal margins from the subcostal angle to the eighth costal cartilage on both sides. This phenomenon must not be confused with excursion of the diaphragm. It involves only activation of the diaphragm in its conflict with activation of the intercostal muscles for mastery of the costal margins. In normal human subjects the two margins in their entire extent move symmetrically outward. Should the entire

subcardial diaphragm be flattened, as occurs in globular enlargement of the heart from myocarditis and in many cases of mitral disease, the costal margins on both sides from the angle to the eighth ribs will move less in an outward direction than the lower and external part of the margins to which the lateral phrenic leaves are attached; and if there should be sufficient flattening, as occurs in many cases of cardiac enlargement, the costal margins from the angle to the eighth ribs will move symmetrically toward the median line with inspiration, whereas below and external to the eighth ribs the costal margins move outwardly. In the case of patients who enter the hospital with acute cardiectasis, it is a common experience to see the symmetrical inspiratory narrowing of the subcostal angle gradually replaced by inspiratory widening as the size of the heart diminishes and approximates the normal.

The inspiratory movement of the subcostal angle aids greatly in estimating the comparative parts played by the heart and by the lungs in many such patients, for many of them have bronchitis and emphysema with cardiac dilatation. When pulmonary emphysema is responsible for severe air hunger and dyspnea, the entire phrenic leaf on both sides is sufficiently flattened so that both costal margins in their entire extent are drawn toward the median line during inspiration.

When the heart and lungs are both factors in air hunger and dyspnea, this means of forming a conception of the contour of the diaphragm is important, because it gives the examiner very definite information about both cardiac and pulmonary enlargement. Such patients are commonly seen in a recumbent position in bed, which is not favorable for percussion of the heart. Accurate percussion of the heart can be done only with the patient in an upright position, whereas inspiratory movements of the costal margins can be studied only when the patient is lying down so that the abdominal muscles are relaxed. Consequently when such recumbent patients are examined, the size of the heart is often underestimated by percussion, but observations on the inspiratory movements of the costal angle betray the degree of cardiac dilatation. If the patient is placed in the sitting posture, percussion will reveal the true size of the heart.

The value of this sign in estimating the size of the heart was recently illustrated by a patient who had a malignant tumor of the thyroid gland and mediastinum and both lungs. The percussion borders of the heart extended on the left to the anterior axillary line, and on the right three quarters of the way to the right nipple line. The contour of precordial dulness was quite like that due to great enlargement of the two sides of the heart, and what added still further to the deception was a communication of the cardiac impulse to the surrounding growths, so that from inspection, percussion and palpation one would have been compelled to say that the heart was greatly and symmetrically enlarged. However, inspiratory widening of the subcostal angle was symmetrical and normal in extent. This could not occur in the presence of so large a heart unless there should be an increase of intra-abdominal pressure to prevent flattening of the diaphragm. Had it not been for this sign, which gave evidence of the conformation of the inferior aspect of the heart, an error in diagnosis could not have been avoided.

In observing patients with acute cardiac dilatation while under treatment, the movement of the costal borders is a very good guide to the progress of recovery. As the enlarged heart grows smaller, the costal margins will move less toward the median line during inspiration, and when both sides of the heart have made a good recovery, normal inspiratory widening of the subcostal angle will be resumed. If the patient has carried an old lesion that involved primarily the left ventricle, as occurs in lesions of the aortic valve and in arterial disease, then as recovery of the right heart progresses, the median half of the right costal border regains its outward movement with inspiration, but the median half of the left border may continue to move toward the median line during inspiration, or exhibit a lesser outward movement. How symmetry and asymmetry of movement at the subcostal angle very accurately mirror the contour of the subcardial diaphragm is also shown in cases in which the subcardial diaphragm is flattened only to the right of the median line. The following case is a very good illustration:

> At a casualty clearing station in Belgium, a wounded man, who also had severe phosgen poisoning, was suffering from severe pulmonary edema, dyspnea, air hunger and cyanosis. On account of severe pulmonary emphysema the heart's size could not be accurately determined by percussion with the patient in the recumbent position. Both costal borders in their entire extent moved symmetrically toward the median line during inspiration. Within a few minutes after the hypodermic administration of epinephrin (20 minims of a 1:1,000 soluton), it was observed that the entire left margin moved outwardly with inspiration; the lateral half of the right costal margin also moved laterally, but the inner half of the right border continued to move in a median direction during inspiration. This indicated bronchiolar spasm to have been a source of the acute lung emphysema. Percussion of the cardiac borders then revealed the right auricle midway between the sternum and the right nipple line. Forty-five minutes after $\frac{1}{25}$ grain of digitalin was given hypodermically, the entire right border moved symmetrically with the left border in an outward direction. Percussion then revealed the right border of precordial dulness at the right sternal border. By no other means would it have been possible under such conditions to acquire so clear a conception of the contour of the lateral and subcardial portions of the diaphragm in acute pulmonary emphysema and dilatation of the right ventricle and auricle.

The arch of the subcardial part of the diaphragm is very flat compared with the arch of its lateral portions, so that only a little depression of that part of the diaphragm is required to give it the mastery of the costal margins where its fibers are inserted. For this reason a differentiation between flattening of the subcardial and of the lateral parts of the diaphragm can be readily determined by observing the extent and direction in which the median and lateral halves of the costal margins move during inspiration. To make such observations the patient must be in a recumbent position, with abdominal muscles relaxed, and the movements of the costal borders should be studied during automatic respiration. If the patient is directed to bring respiration into the field of consciousness, as certainly follows if he is instructed to take a deep breath, he may voluntarily overactivate either intercostal muscles or diaphragm (as impelled by caprice), and thus give false information about the balance of control of the costal margins, which in human subjects is so nicely adjusted between the diaphragm and the intercostal muscles.

In the clinical teaching of Western Reserve University School of Medicine the movements of the costal margins are incorporated in the routine of physical

examination. The student is expected to account for any modification in movements of the costal borders as he should for a displaced apex impulse, and it is found that this procedure greatly improves his conception of the size and contour of the heart. This is the only method that enables the examiner to picture the contour of the inferior aspect of the heart—an attainment which is very important in making differential diagnoses between processes which involve the entire myocardium (or both chambers of the heart) and those which involve primarily either the left ventricle or the right side of the heart.

Lakeside Hospital.

THE RELATIVE USAGE OF NARCOTIC DRUGS IN HOSPITAL SERVICE AND PRIVATE PRACTICE

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This article is based on an elaborate statistical report rendered by the Bureau of Drug Control of Pennsylvania to the Commissioner of Health, and it deals with findings collected from the public hospitals of the state by experts in the field service of this bureau. The duplicates of the federal order blanks for opium, etc., were transcribed, or the clerk or pharmacist of the hospital rendered a report giving the totals for one year, in most instances the calendar year 1919, but in a few cases the fiscal year from July 1, 1919, to June 30, 1920. The number of ward and dispensary cases was that given in the report of the hospital for 1919, when such report was in print, or, when not published, that given by the superintendent of the hospital.

The result was a great volume of data from all over the state, and it was necessary to reduce this to some relative terms of comparison. Morphin, opium, etc., were purchased in a host of combination tablets, official preparations, special formulas and, as well, in the form of simple or uncombined drugs. All of these data were computed by Miss Nora C. Cantwell, secretary of the bureau, to the bases of opium, morphin, heroin, codein, cocain, etc., actually purchased by each hospital; and these totals for each hospital were, in turn, again computed to reach an opium basis for purposes of simple comparison, as regards opium and its educts, and to cocain as regards various solutions and tablets.

Finally, the totals on an opium and cocain basis were divided by the total numbers of ward and dispensary patients, for each hospital, and an annual per capita of opium and cocain determined. This made a fair basis of comparison easily understood. To give all of this material in detail would require much space, and in this article only certain totals will be given, and some inferences drawn.

The public hospitals of Philadelphia used in one year, estimating all alkaloids to an opium basis, 1.6 grains per capita for each patient treated, some patients being many months in the wards, and others visiting the dispensaries from one to many times. On the same basis, the public hospitals of Pittsburgh used a per capita of 2.9 grains of opium. The public hospitals of Allentown, Altoona, Erie, Harrisburg, Lancaster, Reading, Scranton, Wilkes-Barre and Williamsport—cities next in population to Philadelphia and Pittsburgh—used an annual per capita of 3.194 grains of opium. And the public hospitals of the smaller municipalities—Bellefonte, Berwick, Bradford, Chambersburg, Easton, Greensburg, Pottstown, Renova, Sayre, Uniontown and many others—used an annual per capita of 3.3 grains of opium, on an average estimate.

These figures tend to confirm statistics previously gathered and which show that the per capita usage of opium and its educts going through professional channels is smaller in the large cities of Pennsylvania than in the minor municipalities and the rural districts.

Striking an average for the public hospitals of the whole state, as based on the numbers of patients treated, the annual per capita of opium is so close to exactly 3 grains that this figure may be accepted as approximately correct.

The report of a committee appointed by the Secretary of the Treasury, as published from Washington in June, 1919, showed, as estimated on an opium basis and counting every man, woman and child—sick and well—in the Union, an annual per capita consumption of 36 grains of opium, with an additional unknown supply of smuggled-in opium to be added thereto.

A report rendered by the Bureau of Drug Control of Pennsylvania in August, 1919, estimated the parallel figures in that state as 34 grains; and a report that we are now preparing shows a drop within the last year of approximately 30 per cent., or about to 24 grains. It is worthy of comment that the per capita credited to the hospitals, where certainly there exists the greatest real need for opium and its educts, is *only one-eighth that of the state at large,* counting sick and well, young and old, normal and addicted persons.

The per capita usage of cocain, estimated on the same plan as opium, was: public hospitals in Philadelphia, 0.223 grain per year; Pittsburgh, 0.314 grain; other large municipalities, 0.26 grain; small municipalities, 0.154 grain. These figures are very low, owing partly to the fact that other local anesthetics are largely displacing cocain.

Heroin, apparently, is going out of hospital usage, as the total purchases were very small for all over the state, thirty-six public hospitals using no heroin whatever. The heavy purchases of heroin were nearly all made by hospitals in Philadelphia, with Lancaster and Reading hospitals using the bulk of the rest consumed. Only two homeopathic hospitals in the state purchased any heroin. There appears to be some feeling over the heroin proposition, as physicians in hospital service in smaller municipalities connect the general use of heroin in Philadelphia with the heavy mortality rate there during the influenza epidemic of 1918-1919. I have no data warranting an expression of opinion in this connection; but it is a fact that the hospitals of Philadelphia, Reading and Lancaster made 90 per cent. of the total purchases of heroin to be credited to the hospitals of the state.

The homeopathic hospitals of the state, grouped in a class by themselves, show an annual per capita of 0.445 grain of opium, as against 3 grains for the hospitals of the state at large. The lowest narcotic record in the state is held by the Woman's Southern Homeopathic Hospital of Philadelphia, which treated 790 ward cases, 1,176 dispensary cases, and used only 24 grains of opium and 16 grains of morphin in a year, according to our record. The heaviest record in the state, a per capita of 11¼ grains of opium per year, is held by a small hospital in Columbia County that does a great deal of emergency surgery. It must be remarked that

the character of work done by a hospital has much to do with setting its narcotic per capita. A hospital for miners, or one located near large railroad yards, has a vastly different proposition to face from that of a hospital for women in a residence section. The Homeopathic Hospital of Pittsburgh, doing considerable surgery, has an annual opium per capita of 1.5 grains. Probably the hardest narcotic situation met by any hospital in the state is that confronting the Philadelphia General Hospital, which treated 23,900 patients in the year, 3,624 of them being insane persons, and several hundred being drug addicts; yet its annual opium per capita was only 6 grains, which under the circumstances is very low.

It is the view of this bureau that the narcotic record of the public hospitals of Pennsylvania is most creditable, and that it is not wise to attempt to reduce the narcotic per capita in the case of most of them.

The several hospitals reporting no dispensary cases have an annual per capita average of 3.3 grains of opium, against the general average of 3 grains for all of the hospitals. A slight factor of error exists in the fact that some hospitals give dispensary patients prescriptions to be filled outside, but the prescriptions reported from drug stores as filled for hospital dispensary patients carry so little narcotic medication that the figures would be very slightly altered by incorporating them.

The more nearly a hospital approaches standardization, the lower is its narcotic per capita, and the fewer combination tablets and other unscientific narcotic preparations appear on its report. A few hospitals purchase proprietary narcotic preparations, such as Papine and H. M. C. tablets. Very few public hospitals treat drug addicts for the cure of the craving for drugs, and when they do treat them they take the patients entirely off the drug addiction within a few days.

In making a comparison of the relative usage of narcotics in hospital service and in private practice, it is difficult to secure exact figures in the latter field. This bureau aims to get complete reports of narcotic purchases and prescriptions, and we do get the bulk of these reports; but we realize that we miss many on account of various human factors. There is some concealment, more careless reporting, and a great deal of neglect; and, although these elements are followed up, the statistics collected in the field of private practice are only approximately correct. Few physicians keep clinical records to an extent that enables them to report the number of patients treated in a year, and we cannot demand such figures from them, nor do we know from morbidity reports how many persons are ill and injured in the state in one year.

There is one physician to about 700 people in Pennsylvania. Estimating on the hospital per capita of 3 grains of opium a year, the average physician with 700 patients, assuming that every one of them is ill at least once in the year, which is far from the fact, should use 2,100 grains of opium a year, figuring morphin, heroin, codein, etc., on an opium basis. This estimate covers, of course, dispensing and prescribing.

To offset the persons who do not get any medical attention in the year, it is necessary to bear in mind that physicians in private practice treat many incurables and chronic cases of painful disease requiring constant narcotic medication, that there are many postoperative cases, aged and infirm persons, and persons who refuse surgical attention, in the practices of physicians; and it must also be remembered that many country practitioners are denied the help of good nursing, see their chronic cases comparatively seldom, and are, by force of circumstances, required to use a higher narcotic per capita with these patients than they would use were these unfortunates in hospital beds. Things are far from ideal in general medical practice.

Statistics are collected fairly readily from the more capable and up-to-date physicians, and we find that at least 60 per cent. of the physicians in Pennsylvania are getting along on a per capita of 4 grains of opium (estimating all opium educts on an opium basis) for 700 persons in their practices—sick and well, chronic and incurable cases, postoperative and aged. This is not far from the hospital basis, fairly estimating all factors, and may be considered a fair and proper basis for the average physician of capacity. We consider it a creditable record.

Our recent figures, however, show a per capita, averaging the *whole* medical profession in the state, of at least 15 grains of opium a year for every person in the state. This is five times the hospital per capita and counting the year's drop of approximately 30 per cent. from the bureau report of August, 1919. These figures for the whole profession are most conservative, as the average per capita of opium going through legitimate and legal channels is 24 grains a year. This leaves a per capita of 9 grains a year to be accounted for by dentists, veterinarians, osteopaths, "patent medicines" and other exempt preparations, and wastage.

The inference is obvious that the less competent members of the medical profession must be credited with a per capita far in excess of that credited to the more competent physicians. Our records of individual purchases show that about 3,600 physicians run markedly above a per capita of 4 grains a year, as estimated on the basis set forth in this paper. Yet comparatively few physicians run over a per capita of 15 grains a year; certainly not more than 600 of them. About 250 have been using exceptionally large amounts, and these are the men catering to drug addiction or simply carrying addicts along on the discredited ambulatory reduction treatment. These 250 men are responsible for a grossly undue amount of narcotics that raises the whole average of the state to what it is. If they dropped out and none took their places, probably the per capita professional average in the state would be cut in half, at least, and still allow for many honorable and more or less incapable physicians to run a per capita of 10 to 15 grains.

This excess baggage in the narcotic field can easily be accounted for by a simple estimate. An addict to morphin will very commonly take 10 grains a day, or 3,650 grains in a year. Physicians often doubt whether any addict they personally know takes this much; they think they know that 4 grains a day is the limit, but they do *not* know, as this bureau does, that these very addicts are procuring supplies from two or more sources at the same time.

Pennsylvania Hospital, in Philadelphia, treated 17,726 patients, according to the report rendered, and used 2,458 grains of morphin in a year. The University Hospital treated 24,212 patients and used 1,248 grains of morphin. Hahnemann Hospital treated 20,742 patients and used 2,063 grains of morphin. West Penn Hospital, in Pittsburgh, treated 8,592 patients and used 2,890 grains of morphin. One addict using 10 grains a day consumes in a year more morphin than is used by any one of these large hospitals. The

average usage of these four large hospitals is 2,165 grains in a year. One addict taking 6 grains a day will use that much in a year.

Philadelphia General Hospital, inclusive of its department for the insane, uses about 20 ounces of morphin in a year, treating 23,900 patients. Five morphin addicts, each taking 6 grains a day, will use that much morphin in a year. Many physicians are carrying along, on the reductive ambulatory treatment, that many morphin addicts, and supplying them as much morphin as suffices for this large hospital. This is the sort of thing that runs up the professional per capita usage of morphin in Pennsylvania.

One heroin addict, a woman in Philadelphia under the care of a reputable physician, received on prescription 4,320 grains of heroin in 1919, and she took all of it. The combined usage of heroin in all of the public hospitals in Pennsylvania, excepting Philadelphia, Reading and Lancaster, was only about 3,000 grains.

Despite the fact that the public hospitals in Philadelphia use more heroin than do those in the state at large, the total usage in these Philadelphia hospitals is only slightly over 12,000 grains in a year. Yet there recently came to my desk a report on A. T., a white man, aged 28, an addict to heroin and cocain for eleven years, who procured in Philadelphia during the last year from various sources 6,570 grains of heroin (18 grains a day). That is more than half as much as all of the public hospitals in Philadelphia used in the year. Three heroin addicts in Philadelphia, of the many reported, consumed as much heroin in 1919 as did all of the public hospitals of the city combined. Needless to say, this bureau took these cases in hand and served notices on the physicians involved to cease such prescribing. These extreme instances are cited to show why the professional per capita is high, clearing the hospitals and the great majority of the physicians of all blame, but revealing a serious lack of knowledge, ethics and honor among a small minority of physicians who are a menace to the public health.

Sometimes there is a serious municipal problem to face, owing to careless or discredited physicians making drug addicts and maintaining the addiction of the old ones. The twenty-seven largest hospitals in Philadelphia, all combined, use about 90 ounces of morphin in a year; yet one town of 15,000 people in Pennsylvania, and having about fifty addicts carried along by three physicians, used about 200 ounces of morphin in a year for them alone, while the excellent hospital there, treating 1,651 patients in the same year, 1919, used less than 2 ounces of morphin, and the community at large used a rather low per capita. Yet this community has many estimable physicians, an active medical society and a good city government that deplores the fact that a few physicians have brought so much woe to the community.

RECOMMENDATIONS

This is a broad survey, as accurate as the nature of the problem faced has, thus far, made practicable. Permit a few recommendations.

1. There should be more and better rural hospitals.

2. Physicians whose training is defective should be aided to a higher standard of efficiency.

3. The importation and distribution of narcotic drugs for legitimate purposes should be, in my view, under the care of a government bureau; but no government should, through subsidies, etc., participate in the profits of the opium business.

4. Proper limits should be placed on the amounts imported and distributed to physicians, pharmacists, and the like, reducing the amounts through a series of years, finally reaching the actual basis of need.

5. Smuggling of narcotics should be made an offense punishable by imprisonment for not less than five years, never by a mere fine.

6. The internal revenue taxation of narcotics and dealing therein, as established in the United States, should be kept up as a necessity in tracing importations, distribution and usage.

7. Cannabis, hyoscyamus, hydrated chloral, and a few synthetic drugs should come under the narcotic-control laws, and no narcotic drugs whatsoever should be permitted in proprietary preparations and products sold without prescription. Exemptions lead to abuses.

8. Drug peddling in every shape and form should be sternly met with heavy jail sentences, never by the imposition of a mere fine.

9. The so-called ambulatory reduction treatment of drug addiction is rarely of any value and should not be permitted under the laws designed to control addiction; but the drug addicts should, in some way be hospitalized or humanely taken care of in proper institutions.

APLASTIC ANEMIA AND RELATED CONDITIONS

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Aplastic anemia is fortunately a rare disease. It has, however, two significant aspects. In the first place, it is theoretically important because an appreciation of it helps to an understanding of other anemias. In the second place, it has practical importance as the type of a group of diseases which, taken as a whole, are by no means infrequent. Moreover, they possess a peculiar urgency, for diseases of this class cause most of the so-called uncontrollable hemorrhages.

It is important to understand the theoretical relationship of aplastic anemia to other diseases of the anemic group. Anemia means decrease in the total amount of hemoglobin contained in the circulating red corpuscles. It is usually associated with a numerical decrease in the red cells themselves.

At a given moment the state of the blood as regards hemoglobin and red corpuscles is the resultant of two opposed forces—that of production balanced against that of destruction or loss. Every individual is constantly losing red cells by minor hemorrhages from the skin and mucous membranes, and a still greater loss is going on constantly through destruction inside the body. The best evidence of this is the constant flow of bile pigment, a derivative of hemoglobin. So rapid is this destruction that the red cell has been found to have a life of only a few weeks. This constant loss must be compensated by an equally constant formation of new corpuscles. The production of red corpuscles is a function of the bone marrow. The normal marrow of the adult consists mostly of fat, this portion being inactive. There are, however, in the flat bones, the bodies of the vertebrae and the ends of some of the long bones, depôts of red marrow, and it is here that the production of red corpuscles is constantly taking place.

Most of our ordinary benign anemias are primarily due to increased destruction or loss of blood. In consequence of this the yellow marrow changes to red marrow more or less completely, and along with this increase of active marrow, there is an increase in the formation of blood cells. In benign and ordinary secondary anemias this increased productivity is sufficient so that when the cause is removed, it sooner or later restores normal conditions. In pernicious anemia we have the same intense hyperplasia of the marrow, and the patient dies, not because blood production fails, but because the destructive process is so intense and continuous that production fails to catch up. I do not mean to say that the marrow in pernicious anemia is like normal red marrow. It is far from normal and it produces cells that are far from normal; nevertheless, the element of overproduction is present during the greater part of the disease and in the greater number of cases.

In aplastic anemia this compensatory overproduction fails to take place. This is the very essence of the disease—failure on the part of the marrow to produce even the normal number of red corpuscles. Instead of the yellow marrow becoming red, the entire marrow becomes yellow or gelatinous or otherwise modified and functionless.

The view has often been expressed that aplastic anemia is merely pernicious anemia without regenerative changes in the marrow. We do not hear this so frequently of late, and certainly there seem to be radical reasons for rejecting it, at least in the majority of cases. Pernicious anemia is the result primarily of increased blood destruction, and it is perfectly possible to demonstrate by a quantitative study of the bile pigments eliminated that this increased destruction takes place. Similar studies in aplastic anemia usually show no evidence of increased blood destruction. To be sure, pernicious anemia may end in a terminal phase of aplasia, but we may say that the great majority of cases of aplastic anemia have nothing whatsoever to do with the pernicious form.

There is much more reason for believing that aplastic anemia may result from some of the factors usually causing ordinary secondary anemia. In other words, hemorrhage or severe sepsis may result in exhaustion of the marrow; they hit the marrow so hard that it is no longer able to work, and aplasia supervenes. It must be remembered, however, that hemorrhage is a prominent and often an early symptom of aplastic anemia, and one must not put the cart before the horse. Still, there are cases in which there seems to be little doubt of the causative relationship of hemorrhage.

Poisons like benzene (benzol, C_6H_6) and some of the substances used in the production of higher explosives unquestionably may produce, both clinically and experimentally, an anemia that is at least closely allied to the form we are studying. In leukemia again we often find, mixed up with the changes in leukocytes, numerical and morphologic alterations in the red corpuscles and platelets similar to what is seen in aplastic anemia. In these cases it is probable that the normal marrow has been displaced by the overgrowth of the tumor-like leukemic tissue. Ordinarily the picture is clear enough, as it is so completely dominated by the changes due directly to the leukemia; but in aleukemic phases of the disease, in which the characteristic hyperleukocytosis is absent, the diagnosis may be difficult or impossible.

After we have subtracted all these secondary forms of aplastic anemia, there still remains a large residue to which the word idiopathic must for the present be given. The marrow from some unknown cause stops work and the patient becomes anemic from the ordinary normal processes of blood destruction.

The most striking clinical feature of the disease is, of course, the anemia. It is usually extreme in degree from an early stage and it progresses with great rapidity, as might be expected of a disease in which the blood-forming organs are so profoundly altered. The next most important symptom is the tendency to bleed. Hemorrhage from the mucous membranes of the nose and throat and rectum is common, and subcutaneous hemorrhages are present in almost every case. I have seen the disease associated with what appeared to be noma. Whether the noma was primary and the aplasia due to marrow injury from the toxemia, or whether the anemia was primary and the noma resulted from disturbance of antibacterial functions, I do not know.

The blood picture is clear and definite. So far I have spoken only of the red cells and of the marrow deficiency in respect to their production; but the production of red cells is not the only function of the marrow. In addition, this tissue produces platelets and certain of the leukocytes. In aplastic anemia the marrow is depressed in all its functions, and all three must be taken into consideration. As regards the red cells, I have said that they are reduced and that the anemia advances rapidly. The hemoglobin is, of course, also decreased, and it is decreased in about the same proportion so that the color index does not vary far from 1. The tendency is to a slightly low index. Qualitative changes in the red cells, as seen in stained smears, are unexpectedly slight, considering the severity of the anemia. Nucleated reds are usually absent. Abnormalities in color, size and shape are also slight. The reticulated cells, presumably young forms, are usually decidedly below normal. These changes are what one would expect in anemia due simply to cessation of blood production. New cells, normal or abnormal, are not produced. Those that remain are about what they were in the first place. To be sure, in some cases small numbers of blasts and other abnormal reds may appear, probably owing to the fact that a few islands of active marrow remain. They are like the few men who remain in a factory when all the others are on strike. They labor valiantly, but turn out a product which is incomplete and abnormal. In my opinion, the presence of these few changed forms is not to be considered as evidence that the case was originally pernicious anemia.

The white corpuscles are, as might be expected, numerically decreased. Smears show that the deficiency does not involve the large mononuclears (endothelial leukocytes) or the lymphocytes, but that it is confined to the polymorphonuclear neutrophils, eosinophils and mast cells. The reason for this is obvious. The decrease involves only such cells as are produced in the marrow. Lymphocytes and large mononuclears are produced elsewhere. Therefore they are not involved. The degree of decrease in the polymorphonuclears is very striking. Normally their absolute number is in the vicinity of from 3,000 to 6,000 per cubic millimeter. In aplastic anemia they are counted rather by hundreds, and I have seen cases in which it was necessary to make a half hour's hunt before a single one could be discovered.

The platelets are also decreased. Their average number in the normal individual is about 300,000. In this disease they may be reduced to a few thousand. The reduction is obvious at a glance at a well-stained smear.

The hemorrhages are explained mainly by the decrease in platelets, but there is also a decrease in prothrombin, perhaps itself a derivative of platelets. Coagulation time is prolonged. The clot, when it forms, does not retract. Bleeding time, that is to say, the duration of hemorrhage from a small cut, normally one or two minutes, is greatly increased. Both the increased bleeding time and the nonretractile clot are inevitable results of marked decrease in the platelets.

The prognosis in aplastic anemia is bad. Most patients die in a few weeks. Remissions, as a rule, do not occur. I have reported one case in which a perfectly clean-cut remission did take place, and one or two similar instances have appeared in the literature since. Repeated transfusions undoubtedly prolong the duration of the disease, but there is no evidence that they modify the ultimate result.

Aplastic anemia is to be regarded as the most marked form of deficiency of the marrow, involving all three of its functions. But there are forms of partial failure, the most important of which is purpura hemorrhagica (Werlhoff's disease). Of all conditions that cause uncontrollable hemorrhage, purpura hemorrhagica is probably the most common. Its importance to the internist is obvious, and it is equally obvious that it is important to the surgeon and more particularly to those who operate on the nose and throat. It is probably a form of aplasia involving only the platelet-producing function of the marrow. The platelets are greatly decreased, as is evident on counting or on a mere inspection of the blood smear. I say it is *probably* due to marrow deficiency. At least it is today almost uniformly considered to be of this nature. Lee and Robertson have, however, produced a similar condition experimentally by injections of antiplatelet serum. Apparently it makes no difference how the blood is deprived of its platelets. If they are not there, purpura hemorrhagica results.

In consequence of lack of platelets, certain definite symptoms of impaired coagulation result, namely, prolonged bleeding time and nonretractile clotting. There is no change in the coagulation time.

The red corpuscles in purpura hemorrhagica are usually decreased, as one might expect in a disease characterized by excessive bleeding. Here, however, the anemia is a consequence of bleeding and, so far as red corpuscles are concerned, the marrow reacts normally and we have instead of aplasia every evidence of overproduction of red cells. Blasts, abnormalities in size, shape and color, increase in reticulated cells, and all the other changes that go with an ordinary posthemorrhagic anemia may be found. The white corpuscles, too, are normal. Indeed, there may be an increase of polymorphonuclear neutrophils such as is so often seen in young persons after hemorrhage. In other words, there is no aplasia either of the red or white cell-producing functions of the marrow.

It will be seen that in purpura hemorrhagica we have a remarkable dissociation of the functions of the marrow, only one of them—that of producing platelets—being affected. Such definite and clean-cut aplasia of the erythrogenic or leukogenic tissues alone, if it occurs at all, is extremely rare. Türk, in 1907, described a case of sepsis in which the polymorphonuclear leukocytes almost wholly disappeared, the red cells remaining normal. Naturally, at that date little was said of the platelets. In benzene poisoning the effect on the leukocytes is earlier and decidedly more marked than on the reds or platelets. The anatomic relationship of the marrow cells having to do with the three functions is so close that, except for the platelets, one is rarely much affected without involving the others.

Mixed and intermediate cases are more frequently seen. Minot has reported cases of purpura hemorhagica with chronic anemia of a sort suggesting deficient marrow function. I have recently had two somewhat similar cases under my care. In one a diagnosis of aplastic anemia was made five years ago. The patient was referred to me by an ophthalmologist because of hemorrhages into the vitreous. It was undoubtedly purpura hemorrhagica, but in addition to great decrease in platelets, there was an anemia far beyond what the hemorrhages would account for. There was a leukopenia involving principally the polymorphonuclear neutrophils, and the reticulated red cells were low. Obviously this was hemorrhagic purpura plus insufficiencies of the other marrow functions, though, of course, the marrow was hypoplastic rather than aplastic. Perhaps the expression "hypoplastic anemia" would cover the whole picture.

Various combinations of marrow inefficiency may occur, so that we must individualize and study each patient on his own merits. If this is done, it is usually easy to understand and classify the case, but it is often impossible to assign to it the name of a recognized disease.

The treatment of this group of diseases practically narrows itself down to transfusion—about the only thing that will do the least bit of good. Transfusion replaces red cells, and lessens for a time the degree of anemia. It stops hemorrhages by replacing the platelets. Its effect on both of these elements will be about as durable as the elements themselves, that is, the effect on the red cells will last about a month, but the effect on the platelets will last only a few days.

Does it ever give more lasting benefit? Will the marrow under its influence sometimes resume its function? Unfortunately, in aplastic anemia, the answer must be "No." I recently had under my care at the City Hospital a little girl on whom we made nine transfusions. The first ones gave surprisingly long periods of freedom from hemorrhage. Then we were tempted to be hopeful. Toward the end, however, transfusions seemed to have not the slightest effect even in temporarily controlling the bleeding. One might expect better results in cases in which aplasia has followed acutely after a single hemorrhage, or in such cases as those due to benzene poisoning, as the cause is not continuous. If one could tide over the immediate emergency, possibly the marrow might ultimately resume its functions; but there is not evidence sufficient to warrant the statement that this will in fact occur.

In hemorrhagic purpura the condition is somewhat more hopeful. The aplasia is partial and the cases are more frequently chronic. They tend to occur paroxysmally. If platelets are supplied through a generous transfusion, the hemorrhages can almost invariably be stopped for a few days. If we can tide the patient over these days, the immediate emergency may be relieved, and a certain number of them will probably recover. I have seen at least one case in which early recurrences required transfusion. The attacks became less severe and less frequent, and when last heard from the man had been nearly a year without one.

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ACUTE APPENDICITIS

A REVIEW OF FIVE HUNDRED AND EIGHTY-FOUR CONSECUTIVE CASES *

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This paper is an analytic study of the mortality and complications of 584 consecutive cases of acute appendicitis, with special reference to the late results of 500 cases in which the patients were followed from three months to four years after leaving the hospital. The main purpose in publishing these results is to emphasize the importance of early operation in decreasing mortality, complications and unfavorable sequelae. The number of late cases received by us, as shown by the fact that 206 (35 per cent) of the patients had either developed localized abscess or diffuse spreading peritonitis before admission, justifies this renewed plea for early operation.

TABLE 1.—MOST IMPORTANT COMPLICATIONS AND SEQUELAE

	Nondrained Cases		Drained Cases	
	No.	Per Cent.	No.	Per Cent.
Secondary abdominal abscess	4	1.6	21	6.2
Postoperative hernias	4	1.9	49	15.0
Average days in hospital	10		19	

The total mortality of the series of 584 cases is twenty-five, or 4.2 per cent. The analysis shows strikingly the much lower mortality in the early cases, which can be closed without drainage, over the late cases that must be drained. Two hundred and forty cases were closed without drainage; in these there were two deaths, a mortality of 0.83 per cent.; there were 344 drained cases with twenty-three deaths, a mortality of 6.8 per cent. A study of the most important complications and sequelae reveals similar findings (Table 1).

TABLE 2.—MORTALITY BY DECADES

Age	Cases	Deaths	Mortality Per Cent.
From 0 to 10	65	7	10.9
From 11 to 20	201	5	2.4
From 21 to 30	182	2	1.1
From 31 to 40	83	7	8.5
From 41 to 50	43	1	2.3
From 51 to 60	6	2	33.3
From 61 to 70	4	1	25.0

All patients have been operated on by the members of the staff of the Second Surgical Division, and, as a rule, a definite routine has been followed. The McBurney incision is used in the majority of cases. The stump of the appendix is inverted when possible and covered with a purse string suture, reinforced by a Lembert suture, both of catgut. If the cecal wall is indurated, the stump is ligated and cauterized. It has been the general principle to make the incision in the fascia and muscle comparatively small in order to diminish postoperative sloughing in the drained cases; when the incision is large it is necessary to suture the aponeurosis, thereby burying foreign bodies and interfering with the blood supply of a tissue easily subject to bacterial infection. When fluid is found it is removed by the suction apparatus, care being taken to traumatize the intestine as little as possible.

In the majority of cases, two cigaret drains are used, the longer placed directly to the area to be drained, and the shorter just into the peritoneal cavity, but not to the focus. The short drain is removed at the end of twenty-four hours, and the long one loosened. We hope, thereby, to drain around the cigaret rather than through it; when suppuration is profuse, the long drain is removed from forty-eight to sixty hours after operation, and a tube inserted. We believe that fewer fecal fistulas occur by this method than if tubes are inserted at the time of operation. Drainage is employed when there is pus or when oozing is likely to occur. In the cases in which drainage is employed, if the incision is small only the peritoneum is united about the drain, no sutures being placed in aponeurosis, muscle or skin.

TABLE 3.—CASES IN GROUP 1

	Number
Nonadherent	177
Adherent	407
Gangrenous	237
Perforated	116
Retrocecal	113

Of the patients, 211 (36.3 per cent.) were female, with eleven deaths, a mortality of 5.2 per cent.; 372 (63.7 per cent.) were male, with fourteen deaths, a mortality of 3.7 per cent. This shows a distinct difference from the chronic appendicitis cases. In our series of 446 chronic cases, 61.9 per cent. are female and 38.1 per cent. male. One would assume, therefore, that either chronic appendicitis in women does not as a rule become acute, or that the diagnosis of chronic appendicitis in women suffering from right lower quadrant pain is frequently incorrect. These figures, I believe, correspond with the usual published statistics.

TABLE 4.—CASES IN GROUP 2

	Number
Without adjacent peritoneal reaction	246
With free fluid	127
Acute diffuse spreading peritonitis	73
Abscess	133

By decades we see rather startling changes in the mortality (Table 2). Our figures correspond with those of Farr and others, who have shown that the mortality is higher in children than in adults. Between the ages of 10 and 30, the mortality is about 1.8 per cent.; as we pass into middle age the mortality again increases.

TABLE 5.—IMMEDIATE POSTOPERATIVE COMPLICATIONS

	Number of Cases	Per Cent.	Deaths
Pneumonia	15	2.5	4
Fecal fistula	21	3.6	2
Ileus	5	0.8	4
Femoral phlebitis	3	0.5	0
Peritoneal abscess	25	4.2	1
Subphrenic abscess	2	0.3	1

A classification of the gross pathology, that is, the operator's description at time of operation, is of necessity rather indefinite, because it is difficult to recognize the entire pathologic condition through a small incision. Arbitrarily I have separated this into two groups: (1) the pathology of the appendix itself, and (2) the reaction of the peritoneum. There are four subdivisions of the latter group:

* From the Second Surgical Division of the New York Hospital.

(*a*) without reaction of the adjacent peritoneum but with acute inflammation of the appendix itself; (*b*) with free fluid—the cases in which serum or cloudy fluid escapes on opening the peritoneal cavity, but in which there is no general peritoneal reaction; (*c*) with acute spreading or diffuse peritonitis; (*d*) with abscess.

ABDOMINAL COMPLICATIONS OF GROUP 2

(*a*) In the subdivision without adjacent peritoneal reaction, infection of the wound occurred in thirteen cases (5.2 per cent.); hematoma, one case; fecal fistula, one case (an adherent appendix drained on account of oozing). One patient developed a pelvic abscess, which was drained at a second operation.

TABLE 6.—MORTALITY IN GROUP 2

	Cases	Deaths	Mortality Per Cent.
Without adjacent peritoneal reaction	246	2	0.8
With free fluid	127	5	3.9
Acute diffuse peritonitis	73	13	17.8
Abscess	133	5	3.7

There was one death due to the development of acute diffuse peritonitis on the third day after operation. Seven postoperative hernias (2.8 per cent.) developed after the patients had left the hospital.

(*b*) In the cases with free fluid, seventy-seven were drained and fifty closed without drainage. Six secondary abdominal abscesses were incised and drained, three having been drained and three not drained at the primary operation. Five deaths occurred in cases in which four had been drained and one not drained. There were seven postoperative hernias (5.5 per cent.).

(*c*) There were seventy-three cases with acute diffuse or spreading peritonitis. Seven abdominal collections of pus (5.2 per cent.) were later incised and drained. There was one thoracotomy for subphrenic abscess; there were five fecal fistulas (6.8 per cent.) and three cases of ileus (4.1 per cent.). There were thirteen deaths. Eleven postoperative hernias (15.6 per cent.) have developed since the patients left the hospital.

TABLE 7.—SECONDARY COMPLICATIONS FOLLOWING OPERATION AND CONTRIBUTING TOWARD FATALITY

	Cases
Acute diffuse peritonitis developed after operation	2
Ileus	4
Pneumonia	4
Fecal fistula	2
Subphrenic abscess	1

(*d*) There was abscess in 133 cases. Nine secondary collections of pus in the abdomen (6.7 per cent.) were drained. Ileus occurred twice, with one colostomy for its relief. There was fecal fistula in fifteen cases (11.2 per cent.). There were five deaths. Twenty-four (18.7 per cent.) ventral hernias have since developed. There were eleven patients from whom the appendix was not removed at the primary operation. One patient died, one was later drained for a secondary collection, and two at a subsequent time had their appendixes removed with repair of sinus or hernia at another hospital. Three other patients developed ventral hernias.

DEATHS

There were twenty-five deaths in this series, or a mortality of 4.2 per cent. Twenty-three patients died in the hospital. Of the two cases in which death occurred after leaving the hospital, one patient had been sent to a convalescent home, apparently well, but he developed acute general peritonitis while there, and was brought back to the hospital, and a laparotomy with drainage was performed, but he died three days later. The other patient, a child, with a fecal fistula, was taken from the hospital against advice on the tenth day and died twenty days later.

Two patients died after closure without drainage: One patient, aged 24, developed acute diffuse peritonitis on the third day, and died two days later. The other, a man, aged 31, with free fluid at operation, contracted a pelvic and a subdiaphragmatic abscess, both of which were drained; but he died of gradual inanition and sepsis.

DATA OBTAINED BY MEANS OF FOLLOW-UP WORK

Of the 559 patients that survived operation, 500 (89.4 per cent.) have been followed from three to sixty months, the majority for fifteen months. In following our patients we have tried to ascertain the general state of health; any complaints; whether there is gain or loss of weight, and how soon they were able to return to their normal economic activity.

On physical examination, notes are made of the local and general conditions.

Weak Wounds.—Weak scars, in which there was deficiency of the external oblique aponeurosis, were noted in thirty-four cases; these are often potential hernias; but a number have been followed from three to four years without any observed change, and others reported weak at the first examination have been reported firm at a subsequent time.

TABLE 8.—AGE INCIDENCE OF HERNIA

Age	Cases	Hernia	Per Cent.
From 0 to 10	49	5	17.1
From 11 to 20	180	10	5.5
From 21 to 30	157	12	7.7
From 31 to 40	70	7	10.0
From 41 to 50	39	11	28.2
From 51 to 60	4	1	25.0
From 61 to 70	1	0	0.0

Postoperative Hernias.—In compiling the statistics on postoperative hernia the percentages have been taken from the 500 followed cases, as it would be unfair to base any assumptions on the patients not followed. This is too often done in similar analyses. There were forty-nine hernias (9.8 per cent.), thirty-five (10.8 per cent.) among 323 male patients, and fourteen (7.9 per cent.) among 177 female patients.

It is evident that the formation of hernias is influenced by poor musculature and by lowered resistance, as hernia is more frequent in infants and after 40 years; moreover, as the years from 11 to 40 are the most active, it is difficult to assume that muscular exercise and strain following operation are marked contributing factors toward the production of hernia.

Among 205 cases not drained there were four hernias (1.9 per cent.); among 295 cases drained, forty-five hernias (15 per cent.).

Cases not Drained: One patient had a hematoma in the wound, which was opened and the wound healed by granulation; two patients developed infected wounds, which were treated by incision and drainage; one case apparently healed by first intention, and the patient left the hospital on the tenth day.

Cases Drained: In 258 cases in which the McBurney incision was employed there were thirty-eight hernias

(14.7 per cent.); in thirty-seven cases with the right rectus incision, seven hernias (21.6 per cent.). While this series is too small for strict deductions, it shows, nevertheless, a distinct increase of hernia in the right rectus over the McBurney incision.

The average time the patients who developed hernia spent in the hospital after operation was twenty-seven days; thirty-two (65.3 per cent.) left the hospital within four weeks: five between seven and fourteen days; thirteen between fifteen and twenty-one days, and fourteen between twenty-two and twenty-eight days. It has been difficult to determine whether early return to work has been a factor. Seventeen patients stated how soon they returned to work after leaving the hospital, the average time being 5.8 weeks, which is slightly less than the average of all cases of acute appendicitis followed (i. e., 6.5 weeks). Nine of the seventeen patients (53 per cent.) returned to work within four weeks after leaving the hospital.

That prolonged drainage is an important factor is shown by the fact that following appendectomy, nine out of the forty-nine patients that developed hernia had had their wounds reopened and drained for secondary abscesses in the abdomen; and, moreover, that in the fourteen cases in which the appendix was not removed at the primary operation for fear of breaking up the abscess cavity wall and contaminating the peritoneal cavity, or on account of the serious condition of the patient, five (35.0 per cent.) developed hernias.

Repair of Hernia.—Twenty-two patients were operated on for postoperative hernia by us, with no recurrence. Two patients were operated on at other hospitals, with satisfactory results. No mortality occurred resultant to the operation for repair of hernia. One case of intestinal obstruction occurred after the repair of hernia; laparotomy was performed in this case, a band of adhesions was freed, and a satisfactory recovery took place.

General Health.—This was classified as good or improved in 476 cases (95.2 per cent.); fair in fifteen (2.6 per cent.), and poor in eleven (2.2 per cent.).

In the fair cases, six patients complained of abdominal pain; two of obstinate constipation, and two of pain in the region of the gallbladder; two had chronic endocarditis, and one, chronic pulmonary tuberculosis.

In the poor cases, seven patients complained of abdominal pain; one had ulcer of the duodenum; one, rheumatism; one repeated fracture of the humerus, and one, intestinal obstruction.

Cases in which operation was performed for other conditions after the patient had left the hospital were: adhesions of the peritoneum, one case; intestinal obstruction, one; empyema, six weeks after leaving the hospital, one; mastoid, seven weeks after leaving the hospital, one case.

Late death, several weeks after the patient left the hospital, occurred in one case of chronic pulmonary tuberculosis, and in one case of acute endocarditis.

Digestive Symptoms.—On admission, forty-three patients complained of digestive disturbances of considerable import and lasting for various periods of time before the onset of the acute attack; thirty-five out of the forty-three (81.4 per cent.) were cured by operation.

Constipation: Seventy-four patients gave a history of chronic constipation; forty-nine (66.2 per cent.) were relieved of the constipation. On the other hand, twenty patients who, previous to operation, had not complained of indigestion, have had some disturbance of digestion for various lengths of time, and twenty-nine were more or less constipated. The twenty patients developing digestive disturbances are evenly divided between the drained and the nondrained cases. It is noticed, however, that the bulk of nondrained cases in which indigestion is complained of are in children. To a certain degree these figures are inaccurate, because when patients are admitted they are suffering acute pain and they are likely to minimize past digestive disturbances, while those returning to a follow-up clinic will emphasize any disturbance of health.

Weight.—As appendicitis is largely a disease of young adults, it is natural that a gain in weight should occur. Our series shows that eighty-one (16.2 per cent.) have mentioned a gain of weight, that thirteen (2.6 per cent.) have complained of loss of weight, while in the remaining cases the weight has been about stationary or has not been mentioned. Several patients have gained from 20 to 30 pounds.

Economic.—Note has been made of the economic ability in 377 cases (75 per cent.). Of this number, nine patients (2.3 per cent.) claimed that they were incapable of working, and six (1.6 per cent.) were capable of doing only light tasks, while 362 (96 per cent.) returned to their former occupations. One hundred and fifty-four stated how soon they returned to normal work after leaving the hospital. The average time was 6.5 weeks, although eighty-eight (57.1 per cent.) returned to work within four weeks. This group may be thus subdivided: Returned to work within one week, eleven; between one and two weeks, twenty-five; between two and three weeks, twenty-five, and between three and four weeks, twenty-seven.

COMMENT

The review of a series of cases is in reality taking a list of stock. There are certain questions we ask ourselves in regard to our results, and, although we may have assumed that we had few complications, an analysis often changes our entire conception of the work accomplished. Years ago we were taught that if operation was not performed at the onset of the attack, it was wise to wait until the formation of the abscess. From the number of late cases we receive, one might assume that many members of the profession still believe this precept; but a study of our abscess cases shows that there is no decrease in mortality over acute appendicitis with free fluid, while the secondary complications and late sequelae are greatly increased with abscess.

As a matter of economic efficiency, a patient spends much less time in the hospital and is returned to his normal occupation in a much shorter time if his acutely diseased appendix is removed at the earliest possible moment.

Regarding the omission of drainage in questionable cases, the fact that two of our patients who died (8 per cent. of the entire mortality in our series) might have been saved by drainage emphasized the old dictum, "When in doubt, drain."

Postoperative hernias occurred in 15 per cent. of drained cases, as revealed by an efficient follow-up system. The recognition of this high rate of incidence will be an incentive to every surgeon to attempt to reduce these figures in the future.

Prolonged drainage seems to us the greatest factor toward the production of postoperative hernia. The average time that these patients were kept in the hos-

pital, twenty-seven days, as compared with nineteen days, the average of all the drained cases, suggests that it is not a question of getting the patient out of bed too soon; and as the percentage is relatively low between the years from 11 to 30, muscular exercise and hard work following operation are smaller factors than we had assumed. Our endeavor, therefore must be directed toward small incisions with adequate drainage, protection being given as far as possible to the aponeurosis of the external oblique, which is susceptible to infection and is prone to slough when traumatized.

We have for some time been using the Carrel-Dakin technic in our drained cases, beginning about the fourth day after operation, and have performed a number of secondary closures with suture of the muscles. We believe that this will reduce the number of hernias in the future.

CONCLUSIONS

1. The operation should be performed as soon as the diagnosis is made. Delay increases the mortality and postoperative complications, and prolongs convalescence.

2. Questionable cases should be drained. The possibility of hernia is better than an occasional fatality.

3. Postoperative hernia occurs more frequently than is commonly supposed after drainage, i. e., 15 per cent.

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HYDROGEN-ION CONCENTRATION OF THE CONTENTS OF THE SMALL INTESTINE

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MINNEAPOLIS

Our object in this paper is to give the results of our study of the acidity of the contents of the small intestine, and to discuss the causes of the prevalent erroneous impression that the intestinal content is alkaline. In order to do this it is necessary to go into the history of the subject. The reaction of the intestinal contents depends on the relative proportions of its ingredients: foods, saliva, gastric juice, pancreatic juice, bile and succus entericus. Most foods are slightly acid,[1] the saliva fluctuates about the neutral point, the gastric juice is about one tenth normal hydrochloric acid, the bile is slightly acid (Foa, 1905), the pancreatic juice is alkaline, and the succus entericus turns litmus paper blue. Since there seems to be a tendency to deduce the reaction of the chyme and chyle from their components, a history of all the digestive juices bears on the point in question.

Early writers supposed the process of digestion to be a fermentation similar to that occurring outside the body, and ascribed the acidity of the stomach contents to a similar process as in the formation of vinegar. Van Helmont,[2] in 1648, recognized a distinction between these processes, for he says that if the gastric ferment were only an acid, vinegar alone would be able to digest all our food. He says, further, that the acid chyle on passing into the duodenum changes from an acid into a salt. Boerhaave,[3] in 1708, denied the acidity of the gastric juice. Haller,[4] in 1765, asserted that saliva and bile are neither acid nor alkaline, and supposed the acidity of the stomach to be due to fermentation. The gastric juice of birds turned blue paper red in Reaumur's [5] experiments, 1752. Spallanzani [6] pointed out that most samples of gastric juice that had been collected up to his time were contaminated with bile regurgitated from the duodenum, and that he was able to collect pure gastric juice from dogs. Scopoli analyzed a sample for him and found that it precipitated silver chlorid (luna cornea) from a silver solution. Spallanzani never convinced himself that the *acid* in the stomach was not due to acetic acid fermentation, but he said *digestion* was not alcoholic, acetic or putrid fermentation, but was a solution of the food by other means. Similar results to those of Spallanzani were published at the same time but independently by Stevens [7] of Edinburgh, in 1877; and John Hunter [8] had already (1772) determined that the gastric juice is acid in a great variety of animals. Carminati, in 1785, showed that the presence of food in the stomach caused acid to be secreted.

It seems evident from the foregoing that nothing very positive might be said in a textbook about the reaction of the digestive tract. The third English edition of Haller's "First Lines of Physiology," [9] published in 1801, gave a very vague account of digestion. One correct observation is reiterated, however, and that is that bile and pancreatic juice frequently regurgitate into the stomach. Richerand's Physiology,[10] 1808. gives but very little better account. In 1824, Prout [11] showed that the acid in the stomach is hydrochloric acid. The French Academy of Science offered a prize for the best work on the chemistry and physiology of digestion. In 1826, two papers were submitted in competition for the prize, the first by Lassaigne and Leuret and the second by Tiedemann and Gmelin.[12] The last named authors found that saliva contained bicarbonates that caused it to effervesce on addition of acid; the secretion flowing from a tube in the pancreatic duct reddened litmus at first but later became alkaline; the contents of the small intestine of starving animals was acid but became neutral as the ileocecal valve was approached, and the cecum was acid. They found that the intestinal secretion is alkaline but not enough to neutralize the intestinal contents. In Dunglison's [13] "Human Physiology," 1838, the foregoing authors are thus referred to: Leuret and Lassaigne had found that diluted vinegar applied to the mouths of the bile duct and pancreatic duct caused a discharge of bile and pancreatic juice, and that the acid chyme must necessarily induce the same effects, and Tiedemann and Gmelin suggest that the soda of the bile unites with the acid of the chyme, and the contents of the ileum become less and less acid; Magendie collected gas from the small intestines of three decapi-

1. McClendon, Myers, Culligan and Geydesen: J. Biol. Chem. **38**: 535, 1919.
2. Van Helmont: Ortus Medicinae, 1648.
3. Boerhaave: Institutiones Medicae, 1708.
4. Haller: Elementa Physiologiae, 1765.
5. Reaumur: Mem. Acad. Sc. Paris, 1752.
6. Spallanzani: First memoir on digestion, 1777.
7. Stevens: Inaug. Diss., Edinburgh, 1777.
8. Hunter: Phil. Tr. Roy. Soc. London, 1772.
9. Haller: First Lines of Physiology, translated from third Latin edition, Edinburgh, 1801, p. 318.
10. Richerand: The Elements of Physiology, translated by Kerrison, Philadelphia, 1808, p. 65.
11. Prout: Annals of Philosophy, 1824, p. 117.
12. Tiedemann and Gmelin: Die Verdauung nach Versuchen, Heidelberg, 1826.
13. Dunglison: Human Physiology, Ed. 3, Philadelphia, 1838, pp. 533-537.

tated criminals, and the analysis by Chevreul showed an average of about equal parts of carbon dioxid, hydrogen and nitrogen. This last observation may be taken as indicating that the acidity of the intestinal contents may be partly due to free carbonic acid. Similar accounts may be found in Oliver's [14] "First Lines of Physiology," 1835, and Roget's [15] "Outlines of Physiology," 1839, and some of these observations are given by Hutin [16] and Broussais,[17] in 1828.

Busch,[18] in 1858, studied a patient in whom the contents of the first part of the jejunum flowed out through a fistula in the abdominal wall, and the remainder of the jejunum communicated with the outside by a second fistula. He found the intestinal secretion obtained from the second fistula to be always alkaline and to digest certain foodstuffs. The jejunal contents obtained from the first fistula emulsified fat when alkaline, but only partially emulsified it when acid. When collected after fasting it was nearly always neutral, seldom slightly acid or slightly alkaline; after feeding, it varied greatly, being acid, neutral or alkaline. The second edition of Ludwig's [19] Physiology, 1861, fails to give a clear account of the reaction of the intestine; one point, however, seems worthy of quotation, and that is that the action of the gastric juice makes the food easier to digest in the intestine. Kühne, in 1867, found that when pancreatic juice is incubated with fibrin or coagulated egg white, the decomposition products of the protein do not neutralize the alkalinity of the juice. Some textbook writers seem to have been guided by observations on pure secretions of digestive glands or mixed secretions obtained from starving animals. Dalton's [20] Physiology, 1875, refers to the alkaline reaction of the jejunal contents obtained by Bernard from a dog that had fasted twelve days.

In 1879, Ewald [21] reported a study of the intestinal contents of a patient with fistula of the ileum, stating that it was acid or neutral but never alkaline. Demant found the intestinal secretion (succus entericus) obtained from a similar fistula to be markedly alkaline. In 1891, Macfadyen, Nencki and Sieber,[22] with the aid of a grant from the Elizabeth Thompson Science Fund of Boston, studied the outflow from a fistula in the lower part of the ileum of a patient, continuously for six months. They found the contents of both ileum and cecum acid in reaction. The ileum was never alkaline, and seemed to be the more acid the greater its sugar content. On one day the sugar content rose to 4.7 per cent., and the filtered juice when titrated, litmus or cyanin being employed as indicator, was 0.03 normal acid. The acids were chiefly acetic and other fatty acids, and both optically active and inactive lactic acids. This paper seems not to have been widely read, as Foster,[23] in 1894, stated that the contents of the small intestine of dogs is acid throughout, after a diet of fat, starch or meat, but he supposed that in man the contents have probably become distinctly alkaline before they have passed far down the duodenum.

In 1905, London and Sulima [24] observed that the fluid collected from a jejunal fistula in a dog was neutral. They found that a mixture of 37 parts of bile, 83 parts of pancreatic juice and 74 parts of gastric juice was neutral. In 1906, London and Polowzowa [25] titrated the total outflow from fistulas in dogs after feeding 200 gm. of bread. The total acidity of the outflow from the duodenal fistula was 82 c.c. of tenth normal acid (average of three experiments). The average "alkalescence" from the jejunal fistula was about 7 c.c. of tenth normal alkali, and that from the ileum 57 c.c., and from the cecum, 24 c.c. Since the duodenal fistula was very close to the duodenojejunal junction, and the jejunal fistula was less than a meter lower down; and since the secretion of the intestine contains about one tenth normal sodium bicarbonate, in order to obtain the foregoing results, about 89 c.c. of it would have to be secreted in less than a meter length of jejunum, and 50 c.c. more in the ileum during the duration of the experiment (about five hours). From the observations of Boldyreff, in 1907, this quantity of secretion might seem possible to obtain. But since it is not possible to titrate a bicarbonate solution containing protein without special apparatus for driving off the carbon dioxid or with the use of an indicator of the range of methyl orange, and since no mention was made of the former, we assume that methyl orange was used, and hence the results have no bearing on the actual reaction of the intestinal contents. In 1908, London and Sulima [26] fed fasting dogs 200 gm. of ground horse flesh. In one with a jejunal fistula, the flow commenced six minutes after feeding, and was alkaline. Twenty minutes after eating, the flow from the fistula contained particles of meat and was acid to litmus paper. Eighty minutes after eating, the particles of meat virtually ceased to appear and the reaction was alkaline to litmus paper.

Cohnheim,[27] in 1907, said that the acid from the stomach is more than neutralized by the alkali from the pancreas, bile and intestinal secretion, but that the resulting alkalinity is in turn neutralized by carbon dioxid and organic acids. These organic acids arise partly from the hydrolysis of fat of the food and partly from acid fermentation (lactic and acetic acids). The reaction of the intestinal contents is clouded by ignorance as to the behavior of indicators. According to Matthes and Marquardsen, Pflüger, Macfadyen, Nencki and Sieber, Schmidt, Moore and Rockwood, and Munk, one might gain the impression that the contents of the intestine are nearly neutral. According to Schierbeck, the reaction of the intestine is the optimum for the action of its enzymes. Luciani [28] quotes the same authors differently. It is only in the last part of the ileum that the contents give a neutral or alkaline reaction. The cause of the acidity of the intestinal contents has been studied by Nencki and Zaleski, Moore and Rockwood, Hemmeter, Foa, Lombroso, and others. Foa, in 1906, suggested that the pancreatic juice and succus entericus were insufficient to neutralize the gastric juice. Lumbroso and also Rossi objected to this view, and Foa, in 1908, modified his statement,

14. Oliver: First Lines of Physiology, Boston. 1835, pp. 235, 248.
15. Roget: Outlines of Physiology, Philadelphia, 1839, p. 159, footnote; pp. 161, 165, 166.
16. Hutin: Manual of the Physiology of Man, translated by Tongo, Philadelphia, 1828, p. 53.
17. Broussais: A Treatise on Physiology applied to Pathology, translated by Bell, second American edition, Philadelphia, 1828, pp. 320, 322.
18. Busch: Arch. f. path. Anat. u. Physiol. **14**: 140, 1858.
19. Ludwig: Lehrbuch der Physiologie des Menschen, Ed. 2, Leipzig **2**: 650, 1861.
20. Dalton: A Treatise on Human Physiology, Ed. 6, Philadelphia, 1875, pp. 178, 181.
21. Ewald: Arch. f. path, Anat. u. Physiol. **75**: 409, 1879.
22. Macfadyen, Nencki and Sieber: Arch. f. exper. Path. u. Pharmakol. **28**: 318, 1891.
23. Foster: A Text Book of Physiology (abridged), New York, 1896, p. 391.
24. London and Sulima: Ztschr. f. physiol. Chem. **46**: 211, 215, 1905.
25. London and Polowzowa: Ztschr. f. physiol. Chem. **49**: 336, 1906.
26. London and Sulima: Ztschr. f. physiol. Chem. **56**: 389, 1908.
27. Cohnheim, in Nagel: Handbuch der Physiologie des Menschen, 1907.
28. Luciani: Human Physiology, translated by Welby, London, 1913, p. 207.

saying that the acidity of the intestinal content is due to acidmetaprotein.

Lastly, in examining texts used now by medical students, we find that Hammarsten [29] considers the contents of the intestine acid. Mathews [30] states that the reaction of the intestinal contents may be acid and that acidity is increased by carbohydrate fermentation, and that this has a part in checking bacterial putrefaction. He remarks further that bile is neutral or faintly alkaline to litmus, but aids in neutralizing the gastric juice; the pancreatic juice is strongly alkaline, and its alkalinity when titrated, with litmus as indicator, is from 0.01 to 0.015 normal; the duodenal secretion has a $p_H = 7.7$, and the optimum p_H for pancreatic lipase is 8. Starling [31] states that the contents of the intestine are alkaline to methyl orange and acid to phenolphthalein. Stewart [32] observes that in the intestine it is possible that trypsin may perform its work in a medium that is sometimes acid, and that the acidity may check the activity of bacteria. Howell [33] states that the contents of the intestine may be acid by carbohydrate fermentation. Burton-Opitz [34] remarks that the secretions poured into the intestine are alkaline, that trypsin acts in an alkaline medium, and that the pancreatic juice turns the acid metaprotein of the chyle into alkaline metaprotein, but that the reaction may later become neutral. He emphasizes the importance of an alkaline reaction in fat digestion.

Michaelis [35] gives the determinations of Auerbach and Pick with the hydrogen electrode to show that the intestinal secretions of dogs are alkaline, and numerous curves are given to show that intestinal enzymes act best in alkaline mediums, whereas the feces are stated to be acid.

To summarize the literature on the reaction of intestinal contents, we may say that a marked lack of agreement exists. This lack of agreement may be due partly to erroneous observation and poor technic, and partly to an attempt to harmonize experiments in vitro with what happens in vivo. It has been found that the pancreatic enzymes act on some proteins and fats best in an alkaline medium. How can they act on fats in an acid medium in the intestine? The answer might be that the bile permits the hydrolysis of fat in a slightly acid medium. The experiments of Bradley are interpreted as showing that the optimal hydrogen-ion concentration for protease action is the optimal hydrogen-ion concentration for the swelling of the substrate, and after the substrate is once swollen the hydrogen-ion concentration may be changed without the same effect on rate of proteolysis as if the same change had been made at the start. Michaelis [36] objects to this view, but it must be remembered that Long and Hull [37] found that the optimal p_H for tryptic digestion of casein is between 5.5 and 6.3 and not between 7 and 8.

It was found by McClendon [1] and his collaborators that the contents of the duodenum of infants and the small intestine of pups, dogs, cats, suckling rabbits (and adult rabbits on a sugar diet) were acid, and the only place where alkalinity was found was the last part of the ileum in the herbivora on a diet deficient in soluble carbohydrates. It is our object in this paper to extend these observations to man.

29. Hammarsten: Physiological Chemistry, translated by Mandel, New York, 1914, pp. 512, 513.
30. Mathews: Physiological Chemistry, New York, 1915, pp. 387, 389, 397, 407, 413, 414, 438, 445.
31. Starling: Principles of Human Physiology, Philadelphia, 1912, p. 791.
32. Stewart: A Manual of Physiology, Ed. 8, New York, 1918, p. 420.
33. Howell: Text Book of Physiology, Ed. 7, Philadelphia, 1918, p. 814.
34. Burton-Opitz: A Text-Book of Physiology, Philadelphia, 1920, pp. 931, 935, 949, 994, 995, 996.
35. Michaelis: Wasserstoffionenkonzentration, Berlin, 1914.
36. Michaelis: Deutsch. med. Wchnschr. **46**: 126, 1920.
37. Long and Hull: J. Am. Chem. Soc. **39**: 1051, 1917.

EXPERIMENTAL

In obtaining intestinal contents we used the intestinal tube as described by Buckstein,[38] using smooth rubber tubing of 1.5 mm. internal diameter and 3.5 mm. external diameter, cut into 7 foot lengths. The end to be swallowed had holes burned in the wall with a hot wire for about 4 inches. To this end was tied, with No. 4, twenty-day, chromatized catgut, an oval sinker that weighed 6 gm. The sinker was made of polished iron and had a ring on one end large enough to thread the catgut through. The object of the catgut was to resist digestion until the tube reached the right level and then to dissolve and release the sinker. We found, however, that the tube could be pulled out with the sinker attached, and have now discarded this method and substituted the Einhorn duodenal tube tip. Andresen,[39] 1918, withdrew a Rehfuss tip from the jejunum in a similar manner.

Tubes were swallowed by two healthy men, aged about 25 years, at 10 a. m. on empty stomachs (no breakfast). After having swallowed 36 cm. of the tube the subject lay on his right side with hips elevated for about thirty minutes. After the passage of the pylorus had been ascertained by the flow of duodenal contents from the tube or by fluoroscopy, the subject went about his usual sedentary and athletic activities. Change of position and activity of the abdominal muscles hastened the descent of the tube. This was especially noticed in regard to swimming and riding in an automobile. In case the presence of the tube in the throat became annoying, the subject found relief by eating bananas or ice cream about 3 o'clock each afternoon. The tubes were withdrawn at the end of four days and three hours (afternoon of the fifth day). The hydrogen-ion concentration was determined by the hydrogen electrode. The p_H varied from 4.1 to 6.5. The acidity was not entirely due to carbon dioxid, as the contents remained acid after removal of carbon dioxid.[40]

The subjoined protocol gives the food eaten and p_H of the intestinal contents:

First Day.—Lunch (noon), fried potatoes, 2 eggs, apricots, bread and butter; 3 p. m., banana and ice cream. Fluoroscopy: Subject A showed the tube in the third part of the duodenum, and B in the jejunum. Dinner (6 p. m.), potatoes, fish, bread, pineapple and cake. Samples taken at 7:30 p. m.: Subject A, $p_H = 5.1$; Subject B, $p_H = 4.5$; 7:45 p. m.; Subject A, $p_H = 4.5$.

Second Day.—Breakfast (7 a. m.), corn-flakes, toast, coffee. Samples, 10 a. m.: Subject A, $p_H = 4.9$; Subject B, $p_H = 5.2$. Fluoroscopy: Subjects A and B showed the tube in the jejunum. Lunch, potato, bread, butter, sausage, apricots, radishes; 3 p. m., ice cream and banana. Dinner, beef, potato, bread, butter, pudding.

Third Day.—Dinner, radishes, potatoes, beef, bread, butter, pudding; 3 p. m., candy. Supper, beef, bread, butter, coffee, pears.

Fourth Day.—Breakfast, coffee, toast, corn-flakes. Samples, 10 a. m.: Subject A, $p_H = 4.1$; Subject B, $p_H = 4.4$. Fluoros-

38. Buckstein, Jacob: The Intestinal Tube, J. A. M. A. **74**: 664 (March 6) 1920.
39. Andresen, A. F. R.: Ann. Surg. **67**: 565 (May) 1918.
40. In addition to the references already given, the following will be found of interest:
Adelon: Physiologie de l'homme, Paris **2**: 544, 567, 1823.
Long: J. Am. Chem. Soc. **39**: 1278, 1917.
McClendon, J. F.: Am. J. Physiol. **38**: 191, 1915.
Nagel: Handbuch der Physiologie des Menschen **2**: 602, 1907.
Prout: Bridgewater Treatise, American edition, Philadelphia, 1834, p. 268.

copy: In Subject B, the weight had become detached from the tube. Lunch, ham, potato, bread, butter, apricots, cake. Samples, 2 p. m.: Subject A, $p_H = 4.2$; Subject B, $p_H = 6.2$; 3 p. m., banana and ice cream. Sample, 5 p. m.: Subject B, $p_H = 6.4$ Dinner, pork chops, bread, butter, lettuce, potato, pineapple. (In both subjects the tubes had descended 7 feet from the teeth.)

Fifth Day.—Breakfast, corn-flakes, toast, coffee. Samples, 10 a. m.: Subject A, $p_H = 6.5$; Subject B, $p_H = 5.9$. Fluoroscopy: Both subjects removed tubes (Subject A with weight attached).

CHRONIC PELVIC PERITONITIS OF UNKNOWN ETIOLOGY OCCURRING IN WOMEN

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Recently I have encountered four cases presenting a rather characteristic clinical picture and definite pathologic findings, without any demonstrable etiologic factor. The histories and the findings of the cases are so similar that recounting one will suffice for the group:

Mrs. A. L., aged 24, with irrelevant family history, had always been nervous but had had *no acute illness.* Her bowels had been constipated, especially for the last few months. She began to menstruate at 13 regularly every twenty-eight days; the duration was five or six days with a profuse flow for one or two days. She had severe pain for one or two days during the period. The pain was in the form of cramps in the lower abdomen, and severe backache. She had been married one year and was never pregnant. She complained of severe dysmenorrhea, backache more or less constant, especially marked about the time of the periods, dyspareunia and sterility.

The patient was thin and neurotic. The general physical examination was negative. There was a lordotic tendency and some visceroptosis. Tenderness could be elicited in both iliac fossae. The introitus, vulva and vagina were normal. The cervix was small and pointed forward. The uterus was small, retroverted and retroflexed, and was not freely movable. Both adnexa were prolapsed, not freely movable, and manipulation elicited pain.

For the relief of the backache and dysmenorrhea and to correct the malposition, a laparotomy was performed. The pelvis was found filled with adhesions. The uterus was retroverted and adherent to the sigmoid. Both adnexa were prolapsed in the culdesac and adherent to the pelvic wall and to the uterus. The tubes were sealed by the adhesions but not distended; the ovaries were microcystic, adherent to the tubes by fine and old adhesions, and also to the uterus and pelvic peritoneum. The appendix also was involved in the adhesions, though it showed no gross inflammatory involvement of its wall or mucosa, nor did the subsequent histologic examination reveal any inflammatory lesion except a thickening of the peritoneal coat.

This case history would apply equally well to all the cases except that in one patient the tubes were patent.

The question, of course, arises as to the etiology of these adhesions. That there must be or must have been a source of irritation is undoubted, but the type of irritation is difficult, and in my four cases impossible to determine. Naturally a possible infection must be considered, but in none of the cases was a history of any type of infection obtainable.

There was no physical evidence of a gonorrhea. The urethra, Skene's ducts, and the bartholinian exits and vulva were normal. The vaginal mucosa and cervix were also normal. Smears and cultures taken subsequently were negative for gonococci. There was no history or evidence of a previous pregnancy, miscarriage or instrumental manipulation, and it therefore seems most reasonable to rule out as an etiologic factor any infection contracted in this fashion. Sections of the tubes showed no inflammatory lesion of the mucosa or muscularis in two cases, and in both of these cases stains for bacteria proved negative.

An appendicular infection with subsequent involvement of the pelvic peritoneum must be considered; but in the group under discussion, the appendix, while involved in the general process, presented a lesion limited entirely to the serosa, and that of the nature of a chronic adhesive process, such as is so commonly seen in cases of pelvic infection with secondary involvement of the surrounding viscera. There is one other possibility of an extragenital condition of inflammatory nature. A chronic irritation from contamination of the pelvic peritoneum by the colon bacillus might be a possibility in some of these cases. This condition might be due to an impairment of the intestinal wall because of the chronic constipation that is present in this group. Colon bacilli have been shown to possess the power of penetrating the intestinal wall when it is in any way interfered with, either in its blood supply or in its general tone. While this possibility of an infection of low grade virulence due to the presence of these organisms and the resulting adhesive peritonitis must be entertained, I feel that in view of the frequency of the impairment of bowel action and the consequent constipation, and the relative infrequency of this peculiar pelvic condition, we must look for other factors to explain it.

Two other possible sources of irritation must be considered: One is the occasional case of bleeding from the tube at or between menstrual periods and the occasional discharge of tubal secretion through the fimbriated extremity, as in cases of so-called "Mittelschmerz," which may give rise to a chronic irritation and so to the formation of pelvic adhesion of this type. In none of the cases, however, did the pelvis contain blood, nor were the adhesions blood stained or pigmented. Still, such an etiologic possibility must be entertained.

The second possibility implicates the ovary, which, because of the retroverted uterus, is dragged down into the culdesac and anchored there. Periodically with the rupture of a graafian follicle there is deposited an ovum with a minute quantity of fluid on one or the other side of the pelvis. The ovum, if it does not reach the tubal lumen, dies and is absorbed. Its presence and the necessary activity that causes its absorption may have a bearing on the condition under discussion. Can such a process result in the formation of the adhesive condition that is found at operation? Such a mechanism would account for some of the symptoms, as the sterility, and the exaggeration of pain during the menstrual period.

All in all, this condition of pelvic inflammation does not fit into the classification of pelvic infections as we now understand them, and I believe close attention to this type of case both clinically and histologically may help to clear up the question of its etiology. The condition also has a direct bearing on the great question of female sterility. No amount of manipulation, variation in the exhibition of endocrine products, or other conservative methods will offer a possible hope of pregnancy. In this type of lesion, a laparotomy with sharp or blunt separation of the adhesions, and an

attempt to reestablish the patency of the tube by a plastic operation and to bring and maintain the ovaries in their proper position offer the only chance for a good result.

Culbertson, in a discussion of Doederlein's paper at the Chicago Gynecological Society, mentioned this type of case and stated that nowhere in the literature could he find an accurate account of these cases. I also have been unable to find any information that would help in establishing an etiologic factor for this clinical condition.

A DIABETIC DIETARY

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In the diabetic dietary here given, selected articles of food are arranged in groups according to the carbohydrate content of 1 ounce, 30 gm., portions, and according to some other considerations. The protein and fat content and caloric value of the 1 ounce portions of the individual articles are also given.

Group 1 contains articles eaten for their protein or fat, and some eaten for variety and stimulation. None of the articles in this group contain any carbohydrate.

Group 2 contains articles and fruits of small carbohydrate content, namely, 1 gm. to the ounce. The articles in this group are most useful in constructing diets in which severe restriction of carbohydrate is required.

Group 3 contains articles of small carbohydrate content, 1 gm. to the ounce, which are important sources of protein and fat, in that respect differing from the articles in Group 2.

Group 4 is the milk group, of special but limited use in diabetes; for, notwithstanding the small carbohydrate content of milk, 1.5 gm. to the ounce, the large amount of it which is taken when it is used as an important element of the diet adds considerable carbohydrate to the ration.

Group 5 contains vegetables, fruits and nuts having 2 gm. of carbohydrate to the ounce. The articles in this group can be used to supplement those in Group 2, half the quantity giving equivalent amounts of carbohydrate.

Group 6 contains vegetables, fruits and nuts having 4 gm. of carbohydrate to the ounce, and also oatmeal porridge.

Group 7 contains vegetables and fruits having 5 gm. of carbohydrate to the ounce, and also some wheat preparations.

Group 8 contains cooked potato, boiled rice and bananas, all of which contain the same carbohydrate content per ounce, 6 gm., and are consequently interchangeable in equal quantity as sources of carbohydrate.

Group 9 contains bread and dried beans, which have the same carbohydrate content, 18 gm. to the ounce. Beans are theoretically interchangeable with bread as a source of carbohydrate, but practically they are not so because of certain peculiarities of beans which make them an inferior article of food. They are admitted to the list for the sake of variety. It may be noted that baked or boiled potato, boiled rice and bananas are the carbohydrate equivalents of bread in three times the quantity.

Group 10 contains crackers and dry oatmeal, whose carbohydrate content is 20 gm. to the ounce. It is desirable to use dry oatmeal in measuring the ration in diets calling for large quantities of that article, in order to eliminate the error that might arise in making the porridge in large quantities. It is convenient to know that the ordinary Uneeda biscuit weighs about one-fourth ounce, and consequently supplies 5 gm. of carbohydrate.

DIABETIC DIETARY FOR DATE

One Ounce, 30 Gm., Contains, Approximately:

Protein, Gm.	Fat, Gm.	Calories		Gm. Oz.	Directions
			1. No Carbohydrate		
8	5	75	Meat, poultry (cooked, lean)..		
6	0	25	Fish (cooked, lean).....		
6	6	75	Egg (one).....		
5	15	150	Bacon (cooked).....		
8	11	130	Cheese.....		
0	25	225	Butter.....		
0	30	270	Olive oil.....		
0	0	0	Coffee, tea, cocoa shells.....		
0	0	0	Broths.....		
0	0	100	Whisky.....		
20	0	80	Special flour made from casein		
			2. Carbohydrate, 1 gm.		
0.5	0	5	Vegetables (cooked); celery, vegetable marrow, tomato, okra, leeks, chard, asparagus, brussels sprouts, spinach, cauliflower, cabbage, beet greens, dandelion greens, string beans, egg plant, sauerkraut.....		
0.5	0	5	Vegetables (raw); lettuce, endive, cabbage, tomato, celery, watercress, cucumbers, radishes.....		
0	0	5	Grapefruit, lemons.....		
			3. Carbohydrate, 1 gm.		
6	1	35	Cottage cheese.....		
1	6	60	Cream (20 per cent.).....		
2	0.5	15	Oysters, clams.....		
9	15	180	Butternuts, pignolias.....		
0.5	4	40	Olives.....		
			4. Carbohydrate, 1.5 gm.		
1	1	20	Milk.....		
1	0	10	Milk, skimmed; buttermilk....		
			5. Carbohydrate, 2 gm.		
0.5	0	10	Vegetables (cooked); beets, carrots, squash, onions, turnips.....		
0.5	0	10	Vegetables (raw); onions, turnips.....		
0	0	10	Orange, peach, pineapple, watermelon, muskmelon, strawberries, blackberries, cranberries.....		
4	20	200	Brazil nuts, hickory nuts, pecans, filberts.....		
			6. Carbohydrate, 4 gm.		
1	0	20	Vegetables (cooked): green peas, parsnips.....		
0	0	15	Apples, pears, cherries, apricots, huckleberries, raspberries.....		
5	18	200	Walnuts, almonds, pistachios		
1	0.5	25	Oatmeal porridge (1-5).....		
			7. Carbohydrate, 5 gm.		
1	0	25	Vegetables (cooked): green lima beans, green corn.....		
0	0	25	Plums, apples (baked), prunes (boiled).....		
1	0	25	Wheat cereal porridge, macaroni (boiled).....		
			8. Carbohydrate, 6 gm.		
1	0	30	Potato (baked, boiled).....		
1	0	30	Rice (boiled).....		
0.5	0	30	Banana.....		
			9. Carbohydrate, 18 gm.		
3	0	90	Bread.....		
6	0.5	90	Beans, dried.....		
			10. Carbohydrate, 20 gm.		
3	3	125	Crackers.....		
5	2	120	Oatmeal, dry weight.....		

Diabetic dietary. The original form employed is printed on a sheet measuring 8½ by 12 ¼ inches.

The practical application of this dietary is so obviously simple as hardly to require explanation. The quantities of the articles to be allowed in the daily ration should be written opposite the name of the article, or against the group or part of a group enclosed in a bracket. The carbohydrate ration should be provided for first, which is done from articles that contain comparatively little protein or fat. Then the protein ration should be provided for, which is done from articles that contain little or no carbohydrate and

varying amounts of fat, but usually not enough fat to supply the full ration of that element required. Then the fat ration can be brought up to the required amount by addition of articles that do not add much protein or carbohydrate.

For severely restricted diets, Groups 1, 2 and 3 are the regular field of choice, and these groups may supply the basis for most diabetic prescriptions.

1218 Pacific Street.

MALIGNANT ENDOCARDITIS AND METASTATIC ABSCESS IN GONOCOCCEMIA

REPORT OF A CASE IN A CHILD WITH CULTURE OF THE GONOCOCCUS FROM THE BLOOD DURING LIFE *

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Since Thayer [1] and his associates established the specific nature of endocarditis occurring as a complication of gonorrhea, many cases have been studied in adults; but this complication in gonorrheal vaginitis in infants and children is rare.

Definite suppuration in the muscles and subcutaneous tissues as a manifestation of gonococcemia is unusual.

The case I report is of interest (1) because of the age of the patient, ulcerative endocarditis being uncommon under 5 years, and (2) because of the superficial abscess in the lumbar region of gonococcic origin.

REPORT OF CASE

History.—Marguerite S., aged 23 months, entered the hospital with painful swelling of the left ankle and left wrist, and a temperature of 105. The family history was unimportant except for the statement that a friend living with the family had a vaginal discharge. The patient had never been sick before her present illness, which began about three weeks before her admission to the hospital. At that time the left foot became swollen and painful, she had fever, and a vaginal discharge was noticed. The temperature was irregular during the next two weeks, until finally the left wrist became involved and she was kept in bed on account of "weakness."

Physical Examination.—The child was well developed but poorly nourished, and irritable. Moving her limbs caused great pain. The skin was sallow, and the sclera presented a greenish yellow tint suggestive of a moderate degree of jaundice and anemia. The left ankle and left wrist were swollen and exceedingly painful. Over the lumbosacral region there was a superficial abscess, the base of which measured 2 inches in diameter. A vaginal discharge was present. The lungs were normal. The heart was not enlarged. The point of maximal impulse was just inside the nipple-line in the fourth interspace. The cardiac rhythm was rapid and irregular. There was a soft, blowing, systolic murmur audible over the entire cardiac area, heard best at the apex and transmitted to the left axilla. The abdomen was distended and there seemed to be a general tenderness. Because of the distention the abdominal viscera could not be palpated. The patellar reflexes were not exaggerated. The Kernig, Babinski and Brudzinski signs were absent. The temperature was 104, the pulse 140 and the respiratory rate 42 per minute.

Laboratory Examinations.—Vagina: Smears from the discharge showed many gram-negative, intracellular diplococci.

Abscess: This was opened under aseptic precautions, and smears of the pus showed many gram-negative intracellular and extracellular diplococci, having identically the same appearance as the vaginal discharge. Cultures were made on the only medium available at the time, Loeffler's blood serum, but no growth was obtained after forty-eight hours' incubation.

Blood: The total leukocyte count was 19,000 per cubic millimeter. The differential count revealed: neutrophils, 89 per cent.; large lymphocytes, 2 per cent., and small lymphocytes, 9 per cent.. The hemoglobin was 80 (Tallqvist). About 10 c.c. of blood was taken from the median basilic vein and cultivated on ascitic glucose broth and ascitic glucose agar with an acidity slightly under 4 (phenolphthalein). At the end of sixty hours a gram-negative biscuit-shaped diplococcus was recovered from the agar culture.

Clinical Course.—During the next few days in the hospital the temperature was very irregular, varying from 101 to 105. The pulse continued rapid, from 140 to 160, and often was imperceptible. The pain in the joints subsided considerably under rest, as also did the abdominal distention, and the child became fairly comfortable. The liver could now be felt and apparently was not enlarged. The spleen was enlarged and extended about 2 inches below the costal border. The cardiac murmur became harsh and intensified. It was the characteristic murmur of mitral regurgitation. On the seventh day in the hospital (twenty-eighth day of illness) the patient died.

Necropsy.—A partial necropsy was permitted. The abdomen was opened by an incision extending from the ensiform cartilage to the umbilicus. The omentum was slightly congested. Examination of such part of the small intestine as could be observed through this opening failed to reveal any evidence of peritonitis, although there were some petechiae in the serous covering. The spleen was enlarged and soft, but was not removed. The liver appeared normal. The heart was removed through an opening in the diaphragm. The pericardial sac contained a moderate amount of serous fluid. There were no changes in the pericardium. Examination of the heart disclosed the lesions confined to the mitral valve. On the free border of each cusp there were greenish-yellow, cauliflower vegetations. The posterior cusp was perforated, the circular opening measuring 6 mm. in diameter. The edges of the perforation were bordered with the vegetation. Cover glass preparations from the heart valve showed gram-negative diplococci. No attempt was made to grow the organisms from the valves or from the pericardial fluid.

The bacteriologic work was reviewed by Drs. D. O. Smith and Watson Campbell, pathologists to the Kansas City General Hospital, who corroborated the findings and made the following report of a microscopic study of sections of the valve:

Microscopic Examination: "Sections made through the valve show areas of ulceration with an accumulation of amorphous material attached to the surface. Surrounding the necrotic area is a zone of inflammatory reaction and cellular infiltration. Many of the infiltrating cells are of the polymorphonuclear variety. In other areas the endothelium is intact, but beneath it the tissue is undergoing degenerative change. This would indicate that it would have been but a short time until the endocardium would have broken down, producing other areas of ulceration. The muscular tissue is also somewhat involved, as shown by the tissue infiltration. A few coffee-bean shaped diplococci are found beneath the ulcerated areas.

"Diagnosis: Acute ulcerative endocarditis."

COMMENT

Many writers, in reviewing the reported cases of gonorrheal endocarditis, are unwilling to include those cases in which the organism has not been isolated from the blood during life or from the organs at necropsy. The cultivation of the gonococcus is attended with some difficulty; competent workers have failed to recover it from the blood stream and have succeeded in obtaining it from the heart valve or from the pericardial fluid. The variance in strains of the gonococcus, and the probability that it is a transient inhabitant

* From the Children's Mercy Hospital.

1. Thayer, W. S., and Blumer, George: Bull. Johns Hopkins Hosp. 7: 57 (April) 1896. Thayer, W. S., and Lazear, J. W.: J. Exper. Med. 4: 81, 1899.

of the blood stream in many cases may account in some measure for the failure to obtain it in blood cultures.

Faure-Beaulieu,[2] in 1906, collected thirty-four instances, and Dieulafoy,[3] in 1909, thirty-seven in which successful blood cultures were made. Irons [4] and later Rueck [5] have grown the organism from the blood in cases showing complications of gonorrhea.

INCIDENCE

Endocarditis is common in childhood, occurring frequently as a complication of rheumatism and chorea. Gonococcic endocarditis is rare. Gilbert [6] analyzed 197 cases from the records of the Massachusetts General Hospital, and does not mention the gonococcus as the etiologic factor in any case, although in some cases the nature of the infection was not determined.

Satterthwaite [7] analyzed 100 cases of endocarditis in children in New York City and found only one case due to the gonococcus. *Streptococcus viridans* is the common offender in the "rheumatic" endocarditis and in those cases termed slow endocarditis or endocarditis lenta.

Dunn [8] collected 304 instances of endocarditis in children, and in no case was the disease due to the gonococcus. Streptococcus ulcerative endocarditis has been reported in an infant of 6 months, and Huber [9] recovered *Streptococcus attenuans* in an infant 1 year old with endocarditis.

METASTATIC ABSCESSES

Local suppuration in the subcutaneous or muscle tissue has been reported in a comparatively few cases. Wynn [10] observed two cases of metastatic abscess formation in which the gonococci were obtained in pure culture.

Harris and Haskel [11] describe a case in a woman who had boggy swellings at the junction of the lumbar and sacral regions of four months' standing, and a marked fluctuating swelling of the calf of the right leg. The material aspirated from the swellings contained the gonococcus.

Ware [12] obtained bloody fluid from an indurated area in the postscapular region in a patient with a history of gonorrhea, in whose case cover glass preparations showed gram-negative diplococci but cultures on ordinary mediums gave no growth. Budjwid [13] reported abscesses of gonococcic origin in the muscles about the elbow and in the popliteal fossa. Harris and Haskel, in a critical review of these cases, accept Ware's case as one of metastatic gonococcic abscess formation, stating that he furnished negative cultural evidence in support of his microscopic findings. These authors do not regard Budjwid's case as an authentic case of metastasis because of the probability of extension along the tendon sheaths from the joint.

The abscess of the sacral region in the case I have described probably was the result of a localization of organisms from the blood stream due to lowered resistance in the area from pressure, a condition exactly like that which occurs in the development of a bed sore.

2. Faure-Beaulieu, Marcel: Thèse de Paris, 1906.
3. Dieulafoy: Bull. de l'Acad. de méd. **61**: 594, 1909, quoted by Irons (Footnote 4).
4. Irons, W. E.: Gonococcemia. Arch. Int. Med. **4**: 601 (Dec.) 1909.
5. Rueck, G. E.: Med. Rec. **83**: 18 (Jan. 4) 1913.
6. Gilbert, L. W.: Boston M. & S. J. **169**: 85 (July 17) 1913.
7. Satterthwaite, T. E.: Med. Rec. **83**: 18 (Jan. 4) 1913.
8. Dunn, C. H.: Tr. Am. Pediat. Soc. **25**: 237, 1913.
9. Huber, Francis: Acute Infective Endocarditis, Am. J. Dis. Child. **10**: 33 (July) 1915.
10. Wynn, W. H.: Lancet **1**: 352, 1905.
11. Harris, N. M., and Haskel, L. W.: Bull. Johns Hopkins Hosp. **15**: 395 (Dec.) 1904.
12. Ware, M. W.: Am. J. M. Sc. **122**: 40 (July) 1901.
13. Budjwid, quoted by Harris and Haskel (Footnote 11).

SYMPTOMS

The clinical symptoms of gonococcic endocarditis differ in no essential feature from those due to other organisms. The usual features are irregular, intermittent fever, chills, rapid pulse, polymorphonuclear leukocytosis and anemia suggesting a considerable degree of intoxication. As in the case herein reported, the intensity of the murmur, increasing from day to day, has been noted by several observers.

400 Portsmouth Building.

THE DIAGNOSTIC VALUE OF CARDIAC MURMURS *

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This paper comprises a preface and a few dogmatic statements, with little explanation or argument. The opinions expressed are based on:

1. The published work of cardiologists who combine a scientific spirit with a wholly practical devotion to the art of medicine. Of these Thomas Lewis is, perhaps, the best exemplar.

2. Personal experience in the cardiovascular examination of a large number of normal young men called for army service.

3. Having given an intensive cardiovascular course in a medical officers' training camp. With some notable exceptions, mainly very recent graduates, the great majority of these officers considered a murmur to be synonymous with a valvular defect or a stenosed orifice.

This somewhat unhappy condition may be due to the abundance of articles in current literature on the instrumental examination of the heart and arteries, with a corresponding paucity of material relating to the physical examination and the proper diagnostic valuation of its results. On the other hand, it is quite possible that many of us, for various reasons, have not been as keen in the uptake of recent knowledge as the requirements of an exacting profession deserve. It is perhaps too much to expect that the traditional busy physician should find the time to keep up with the minutiae of the cardiologist. We bespeak for him less electrocardiograph, and more of the every day clinical side of cardiovascular diagnosis.

This condition of things has been characterized as unhappy. It deserves the adjective because of the number—and it must be large—of people who are unhappy because of the mistaken diagnosis of valvular heart disease, usually mitral insufficiency. It is mistaken because the diagnosis was based on the axiom, pounded into most of us who graduated fifteen or more years ago, that the systolic murmur at the apex spelled organic incompetence of the bicuspid valve.

MURMURS AND THEIR SIGNIFICANCE

The preface completed, dogmatic statements follow concerning the three chronological types of murmur and their significance—diastolic, presystolic and systolic.

Diastolic Murmurs.—The presence of an aortic diastolic murmur is, in the majority of cases, reliable evidence of aortic insufficiency. But even with this murmur it is not safe to make the diagnosis without the

* Read before the Annual Meeting of the American Climatological and Clinical Association, June 18, 1920, Philadelphia.

confirmatory evidence of a water-hammer pulse, throbbing carotids, capillary pulsation, and a pistol-shot sound in the femorals. This is true because the murmur may be due to the temporary stretching of the aortic ring as a result of extreme anemia; or be of exocardial, especially cardiorespiratory, origin. If, however, the murmur is distinct and is backed by a history of acute rheumatism in a young person, or syphilis in a man of 35 or over, it is right to give the patient the benefit of the doubt, and make the diagnosis on the murmur per se.

Presystolic Murmurs.—These are usually trustworthy. A rough crescendo presystolic bruit, internal to and a little above the apex; an abrupt first sound; a much accentuated pulmonary closure sound, and a small pulse, perhaps also a split second sound, means mitral stenosis. To make such a diagnosis without a definite murmur is unjustifiable. Even here there are possibilities of error. If aortic insufficiency is present, the presystolic murmur may be that which is named after the senior Flint. Moreover, the rapidly acting hearts of effort syndrome and exophthalmic goiter may readily be mistaken for those of mitral stenosis. To distinguish between them is at times extremely difficult.

Systolic Murmurs.—If the usually reliable diastolic and presystolic murmurs lend themselves to occasional misinterpretation, so, to a vastly greater extent, do the multitude of systolic murmurs.

Aortic systolic murmurs are diagnosed as aortic stenosis by many men, who forget that such murmurs are very common as a result of slight roughening of the valves of the root of the aorta, or are accidental or functional, often in connection with the anemic status. In reality, aortic stenosis is a rather rare lesion and requires for its recognition that the murmur should be loud, rough, and accompanied by a thrill; that the aortic closure sound be weak or absent; that left hypertrophy be present, and that the pulse should be of the "plateau" variety. With such signs, in an elderly person, a diagnosis of aortic stenosis is permissible, but not otherwise.

Pulmonary systolic murmurs, heard in what Balfour has called "the region of romance," are substantially negligible in the run of cases. Only rarely, and usually as a sign of congenital malformation, are they indicative of organic disease. In such cases the murmur is so loud and so widely diffused that its exceptional character is immediately recognized.

Apical systolic murmurs constitute the greatest stumbling block in the way of a correct diagnosis, for the reasons already stated. Very commonly they are of cardiorespiratory production; they vary in intensity and quality from time to time, and with change of posture or the phase of respiration. Some are frictional in character, arising in the pericardium as a result of an old inflammation. Others are caused by roughening of the valve-cusps. Finally, the murmur may be, and often is, that of a relative insufficiency due to a relaxed mitral ring.

Many necropsies have shown that no matter what the character of the murmur—soft, musical, harsh; or the direction and extent of its audibility—to the left, at the angle of the scapula, the mitral ring and valve may be normal. Per contra, the valve may be distorted or the orifice dilated, without a murmur intra vitam.

The consensus among those best qualified to judge is tending strongly toward the great probability that uncomplicated (primary) mitral insufficiency should be classed among the comparatively infrequent valve lesions. It may occur as a distinctly secondary result of the pathologic changes that result in mitral stenosis, or the cardiac hypertrophy and dilatation that develop in the course of cardiovascular-renal disease, exophthalmic goiter or syphilitic aortic lesions.

It is, I believe, safe to say that primary organic mitral insufficiency should in no case be diagnosed unless in addition to the murmur there is evidence of cardiac hypertrophy, and, preferably, a definite history of rheumatic fever. In view of the fact that about 90 per cent. of apical systolic murmurs are not due to mitral insufficiency, this rule does not appear to exceed legitimate diagnostic requirements.

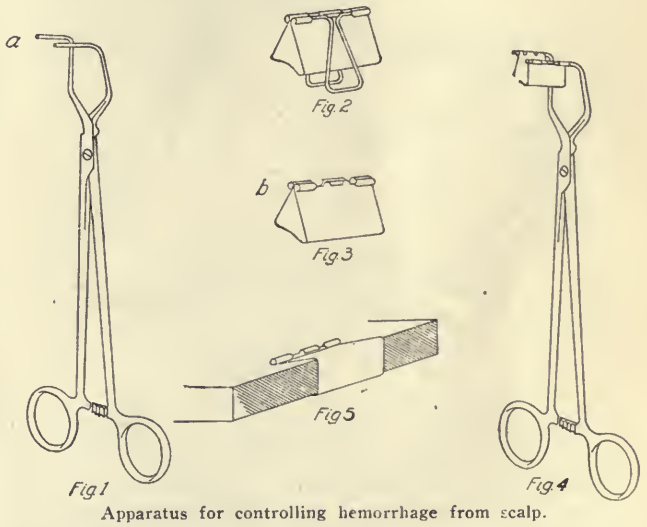
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Clinical Notes, Suggestions, and New Instruments

AN APPARATUS FOR CONTROLLING HEMORRHAGE FROM THE SCALP

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In any operation in which it is necessary to incise the scalp, many hemostats must be used in order to control the bleeding. Even if the heretofore devised special scalp hemostats are used, quite a number must be applied. The result is that the operative field is crowded with instruments that are continually getting in the way and impeding the progress of the operation.



Apparatus for controlling hemorrhage from scalp.

The object of the apparatus described herewith is to produce hemostasis in a scalp incision, doing away with all of the more bulky instruments ordinarily used.

The apparatus consists of a clip-holder 8 inches long (Fig. 1) and several clips (Fig. 3). It will be noted that when the handles of the clip-holder are compressed, the points (*a*) are spread. The clips used are ordinary No. 2 L. E. B. binder-clips, 20 mm. long by 12 mm. wide by 10 mm. high (Fig. 2) with the handles removed (Fig. 3). A clip is slipped on the clip-holder, the prongs (*a*) being placed through the small tubes along the edge of the clip (*b*). One prong is made one-sixteenth inch longer than the other to facilitate this "loading." When the handles of the clip-holder are compressed, the edges of the clip are spread apart, as shown in Figure 4. With the clip spread apart it is slipped over the cut edge of the scalp at a bleeding point, the handles of the clip-holder are released, and the entire clip-holder is removed by withdrawing the prongs (*a*) from the small tubes (*b*), leaving the clip firmly attached to the scalp (Fig. 5). When the time

comes to suture the scalp, the clips can be easily removed by grasping them between the fingers and making gentle traction on them. It has been found that although they grasp the scalp tightly enough to control bleeding completely they do not injure it in any way.

In order to insure the quickest service from this apparatus, it is advisable to have two or three clip-holders and about one dozen clips. In this way, while the operator is applying one clip the nurse may be "reloading" another clip-holder. The number of clips applied depends, of course, on the extent of the incision and the amount of bleeding. Eight clips have been used successfully in a horseshoe incision for a subtemporal decompression, but more can be used if the procedure demands. It seems probable that the maximum number needed for any operation would be twelve and, since the same clips may be used again and again, this is a sufficient number to complete the apparatus. Both the clip-holder and the clips may be sterilized by boiling.

ETIOLOGY OF DEVIATIONS OF THE NASAL SEPTUM: ANATOMIC THEORY

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The various theories attempting to explain the causation of septal deformities—as the Talbolt theory of stigmas of degeneracy, the Trendelenburg and Freeman theory of persistent high arch of the palate crowding the vomer, and the Bosworth theory of traumatism—are not altogether acceptable or, in the great majority of instances, satisfactory. The rhinologist must carefully scrutinize to find any stigmas. Most of the patients have no high palatal arch. Of course, in the great number of cases there is no history whatever of traumatism. There must be some clearer, more universal and more plausible explanation of the causation of this anatomic defect.



A, perpendicular plate of ethmoid: ossification begins the forty-eighth week; *B*, triangular cartilage: remains soft throughout life; *C*, vomer: primitively consists of two very thin lamellae or plates with cartilage in between, which become partly fused about the third month of fetal life, and completely united to form a medial plate after puberty; ossification begins the eighth week; *D*, nasal bone: ossification begins the eighth week; *E*, superior maxillary bone: ossification begins the eighth week; *F*, palate bone: ossification begins from the fifth to the eighth week; *G*, crista galli: ossification begins the forty-eighth week; *H*, sphenoid bone: ossification, eighth week; *I*, frontal bone: ossification begins the eighth week. The numbers indicate the week of fetal life when ossification begins.

I suggest the following theory: The nasal septum divides the bony structure into two compartments. It is surrounded by hard, unyielding, bony tissues which begin to ossify from the first to the eighth week of gestation. The septum, composed of the vomer, perpendicular plate of the ethmoid and triangular cartilage, ossifies so far as the bony portion is concerned, from the second year to puberty. Of course, the cartilage remains soft throughout life.

It is easily conceived, therefore, that the surrounding bony structures, ossifying at a much earlier period than the bony septum, will cause the septal constituents to deflect or deviate in order to permit it to occupy its proper space. It is as if one should attempt to insert a paper perpendicularly into a box of smaller dimensions. The paper would, of course, assume the form of an S or bend out with concavo-convex configuration.

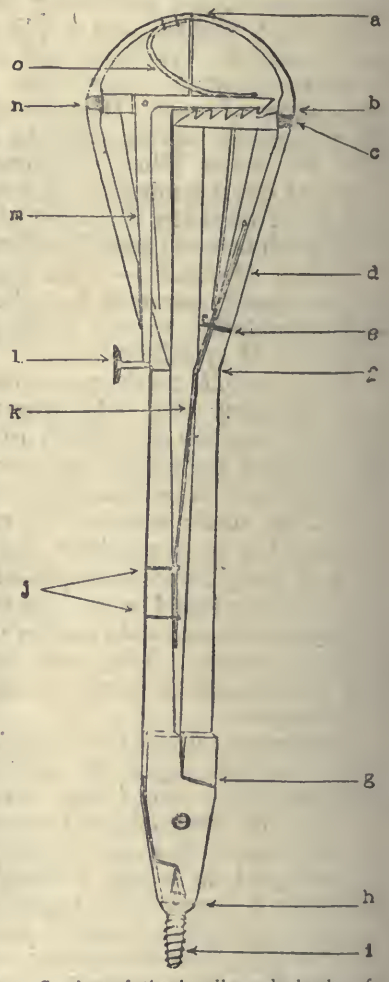
The accompanying diagram is self-explanatory.

BONE-SCREW AND BONE-SCREW SCREW-DRIVER

EDWARD A. CAYO, M.D., SAN ANTONIO, TEXAS

This bone-screw is, in structure, the same as the ordinary screw used in bone surgery, with the difference that in place of the groove in the head of the ordinary screw there is a projection on the head of the bone-screw. This projection extends right across the screw-head: it is 3/32 inch high, 1/32 inch in thickness on top, and it is beveled to a thickness of 3/32 inch at its base, all corners being slightly rounded.

From a physiologic standpoint, the bone-screw is preferable to the ordinary screw with the grooved head, as the tissues can readily grow about the projection and form tissue with healthy circulation; whereas, with the grooved head, the tissues form a pedicle to fill the groove, this pedicle, of course, having poor circulation and therefore being tissue of low resistance. Wherever there is tissue enough to bury the plate so that the screw does not come in contact with the skin, the projection on the head will not make any difference. Wherever this screw is contraindicated, it is quite obvious that a plate will give trouble too.



Section of the handle and shanks of screw-driver. The beveled jaws are shown gripping the beveled projection on the head of the screw, holding the latter securely in position.

BONE-SCREW SCREW-DRIVER

The measurements of the instrument are: full length, *a-h*, 9 inches; diameter at *b*, 2 inches; diameter at *f*, 11/16 inch. The part of the handle above line *b*, when the shanks are closed, forms a complete half-sphere, the outer surface of which is slightly grooved stellately. Form *b* to *f* the handle is tapered cylindrically. The shanks meet at line *g*, and from this point the space between them gradually increases up to line *f*, where it is 5/16 inch: from *f* to dome-line *b*, the space between the shanks is 5/16 inch. Between lines *b* and *f*, each half of the handle has two additional openings, as shown in the illustration.

There are two springs, clasp-spring *o*, and opening-spring *k*. The latter is notched for retention-pin *e*, which limits the spread of the shanks and also the opening of the jaws.

The illustration shows the beveled jaws of the screw-driver gripping the beveled projection on the head of the screw and holding the latter securely in position. When the screw is in position in the jaws, the shanks of the handle are sprung so

as to close the dome: when empty, the jaws close to contact.

From a mechanical standpoint the bone-screw and bone-screw screw-driver, as contrasted with the ordinary screw and screw-driver, which are mechanical and surgical incompatibilities, together form a mechanical combination with which a surgeon can apply or remove the bone-screw with the minimum loss of time.

The screw and screw-driver in surgical use up to the present time have ever been a source of aggravation to the surgeon, and the chief factor in prolonging bone-plating operations.

The bone-screw screw-driver also makes a serviceable needle-holder.

Moore Building.

USE OF SILVER NITRATE OINTMENT IN THE TREATMENT OF VULVOVAGINITIS IN CHILDREN *

GEORGE GELLHORN, M.D., ST. LOUIS, MO.

It would require considerable space to set down all the various methods and medicaments which have been proposed for the therapy of gonorrheal vulvovaginitis in children. Their very multiplicity argues against them, and every clinician realizes only too well how far we are still removed from a uniformly reliable mode of treatment. The method most widely in use is instillation, into the vagina, of a watery solution of a silver salt, such as silver nitrate, protargol, argyrol or the like. The one great drawback of this procedure is that the bactericidal agent remains in contact with the inflamed mucosa only a short time, and that it has no opportunity to penetrate into the crevices of the vagina.

This disadvantage is overcome by the method which I have been using for the last two or three years, the publication of which has been postponed until favorable reports had been received from other observers.

The drug employed is silver nitrate in the form of a 1 per cent. ointment (silver nitrate, 1.0; lanolin and white petrolatum, of each, 50.0). This ointment is injected into the vagina through an ordinary glass syringe with a slender nozzle to which a piece of soft rubber catheter or tubing, about 3 inches long, is attached. The tubing is changed for each patient. It can be introduced without pain into the vagina of even a very small child, and is slowly pushed inward the entire length of the vagina. The latter, then, is very slowly filled to capacity with the silver salve. The excess of salve which oozes back through the hymenal opening is not wiped off, as it is meant to cover and protect the irritated vulva and its surroundings.

The treatment is given once a day without any additional douching. Every seventh or eighth day, after a day of rest, a smear is examined, and the injections are continued if gonococci are present. If they are absent, smears are made at intervals of three days without any further treatment until at least three have been found negative. It is then advisable to send the child home but insist on a final examination in two weeks. Occasionally, provocative silver nitrate injections are made and smears examined subsequently.

As a result of this treatment, the discharge and the outer excoriations, as a rule, disappear very quickly. In some cases, a scant, watery discharge persists for a short while which may harbor gonococci. But even when there is no discharge at all, it is necessary to scrape off some vaginal secretion by means of a very thin, dull spoon lest the presence of gonococci be overlooked. The average duration of treatment is from three to four weeks. Case 1 is typical:

CASE 1 (No. 1312, 1920).—A colored child, aged 3 years, was admitted to the hospital, Aug. 8, 1920, with a profuse vaginal discharge which contained gonococci in abundance. She was first treated on the pediatric service with daily injections of a 25 per cent. solution of argyrol, but after three weeks of this treatment, the discharge was still profuse and the little patient complained of pain in the vagina. Gonococci were still present. September 1, she was transferred to the gynecologic service and received the silver nitrate ointment treatment as outlined above. On the ninth day, the discharge was still profuse and contained gonococci. On the seventeenth day, the discharge was diminished yet positive as to gonococci. On the twenty-fourth day the discharge had ceased; no gonococci were found. Treatment was then discontinued, but smears were examined every third day for almost three weeks, always with the same negative result.

Occasionally a cure is effected even more promptly, as in Case 2:

CASE 2 (No. 1618, 1920).—A colored child, aged 4 years, was admitted with a gonorrheal vulvovaginitis, Sept. 15, 1920. Treatment with silver nitrate ointment was instituted, September 17. Eight days later, the discharge was greatly diminished, but still contained gonococci. After another six days, less than two weeks after the beginning of treatment, there was no discharge, nor were there any gonococci in the smear. After a rest of four days, the vagina was swabbed with a 5 per cent. solution of silver nitrate. This caused a slight, thin secretion which proved to be free from gonococci. Three more smears were examined at intervals of three days, and the patient was discharged completely cured four weeks after admission.

When there is a return of gonococci in the smears after a temporary absence, or when the discharge cannot be freed at any time from the microbes, one must assume that, contrary to the usual behavior of the disease in childhood, the gonococci have invaded the cervical canal. Instances of such an ascending gonorrhea with the formation of pyosalpinx or pelvic abscess are well known though, fortunately, they are not frequent.

As may be inferred from the foregoing description, the treatment is exceedingly simple and absolutely painless, and it may be entrusted to nurses or mothers. In the latter case, however, some supervision is advisable. It may merely be a coincidence; yet, in two recurrences among my patients and in one in the practice of a friend of mine, the mothers had carried out the treatment.

It is desirable to prescribe only small quantities of the ointment because silver nitrate is quickly decomposed and thereby becomes either inert or irritating. Discolored preparations should be discarded.

The 1 per cent. silver nitrate salve has been used in my service at the City Hospital on children ranging in age from 9 months to 12 years. Under the older forms of treatment, these children had been confined in the wards for several months; the older ones were kept out of school and exposed to all the harmful influences that emanate from the adult inmates of venereal wards in public hospitals. Moreover, the very chronicity of the affection caused the interest of interns and nurses to wane, and this still further prolonged the stay of the little patients. Happily, this condition no longer prevails. Results are obtained promptly, and the number of weeks in which the children are evacuated is less than the number of months that was formerly required.

It may be added that in adults a 2 per cent. silver nitrate ointment has been found highly serviceable in the acute stage of gonorrhea. It is either injected, as in children, or introduced by means of a soft tampon. It greatly ameliorates and shortens the initial phase of the disease, during which we have heretofore been forced to inactivity, and seems to prevent the extension of the infection into the vulvovaginal glands.

Metropolitan Building.

* From the Gynecologic Service of Washington University Medical School at the City Hospital.

The Microscope and the Development of Histology.—There is room for difference of opinion as to the impulses from external sources which have had the most far-reaching effects on medicine, but I would name four as of exceptional importance. They are the invention of the compound microscope, the development of chemistry, the acceptance of the doctrine of evolution, and the discovery of the relation of microorganisms to disease. The microscope was invented in Holland early in the seventeenth century, but its possibilities as an aid to anatomy were not at first grasped, and it was not till after Harvey's death that Malpighi actually saw the capillaries and the contrary direction of the blood flow in arteries and veins. The rise of histology from that time forward has transformed our ideas of the structure of the body, and with each improvement in the microscope our horizon has widened. We have passed from the organ to the units of which it is built up, and Virchow's "Cellular Pathology" marks an epoch in medicine.—F. W. Andrewes, *Lancet*, Oct. 23, 1920.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - - Six dollars per annum in advance

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SATURDAY, DECEMBER 11, 1920

A CONTRAST OF CHEMOTHERAPY AND SEROTHERAPY

Analogy has its dangers as well as its advantages in medicine. This is particularly true as it pertains to therapy. Merely because two diseases are characterized by some common symptom, such as fever or edema or hypersensitiveness, for example, one is not justified in concluding that a course of treatment or a palliative procedure successful in one type will be equally valuable in another. Efficient therapy deals with etiologic agencies as well as with symptoms. Widely different causative organisms may give rise to identical pathologic reactions or states. Different procedures may consequently be needed to overcome the similar harmful effects.

The foregoing reflections have been called forth by a consideration of certain current tendencies in so-called chemotherapy. Stimulated by the success of the various arsenicals, beginning with arsphenamin, in the attack on some of the diseases of spirochetal and protozoan etiology, there has naturally been a tendency to attempt to extend the field of usefulness of the newer classes of chemical compounds to combat other infections of a related character. Of late the leptospira group of organisms, so closely related to the true spirochetes, has aroused particular attention in this respect. The organism of infectious jaundice, *Leptospira icterohaemorrhagiae,* to which reference has repeatedly been made in THE JOURNAL, has been shown definitely by Inada, Ido and Noguchi, among the pioneer investigators of infection with this agent, not to yield to chemotherapy with arsphenamin and neo-arsphenamin. Incidentally this fact may be taken, if opinions still differ, as further support for the opinion that the leptospira group of organisms forms a type of its own, and differs from the other pathogenic spirochetal parasites.

The indication of this lack of definite therapeutic value for the familiar arsenicals in the case of the leptospira group has been further substantiated by Noguchi.[1] He has directed his efforts toward the experimental infection of guinea-pigs with *Leptospira icteroides* which he has derived from certain cases of yellow fever. From his attempts at treatment with arsphenamin and neo-arsphenamin he concludes that it is extremely doubtful whether the severity of the infection was mitigated. Indeed, he speaks of the "inefficacy or dubious therapeutic value" of the drugs mentioned against the *icteroides* infection, although they are highly poisonous for *Leptospira* in vitro. On the other hand, anti-*icteroides* immune horse serum protected guinea-pigs from an infection with at least 5,000 minimal lethal doses of *Leptospira icteroides.* We can readily agree with Noguchi, therefore, when he points out that the contrast between chemotherapy, as carried out with the arsenicals, and serotherapy, as demonstrated with immune serum, may be of great practical importance. It would be most unfortunate if current enthusiasm for novel procedures were to lead to oblivion of older tested principles. Supposed analogies often fail.

1. Noguchi, Hideyo: Etiology of Yellow Fever, XII, Chemotherapy Versus Serotherapy in Experimental Infection with Leptospira Icteroides. J. Exper. Med. **32**: 381 (Oct.) 1920.

THE CONTROL OF THE PYLORUS

Physiologists of long ago ascribed to the pylorus a unique function—"a peculiar tact which enables it to select from the contents of the stomach what is proper to pass through, while it rejects the remainder." In recent years, vague explanations of this sort, as well as the essentially mechanical hypotheses, have given way to the theory of the "acid control" of the pyloric sphincter, as elaborated by Cannon[1] of Harvard. According to this chemical explanation, the presence of acid within the stomach favors or produces a relaxation of the pyloric sphincter; while in the duodenum, on the contrary, it causes a closing contraction of the sphincter. In this way, as is now commonly taught in textbooks,[2] it may be imagined that after each ejection of acid chyme the sphincter is kept closed until the acid material in the duodenum is neutralized. Thus, automatically a mechanism is provided by means of which the duodenum is charged at intervals and at such times as it is prepared to receive and neutralize a new quantity of the chyme.

The chemical theory of acid control of the pyloric sphincter has been the outcome of extensive experiments on animals. It has never been denied by its proponent that other factors than the gastric acidity may alter the nature of the control. There is no doubt that the normal quiescent sphincter is in a state of contraction. Certain facts, such as the emptying of the stomach in achylia gastrica, have never been suitably explained by Cannon's theory, nor is it clear why water may leave the stomach so rapidly before intragastric acidity develops to any considerable extent. It has been suggested that perhaps in man other factors exert

1. Cannon, W. B.: The Acid Control of the Pylorus, Am. J. Physiol. **20**: 284, 1907.

2. Howell, W. H.: Textbook of Physiology, Philadelphia, W. B. Saunders Company, 1919, p. 728. Macleod, J. J. R.: Physiology and Biochemistry in Modern Medicine, St. Louis, C. V. Mosby Company, 1918, p. 457.

the principal control on the pyloric sphincter. Thus, Cole [3] has observed by the roentgen-ray method in human subjects that a meal of mixed foods and fluids begins to leave the stomach immediately after ingestion. He has concluded that the pylorus opens partly at each gastric "systole," and that "during the stage of 'diastole' when the gastric pressure is diminished, the sphincter may be closed to prevent the chyme from falling into the stomach." The opening of the pylorus is thus correlated with the passage of peristaltic waves and with an increased tonicity of the stomach.

In Carlson's [4] laboratory, evidence has likewise been obtained on man as well as animals to show that there is a correlation between marked motor activity of the stomach (either as changes in tonus or as peristalses) and an inhibition in tone of the pyloric sphincter. Fluoroscopic examination of the stomach of man, while simultaneously recording graphically the motor activity of the stomach, shows that the pylorus opens for the ejection of chyme with arrival at the pylorus of powerful advancing rings of constriction, aided possibly by a general increase in tone of the stomach musculature as a whole. In the cases observed there was certainly a greater relation between the muscular activity and the opening of the pylorus than between the latter and the reaction of the intragastric contents.

If further evidence were needed that factors other than the presence of free acid in the stomach near the pyloric sphincter are related to an opening of that sphincter, they could be found in the latest records from the Peter Bent Brigham Hospital in Boston. The observations, likewise fluoroscopic, made there by McClure, Reynolds and Schwartz [5] on the functioning of the sphincter have shown that finely divided carbohydrate, protein or fatty foods begin to leave the normal human stomach within a comparatively few minutes after their initial ingestion. Under normal conditions the human pyloric sphincter opens regularly at the approach of each antral peristaltic wave, allows chyme to pass through into the duodenum during an appreciable length of time, and closes when the antral peristaltic wave has spent itself. The introduction of fortieth normal, twentieth normal or tenth normal hydrochloric acid solutions into the first, second or third portions of the normal human duodenum either produced no effect on the opening of the pyloric sphincter as observed by means of the fluoroscope, or produced effects which were interpreted as the result of abnormal irritation of the duodenal mucosa. Furthermore, neutralization of the contents of the first portion of the duodenum did not prevent the closing of the pyloric sphincter. It is on the basis of such facts that the Boston observers also conclude that acid is not the principal factor controlling the opening and closure of the pyloric sphincter in man. Doubtless the importance of the chemical control has been overemphasized in recent years.

3. Cole, L. G.: Am. J. Physiol. **43**: 618, 1917.
4. Luckhardt, A. B.; Phillips, H. T., and Carlson, A. J.: Contributions to the Physiology of the Stomach, LI, The Control of the Pylorus, Am. J. Physiol. **50**: 57 (Oct.) 1919.
5. McClure, C. W.; Reynolds, L., and Schwartz, C. O.: On the Behavior of the Pyloric Sphincter in Normal Man, Arch. Int. Med. **26**: 410 (Oct.) 1920.

THE CALCIUM REQUIREMENT OF MAN

For an enormous number of people living in the civilized parts of the world, the days of a surfeit of food are, for a time at least, past. Even in regions of comparative abundance, the higher cost of living has enforced economies in the dietary as well as in other directions bearing on daily life. The purchaser of food has become more discriminating, so that the variety as well as the quantity procured for his table are tending toward restriction. With the concentration of attention on foods of relative cheapness, there is a greater likelihood of a lack of some nutrient factor that is ordinarily represented only in small quantity in the usual mixed diet, than of a serious deficiency in such an essential as protein and in the total calorific needs of the body. Lack of food fuel speedily leads to loss of weight and decline. The law of the conservation of energy holds even in times of stress.

In periods of food retrenchment, therefore, it becomes advisable to direct attention to the more subtle dangers represented by the possible need of the "lesser essentials" in the diet. One of these is calcium. Lime salts are by no means universally abundant in natural foods. Some, like meats, cereals, sugars and fats, are decidedly poor in the element calcium. The low content of calcium has been described as one of the limiting factors in a large proportion of our staple foods.

Students of nutrition are now well informed as to the energy requirements of man, in different degrees of activity at different ages, in health and in disease. The problem of the protein minimum has become essentially a debate as to the optimum of protein of suitable physiologic quality. But how about the requirement of calcium, which necessarily occupies a prominent place in the inorganic food supply? In order to answer this, Professor Sherman [1] of Columbia University has collected a large number of dependable data taken from observations on the maintenance nutrition of adult man. In a similar way the protein requirement had been shown to average 45 gm. a day for a person of 70 kg.; the phosphorus need is estimated at 0.9 gm. a day; and now the new data for calcium requirement give a mean result of 0.45 gm. The records are sufficiently numerous so that the statements are "presumably as dependable as the accepted statement of average composition of even the most familiar of our staple foods." Expressed somewhat differently, the findings lead to the conclusion that a food supply, in order to furnish these essential nutrients in relative proportions corresponding to the needs of the body, should contain at least 1 gm. of calcium for every 100 gm. of protein.

1. Sherman, H. C.: Calcium Requirement of Maintenance in Man, J. Biol. Chem. **44**: 21 (Oct.) 1920.

There are indications that in our meat and cereal eating, milk neglecting nation, many more diets are deficient in calcium than in protein. Sherman notes that in the large majority of American food supplies of families and larger groups, as indicated by dietary studies made before the war by the United States Department of Agriculture and the New York Association for Improving the Condition of the Poor, the ratio of 1 gm. of calcium for each 100 gm. of protein does not hold. It does not follow, he adds, that the calcium content was necessarily too low in the majority of dietaries, but rather that the food supply furnished a much more liberal surplus of protein than of calcium. When the results of 224 presumably typical American dietary studies were calculated to the usual basis of nutrients for one man per day, the average protein content was found to be 106 gm., or 140 per cent. above the indicated maintenance requirement of 44 gm., while the average calcium content was 0.74 gm., or 64 per cent. above the estimated actual minimum of 0.45 gm.

The prevention of a calcium deficit is not difficult or expensive. It will not be necessary to requisition the help of the "patent medicine" manufacturer. Salts of lime might be incorporated with our common table salt, as Loew and others have proposed. Sherman's advice seems preferable when he remarks that it would probably be more difficult to persuade people generally to make such additions than to teach a more liberal use of foods naturally rich in calcium, while the latter course has the added advantage that the foods whose larger use would be invoked to increase the calcium intake (notably milk in its various forms) are important sources of proteins of high nutritive efficiency and of the fat-soluble vitamin as well.

WHAT IS A NORMAL BLOOD PRESSURE?

Nowadays, aside from the estimation of pulse rate and the determination of body temperature, few measurements are made more frequently than is the record of blood pressure. Obviously, then, it becomes of great importance in clinical medicine to be able to evaluate the data thus obtained with respect to the condition of the circulatory organs. The observer cannot remain content with mere data; he inevitably asks himself what the norms of health are and what deviations mark the borderline between the normal and the pathologic. In other words, prognosis and intelligent advice to patients may depend in no small measure on a correct understanding of manometric observations of blood pressure. If it is true, as clinicians of experience have ventured to assert, that fifty out of a hundred men will die of cardiovascular disease, a condition in which hypertension plays a conspicuous part, the study of its genesis must become one of the foremost efforts of preventive medicine; and in this investigation the statistics of blood pressure are bound to be significant.

Blood pressure varies with age as well as with other factors that enter into human life. Various "rules" have been proposed for taking into account the physiologic deviations that affect the tension in the blood vessels. Thus, it has been asserted that the normal pressure for any age is roughly 100 mm. of mercury plus a figure represented by the age in question. The "norms" seem to be changing as physicians are acquiring an increased familiarity with the subject. In 1913, a capable observer placed the upper limit of normal systolic pressure at between 150 and 160 mm.; within two years he revised his estimate so as to regard a pressure of more than 135 mm. up to middle life as pathologic hypertension. What shall we regard as a correct dictum for 1920?

It might seem like a relatively simple task to establish physiologic values for blood pressure as they have been satisfactorily ascertained with respect to body temperature, for instance. Large numbers of presumably healthy persons of different ages could be examined, as indeed they have been for a diversity of purposes. Numerous life insurance examination data, figures from army recruits, measurements of candidates for athletics, etc., are available. Careful consideration, however, points to the conclusion that most of such groups are likely to represent special categories of persons, and thereby would tend to make deductions somewhat uncertain in their broadest application. Instead of a record of "selected applicants," some fairer method of sampling mankind would be more accurate.

An ideal way, Alvarez [1] recently wrote, would be to examine every tenth individual passing a certain point on a busy street. Different strata of society might be sampled by choosing streets in different parts of the city and also by choosing different cities. Unfortunately, such methods are not practicable at present. The next best thing probably would be to study the young people gathered together in the public schools and colleges. Particularly in state universities where tuition is free it would seem that the student body should represent a fair sampling from the more intelligent part of the community. Alvarez has had the exceptional opportunity to study a statistical analysis of the blood pressures of several thousands of freshmen of both sexes at the University of California. From these it appears that the blood pressure in young women is much more uniform than in men. The range for the women was practically from 85 to 155; for the men it was from 90 to 175. Fifty per cent. of the women's readings fell between 105 and 119 mm.; 50 per cent. of the men's fell between 116.5 and 136.5 mm. High blood pressure appears earlier and to a greater degree in young men than in young women.

Such are the figures. Ranges of data may include the abnormal as well as the healthy normal. A math-

1. Alvarez, W. C.: Blood Pressure in University Freshmen and Office Patients, Arch. Int. Med. **26**: 381 (Oct.) 1920.

ematical interpretation of the valuable California data suggests that pressures over 130 mm. for the women and over 140 mm. for the men are abnormal. The arithmetical mean for women between 16 and 40 was 115 mm.; for men, 126.5 mm. From clinical experience, Alvarez concludes that pressures over 127 in women, and over 130 in young men, are indicative of a hypertensive diathesis which is associated with many typical symptoms and findings.

It may be and presumably will be objected at once that such statements contradict experience—that many persons outlive the unfavorable prognosis that is based on such low values for the borderline of perfect health. However this may be, we must be prepared to examine dependable data for any evidence of early deterioration of present-day man, wherever it may lead us. Abnormality need not be ignored because it is not always synonymous with death. Real facts are often worth following, wherever they may lead.

Current Comment

THE SINCEREST FLATTERY

Some of our Spanish confrères are liberal in copying from THE JOURNAL without giving credit. The most conspicuous recent instance is the *Estudios Médicos* (Murcia) for November. Of the six "original articles" in that issue, five are reproduced in full from the Spanish Edition of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION without credit, except a one-line statement in extremely small type, appearing under the table of contents. The *Estudios Médicos* is elaborately prepared, beautifully printed on excellent paper, the type is large, especially for the headings and center heads, and it has wide margins, giving the impression of enterprise. The editor is to be congratulated on the excellent material appearing in this particular issue.

THE SPIRITUAL ADVANCEMENT OF THE PHYSICIAN

It is evident that general educational and cultural advancement has occurred among physicians within the last few decades. The frontier atmosphere and the crude manners of pioneer days are largely giving way to the finer type and character of a more civilized state. This advancement may be traced definitely to the broad fundamental education now being required of medical students, which gives them the fine discriminating sense of the cultured man and enables them to measure and evaluate the factors that go to make up human life. Of course, such extension of medical education means also better professional equipment. In urging cultural advancement it is not meant that physicians should become artists, musicians or poets, or even perhaps experts in the realm of sciences indirectly related to medicine. Although the physician need not have an intimate knowledge of all those matters of higher education comprehended under the term "humanities," he should nevertheless have some acquaintance with these subjects. In every community today, one finds physicians who exhibit cultivated taste. While acknowledging first obedience to the vocation of healing the sick, they find in the by-paths of artistic activity not merely amusement and recreation, but also opportunity for contributing to community betterment.

THE FLY IN COURT

The housefly is a vicious cuss:
He has no fear or shame;
He has no business in the soup,
But he gets there just the same.

To a certain summer hotel in the state of Maine there came one day a high-school teacher vacationing with his wife. He had reserved rooms for a two weeks' stay, but after four days' occupancy, he left the hotel, and his excuse was the number of flies in the dining room. All this is covered in a report of the Supreme Judicial Court of Maine, to which the case finally was appealed, for the hotel-keeper sued for fulfilment of the contract. The supreme court ruled in favor of the teacher, and in rendering the decision the judge presented a legal indictment of the fly, calling for at least capital punishment as a logical treatment for the miscreant. We refer our readers to the report of this case,[1] because the indictment of the fly by the judge is unique. The fly has had his legal chance and has lost. The penalty against this outlaw is that he be swatted until dead.

SENSITIZATION OF ORGANS TO LIGHT

The phenomena of photodynamic sensitization of animals through the introduction of fluorescent substances into them were first demonstrated twenty years ago by Tappeiner and his co-workers in Munich. They gave promise of helping to explain many of the still obscure biologic and pathologic effects that seem to be attributable to the action of light on the body. Not only do chemical compounds like fluorescein and eosin sensitize suitable animals, like white mice, so that they are severely affected by the exposure to intense light, whereas they remain unharmed if kept in the dark: similar results are obtainable with more distinctly biologic products. Among these are chlorophyl and the hemoglobin derivative of hematoporphyrin. Meyer-Betz [2] so sensitized himself by injections of the latter that exposure to the sun caused severe skin reactions for several weeks. The details of the reaction have never been adequately investigated. It is of peculiar interest, therefore, to learn from more recent studies of Amsler and Pick [3] at Vienna that isolated organs like the heart can be made to stop functioning when exposed to light during perfusion with a nutrient solution that contains a potent fluorescent substance. In the absence of light, no interference with the orderly beat of the surviving heart is noticed. The effect of

1. A Supreme Court's Pronouncement Against the Fly, this issue, p. 1669.
2. Meyer-Betz: Deutsch. Arch. f. klin. Med. **112**: 476, 1913.
3. Amsler, C., and Pick, E. P.: Eine Analyse der biologischen Wirkung der Fluoreszenzstrahlen, Wien. klin. Wchnschr. **30**, No. 10, 1917.

illumination after sensitization with minute doses of eosin, for example, is to produce a sort of diastolic shock in which the nervous rather than the muscular parts of the organ are injured. Such phenomena urgently call for detailed investigation in many directions. They may help to explain hitherto obscure manifestations under conditions in which sensitizing compounds like the blood pigments accidentally circulate in the body. The still highly indefinite heliotherapy can likewise well afford to take notice of these new opportunities for investigation along promising lines.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Tuberculosis Clinic Established.—The Associated Charities of Redlands has opened a tuberculosis clinic in the northern section of the city. Tentative plans provide for opening the clinic every Saturday.

Personal.—Dr. Franklin R. Nuzum has been appointed director of medical service of the Santa Barbara Cottage Hospital, including the memorial metabolic clinic and laboratories.——Dr. Adelaide Brown, San Francisco, has been appointed lecturer on child hygiene in the division of medicine of Stanford University Medical School.——Dr. Lester C. Scully has been appointed quarantine physician of the port of San Francisco.

Hospital Notes.—The board of supervisors of Yolo County have decided to build a new county hospital to replace the present building which is considered obsolete and inadequate. The new structure will cost $100,000, provision for which has been made in the tax levy for 1920-1921. The hospital will be on the same tract as the present building, about 4 miles from Woodland.——The new Woodland Sanatorium, constructed at a cost of $125,000, is virtually complete. The additions to the old sanatorium almost treble the capacity, providing accommodations for approximately 100 patients.

Regulations Governing Ripe Olives.—The California State Board of Health recently adopted resolutions regulating the packing processes and the marketing of ripe olives. Hereafter ripe olives must be subjected to a temperature of 240 F. for a period of forty minutes and rigid regulations will be enforced regulating the sanitation of the equipment employed in all processes. The regulations are based on the results of the investigations conducted by a board consisting of Dr. Ernest C. Dickson, Stanford University, Drs. Karl F. Meyer and W. V. Cruess of the University of California, and Dr. Jacob C. Geiger, U. S. P. H. S.

GEORGIA

Personal.—Dr. Hugo Robinson, Albany, has been elected district health commissioner of Dougherty County to fill the unexpired term of Dr. Horace C. Robles, deceased.

Hospital Fire.—The Sanatorium of the Seventh Day Adventists at Reeves, 5 miles from Calhoun, sustained damages estimated at $30,000 by a fire, November 14. The patients in the building were removed without casualty.

ILLINOIS

Tuberculosis Societies Meet.—At the eleventh annual meeting of the Illinois Tuberculosis Association, held at Springfield, the following officers were elected: president, Dr. George T. Palmer, Springfield (reelected); vice presidents, G. L. Avery, Peoria, E. C. Searles, Chicago, Dr. Herbert C. Jones, Decatur, and Moss Maxey, Mount Vernon; secretary, J. W. Becker, Jerseyville, and treasurer, Louis G. Coleman, Springfield.——The Winnebago County Tuberculosis Society at its annual meeting, held at Rockford, November 15, elected the following officers for the ensuing year: president, Dr. Anna Weld; vice presidents, Dr. M. R. Harned and Miss Mabel Nelson; secretary, Miss Prudence Ross, and treasurer, Miss Mabel Beattie.

Tuberculosis School Reopened.—The school for diagnosis and treatment of tuberculosis for acting assistant surgeons and local examiners of the U. S. Public Health Service of Michigan, Wisconsin and Illinois will be resumed at Springfield, December 13. The courses will be directed by Dr. George Thomas Palmer, assisted by Drs. Walter H. Watterson, Chicago; Orville W. McMichael, Chicago; Roswell T. Pettit, Ottawa; Herman H. Cole, Springfield; Fred S. O'Hara, Springfield, and Thomas G. Hull. It is planned to conduct courses every six weeks and the second course will be initiated January 24.

Chicago

Dietitians Seek Interesting Lectures.—The Chicago Dietitians' Association seeks the opportunity to attend meetings with lectures, papers or discussions on topics of special interest to its members. Information regarding contemplated lectures may be communicated to Miss Rose Straka, Presbyterian Hospital, Congress and Wood streets.

Illegal Practitioner Fined.—H. C. Selby of 5158 South Wabash Avenue, Chicago, was arrested by the Department of Registration and Education of Illinois charged with a violation of the medical practice act, for which he was fined $25 and costs, November 30. A second count was dismissed on his promise to discontinue the circulation of advertising literature.

Meeting of Institute of Medicine.—At the annual meeting of the Institute of Medicine of Chicago, December 7, Dr. Thomas L. Gilmer delivered the presidential address on "The Relation of Diseases of the Teeth to Systemic Diseases" and Dr. Charles B. Reed spoke on "The Literary Effect of Hunger." Drs. D. J. Davis, Samuel J. Walker, J. G. Wilson and Arthur I. Kendall were elected governors.

Physicians Awarded Foreign Honor.—At a meeting of the north side branch of the Chicago Medical Society, held Thursday night, December 2, the cross of an officer of the Order of Leopold II was awarded to Drs. Frank Billings and L. L. McArthur in recognition of their work for the cause of Belgium and humanity during the World War. Dr. Cyrille Vermeren, Belgian consul in Chicago, made the presentation.

Quarantine Regulations Upheld by Court.—According to a recent ruling of Judge Joseph Sabath of the superior court, the health commissioner has a legal right to order the arbitrary quarantine of any individual declared by medical experts to be a carrier of typhoid bacilli. The ruling was given in the case of Mrs. George A. Barramore on a hearing for a writ of habeas corpus, proceedings for which were instituted by Attorney Clarence Darrow for the American Medical Liberty League, to gain her liberty from the County Hospital, where she was placed in quarantine by order of the health commissioner. The source of infection in five cases of typhoid fever had been traced to Mrs. Barramore; four of the patients were boarders at her home, the other was her son. The first case occurred in June, 1915, the second in July, 1918; two cases developed in July, 1919, and the fifth case occurred early in September, 1919. The court recognized that there is more danger of the spread of the disease through a carrier than through a bedridden patient, owing to the greater possibility of contact with others. The decision acknowledges the commissioner's legal right to take any steps deemed necessary to preserve the health of the community.

INDIANA

Case of Leprosy Discovered.—Officers of the state board of health, following a thorough investigation, have reported the discovery of a case of leprosy in Robert Burdine of 2130 Webb Street, Indianapolis. It is thought that the man contracted the disease while in the United States military service in the Philippine Islands following the Spanish-American War.

Personal.—Dr. Frank F. Hutchins, Indianapolis, has resigned as medical director and superintendent of the Marion branch of the National Military Home. It is reported that he will be succeeded by Dr. William MacLake.——Dr. Lewis A. Storch, Indianapolis, suffered painful injuries when his automobile was struck by a street car recently.——Dr. Roy D. Morrow, Connorsville, sustained two broken ribs and a fractured ankle in an automobile collision.—Dr. Byrl R. Kirklin, Muncie, was elected president of the Delaware Blackford Medical Society at the meeting held in Muncie, succeeding Dr. Herbert L. Buckles, Hartford City.

IOWA

Personal.—Dr. Mary J. Erickson, Newberry, Mich., has been appointed chief of the laboratories of the research on social diseases in the department of pathology and bacteriology at the University of Iowa.

Southeastern Iowa Society Elects.—At the forty-fifth annual meeting of the Southeastern Iowa Medical Association, held in Ottumwa, November 10, Dr. Edward F. LaForce, Burlington, was elected president to succeed Dr. Edward T. Edgerly, Ottumwa, and Dr. George B. Crow, Burlington, was elected secretary-treasurer. The next meeting will be held in Fort Madison on the third Monday in October, 1921.

KANSAS

Physician Donates Private Hospital.—Dr. Samuel Murdock, Sabetha, has donated his private hospital to the Sisters of St. Joseph who will hereafter conduct it as a general institution under the name of St. Anthony's Hospital.

KENTUCKY

Nurse Anesthetist on Medical Faculty.—The Medical Department of the University of Louisville has appointed as full time anesthetist Mrs. Louise Miller, who will reside at the Louisville City Hospital and will conduct classes in anesthesia for the senior students. The state legislature recently legalized the practice of anesthesia by nurses and has authorized the appointment of a nurse examiner for anesthetists.

LOUISIANA

Hospital Appeals for Radium Fund.—Charity Hospital at New Orleans has made an urgent appeal for $10,000 for the purpose of purchasing radium for the treatment of cancer patients.

Free Clinics Opened.—The Monroe free clinic building, an adjunct of St. Francis Sanatorium, Monroe, was recently completed at a cost of $25,000, and citizens are raising a fund of $10,000 to furnish necessary equipment. Dr. Charles Vaughan, Monroe, will be superintendent of the clinic.—— A free clinic for colored poor has been inaugurated at Flint-Goodridge Hospital, 1566 Canal Street, New Orleans, under the charge of Dr. Ray T. Fuller, superintendent of the hospital.

MARYLAND

Health Association Plans Model Clinic.—Washington County Public Health Association has purchased property at 10 E. Washington Street, Hagerstown, for the purpose of establishing a model clinic.

Sanatorium Superintendent Appointed.—Dr. W. A. Bridges has resigned his position as medical director of the Maryland Tuberculosis Association in order to assume the duties of superintendent of Eudowood Sanatorium, to succeed Dr. Martin F. Sloan, now engaged in a tuberculosis survey for the United States government.

Lectures at Fort McHenry.—Dr. William C. Shroeder is giving a series of lectures on tuberculosis at the U. S. Public Health Hospital at Fort McHenry, for the instruction of Public Health Service physicians engaged in tuberculosis field work and of local public health physicians. These lectures will be repeated at intervals of two or three weeks.

Society Meetings.—At a special meeting of the Baltimore City Medical Society, held at Osler Hall, November 29, Dr. O. R. Avison, surgeon-in-chief of the Severance Hospital, Seoul, Korea, spoke on the "Medical and Surgical Problems of the Orient and the Development of Doctors and Nurses in Korea."——At the annual meeting of the Baltimore City Medical Society, held at Osler Hall, December 3, the following were elected officers for the ensuing year: president, Dr. Harvey G. Beck; vice president, Dr. Thomas R. Boggs; secretary, Dr. Frank S. Lynn, and treasurer, Dr. Charles Emil Brack. An address on "The League of Red Cross Societies and Its Relation to the Health of Europe" was given by Dr. Thomas R. Brown, who recently returned from abroad.

MAINE

New Officers of Penobscot County Society.—At the annual meeting of the Penobscot County Medical Association, held at Bangor, November 16, the following officers were elected for the ensuing year: president, Dr. Jarvis B. Woods; vice president, Dr. Charles H. Burgess, and secretary and treasurer, Dr. Harry D. McNeil, all of Bangor.

Health Department Offers Aid for Health Lectures.—The Maine State Department of Health has prepared a series of lantern slides, lecture notes, and literature on child welfare, rural sanitation; school hygiene, first aid, boy scouts, care of the baby, keeping fit, oral hygiene, tuberculosis, milk, insect pests and infectious diseases for the use of the district health officers, local health officials, women's clubs and popular health organizations.

MICHIGAN

Personal.—Dr. Mary C. McClellan, Smithtown Branch, N. Y., has been appointed to a position on the medical staff of the Traverse City Hospital.——Dr. Calvin A. Wisner, Columbiaville, narrowly escaped death recently when his automobile was struck by a train on the Michigan Central Railroad.

Smallpox in State.—Up to November 22, a total of 3,719 cases of smallpox has been reported to the state department of health for 1920, as compared with 2,070 cases in 1919. Some of the increase is attributed to more thorough reporting, but the situation is considered serious enough to command the attention of health officers of Wyandotte, Saulte Ste. Marie and other cities which have already experienced small epidemics.

Food Hygiene Regulated.—In compliance with a municipal ordinance recently passed in Escanaba no person will be permitted to work in any establishment where food is prepared, cooked or served without first obtaining a certificate from the health department certifying that he is free from venereal or other communicable disease. These certificates may be annulled by the health officer at any time if the employee becomes infected with any communicable disease.

MINNESOTA

Smallpox in Minneapolis.—On November 19, 153 cases of smallpox were under quarantine in Minneapolis according to the statement of Dr. Francis E. Harrington, city health commissioner. The department of health and the division of school hygiene has completed arrangements for vaccination of pupils.

Health Officers Elect.—At the annual meeting of the Minnesota Public Health Association, held at St. Paul, November 17, Dr. Charles L. Scofield, Benson, was reelected president; Mrs. H. A. Patterson and Dr. Albert J. Chesley, Minneapolis, vice presidents; Mrs. A. H. Vernon, Little Falls, secretary, and Mr. W. A. Laidlaw, St. Paul, treasurer (reelected).—— At the annual conference of health officers of Minnesota, held at St. Paul, November 17, Dr. Frederick U. Davis, Faribault, was elected president; Dr. Thomas F. Rodwell, Mahnomen, vice president, and Dr. Charles E. Smith, Rochester, secretary.

MISSISSIPPI

Personal.—Dr. W. E. Noblin was elected president of the Mississippi State Health Association at its annual meeting recently held at Yazoo.

State Sanatorium Assured.—Plans have been completed for the erection of a state tuberculosis sanatorium on a site located 39 miles south of Jackson on the Gulf and Ship Island Railroad, in a region covered with long-leaf pine forests. The sum of $1,463,000 has been appropriated by the state legislature for erection of the buildings.

MONTANA

Typhoid Carrier Causes Epidemic.—Eight cases of typhoid fever, three of them fatal, in Myers, Treasure County, were recently traced to a carrier employed in a threshing crew, according to reports of Dr. John C. E. Hagen, county health officer.

Hospital for War Veteran.—Disabled veterans of the World War will be received at Fort William Henry Harrison, near Helena, within the near future. The fort is being converted into a general hospital for the rehabilitation of disabled veterans from the northwestern states.

NEW HAMPSHIRE

Hillsborough County Meeting.—At the semiannual meeting of the Hillsborough County Medical Association, held at Milford, early in November, Dr. Frederick T. Lord, Boston, delivered an address on "Certain Aspects of Lobar Pneumonia and Serum Treatment," and Dr. Fritz B. Talbot, Boston, spoke on "The Treatment of Acute Illness in Children."

Tuberculosis Association Establishes Clinic.—The New Hampshire Tuberculosis Association opened a free tuber-

culosis clinic at Laconia, November 15. Drs. John M. Wise, superintendent of the tuberculosis sanatorium at Glencliff, and Robert D. Kerr, Manchester, executive secretary of the association and examining physician for southern New Hampshire, are in charge.

NEW JERSEY

Fined for Neglecting Report of Birth.—On complaint of the board of health of Montclair, it is reported Dr. Hayes J. Burnett was recently fined $50 and costs for failing to report a birth within the five day limit prescribed by the state law.

Convicted for Violation of Practice Act.—A report from the secretary of the New Jersey State Board of Medical examiners states that five individuals were recently convicted of violations of the medical practice act and penalized as follows: Josephine Ondeo was found guilty of unprofessional and dishonorable conduct and her license to practice midwifery was revoked, June 10; in September, Mrs. Minnie Magnette and Fred Michelback pleaded guilty to a charge of practicing without a license and were fined $200 each; in November, Dr. Charles Smith and Anthony DeVito, both of Newark, were found guilty and fined $200 each.

NEW MEXICO

New Officers for Bernalillo County Society.—At the November meeting of the Bernalillo County Medical Society, held at the Chamber of Commerce, Albuquerque, a resolution was adopted endorsing the passage of the Sheppard-Towner bill for the protection of mothers. Officers for the ensuing year were elected as follows: president, Dr. John R. Van Atta; vice presidents, Drs. Arno Klein and Carl Mulky; secretary-treasurer, Dr. Frank E. Tull, and corresponding secretary, Dr. George S. McLandress, all of Albuquerque.

NEW YORK

Schenectady Health Center.—The health department of Schenectady has purchased the Knights of Columbus property in Union Street and has converted the building into a health center. The center will be open daily from 9 a. m. to 5 p. m., and on Tuesday, Wednesday and Thursday evenings until 9 p. m. Clinics will be held for women's diseases, child hygiene, tuberculosis, mental hygiene, venereal diseases and eye, ear, nose and throat diseases.

Jefferson County Society Elects Officers. — At the annual meeting of the Jefferson County Medical Society, held at Watertown, November 9, under the presidency of Dr. Elbridge Minar, Mannsville, the following officers were elected to serve during 1921: president, Dr. George B. Van Doren, Watertown; vice president, Dr. Frederick G. Metzger, Carthage; secretary, Dr. Murray M Gardner, Watertown, and treasurer, Dr. Andrew H. Allen, Watertown.

New York City

Columbus Hospital Changes Location. — The management of the Columbus Hospital has purchased the St. Lawrence Hospital at 457 West One Hundred and Sixty-Third Street, and proposes to move to the new location within a few weeks.

Asthma and Hay Fever Clinic.—The New York Hospital has instituted a public clinic for the treatment of asthma, hay fever and various pollen, food and protein poisonings. The clinic is held on Monday and Friday afternoons. Dr. Robert A. Cooke is in charge.

Associated Clinics Meeting.—At the annual meeting of the Associated Out Patient Clinics to be held at the New York Academy of Medicine, December 13, Dr. William Gilman Thompson will deliver the principal address on "Present Inadequate Dispensary Service for the Treatment of Industrial Accident Cases."

Society Honors Dr. Kindred.—Dr. John J. Kindred, superintendent of the highways of Queens County and recently elected representative in Congress, was the guest of honor at the meeting of the Long Island City Medical Society, December 1. The reception was given in recognition of the work Dr. Kindred has done for the medical profession and for the society, of which he is a former officer.

Health Department Plans Attack on Cancer.—The major part of the increased appropriation given by the Board of Estimate for public health education will be spent by the health department in educational propaganda to reduce fatalities from cancer. Statistics indicate that the death rate of cancer rose from thirty-five per hundred thousand of the population in 1869 to eighty-five per hundred thousand in 1918. The appropriation for public health education has been increased from $1,000 to $7,500.

NORTH CAROLINA

Henderson Health Officer Resigns.—Dr. Edwin J. Kehoe has resigned his position as health officer for Henderson and Vance County.

New Officers of District Society.—At the annual meeting of the Fourth District Medical Society held at Wilson, November 11, under the presidency of Dr. Richard J. Noble, Selma, the following officers were elected: president, Dr. James C. Grady, Kenly; vice president, Dr. Edmund C. Boyce, Rocky Mount; secretary, Dr. Charles A. Woodard, Wilson (reelected), and treasurer, Dr. Byrd C. Willis, Rocky Mount (reelected). The next meeting will be held at Smithfield.

NORTH DAKOTA

Health Officer Resigns.—Dr. Arthur A. Nichols has tendered his resignation as city health officer of Fargo.

University Receives Library Gift.—The medical library of the University of North Dakota at Grand Forks is the recipient of the professional library, containing about 500 volumes, of the late Dr. Samuel Harvard Irwin, a former physician of Grand Forks. The gift is made through the generosity of Dr. Irwin's widow and children.

OHIO

Ross Welfare Association Election.—The following officers were elected at a recent meeting of the Ross County Welfare Association: president, Dr. Gilbert E. Robbins, vice presidents, Dr. William S. McKell and Miss Alice Bennett, secretary, Dr. Raymond E. Bower, and treasurer, Mr. C. M. Haynes, all of Chillicothe.

Columbus Tuberculosis Society Clinic Moved.—The Columbus Society for the Prevention of Tuberculosis has opened a new dispensary at Oak Street and Washington Avenue, to replace the dispensary formerly maintained at its old headquarters in East Long Street. The building was remodeled at a total cost of $25,000, and new equipment has been installed.

Personal. — Dr. Edwin J. Kehoe, Henderson, N. C., has been appointed director of the child welfare clinic of the Cincinnati City Health Center.——Dr. John W. Cogswell has been nominated professor of obstetrics and gynecology at the Ohio State University, Columbus.—— Dr. William T. Moore, New Concord, a medical missionary to Egypt, has sailed for the Near East with his family.

PENNSYLVANIA

New Officers of Bucks County Society. — At the annual meeting of the Bucks County Medical Society, held at Doylestown, November 10, the following officers were elected: president, Dr. Frank Lehman, Bristol; vice presidents, Drs. John J. Sweeney, Doylestown, and Herman C. Grim, Trumbauersville, and secretary-treasurer, Dr. Anthony F. Myers, Blooming Glen.

Lycoming County Society Meeting.—The Lycoming County Medical Society, at its regular meeting, held at the Williamsport Hospital, November 12, decided to erect a tablet in memory of the members of the society who served in the World War. Dr. Henry D. Jump, Philadelphia, president of the state medical association, delivered an address on "Medical Economics."

Philadelphia

Mütter Lecture.—The Mütter Lecture of 1920 of the College of Physicians of Philadelphia was delivered at Mitchell Hall, Thursday evening, December 10, by D. J. Chalmers DaCosta on the subject of "Osteitis Deformans."

Personal.—Dr. J. Whitridge Williams, professor of obstetrics at Johns Hopkins University, was the guest and principal speaker at the annual invitation meeting of the Obstetrical Society of Philadelphia, December 2.

New Presbyterian Hospital Planned.—The Presbyterian Hospital has acquired additional land near its present buildings at Thirty-Ninth Street and Powelton Avenue, on which it is proposed to erect additional buildings for hospital purposes.

Postgraduate Lecture Course. — Dr. Jay F. Schamberg began a series of three illustrated lectures on the diagnosis and treatment of diseases of the skin and syphilis, December 3, in the auditorium of the Clinical Association on Sydenham Street.

Public Health Lecture.—The fourth public health lecture of the course given by the School of Hygiene and Public

Health of the University of Pennsylvania was delivered, December 4, by Dr. Philip P. Calvert, professor of zoology, on "The Rôle of Insects and Rodents in the Transmission of Disease."

SOUTH CAROLINA

Commission on Health and Sanitation.—The South Carolina development board has appointed a commission on health and sanitation including Drs. George B. Comer, Newberry, Davis Farnum, Greenville, Benjamin A. Henry, Anderson, Robert Wilson, Jr., Charleston, L. M. Fisher, U. S. P. H. S., and James A. Hayne, Columbia.

UTAH

Ogden Free Clinic.—The Ogden free clinic has been opened at Twenty-Fifth Street and Washington Avenue, under the auspices of the city and county commissioners, the Weber County Medical Society, the Red Cross and other welfare organizations. Dr. Joseph R. Morrell has been appointed medical director.

Child Welfare Campaign.—Dr. Heber J. Sears, chief of the department of hygiene and preventive medicine in the University of Utah, recently initiated a state campaign on health and child welfare by a series of lectures in Summit County. Physicians throughout the state have been appointed as lecturers in aid of the public campaign.

VIRGINIA

Medical College Appointment.—Margaret Morris Hoskins, Ph.D., has been appointed instructor in histology and embryology at the Medical College of Virginia, Richmond.

Society Elects New Officers.—The Northern Neck Medical Association at its annual meeting held at Kilmarnock elected the following officers for the ensuing year: president, Dr. Henry J. Edmonds, Kilmarnock, vice president, Dr. Maryus C. Oldham, Lancaster, and secretary-treasurer, Dr. C. T. Pierce.

WASHINGTON

Snohomish County Society Meeting.—The Snohomish County Medical Association at its regular November meeting elected Dr. Nathan L. Thompson, president, and Dr. Albert P. Duryes, secretary-treasurer.

Aberdeen Hospital Sold.—The Loyal Legion of Loggers and Lumbermen has purchased the Aberdeen Hospital for $40,000. The hospital will be enlarged and refurnished to provide facilities for lumbermen employed in the section.

WISCONSIN

Personal.—Dr. Guy W. Henika, Madison, for seven years deputy state health officer and supervisor of the state clinics, has tendered his resignation, effective January 1.

Seventy-Fifth Anniversary of State Association.—The State Medical Society of Wisconsin is arranging to celebrate the seventy-fifth anniversary of its founding at its annual session to be held at La Crosse, in October, 1921. All physicians who have practiced in the state and have moved away, as well as those who were born in or lived in Wisconsin but have practiced elsewhere, are to be invited to the "home-coming" in connection with the session. Memoranda regarding such physicians sent to Dr. Rock Sleyster, secretary, Wauwatosa, will assist in perfecting the records of the state association.

GENERAL

Meeting of Radiologic Society.—The Radiological Society of North America will meet at Chicago, December 15, 16 and 17, with headquarters at the Hotel Sherman.

Child Welfare School in the Philippines.—A school of puericulture has been organized in the Philippines, thanks to the efforts of the Philippine League of Infant Welfare, the president of which is Dr. José Albert.

Estate of General Gorgas.—Gen. William C. Gorgas left an estate valued at $20,500, according to the petition for the probate of his will entered by his widow, Mrs. Marie D. Gorgas. The estate includes proceeds of life insurance and a residence at Chevy Chase, Md.

Southern Medical Association Elections.—At the annual meeting of the Southern Medical Association, held at Louisville, November 15-18, under the presidency of Dr. Edward H. Carey, Dallas, Texas, the following officers were elected: president, Dr. Jere Crook, Jackson, Tenn.; vice presidents, Drs. E. Bates Block, Atlanta, Ga., and George A. Hendon, Louisville, and secretary, Dr. Seale Harris, Birmingham, Ala.

Physician Sails to China.—Dr. Franklin C. McLean, director of the Peking Union Medical College with headquarters at the Rockefeller Foundation offices in New York, is on his way to Peking where he will serve as professor of medicine at the medical college after January 1.

Medical Members of Red Cross.—Dr. Livingston Farrand has been reappointed chairman of the central committee of the American Red Cross; Surg.-Gen. Merritt W. Ireland has been designated to represent the War Department, and Surg.-Gen. E. R. Stitt has been named to represent the Navy Department.

Appointed Red Cross Health Director.—Prof. C. E. A. Winslow of Yale University School of Medicine has been granted leave of absence for the spring term so that he may assume the position of director of public health activities of the League of Red Cross Societies, with headquarters at Geneva, Switzerland.

Meeting of Students Health Association.—The American Students Health Association, an organization of persons interested in student health work, will hold a meeting at Chicago, December 31. Headquarters will be at the Sherman Hotel. Dr. Warren E. Forsythe of the University of Michigan, Ann Arbor, is secretary of the association.

British War Medals for American Officers.—According to a communication received from the British War Office by the Surgeon-General of the U. S. Army, on the completion of the list of officers and nurses who are entitled to receive the British War Medal for service with the British Army during the World War, these medals will be forwarded to the Surgeon-General for distribution from his office. When the medals are received in this country, they will be forwarded by Surgeon-General Ireland to those designated by the British War Office.

Institute on Venereal Diseases.—The Institute on Venereal Diseases, held at Washington, D. C., under the auspices of the U. S. Public Health Service was attended by 511 men and women, including 100 physicians, 48 directors of clinics, 47 nurses, 22 police women, 15 educators and 50 national, state and city health officers. The administrative officers of the institute were Surg.-Gen. H. S. Cumming, U. S. P. H. S.; Asst. Surg.-Gen. C. C. Pierce, director of the institute, and Mr. H. H. Moore of the division of venereal diseases, Public Health Service.

Officers of Tri-State Society.—At the thirty-sixth annual meeting of the Tri-State Medical Association of Tennessee, Arkansas and Mississippi, held at Memphis, November 30, December 1 and 2, under the presidency of Dr. John F. Sanders, Blytheville, Ark., the following officers were chosen for the ensuing year: president, Dr. G. B. Gillespie, Covington, Tenn.; vice presidents, Drs. John K. Crawford, Somerville, Tenn., Walter L. Boswell, Clarendon, Ark., and S. G. Mills, Alligator, Miss.; secretary, Dr. Arthur F. Cooper, Memphis, Tenn. (reelected), and treasurer, Dr. James A. Vaughan, Memphis, Tenn. (reelected).

Amendment to Narcotic Exportation Statute.—Senator L. Wesley Jones of Washington will introduce in the United States Senate a bill to amend the present federal statutes which prohibit the exportation of opium or cocain. The proposed amendment will forbid the importation of these habit-forming drugs or their salts and derivatives. Crude opium, coca leaves and other crude narcotics may be imported only in such quantities as may be found necessary by the Surgeon-General of the Public Health Service for the manufacture of morphin, cocain or medicinal preparations for use within the United States. A duplicate bill will be introduced in the House by Representative John F. Miller of Seattle.

Survey of Drug Addicts.—Clinics conducted by the narcotic division of the Bureau of Internal Revenue, through which agency several thousand drug addicts were examined, reveal no evidence of an increase of the narcotic habit since prohibition went into effect. The number of women habitués is slightly in excess of the number of men. The investigation disclosed that different communities have their favorite narcotics. In New York the addicts consume heroin almost entirely; in Chicago there is a predominant demand for morphin; in San Francisco, owing to the many oriental inhabitants, opium is most frequently employed, whereas St. Louis, New Orleans and other cities with a large colored population, cocain is in vogue. Field agents of the bureau have recently discovered small stocks of hashish.

LATIN AMERICA

New Medical Courses in Chile.—Beginning in 1921 new courses of chemistry and toxicology will be given in connection with the subject of legal medicine in the School of Medicine of Chile.

Institute of Physiology in Paraguay.—The department of education has ordered the creation of an institute of physiology connected with the School of Medicine, which will be in charge of the professor of physiology.

New Sanatorium in Colombia.—There has been organized a corporation at Bucaramanga, Colombia, for the purpose of erecting a modern sanatorium. Half of the capital will be subscribed by the local physicians and the other half by private citizens.

New Health Board in Honduras.—A board of health has been appointed at Puerto Cortés to take charge of public health work at that port and to prevent the introduction of yellow fever. The board consists of Drs. Fidel Carías S., Camilo Jirón, T. Tábora, F. Canales, R. Andino Aguilar, and L. Rosales M.

Smallpox in Haiti.—Reports from Haiti indicate an unusual prevalence of smallpox on the island, several hundred cases of which have been recorded. The disease is apparently of a mild type, few fatal cases having been reported. The U. S. Navy has consigned supplies of smallpox vaccine to its representatives at Port-au-Prince.

Department of Public Health at Costa Rica.—There has been created a public health department at Costa Rica under the department of police. The new department will undertake a campaign against hookworm disease and will have charge of all public health work approved by the government. The appropriation for the first year amounts to 50,440 colones (about $20,000).

Yellow Fever Tablet at Guayaquil.—The authorities have ordered that a tablet be placed in the bacteriologic laboratory of the Public Health Department of Guayaquil to commemorate the discovery of the causative organism of yellow fever. The inscription reads as follows: "In this laboratory of the Public Health Service, the prominent Japanese bacteriologist, Hideyo Noguchi, member of the Rockefeller Institute, discovered the yellow fever organism, July 24, 1919."

FOREIGN

Quakers Feeding German Children.—The *Deutsche medizinische Wochenschrift*, p. 1284, mentions without comment that the American Quakers are spending daily 1,000,000 marks in a total of 100 German cities, for the feeding of German children, distributing 400,000 portions.

Station for Experimental Surgery.—The *Paris médical* relates that Mme. Frances Bostwick Voronoff has endowed the Collège de France with sufficient funds to equip and maintain a station for experimental surgery. The decree authorizing acceptance of the endowment was dated Oct. 28, 1920.

Retirement of Hutinel.—The Hôpital des Enfants Malades at Paris has received its last visit from Prof. V. Hutinel after more than forty years of service, as he has reached the age limit for retiring from his connection with the faculty and hospital. He is one of the editors of the *Archives de Médecine des Enfants*. The infectious erythema seen in typhoid and pneumonia is known as Hutinel's disease.

Congress of Tropical Medicine at Java.—The Fourth Congress of the Far Eastern Association of Tropical Medicine will be held at Batavia, Java, in August, 1921, and all physicians interested in tropical medicine are invited to attend. Papers should be in English, French or German and should be received before Jan. 1, 1921. Dr. P. Deqqeller, Weltevreden, Batavia, is secretary.

Deficit from Publishing Medical Journals.—The Swedish Medical Association publishes a quarterly, a monthly record of the transactions, and a monthly journal with one or two leading articles, abstracts and news. There was a deficit of 14,109 crowns last year, and the prospects are that the deficit will be much larger this year. The government appropriated last May 5,000 crowns for the publishing work of the association, and the latter recently appealed to have the subsidy renewed in 1921.

Prophylaxis of Venereal Disease.—The bill now under discussion in Italy provides for the compulsory notification of all cases of syphilis with contagious manifestations which are discovered in any school, college, sanatorium or other collective groups, civil or military. It also decrees the founding of a dispensary for venereal diseases in the principal town of every province and in every community with more than 30,000 inhabitants, and allows the organization of a dispensary of the kind wherever the prevalence of venereal diseases seems to require it.

Congress Week in Italy.—The Italian internists, surgeons and orthopedists held their separate annual meetings in Rome in the second week in November. The internists devoted their attention mainly to asthma, lymphogranulomatosis and electrocardiography. The main addresses in the surgeons' twenty-seventh congress were on surgery of the cecum and colon, and the treatment of fractures. The orthopedists discussed treatment and orthopedic correction of rigidity and ankylosis and treatment of epidemic poliomyelitis and of spastic paralysis. The same week the neurologists and psychiatrists met at Genoa to discuss abnormal children.

Grain Itch.—Two communications in the *Policlinico* report from different regions in Italy "vast epidemics" of dermatitis caused by *Pelliculoides ventricosus* in September and October. The dermatitis affected thousands, frequently all the members of the families. The intense pruritus was sometimes accompanied with a general reaction, fever, headache and delirium. The hairy regions, hands and feet always escaped, and it was easy to cure it with baths and starch powders, but on return home the dermatitis was contracted anew. The acarus was found even in bran dust, etc., and sometimes such numbers accumulated as to form reddish deposits on the grain and sacks containing it.

Announcement of Prize.—The Accademia delle Scienze of Turin, Italy, offers two awards of the Bressa prize, one covering the four years ending with 1918 and the other the four years ending with 1922. The amount of each prize is 9,000 lire. The prize is to be awarded to the scientist of any nation who in the judgment of the Accademia has made the most important or useful discovery or produced the most notable work in the physical or experimental sciences, natural history, applied mathematics, chemistry, physiology or pathology, including geology, history, geography and statistics, during the quadrennium in question. The Accademia will adjudge the prize as above whether the work has been presented in competition or not. The prize has been awarded previously on twenty occasions.

The Inter-Allied Conference on the War Disabled.—At this conference at Brussels in September, March emphasized that the Allies have contracted a common debt to their war disabled whatever flag they served under, and they owe protection to them wherever they may be residing, even if in an enemy country. The protection thus becomes international; it comprises the payment of pensions, the renewing of prostheses, medical care and possibly vocational reeducation. Another question discussed was the protection of the disabled against industrial accidents to which they are necessarily more liable than others. The International Labor Bureau claims that all the protection of the war disabled should be in its hands; that the lessons learned from the training and care of the war disabled should be applied to all laborers, and that as eventually all such matters will be referred to it, it should be given charge at once. Others ask merely that the state provide for alien disabled just as it does for its own disabled. An international card certifying to the war disability should be issued entitling to the same privileges in all the countries interested. A resolution was adopted advocating a single central laboratory for research on prosthetic appliances, to combine physiologists, orthopedists, etc., and to which suggestions can be sent to be tested out. The necessity for improving artificial arms was made manifest by the discussions, and also the fact that while amputation of the arm permits agricultural work, yet the men should be directed to the lighter aspects of it. Another resolution urged the centralization of all injured in industrial accidents, in order to profit by the lessons learned from the war. Further details are given on page 1659.

Deaths in Other Countries

Dr. **Alfredo Machado,** one of the leading pathologists of South America, member of the medical faculty at Caracas, president of the first national medical congress of Venezuela in 1911, and corresponding member of scientific societies in other countries, died in the prime of life.——Dr. **J. A. Ayerza,** surgeon of the Rivadavia Hospital at Buenos Aires, at one time director of the Asistencia Pública, author of numerous articles in medical periodical literature.——Dr. **L. Piron,** mayor of his city in Belgium until exiled to Holland by the war, aged about 70.——Dr. **G. Roncaglia,** professor of diseases of women at the University of Modena.——Dr. **F. Gangitano,** professor of surgery at the University of Camerino.

Government Services

Appointment of Medical Officers

Commissions in the Medical Corps of the U. S. Army have been awarded to the following emergency officers who have qualified in the October examinations for the selection of additional medical officers under the Army Reorganization Act:

LIEUTENANT-COLONELS

F. H. Bloomhardt, Altoona, Pa.
D. S. Fairchild, Washington, D. C.

MAJORS

E. J. Abbott, Fonda, N. Y.
R. A. Allen, Tacoma, Wash.
C. L. Banks, Constitution, N. H.
E. P. Beverley, San Antonio, Texas.
A. J. Black, West Haven, Conn.
Robert Burns, St. Louis.
R. A. Burns, Brownsville, Texas.
R. A. Campbell, Camp Marfa, Texas.
C. L. Chase, Washingtonville, N. Y.
T. L. Coley, Bethayres, Pa.
J. M. Downs, Los Angeles.
A. G. Franklin, Camp Jackson, S. C.
C. S. Freedman, Susanville, Calif.
F. N. Greene, Philadelphia.
D. J. Hayes, New Troy, Mich.
Howard Hume, Washington, D. C.
C. W. Jump, Bozeman, Mont.
W. G. McKay, Camp Benning, Ga.
P. D. MacNaughton, Calumet, Mich.
T. S. Troy, Decatur, Ga.

CAPTAINS

C. B. Callard, Aurora, Ill.
D. C. Campbell, Jacksonville, Fla.
M. D. Council, McRae, Ga.
R. N. Greene, Jacksonville, Fla.
L. W. Hassett, Camp Devens, Mass.
F. E. Hickson, Camp Dix, N. J.
D. C. Hutton, San Francisco.
H. E. Keely, Fort Sheridan, Ill.
H. G. Lareau, Chicago.
Ottis Like, Rockford, Ill.
W. J. Leary, Mondamin, Ia.
S. Marcus, Fort Sheridan, Ill.
J. I. Meagher, Fort Jay, N. Y.
J. L. Meddaugh, San Francisco.
F. J. Moennighoff, Kansas City.
R. C. Murphy, Chicago.
O. W. Nettles, Camp Dix, N. J.
C. A. Newcomb, Biltmore, N. C.
H. E. Orndorff, Glen Riddle, Pa.
J. B. Owen, St. Louis.
L. H. Palmer, San Antonio, Texas.
A. C. Rhine, Hampton, Ia.
F. W. Romaine, Philadelphia.
W. C. Russell, Camp Dix, N. J.
G. J. Schirch, Washington, D. C.
F. N. Stiles, Grand Junction, Colo.
D. W. Sullivan, Milbank, S. D.
David Walley, Richton, Mass.

FIRST LIEUTENANTS

W. E. Dapp, Fairfield, Ohio.
A. D. Haverstock, Washington, D. C.
J. F. Lane, Greenville, Tenn.
J. I. Martin, Camp Grant, Ill.
I. F. Peak, Bolivar, Tenn.
G. P. Rawls, Indianapolis.
W. C. Royals, New Orleans.

Reserve Officers' Training Corps Units

Reserve Officers' Training Corps schools for the Medical Corps of the Army have been inaugurated in two colleges by the appointment of Lieut.-Col. James C. Gregory, assigned to the Rush Medical College, Chicago, and Major Robert W. Kerr, assigned to Washington University, St. Louis, as professors of military science and tactics. The courses at both of these institutions will start with an initial enrolment of over 100 students. Units of the Reserve Officers' Training Corps will be established in other medical colleges as soon as these comply with the terms of the Army Reorganization Act.

Colonel Depage Awarded Distinguished Service Medal

Surgeon-General Ireland has been designated by President Wilson to present the Distinguished Service Medal to Col. Antoine Depage, surgeon in the Belgian Army, for the assistance which he rendered young and inexperienced officers of the American Expeditionary Forces at his hospital at LaPanne, Belgium. The Belgian surgeon took a personal interest in training officers of the American Army in the technical advances in military surgery and in the treatment of the wounded.

Chaulmoogra Oil in Tuberculosis

Surgeon-General Cumming has announced that the widely circulated statement that the U. S. Public Health Service has found chaulmoogra oil efficacious in the treatment of tuberculosis is unwarranted. Experiments made some years ago with the oil gave no definite results. Recently experiments with its ester or derivatives were begun because of hopes based on some similarities between the bacillus of leprosy and of tuberculosis, but these have not proceeded far enough to warrant scientific deductions.

Medical Officers, U. S. Navy, Relieved from Active Duty

ILLINOIS

Bowen—Judy, J. A.
Oak Park—Moore, H. W.

NEW YORK

Troy—Smith, G. E.

NORTH CAROLINA

Franklin—Angel, F.

OHIO

Toledo—Werum, P. D.

TEXAS

San Antonio—Kelley, H. C.

VIRGINIA

City Point—Lee, F. H.
Richmond—Reese, W.A.

WISCONSIN

Milwaukee—Malkin, G. M.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Nov. 19, 1920.

Wounds of the Liver

Dr. P. Soubeyran, agrégé professor of the Montpellier Faculty of Medicine, has just published an interesting book dealing with wounds of the liver and the biliary ducts (F. Alcan, publisher). The work is based on observations made during the war. It discusses 297 cases, 147 of which resulted in recovery and 150 ended fatally. The cases in which operation was performed; namely, 221, resulted in 86 recoveries and 135 deaths. The 76 cases in which operation was abstained from yielded 61 recoveries and 15 deaths.

What are the serious factors to be considered in wounds of the liver? In the first place may be mentioned the form and extent of the hepatic lesion. Thus, Soubeyran found that four wounds resulting from bursting shells all ended fatally. Of seven penetrating, tunnel wounds, four proved fatal and three gave recoveries. Of nine patients with lacerating wounds, seven survived and two died. Of six perforating tunnel wounds, three were fatal and three were benign. A very important factor affecting the gravity of wounds of the liver is the coexistence of other visceral lesions. Soubeyran reports 35 deaths out of 136 isolated lesions of the liver, and 115 deaths among 161 patients with associated visceral lesions.

From a study of the published facts and from twenty-six cases in which he made personal observations, Soubeyran concludes that surgical intervention in wounds of the liver has the following three indications: (1) frank signs of hemorrhage, especially if the path of the projectile appears to affect the region of the hilum; (2) when an associated visceral lesion is suspected, and (3) when a large foreign body is included within the liver. As regards small fragments, we may expect periods of quiescence and periods of intolerance.

Surgical intervention is contraindicated (1) when the signs of hemorrhage are nil or slight; (2) if the liver alone is injured, and the fragment (of small volume), although it has remained in the liver, seems to cause no further disturbance, and (3) when the patient is suffering too severely from shock, or is seen too late.

Soubeyran's work closes with an excellent chapter on technic. Passing in review the various methods of approach to the liver, he declares himself an advocate of Mayo-Robson's incision. As for whether wounds of the liver should be sutured or tamponed, he says they should be sutured when the general condition of the patient is satisfactory and when the wound is of regular outlines and easily accessible, as this method has the advantage of reconstituting the liver anatomically, allows the abdomen to be closed entirely, and avoids all danger of eventration. Tamponing should be reserved rather for the tracts caused by rifle bullets, for wounds of irregular outline, and for wounds with great loss of substance. It is indicated when the general condition is serious and when the hepatic tissue is fragile. It is the only method that can be used if the wounds are deep and difficult of access.

Death of Prof. G.-M. Debove

Prof. Maurice Debove, perpetual secretary of the Academy of Medicine, died recently after a long and painful illness, which, a short time ago, necessitated surgical intervention.

Debove was born in Paris, March 11, 1845, and in 1873 was graduated as doctor of medicine. In 1877 he became physician to the hospitals and in 1878 agrégé professor. In 1890 he was given the chair of internal pathology in the Faculty of Medicine of Paris. In 1901 he exchanged this for the

chair of clinical medicine. In 1902 he succeeded Professor Brouardel as dean of the faculty, but held this office only a short time. He was elected in 1892 a member of the Academy of Medicine, and in 1913 he succeeded Professor Jaccoud as perpetual secretary of this assembly.

Debove was a pupil of Charcot and occupied himself in his early years with the pathology of the nervous system. Later in life he published numerous works on the diseases of the digestive tract. We are indebted to him for several improvements in the technic of gastric catheterization and lavage of the stomach, the introduction of forced feeding in the treatment of tuberculosis, and the application of ethyl chlorid as a spray in the treatment of neuralgia, more especially, sciatic neuralgia.

Debove took an active part in the campaign against alcoholism and against tuberculosis. The Ligue nationale contre l'alcoolisme retained him for many years as their president.

As perpetual secretary of the Academy of Medicine, Debove was devoted to the interests of this assembly.

LONDON

(From Our Regular Correspondent)

Nov. 15, 1920.

The Ministry of Health and the Medical Secret

The unsatisfactory state of law in this country, which does not recognize the physician's right of secrecy as to information which he has acquired in confidence from his patients, has often been discussed in these columns. The case of a physician who had attended a woman at a venereal clinic established by the Ministry of Health and was summoned to give evidence in an action for divorce, which she brought against her husband, has also been reported. The physician drew the judge's attention to the fact that the venereal disease regulations require all information acquired in the course of his duties at the clinic to be regarded as strictly confidential; but the judge ruled that he was bound in law to answer any questions put to him. It is to be noted that in this case there was no question of violating professional confidence, as he was summoned on behalf of the patient. The case has caused the Ministry of Health to consider the whole question, and the principal medical officer, Sir George Newman, has issued a letter on the subject. He says that the ministry is advised that the obligation which it imposes on the physician is not to disclose to third parties any facts which his examination of the patient may bring to light. This, in effect, restates the well-known rule of the medical profession and adds a legal sanction to it. But, so far as the ministry is aware, a disclosure at the express request of the patient and in the patient's own interest would not be contrary to any principle of medical ethics, and the ministry does not place any different interpretation on the regulations. Cases will readily occur to every physician in which it may be almost said to be his moral or social duty to comply with such a request.

In such a case as the one referred to above, a refusal to give evidence to establish the patient's case might lead to a denial of justice. It is necessary to add, however, that the venereal disease regulations do not purport to and, indeed, cannot override the general law, which requires a witness in a court of justice to answer all such questions as the judge may hold to be relevant to the issue. Strictly speaking, the legal profession alone is entitled to claim a professional privilege in this respect, and it may be that cases will arise in the future in which a physician, subpenaed at the instance of the other party to the litigation as a witness of facts relating to a patient, cannot give evidence without violating professional confidence. If, in these circumstances, he finds himself involved in a conflict of duties, it appears to the ministry that he may properly appeal to the court for protection, and it is confident that to any such appeal the court, so far as the law allows, would give a full and sympathetic consideration.

A Fellowship of Australian Surgeons

At the recent Australasian Medical Congress, held in Brisbane, the establishment of an association or fellowship of Australian surgeons was discussed in the surgical section. This was the outcome of a letter addressed by Prof. L. E. Barnett of Chicago to the honorary secretary of the section. He suggested that action might be taken somewhat on the lines of the American Fellowship in order to obtain a higher grade of efficiency in surgical work and to provide a hall-mark for bestowal on the efficient. Mr. Hamilton Russell moved that "the members of the Surgical Section of the Eleventh Australasian Medical Congress approve of the suggestion of Professor Barnett that the time has arrived for considering the desirability of forming an Australasian Surgical Association, with the object of raising the standard of surgery in Australasia, and that they pledge themselves to an endeavor to formulate an appropriate scheme for the establishment of such an association." He referred to the formation in Melbourne of the Surgical Association. They had discovered in that city evidence of marked insularity in the three clinical schools, and a tendency for graduates to develop on fixed lines and within narrow limits. To overcome this and to establish a closer relation between the members of the surgical staffs of the hospitals, the Surgical Association was formed. It was inspired by the same motives of improving the standard of surgical works as was Professor Barnett's suggestion. An amendment was moved in favor of forming a section of surgery in each branch of the British Medical Association in Australia and New Zealand. The proposer feared that otherwise there might be some interference with the whole-hearted support of the British Medical Association. A lively discussion followed. On one side it was contended that the formation of a separate society would diminish the interest taken in the British Medical Association and weaken it. On the other, that safeguards could be provided by restricting membership of the fellowship to members of the British Medical Association and giving all publications to the official journal. Mr. G. A. Syme of Melbourne said that if every one were admitted, surgeons would be less inclined to discuss their failures and their accidents, which they would do in the presence of a limited number of experts. Another speaker said that conditions in Australia and America were not parallel, and that they should discard any attempt to follow American precept. The presence of outsiders at a specialists' meeting did not retard work. If they were excluded, a method of postgraduate instruction was lost. In America no special surgical degree had been created prior to the formation of their fellowship. In Australia, all the universities except Sydney provided a special and advanced surgical degree. Such degrees were sufficient to hall-mark the efficient. One member was struck when in London by the fact that while the British Medical Association dominated medical politics, the Royal Society of Medicine monopolized the scientific activity of its members. It was contended, on the other side, that to overcome the unfortunate provincialism of certain schools the new organization was necessary. Frank discussion and candid criticism were impossible in big meetings, and only in private gatherings of specialists could men rub off one another's angles and speak intimately of their difficulties and failures. Mr. Russell said, in reply, that the British Medical Association would be better supplied with surgical material by the existence of the fellowship. He could not believe that there was any danger to the British Medical Association. The amendment was carried by a large majority.

BELGIUM

(From Our Regular Correspondent)

Nov. 2, 1920.

Tuberculous Soldiers

At the fourth interallied conference, recently held in Brussels for the discussion of matters pertaining to the care of disabled soldiers, the question of tuberculosis brought forth the most reports and awakened a lively exchange of views. This is not surprising when we consider the frightfully large number of tuberculous soldiers that have been listed by the pension boards of the various countries. The experience of Italy will suffice to give an idea of the situation. In 1914 the number on the pension list, by reason of tuberculosis, was 1,224. By the end of 1919 this number had risen to 40,000. Of the prisoners of war, 29 per cent. had been recognized as tuberculous. In view of the constant increase of tuberculosis, or, we may say rather, in view of the discouraging results brought about by war conditions, it was declared by the conference to be a matter of urgent need that measures be adopted to meet the new situation that had arisen, in which connection it was especially important that reliable information be secured in regard to the exact extent of the spread of tuberculosis.

At the suggestion of Senator Foa of Italy, the tuberculosis commission passed a resolution that information be secured as soon as possible in regard to the total number of tuberculous pensioners, including both those who had contracted the disease during the war and those whose condition had become aggravated by reason of the war or through service therein, and that the organizations already in existence in the several countries be called on to furnish reports on the tuberculous men already pensioned, and to ascertain the number of tuberculous persons among those who had been mobilized for war. One fact seems to be already definitely established; namely, that the compensation which has been allowed soldiers pensioned by reason of tuberculosis is not commensurate with the imperious demands by way of rational treatment that this grave disease imposes.

The need of the complete revision of the disability claims as presented by the tuberculous, and the necessity of an increase in the compensation to be granted this class of pensioners once recognized, the next step would be to demand greater care in the examination of the patient and the diagnosis of the disease. For this reason, it becomes necessary that the diagnosis of tuberculosis be intrusted to professional phthisiotherapeutists, who should be encouraged by their respective governments in their specialization. These specialists should establish the identity of *B. tuberculosis* by culture methods, and their examinations of suspected sputum should not be confined to a single specimen taken in haphazard fashion any time during the day but should be applied more particularly to the first expectorations of the morning and should be repeated several times before a definite decision is reached.

Every physician cannot be expected to be competent to pronounce a judgment on the grave question of diagnosis of tuberculosis, especially if we consider that such judgment will have such a profound bearing on the whole existence of the patient and may occasion heavy expense to the state. It is also desirable that existing laboratories be adequately provided with the proper equipment, and that laboratories called on to give expert opinions shall have thoroughly trained men at their head. Medical assistance must be assured by means of dispensaries and sanatoriums, but in order to meet the need the number of these must be increased and they must be manned by the most competent personnal. Aside from the question of treatment, the problem of the amount of indemnity to be allowed tuberculous pensioners awakened much polemic discussion. Basing the opinion on the fact that forced feeding and complete rest are indispensable conditions in the rational and effective treatment of tuberculosis, it must be admitted as a fundamental principle that proved tuberculous subjects should be regarded as presenting total disability, at least for the time being; otherwise they are robbed of the opportunity of securing complete rest and are thus deprived of the chance of recovering.

M. Reisdorff, general secretary of the Oeuvre des invalides de guerre belges, expressed the view that the amount of pension granted should not depend on the (more or less fluctuating) state of health of the patient at the time he presented himself for medical examination, but should be determined with great care by the same medical specialists in tuberculosis that were called on to furnish the diagnosis. Such specialists, when it becomes their duty to establish the amount of pension of proved tuberculous subjects, should raise the percentage of disability to the maximum, no matter what the localization of the infection might be.

From the standpoint of public hygiene and prophylaxis, tuberculous soldiers constitute a menace by reason of the danger of contamination that they present. At times, the usefulness of isolation should be considered. The Belgian delegates even proposed that isolation be made obligatory, or suggested that as a penalty the pension might be reduced if isolation was refused.

If the general conditions proposed can be realized, the recovery of a number of patients and the utilization of otherwise wasted energies can be confidently expected. But, in order to make this fully possible, it will be necessary to provide later industrial and professional training. The conference expressed the desire that such training be directed by commissions composed of medical and professional men, and that it should take into consideration the necessities arising out of the nature of the disease in question, such as apprenticeship in healthful occupations, the organization of rural and village colonies, and of community associations. Former soldiers, now tuberculous, should, furthermore, be able to take advantage, with the least possible delay, of the laws permitting them to establish themselves in the rural districts. Then again, among the lines of work reserved for disabled soldiers, certain positions should be specially selected and given to men who have been tuberculous but who have recovered and can no longer transmit the disease.

MEXICO CITY

(From Our Regular Correspondent)

Nov. 20, 1920.

Plague and Yellow Fever

It was generally believed that we were entirely rid of plague, as no more cases had occurred in Vera Cruz since June 30, when the last human case was reported. Recently, however, a new focus of bubonic plague was discovered in the town of Cerritos, in the state of San Luis Potosí. Up to October 30, fifteen cases and eight deaths had been reported. It is assumed that the disease was conveyed to that town by some sick rodent from Tampico taken in a cargo of merchandise.

The enforcement of antiplague measures at San Luis did not prove to be especially difficult, as the necessary equipment was sent immediately from Tampico in order to check the epidemic at the start. Dr. A. E. Gochicoa, who successfully conducted the campaign at Tampico, organized the service at San Luis. After he left, the campaign was placed in charge of Dr. F. L. Rocha, who had received his training under Dr. Gochicoa. The necessary measures were carried out by a personnel already trained in deratization and disinfection, and it is expected that we shall have no more trouble on this account.

Yellow fever is still present at Vera Cruz, though it shows a tendency to decrease. So far there have been 175 cases and seventy-two deaths. Besides the antimosquito measures mentioned in previous letters, prophylactic vaccination with Noguchi's vaccine has been employed, a good supply being sent by the International Health Board. Noguchi's anti-icteroides serum has also been tried. As yet it cannot be stated definitely whether either of these preparations prevents or cures the disease. This is due not only to the lack of statistics but also to the fact that it has not always been possible to display the required scientific accuracy in the use of the preparations. For instance, there was a case which attracted much attention, in which a person who received two injections of Noguchi's vaccine developed fever and albuminuria. Assuming that it was yellow fever, 20 c.c. of serum was injected intravenously, and as a result the patient died four hours afterward. It is now understood, however, that in this case death was due to anaphylactic shock. As a consequence, it has been decided to show more caution in similar cases. In Yucatán, although the number of cases is smaller, the results seem more favorable. Of six cases, four were diagnosed and the patients treated with the serum during the first seventy-two hours. The four recovered, while in the other two, in which the serum was given after that period and when the patients seemed intensely toxic, no effect was apparent. A patient treated at Campeche during the first twenty-four hours recovered, the temperature decreasing to normal six hours after the injection. It is not certain, however, that this was a case of yellow fever. It is noteworthy that besides the cooperation of the International Health Board, the oil companies have also organized a public health committee, which has helped to sanitate and cleanse the ports of Tampico and Tuxpan, and besides, some companies have made gifts of oil for use in ponds.

As the yellow fever epidemic began in June, it is not surprising that it is not yet ended, in view of the fact that even so well conducted a campaign as that at Guayaquil in 1918-1919 did not show results until five months had elapsed. On the other hand, during the fall and winter, strong north winds prevail along the Gulf coast which bring about a material decrease of temperature—to 10 or 12 C. (about 50 F.) at Vera Cruz and to 0 C. (32 F.) at Tuxpan, which is fatal to adult stegomyias. If during this period the oiling of ponds is pushed in order to destroy larvae, and if the people take care to destroy larvae and mosquitoes, we may hope that by next spring the Gulf focus of yellow fever will be extinguished forever. That would make a fact of the idea held by the lamented Gorgas, who hoped to write the last chapter of yellow fever, and at the same time it would be one of the most encouraging episodes in the history of human progress. Having all this in mind, our sanitary authorities have not neglected any means to carry out the campaign against the epidemic. They had to overcome obstacles, as there was a scarcity of funds and it is difficult to impress the general public with the value of the procedures recommended, as no immediate results are apparent.

Personal

Dr. J. Prado Romaña has arrived at Mexico as the diplomatic representative of the government of Guatemala.——Dr. Emilio Galán has been appointed director of the Hospital General.——Dr. Alfredo Cuarón has been appointed head of the yellow fever service at Tampico.——The following physicians have left on their way to the United States: Dr. F. Castillo Nájera for New York on private business; Dr. Ricardo Granillo, who has been granted a fellowship by the Rockefeller Foundation, and who will take a graduate course in public health at Johns Hopkins University; Dr. Francisco de P. Miranda, who will become Mexican sanitary delegate at New Orleans, and Drs. Tomás G. Perrín and A. Brioso Vasconcelos, who will represent the Academy of Medicine and the Department of Public Health, respectively, at the Pan-American Conference on Venereal Diseases, which will be held at Washington in December.

MADRID

(From Our Regular Correspondent)

Oct. 28, 1920.

Increase of Venereal Diseases in Madrid

Dr. Díaz Villarejo, in a lecture on the constant increase of venereal diseases in Madrid, attributes this increase to (1) venereologists who do not conduct the sanitary propaganda expected of their profession; (2) the flourishing of the infamous advertising of proprietary medicines and quack remedies; (3) patients who either do not consult physicians or, if they do, disregard their prescriptions, and (4) the indifference of the government, which does not concern itself with the problem. The enormous increase of syphilis was shown by Dr. Díaz Villarejo by means of statistics taken from Dr. Castelo's clinic in the hospital of San Juan de Dios from 1902 to 1919. During that period the new cases of syphilis increased from 454 in 1902 to 1,540 in 1919. In 1902 there were fifteen cases of syphilis in children below 18 years of age, while in 1919 the number was 103. It is a matter for regret to see the small number of prostitutes that apply for treatment, and their youth. Young women of this type become ordinarily infected the first year. More than half were infected during that period, and the remainder between the second and at the most the third year, as shown by 600 case reports taken from Dr. Castelo's service: 304 the first year, 186 the second, and 110 the third. Dr. Diaz Villarejo says that there is no question more disregarded in Spain than venereal diseases. Reglementation, as practiced in Spain, means only that the prostitutes use as a certificate of health a printed sheet that can be signed by any physician and which serves only to benefit unscrupulous members of the profession. Prostitutes are at all times out in the most central parts of the town, but they are never seen by the police. In the pavilion reserved for them in the San Juan de Dios Hospital there are under treatment only four pitiful women, who lack even clothing. In order to fight the social evil, Díaz Villarejo advises prophylactic measures, educating women and surrounding them with economic, social and moral guarantees. He recommends moral and antivenereal education for working men, students, soldiers and prostitutes, the establishment of prophylaxis stations, the distribution of prophylactic kits, compulsory treatment of venereal diseases and reglementation.

Meeting at Jerez de la Frontera

The public health employees of Andalusia are consolidating their forces and have formed an association, composed of physicians, pharmacists, veterinarians and *practicantes* (nurses). They have been holding numerous meetings to present their grievances and criticize the actions of the heads of the Spanish Public Health Service. The constitution of the Unión Médica Andaluza is rather unique, as all its members sign I. O. U.'s for 5,000 pesetas (about $600), which the union can collect, should the member break the pledges made when admitted to membership. At this year's meeting the town physicians have repeated their age-long complaints, as municipal authorities still fail to pay them, in spite of governmental orders and decrees. There is a physician whose salary is 1,250 pesetas a year, and his pay arrears amount to 20,000 pesetas. Another case is that of a physician's widow who has a bill for arrears of salary amounting to 40,000 pesetas, and in order to support his children had to become a servant of one of the aldermen of the town. These stories so incensed the attending physicians that they prepared an

indignant protest against the authorities and threatened more radical measures. The physicians of Coin, who went on a strike and then gave it up when the mayor paid them their back salary, are again threatening a strike, as they have not been paid this year either. These frequent medical strikes involve, however, the danger, as already stated, that if patients get out of the habit of being treated by physicians, in the long run they will convince themselves that medical service is not necessary.

At the same assembly the other public health professions stated their respective complaints. We heard, for instance, the plea of the *practicantes,* or minor surgeons, who are at once nurses, midwives, masseurs, and the like, being in possession of degrees obtained through elementary studies and examinations. This profession is peculiar to Spain. When the number of physicians was too small for actual needs, the *practicantes* rendered efficient aid; but nowadays when there is a plethora of physicians, the *practicante* in most cases is rather a rival than a collaborator of the physician. The Andalusian physicians showed an altruistic spirit and accepted the union with the *practicantes* to strengthen their protests even more.

Among the subjects discussed was the grievance of Spanish physicians because of the readiness with which foreign physicians are authorized to practice in Spain, while Spanish physicians are rejected by those in authority in other countries. This is always irritating, but most especially as regards France, as there are always French physicians practicing their profession either permanently or temporarily in Spain, while no Spanish physicians are allowed to practice in France. French protectionism is carried so far in this respect that even those Spanish physicians who served in France during the war are forbidden to practice their profession there.

Increase of Malaria in Spain

The excessive increase of malaria is causing much concern in Spain. One of the causes is the arrival of soldiers from Morocco, where the army is conducting a campaign in unhealthy, malaria-stricken territory. In some provinces the disease has increased so much that the Geographic and Statistical Institute states in its last report that last year there were 3,000 deaths from malaria. It may be estimated that for each death there are 100 cases. Therefore, even accepting optimistically the number of 3,000 deaths as accurate, this implies 300,000 malaria patients. Such conditions are really shameful, as this disease is easily curable; to avoid their continuation, something more effective is needed than the appointment of a committee, the only thing done thus far. The newspapers urge the sending of quinin to the infected places to be distributed free of charge at drug stores and, where there are no drug stores, at cigar stores or taverns.

Monument to Martín Salazar

After the medical week at Santander, there was unveiled at the Sanatorium of Pedrosa a bust of Dr. Manuel Martín Salazar, inspector general of public health. The Sanatorio de Pedrosa for pretuberculosis children is a state institution that was founded through Dr. Martín Salazar's efforts. The place for the monument was therefore chosen appropriately. The position of inspector general was created by Sr. La Cierva, a minister who wanted to take public health affairs out of politics. He achieved his purpose, appointing Dr. Martín Salazar as a result of a competitive examination in which the latter showed his great knowledge in all branches of public health. Before that he had studied many years at the infectious diseases institute directed by Koch in Berlin, and had been a professor in the academy of military medicine, besides having distinguished himself in the antiplague campaign in the Canary Islands.

Marriages

ELLIOTT HARRISON METCALF, Rockville, Conn., to Miss Emily Elizabeth Snyder of Mt. Carmel, Pa., at Washington, D. C., November 15.

PAUL H. WALTER, Bethlehem, Pa., to Miss Mary Elizabeth Mock of Philadelphia, at New York, November 17.

PAUL LIVINGSTONE, East Orange, N. J., to Miss Jean Patterson Miller of Beaver Falls, Pa., December 1.

JONAS CLARENCE KOPELOWITZ, St. Louis, to Miss Evelyn Lucile Friedman of Seattle, November 30.

WILLIAM GEORGE EPSTEIN, Chicago, to Miss Florence Virginia Simpson of Wheaton, Ill., recently.

EDMOND LAWRENCE FAUST to Miss Consuelo Abaunza, both of New Orleans, November 18.

MELVIN J. LOCKE to Miss Mary S. Alexander, both of Bellefontaine, Pa., October 30.

RAY MCKINLEY DIX to Miss Olive Genevra Dickson, both of Chicago, recently.

HARRY GEORGE LEON, to Miss Anna Landis, both of Chicago, August 29.

Deaths

Joel Cullen Hall ⊕ Anguilla, Miss.; Long Island College Hospital, Brooklyn, 1867; aged 82; surgeon of the Thirty-Seventh Tennessee Volunteers during the Civil War; at one time health officer of Sharkey County; for two terms a member of the state legislature; died, November 19.

William Thomas Bell, Selmer, Tenn.; College of Physicians and Surgeons, Keokuk, Iowa, 1881; aged 62; a member of the Tennessee State Medical Association; at one time president and at the time of his death secretary of the McNairy County Medical Society; died, November 14.

Jack Bryant Stinson, Sherman, Texas; New Orleans School of Medicine, 1861; Bellevue Hospital Medical College, 1874; aged 82; assistant surgeon of the Twelfth Alabama Infantry in the Confederate Service during the Civil War; died, November 17, from senile debility.

Charles Arthur Lothrop ⊕ Stanley, Wis.; Hahnemann Medical College, Chicago, 1892; aged 51; at one time physician of the Wisconsin Veterans' Home; was instantly killed, October 26, near Hannibal, when the automobile in which he was riding overturned.

Henry William Karl Abraham ⊕ Appleton, Wis.; Rush Medical College, 1898; aged 54; president of the State Medical Society of Wisconsin, and a member of the State Board of Medical Examiners; died suddenly, November 22, from heart disease.

William Duncan O'Brien, Pittsburgh, Pa.; Bellevue Hospital Medical College, 1878; aged 67; a member of the Medical Society of the State of Pennsylvania; surgeon of the Baltimore and Ohio Railroad for twenty-five years; died, November 15.

John H. Devor, Chambersburg, Pa.; College of Physicians and Surgeons, Baltimore, 1885; aged 63; a member of the Medical Society of the State of Pennsylvania; for fourteen years a member of the Chambersburg Hospital staff; died, November 13.

Elmore Flavius Mitchell, Beech Grove, Ky.; Hospital College of Medicine, Louisville, 1905; aged 46; a member of the Kentucky State Medical Association; died at the Owensboro (Ky.) City Hospital, November 16, following an operation for appendicitis.

Thomas H. Baker, Louisville, Ky.; Hospital College of Medicine, Louisville, 1889; aged 61; a member of the Kentucky State Medical Association; health officer of Louisville, and postmaster for nine years; died, December 1.

Joseph C. Krejci, Sioux City, Iowa; University of Vienna, Austria, 1862; aged 84; a member of the Iowa State Medical Society; for almost half a century a practitioner of Sioux City; died, November 12, from nephritis.

William McGranahan Blaine, Youngstown, Ohio; Pulte Medical College, Cincinnati, 1895; aged 48; lieutenant, M. C., U. S. Army, and discharged, Dec. 17, 1918; died, November 22.

⊕ Indicates "Fellow" of the American Medical Association.

Daniel H. Luce, Oneonta, N. Y.; New York Homeopathic Medical College and Hospital, New York, 1889; aged 57; a member of the Medical Society of the State of New York; died, November 16, from angina pectoris.

Franz Edward William Hopke, Brooklyn; New York Homeopathic Medical College, New York, 1899; died in the Wade Sanitarium, November 23, from injuries received when he was struck by an automobile.

John Austin Moore, Birmingham, Ala.; College of Physicians and Surgeons, Baltimore, 1885; aged 58; a member of the Medical Association of the State of Alabama; died, November 19.

Luman P. Sturtevant, Conneaut, Ohio; Homeopathic Hospital College, Cleveland, 1874; aged 74; for forty-six years a practitioner of Conneaut; died, November 10, from heart disease.

William Adams Dayton, New York; College of Physicians and Surgeons in the City of New York, 1880; aged 62; consulting aurist at Tarrytown Hospital; died, November 19.

George Bush Walp, Philadelphia; Medico-Chirurgical College of Philadelphia, 1901; aged 44; captain, M. C., U. S. Army, and discharged, October 31; died, November 18.

Jacob Henry Palmer, Fort Dodge, Iowa; Medical College of Ohio, Cincinnati, 1874; aged 68; died at the Des Moines Hospital, following an operation for gallstones.

Harrison Llewellyn Harris, Richmond, Va.; Howard University, Washington, D. C., 1882; aged 65; a colored practitioner; died, November 19, from nephritis.

Harry H. Smith ⊕ Middletown, Ohio; Indiana Medical College, Indianapolis, 1907; aged 48; at one time physician at the Indiana Reformatory; died recently.

Benjamin S. Story, Happy Jack, La.; University of Louisville, Ky., 1880; aged 65; at one time a member of the state board of health; died, November 15.

Daniel T. Condict, Goshen, N. Y.; Albany (N. Y.) Medical College, 1874; aged 68; physician of Orange County; died, November 19, from ivy poisoning.

William S. S. Young, Vallejo, Calif.; Hahnemann Medical College and Hospital, Philadelphia, 1888; aged 58; died, November 16, from nephritis.

Gustavus Adolphus Weyer ⊕ San Francisco; University of California, Berkeley and San Francisco, 1899; aged 52; died, November 19, from nephritis.

John D. McDonald, St. Joseph, Mo.; University of Pennsylvania, Philadelphia, 1894; aged 50; died in a hospital in St. Joseph, November 19.

John Edward Foscue, Jamestown, N. C.; University of Maryland, Baltimore, 1901; aged 42; died suddenly, November 16, from heart disease.

Enoch Knox White, Florence, Miss.; Vanderbilt University, Nashville, Tenn., 1891; aged 63; died, November 14, from cerebral hemorrhage.

Robert H. Porter ⊕ Chicago; Cincinnati College of Medicine and Surgery, 1874; aged 76; died, December 1, from carcinoma of the liver.

Anna Maria Gutzwiller McBean, Los Angeles; University of California, Berkeley and San Francisco, 1907; aged 37; died, November 13.

Robert W. Smith, Rochester, N. Y.; University of Buffalo, N. Y., 1872; aged 81; a veteran of the Civil War; died, November 8.

William Erwin, Philadelphia; Hahnemann Medical College and Hospital, 1877; aged 65; died, November 21, from nephritis.

Walter C. Browning, Philadelphia; Jefferson Medical College, 1878; aged 64; died, November 23, from cerebral hemorrhage.

Adelbert Millett, Belfast, Maine; Dartmouth Medical School, Hanover, N. H., 1888; aged 62; died, November 17.

Adrian Hazen Hoyt, Concord, N. C.; Dartmouth Medical School, Hanover, N. H., 1887; aged 59; died, October 20.

Albert E. Salter, Buffalo; Hahnemann Medical College and Hospital, Chicago, 1891; aged 73; died, November 12.

Mark Israel Knapp ⊕ New York; University of the City of New York, 1894; aged 52; died, November 26.

Banks Withers, Morrisville, N. C.; University of Maryland, Baltimore, 1896; aged 50; died, November 6.

Abram Sharples, Goshen, Ore.; Jefferson Medical College, 1864; aged 79; died, November 20.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

PHYSICIAN'S STOCK IN PRESCRIPTION PRODUCTS

The letter that follows comes from a physician who feels that he has a grievance regarding a company in which he holds stock:

"In 1914, I bought some stock of the —— —— Company, and in 1917 bought some more stock in the same company. I notice that the company advertises in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, and I believe it does this not so much to acquaint the medical profession with its product, as to acquaint physicians with its name in order that its stock salesmen can keep on unloading more stock to members of the medical profession.

"The company gets the doctors' money through the sale of stocks, it gets its products on the market with the doctors' assistance and through their influence, and it looks to me as if the doctors were getting very little in return, as the dividend checks have been few and far between since I have known anything of the company.

"It is not my idea to criticize the product; but I do believe and feel that the stockholders are entitled to a square deal from a company which in turn is expecting so much from them, and again I feel that the publishers of THE JOURNAL should be made aware of these conditions so that they do not either consciously or unconsciously foster a concern that is depriving the physician of his hard-earned money.

"If this letter is unfair, I am willing to be shown otherwise. Kindly publish it in THE JOURNAL, omitting my name and address."

The company to which our correspondent refers puts out a proprietary product prescribed by physicians and used by the public. Some years ago the company in question advertised its product in THE JOURNAL until its stock-selling scheme was brought to the attention of THE JOURNAL; the advertisements were then rejected. Some years later, on evidence that the company had discontinued its stock-selling methods to physicians, its product was again admitted to the advertising pages of THE JOURNAL. Our correspondent says that he believes that the physicians who hold stock in this company "are entitled to a square deal." What about the public? Is it getting a square deal when physicians are financially interested in the products that they may be called on to prescribe? Is the average layman's confidence in the medical profession likely to be enhanced when he learns that the physician to whom he went for treatment has a financial interest in the therapeutic agent which was prescribed? Our correspondent's complaint seems to be, not against the company for selling stock to physicians, but because "the dividend checks have been few and far between," the assumption being that had the dividends come regularly, there would have been no complaint. It cannot be too often emphasized that it is against public interest and scientific medicine for physicians to be financially interested in the sale of products which they may be called on to prescribe for the sick. It is perfectly true that there are many physicians who would not consciously permit financial considerations to warp their judgment; but it is not humanly possible to remain unbiased in cases of this sort. It is conceivable that a judge on the bench might make every effort to dispense impartial justice in a suit in which one of the parties was a firm in which he, the judge, had financial interest. Nevertheless, it would be obviously improper for such a judge to try a case of this kind. Yet, in this supposititious case the only harm that could result would be of a financial nature. In the case of the doctor, the harm is not to the public's purse but to the public's health.

MORE MISBRANDED NOSTRUMS

Linonine.—In February, 1920, the Kerr Chemical Company, Danbury, Conn., consigned a quantity of Linonine to a concern in Philadelphia. Some of this was seized by the federal authorities on the charge that it was misbranded. When analyzed in the Bureau of Chemistry it was found to be an emulsion composed essentially of linseed, cinnamon and eucalyptus oils with methyl salicylate and glycerin. The trade package bore such claims as these:

"Pulmonary diseases, Consumption, Chronic Coughs . . . Chronic Bronchitis, The After Effects of La Grippe, Wasting Diseases, Rickets, Scrofula. Whooping Cough, Rheumatic and Strumous Diseases, General Debility, Etc. . . . Linonine is unsurpassed as a strengthener, builder, blood renewer, and for affections of the throat and lungs."

These claims were declared false and fraudulent and applied with a knowledge of their falsity for the purpose of defrauding purchasers. In May, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 7717; issued Nov. 11, 1920.*]

Valentine's Sarsaparilla Compound.—The Allan Pfeiffer Chemical Company, St. Louis, Mo., shipped in May, 1919, a quantity of "Valentine's Sarsaparilla Compound with Potassium Iodide." The product when analyzed by the Bureau of Chemistry was found to consist essentially of a solution of sugar in dilute alcohol, with a small amount of potassium iodid and with extractives from sarsaparilla, gentian and a laxative vegetable drug. The stuff was falsely and fraudulently represented as an effective blood purifier and a treatment, remedy and cure for pimples, eruptions, sores, boils, skin diseases, etc. In May, 1920, a plea of guilty was entered and the court imposed a fine of $25 and costs.—[*Notice of Judgment No. 7746; issued Nov. 11, 1920.*]

Olive Branch.—In May, 1920, the federal grand jury returned an indictment against Nellie M. Ellis, trading as the Olive Branch Remedy Co. of South Bend, Indiana, on the charge of misbranding. When analyzed by the Bureau of Chemistry "Olive Branch" was found to consist of suppositories containing chiefly cacao butter, soap, borax, alum and a trace of unidentified alkaloid. The nostrum was falsely



and fraudulently represented as an effective treatment, cure and specific for all female diseases, despondency, "tired feeling of helpless, hopeless existence," cancerous trouble, falling of the womb, stomach trouble, etc. In May, 1920, the defendant pleaded guilty and was fined $100 and costs.—[*Notice of Judgment No. 7740; issued Nov. 11, 1920.*]

Prince's Pills, Liniment and Tru-Vigor Nerve Tablets.—The Boston Drug and Chemical Company, Boston, Mass., shipped in August, 1917, a quantity of these products which were misbranded. Analysis of a sample of Prince's Pills by the Bureau of Chemistry showed them to be composed largely or wholly of rhubarb and aloes. They were falsely and fraudulently recommended as a treatment and cure for suppressed, delayed and irregular menstruation and effective to produce a miscarriage.

"Prince's Liniment" was found by the Bureau of Chemistry to contain ammonia, camphor, turpentine oil and a small percentage of alcohol. It was falsely and fraudulently recommended as a treatment and cure for neuralgia, diphtheria, rheumatism, sciatica, erysipelas, corns, warts, headache, earache and several other things. It was also falsely labeled as containing wintergreen and capsicum when as a matter of fact it contained neither of these substances.

"Prince's Tru-Vigor Nerve Tablets" were found by the Bureau of Chemistry to consist essentially of strychnin and a greenish, acid resin probably from damiana. These tablets were falsely and fraudulently recommended as a treatment and cure for "lost manhood," sleeplessness, despondency, all nervous diseases, hysteria, impotency, diseases of the prostate gland, etc.

In October, 1919, the Boston Drug & Chemical Co. entered a plea of *nolo contendere* and was fined $25.—[*Notice of Judgment No. 7720; issued Nov. 11, 1920.*]

Some Mrs. Summers Nostrums.—In May, 1920, a United States Grand Jury returned an indictment against Gabriel R. Summers, South Bend, Ind., charging shipment by him of a


be spanked on certain occasions.

Sister: Read My Free Offer!

I am a woman.
I know a woman's trials.
I know her need of sympathy and help.

If you, my sister, are unhappy because of ill-health, if you feel unfit for household duties, social pleasures, or daily employment, write and tell me just how you suffer, and ask for my free ten days' trial of a home treatment suited to your needs. Men cannot understand women's sufferings. What we women know from experience, we know better than any man. I want to tell you how to cure yourself at home at a cost of about 12 cents a week.

If you suffer from women's peculiar ailments causing pain in the head, back, or bowels, feeling of weight and dragging down sensation, falling or displacement of pelvic organs, causing kidney and bladder weakness or constipation and piles, painful or irregular periods, catarrhal conditions and discharges, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling along the spine, palpitation, hot flashes, weariness, sallow complexion with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living.

I INVITE YOU TO SEND TODAY FOR MY FREE TEN DAYS' TREATMENT

Let me show how these ailments can be easily and surely conquered in the home without the dangers and [illegible] you are cured, and where [illegible]

number of nostrums labeled as from Vanderhoof & Co., South Bend, Ind. These preparations were "Mrs. Summers' Absorbent Pile Remedy," "Mrs. Summers' Womb, Ovarian & Kidney Tonic & Vitalizer Tablets" and "Mrs. Summers' Heart, Brain and Nerve Pills."

Analysis of the pile remedy showed it to be a suppository containing chiefly cacao butter, borax, alum, tannin, camphor and small amounts of hydrastin and belladonna. It was falsely and fraudulently represented as an effective treatment and cure for piles.

The "Womb, Ovarian and Kidney Tonic and Vitalizer Tablets" were found to consist essentially of plant material, a small amount of aromatics like cinnamon and cloves, together with iron oxid and carbonate of lime. These tablets were falsely and fraudulently represented as an effective remedy and cure for all diseases affecting the womb, ovaries and kidneys and as a vitalizer to all female organs and structures and that it was an effective cure for all weaknesses and suffering in women.

The "Heart, Brain and Nerve Pills" were found by the Bureau of Chemistry to consist essentially of reduced iron, asafetida, valerate of zinc and nux vomica. These pills were falsely and fraudulently represented as an effective treatment and cure for nervousness, restlessness, loss of vitality and energy, diseases of the heart, brain and nerves, etc. In May, 1920, Summers pleaded guilty and was fined $100 and costs.—[*Notice of Judgment No. 7747; issued Nov. 11, 1920.*]

Some Cal-Sino Nostrums.—The Cal-Sino Company, a corporation that traded under the name W. H. Smaw & Co., Baltimore, Md., shipped in March, February and June, 1918, a quantity of articles "Compound Syrup of Hypophosphites," "Bromo Febrin," "Hystoria," "Aromatic Cod Liver Oil," "Red Cross Kidney and Liver Regulator," "White Pine and Tar Syrup" and "Boro-Thymine" which were misbranded. Analysis of samples of the "Compound Syrup of Hypophosphites" showed that it contained no ferric hypophosphites nor glycerin and only traces of calcium and manganese hypophosphites. As the preparation was an official one and differed from the standard of strength, quality and purity required, the product was declared adulterated and misbranded. Furthermore, it was declared misbranded because it was falsely and fraudulently described in the trade package as a treatment, remedy or cure for consumption, weak lungs, all forms of general debility, etc.

The "Bromo Febrin" was labeled as containing 4 grains of acetanilid to each powder. As a matter of fact it contained

30 per cent. less than this amount and contained no bromids or bromin compounds. The preparation was, therefore, declared adulterated and misbranded.

The "Red Cross Kidney and Liver Regulator" when analyzed by the federal chemists was found to be a sweetened water-alcohol solution containing as active ingredients potassium acetate, methyl salicylate, eucalyptus, podophyllum and jaborandi. It was falsely and fraudulently claimed to be an effective remedy for Bright's disease, diabetes, jaundice, headache, all affections of the kidneys and liver, etc.

"Hystoria" was found to be a nostrum of the alcohol type containing over 16 per cent. of alcohol and small amounts of plant extractives with traces of alkaloids in amounts too small to identify. Hystoria was labeled as containing 32 per cent. alcohol when, as a matter of fact, it contained only half this amount. Further, it was falsely and fraudulently described as a treatment, remedy, cure and preventive for painful, suppressed or scant menstruation, hemorrhage of the womb, all uterine diseases, etc.

"Smaw's Aromatic Extract of Cod Liver Oil Emulsion" was found on analysis to contain no cod-liver oil but to consist essentially of sugar, aromatics, compounds of phosphorus, calcium, magnesium and iron, plant extractives, and over 12 per cent. of alcohol. This preparation was labeled as containing 17 per cent. of alcohol and was falsely and fraudulently recommended as a remedy for consumption and other pulmonary affections and as a body builder in cases of deficient nutrition and wasting diseases.

The "White Pine and Tar Syrup" when analyzed by the Bureau of Chemistry was found to contain ammonium chlorid, plant extractives with indications of white pine bark and balm of Gilead buds, oil of tar, 5.75 per cent. of alcohol and 2.19 minims of chloroform to each fluid ounce. The product was falsely and misleadingly labeled as to ingredients and was falsely and fraudulently recommended as a remedy and cure for chronic asthma, croup, whooping cough, etc.

"Boro-Thymine" was found to be a water-alcohol solution containing about 2 per cent. boric acid with small amounts of benzoic acid, methyl salicylate, thymol, menthol and eucalyptol. It was falsely and fraudulently recommended as a remedy and cure for scarlet fever, diphtheria, gonorrhea, leucorrhea, etc.

In January, 1920, the defendant pleaded guilty and the court imposed fines aggregating $300 and costs.—[*Notice of Judgment No. 7719; issued Nov. 11, 1920.*]

Correspondence

CONGENITAL DISLOCATION OF THE HIP

To the Editor:—In The Journal, Nov. 27, 1920, in the department of Current Medical Literature, appears this abstract from the *Presse médicale,* Paris, Sept. 22, 1920:

Recent Progress in Treatment of Congenital Luxation of the Hip Joint.—Calot cites as three important acquisitions: (1) The discovery in young children that the true acetabulum in 90 per cent. of the cases belongs to the ischium and not to the ilium portion of the hip-bone. (2) The discovery that the position to be given to the head and neck of the femur must be horizontal and transverse throughout the whole treatment, the rotation exactly equal to the angle of torsion of the upper end of the femur, and the abduction exactly equal to the angle of the slope of the neck. (This is the complement of the angle made by the axis of the neck with a straight line passing from the center of the head to the center of the bicondyle axis of the knee.) (3) The criterion of the cure by the appearance in the roentgen-ray picture of a large and solid horizontal vault of bone at the point of the true roof of the original acetabulum, that is, at the upper limit of the Y cartilage. This bone vault begins to form in the plaster cast. Twenty-two illustrations accompany the article, and a table showing abduction to correspond to different angles of the slope of the neck.

Verily, a little learning is a dangerous thing! Lest credulous readers be misled by this quotation, I offer the following comment:

1. Ever since good roentgenograms have been made it has been known that the greater part of the acetabulum lies below the horizontal line dividing the ilium from the ischium. This is the first discovery which Calot has made!

2. The necessity for the "horizontal and transverse" position of the head and neck of the femur depends on the security of the replacement, and on that alone. There can be no fixed rule. Sometimes the head and neck may look upward and inward, and sometimes look downward and inward instead of the usual approximately horizontal position. The direction of the first position in which the hip is placed must depend on the security of the replacement, and the period during which it is held there is not a definite one. Rules governing young cases cannot be applied to the older cases.

Neither Calot nor any one else has proved that there *is* any torsion of the neck. If there is, to measure it is impossible; to estimate it is useless; for it really has no bearing on the treatment.

3. "The criterion of the cure" is that the replaced head stays in the acetabulum. The development of a "roof" from the acetabulum over the head is no assurance that the head will stay in; nor the absence of such a "roof" that the head will slip out. When the weight is not carried by the bony frame with the head in the acetabulum, but only by muscular and ligamentous support before the dislocation is replaced, the ossification of both the head and the rim of the acetabulum is delayed and their real shape does not show in the roentgenogram; but as soon as the bones feel the stress of necessity after the head has been replaced, osseous deposit is hastened and the femoral head and the acetabulum begin to show in the roentgenogram more and more of their real shape.

In a word: All of Dr. Calot's wonderful "discoveries" have been well known to the orthopedic surgeons of this country for years. No one has heretofore troubled himself to write learnedly about matters that are of no real importance in the diagnosis and treatment of congenital dislocation of the hip.

John Ridlon, M.D., Chicago.

FIVE CASES OF GLIOMA OF THE RETINA IN ONE FAMILY

To the Editor:—I submit a report on some rather interesting cases of glioma of the retina in one family. Among eleven brothers and sisters, five have had glioma of the retina. Of the five, three sisters and two brothers, only one brother is alive; he is now 12 years old and enjoys good health, although blind. Both his eyes were enucleated, the left when he was 2 years old and the right six months afterward. In these patients eight enucleations, five operations for recurrences and in the patient still living the resection of the palpebral conjunctiva and suture of the eyelids have been performed. Recently the father has died from gastric cancer. The mother is in good health, and the other children, one of them 16 years old, are also in good health.

L. Comas, M.D., Santiago de Cuba.

"CREDULITY AND CURES"

To the Editor:—In a communication (The Journal, Oct. 9, 1920, p. 1017), Dr. Robert T. Morris quickly disposes of all recent theories of the neuroses. "Virchow, the liberator of medicine from mysticism, told us that an objective cause lay behind every subjective symptom." With all respect to the founder of cellular pathology, some views have changed since Virchow, and we may mention serology, psychanalysis and endocrinology as modern instances. Mortmain may be a valuable principle in law, but its place in medical science is doubtful. "Objective causes" is a phrase which today covers chemical reactions as well as histologic changes, and there cannot be much doubt that unconscious thinking or, if you prefer, emotional reactions to sense impressions or cerebral processes (Crile), with the resultant disturbances in the vege-

tative sphere, is as objective as a blood clot or a callus. Some of us surgeons may think that Freud is a mystic. Some of us, enamored of the pragmatism of the jackknife, treated hysteria by removing the uterus or ovaries. The truth inherent in endocrinology, as in psychanalysis, cannot be obliterated either by the vagaries of some fanatic supporters or by the stand-pat attitude of some, equally fanatic, opponents.

PERCY FRIDENBERG, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

HEALTH OF EMPLOYEES IN MATCH MAKING—PHOSPHORUS POISONING

To the Editor:—Can you inform me whether or not the manufacturing of matches is at present considered to be a very insanitary occupation for the employees? I have read something concerning this matter in the past, but I am not informed as to the present-day conditions. Please advise me where I may obtain this information.

CHARLES F. READ, Dunning, Ill.
Managing Officer, Chicago State Hospital.

ANSWER.—The manufacture of matches was formerly considered an insanitary occupation because of the prevalence of phosphorus poisoning which resulted from the almost universal use of poisonous white phosphorus in the paste forming the match heads. As a result of a conference at Berne in 1906, an international convention, signed by a number of European powers and their colonies, provided for the prohibition of the manufacture, sale and importation of white phosphorus matches. Virtually every civilized country has since passed prohibitory laws. By act of Congress in 1912, a tax of $2 per hundred is levied in this country on matches made with white phosphorus, and their importation and exportation is prohibited under heavy penalties. These restrictive measures have definitely eliminated the use of white phosphorus in the manufacture of matches, and the occupation has consequently lost its greatest hazard. From the available literature it would seem that conditions in match factories are good at present. A survey made in Ohio shows that this is the case in that state.

Books on occupational diseases discuss this:

Kober, G. M. and Hanson, W. C.: Diseases of Occupation and Vocational Hygiene, Philadelphia, P. Blakiston's Son & Co., 1916.
Thompson, W. G.: The Occupational Diseases, Their Causation, Symptoms, Treatment and Prevention, New York, D. Appleton & Co., 1914.
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Spinner, J. R.: Phosphorus Poisoning, *Deutsch. med. Wchnschr.* **45**: 912 (Aug. 14) 1919.
Simonds, J. P.: The Mechanism of the Protective Action of Carbohydrate Diet in Phosphorus and Chloroform Poisoning, *Arch. Int. Med.* **23**: 362 (March) 1919.

CULTURAL CHARACTERISTICS OF LACTOBACILLI

To the Editor:—Please inform me as to the cultural characteristics of *Bacillus acidi-lactici* (Bulgarian), the type ordinarily used in preparing artificial buttermilk. I am especially interested in the sugar reactions.

LEON S. LIPPINCOTT, M.D., Vicksburg, Miss.

ANSWER.—We take it that our correspondent has in mind the so-called lactobacilli, of which the Bulgarian bacillus (*B. bulgaricus*) is the best known representative. The organism called by the name *Bacillus acidi-lactici* belongs to quite a different group, best termed *Bacillus aerogenes*, and closely related to *Bacillus coli*. The lactobacilli are large rods occurring singly or in filaments, producing large amounts of acid in milk, sometimes more than 3 per cent. Young cultures are gram positive. The lactobacilli grow sparingly on laboratory mediums. Milk or mediums prepared from milk, such as whey agar, are good culture mediums. The presence of dextrose or lactose favors growth. The work of different investigators on fermentative powers shows marked lack of agreement. It is apparently true that mannite, saccharose and maltose are attacked by some strains and not by others. According to Rahe (*J. Infect. Dis.* **15**:14, 1914), *Bacillus bulgaricus* does not ferment maltose in broth, and may be differentiated from other acid-resisting organisms by this character. The fermentative activities of the whole group, in correlation with other characters, probably deserve more attention than they have received.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 11. Sec., Dr. Samuel W. Welch, Montgomery.
ARIZONA: Phoenix, Jan. 4-5. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
COLORADO: Denver, Jan. 4. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
DELAWARE: Dover, Dec. 14-16. Sec., Reg. Bd., Dr. P. S. Downs, Dover.
DISTRICT OF COLUMBIA: Washington, Jan. 11-13. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.
HAWAII: Honolulu, Jan. 10-13. Sec., Dr. J. E. Strade, 1041 Alakea St., Honolulu.
INDIANA: Indianapolis, Jan. 11. Sec., Dr. W. T. Gott, Crawfordsville.
MARYLAND: Baltimore, Dec. 14. Sec., J. McP. Scott, 137 W. Washington St., Hagerstown.
MINNESOTA: Minneapolis, Jan. 4-6. Sec., Dr. Thomas McDavitt, 539 Lowry Bldg., St. Paul.
NEW MEXICO: Santa Fe, Jan. 10-11. Sec., Dr. R. E. McBride, Las Cruces.
NEW YORK: New York City, Albany, Syracuse and Buffalo, Jan. 24-27. Asst., Professional Examinations, Mr. Herbert J. Hamilton, State Education Bldg., Albany.
NORTH DAKOTA: Grand Forks, Jan. 4. Sec., Dr. George M. Williamson, Grand Forks.
OKLAHOMA: Oklahoma City. Jan. 11-12. Sec., J. M. Byrum, Shawnee.
OREGON: Portland, Jan. 4-6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.
PENNSYLVANIA: Philadelphia, Jan. 11-15. Sec., Dr. Thomas E. Finnegan, Harrisburg.
RHODE ISLAND: Providence, Jan. 6-7. Sec., Byron U. Richards, Providence.
SOUTH DAKOTA: Pierre Jan. 18. Director, Division of Medical Licensure, Dr. H. R. Kenaston, Bonesteel.
VIRGINIA: Richmond, Dec. 14-17. Sec., J. W. Preston, 511 McBain Bldg., Roanoke.
WASHINGTON: Spokane, Jan. 4-6. Sec., Dr. William M. O'Shea, Spokane.
WEST VIRGINIA: Charleston, Jan. 13. Sec., R. T. Davis, Charleston.
WISCONSIN: Madison, Jan. 11-13. Sec., Dr. John M. Dodd, Ashland.

OSTEOPATH NOT RECOGNIZED BY HOSPITAL

At Memphis, Tenn., recently, the superintendent of the Baptist Memorial Hospital refused to permit an osteopath to treat patients in the hospital. Later a patient was admitted, supposedly under the care of a regular member of the staff, but who, it turned out, was the patient of the osteopath who was treating the patient. When he learned the facts, the superintendent ordered that the osteopath be refused further admission to the hospital. The osteopath endeavored to secure an injunction prohibiting the superintendent from stopping his treatment of the patient, claiming that he, the osteopath, was regularly licensed and that, since the hospital was a public institution erected and maintained by public funds, its superintendent had no right to bar him from practicing in it. The attorney for the hospital argued that the hospital was responsible to the public and had the right not only to make such regulations as would enable it to determine the character of the work being done, but also to bar any man who did not meet its requirements. Other cases were cited in which decisions had been rendered in favor of the hospitals. The judge then rendered a decision denying the osteopath an injunction.

Wisconsin June Examination

Dr. John M. Dodd, secretary, Wisconsin State Board of Medical Examiners, reports the oral, written and practical examination held at Milwaukee, June 29-July 1, 1920. The examination covered 14 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 33 candidates examined, 32 passed and 1, an osteopath, failed.

Eleven candidates were licensed by reciprocity. Twenty-five candidates were licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1910) 75, (1916)*		
Northwestern University Medical School	(1920) 85, (1920)**		83, 90
Rush Medical College	(1911) 80, (1920) 86, (1920)**		82. 87
University of Illinois	(1920) 83,		83, 86
State University of Iowa College of Medicine	(1920)		84
Johns Hopkins University	(1919)		82, 88
University of Michigan Medical School	(1897)		79
Columbia University	(1920)		84
Marquette University	(1920) 84, 84, (1920)** 83, 83, 84, 84, 84, 84, 85, 85, 85, 86, 87, 88		
Milwaukee Medical College	(1898)		80

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Loyola University	(1916)		Missouri
Rush Med. College	(1901), North Dakota (1918), (1920, 3)		Illinois
St. Louis University School of Medicine	(1919)		Missouri
Washington University	(1919)		Missouri
Columbia University	(1918)		New York
University of Buffalo	(1918)		New York
University of Pittsburgh	(1913)		Penna.

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Hahnemann Medical College, Chicago	(1913),	(1917)	U. S. Army
Rush Medical College	(1915) U. S. Army,	(1917)	U. S. Navy
University of Illinois	(1913),	(1917)	U. S. Army
Johns Hopkins University	(1910),	(1914)	U. S. Army
Tufts College Medical School		(1917)	U. S. Navy
Univ. of Mich. Homeopathic Med. School		(1915)	U. S. Army
University of Minnesota		(1914)	U. S. Army
Barnes Medical College		(1909)	U. S. Army
Albany Medical College	(1901),	(1907)	U. S. Army
Fordham University		(1918)	U. S. Army
N. Y. Homeo. Med. Coll. & Flower Hosp.	(1915),	(1916)	U. S. Army
Jefferson Medical College		(1918)	U. S. Army
University of Pennsylvania		(1915)	U. S. Navy
University of Pittsburgh		(1916)	U. S. Army
Vanderbilt University		(1912)	U. S. Army
Baylor University		(1917)	U. S. Army
Marquette University	(1913) U. S. Army,	(1917)	U. S. Navy
Wisconsin College of Physicians and Surgeons	(1908)		U. S. Army

* No grade given.

** Completed four years' work; will receive diploma on completion of internship.

Ohio June Examination

Dr. H. M. Platter, secretary of the Ohio State Board of Medical Examiners, reports the oral, written and practical examination held at Columbus, June 8-11, 1920. The examination covered 10 subjects and included 105 questions. An average of 75 per cent. was required to pass. Of the 160 candidates examined, 156 passed and 4 failed. Ninety-nine candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University		(1919)	76
Chicago College of Medicine and Surgery		(1916)	84.5
Loyola University	(1916) 76.4,	(1919)	78.9
Rush Medical College	(1919) 83.7,	(1920)	81.2
Johns Hopkins University	(1916) 85.5, (1918) 80.8,	(1920)	82.4, 85.8
Harvard University	(1903) 77.5,	(1917)	86.2
Eclectic Medical College, Cincinnati	76.9, 75.7, 76.7, 78.5, 79.3, 79.8, 79.8, 80.2, 81, 81.3, 81.5, 81.9, 82.1, 82.3, 82.6, 83, 83.6, 85.3, 85.4, 85.9, 85.9, 87.5.	(1920)	76.3,
Ohio State University College of Homeo. Medicine		(1920)	81.3
Ohio State University College of Medicine	80.5, 80.8, 82.7, 82.7, 83.5, 83.5, 84.1, 84.2, 84.2, 84.5, 84.6, 84.7, 84.9, 84.9, 85.2, 85.2, 86.5, 87.1, 87.9, 88.4, 85.4.	(1920)	75.4,
University of Cincinnati College of Medicine	78.9, 79, 79.3, 79.3, 78.8, 78.8, 79.5, 79.5, 80.4, 80.5, 80.6, 80.6, 81.1, 81.1 81.6, 81.8, 81.8, 81.9, 82.3, 82.4, 82.7, 82.7, 82.8, 83.2, 83.5, 83.5, 83.8, 83.6, 84.2. 84.3, 85, 85.1, 85.2, 85.2, 85.3, 85.5, 86.2, 88, 88.7.	(1920	78.2,
Western Reserve University School of Medicine	(1920) 75, 75.7, 76.7, 77.5, 77.6, 78.7, 78.9, 78.9, 79.9, 80.3, 80.4, 80.8, 80.9, 81.2, 81.4, 81.5, 81.9, 81.9, 82, 82.2, 82.4, 82.4, 82.5, 82.5, 82.5, 82.6, 82.7, 83.8, 83.8, 84.1, 84.2, 84.6, 84.9, 85, 85.1, 85.1, 85.3, 85.3, 85.4, 87.6, 87.6.	(1917)	79,
University of Oklahoma		(1918)	76.7
Hahnemann Med. College and Hospital Philadelphia		(1919)	78.4
Jefferson Medical College	(1920) 76.2, 80.3, 81.4, 81.6, 81.8,		82.1
University of Pennsylvania	(1917) 82.7,	(1918)	82.6
University of Pittsburgh		(1919)	78.7
Meharry Medical College	(1913) 75,	(1919)	77.4
University of Tennessee		(1917)	81.1
Vanderbilt University	(1916) 79.7,	(1919)	80.6

College	FAILED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery		(1917)	72.5
Eclectic Medical College		(1920)	73.8
Ohio State University of Homeopathic Medicine		(1919)	73.5
Meharry Medical College		(1919)	72.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
George Washington University	(1906)		Dist. Colum.
Georgetown University Medical School	(1912)		Dist. Colum.
American Medical Missionary College	(1902)		Alabama
Bennett College of Eclectic Medicine and Surgery	(1906)		Illinois
Chicago College of Medicine and Surgery	(1917)		Illinois
Northwestern University	(1918)		Illinois
Rush Medical College	(1903) (1905) Indiana, (1917), (1919), (1920, 2)		Illinois
College of Physicians and Surgeons, Chicago	(1897)		Illinois
University of Illinois	(1913), (1919, 2)		Illinois
Indiana University	(1916), (1917), (1918), (1919)		Indiana
State University of Iowa Coll. of Homeo. Medicine	(1910)		Iowa
Kentucky School of Medicine	(1898)		W. Virginia
University of Louisville	(1889) (1910) Virginia, (1911) Texas, (1917) Indiana.		Kentucky
Tulane University Medical College	(1910)		Louisiana
Baltimore Medical College	(1903)		New York
College of Physicians and Surgeons, Baltimore	(1904)		Maryland
Johns Hopkins University	(1915) West Virginia, (1917)		Penna.
University of Maryland	(1897) (1915), (1917) West Virginia, (1917) New York, (1918) Maryland.		Penna.
Harvard University	(1895) Maine, (1916)		New York
Detroit College of Medicine and Surgery	(1915)		Michigan
University of Michigan Medical School	(1894) (1912, 2) Michigan, (1916) Michigan.		Illinois
Missouri Medical College	(1898)		Oklahoma
St. Louis College of Physicians and Surgeons	(1904)		Indiana
St. Louis University	(1911), (1917), (1918), (1919, 3)		Missouri
Washington University	(1902) Illinois, (1912)		Missouri
John A. Creighton Medical College	(1914) Utah, (1915)		Nebraska
Albany Medical College	(1910)		New York
Columbia University	(1915) New Jersey, (1916)		New York
Cornell University College of Medicine	(1906)		New York
Long Island College Hospital	(1915)		New York
Medical Department of the University of New York	(1889)		New York
New York University Medical College	(1896)		New York
Syracuse University College of Medicine	(1907)		New York
University of Buffalo	(1914) Pennsylvania, (1919)		New York
New York Homeo. Medical College and Hospital	(1906)		Penna.
Cleveland Medical College, Homeopathic	(1894)		Penna.
Eclectic Medical College, Cincinnati	(1906) (1912) Kentucky, (1916) Nebraska.		W. Virginia
Ohio-Miami Medical College	(1910)		Colorado
University of Wooster	(1876)		Minnesota
Hahnemann Med. Coll. and Hosp. of Phila.	(1902), (1906)		Penna.
Jefferson Medical College	..(1882), (1915), (1916), (1917) Pennsylvania; (1912)		Iowa
Medico-Chirurgical College of Philadelphia	(1915)		Penna.
University of Pennsylvania	(1914)		New York
University of Pittsburgh	(1911, 2)		Penna.
Meharry Medical College	(1905, 3), (1911) (1916) Missouri, (1918) Kentucky.		Alabama
University of Texas	(1912), (1913)		Texas
Medical College of Virginia	(1913), (1916)		Virginia
University of Virginia	(1894)		New York
University of Vermont	(1910), (1915, 2)		Vermont
Marquette University	(1916)		Wisconsin
University of Athens	(1910)		Penna.

Utah July Examination

Dr. C. L. Olsen, acting secretary, Utah State Board of Medical Examiners, reports the oral examination held at Salt Lake City, July 6-7, 1920. The examination covered 16 subjects and included 100 questions. An average of 75 per cent. was required to pass. Eight candidates were examined, all of whom passed. Five candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Illinois College of Medicine, Chicago	(1920)		84.7
Harvard University	(1920)		90.9
Columbia University	(1920)		88.8
Long Island College Hospital	(1919)		89.3
Western Reserve University	(1919) 85.9,	(1920)	83.6
University of Pennsylvania School of Medicine	(1920)		88.9
Wisconsin Eclectic Medical School, Milwaukee	(1896)		75

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University Medical School, Chicago	(1909)		Illinois
Rush Medical College	(1920)		Illinois
University of Louisville	(1909)		Kentucky
University of Pennsylvania	(1873)		Penna.
University of Naples	(1893)		*Italy

* Graduation not verified.

Vermont June Examination

Dr. W. Scott Nay, secretary, Vermont State Board of Medical Registration, reports the written examination held at Burlington, June 29 to July 1. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Sixteen candidates were examined, all of whom passed. One candidate was licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Vermont College of Medicine	(1916) 87.1, (1917) 87.4, (1920) 78, 78.8, 83.9, 84.1, 86.8, 87.3, 87.5, 87.6, 87.7, 88.1, 88.3, 89.3, 89.3	(1913)	84.9

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Harvard University		(1915)	Maine

Book Notices

MAIN STREET. The Story of Carol Kennicott. By Sinclair Lewis. Cloth. Price, $2. Pp. 451. New York: Harcourt, Brace and Howe, 1920.

The physicians of literature—what an assembly they would make! So intimately are physicians bound up with the everyday life of people in general that almost every author has brought them into his works: To mention a few: Dr. Watson, the intimate companion of Sherlock Holmes; the physicians painted by Checkhov, himself a physician; the kindly doctor of "Rab and His Friends"; old Dr. McClure, sympathetically portrayed in "Beside the Bonnie Briar Bush"; "K" of Mrs. Rhinehart, and quite recently F. Brett Young's "Young Physician." It has remained for Sinclair Lewis, however, to take the ordinary physician of any small town in the Middle West and to put him properly into a book. Briefly, the story describes how a young woman with ideals—with a capital "I"—married a young physician in Gopher Prairie, Minnesota, and then set out to cure the town, to broaden it and to make it artistic. Her husband, Dr. Kennicott, is first and foremost a physician. He does not care for art; he reads only an occasional newspaper; although a steady student of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION he is not especially interested in reading anything else; he knows medicine; he admires the great physicians and surgeons of his time; he is a solid and leading member of his society. But it is a narrow society, and his wife, whom he does not understand, would like to broaden it. The job is too big for her. She tries to break away. In the end she returns to Gopher Prairie and, though still retaining a firm belief in her ideals, is content to devote herself to her husband and her children. This brief outline of the plot tells little of the significance of the book. Mr. Lewis has seen the faults of American small town life. His atmosphere is honest and accurate. His father, brother and an uncle are physicians, and he has imbibed at first hand the medical life of such a community as he describes. Note for example the description of the Gopher Prairie drug store:

> Dyer's Drug Store, a corner building of regular and unreal blocks of artificial stone. Inside the store, a greasy marble soda-fountain with an electric lamp of red and green and curdled-yellow mosaic shade. Pawed-over heaps of tooth brushes and combs and packages of shaving-soap. Shelves of soap-cartons, teething-rings, garden-seeds and patent medicines in yellow packages—nostrums for consumption, for "women's diseases"—notorious mixtures of opium and alcohol, in the very shop to which her husband sent patients for the filling of prescriptions.

Here are some comments by Dr. Kennicott on Dr. Westlake, an old practitioner of Gopher Prairie:

> "Will! What do you think of Dr. Westlake?"
> "Westlake? Why,"
> "I noticed him on the street today."
> "Was he limping? If the poor fish would have his teeth X-rayed. I'll bet nine and a half cents he'd find an abscess there. 'Rheumatism' he calls it. Rheumatism, hell! Wellllll—" A profound and serious yawn. "I hate to break up the party, but it's getting late, and a doctor never knows when he'll get routed out before morning." (She [Mrs. Kennicott] remembered that he had given this explanation, in these words, not less than thirty times in the year.)

Lewis has accurately caught the vernacular of the careless physician: his physicians invariably "operate their patients" instead of operating on them. Particularly displaying the author's insight is Dr. Kennicott's response to one of his woman patients with an "imaginary" ailment. She has been reading the magazines and she knows about "psychoses" and wants him to "order a change in a woman's way of living so she can get on a higher plane ———." Kennicott answers:

> "Wait! Wait! Whoa-up! Wait now! Don't mix up your Christian Science and your psychology! They're two entirely different fads! You'll be mixing in socialism next! You're as bad as Carrie, with your 'psychoses.' Why, Good Lord, Maud, I could talk about neuroses and psychoses and inhibitions and repressions and complexes just as well as any damn specialist, if I got paid for it, if I was in the city and had the nerve to charge the fees that those fellows do. If a specialist stung you for a hundred-dollar consultation-fee and told you to go to New York to duck Dave's nagging, you'd do it, to save the hundred dollars! But you know me—I'm your neighbor—you see me mowing the lawn—you figure I'm just a plug general practitioner. If I said 'Go to New York,' Dave and you would laugh your heads off and say, 'Look at the airs Will is putting on. What does he think he is?'"

Kennicott, like many of our best physicians, in large cities as well as in small communities, is a conscientious, self-sacrificing man, but at heart a provincial. Physicians who read this book will like it, even though every now and then it causes an inward wincing because of some of the satirical thrusts at their faults. The wives of medical men will certainly enjoy it, since it will make some of the conscientious physicians look around and take notice. "Main Street," for the physician, is more than a first class piece of fiction—it is a commentary on the social side of medical life.

DISEASES OF THE INTESTINES AND LOWER ALIMENTARY TRACT. By Anthony Bassler, M.D., Professor of Gastro-Enterology, Fordham University Medical College. Cloth. Price, $7. Pp. 660, with 286 illustrations. Philadelphia: F. A. Davis, 1920.

The author first discusses history taking, emphasizing the fundamental importance of the patient's complaints. The methods of physical, laboratory, instrumental and roentgenologic examination are described fully. There are many excellent roentgenograms, both of the normal and the pathologic conditions of the intestinal tract. Numerous diet lists in use by the author in his private practice are given in detail. The subjects of intestinal obstruction and appendicitis are treated thoroughly. The last few chapters of the book are devoted to diseases of the rectum. Many subjects appear to be considered with too great detail, and others with too little. It is hardly possible for the great majority of practitioners of medicine, to whom the book is dedicated, to carry out a complete chemical and bacteriologic examination of the stools, and the equally complete qualitative and quantitative urinalysis that the author recommends. The work would require almost a week for its completion. Fifteen pages are devoted to the vaccine treatment of intestinal intoxication. Eleven different types of vaccine are recommended, depending on the type of organisms isolated from the stools. If intestinal toxemia were really the cause of the many and varied conditions that the author would lead us to think, and if the efficacy of these vaccines could be established, the isolation of the various bacterial causes and the preparation of a vaccine would warrant its use. This, however, the author does not succeed in proving, particularly in the case of rectal injections of foreign colon bacillus vaccine. Contrasted with the number of pages devoted to the subject of vaccines is the scant two pages devoted to catarrhal jaundice. There is no consideration given to the subject of differential diagnosis. In fact, aside from acute intestinal obstruction, the subject of differential obstruction is not gone into save for the mentioning of the possible conditions that may have to be considered in the diagnosis.

MASSAGE AND EXERCISE COMBINED. A Permanent Physical Culture Course for Men, Women and Children. Health Giving, Vitalizing, Prophylactic, Beautifying. A New System of the Characteristic Essentials of Gymnastic and Indian Yogis Concentrating Exercises Combined with Scientific Massage Movements, with 86 Illustrations and Deep Breathing Exercises. By Albrecht Jensen. Cloth. Price, $4 net. Pp. 93. New York: The Author, 1920.

What the "patent medicine" is to pharmacotherapy, "health cults" and "systems" are to nonpharmacal therapeutics. Jensen's book is of this type. "The Permanent Physical Culture Course for Men, Women and Children—Health-Giving, Vitalizing, Prophylactic, Beautifying" is a combination of self-massage with active movements, with resulting sacrifice of some of the advantages of each. The massage manipulations described are chiefly effleurage (stroking) and tapotement (beating), while petrissage (kneading) does not enter into this "system" of physical culture, for the evident reason that autopetrissage is a difficult and tiresome procedure. Nor is friction brought into use, though both of these manipulations are of importance for obtaining the best results in various pathologic conditions amenable to massage treatment. Furthermore, the muscular relaxation indispensable for deep effects from massage is impossible, owing to the fact that the individual is in the standing posture. The soothing and relaxing effect obtainable from proper massage is, of course, also out of the question when the patient manipulates himself. From the exercises, on the other hand, one of the chief purposes of gymnastics—the development of useful coordinations—is taken away. As these massage exercises require con-

centration, they are unsuitable for purposes of recreation. Still, Jensen maintains that their combined application is "physical culture in its most scientific and perfected form." Like other exponents of "systems," he does not hesitate to make great promises. Thus, he states that a woman "by care, massage and exercises of the abdominal muscles, after having recovered from her accouchement, could regain her former figure and appearance"; that these exercises "will preserve youth and retard old age"; and so on. Though they may not do all that is claimed for them, the exercises described have their virtues. They will reduce fat persons and may build up thin ones. It has been said that massage is a good means of reducing obesity in the masseur. Hence, if an obese person could be induced to perform on himself the manipulations described by Jensen—and some of these would be physically impossible for a really fat person—he might accomplish the desired result.

MARINE HYGIENE AND SANITATION. A Manual for Ships' Surgeons and Port Health Officers. By Gilbert E. Brooke, M.A., L.R.C.P., D.P.H., Port Health Officer, Singapore. Cloth. Price, $4.50. Pp. 409, with illustrations. New York: William Wood and Company, 1920.

Many scientific books, and certainly all those intended as manuals, are dry reading. It is therefore a pleasure to find a book on hygiene which is as fascinating as an adventure tale. Dr. Brooke's sense of humor and his broad outlook on questions relating to marine sanitation are evident from preface to appendix. The volume opens with a chapter on the ship's surgeon. This is followed by a description of the structure of a ship, with emphasis on the things of most importance to a surgeon or port health officer. The next chapters deal with ship ventilation, water and food supplies, and ship vermin. Quarantine inspection is considered, and then follows a detailed discussion of ship-borne diseases, including etiology, symptoms and methods of spread. Most emphasis is laid on the four infections regarded by the author as the major ones from the standpoint of a port health officer: cholera, plague, yellow fever and smallpox. In the succeeding chapters, considerable space is given to inspection and disinfection of ships, and the book concludes with a discussion of the duties of a port health officer. Brooke's views on beriberi are of some interest as coming from a man who has seen a great amount of the disease in the Orient. He is convinced that beriberi is a bacterial infection, perhaps superimposed on the deficient diet. We are gratified with the author's remarks concerning the efficiency of the quarantine organization of the United States Public Health Service. The book is of considerable interest to all those concerned with public health work, whether or not connected with port quarantine or inspection.

THE DIAGNOSIS AND TREATMENT OF PERIPHERAL NERVE INJURIES. Medical Research Council, First Report of the Committee Upon Injuries of the Nervous System. Paper. Pp. 59. London: His Majesty's Stationery Office, 1920.

In this report an attempt has been made "to enunciate the general principles of treatment, and to indicate the variations demanded by the special physiology and anatomy of each of the more important nerves." The report is divided into four parts and an addendum. The first part is devoted to nerve injuries in general, and consists of methods of examination of motor, sensory, vasomotor, secretory and trophic functions, the diagnosis of nerve injury, complications, and operative and nonoperative treatment. Within a few pages may be found a summary of the most important deductions derived from the experience of many workers. The second part deals with special nerves. The diagnosis, level of lesion, treatment, and signs of returning function are described as related to the musculospiral nerve, the median nerve, the ulnar, musculocutaneous, circumflex and sciatic nerve, and the brachial plexus. In this part there are several excellent illustrations. The subject matter is free from controversial points, and consists of well digested, clearly expressed conclusions derived from personal experience and the literature. The third section deals briefly with the histologic examination of injured peripheral nerves, and the fourth with pain with injuries of peripheral nerves. The report is comprehensive, easily understood, and exceptionally accurate. It should be of great value to all medical officers concerned with peripheral nerve injuries, and offers to the physician in a small volume considerable material that would otherwise necessitate many sources of information.

THE LINK BETWEEN THE PRACTITIONER AND THE LABORATORY. A Guide to the Practitioner in his Relations with the Pathologic Laboratory. By Cavendish Fletcher, M.B., B.S., M.R.C.S., Director, Laboratories of Pathology and Public Health, London, and Hugh McLean, B.A., B.C., D.P.H., Assistant Pathologist, Laboratories of Pathology and Public Health, London. Paper. Price, $1.50. Pp. 91. New York: Paul B. Hoeber, 1920.

This is a handy pocket manual intended to inform practitioners what help they can expect to secure from the laboratory in the diagnosis or treatment of the diseases indexed, together with brief instructions as to the proper method of collection of material in each case. The directions are clear and the advice, sound.

Miscellany

SANITATION IN WORKSHOPS AND FACTORIES

The annual report of the chief inspector of factories and workshops of London for 1919 points out that during the war the standard of safety and sanitation declined, owing to pressure of work, shortage of staffs, and difficulties in obtaining materials and labor for repairs or renewals. But in 1919 a great step forward was made, not only in recovering lost ground but also in advancing to a higher standard. The higher level of sanitation and comfort required in works producing munitions and other war material has tended to produce better surroundings, with greater regard for cleanliness. But on the part of the workers there is no great demand for washing and sanitary conveniences, even when the trade is obviously dirty and unpleasant. The whole question of heating, especially in large factories, is receiving much attention, and in nearly every district the unit system is being introduced. In this system each unit consists of a bar which forces the air under pressure downward over steam-heated pipes and so distributes the heated air at floor levels, where the effect is most felt by workers. In order to obviate the "dry" feeling in the air, sometimes noted in shops thus heated, one firm introduces steam from jets near the roof and the workers maintain that the atmosphere is improved. Another interesting development for reducing the high temperature associated with many industries is the douche system of air cooling, in which a douche of cold moving air is blown by means of fans into the space where men are at work, producing a cooling and refreshing effect. Whereas formerly the men often left work in the early afternoon, owing to the excessive temperature, they now put in full time without fatigue. In regard to industrial diseases, the Whitley Councils (consisting of employer and employees) made themselves felt during the year. Conferences were held with representatives of the manufacturers and operatives in different trades to consider improvements in hygiene. The statistics show an increase of lead poisoning as compared with 1918, but that was unavoidable with the return to ordinary trade. The industry in which there is now the greatest danger of plumbism is not the manufacture of white lead or pottery, or coach painting, but the manufacture of electric accumulators. Experiments have been made in this country in the direction of accomplishing by machinery the operation of pasting in this industry—in which the larger proportion of cases occur—but they have not been so successful as in America. Among the few cases of plumbism reported in the pottery industry, the proportion of fatalities is high being 28 per cent. in the five years 1915-1919, compared with the proportion 7.2 per cent., to all reported cases.

The Anthrax Disinfection Committee was appointed in 1919 to advise on the scheme for disinfecting infected materials. Experience has shown that death in anthrax is now a rare event, provided the necessary treatment is available and the disease recognized early. This may be due to the serum treatment combined with enforcement of physiologic rest, the need for which is well established. Grave doubts are cast on the utility of the excision of external anthrax, save perhaps in the earliest stages.

Medicolegal

No Recovery for Services Rendered Without License

(O'Bannon v. Widick et ux. (Mo.), 220 S. W. R. 853)

The Supreme Court of Missouri, Division No. 2, says that the plaintiff sued the defendants, husband and wife, to recover for professional services as a mechanotherapist, rendered by him to the defendants and their family at their request. He obtained a judgment in the circuit court, which was reversed by the Springfield (Mo.) Court of Appeals, 198 S. W. 432. The evidence was sufficient to warrant a finding in his favor, if he was authorized by law to perform the services rendered and charge for them. He admitted that his demand was for services rendered in the treatment of ailments and diseases of the human body, and that he had no license as a physician or surgeon which authorized him to render the services sued for. On being asked what profession or line he was following, he replied, "I am covering the field as a practitioner of drugless healing, and take the general field of dietetics, scientific food, the adjustment of the spine, and a correspondence course in osteopathy; two years in the practice and study of medicine twenty-eight years ago. It is what is called mechanotherapy." That was followed by the question: "You have also stated you are practicing what is known as the chiropractic method?" the answer to which was "Yes; except the medicine; I use food and scientific work." The Springfield Court of Appeals held that the plaintiff, without a license to practice, could not recover for the services that he rendered, under the foregoing circumstances. Then the cause was transferred to the supreme court, on account of the conflict between the opinion mentioned above and that in *Smythe* v. *Hanson,* 61 Mo. App. 285, decided by the St. Louis Court of Appeals. On a careful consideration of the questions presented, the supreme court is of the opinion that the decision of the Springfield Court of Appeals properly declared the law of the case, which is adopted as the opinion of the supreme court. In 8 Elliott on Contracts (1913-1918 Supplement) p. 126 et seq., Section 646 and following, that opinion is strongly approved, and a number of recent decisions from other jurisdictions are cited in support of it.

Right to Restrain Insane Persons

(Maxwell v. Maxwell (Iowa), 177 N. W. R. 541)

The Supreme Court of Iowa, in reversing a judgment that was rendered in favor of the defendant, on account of the jury's having been erroneously instructed, says that the plaintiff and the defendant were father and son, and that the former, about 78 years of age, sued the latter for damages for alleged false arrest and imprisonment in wrongfully causing the sheriff to take the plaintiff into custody and transport him to the Soldiers' Home at Marshalltown. The general rule is that where it is made to appear that one is not capable of rational self-control, and by reason thereof his own safety or the public safety is imperiled, one who by relationship or otherwise is the natural or proper custodian of an insane person may lawfully restrain him in some proper place for treatment, for the good of the patient or for the protection of the public, and this without warrant and without judicial proceedings. The right to restrain an insane person is not governed by the general law which provides that no one shall be deprived of life, liberty or property without due process of law. Restrain under such conditions does not offend against the constitutional inhibition. The court finds no authorities going so far as to say that one sustaining the close relationship which this defendant sustained to this plaintiff is not justified in temporarily restraining him of his liberty, when such restraint is made necessary for his own protection or the public safety. The consensus of judicial opinion seems to be that, while every one is ordinarily entitled to direct his own actions, yet where one is in fact insane, and there are manifest probabilities of injury to himself or the public if permitted to go unrestrained, even though those have not been manifest, he may be restrained by any one for a reasonable time in the interests of the public good. The authorities limit the right to restrain an insane person of his liberty to proof of actual insanity and immediate danger to himself or to the public, and they unite in holding that the right to restrain for his own benefit and for the protection of others is not questioned, but is discussed as analogous to cases in which one is in delirium of fever and would break away from his attendants, or one who is afflicted with a contagious disease. However, the right of one to arrest and restrain another of his liberty on the ground of insanity is dependent on the existence of the fact on which the right is predicated. A citizen has not the right to arrest any member of society who may be deranged in his mind, and therefore, in order to justify his act, when charged with wrongful arrest, he must show, not only that the defendant was insane at the time, but also that to permit him to go at large imperiled his own safety or the safety of the public. It is not sufficient to show that he was lacking in mental capacity or had hallucinations. Nor is it sufficient to show in cases of this kind probable grounds for suspecting that the person was insane or probable reason for believing that his being at large would imperil the safety of the public. The one restraining him must justify it by proving the fact on which his right to restrain rested. In other words, one who arrests another and restrains him of his liberty, on the theory that he is incapable of rational self-control, assumes the burden of showing that fact and the imminent necessity for the restraint. This is the true rule, and the sane and safe rule in matters of this kind.

A Supreme Court's Pronouncement Against the Fly

(Williams v. Sweet (Me.), 110 Atl. R. 316)

The Supreme Judicial Court of Maine, in granting the defendant a new trial after the plaintiff had recovered a verdict in this action to recover the price which the defendant had contracted to pay for certain rooms for two weeks, in the month of August, but which the defendant and his party had abandoned after four days, says that the crux of the case was found in answer to the inquiry: Was the defendant justified in leaving? It will be conceded that a hotel, when it holds itself out to the public as a place of resort for rooms and board, carries with such offer an implication that it will furnish its patrons with accommodations that are compatible with the standing of the hostelry, the prices paid, and the class of people invited to become its guests. These "accommodations" include apartments, table, dining service, and especially such sanitary conditions as are calculated to render the surroundings inviting and wholesome rather than repulsive and deleterious to health. The complaint in this case was that at the table at which the defendant and his party were accustomed to sit the flies were so numerous and became so obnoxious that their presence created an intolerable condition in violation of the obligation of the landlord to furnish suitable and sanitary dining facilities as implied in his contract. The real issue involved a single question of fact: Was the defendant justified in leaving the hotel on account of the fault of the plaintiff, in allowing flies to collect at the defendant's table in such numbers as to become insanitary and repulsive? The court thinks that he was.

It is a matter of common knowledge that the common house fly has come to be regarded by the enlightened understanding, not only as one of the most annoying and repulsive of insects, but one of the most dangerous in its capacity to gather, carry and disseminate the germs of disease. He is the meanest of all scavengers. He delights in reveling in all kinds of filth; the greater the putrescence, the more to his taste. Of every vermin, he above all others is least able to prove an alibi when charged with having been in touch with every kind of corruption, and with having become contaminated with the germs thereof. After free indulgence in the cesspools of disease and filth, he then possesses the further obnoxious attribute of being most agile and persistent in ability to distribute the germs of almost every deadly form of contagion. It is a matter of common knowledge that yellow fever was formerly the scourge of certain localities in our own and other countries. For years no one mistrusted or was able to detect the cause. But one day it was announced that a certain kind of mosquito by its sting communicated the germs of this dread disease. The knowing introduction of one of these mosquitoes

now would constitute a criminal offense. While the house fly has not yet been regarded as fatal as a mosquito, he, nevertheless, is now attracting the serious attention of sanitary and health departments all over the country; in fact, all over the world. The dangers with which his presence is fraught are also a matter of common knowledge, and hence of judicial notice. The court finds that the bibliographic list on this subject in the last twelve years embraces 136 publications in books and bulletins issued in many countries and printed in different languages.

That the defendant left the plaintiff's hotel on account of the obnoxious presence of flies there can be no doubt, and the court thinks that he was justified in so doing. Accidentally, flies may invade any dining room, public or private; but the presence of flies in a dining room regularly in numbers, however small, is a menace not to be encouraged or tolerated. A single fly may so contaminate food, milk or a dish as to communicate a dangerous or even deadly disease like tuberculosis. To the person, therefore, who knows its dangers, flies about the food, in numbers however small, are at once repulsive, nauseating and dreaded. A single fly may be reeking with filth and covered with a million noxious germs. To those informed on the subject, this case presents a matter of importance and serious consideration. Reasonable conditions of sanitation are always to be measured by the fatality of the diseases liable to be communicated as the result of the lack of such conditions.

Position of One Not Calling Physician as Witness

(Bernhardt v. City & S. Ry. Co. (D. C.), 263 Fed. R. 1009)

The Court of Appeals of the District of Columbia holds that there was no error in excluding evidence offered by a plaintiff in a personal injury case to show that a physician who had attended him refused to make a further examination for the purpose of testifying for him. The court says that, it having appeared in the record that the physician had treated the plaintiff, it would have been proper for the defendant to argue that the failure of the plaintiff to call the physician as a witness justified the inference that, if called, his testimony would have been adverse to the plaintiff's case. It was therefore proper for the plaintiff to overcome that presumption, if he could, by showing why the physician did not testify. But a statement to the effect that the physician refused to appear in court was immaterial, since the plaintiff could have coerced his appearance by the service of a subpena. It might be that it would have been a dangerous experiment, as suggested by counsel for the plaintiff, to put the physician on the stand under the circumstances; but the plaintiff was not required to do that. He had his choice, either to call him or to suffer the effects of the presumption which the law would raise in the event that he was not called.

Liability from Loss of Drainage Tube Not Shown—Evidence

(Burris v. Titzell (Iowa), 177 N. W. R. 557)

The Supreme Court of Iowa, in reversing a judgment that was rendered in favor of the plaintiff, says that he divided his petition into two counts. The first count charged as a basis for recovery simply that the defendant, a surgeon, negligently, carelessly and unskilfully inserted a drainage tube in such a way and with such fastenings that, as a result of the defendant's negligence in fastening it, it escaped into the pleural cavity of the plaintiff and caused him serious injury. The plaintiff sought to make the defendant liable for all consequences that followed that act. Among these he alleged that it became necessary subsequently to perform an operation to remove the tube, which operation was not only painful, but very injurious. But that operation could be considered only in determining the damages which the plaintiff was entitled to on account of the substantive negligence charged, and it must affirmatively appear that the defendant was guilty of that negligence before he could be charged with the consequences that followed the act charged to be negligent. The evidence showed that a thread was used that would not easily be absorbed, rot or give way, and that the thread was fastened by the use of a needle to the body of the plaintiff, and that this was the usual and a proper way. The only evidence there was that tended in any way to negative this was that the tube did not remain where it was fastened, but escaped into the body of the plaintiff, although not until some ten days after the operation, during which time the wound was dressed by nurses furnished by the hospital, over whom the defendant had no control. How the tube escaped was not shown. To lay a foundation for liability under the issue tendered, it must affirmatively appear and there must be evidence in the record that would justify the jury in saying that the escape was due to the negligent manner in which the tube was fastened to the body at the time of the operation. If it was thought that it was the duty of the defendant, after the operation, to watch and see that the stitches did not become loose, it should have been so alleged. The patient sustained a somewhat different relationship to this surgeon, so far as nurses were concerned, than he would have sustained if he had been a private patient under the charge of the surgeon and of nurses selected and placed in charge by the surgeon. The jury might well find that the defendant properly fastened the tube, and was guilty of no negligence in the manner in which he fastened it, but that the interns or nurses whose duty it was to dress the wound were negligent and careless in the dressing, and through this the tube became loosened from its moorings and slipped into the body. An instruction was erroneous from which the jury could draw the inference that they were justified in finding actionable negligence on the part of the defendant in permitting the nurses to dress the wound, and that he was responsible for their acts in dressing the wound, if he permitted them to dress it, as it was not charged that he was negligent in permitting the nurses and interns to dress the wound. To hold the defendant liable on this first count, the court must enter the field of speculation with no proof of any substantial fact involving him in negligence.

The second count of the plaintiff's petition was predicated on alleged negligence of the defendant in an operation performed in an attempt to remove the tube. The plaintiff called no expert witnesses to testify to whether the manner in which this operation was performed was approved by the medical profession or not. But, assuming that the defendant had before him the roentgenogram previously taken, knew exactly where the tube was located in the plaintiff's body, and, in an effort to remove it, cut the body at such a point as would clearly suggest to the mind of the ordinary layman that the wound inflicted was grossly in excess of what was reasonably necessary to reach the point where the tube was located, the jury might well find the defendant guilty of negligence. This was a case wherein liability might rest and be shown without the testimony of expert witnesses.

The defendant contended that certain prior attempts to remove the tube were unsuccessful because the plaintiff was unable then to take an anesthetic. That was not negatived by the fact that a year later the plaintiff was able to take an anesthetic without suffering any ill effects from it.

Not a "Surgeon" and Not a "Surgical Operation"

(Maupin v. Southern Surety Company (Mo.), 220 S. W. R. 20)

The Springfield (Mo.) Court of Appeals says that the word "surgeon," unqualified, in the mind of the ordinary individual, means one possessed of such knowledge of the human body, and such other knowledge as the laws of our land require, and possessed of such skill in the use of instruments, that he may be expected with reason to correct or relieve some unnatural condition of the human body. The court does not think that the mass of mankind would connect the idea of a veterinarian with the word "surgeon," as that word is generally used. In the case before the court, an accident insurance policy provided, among other things, that the insurer, the defendant, would be liable in the event that a legally qualified physician or surgeon, while holding a necropsy or performing a surgical operation, actually cut or wounded himself, and by reason of such cutting or wounding and simultaneously therewith was inoculated with poison. The insured was a veterinarian, who, while vaccinating some hogs and while endeavoring to slit the ear of one to show that it had been treated, accidentally cut his finger, from which blood poisoning resulted, causing his death. The plaintiff, who was the

beneficiary under the policy, contended that the insured was a "surgeon," and that the operation which he was performing when injured was a "surgical operation," as those terms were used in this provision of the policy. The court, however, holds otherwise, and reverses a judgment that was obtained by the plaintiff against the defendant insurer.

Society Proceedings

COMING MEETINGS

American Physiological Society, Chicago, Dec. 30.
Porto Rico, Medical Association of, Ponce, Dec. 13-14.
Radiological Society of North America, Chicago, Dec. 16-17.
Society of American Bacteriologists, Chicago, Dec. 28-30.
Southern Surgical Association, Hot Springs, Va., Dec. 14-16.

SOUTHERN MEDICAL ASSOCIATION

Fourteenth Annual Meeting, held at Louisville, Ky., Nov. 15-18, 1910

(Concluded from page 1592)

Static Difficulties of Lower Extremities as Influenced by Circulatory Disturbances

DR. THOMAS MADDEN FOLEY, Washington, D. C.: Many unrelieved orthopedic conditions are due to circulatory disturbances, and may be relieved by proper treatment. Deep varices in venae comites and atypical angioneurotic diseases of the lower limb are more frequent than are usually thought. Appropriate systemic treatment for central circulatory disturbances must not be neglected.

Seminal Vesiculitis

DRS. EDWARD WILLIAM WHITE and R. B. H. GRADWOHL, Chicago: No undue haste need be exercised in advising operations until all palliative measures have been exhausted. Vesiculectomy is the operation of choice in the hard sclerotic vesicles, whereas, vesiculotomy and drainage have been entirely satisfactory in pus cases and acute catarrhal cases, chronic fibrous, sclerotic cases, unrelieved by treatment, and vesical cases causing obstruction to the higher urinary tract.

Hemorrhage from Kidney

DR. H. A. FOWLER, Washington, D. C.: The nature of the treatment to be employed in any given case depends naturally on the character and amount of hemorrhage. When the demand for immediate control of bleeding is not urgent, conservative measures should be given a thorough trial before one resorts to radical surgical intervention. Bleeding ceases at times after simple ureteral catheterization. The bleeding usually recurs. Injection of the pelvis with 1 per cent. silver nitrate solution is often followed by cessation of bleeding. I have employed the intramuscular injections of horse serum with varying results. If conservative measures fail to stop bleeding, and the patient's condition justifies it, nephrotomy or decapsulation may be performed, provided the kidney on exposure does not show a gross pathologic condition. In cases of severe uncontrollable hemorrhage, nephrectomy is the only operation to be considered.

Transplantation of Cartilage

DR. W. T. COUGHLIN, St. Louis: For transplantation into the skull in cranioplasty, the transplanted portion should be thick enough to afford protection. The cartilage should be removed with its perichondrium intact, because when split the piece curves with its perichondral surface concave. This curving is often of advantage.

Postoperative Thrombophlebitis

DR. FRANK K. BOLAND, Atlanta, Ga.: The treatment of thrombophlebitis consists in rest, elevation of the part, and the application of cold during the acute stage, and heat afterward. Opium is often necessary to relieve pain. It is well for nurses to know that postoperative pain in the legs should not be subjected to massage until the cause of the pain is known. Such well intended, but misdirected, treatment may produce pulmonary embolism.

Breast-Fed Babies Who Cry at Night

DR. EUGENE ROSAMOND, Memphis, Tenn.: Habitual crying in breast-fed babies at a particular time each day—usually the late afternoon and at night—is a symptom of hunger. Supplemental and complemental feeding is the remedy. Complemental feeding should be given only with a cup and spoon.

Administration of Digitalis to Children with Diphtheria

DR. HUGH MCCULLOCH, St. Louis: Diphtheria toxin, either experimentally or clinically, produces anatomic and functional changes in the structures of the heart by direct action. The administration of digitalis to patients with diphtheria is contraindicated because there would result a summation of effects in the same heart. This summation constitutes a real danger to the life of the patient. Measures other than the administration of digitalis should be adopted for providing rest for the heart.

Dietetic and Medical Treatment of Gastric and Duodenal Ulcers

DR. SEALE HARRIS, Birmingham, Ala.: The treatment of gastric and duodenal ulcer should be thorough and systematic, with attention to details. Absolute obedience of the patient is important. Rest in bed for a period of three or four weeks, preferably in a hospital or infirmary, should be insisted on, and the patient should be under direct observation from six to eight weeks and should report symptoms to his physician for six months or a year, whether treated medically or surgically. Every patient with gastric or duodenal ulcer should be examined thoroughly for evidences of focal infections in the nasal passages or sinuses, and for infected tonsils. In treating gastric and duodenal ulcers either medically or surgically, it should be remembered that it is a secondary condition, one which is likely to return unless the underlying causes are sought for and removed.

Gastric Lavage

DR. GEORGE M. NILES, Atlanta, Ga.: In chronic gastritis, with excessive mucus, a lavage two or three times weekly is generally of aid. The lavage habit into which some patients lapse is an unfortunate one. These individuals, having learned to use the tube themselves, and finding that the emptying of an overdistended stomach will bring relief from epigastric distress, make it a practice to wash out the stomach with the first qualm. Some of these misguided sufferers wash out their stomachs from two to four times daily, bringing their bodies to the verge of caloric bankruptcy by their unwise zeal. Under certain circumstances it is allowable to teach the patients how to administer to themselves a gastric lavage when they live in isolated localities, or when it is impracticable to see the physician at the proper time. Such instruction should be leavened with caution, and the patient informed of the dangers that lie in wait for those who fly to the stomach tube not wisely but too often.

Fractional Analysis of Gastric Contents

DRS. JULIUS FRIEDENWALD and ZACHARIAH R. MORGAN, Baltimore: By means of fractional analyses we can study the entire cycle of digestion, as to both the secretory and the motor activity of the stomach, obtain definite information regarding the amount of secretion, analyze the acidity in any period of the cycle of digestion, and follow the effect of an ulcer cure on the hyperacid secretion. Fractional analysis of the gastric secretion is extremely important in all cases of achylia gastrica to differentiate the true achylias from the spurious forms. No pathognomonic curve exists which can be considered as absolutely distinctive of any gastric affection.

Sprue

DR. SIDNEY K. SIMON, New Orleans: Sixty-two patients were treated by Michel with a vaccine; it is claimed that forty-nine were discharged, twelve were improved, and only one died. Vaccine treatment holds out a promising field of therapy for the future. However, the usual dietetic regulations must be observed in order to obtain the best results.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

Nov. 15, 1920, **28**, No. 1

Cytologic Studies of Langerhans' Islets, with Special Reference to Problem of Their Relation to Pancreatic Acinus Tissue. S. Saguchi, Kanazawa, Japan.—p. 1.
Cause of Hypertrophy of Surviving Ovary After Semispaying (Albino Rat) and on Number of Ova in It. H. Arai, Philadelphia.—p. 59.
Gonads of Fowls. I. Hematopoietic Processes in Gonads of Embryos and Mature Birds. J. F. Nonidez, Washington, D. C.—p. 81.

American Journal of Syphilis, St. Louis

October, 1920, **4**, No. 4

*Reaction of Pregnant and Lactating Females to Inoculation with Spirochaeta Pallida. W. H. Brown and L. Pearce, New York.—p. 593.
Standardized Method of Performing Wassermann Test. W. A. Hinton, Boston.—p. 598.
Standardization of Wassermann Reaction. J. A. Kolmer, A. M. Rule and M. E. Trist, Philadelphia.
XII. Titration of Hemolysin and Sensitized Versus Plain Red Blood Corpuscles in Complement Fixation Tests.—p. 616.
XIII. Influence of Heating Serum on Complement Fixation in Syphilis.—p. 641.
XIV. Influence of Temperature and Duration of Primary Incubation on Hemolytic Activity of Complement. J. A. Kolmer and A. M. Rule, Philadelphia.—p. 675.
Cholesterinemia and Wassermann Reaction. E. Henes, Jr., Milwaukee.—p. 685.
Preparation of Amboceptor with Human Erythrocytes. A. H. Sanford, Rochester, Minn.—p. 697.
*Spontaneous Rupture of Heart and Aorta. A. V. St. George, New York.—p. 702.
Syphilis of Genital Organs of Male and Urinary Organs. IV. Scrotum, Testicle, Epididymis, Spermatic Cord, Seminal Vesicles. L. Thompson, Hot Springs, Ark.—p. 706.
Case of Syphilitic Ulceration of Vaginal Vault and Cervix Complicating Pregnancy at Eighth Month, Cured by Antisyphilitic Treatment and Followed by Normal Labor at Full Term. R. A. Bartholomew, Atlanta, Ga.—p. 725.

Reaction of Pregnant and Lactating Females to Spirochaeta Pallida Inoculation.—The results reported by Brown and Pearce show that the reaction of the rabbit to a genital inoculation with *Spirochaeta pallida*, which practically coincides with conception, differs very decidedly from that of the normal animal inoculated in the same way, and that this difference extends through the period of pregnancy and well into the period of lactation. The differences noted are of two kinds: ordinarily, it appears that the defensive mechanism of the pregnant animal is capable of opposing a resistance to inoculations performed at the time of conception such that little or no clinical sign of infection appears—a condition possibly analogous to that on which Colles' law was founded. In other instances, however, slight local lesions and marked constitutional disturbances are produced which suggest an ineffectual resistance to the infection or a breaking down of the defensive mechanism.

Spontaneous Rupture of Heart and Aorta.—Two cases are cited by St. George. One patient, aged 22, had a ruptured gumma, about 2.5 cm. in diameter, on the anterior surface of the left ventricle of the heart near the apex. The tear in the gumma was ragged and extended obliquely through the muscle. In the second case, a man, aged 45, about 1.5 cm. from the ostium of the aorta there was a clean, smooth margined tear which involved the vessel wall through its entire thickness and circumference, with the exception of about 1.5 to 2 cm. The walls of the organ were thin, but smooth and fairly elastic; it was diffusely dilated, but showed no pathologic changes visible to the naked eye.

Annals of Medical History, New York

1919, **2**, No. 4

Sculpture and Painting as Modes of Anatomical Illustration. F. H. Garrison and E. C. Streeter.—p. 305.
Quintessence in Rabelais. D. W. Montgomery, San Francisco.—p. 330.
Thomas Phaer. J. Ruhräh, Baltimore.—p. 334.
Statements of Medical Interest from Life of Benvenuto Cellini. J. Rosenbloom, New York.—p. 348.
Daniel Turner and First Degree of Doctor of Medicine Conferred in the English Colonies of North America by Yale College in 1723. J. E. Lane, New Haven, Conn.—p. 367.
A Neglected Name: Dr. Isaac Senter. W. Abbatt, Tarrytown, N. Y.—p. 381.
Latin Translation of Complete Works of Galen by Andrea Laguna, Spaniard, Strassburg, 1604. D. F. Harris, Halifax, N. S.—p. 384.

Annals of Surgery, Philadelphia

September, 1920, **72**, No. 3

Some Things that Surgeons Stand for. W. W. Keen, Philadelphia.—p. 257.
*Treatment of Chronic Empyema. T. Tuffier, Paris.—p. 266.
*Id. C. A. Hedblom, Rochester, Minn.—p. 288.
*Morelli Method of Aspiration Drainage for Acute Empyema. L. Davis, Boston.—p. 327.
*Abscess of Lung. J. A. Hartwell, New York.—p. 333.
Treatment of Bronchial Fistulas. C. Eggers, New York.—p. 345.
Penetrating War Wounds of Chest. G. J. Heuer, Baltimore; G. P. Pratt, Omaha, and V. R. Mason, Baltimore.—p. 352.
Thoraco-Abdominal Injuries: Some Technical Procedures Developed by War. C. G. Heyd, New York.

Treatment of Chronic Empyema.—Tuffier discusses in detail his experience with this class of case. He says that chronic pleurisies are exceptional when acute effusions are well treated. Chronicity depends on a chronic pulmonary infection or on special anatomic peculiarities. Costal resection in the treatment of chronic empyema should be reduced to the minimum. Closure of the surgical incision and pleural decortication should be preceded by disinfection of the cavity and then gives success which was formerly unknown. Ninety-one cases are analyzed.

Treatment of Chronic Empyema.—In forty-nine of 150 cases of empyema at the Mayo Clinic prior to 1910 the Estlander operation was performed; in nine the Schede resection, and in one the Delorme decortication. One death occurred following a Schede operation. The 210 patients with empyema had more or less extensive rib resections. A Schede operation was done in six instances, a decortication in seven, and Ransohoff's discission of the pleura in one. There were fourteen deaths; one followed a decortication. During a little more than two years, 150 patients with chronic empyema have been treated in the clinic. Eight of these patients had sinuses only, some of which, however, were fairly extensive. The others had chronic cavities varying in capacity from 50 to 2,500 c.c. One hundred and seventeen of the patients had been operated on elsewhere. Most of the others came with large accumulations of pus, variously diagnosed. Unresolved pneumonia and abscess of the lung were diagnosed in many of these cases. Fifteen had tuberculous empyema. Judging from the history, clinical findings, and courses, thirteen others may also have been tuberculous.

Hedblom states that the choice of treatment must be made with cognizance of the variable etiology and pathology of the process, and the general condition of the patient. A major procedure is indicated only if nonoperative or less extensive surgical treatment reasonably may be considered less effective. In case of sinuses and small cavities, adequate drainage is usually sufficient to effect a cure with or without short preliminary hypochlorite solution treatment. It is at least open to question whether a radical operation is indicated in these cases for the sole purpose of shortening convalescence at the risk of an appreciably increased mortality. Use of the surgical solution of chlorinated soda is the method of choice in the treatment of the ordinary type of chronic empyema cavity of any size. A pulmonary decortication through a rib spreading exposure after preliminary irrigation is the most conservative treatment for cavities that are not obliterated by drainage or solution treatment alone. A decortication should be done rather than a destructive operation, thereby giving the patient the benefit of the doubt. If the lung does not expand, or if a considerable cavity persists following decortication, a plastic operation is indicated. In the absence of bronchial fistulas and of bleeding, secondarily infected tuberculous empyema may be markedly benefited by antiseptic solution treatment. Adequate drainage is the first indication in cases of empyema cavities which are draining through large bronchial fistulas. Operative closure of bronchial fistulas that persist is necessary to complete healing. A large bronchial fistula is a contraindication to solution treatment. Operative mortality in chronic empyema has been due largely to shock and infection. Reduction of the extent of operation and preliminary sterilization will materially lower this mortality.

Aspiration Drainage for Acute Empyema.—The features of the Forlanini-Morelli method in the treatment of empyema are in brief: the systematic induction of pneumothorax, continuous aspiration drainage combined with irrigation, and an airtight pneumatic jacketed drainage tube of great value in appropriate cases. Davis commends the treatment.

Abscess of Lung.—Hartwell maintains that the pneumococcus is not an important factor in lung abscess; that *Staphylococcus aureus* is often responsible; that abscess of the lung frequently is a primary lesion in that a true pneumonic consolidation as connoted by the name pneumonia does not precede it; that abscess of the lung includes in its pathology a marked degree of surrounding necrosis or even massive gangrene, and that when an empyema ruptures into the lung and discharges through the bronchus the original lesion was a lung abscess which, by its extension, finally found two outlets for its purulent content.

Archives of Dermatology and Syphilology, Chicago

November, 1920, **2**, No. 5

*Protein Sensitization in Production of Skin Disease. H. P. Towle, Boston.—p. 531.
Protein Sensitization in Skin Diseases: Urticaria and Its Allies. W. J. Highman, New York, and J. C. Michael, Houston, Texas.—p. 544.
*Lymphogranulomatosis of Skin in Hodgkin's Disease. H. Fox, New York.—p. 578.
*Lymphatic Leukemia with Primary Manifestations in Skin. J. Butler, Minneapolis.—p. 594.
*Lichen Planus. F. M. Jacob, St. Louis.—p. 607.
Spontaneous Gangrene from Endarteritis Obliterans. A. Ravogli, Cincinnati.—p. 617.
Fatal Case of Recurrent Desquamative Scarlatiniform Erythema; Symptomatology and Probable Etiology. J. Grindon, St. Louis.—p. 623.
*Syphilitic Infection of Central Nervous System of Rabbit. W. H. Brown and L. Pearce, New York.—p. 635.
Vanishing Lesion: A New Problem in Teaching. C. M. Smith, Boston.—p. 639.
Streptodermatitis, Especially in Relationship to Wounds. D. W. Montgomery and G. D. Culver, San Francisco.—p. 649.

Protein Sensitization.—Protein sensitization is now an accepted fact, but, Towle says, while accepting the principles of the cutaneous food test, interpretation must await fuller, better defined understanding of the process of protein sensitization before it can attain its greatest efficiency.

Lymphogranulomatosis of Skin.—The case reported by Fox was one of Hodgkin's disease, presenting tumor-like infiltrations of the skin. As the cutaneous lesions showed a similar structure to that found in lymphatic glands, Fox says it should be classed as one of true Hodgkin's disease of the skin. This case may be added to those that tend to disprove the contention that Hodgkin's disease is related to tuberculosis.

Skin Tumors in Lymphatic Leukemia.—A case of lymphatic leukemia following lymphadenotic skin changes of the circumscribed or tumor type is cited by Butler. The disease began apparently with a throat infection. The first evidence of the disease was the development of the skin tumors. The blood picture was normal at the beginning of the disease. There were no blood changes until all of the skin tumors were formed. Glandular and visceral involvement was not apparent in this case at any time. The skin tumors were made up of collections of large lymphocytes. When all the tumors were formed the blood showed a leukemia for the first time. The lymphocytic deposits showed numerous mitoses. The benzol treatment caused a partial regression and paling of the tumors.

Lichen Planus.—A careful study of the more complete histories of this series of 179 cases gave practically no positive evidence as to either the nervous or infectious origin of this condition. In a small number of cases severe nervous shocks occurred before the eruption, but these were so few in number that Jacob considers them as coincidences. Other patients denied any possibility of nervous shock or worry of any kind. A number of these cases show a beginning in a primary single lesion and some in a single small patch of lesions. The general eruption appeared only after a varying incubation period. A few of these cases showed toxemic symptoms accompanying the rash. These characteristics are comparable to the primary and early manifestations of syphilis. Many features strengthen the opinion of the microbic origin of the disease. Whether the hypothetic virus localizes in other organs than the skin has, of course, not been demonstrated, with the possible exception of the bladder and the gastrointestinal canal. In the treatment, mercury, arsenic and the roentgen ray were found to be efficient.

Syphilitic Infection of Central Nervous System.—The experiments made by Brown and Pearce, although too limited to warrant any broad generalizations in regard to syphilitic infection of the central nervous system, yielded results sufficient to show that such infections may be produced in the rabbit by an ordinary testicular inoculation of well adapted strain of *Spirochaeta pallida*, and that spirochetes may invade the central nervous system at a very early period of the infection.

Archives of Neurology and Psychiatry, Chicago

November, 1920, **4**, No. 5

*Wounds of Head and Compensation Laws. C. L. Dana, New York.—p. 479.
*Choreo-Athetoid and Choreopsychotic Syndromes as Clinical Types or Sequel of Epidemic Encephalitis. L. Archambault, Albany, N. Y.—p. 484.
Compulsion Neurosis in a Child. P. R. Lehrman, New York.—p. 512.
Extracranial Injuries of Multiple Cranial Nerves. L. J. Pollock, Chicago.—p. 517.
*Puncture of Cisterna Magna. J. B. Ayer, Boston.—p. 529.
Coincidence of Cervical Ribs and Syringomyelia. P. Bassoe, Chicago.—p. 542.
*Frequency of Albuminuria with Casts in Epileptics Following Convulsive Seizures. N. Novick, East Norfolk, Mass.—p. 546.

Wounds of Head and Compensation Laws.—Dana suggests that there should be such a modification of compensation laws that the patient receives early expert advice, not only surgical but neurologic; that treatment and reeducational and reconstructive measures be employed early and actively; that the closest possible study be made early to determine the existence of local brain and cord injuries.

Rare Clinical Types of Epidemic Encephalitis.—Cases are cited by Archambault which show that epidemic encephalitis, aside from the usual and familiar clinical picture of midbrain involvement, may yield a number of clinical types closely resembling several well known affections of the nervous system, such as paralysis agitans, poliomyelitis, polyneuritis, cerebellar sclerosis, etc. The combination of choreiform twitchings and acute psychotic disturbance as the salient manifestations is not uncommon and choreo-athetoid or frankly athetoid syndromes may be observed as sequels of the disease.

Puncture of Cisterna Magna.—Ayer urges that puncture of the cisterna magna be employed when it is desirable to reach the upper reservoirs of the cerebrospinal fluid system. This procedure, as carried out forty-three times in twenty patients, has proved of value either for diagnostic or therapeutic purposes. It has been used to advantage in the diagnosis and treatment of cases of postmeningitic subarachnoid block. It has been employed in the treatment of a selected group of cases of cerebral syphilis and in one case of epidemic meningitis. In connection with lumbar puncture it has proved of value in the diagnosis of cord compression from causes other than meningitis.

Albuminuria and Epilepsy.—In a series of sixty cases of epilepsy studied by Novick, two thirds, or 66 per cent., have shown albuminuria with granular casts after every seizure. Two cases of this series which were diagnosed clinically as hysteria, gave no evidence of either albumin or casts in the urine on repeated examinations following epileptiform seizures. An investigation into the frequency of nephritis in epilepsy is suggested.

Boston Medical and Surgical Journal

Nov. 18, 1920, **183**, No. 21

Tuberculosis and Influenza. J. B. Howes, Boston.—p. 596.
*Traumatic Spleens. F. F. Henderson, Boston.—p. 599.
Ruptured Uterus in Previously Cesareanized Patient; Report of Case Where Fetus Remained Intact Within Membranes Following Rupture. C. J. Kickham, Boston.—p. 602.

Rupture of Spleen.—A review made by Henderson of operations at the Boston City Hospital since 1914 shows ten cases of ruptured spleens, eight of which were traumatic and two

spontaneous in typhoid fever. Of these ten patients four survived the operation of splenectomy. A summary of the important facts of the ten cases shows that in only one case was the diagnosis of ruptured spleen made before operation, and that was the case of typhoid. In all cases except one, the pulse at admission ranged from 120 to 160. In all, with the exception of the typhoid, the admission temperatures were subnormal; one as low as 95.8 F. Only one of the patients who recovered was transfused with whole blood; the other three patients had intravenous salt solution. All the patients were under 46 years of age. Seven out of the ten showed no signs of external injury pointing to trauma of the spleen. Two of the remaining three had fractures of the ribs over the spleen; the other having only lower chest tenderness. Henderson emphasizes that immediate operation is essential.

Colorado Medicine, Denver

November, 1920, **17**, No. 11

Why Diphtheria? Reasons and Remedies. J. W. Morgan, Denver. —p. 285.
State Medicine; What is It, and in What Directions Should it be Developed? V. C. Vaughan, Ann Arbor, Mich.—p. 288.
Far Reaching Effects of Rectal Diseases On General Health. A. L. Doublass, Denver.—p. 294.

Delaware State Medical Journal, Wilmington

July, August, September, 1920, **11**, No. 3

National Health Insurance, in Its Relation to Medical Profession. F. L. Hoffman, Newark, N. J.—p. 7.
Foot and Shoe Problem. J. T. Rugh, Philadelphia.—p. 12.
Medicine from a Business Standpoint. D. S. Booth, St. Louis.—p. 19.

Georgia Medical Association Journal, Atlanta

September, 1920, **10**, No. 4

Some Diagnostic Problems of Chest. E. C. Thrash, Atlanta.—p. 79.
Surgical Treatment of Empyema. J. W. Turner, Atlanta.—p. 83.
Treatment of Cancer with Radium. C. C. Harrold, Macon.—p. 87.
Early Diagnosis Means of Reducing Death Rate from Cancer. J. L. Campbell.—p. 90.
Case of Tetanus with Recovery. R. Binion, Milledgeville.—p. 95.

Journal of General Physiology, Baltimore

Nov. 20, 1920, **3**, No. 2

Recovery of Transmissivity in Passive Iron Wires as a Model of Recovery Processes in Irritable Living Systems. R. S. Lillie, Worcester, Mass.—p. 129.
*Theory of Injury and Recovery. I. Experiments with Pure Salts. W. J. V. Osterhout, Cambridge, Mass.—p. 145.
Labyrinth and Equilibrium. III. Mechanism of Static Functions of Labyrinth. S. S. Maxwell, Berkeley, Calif.—p. 157.
*Action of Inhibitory Nerves on Carbon Dioxid Production in Heart Ganglion of Limulus. W. E. Garrey, New Orleans.—p. 163.
*Kinetics of Inactivation of Complement by Light. S. C. Brooks, Boston.—p. 169.
*Mechanism of Complement Action. S. C. Brooks, Boston.—p. 185.
Comparative Studies on Respiration. XIII. Apparatus for Measuring Production of Minute Quantities of Carbon Dioxid by Organisms. M. Irwin, Cambridge, Mass.—p. 203.
Environmental Factors Other Than Temperature Affecting Facet Number in Bar Eyed Mutant of Drosophila. J. Krafka, Jr., Urbana, Ill. —p. 207.
Significance of Hydrogen Ion Concentration for Digestion of Proteins by Pepsin. J. H. Northrop, New York.—p. 211.
Radioactivity and Physiologic Action of Potassium. R. F. Loeb, New York.—p. 229.
Chemical Character and Physiologic Action of Potassium Ion. J. Loeb, New York.—p. 237.
Ion Series and Physical Properties of Proteins. II. J. Loeb, New York.—p. 247.

Recovery of Cells from Injury.—The recovery of cells after exposure to toxic solutions is discussed by Osterhout who studied this problem on *Laminaria*. Equations are developed which make it possible to predict the resistance of the tissue during exposure to sodium chlorid or calcium chlorid as well as the recovery curves after any length of exposure to either of these solutions.

Chemical Reaction in Heart Ganglion Cells and Carbon Dioxid Production.—Garrey found that stimulation of the inhibitory nerves of the neurogenic heart of *Limulus*, which correspond to the vagus nerves of the vertebrate heart, results in a marked diminution of carbon dioxid production in the heart ganglion, while stimulation of the ganglion, leading to increased activity of the heart, leads also to increased carbon dioxid production by the ganglion. This shows that inhibition of the automaticity of this ganglion by the action of its inhibitory nerves consists, not in a process of blocking, but in a diminution of those chemical reactions in the ganglion cells which give rise to the production of carbon dioxid.

Photo-Inactivation of Light.—During photo-inactivation a single disappearing molecular species governs the rate of reaction. This substance, Brooks says, must be primarily responsible for the hemolytic power of serum when it is used as complement.

Mechanism of Complement Action.—The hypotheses is advanced by Brooks that there is present in serum a hemolytic substance which is formed from a precursor (which may resemble lecithin) and is constantly being formed and simultaneously being broken down into inactive products. Both precursor and lysin contain the same photosensitive molecular group. The lytic substance is dependent for its activity on the state of the serum proteins.

Journal of Infectious Diseases, Chicago

November, 1920, **27**, No. 5

Etiology of Acute Gangrenous Infections of Animals: Blackleg, Braxy, Malignant Edema and Whale Septicemia. Studies on Pathogenic Anaerobes. H. H. Heller, San Francisco.—p. 385.
*Effect of Streptococcus Hemolyticus Infection on Reaction of Blood of Rabbits. L. R. Dragstedt, Chicago.—p. 452.
*Agglutination in Influenza. K. Utheim, St. Louis.—p. 460.
*Relation of Different Strains of Influenza Bacilli as Shown by Cross Agglutination and Absorption Tests. H. H. Bell, St. Louis.—p. 464.
*Complement Fixation in Influenza with B. influenzae Antigens. J. V. Cooke, St. Louis.—p. 476.
*Improved Method for Production of Antimeningococcic and Other Serums. J. F. Anderson, New Brunswick, N. J.—p. 482.
*Effect of Roentgen Ray and Thorium X on Pneumococcus and Streptococcus Infections in Mice. H. J. Corper and P. Chovey, Denver. —p. 491.
Primary Toxicity of Certain Preparations from Tubercle Bacilli for Mice and Guinea-Pigs. H. J. Corper and M. Moore, Denver.—p. 499.
*Weight Curves of Tuberculous Guinea-Pigs. Studies on Biochemistry and Chemotherapy of Tuberculosis. XX. L. M. DeWitt, Chicago. —p. 503.

Streptococcus Hemolyticus Infections and Acidosis.—Dragstedt states that experimental *Streptococcus hemolyticus* infections in rabbits produce a relatively marked acidosis, the p_H of the blood varying from 7.65, which is normal, to 7.3 in an extreme case. This does not in itself play any effectual rôle in the mechanism of resistance.

Agglutination in Influenza.—Of thirty strains of the influenza bacillus isolated by Utheim from patients with influenza, eleven, or 36 per cent., gave agglutination with the patient's serum. Seven of these occurred in cases of uncomplicated influenza, and four in cases of influenzal pneumonia. Of the remaining nineteen negative cases, ten were pneumonias. Of thirty strains only one was agglutinated by heterologous serum.

Reaction of Different Strains of Influenza Bacilli.—Bell states that the influenza bacillus represents a heterogenous group of organisms as shown by agglutination and absorption tests. Identical strains occur. No differentiation can be made by these methods between the organisms isolated from normal healthy throats within two months preceding the epidemic and those isolated from the throats of influenza patients. A person may carry in the throat three different strains of this organism at the same time. The morphology alone is unreliable as a means of dividing this group of organisms into subgroups.

Complement Fixation in Influenza.—Complement fixing antibodies were demonstrated by Cooke in the serum of a considerable number of older children and adults convalescent from influenza by the use of *B. influenzae* antigens. These antibodies are much less constantly found in children from 1 to 5 years of age. No definite antigenic relationship could be detected between the sixteen strains of *B. influenzae* with the serum tested. The results indicate that the influenza bacillus is pathogenic and infects many, if not all, patients with influenza. The complement fixation test cannot furnish sufficient evidence, however, to justify the conclusion that *B. influenzae* is the sole etiologic agent in influenza.

Production of Antimeningococcic Serum.—A potent and well balanced antimeningococcic serum was quickly and safely

produced from the horse by Anderson by a method involving the use of antigen, given intravenously, prepared from washed, killed cultures of meningococci. He claims that the severe and even fatal reactions so frequently encountered in the horse after intravenous injections of bacteria are not a manifestation of anaphylaxis, but are due to the presence of a toxic substance in the material injected. This toxic material can be removed by centrifugation and washing, and its removal apparently does not reduce the antigenic properties of the emulsion.

Effect of Roentgen Ray and Thorium X on Infections.—Mice subjected to a single nonlethal exposure to the roentgen ray, capable, however, of producing a leukopenia, or given a single nonfatal injection of thorium X, also capable of causing leukopenia, and shortly thereafter inoculated with pneumococci (four types) and hemolytic streptococci, human and bovine, revealed an increased susceptibility to all of these organisms.

Weight Curve in Tuberculosis.—The more closely the weight curves of tuberculous animals treated by any method adhere to the normal weight curve, the more benefit may be hoped for from the treatment, is the conclusion reached by DeWitt from her observations.

Journal of Urology, Baltimore

October, 1920, **4**, No. 5

*Infiltration Anesthesia of Internal Vesical Orifice for Removal of Minor Obstructions: Presentation of Cautery Punch. J. R. Caulk, St. Louis.—p. 399.
*Action on Gonococcus of Sodium Oleate, Alone and in Combination with Other Drugs. D. M. Davis and E. O. Swartz, Baltimore.—p. 409.
*Hexamethylenamin: Its Quantitative Factors in Therapy. A. T. Shohl and C. L. Deming, Baltimore.—p. 419.
*Tumors Primary in Ureter; Report of Case. W. C. Quinby, Boston. p. 439.

Cautery Punch.—Caulk has modified Young's punch by placing an electric cautery attachment to the distal part of the inner sheath. The instrument is described in detail and likewise the author's use of it. Its simplicity, its freedom from hemorrhage, absorption and other complications, Caulk says, make this the method of choice for the group of prostatic obstructions due to median bar formations or contractures of the vesical neck, and since it should be attended with a negligible mortality, it commends itself as a means of reducing the gross death rate of prostatic surgery.

Action of Sodium Oleate on Gonococcus.—Sodium oleate was found by Davis and Swartz to have a definite germicidal value for the gonococcus. This value is increased, where uncoagulated protein is present, by the addition of 0.5 boric acid. The presence of small, sublethal quantities of sodium oleate, 1:8,000, increases the germicidal action of many drugs against the gonococcus. With others it is without effect. Sodium oleate with boric acid is suggested as an adjuvant to other drugs in the treatment and prophylaxis of gonorrhea.

Hexamethylenamin Antisepsis.—According to Shohl and Deming, liquor formaldehydi solutions of from 1:5,000 to 1:10,000, in two hours, at body temperature, will kill from 80 to 90 per cent. of *B. coli*. The rate of transformation and the amount of formaldehyd formed from hexamethylenamin depend on the hydrogen ion concentration of the urine. The urine must be as acid as p_H 5.4 to obtain from 80 to 90 per cent. antisepsis in two hours.

Mesothelioma of Ureter.—Quinby's case was one of mesothelioma of the left ureter, probably of renal anlage origin. The corresponding kidney was removed but was entirely normal.

Laryngoscope, St. Louis

October, 1920, **30**, No. 10

Vasomotor Disturbances of Nose, with Special Reference to Hay Fever; Report for 1919. G. Selfridge, San Francisco.—p. 611.
Vestibular Vertigo of Nonsuppurative Origin: Factors Bearing on Prognosis: Reports of Cases. P. D. Kerrison, New York.—p. 626.
Combined Operative and Radium Treatment of Malignant Disease of Nasal Accessory Sinuses. H. A. Barnes, Boston.—p. 646.
Healing Processes Following Mastoid Operations. P. Hammond, Boston.—p. 662.
Sixth Nerve Involvement in Purulent Otitis Media. C. E. Perkins, New York.—p. 666.

Maine Medical Association Journal, Portland

November, 1920, **11**, No. 4

Epidemic Encephalitis. I. H. Pardee, New York.—p. 107.
Treatment of Skin Burns. E. H. Risley, Waterville.—p. 117.

Medical Record, New York

Nov. 20, 1920, **98**, No. 21

Gastric Hemorrhage. J. R. Verbrycke, Jr., Washington, D. C.—p. 841.
Suprarenal Action. E. H. P. Ward, White Plains, N. Y.—p. 845.
Employment of Diathermy and Galvanism in Management of Sequels of Occlusion, Partial or Complete, and of Rupture of Cerebral Arteries. E. C. Titus and F. DeKraft, New York.—p. 851.
Hypothyroidism, Infiltration and Hypertension. H. R. Harrower, Glendale, Calif.—p. 854.
Clinical Significance and Therapeutic Indications of Abnormal Blood Pressure. A. S. Blumgarten, New York.—p. 856.
Erythema Nodosum: Its Treatment by Streptococcus Vaccine. Report of a Case. S. A. Levinsohn, Brooklyn.—p. 859.

New York Medical Journal

Nov. 20, 1920, **112**, No. 21

The Unconscious. W. H. R. Rivers, Cambridge, England.—p. 789.
New Psychoanalytical Theory. A. Tridon, New York.—p. 794.
Tricuspid Stenosis and Tricuspid Insufficiency. J. J. Young and L. H. Cotter, New York.—p. 798.
Clinical Notes from First Surgical Division of Fordham Hospital. A. Nicoll and H. M. Rammol, New York.—p. 802.
Cellular Therapeutics. F. T. Woodbury, Edgewood Arsenal, Md.—p. 809.
Cholesterol Thorax; Report of Case. J. H. Barach, Pittsburgh. p. 811.
Underlying Factors in Good Posture. C. W. Crampton, Battle Creek, Mich.—p. 812.
*Case of Erysipelas with Complete Loss of Vision. N. A. Cooper, Bombay, India.—p. 817.
Blood Pressure Cause of Astigmatism. G. F. Barnes, Herkimer, N. Y.—p. 816.

Erysipelas with Loss of Vision.—Cooper reports what he believes to be the only case on record of loss of vision from an attack of erysipelas. The patient was treated with antistreptococcic (erysipelas) serum injections in large doses. About eight injections were given, together with appropriate local treatment. Emetin injections, one-fourth grain, were given every day for three days. After the third injection, the temperature dropped to normal. Three more injections were given and the fever remained below normal. During this period the only drug that was administered to the patient by mouth was liquor ferri perchloridi several times a day. The blood picture showed, instead of a leukocytosis, a marked leukopenia, which is very unusual in such diseases, with the red blood cells numbering 2,020,000 and a few microcytes. There were no other changes in the blood. About eight days after the complete fall in temperature, large abscesses suddenly developed on the face of the patient, in both arm pits and on the buttocks. Autogenous vaccine was prepared and four injections were given. This prevented the development of further abscesses and inhibited the ripening of those already formed. There were no other pyemic complications. Vision eventually became normal. Cooper ascribes the patient's recovery to the iron.

Ohio State Medical Journal, Columbus

Nov. 1, 1920, **16**, No. 11

Epidemic (Lethargic) Encephalitis. E. Scott, C. W. McGavran and J. H. Warren, Columbus.—p. 797.
Present Day Nursing Problem in Obstetrical Practice. S. J. Goodman, Columbus.—p. 802.
Red Cross Public Health Nursing Program. V. L. Lorimer, Cleveland. p. 806.
Public Health Nursing Service in Norwalk, Ohio. L. G. Walters, Norwalk.—p. 807.
Water Supply Control in Ohio. W. H. Dittoe, Columbus.—p. 809.
Our Unfortunate Country Cousins. G. E. Robbins, Chillicothe.—p. 811.
Venereal Prophylaxis in Civilian Life. H. L. Sanford, Cleveland.—p. 815.
Operation of Venereal Disease Clinic. E. D. Thompson, Akron.—p. 818.
Malingering as a Postwar Condition. C. W. Stone, Cleveland.—p. 821.
Feebleminded Problem. C. F. Neu, Indianapolis.—p. 824.

Virginia Medical Monthly, Richmond

November, 1920, **47**, No. 8

Back to Old Standard of Ethics. P. A. Irving, Farmville.—p. 335.
Acute Nontuberculous Infections of Lungs and Pleura. F. C. Rinker, Norfolk.—p. 342.
Id. Symptomatology and Diagnosis. M. Call, Richmond.—p. 346.
Treatment of Pneumonia. J. W. Preston, Roanoke.—p. 350.
Nontuberculous Infections of Lungs and Pleura. Medical Treatment Except Pneumonia. G. B. Lawson, Roanoke.—p. 353.

Id. Surgical Treatment. D. P. Peters, Lynchburg.—p. 356.
Influenza. W. T. Vaughan, Richmond.—p. 361.
Foreign Bodies in Respiratory Tract and Their Removal by Laryngoscope and Bronchoscope. J. E. Diehl, Norfolk.—p. 366.
Care of Obstetric Cases in Remote Country Districts: The County Hospital. I. S. Stone, Washington, D. C.—p. 369.
Abscess of Lungs; Report of Cases. J. T. McKinney, Roanoke.—p. 371.
What Advice Shall We Give Regarding Pregnancy in Patients with Mammary Cancer? G. T. Tyler, Greenville, S. C.—p. 375.
*Fluid Injections by Intraperitoneal Route. J. S. Weitzel, Richmond.—p. 376.
Etiology and Treatment of Asthma. T. S. Shelton, Richmond.—p. 378.

Fluid Injections by Intraperitoneal Route.—Weitzel points out that fluid can be administered by the intraperitoneal route with more prompt results than by any other avenue, affording a weapon that fills a long felt want in the treatment of diseases in infants associated with marked dehydration and toxemia. He follows the teaching of Garrod, injecting such quantities of physiologic sodium chlorid solution as are indicated, usually from 75 to 250 c.c.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, London

October, 1920, **8**, No. 30

*Cysts, and Primary Cancer in Cysts, of Breast. G. L. Cheatle.—p. 149.
*Four Aneurysms in Neck. R. L. Knaggs.—p. 167.
*Causation of Appendicitis. A. R. Short.—p. 171.
Sex and Age Incidence in Appendicitis. A. E. Maylard.—p. 189.
Traumatic Dislocation of Knee Joint. H. Platt.—p. 190.
Cause of Death in Certain Cases of Early Fatality Seen at Casualty Clearing Station. H. W. Kaye.—p. 193.
Pathology of Gunshot Wounds of Spinal Cord. W. Thorburn.—p. 202.
Gunshot Wound of Forearm Masking Symptoms of Cervical Rib. C. P. G. Wakeley.—p. 226.
*Intussusception of Vermiform Appendix. A. J. Blaxland.—p. 227.
Two Cases of Omphalomesenteric Cyst Causing Intussusception. F. J. Coutts.—p. 228.

Cysts and Cancer of Breast.—Observations made from whole sections of female breasts lead Cheatle to the conviction that cancer can and does begin in cysts, and, further, that not only can it begin therein, but it also gives rise to such definite and typical microscopic appearances that this source of origin can thereby be demonstrated. Cheatle advises the removal of every breast which is obviously clinically cystic, even if only a single cyst is clinically present.

Aneurysms in Neck.—A case of varicose aneurysm (arteriovenous) of the common carotid artery; two cases of traumatic aneurysm at the root of the neck, treated by distal ligature of the common carotid, and a case of carotid aneurysm, treated by proximal ligature are recorded by Knaggs.

Cause of Appendicitis.—It is suggested by Short that the cause of the increase in the frequency of appendicitis in Great Britain is the relatively less quantity of cellulose eaten on account of the wider use of imported foods.

Intussusception of Appendix.—In Blaxland's case, occurring in a man, aged 63, the appendix had become completely turned inside out and had drawn the cecum up with it, resulting in an ileocolic intussusception. The history of this case suggests that the invagination of the appendix took place gradually over a period of several weeks, and caused no symptoms of consequence until the cecum became implicated in the process, when acute symptoms at once became evident. In the absence of the passage of blood per rectum, the cause of the intestinal obstruction could not be diagnosed prior to operation, but the detection of the abdominal tumor enabled the selection of the most suitable incision for laparotomy to be made.

British Medical Journal, London

Nov. 6, 1920, **2**, No. 3123

Principles of Internal Secretion. W. L. Brown.—p. 687.
Early Symptoms and Signs of Nervous Disease and Their Interpretation. H. Head.—p. 691.
*Blackwater Fever. A. Goodall.—p. 697.
*Resuscitation in Death Under Anesthesia. W. E. Fisher.—p. 698.
*Head of Rye Grass in Lung Removed from Pleura. R. E. Smith.—p. 701.
Intranasal Dacryocystostomy. H. L. Whale.—p. 701.
Case of Bromoform Poisoning, with Recovery. W. B. Watson.—p. 702.
*Spontaneous Extrusion of Fibroid. G. C. Gell.—p. 703.

Blackwater Fever.—Fourteen cases of blackwater fever are tabulated by Goodall. In twelve of these malaria parasites were found. All the patients were treated with large doses of quinin and twelve recovered. It is contended that malaria is the essential cause of blackwater fever, and that exposure to cold may be an important factor in determining its onset.

Resuscitation in Death Under Anesthesia by Heart Massage.—Fisher directs attention to the fact that the living tissues of the body, according to their nature, return a varying measure of vital force and survive for varying periods the suspension of their blood supply. The more lowly their origin, the more durable is their life. The connective tissue and epithelial elements may survive for days, as is shown by their preservation if kept cool for purposes of grafting. Muscle may preserve its vitality for hours, but the little delicate fabric of the central nervous system, on which vital systemic processes depend, does not survive deprivation of its vascular nutrient supply for more than thirty minutes at the most. Accordingly, experience of cardiac massage has shown that cessation of the circulation for thirty minutes means inevitably the termination of life, so that after a longer period cardiac massage and artificial respiration alike are futile.

Head of Rye Grass in Lung.—Smith cites a case in which an ear of rye grass was inhalted, and after producing symptoms of an unusual character was extracted from the pleura.

Spontaneous Extrusion of Fibroid.—Gell cites a case in which infection of the uterus—probably autogenous—was responsible for the natural cure of a fibroid. An abscess probably formed in the uterine wall. The gradual process of suppuration must have loosened (or sloughed) the tumor from its bed and so rendered it capable of extrusion from the uterine cavity as a foreign body.

Nov. 13, 1920, **2**, No. 3124

*Treatment of Subacute Nephritis by Kidney Decapsulation. T. Horder.—p. 727.
Surgical Treatment of Cancer of Rectum. W. E. Miles.—p. 730.
Oxygen Inflation of Peritoneal Cavity for Radiographic Purposes. J. E. H. Roberts.—p. 742.
Case of Lethargic Encephalitis. J. J. Hanley.—p. 743.
Hydatidiform Mole: Perforation of Uterus. R. C. Harkness.—p. 744.
Case of Gonorrheal Mastitis. W. H. F. Oxley and J. Dundas.—p. 744.

Kidney Decapsulation in Subacute Nephritis.—Four cases of decapsulation are reported by Horder. The first two cases were highly successful in their end-results. The second pair of cases were partially successful. In all four of the cases both kidneys were decapsulated at the same operation. The capsules were completely stripped from the entire organs, were cut away, and were removed. Horder believes that there is a clinical type of nephritis in which—when thorough general measures have proved unavailing, and a reasonable time element, during which it is known that resolution not infrequently occurs, has passed—decapsulation becomes a definite indication and promises satisfactory results. This type he terms subacute nephritis, and is characterized by extensive and considerable edema, massive albuminuria with casts in the urine, toxic symptoms of the chronic uremic kind, and an absence, or the presence in only slight degree, of cardiovascular changes, such as arteriocapillary fibrosis, hypertrophy of the left ventricle, arterial hypertension and retinal degeneration. This was the state of things in both of Horder's cases that resolved completely after the operation. In the two cases in which some improvement followed the procedure, but no cure, definite evidence of cardiovascular changes was present, and the type of disease suggested a general involvement of the arterial system rather than a local inflammatory process in the kidney.

Bulletin Naval Medical Association of Japan, Tokyo

September, 1920, No. 30

Surgical Solution of Chlorinated Soda and Eusol Prepared from Materials in Japan. K. Murakami.—p. 1.

Japan Medical World, Tokyo

Oct. 9, 1920, **10**, No. 41

Disinfection of Japanese Room. S. Toda and K. Fujiwara.—p. 887.

Oct. 16, 1920, **10**, No. 42

Progress of Medical Science in Brazil. A. Neiva.—p. 911.

Journal of State Medicine, London

November, 1920, **28**, No. 11

State, Doctor and Venereal Disease. J. H. Sequeira.—p. 327.
Antigens and Antibodies. M. Nicolle.—p. 343.
Case of Oriental Sore Cured by Intravenous Injections and Inunctions of Antimony Tartrate. G. C. Low.—p. 354.

Lancet, London

Nov. 13, 1920, **2**, No. 20

*Mental Defect and Criminal Conduct. B. Donkin.—p. 979.
*Interrelationship Between Pregnancy and Syphilis. R. A. Hendry.—p. 986.
*Spirillolysis and Its Causation. A. Routh.—p. 988.
*Results of Three Years' Treatment of Syphilitic Mothers and Babies. J. Adams.—p. 990.
*Experiments with Cerebrospinal Fluid. J. E. R. McDonagh.—p. 991.
*Treatment of Diphtheria Carriers with Detoxicated Klebs-Löffler Vaccine. A. R. Fraser and A. G. B. Duncan.—p. 994.
*Preservation of Lemon Juice. P. W. Bassett-Smith.—p. 997.
*Simple Method of Tonsillectomy. J. O'Conor.—p. 998.
Transposition of Cecum, Appendix and Colon, with Absence of Sigmoid Flexure. V. J. Glover.—p. 998.
*Case of Nerve Suture with Immediate Return of Sensation. W. Robertson.—p. 999.

Mental Defect and Criminal Conduct.—Donkin is of the opinion that criminal conduct is dependent on the innate capacities of each individual as developed and actuated by the innumerable influences which act on these capacities; and that the actual mental characters or qualities observed are the resultant of these factors. In his opinion the proper and fruitful understanding and treatment of criminals depends mainly on the careful study of the individual offender. This consideration should influence far more than it does at present the sentences awarded in courts of law, which are to an undue extent based on the class of crime committed, irrespectively of the history of the accused person, and of the circumstances in which the offense took place. No judge should pronounce any sentence of imprisonment unless he is personally acquainted by visiting prisons with the actual nature of the terms of imprisonment entailed by his sentences.

Pregnancy and Syphilis.—Hendry concludes: (1) that the clinical evidence of syphilis is unreliable; (2) that the Wassermann reaction is the test by which, at present, the diagnosis must usually be made; it must be borne in mind that a negative or a slightly positive reaction may accompany syphilis during pregnancy, and, moreover, that a positive reaction may occur in a nonsyphilitic individual; (3) that the examination of stillbirths, etc., furnishes reliable but, at present, insufficiently available, evidence; (4) that the institution of mercurial treatment before the pregnancy justifies a favorable fetal prognosis; (5) that the prognosis when treatment is begun during the pregnancy depends on the unknown and already present degree of infection of the fetus. Hendry analyzes cases of latent syphilis, in which, apart from the effect on the pregnancy, there were no active clinical symptoms or signs of syphilis.

Treatment of Syphilis in the Pregnant.—The treatment of syphilis in the pregnant woman is, in Routh's opinion, only likely to be successful if up to the date of its commencement the multiplication of the mature spirochete has been prevented by the granulosing and inhibiting action of the ferments, for if unrestricted infection by the mature organism had been going on in the early cellular ovum or fetus it would have speedily been destroyed, for every growing organ would have been invaded. He believes that congenital syphilis could be prevented in all well organized health centers if every expectant mother came under scientific medical supervision, and if facilities for diagnosis, and for both efficient and sufficiently prolonged treatment of mother and child were available. This is what the ministry of health is endeavoring to organize.

Treatment of Syphilitic Mothers and Babies.—The results of treatment of syphilitic mothers and babies Adams says are most encouraging. In the last two years there has been only one stillbirth and no deaths from syphilis among the cases treated. His experience has been that if the mother's Wassermann reaction can be brought to negative or doubtful at her confinement, the baby will be born negative and show no sign of syphilis. If the mother is positive or strongly positive, the baby will probably be positive too, in which case, of course, vigorous antisyphilitic treatment is begun at once. None of the babies born negative have since become positive, nor developed any signs of syphilis, though many have not had any treatment beyond the drugs they absorb through their mother's milk. Adams states that a pregnant woman with syphilis, whether active or latent, if treated for three or four months before her confinement, will probably be delivered of a healthy child at full term.

Examination of Cerebrospinal Fluid.—McDonagh claims that shaking a cerebrospinal fluid with toluene, xylene, or benzene the day after it is withdrawn will enable one at once to determine whether the lesion is degenerative or not. This test may be still further confirmed by treating another portion of the fluid with liquor formaldehydi before it is shaken with a hydrocarbon liquor. The various proteins merge into one another; there is no hard and fast line between albumin and globulin, and globulin and lipoid-globulin. The differences between them are physical rather than chemical. The complement-fixation test is regulated by the ions on the surface of the protein particles—their number and electric charge. The colloidal gold test is dependent on the presence of certain protein particles (lipoid-globulin) which have a prevailing positive electric charge on their surface. Carried out with distilled water this test will readily serve to distinguish a normal fluid from a fluid from a case of degeneration, because the latter only will precipitate the colloidal gold and in the first few tubes only. This may be confirmed with the fluid pipetted off from the hydrocarbon emulsion, because only those fluids from cases of widespread degeneration will precipitate colloidal gold. A diminution in the precipitation of colloidal gold in the first tube when the fluid has been treated with acetic acid indicates degenerative encephalitis. This may be confirmed by the slight precipitation which occurs in fluids which have been treated with ammonia and allowed to rest before being tested and which is only met with in cases of degenerative encephalitis. The lipoid-globulin particles simulate parasites in certain ways and those found in the cerebrospinal fluid in degenerative cases are waste products which have reached the fluid by ultrafiltration through the choroid plexuses. Treating a normal fluid and serum with an acid makes the protein particles therein approach as near as possible to those normally met with in syphilis.

Treatment of Diphtheria Carriers with Detoxicated Klebs-Loeffler Vaccine.—Fraser and Duncan injected this vaccine subcutaneously and intravenously in doses of from 200 to 350,000 millions. In one case eleven doses were given during about six weeks at four days intervals. They suggest a course which might be suitable for the treatment of chronic diphtheria carriers. The first does of 0.05 c.c. contains 5,000 million bacilli. On the fourth day another larger dose is given. The twelfth dose, given on the forty-fifth day, 3.5 c.c., contains 350,000 million bacilli. Good results are reported.

Preservation of Lemon Juice.—The juice of fresh lemons is evaporated by Bassett-Smith down in vacuo at room temperature to a specific gravity of 1.3; it is then a dark yellow, viscid, and very acid fluid, easily made into solid tablets with lactose, etc., and keeping well either in the concentrated juice or tablet form. Boiling the lemon juice for five minutes does not appreciably diminish the antiscorbutic property. Heating for three quarters of an hour at 58 C. diminishes it to a more marked degree. The equivalent of 2.2 c.c. in one animal gave complete protection; 4.4 c.c. completely protected three out of four.

Tonsillectomy.—The essentials of O'Conor's method are rigid maintenance of the head in the vertical position, and the intelligent assistance of the left index finger.

Nerve Suture with Immediate Return of Sensation.—In Robertson's case the median nerve was severed in an attempt made by a layman to reduce a fracture of the humerus. After union was complete, extreme atrophy of the forearm and hand were noted. A nerve lesion was suspected. After freeing the nerve from cicatricial tissue the sheath was found to be intact, but a gap was observed measuring 2 or 3 mm. The sheath was cut through the gap, and when the two cut ends of the nerve were examined each surface was found covered

with small oval bodies, the repair material of a severed nerve. No formed tissue existed between the ends of the nerve. The repair material was shredded off down to normal nerve fiber and the two ends of the nerve were sutured through with fine silk. In opposing the ends the proper alinement of the nerve was observed. The nerve sheath was carefully stitched up. When the boy came out of chloroform, or shortly afterward, he could feel his fingers. He could also discern articles placed between fingers and thumb. To the integrity of the nerve sheath is to be attributed the early functioning of the nerve cells.

Annales de Médecine, Paris

July, 1920, 8, No. 1

*Rats United by Siamese Graft. B. Morpurgo (Turin).—p. 1.
*Gas Cysts of the Intestines. M. P. Weil.—p. 11.
*Central Neurofibromatosis. E. Christin and F. Naville.—p. 30.
Fibrous Patches Enclosing Meningococci on the Arachnoid. R. Lutembacher.—p. 51.
*The Modern Views on Tuberculosis. L. Bernard.—p. 54.

Symbiosis of Two Rats.—Morpurgo comments on the fact constantly observed in his experiments that when a strong rat and a weak rat are united by a Siamese graft, the weaker one succumbs in a few days to rapidly progressive atrophy. He thinks that this throws light on the individual constitution.

Cystic Pneumatosis.—Weil tabulates the details of seventy cases on record of gas cysts of the intestine, including a case in a woman of 25 reported in detail. The list includes Finney's case (The Journal, Oct. 17, 1908, p. 1291). The symptoms may suggest appendicitis, peritonitis, ileus or a tumor, but the abdomen may be soft and depressible notwithstanding the extreme distension, and there may be an elastic response and resonance to percussion, crepitation, gas ascites, and lack of shadows in radioscopy. The therapeutic effect of a laparotomy is remarkable, even when it is merely exploratory. Five writers have reported that the cysts disappeared thereafter. This occurred likewise in the case here reported, but although nearly all the cysts had disappeared, spasm of the bowel induced ileus rebellious to medical measures, and the patient did not long survive the gastro-enterostomy this required. In Kadjian's case the cystic process kept recurring after three laparotomies and excisions. In 32, that is, in 59 per cent. of the total 54 cases of which details are known, there was associated ulcer in the stomach or pylorus; in 4 cases tuberculosis of the bowel; in 2 of the lungs; in 2 each chronic appendicitis or enteritis; and once each tuberculous peritonitis, pyloric cancer, pernicious anemia, uremia and myocarditis. In the case here described there was no associated lesion but a history of moderate typhoid three years before. The differential diagnosis is masked as a rule by the associated lesion, so that pneumatosis may sometimes have been overlooked in the past.

Central Neurofibromatosis.—Christin and Naville report from Geneva a case of intracranial neurofibromatosis in a man of 39. Thirty-one tumors were found inside the skull, of the most various structure, gliomas, fibromas, neuromas, myxomas, osteomas, endotheliomas and sarcomas. The patient at 17 had become suddenly completely deaf after sudden vertigo and a fall, but from that time to the age of 39 had had no other symptoms. In sixteen of the twenty-three cases of central neufibromatosis on record the first symptoms had appeared before the age of 20 but then intervals up to 35 years had passed without further disturbance. In two of the three other cases, a neurofibroma had been discovered on the optic nerve in childhood. Central complete deafness is the hall-mark of the disease. It was bilateral in sixteen of the twenty-three cases and unilateral in four; in the others, an otitis might have explained the deafness. In only one of the total was the hearing normal. Equilibration was scarcely impaired although the labyrinth was evidently destroyed, which testifies to remarkable functional substitutions. This is also suggested by the frequent lack of violent and intense headache, torpor, somnolency, etc. There were cutaneous neurofibromas only in about two thirds of the cases, but a familial or hereditary character was evident in a number.

Modern Ideas on Tubercle Bacillus Infection.—Bernard reiterates that the variable evolution of tuberculosis is governed by two conditions: the number of the bacilli causing the infection and the solidity of the immunization. The infection is essentially a vaccinating infection, but the immunization is variable and unstable. Tubercle bacilli are all of about the same degree of virulence; it is merely a question of quantity. These conceptions do away with the old theory of the virus and the soil. Every human being is susceptible to infection with the tubercle bacilli; there is no natural immunity. Modern research has demonstrated the tuberculous origin of many pathologic conditions for which in the past no one thought of incriminating these bacilli. It has been demonstrated further that the tubercle bacilli can traverse a mucous membrane, the conjunctiva as well as the intestinal mucosa, without determining lesions in it. Only in the already tuberculized organism do they induce a lesion as they pass. The physiologic route for absorption is the intestinal mucosa, and dust and droplets containing the bacilli can be swallowed as well as the bacilli in food.

When the bacilli get through the intestinal mucosa, the mechanical conditions of the circulation of blood and lymph favor their accumulation in the lungs and bronchial glands. This explains the predilection of the lungs for tuberculosis and does away with the necessity for assuming infection by inhalation. Calmette maintains that the bacilli get into the blood occasionally and are thrown off by the emunctories, mostly in the bile and by the intestinal route. This intermittent elimination makes the individual not only a carrier but a sower of bacilli even when he may be apparently healthy, his latent tuberculous focus revealed only by the tuberculin test. Bernard denies this, declaring that it is difficult to conceive that the emunctories can excrete bacilli unless the organs of elimination are themselves the seat of a tuberculous process. Calmette insists also that immunity to tuberculosis obeys the same laws as immunity to syphilis: As soon as the last of the bacilli have been killed or eliminated, the individual is as susceptible to new infection as the virgin organism. There is no doubt that artificial controlable vaccination is the ideal of the future, but to date, he says, all the efforts in this line have failed.

Journal de Chirurgie, Paris

1920, 16, No. 5

*Diverticuli of the Esophagus. H. Hartmann.—p. 481.
*Surgery of the Pituitary. Lacouture, Charbonnel and Lafargue.—p. 491.

Diverticulum of the Esophagus.—Hartmann warns that even with roentgenoscopy, a diverticulum of the esophagus is liable to be mistaken for spasm or stenosis, saying that he has made this blunder twice himself. In one man of 65 who for over three years had complained of bad taste in his mouth and regurgitation, the bismuth meal seemed to indicate merely transient spasm with merycism, but Hartmann suspected a diverticulum from the sensation of shriveling felt on palpation when the larynx was pushed back, this sensation subsiding as the diverticulum was emptied by the pressure. One woman of 61 had had difficulty in swallowing for nine years, with spasms of coughing at night during which she expelled scraps of food and once a drug tablet taken forty hours before. For the last year and a half she felt that a pocket emptied itself when she lay on the side, the fluid and other contents pouring into the mouth. Hartmann improved the general health by feeding through an opening into the stomach, and a month later resected the diverticulum with complete success aided by a number of minor points in the technic which he describes.

Operation on the Pituitary.—Another case of hypophysectomy is added here to the 159 on record. A successful intervention requires an early diagnosis and the good luck to happen on a benign, still circumscribed tumor. The various technics that have been applied are described, and the preference given to access through the right sinus and upper jaw, on one side, the only incision required for this being from around the nostril straight down to the lip, a little to the right of the center. This allows nearly the whole of the cheek to be turned back almost to the orbit. In the case reported, with illustrations, this operation put an end to the intense headaches and arrested the progressive loss of vision and the tendency to obesity and to enlargement of the extremities. Through an incision 1.4 cm. long in the floor of

the sella, 7 or 8 gm. of a cerebroid tissue was scooped out which seemed to be part of the anterior lobe of the pituitary. The lack of disfigurement from the extensive operation was remarkable. This operation shows up extensively the floor of the sella turcica, but the region above is hard to reach and explore.

Journal de Radiologie et d'Electrologie, Paris

October, 1920, **4**, No. 10

*Radiotherapy of Cancer. C. Regaud.—p. 433.
*Köhler's Disease. Drevon.—p. 466.

Radiotherapy of Cancer.—This is Regaud's address at the International Surgical Congress in July. He reviews the bases, indications and results, emphasizing that almost without exception the rational radiotherapy of a cancer requires the combination of roentgen-ray and radium treatment besides surgical measures. His final conclusion is that surgery has about reached the limit for excision of malignant disease; fulguration and diathermy have not added much to the results of surgery alone. Radiotherapy is like surgery, both are purely local, and both are provisional, until some means is discovered to act on the malignant disease from within by means of agents brought to the spot by the blood, even if no more than to sensitize the cancer tissues for radiotherapy. Distance and metastases will then offer no obstacle. This third phase of treatment of cancer has begun but to date it has not yielded any important results. Radiotherapy, however, is gaining rapidly on surgery, but it should be as modest as the latter, knowing that both are building on sand. Certain superficial epitheliomas are so susceptible to radiotherapy that surgery is now contraindicated for such growths, but spindle-cell epidermoids are very resistant. Wherever the seat, skin, lip, tongue, or mucosa, the growth may apparently melt away, but malignant elements still persist in the depths, and local recurrence is the rule after the apparent cures realized by the technic of radiotherapy that has been applied until recently. The difference is so great between the susceptibility of these epidermoid epitheliomas and other varieties, especially ulcus rodens, that a different technic must be worked out for them. Histologic control is not possible of the cures that have been published and, until we are better informed, it is wiser to cut out the operable epidermoids. He advises radium treatment of operable cancer of the uterine cervix and then, a few weeks later, excision. Radiotherapy does not aid in sowing cancer cells abroad but it promotes the development of preexisting scattered cells.

Case of Köhler's Disease.—Drevon comments on the vagueness of the symptoms, merely vague pains in the foot, compared to the characteristic roentgen-ray findings showing an anomaly in the development of the scaphoid bone. In a case illustrated both feet were affected, which conflicts with the assumption of a traumatic or infectious origin. Mouchet calls it scaphoiditis of the tarsus in young children. The scaphoid is small, and almost as opaque as metal.

Journal d'Urologie, Paris

1920, **10**, No. 1

Diverticulum of Bladder. V. Pauchet and R. de B. d'Ormond.—p. 1.
*Primary Tuberculosis of the Bladder. M. Jungano.—p. 15.
*Catheterization of Ureters. E. Pillet.—p. 43.

Primary Tuberculosis of the Bladder.—Jungano reports a case in a woman of 35, and reviews the literature on the diagnosis and outcome. He wrote to twenty-five leading urologists to inquire their experience with primary tuberculous cystitis, and only two had ever known of an instance of primary tuberculosis of the bladder. One of these stated that as catheterization of the ureters had not been done, it is impossible to state that the kidneys might not have been affected. Brongersma was the other, and in his case the diagnosis had been primary tuberculosis of the kidneys, but on attempting the proposed nephrectomy the right kidney was found sound, and months later the left kidney was exposed, and was likewise found sound. The diagnosis was thus corrected to tuberculous cystitis. This patient, a woman now 34, had had symptoms from the urinary apparatus since the age of 10; eighteen years have elapsed since the attempted operations on the kidneys. The general health is fair but the chronic cystitis has grown worse.

Catheterization of Ureters Through the Opened Bladder.—Pillet regards opening the bladder as less serious than exploratory exposure of both kidneys in case of cystitis so intense as to prevent cystoscopic examination of the bladder. In seven cases described, this allowed catheterization of the ureters and diagnosis of conditions in the kidneys. This showed that one kidney was sound and permitted the removal of the diseased organ.

Paris Médical

Sept. 18, 1920, **10**, No. 38

Relations Between Lethargic Encephalitis and Other Morbid Conditions. C. Achard.—p. 209.

Sept. 25, 1920, **10**, No. 39

High Blood Pressure Inevitable with Arteriosclerosis and Sclerosis of the Kidneys. P. Carnot and F. Rathery.—p. 221.
Primary Dilatation of Esophagus. E. Chabrol and J. Dumont.—p. 226.

Oct. 2, 1920, **10**, No. 40

*Neurology in 1920. J. Camus.—p. 233.
The Mental State in Paralysis Agitans. H. Claude.—p. 241.
Basal Metabolism in Exophthalmic Goiter. G. Roussy.—p. 245.
Physiology and Pathology of Striate Body. J. Lhermitte.—p. 247.
*Trigeminal Neuralgia. De Martel.—p. 254.
*Frontal Coma. G. Milian.—p. 256.
Meningitis with Tabes and General Paresis. C. Vincent.—p. 258.
What Psychiatry Learns from the War. Porot and Hesnard.—p. 260.

Neurology in 1920.—Camus quotes that the lumbar puncture fluid should always be examined the fourth year after infection with syphilis. If the patient is not seen until between the fourth and tenth years, the fluid then should be examined regularly. After the tenth year it is not so important, as in 75 per cent. of the cases the symptoms by that time are unmistakable. He cites data which have apparently demonstrated that the symptoms for which we have been incriminating the pituitary are in reality the work of the nerves compressed by the pituitary tumor, and are not due to the pituitary secretion. "It is impossible to conceive how a secretion could induce the extra deposit of fat at some points and its disappearance at other points, such as we see in lipodystrophy, while a nervous origin would readily explain this." The peptone antianaphylaxis treatment of migraine and the antianaphylaxis treatment of epilepsy by seeking the article of food that seems to bring on the seizure and having the patient eat half a gram of it forty-five minutes before the regular meal of the same, open new horizons in treatment. He cites as further progress the benefit from luminal treatment in epilepsy, and from arsenical preparations in shaking palsy; from direct injection of alcohol in causalgia, and from epinephrin by the mouth in Erb's myasthenia. Also Stocker's report of a case of acute mania in which a cure was realized by partial thyroidectomy.

Trigeminal Neuralgia.—De Martel has done retrogasserian neurotomy in fourteen cases and with complete success in thirteen. He begins with injection of alcohol; this alone may cure. If it relieves, it shows that retrogasserian neurotomy is indicated if the pain returns.

Frontal Coma.—Milian discusses the features which differentiate the various sites for lesions inducing coma. With coma from a frontal lesion, the sensory functions are almost normal and the cornea reflex is unimpaired. It simulates natural slumber, the pulse regular although small.

Presse Médicale, Paris

Oct. 6, 1920, **28**, No. 72

*Cancer of the Rectum. V. Pauchet.—p. 705.

Cancer of the Rectum.—Pauchet declares that radical or very long cures may be anticipated with malignant disease of the rectum after extensive resection of the cellular tissue and glands as well as the rectum itself. The outcome depends on the first physician consulted by the patient. He gives nineteen illustrations of the technic for removal by abdomen and perineum in the good cases; and by the perineum and sacral region at two sittings in the border cases. The inoperable cases may improve remarkably under an artificial anus and radium treatment, making a buttonhole incision in muscle for the iliac anus, with demitorsion, and training the patient to use it.

Oct. 9, 1920, **28**, No. 73

Potassium Borated Tartrate in Treatment of Epilepsy. P. Marie, Crouzon and Bouttier.—p. 713.
Dextrocardia Acquired from Pulmonary Lesion. Papillon and Flipo. —p. 716.
Recent American Literature on Benzyl Benzoate in Therapeutics. L. Cheinisse.—p. 717.

Oct. 13, 1920, **28**, No. 74

*Paratyphoid Bacilli in Cream Cakes. E. Lesné and others.—p. 725.

Poisoning from Cream Cakes.—Lesné, Violle and Langle cultivated paratyphoid B bacilli from the stools of three children seized with acute, severe gastro-enteritis from four to eighteen hours after having eaten a *cornet à la crème* at lunch, and the same bacilli were found in the cream filling. A number of other children and adults—a total of twenty-eight, including some in the baker's family—were also affected, and the condition was grave at first but all had recovered by the tenth day. There was nothing in the aspect or odor of the cakes to suggest that anything was wrong, but the cakes had stood in the showcase for twenty-four hours on a June day. The bacilli from the filling were agglutinated at 1:1,000 by a test serum that agglutinated paratyphoid B. Lecoq compiled in 1906 records of 700 cases in seven years of poisoning from bakery goods or pastry with cream filling, and this is the third epidemic that has been reported since. They suggest the need for forbidding the use of raw cream for filling, at least during the summer; the sugar, gelatine, etc., make a good culture medium for the paratyphoid B and the salmonelloses. The poisoning does not always terminate so harmlessly as in these cases.

Revue Médicale de la Suisse Romande, Geneva

September, 1920, **40**, No. 9

*The Prognosis in Syphilis. M. Monfrini.—p. 541.
Ocular Symptoms in Lethargic Encephalitis. A. Verrey-Westphal.—p. 557.
*Obstetric Paralysis of Arm. C. Thélin.—p. 562.
*Results of Gastro-Enterostomy for Ulcer. A. Métraux.—p. 569.
Disordered Heart Action in Soldiers of the Belligerent Armies. E. Thomas.—p. 622. Conc'n.

Prognosis in Syphilis.—Monfrini insists that it is impossible to draw the prognosis in syphilis without examination of the cerebrospinal fluid. At every phase of syphilis lumbar puncture is indispensable, either for diagnosis or for prognosis and as a guide to treatment. He describes a case in which sixteen months after infection and vigorous specific treatment, including twenty-four intravenous injections of arsphenamin preparations, the Wassermann reaction was persistently negative and there was not a trace of clinical manifestations of the disease, and there had never been any symptoms on the part of the nervous system. The patient refused lumbar puncture, and a few weeks later alarming neurosyphilis developed.

Obstetric Paralysis of the Arm.—The brachial plexus had evidently been overstretched lengthwise in Thélin's case in which some effort had been necessary to liberate the shoulders and trunk after the head had been born. The paralysis gradually subsided completely in three months.

Simple Posterior Gastro-Enterostomy for Gastric and Duodenal Ulcers.—Métraux summarizes the details in turn of 210 cases in Roux' service with 90 per cent. of cures and 3.3 per cent. deaths from peptic or recurring ulcer, or cancer, or uremia. The 53 cured and 5 much improved cases formed 90.6 per cent. of the 64 pyloric ulcer cases; the 25 cured formed 86.2 per cent. of the 29 ulcers on the lesser curvature close to the pylorus, and the 24 cured formed 89.7 per cent. of the 29 ulcers of the mediogastric lesser curvature; the 5 cured formed 7.4 per cent. of the 7 ulcers in the cardial region; the 13 cured formed 92.8 per cent. of the 14 ulcers in the anterior wall, and the 12 cured formed 92.3 per cent. of the 13 ulcers in the posterior wall; the 25 cured and 1 much improved formed 96.5 per cent. of the 27 cases of duodenal ulcers, and the 9 cured and 1 much improved formed 83.3 per cent. of the 12 cases of multiple gastric and duodenal ulcers, the cure persisting for from five to ten years. All were cured in the 4 cases of ulcer on the greater curvature, one for thirteen years. In 9 cases no ulcer was found to explain the ulcer symptoms, but the 7 cured and 1 improved formed 88.8 per cent. Métraux emphasizes that simple posterior gastro-enterostomy will give better results than other operations on the stomach, in the hands of the majority of surgeons, for a long time yet.

Schweizerische medizinische Wochenschrift, Basel

Oct. 21, 1920, **50**, No. 43

*Transfusion and Reinfusion of Blood. D. Eberle.—p. 961.
*Pregnancy Toxicoses. W. Bigler.—p. 968.
*Poisoning from "Dial." A. Müller.—p. 973.

Blood Transfusion.—Eberle reinjected the blood from a tubal abortion in ten cases and in two others the extravasated blood from rupture of the liver; in eight cases the blood of a relative was injected. The immediate effect was extremely favorable in this last group but permanent benefit was realized only in four; the others died. The seven that recuperated in the other group might have recovered without reinfusion of their own blood. Hemolysis occurred after reinfusion of one patient's own blood. To have an actually life saving influence in severe anemia, as much as 0.75 or 1 liter is necessary.

Pregnancy Toxicoses.—Bigler comments on the failure of the various tests for pregnancy and to determine the nature of pregnancy toxicoses, based on hemolysis, precipitation, agglutination, deviation of complement, and on anaphylaxis. It has proved impossible to induce anaphylactic reactions in the maternal organism with serum from the fetus. The toxic substances which enter the maternal blood stream from the placenta are evidently not true antigens, or else the maternal organism possesses some defensive mechanism which deprives them immediately of any antigen property. The pregnancy toxin, on the other hand, is not a ferment but seems to be more of the nature of a proteinogenous amin. He thinks there is much to incriminate proteinogenous amins which have an action similar to that of epinephrin, these amins being the product of atypical proteolysis in the placenta itself. The solution of the problem of the pregnancy toxicoses is therefore to be sought in chemistry rather than in immunology, etc.

"Dial" Poisoning.—Müller reports what he thinks is only the second case on record of poisoning from an overdose of dial taken by mistake or with suicidal intent. Differentiation from diabetic and uremic coma is difficult. He advocates profuse rinsing out of the stomach with a weak solution of potassium permanganate. Dial closely resembles veronal.

Archivos Latino-Amer. de Pediatría, Buenos Aires

July-August, 1920, **14**, No. 4

*Cerebrospinal Syphilis in Child. J. C. Navarro and C. Pillado Matheu. —p. 297.
*Helminths in Infants. C. Ferreira.—p. 302.
*Immunization Against Measles. Margarino Torres and Genesio Pacheco.—p. 305.
Pure Radial Paralysis in Boy. V. Escardó y Anaya.—p. 313.
*Transfusion for Anemia in Child. M. F. Langón.—p. 319.
Tuberculous Meningitis in Course of Typhoid; Three Cases. M. Ponce de León.—p. 324.
*Ophthalmic Herpes Zoster in Child. J. de Salterain.—p. 331.
Spontaneous Rupture of Hydatid Cyst in Liver. F. Rodriguez Gomez. —p. 336.

Neurosyphilis in Boy of Ten.—The symptoms deceptively simulated sclerosis in patches except for the lack of a progressive course, the great improvement under mercurial treatment, and persistence of the improvement during the two years to date.

Helminths in Infants.—Ferreira found the oxyuris, trichocephalus or ascaris in 23 per cent. of the 196 infants from 6 months to 2 years old at S. Paulo. At Rio de Janeiro and Buenos Aires the proportion infested among children a little older than this was 80 and 54 per cent., respectively.

Immunization Against Measles.—The blood of measles patients during the pre-eruptive or eruptive period injected into guinea-pigs induced a febrile reaction after an incubation of from three to five days. Blood from one of the guinea-pigs, drawn as the temperature rose and injected into a normal guinea-pig, induced likewise a febrile reaction. In this way the virus of measles was transmitted through a series of guinea-pigs in this research reported from Rio. Material taken from the throat of a measles patient in the pre-eruptive stage and injected subcutaneously in a guinea-

pig was not followed by a rise in temperature. Five children from 2½ to 5 years old, that had been definitely exposed to measles were inoculated with convalescent measles serum, and only one developed the disease and it was exceptionally mild in this case. The experiences related confirm, it is said, the statements of Richardson and Connor in THE JOURNAL, April 12, 1919, p. 1046, in respect to the presence of antibodies in the serum of convalescents from measles.

Transfusion for Anemia in Child.—The anemia had developed in the girl of 9 after influenza with a retropharyngeal abscess followed by septicemia, complicated with nephritis and hepatitis. The pulse was imperceptible and there was syncope when the child tried to sit up. The temperature was subnormal, the hemoglobin down to 25 per cent. As the other members of the family had influenza at the time, Langón gave 50 c.c. of his own blood for the transfusion, and the benefit was most striking at once. Another donor was found for a second transfusion of citrated blood the following day, a total of 120 gm., and the child recuperated completely.

Ophthalmic Herpes Zoster.—Salterain's patient was a girl of 11, and the herpes zoster developed around the eye and on the nose and brow, corresponding to the course of the ophthalmic nerve on the right side. The conjunctiva was inflamed, but the cornea was intact, and the pupil and reflexes were normal. The zona subsided in the course of ten or twelve days without leaving pigmentation. There had been a blow on this eye two days before the pains developed, but the pains did not locate at the point injured.

Brazil-Medico, Rio de Janeiro

July 31, 1920, **34**, No. 31

*Flushing the Maxillary Sinus. P. Brandão.—p. 491.
Mycosis of Lung. M. Machado.—p. 495.
The Hookworm Problem. Hackett.—p. 497.

Flushing the Antrum of Highmore.—Brandão punctures the antrum, through the nose, aspirates the contents, and then rinses out the cavity. Some patients are cured by this flushing treatment repeated only two or three times. Others require thirty, forty or more before a cure is realized. But he was able to cure 66 per cent. of his thirty-nine cases although the sinusitis was of from two weeks to two years' standing. The cases in which this conservative treatment had to be supplemented with operative measures were usually of much longer duration, up to eight and ten years. He gives six illustrations showing the exact technic of this "diameatic lavage," as he calls it.

Siglo Médico, Madrid

June 19, 1920, **67**, No. 3471

Hydrotherapy in Psychoneuroses. E. Fernández Sanz.—p. 449.
Spanish Pediatrists of Sixteenth Century. B. Henández Briz.—p. 451.

June 26, 1920, **67**, No. 3472

Extraction of Cataract in the Capsule. I. Barraquer.—p. 469.
The Current in Diathermia. B. Navarro Cánovas.—p. 470.

July 3, 1920, **67**, No. 3473

Vision Gained at Seventeen for First Time. B. Castresana.—p. 485. Cont'd.
Early Diagnosis of General Paresis and Tabes. G. R. Lafora.—p. 487.
The Modern Campaign Against Tuberculosis. A. Espina y Capo.—p. 489. Conc'n in No. 3478, p. 591.

Archiv für Gynaekologie, Berlin

1920, **113**, No. 1

*Technic for Radium Treatment. W. Hauschting.—p. 1.
*Ovarian Cancer. O. Frankl.—p. 29.
*Spontaneous Absorption of Tubal Pregnancy. J. Schiffmann.—p. 133.
*Conservative Operations on the Adnexa. H. H. Schmid.—p. 164.

Technic for Radium Treatment.—Hauschting summarizes the experiences at the Berlin women's clinic in charge of Bumm. They teach that 1 standard erythem dose is all that the mucosa of the intestines and bladder can bear, but the cervix muscles can stand 40, the corpus muscles 30, and the vaginal mucosa 5 or 6 erythem doses. On account of the proximity of the intestine and bladder walls, the dose for uterine cancer has to be calculated with great care for each individual case or exposing the cervix or vagina may entail serious by-effects. The carcinoma dose is practically the same as the erythem dose, and over and underdosage are both unfavorable. The cancers adapted for radium treatment are those in which the local conditions allow the complete irradiation of the whole with a single carcinoma dose. When the cancer is extensive or glands beyond have been invaded, then this cannot be realized and a cure with radium alone cannot be anticipated. If any point of the cancer does not receive the full erythem dose, that point is not devitalized when all the rest has been destroyed.

Ovarian Cancer.—Frankl's study of the pathology and clinical course of 65 primary and 23 secondary ovarian cancers fills over 100 pages, with two colored plates and other illustrations. Two of the patients were 17 and 19 years old, and 7 patients were in the twenties, as also 3 with metastatic cancer. Menstruation had been arrested for two or three months in 11 of the 18 younger women with metastatic cancer, and in 3 of the 65 primary cases. Hemorrhages occurred in only 10 of the 83 cases. In 2 cases a living fetus, 20 or 35 cm. long, was found in the uterus when both ovaries formed huge cancerous tumors. In one nonpregnant woman lactation was observed with an autochthonous ovarian cancer. On suspicion of ovarian cancer, search should be made for a primary focus in stomach, or intestines, and for the characteristic hard consistency of the uterus and possibly of the tubes. The hardness, he says, is like that of the uterus after fixation in formaldehyd solution, and this is enough of an indication for panhysterectomy as the uterus is almost always involved with metastatic ovarian cancer and the latter is generally bilateral. His impression is decidedly favorable for postoperative roentgen-ray exposures.

Spontaneous Retrogression of Tubal Pregnancy.—In Schiffmann's two cases as also in Goebel's case, evidences were casually discovered of a tubal pregnancy in which the transformation of the young ovum into a mole and the resorption and organization of this had progressed without subjective or objective disturbance at any time. The condition was discovered at a later laparotomy for other cause.

Conservative Operations on the Adnexa.—Schmid records 120 cases in which a wedge was cut from the fundus of the uterus along with diseased adnexa but part of one ovary was saved. He compares this experience with that of others, citing nearly seven pages of literature on conservative operations on the adnexa. This wedge excision is particularly useful for younger women as it wards off the premature menopause, and in 83 per cent. of his cases it restored full earning capacity. Of the 1,038 women with chronic adnexitis in the years 1911-1918, 75 per cent. were cured or improved to subsidence of symptoms by conservative measures. The annual number of cases of adnexitis has more than doubled since 1918, probably from return of the troops.

Archiv für Kinderheilkunde, Stuttgart

Oct. 16, 1920, **68**, No. 3

*Pericardial Adhesion in Children. L. Rehn.—p. 179.
*Fatless Breast Milk. E. Friedberg and C. Noeggerath.—p. 195.
*Epinephrin in Pneumonia in Infants. J. Vogl.—p. 215.
Malformation of Mesentery and Megacolon. F. Goebel.—p. 221.
*Galactose Metabolism in Children. Selma Meyer and G. Stern.—p. 241.
*Sugar Content of Children's Blood. A. Mertz.—p. 254.

Adhesive Pericarditis in Children.—Rehn declares that the diagnosis of cardiac defect covers a multitude of cases of adhesive pericarditis which it behooves us to recognize with a view to possible operative treatment. In four cases he slit the sternum slanting from the right lower side to the upper left side in the second or third interspace. The pericardium was then slit to correspond, and in three of the cases he was able by this means to break up the adhesions between the sheets of the pericardium, but in the fourth case this was not possible. Then a large portion of the anterior wall of the pericardium was resected, and the gap was covered with a fat-fascia flap. The operation was borne well by the four children, and those who saw them before and after the intervention were impressed with its actually magic action. One boy of 14 was almost at death's door, but recuperated remarkably and attended school until his death eighteen months later from intercurrent influenza. A girl of 13 also recuperated remarkably, could walk for hours without fatigue or shortness of breath, and looked in perfect health but succumbed a year later to recurrence of acute rheumatism. The two other

patients soon died from the progress of tuberculous lesions elsewhere. In all the cases the ascites, and the congestion of the liver subsided as circulation through the heart more nearly approximated normal. The disappearance of the ascites testified that it had been the result of the obstacle to the heart functioning represented by the unyielding pericardium, rather than by the liver. With adherent pericardium, if the heart is taxed, edema develops which subsides under repose. The inflammatory process sometimes spread to the surface of the liver when iodin had been injected into the pericardium of dogs to induce adhesions. This explains some of the features of adhesive pericarditis. The symptoms are more sharply defined and the course shorter in children than in adults. With the signs of stasis in the superior and inferior vena cava, the swelling of the veins in the neck, the puffiness of the face and the slight cyanosis, the large size of the congested liver may be regarded as an early symptom. Anything impeding the passage of the blood from the vena cava into the heart must entail stasis in the liver. He has witnessed extreme congestion in the liver developing in a few hours after a hemorrhage or a rapidly developing effusion in the pericardium.

Centrifuged Human Milk for Sick Infants.—Friedberg and Noeggerath describe the remarkable improvement of certain very sick infants when fed with breast milk from which the fat had been removed by centrifuging. It may prove a life saving measure in severe cases of "decomposition" as well as ordinary toxicosis. It averts the necessity for a starvation diet for more than one day at most. One 6 months' infant was given the second day 180 c.c. of the separator breast milk, increasing to 240 c.c. and by the fourth day all the symptoms of the toxicosis had subsided. The next day full breast milk was allowed in the same amount and the sixth day the whole picture of the toxicosis returned with cerebral symptoms and fever and persisted for five days, the child only gradually recuperating thereafter under whole breast milk. One infant of 2½ months with severe "decomposition" which had persisted for four days was restricted to tea for six hours, with six enemas of Ringer's solution, each 50 c.c., and analeptics, and then was given the centrifuged breast milk in small amounts, slowly increasing. The weight began to rise by the next day. By the fourth day small amounts of whole breast milk were allowed in addition. By the eighth day this was given exclusively, and the child continued to thrive. Infants thrive on this centrifuged breast milk when their condition seems to prevent their being nourished in any way. The nutritional properties of breast milk are paralyzed by the fat in it in these extremely toxic cases.

Epinephrin in Treatment of Pneumonia in Infants.—Vogl injected subcutaneously 0.2 c.c. of a 1:1,000 solution of epinephrin in sixty infants with pneumonia or capillary bronchitis in the Prague foundlings' asylum and in thirty brought to the dispensary. From one to four to eight injections were made daily, seeking to utilize the vasoconstricting and inflammation checking action of the epinephrin. The death rate was 6 per cent. in the institution and 13.5 per cent. in those brought from outside for the injections. The mortality in the outside cases not treated with the epinephrin was 45 per cent. He emphasizes that bringing the pneumonia infants to the dispensary was a kind of fresh-air treatment which had a salutary effect. Eight days was the longest epinephrin course in any instance. He regards it as an actual causal treatment, combating the process of exudation in the finer air passages and infiltration of the lung tissue.

Galactose Metabolism in Infants.—Meyer and Stern report from sixty-three tests that the limit of tolerance for galactose after ingestion of from 10 to 60 gm. seems to be 20 and 40 gm. in infants of 1 and 2 years. Elimination of larger proportions than 0.5 and 3 gm. with these amounts is a sign of insufficiency in some part of the digestive apparatus. After subsidence of the acute phenomena, the liver will generally be found below par.

The Sugar Content of the Blood in Infants.—Mertz concludes from his long analysis of what has been published on this subject that the carbohydrate metabolism of infants and young children obeys the same laws as in adults. It has no special features.

Beiträge zur klinischen Chirurgie, Tübingen

1920, **120**, No. 2

*Resection for Hard Gastric Ulcer. H. Kloiber.—p. 247.
*Gastric and Duodenal Ulcer. F. Zacherl and Emma Landes.—p. 302.
Spurious Appendicitis in Influenza. H. Brütt.—p. 313.
Appendix Peritonitis. O. M. Chiari.—p. 326.
*Rubber Prosthesis for Bile Ducts. L. Simon.—p. 344.
*Hydronephrosis from Abnormal Blood Vessel. F. C. Hilgenberg.—p. 357.
Anesthesia for Excision of Rectum. H. Schmerz.—p. 368.
Subcutaneous Injury of Wrist Bones. W. Peters.—p. 373.
*Schlatter's Disease. W. Müller.—p. 389.
*Pneumatocele of the Skull. W. Müller.—p. 399.
The Purpura Problem. F. Kleeblatt.—p. 412.
*Multiple Cancers. M. Silberberg.—p. 427.
*Freshened Surfaces in Joining Bones. K. Scheele.—p. 442.
Intratracheal Tumors. O. Maier.—p. 450.
*Retropharyngeal Goiters. H. Schmerz.—p. 483.

Transverse Resection of Stomach for Hard Ulcer.—Kloiber devotes over fifty pages to the ultimate outcome in eighteen cases reexamined from two to four years after transverse resection of the stomach on account of a callous boring ulcer. In one of the cases the course and operative and histologic findings indicated simple ulcer but two years later the patient succumbed to carcinosis originating in a cancer in the resection cicatrix. Serial sections of the whole resected portion might have disclosed the malignant disease. One other patient succumbed to intercurrent disease, and 5.6 per cent. have been merely improved, but in 72.2 per cent. the cure has been complete and permanent. The experiences described teach the advantages of making the resection extensive, as this reduces the secreting surface and also the surface in which cancer is liable to develop. The details of the cases are given, with roentgenographs of the present condition.

Gastro-Enterostomy for Gastric and Duodenal Ulcer.—Zacherl and Landes review their experiences with 39 cases of gastric or duodenal ulcer in which the operation revealed cicatricial tissue. During the last five years they have had no instance of cancer developing after gastro-enterostomy in previous years, and hence are inclined to pay little heed to the danger of malignant degeneration. If the subjective and objective symptoms of gastric or duodenal ulcer persist after two courses of medical treatment, they advise operative measures. After posterior gastro-enterostomy, they shut off the pylorus by Merten's method of drawing it up with two threads above and below and turning in the pylorus. This does not insure anatomic closure, but sufficient functional closure for the purpose. In 26 recently reexamined, the pylorus was not permeable in 14; it was slightly permeable in 9, and quite permeable in 3 although most of the food passed through the anastomosis. In 24 cases 79.2 per cent. may be regarded as a complete cure; 8.3 per cent. were improved but not cured.

Rubber Prosthesis to Connect Bile Duct with Duodenum.—Simon was obliged to bridge the gap with a rubber tube in five cases in which it was impossible to join the hepatic or common bile duct directly to the intestine. In two of the cases he removed the tube later, and in three he left it to its fate. In this latter group the functional results were perfect from the very first day. He regards it as extremely important to make a cover of peritoneum tissue to encase the rubber tube. In two of the cases he took the flap for the purpose from the serosa of the duodenum itself. It is important further to do the operation with the patient reclining with the organs in their natural position, not thrown forward by a bolster. The tube was held in the bile duct with a single catgut suture but no suture was applied to the lower end, as the slanting passage, 2 or 3 cm. long, into the duodenal wall seemed to guarantee a firm enough hold. This end of the tube projected about 1 cm. into the lumen of the duodenum. The result was so good in his cases that he thinks this technic might be advisable even when direct anastomosis is possible. The rubber tube was never found in the stools except in one case in which the common bile duct was double, and two tubes had to be used; one of them passed off later through the anus.

Hydronephrosis Caused by Abnormal Blood Vessel.—Hilgenberg compares with a case described the few cases on record of intermittent hydronephrosis from this cause, and urges the necessity for an early diagnosis. This alone permits effectual operative treatment before the parenchyma has suffered irreparable injury.

Spontaneous Separation of Epiphyses.—Müller describes a case of Schlatter's disease in a boy of 13 who presented, besides the typical splitting off of the tuberosity of the tibia on both sides, separation of the epiphyses of the trochanter minor, and partial splitting off of the tip of one patella. There was no history of trauma of any kind. Schlatter's disease thus seems to be a symptom of a systemic pathologic condition which manifests itself in a tendency to spontaneous separation of epiphyses and infractions, most evident in the tuberosity of the tibia. It seems to be connected with late rachitis.

Pneumatocele of the Skull.—Müller knows of only twenty-one cases in the literature of the peculiar tumor which results from accumulation of air between the bone and the periosteum of the skull. He adds another case to the list, with an illustration of the woman of 50. The entire side of the head was taken up by the tumor, all the hair having dropped out over it. It measured 8 by 11 cm. and she could press the air out of it into the outer ear but the tumor soon filled with air again. It had developed about eighteen months before, but she had had otitis at 15 and 21, which had subsided under local treatment. He cured the pneumatocele by closing with a flap of fat the opening for the air, and removing the periosteum over the area involved.

Multiple Cancers.—Silberberg reports six cases of multiple cancers and compares them with others on record, saying that possibly many cases of supposed recurrence of cancer may have been multiple primary malignant growths. In two of his cases cancer developed simultaneously in both breasts but they were of the same type. In two other cases they were of different types. In another case the cancer in one breast was evidently a metastasis from a gastric cancer while the cancer in the other breast was an independent growth of another type. In the sixth case the cancer in the second breast followed over two years after the excision of the other breast for cancer.

To Join Bones by Raw Surfaces Cut in Steps.—Scheele's illustrations show how the area of the freshened surfaces can be enlarged by cutting them in steps.

Retropharyngeal Goiter.—Schmerz analyzes the experiences in von Hacker's service at Graz with 2,000 goiter operations in sixteen years. Among all these and an additional group of 130 operative cases of strumitis, there were only 0.02 per cent. cases of retropharyngeal goiter. These retropharyngeal tumors were all successfully removed by the usual thyroidectomy technic. They had interfered with swallowing, and in one case the tumor, as large as an apple, could be seen at the root of the tongue.

Deutsche medizinische Wochenschrift, Berlin

Sept. 2, 1920, **46**, No. 36

Adaptation in Relation to Constitution. F. Kraus.—p. 989.
*The Constitution of Illegitimate Children. H. Reiter.—p. 991.
The Combination Treatment of Syphilis with Silver Arsphenamin Sodium and Colloidal Silver. Lenzmann.—p. 992.
*Diuretics in Kidney Disease. F. Hirschfeld.—p. 995.
*The Mid-Brain. E. Leschke.—p. 996. Begun in No. 35, p. 959.
Superinfection with Chicken Cholera Bacilli. M. Berliner and S. Citron.—p. 997.
Dietrich Complement Fixation Test in Fevers. A. Mayer.—p. 998.
Case of Traumatic Tuberculosis. H. Lau.—p. 999.
Test for Purity of Neo-Arsphenamin. A. Rödel.—p. 999.
"Care of War Cripples" (Schlossmann). Weinberg.—p. 1000.
Otologic Hints for the General Practitioner. Partial Deafness of Nervous Origin. G. Brühl.—p. 1000.

Constitution of Illegitimate Children.—In an examination of 1,962 legitimate and 1,000 illegitimate children in Rostock, Reiter found no characteristic difference in the length, but the weight of the illegitimate infants was 200 gm. less, on the average, than that of the legitimate children. This indicates that, as a whole, the constitution of illegitimate children is inferior to that of the legitimate. He points to Norway as a country in which the authorities consider it their duty to see to it that, as far as possible, illegitimate children are surrounded by all the conditions necessary to insure to them good prenatal development. He thinks that it is the duty of every country to do all it can to place safeguards about the lives of illegitimate children yet unborn.

Diuretics in Kidney Diseases.—Hirschfeld discusses the rôle of diet as affecting the action of diuretics in kidney disease. Certain diuretics may, with a diet poor in proteins, produce diuresis in kidney patients, whereas, with a diet rich in proteins, they will check diuresis. It is impossible to give definite limits, since in one case diuresis was checked with 130 gm. of protein and stimulated with 70 gm., whereas in another, a severer case, diuresis was checked with 70 gm. and stimulated with approximately 40 gm. It would appear, therefore, that, as the functional activity of the kidney is lessened, less protein is required in the food for the favorable action of diuretics.

The Clinical Pathology of the Midbrain.—Leschke refers to Fröhlich's having associated dystrophia adiposogenitalis with a decrease in the functioning of the pituitary body, and brings forward his reasons against accepting Fröhlich's theory. Among the thirty-five cases of this disease that have come to necropsy there were no less than twelve in which the hypophysis was not affected. In the remaining twenty-three cases many different forms of tumors had led to dystrophia adiposogenitalis, in some cases with an increase and in other cases with a decrease of hypophysial tissue. He states also his reasons for incriminating disturbances in the functioning of the midbrain in the pathogenesis of dystrophia adiposogenitalis. In all cases of such dystrophia the base of the midbrain was pathologic, even when the hypophysis was intact. Following an isolated injury of the midbrain, genital atrophy has been observed in animal experiments. Furthermore, it is known that exclusion of the midbrain causes a marked increase of protein metabolism (Grafe), whereas stimulation of the base of the midbrain brings about a decrease (Leschke and Schneider). It is in agreement with this fact that polyphagia plays a great part in all affections of the midbrain.

Jahrbuch für Kinderheilkunde, Berlin

1920, **93**, No. 3

*The "Butter-Flour" Mixture. A. Niemann and K. Foth.—p. 137.
Determination of Lipoids in Blood. J. C. Schippers.—p. 151.
*Calcium Metabolism in Infants. E. Schiff and A. Peiper.—p. 160.
Influence of Ultraviolet Light on Latent Tetany in Infants. F. Sachs.—p. 167.
*Infant Feeding During Second Year. C. Vahlensieck.—p. 177.

For and Against "Butter-Flour Mixture."—Niemann and Foth comment on the success of different pediatrists with special methods of infant feeding, but in the hands of others the outcome is disappointing. The "trade secret" which is not imparted, and cannot be imparted, is the skill in detecting the proper indications for the method. The butter-flour mixture seems to be adapted for artificial feeding of infants without severe nutritional disturbance, but for whom the ordinary milk mixtures are not suitable. It is contraindicated with acute diarrhea, or sudden great loss in weight, or acute rise in temperature from digestive disturbance. [The technic for making the mixture was described in these columns recently, p. 1101.]

Influence of Epinephrin and Pilocarpin on Calcium Metabolism in Infants.—Injection of pilocarpin in four infants from 2 to 4½ months old induced profuse sweating and retention of a larger proportion of calcium (with one exception). Epinephrin reduced retention of calcium (with one exception). The research demonstrates anew the close connection between the metabolism and the nervous system. The increasing irritability of the nervous system by loss of calcium and the increasing losses of calcium under the influence of epinephrin are closely linked processes. The tabulated details confirm that suprarenal treatment offers no chance of success in rachitis.

Feeding During the Second Year.—Vahlensieck reviews the experiences at the Barmen infants' clinic with 629 children during a period of eleven years. Of this number, 129 were studied with special care to estimate the effect of various diets. The children are weaned at 8 or 10 months; no benefit from nursing longer than this could be detected. Meat and eggs were entirely excluded but in addition to the gruels, zwieback, etc., nearly all the market vegetables were used, with the exception of the cabbage family. The four grades of the diet, with a total bulk of from 1,050 to 1,260 gm., represent from 960 to 1,242 calories, with from 34.66 to 44.16

protein; from 27.44 to 40.20 fat; and from 135.81 to 172.27 carbohydrates. The milk is diluted only in the first diet (1:3). The child passes through the four grades of the diet during the second year.

Mittheil. a. d. Grenzgebieten d. Med. und Chir., Jena

1920, **32**, No. 2

*Pseudo-Appendicitis. E. Liek.—p. 153.
*Localization of Abdominal Tumors. K. Heinrich Bauer.—p. 217.
*Surgical Complications of Typhoid. H. Weinen.—p. 260.
*Exudative Pleurisy. Max Rosenberg.—p. 267.
*Basedow's Disease and Myxedema. R. Cordua.—p. 283.
Prophylactic Use of Radium Treatment. F. Dauwitz.—p. 287.
*Sensibility of Internal Organs. V. Hoffmann.—p. 317.

Pseudo-Appendicitis.—The material covers 1,400 cases, including 300 designated as pseudo-appendicitis. The faulty differential diagnosis very often is due to perimetritis, also pyelitis or pyelonephritis, renal colic, enterocolitis, and acute inflammations of the cecum. Correctives for the diagnosis are afforded by the consideration that it is not sufficient to determine pain at McBurney's point, spastic contractions of isolated portions of the intestine, etc. Observations should be made of the history of each case, the possible connection with mental and nervous, perhaps local disturbances. In many cases, spastic contractions will disappear during narcosis and before the beginning of the operation. Nervous intestinal spasms are very frequent, and very often mistaken for what is designated as chronic appendicitis. For the relief of reflex neuroses no operation is proven definitely useful. Instead, atropin treatment of three weeks' duration is recommended: 0.001 to 0.0015 gm. of atrophin sulphate in pills each day. In severe cases, a 1:1,000 solution of atropin sulphate (for five days 3 times 4 drops; next five days, 3 times 8 drops; then 12 drops 3 times daily, and back to 4 drops). Liek warns against a one-sided, mechanical principle in surgical diagnosis. The function of the organs, especially within the digestive tract, and their dependence on nervous reflexes as induced by mentality, surroundings and habits, deserve full recognition, and this may prevent at least some unnecessary operations. An excellent bibliography is appended.

Localization of Abdominal Tumors.—Abdominal tumors are local affections. The development follows the length of the lesser curvature where the muscular apparatus forms a fissure (*sulcus gastricus* or *salivalis* of Retzius), where nearly all round ulcers are seated, and is localized laterally from this course, preferably at the posterior wall. Within this region the preferred locality again seems to be the close proximity to the physiological narrows, pylorus and isthmus. At these localities initial defects are prevented from healing by anatomic and functional conditions. An initial ulcer becomes chronic if located where constantly exposed to the influence of the gastric juice at every phase of digestion. Local anemia induced by stasis, spastic conditions, originate usually in neurogenous disturbances and will be recognizable by radiography, in which case a regulation of the natural functions will be more readily indicated than when several symptoms have set in. A list of 148 publications on the subject is appended.

Surgical Complications of Typhoid.—Weinen analyzes typhoid statistics 1873-1910 and compares with army data of recent times. He calls attention to the complications of splenic abscess indirectly caused by typhoid bacilli, also to the relatively rarer abscesses of the liver. A table covering 1874-1913 shows the status of typhoid, with complications, giving comparative data of mortality, for example, 7.23 in 1874-1875 against 0.004 in 1912-1913.

Exudative Pleurisy.—Rosenberg recommends the open pleura puncture according to Schmidt's method (*München. med. Wchnschr.*, 1915), in cases where the exudate extends beyond the upper third of the scapula, or when no resorption takes place after two or three weeks. The method consists mainly in replacing the exudate with air; this prevents the redevelopment of exudate and also the formation of broad adhesions between the costal and pulmonal pleura. The only contraindication is dyspnea.

Exophthalmic Goiter Developing Into Myxedema Under the Influence of Roentgen-Ray Treatment.—Cordua analyzes cases where such an influence undoubtedly was proved. He warns against pursuing radiologic treatment until complete disappearance of struma, and recommends two to four energetic treatments with a subsequent rest period for five or six weeks before resumption.

Sensibility of Internal Organs.—Pain irritation in the internal organs is conducted along the course of the vegetative system, especially cerebrospinal nerves. One and the same process in an organ may or may not be attended by pain, according to the manner in which the process begins, or in which it reaches the course of the pain-nerves. "The intestines are to be credited with conscious sensibility." The pain-nerves are but scantily developed, and in some localities even entirely absent.

Monatsschrift für Kinderheilkunde, Berlin

September, 1920, **18**, No. 6

*Significance of Thirst in Toxicosis. F. Göppert.—p. 481.
*Starvation Diet in Alimentary Toxicosis. F. Göppert.—p. 483.
Carbohydrate Fermentation. K. Blühdorn.—p. 488.
Mortality of Children to End of Second Year. Blühdorn and Ohlemann.—p. 501.
Nitrogen and Fat Metabolism in a Case of Congenital Occlusion of Bile Ducts. E. Freise.—p. 515.
Practical Results of Moll's Phosphate Test. O. Weidmann.—p. 520.

Thirst as a Manifestation of Toxicosis.—Göppert recalls the familiar experience that when, as was usually the case, toxicosis patients were given a thorough lavage of the stomach and intestine, a number, either during the procedure or within thirty or forty minutes, began to take on a fresh and natural appearance, whereas others were only slightly affected thereby, and many not at all. The favorable effect was usually explained as due to the removal of some offending substance from the stomach or intestine, but the fact is there was often little to be removed, and yet the effect secured was often striking. It has developed in recent years that the removal from the gastro-intestinal canal of food remnants was important and useful, in many such cases, but even more important was the subsequent filling of the stomach or intestine with large quantities of a warm fluid. We now distinguish therefore, clinically, those mild cases of toxicosis in which, following ingestion of water, the cerebral symptoms disappear, and the serious cases that are not influenced thereby. Göppert finds that in most of his cases the signs of toxicosis have developed fully only because of the presence of marked thirst. If the thirst is quenched the threatening aspects disappear to such an extent that it requires a careful examination to detect the danger that threatens the child. In fact, it is often quite impossible to discover the toxicosis without a knowledge of the previous history. In certain cases of this kind, the subsequent treatment departing from that indicated in toxicosis in infants, the children either died or their lives were endangered. The conclusion, therefore, is that if a child is threatened with toxicosis, the symptoms of such toxicosis will appear earlier under the influence of thirst, and may disappear when the thirst has been quenched.

The Dangers of Starvation Diet in Toxicosis.—Göppert recalls that our two main weapons in combating toxicosis in infants are withholding of food and the ingestion of large quantities of water or other liquid. He admits that, as a general rule, this method is satisfactory and that there is no great danger of overdoing the hunger cure, but he points out that for certain weak children the sudden and complete institution of the starvation diet is a very serious matter. To extend the diet of highly diluted milk for a period of more than twelve or even eight hours is fraught with danger in the case of children who are cachectic from prolonged diarrhea, who have become emaciated by a milkless gruel diet, or who, although now in fair condition, have recently passed through a time of reduced diet and are now suffering from a relapse of the toxicosis. Göppert has found in such cases that the disturbance of function of the lower portion of the intestine, as compared with the small intestine, was very slight and that rectal injections of maltose preparations are well borne and are helpful. They gave the system the additional nourishment required to tide the patient over the crisis, thus facilitating recovery; in fact, in some cases recovery might not have been possible without them.

Münchener medizinische Wochenschrift, Munich

Aug. 13, 1920, **67**, No. 33

*Sedimentation Time of Red Corpuscles. W. Runge.—p. 953.
Serologic Studies on General Paresis. V. Kafka.—p. 955.
War and Tuberculosis in Munich. J. Bartschmid.—p. 957.
Trauma of Nervous System and Pernicious Anemia. J. Zadek.—p. 960.
Progressive Bulbar Paralysis and War Service. H. Baumm.—p. 961.
Nature of Sachs-Georgi Reaction. M. Mandelbaum.—p. 962.
*Erythema Venosum. Lengfellner.—p. 962.
Massage of Abdomen in the Erect Posture. W. Smitt.—p. 963.
Retention of Murphy Button in Gastro-Enterostomy. W. Bürmann. —p. 963.
"Open" Pulmonary Tuberculosis in Infants. Klotz.—p. 964.
Use of Etiologic Conceptions in Medicine. H. E. Hering.—p. 964.
Remedies and Poisons Found in Homer. L. Lewin.—p. 966.

Sedimentation Time of Red Corpuscles in the Healthy and Mentally Diseased.—Runge reports, as the results of his investigations, that not only in paralysis, tabes, and syphilis of the brain; in arteriosclerosis and inflammatory cerebral processes, as well as in inflammatory processes in other parts of the body, but also in a considerable proportion of dementia praecox cases, the sedimentation of red corpuscles is accelerated. In a few rare cases remarkably slow sedimentation was observed, for which no explanation could be found. Runge is not prepared to say whether there is any direct connection between accelerated sedimentation and the disease process or whether it is the result of secondary disturbances (disturbances of nutrition, motor disturbances, etc.), but his findings encourage further research in this line for diagnostic purposes.

Atypical Erythema Nodosum.—Under the term "erythema venosum" Lengfellner considers his 84 cases of atypical erythema nodosum, 36 being observed for many years. All the cases presented in the region of the lower third of the leg, between the shoe tops and the bottom of the skirt, a cufflike reddening of the skin, together with swellings, not usually sharply defined. The skin over the crest of the tibia and the outside of the leg were always most affected. The patients were all women and girls, and 60 per cent. looked healthy, but a large percentage of them presented an excessive panniculus adiposus. The swellings often persist for years without the patient complaining particularly, until finally a bluish red discoloration appears. They seldom pit on pressure except in the secondary stages. There were often accompanying pains in the feet, in the ankle and throughout the leg. Only continued massage, preferably of the whole body, could bring enduring relief. Of the 84 patients 21 developed ulcers of varying size; 3 were syphilitic; 3 were tuberculous, and the rest were typical (mostly small) ulcera cruris. Lengfellner regards the ulcers as the natural end-product of the whole process, and thinks that ulcers would have appeared in every case if proper treatment for improving the circulation had not been given. Besides massage, local treatment consisted of quartz lamp radiation, hot air jets, resinous dressings and local protection against cold and external injury. (A similar atypical erythema nodosum on girls' legs was mentioned in THE JOURNAL, Feb. 28, 1920, p. 638.)

Wiener klinische Wochenschrift, Vienna

Aug. 26, 1920, **39**, No. 35

Protein Therapy. H. Hayek.—p. 768. Conc'n in No. 36, p. 798.
Tuberculin Allergy and Local Reaction. P. Gerber.—p. 772.
Tuberculin Diagnosis in Pulmonary Tuberculosis. A. Kirch.—p. 774.
Enanthems and Exanthems in Influenza. A. Leimdörfer.—p. 776.

Zeitschrift für urologische Chirurgie, Berlin

July 30, 1920, **5**, No. 1-2

*Disease in Malformed Kidneys. T. Cohn.—p. 1.
*An Accessory Kidney. S. Gottfried.—p. 11.
*Spontaneous Cure of Hypernephroma. S. Kraft.—p. 1o.
Operation for Congenital Diverticulum of the Bladder. E. Schönburg and E. Pfister.—p. 27. Idem. V. Blum.—p. 90.
*Prolapse of Urethra in Little Girls. W. Schmidt.—p. 31.
*Papillomas of Renal Pelvis. T. Hryntschak.—p. 46.
*Recurrences After Prostatectomy. V. Blum.—p. 77.
*Ischiorectal Versus Suprapubic Prostatectomy. O. Orth.—p. 101.

The Zeitschrift.—As the *Zeitschrift für urologische Chirurgie* enters on its fifth volume, it announces the merger with it of *Folia urologica*, now in its tenth volume.

Disease in Malformed Kidneys.—Cohn reports a case of hydronephrosis in a practically single kidney, and one of tuberculosis. The other kidney was rudimentary in each case. The large size of an overworked single kidney is liable to mislead to the assumption that this is the diseased organ, as occurred in his tuberculous case.

An Accessory Kidney.—Gottfried comments on the importance of recognizing an accessory kidney as this allows resection of the diseased portion without the necessity for nephrectomy. In a case described the apparently normal ureter led to the accessory kidney, while a small supernumerary ureter was the outlet for the normal kidney. Accessory and malformed kidneys seem to be especially predisposed to disease. Harbitz found congenital malformation in three of nine cases of tuberculosis of the kidney.

Spontaneous Cure of Hypernephroma.—Kraft's patient was a man of 46 who two years before had had part of the left kidney resected for cystic degeneration. Six months later pains compelled nephrectomy, and the kidney showed evidences of having been the seat of a hypernephroma which had become transformed into a multilocular cystic tumor. The hypernephroma in this case could be traced back to the age of 9, and Kraft urges the importance of suspecting hypernephroma in children when there is hematuria in the midst of apparent health. An exploratory incision may be advisable. Fabricius has reported a case of spontaneous subsidence of a hypernephroma in a man of 55. The tumor masses had become encapsulated and lost their vitality from pressure atrophy. The patient is still in good health, twelve years later.

Prolapse of Urethra in Little Girls.—Schmidt gives a colored plate of the first of his two cases of prolapse of the urethral mucosa in girls of about 6. In his second case the prolapse followed local treatment of the urethra during gonococcus vulvovaginitis. Two-thirds of the total seventy-nine cases compiled by Brüning were in girls between 8 and 11. In Schmidt's first case a catgut suture was run around through the mucosa at the base of the prolapse after a stout metal catheter had been introduced into the bladder and a silk thread in each half of the distal portion of the prolapse. The prolapsed mucosa was cut off above the run-around suture. There was very little bleeding and there has been no incontinence since. The cautery, bed rest and application of cold, with mechanical measures, may cure in moderate cases of prolapse. A cork disk on the retention catheter, pressed against the meatus, may aid in overcoming the tendency to prolapse. Ingerslev advocates a cotton tampon in the vagina. The cautery is liable to lead to stenosis later. In conclusion, Schmidt warns of the importance of the silk thread in the distal urethral mucosa on each side. Traction on them prevents the prolapsed mucosa from retracting, as occurred in Guersant's case. He describes further the Singer, Emmet and Kleinwächter technics.

Papillomas of Kidney Pelvis.—Hryntschak discusses the clinical picture and the pathologic anatomy of a case in a man of 39, with illustrations of the kidney; also in thirty-five cases of probably, and of six of certainly benign character, and of twenty-seven positively malignant cases of renal pelvis papillomas. Nephrectomy is the only treatment, and the patient should be supervised with the cystoscope for a full year afterward.

Recurrences After Prostatectomy.—Blum relates that after an interval of nine years free from symptoms following radical suprapubic prostatectomy, the man of 68 had to return to the systematic use of the catheter until a second suprapubic operation relieved him anew. Blum emphasizes that what we call the surgical capsule of the prostate is in reality the squeezed-flat, normal prostate, and that this may develop an adenoma again as well as at first. His case and about twenty similar cases he summarizes from the literature confirm the necessity for excising with the hypertrophied prostate the overhanging mucosa and every minutest scrap of adenoma tissue left after the enucleation. Supervision should be maintained for ten years.

Ischiorectal Prostatectomy.—Orth compares the mortality of from 10 to 22 per cent. with suprapubic prostatectomy and of 8 or 9 per cent. with the perineal, to the 3 or 4.7 per cent. of the ischiorectal method according to Voelcker, and expa-

tiates on the ample oversight afforded by the latter, with its other advantages, especially the free drainage at the lowest point. He reports from Voelcker's service its application in four cases of cancer in the prostate. In three there has been no sign of recurrence since the operation, the intervals up to one year. The shriveling with the atrophy of the prostate sometimes induces retention as with hypertrophy, and this ischiorectal operation in such cases usually showed that attempts at nonoperative stretching could not possibly have been successful. He refers to Voelcker's publications for the technic, saying it is the prostatectomy of the future. The rectum was injured only in one of the seventy-nine cases in which it has been applied in the service; this compelled completing the operation from the front.

Zentralblatt für Chirurgie, Leipzig

Aug. 21, 1920, **47**, No. 34

*Operations for Renal Calculus. G. Marwedel.—p. 1034.
Retroperitoneal Access to Deep Abscess. Pribram.—p. 1036.
Simple Method of Fastening a Catheter. J. Stickmann.—p. 1039.

Operations for Renal Calculus.—Marwedel states that in the case of large stones, to remove which the incision may have to be extended from the pelvis into the kidney proper, pyelotomy on the anterior side of the pelvis is to be preferred. After removal of the stone he introduces a small closed forceps into the pelvis and passes it through the parenchyma of the kidney until the tip appears on the convexity of the kidney, and with this he draws a fenestrated drainage tube down into the pelvis.

Zentralblatt für Gynäkologie, Leipzig

Aug. 14, 1920, **44**, No. 33

*Tuberculosis of the Female Genital Organs. Bauereisen.—p. 905.
*Endometritis Post Abortum and Uterine Hemorrhages. Lahm.—p. 914.
"Relation of the Corpus Luteum to Menstruation." Frantál.—p. 918.

Aug. 21, 1920, **44**, No. 34

Oxyurids in the Female Genital Organs. F. Klee.—p. 939.
Experiences with Twilight Sleep. W. Schmitt.—p. 941.
Adenomyoma of Posterior Wall of Vagina. Hinterstoisser.—p. 947.

Experimental Research on Primary Tuberculosis of the Female Genital Organs.—Bauereisen injected 0.2 gm. of a bovine tubercle bacillus emulsion through an abdominal incision into the seminal vesicles of four male guinea-pigs. A severe tuberculosis of the seminal vesicles, the prostate and the vas deferens developed, which extended into the epididymis, by way of the lymphatics. Tubercle bacilli were found in the bladder urine of four of the animals. There were tuberculous nodules in the peritoneum, liver, spleen and lungs. Of eleven healthy female guinea-pigs laparotomy was performed on four and the cornua uteri ligated and divided. The other seven were left intact. After the wounds of those operated on had healed, the males and females were put together. Five weeks later seven of the females were killed. In four instances a typical tuberculosis of the vaginal mucosa had developed; twice an extensive tuberculosis of the cornua uteri was noted. As to direct infection of the embryo, the results were negative. However, bacilli, together with infiltration, were found in the liver of one embryo; also primary tuberculosis of the vagina, but as acid-fast, that is, tubercle bacilli, could not be demonstrated, Bauereisen thinks the condition must be explained by hematogenic infection of the embryo by the mother.

Endometritis Post Abortum and Uterine Hemorrhage.—Lahm states that the investigations of recent years on uterine hemorrhages have sought to establish the causal connection between the ovaries and the uterine mucosa in both physiologic and pathologic conditions. Hemorrhages following abortion or incomplete expulsion of the placenta are the material that should be studied to reach definite conclusions as to causal relations. He has found not infrequently in cases of hyperplasia mucosae uteri in mature women inclusions in the uterine mucosa, which presented morphologically the appearance of remnants of gestation products, and he endeavors to show that endometritis post abortum is not only the cause of the well-known metrorrhagic hemorrhages but also for the frequent hyperplasia of the endometrium following interruption of a pregnancy. It may even exert an inhibiting influence on the ripening of the follicles in the ovaries. In the latter case the stimulus would pass, not from the ovary to the uterine mucosa, but exactly the reverse.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

June 19, 1920, **1**, No. 25

Changes in Energy During Movement. J. H. O. Reijs.—p. 2265.
*Melanosarcoma of Conjunctiva. L. K. Wolff and Deelman.—p. 2275.
New Terms in Medical Language. J. van der Hoeve.—p. 2282.
Goiter with Total Ophthalmoplegia. M. den Boer.—p. 2284.
Hyperesthesia in Lethargic Encephalitis. H. J. Kruisinga.—p. 2286.

Sarcoma of the Conjunctiva.—A woman in the thirties had had for ten years a pigmented patch on the temporal conjunctiva. Then it rapidly developed into a melanosarcoma. This was removed, and prophylactic roentgen-ray exposures were given to a total of 16 H units with 5 mm. aluminum filter. The functioning of the eye was not impaired and there were no disturbances of any kind for more than a year. Then pigment began to gather at the old site of the tumor. There was nothing to suggest a tumor, about this patch, but as its malignant nature could not be disproved, the eyeball was enucleated. The microscope showed a structure like the preceding sarcoma, as also in a nodule removed from the cheek, near the left eye, which developed a few months later. The important features of the case are (1) the failure of the roentgen-ray treatment to ward off recurrence, and (2) the fact that the roentgen exposures did not damage the eye in the least either in function or structure; nothing could be detected with the microscope to indicate the slightest harm from the course. In Axenfeld's glioma cases, given roentgen-ray treatment, cataract developed thereafter in the entire group, in some as early as in twelve or eighteen months. Conjunctival sarcomas generally grow outward and not into the depths, while they seem to be prone to late metastasis and the recurrence may not present any of the clinical characteristics of a tumor.

Norsk Magazin for Lægevidenskaben, Christiania

October, 1920, **81**, No. 10

*Diagnosis of Disease of Internal Ear. F. Leegaard.—p. 961.
Shoulder Disabled by Unsuspected Suhdeltoid Calcified and Ossified Bursitis. O. Usland.—p. 980.
Dakin's Fluid with Wound Diphtheria. K. Haugseth.—p. 994.
*Hereditary Mental and Skin Anomalies. J. Henrichs.—p. 996.

Internal Ear Disease.—Leegaard says that circumscribed labyrinthitis requires only enough of an operation to insure free escape for the secretions, and diffuse labyrinthitis, only when it is suppurative. Serous diffuse otitis calls merely for rest in every respect. The signs of the suppurative diffuse form are a stormy beginning with vestibular symptoms, vomiting, nystagmus, subjective noises, rapid, complete deafness, loss of reacting power from the vestibular apparatus, sometimes fever, and the discovery of a fistula from which pus is oozing. The physician must be guided by individual conditions in steering between the Scylla and Charybdis of conservative and operative treatment.

Hereditary Mental Disease and Ichthyosis.—Henrichs gives the genealogic trees of seven families in which an inherited taint manifests itself in idiocy and ichthyosis in different members of each generation and sometimes both in one person. The records show from eight to sixteen members in each family thus affected in the course of four or five generations. He discusses the mechanism of this hereditary taint, being inclined to incriminate the endocrine system and the thyroid in particular.

Ugeskrift for Læger, Copenhagen

Sept. 16, 1920, **82**, No. 38

*Fat Infiltration of Liver. E. Begtrup.—p. 1199.
Recovery from Meningococcus Sepsis; Two Cases. S. Kiær.—p. 1204.

Fat Infiltration of the Liver.—Begtrup is prosector, and he has noted that persons do not die of fat infiltration of the liver. This seems to be capable of retrogression. In the five years before 1916, he found fat infiltration of the liver in from 18 to 23.5 per cent. of the cadavers, but since then only in 4.5 to 6.2 per cent. The proportion of cases of cirrhosis of the liver has shown no such decline, the range being only from 6 to 4.9 per cent.

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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, NO. 25 CHICAGO, ILLINOIS DECEMBER 18, 1920

ANTHRAX IN ANIMAL (HORSE) HAIR

THE MODERN INDUSTRIAL AND PUBLIC HEALTH MENACE

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NEW YORK

During the World War it was found that shaving brushes manufactured of horsehair contained the germs (spores) of a most fatal disease, and through this source a number of persons were inoculated with anthrax. This led to a careful investigation by the department of health of the animal hair used in brush manufacture. It was found in frequent instances, particularly with horsehair that had been imported, that hair cloth, hair braid and various kinds of brushes, especially toilet brushes (in the majority of instances shaving brushes) made from this material, were contaminated with dirt containing the spores of anthrax.

In New York City in the last seventeen months there have been reported to the division of industrial hygiene of the department of health thirty-four cases of human anthrax, of which eleven have been fatal. The accompanying table indicates the sources of danger from this disease. The table presents in chronological order the thirty-four cases of anthrax occurring in New York City during 1919 and 1920, a period of one year and five months, and shows briefly the name, age, sex, date of occurrence, source of infection and result.

A campaign of education of those who are engaged in the manufacture of brushes, particularly those using horsehair, was undertaken in order to secure general cooperation in an endeavor to annihilate this modern industrial and public health menace at its source. It was little appreciated how dangerous it is to handle horsehair, as workmen who had been at a trade for long periods and not experiencing such results were loath to believe that there could be danger. The appearance of case after case brought this fact home to employer and employee, as well as to the public health officials. After a careful study of this matter, the New York City Department of Health adopted the subjoined statute:

At a meeting of the Board of Health of the Department of Health of the City of New York, held in the said city on the 16th day of June, 1920, the following resolution was adopted:

SPECIAL REGULATIONS

Resolved, That Article 12 of the Sanitary Code be amended by adding thereto a new section to be known as Section 230 and to read as follows:

Sec. 230. *The manufacture and sale of hair brushes and hair cloth.*—No person shall use in the manufacture of brushes or cloth, any animal hair which has not been sterilized by a process prescribed or approved by the Board of Health nor shall any person bring into, or offer for sale, sell, or deliver in the City of New York, any brush or cloth containing animal hair unless the same shall have been so sterilized.

It shall be the duty of the manufacturer of shaving brushes, tooth brushes, hair brushes, nail brushes, or other toilet brushes intended for human use, to cause his name or trade mark, the place of manufacture, and the word STERILIZED to be permanently, clearly and legibly painted or branded upon every such brush before offering for sale, selling, or delivering the same in the City of New York. Provided, however, the word STERILIZED shall not be painted or branded upon any such brush unless the animal hair used in the manufacture thereof shall have been sterilized by a process prescribed or approved by the Board of Health.

No person shall sell, offer for sale, or deliver, or have in his possession with intent to sell, offer for sale, or deliver in the City of New York, any shaving brush, tooth brush, hair brush, nail brush, or other toilet brush intended for human use, containing animal hair, unless the name or trade mark of the manufacturer, place of manufacture, and the word STERILIZED are permanently, clearly and legibly painted or branded thereon.

The provisions of this section shall take effect the 1st day of July, 1920, but shall not apply to brushes in stock on the 16th day of June, 1920, in the hands of dealers which have not been labeled or branded, as hereinbefore required.

WHEREAS, This board has adopted Section 230 of the Sanitary Code relating to the manufacture and sale of hair brushes and hair cloth and the protection of the public against anthrax; and

WHEREAS, The provisions of said section require all hair used in the manufacture of brushes and cloth to be sterilized by a process prescribed or approved by this board; and

WHEREAS, An investigation conducted by the Department of Health indicates that so far as can be ascertained at this time only two processes have been found to be effective and adequate to properly sterilize such hair and to render the same free from anthrax bacteria and spores; and

WHEREAS, The two processes referred to are as follows, to wit:

1. Boiling the hair in water maintained at a temperature of 212 F. for a period of at least three hours.
2. The placing of the hair in an autoclave in which a 10-inch vacuum is produced. Live steam to be then turned on and kept at 15 pounds pressure for a period of three hours; be it therefore

Resolved, That the following processes for the sterilization of hair to be used in the manufacture of brushes or cloth and relating to the provisions of Section 230 of the Sanitary Code, be and the same are hereby approved, to wit:

1. Boiling the hair in water maintained at a temperature of 212 F. for a period of at least three hours.
2. The placing of the hair in an autoclave in which a 10-inch vacuum is produced. Live steam to be then turned on and kept at 15 pounds pressure for a period of three hours.

It was anticipated that a regulation of this character, if not understood by those interested, would materially injure the brush trade which, owing to general labor unrest and upward tendency of prices, was having its own share of trouble. Regulations were drawn and placed in effect after a conference with brush manufacturers, and a number of visits were made to factories and special talks given to the workmen in these establishments; in addition, literature was printed and was disseminated in channels that would reassure, while informing without causing confusion.

A visit was made to several of the brush men's conferences (Troy and Northampton), and correspondence was held with neighboring states similarly interested in this unpleasant condition. The regulation was given publicity through the newspapers, each case of human anthrax as it appeared being specially featured. This public health feature of the work was well received, and aid was given freely by all concerned, even by

those hard-headed, experienced workmen who are at times so persistent in continuing a practice simply from habit, and who will not change or alter their methods until imminent dangers squarely placed before them make them alter their usual methods.

NATURE OF ANTHRAX

Primarily, anthrax is an animal disease, frequently transmitted to man, not in the sense that the animal is the host, but that the animal is its victim, from which by accident man receives the infection. Naturally, then, the source of anthrax in man is most often looked for in the products of the animal—in hides, wool or hair. Anthrax is widespread, affecting cattle, sheep and horses most often, and less frequently men. We are informed that all herbivora are liable to anthrax, but that carnivora enjoy relative immunity. Domestic animals, cats, dogs and pigs often fall victims to anthrax, probably from their intimate contact with the soil or from eating infected meat. Experiments in the laboratory demonstrate that rabbits, mice and guinea-pigs are peculiarly susceptible to anthrax.

Anthrax in medical history is an ancient affair, and from the earliest times has been considered a scourge to both men and beasts. Today anthrax is being disseminated through a source but little suspected by the general public and especially by the medical profession. Brushes used in toilet and domestic use, as well as hair cloth and hair braid, have recently in New York City caused a number of cases of this disease.

SOURCE OF INFECTION

Originally, anthrax was probably telluric; but, rising to the surface, it infected pasture lands and through grazing, was taken up by animals and disseminated. Lands rich in organic matter seem best suited for the growth of anthrax. Fields may be contaminated through hay or seed from infected areas or from carcasses of animals not deeply buried, the ground water probably carrying the organisms of anthrax to the surface. According to Kitasato, sporulation in the ground is incomplete at from 18 to 20 inches beneath the surface of the soil.

Anthrax in an infected animal may be disseminated through the urine, feces and other body discharges. Arntz found anthrax organisms in the saliva of an infected horse, and others have found the organisms in cow's milk. Anthrax may be disseminated in the excrement of carrion birds, which may contain anthrax spores. Sucking insects, especially flies, may similarly disseminate the disease.

No doubt the greatest danger from anthrax lurks in hides; and in this particular industry the menace is well known and guarded against, as evidenced by the fact that millions make or wear gloves, shoes and articles from hides, such as traveling bags, but comparatively few contract anthrax. In both American and English investigations, no infection has been reported among the thousands of workers in the glove and shoe industries.

A recent menace, which about a year and a half ago attracted our attention, was the dissemination of anthrax through the handling or use of brushes and cloth made of horsehair. The cheap horsehair shaving brush has been the principal offender in this regard, but other brushes with contaminated hair have occasioned a number of cases, and a new horsehair brush of any kind used for toilet purposes should be sterilized carefully before it is used.

Direct contact with the infected animal is not essential, as infection may occur through dirt or dust contaminated with the anthrax spore or germ.

Manufacturers of hog bristle brushes are of the opinion that hog bristles rarely, if ever, disseminate anthrax. This may be true, as the method of collecting, treating and preparing hog bristles for toilet brushes probably removes this contamination; but the material so removed, unless sterilized, may be the means of seeding places for the future infection of either man or beast.

Every object to which anthrax spores can be attached becomes a source of danger and is liable to cause the spread of this disease at any time; therefore it is most essential that this menace should be known and anticipated by all.

METHOD OF PREVENTION

Animal hair is usually purchased by weight, and in the original packages imported there is considerable foreign material—dirt. This may be the means of disseminating the disease unless the dirt is destroyed when the hair is taken from the container and the container sterilized or destroyed by fire.

Shaving brushes made of horsehair or a mixture containing horsehair have caused eighteen of the thirty-four cases, with nine fatalities—a mortality of 50 per cent. There was laboratory confirmation in every instance.

Numerous samples of horsehair and brushes made of horsehair—especially shaving brushes made of horsehair—have been tested and have been found in 80 per cent. of the cases to be positively contaminated with the spores of anthrax. This indicates conclusively that horsehair used in brush manufacture, especially shaving brushes unsterilized or improperly sterilized, is a positive menace.

In our experience the use of a new shaving brush, made of horsehair or a mixture containing horsehair, in the home or in the public barber shop, is a matter calling for prompt and drastic action by our public health authorities. Suggestion has been made that all shaving brushes made of horsehair should be excluded from sale and their future manufacture interdicted, and that horsehair used in making other brushes should in every such instance be carefully sterilized. Exclusion of such contaminated material from commerce is difficult or impossible. Furthermore, such exclusion does not solve the problem but simply passes it over to others elsewhere who, uninformed or ignorant, would be unnecessarily exposed. Anthrax spores resist all the ordinary disinfectants. They have been found active after passing through tanning and bleaching solutions. This gives rise to a grave public health menace. Seymour-Jones uses mercuric chlorid, 1:2,500, with 1 per cent. formic acid. Van Schattenfroh suggests forty-eight hours' exposure to 2 per cent. hydrochloric acid with 10 per cent. sodium chlorid. Our laboratory informs us that these measures will destroy spores; but until they are proved by extensive use, they cannot be pronounced absolutely safe.

Anthrax prevention is a matter of cleanliness. Prophylaxis is therefore the keynote of success. Manufacturers should know that the animal product entering into their goods must be cleaned and that the material removed from the hide, hoof or hair (wool) must be sterilized in order to prevent contaminating nearby grounds and, through contamination of insects, as the fly and the mosquito, pass the disease on to man.

Any object coming into contact with the spores may cause the disease. As one writer tersely puts it, "Against an enemy so tenacious and so destructive, the united efforts of all should be directed to prevent its dissemination." We are concerned chiefly with the protection of the industrial worker and the citizen using these manufactured products. The eradication of anthrax involves difficulties that are practically insurmountable. Our efforts must therefore be assiduous and ceaseless. The chief means are education, supervision and regulation. Departments of health can do much and will be greatly aided in their efforts if the public will heed the advice given.

OCCURRENCE OF ANTHRAX

Age	Sex*	Date of Occurrence	Source of Infection	Result
79	♂	2/19	Shaving brush	Died
20	♂	3/19	Shaving brush	Died
57	♂	3/19	Brushes during manufacturing	Died
46	♂	4/19	Shaving brush	Died
45	♂	7/19	Shaving brush	Died
18	♂	8/19	Hair brush	Recovered
47	♂	10/19	Shaving brush	Recovered
34	♂	11/19	Shaving brush	Died
59	♂	11/19	Shaving brush	Died
21	♀	11/19	Hair during manufacture of shaving brushes	Recovered
24	♂	11/19	Hides	Recovered
45	♂	12/19	Shaving brush	Died
29	♂	12/19	Hides	Recovered
43	♂	12/19	Hides	Died
32	♂	1/20	Hides	Recovered
48	♂	1/20	Shaving brush	Died
68	♂	1/20	Hides	Recovered
16	♀	1/20	Table dust brush	Recovered
62	♂	2/20	Brush during manufacturing	Recovered
31	♂	3/20	Shaving brush	Recovered
27	♂	3/20	Shaving brush	Recovered
45	♂	3/20	Hides	Recovered
18	♂	3/20	Hides	Recovered
33	♂	3/20	Shaving brush	Recovered
48	♂	4/20	Hides	Recovered
36	♀	3/20	Hair cloth and braid during making of hats	Recovered
15	♂	6/20	Making brushes from horse hair in school	Recovered
24	♂	7/20	Shaving brush	Recovered
37	♂	7/20	Shaving brush	Recovered
43	♂	8/20	Shaving brush	Died
44	♂	8/20	Not determined	Recovered
16	♂	8/20	Shaving brush	Recovered
14	♂	9/20	Bite of insect ?	Recovered
46	♂	9/20	Shaving brush	Recovered

RECAPITULATION

Sources of Infection	Died	Recovered	Total
From use of shaving brush	9	9	18
From manufacture of shaving brush	1	2	3
From using animal hair	0	1	1
From handling hides†	1	7	8
From use of table dusting brush (new)	0	1	1
From manufacture of women's hats (hair cloth and hair braid	0	1	1
From manufacturing hair brushes	0	1	1
From unknown cause (mosquito?)	0	1	1
Aggregate	11	23	34

* In this column, male is indicated by ♂, and female by ♀.
† As there are no tanneries in New York City, we exclude these from our consideration.

In the industries, especially where animal products are handled, a realization of this menace should be prominent in the minds of the medical and lay staff. The necessity for prompt treatment was never more imperative. In every shop where materials liable to carry infection are handled, the workers should be examined at stated intervals. Every skin disturbance particularly should be promptly reported and examined and, if possible, laboratory confirmation should be secured. Facilities for early diagnosis and early treatment must be provided.

In the prevention of anthrax, nothing is more important than to have the workmen provided with and made to use proper appliances, as gloves, face masks and overalls, which should be cleaned after use. There should be mandatory regulations for the purpose of forcing employers to furnish, and workmen to use, these protective devices. Recalcitrants should be heavily disciplined.

Physicians should be on the alert when called to attend any workman whose occupation has to do in any way with animal products, especially animal hair, and whose disease may be anthrax, and should promptly report these cases, as required by law. The earlier the diagnosis, the greater the opportunity for success in saving the life of the patient and the prevention of the dissemination of the disease to others. One fact that is of interest is the failure on the part of physicians to recognize the disease. None of our thirty-four cases were detected by the family physician. The actual condition was not recognized until the patient was removed to a hospital or until the laboratory reported after the patient's death.

RECOMMENDATIONS BY NEW YORK STATE DEPARTMENT OF LABOR

The New York State Department of Labor, which handles this matter in New York State, has offered these recommendations regarding anthrax:

(*a*) Every physician should report every case of anthrax to the state industrial commission.

(*b*) In every establishment where articles are liable to be infected with anthrax, a competent physician should be employed.

(*c*) Special provision should be made for the protection of employees.

(*d*) Every employee should be required to make use of these preventive means. It should be the duty of the foreman to enforce the use of such by employees.

(*e*) Cooperation with federal, state and municipal officials should be maintained, and all in any way connected with material liable to be contaminated must be made aware of the menace.

RULES FOR EMPLOYEES

Every employee should be informed of the danger of anthrax and the necessity of avoiding infection.

Employees should wear protective clothing and use dressing rooms, wash rooms and lunch rooms according to hygienic rules regarding cleanliness.

No food should be taken into the work rooms and no food taken until the workman has washed up and changed to other clothing.

All slight injuries, as well as severe hurts, should be promptly attended by a physician. The advice of the physician should be followed and the case observed for at least four days, laboratory tests being made early for confirmation.

Every one, employer, employee and the public generally, should cooperate in enforcing the regulations regarding the prevention of this very fatal disease.

GENERAL RULES FOR THE PREVENTION OF ANTHRAX

In factories, warehouses and places where horsehair is handled or stored, the floors should be made of cement or so waterproofed as to be easily washed and kept clean. The walls should be whitewashed. Should a case of anthrax appear, the floor should be cleaned, the scrubbing being done under expert supervision, and the washings sterilized by boiling or burning. The tables, work benches and boxes coming in contact with infected materials should be washed as often as necessary with a disinfecting solution, hot sal soda or hot cresol.

Dressing rooms, wash rooms and lunch rooms should be provided for employees. The dressing room should have individual lockers so that the worker may keep his street clothes separate from this contamination. The overalls should be furnished and washed after use. The wash room should be furnished with hot and cold water, soap, individual towels and individual drinking cups or a small stream fountain.

No food should be allowed in the work room.

Where dust is evolved, special ventilating devices are essential and baffling masks should be worn by the employee. A simple mask which is inexpensive is a thin layer of cotton with one or two layers of cheesecloth on each side, and tapes from each corner of the square mask tied about the neck, one above the ears and the other below. After use, these should be burned.

Publicity given through posters in different languages, with the disease itself pictured, preferably in colors, should be posted throughout all places where these animal products are handled, from the pier to the workshop, warnings of the dangers and methods of avoiding infection as well as the public regulations being made a conspicuous part of this poster.

The employer should be held responsible for the observance of regulations to prevent anthrax in his warehouse or shop.

CONCLUSION

Might it not be well to stop the sale or importation of horsehair shaving brushes, and require all brush makers using horsehair to sterilize it before using?

RELATION OF CONTACT WITH TUBERCLE BACILLUS TO DEVELOPMENT OF TUBERCULOSIS IN ADULTS *

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By previous study, I [1] have found that dust containing bed lint collected from the wards, and from window sills and specimen jars from the mortuary where necropsies on tuberculous patients are performed on the average of one every day, contained living tubercle bacilli; also that guinea-pigs placed in sterile cages and kept in the mortuary contracted pulmonary tuberculosis.

The present report of investigation consists of further studies along these lines. These were carried on in order to determine to what extent the tubercle bacilli are scattered around a sanatorium caring for a large number of advanced cases of pulmonary tuberculosis, and to what degree physicians, nurses and other attendants come in contact with the micro-organism. Since this work has been in progress, the researches of Brown, Petroff and Pesquera [2] and of Cumming [3] have given us valuable information on this subject, and the work that I report is in part a repetition of that recently published by these observers. I feel, however, that concerning a subject so important, certain confirmatory observations may not be out of place.

In each of the experiments reported here, the reproduction of the disease in a guinea-pig has been the deciding factor; sixty pigs in all were used. The patients tested were either moderately or far advanced, positive sputum cases of tuberculosis. The objects and conditions studied comprised: droplets from coughing patients; saliva; gauze used by coughing patients to cover the mouth; pillow cases; and the infectiousness of patients' hands, urine and eating utensils, and of magazine covers and door-knobs frequently used by patients.

RESULTS OF EXPERIMENTS

Droplets from Coughing Patients.—I held sterile Petri dishes 15 inches from the mouth of patients, who were instructed to cough from twelve to fifteen times. The dishes were then closed, protected from light and carried to the laboratory, where they were washed with 5 c.c. of sterile physiologic sodium chlorid solution, and the entire solution was injected subcutaneously into the left groin of guinea-pigs. For each of the ten patients tested, one guinea-pig was injected, May 1, 1919. Seven pigs, August 6, were found at necropsy to be negative for tuberculosis. September 1, the remaining three pigs, which in the meantime had developed symptoms of the disease, were also found at necropsy to have generalized tuberculosis. March 26, 1920, the experiment was repeated with slight changes. The Petri dishes were held 6 inches from the mouth of four patients, and four pigs were injected intraperitoneally. One pig was killed, May 17, and found to have peritoneal tuberculosis. Two pigs died, May 6, and at necropsy showed tuberculosis of the lungs liver, spleen and peritoneum. One pig was killed, June 26, and found to be entirely negative for tuberculosis.

Saliva.—To test the infectiousness of saliva, the saliva from five patients was collected in separate sterile Petri dishes and injected into five pigs, Dec. 31, 1919. Two of these pigs were killed, Feb. 2, 1920, and showed generalized tuberculosis; examination of the remaining three, killed, February 28, showed one to be negative and the other two to have generalized tuberculosis.

Gauze Used by Patients to Cover the Mouth when Coughing.—Two pieces of gauze thus used were washed in sterile salt solution and the emulsion injected into two guinea-pigs, one subcutaneously and the other intraperitoneally, April 1, 1920. The subcutaneously injected animal died twelve days later, with the inguinal gland on the injected side in a condition of suppuration. A slide prepared from the pus from the gland showed the presence of tubercle bacilli. The other pig was killed, April 27, and found to have tuberculosis of the mesentery, spleen, liver and bronchial glands.

Pillow Cases.—The pillow slips that had been used twenty-four hours by bed patients were washed in sterile salt solution. The wash water was centrifugalized and the sediment injected intraperitoneally into four pigs, March 26, 1920, one animal being used for each pillow case. The pigs were killed and examined with these results: April 27, one pig, negative; April 29, one pig, generalized tuberculosis; May 7, one pig, peritoneal and splenic tuberculosis, and May 12, one pig, negative.

Infectiousness of Patients' Hands.—Under my direction, five patients were instructed to rinse their hands with sterile salt solution into sterile Petri dishes. One guinea-pig was injected, Jan. 6, 1920, with 10 c.c. of the wash water for each of the five patients. One pig died the following day, another, February 28, and one, March 16, all three being negative for tuberculosis. Necropsies performed on the remaining two, March 6 and March 14, respectively, disclosed generalized tuberculosis.

Urine.—In order to test whether or not virulent tubercle bacilli are excreted in the urine in moderately and far advanced cases of tuberculosis, urine was collected in sterile receptacles from ten male patients (all negative for genito-urinary tuberculosis), and 50 c.c. of each specimen centrifugalized for thirty minutes at high speed. A small amount of the sediment was then injected into the left groin of a guinea-pig, one pig for each patient, Oct. 18, 1919. Eight of the ten animals were killed, December 30, and examined for tuberculosis, but found to be negative; one, killed, November 25, and one, November 29, also was negative. The experiment was repeated, Dec. 3, 1919, with ten guinea-pigs. Two were killed, December 28; two, Jan. 3, 1920; one, January 8; three, January 15; one, January 22, and one, February 8. These were all uniformly negative for tuberculosis.

Eating Utensils.—Spoons that had been used by patients (open cases of tuberculosis) were collected immediately after a meal and washed with 1 per cent. sodium hydroxid. The wash water was then neutralized with half normal hydrochloric acid and centrifugalized. The sediment was

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1. Rogers, J. B.: Studies on the Viability of the Tubercle Bacillus, Am. J. Pub. Health **10**: 345 (April) 1920.
2. Brown, Petroff and Pesquera: Etiological Studies in Tuberculosis, Am. Rev. Tuberc. **3**: 621 (Dec.) 1919.
3. Cumming, J. G.: Can the Tuberculosis Transmission Rate Be Reduced? J. A. M. A. **74**: 1072 (April 17) 1920.

washed with sterile physiologic sodium chlorid solution and injected into four guinea-pigs intraperitoneally, June 1, 1920. One pig died, July 15, and was found to be negative for tuberculosis. One died, July 27, and showed tuberculosis of the lungs, mesentery and tracheobronchial glands. Two pigs were killed, July 31; one showed tuberculosis of the omentum, liver and lungs, and enlargement of the tracheobronchial glands; the other, tuberculosis of the liver and omentum, with slight enlargement of the tracheobronchial glands.

Magazine Covers.—Magazine covers, very much soiled from use, were collected from the open wards and washed with 1 per cent. sodium hydroxid. After fifteen minutes the wash water was neutralized with half normal hydrochloric acid and centrifugalized. The sediment was injected intraperitoneally into three guinea-pigs, May 31. One pig was killed accidentally the following day. Two pigs were killed, July 31; one showed tuberculosis of the liver, omentum and spleen, with a very slight enlargement of the tracheobronchial glands; the other, tuberculosis of the lungs, spleen, liver and tracheobronchial glands.

Door-Knobs.—In order to test whether an object much handled by patients with open tuberculosis becomes contaminated, the door-knob on the door leading into the patients' dining room was washed with sterile sodium chlorid solution and the wash water collected into a sterile beaker. (The knob is handled by approximately 100 patients every day.) The washings were centrifugalized at high speed for several minutes, and the sediment was injected intraperitoneally into three guinea-pigs, April 12, 1920. One pig died, April 29, and one, May 5. Necropsies on these failed to reveal any evidence of tuberculous infection. One died, April 30, and showed numerous miliary tubercles in the omentum.

COMMENTARY

As a result of our experiments, we have found that such objects as gauze used to cover the mouth when coughing, pillow cases used twenty-four hours, patients' hands, spoons used by patients, magazine covers picked up indiscriminately from the wards, and door-knobs frequently handled by patients are contaminated with living, virulent tubercle bacilli.

Patients with open tuberculosis frequently emit infectious particles when coughing. If these particles are collected 15 inches from the mouth of the patients, 35 per cent. of a group of guinea-pigs can be infected; if collected at a distance of 6 inches, the percentage increases to 75 per cent. Such particles, no doubt, are inhaled by persons in close proximity to the patients.

The saliva in open cases of tuberculosis usually contains living tubercle bacilli.

The sedimented urine in twenty open pulmonary tuberculosis cases negative for genito-urinary tuberculosis failed to infect any of the twenty inoculated guinea-pigs.

Physicians, nurses and other attendants caring for patients with open tuberculosis in institutions are constantly associated with the virus of tuberculosis; from reliable statistics, however, as shown by the studies of Ravenel,[4] Pottenger [5] and Fishberg,[6] we know that they do not develop the disease more than the population at large. In either case the necropsy findings by Opie,[7] Adami [8] and Naegeli [8] show that tubercle bacillus infections are virtually universal, while, on the other hand, only approximately less than 3 per cent. of the people develop clinical tuberculosis. Out of 240 nurses employed at the Cincinnati Tuberculosis Sanatorium, only three developed tuberculosis, and one diagnosed as tuberculous after working at the sanatorium for two years gave a history of previous infection. In fact, many nurses who come here as closed cases of tuberculosis seem to improve under the sanatorium regimen. These statistics were taken from a period covering seven years.

4. Ravenel, M. P.: Present Views in Respect to Modes and Periods of Infection in Tuberculosis, J. A. M. A. **66**: 613 (Feb. 26) 1916.
5. Pottenger, F. M.: Clinical Tuberculosis, St. Louis, C. V. Mosby Company, **2**: 519, 1917.
6. Fishberg, Maurice: Pulmonary Tuberculosis, Philadelphia, Lea & Febiger, 1916, p. 109.
7. Opie, E. L.: The Focal Pulmonary Tuberculosis of Children and Adults, J. Exper. Med., **25**: 855 (June) 1917.
8. Cited by Fishberg (Footnote 6), p. 54.

CONCLUSIONS

Aside from the mere presence of the organism in the body, other factors are necessary for the development of clinical tuberculosis. What the factors are has not as yet been clearly shown. In all probability there must be a lowering of the individual resistive power; whether this is congenital or acquired, whether purely local or constitutional, resulting from pathologic states or physical abnormalities, is still a question.

At all events, we may safely assume that the elimination of clinical tuberculosis from adults will largely depend on the establishment of such living conditions as will keep up to normal those powers of individual resistance.

TUBERCULOUS MENINGITIS

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For the early recognition of tuberculous meningitis, it is necessary to have a clear conception of the constitutional as well as the ocular symptoms; and this is difficult to get from the literature extant.

It is very essential to coordinate the ocular and the general symptoms to arrive at an early diagnosis. This is better accomplished by the oculist and the general practitioner cooperating; but in the absence of such cooperation it is all the more important for both sets of symptoms to be understood by the single medical attendant.

Metzner [1] considers that tuberculous or basilar meningitis is always a secondary affection, and that the virus may be carried to the meninges from tuberculous glands, bones and joints, or more frequently from ear infection; that acute infectious diseases lay the foundation for the tuberculous process, and that tuberculous meningitis is most often found in children. There is a short prodromal stage, with more or less headache; vomiting, with pains in the chest and abdomen, loss of weight, drowsiness and impaired intelligence. In the second stage, involvement of the spinal cord is shown by tenderness along the spine or stiffness of the neck. The cranial nerves may now be involved, shown by ptosis of one or both upper lids, convergent or divergent strabismus, involuntary lateral movements of the globes, and inequality of the pupils, with light reaction sluggish or absent. The reflexes are usually exaggerated at first, later diminished, and finally lost. The temperature may vary from 100 to 104 F. At death it may fall to 88 or rise to 106. The pulse is usually slow in the early stages, and later small and rapid. A primary focus, or tubercle bacilli in the cerebrospinal fluid, establishes the diagnosis. Metzner gives an illustrative case in a boy, aged 16 months, and says that the disease is probably always fatal. Necropsy in the case of this child revealed a plastic exudate covering the pia and at the base. In the latter situation it was most pronounced, measuring 3 mm. in thickness.

1. Metzner, A.: Tuberculous or Basilar Meningitis, with Case Report and Autopsy Findings, Indianapolis M. J. **18**: 191, 1915.

Nichols [2] states that tuberculous meningitis is secondary to a discoverable tuberculous lesion elsewhere, that it is due to the presence of tubercle bacilli in the pia or at the base, that typical miliary tubercles invade the meninges in either small foci or large areas, and that there is a mucilaginous exudate, with a very large amount of serum. Of the eye symptoms, he says that ocular palsies are especially common, but variable; that the sixth nerve is particularly susceptible, diplopia occurring from failure of one or both nerves; that nystagmus is a prominent symptom; that the pupils react sluggishly, undulate, and often dilate when light is thrown on the retina. Early in the disease the pupils are miotic, and later mydriatic. He further mentions double choked disk and tubercles of the choroid.

Hawthorne [3] points out the usual vague and indefinite character of the early symptoms in tuberculous meningitis, gradually increasing coma, with or without vomiting, being the only suggestion of a brain lesion. He then relates two cases of sudden onset, with localized palsies or convulsions, and observes: "There would seem to be some practical value in illustrations of the statement that a localized paralysis or a unilateral convulsive seizure may mean the clinical beginning of tuberculous meningitis." In the first illustrative case, in a boy of 10 years, the fundus oculi and the cerebrospinal fluid were negative during the stage of convulsions and paralyses; but later, severe headache, persistent vomiting, fever, and cellular elements in the cerebrospinal fluid made the diagnosis certain. In the second case, a baby boy of 19 months had sudden convulsions limited to the right side; remission for forty-eight hours; then a recurrence, with gradually developing signs of tuberculous meningitis, which were confirmed by postmortem findings.

The tenet that this disease is secondary to some primary tuberculous focus is subscribed to by Hawthorne, although he mentions the well known fact that it is not uncommon to find no cerebrospinal fluid change or tubercle bacilli. The brain symptom first noticed shows the arrival of the irritant through the blood stream, in the form of minute emboli. The infection gradually extends. An old quiescent focus may light up and spread.

Ocular paralysis may occur in pulmonary tuberculosis, and several weeks later, general tuberculous meningitis, showing first a limited infection, and later a spreading by continuity or contiguity of tissue.

Sauer [4] writes along the same lines, supporting his contention of the diagnostic value of localized paralysis as an early sign of tuberculous meningitis, by two illustrative cases.

Hickling [5] reports the case of an infant, aged 13 months, who, after two months of varying sickness with occasional convulsions, developed tuberculous meningitis. There was no optic neuritis, but the right pupil was widely dilated. There were clonic spasms, sudden vomiting, the night cries of meningitis, head pains, wasting, and death in two weeks.

Tuberculous meningitis in an infant, aged 10 weeks, is recorded by Sherman.[6] There were mild convulsions and dull mentality. Ptosis and mydriasis of the right eye developed on the third day, and both pupils reacted sluggishly.

Van der Bogert [7] asserts that tuberculous meningitis occasionally ends in recovery, reports the cure of a 3½ year old child in his practice, and refers to articles by seven other observers. Between 2½ and 3½ years of age, the child suffered from measles, whooping cough, and finally a "grippy" cold. Then typical signs of meningitis appeared and persisted for two months, when lumbar puncture was made for marked pressure symptoms. The spinal fluid gave a lymphocyte count of 45, and two typical tubercle bacilli. The turning point in the disease immediately followed lumbar puncture, and in six months the child was pronounced well, though excitable.

Browning [8] states that the tendency to the arrest of tuberculous processes is very slight in involvement of the meninges, but that enough cases of prolonged arrest or cures have been recorded to show that such termination is possible, though infrequent. He reports four cases that he classifies as cures. Although there were tuberculous foci, no laboratory proofs were given.

Meyers [9] gives a full and interesting study of 105 cases of tuberculous meningitis.

As my cases of tuberculous meningitis in children differ in no respect from those outlined above, none of them are here reported. A few adult cases of the type that is first seen by the ophthalmologist are now noted, rather than the advanced cases in which the diagnosis of the general disease has already been made by the internist, the ocular manifestations then being of interest rather than importance.

REPORT OF CASES

CASE 1.—A man, aged 31, referred by the late Dr. B. P. Anderson, who suggested meningeal involvement but desired to have the question of eye strain determined as the possible cause of a recently developed headache, had so far recovered from pulmonary tuberculosis as to be on the point of accepting a clerical position. Associated with the headache, which had been constant for five days, were pains in and about the eyes. Four days later the headache was even more severe, and there was projectile vomiting and slight hyperemia of the disks. By five days later diplopia, mydriasis of the right eye and miosis of the left had developed. In another two days the hyperemia of the retina and papilla were increased, the patient was dull and irritable by turns, and the vomiting continued. On the following day delirium developed. Coma, right miosis, left mydriasis, with ptosis of the left upper lid, and optic neuritis, without retinal hemorrhage or choked disk, supervened on the next day. Death occurred twenty-four hours later.

Soon afterward, Dr. Anderson wrote that in over forty years of practice, largely among tuberculous patients, he had never seen severe, persistent headache in such cases that was not the precursor of tuberculous meningitis.

CASE 2.—A man, aged 40, referred by Dr. A. G. Staunton because of blurred vision, and a diplopia which had appeared two days before but was gradually disappearing, had normal vision with correcting lenses. Six weeks later, following the excessive use of alcohol, the patient was again affected by diplopia and diminished vision, and also persistent headache. The sight and mentality steadily failed, the head was drawn to one side, and great restlessness developed. No marked ophthalmoscopic changes were observed by Dr. W. H. Crisp who, with Dr. Staunton, attended the patient in the last few

2. Nichols, C. L.: Tuberculous Meningitis, Long Island M. J. **11**: 271, 1917.
3. Hawthorne, C. O.: Localizing Brain Symptoms (Hemiplegia and Hemispasm) as Early Events in Tuberculous Meningitis, Brit. J. Child. Dis. **12**: 232, 1915.
4. Sauer, L. W.: Hemiparesis and Hemiplegia as Early Symptoms of Tuberculous Meningitis, Arch. Pediat. **31**: 902, 1914.
5. Hickling, G. H.: Case of Tuberculous Meningitis of Unusually Long Duration, Practitioner, London, **99**: 390 (Oct.) 1917.
6. Sherman, D. H.: Tuberculous Meningitis, New York M. J. **108**: 618 (Oct. 5) 1918.
7. Van der Bogert, Frank: Prognosis in Tuberculous Meningitis, Report of a Recovery, Arch. Pediat. **35**: 676, 1918.
8. Browning, C. C.: Report of Four Cases of Tuberculous Meningitis with Apparent Permanent Arrestment, Tr. Am. Climatol. A. **30**: 165, 1914.
9. Meyers, A. E.: A Study of 105 Cases of Tuberculous Meningitis, Am. J. Dis. Child. **9**: 427 (May) 1915.

weeks. Death occurred twelve weeks after the first appearance of diplopia and dimness of vision, and six weeks after their reappearance and the first onset of severe headache. As the patient was in Colorado for treatment for pulmonary tuberculosis, the diagnosis of tuberculous meningitis was made.

CASE 3.—A man, aged 26, referred by Dr. H. L. Fowler on account of failing vision for the previous two days, had vision of 10/120 in the right eye and 10/200 in the left eye. The optic disks were red, with obscure margins, and the retinal vessels were full and tortuous. The patient had been in Colorado for one and a half years because of pulmonary tuberculosis, for which he was being treated. The Wassermann test was negative. Two days after the first ophthalmic examination, the optic neuritis was more pronounced and the vision further reduced. A week later there was light perception only, severe headache and great restlessness. Death occurred a few days later from evident tuberculous meningitis.

CASE 4.—A man, aged about 45, was referred by Dr. G. L. Monson because of paralysis of the internal rectus and levator, and mydriasis of the left eye. The ophthalmoscopic examination was negative, but the patient was prostrated and complained of severe and unremitting headache. Later, typical signs of meningitis developed; and as the case was one of arrested pulmonary tuberculosis, the diagnosis of tuberculous meningitis was made and concurred in by all consultants. Death occurred within one week of the onset of the ocular symptoms.

CASE 5.—A man, aged 34, with arrested pulmonary tuberculosis, who was referred by the late Dr. W. C. Allen, and whose right membrana tympani ruptured spontaneously, had a slight discharge from the ear. The discharge ceased and reappeared alternately for five and one-half months, when the ear was dry and the patient felt well and hopeful. Three days later there was pain in the ear, the following day convulsions, and one day later the signs of meningitis localized on the right side, with extreme prostration. Death came on the next day. Necropsy disclosed the attic full of granulations, an abscess in the petrous portion of the temporal bone, and the right cerebral lobe bathed in pus, which was most abundant in the middle fossa.

COMMENT

As Colorado has long been a well known resort for sufferers from tuberculosis, the medical profession has naturally looked to Colorado physicians for contributions to the pathology, management and outcome of this dread disease. This expectancy has not been disappointed so far as the general workers in this field are concerned, as the literature on tuberculosis amply shows. Notable contributions have also been made by Coloradoans along the lines of ophthalmology and otolaryngology. But the fact that the disease is often checked or arrested under favoring climatic conditions, and is less likely to partake of the miliary form of tuberculosis in a state where living conditions are generally favorable, are probably the reasons that tuberculous involvement of the eye and brain is less often observed and reported by Colorado ophthalmologists than might be expected.

I have been struck by the great preponderance of tuberculous meningitis in adults as compared with children, and in men as compared with women, in my practice of twenty years in Colorado. When summoned early in the disease, it has been because the patient attributed the severe headache to eye strain, and sought relief through glasses; or dimness of vision had been the reason for the summons. Later, palsies of certain external ocular muscles or the levator, mydriasis, and blindness of one or both eyes, called for counsel from the ophthalmologist. The ophthalmoscopic findings were usually disappointing, even negative at first. As the disease progressed, hyperemia of the papilla or moderate edema of the disk and adjacent retina was often seen; but choked disk, with marked retinitis and occasional retinal hemorrhage, was only rarely observed. Tubercles of the choroid were never seen, though always searched for. The failure to find them may have been due to the inability to make frequent examinations with the electric ophthalmoscope, with which Marple [10] had such extraordinary success in finding choroidal tubercles in infants that he readily accepted Carpenter and Stephenson's report of 50 per cent. of their cases of tuberculous meningitis showing tubercles of the choroid. Parker [11] estimates that about 10 per cent. of the cases of tuberculous meningitis show discrete tubercles of the choroid except in general miliary tuberculosis, where they may be found in nearly half the cases.

In all my cases there was a frank history of pulmonary tuberculosis, usually subsiding or quiescent. In many cases the patient was so markedly improved as to be contemplating or arranging for a return to active life. Given such a history, with a severe headache of sudden onset and notable persistence, and unlike the eye strain types of headache, I am ever on guard for the revealing symptoms of tuberculous meningitis. Usually I have not failed in realizing this gruesome expectancy. Further, it has been my experience that in adults there is not the slowly developing prodromal stage observed in children, in whom headache is but one of many of their symptoms in this grave disease.

Called eight years ago to a Denver man (Case 4) with a history of tuberculosis arrested many years previously, whose only symptoms were severe, persistent headache, unilateral ptosis, divergent squint and mydriasis (with negative ophthalmoscopic findings), I was unable to give even a tentative diagnosis of tuberculous meningitis. An eminent internist and a neurologist were equally puzzled. After several days the typical signs of tuberculous meningitis made it clear to all what fatal disease was manifesting itself.

A few years later a tuberculous man (Case 3) who had shown satisfactory improvement in the pulmonary condition developed sudden impairment of vision in one eye, associated with severe, constant headache. A moderate optic neuritis was present. The expert diagnostician summoned declared that the condition could be diagnosed either as brain tumor, syphilitic optic neuritis or tuberculous meningitis. I stood out for tuberculous meningitis, the expert on tuberculosis concurring. The patient died within two weeks of tuberculous meningitis, with binocular blindness.

The point I would emphasize is, that severe headache of sudden onset and persistent character in an adult patient with a history of tuberculosis, either active or quiescent, should awaken a suspicion of tuberculous meningitis. And especially if taken in connection with disturbances of the motility of the eye, upper lid or pupil, or impairment of vision, this type of headache should strongly suggest tuberculous meningitis. It would seem that the ophthalmologist might thus first point the way to the diagnosis of a disease of insidious onset well before the comparatively slow development of the syndrome that makes its recognition so easy that "one who runs may read."

219 Majestic Building.

10. Marple, W. B.: Tubercle of the Choroid in Tuberculous Meningitis, Ophthalmoscope **10**:559, 1912.
11. Parker, W. R.: American Encyclopedia of Ophthalmology **11**: 8343.

THE THERAPY OF CATARRHAL FEVERS

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As the Pfeiffer bacillus is no longer regarded as the specific cause of influenza, and as bacteriologically and clinically it is practically impossible to distinguish between influenza, grip and the common "cold," the old term "catarrhal fever" might be advocated as a convenient designation for this group of clinical conditions characterized by inflammation of the mucous membranes and rise in body temperature. The difference in contagiousness and distribution might be indicated by the adjectives "pandemic," "epidemic" and "endemic." The acceptance of such a term would give a place in systematic medical literature to the ordinary "cold" which, though in its protean manifestations perhaps the commonest of ills, is, strange to say, not discussed in standard textbooks on medicine. The use of this term would relieve us of the diagnostic embarrassment in which we at present not infrequently find ourselves, of attempting to differentiate between influenza and the ordinary "cold," conditions so closely akin to each other that efforts to make a strict differentiation between them merely show the futility of such attempts. The term would be employed just as we use eczema, pleurisy, peritonitis, meningitis, asthma or epilepsy, each of which embraces a number of conditions of diverse etiology and pathology, but clinically similar enough to make profitable the discussion under the respective headings. Our therapy should be improved by the recognition of the essential similarity of the principles underlying the treatment of these nonspecific febrile inflammations of mucous membranes, and by the application of the massive experience we have gained in the treatment of influenza to the benefit of the common "cold."

ETIOTROPIC THERAPY

As bacteriologists have failed to demonstrate any but common and frequently nonpathogenic micro-organisms in influenza, and as various bacteria have been found in different localities and in different cases, we must assume that these germs are merely secondary invaders taking advantage of a condition of lowered resistance to assert their pathogenicity. The sudden simultaneous loss of resistance on the part of almost everybody that occurs during an influenza pandemic, spreading as it does along the lines and with the speed of human travel, can be explained only by a living virus disseminated by ordinary human intercourse, chiefly by the mouth spray. We shall speak of this cause as "the virus." Should future investigations enable us to name the virus, it would merely change the terms employed. This virus, in an attenuated form, is probably always with us. If this be the case, then pandemic influenza depends on the coincident development of an unusually virulent strain of the virus with that of a nonimmune human generation. As successful pathogenicity progressively increases the virulence and aggressiveness of a virus, we could understand how, under these conditions, extreme virulence would result. The pandemic recurrence of the disease at intervals of approximately thirty years would be explained by lack of immunity of a new generation.

Influenza pandemics run their course until all who are susceptible are either immunized or dead. As the virus is disseminated by innumerable carriers, sick and well, quarantine does little good. It merely delays the rapidity of the spread of the disease. During a pandemic, influenza vaccination does not protect to an important degree. Indeed, probably by reason of the negative phase induced by vaccination, it may be followed by severe and even fatal attacks.

The influenza epidemic of 1919-1920, the coming of which had been predicted with the same precision as that of an eclipse of the sun, showed the same differences from that of the previous year's pandemic that were observed on former occasions. Thus, while the pandemic of the first year appeared without reference to season or weather, the epidemic of the next year did not occur until after inclement weather had set in. The disease of the second year was much less general, much milder, and much freer from serious complications. The explanation for these facts is not difficult. Evidently, after approximately a year, much of the immunity acquired during the pandemic is lost. This seems especially true of those who had a mild attack during the pandemic year. However, it now requires an additional factor to start influenza in epidemic form; and this factor is furnished by chilling; hence, the onset after cold weather. During the secondary epidemic the disease does not spread with the explosiveness so characteristic of the pandemic. It is much milder and rarely fatal, because there is some residual immunity from the previous year's pandemic, and also because those who were incapable of acquiring immunity are now dead. Losing sight of this mildness of the influenza epidemic following a great pandemic renders us liable to fallacious therapeutic deductions. During such an epidemic, it would not be difficult to have a series of 500 or more cases of influenza without a single death, no matter what the treatment, provided the patients had good nursing.

Last year's epidemic probably has immunized our people against the virus to such a degree that no very extensive epidemic will occur this year. However, when bad weather sets in, we shall have a run of "colds," the chilling being requisite to lower the immunity of those with poor resistance. Coincidently the virus may become endowed with greater aggressiveness, and limited contagion may likewise result. As the general immunity of the people is no doubt better this year than it was the year before, there will not be nearly so many cases; and, on the whole, they will be milder. It seems safe to predict that "catarrhal fever" —not to use the term influenza, which is associated in our minds with specific etiology, high virulence and great contagiousness, nor "colds," as some of these cases are surely not due to chilling—will continue to manifest itself from year to year with irregularly decreasing virulence, until another pandemic sweeps the world.

An attack of catarrhal fever is a struggle for immunization, lasting on an average about three days, after which there is a period of extremely precarious equilibrium of immunity with a great tendency to relapse or the development of complications. The immunity, when finally acquired, is absolute only for a relatively short time, recurrence of the disease not infrequently taking place within two or three months. It is difficult to see how prophylactic immunization can be of much value against a disease that does not immunize better against itself, especially as we do not really know its exciting cause. On the other hand, the prevention of the dissemination and implantation of the virus, when

in condition of increased virulence and aggressiveness, is decidedly indicated. Free ventilation dilutes the virus and removes it, just as running water washes away dirt. But ventilation must be accomplished without chilling the inhabitants of the room. Coughers and sneezers who do not catch their mouth spray are liable to be dangerous to the community. Every case of "cold" should be surrounded with precautions against contagion; for, while some of these cases are noncontagious, others are—and we cannot at present distinguish between them. Children who cough, sneeze or have running noses should be excluded from school and kept at home until cured; and this not only to protect others, but also for the sake of the ailing child itself: for exposure to inclement weather is liable to aggravate the trouble, or to give rise to possibly serious complications.

The best prophylactic against endemic catarrhal fever, or "colds," is "hardening," i. e., accustoming the body to exposure to cold, so that such exposures do not produce chilling. It would lead us too far to discuss the technic of the "hardening" process. It should be pointed out, however, that the very young, the very old and those crippled by organic disease may be harmed instead of benefited by it. For these, protection by suitable climate or by keeping indoors during inclement weather is the rule of safety.

Removal of chronically inflamed tonsils, adenoids or nasal polypi, straightening of deflected septums—in short, doing away with foci of infection—is an important principle of prophylaxis, so well established that further discussion of this seems unnecessary here. Prophylactic vaccination, on the other hand, is at best an experiment in any case. It may result in benefit or in harm, dependent on a number of conditions, some of which are at present not under control.

The predominance of the idea of infection has led to employment of all kinds of antiseptic topical applications. As anything that will kill germs will kill the infected membrane and thereby do more harm than the germs would do, the use of germicides is out of the question. Bacteriostatic or germ-growth inhibitive applications are capable of exerting their effect only so long as they are on the membrane in sufficient concentration, which in any of these cases can be only for a negligably short time. Hence, topical treatment has no etiotropic significance in catarrhal fever, though it may have value by cleansing, soothing, analgesic or astringent action, or by the production of hyperemia.

RESTORATIVE TREATMENT

The chief problem in catarrhal fever is to restore the lost immunity; and, to favor this, the single most important item known is warmth, just as chilling is, no doubt, an important factor in the loss of resistance in many cases. As long as the patient's temperature is normal, confinement in adequately heated rooms might be sufficient; but when the heat-regulating mechanism has been upset to the degree evidenced by fever—no matter how mild—absolute rest in bed is imperative, because only in this way can chilling be prevented with any degree of certainty. This must include the use of the bed-pan and the urinal. The sooner such bed treatment is commenced, the milder usually is the course. In all severe or fatal cases that have come under my notice, the patient sinned by not going to bed soon enough, or by not staying in bed long enough or thoroughly enough.

Diaphoresis by means of heat is a time-honored remedy, the more efficient the earlier it is used. It probably acts chiefly by stimulation of immunization processes resulting from the induced slight pyrexia, rather than by changing the distribution of the blood or by elimination of poisons in the sweat, as has been suggested. However, sweating sometimes aggravates the cases, unless followed by warmth of bed. The disadvantage of sweating is that it predisposes to chilling. When we are wrapped in wet coverings, we lose heat more rapidly than when exposed naked to the same temperature. Hence, when a patient is sweating, we should see to it that he is not permitted to lie in wet garments. We must keep him warm and dry, no matter how much trouble that may cost.

Even more difficult than to get the patient to go to bed is to have him stay in bed long enough—let us say for three days of normal temperature—or longer, if there is a continuance of symptoms or a murmur at the heart. Rightly viewed, catarrhal fever is a beneficent process. It results in valuable immunity, provided we give it a chance to become well established. If a patient gets chilled, while his resistance is still in precarious equilibrium, he is not only prone to recurrence or persistence of the affection or its extension to continuous or contiguous areas, such as the middle ear or the lymph glands, but also liable to deep localizations of infection, with resulting pneumonia, pleurisy, endocarditis, pericarditis, acute articular rheumatism, multiple neuritis, nephritis, etc. Thus, approximately 50 per cent. of all cases of pneumonia are preceded by catarrhal fever, the proper treatment of which would probably have prevented the serious disease. In the great majority of cases of acute articular rheumatism and of endocarditis, these conditions are preceded from a few days to a week or two by tonsillitis or some other manifestations of catarrhal fever. Most of the patients complaining of neuritis or neuralgia admit having had a "cold" some time previously, and inquiry reveals that rest in bed or confinement to the house had not been resorted to. On the other hand, people who apply the "coddling" treatment conscientiously are practically free from these sequelae. These are old and well known facts, which, like other not sufficiently appreciated and practiced truths, not only deserve reiteration, but demand it.

Alkali is the only medicament likely to aid in the establishment of immunity. There is some evidence that acidosis is present in these fever patients, and that acidosis antagonizes immunization. There is also a clinical tradition that alkali favors recovery and prevents complications, perhaps by antagonizing acidosis. Sodium citrate is the most pleasant administration form of alkali. We may, therefore, have the patient take a glassful of lemonade every two hours, to which a quarter of a teaspoonful of baking soda has been added; or we may prescribe 1 or 2 gm. of sodium citrate in lemon or orange syrup, to be taken diluted with a glassful of water every two hours. The taste of this salt is so inoffensive that children generally take it without any trouble whatever in doses appropriate to their age.

The liberal—though not excessive—use of fluid is important in all cases of this, as well as of other fevers. From one-half to one tumblerful should be given every hour while the patient is awake. It may generally be prescribed in the form of liquid diet, given every two hours, and a fruit drink (lemonade, orangeade, grape juice or raspberry juice and water) every two hours, alternating with the diet. Of course, when there is albumin in the urine, soup and other prepara-

tions derived from meat would be interdicted. A special difficulty arises in the administration of fluid in the emetic form of influenza; and in no form is the meeting of this indication more imperative. Albuminuria is nearly always present in those cases in which emesis is a prominent part of the clinical picture. It may be that the vomiting, by fluid depletion of the system and concentration of the urine, may cause kidney irritation; or it may be that the kidney involvement leads to emesis by causing uremia or acidosis. Possibly a vicious circle is present, the breaking in on which leads to therapeutic triumph. This may often be accomplished by the extrabuccal administration of fluid and by absolute gastric rest for a sufficient length of time. In this condition, antiemetics are disappointing. They often aggravate and prolong emesis by interfering with the required gastric rest. The vomiting ceases if one leaves the stomach absolutely alone, not permitting even water excepting an occasional teaspoonful to moisten tongue or lips, provided one gives fluid by rectum, or, if this be nonretentive, by the most available parenteral route. Usually, a 2 per cent. solution of baking soda is retained, when administered rectally by means of a catheter and the barrel of an ordinary glass syringe serving as a funnel, in quantities of from 2 to 8 ounces, according to the age of the patient and his rectal irritability, every two to four hours, the shorter intervals being employed when only small amounts can be given. After from twelve to twenty-four hours of this regimen, the patient usually retains hourly tablespoonful doses of carbonated water. Cream and carbonated water, equal parts, may also be given every hour alternately. After another twelve hours, the quantity of each of the fluids is increased to a wineglassful; and, if the emesis does not recur, soon cupfuls of fluid can be given. The parenteral administration of fluid is continued until one is well satisfied that the patient retains an abundance of fluid by mouth.

The old notion that hyperemia is harmful in inflammation, and the antiphlogistic treatment based thereon, have been quite generally discarded in favor of the view, especially championed by Bier, that the hyperemia is essential to the restoration of lost local immunity. As, however, an excess of hyperemia may produce harm, we must beware of using hyperemia-producing agencies in the presence of extreme congestion. At such time only cleansing and soothing or astringent applications are admissible. Where such excess is not present, encouraging the hyperemia, especially by the employment of heat, is indicated. Thus the prompt use of prolonged hot irrigations of the ear at the first appearance of earache, coupled with the general "coddling" treatment, frequently succeeds in checking the progress of middle ear inflammation. The hyperemia may be produced by reaction from cold, as by flannel-covered cold compresses to the side of the neck, so grateful to many patients with tonsillitis. Or it may be induced by chemical means—the mustard poultice, or by painting with tincture of iodin—applied to surfaces overlying the affected part, as the chest, which often relieves soreness.

SYMPTOMATIC TREATMENT

Of late the artificial production of fever by means of foreign protein has been advocated in the treatment of influenzal pneumonia and of other infections, and fairly favorable results are reported. While, in view of the limited number of observations, this form of treatment can hardly be considered established, it at least bids us pause in routine and indiscriminate antipyresis. If it is true that fever favors the establishment of immunity, then antipyretic therapy is a mistake. That the lowering of temperature, be this by medicinal antipyretics or by the use of cold, does not shorten the course of the disease or lessen its mortality, is generally admitted. Indeed, when a grave complication, such as pneumonia, arises, the antipyretics are commonly abandoned, unless the temperature has an extremely high range. If it is not well to employ antipyretics in the presence of a serious infection, is it wise to use them in an infection that at any time may become serious?

During the pandemic, as a routine, I employed pyramidon or acetylsalicylic acid in small doses as analgesics, and believed I was helping my patients, for often they praised the prompt relief obtained by the medicine. Many, however, complained of the drenching sweats induced by the drugs, which led some of them to stop their use, and they could do this without recurrence of the aches and pains. Having learned to fear the sweating as a predisposing cause to complications by way of chilling, I completely abandoned the use of these agents during last year's epidemic, and found that patients did not suffer as greatly as I had feared. On the whole, the patients were more comfortable by sweating less. No doubt a few small initial doses of these analgesics (as pyramidon, from 0.10 to 0.15 gm.) with the addition of extract of hyoscyamus, from 0.010 to 0.015 gm., to antagonize sweating, may contribute toward comfort. But to continue these agents day in and day out or to give them in large doses is inadvisable.

Cathartics need not and should not be given in a routine manner. Having employed calomel-saline catharsis up to within the last few years, and having reaped a few cases of stomatitis as the result, I have practically given up this practice, and find that my patients are none the worse for the change. The early administration of saline or castor oil—usually undertaken by the people on their own initiative—is either responsible for or at least coincides remarkably often with initial vomiting, which continues sometimes as the most annoying part of the clinical picture. If the patient's bowels have not moved for twenty-four hours, the administration of an enema of 2 per cent. baking soda does no harm and usually accomplishes all that is required. If not, magnesia magma may be given every two hours, a teaspoonful or two for infants, a tablespoonful or two for adults, until a satisfactory evacuation is secured. If this does not act well, a peristalsic stimulant, such as cascara sagrada, is required, of the aromatic fluidextract of which a teaspoonful or more may be given at bedtime.

One of the chief indications, in cases in which there is cough, is to encourage expectoration; the worst thing to do is to check the cough. For thinning the mucus, so as to favor its expulsion, there is nothing that can take the place of water, whose liberal ingestion has been emphasized. It is probable that the addition of salines, such as sodium citrate, ammonium chlorid or sodium iodid, enhances the expectorant value of water. Of these, sodium citrate is the least offensive; and, being also an indirect alkali as well as a diuretic, it is more often likely to be of use in catarrhal fever than any other drug. Best of all, it cannot do any harm, unless it favors the appearance of urticaria, which occurred in two cases while under the influence of the citrate—whether because of the drug, it is impossible to tell.

Ammonium chlorid is possibly a more powerful expectorant than sodium citrate; but it is also more

unpleasant in taste and occasionally provokes emesis in infants. Usually a dose of 0.06 gm. is well borne by a child 2 years old. For adults, 0.50 gm. of ammonium chlorid may be given every hour or two, according to the urgency of the expectorant action required.

Iodid is the most potent of saline expectorants; but, owing to possibility of excessive action (iodism), it is unwise to use it in the presence of acute coryza, laryngitis or bronchitis. When, however, the first few days have passed without decided improvement of the cough under milder treatment, iodid may usually be resorted to with benefit. It may be given in doses of 0.12 gm. every two hours, with directions to increase the interval between doses to four hours as soon as the cough loosens up, the nose runs, or the eyes water. For children, the iodid effect is most pleasantly obtained by giving sajodin in doses of 0.06 gm. mixed with sugar (0.30 gm.) and cacao (10 per cent.), preferably in the form of sweet tablets, though powders will do if tablets are not available.

An opiate to check the cough is dangerous, as opiates favor retention of secretion and the development of bronchopneumonia. As a rule the cough is the patient's friend. When, however, an individual has been harassed by a useless dry cough for a night or two, a single dose of an opiate to favor sleep might do more good than harm; but to administer opiates, including powder of ipecac and opium (Dover's powder), in a routine manner and continuously is bad practice.

CONCLUSIONS

To draw a sharp distinction between influenza, grip and "colds" is futile; hence the term "catarrhal fevers" is advocated to embrace the whole group. The recognition of the essential similarity of these conditions might enable us to turn our experience with influenza to good account in the treatment of the common "cold."

Even a mild case of catarrhal fever requires absolute bed treatment, continued until the patient has been well for several days. "Coddling" is the rule of safety in catarrhal fever; "hardening" in its prophylaxis.

With the possible exception of alkalis, the use of medicines is merely symptomatic. We must beware against procuring comfort by the sacrifice of interests more vital to the patient. Thus, routine antipyresis is a mistake, though the sparing initial use of a few small doses of members of the antipyrin or salicylate group as analgesics may do no harm.

Opiates to check cough should be used most exceptionally in catarrhal fever. The indication is to favor expectoration, as by saline expectorants and by fluid.

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The Causes of Intussusception.—John Morley maintains (*Brit. M. J.* **2**:542 [Oct. 9] 1920) that in all the discussions on the etiology of intussusception, attention has tended to be concentrated on the mechanism by which the process starts. Is the invagination started by a localized spasm of a segment of the bowel or by a localized paresis? It is an interesting pathologic problem, and the evidence is in favor of spasms as the exciting cause. But far too little attention has been given to a predisposing cause of intussusception that is almost always present, namely to lack of peritoneal fixation of the proximal colon. It is obvious that this factor does not influence the rare enteric form of intussusception. But in the common form in which the ileocecal valve forms the apex, or the ileocolic form in which the lower ileum first prolapses through the valve until it jams, and then the ileocecal region travels along the colon, we find a definitely abnormal mobility of cecum and ascending colon, with persistence of the ascending mesocolon and often a definite pericolic membrane.

THE PHENOMENON OF VERNES AS APPLIED TO THE SERODIAGNOSIS OF SYPHILIS

PRELIMINARY REPORT

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It is only since the discovery of *Spirochaeta pallida* by Schaudinn in 1905 that syphilis has been the subject of extensive laboratory research. Previously the disease had been studied almost exclusively from the clinical point of view. Even before Schaudinn's epochal discovery, Bordet and Gengou,[1] in 1901, described a new procedure for the diagnosis of infectious diseases based on the phenomenon that we know today as complement fixation. During the same year that Bordet and Gengou recorded their classical observations, Widal and LeSourd [2] applied the principle of complement fixation to the diagnosis of typhoid fever.

In 1906, Wassermann, Neisser and Bruck [3] described a method for the indirect application of the phenomenon of Bordet and Gengou which has been universally known since that time as the Wassermann test. The original method of Bordet and Gengou could not be applied by Wassermann and his co-workers because of the impossibility of growing *Spirochaeta pallida* in pure culture. It became necessary, therefore, to find a substitute for a culture of the spirochete, and for this purpose Wassermann utilized an aqueous extract of the liver of a syphilitic fetus. By virtue of this substitution there was introduced into the technic of the test a factor of nonspecificity that has been a stumbling block in the pathway of the serodiagnosis of syphilis ever since. This factor of nonspecificity was largely ignored in the first wave of enthusiasm that greeted the adoption of the new method. It was not long, however, before it was found that the same results that Wassermann reported could be obtained with alcoholic extracts of organs containing no *Spirochaeta pallida,* such as the heart or liver of man, ox or guinea-pig.[4] Herein, therefore, lies the distinction between the specific immunologic phenomenon of Bordet and Gengou and the nonspecific biologic test of Wassermann, and this factor of nonspecificity has been a constant subject of dispute from the original publication of Wassermann's work to the present day. Various organic chemical substances, such as pure lipoids, cholesterin and lecithin,[5] have been advocated by some as substitutes for the "so-called antigens" derived from organ extracts, while others have introduced organic chemical substances into the alcoholic organ extracts, thereby increasing the sensitivity of the latter.[6]

Despite the enormous amount of labor that has been spent in efforts to standardize the technic of the Was-

1. Bordet, J., and Gengou, O.: Ann. de l'Inst. Pasteur **15**: 289, 1901.
2. Widal and LeSourd, in LeSourd, Thèse doct. Fac. méd., Paris, 1902.
3. Wassermann, Neisser and Bruck: Deutsch. med. Wchnschr. **32**: 450, 1906. Wassermann, Neisser, Bruck and Schuct: Ztschr. f. Hyg. u. Infektionskr. **55**: 451, 1906.
4. Landsteiner, Müller and Pötzl: Wien. klin. Wchnschr. **20**: 1421, 1565, 1907.
5. Noguchi: J. Exper. Med. **11**: 84, 1909. Sachs and Rondoni: Berl. klin. Wchnschr. **45**: 1968; Ztschr. f. Immunitätsforsch., Orig., I. 1908-1909, p. 132.
6. Sachs: Berl. klin. Wchnschr. **68**: 2066, 1911. McIntosh and Fildes: Syphilis, London, 1911, p. 220. Walker and Swift: J. Exper. Med. **18**: 75, 1913.

sermann test, it has remained a nonspecific biologic test based on no certain immunologic principle. For a long time it has been believed that the results were attributable to physicochemical reactions, but nevertheless the mechanism of the reaction has been explained in the immunologic terms of Ehrlich's side chain theory. Not a few authors, believing the reaction to be dependent on certain physicochemical transformations due to the presence of albuminoid substances in the blood serum, have sought other methods than hemolysis for the detection of the pres-

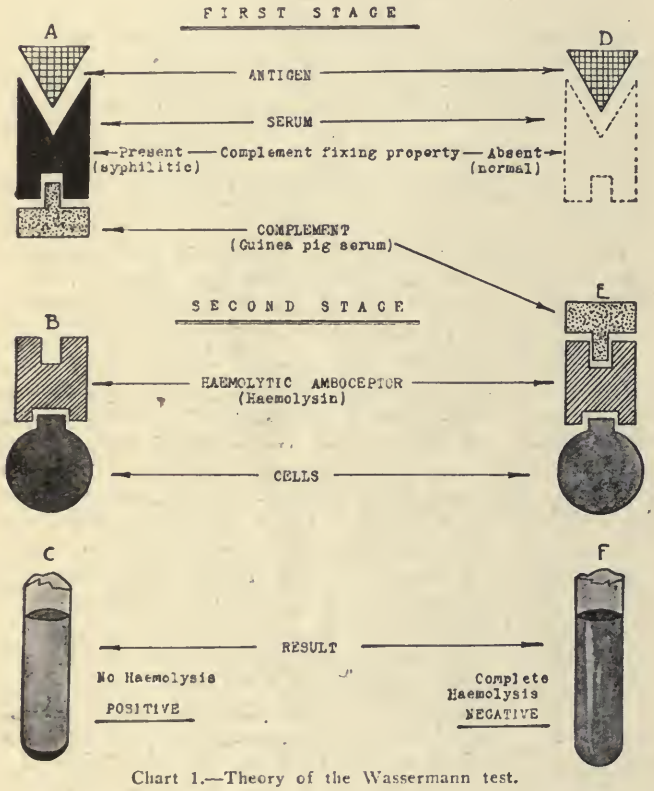


Chart 1.—Theory of the Wassermann test.

ence of these substances. As evidence of such attempts one might mention the precipitoreaction, the coagulo-reaction, the freezing reaction, and the Bruck test.[7]

In testimony of the need that has been felt for standardized methods, a glance at the literature of the subject gives immediate proof of the tenor of feeling.[8] The extensive and numerous contributions on this subject by Kolmer and his collaborators illustrate the number of factors capable of producing variations in technical results. A diagnostic reaction capable of being varied by so many factors, dependent on such thorough appreciation of fundamental serologic principles, and requiring such numerous and precise titrations of all the elements concerned must, of necessity, be productive of discordant results. Owing to the practical feature of this problem, an effort for the determination of the reliability of the reaction and for its standardization was begun in this country as early as 1915 by a committee[9] of serologists representing a number of the larger institutions in the greater city of New York. After two seasons of labor, including many hundreds of comparative titrations, the work was left unfinished but was, in part, made the subject of a report by Ottenberg.[9]

Owing to the differences in the technic employed in different laboratories and by different individuals, widely varying and discordant results have been reported,[10] and clinicians have sounded notes of alarm and have aimed sharp criticisms at serologic laboratories and serologists in general. Even among the most ardent defenders of the Wassermann test, with whom one of us has allied himself, it has been realized that results vary under different conditions of technic and that many unreliable results are reported by unskilled technical workers.

The necessity of studies aimed at the clarification of the physicochemical properties of blood serum as an antecedent to the perfection of any precise and reliable procedure, based on physical chemistry, is obvious from the foregoing discussion. With this object in view Vernes, in 1909, began a series of serologic observations on the blood and spinal fluid of a large group of cases that were carefully controlled clinically.

To understand the methods employed by Vernes and the significance of his results, it is necessary to appreciate the theory on which the Wassermann test is explained and the method of arriving at the results. Briefly, it depends on the fact that the serum from individuals suffering from syphilis has the power of binding, deviating, or rendering inert complement or alexin by forming with it and the "so-called antigen" an inseparable link. Because of the invisibility of this reaction, it is necessary to employ an indicator. This indicator consists of red blood cells and a substance (hemolysin) which, in the presence of complement, is capable of dissolving the red cells, thereby producing a visible result—hemolysis (Chart 1). In case the serum is from a syphilitic individual, the complement is fixed (bound or deviated) (*A*) and is not available for hemolytic action on the red cells in the presence of their hemolytic amboceptor (*B*), the result being that the cells remain undissolved—positive reaction (*C*). If the serum is from a normal individual possessing no complement binding property, the complement cannot be fixed (*D*) and is, therefore, available for its

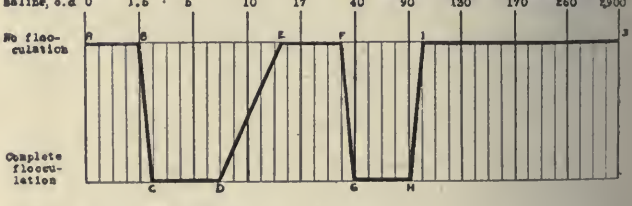


Chart 2.—Curves obtained with a suspension of 0.225 gm. of iron acetate in 250 c.c. of distilled water. Only a portion of the progression is indicated. This chart and Charts 3, 4, 5 and 6 are taken from Uffoltz: Arch. de méd. et de pharm. mil., December, 1918.

action on the red cells (*E*), the result in this case being dissolution of the red cells—hemolysis—negative reaction (*F*). Between a positive reaction, characterized by the absence of hemolysis, and a negative reaction, characterized by complete hemolysis, there are several degrees, the interpretation of which depends on the

7. Porgès and Meier: Wien. klin. Wchnschr. **31**: 206, 1908. Hirschfeld and Klinger: Sem. méd., Aug. 5, 1914. MacDonagh: Med. Press & Circ., June 27, 1916. Bruck: München. med. Wchnschr. **64**: 25 (Jan. 2) 1917.

8. Field, C. W.: A Method Developed for Obtaining a Standard Wassermann Reaction, Arch. Int. Med. **13**: 790 (May) 1914. Kolmer and collaborators: Am. J. Syph., January, April, July and October, 1919; January and July, 1920.

9. Drs. Haven Emerson (chairman), Hans Zinsser, Homer F. Swift, F. W. Famulener, C. W. Field, I. J. Levy, Archibald McNeil, M. P. Olmstead, Reuben Ottenberg and L. H. Cornwall. Ottenberg, Reuben: On the Reliability of the Wassermann Reaction, Arch. Int. Med. **19**: 457 (March) 1917.

10. Plehn: Berl. klin. Wchnschr. **34**: 1544, 1911. Rühl: Dermatol. Wchnschr. **6**: 159, 1913. Wolbarst: New York M. J. **97**: 378, 1913. Stone: Ibid. **99**: 1242, 1914. Nicholas and Gaté: Ann de dermat. et de syph. **5**: 192, 1914-1915. Ravaut: Ann. de dermat. et de syph. **5**: 285, 1914-1915. Coca: Bull. Johns Hopkins Hosp. **27**: 155, 1916. Thibierge, G.: Press méd. **26**: 609 (Nov. 28) 1918.

individual workers. This has led to the adoption of four arbitrary degrees expressed by plus signs.

Considering that such an interpretation of color changes, depending on the personal equation of the serologist, possessed an undesirable element of inaccuracy, Vernes devised a colorimetric scale consisting of eight tints numbered from 0 to 8. Zero represents the absence of any hemolysis or red coloration, and 8 represents the maximum hemolysis or deepest shade of red. By means of this scale he was able to measure in a precise manner the amount of hemolysis that occurred in serologic reactions and to record it in degrees (0 to 8). Having done this, he began a study of the results obtained with serums from the same patients from week to week. He charted these results graphically, and was able to show that the curves obtained with syphilitic serums possessed certain fundamental characteristics. He was not always able to distinguish syphilitic and normal serums by colorimetric readings because, under certain conditions, the two gave the same readings. This is similar to the experiences of all serologists, and accounts for the doubtful results reported for Wassermann reactions. By means of his graphic charts, however, he was able to detect fundamental differences between the curves obtained with normal and syphilitic serums when they were submitted to periodic examinations.

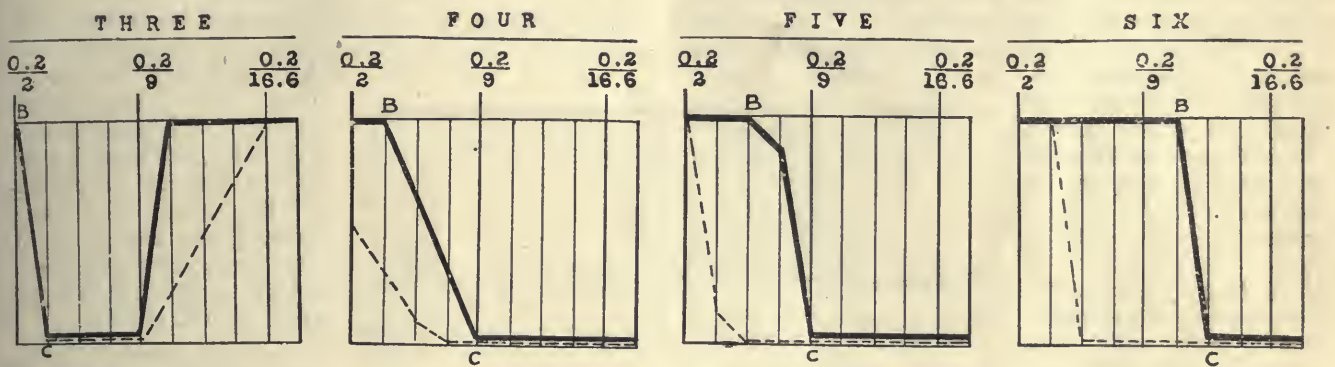
Thus, in 1913 Vernes [11] published his results based on more than 150,000 serologic reactions performed with identical technic on many hundreds of patients suffering from different diseases. He described a syphilitic chart or "graphique" illustrating a specific curve for syphilitic serums. He was able to show that, whereas the difference between normal and syphilitic serums cannot always be detected by colorimetric readings alone, when the periodic results are charted nonsyphilitic serums give invariably a horizontal line which contrasts markedly with the varying curves given by syphilitic serums.

NATURE OF THE PHENOMENON

The nature of the phenomenon which produced the distinguishing characteristics of syphilitic serums remained to be determined. It was the characteristic oscillations in the curves obtained with syphilitic serums that stimulated Vernes to attempt a complete restudy of the properties of normal and syphilitic serums by methods departing widely from those underlying the work of Wassermann. This new work was based essentially on the observation of two fundamental characteristics of the curves obtained with syphilitic serums—an ascending curve with the progress of infection, and a descending curve after the institution of treatment.

After it had been made certain that syphilitic serum possessed an unknown property, capable of being measured and graphically charted, there remained the necessity for further studies aimed at the determination of the best experimental conditions for discovering this property.

The experiment [12] that was the foundation of the subsequent work of Vernes consisted in adding to a fine suspension of ferric hydrate diminishing quantities of normal and syphilitic serums. He prepared a fine suspension of ferric hydrate by successive triturations of iron acetate in distilled water followed by prolonged boiling. By adding 0.225 gm. of iron acetate to distilled water he obtained an opalescent liquid of a yellow ocher color. He arranged a series of approximately forty test tubes, each one containing 2.0 c.c. of the colloidal suspension of ferric hydrate and 0.2 c.c. of a mixture of human blood serum and 0.9 per cent. sodium chlorid, the amounts of serum diminishing from left to right (Chart 2). After incubation at 37 C. for forty minutes, it was observed that flocculation occurred in certain tubes, and then disappeared either abruptly or progressively in a certain number of tubes to reappear again in a later series of tubes, constituting thereby periodic zones of flocculation. After a certain point was reached in the dilutions of blood serum (*I* in Chart 2), no flocculation was produced.



Charts 3, 4, 5 and 6.—Heavy line, normal serum; broken line syphilitic serum. Chart 3, 0.2 gm. of iron acetate in 250 c.c. of distilled water. Chart 4, 0.1 gm. of iron acetate in 250 c.c. of distilled water. Chart 5, 0.05 gm. of iron acetate in 250 c.c. of distilled water. Chart 6, 0.04 gm. of iron acetate in 250 c.c. of distilled water.

By reducing the amount of iron acetate it was noted that the first zone (*B-E* in Chart 2) was moved to the right (Charts 3, 4, 5 and 6). Considering only this zone, then, a smaller quantity of serum was required to produce flocculation when the quantity of iron acetate was reduced. Conversely, if the least amount of serum which produced flocculation in this zone were taken and increasing amounts of iron acetate added to it, the curve of flocculation moved to the left. When the normal and syphilitic serums were compared it was noted that, with the lower concentrations of acetate, the curve of flocculation was always more to the left with the syphilitic serums. The constancy of these results indicated that there existed a definite difference in the stability of normal and syphilitic serums. Further, it was demonstrated that this difference in stability remained constant if one substituted other mineral substances in colloidal states for ferric

11. Vernes, A.: Les signes humoraux de la syphilis, Paris, 1913.

12. Vernes, A.: Compt. rend. Acad. d. sc. **165**: 769, 1917.

hydrate. By such substitution the periodic rhythmicity of flocculation was changed, but the variation between the two serums (normal and syphilitic) remained constant.

THE COLLOIDAL SUSPENSION

The next step in the experimentation consisted in determining the requirements for the proper physical state of the colloidal suspension and for the mixture and state of the serum so that, in certain zones, flocculation would always occur with syphilitic serum and never with normal serum. Mineral suspensions did not fulfil these requirements; therefore it was necessary to employ an organic colloidal preparation. As a result of extensive experiments with organic colloidal suspensions, Vernes [13] has shown that "a large variety of tissues furnish products soluble in alcohol which, after dilution with distilled water, give colloidal suspensions of the physical states required for the reaction." Horse heart was chosen, however, as the most suitable. The fresh heart was macerated in alcohol, desiccated, mixed with ethyl chlorid and absolute alcohol, distilled under negative pressure, and made up to the proper volume by the addition of alcohol so that its content was 0.15 gm. of the dried powder to the liter. The name perethynol was given to this preparation, and the abbreviation P used to designate it.

The second step in the experimentation with the colloidal suspensions consisted in reducing the perethynol to the desired colloidal state by dilution with distilled water or by the addition of an electrolyte to the distilled water. If perethynol is added drop by drop to distilled water, with constant shaking the result is a limpid suspension, the particles of which are in such a finely divided state as to be invisible under the ultramicroscope. If, on the contrary, the distilled water is added to perethynol in a similar manner, the result is a milky suspension. For the electrolyte it was found that solutions of the chlorid of sodium, calcium, cerium or tin might be employed; but sodium chlorid in a concentration of 0.4 per cent. was chosen as the most suitable and, for the preparation of the colloidal suspension, perethynol was added to 0.4 per cent. sodium chlorid in distilled water in the proportion of 1 part of P to 6.5 parts of sodium chlorid solution. Chart 7 illustrates the results with varying dilutions of sodium chlorid in the presence of normal and syphilitic serums, heated at 55 C. for twenty minutes. It will be noted that there is a common zone of flocculation for the two serums. It was necessary to reduce this to a minimum. Heating the serum at 55 C. for twenty minutes accomplished this by its effect in increasing the size of the granules and diminishing the flocculability. This resulted in restricting the common zone to narrower limits and at the same time made the results more clear-cut by increasing the differentiation between the serums.

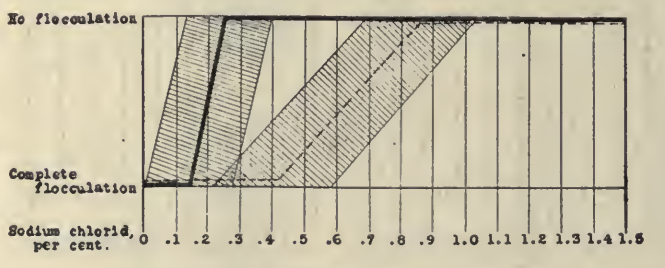


Chart 7.—Flocculation of syphilitic and normal serum with perethynol diluted with sodium chlorid solutions of varying strengths. Each tube contained 0.2 c.c. of serum heated for twenty minutes at 55 C., and 0.8 c.c. of 1: 6.5 suspension of perethynol. Heavy line, normal serum; broken line, syphilitic serum.

The third step [14] consisted in perfecting the technic so that the results were easy to appreciate and indicated intermediate as well as extreme degrees of difference between normal and syphilitic serums. It was not possible to read the results directly, so here again it was necessary to employ another colloidal reaction of a different type than, but depending on, flocculation. "Let one imagine a substance which has the power of opposing flocculation (antiflocculant) and at the same time the power of producing hemolysis (hemolysin) but which loses its hemolytic property in direct proportion to the utilization of its antiflocculant property. Then instead of judging its stability directly by detecting the degree of flocculation, it is judged indirectly by detecting the degree of hemolysis. The latter is registered in degrees by the use of a colorimetric scale. Many substances are capable of playing this double rôle, but notably pig serum."

The amount of pig serum to be employed is determined by a preliminary titration. The elements on which the pig serum exerts its hemolytic power are red cells of sheep, which are likewise employed in an amount determined by a preliminary titration. They are made up in a 50 per cent. suspension with hypertonic saline solution after being washed and centrifugalized successively.

COMPLETE REACTION

The complete reaction is performed by introducing successively into test tubes similar to those employed for ordinary serologic work the ingredients named in the accompanying table. These ingredients, with the exception of the serum to be examined, are brought to a uniform volume of 0.8 c.c. by the addition of 0.9 per cent. sodium chlorid.

It is not possible to see any flocculation as a result of the first stage of the test either with normal or with syphilitic serum. Normal serum does not produce flocculation, and if the serum is from a syphilitic individual the pig serum prevents flocculation by virtue of its antiflocculant power. The total or partial utilization of the dispersing or antiflocculant power of the pig serum in the first stage of the reaction is revealed by the degree of hemolysis in the final stage. After centrifugalization, not only are the tubes containing normal serums red and those containing certain syphilitic serums free from any hemoglobin tinge, but there are intermediate degrees of color tints between the deep red and colorless which constitute a syphilitic index, said by Vernes to be of considerable importance in the control of treatment.

INGREDIENTS EMPLOYED IN THE COMPLETE REACTION

STAGE I	C.c.
Human serum	0.2
Perethynol (diluted 1: 40 in 0.9% NaCl)	0.8
Pig serum (titrated quantity in 0.9% NaCl)	0.8

The tubes are placed in an incubator at 37 C. for one and one-quarter hours, at the end of which time they are removed and to each is added:

STAGE II	C.c.
Sheep cells (titrated and made up in 50% hypertonic saline solution)	0.8

The tubes are again incubated for one-half hour and then centrifuged.

CONCLUSION

A study of these syphilitic indexes constitutes a sero-measure of syphilis and indicates the efficacy of specific treatment.

13. Vernes, A.: Compt. rend. Acad. d. sc. **166**: 575, 1918.
14. Vernes, A.: Compt. rend. Acad. d. sc. **167**: 500, 1918.

The specificity of the reaction is vouched for by Vernes after an extensive application to a large number of patients suffering from various diseases, which application has been controlled by the clinical observations of Marie, Landouzy, Chatelin and others. The scientist who is responsible for this important discovery which, if confirmed, will revolutionize the laboratory diagnosis of syphilis, makes these unqualified assertions as to its reliability:

1. All syphilitic infection is accompanied by a pathognomonic modification in the stability of the blood serum and spinal fluid.
2. This pathognomonic alteration disappears under the influence of arsenical treatment, but each time that the treatment has been insufficient it reappears from the second to the fifth month, rarely from the fifth to tthe seventh.
3. When, following arsenical treatment, this pathognomonic alteration remains absent for eight months after the discontinuance of treatment and *the lumbar puncture is negative*, its reappearance has never been noted.

Through the courtesies of Professors Frederick Tilney and John H. Larkin, this new method is now under investigation in the neurologic department of Columbia University and in the pathologic department of the City Hospital. The results of these investigations will be the subject of later communications.

A TREATMENT FOR COLIC IN BREAST-FED INFANTS

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CHICAGO

There is scarcely any condition affecting the breast-fed infant which is more prevalent than colic. While in itself colic perhaps does not materially injure the infant organism, it is nevertheless of great importance because of the disturbance that it produces in the household; furthermore, many physicians do not realize the importance of breast feeding and are likely to use colic as an excuse for prematurely weaning the baby. This increases the danger to the infant and frequently causes more worry and anxiety to the parent than if the child had remained on the breast, even though colic had continued. For these reasons, aside from the humane aspect of relieving pain in these helpless babies, any treatment that will alleviate the suffering is a boon.

It should be emphasized that colic should primarily be regarded as a symptom of overfeeding. As a rule, this means overfeeding of the breast milk as a whole; but occasionally it means that the food which the child obtains is too rich in fat. Whether or not an excessive fat supply in the breast milk can be blamed for the appearance of colic is as yet an unsettled question, though there are many points that would seem to favor such an hypothesis. Colic is practically always accompanied by two symptoms on the part of the intestinal tract: pain and accumulation of gas. Evidently, these two symptoms are very intimately associated and are due to irritation of the intestinal wall with an accumulation of gas in the segment of the bowel isolated by localized cramping of the intestinal musculature.

The two bacterial processes that take place in the bowel are, of course, fermentation and putrefaction. Only one, fermentation, may be considered in this instance. There will, I think, be very little objection to the statement that colic is associated with fermentation within the intestinal canal.

Bahrdt and his co-workers have long since shown that fermentation products, to be irritating to the intestinal wall, must be other than those usually found. Lactic acid apparently is not irritating to the intestinal wall, but, on the other hand, the more volatile fatty acids are more definitely irritating. It is also well recognized that fermentation and putrefaction are to a large extent antagonistic processes; that is, the conditions which favor fermentation are inimical to putrefaction, and vice versa. With these facts in mind it would seem a logical procedure to attempt, if possible, first, to change the character of the fermentative processes within the bowel, and, secondly, to reduce fermentation by favoring putrefaction.

One of the bacterial organisms in the intestine which is most active in a fermentative way is the lactic acid bacillus. While there may be some question as to whether the lactic acid bacillus when introduced by mouth really will be of much value in changing the condition within the intestinal tract, the clinical experience of most pediatricians is that those foods which contain lactic acid bacilli in large numbers are of great benefit in many nourishment disturbances in artificially fed infants. I cannot, of course, support the extravagant claims of some clinicians as to the benefit to be derived from cultures of the lactic acid bacillus, but certainly there has been no greater advance in the artificial feeding of infants than that which came when buttermilk and allied foods were introduced. It would therefore seem to be a rational procedure to introduce cultures of lactic acid bacilli when we suspect not only excessive but abnormal fermentation, and therefore to attempt to direct this fermentation in such a way that the more volatile fatty acids will not appear in the same quantities. This, it would seem, could be accomplished, if we were able to increase the formation of lactic acid without increasing the quantity of fermentable material.

While in the lower bowel, that is, the large intestine, it is undoubtedly true that little or no effect on the condition of bacterial growth is to be produced by the introduction of protein by mouth, still it would seem altogether likely that increased introduction of protein by mouth would tend to lower fermentative processes in the small intestine. With these ideas in view, there were devised the methods of the treatment of colic about to be described.

Of course, preliminary to any statement concerning the treatment of colic, one must always bear in mind that, in the majority of cases, colic is a condition due not only to too much fat but usually to too great a quantity of breast milk. One can reduce the quantity of breast milk, of course, by shortening the length of the nursing period. This disproportionately reduces the quantity of fat in the food since, toward the end of the nursing period, the fat is several times as great relatively as in the early portion; but it is well known that many cases of colic do not respond to these simple methods, and one is frequently at one's wit's end to devise other ways of combating the difficulty. A treatment which has been repeatedly tried out and which has proved successful, not only in my practice, but also in that of my colleagues, is this:

Morning and evening, these children are given about 5 c.c. of the liquid culture of active lactic acid bacilli, and each breast feeding is preceded with a gram of powdered casein. There is, of course, no difficulty in administering the liquid

culture of the lactic acid bacilli; but powdered casein is hard to use. In the first place, it is quite difficult to get pure casein on the market. There are proprietary combinations of casein which can be used, and it is possible to obtain pure casein if sufficient search is made. The ordinary casein of commerce is, however, not to be used.

Even though the powdered casein is obtained, it is not at all soluble by ordinary means, and hence it is necessary to make a paste and place this on the back of the infant's tongue. If it is impossible to obtain the powdered casein, one may carefully skim milk and take the curd of the milk. The quantity of curd to be used before each nursing is approximately that obtained from an ounce of skimmed milk.

One advantage of this treatment is that ready cooperation of the mother is usually obtained when she learns that the treatment consists in giving the child some extra food. One should not expect that treatment of this sort will bring results at once; but it is unusual for a case of colic to resist this treatment for longer than a week or ten days, and usually the benefit begins to appear within twenty-four to forty-eight hours.

Another type of colic which is rather frequently encountered is that due to a deficient quantity of breast milk. If the infant has colic under these circumstances, the best food for supplementing will undoubtedly prove to be albumin milk.

104 South Michigan Avenue.

HOOKWORM AND OTHER INTESTINAL PARASITES IN ECUADOR

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Can hookworm be stamped out entirely in an infected community? This question has been discussed, pro and con, by physicians in tropical countries and in the Southern states for many years, and today we realize that this much to be desired result may be accomplished only through the expenditure of much effort and money. Hookworm eradication, like prohibition, will never be a success so long as it is treated as a local option measure; and so long as unrestricted immigration to and from an infected community is permitted, hookworm disease will prevail. A hookworm campaign, to be eminently successful, must embrace all of an infected area or our efforts will avail little. At no place has this fact been more effectually demonstrated than at this camp where, for several years, an extensive campaign has been in operation; but because of the ever changing population usual in mining districts, hookworm is always with us.

I realize that this subject has received its full measure of publicity during the last few years, and I am writing, not with the idea of discussing the etiology, transmissibility or pathology, but merely to submit a few statistics and observations from an angle slightly different from the usual one. To many physicians, hookworm disease, being largely a tropical and semitropical problem, holds little of interest; but those whose lot is cast among the unfortunates for whom, in many remote districts, so little is being done, will not dismiss the subject lightly.

CHARACTER OF COUNTRY

A complete survey was instituted in January of the present year among the employees and dependents of employees of the South American Development Company, a gold mining corporation whose mines are located in Portovelo, Ecuador, near the larger town of Zaruma. This property is situated in the Andes Mountains, near the headwaters of the Tumbez River and 4 degrees south of the equator. The altitude is 2,000 feet, though employees come from altitudes ranging from sea level to 8,000 feet. The average maximum temperature is 80.21 and the average minimum, 67.93 F. The humidity is high during the rainy season (October to May), while the remainder of the year is usually dry. The natives, a goodly percentage of whom are ignorant, with a large admixture of Indian blood, as a rule go barefoot, live in hovels and subsist chiefly on a diet of rice, beans, plátanos and raspadura (brown sugar). However, many of the permanent employees of the company are better housed and eat at the company "fonda" or dining room, and these, of course, have a well balanced diet.

Portovelo and the company property, which covers an area of several square miles, is kept as sanitary as constant vigilance and the expenditure of adequate sums of money can make it. A large sanitary squad is kept busy eliminating the possible breeding places of mosquitoes, preventing soil pollution with hookworm larva and water contamination with amebas, inspecting latrines, and performing the various duties that fall to such a detail. All drinking water is distilled. Houses are well screened and have much modern plumbing. However, with a large native population that has little conception of sanitation, it is difficult to exclude and eliminate all transmissible diseases. Outside the camp limits even the outdoor toilet is practically unknown. It is hard for the North American to comprehend a country where even the towns have no toilet facilities and the odor in most of them is enough to sicken one. As all other sanitary efforts of the country are on a par with soil sanitation, it is easy to understand why hookworm disease, malaria, syphilis, tuberculosis and even leprosy flourish there.

CONTROL

This company maintains a hospital where not alone company employees and their families receive free medical treatment, but nonemployees from all over the country, even as far south as the Peruvian border, come for operations and treatment. As can be understood, many phases of disease are encountered which are seldom seen in more fortunate districts, where sanitation and preventive medicine have come into their own. Particular difficulty is experienced in hookworm and malarial control. Many of the employees are transient and others own or lease small tracts of land at some distance from the camp, and spend much of their time during the crop season away from the camp. During this absence, while in communities where hookworm and malaria are prevalent, they become reinfected. The applicants for employment average about 100 a month, and a continual hookworm and malarial survey is therefore rendered necessary. However, it has been possible to reduce hookworm disease to a minimum by a rigid enforcement of sanitary measures and frequent reexaminations and treatment; and as the employees of the company are more or less under control and are obliged to report for the necessary surveys, the results are more satisfactory and the data more dependable than among a similar number of residents of a community where they are not obliged to conform to such regulations.

OTHER INTESTINAL PARASITES

In conducting the recent survey, attention was early and particularly attracted to the heavy infestation with other classes of intestinal parasites, as Table 1, based on 1,109 cases in the preliminary survey, indicates.

TABLE 1.—RELATIVE PERCENTAGE OF VARIOUS CLASSES OF PARASITES

Class of Parasite	Positive	Negative	Per Cent. Positive
Trichocephalus dispar	937	172	84.5
Ascaris lumbricoides	872	237	78.8
A. duodenale and N. americanus	602	507	54.25
Oxyuris vermicularis	254	875	22.8
Strongyloides	212	897	19.1
Taenia (saginata and solium)	11	1,098	1.0
Endameba histolytica	10	1,099	0.9

METHOD OF DIAGNOSIS

In all cases the laboratory diagnosis was made by the glycerin-salt method of Barber. Specimens were prepared on clean slides and examined with low power unless detail was necessary. In negative cases, specimens were centrifuged and at least three slides were examined before the cases were so classified. In the tables submitted herewith the hemoglobin content and differential counts are omitted, as these would require exhaustive tabulation and it is thought that the findings would be of little general interest.

TABLE 2.—OCCURRENCE OF PARASITES

	Number	Per Cent.
No infestation with intestinal parasites	105	9.5
Infestation with one species	248	22.4
Infestation with two species	407	36.7
Infestation with three species	264	23.8
Infestation with four species	81	7.5
Infestation with five species	4	0.4

Table 2 is based on the number of different species harbored by a single individual as evidenced in the laboratory examinations of the 1,109 cases referred to above.

INFLUENCE OF ENVIRONMENT

Attention is invited to Table 3, which is peculiar in the fact that, contrary to tradition, those employed in the mine show a lower percentage of hookworm infestation than surface employees. This may be explained by the fact that the former, as a rule, have been longer in the company employ and have had the advantage of previous treatment. Applicants for employment show the highest percentage of infection. Those coming from the low country are almost 100 per cent. positive, while those coming from the higher altitudes are, of course, relatively free. It has also been found that in applicants who are infested with hookworm, the infestation is much more profound and the hemoglobin content of the blood is much less than in company employees who, even though infested, have had the benefit of previous treatment. In many instances it was demonstrated that, even though hookworm infestation was negative, when there were heavy infestations with two or more classes of intestinal parasites, notably *Trichocephalus dispar* and *Ascaris lumbricoides,* a severe degree of anemia and gastro-intestinal symptoms were in evidence.

TABLE 3.—RESULTS OF EXAMINATION OF STOOLS OF SIX HUNDRED AND SIXTY-SEVEN EMPLOYEES AND APPLICANTS FOR EMPLOYMENT

Hookworm	Positive	Negative	Total	Per Cent. Positive
Mine employees	103	102	205	50.3
Surface employees	172	133	305	56.66
Applicants for employment	104	53	157	66.2
Total	379	288	667	58.66*

* Average per cent. positive.

TREATMENT

In conducting the campaign for the eradication of hookworm and other parasites, the men were notified to report at the hospital at 7:30 a. m. They were instructed to eat no breakfast and to avoid the use of alcohol. As the survey embraced the general physical condition of the employees, including malaria, tuberculosis, syphilis and other quarantinable or transmissible diseases, and entailed a great amount of laboratory work, the number reporting was limited to fifteen daily. On reporting they were given from 30 to 48 drops of oil of chenopodium in divided doses. Freshly filled hard gelatin capsules, and the oil of a standard pharmaceutical concern, were used. The first dose was given at 8, the second at 9 and the third at 10 a. m. Three hours after the last dose they were given an ounce of magnesium sulphate, which was later repeated if four stools did not promptly result from the first dose of the purgative. As before stated, all employees were given a physical examination and the dose of chenopodium determined by their physique, estimated degree of infestation and anemia present. Such conditions as enteritis, nephritis and malaria were also considered in determining the dosage. Those under 18 years of age were given appropriate amounts. In advanced cases, the improvement that follows the first



Fig. 1.—A portion of the camp, and the topography of the surrounding country.

treatment is usually striking. The edema in the feet and legs disappears or is greatly reduced, the appetite improves, and mentality brightens. In patients examined two or three months after complete eradication, it will often be found that the pulse rate has become lower, palpitation and functional heart murmurs have disappeared, and the hemoglobin has increased from 15 to 30 per cent. A marked gain in body weight is not unusual.

UNTOWARD EFFECTS OF TREATMENT

Oil of chenopodium was used exclusively for the eradication of hookworm and was most satisfactory. In a few of the earlier cases treated, from 30 to 50 drops of chloroform were given in castor oil, following the chenopodium; but persistent vomiting followed this method of treatment in a large percentage of cases, and it was then difficult to administer another purgative. The latter method of treatment was therefore abandoned and the one first mentioned substituted. No further trouble was experienced, and the effectiveness of the treatment apparently in no way diminished. In a very few cases, slight toxic symptoms were noted, as evidenced by vertigo, abdominal pain and prostration; but these symptoms were transient, and no sequelae, except a moderate diarrhea in a few instances, were noted. Oil of chenopodium has been used in Curipamba hospital for the last four years, and there is no record of a fatality or serious sequelae which can be even indirectly ascribed to its use. It is thought that those patients who have a heavy infestation with low hemoglobin content and marked debility, due either to the uncinariasis or to other constitutional disease which accompanies it, should have smaller doses of the drug in the primary treatment. By this method the patient is relieved of a part of the worms, and subsequent treatment may be with reduced dosage and at sufficient intervals to permit recuperation on the part of the patient. As a surgical operation, performed late in the disease and when the patient has not sufficient resistance, may be "the straw that breaks the camel's back," so it is in the treatment of advanced cases of hookworm disease, and care in the handling of these cases is essential. In this hospital no treatment for hookworm is given to an outpatient who has not been under the observation of a member of the staff.



Fig. 2.—An average native house, in this case used as a schoolhouse.

REEXAMINATION

Within from two to four weeks after the preliminary treatment, the patients were again examined, and Table 4 demonstrates the effectiveness of the chenopodium treatment. It will be noted that two treatments rendered negative almost 98 per cent. of the cases.

CONTROL MEASURES INSTITUTED

Since the campaign was instituted, the sanitary measures of the camp have been more rigid, pamphlets containing educational propaganda were distributed, and all of the accepted prophylactic measures were inaugurated to reduce the chances of reinfection. At this time all applicants for employment are required to undergo a physical examination prior to employment. Those who are considered free from all transmissible diseases and are eligible for employment are issued a certificate of health, and it is hoped that the 1921 survey will show a marked decrease in hookworm and other diseases of a transmissible nature.

CONCLUSIONS

Hookworm disease is very prevalent in Ecuador. Both the Old and the New World varieties are found here. Its eradication has not been attempted except in a few small areas.

A hookworm survey should be elastic enough to include every native in an infected region, and sufficiently comprehensive to embrace all other classes of intestinal parasites, many of which produce symptoms similar to hookworm disease, including gastro-intestinal symptoms and anemia. This is particularly true of patients, harboring two or more classes of parasites, who do not have a properly balanced diet.

Trichocephalus dispar and *Ascaris lumbricoides* are found in a large percentage of the population, and diarrhea and subsequent anemia are not unusual sequelae.

Chenopodium oil has proved more effectual in the removal of intestinal parasites, with the exception of *Trichocephalus dispar* and the tapeworm family, than the older vermifuges. The former has been found more resistant to treatment than other species, and neither chenopodium nor other vermifuges or anthelmintics seem to exert a marked influence on their removal or destruction.

The fact that oil of chenopodium acts as a vermifuge on other classes of parasites is an economical factor in its favor, saving in many instances the necessity of administering other drugs for their removal. The older method of treatment in Curipamba hospital consisted in the administration of santonin and calomel for the removal of other classes of intestinal parasites, previous to the chenopodium treatment, but that procedure has been found superfluous in the eradication of *Ascaris lumbricoides* and *Strongyloides*.

Untoward symptoms and toxic action ascribed to the use of chenopodium oil are due, in many instances, to improperly selected cases. Each patient to whom

the oil is administered should come under the observation of the prescriber and dosage determined after a physical examination.

A classical symptom often mentioned in textbooks as occurring in hookworm disease, i. e., a triangular spot, or spots, on the dorsum of the tongue, appearing as though a pen had been wiped on it, is of little value as a diagnostic sign. In the series of cases reported, this sign was not observed in a single instance.

TABLE 4.—RESULTS OF TREATMENT

Preliminary Survey (hookworm):	
Total positive	602
Total negative	507
Total examined	1,109
Results Following First Treatment (positives in preliminary survey):	
Positive	74
Negative	368
Unable to locate	160
Total	602
Results Following Second Treatment (positives after first treatment):	
Positive	10
Negative	55
Unable to locate	9
Total	74

Is there a specific toxin generated in pulmonary tuberculosis which is inimical to the development of hookworm in a host so affected? An interesting feature, and perhaps an unusual one, was the fact that while the initial survey of employees revealed an average infestation of 58.66 per cent. with hookworm, in forty-six cases of pulmonary tuberculosis, hookworm infestation could not in a single instance be demonstrated, though the pulmonary condition apparently exerted little influence on other species of parasites, which were present in about the usual number. This may be merely a coincidence, but it is certainly worthy of further investigation, as a review of the available literature on either hookworm disease or tuberculosis gives no enlightenment on the subject.

SUPPURATING MYOMA UTERI

REPORT OF CASE WITH A BRIEF REVIEW OF THE LITERATURE

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An unusual complication of myoma uteri was recently observed in the surgical clinic of Dr. John B. Deaver, at the Lankenau Hospital, Philadelphia. In the wide experience of this surgeon, comprising more than 1,200 operations for uterine fibroids (at this hospital alone), this was the first instance of its kind encountered. With this evidence of the infrequency of the complication a report of the case seems warranted.

REPORT OF CASE

History.—Mrs. M. C., aged 20, negress, was admitted to the Lankenau Hospital, May 4, 1920, complaining of sharp pains in the lower abdomen. She said she had noticed a mass in that region for the last two years, which had gradually increased in size but had not caused any discomfort or in any way interfered with menstruation, until about one month before when she missed the normal menstrual period. Two weeks before a sharp pain had developed in the right lower abdomen, later becoming generalized over the entire abdomen but remaining more severe in the right lower quadrant. While there was no nausea or vomiting, there was a rise in temperature accompanied by night sweats several days before admission.

The menstrual history was normal except for the period missed one month before. She had had marked leukorrhea with frequent and burning urination at the beginning of the leukorrhea two years before. She had no children, and had had no miscarriages. There were indications of gonorrheal infection two years before, which, however, was not at that time confirmed by bacteriologic examination. The social history was negative.

Physical Examination.—The patient, a well nourished negress, was slightly delirious, with a hot, dry skin. The head, neck and thorax were negative. A rounded, slightly movable, firm and somewhat tender mass was present in the lower abdomen. The tumor, which was nonfluctuating, was about the size of a six months' pregnancy and seemed to extend into the pelvis. Vaginal examination revealed slight leukorrhea, the cervix normal, and the pelvis filled with a tender, hard mass evidently attached to the posterior surface of the uterus. The urine was negative; the blood count revealed a leukocytosis of 24,100. The Wassermann reaction was negative. A tentative diagnosis of myoma uteri was made.



Fig. 1.—The uterus laid open, showing probe within the uterine cavity. The roughened areas represent the burrowing pus cavities.

Operation.—This was performed, May 6, 1920, by Dr. John B. Deaver. When the abdomen was opened, an inflammatory mass appeared at the fundus of the large, fibroid uterus, about the size of the head of a full term fetus, to which the great omentum was adherent. A subtotal hysterectomy was performed. Incision of the removed specimen revealed an irregularly pocketed pus cavity at the fundus of the uterus, containing about 0.5 liter of greenish pus. Both tubes and ovaries were normal. Bacteriologic examination of a smear taken from the infected fibroid disclosed many pus cells, a few gram-negative organisms, and intracellular diplococci, indicative of gonococci. Recovery was interrupted during the first few days following operation by toxic symptoms, which, however, soon disappeared. On the thirteenth day after operation the patient developed a fecal fistula which had closed spontaneously by the twenty-seventh day, when she was discharged in good condition.

Pathologic Report (by Dr. Stanley P. Reimann).—The specimen was a myomatous uterus, the total mass measuring 22 by 17 by 15 cm. There were five myomas. The largest,

roughly pear-shaped and 15 cm. in length, sprang obliquely from the upper right cornu to which it was blended; the smaller tumors measured from 2 to 5 cm. and sprang from the opposite side of the uterus. The specimen was amputated supracervically. The endometrium was pale and covered with tenacious mucopus. The largest myoma in its upper and in half of its lateral aspects showed irregular, ragged cavities which contained more or less thick greenish yellow pus. These cavities penetrated the tumor mass to distances of from 6 to 7 cm. and burrowed their way irregularly in all directions. No direct communication was found with the uterine cavity, although the abscess cavities burrowed to within 0.5 cm. of it. The other tumors showed the ordinary gross appearance of fibroleiomyoma. Smears from the purulent centers of the cavities showed a gram-negative, intracellular diplococcus, resembling morphologically the gonococcus, which, however, failed to grow on ordinary culture mediums.

Histology.—The endometrium showed irregularity in the contour and size of the glands. Many were filled with mucoid material, desquamated cells and débris, and a few with blood pigment. The matrix showed a small amount of lymphocytic infiltration, and the myoma cavities an excess of fibrous tissue with very little smooth muscle. The walls of the abscess cavities were lined with partially necrotic fibrous tissue, richly infiltrated with pus cells. The reaction extended to varying depths and consisted of intense, active congestion, pus cells, edema and small amounts of fibrin.

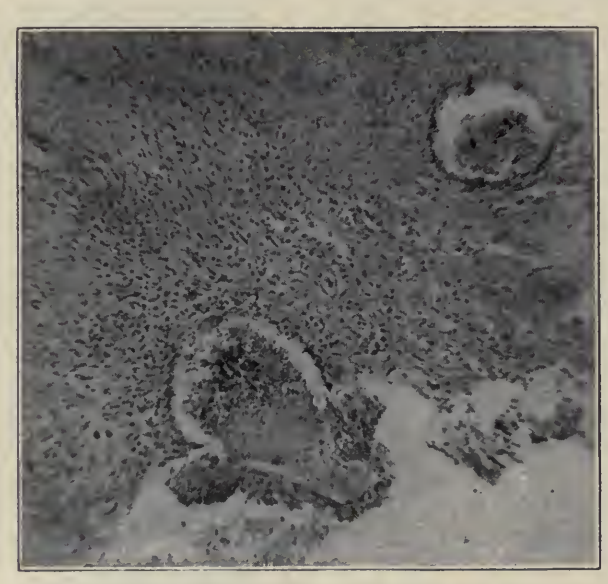


Fig. 2.—Wall of an abscess cavity, showing a dilated vessel and the cellular (pus) infiltration.

COMMENT

While some authorities class suppuration among the degenerative changes of uterine fibroids, the classification can hardly be said to be accurate if by suppuration is meant the invasion of the tumor by pyogenic organisms of sufficient virulence to produce the abscess. The confusion of terms may be due to the fact that in many reports suppuration is taken more or less for granted, without a bacteriologic or histologic study, and also to the frequent association of gangrenous degeneration and abscess formation.

Statistics from various sources confirm the rarity of the condition. Guéry,[1] in 1901, was able to collect only forty-seven instances of genuine, or, as he terms them, primary suppurating fibroids, that is, unassociated with other types of degeneration. Messa[2] in fifty cases, LeBec[3] in fifty-seven, and Noble[4] in 218 failed to observe suppuration in any. Lauwers[5] noted the phenomenon in 0.5 per cent. of his cases. Basso[6] in 605 myomas observed only one instance of suppuration; while Kelly and Cullen[7] among 1,428 uterine myomas report only eleven cases of suppuration.

On the other hand, Martin[8] asserts that suppuration occurs in 5 per cent., and Cullingworth,[9] in 15 per cent. of cases of myoma uteri. These figures are evidently too high, and probably are the result of the inaccurate classification, already referred to, which includes necrosis, gangrene and other forms of degenerative changes.

While a uterine fibroid may become infected at any time, infection is most likely to take place during active sexual life, that is, between the twenty-fifth and forty-fifth year. The change is noted at varying periods after the first symptom of tumor formation is apparent. In some instances, as in our case, two years elapsed before suppuration set in, and in others, the period extended from four to five years, and even ten, twenty or forty years, as in cases reported, respectively by Morestin,[10] Michon,[11] Routier,[12] Hartmann and Mignot,[13] Vautrin[14] and Carter.[15]

The myoma becomes infected as a result of impaired circulation which activates the bacteria latent in the tumor. In the order of frequency, the factors leading to infection of a fibroid are pregnancy; trauma from a surgical or obstetric procedure, in the interstitial variety by direct extension of infection from an endometritis; torsion of the pedicle, especially in the subserous tumor, which has a tendency to develop adhesions to neighboring organs, such as the intestine, the bladder and principally the tubes and ovaries; chemical irritation, such as the administration of ergot and other drugs destined to contract the uterus, as in the case reported by Basso; and mechanical irritation, in the use of the roentgen ray and radium.

Bacteriologic studies reveal the fact that there is no type of organism peculiar to suppurative myomas. It is nearly always the same as that present in the neighboring organs from which the infection has in all probability been derived. Accordingly, one would naturally expect to find streptococci, staphylococci, colon bacilli and gonococci. All of these organisms, in fact, have been recovered from suppurating myomas with the sole exception of gonococci. The case under consideration, therefore, appears to be a unique example of its kind. The history of specific infection, as well as the presence of a chronic endometritis, as demonstrated in the pathologic study, and the finding of the diplococcus in the bacteriologic examination of the pus are, I believe, evidence in support of this statement.

1. Guéry, A.: Etude sur la suppuration des fibromyomes utérins, Thèse de Paris, 1901 (gives complete bibliography).
2. Messa, G. E.: Contributo allo studio delle trasformazioni regressivi (degenerazione benigne) dei fibromiomi dell'utero, Ann. di ostet. **2**: 549, 1912.
3. LeBec, cited by Piquand, M. G.: Les dégénerescences des fibromyomes de l'utérus,, Thèse de Paris, 1905.
4. Noble, C. P.: The Complications and Degenerations of Fibroid Tumors of the Uterus, Brit. Gynaec. J. **17**: 170, 1901-1902.
5. Lauwers: Complications des myomes, Bull. Soc. belge de gynéc. et d'obst. **9**:49, 1897.
6. Basso, G. L.: Sulla suppurazione dei fibromi uterini, Ginecologia **11**: 1, 1914.
7. Kelly, H. A., and Cullen, T. S.: Myomata of the Uterus, Philadelphia, W. B. Saunders Company, 1909.
8. Martin, A.: Cited by Guéry (Footnote 1).
9. Cullingworth, C. J.: Cited by Guéry (Footnote 1).
10. Morestin, P.: Cited by Basso (Footnote 6).
11. Michon: La suppuration des fibromes utérins, Gynécologie **14**: 9, 1910.
12. Routier: Cited by Basso (Footnote 6).
13. Hartmann and Mignot: Suppuration des fibromes interstitiels, Ann. de gynéc. et d'obst. **45**: 425, Philadelphia, W. B. Saunders Company, 1896.
14. Vautrin: Enorme fibrome suppuré de l'utérus, Rev. méd. de l'est. **40**: 479, 1908.
15. Carter, C.: Degeneration and Cretification of Fibroid Tumor of Uterus, Tr. Obst. Soc. London, **13**: 167, 1871.

The symptoms of suppurating fibroids are not distinctive, except that the pain is likely to change from the usual dull, dragging pain to that of a sticking character. The process is evidently not sudden, as is indicated by the time elapsing between the first signs of fibroid and the development of the infection. Diagnosis, therefore, is not always possible. In some instances there may be a rapid increase in the size of the tumor accompanied by local tenderness, fever, night sweats and possibly a discharge of pus from the vagina, together with emaciation and signs of general septicemia. A high leukocyte count in connection with these symptoms in the presence of what appears to be a fibroid should suggest a suppurating tumor, since it is well known that leukocytosis is not a feature of the ordinary myoma uteri.

The prognosis of suppurating fibroids is grave, and its gravity is further increased by the complications that may arise, as well as by the depleted condition of the patient when she comes to operation. A study of the literature shows that these infected fibroids frequently rupture into the peritoneal cavity; or they may break away from the pedicle of the tumor and are then found free in the abdominal cavity; or they may rupture through the posterior vaginal wall, the intestine or the bladder; or they may become organized and inspissated. These possibilities naturally add to the mortality, which is high.

Basso [6] estimates the death rate at 50 per cent.; Berger [16] reports twenty-three cases with sixteen deaths, or 70 per cent. mortality. His cases, however, were all related to pregnancy and parturition, which contribute to the gravity of the condition. Kelly and Cullen [7] reported eleven cases with three deaths, a mortality of 27 per cent. This reduction is no doubt due to improvement in surgical technic and treatment.

The treatment of suppurating myomas is essentially surgical, and too much emphasis cannot be laid on the importance of early surgical interference before complications have a chance to develop. Prognosis also is naturally more favorable if the tumor is small and nonadherent and can be removed in toto without danger of rupture and spread of its contents during operation.

In case of pregnancy complicated by myoma uteri, it is important to lay more than usual stress on aseptic precautions during pregnancy, at parturition and afterward, and to remove the fibroma as early as is safe after the termination of pregnancy.

As á rule, hysterectomy, total or subtotal, is the operation indicated, with suitable drainage.[17]

16. Berger, G.: Suppuration des fibromes au cours de la puerpéralité, Thèse de Paris, 1907.

17. In addtion to the references already given, the following will be found of interest:

Blacker, G.: A Suppurating Fibroid Tumor of the Uterus, Tr. Obst. Soc. London **49**: 100, 1907.

Bonfils, E.: Contribution a l'étude de la suppuration des fibromyomes de l'utérus, Thèse de Montpellier, 1910.

Delage, J., and Ganjoux, E.: Sur la suppuration des fibromes de l'utérus, Gaz. d. hôp. **80**: 591, 1907.

Van Orden: Suppurating Fibroid Due to a Criminal Abortion, Am. J. Obst. **68**: 99, 1913.

AN OPERATION FOR TUBERCULOSIS OF THE WRIST

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SAN FRANCISCO

Ten years ago, as the result of careful clinical and laboratory investigation, I laid down as a cardinal rule that the proper way to cure a tuberculous joint in the adult was to destroy it.[1] Up to that time the only theory of operation was to remove as much tuberculous tissue as possible.

Since my original article was published, I have continued my investigations, and on numerous occasions have called attention to this cardinal rule, emphasizing and amplifying it as time went by.[2] The operation described here shows how the theory may be applied successfully to a most intractable form of joint tuberculosis.

THE OPERATION

A longitudinal incision, 8 or 10 cm. long, runs from the middle of the third metacarpal bone to a point about 4 cm. proximal to the articular surface of the radius, passing over the wrist at about its middle. The incision is deepened, and the extensor tendons are retracted. The periosteum over the proximal end of the third metacarpal and that over the distal end of the radius is incised for about 2 cm., and stripped back.

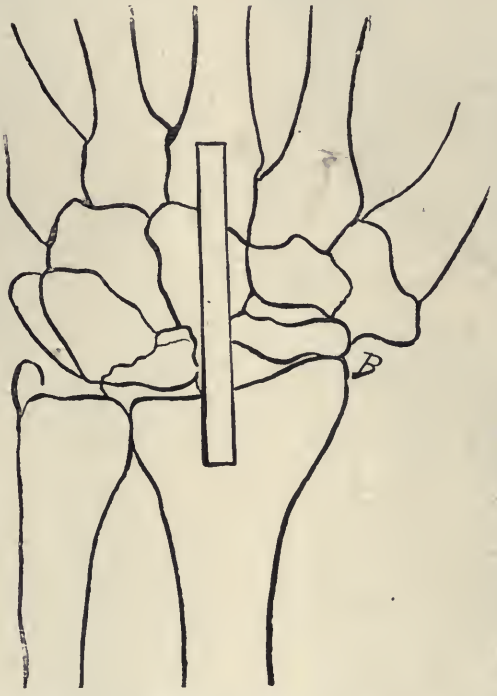


Fig. 1.—Graft running between base of third metacarpal and end of radius.

With a motor saw, two parallel cuts about 5 cm. long and 5 mm. apart are made, through the wrist joint, into the radius and the third metacarpal, running into each bone for the distance of a centimeter. A graft is removed from the anteromedial cortex of the tibia measuring about 4 by 0.5 cm., and is fitted into the groove. When the wrist is forced into superextension the graft locks fast. The graft is sutured in place, and the skin is closed. After the application of a sterile dressing the forearm and hand are put up in plaster of Paris, with the fingers and thumb free, and with the wrist in superextension. The superextension not only locks the graft in place, but improves function in the hand when the wrist becomes ankylosed. It also serves the purpose of approximating the radius and metacarpus. In a diseased wrist it brings them almost into apposition.

Considerable swelling of the fingers may be looked for after the operation, but need cause no anxiety if the plaster dressings have been slit up.

The plaster gauntlet remains on for about three months, the patient moving his fingers and thumb as much as possible meanwhile.

The result is a useful hand, possessing as much rotation as before the operation, and with excellent power in the fingers and thumb.

1. Fly, L. W.: Surg., Gynec. & Obst., **10**: 561, 1910.

2. Ely, L. W.: Joint Tuberculosis, New York, William Wood & Co., 1911; California State J. Med. **13**: 286, 1915; Med. Rec. **78**: 147, 1910; Berlin klin. Wchnschr. **50**: 256, 1913; ibid. **47**: 2062, 1910; New York M. J. **6**: 783, 1915; New York State M. J. **10**: 273, 1910; The Three Rules of Treatment in Adult Joint Tuberculosis, J. A. M. A. **58**: 534 (Feb. 24) 1912; Diseases of Bones and Joints, New York, 1910.

REPORT OF CASES

Case 1.—A. W., aged 12 years, schoolboy, with a tuberculous family history, was brought to the Stanford Clinic, Aug. 26, 1916, on account of pain in his left wrist, which had been present for two weeks. The examination of the joint was negative, and an external application was prescribed. Two months later he was brought again for the same complaint, and a tentative diagnosis of tuberculosis was made by the attending surgeon, though the history does not reveal the data on which the diagnosis was made.

November 4, a roentgenogram disclosed "marked demineralization of the left carpal bones," and the diagnosis read "probable tuberculosis." A plaster-of-Paris splint was applied. November 25, the first mention of swelling was made. From this date forward the immobilization was continued, reinforced by heliotherapy.

June 8, 1918, plaster of Paris was discontinued.

Aug. 7, 1918, there was no pain. The wrist was rather swollen, and the hand was adducted. There seemed to be some active inflammation. A fair amount of flexion and extension was present, about 40 degrees, and rotation was virtually normal. A new plaster-of-Paris gauntlet was applied with the thumb and fingers free, and the wrist in slight superextension.

The plaster-of-Paris gauntlets were continued for another year.

Aug. 25, 1919, operation, as described above, was performed. The carpal bones were found irregular and friable. The radius could be cut with a knife, and the synovial membrane was thickened. A plaster-of-Paris gauntlet was applied, with the wrist in superextension. The material removed from the wrist was ground up and injected into a guinea-pig. The results were positive for tuberculosis. Microscopic examination of the bones and soft parts did not reveal tuberculous



Fig. 2 (Case 1).—Anteroposterior view nine months after operation. The graft has increased decidedly in thickness, and its structure blends with that of the receiving bone.

tissue. Immobilization was continued until November 25, the patient meanwhile improving in his general condition.

May 22, 1920, the patient was seen at his place of business, where he is working as a bank clerk. The wrist was apparently well, and had been since the last note. It was firmly ankylosed in an attitude of slight superextension. Flexion and extension were absent; rotation was perfect. The patient swam and indulged in any exercise he fancied. He was now 16 years of age, and in excellent physical condition.

July 2, bony union was evident. The wrist apparently was well. The roentgenogram disclosed fusion of the graft with the receiving bones. The patient was in excellent physical condition.



Fig. 3 (Case 2).—Anteroposterior view taken about nine months after operation. As in Case 1, the graft has increased decidedly in thickness, and its structure blends with that of the receiving bone.

Case 2.—M. S., a woman, aged 22, a laundry worker, complained of a sore wrist Sept. 8, 1919, which she had had for nine years and which she attributed to a fall. Examination revealed slight bowing of the lower end of the forearm. Motion was markedly restricted in flexion, extension and supination, and moderately in pronation. The hand was atrophied, the finger motions were free. A roentgenogram revealed "old destructive arthritis."

September 13, operation, as described above, was performed. The saw slipped and lacerated badly the common extensor tendons of the fingers. They were united with silk sutures. Material from the wrist was sent to the laboratory for examination.

September 14, edema and cyanosis of the fingers necessitated slitting the gauntlet, and the superextension was lost.

The wound healed by first intention, but the pain and disability in the fingers, in spite of early and persistent motion, were so severe that two operations were necessary on the damaged tendons. At the first, Dec. 15, 1919, they were found closely adherent to the surrounding structures. They were dissected free and were enclosed in a tube of fascia lata. Subsequent active and passive motions were begun early.

Feb. 23 1920, the tendons were again dissected free. They proved tightly adherent to the fascial tube, and this to the carpus and the subcutaneous tissues. It was dissected off.

February 24, active and passive motions were begun.

February 25, electrical stimulation of the common extensor was begun.

The active and passive motions and the electrical stimulation were kept up for two months with good results.

June 24, the patient said the wrist was well. She had no pain, and did heavy work. The joint was stiff in line with the forearm. Supination was slightly restricted, pronation somewhat more so. The arc of rotation was approximately

half normal. Motion in the interphalangeal joints was normal, but in the metacarpophalangeal joints was somewhat restricted. The thumb was free. The limitation was apparently due to adhesions of the tendons with the deep tissues. There was marked bony thickening at the site of the graft. A roentgenogram was taken.

The guinea-pig test with material from the wrist was negative. Microscopic examination of some of the bone removed disclosed typical bone tuberculosis.

PARAFFINOMA AND WAX CANCER*

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REPORT OF CASE

A woman, aged 30, referred by Dr. Oliver Ormsby in June, 1918, had become annoyed in June, 1916, by a couple of small moles of approximately symmetrical location on each cheek. These had been removed by electrolysis, leaving small, depressed scars. Paraffin had then been injected by a so-called beauty specialist to fill out the depressions; the immediate results were so pleasing that several small wrinkles on each cheek had also been filled out at subsequent sittings. In about a year the site of the injections became slightly swollen, indurated, and assumed a dusky red color. The induration and discoloration gradually spread to involve the greater part of each cheek lying between the angle of the mouth anteriorly, the zygoma above, the anterior border of the masseter muscle posteriorly, and the mandibular margin below. It became impossible to open the mouth more than one-half inch. The induration transformed the smooth convexity of the cheeks which had



Fig. 1.—One week after the first step of the operation on the right cheek; the arm held in place by a plaster cast. On the left cheek the paraffinoma, ulcerating at a point just beneath the zygoma, is well seen.

immediately followed the paraffin injections into pronounced concavities. At frequent intervals the lesions became the seat of mild suppurative processes associated with the extrusion of minute particles resembling paraffin; these would leave small ulcers which would crust over, heal, and again break down, so that there was an almost constant discharge from areas involved. The patient became adept in the art of making up; and by filling the depressions with a half inch of some cosmetic she was able to present passable features; once made up, however, any disturbance of the immobilization of the face affected the complexion disastrously.

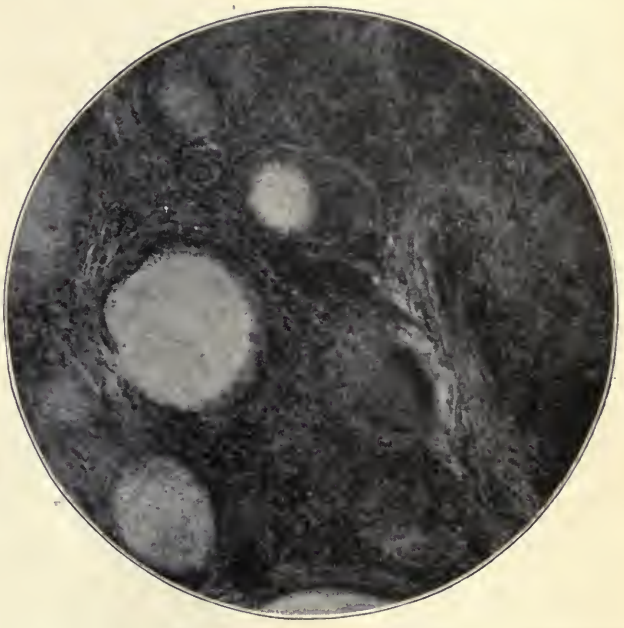


Fig. 2.—Section from a paraffinoma. Note cellular infiltration about islands of paraffin and foreign body giant cells.

When first seen by Dr. Ormsby, the condition was as just described. The blood Wassermann test was positive. The patient was referred to me for surgical treatment. In view of the positive Wassermann test it was deemed wise to defer operation pending the results of vigorous antisyphilitic treatment. The Wassermann test became negative in three months; six months later the patient entered the Presbyterian Hospital of Chicago for surgical treatment. There had been no appreciable local change resulting from the antisyphilitic treatment.

There were three reasons for operating: to (1) reduce disfigurement; (2) increase the mobility of the mandible, and (3) forestall epithelioma. The treatment adopted was complete excision of involved tissue and substitution of a flap of skin and fat from the arm, one side at a time. This involved four different operations. At the first operation, the lesion on the right cheek was excised, the dissection being carried to the mucous membrane at one point; the right arm was brought up over the head and a pedicled flap from the arm stitched into the cheek defect (Fig. 1). The position of the arm was maintained by a plaster cast for two weeks when, under gas-oxygen anesthesia, the cast was removed, the pedicle of the flap cut, and the arm brought down to the side. The stump of the transplant on the cheek was then sutured in position. Ten days later the procedure was repeated on the opposite side. Healing in each instance was uneventful. The result when the patient was last seen, that is, eight months after operation, was a decided success from the standpoint of each of the three objectives of treatment.

CLINICAL PATHOLOGY OF SKIN LESIONS FROM PROLONGED EXPOSURE TO PARAFFIN

The skin lesions resulting from prolonged exposure to paraffin vary with the susceptibility of the individual to paraffin irritation, and inversely with the degree of purity of the paraffin. In 1914,[1] in summarizing the

* From the Department of Surgery of Rush Medical College, Chicago.

1. Davis, B. F.: Paraffin Cancer, J. A. M. A. **62**: 1716 (May 30) 1914.

lesions as found among men employed in a large plant near Chicago engaged in the manufacture of paraffin, I said:

Skin lesions attributable to their occupation were found only in the men employed in the press-rooms. Here the crude paraffin is run into great presses and the oils, "pressed distillate," expressed. The paraffin remaining in the press, so-called slack wax, is scraped off by men who use spade-like instruments and usually work bare-handed with sleeves rolled up above the elbows. During this process the men become pretty thoroughly smeared with the pressed distillate. The work is done at room temperature. During the first few months of employment in this department the majority of workmen suffer from "wax-boils" affecting any portion of the skin, but particularly the arms and neck. The susceptibility to this trouble, which appears to be a species of furunculosis, may disappear in time to a very large extent. A certain proportion of the workmen, however, will develop still further lesions. Thus, after a number of years, pigmented spots make their appearance; some of them are scaling and psoriatic, others merely rust-colored areas varying in diameter from a few millimeters to a centimeter and a half; these may be followed by wart-like growths of slow development amenable to various common remedial measures; finally, true epithelioma may appear. These changes are seen only in those employees who come into intimate and nearly continuous contact with the "pressed distillate" for a period of years. Waxboils and the subsequent lesions are unknown among the workers in the finished paraffin and among the men who handle the crude oil.

As the constant presence of crude paraffin on the surface of the skin causes a chronic inflammatory reaction in susceptible individuals, so the higher grades of paraffin, injected into or beneath the skin, appear to exert a similar influence on the tissues with which they come in contact. There must be an individual predisposition on the part of the patient here also, since the majority of people into whose skin paraffin is injected do not develop paraffinomas; on the other hand, the affliction is common enough to clothe the procedure of paraffin injection with distinct risk.

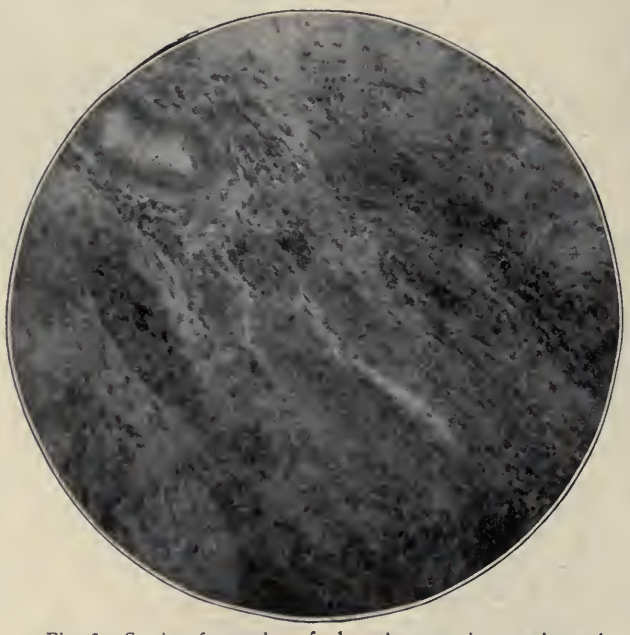


Fig. 3.—Section from edge of ulcerating area in experimental paraffinoma in a dog. Note the apparently infiltrating columns of epithelial cells. In the center are several mitotic figures.

Paraffinoma is a chronic inflammatory process involving skin and adjacent subcutaneous tissues, characterized clinically by the development of reddish purple, indurated masses, painless, not tender, persistent, not subject to ulceration as a rule, and ordinarily benign but occasionally becoming malignant. Microscopically, there appear numerous oval or circular clear spaces surrounded by fibroblasts with a marked sprinkling of endothelial and plasma cells; frequently the clear spaces, doubtless spaces from which paraffin has been dissolved in the process of sectioning, are the seat of plasmodial masses of endotheloid cells distinctly similar to foreign body giant cells (Fig. 2). In a few instances malignant degeneration has been discovered in paraffinomas.

The chief objection to paraffinoma is the terrible and almost ineradicable disfigurement which it produces. The only treatment of value is complete extirpation of the paraffin-bearing tissue and plastic repair of the resultant defect.

Experimentally, much has been accomplished from the standpoint of the production of lesions in animals similar to those that are seen in pathologic conditions in man.

From the standpoint of etiology and therapy, nothing has been added by animal experimentation to the information at hand as the result of clinical study. It is easy to produce granulomatous masses in dogs and rabbits by the subcutaneous injection of pressed distillate and slack wax, and occasionally an overgrowth of epithelial cells of an apparently infiltrating type may result. I have seen this occurrence once in a dog at the edge of an ulcerating paraffinoma which had developed in about six weeks as the result of the daily injection of small quantities of slack wax (Fig. 3). Yamagiwa and Ichikawa [2] produced epithelioma-like growths, only three of an infiltrating character, however, on thirty-two of fifty-two rabbits' ears systematically painted with tar for several months; these lesions appear to resemble closely the cutaneous disturbances seen in paraffin workers and the lesions produced in rabbits and dogs by prolonged exposure to the irritation of crude paraffin. It seems probable that this is another expression of the scarlet R reaction on which Fischer based his atraxine theory of the cause of cancer, and is probably explainable in the same terms. Thus, Bullock and Rodenburg [3] concluded "A Study of the Scharlach R Reaction" in these words:

The scharlach R reaction is a reparative process, acting under conditions of prolonged disturbance of mechanical equilibrium between epithelium and connective tissue, and dependent in its inception and continuation upon irritation and cell death. The contact with epithelial cells of a chemical irritant of slow absorbability and relatively mild toxicity is indispensable for the production of the reaction. The chemical owes its power of inducing epithelial proliferation, not to its solubility in lipoids, but to its ability to cause continuously a certain amount of tissue death. Cessation of epithelial proliferation occurs before the absorption of the foreign substance, and indicates the return of equilibrium after the performance of the new task imposed upon the tissue. The character and extent of the reaction are independent of the amount of blood circulating in the tissue. The degree of reaction depends on the surface area of epithelium exposed to the irritant. Scharlach R exerts no specific stimulating action on epithelial cells. The atraxine hypothesis of Fischer is untenable. Metaplasia is a frequent occurrence in the tissues of the ear, breast, prostate and lung after the injection of a chronic irritant of the type used in our experiments.

Experimentally, it is exceedingly difficult to carry the work on the relation of chronic irritation to cancer beyond the stage of chronic inflammation, possibly

2. Yamagiwa and Ichikawa: Mitt. a. d. med. Fakult. d. K. Univ. Tokyo **15**: 243-395 1915.
3. Bullock and Rodenburg: J. M. Res. **33**: 53, 1915.

because of the relative brevity of the duration of the experiment; clinically, we commonly see the relationship verified.

SUMMARY

We may say that paraffinoma is a chronic granuloma produced by prolonged, continuous exposure of susceptible tissues to the irritation of paraffin. Disfigurement, deformity and interference with function, if the lesion is in a region requiring motility, are the chief types of disability resulting; cancerous degeneration, "wax cancer," is an occasional intruder. Complete extirpation of the involved tissue is the treatment of choice. Paraffinoma probably is not the expression of a specific growth-inciting property of paraffin, but is rather the result of the long continued action of a low grade chemical irritant.

Academy of Clinical Medicine Building.

EMPTYING A CHRONICALLY DISTENDED BLADDER

DESCRIPTION OF A SIMPLE DEVICE *

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It has been a surprise to me how often men will go for months and years with a distended bladder. They will suffer a continuous overflow and live constantly with a back pressure on the kidneys for a surprisingly long time before sufficiently serious complications intervene to drive them to a physician or surgeon.

The problem of relieving the urinary tract from this pressure without bringing on an attack of anuria has been the subject of discussion ever since prostatectomy became a comparatively common procedure.

A common practice is to draw off a few ounces every few hours and gradually empty the bladder. This is a haphazard method which always leaves one in doubt as to the amount of urine and consequently the amount of pressure remaining in the bladder. A serious objection to this frequent catheterization is the irritation of the delicate mucosa of the urethra and bladder, unimmunized as it is, with its attendant shock and nervous upset.

REPORT OF CASE

When Mr. W. B., aged 78, came to me a few months ago suffering from a distended bladder of three years' standing, it occurred to me that a plan might be carried out easily whereby we might know at all times just how rapidly the pressure was being lowered, and hence we might be able to gage the discharge within perfectly safe bounds.

With this in view I placed the ordinary catheter and retained it by the usual method with adhesive straps. With a glass connecting tube I joined this to a rubber tube about 5 feet long, attaching the other end to an ordinary douche can, which I hung upon a standard by the side of the patient's bed. By raising and lowering the douche can I could regulate the pressure to a nicety. In adjusting the height of the can I found that at 12 inches above the base of the bladder there was a slow discharge of urine into the can. I left it at this point from 5 p. m. until morning, when it was lowered to 10 inches. Instructions were to empty the can whenever it contained 2 inches of fluid. Enough of a 1:4,000 solution of mercuric chlorid was kept in the can to prevent infection from possible inflow and outflow of the urine. The can was gradually lowered every four to eight hours, until at the end of forty-eight hours it reached a point 6 inches above the base of the bladder. During the next twelve hours the bladder emptied itself completely against this 6 inches of pressure, and the discharge became slightly bloody. During the first forty-eight hours the man passed 309 ounces (9 7/10 quarts) of urine. The patient was encouraged to drink large quantities of water. The catheter was now disconnected from the pressure tube, and the bladder allowed to drain freely into a bottle. The pressure could have been easily continued for twenty-four or forty-eight hours longer, and I believe would have had a beneficial effect on the patient. Fear of clotting from the bleeding present was an important factor in my determining to discontinue the pressure. I feel certain, however, that this could have been overcome with little difficulty. As it was, the patient was badly collapsed.

The systolic blood pressure, which was 170 when the emptying began, fell to 90. The patient's voice dropped to a whisper. He was listless and generally prostrated. Owing to a complicating infection (coming on ten days later) he was four weeks rallying before we felt justified in removing the prostate. From this he rallied slowly, but made a satisfactory recovery.

HYDRAULIC BALANCE

A study of the hydraulics of this condition is most interesting, and some of the findings in this case illustrate nicely the principles involved. To discuss it here in detail would require too much time and would take us away from the subject of this paper. A few of the most important points, however, may be mentioned.

November 20 and December 4, this man's blood pressure was: systolic, 170; diastolic, 100. In spite of insistent urging by his family, he had put off consulting a physician until his chief complaint at his first visit was a weakness and unsteadiness of his lower extremities and a slight edema. Strangely enough, the urine was free from albumin, casts or excess of cellular content. The bladder was distended to the umbilicus. The blood pressure of 170 was working against a full bladder, damming back urine into the kidneys, relieved only by overflow for three years. The bladder began to empty against a hydraulic pressure of 12 inches. In health, the resistance to overflow from the ureter is negligible. In this condition the urinary tract receives the added pressure from periodic contraction of the abdominal and bladder muscles. All this had resulted in a blood pressure of 170. The intravesical pressure had impeded the capillary and venous flow in the mucous membrane of the bladder, ureter, kidney pelvis, and in the urinary tracts of the kidneys. During three years, Nature's craft had in compensation maintained a crippled circulation. In three days this blood pressure fell to 90 mm. without any suggestion of toxemia or infection. Relieved of this back pressure, even though gradual (taking forty-eight hours), this circulation in the urinary tract found itself with a surplus of venous and capillary blood vessels, many of them with weak walls; consequently a congestion and a slight hemorrhage resulted. Under these conditions one of two things must happen: A flood of fluid through the chronically dilated portals must result, or a closure of these portals by the dilated blood vessels mechanically obstructing them. In this case there was a flood of fluid, and collapse of blood pressure and general prostration, with a clammy skin. An additional cause of the fall was the removal of the call for high blood pressure. The organism was freely relieved of its urinary secretions and consequently stopped calling for more force to drive the circulation through the secreting apparatus, and automatically the blood pressure fell. As usual, the pendulum swung too far and the blood pressure fell to a point below comfort.

I am not attempting to name all of the factors in this process or to detail the mechanism of anuria which

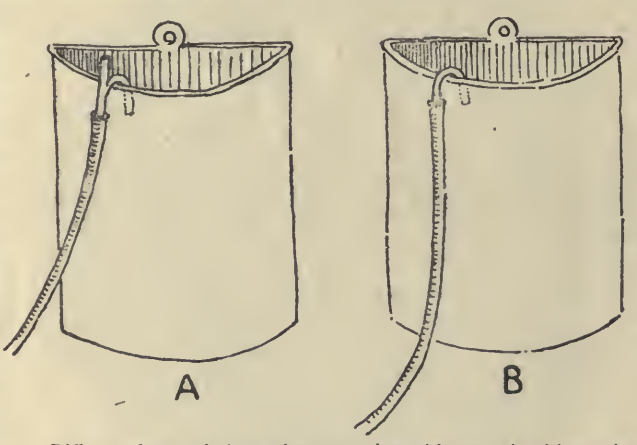
* Read before the Los Angeles Clinical and Pathological Society, May 27, 1920.

will follow a sudden removal of this back pressure by emptying the bladder in one sitting. The importance of a study of the hydraulics in this condition must be evident to every one giving it any thought. I do not know all the factors. I can conceive of an anuria resulting from too low blood pressure to force the circulation through the secreting mechanism. I can also see how congestion could block this mechanism with or without blood pressure.

I hope that this method will be found helpful in giving the circulation time to adjust itself to the change in the hydraulic balances of the body in these neglected prostatic patients. I am convinced that I should have done much better by my patient if I had taken more time and if I had maintained some pressure after the bladder emptied at 6 inches.

SUGGESTIONS FOR IMPROVING OUTLET OF TUBE

A variety of methods of collecting the urine as it comes up into the tube will suggest themselves to any one making a little study of it. Among these would be providing another opening in the can from half an inch to an inch higher than the one into which the urine discharges, This to be kept open into another receptacle so that the urinary pressure can be kept constant. I found it difficult to keep the nurses duly impressed with the need of frequently emptying the douche can so that the pressure should not vary more than 1 or 2 inches as the can filled from the bladder. Some device of this kind which will automatically keep the pressure constant will be a decided improvement.



Different forms of glass tube connecting with can: *A*, with curving attachment to one side; *B*, simple U tube.

Dr. H. H. Sherk of Pasadena suggests that a glass tube have a curving attachment made to one side of it which could be hung over the edge of the can and directly drip into the can. This would provide against the forming of a siphon in the U glass (*A* in the accompanying illustration). I believe the best suggestion, however, on account of its simplicity would be to use a simple U glass, which could be bent by any one over a Bunsen flame, attached to the end of the rubber tube and hooked over the edge of the can (*B*).

Another suggestion comes with the study of the change in blood pressure in connection with the lowering of the bladder pressure: that the blood pressure be watched by frequent readings, perhaps as often as every three or four hours, with the expectation that they would be an index to the increase or diminution of rapidity with which the bladder should be emptied.

The connection between blood pressure and the discharge of urine through the kidneys seems proved by the last few years' study of these two factors, and it seems to me that some direct evidence will be accumulated from studies of this kind.

Dr. B. O. Adams of Riverside has tested this plan recently with satisfactory results. By taking a week to it, he was able to save his patient altogether from collapse. Unfortunately, no records of blood pressure were made. He placed a Y in the tube which, by stopcock control, lowered the fluid in the can conveniently and hence more frequently.

Whatever method is used, the upper outlet of the tube must be securely fixed, adhesive tape being used where helpful, as a giving way might be disastrous. The bladder would empty very quickly if the tube should fall to the floor, probably before either the nurse or the patient was aware of the danger.

ABSCESS OF THE SPLEEN

REPORT OF CASE WITH RECOVERY FOLLOWING OPERATION *

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A review of the literature would seem to show that abscess of the spleen is not a very rare clinical entity. It is true that textbooks give little space to its discussion, but the excellent summaries of diseases of the spleen by Warren,[1] Johnston[2] and Balfour,[3] and the thorough presentation of abscess of the spleen alone by Hagen,[4] Dege,[5] Elting[6] and Kuttner[7] reveal a fairly large number of reported cases and an excellent appreciation of the underlying pathology.

As a pathologic entity it has long been recognized and, although the clinical picture it presents is not invariable, and its symptomatology is at times obscure, abscess of the spleen should, in a majority of cases, be diagnosed early enough to permit of the undeniable benefits from operative treatment.

Abscess of the spleen is secondary to some infectious process, usually by embolism, less commonly by direct extension, as from a gastric ulcer. The majority of reported cases have occurred in cases of typhoid fever (Kirchmayer,[8] Esau,[9] Pince,[10] Elting[6]); but in cases of malaria (Chowdhoory,[11] Anderson,[12]) general septic infections and with trauma (Omi,[13] Bogdanik,[14] Oganesoff[15]), a fair number of cases are reported. Kuttner[7] collected 116 instances of abscess of the spleen in 1907, and of these, 25.28 per cent. had septic general infections as their etiologic factor. Elting[6] states that almost all the pyogenic bacteria except the gonococcus have been isolated in such cases. Pitt and Fagge[16] and Karewski

* From the Surgical Clinic of the Peter Bent Brigham Hospital.

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2. Johnston, G. B.: Ann. Surg. **48**: 50-65, 1908.
3. Balfour, D. C.: Surg., Gynec. & Obst. **26**, 1918; Internat. Abst. Surg., 1-15.
4. Hagen, F. B.: Arch. f. klin. Chir. **5**: 188, 1900.
5. Dege: Ueber Tumoren der Milzgegend. Verofft. a. d. Geb. d. Mil.-San.-Wis., Berlin **35**: 487-513, 1906.
6. Elting, A. W.: Ann. Surg. **62**: 182-192, 1915.
7. Kuttner, H.: Beitr. z. klin. Chir. **54**: 405-457, 1907.
8. Kirchmayer, L.: Deutsch. Ztschr. f. Chir. **83**: 13-26, 1906.
9. Esau, P. K. H. A.: Ein Fall von Milzabszess nach Typhus abdominalis, nebt Bemerkungen über Milzabszessen überhaupt, Inaug. diss., Greifswald, 1903.
10. Pince, R.: Contribution à l'étude des abcès de la rate dans la fièvre typhoïde, Toulouse, 1903, 1-100.
11. Chowdhoory: Brit. M. J. **2**: 1047. 1887.
12. Anderson, A. R. S.: Lancet **2**: 1631, 1906.
13. Omi, K.: Chugai Iji Shinpo **28**: 28-296, 1907.
14. Bogdanik, J.: Berl. klin.-therap. Wchnschr. **8**: 12, 1905.
15. Oganesoff, L. A.: Med. Obozr. **75**: 746-760, 1911.
16. Pitt, G. N., and Fagge, C. H.: Practitioner, London **86**: 541-543, 1911.

reported a streptococcus from their cases, and Paus,[17] Elting[6] and Muscatello[18] reported pneumococcus from their individual cases. Kuttner[7] reproduced splenic abscesses in animals by the injection of various bacteria and oil into the splenic artery and into the splenic pulp and by traumatizing the pulp without breaking the capsule. Abscess of the spleen was secondary to operation for acute appendicitis in Fauntleroy's[19] case; and in the case of Spear,[20] it was secondary to an attack of influenza, the organism not being isolated.

There may be a solitary large abscess which may reach enormous size, as that reported by Litten,[21] containing 15 liters of pus; or there may be multiple small abscesses, as is common in any parenchymatous organ with a terminal pyemia present. The majority of the cases reported as abscess of the spleen naturally are of the solitary type, and these abscesses are characterized by the fact that sequestrums of splenic pulp are found free in the purulent contents of the abscess cavity (Kuttner[22]).

Operative intervention should be undertaken as soon as possible. Federman,[23] Hagen,[4] Elting[6] and Johnson[2] point out the better results from such treatment, and Elting[6] generously criticizes the mortality in his case as due to a failure to recognize the condition earlier. Stuckey[24] reports a mortality of from 21 to 23 per cent. in the operative cases, and Balfour[3] in twenty-seven operative cases found four deaths, a mortality of 15 per cent. Hagen[4] reported nine cases of operation with one death. This is contrary to the figures given in the larger textbooks (Keen,[25] Osler and McCrae[26]) of from 75 to 85 per cent. mortality. The best prognosis appears to be offered in the typhoid abscess cases.

The operation of choice is splenotomy and drainage (Johnson,[2] Balfour,[3] Elting[6]). However, as Hagen[4] reported nine cases, in all but one of which splenectomy was performed, with only one death, there certainly must be some cases in which total removal of the spleen is both possible and advisable. It is evident from a perusal of the literature that the operation of choice may vary with the type and extent of the disease.

REPORT OF CASE

History.—H. C. H. (P. B. B. H. No. 25015, Surg. No. 12507), a schoolboy, aged 12 years, born in Boston, was admitted to the Peter Bent Brigham Hospital, May 25, 1920, complaining of pain in the left side of two weeks' duration. The family history was good; the mother and four sisters were living and well. The past history showed that the patient had always been a strong, healthy child. Tonsillectomy had been performed five years before, and he had had several minor accidents and illnesses. There was no history of gastro-intestinal, genito-urinary or neuromuscular disorders, and no known association with tuberculosis. There was no history of malaria or typhoid fever.

The present illness apparently began four weeks before admission to the hospital. At that time he suddenly complained of acute bilateral earache and was taken to the Massachusetts Charitable Eye and Ear Infirmary, where both ear drums were punctured for acute bilateral otitis media. At the same time his mother came down with acute lobar pneumonia, from which she was slowly convalescing at the time of admission of her boy to this hospital four weeks later. (This seems of interest since it may be supposed that both mother and child derived their infection from the same source, and is of added interest since cultures from the splenic abscess at the time of operation gave no growth.) Following this operation, the patient made an almost complete recovery in a few days. About a week after the operation for drainage of the middle ears, however, he began to have pain in the left hypochondrium, accompanied with diarrhea, loss of appetite and weakness. The pain was not severe, and was of the nature of a slow, steady ache and local soreness. It was inconstant, and at times, for a day or so, it disappeared. Shortly after the onset there was accompanying nausea and vomiting, and the family physician suggested the possibility of appendicitis. Catharsis brought relief, and the boy, feeling better, returned to school. After a day or so he was referred home from school with a note from his teacher that he was too sick to work. This was about two and a half weeks before admission to this hospital. The pain recurred in the left hypochondrium, and there was some nausea and vomiting. In addition there were almost daily, definite, evening attacks of "chills and fever," when the pain in the left upper quadrant became more intensified. Finally, May 25, he was brought by his aunt to the outdoor department of the hospital. Here he was seen by the staff of both the medical and the surgical departments and finally referred into the house with the tentative diagnosis of typhoid fever because of a tender, palpable spleen, the chronic nature of the disease with chills and fever, and a low leukocytosis. He was admitted to the medical wards.

Physical Examination.—The boy was fairly well developed and well nourished, and lay quietly in bed with no apparent pain or distress. He was mentally clear and cooperative. The general physical examination of the head, neck, chest and extremities revealed no abnormalities. The skin was clear, the heart normal in size and position. There was a short, rough murmur accompanying the first sound, heard best at the apex. The lungs were resonant, with good expansion, the breath sounds everywhere being vesicular, with no râles. The left inguinal glands were easily palpable but not tender, and the other superficial glands could not be palpated. The reflexes were normal and equal on the two sides.

The abdomen was symmetrical and the anterior wall well muscled. There was a slight prominence in the epigastrium, but no pulsations were seen or felt. There was definite tenderness in the left upper quadrant, with spasm of the musculature in this region, and dulness extended from the sixth rib to 2 cm. below the costal margin. The liver edge could not be felt, and the gallbladder and kidneys were not palpable. There was no definite costovertebral tenderness, although there was generalized dulness extending into the left flank. No shifting dulness or other evidence of intra-abdominal fluid could be made out. The spleen as a definite organ was not palpated, although the increased dulness and spasm in this region were thought to be due to an enlarged spleen, and on deep respiration there was the suggestion of a descending mass.

On admission the temperature was 99, the pulse 100 and the respirations 20. Blood examination revealed: leukocytosis, 8,000; hemoglobin, 75 per cent. (Tallqvist); red blood cells, 3,980,000, normal in size, shape and color. Smear: polymorphonuclears 77 per cent.; lymphocytes, 16 per cent.; large mononuclears, 4 per cent.; eosinophilis, 3 per cent. The urine was yellow, cloudy, acid, with a specific gravity of 1.022, and contained no albumin or sugar; the sediment showed granular débris and rare white blood cells.

A diagnosis of questionable intra-abdominal abscess, possibly splenic, or teniasis was made. The patient did not appear very ill.

Clinical Course.—During the next twenty-four hours there was almost no change in either the general or the local condition. The temperature was normal the morning after admission, there was a normal bowel movement, and a fair amount of nourishment was taken without complaint. The

17. Paus, N.: Deutsch. Ztschr. f. Chir. **133**: 386-389, 1915.
18. Muscatello, G.: Gazz. med. ital. **55**: 141-144, 1904.
19. Fauntleroy, A. M.: Report of a Case of Splenic Abscess, J. A. M. A. **56**: 260 (Jan. 28) 1911.
20. Spear, W. M.: Abscess of the Spleen, J. A. M. A. **41**: 304 (Aug. 1) 1903.
21. Litten, M., in Nothnagel's Specielle Pathologie und Therapie, Vienna, Alfred Holder, Die Krankheiten der Milz **8**: 59, 1898.
22. Kuttner, H.: Verhandl. d. deutsch. Gesellsch. f. Chir. **36**: 23-25, 1907.
23. Federman: Deutsch. med. Wchnschr. **31**: 586-588, 1905.
24. Stuckey, L.: St. Petersb. med. Wchnschr. **35**: 580-583, 1910.
25. Keen, W. W.: Surgery, Philadelphia, W. B. Saunders Company **3**: 1076-1078, 1908.
26. Osler and McCrae: Modern Medicine, Ed. 2, Philadelphia, Lea & Febiger **4**: 944, 1913.

temperature rose during the day, reaching 100.4 at noon, and 101.3 at 4 p. m.

Suddenly, without previous warning, at 5:40 p. m. the patient was seized with violent pain in the left hypochondrium; he then had a severe chill, became almost immediately actively delirious, and began to vomit. The temperature taken shortly afterward was 106, and within an hour the white blood cells had risen to 23,000. Vomiting of yellowish, fluid, gastric contents continued. The abdomen became absolutely rigid, and the surgical staff was called in consultation. Before their arrival, a cold sponge bath was given, and within an hour the temperature had dropped to 102.

When seen in consultation, the patient was conscious and rational, but fretful and evidently suffering from considerable abdominal pain. The pulse varied around 110 and was of good quality, although the patient appeared somewhat cyanotic. Respiration was almost entirely thoracic. The abdomen seemed a little full, and there was boardlike spasticity throughout the anterior abdominal wall, although the tenderness was a little more marked in the left hypochondrium. There was no distention or palpable mass, and a rectal examination was inconclusive, because of the fretful nature and youth of the patient. There was some evidence of shifting dulness, and the dulness in the left flank seemed to have increased. It was obvious that there was generalized peritoneal irritation but, as the patient had markedly improved in the half hour since the abrupt onset of his attack, and as there were many conflicting opinions among the original observers as to the focus from which such an overwhelming irritation could have proceeded, as based on their earlier observations, operation was withheld for the moment and the patient transferred to the surgical service for further observation.

Two hours later the temperature had dropped to 100 F. and the general condition was much improved. The abdomen was slightly distended and there was definite evidence of shifting dulness. Rectal examination was negative. There was generalized spasm and tenderness, but both were definitely more marked in the left upper quadrant. The lesion was, therefore, presumably localized in the spleen, and with the story of a bilateral otitis media followed for four weeks by evening chills and fever, constant pain in the left hypochrondrium and an enlarged spleen, the diagnosis of abscess of the spleen, rupture and general peritonitis was made and immediate operation determined on.

Operation.—Under gas-oxygen anesthesia a 3-inch, high, left rectus incision was made just medial to the outer border of the muscle. The muscle was retracted medially, when a definite mass was easily palpable beneath the hand in the wound, and the tissues of the posterior rectus sheath were noticed to be infiltrated with serum and much thickened. On opening the peritoneum, free, turbid fluid filled with fibrin flakes was present in large quantities. Swabs were made of this fluid for culture inoculation. In places among the coils of intestine where the fluid had sedimented, it consisted of frank pus and the peritoneum everywhere was injected, diminished in luster and flecked here and there with fine particles of fibrin. The intestines were walled off mesially, and the excess fluid mopped out. This exposure showed that the transverse colon at the splenic flexure, the lower border of the stomach and the omentum were intimately adherent by firm adhesions to a greatly enlarged spleen, and that just inferior to these points of adhesions there was a ragged, irregular, necrotic tear into the substance of the spleen. Examination of this tear revealed a cavity the size of an adult's fist in the substance of the spleen filled with purulent, necrotic, splenic pulp and thick pus, most of which had apparently been discharged into the abdominal cavity. An attempt was immediately made to free the spleen from the surrounding structures, it being hoped that splenectomy might offer a better chance for recovery. The nature of the adhesions to stomach and colon were so intimate and the proximity of the tail of the pancreas so immediate that it was soon seen that, even if possible, such a procedure would be most time consuming, as well as holding the added risk of injury to some other important organ. This attempt, therefore, was almost immediately discontinued, and two large cigaret drains led into the wound, one behind the spleen and the other into the necrotic cavity within the spleen itself. Rapid closure about these drains was accomplished, a continuous suture of No. 1 chromic catgut being employed for the peritoneum and posterior rectus sheath, a continuous suture of No. 2 chromic catgut to the anterior rectus sheath, and three silkworm-gut tension sutures including skin and fascia, between which a few fine silk sutures were placed for better skin approximation. A 2-inch midline suprapubic wound was then made immediately above the pubes, and after the evacuation of a considerable amount of purulent fluid, a large cigaret drain was led into the pelvis through this wound.

Postoperative Course.—The patient was then placed in bed in a semirecumbent position and made a good immediate postoperative recovery. For twenty-four hours hiccuping, doubtless due to irritation of the diaphragm from infection on its abdominal aspect, was a troublesome factor, combined with some vomiting; but the temperature for the first five days never reached above 101, and the pulse steadily declined from 120 to 100. In fact, the general condition visibly improved daily. Distention never became troublesome, being easily controlled by enemas. The drains were gradually removed, the amount of discharge rapidly diminishing after the first four days, the suprapubic drain being removed on the seventh day after operation. By this time the patient was taking nourishment well, and the fluid intake was up to 2,000 c.c. daily. Cultures made of peritoneal fluid at the time of operation showed no growth. The white blood cells dropped to 12,000 by the second and third days after operation.

On the ninth day, one of the drains from the upper wound was removed, evidently the one entering the spleen itself, from the character of the material on the end of the drain. The next day the patient was worse, respiration was difficult, he vomited several times, and he had some local pain. It was presumed that a small pulmonary infarct had occurred, although no signs could be made out with the stethoscope. This reaction was temporary and the patient steadily gained in condition until the nineteenth day after operation, when the temperature, pulse and respiration rate began to climb, reaching 101.9, 130 and 25, respectively, on the twentieth day. A thorough physical examination revealed suggestive signs of fluid in the left pleural cavity, which was immediately confirmed by roentgenograms, the latter showing definite clouding of the whole left side. Thoracentesis in the eighth interspace yielded straw colored fluid. Forty c.c. of fluid was withdrawn, giving considerable subjective relief. The fluid clotted solid within three minutes; a culture was taken, but there was no growth in seventy-two hours. By the twenty-second day all drains had been retired. Following the thoracentesis, the temperature, pulse and respirations returned to practically normal limits until the twenty-seventh day after operation, when the temperature suddenly rose to 103.5 and the pulse to 140. Thoracentesis was repeated, and 60 c.c. of straw colored fluid removed and cultures of it made. The withdrawal of the fluid again resulted in much subjective relief, but the course of the pulse and temperature continued hectic and septic for ten days more, when they gradually fell to normal and remained so until the patient's discharge. Cultures from this second tapping grew both streptococcus and staphylococcus. Roentgen-ray studies of the left chest on the thirtieth day revealed a definite decrease in the amount of fluid, and because of this, the obvious general improvement and the nature of the fluid, thoracostomy was withheld. It is our experience that such secondary pleural irritations often subside spontaneously.

By the forty-fifth day the patient's condition had so improved that he was up and about the ward, and on July 14, the fifty-second day after operation, he was discharged home well, with all wounds closed, weight 33 kg. (72¾ pounds). Since his discharge he has steadily improved in condition, and at the time of our last examination, August 27, he had no complaints, his weight was 39 kg. (86 pounds), the wound was solid, and his general condition excellent.

COMMENT

In retrospect, the diagnosis in this case, except for its relative rarity, should have been made immediately

after the acute rupture took place. The fact that there was an original focus (the otitis media), the continued evening chills and fever, and the localizing symptoms in the left hypochondrium were characteristic and almost pathognomonic. A postoperative study of the literature revealed this, but at the same time it is only fair to say that the diagnosis has not usually been made before operation. Grand-Mourset [27] collected fifty-seven instances of abscess of the spleen, in only fourteen of which was the correct diagnosis made, and the cases of Elting [6] and Wilson [28] are examples of how, even under protracted observations, the diagnosis may be missed. However, it is obvious after a survey of the reported cases that the chief obstacle in making the diagnosis is simply lack of familiarity with the condition. The physical signs in most of the cases reported, as in our own, if correctly interpreted, were sufficient, and it was only the fear of overlooking some more common lesion that blocked an earlier diagnosis. This report, therefore, exemplifies the value of careful physical diagnosis.

The subject of the technic of surgical intervention has been admirably presented by Tedenat,[29] Elting,[6] Hagen [4] and others; and although there is some divergence of opinion as to splenectomy, it is one based on the different types of abscesses. In the single larger type such as this, it is our impression from reading other reports that drainage, rather than splenectomy, is indicated; and if the operation can be performed before rupture or before a pyemic condition is instituted, there is every reason to believe that the mortality can be brought down to about 10 per cent. We feel that since the chief obstacle to operative intervention, which alone can be of help, is the lack of appreciation of the frequency of occurrence of such lesions, a report of a typical case might be of some assistance to others.

MILK-BORNE DIPHTHERIA

AN OUTBREAK TRACED TO INFECTION OF A MILK HANDLER'S FINGER WITH B. DIPHTHERIÆ

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BOSTON

Aug. 20, 1920, four cases of diphtheria were reported from Williamstown, Mass. (population, 4,200), the seat of Williams College. On the next day nine more cases were discovered.

Investigation was made by the department epidemiologist, August 22 and 23, and during its progress nine additional cases were reported. Since then to date (August 31) there have been eleven new cases, none with onsets later than August 24. Doubtless some secondary cases will follow.

The last known case of diphtheria in Williamstown had occurred in July at a college boarding house of the better class. In summer this house is patronized by vacationists, faculty members and special students, about one half of whom only take meals there. This patient, a young woman vacationist, became ill with sore throat, July 16, but did not see a physician at once. Diagnosis was made and quarantine instituted, July 21. August 10, she left the state.

Of the first thirteen cases of the outbreak, five were from this house. It was, therefore, the first place visited, and, on this visit, it was discovered that four more persons from there, two guests and two servants, were at their homes ill with sore throats. One servant was a maid and the other a waiter. These cases were diagnosed diphtheria on clinical evidence, and the diagnoses were subsequently confirmed by the state laboratory, so that there were now nine out of the seventeen patients from this place. Of the remaining eight, two children were known to have been in contact with one of these patients. Of the remaining six, no contact with the boarding house group seemed likely or was later discovered. Five of the six patients (who lived in separate homes in different parts of the town) had the same milk supply as that which was used at the boarding house. The remaining patient reported another supply.

At this stage two clues were entertained: 1. That the July patient had left one or more carriers—probably among the kitchen help (in fact, a case had already been found among the waiters; but it was acute). 2. That the milk was to blame. Against the first assumption was the fact that, though the first patient had been at the boarding house at least from July 16 to August 10, the outbreak did not occur until August 20, with no date of onset found earlier than August 12. Furthermore, the outbreak was explosive, which is not common with diphtheria caused by contact, especially among adults. However, a carrier among the food handlers was under consideration. Such a carrier could have caused a sudden outbreak in the house, but more likely would have done so earlier.

There were left, then, six outside foci not connected with the boarding house, five of them having the milk supply used at this house. During the day four more cases came in representing four new foci unrelated to that group. Three of these patients had the suspected milk. A fourth produced his own milk, but on second questioning stated that he had bought a quart of cream from the dairy in question, August 15, and had partaken of it. The two children mentioned as having associated with a known patient also had this milk. A careful checking of the whole list of patients to this time, twenty-one in all, showed that twenty of them had the same milk, that nine of them were from the same boarding house among whom was a waiter (food handler), that only two of the twelve not at that house had any known association with that group, and that there were twelve foci, eleven of which had the suspected milk. Later it was also found that the twelfth patient had purchased extra milk from a grocery that handled the product of this dairy.

Cultures were taken twice from the noses and throats of the remainder of the boarding house group, thirty-two in all, August 22 and 23.

The dairy was visited the morning of the 23d. The town assessor's books show a total of 970 cows in the town, virtually all supplying milk for local use. Six dairies with 177 cows supply the town commercially. Besides there are a number of two to five cow dairies. The dairy in question is the largest, having fifty-four cows. It furnishes about one fourth of the commercial supply and about one eighteenth of the total supply. It had bought no milk for two months nor sold any to dealers. It had had all of the first twenty-one cases on its route. It is considered the best in the place and was in fair sanitary condition, as country dairies go. It was learned that the

27. Grand-Mourset: Thèse de Paris, 1885, No. 368.
28. Wilson, T.: U. S. Nav. M. Bull. **10**: 674-676, 1916.
29. Tedenat: Rev. de gynéc. et chir. abd., July-August, 1901.

supply is unpasteurized, that the bottles are washed in warm water but not sterilized by steam or boiling for fear of breaking them, and that the wet method of milking is used. The milk was not mixed, but each milker used a separate receiving receptacle from which the milk was usually bottled separately. This merely happened so without any design.

Cultures were taken from the family of the dairyman and from the other milk handlers, fifteen in all. A daughter of the owner had a sore right index finger. On examination it was found that the nail was gone and that the sore was covered by a soft, brownish scab, removal of which revealed a soft, white exudate. Cultures were taken from this. The sore was apparently healing and had probably been worse. It was first sore, July 30, and the nail had been removed, August 8, by a local physician. She said that she had milked except when her finger was too sore to do so, and had been at work in the dairy all the time either milking, delivering milk or helping in other ways.

Recommendations were then made that the dairy should be considered the probable source of the outbreak, pending further findings.

Reports from the cultures at the boarding house showed *B. diphtheriae* from the throat of one of the maids. Returns from the dairy cultures showed *B. diphtheriae* from the sore finger. Inoculation from this culture proved fatal to a guinea-pig in seventy-two hours. A control pig protected by antitoxin did not die. Diagnosis of nearly every case was confirmed by the department laboratory. The source of infection of the milkmaid's finger has not yet been determined.

The dates of onsets of thirty-two cases traced directly to the milk were: August 12, 2; 14, 2; 16, 3; 17, 1; 18, 9; 19, 5; 20, 2; 21, 1; 22, 1; 23, 3; 24, 3.

The incident is interesting in that, while neither a milk outbreak of diphtheria nor a true diphtheria wound infection is very common, a combination of both is indeed unique. Another fact of interest is that this wound infection did not cause any carriers or true cases among fifteen persons at the milk farm, nine of whom were children from 1 to 20 years old, though contact had been very intimate and the period of exposure at least from the onset of the outbreak.

SECOND OUTBREAK

No further cases occurred until September 15, at which time there was a second outbreak of fourteen cases, with onsets September 15, 18 and 19. The infected milker had returned home and gone to work, September 11. It was discovered that one of the cows had a teat infected with *B. diphtheriae* and also that the owner (a milker also) had the infection in a sore on his hand. He stated that he mashed his hand with a hammer, September 13.

It is impossible to say whether the infection passed from the girl's finger to the cow and from the cow to the man's hand, or whether the father's hand was infected in the home.

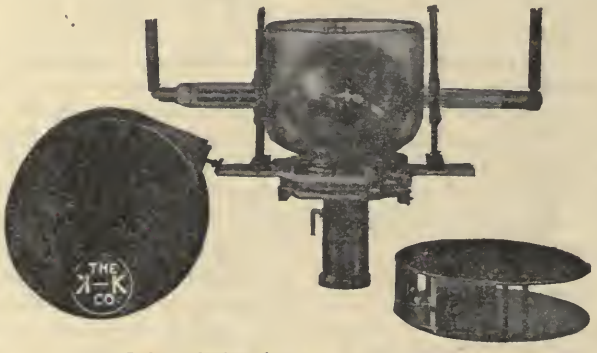
The girl returned to work without negative cultures for release, but at the time of the second outbreak the culture from her finger was negative and has been found negative once since. All diagnoses were made in the state department laboratory.

Clinical Notes, Suggestions, and New Instruments

A SAFETY DEVICE FOR ROENTGEN-RAY TUBES

E. S. Blaine, M.D., Chicago

The ever present danger to patient and operator of physical contact with the high tension field during roentgen-ray exposure for plate or therapy calls for particular care in all roentgen-ray procedures. Many, if not all, roentgenologists of large experience have had patients who inadvertently came into too close proximity with the terminals of the roentgen-ray tube. This resulted in a more or less disagreeable shock with old style apparatus, depending on its particular setting; but the apparatus with rheostat control was not particularly dangerous to life. With the modern autotransformer control, a different situation arises in which the same accident is far more serious and has in several instances caused death to the patient, and in one well known instance to the operator himself.



Safety device for roentgen-ray tubes.

The best way in which to avoid this occurrence is to keep removed a sufficient distance from the terminals to provide safe insulation against entering the high tension field. In spite of all warnings, some patients, particularly during treatment exposure, will raise a hand to scratch the nose or make some similar movement, and thereby the hand comes in contact with the tube terminal with the result noted above.

A safety device is now available which will protect against this accident. A cage or cover of an insulating material is placed over both tube terminals. These cages are attached to the tube stand supporting the tube. The design of this device is such that neither the patient nor the operator can touch the danger points at any of the ordinary working conditions of the roentgen-ray tube operation. The high tension wires as well as the low tension Coolidge leads leading from the tube terminals are enclosed in insulated tubes, thus adding further protection against accidental contact with these dangerous parts. The tube can be set in most desired positions with little or no interference from the safety device, and is quickly attached to the standard tube stands.

5 South Wabash Avenue.

A CASE OF BACILLARY DYSENTERY WITH PSEUDO-MEMBRANE IN THE VAGINA AND EDEMA OF THE ABDOMINAL WALL

Isaac Ivan Lemann, M.D., New Orleans

The points of interest in this case are indicated in the title. These points have seemed of sufficient importance to warrant this report, because none of the standard texts mention them and apparently they have not previously been described in the literature.

History.—A. O., a white married woman, aged 48, whom I saw Nov. 15, 1919, at Touro Infirmary in consultation with Dr. W. P. Bradburn, through whose courtesy I am permitted to make this report, had eaten a cream puff, November 3, which did not seem fresh. The next day she had severe pains in the epigastrium, and loose bowels with straining.

November 5, nausea began. All symptoms increased until November 10, at which time she was first seen by Dr. Bradburn. At that time Dr. Bradburn described her as being in a state of collapse; the surface covered with a cold perspiration, the pulse weak and rapid. There was slight rigidity of the upper abdomen, and apparently a mass about the size of an orange in the epigastrium. This apparent "mass" disappeared within a few days. After her admission to Touro Infirmary, November 10, she was given glucose and sodium bicarbonate, each 5 per cent. solution by proctoclysis, one-fourth grain of calomel every two hours, and later a teaspoonful of paregoric every three hours. No food was given, only water being allowed.

Examination.—When first seen by me, November 15, she had improved; but her face was still somewhat pinched, the temporal fossae were sunken, and the general appearance was that of great prostration. The bowel movements had continued to be numerous, bloody and mucous, and extremely offensive. The patient had vomited once, though she suffered greatly from nausea. There was marked edema of the abdomen, slightly greater in the upper right quadrant. The patient flinched slightly when pressure was made in the liver region, but the abdomen in general was not tender. The liver edge was felt three finger breadths below the costal margin on deep inspiration. The heart and lungs were negative. At the introitus of the vagina a roughened, corrugated elevation was felt. The vaginal walls, vault and cervix felt edematous. On inspection with the speculum, the rough, corrugated elevation proved to be due to a thick, tenacious, dirty-gray membrane which was pulled off with difficulty and left a superficial bleeding ulceration. On the cervix there was also an erosion and membrane. Rectal examination (digital) revealed nothing abnormal. The patient's blood gave a strong agglutination with the Shiga bacillus. Dr. John A. Lanford, pathologist of Touro Infirmary, was also able to recover Shiga bacilli from cultures made from the vaginal pseudomembrane and from the cervix. Other laboratory examinations were without special interest. The blood showed a moderate leukocytosis (17,000, with 85 per cent. neutrophils). The urine had a trace of albumin and a large amount of indican. The feces revealed no parasites and no ova, but pus, blood and epithelial cells were present. The stools were copious, liquid and offensive.

Treatment and Results.—In addition to the supportive measures, the principal features of the treatment were: (1) liquid diet without milk; (2) daily duodenal irrigations with sodium sulphate solution by means of the Jutte tube; (3) irrigations of the vagina three times daily with 1:1,000 permanganate solution. Improvement began almost at once. Virtually all symptoms had disappeared in three weeks, and by the end of the month (December 15), the patient had entered fully into convalescence. In February, 1920, Dr. Bradburn reported her in perfect health in every way.

It will be noted that the croupous pseudomembrane in the vagina in this case corresponds exactly with those universally described as occurring in the bowel of dysentery patients; in other words, the bacilli seem to act on the vaginal as they do on the intestinal mucous membrane. The question arises as to the manner in which they were introduced into the vagina. The most plausible explanation would seem to be that the contamination was directly from the rectal discharges by proximity, especially as the inflammatory process was most extensive and intense at the introitus, and seemed to be ascending; or the infection may have been by contiguity within the pelvis. In this connection it seems pertinent to cite the opinion of Flexner and Sweet[1] as to the mode of production of the pseudomembrane in the bowel. They assert that the bacilli may abound in the small intestine where no pathologic lesion may be found, but they give rise to toxins, one of which acts on the lower bowel, the other on the nervous system. The excretion of the toxin causes an exudation of lymph into the submucosa and later into the mucosa. This lymph coagulates and is invaded by a cellular exudate, and in due course the glands and the tissue of the mucosa and muscularis mucosae are destroyed by coagulation necrosis, with thrombosis of vessels. If the ulcers of the lower bowel and the false membrane there are produced by the excretion of this toxin, it might be asked whether the vaginal condition could not be produced in the same way. Another theory may be suggested, namely, that the infection was carried to the vagina by the blood stream. Cases of bacillary dysentery septicemia have been reported.[2] However, there was nothing else in our patient's condition to warrant such a supposition. Unfortunately, no blood culture was made.

I have no explanation to offer as to the production of the edema of the abdominal wall. Its appearance was analogous to the edema frequently noted on the thoracic wall over empyemas and over abscesses of the liver.

1. Flexner and Sweet, quoted by Castellani and Chalmers: Manual of Tropical Medicine, 1910, p. 992.

2. Markwald and Rosenthal, quoted by Castellani: Manual of Tropical Medicine, 1910, p. 992. De Sautelle, W. T.: A Case of Bacillus Dysenteriae Septicemia, J. A. M. A. **63**: 1853 (Nov. 21) 1914.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

PNEUMOCOCCUS VACCINE (See New and Nonofficial Remedies, 1920, p. 286). Lederle Antitoxin Laboratories, New York.

Pneumococcus Glycerol-Vaccine (Types I, II, III—Polyvalent)—Lederle.—A suspension of killed pneumococci of characteristic strains of Types I, II and III (equal portions of each type) in a vehicle composed of glycerol 66 per cent., physiologic solution of sodium chloride 33 per cent., and cresol 1 per cent. The product is supplied in packages of 3 vials containing the glycerol-vaccine and of 3 vials of sterile diluent with which to make the proper dilution of the vaccine at the time of injection. Each dose consists of 0.1 Cc. of Pneumococcus Glycerol-Vaccine (the concentration of killed bacteria for the first dose being one half as great as for the second or third dose) and 0.9 Cc. of sterile physiologic solution of sodium chloride. After dilution the first dose contains 6,000 million killed bacteria; the second and third doses contain 12,000 million killed bacteria each.

PERTUSSIS BACILLUS VACCINE (See New and Nonofficial Remedies, 1920, p. 285). Lederle Antitoxin Laboratories, New York.

Pertussis Glycerol-Vaccine—Lederle—A suspension of killed Pertussis bacteria (Bordet) of eight strains in a vehicle composed of glycerol 66 per cent., physiologic solution of sodium chloride 33 per cent. and cresol 1 per cent. The product is supplied in packages of 5 vials containing the glycerol-vaccine and of 5 vials of sterile diluent with which to make the proper dilution of the vaccine at the time of injection. Each dose consists of 0.1 Cc. of Pertussis Glycerol-Vaccine (the concentration of the killed bacteria increases progressively for each respective dose) and 0.9 Cc. of sterile physiologic solution of sodium chloride. After dilution, the five different doses contain 1,000 million, 2,000 million, 4,000 million, 6,000 million and 8,000 million killed bacteria respectively.

BACILLUS BULGARICUS (See New and Nonofficial Remedies, 1920, p. 156).

Culture of Bacillus Bulgaricus-Coleman.—A pure culture of *Bacillus bulgaricus* marketed in bottles containing about 90 Cc.

Actions and Uses.—This culture is stated to be suitable for all purposes of which *Bacillus bulgaricus* is used. See general article, Lactic Acid-Producing Organisms and Preparations.

Dosage.—From 4 to 12 Cc. in sweetened water or milk half an hour after meals. The culture must be kept in a cold place and should not be used after the time stamped on the bottle.

Manufactured by The Coleman Laboratories, Wheeling, West Virginia. No U. S. patent or trademark.

The culture is grown on a medium composed of whey broth containing dextrose.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, DECEMBER 18, 1920

With the expiration of the calendar year, subscriptions to THE JOURNAL and Fellowship dues become payable. A pink slip to be used in remitting dues and subscriptions for 1921 is inserted in THE JOURNAL this week. This is in accordance with the procedure followed the last two years, which proved to be satisfactory to all concerned, and a great saving in labor and in postage in the central office, for to send a bill under first-class postage to each subscriber and Fellow entails a large expense. The slip which is inserted in each copy of THE JOURNAL, though less formal than a personal statement, serves the same end. It is hoped that even a larger number of Fellows and other subscribers than heretofore will cooperate in this matter.

PREPARATION OF DIABETIC PATIENTS FOR SURGICAL OPERATIONS

In order to avoid a variety of possible postoperative complications in persons with diabetes who may require surgical intervention, it is important to give them the benefit of special preliminary dietary consideration and therapy. It has been emphasized that if surgery is indicated, diabetes is no excuse for its nonperformance. On the other hand, it is the duty of the surgeon to understand thoroughly the dangers that may threaten, and to prepare to combat them. Foremost among possibilities of interfering symptoms is acid intoxication or ketosis; for in diabetes the acidosis is associated preeminently with the production of beta-oxybutyric acid, aceto-acetic acid and acetone.

Only a few years ago it was customary to combat this menace by the liberal use of alkalis, notably sodium bicarbonate. The existence of the ketosis and the degree of depletion of the alkali reserve of the blood plasma can now be ascertained with scientific precision by clinically available methods. The treatment with alkalis has, however, proved to be otherwise than advantageous. A diabetic patient theoretically needs alkalis, Joslin [1] writes. But one must bear in mind the possibility, he adds, that the administration of small quantities of an alkali over long periods may set free acid bodies existing combined, quiescent and harmless in the body, and thus do harm. Furthermore, the administration of alkalis over long periods may deplete the body salts, such as chlorids, which are distinctly useful. Another danger from the use of alkalis, Joslin continues, is the occurrence of nausea and vomiting, and this is real, though greatly lessened when chalk is combined with the sodium bicarbonate. When alkalis are given, large quantities of urine must be voided to remove the salts of the acid. The quantity of liquid which must be ingested is so large as to overburden the stomach, and the excretion of so much acid frequently overwhelms the kidneys and they cease to act.

The same warning has recently been uttered by Kahn [2] of the Beth Israel Hospital, New York. He, too, points to the necessity of averting rather than combating the ketosis by preventing the formation of the ketone substances. As they are now generally admitted to arise from the incomplete catabolism of fats, owing to the inadequate combustion of the carbohydrates by the diabetic, the foremost aim should be to decrease the fat intake to a minimum and, theoretically at least, to attempt to increase the antiketogenic power of the organism. A few years ago the protein-fat diet, free from carbohydrates, was a favorite method of treatment. Such a procedure may at times precipitate a coma; but if the fat is excluded in large measure and a small amount of carbohydrate even permitted, the outcome of highly restricted corrective diets may be far more satisfactory. The latest lesson in this domain of clinical medicine teaches that in severe diabetes it is not merely the metabolism of the carbohydrates, but also that of the fats and even of the proteins that is disturbed. The selection of foods within the tolerance of the patient represents the keynote of successful therapy. The time has come for the surgeon to follow the lead of the internist in seeking the upbuilding of tolerance rather than employing the once popular alkali therapy prior to operative treatment of diabetics.

1. Joslin, E. P.: Treatment of Diabetes Mellitus, Philadelphia, Lea & Febiger, 1917, p. 394.

2. Kahn, M.: Preoperative Preparation of Diabetic Patients and Their Subsequent Treatment, Surg., Gynec. & Obst. **31**: 363 (Oct.) 1920.

THE ROUTE AND RESULTS OF OUR FIRST INFECTION WITH TUBERCULOSIS

We have moved forward step by step in our knowledge of the routes of infection and processes of protection in human tuberculosis, until now we may fairly be said to have a satisfactory understanding of these matters. Gradually the old saying that "every one has a little tuberculosis" was turned into something more definite by the studies of pathologic anatomists, who made a careful search for the scars of healed and quiescent tuberculosis, and raised the early estimates of from 50 to 70 per cent. of tuberculous infection in the adult population to 90 per cent. or more, by means of gross inspection and microscopic corroboration. A distinct advance was made in the study of this important

problem when Opie of St. Louis began to supplement the postmortem studies by making roentgenograms of the respiratory tract after its removal from the body. By this means it has been found possible to locate the scars of healed tuberculous lesions with a readiness and accuracy not approached by the usual procedures of palpation and sectioning. We have already commented on Opie's [1] earlier observations, which showed more clearly and conclusively than had been done before that nearly all persons in this country acquire in childhood tuberculous pulmonary infections, which occur as foci scattered throughout the lung with no particular predilection for the apexes, and which are almost constantly accompanied by tuberculous lesions in the adjacent lymphatic nodes, often more extensive than the primary pulmonary lesion.

When the lungs of adults are examined, these healed lesions, being usually densely cicatrized and in great part calcified, are readily detected in roentgenograms. In association with the apical lesions, which occur in the later period of childhood and in adult life, there is no caseation or calcification of the regional lymph nodes. In harmony with experimental observations, the early focal lesion has the character of a first infection and implicates the lymphatic nodes, whereas the apical lesion has the character of a second infection and exhibits no tendency to cause caseous tuberculosis of adjacent lymph nodes. It was shown that apical lesions increase in frequency with increasing age. They rarely occur before 10 years of age; from 10 to 18, the incidence was 11 per cent.; between 18 and 50 years of age the incidence of apical lesions in those who had died with conditions other than tuberculosis was approximately 14 per cent., and after the age of 50 the incidence of apical lesions was much increased, for they were present in more than a third of those who had died from all causes. In the young person infected for the first time with tuberculosis, the lesion assumes the features seen in susceptible animals inoculated with tubercle bacilli, for the infection spreads to the regional lymph glands and is overcome by the development of a specific increase in resistance. In the adult, presumably because of the persistence of this acquired partial immunity, the apical lesion usually pursues a chronic course and does not spread to the lymph glands; this is a characteristic of second infections in animals already tuberculous which was observed first by Koch.

In a more recent paper, Opie [2] states that in a series of eighty-six lungs of adults examined, only seven showed no calcified lesions on the roentgenograms, and uncalcified cicatrices probably could have been found in these. In the remaining seventy-nine cases the lesions were usually multiple, and in ten cases the involvement of the lung and the lymph glands was very extensive. In these the individual must certainly have passed through a serious infection, which, even if its symptoms were so inconspicuous that they left little if any impression on his memory, nevertheless subjected him to grave danger at some period of his childhood, for in such cases Opie found healed tubercles usually present also in the spleen and liver. In one case, indeed, healed calcified nodules, presumably of healed tuberculosis, were also found in the meninges.

In approximately half the adult lungs the healed pulmonary nodules, which are usually multiple, are from 0.5 to 1 cm. in diameter, and the more numerous nodules in the lymph nodes are from 1 to 2 cm. across. In many cases the lesions are considerably larger. Only by examining the roentgenograms reproduced by Opie can one appreciate what myriads of healed calcified lesions may be found in a human lung, or what great calcified masses may be present in the peribronchial glands. If we consider that these represent merely the unabsorbed residues of tuberculous lesions which must have been very much larger when in the active stage, and that by no means all the lesions leave demonstrable scars, it is apparent that all of us recover not only from tuberculosis but commonly from really widespread and large tuberculous lesions.

No line can be drawn between the lesions that have been described and those that produce obvious symptoms and death. The distinction between latent and clinical tuberculosis, which is not infrequently made, has no other basis than the limitations of diagnostic methods and the tendency of tuberculosis to proceed to recovery. This idea has been put to the test in the same institution by Cooke and Hempelmann,[3] who found that in a large group of supposedly well children examined by means of the complement fixation test a considerable number giving positive reactions can be shown on careful examination to have other distinct evidences of tuberculosis, which otherwise might have been overlooked. They believe that masked juvenile tuberculosis presents a sufficiently distinctive clinical type to deserve a prominent place in the category of tuberculous affections of childhood.

Ever since attention was drawn to the possibility of primary intestinal infection with tuberculosis, and especially since study of the frequency of infection with the bovine type of tubercle bacilli has been carried out, one conspicuous feature of all statistical compilations has been the relative frequency of primary intestinal infection observed in the British Isles. Evidently, unsterilized milk infected with virulent bovine tubercle bacilli is there consumed to a serious degree. Opie [4] has corroborated these earlier anatomic observations by studying the mesenteric lymph glands with the aid of the roentgen rays. Healed tuberculosis of these glands is seldom seen in this country. In a series of ninety-

1. The Frequency of Tuberculous Infection of the Lungs, editorial, J. A. M. A. **68**: 1913 (June 23) 1917.
2. Opie, E. L., and Anderson, Hans: First Infection with Tuberculosis by Way of the Lungs, Am. Rev. Tuberc. **4**: 629 (Nov.) 1920.
3. Cooke, J. V., and Hempelmann, T. C.: Masked Juvenile Tuberculosis, Am. Rev. Tuberc. **4**: 660 (Nov.) 1920.
4. Opie, E. L.: First Infection with Tuberculosis by Way of the Intestinal Tract, Am. Rev. Tuberc. **4**: 641 (Nov.) 1920.

three necropsies on children and fifty on adults made by him in St. Louis, he found not a single instance, whereas in the bodies of sixty-six young British soldiers examined in France, no less than eighteen showed calcified mesenteric nodules. Although these intestinal infections are presumably for the most part produced by the bovine tubercle bacillus, yet they would seem to be quite as efficacious in protecting the individual against subsequent infection with human bacilli, for instances in which little if any healed pulmonary infection could be found appeared to be much more common among the British than in St. Louis. It is noteworthy that among those in whom mesenteric lesions occur, focal tuberculosis of the lung is scant or absent. First infection with tuberculosis, therefore, may occur by way either of the lungs or, much less frequently, by way of the gastro-intestinal tract, and the occurrence of lesions in one of these sites tends to prevent infection of the other. These studies add still further evidence to the ubiquity of childhood infection with tuberculosis, and its importance in conferring an increased resistance which in most persons entirely prevents subsequent infection, or, at the very least, greatly increases the capacity to localize and usually to overcome all later infections.

BLOOD CONCENTRATION IN INFLUENZA AND ITS TREATMENT

The studies that have been reported by Winternitz [1] and his collaborators on the pulmonary complications of poisoning with a number of lethal gases employed in the World War indicate a striking resemblance between some of the lesions found and the conditions frequently arising in influenzal pneumonia. Pulmonary edema is a serious factor to be contended with in consequence of the damage to the upper respiratory tract. Toxic products that find their way into the circulation may also be a menace to life in all these cases, as they doubtless are in certain other types of infectious disease. Although it has generally been assumed that the cause of death in gas poisoning is the edema of the lungs aided by the accompanying congestion, Underhill [2] has questioned the validity of such an explanation. In a lecture last year before the Harvey Society he pointed out, as the results of extensive experiments conducted for the Chemical Warfare Service, that the pulmonary edema observed in war gas poisoning is accompanied by a distinct concentration of the blood. This phenomenon, indeed, constitutes one of the most striking manifestations of the pathologic conditions encountered. In cases in which the loss of fluid from the blood leads to rapid concentration, the heart, even though its rate is maintained far above normal, may nevertheless no longer be able to maintain a circulation of normal efficiency. Body temperature drops, and further serious consequences ensue. As Underhill [2] has summarized the situation from observations on gassed animals, it seems quite logical to assume that blood concentration is immediately responsible for death. Blood concentration means a failing circulation, an inefficient oxygen carrier, oxygen starvation of the tissues, fall of temperature and, finally, suspension of vital activities. The whole aim of treatment in gas poisoning has been to prevent blood concentration or else restore it to a level more nearly normal. When this is accomplished, the animal survives in spite of the fact that the lungs may be very edematous. It may be stated, then, that in the presence of edema and a concentrated blood, entrance of oxygen into the circulation does not prevent death. On the other hand, restoration of blood to a more normal concentration enables an animal to survive even though an extensive edema exists. Administration of oxygen under the last named conditions undoubtedly makes recovery easier. On the basis of such considerations, Underhill proposed a method of treatment involving venesection, infusion and oxygen administration for the reestablishment of normal conditions in the respiratory functions of the blood in gassed individuals.

With the demonstration of the close analogy between the morphologic pathology of war gas poisoning and influenzal pneumonia, one naturally inquires whether the latter disease exhibits comparable signs of blood concentration, and, if so, whether they have a prognostic significance or furnish a guide to therapy. An answer has been given by Underhill and Ringer [3] as the result of a study of the blood of influenza patients exhibiting pulmonary edema. In these investigations, too, it was found that the blood may become greatly concentrated, thereby constituting a factor of great importance with respect to the outcome of the disease. Clinical estimations of the hemoglobin content of the blood serve as a sufficient guide to establish the signs of danger. In a series of forty-three cases, death has invariably followed marked increase in the concentration of the blood. As pointed out in their recent report,[3] the signs of an approaching fatal change must be recognized in due season so that relief measures can be instituted. It is advised that treatment always be given before the blood concentration has reached 125 per cent., for beyond this level it seems to be of less value. The advised procedures consist of venesection and the introduction of fluid into the body by way of either the mouth or the veins, so that a normal blood concentration will be restored. The proposed therapy has given promising results in a few carefully controlled cases. It has a rational basis and deserves careful consideration when the emergency of an influenzal epidemic again arises.

1. Winternitz, Wason and McNamara: The Pathology of Influenza, New Haven, Conn., Yale University Press, 1920.

2. Underhill, F. P.: The Physiology and Experimental Treatment of Poisoning with Lethal War Gases, Arch. Int. Med. **23**: 753 (June) 1919.

3. Underhill, F. P., and Ringer, Michael: Blood Concentration Changes in Influenza, with Suggestions for Treatment, J. A. M. A. **75**: 1531 (Dec. 4) 1920.

Current Comment

THE CULTURE OF THE PHYSICIAN

Just now the popular educational slogan is vocational education. "Train a child or a youth for the job he is to pursue in life" is the cry of the enthusiast, "to cook, sew, mold iron, lay brick or plan buildings." In colleges the same trend is apparent in the demand for productive scholarship. Admitting that the theory as applied to medicine will make better technicians, it should not be forgotten that it will also make for the influences of materialism. The things of the spirit, the beauty and ennobling effect of culture and refinement in the higher sense, will be lost. In our eagerness to know structure and function, normal and disturbed, of the body, we are likely to forget the whole man: an aspiring, feeling, beauty-loving creature with qualities that distinguish him as superior to the lower animals. Among physicians there have always been found men who eschew the finer things outside the pale of practical medicine, priding themselves on sticking "strictly to business." They frown on any departure from the narrow professional path. They do not see the flowers by the wayside. For them, lectures on literature, art or philosophy have no interest. They gain little pleasure in seeing a great actor interpret Shakespeare, or in hearing good music. Rather, they boast of ignorance with regard to such matters, and let it be known that they have no time for these unpractical subjects. They do not realize that they lay themselves open to the suspicion of an underlying selfishness, a striving after the tradesman's goal of business and professional aggrandizement. The well-rounded man is the one who appreciates the value of the cultural as well as the practical, and who lives a complete and satisfactory life —satisfactory not only to himself but also to his community.

THE FRENCH ACADEMY OF MEDICINE, 1820-1920

By a royal decree of Dec. 20, 1820, promulgated Jan. 14, 1821, Louis XVIII created the Académie royale de médecine, which remains today as the Academy of Medicine in Paris. Founded originally in response to a demand for authoritative advice on matters of national importance pertaining to the domain of medicine and the public health, the distinguished academy which now celebrates its centenary still remains as an official advisory council of the French government in relation to such matters as epidemics, medicolegal problems, the examination of new or secret remedies, the critique of mineral waters, and a variety of aspects of sanitary science and hygiene.[1] In addition to its public advisory relations, the academy has always been devoted to the study and investigation of all disciplines that contribute to the different branches of the healing art. In 1902, it became housed in a new building on the rue Bonaparte in Paris. The long established *Bulletin* of the academy still appears weekly, and includes both official communications addressed to the academy and scientific contributions presented at the weekly sessions. In addition to a hundred regular members, grouped in eleven sections, there are twenty national and twenty foreign associates as well as 100 national and fifty foreign corresponding members, grouped in four divisions. The recital of the names included at present and in the past in these various categories would furnish a catalogue of the most distinguished representatives of the medical profession in all parts of the world. On the one hundredth anniversary of the foundation of the French Académie de médecine, the greetings and felicitations of admirers of its work are certain to be elicited in all parts of the civilized world.

1. An account of the organization of the French Academy of Medicine is given in the Presse médicale, Nov. 26, 1902, No. 95, p. 1131. Dowling, F.: The Academy of Medicine in Paris, New York M. J., July 1, 1911, p. 25. Mémoires de l'Académie royale de médecine **1**: 1, 1827. Bull. de l'Acad. de méd., 1874, p. 1041.

DISAPPEARANCE OF B. DIPHTHERIAE FROM THE THROAT, EXPRESSED MATHEMATICALLY

There is probably no more difficult or more unsatisfactory problem in contagious diseases than that of the diphtheria carrier. Though the death rate for diphtheria has been greatly reduced since the discovery of antitoxin, the morbidity rate has remained virtually the same. Gelien, Moss and Guthrie[1] found that approximately 18 per cent. of 800 healthy children in Baltimore were carriers of diphtheria bacilli at one time or another, and about 11 per cent. of these were carriers of virulent organisms. They also found a higher percentage of positive cultures in children with pathologic throats than in those with normal throats. Of fifty children who yielded positive cultures at the first examination, twenty-nine had positive cultures two weeks later. After four, six, eight, ten and twelve weeks, the number of positive cultures was fifteen, eleven, twelve, twelve and six, respectively. Recently, Hartley and Martin[2] have reduced to a mathematical formula the rate with which diphtheria bacilli disappear from the throat of convalescents. Their data are taken from 3,070 observations in 457 cases. By the use of a logarithmic equation they have found that approximately 5 per cent. of those remaining each day after the fifth day become free from the bacilli in twenty-four hours. This, however, does not apply to those with abnormal throats. The standards used to determine when patients are free are different in many places, and Hartley and Martin have shown mathematically how the results depend on the standard used. In their work, three successive negative cultures taken at weekly intervals were required. If, however, only two successive negatives had been required, then the number free each day would have been 5.4 per cent., and if only one negative had been required, the rate would have been 7.1 per cent. Expressed in another way, the number discharged would have been increased by 9.3 and 29 per cent., respectively, if two negative or only one had been required. The data of other investigators when similarly analyzed also give a logarithmic function, which differs from their own by

1. Gelien, J.; Guthrie, C. G., and Moss, W. L.: Diphtheria Bacillus Carriers, Bull. Johns Hopkins Hosp. **31**: 388 (Nov.) 1920.
2. Hartley and Martin: Proc. Roy. Soc. Med., Sec. Epidemiology and State Med. **13**: 277 (July) 1920.

a constant. This constant difference they attribute in the main to such factors as the strain of infecting organism, the environment of the patient in the convalescent ward, and the treatment of the convalescent. No doubt many external conditions, not an intimate part of the reaction between host and infecting organism, play a part in the rate with which carriers become free. The diphtheria carrier should be intensively studied as an example of the way in which the body rids itself of infecting organisms. If the rate can be expressed by a mathematical equation, the effect of modifying certain conditions may be more evident.

Association News

THE BOSTON SESSION

Hotel Headquarters of the Scientific Sections

The local Committee on Arrangements for the annual session to be held in Boston, June 6-10, 1921, has designated the following headquarters for the sections of the Scientific Assembly indicated:

Sections	Headquarters
Practice of Medicine	Hotel Somerset
Surgery, General and Abdominal	Hotel Lenox
Obstetrics, Gynecology and Abdominal Surgery	Hotel Touraine
Ophthalmology	Hotel Vendome
Laryngology, Otology and Rhinology	Hotel Brunswick
Diseases of Children	Parker House
Nervous and Mental Diseases	Young's Hotel
Urology	Hotel Westminster
Dermatology and Syphilology	Copley Square Hotel
Preventive Medicine and Public Health	Bellevue
Orthopedic Surgery	Adams House
Gastro-Enterology and Proctology	Hotel Essex

Officers of the Subcommittee on Hotels are Dr. John T. Bottomley, chairman, and Dr. Stephen Rushmore, secretary. Communications for the attention of this subcommittee should be addressed to one of these officers at the Boston Medical Library, 8 The Fenway.

CONFERENCE OF THE SECRETARIES OF THE SECTIONS OF THE SCIENTIFIC ASSEMBLY

Under the auspices of the Council on Scientific Assembly, a conference of that council with the secretaries of the several sections of the Scientific Assembly was held at the headquarters of the Association, December 10. There were in attendance members of the Council on Scientific Assembly: Dr. John E. Lane, Dr. E. S. Judd, Dr. F. P. Gengenbach and Dr. J. Shelton Horsley, chairman; and ex officio, the Editor and General Manager of The Journal and the Secretary of the Association. The several sections were represented as indicated: Practice of Medicine, Dr. H. S. Plummer, chairman, and Dr. Nellis B. Foster, secretary; Surgery, General and Abdominal, Dr. Urban Maes, secretary; Obstetrics, Gynecology and Abdominal Surgery, Dr. Sidney A. Chalfant, secretary; Ophthalmology, Dr. George S. Derby, secretary; Laryngology, Otology and Rhinology, Dr. William B. Chamberlin, secretary; Diseases of Children, Dr. Frank C. Neff, chairman; Pharmacology and Therapeutics, Dr. Leonard G. Rowntree, chairman; Pathology and Physiology, Dr. J. J. Moore, secretary; Stomatology, Dr. Arthur D. Black, secretary; Nervous and Mental Diseases, Dr. Charles W. Hitchcock, secretary; Dermatology and Syphilology, Dr. Harold N. Cole, secretary; Preventive Medicine and Public Health, Dr. W. S. Leathers, secretary; Urology, Dr. H. L. Kretschmer, secretary; Orthopedic Surgery, Dr. H. B. Thomas, secretary; Gastro-Enterology and Proctology, Dr. L. J. Hirschman, chairman.

The sections will meet on Wednesday, Thursday and Friday of the week of the annual session, June 8, 9 and 10, 1921. The Sections on Practice of Medicine; Obstetrics, Gynecology and Abdominal Surgery; Laryngology, Otology and Rhinology; Stomatology; Pathology and Physiology; Nervous and Mental Diseases; Urology, and Preventive Medicine and Public Health will hold their meetings during the morning hours. The Sections on Diseases of Children; Surgery, General and Abdominal; Ophthalmology; Miscellaneous Topics; Pharmacology and Therapeutics; Orthopedic Surgery; Dermatology and Syphilology, and Gastro-Enterology and Proctology will meet during the afternoon hours. Reports were received from each of the sections showing satisfactory progress in the compilation of the programs.

A committee of the Board of Trustees presented the question of active cooperation on the part of the several sections in the Scientific Exhibit. The consensus was that the contemplated cooperation is advisable, and those at the Conference evidenced a readiness to participate in encouraging the presentation of scientific exhibits.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Old Medical School Offered for Educational Use.—The University of Alabama has offered to the Mobile County Board of School Commissioners free use of the old medical school building for educational purposes.

Physician Convicted of Prohibition Violation.—It is reported that Dr. William S. Hansard, Henagar, was recently convicted in federal court on a charge of illegally transporting liquor and was fined $100, and sentenced to four months in the county jail.

CALIFORNIA

Hospital Notes.—The new hospital erected by the Union Oil Company at Orcutt for its employees is ready for occupancy.——Construction work has been begun on the first group of six permanent buildings for the naval hospital at Balboa Park.

Physician Violates Harrison Law.—According to a report, Dr. Amos J. Landis, Chico, pleaded guilty before Justice J. L. Barnes, to a charge of the illegal sale of narcotics. He was ordered to pay a fine of $100 and was given a suspended sentence of six months in the county jail.

DISTRICT OF COLUMBIA

Lepers Under Quarantine.—Dr. William C. Fowler, district health officer, has requested the U. S. Public Health Service to assume responsibility for the care of two lepers now under quarantine in charge of the district health department. The transfer of the lepers has been delayed on account of technical details in the acquirement of title to the national leprosarium in Louisiana.

Fire at Walter Reed Hospital.—A fire at the Walter Reed General Hosital, which destroyed two psychopathic wards, caused the death of one shell shocked soldier and injury to several others. Two hundred men were in the four endangered wards, and seventy of these had to be carried to safety by nurses and other patients. The loss is estimated at approximately $25,000.

Personal.—Dr. Christopher J. Murphy has been appointed a member of the board of surgeons of the police and fire departments to succeed Dr. Henry F. Sawtelle, resigned.—— Dr. J. Frank Wallis has severed his connection with the wax model department of the Army Medical Museum and will conduct a laboratory of medical art, specializing in the preparation of moulages of skin and venereal diseases.

Dispensary for Government Employees.—The U. S. Public Health Service has opened a dispensary for the medical treat-

ment of practically all classes of government employees and for men being trained by the Federal Board for Vocational Education. The dispensary is located in Building C of the government group at Seventh and B streets N.W., and serves as an outpatient department of the Public Health Service hospital at Mount Alto. The medical staff comprises twenty-five physicians; Dr. Claude W. Mitchell is the executive officer.

GEORGIA

Personal.—Dr. Alexander S. M. Coleman, Douglas, was elected president of the Eleventh District Medical Association at the recent semiannual meeting in Waycross.

New Hospital Under Construction.—Drs. William C. Pumpelly and George Y. Massenberg, Macon, have under construction a clinic building and sanatorium on Walnut Street, Macon, on grounds surrounding the former Guttenberger home. The hospital will have rooms for twenty-six patients.

ILLINOIS

Personal.—Dr. Wilbur E. Coulter, Seneca, was recently elected president of the La Salle County Medical Society.

Reciprocal Relations Established.—A report from the director of the Department of Registration and Education of Illinois states that reciprocal relations in medical licensure have been established between Illinois and New York.

Branch Laboratory Established.—The state department of health has established a branch laboratory at Ottawa, in charge of Dr. Roswell T. Pettit, to be known as the north central laboratory. Other branches have already been established in Galesburg, Carbondale and Danville.

Chicago

Chicago Tuberculosis Society.—Physicians interested in the study of tuberculosis met, December 16, for the purpose of organizing a special society to be known as the Chicago Tuberculosis Society.

Joint Meeting of Societies.—A joint meeting of the Chicago Medical Society and the Radiological Society of North America was held, December 15. Dr. J. C. Bloodgood, Baltimore, delivered an illustrated address on cases of bone lesions for diagnosis.

Institute of Medicine Elects Officers.—At a meeting of the board of governors of the Institute of Medicine the following officers were elected for 1920-1921: president, George H. Simmons; vice president, C. Judson Herrick; chairman of the board of governors, L. Hektoen; secretary, E. E. Irons; treasurer, J. A. Capps.

INDIANA

Tuberculosis Association Organized.—The Elwood Tuberculosis Association was organized at a meeting held in Anderson, November 30, and the following officers were elected: president, Dr. G. M. Showalter; vice president, A. W. Konold, and secretary-treasurer, Sheridan Clyde.

New Officers of County Society.—The election of officers of the Dearborn and Ohio County Medical Society was held in connection with the annual meeting held in Aurora, December 1. Dr. Francis M. Mueller, Lawrenceburg, was elected president; Dr. John W. Elfers, Rising Sun, vice president; Dr. Edward J. Libert, Aurora, secretary, and Dr. Arthur T. Fagaly, Lawrenceburg, treasurer.

Conference on Mental Hygiene.—At the Indiana Conference on Mental Hygiene, held at the Claypool Hotel, Indianapolis, December 17, Dr. Harold Douglas Singer, director of the Illinois State Psychopathic Institution; Dr. H. H. Goddard, director of the Bureau of Juvenile Research of Columbus; Dr. Albert M. Barrett of Michigan University, and Dr. Arthur H. Estebrook, investigator for the Carnegie Institute of Washington were the principal speakers.

IOWA

Hancock-Winnebago Society.—A tuberculosis clinic and child welfare demonstration was held at Forest City, December 9, under the auspices of the Hancock-Winnebago Medical Society. Dr. Albert H. Byfield, Iowa City, was in charge of the child welfare demonstration and Dr. John H. Peck, Des Moines, and Dr. Lawrence L. Craven, Adel, supervised the chest clinic.

Hospital Transferred.—Dr. William Jepson, Sioux City, has donated a hospital valued at $75,000, with a capacity for sixty patients, to the Northwest Iowa Methodist Conference. The conference proposes to erect a modern hospital with a capacity of 250 beds in the immediate future. The institution was recently dedicated and will hereafter be known as the Methodist Hospital of Sioux City.

KENTUCKY

Laboratory Stations Established.—Redistribution of substations of the health office laboratory of Louisville has been made by the acting health officer. Five new stations have been established.

New Health Officer of Louisville.—The Board of Public Safety has appointed Dr. E. Ellis Owen as health officer of Louisville, to succeed Dr. Thomas H. Baker, deceased. Drs. Sidney J. Meyers, Benjamin C. Frazier and Ellis S. Allen have been appointed members of an advisory committee to cooperate with the Jefferson County Medical Society and the state board of health.

LOUISIANA

Personal.—Dr. E. E. Evans has been appointed superintendent of the East Louisiana Hospital for the Insane, Jackson.

Hydrophobia at Church Point.—It is reported that thirty-two persons from Church Point, Acadia Parish, are under treatment for hydrophobia at the New Orleans Charity Hospital. The disease has been traced to a farmer living near Church Point, who supposedly contracted it from a horse which he had been treating.

New Tuberculosis Sanatorium Dedicated.—The new buildings at New Pines on Greenwood Road, near Shreveport, which will serve as a sanatorium for the treatment of tuberculous patients, was dedicated by formal exercises, December 4. The sanatorium with its auxiliary structures represents an investment of over $100,000, and includes a cottage donated by the Standard Oil Company of Louisiana. The grounds, comprising 54 acres of land, were donated by Col. J. B. Ardis and his family.

MARYLAND

Reconstruction of Johns Hopkins Hospital.—Plans have been completed by the trustees of Johns Hopkins Hospital for the reconstruction of the hospital group, which will involve an investment of approximately $11,500,000, including $6,750,000 as a permanent endowment fund. The first unit will be started next summer by the erection of a new pathologic building, costing $600,000, to replace the structure destroyed by fire last winter.

Plans for City Hospital.—Four suggestions as to the steps which the city should take toward the establishment of a municipal hospital for communicable diseases out of the bond issue of $750,000 authorized by popular vote have been made by Dr. C. Hampson Jones, commissioner of health. (*a*) A hospital of sufficient capacity for the segregation and care of persons suffering from ordinary communicable diseases; (*b*) a segregation hospital for advanced cases of tuberculosis; (*c*) a hospital for venereal diseases, and (*d*) a hospital for cases of smallpox and other diseases commonly considered quarantinable by the U. S. Public Health Service at ports of entry. A hospital for venereal diseases is provided by the purchase by the city of the former Hahnemann Hospital, now the Morrow Hospital.

NEW YORK

New Hospital for Albany.—A million dollar hospital will be erected to take the place of the present St. Peter's Hospital in Albany. Funds for the institution will be donated by Mrs. James C. Farrell in memory of her husband, and the hospital will be known as the James C. Farrell Memorial Hospital.

Tuberculosis Society Organized.—The Steuben County Tuberculosis Association was recently organized at Corning, with the following officers: president, L. H. Brown, Hammondsport; vice presidents, A. J. Aaronson, Canisteo, R. L. Allison, Corning, and Dr. John A. Conway, Hornell; secretary, Mrs. W. W. Clark, Wayland, and treasurer, B. Frank Towne, Corning.

New York City

Cardiology Society Organized.—At the first meeting of the Brooklyn Cardiological Society, held November 29, the following officers were elected: president, Dr. William J. Cruikshank; vice president, Dr. Glentworth R. Butler; secretary, Dr. William W. Laing, and treasurer, Dr. Frank Bethel Cross.

Anthrax Cases During 1919 and 1920.—The *Monthly Bulletin* of the department of health for November presents an

investigation of thirty-four cases of human anthrax occurring in New York City from Jan. 1, 1919, to Oct. 1, 1920, as compared with seventy-four cases from 1900 to 1918. Of the thirty-four cases eleven proved fatal.

Joint Meeting of Surgical Societies.—A joint meeting of the New York Surgical Society and the Philadelphia Academy of Surgery was held in Hosack Hall, New York Academy of Medicine, Dec. 8, 1920. Dr. William Downes, New York, presided, and papers were read by Dr. Eugene H. Pool, New York, on "Suppurative Pericarditis (Pericardiotomy)," and by Dr. John B. Deaver of Philadelphia on "Gastro-Enterostomy in Perforated Ulcer of the Stomach and Duodenum."

NORTH CAROLINA

Personal.—Dr. Robert S. Bailey, Orangeburg, S. C., has been appointed health officer for Henderson and Vance County to succeed Dr. Edwin J. Kehoe, resigned.

Medical Society Opposes State Medicine.—The Guilford County Medical Society at its meeting in November adopted resolutions endorsing the educational health campaign of the North Carolina State Board of Health, but voicing its belief that a therapeutic campaign under auspices of the board is not advisable, on the ground that the licensed physicians of North Carolina are fully qualified and of sufficient number to care for all indigent sick. The campaign instituted by the state board of health for the removal of tonsils and adenoids is held to be unnecessary and expensive, and to tend to reflect on the willingness of the qualified physicians to care for these cases, and the operations have generally been performed at places unsuitable for surgical procedures. Many persons who are able to pay have been treated at public expense. Dr. Watson S. Rankin, Raleigh, secretary of the state board of health, has issued a public reply in justification of the campaign.

OHIO

Tuberculosis Dispensary at Niles.—The Trumbull County Tuberculosis Society has acquired rooms in the Armstrong Block, Niles, for the purpose of establishing a free dispensary. Clinics will be held each Wednesday afternoon at 3 o'clock.

Personal.—Dr. D. F. Garland has resigned his office as city welfare director of Dayton after seven years of service.——Dr. Francis B. Norton has tendered his resignation as police surgeon of Cleveland.——Dr. John P. Harbert has established a free surgical clinic and outpatient clinic at the eye, ear, nose and throat hospital on North Main Street, Bellefontaine.——Dr. Gilbert E. Robbins has been elected health commissioner of Chillicothe for a term of two years.

New Officers of County Societies.—At the annual meeting of the Tri-County Medical Society held at Van Wert, November 23, the following officers were elected for 1921: president, Dr. David H. Richardson, Celina; vice president, Dr. Lloyd M. Otis, Celina, and secretary-treasurer, Dr. Milton L. Downing, Rockford.——The Ottawa County Medical Society has elected the following officers: president, Dr. Arthur A. Brindley, Port Clinton; vice president, Dr. Henry Longholtz, Oak Harbor, and secretary-treasurer, Dr. Stuart T. Drumgold, Elmore.

OREGON

Construction of Medical School Delayed.—Construction work on the buildings for the University of Oregon Medical School was indefinitely delayed by a landslide which completely buried the roadway leading to the school buildings. Employees of the university and city employees of Portland are engaged in clearing the obstruction.

Hospital Notes.—The new building of the Salem Deaconess Hospital will be ready for occupancy by Christmas.——Plans and specifications have been completed for the proposed new building of the Portland surgical hospital, to be erected on North Twenty-First Street, Portland. The structure will be of concrete, three stories high, and will cost approximately $50,000.

PENNSYLVANIA

Regulation of Sale of Clinical Thermometers.—According to an opinion of B. J. Myers, deputy state attorney-general, the advisory board of the state health department has the power to regulate the sale and testing of clinical thermometers of Pennsylvania if the members deem it necessary for the protection of the health and lives of the people of the state.

Personal.—Dr. Edward Martin, state commissioner of health, has accepted an appointment as consulting physician for the division of hygiene and engineering of the State Department of Labor and Industry.——Dr. Charles H. Keene, Boston, has been appointed director of the bureau of health and instruction for the public and normal schools of the state.——The following appointments were recently announced by the state commissioner of health: Dr. Albert P. Francine, Philadelphia, to be chief of the division of tuberculosis dispensaries; Dr. Ellia I. Rynkiewicz, Shenandoah, clinician of the state prenatal clinic in Shenandoah; Dr. Edgar R. Biedleman, chief of the genito-urinary clinic at Bethlehem, and Dr. Stewart E. Rauch, assistant; Dr. Charles H. Swenk, Sunbury, chief of the child health clinic in Northumberland County, and Dr. John Henry Stearns, Stroudsburg, chief of the Monroe County Genito-Urinary Clinic.——Dr. Thomas W. Jackson, assistant to the state health commissioner, has obtained leave of absence for one year for the purpose of engaging in public health work in South America, under the auspices of the Rockefeller Foundation.——Dr. J. W. McMullen, Harrisburg, has been appointed chief of the tuberculosis clinic in Harrisburg, and Dr. George O. Keck, director of the Mont Alto Sanatorium.——Dr. Albert M. Redelin, Freeland, has been elected assistant surgeon of the Coaldale State Hospital, to succeed Dr. William A. Weaver, Philadelphia, resigned.

Philadelphia

Health Council Tuberculosis Work.—Under the direction of the Philadelphia Health Council and Tuberculosis Committee six clinics are maintained for the treatment of sick and debilitated children. Open air classes are conducted in the public schools and milk is supplied to undernourished children attending these classes. At the portable clinics in the recreation centers and playgrounds the children in attendance are given special examinations. Open air camps are also under operation.

Personal.—Drs. Lynnley G. Smith and Harry B. Fish have been appointed assistants in the genito-urinary clinic, Philadelphia, by Col. Edward Martin, state commissioner of health.——On the occasion of his eighty-fourth birthday, January 20, a dinner and reception will be given in honor of Dr. W. W. Keen, emeritus professor of surgery of the Jefferson Medical College, at the Bellevue Stratford Hotel. A life size bust of Dr. Keen will be presented on behalf of numerous medical, scientific, and civic organizations and of his friends in Philadelphia and elsewhere. Written individual tributes testifying to Dr. Keen's contributions to the science, art and literature of medicine, to his record in the Civil and following wars and to the high esteem in which he is held, will be incorporated in a bound volume to be presented at the dinner.——Dr. James Darrach, only survivor of the class of 1849 of the University of Pennsylvania and one of the oldest retired practitioners of the East, passed his ninety-second birthday, December 7. During the Civil War he was chief surgeon of the Germantown Hospital and he was among the first in Philadelphia to employ the microscope in research work.——Dr. John S. Shearer of the department of physics of Cornell University lectured December 9 at the Franklin Institute on "Recent Advances in the Production and Application of Roentgen Rays."

SOUTH CAROLINA

Fire at Government Hospital.—Fire at the U. S. Public Health Service Hospital at Camp Sevier, December 1, partly destroyed two wards and threatened the safety of about seventy patients. All patients were safely removed from the burning buildings and no injuries were reported.

Health Museum Holds Exhibition.—A model of a tuberculosis camp has been placed on exhibition in the Charleston museum by direction of the curator, Dr. George McF. Mood. Other public health material has been loaned to the museum for the special exhibition by Dr. James A. Hayne, Columbia, chairman of the state board of health.

TEXAS

Public Meeting of County Society.—The Denton County Medical Society held an open public meeting, December 7, at the first Christian Church at Denton. Addresses on topics relating to public health were delivered by Dr. Bacon Saunders, Fort Worth, Dr. James I. Terrill, Dallas, and Dr. Agnes Hopkins, Dallas.

Society Names Cisco Board of Health.—In conformity with the municipal ordinance of Cisco which stipulates that the Cisco Medical Society shall select the three members of the city board of health, the following physicians were named at a recent meeting of the society: Drs. J. E. Clarke, William P. Lee and Kincy J. Scott.

GENERAL

Weldon Medal Award.—The Weldon Medal has been conferred by the University of Oxford on Dr. J. Arthur Harris of the station of experimental evolution of the Carnegie Institution of Washington in recognition of his work in biometry.

Fraternity Elects Officers.—At the annual meeting of the Kappa Psi Medical Fraternity, held recently at Louisville, the following officers were elected: regent, Dr. James D. Reeder, Baltimore; vice regent, Dr. Victor J. Anderson, Chicago, and secretary-treasurer, Dr. Watson W. Eldridge, New York.

Liquor Regulations Extend to American Ships.—According to an opinion of the attorney-general of the United States, addressed to the Secretary of the Treasury and incorporated in Treasury Decision 3098, "the provisions of the National Prohibition Act extend to American ships, whether in American waters, on the high seas or in foreign waters."

Laboratory Cars for Mine Rescue Purposes.—The U. S. Public Health Service has assigned two traveling laboratory cars to the U. S. Bureau of Mines for aid in mine rescue work. The laboratory car "Hamilton" will be stationed at Terre Haute, Ind., and the "Wyman" will be utilized for field work.

Fraternity Convention.—The annual convention of the Alpha district of the Phi Chi Medical Fraternity will be held in Boston, Jan. 3 and 4, 1921, at the fraternity headquarters, 144 Huntington Avenue. Clinics will be held by prominent clinicians at Massachusetts General, Boston City, Carney, and the Salvation Army hospitals. A reception, smoker and banquet will be given at the Hotel Vendome on the evening of January 3.

Standard of Height and Weight of Children.—A conference was held in New York, December 3, for the purpose of adopting a uniform table of weight and height of children at various ages. The following organizations were represented at the meeting: American Child Hygiene Association; Child Health Organization; U. S. Bureau of Education; U. S. Children's Bureau; Elizabeth McCormick Memorial Fund; Nutrition Clinics for Delicate Children; U. S. Public Health Service, and School of Public Health of Yale University.

Science Association to Hold Meeting.—The seventy-third meeting of the American Association for the Advancement of Science will be held in Chicago, Dec. 27, 1920, to Jan. 1, 1921, under the presidency of Dr. L. O. Howard, Washington, D. C. The retiring president, Dr. Simon Flexner, New York, will deliver an address on "Twenty-Five Years of Bacteriologic Research, a Fragment of Medical Science," at Mandel Hall, December 27, 8 p. m. Headquarters of the association will be at the Congress Hotel, and registration at the Reynolds Club, University of Chicago, Fifty-Seventh and University Avenue.

Bequests and Donations.—The following bequests and donations have recently been announced:

University of Colorado, a gift of $700,000 for the construction of a medical school and hospital, by the General Education Board of the Rockefeller Foundation.

Rockingham Hospital, Bellows Falls, $10,000, by the will of Charles E. Howard, Bellows Falls, Vt.

Madison General Hospital, $25 000, by the will of Dr. Charles H. Vilas, Madison, Wis.

Flower Hospital and the Ophthalmic Hospital, New York, and Greenwich (Conn.) Hospital, each $150,000, by the will of Commodore Elias C. Benedict.

Conference on Venereal Diseases.—The All-America Conference on Venereal Diseases and Social Hygiene, held in Washington, D. C., December 6-11, was the first of a series of meetings in the international campaign against social diseases. The second meeting will be held in May, 1921, at Copenhagen, Denmark, and will be attended by representatives of all the Scandinavian nations, Holland and Great Britain. Subsequent conferences will be called at Paris and London, one or both of which, presumably will be attended by delegates from Germany. In his presidential address Dr. William H. Welch pointed out that only within the last few years had knowledge of these diseases progressed far enough to make such a gathering possible. Today, medical knowledge is sufficient to exterminate these diseases; and it is only necessary to educate the public to lend cooperation and to combat the sham modesty that forbids the mention of these diseases. The program of the conference was divided into twelve groups dealing with all phases of the subjects. The following were official delegates from countries of the Western Hemisphere: Dr. A. da Fonseca, Brazil; Dr. C. Masi, Paraguay; Dr. José S. Salas, Chile; Dr. Francisco del Valle Atiles, Porto Rico; Drs. Tomás G. Perrin and A. B. Vasconcelos, Mexico; Dr. Alfred Figueras Ballester, Cuba; Dr. Manual Zúñiga Idiaquez, Honduras; Dr. J. A. Amyot, Canada.

LATIN AMERICA

Trial of a Leprosy "Cure."—The government of Cuba has authorized Dr. Modesto Gómez Rubio to try during three years a leprosy treatment on sixty patients selected from the hospital for lepers.

Public Health Appropriations in Chile.—The council of the state of Chile has granted appropriations of 150,000 pesos to the Infant Welfare Association, 100,000 pesos to the Hospital de Concepción, and 500,000 pesos for the control of infectious diseases.

Medical Congress of Uruguay.—Preparations for the National Medical Congress, to be held at Montevideo in April, 1921, are well under way. The organization committee includes Dr. Bernardo Etchepare, president; Dr. Carlos Butler, vice president; Dr. Camilo Payssé, secretary; Dr. Enrique Méndez, treasurer, and Dr. Gilberto Pegules, librarian.

Special Tax in Uruguay for Antisyphilis Campaign.—The *Boletin* of the national public health service in Uruguay has the text of a law imposing a tax of 1 centésimo per hectare on grazing lands, the income to be devoted to the prophylaxis of syphilis throughout the country, founding of dispensaries and laboratories, and the organization in the capital of a museum with wax models of the different manifestations of syphilis, for educative purposes.

FOREIGN

Royal Society Elects.—At the annual meeting of the Royal Society, November 30, Dr. C. S. Sherrington, Wayneflete professor of physiology at the University of Oxford, was elected president, to succeed Sir Joseph Thomson.

Physicians Elected to Italian Senate.—Two more physicians have been elected to the Italian senate, Dr. G. Sanarelli and Dr. N. Badaloni. The former has been professor of hygiene at the University of Rome since 1915 and has had twenty years of service in the lower house. Badaloni is professor of pathology at the University of Naples.

Italian Federation of Brain Workers.—The first congress of representatives of scientific, pedagogic and other associations of intellectuals was held recently at Rome. The spirit of organization is in the air, one of the speakers said, and there is no reason why brain workers should not unite to further their material as well as scientific interests. The federation was founded eight months ago and includes editorial workers, men of all professions and officials. Social insurance in favor of brain workers was one of the topics discussed, and the importance of thorough organization in each group and subgroup.

Teaching the History of Medicine.—A historical medical museum is being planned at Rome, and the University of Geneva, Switzerland, has recently founded a professorship for the history of medicine. Such chairs have already been installed at Paris, London, Edinburgh and Berlin. Spain commissioned Dr. Albiñana of Madrid to study historical medical relics in different countries, and he has been delivering recently a course of public illustrated lectures on the subject. The *Siglo médico* gives the details of the topics presented in the four lectures based on the museum collections, etc., in France, Belgium, Holland and England besides Spain.

Antiquackery Meeting.—The annual meeting of the Netherlands Antiquackery Society was held recently at Amsterdam. Among the subjects discussed was a proposal to have a printed label to be pasted on nostrums as they are sold, warning the purchaser that the remedy in question is not a cure. Prof. van der Wielen said that sixty pharmacists had promised their cooperation in the matter. A resolution was adopted in favor of the project and a committee appointed to prepare the labels for different classes of nostrums. One of the members exhibited an unopened bottle of a nostrum which contained a beetle and another insect, and stated that he was going to place the bottle in a show window at the busiest corner in Amsterdam.

Deaths in Other Countries

Dr. **G. von Bunge,** professor of physiology at the University of Basel, aged 76.——Dr. **E. Bloch,** professor emeritus of otology at the University of Freiburg, aged 73.——Dr.

V. Carlier, professor of urology and pathology at the University of Lille.——Dr. J. Coelho de Miranda Leão, chief of the public health service in the Amazonas district of northern Brazil, a founder and officer of the Sociedade de Medicina e Cirurgia do Amazonas, and a pioneer in research on regional helminthiasis, aged 51.——Dr. N. Lugo-Viña of Cienfuegos, Argentina.——Dr. L. Valdes de la Puente of Havana, aged 69. ——Dr. Karl Toldt, professor emeritus of anatomy at the University of Vienna and author of manuals and an atlas of human anatomy, and of numerous publications on the development of the gastric and other glands and the embryology of the genital organs and on comparative anthropology, aged 80.

CORRECTION

Relation Between Suprarenal Function and Tuberculosis. —In the abstract of the article by Drs. Hartwell and Ryder, THE JOURNAL, November 27, p. 1520, the concluding sentences should read: "There was also progressive hyperplasia of the suprarenals corresponding to the duration of the tuberculous infection and this was true both in the pigs which had been operated on and in the controls. This suggests a demand for increased suprarenal function in tuberculosis."

Government Services

Medal Awarded to Surgeon-General Ireland

The silver medal of the Serbian Red Cross has been awarded to Surgeon-General Ireland for services which he rendered in relieving distress among the sick and wounded of the Serbian nation.

Resignation of Public Health Service Officers

Notwithstanding temporary increases in pay granted by Congress, the Public Health Service, in common with the Medical Corps of the Army and Navy, is having difficulty in securing candidates to maintain its regular staff of officers. During the last year the resignations among its personnel have exceeded the admissions.

Study of Health Conditions in United States

Surgeon-General Cumming, U. S. P. H. S., has inaugurated a campaign for the study of health conditions in the various states. Officers will be assigned for temporary duty to investigate the public health activities in given states, and to study the laws and regulations in force throughout the country. Asst. Surg. E. C. Williams was recently assigned to the office of the governor of Arizona to cover this new phase of work in that particular state.

Provision for Tuberculosis Patients

The Public Health Service has purchased 2,500 sheep-skin coats for the use of patients suffering from tuberculosis in hospitals located in every part of the country. The coats, which are heavy and wind-proof, will make it possible for patients in these institutions to spend the greatest part of the time in the open air during the winter months. They have already been distributed to the Public Health Service hospitals.

Department of Public Welfare

A bill—Senate Bill 4542—to create a department of public welfare has been introduced in the Senate by Senator Knox for Senator Medill McCormick. It provides for a secretary of public welfare who shall be a member of the cabinet, and would take over the Public Health Service and Bureau of War Risk Insurance from the Treasury Department; the Children's Bureau and Women's Bureau from the Department of Labor; the Bureau of Education, St. Elizabeth's Hospital, Freedmen's Hospital, Bureau of Pensions, and Indian Service from the Department of Interior; it would abolish the U. S. Employees' Compensation Commission and transfer its functions to the Bureau of Pensions; it would abolish the Interdepartmental Social Hygiene Board and transfer its functions to the Public Health Service, and would take over the National Home for Disabled Volunteer Soldiers and the Columbia Institution for the Deaf, Washington, D. C.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 20, 1920.

The Therapeutic Value of Music

The Society of Vocal Therapy was founded two years ago to provide teachers for the instruction of soldiers and ex-soldiers in breathing and singing under medical supervision. At the second annual meeting of the society, Lieut.-Col. Sir Frederick Mott gave an address on the influence of music on body and mind. He said that early in the war two cases of shell shock in which there was complete loss of memory came under his notice, which showed that musical memory returned earlier than other forms of memory—or, rather, the power of recollecting past experiences. He found that soldiers suffering with shock who had been singers or players of the piano were able to remember and sing songs or play pieces they had learned on the piano, and yet could not remember experiences connected with their daily vocations or surroundings. Again, men who were mute from the same cause would at a concert suddenly regain their speech by joining in the chorus of some well-known song. Of all the arts, music appealed most to the emotions, and probably words associated with music were more stably organized in the mind, owing to the musical origin of the language of the emotions. There were, broadly speaking, two laws of psychologic association in memory: association by contiguity, and association by similarity. In singing there there was a contiguous association of musical cadence and articulate speech. There was reason to suppose that the utterance of vocal inarticulate sounds of varying pitch was in evolution much older than articulate speech and that, whereas the production of such sounds could be initiated in both halves of the brain, articulate language in right-handed persons could be initiated only in the left half, which controlled voluntary movement of the right half of the body. He quoted the case of a soldier who suffered from aphasia and right hemiplegia following a gunshot wound of the left side of the brain. The bullet passed through the speech center and also blinded him. He understood what was said to him, but could express judgment only by "Ah" and "Oot," which corresponded to "Yes" and "No." He could, however, sing several songs through without difficulty, provided the first word or bar of the music was given to him. When the song, "'Tis a long way to Tipperary" was hummed to him, he started the well-known chorus, winding up with: "Are we downhearted? No." But on being then asked to say "Tipperary," he replied, "Oot," and could not utter any of the words. Sir Frederick concluded that the song must have been repeated so often as to have become organized in both halves of the brain or in the subcortical lower centers. A month later he could speak. The aims of the Society of Vocal Therapy are the promotion through speech and song and efficient breathing of the physical and mental health of the sick, wounded, and disabled service men, by the most effective methods of individual and class training. The society also trains both voluntary and paid teachers.

The Physician's Dilemma in a Case of Suspected Poisoning

The dilemma of a physician who suspects that his patient is being poisoned but has no evidence sufficient to act on has often been discussed. A story that appeared recently in *Truth* illustrates one means of solution. It is given on the authority of Dr. Russell of Glasgow: A physician of his acquaintance was attending a woman suffering from a mysterious ailment. After long and anxious observation he came to the conclusion that the patient was being poisoned,

but he had no tangible proof. After privately advising with his friends, he did not report the case to the police, and ultimately the woman died. The tragedy is of a kind well known to many physicians. The physician is called in by a man or a woman of good position and the highest reputation to prescribe for a relative who is suffering from some inscrutable disease. He examines the patient again and again and can make nothing of the case. Then it suddenly occurs to him that the symptoms suggest poisoning. He then asks for the advice of a consultant. Probably the consultant, who has not studied the case so minutely, sees nothing suspicious. Even if he does, he too is faced by the same terrible dilemma. If he reports to the police and fails to prove that poison is being administered, he is a ruined man: if he does not, he may be an unwilling party to a horrible murder. As a way out of the dilemma Dr. Russell repeats a story told him many years ago by the late Professor Hunter, who was then a lawyer of some standing and one of the members of Parliament for Aberdeen:

One morning a fellow countryman came to his chambers in the Temple in great distress. He said that he had been for some time attending a certain gentleman of wealth and position. At first he was greatly puzzled by the case; but gradually he had become convinced that the patient was being poisoned. "I can't prove he is being poisoned," he said, "so this is my position: If I report the case to the police the poisoning will stop, the man will recover, and I shall be ruined. If I don't report it, the poisoning will continue, the man will die, and I shall be a kind of party to his murder." "Whom do you suspect?" asked Hunter. "That is just my difficulty," replied the physician. "I can't suspect any one. He married only quite recently a young and charming woman, who is absolutely devoted to him. She insists on nursing him herself—sleeps on the sofa and watches over him like an angel. Her distress about his illness is painful to witness." Professor Hunter thought for a moment and then gave advice which the sequel will show. That evening, when the physician called, the wife, as usual, was deeply concerned. When he had finished his examination they left the sick room together. "Don't you think, doctor," she said, hopefully, "that he is a little better today?" "No, madam," replied the physician gravely, "I think that he is worse." A look of deep distress came over her face. "It is a very peculiar case, madam," he went on, looking straight into her eyes, "so peculiar that if I did not know that everything he eats and drinks is being prepared by yourself, I should fear he is being poisoned." The wife turned deadly pale, but made no answer. Within a fortnight he was well, and within a month she had run away with another man.

The Public Health

The last autumn has been one of the healthiest on record. Infant mortality during the months July, August and September dropped to the abnormally low rate of 65 per thousand births, the lowest on record. There has been a wide outbreak of scarlatina and diphtheria, but both diseases are of an extremely mild type and their mortality has been far lower than usual. At present there is no sign of an epidemic of influenza, a disease that seems to come and go in a mysterious manner and has been responsible in recent years for much mortality.

The Australian Medical Congress which recently met in Brisbane, Queensland, considered a list of resolutions sent forward by various sections. Among those adopted were: From the section of naval and military medicine and surgery, an expression of opinion that the real principles that underlie the success of the military health administration during the great war could be readily adapted to civil life, these principles implying control by a central commonwealth authority, the granting of a maximum autonomy to the local health authorities, and the organization of the medical profession, so that each member has his part in the public health organization; the advancement of research, and lastly education, by requiring among other things that trainees under the defense scheme shall study sanitation.

The Congress also accepted a recommendation from the dermatology section, suggesting the appointment of a committee to report on the occurrence of skin cancer in Australia. A resolution from the public health section, urging the establishment of a mosquito eradication campaign was also adopted. Other resolutions forwarded by this section, and adopted by the congress, included a proposal that a chair of preventive medicine be established in the medical school of each Australasian university, and also a proposal that hygiene be taught in all classes in all schools, as well as a proposal that laboratories be established at the principal centers of extrametropolitan population throughout the commonwealth.

Atmospheric Pollution

The Advisory Committee on Atmospheric Pollution, appointed by the British Meteorological Office, has issued its sixth annual report, which has been reprinted in the *Lancet*. It is based on observations made in the large towns. The present report shows a marked diminution of smoke pollution, which is attributed to the increasing use of gas fires. It is shown that there is a cycle in the distribution of impurities in the air during the twenty-four hours. At about 6 a. m., when fires are lighted, the impurities begin to increase, and this continues until 11 a. m. From this hour until about 10 p. m. the quantity varies little from hour to hour, but at the latter hour it rapidly diminishes and almost disappears by midnight. The highest mean monthly deposit of impurities for the year was registered in London and amounted to 15.35 metric tons per square kilometer.

BELGIUM

(From Our Regular Correspondent)

Nov. 23, 1920.

Prophylaxis of Venereal Disease

In previous letters I have mentioned the various measures adopted by the government to combat the inroads of venereal disease. As is well known, free treatment for patients of limited means has been made possible by the establishment in every large center of a certain number of competent physicians who are empowered to distribute gratuitously the needed remedies. However, the selection of physicians on the part of the government has, it is asserted, been inadequate and has given rise to grave charges from specialists. The societies for dermatology and urology have become aroused over the matter, and at their October meeting they passed a resolution, which is intended to serve as a general appeal and a plan for the reform of the present régime.

The Société belge de dermatologie et de syphiligraphie and the Société belge d'urologie hold the view that the campaign against venereal disease should take cognizance of all the means of action that are brought to bear against the various types of venereal disease, such as syphilis, gonorrhea and chancroid. They believe that prophylaxis should, for the present, be based chiefly on therapeutic measures, that the venereal campaign should not be undertaken except with the collaboration of all physicians, and that it is the duty of the government to pass the necessary legislation requiring every graduate in medicine to give evidence of his ability to handle venereal diseases. For the benefit of physicians who wish to gain a practical knowledge of the treatment of venereal disease, specially equipped centers of instruction should be established in great numbers. An examining board should be created before which all physicians so desiring could give

evidence of their special fitness to treat venereal cases. A special certificate would be issued to those satisfying such examining board in regard to their competence.

At present there are various places where venereal patients may secure the needed treatment. These are in the form of polyclinics, offices of charity boards, and consultation hours in municipal shelters and in free dispensaries, all of which have shown what they can do in furtherance of the antivenereal campaign. On these various institutions, therefore, devolves the duty of organizing such general measures as are needed to increase the efficiency of their endeavors in the struggle in question. Furthermore, it is a matter of general interest that an ample system of centrally located units fully equipped for the antivenereal campaign be organized at once in order to multiply the centers of influence and of action. The purpose and effect of such a system will not be to deprive the general practitioner of any part of his clientage. The idea is to give to the private practitioner the means of making a more certain diagnosis, and to give him all the instruction he may need to carry out the treatment in a satisfactory manner. It is desirable that, on request of physicians, venereal remedies be distributed gratuitously to persons of inadequate means. As a basis for present needs the societies suggest the following remedies: mercurials, iodids, preparations of arsenic (arsphenamin and neo-arsphenamin), potassium permanganate, mercuric oxycyanid, mercuric chlorid, silver salts, vaccines, etc.

At a special meeting to be held each year the two societies will issue a report in regard to the remedies to be employed in the antivenereal campaign. At this annual meeting the societies will appoint certain representatives to report on the subject for the ensuing year.

War Cripples

In the various countries that took part in the war there are unfortunately a large number of men so badly crippled or mutilated that they can make little practical use of the activity that they still possess. The various governments bestow on men thus seriously disabled the greatest care and attention. The interallied conference held in Brussels passed several resolutions concerning this class of pensioners. One resolution proposed a plan for the establishment for their use of groups of small detached cottages. For certain classes of patients, and more particularly for neurotics, sanatoriums provided with special workshops seem indispensable. Great importance is attached to work as a moral factor, and the feeling of a certain relationship, be it ever so slight, with the social body as a whole fills the heart and mind of these men with just pride, and their faith and hope in life are thereby preserved. These special workshops might be under the control of the central government (Dronsart's proposal), in separate institutions to be newly established, or they could be made special departments of the existing schools for the retraining of soldiers. It might be still better to turn them over to private interests by whom home work could be organized, or to corporations, assisted by a committee composed of patrons of the undertaking.

Agricultural colonies on market gardens might also be provided. Prof. Oreste Bellotti advised including in this class those who had suffered grave deformities of the face. They could be hospitalized in special institutions, which for agricultural workers could take on the form of rural colonies. In England, putting different classes of disabled men together in the same colonies has been found to work out satisfactorily.

The Nobel Prize

The Nobel prize in medicine has been bestowed on Dr. Bordet, director of the Pasteur Institute of the province of Brabant and professor in the Université libre de Bruxelles. Bordet is the author of the work on immunity to which the press has accorded so much praise. No one was better qualified than he to write on this subject, to which he has himself made many important contributions.

Bordet was born in 1870 and was graduated in medicine at the age of 22. In 1893 he received a traveling scholarship and the following year went to Paris, where he practiced in the Pasteur Institute in the services of Drs. Roux and Metchnikoff. In 1901 he was appointed director of the Pasteur Institute at Brussels. It is a known fact that Bordet is, in the main, the discoverer of the reaction termed deviation of complement, which goes by the name of the Wassermann reaction. For some time, however, there has been noted in European bibliography a tendency to correct this error, and we are coming to speak of the Bordet-Wassermann reaction.

In 1909 Bordet discovered the microbe of pneumonia in cattle. Several prizes have been awarded him in the past. Of late he has been directing the campaign against the cattle plague in Belgium, the terrible pestilence that has threatened all Belgium cattle but which at present seems to be definitely checked. Since the king returned from Brazil he has given evidence of his admiration for the illustrious professor by addressing to him his heartiest congratulations.

A New Medical Journal

The spirit of sectionalism, which was rampant before the war and threatened to paralyze all forms of enterprise in Belgium, is again beginning to get the upper hand. At the time of the armistice all the local medical journals, which serve no other purpose than to scatter our efforts, had disappeared, but behold, one after another they are rising from their ashes. The attempts made by the *Scalpel* to bring all the activities of the Fédération médicale belge under control have not been crowned with the success that was expected, and at present all medical faculty centers are establishing their own local journals. Brussels alone was conspicuous in not being represented by any journal of importance. So far as there may be said to have been a lack (for, personally, we persist in believing that a union of all local organs would constitute real progress), the want has been supplied in most excellent fashion. A new monthly bearing the name *Bruxelles-Médical* has appeared in a presentable form and is edited in a satisfactory manner considering the high cost of everything. Its purpose is essentially a practical one and it addresses itself to the general practitioner. Among its patrons and supporters we find the names of Bordet, Depage, Willems, Zunz and Fredericq, and among its foreign contributors I may mention Bard, Duval, Carrel, Faure, Putti, Macewen and Keen.

MEXICO CITY

(From Our Regular Correspondent)

Nov. 20. 1920.

National Academy of Medicine

After the usual vacation, the National Academy of Medicine began its fifty-seventh year, October 1, by a solemn session, presided over by the acting secretary of the interior, who represented the president of the republic. This session was also attended by the rector of the university. After a review of the work done by the members during the year, the usual elections of officers were held. Those elected were: Dr. D. Nicolás León of the section of history of medicine, who was appointed vice president, and J. Izquierdo of the section of physiology, second secretary. The presidency will be discharged by the former vice president, Dr. Germán Díaz Lombardo of the section of urology, and the position of first secretary will be occupied by Dr. Jesús Arroyo of the section

of internal medicine. As the thesis presented by Dr. D. Ramón Pardo on "Sensorial Chiasmas" was approved, he was elected corresponding member in the city of Oaxaca, where he has also been professor of anatomy and director of the institute of science. The department of the interior has received with approval the resolution that the hospital general, the most important Mexican center for clinical teaching, should be under the jurisdiction of the school of medicine, and it is expected that this will soon be done.

Protest by Medical Students

Pedro José Zepeda, a citizen of Nicaragua, who has lived in the United States and other countries and who alleges to be a physician, asked to be examined by the school of medicine. To the great astonishment of all those who witnessed the examination, in which the applicant showed his complete ignorance of medical science, he was licensed by the board. This caused a most vigorous protest on the part of many students. These stated that such action would hurt the university and also that the examination had been illegal, as one of the members of the board had taught the applicant privately. The students therefore demanded the annulment of the examination and of the diploma of physician and license already granted to Zepeda. The university officers considered the matter, and after studying a report by Dr. J. González Urueña, Pharmacist Roberto Medellín and Lic. Alfonso Caso, rendered a decision favorable to the students' petition. They based their action, however, on legal reasons, which differed from the students' assertions. Zepeda's examination has therefore been annulled and his diploma recalled. The behavior of the professors who took part in the examination has been unfavorably commented on, and the medical students deserve praise for their action.

Beginning of the Competitive Examinations

As previously announced, it was decided to fill certain chairs of the school of medicine by means of competitive examinations. These examinations were not very successful because of the small number of applicants, and other reasons. Thus far only one professor has qualified in this way, Dr. Ernesto Cervera, who applied for the position of professor of microbiology and had no competitors. Even in his case some criticisms are heard of the fact that, while competitive examinations were held for the chair held by Cervera, who enjoys a high reputation and has filled his position during five years, on the other hand there are appointed as full-fledged professors individuals who really are a hindrance to the progress of the institution or are even physically unfit as, for instance, a professor affected by deafness. It might be well that the heads of the school should act otherwise or not act at all if they cannot follow the example of Licéaga or Angel Hidalgo, former directors, who should always serve as models.

BUENOS AIRES

(From Our Regular Correspondent)

Nov. 9, 1920.

Surgery Institute

The cornerstone of the Institute of Surgery, the construction of which was ordered recently by the government, has just been laid. Work on the building will be begun immediately at an estimated cost of $400,000. The surgery service, which will occupy this building, is that in charge of Prof. José Arce, who has sailed for Europe.

Union of Medical Societies

During recent years there has been a tendency to federate all national medical societies. Federation has been largely brought about through the creation of the Argentine Medical Association, but it has not been possible to make some societies join the latter, owing either to the fact that they limit the numbers of members (societies of surgery, obstetrics and gynecology) or to an extreme spirit of independence (society of pediatrics). In view of the present tendency, however, it seems unavoidable that all medical societies will finally combine.

Pharmaceutical Preparations

A serious defect of our public health organization is its extreme tolerance in permitting the sale of medical preparations. Every two or three years we see an extraordinary advertising campaign promoting some wonderful remedy, generally vegetal, which cures all kinds of diseases, as shown by photographs, certificates and other testimonials that all newspapers publish without any scruples. These products are sold on a large scale to the great benefit of the owners. As a rule, when they are submitted to the technical bureaus of the national department of public health, these advise against their sale; but through political influence this decision is revoked and their sale is authorized. The same thing has happened many times. The last case of the sort, which occurred recently, was rather interesting, since the remedy can be sold in the federal capital, but its sale is forbidden in the province of Buenos Aires, where it was proved that it was just plain water. As soon as the sale of one of these products is authorized, the technical bureaus are asked to state only whether the product is harmful or not; as soon as they reply that it is not harmful, permission for sale is given. These practices have continued for many years to the great harm of the public health, and amount to a form of complicity on the part of the public health authorities with the exploiters.

BERLIN

(From Our Regular Correspondent)

Nov. 16, 1920.

Closing of the Friedmann Tuberculosis Institute

Shortly after Friedmann succeeded in inducing the minister of public instruction, Haenisch, to bestow on him the office of extraordinary professor with duties in connection with the treatment of tuberculosis, he exerted himself to the utmost to secure the establishment of a government-controlled institute for the treatment of his patients. After repeated attempts had met with failure, a portion of the old military hospital in Scharnhorst Street was fitted up for his purpose. Only the building was furnished him by the government. To secure the furnishings for the hospital and the funds needed for its maintenance, the minister of public instruction succeeded in interesting two of his friends, Parvus and Sklarz, in the enterprise. These two men, who, during the war, had amassed considerable fortunes through the filling of army contracts, agreed to contribute the sum of 700,000 marks for the support of the Friedmann Tuberculosis Institute. Haenisch accordingly announced in the Prussian assembly that with the aid of this generous gift a tuberculosis hospital for the common people was to be established, in which tuberculous patients without adequate means could enjoy the blessings of the "Friedmann treatment!" Just what course affairs took did not become publicly known until recently. Georg Sklarz and Friedmann eventually had a falling out, and much came to light during the recriminations that followed. The "Institute," founded ostensibly for the benefit of the poorer classes, apparently changed very quickly into a private institution from which the two partners, Friedmann and Sklarz, are said to have derived considerable revenue. From February to September, 1,350 patients were treated, and only fifty of these received free treatment! From the other patients fees were received ranging from 20 to 600 marks. To fifty patients, who apparently had more means than the rest, Friedmann is said to have

given special private treatment. Friedmann, however, seems to have kept within modest limits even as regards the higher fees charged private patients, for from those who called on him during his regular consultation hours he secured fees that gradually rose from 600 to 5,000 marks and more for the "treatment," which consisted, it is said, of a single injection. The falling out between Sklarz and Friedmann, according to Friedmann's statements, was the fact that Sklarz claimed, in addition to his share of the medical fees, special commissions for himself, and because of his demand that the price of the Friedmann remedy be increased from 15 to 20 marks. Sklarz, on the other hand, brings charges against Friedmann on account of his alleged cupidity and other misdemeanors. Sklarz has reduced his complaints to formal writing and has presented them to the Bureau of Public Instruction with the request that disciplinary action be taken against Friedmann. If his request is complied with, the minister of public instruction may be compelled to depose from office the man whom he appointed to a professorship—an appointment made against the judgment of the medical profession in general, and of the medical faculty of the university in particular. Friedmann, in turn, has induced the Staatsanwalt (Solicitor General) to take up the case and to inquire into Sklarz' demands.

In conclusion it is worth noting that the supposed tuberculosis institute for the common people—apparently a Friedmann-Sklarz private institute—has closed its doors.

Memorial Tablet in Honor of Zuntz

At the suggestion of the Niederrheinische Gesellschaft für Natur- und Heilkunde, a memorial tablet is to be placed on the birthplace in Bonn of the Berlin physiologist N. Zuntz, who died last spring. To the pupils and friends of Zuntz the society has issued an appeal for contributions for this purpose. As there are doubtless a large number of former pupils of this famous scientist among American colleagues, the announcement of the plan may not be out of place. Contributions may be sent to Prof. A. Loewy (Kurfürstenstrasse 43, Berlin), who for many years was a collaborator with Zuntz.

Prize Award for Work on Radiotherapy in Tuberculosis

The Robert Koch Foundation for Combating Tuberculosis announced last year a prize for the best work on the subject "The Value of the Various Kinds of Rays (Sun, Roentgen, Radium, Mesothorium) for the Diagnosis and Treatment of Tuberculosis." The prize of 5,000 marks has now been awarded to Dr. Gassul, a former assistant in the Berlin University Institute for the Investigation of Cancer. The judges were Bumm, president of the reichsgesundheitsamtes (public health bureau), Geheimrat Flügge, Professor Kayserling and Kirchner, formerly "ministerial director."

Marriages

James W. Chapman, Pasadena, to Miss Madge Dickinson of Shelbina, Mo., at San Gabriel, Calif., November 26 .

Charles R. Fox to Miss Helen M. Behringer, both of Northampton, Pa., at Mauch Chunk, Pa., recently.

Edna N. Sypher Kane to Fabyan Packard, both of Boston, at North Andover, Mass., September 12.

Louis Edward Sauriol, Wolfe Island, Ont., to Miss Ita M. La Marche of Kingston, Ont., November 15. . .

Octavius Thorndike Howe, Boston, to Mrs. Arthur L. Kelley of Providence, R. I., November 18.

Jacob J. Mendelsohn to Miss Grace Helen Kamerman, both of Chicago, August 15.

Robert G. Savage to Miss Edith Lavin, both of Oak Park, Ill., November 10.

Deaths

Francis James Kearny, Plaquemine, La.; Tulane University, New Orleans, 1886; aged 60; a member of the Louisiana State Medical Society; for thirty years local surgeon for the Texas and Pacific Railway Company; a member of the first state board of medical examiners in 1896; coroner and health officer of Iberville Parish from 1896 to 1900; at one time a member of the Plaquemine City Council; died suddenly, December 2, from angina pectoris.

Fontaine Bruce Moore ⊕ Memphis, Tenn.; University of Pennsylvania, Philadelphia, 1911; aged 34; lieutenant, M. C., U. S. Army, and discharged, Dec. 27, 1918; a specialist in diseases of the eye, ear, nose and throat; a member of the American Academy of Ophthalmology and Oto-Laryngology, and Memphis Society of Ophthalmology and Oto-Laryngology; died, November 27, from lobar pneumonia.

Frank Martin ⊕ Baltimore; University of Maryland, Baltimore, 1886; aged 57; major, M. C., U. S. Army, and discharged, June 23, 1919; professor of clinical and operative surgery in his alma mater; visiting surgeon to University of Maryland and other hospitals; a member of the Southern Surgical and Gynecological Association, and American College of Surgeons; died, December 7.

William Joseph Schuyler, Utica, N. Y.; University of the City of New York, 1885; aged 59; a member of the Medical Society of the State of New York, lecturer in obstetrics in the St. Luke's Hospital Training School for Nurses; visiting physician to the House of Good Shepherd; at one time health officer of Utica; died, November 20, from cerebral hemorrhage.

Moses D. Hoge, Jr., Richmond, Va.; University of Heidelberg, Germany, 1886; aged 59; a member of the Medical Society of Virginia; at one time professor of histology and pathology, clinical diagnosis, and biology in the University College of Medicine, Richmond; formerly a member of the board of health and city school board; died, November 24.

Fayette H. Montgomery ⊕ Danville, Ky.; George Washington University, Washington, D. C., 1892; aged 50; secretary of Boyle County Medical Society since 1917; health officer of Boyle County; who was under treatment at the Cincinnati Sanitarium, College Hill, was found dead, November 24, from knife wounds.

Edwin Scott Blair, San Bernardino, Calif.; University of Michigan, Homeopathic Medical School, 1903; aged 48; formerly superintendent of the Southern California State Hospital, Patton; was instantly killed, December 4, when the automobile in which he was riding was struck by a train.

Robert Arthur Bowie, Brockville, Ont.; McGill University, Montreal, 1891; L. R. C. P., and L. R. C. S., and London, 1892; aged 50; Lieutenant-Colonel, R. A. M. C.; was instantly killed, November 26, when he fell down an elevator shaft in St. Vincent de Paul Hospital, Brockville.

Albert P. Black, Bradner, Ohio; National Normal University, Lebanon, Ohio, 1896; aged 60; at one time mayor of Bradner, and president of the school board; died in St. Vincent's Hospital, Toledo, November 21, from cerebral hemorrhage.

Edwin Lee Morgan ⊕ Washington, D. C.; Medical College of Virginia, Richmond, 1879; aged 65; consulting physician of St. Ann's Orphan and Infant Asylum; librarian of the Medical Society of the District of Columbia; died, November 23.

Frank Virdin, Wilmington, Del.; College of Physicians and Surgeons, Baltimore, 1894; aged 54; a member of the Delaware State Medical Society; died in Johns Hopkins Hospital, Baltimore, November 27, from acute dilatation of the heart.

John Moore, Shannonville, Ont.; Queens University, Kingston, Ont., 1891; aged 64; died in the General Hospital, Belleville, Ont., November 12, from injuries received when an automobile in which he was riding was struck by a train.

Woodford Hinzman ⊕ Terra Alta, W. Va.; College of Physicians and Surgeons, Baltimore, 1903; aged 42; physician at the West Virginia Tuberculosis Sanatorium; died in that institution, November 22, from pulmonary tuberculosis.

Almedes Frank Feraco, Brooklyn; New York Homeopathic Medical College, New York City, 1918; aged 27; died at

⊕ Indicates "Fellow" of the American Medical Association.

the Southampton, L. I., Hospital, November 25, from gunshot wounds accidentally received while on a hunting trip.

Granville Reynard ⊕ Union City, Ind.; Medical College of Ohio, Cincinnati, 1881; aged 64; health officer of Randolph County; president of the Randolph County Medical Society in 1919; died, November 26, from cerebral hemorrhage.

John C. Ferbert ⊕ Los Angeles; University of Southern California, Los Angeles, 1897; aged 48; assistant surgeon, lieutenant (j. g.), U. S. N. R. F., and discharged, March 27, 1919; died, December 3, from cerebral hemorrhage.

William Thomas Bishop ⊕ Harrisburg, Pa.; Rush Medical College, 1879; aged 80; medical examiner of the Pennsylvania Railroad for twenty-five years; a veteran of the Civil War; died in Ebensburg, November 27.

Charles W. Drew, Minneapolis, Minn.; University of Vermont, Burlington, 1880; aged 62; founder and director of the Minnesota Institute of Pharmacy; at one time city physician and chemist; died, November 25.

James W. Pilcher, Stellaville, Ga.; Atlanta Medical College, 1875; aged 67; a practitioner for forty years; died at the home of his daughter in North Augusta, Ga., November 22, from cerebral hemorrhage.

Frank Joseph Plummer, Malden, Mass.; Baltimore Medical College, 1896; aged 64; a member of the Massachusetts Medical Society; died at the Peter Bent Brigham Hospital, recently, from nephritis.

William M. Calhoun, East Liverpool, Ohio; University of Wooster, Cleveland, 1877; aged 75; at one time vice president of the Columbiana County Medical Society; died, November 20, from pneumonia.

Alton Winslow Leighton, New Haven, Conn.; Yale University, New Haven, 1879; aged 52; a practitioner of New Haven for forty years; died in LaJolla, Calif., November 17, from heart disease.

William H. Baldwin ⊕ Coldwater, Mich.; Detroit College of Medicine and Surgery, 1895; aged 54; at one time president of the Northern Tri-State Medical Association; was found dead, November 29.

Casey Sims, Morton, Ill.; Chicago College of Medicine and Surgery, 1914; aged 32; was instantly killed, December 1, when the automobile in which he was riding struck a ditch and overturned.

Abijah Benjamin Bennett, Opelika, Ala.; College of Physicians and Surgeons, Baltimore, 1881; aged 64; a member of the Medical Association of the State of Alabama; died, November 12.

Francis Augustus Schlitz ⊕ Brooklyn; University of the City of New York, 1878; aged 74; at one time consulting physician to the Deaconess Hospital, Brooklyn; died, November 28.

Andrew B. Kirkpatrick, Philadelphia; Jefferson Medical College, 1884; aged 66; a member of the Medical Society of the State of Pennsylvania; died, November 22, from cerebral hemorrhage.

Theodore Clifton Cole ⊕ Thurman, Iowa; College of Physicians and Surgeons, Keokuk, 1878; University Medical College of Kansas City, 1896; aged 66; died, October 16, from pneumonia.

Charles Austin Rood, Reedsburg, Wis.; Rush Medical College, 1876; aged 68; for thirty-five years resident physician of the Northwestern Railway; died, November 20, from nephritis.

Sylvanus L. S. Spragg, Wheeling, W. Va.: Jefferson Medical College, 1879; aged 68; a member of the West Virginia State Medical Association; died, November 21, from heart disease.

James Druery Boyce, Memphis, Tenn.; Vanderbilt University, Nashville, Tenn., 1875; aged 65; a practitioner for forty-five years; died, November 12, from cerebral hemorrhage.

Oliver R. Venable, Winchester, Ky.; University of Michigan, Ann Arbor, 1885; aged 60; a member of the Kentucky State Medical Association; died, December 3, from pneumonia.

John Smith Douglass ⊕ Cape May C. H., N. J.; Medico-Chirurgical College of Philadelphia, 1896; aged 53; health officer of Cape May County; died in Philadelphia, December 6.

John Robert Thompson, Nashville, Tenn.; Vanderbilt University, Nashville, Tenn., 1883; aged 59; health officer of Davidson County; died, November 28, from heart disease.

Thomas Jefferson Pitner ⊕ Jacksonville, Ill.; College of Physicians and Surgeons in the City of New York, 1869; aged 78; a practitioner for fifty years; died, December 3.

Frank D. Emack, Phoenixville, Pa.; University of Maryland, Baltimore, 1875; aged 70; a member of the Medical Society of the State of Pennsylvania; died, November 21.

John William Coughlin, Fall River, Mass.; College of Physicians and Surgeons, Baltimore, 1885; aged 60; mayor of Fall River from 1891 to 1895; died, December 1.

John McClusky Murray, Wind Ridge, Pa.; Bellevue Hospital Medical College, 1876; aged 74; a veteran of the Civil War; died, November 26, from heart disease.

Johannes Alfred Elmere, Osage City, Kan.; Kansas Medical College, Topeka, 1894; aged 54; died in the Swedish Hospital, Kansas City, November 18, from carcinoma.

Bernard S. Peck, Galva, Ill.; Jefferson Medical College, 1872; aged 75; one of the founders of the Galva State Bank; died, November 21, from cerebral hemorrhage.

Theodore Arthur Weed, Cleveland and West Park, Ohio; University of Wooster, Medical Department, 1877; aged 64; died, November 28, from heart disease.

Grant Marchant, Milledgeville, Ohio; Columbus Medical College, 1887; University of the City of New York, 1891; aged 55; died, about November 29.

Benjamin R. Woodyard, Little Rock, Ark.; Memphis, Tenn., Hospital Medical College, 1894; aged 51; was shot and killed at his home, November 30.

George W. Simmons, Denton, Md.; Pulte Medical College, Cincinnati, 1888; aged 76; died at the home of his son in Chestertown, Md., November 20.

Samuel Augustus Brecht, Quentin, Pa.; University of the City of New York, 1884; aged 61; died, November 26, from abscess of the liver.

Nicholas Thomas Bolen, Brooklyn (License, New York); aged 59; chief dermatologist of the Wykoff Heights Hospital; died, November 28.

Peter John Conroy ⊕ Everett, Mass.; University of Vermont, Burlington, 1882; aged 65; died at Randolph, N. H., about November 28.

William Henry Lippert, Philadelphia; University of Pennsylvania, Philadelphia, 1899; died, suddenly, October 10, from heart disease.

Godfred L. Miller, Winchester, Va.; Winchester (Va.) Medical College, 1859; aged 82; a veteran of the Civil War; died, December 2.

John Beale Gardner, Washington, D. C.; Medical College of Virginia, Richmond, 1852; aged 90; died, November 18, from pneumonia.

Randolph Foster Bryant, Chicago; Eclectic Medical Institute, Cincinnati, 1869; aged 72; died, November 11, from arteriosclerosis.

J. DeWitt George, Indianapolis; Homeopathic Hospital College, Cleveland, 1880; aged 66; died, December 1, from heart disease.

Francis McCabe, Palmyra, Mo.; University of Pennsylvania, Philadelphia, 1855; aged 91; died, November 15, from nephritis.

James A. P. Knox, Memphis, Tenn.; St. Louis Medical College, 1859; aged 89; a retired practitioner; died, December 1.

Frank Clair Kennelley ⊕ Denver; University of Illinois, Chicago; aged 37; died, December 5, from influenzal pneumonia.

Philip Seidman, New York City; University and Bellevue Hospital Medical College, 1920; aged 23; died, November 30.

Frank Warren, Whitby, Ont.; McGill University, Montreal, Que., 1872; aged 70; died, November 9, from heart disease.

Mary Cornelia Heileson-Nelson, Elk Horn, Iowa; University of Michigan, Ann Arbor, 1896; aged 61, died recently.

A. Pierre Sillan, St. Martinville, La.; Tulane University, New Orleans, 1894; aged 54; died, November 22.

James I. Gumaer, Beatrice, Neb.; College of Physicians and Surgeons, Keokuk, Iowa, 1876; died, recently.

Cicero Buchanan, Waynesboro, Tenn.; Atlanta, Ga., Medical College, 1868; aged 78; died, November 28.

Frank G. Legg, Coldwater, Mich.; Chicago Homeopathic Medical College, 1879; died, December 1.

John Grant, Woodville, Ont.; University of Toronto, Ont., 1888; aged 58; died, November 2.

The Propaganda for Reform

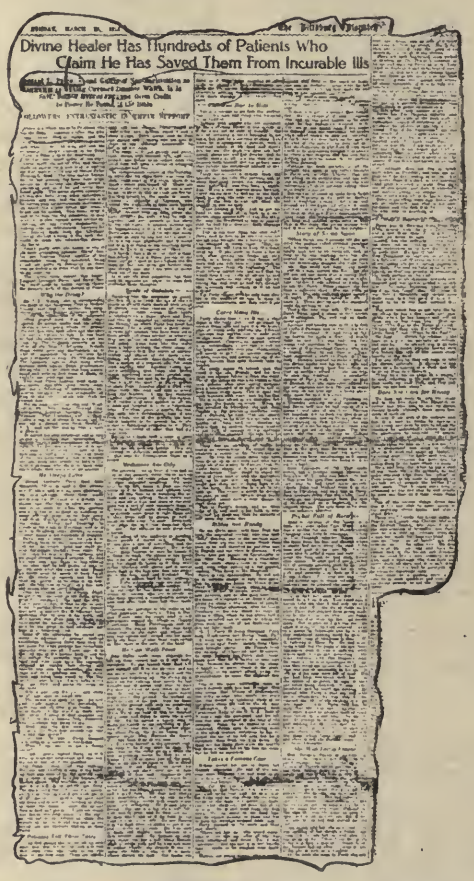
IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE PARRY MEDICINE COMPANY

A Pittsburgh Quackery Is Debarred from the Mails

For some years Pittsburgh, Pa., has harbored a quack concern known as the Parry Medicine Company. The president of the company was one Leonard L. Parry, who advertised himself as "Dad Parry, the Healer" and also as "The Miracle Man." Parry was the principal owner of the company, but its secretary and treasurer, one W. F. Craig, was also a stockholder. The Propaganda files contain a page from the Pittsburgh *Dispatch* of Sunday, March 29, 1914 (which we reproduce in miniature), containing a sensational write-up of the usual Sunday newspaper "feature" type of Leonard L. Parry, the "Divine Healer." The article occupied two-thirds of a page. Four weeks later, the same paper contained in its Sunday edition a full page advertisement (also reproduced) of the Parry quackery. Whether the advertisement was in the nature of a *quid pro quo* for the "special article" we have no means of knowing. The matter is referred to simply because printers' ink is the life blood of quackery.

Parry, who is an obviously ignorant faker, brags that he has been arrested 21 times and imprisoned 9 times. In April, 1917, he was arrested and convicted of the illegal practice of medicine and was sentenced on three indictments to pay a fine of $500 and to serve six months in jail. Newspaper reports indicate that Parry, by legal technicalities, kept out of jail until December, 1917. It seems, also, that an effort was made to appeal to the Governor of Pennsylvania for a special permit entitling Parry to practice medicine without violating the Medical Practice Act. Later the State Pardon Board was petitioned and strong efforts were made to obtain a pardon for Parry. Fortunately, these efforts were unsuccessful.



Divine Healer Has Hundreds of Patients Who Claim He Has Saved Them From Incurable Ills

Greatly reduced reproduction of a "feature article" in the Sunday edition of the Pittsburgh *Dispatch*, March 29, 1914. It recounts the marvellous exploits of Parry the "Divine Healer."

THE FEDERAL GOVERNMENT REACHES PARRY

Apparently, as soon as Parry got out of jail he went right back to his quacking and in time the federal authorities took action. As a result, the Parry Medicine Co. has been denied the use of the mails because it has been found guilty of conducting a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises. The order was issued Oct. 14, 1920. The memorandum of Judge W. H. Lamar, Solicitor for the Post Office Department to the Postmaster-General recommending the issuance of a fraud order brings out various interesting points and we quote extensively from this memorandum:

"The Parry Medicine Company was incorporated under the laws of Ohio in June, 1919, with a capitalization of $10,000. The company is principally owned by L. L. Parry, the next largest stockholder being W. F. Craig. The gross revenue up to August 3, 1920, was $290,193.31. The company was organized to handle the medicines originated by L. L. Parry, self-styled 'Dad Parry the Healer' and the 'Miracle Man.'"

The "medicines" put out by the Parry concern were fourteen in number and were numbered consecutively. They were essentially the same in composition, differing only in flavoring. They were all sold at the uniform price of $1.50 for each 6⅔ ounce bottle. The government chemists reported that each of the "fourteen separate and distinct Parry medicines" contained one-fourth alcohol (25 per cent.), one-fourth water, one-half olive oil and from one to four drops of certain vegetable oils. Here is the list of medicines and the diseases for which they were sold, together with the composition as found by the federal chemists:

PARRY'S FOURTEEN REMEDIES

"No. 1.—For Tuberculosis, Lungs, Bones or Flesh, Gallstones or Tapeworm."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil, about 50 per cent., and a few drops of the oils of anise, clove, sandal and juniper.

"No. 2.—For Cancer, Tumors, Adenoids, Hemmorrhoides, Piles, Asthma, Goiter, Typhoid and all other fevers."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of the oils of spearmint and clove.

"No. 3.—For Bright's Disease, Bladder, Kidneys, Influenza and for Weak Women."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of the oils of sandalwood and juniper.

"No. 4.—For Stomach, Bowel Trouble, Black Plague and Leprosy."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of the oils of clove, cinnamon and peppermint.

"No. 5.—For Inflammation of Throat and Bronchitis."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of the oils of clove, juniper and cinnamon.

"No. 6.—For Eczema, Pimples, Skin Disease and Smallpox."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of the oils of spikenard, clove and anise.

"No. 7.—For Varicose Veins, High Blood Pressure and Dropsy."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of the oils of sandalwood and spikenard.

"No. 8.—For Diabetes, Liver, Spleen and Adenoids."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil, about 50 per cent., and a few drops of oils of sandalwood and spikenard.

"No. 9.—For Insanity, Fits, Paralysis, Meningitis, Mad Dog and Snake-Bite."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of oil of spikenard.

"No. 10.—For Heart, Kidneys, Nose and Throat."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of oils of spikenard and juniper.

"No. 11.—For Nervous Troubles, Rheumatism and Saint Vitus Dance."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of oils of cinnamon, clove and lemon.

"No. 12.—For Nerves, Gall Stones, Curvature of Spine and Deformity."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of oils of clove, anise and lemon.

"No. 13.—For Blindness, Weak Eyes, Cataract and Deafness."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of oils of cinnamon, anise and clove.

"No. 14.—All Venereal Diseases, Etc."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of oil of juniper.

A MEDICINE WITH A "KICK"

As has been said, each bottle contained 6⅔ ounces of which one-fourth was alcohol. A dose was the *contents of one bottle!* Obviously, a person taking a dose of the Parry medicines would get 1⅔ ounces of alcohol, or the equivalent of 3⅓ ounces of whisky at 100 per cent. proof. It is easily conceivable that such a dose—equal to two stiff highballs—would change the outlook of the taker and possibly cause him to view Parry's quackery in a somewhat tolerant light. This fact also lends color to the report of a woman witness against Parry in a case in 1916 when this quack was charged with practicing medicine without a license. The woman testified at that time, according to the newspapers, that when she visited the Parry headquarters she was given a "dose" of the Parry medicine which "had a slight taste of gin" and affected her so that she "felt drunk." She testified, also, that in the rear room she saw nurses administering to many women "who were sprawled out apparently drunk or affected in some way by the stuff."


Opened Eyes of Blind Man Who Could Not See for Eight Years
Amazing Recoveries Among Many Patients of Leonard L. Parry
Paralyzed Woman in Invalid's Chair Seven Years Now Walking
Witnesses Shed Tears When Grateful Patients Thank Their Benefactor
COUPON

Greatly reduced reproduction of a full-page advertisement of Parry's quackery in the Sunday edition of the Pittsburgh *Dispatch*, April 26, 1914 — four weeks after the "write-up."

To get back to Judge Lamar's memorandum:

"In describing how he 'discovered' his medicines, Parry testified that some ten or twelve years ago, on account of the failure of his general health and eyesight, he had to give up the house-moving and general contracting business, in which he was engaged, and purchased a small coal yard, and that later his failing sight necessitated the abandonment of this business; that he remained at home, unable to work on account of his total blindness, for about a year, and that during this time God instructed him how to compound his various medicines. He stated that all of the information did not come to him at once, and his testimony is somewhat vague on the point as to whether he gleaned his information from his reading of the Bible during the year when, according to his statement, he was 'totally blind', or whether he obtained all of his information by means of 'visions.' When asked on cross-examination on what particular passage of Scripture his theory of medication was based, Parry answered by giving an alleged quotation from the Bible as follows: 'Go, preach my Gospel through all the world, without money and without price.'"

CURING CANCER OF THE LIVER

The memorandum goes on to state, further, that as a matter of fact Parry failed to give either God or the Bible any credit for his "wonderful discoveries" but took full credit to himself. Then:

"Parry testified that by means of this medicine he cured himself of total blindness, heart trouble, stomach trouble, obesity, and cancer of the stomach and liver, although he admits that while he is only 5 feet, 10½ inches tall, he now weighs 251 pounds. He says his medicine will grow hair, but he, himself, is slightly bald. With reference to his alleged cure of cancer of the liver in himself he said:

PARRY.—I had a cancer on the liver and I vomited it up and took it out. I couldn't get it out and I had to take it out with my hand and I throwed it in a bucket and dumped it in the snow, and the stuff I vomited up after that was bitter. I vomited up that great big fat cancer and throwed it in the bucket.

QUESTION.—Could you state for the information of the Court just how your medicine works on cancer?

PARRY.—It works different ways. There are 54 different kinds of cancer. I've had hundreds of cases where they just take the medicine and it comes out on the floor. Fibroid cancers is awful. I never see one yet that it [the medicine] wouldn't get in three minutes.

"On cross-examination he was unable to explain how a big fat cancer,' so large that he could not get it out of his mouth without clawing at it with his fingers, could pass from his liver to his stomach and thence up through his mouth.

"Parry stated that he is not a doctor and that he 'wouldn't be a doctor for anything in the world,' that he does not diagnose cases, but relies entirely on the statements of his patients as to what is the matter with them. He asserted on the witness stand that this medicine will cure every disease to which humanity is heir, but admitted that it will not restore life to the dead. His claims for the medicine are based on statements of persons who have taken it. He failed to produce at the hearing before this office proof of a single cure effected by his medicine in any disease, the presence of which had been clearly established after proper diagnosis.

"In response to a test letter sent to the company by the inspector under the name Ellen Stone, in which the writer alleged that she had cancer of the breast, the Parry Medicine Company replied in part as follows:

Your health can be returned, there is no reason why it cannot, thousands and thousands have been returned to health with the same trouble. . . . Mr. Parry's medicine No. 2 has cured over 14,000 cancers, many of which were identically the same as yours. Bad blood is the real cause of all disease, sickness, suffering and pain. Mankind came from blood and blood the body is. From infancy to the grave we have to keep our blood pure.

"It is not clear how Craig, who is not a physician, the writer of the letter from the Parry Medicine Company above referred to, was able to state, without ever having seen the patient, that the disease from which Ellen Stone thought she was suffering was 'identically the same' as that from which many of the 14,000 persons, alleged to have been cured by Medicine No. 2, were suffering."

The Government, in preparing its case, sent certain test letters to Parry and these letters with their answers became part of the court records. With reference to one of these letters the memorandum says:

"In response to a test letter sent by the Inspector under the name John Gillis, in which it was stated that the writer was suffering from blindness, a letter was received from the Parry Medicine Company signed 'Mr. Craig,' reading in part as follows:

Our medicine No. 13 will do the work, I presume you would think it ridiculous and absurd were I to tell you that medicine has not only restored sight to the blind, and returned health to the afflicted eyes of others, but persons having taken the medicine for some time have actually grown new eyes in their heads where they had run out.

This may seem absurd Mr. Gillis, but it is an absolute fact in several cases. This same truth and records I personally furnished to

the United State Government, we stand ready today also to produce these people and let them speak for themselves.

"Parry testified on this point as follows:

Question.—How does the medicine grow an eye that a surgeon has taken out?

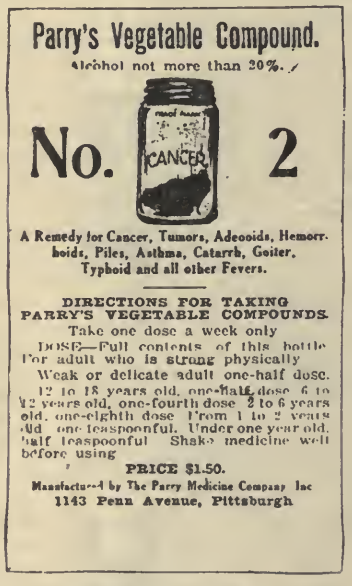
Parry.—Why, when you were born into the world, you had two eyes, didn't you? Well, your mother gave you your eyes with her blood, didn't she? Now I don't see why your blood wouldn't make another eye if it was good.

Question.—So you grow an eye by means of what's in the blood?

Parry.—Yes, you see it couldn't be done any other way. There's only two ways of making an eye, one's with glass and the other through the blood. You see we're all equal in this world, your body is no better than mine and mine's no better than yours, because there's nothing in either that hasn't been made with blood.

PARRY'S "EXPERT"

Like most medical mail-order fakers the Parry Medicine Company hired a man who had the legal right to put "M.D." after his name. According to Judge Lamar's memorandum, the man in this case was one George B. Kline, who acted as Parry's "expert" and who admitted on the stand he had been employed by Parry for seventy-five weeks during 1916 and 1917. He further testified that he assisted in dispensing the Parry medicines and that, although he did not know what the medicines contained, he had prescribed them to about two thousand persons each week during that time.



Reproduction (reduced) of a label from one of Parry's cocktails.

In addition to selling his medicines, Parry also sold a book entitled "The Cause of Disease" of which he was alleged to be the author. The book sold for $3.00 and was represented as being "Worth its weight in gold." It contained 278 pages, 10 of which were devoted to "the cause of disease as expounded by L. L. Parry" and the balance largely to testimonials for the Parry medicines. At the time the fraud order was issued Parry, according to the postmaster at Pittsburgh, was receiving from thirty-five to fifty pieces of mail a day.

Correspondence

"STRONGYLOIDES INTESTINALIS INFESTATION"

To the Editor:—The report of a case of *Strongyloides intestinalis* infestation (THE JOURNAL, Oct. 23, 1920, p. 1137) should not be allowed to pass without comment, as it would leave the inexperienced in tropical diseases under the impression that the relatively harmless *Strongyloides stercoralis* is a formidable, death dealing foe of mankind, capable of determining in its host the most diverse and serious lesions imaginable. Here in the tropics, where intestinal parasites play such an important pathogenic rôle, we examine the stools of virtually every patient that comes to us, and in the course of these microscopic examinations we are constantly meeting *Strongyloides intestinalis*. The patients only rarely show symptoms that could even remotely be ascribed to infestation with this worm. The parasites themselves are extremely difficult to eradicate, and the hosts usually harbor them for years without any apparent detriment to their health. The fact that Dr. Ginsburg discovered larvae of *Strongyloides intestinalis* in the feces of a patient with jaundice, scaphoid abdomen, enlarged liver, edema of the extremities, tardy reflexes, subnormal temperature, rapid pulse and respiration, foul, reddish, very turbid urine containing albumin and hyaline and granular casts, and dying evidently of pulmonary edema, is no reason why *Strongyloides intestinalis* should be incriminated. With these very definite signs of a serious renal lesion and general toxemia, it might have been more profitable to center the attention on the organs involved, disregarding for the time being the innocent *Strongyloides*. In the presence of such organic lesions as evidently existed in the case reported, the administration of a powerful and toxic drug, such as thymol, would hardly be indicated.

The pathogenicity of *Strongyloides stercoralis* is still considered a debatable question. Castellani and Chalmers, in their "Manual of Tropical Medicine," state that "the parasite is generally believed to cause a catarrh of the small intestine, though many believe it to be nonpathogenic." Brumpt, in his "Précis de parasitologie," expresses himself thus: "For several years this parasite was considered as the causal agent of Cochin China diarrhea, but its absence in some cases of this disease have deprived it of its supposed rôle in the pathogenicity of this malady." Fantham, Stephens and Theobald, in their treatise on "Animal Parasites of Man," state that "The pathological significance of this intestinal parasite is not yet fully demonstrated"; and in Sir Patrick Manson's "Tropical Diseases" we read: *"Strongyloides intestinalis* was discovered by Normand in 1876. For a time it was supposed to be a cause of a form of chronic diarrhea very prevalent in Cochin China. Later investigations, while clearing up the natural history of the parasite have robbed it of any claim to pathological importance."

E. P. DE BELLARD, M.D., Caracas, Venezuela.

JOHN ROBINSON, M.D., OF NORWICH, ENGLAND, AUTHOR OF "ENDOXA," ETC., A SON OF THE PILGRIM PASTOR

To the Editor:—In connection with the Mayflower tercentennial, some of the readers of THE JOURNAL may be interested in the following clipping from the editorial page of the *Christian Life and Unitarian Herald,* Sept. 4, 1920, since this London weekly is comparatively inaccessible in America, and the passage in question shows for the first time that John Robinson, M.D., of Norwich, England, author of "Endoxa" and other works, fellow-citizen of Sir Thomas Browne at Norwich and probably his fellow-collegian at Leyden, was also a son of the famous John Robinson, pastor of the Pilgrims. Admirers of the immortal Sir Thomas may recall our John's quaint title: "Endoxa, seu quaestionum quarundam miscellanearum examen probabile . . . una cum Pseudodoxiae Epidemicae (T. Brunii) ventilatione tranquilla" (London, 1656), translated as: "Endoxa, or some possible inquirics into Truth, both divine and humane . . . as also a calm ventilation of Pseudodoxia Epidemica (or Doctrine of Vulgar Errours, set forth . . . by Thomas Browne) . . . Translated and augmented by the Author" (London, 1658).

Some nine years ago the announcement of the identification of John Robinson and his wife as from Sturton-le-Steeple was made for the first time through these columns. Now, on the eve of the three hundredth anniversary of the sailing of the *Mayflower,* we are able to point for the first time to John Robinson's son as having been settled in practice as a Doctor of Medicine in Norwich. By the diligent search of Dr. A. Eekhof, of Leyden, the will of Bridget Robinson, drawn up 28 October, 1643, has come to light. It describes her in terms which incidentally confirm our identification of her as the daughter of Alexander White, of Sturton—"de eerbare Brechgan Alexandersdr., wedue van zaliger D. Johannes Robbens, in sijn leven predicant in de Engelsche gemeente binnen deser stede"—the honourable Bridget, Alexander's daughter, widow of the late Master John Robinson, in his lifetime preacher in the English congregation within this city. But the interesting point is that she makes a bequest to the children, John and Mary, of her son "John Robinson, Doctor of Medicine, dwelling in England."

This gives an entirely fresh clue to the family. It led us to suggest that the John Robinson, M.D., of Norwich, whose medical thesis "De Purgatione" was published at Leyden in 1628, and who wrote some friendly criticisms of Sir Thomas Browne's Pseudodoxia Epidemica, or treatise on Vulgar Errors, in 1656, was one and the same with the son of the Pilgrim Pastor.

Rev. Alexander Gordon has now looked into the copy of Dr. John Robinson's "Endoxa" at the British Museum Library, with the result for us that this identification is established without a doubt. The opening section of this work consists of a Latin expansion of a "Consideration of certain Miscellaneous Propositions," "by John Robinson, Doctor in Physick, in Norwich, 1649." The writer here shows his judgment in regard to the nature of a Christian Church to be the same as that of the Pilgrim Pastor. He argues for the Independent position. He thinks it more than probable "that a company of Faithful (*the Heart no Man knoweth*) uniting themselves into a body, become a true Ministeriall Church; and having Christ for their sole head, may claime priviledge, to all the Ordinances instituted in the Gospell, as by a Charter belonging to them; without any necessary dependency, upon any power, either Secular or Ecclesiasticall."

Further than this, Mr. Gordon notes that the leaf prefixed to the "Endoxa," introducing it to the public, is signed by William Greenhill and Thomas Allen, two stalwart Independents. The latter was a Norwich man who fled to New England in 1638, and after his return was called to the pastorate of the Congregational Church in his native city. These two sponsors of the book commend it to the candid reader as "a Botanic Garden, free from weeds, variegated with the choicest plants and flowers of every kind, stocked and filled by the labour and industry of a man truly learned—a genuine son of the well known excellent and blessed Robinson." There can be no question that they point here to the famous John Robinson, of Leyden, in whose steps his son was closely walking.

This identification of Dr. John Robinson as the son of the Pilgrim Pastor may help to clear up an obscure point in the career of Sir Thomas Browne, the author of "Religio Medici," for the two men appear to have been not only fellow-citizens, but fellow-collegians at Leyden, and they were evidently on friendly terms. . . W. H. B.

LEONARD L. MACKALL, New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

VALUE OF POSITIVE WASSERMANN REACTION IN ABSENCE OF CLINICAL SYMPTOMS

To the Editor:—Please state the relative value of a positive Wassermann reaction in the absence of all clinical history and symptoms of syphilis. Is a positive diagnosis of syphilis ever warranted under such circumstances? A. F.

ANSWER.—A reliable frankly positive Wassermann reaction is evidence of syphilis. There are a few rare conditions other than syphilis which occasionally produce a positive Wassermann reaction, but these are so unusual that they constitute an unimportant exception to the general statement. Many Wassermann tests are made which are unreliable; and, in the absence of clinical evidence of syphilis, one should use great caution in making a diagnosis on a positive Wassermann reaction alone. It should be repeated more than once, and it should be made by a serologist whose findings can be depended on. It should also be frankly positive and not a borderline reaction.

CARING FOR RUBBER GLOVES

To the Editor: — Will you kindly print in your correspondence column a simple but efficient manner of caring for rubber gloves — a means that is feasible for the general practitioner. Please omit name. W. E. M.

ANSWER.—The personal preference of the surgeon usually determines whether the dry or wet method is used for sterilizing rubber gloves. Dry sterilization is usually preferred because the hands do not become sodden as when gloves are wet. The interior of the glove is well dusted with talc powder, and a piece of gauze is introduced to keep the surfaces apart. The wrist end of the glove is folded over so that it can be put on without touching the outer surface. The gloves are then put into a cotton bag for sterilizing by dry heat or steam under pressure. If the wet method is to be used, the gloves are washed with soap and water containing a little ammonia, rinsed in sterile water and boiled for thirty minutes in a 1 per cent. solution of sodium carbonate. Then the gloves are dried and wrapped in a sterile towel and kept until needed. After the gloves have been sterilized by either method, they are kept in the sterile bags or towels until called for. If too long a time elapses, it is advisable to resterilize them to make sure that they are sterile.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 11. Sec., Dr. Samuel W. Welch, Montgomery.

ARIZONA: Phoenix, Jan. 4-5. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

COLORADO: Denver, Jan. 4. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, Jan. 11-13. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

HAWAII: Honolulu, Jan. 10-13. Sec., Dr. J. E. Strade, 1041 Alakea St., Honolulu.

INDIANA: Indianapolis, Jan. 11. Sec., Dr. W. T. Gott, Crawfordsville.

MINNESOTA: Minneapolis, Jan. 4-6. Sec., Dr. Thomas McDavitt, 539 Lowry Bldg., St. Paul.

MISSOURI: St. Louis, Jan. 18-20. Sec., Dr. George H. Jones, Jefferson City.

NEW MEXICO: Santa Fe, Jan. 10-11. Sec., Dr. R. E. McBride, Las Cruces.

NEW YORK: New York City, Albany, Syracuse and Buffalo, Jan. 24-27. Asst., Professional Examinations, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, Jan. 4. Sec., Dr. George M. Williamson, Grand Forks.

OKLAHOMA: Oklahoma City, Jan. 11-12. Sec., J. M. Byrum, Shawnee.

OREGON: Portland, Jan. 4-6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia, Jan. 11-15. Sec., Dr. Thomas E. Finnegan, Harrisburg.

RHODE ISLAND: Providence, Jan. 6-7. Sec., Byron U. Richards, Providence.

SOUTH DAKOTA: Pierre, Jan. 18. Director, Division of Medical Licensure, Dr. H. R. Kenaston, Bonesteel.

WASHINGTON: Spokane, Jan. 4-6. Sec., Dr. William M. O'Shea, Spokane.

WEST VIRGINIA: Charleston, Jan. 13. Sec., R. T. Davis, Charleston.

WISCONSIN: Madison, Jan. 11-13. Sec., Dr. John M. Dodd, Ashland.

WHO'S WHO IN THE HOSPITAL?

An Attempt at Constructive Criticism

H. G. WETHERILL, M.D.
DENVER

None of the schemes for what is now designated by the term "hospital standardization" appear to me to contemplate the consideration of that which is fundamental and basic in the correction of the worst feature of hospital maladministration.

All attempts to standardize hospitals and to establish in them scientific procedure, orderly methods and coordinated endeavor for the attainment of better results must depend primarily on the measure of success each hospital has in organizing and amalgamating the *whole* working force of the institution.

In a "closed hospital"[1] with a relatively small and carefully chosen staff of well trained and efficient medical men, such organization and standardization are easy of attainment and are to be expected as a natural consequence of the favorable factors presented. Careful case recording, laboratory facilities, necropsy study and coordinated diagnostic, therapeutic and research methods should prevail.

Unfortunately, however, there are comparatively few such hospitals in America, and of the "open hospitals" only a relatively small number are so conducted as to be controlled or dominated by a group of highly trained and scientific men, even when such are available on the staff of the hospital.

The prevailing type of American hospital is the unendowed commercial "open hospital" into which any and every "reputable" physician is free to bring his patients for such treat-

1. The term "closed hospital" is here used in contradistinction to the term "open hospital" in deference to the accepted meaning of these terms as established by usage. They are both objectionable and convey erroneous impressions and, like the term "general hospital," are construed to mean that which they were never intended to mean. When hospital standardization ideals are realized, if they ever are, all hospitals will be "open hospitals" for those who apply and can qualify for practice in them, and there will be no "closed hospitals."

ment or operation as he may be pleased to direct and execute. How "open" such hospitals are, and how unrestricted the operations of the "reputable practitioners," we all know. In the vernacular of the race track it could be described as a "free-for-all, go-as-you please," competition in which the "brilliant performer of unnecessary operations" is likely to be the winner. Even osteopaths, chiropractors and advertising quacks sometimes have the entrée to such "open hospitals," and abortionists may use them to clear away the débris retained after an incomplete office operation.

Thus, under the protection and implied guarantee of safety the hospital holds out to its patients, the unattached and irresponsible "reputable" practitioner finds in its open door an invitation to attempt those things for which he has had little or no special training and for the safe conduct of which he is totally unfitted. He has none of the benefits of staff membership, if there be any, and he is free from all restraint and is responsible to no one for his conduct or his results. Case recording, laboratory facilities and coordinated diagnosis, therapeusis and research may never mean anything to him, and no refinements of hospital standardization can be brought to bear on him so long as he remains outside the hospital organization and is totally irresponsible to it and uncontrolled by it.

It is absolutely essential as a fundamental basis for progress along the lines of better hospital organization, which may some day lead to standardization, first to control and govern this disassociated, irresponsible and unorganized element in the existing hospital system.

What good could come of it if every hospital in the land were to be given in a night all the facilities prescribed by the most rigid requirements of the most highly idealized standardization program extant if its execution and operation depended on such an unassimilable and untrained personnel?

Candor compels us to admit that it is going to be next to impossible satisfactorily to standardize our hospitals along the simplest lines if the staff alone of each hospital is to be considered. It will require years of work to inculcate and implant the principles of hospital standardization into the minds and methods of those already within the hospital organizations, though they probably represent the better and most advanced element in the medical profession. To do this for those outside the hospital organizations, those on whom no influence or control can be directly exercised, would appear to be quite impossible.

If, then, we must reach and bring within the sphere of influence of the organized and standardized hospitals this detached and irresponsible element, and I believe all who consider this intricate problem will concede that this must be done, for they cannot be ignored or left without the organization, how should it be accomplished?

HOW TO REACH UNATTACHED, OUTSIDE PRACTITIONERS

In many instances, in every large city where there are "open hospitals," some of the most capable and able physicians and surgeons in the community practice extensively in some hospital with which they have no official connection or tie of any kind. They would in many, indeed in most of such instances, welcome any plan that would include them in the scheme of official association with such hospital. That such recognition has not been accorded them in the past is due to the crucial failure of the system, or lack of system, on which most American hospitals have been founded; for it should always have been a fundamental principle of organization and control in all hospitals that no physician be allowed to practice in them till he had formally been accorded the privilege.

Furthermore, his application for admission as an "approved," "associate" or "visiting physician" should have been accompanied by a detailed statement of his personal history and educational advantages, his special training and professional associations, and other personal data that would be pertinent.

His application should have been passed upon by a committee of officials of the hospital on which the medical staff should have adequate representation, and if his application is favorably acted upon he should be granted a *revocable permit* to practice in the hospital.

Late as it is, formidable as the obstacles seem to be and are, this is the plan that in my opinion should now be universally adopted to create a foundation for satisfactory individual hospital organizations and universal hospital standardization.

Some such plan as this for reaching and bringing within the sphere of influence of this standardization movement these detached but essential elements will have to be adopted, or a considerable and important part of the working hospital personnel can never be reached or influenced in any way.

BASIC FACTORS IN STANDARDIZATION OF HOSPITALS

It has been said many times that the standardization of hospitals and the standardization of physicians and surgeons must go hand in hand, and that the advancement of one of these necessarily implies the progress of the other; but this can be true only if their interdependence is closely tied together and if consistent effort is made to bring within the fold all surgeons and all hospitals that present evidence of qualifications that should entitle them to recognition.

Once established, such a system would soon create for those hospitals and those surgeons who conformed to its requirements a prestige that would compel the compliance of all the others. The history of the reorganization of medical education in America would be repeated, and the standardization of American hospitals would then be a readily solvable problem.

In 1918, I presented a resolution at the annual meeting of the staff of two of the Denver hospitals with which I have long been connected, in which it was set forth that it was the sense of the staff that no one should be permitted to practice in the hospital till he had made formal application for the privilege of doing so and his application had been favorably passed upon by the proper board or committee of the hospital.

I subsequently prepared and submitted a form of application blank as a basis of operations, but in neither hospital was any effective action taken, though the resolution was unanimously voted by the staff at its annual meeting (the only meeting of the staff for the year, by the way, in each instance). A copy of the application form is given herewith as a guide to the preparation of such forms for other hospitals.

It is a pertinent commentary on this state of things that within the last year in each of these hospitals serious consequences, and in one instance a fatal result, followed the grossest and most inexcusable malpractice at the hands of "outside operators" who had been permitted to use the operating room without the knowledge or consent of any physician or surgeon connected with either hospital. How many other such instances there may have been during those two years since the staff "solemnly" and unanimously resolved that such things should not be, I do not know. The foregoing details are given solely because I believe that such conditions are not peculiar to Denver but are common elsewhere; indeed, one might almost say everywhere throughout the United States.

Staff meetings once in each year and the lack of coordination this implies within the hospital organization, and the "open door" for "outside operators" must be considered as primary basic defects in any scheme of hospital standardization. Nothing, nothing whatever, can be done to standardize

anything on earth till such fundamental fallacies are eliminated.

Again using my own city as an example, merely because it probably is typical of many others, it is significant that the one hospital in which monthly meetings of the staff are held and in which some approach to the established standards of the American College of Surgeons is attained is the only closed hospital in the city, that is, its patients are all under the care of members of its staff. This is the more remarkable as it is the one hospital in which all citizens of Denver may be said to have a proprietary right and in which chiropractors and other quacks might without impropriety set up a claim for equal privileges with others.

Date.....192

APPLICATION FOR PERMISSION TO PRACTICE IN ..... HOSPITAL AS AN "APPROVED ASSOCIATE PHYSICIAN"

Name in full.....

Residence .....

Office .....

Date of your license to practice in Colorado?.....

In what states other than Colorado have you practiced and between what dates?.....

.....

Date and place of birth.....?.....

When and where were you graduated in medicine?.....

.....

Other degrees taken.....

Hospital, college and other appointments, internships, etc.....

.....

.....

.....

Specialty .....

Postgraduate courses .....

.....

Associated with or assistant to.....

.....

How long? (Give dates).....

Past clinical laboratory and surgical opportunities.....

.....

.....

In accepting the privileges and facilities of Hospital for my patients, to be treated or operated on by me, I agree to be bound and governed by all the rules and regulations of the hospital and all regulations made for the government of its medical and surgical staff.

I shall accept the appointment as an approved associate physician or surgeon of the hospital if it is offered me, subject to revocation and cancellation on ten days' notice if for any reason at any time the executive board of the hospital deems it desirable or necessary to revoke and cancel this permission to practice in the hospital.

Approved:.....192

....

....

Committee.

This application must be accompanied by two letters from reputable physicians certifying to your ability, character and habits.

The Hospital of the City and County of Denver is far from being what it might be and should be in many respects; but *it is a closed hospital,* and the responsibility for any maladministration and malpractice that does occur there can be fixed and fastened where it belongs.

It is interesting to remember in this connection that there are county hospitals in which osteopaths and perhaps other sectarian faddists practice and have representation on the staff and among the force of hospital interns.

The remedy for such an evil is so obvious that I refrain from mentioning it.

ADVANTAGES OF THE CLOSED HOSPITAL

It is evident to every one who has been in touch with hospital conditions East and West that the "closed" hospital is the better hospital in all respects. Its administration is easier and better, it may be more economically operated because of the simplified and standardized requirements of those who work in it, and, most important of all, the results are better and the mortality is lower.

Such careful scrutiny of those who are to be permitted to practice in the hospitals as is here proposed, the exclusion of those who are incompetent or unfit to do so, and the check a revocable permit affords will, in the end, convert the "open hospitals" of today into the "closed hospitals" of tomorrow, and the service and results should be greatly improved as a consequence of the change.

A PRACTICABLE PLAN

While criticizing conditions as they are, I have endeavored to point a way in which the worst of them may be corrected. I am firmly convinced that all efforts at standardizing hospitals must fail if effective measures are not first employed to reach and bring within the sphere of influence of such standards as may ultimately be adopted the unattached outsider who now has all the privileges of the hospital and none of the responsibilities and restraints imposed on the members of its staff. I am therefore indulging in a form of constructive criticism that should serve to eliminate the evident faults and at the same time furnish a foundation on which a substantial and enduring superstructure of standards for hospital unity and uniformity may ultimately be erected.

The effort for hospital standardization must contemplate as a primary and fundamental factor of its foundation the inclusion of *all* those physicians who are permitted to work in hospitals; and each of them, not excepting the members of the staff, should be required to place in the archives of the institution some statement such as is suggested in connection with this paper. For reference and for record such a statement would have great value, and none who work in the hospital should be excused or exempted from filing such a record regarding his history and experience; for, if the members of the staff file such a statement, it becomes much easier to demand that others do so.

Permits to practice in a hospital, or appointments as associate or attending physicians, should be made revocable for cause, thus providing a double check on incompetence and unscrupulousness, the check on entry and the implied or impending revocation of the privilege accorded if the work or conduct of the individual is not what it should be.

All of this may appear to be utopian and impracticable. I have considered it carefully for a long time and I do not think it so. I believe that if once inaugurated and made effective through the agency of the American College of Surgeons or the American Medical Association, it is workable and practicable and that it offers the key to the standardization problem. If in addition to, or as a substitute for, action by each hospital there could be in each state or each city a body representing all the hospitals, as I suggested many years ago,[2] the whole problem could be simplified.

One detail is essential for success, and this you may deem the most utopian dream of all, for it involves the integrity of purpose and the unbiased and unprejudiced action of all of those who pass upon and approve the applications of applicants. There is, however, a much broader and more liberal spirit among medical men than there used to be, and it is not unreasonable to hope that the administration of such a plan as is here proposed could be fairly, justly and equally administered.

2. Address of the President of the Colorado State Medical Society, Colorado Med., October, 1906; A Plea for Higher Hospital Efficiency and Standardization, Surg., Gynec. & Obst., June, 1915.

New York May Examination

Mr. H. J. Hamilton, assistant professor of examinations, New York State Board of Medical Examiners, reports the written examination held at Albany, Buffalo, New York and Syracuse, May 18-21, 1920. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 94 candidates examined, 62 passed and 32 failed. The following colleges were represented:

College	Year Grad.	Number Licensed
PASSED		
Yale University	(1916)	1
Howard University	(1913) 1, (1918) 1	2
Northwestern University	(1916)	1
Rush Medical College	(1917)	1
University of Illinois	(1917) 1, (1919) 1	2
Johns Hopkins University	(1916) 1, (1918) 2, (1919) 1	4
University of Maryland	(1911) 1, (1916) 1	2
Harvard University	(1917) 1, (1919) 3	4
Tufts College Medical School	(1917)	1
University of Michigan Medical School	(1917)	2
St. Louis University School of Medicine	(1920)	1
Washington University Medical School	(1917)	1
Columbia University College of Physicians and Surgeons	(1916) 2, (1918) 1, (1919) 6	9
Cornell University Medical College	(1918)	1
Fordham University School of Medicine	(1918) 1, (1919) 5	6
Long Island College Hospital	(1919)	3
New York Homeo. Med. College and Flower Hospital	(1916)	2
University and Bellevue Hospital Medical College	(1919)	3
University of Oregon Medical School	(1919)	1
Jefferson Medical College	(1914)	1
University of Pennsylvania	(1910) 1, (1917) 1	2
Vanderbilt University Medical Department	(1918)	1
University of Vermont	(1916)	1
National University of Athens	(1910)*	1
University of Naples	(1905)	1
University of Toronto Faculty of Medicine	(1898) 1, (1909) 1, (1911) 1, (1916) 1, (1919) 1	5
Queens University Faculty of Medicine	(1918) 1, (1919) 1	2
McGill University Faculty of Medicine	(1917)	1
FAILED		
University of Illinois	(1920)	1
University of Louisville	(1902)	1
Johns Hopkins University	(1916)	1
Tufts College Medical School	(1913) 1, (1918) 1	2
Detroit College of Medicine and Surgery	(1918)	1
Dartmouth Medical School	(1905)	1
Columbia Univ. Coll. of Phys. and Surg.	(1917) 1, (1919) 1	2
Fordham University School of Medicine	(1915)	2
New York Homeopathic Medical College and Flower Hospital	(1915) 1, (1916) 1, (1918) 2, (1920) 1	5
University and Bellevue Hospital Medical College	(1917)	1
Hahnemann Medical Coll. and Hosp. of Philalelphia	(1918)	1
Jefferson Medical College	(1919)	1
University of Pennsylvania	(1912)	1
Vanderbilt University Medical Department	(1914)	3
University of Texas Department of Medicine	(1916)	1
University of Vermont College of Medicine	(1916) 1, (1919) 3	4
Queens University Faculty of Medicine	(1913)	1
Univ. of Toronto Faculty of Med.	(1910) 1, (1917) 1, (1919) 1	3
McGill University Faculty of Medicine	(1917)	1

* Graduation not verified.

Mr. Hamilton also reports that 29 candidates were licensed by endorsement of their credentials. Of these, 19 were granted licenses by reciprocity with other states; 8 by endorsement of their licenses on the basis of eminence and authority in the profession; 1 was granted a registration license, and 1 candidate was licensed on diploma. The following colleges were represented:

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
Chicago College of Medicine and Surgery	(1912)	Illinois
Northwestern University	(1914)	Ohio
Harvard University	(1910)	New Jersey
University of Michigan Medical School	(1906)	Ohio
Columbia University College of Physicians and Surgeons	(1885) Oregon, (1906)	New Jersey
New York Homeo. Med. Coll. and Flower Hosp.	(1911)	Delaware
Eclectic Medical College	(1917) 2	Ohio
Medical College of Ohio	(1907)	Ohio
Western Reserve University	(1907)	Ohio
Ohio State University College of Medicine	(1916)	Ohio
Jefferson Medical College	(1916)	New Jersey
University of Pennsylvania	(1913), (1917) Ohio, (1908)	New Jersey
Medical College of Virginia	(1915), (1918)	Virginia
University College of Medicine, Richmond	(1911)	Virginia

College	Year Grad.	Endorsement with
LICENSED BY ENDORSEMENT OF CREDENTIALS		
University of Alabama School of Medicine	(1912)	Alabama
Yale University	(1902)	Connecticut
Kentucky University Medical Department	(1904)	Kentucky
University of Maryland	(1911)	Maryland
University of Michigan	(1884)	Missouri
Washington University	(1910)	Missouri
Columbia University College of Phys. and Surg.	(1909)	Penna.
McGill University Faculty of Medicine	(1895)	Quebec
LICENSED BY DIPLOMA		
Bellevue Hospital Medical College	(1899)	1

Book Notices

RADIOGRAPHY IN THE EXAMINATION OF THE LIVER, GALL BLADDER AND BILE DUCTS. By Robert Knox, M.D. A Series of Articles Reprinted from "Archives of Radiology and Electrotherapy," July, August, September and October, 1919. Cloth. Price, $2.50. Pp. 64, with 64 illustrations. St. Louis: C. V. Mosby Company, 1920.

This work is thorough, well written and timely. The question of the roentgen-ray shadow evidence of gallstones is a daily one in general and special medicine and surgery. Many physicians have met so many disappointments that they seldom resort to roentgen-ray aid or refer suspected gallstone cases to the roentgenologist. Knox has presented a careful analysis of the several factors bearing on the technic of obtaining gallstone shadows. No material departure from the old methods of procedure is presented, but certain steps are accentuated and stressed, while the author's experience has shown that particular features aided in the success of the examination. The intimate gross anatomy of the gallbladder and liver region is demonstrated fully, with illustrations from standard authorities. Certain important points not usually realized are brought out prominently. Some of these have a decided influence on success or failure in roentgen-ray examination of the gallbladder. The chemistry of the various kinds of stones found in the gallbladder is fully detailed, and the shadow appearance of these is well illustrated. Considerable roentgen-ray experimentation on different densities of the stones is presented which show the most favorable exposure, spark gap and other items of technic. The differential diagnosis is thoroughly presented. Knox points out many possible sources of error in gallstone diagnosis, and he presents illustrations of some instances in which shadows could easily be mistaken for gallstones. The book will serve as an incentive to more and better gallbladder roentgen-ray work, and is a valuable addition to the roentgen-ray literature of today.

PLASTIC SURGERY OF THE FACE BASED ON SELECTED CASES OF WAR INJURIES OF THE FACE, INCLUDING BURNS. With Original Illustrations. By H. D. Gillies, C.B.E., F.R.C.S., Major R. A. M. C., Surgical Specialist to the Queen's Hospital, Sidcup. With Chapters on The Prosthetic Problems of Plastic Surgery by Capt. W. Kelsey Fry, M. C., R. A. M. C., Senior Dental Surgeon, Queens Hospital, Sidcup, and Remarks on Anaesthesia by Capt. R. Wade, R. A. M. C., Assistant Anaesthetist, St. Bartholomews Hospital. Cloth. Price, $15. Pp. 408, with 844 illustrations. New York: Oxford University Press, 1920.

Major Gillies began the treatment of war injuries of the face and jaw at Cambridge Hospital, Aldershot, England, in January, 1916. Later the hospital was removed to Sidcup, where patients with facial injuries from the British, Canadian, Australian and New Zealand forces were collected in one hospital. In 1908, Col. V. P. Blair of St. Louis arrived, and the hospital had the advantages of consultation from all of the British dominions and from America. Other Americans and colonial officers arrived from time to time so that this book, based on the work there carried out, may be said to represent the last word on the subject it covers. It is doubtful whether, ever again there will be such an enormous mass of material accumulated for study as was available in the institution mentioned. The book is largely made up of case reports, with a general discussion on each particular type of injury. There are 844 excellent illustrations, beautifully printed on the best stock. Any one who attempts to do work in this exceedingly special branch of surgery will find this book full of practical suggestions.

PHYSIOLOGY AND BIOCHEMISTRY IN MODERN MEDICINE. By J. J. R. Mcleod, M.B., Professor of Physiology in the University of Toronto. Assisted by Roy G. Pearce, A. C. Redfield, and N. B. Taylor and by Others. Third edition. Cloth. Price, $10. Pp. 922, with 243 illustrations. St. Louis: C. V. Mosby Company, 1920.

In his preface to the third edition, the author points out that the section on the nervous system has been entirely recast and rewritten by Dr. A. C. Redfield, incorporating also an account of the fundamental principles of neuromuscular physiology. The section on chemistry of respiration has been rearranged so as to include recent work on the effects of the deficiency of oxygen on the respiratory center, as well as the clinical applications. New chapters have been added dealing with the measurement of the functional capacity of the heart, the

principles of ventilation, and the therapeutic value of oxygen. Subjects in which numerous advances have been made recently, such as vitamins, the capillary circulation, surgical shock and the endocrine organs, have also been brought up to date. In order to make room for the new material, technical details have been put in smaller type and some of the illustrations have been omitted, the book thus retaining approximately the same size as formerly. As stated in previous reviews, this is a valuable reference work in the distinct field which it covers.

A PRACTICAL MEDICAL DICTIONARY OF WORDS USED IN MEDICINE WITH THEIR DERIVATION AND PRONUNCIATION, INCLUDING DENTAL, VETERINARY, CHEMICAL, BOTANICAL, ELECTRICAL, LIFE INSURANCE AND OTHER SPECIAL TERMS; ANATOMICAL TABLES OF THE TITLES IN GENERAL USE, AND THOSE SANCTIONED BY THE BASLE ANATOMICAL CONVENTION; PHARMACEUTICAL PREPARATIONS, OFFICIAL IN THE U. S. AND BRITISH PHARMACOPOEIAS AND CONTAINED IN THE NATIONAL FORMULARY; CHEMICAL AND THERAPEUTIC INFORMATION AS TO MINERAL SPRINGS OF AMERICA AND EUROPE, AND COMPREHENSIVE LISTS OF SYNONYMS. By Thomas Lathrop Stedman, A.M., M.D. Sixth edition. Cloth. Price, $6.50. Pp. 1144, with illustrations. New York: William Wood and Company, 1920.

A dictionary is a difficult book to review. One might say it begins with A, the chemical symbol of argon, and ends with zymurgy, the branch of chemistry which deals with fermentation as applied to the manufacture of alcoholic beverages, thus coming to a logical conclusion for these times. En route, it takes up a number of very interesting subjects; in fact, it covers the whole field of medical science. This edition contains many new words, enlarging the book to the extent of twenty pages. Incidentally, this dictionary, under definitions of pharmaceutic preparations, provides an epitome of the Pharmacopeia and National Formulary. There are also numerous valuable short-cut tables.

PATHOGENIC MICRO-ORGANISMS. A Text-Book of Microbiology for Physicians and Students of Medicine. By Ward J. MacNeal, Ph.D., M.D., Professor of Pathology and Director of the Laboratories in the New York Post-Graduate Medical School and Hospital, New York. (Based upon Williams' Bacteriology.) Second edition. Cloth. Price, $4. Pp. 488, with illustrations. Philadelphia: P. Blakistons Son & Co., 1920.

This standard textbook on pathogenic organisms has many features to commend it, particularly the simple classifications, up-to-dateness and the point of view of the discussions, which consider bacteriology as a branch of general science. The author points out that matters of controversy have received less attention than conclusive advances in the subject. This is, of course, the proper method of presenting any scientific subject in a textbook for students. There are numerous excellent illustrations, and the book is of a convenient size, which students will appreciate.

AUTOEROTIC PHENOMENA IN ADOLESCENCE. An Analytical Study of the Psychology and Psychopathology of Onanism. By K. Menzies. With a Foreword by Dr. Ernest Jones. Cloth. Price, $1.50. Pp. 94. New York: Paul B. Hoeber, 1919.

In a foreword, Dr. Ernest Jones points out that this subject has seldom been dealt with scientifically; too frequently as discussed by father, schoolmaster, priest or doctor, the information conveyed has served merely to increase rather than decrease the disturbed state of mind. Mr. Menzies treats it from the standpoint of the psychologist based on a belief in the value of psychanalysis; he has thoroughly covered the literature of the subject, and believes that the cure lies in analysis, sympathy and encouragement. Whether or not the medical reader is in complete sympathy with his ideas, the book represents a scientific attempt to discuss a difficult subject.

THE OXFORD MEDICINE. By various Authors. Edited by Henry A. Christian, A.M., M.D., Hersey Professor of the Theory and Practice of Physic, Harvard University, and Sir James Mackenzie, M.D., F.R.C.P., LL.D., Consulting Physician to the London Hospital. In Six Volumes. Volume II: Diseases of Bronchi, Lungs, Mediastinum, Heart, Arteries, and Blood. Cloth. Price, $90, set. Pp. 817. New York: Oxford University Press, 1920.

This volume maintains the high standard set by the previous volume of this system. The essays are all by well-known authorities, who have carefully reviewed the literature selecting that which is reliable. The loose leaf method provides for keeping the system up to date.

Social Medicine and Medical Economics

PHYSICAL EXAMINATION OF INDUSTRIAL WORKERS

Results of an Investigation by the Conference Board of Physicians in Industry

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NEW YORK

Physical examination of wage-earners is a relatively new procedure in industrial life, but one which, especially during and since the period of the war, has gained considerable popularity and has opened up an entirely new field, not only for the efforts of medical men, but also for the development of business efficiency.

In order to learn something of the recent experience with physical examinations of employees, the Conference Board of Physicians in Industry[1] early in 1920 sent questionnaires to 100 representative industrial establishments asking for certain information "in respect to methods and records of physical examination, average time consumed, examination of women employees by men or women physicians, etc." I shall present a brief analysis of the replies received.

Of the 100 questionnaires sent out, fifty-six were returned to the board. Twenty-two of the establishments reporting stated that they did not make physical examinations of their employees, or that, for one reason or another, they could not furnish the information desired; thirty-four schedules contained information for study. These thirty-four schedules represent fifteen separate industries and a working force of 410,106, of whom 327,183 were males and 82,923 were females. The fifteen industries included were abrasives, automobiles, banking, chemicals, electrical goods, explosives and dyes, light and power, metal trades, petroleum, rubber, shipbuilding, steel, textiles, tobacco and transportation.

CONDUCT OF THE EXAMINATION

Among the thirty-four plants included in this investigation, physical examinations of applicants for employment, or of employees, were first introduced in 1900. In only two plants were they in use prior to 1910, and in twenty-three of the thirty-four plants they were installed in 1914 or thereafter. With one exception, physical examinations, once introduced, had been continuously employed in all of these plants. In the one instance in which physical examinations were discontinued, a textile mill, "labor reasons" were given as the cause, but it appears that in this case the system was scarcely given a fair trial, since it was reported as having been used in only a part of the plant, and there for only six months. Twelve plants reported examinations at the present time to be more complete than when the system was started, while in one case a change to a less complete examination was due to the labor union's opposition to having men stripped for examination. The remaining twenty-one plants either reported no change in methods, or did not answer this question.

Physical examination was conducted in all of the thirty-four establishments at the plant by the plant physician. No outside physicians' certificates were accepted in lieu of examination. In seven of the thirty-four plants a woman physician was employed. In one other a woman physician is provided on

1. The Conference Board of Physicians in Industry is a voluntary, informal association of medical directors in industrial plants, organized for the exchange of ideas and experiences and the formulation of suitable standards and methods in industrial medical practice. The board acts in an advisory capacity to the National Industrial Conference Board on matters within the field of industrial medicine and physiologic research.

request of the women to be examined. In the other plants the examination of both sexes was made by male physicians. It was stated that the principal advantages of employing women physicians for this work were the relief from embarrassment to women applicants, and the ability to obtain a more complete examination.

The investigation showed that in eighteen plants the physical examination was made before employment; in twelve more, at the time of employment; and in two others, after employment. Two establishments did not answer this question. It was also brought out that in only four plants did the physicians interview applicants on matters other than health, and that in eighteen of the plants the physician was in possession of the application card at the time of examination.

The replies to the questionnaire brought out that in twenty-four of the plants examination is required of all employees; in five, examination is required of men only; and in one plant only a special group is examined. In certain industries, special examinations are required for applicants for certain occupations, and in these occupations periodic reexaminations of employees are usually made. Some of the prospective or actual employees subject to special physical examinations are policemen, firemen, railroad men, cranemen, sand blasters, dye workers, lead workers, food handlers, mine rescue service men, and workers with acids and in especially dusty processes.

METHOD OF EXAMINATION

The replies to the questionnaire indicate that, in making the examination in the privacy of the physician's office, in ten plants the men were unclothed to the same extent as when examined for the army; in four plants, shoes were not removed; in ten plants, men were not examined below the waist; in nine plants, the chest was first examined, trousers later being lowered for an inspection for varicose veins; in one plant, the men were not unclothed. In two plants, women were unclothed but covered by a sheet, the examination being conducted by a woman physician; in six plants, women were not examined below the waist; in ten plants, women were examined with the waist open only for testing the heart and lungs; in the remainder of the plants, women were examined for special reasons which required little or no disarrangement of their clothing.

In addition to the routine examinations suggested above, ten plants reported that urinalyses were made. In eight plants, blood pressure is taken regularly. In the other plants, practice as regards these procedures, urinalyses, blood pressure, and Wassermann and tuberculosis tests are made as indicated.

The time required for making the physical examinations varied from three to forty minutes; in eleven plants the time was five minutes or less; in thirteen plants the time was from five to fifteen minutes; in eight plants the time was from fifteen to twenty minutes; in one plant it was more than twenty minutes, and one plant reported "no definite time." The average time required in thirty-three plants was eleven minutes per person. If from this average those plants are eliminated in which the examination was very thorough, or for special reasons consumed longer periods of time, the average amount of time required for an examination was eight minutes. In many of the larger plants a satisfactory examination was given in from four to six minutes, barring special cases.

RESULTS OF EXAMINATIONS

In twenty-eight of the plants reporting, the results of the physical examinations are used as an employment guide to a greater or less extent. Five plants reported no such use, and one plant did not answer this question.

Physical defects disqualifying for employment varied in the establishments studied from none to many, depending on the character of the industry and the work to be done. In every case the reason for imposing restriction of employment on defective workers was based on the fact that, if employed, they would be a menace to themselves, to others or to property. The physical defects mentioned most often in this connection were hernia, amputations of arm or leg, loss of vision of one or both eyes, defective vision, cardiac disease, venereal disease, contagious or infectious diseases, kidney disease, tuberculosis, deformity, physical debility, deafness, varicosities and defective mentality.

Defects permitting limited employment were also numerous, but the most common were compensated heart lesions, hernia with truss, varicosities, defective vision, deformities, defective hearing, varicocele, first degree flatfoot and lung diseases (type not specified).

Twenty-three plants reported that they accept employees with hernia, in some cases to a limited number, and in others only on the execution of a release from responsibility or for special work only. In fourteen of the twenty-three plants no restrictions as regards employees with hernia were noted. Thirty-two of the thirty-four plants employ workers with flatfoot; but in eleven of these, such employees are restricted to special work. Fifteen plants accept workers with varicosities, but of this number four limit the employment of such workers, or require them to sign waivers.

In virtually all of the thirty-four plants reporting, it was stated that, whenever possible, defectives were accepted rather than denied employment. When employed, defectives are placed under the supervision of the medical department and are permitted to continue in their occupation as long as they are unaffected by the work in which they are engaged. It will be remembered that more than 30 per cent. of all men eligible for military duty were rejected in the draft on account of physical defects. Only 4.6 per cent. of those reported on in this investigation were rejected for the same reason, and if those are excluded who were rejected for special work, such as that of trainmen, cranemen and inspectors, wherein defective vision or defective hearing was the cause of rejection, but who would have been acceptable for certain other kinds of work, the average proportion of rejection was only 2.8 per cent. Such results show an earnest effort on the part of the examining physicians to place workers in industry rather than deny them employment, unless when employed they become a menace to themselves, to others or to property. Of those accepted for employment it was shown that 30.3 per cent. were substandard, while the average of those reporting the number rated as A-1 was 57 per cent.[2]

Twenty-four plants gave the number of persons examined during the preceding year. Those reporting the number examined by sex showed that in plants employing a total of 209,777 males, there were 178,367 physical examinations of applicants for employment; and in plants employing 19,632 females, there were 29,074 examinations. The frequency of reexamination of employees, as reported, varied from one month, in certain hazardous occupations, to three years. Seven plants reported reexaminations every six months or oftener; four plants reported reexaminations annually; two plants reported reexaminations every two years; and one plant reported reexaminations every three years. Other plants stated that the time of reexamination was "periodic," "on request," "when indicated," etc. Only two plants reported reexaminations of workers on departmental transfers.

The number of workers who were reported as objecting to the physical examination was negligible. The largest num-

2. It is of interest to note that there seems to be no unanimous opinion among those reporting as to what constitutes an A-1 employee. For example, in two similar industries in the same city one physician reported 20 per cent. of his employees to be in this class, and the other reported "practically all." Obviously, one or both are wrong, since it is scarcely to be expected that one industry secured the cream of the workers to the virtual exclusion of all others.

ber given was 200, among 62,000 employees, where the system of physical examination had been in operation for two years. Ten plants employing 155,010 workers had had no refusals. A plant employing 15,000 reported six objections in three years; another, with 3,300 employees, had had twelve refusals in nine years; still another, with 7,900 employees, reported a few objections.

The reasons advanced against physical examinations in the majority of cases were "red tape" and "objection to exposure." Other reasons were "just examined," "too much trouble," "can get employment elsewhere." Many industrial physicians report an increasing demand on the part of workers for physical examinations at regular intervals.

It is interesting to note the results of the introduction of physical examinations in industry, as reported by the examining physicians. Among these were that physical examinations increase efficiency, result in fewer accidents, lessen absence and labor turnover, eliminate tuberculosis from the plant, reduce the number of venereal disease cases, eliminate other infectious and contagious diseases, make for better adaptation of workers to their jobs, reduce compensation claims, give a clear record of impaired joint function, save useless litigation, increase number of days at work, and satisfy employees that their interests are being safeguarded.

SUMMARY

The results of the board's investigation of physical examination of industrial workers may be thus summarized:

1. Thirty-four replies were received, including fifteen industries and 410,106 employees, of whom 327,183 were men and 82,923 were women.

2. Physical examinations among the industrial establishments reporting were first introduced in 1900, but in the majority of cases they have been in operation only since 1914.

3. Where physical examinations have been given a fair trial, they have proved their value and have been continued and, with one exception, the original scope of the examinations has been maintained or extended.

4. The average time consumed in making regular physical examinations at establishments reporting was eight minutes per person examined.

5. An earnest effort was being made in the majority of plants reporting to place defectives, rather than eliminate them from industry.

6. The average percentage of rejected applicants for employment was only 4.6, and, by eliminating certain special cases, was only 2.8.

7. There was no uniformity of time for reexamination of employees.

8. Objections to physical examinations on the part of prospective or actual workers were negligible.

CONCLUSIONS

This investigation shows that substantial progress has been made in the application of medicine to industry. The position of the physician in industry has been made secure, and he should now bend his efforts to the solution of industrial problems closely related to the medical work. By his training and experience he is qualified to advise with the management as to the placing of employees to the best advantage of themselves and the industry with which they are connected. He is also in a position to suggest necessary improvements in the fields of lighting, ventilation and general sanitation, as well as of personal hygiene, in order that employees may be kept in good physical condition.

A classification of the results of physical examinations is necessary in order that workers may be properly placed. The physical capacities and limitations of an A-1 worker and of a substandard worker should be fairly well defined. For example, only workers without physical defects should be placed in the A-1 class. This will be a relatively small group as compared with the vast majority of workers, who suffer from some slight physical or functional disability, but who are well able to carry on practically any work to which they may be assigned.

A classification of findings of physical examinations which tends to place the worker in his proper group has been adopted and promulgated by the Conference Board of Physicians in Industry, after a careful analysis of a very large number of physical examination records. That such a classification is needed has been demonstrated by the analysis of the reports summarized above.[3] This classification is as follows:

Class 1: Persons physically fit for any employment.

Class 2: Persons physically fit for any employment but below par in physical development or other condition.

Class 3: Persons physically fit only for certain employment when specifically approved for it by examining physician.

Class 4: Persons physically unfit for any employment.

Knowing the requirements of the work which the applicant for employment is to do and having a record of his physical condition, the task of the industrial physician then becomes one of physically adapting the employee to his work, with the assurance that if this is done properly there will be greater contentment, lessened labor turnover, and greater production.

10 East Thirty-Ninth Street.

Medicolegal

A Futile Subterfuge—Prescribing Home Remedies

(State v. Till (Wis.), 177 N. W. R. 589)

The Supreme Court of Wisconsin, in affirming a judgment of conviction of the defendant of practicing medicine without a license, says that the evidences offered on behalf of the state tended to show that on June 20, 1917, a Mrs. Thompson went to the home of the defendant, taking with her her little girl, who was ill. A helper of the defendant handed her a card which she signed and returned to the helper, with 25 cents. The card read:

> Taking upon myself all risk involved and absolving John Till from any and all claims for damages arising out of anything that he may do or omit to do in reference to and connection with in caring for or nursing for myself or my ailments, I request John to examine into my physical condition, and as a matter of humanity and benevolence (*although he does not claim to be a member of any profession*) to attempt in his own way and by such means and agencies as he may deem best, the nursing and caring for, and if possible the cure of my ailments. I appreciate the fact that nursing and relief or curative treatment and nursing sometimes occasion pain. I make this application for help of my own free will. No enticement has been used as far as I am concerned. I am acting in good faith.

Mrs. Thompson was admitted with her sick child to Till's office, where he examined the child and gave her medicine, with directions for its use, $1 being paid for the medicine. It appeared from the testimony that the defendant put his hand beside the child's ear, said that she had infantile paralysis caused by the stomach, and that he would give her some medicine, directing that the medicine be given to her one-half teaspoonful three times a day; that she should be rubbed with liniment every evening, and should return in a month. It was contended on behalf of the defendant that, inasmuch as he did not hold himself out as a doctor, and rendered his services gratuitously, he was not practicing medicine, and so not required to have a license. It was insisted that the 25 cents paid to the helper and the dollar paid after the advice was given were for medicine, and not for the advice. But the jury

3. Fifteen of the thirty-four plants submitted schemes of classification of the findings of their physical examinations. Some used letters; some used numbers; others employed the terms "accepted" and "rejected"; still others classified their results according to the nature of the work to be done. Eight of the fifteen used a classification of four divisions; two used one of three divisions, while the others gave no definite classification.

was not bound by the declaration contained in the card that the services which Till did were rendered as a matter of humanity and benevolence. The jury might properly find, as it must have done, that the card and the sale of the medicine were a mere subterfuge and an attempt to avoid the prohibition of the statute.

The court is further of the opinion that the claim of the defendant that he was within the provisions of Section 1435 j of the Statutes of Wisconsin of 1917, relating to the gratuitous prescribing and administering of family remedies could not be sustained. While it did not appear what the exact nature of the medicine furnished the patient was, the statute is certainly not intended to permit of the prescription of family remedies as a business, and the treatment was certainly not rendered in an emergency.

Nor does the court think that it was error to admit evidence as to transactions had between Mrs. Thompson and the defendant in November, 1916, and in February, 1917, in connection with visits of herself and little girl to the defendant, the jury being instructed that that evidence was admitted for the purpose of throwing some light on the character of the transaction and of the visit to the defendant on June 20, 1917, and not as proof of any violation of the law prior to June 20. So limited, that testimony was properly admitted. It certainly tended to characterize the services rendered by the defendant on June 20. That was particularly true when considered in connection with the provision of the statute which permits the administering of remedies in cases of emergency. While it was not necessary, it was proper for the state to negative any possible inference of that kind. It was properly admitted in this case for the purpose of negativing an innocent intent on the part of the defendant.

Of What Negligence May Consist—Treatment of Hernia

(Stenkowiczki v. Lytle (Wis.), 177 N. W. R. 849)

The Supreme Court of Wisconsin says that negligence in the course of a treatment may consist in the adoption of a wrong method of treatment, or it may consist in the negligent application of a proper method. In this case the plaintiff, who was affected with a hernia and had been treated by the defendant, contended that he had been damaged by the defendant's negligent and improper treatment. The defendant denied that he was negligent, or that the treatment was improper. The evidence showed that he used an injection method of treatment. It appeared from his testimony that the idea was that by injecting a fluid into the tissues in or adjacent to the upper inguinal ring, inflammation would set up which, when it subsided, might cause adhesions that would close the ring or opening and thus prevent further hernia. Several physicians of unquestioned repute and experience testified that such method was obsolete and of no value; that it was not a proper method; that it was absolutely the wrong treatment; and that the plaintiff's injuries were due to the treatment administered by the defendant. On the oher hand, several physicians testified on behalf of the defendant that the treatment was a recognized or proper one, but not much used at present. Under such state of the evidence it was a jury question whether the defendant was negligent in the treatment of the plaintiff. The jury found that (1) the defendant was guilty of negligence in the course of his treatment of the plaintiff; (2) such negligence on the part of the defendant was the proximate cause of the plaintiff's injury; (3) the defendant did not use a method in the treatment of the plaintiff ordinarily used by physicians and surgeons of good standing of the same system or school of practice as that of the defendant in that vicinity or locality, having due regard to the advanced state of medical or surgical science at the time of the treatment; (4) no want of ordinary care on the part of the plaintiff proximately contributed to his injury, and (5) damages in the sum of $1,350. The civil court in which the case was tried awarded the plaintiff a judgment on the special verdict, and the defendant appealed to the circuit court, which reversed the judgment and ordered a new trial on the ground that the special verdict did not include one disputed issue, namely, whether the treatment used by the defendant in ministering to the plaintiff was a proper treatment as recognized by physicians and surgeons having due regard to the advanced state of medical and surgical science. The circuit court held that the third finding did not cover that issue, because it did not determine whether the treatment was a proper or an improper one, irrespective of whether it was or was not one ordinarily used. If it was a proper treatment, it need not be one ordinarily used. But the first finding established that the defendant was negligent in the treatment of the plaintiff, for negligence in the course of a treatment may consist in the adoption of a wrong method of treatment, as here testified to, or it may consist in the negligent application of a proper method, not here claimed to be the case. So the jury in answer to the first question found that the defendant adopted an improper method of treatment, and the third quesion therefore became wholly immaterial. The defect therein did not in any way affect the answer to the first question which, with the answers to the second, fourth and fifth questions, made a complete verdict. Wherefore, the judgment of the circuit court is reversed, and the cause remanded, with directions to affirm the judgment of the civil court in favor of the plaintiff.

Poor Districts Not Liable for Negligence of Officers or Act of Patients

(Wildoner v. Central Poor District of Luzerne County (Pa.), 110 Atl. R. 175)

The Supreme Court of Pennsylvania says that poor districts acting as public agencies in the performance of functions necessary to the well-being of the government are not to be held liable for the negligence of their officers. The erection of houses for the accommodation of the poor and the maintenance and care of the inmates while lodged in these institutions are particular charges on the respective poor districts or counties, as the case may be. Neither the district nor the county should be held liable for the irresponsible acts of these patients, who at times wander about aimlessly through the surrounding country and whose acts in the great majority of cases are harmless, coming from unbalanced minds. It is a known fact that in the majority of cases in county homes the inmates suffer from this affliction. It would be an enormous burden to saddle on the respective districts responsibility for the acts of these patients. Wherefore, the court affirms a judgment in favor of the defendant, which was sued for damages which the plaintiff alleged that he sustained through a fire caused by the acts of the inmates of the defendant's charitable institution, who were clearing land and burning brush, the fire spreading through their negligence.

Evidence of Other Surgeons as to Care and Skill

(Shaw v. Klein (Miss.), 83 So. R. 620)

The Supreme Court of Mississippi, in affirming a judgment in favor of the defendant, a physician and surgeon, says, in a brief opinion, that he performed a minor surgical operation on the plaintiff, who afterward instituted this action to recover damages alleged to have been sustained by him because of the negligence of the defendant in performing the operation. An assignment of error presented the question of the admissibility of the testimony of several surgeons that the defendant was a careful and skilful surgeon. The plaintiff's declaration expressly charged the defendant with the "want of skill and care," thereby putting his possession thereof directly in issue; consequently evidence thereof was admissible. Whether this evidence would have been admissible in the absence of such an allegation was not before the court for consideration.

Duty to Exercise Reasonable Care and Skill

(Grubb v. Elrod (Ga.) 102 S. E. R. 908)

The Court of Appeals of Georgia, Division No. 2, in affirming a judgment in favor of the plaintiff, makes no statement of facts and renders no opinion. It contents itself with the briefest kind of declaration in a syllabus which says that, even though a physician or surgeon may be skilled in his profession, he is nevertheless under a duty to exercise reasonable care and skill in the performance of an operation, and his failure to do so is a tort (or wrongful act) for which a recovery of damages may be obtained.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Internal Medicine, Chicago

Nov. 15, 1920, **26**, No. 5

*Hypersensitiveness to Arsphenamin Following Exfoliative Dermatitis; A Cutaneous Test. H. C. Stuart and E. P. Maynard, New York.—p. 511.
*Epidemic Infectious Jaundice and Its Relation to Therapy of Syphilis. J. H. Stokes, R. Ruedemann, Jr., and W. S. Lemon, Rochester, Minn.—p. 521.
*Pathologic Physiology of Chronic Pulmonary Emphysema. R. W. Scott, Cleveland.—p. 544.
*Chemical Pathology of Blood in Pernicious Anemia and Other Severe Anemias. A. W. Peters and A. S. Rubnitz, Omaha.—p. 561.
Pathology of Epidemic Pneumonia in Mice and Guinea-Pigs. J. J. Keegan, Boston.—p. 570.
*Case of Hemorrhagic Smallpox; Rôle Played by Hemolytic Streptococcus. R. M. Kempton and J. P. Parsons, Ann Arbor, Mich.—p. 594.
Rheumatic Myocarditis; Histogenic Study of Type Cells of Aschoff Body. R. C. Whitman and A. C. Eastlake, Boulder, Colo.—p. 601.
*Study of Lesions Produced by Filtrates of Influenza Sputum. M. W. Hall, Ft. Sam Houston, Texas.—p. 612.
Chronic Bradycardia. F. A. Willius, Rochester, Minn.—p. 630.

Skin Reaction Index in Arsphenamin Treatment.—A case of exfoliative dermatitis or chronic arsenic poisoning is reported by Stuart and Maynard. The first cutaneous manifestations were persistent itching and papular eruptions on the wrists and shins. Cutaneous hypersensitiveness to arsphenamin and neo-arsphenamin occurs in patients who have suffered from exfoliative dermatitis. This was demonstrated by typical skin reactions in two such patients by means of intradermal injections of minute dilutions of the drug, but could not be demonstrated in a third patient, perhaps because the tests were made nine months after the dermatitis when the hypersensitiveness had subsided. This supposition, if substantiated, would make the skin reaction of practical importance in determining when it is safe to renew arsphenamin treatment.

Epidemic Infectious Jaundice.—A critical examination by Stokes and Ruedemann of the data obtained from seventy cases of jaundice indicates that whole several distinct types of jaundice are probably represented in the series, the large proportion were not ascribable directly, if at all, to the effects of syphilis, or of antisyphilitic treatment with either asphenamin or mercury. Syphilis, as either a primary or a secondary etiologic factor, is largely excluded by the fact that the overwhelming proportion of the patients had had so much treatment before the jaundice occurred that Herxheimer effects and hepatorecurrences were practically eliminated. Moreover, two thirds of the patients recovered while antisyphilitic treatment was suspended, and one fourth of those who recovered were not again treated for the disease after the jaundice appeared. Four of the patients who were jaundiced did not have syphilis. The study of this series of seventy cases disclosed strong circumstantial evidence to the effect that an infectious agent, possibly associated with epidemic respiratory infections, was the exciting cause. Forty-one per cent. of the patients had coryza, tonsillitis, pharyngitis, influenza, "grippe," bronchitis, pneumonia or otitis media (named in order of frequency), intimately associated with the prodromal symptoms or actual appearance of the jaundice. Fifty-nine per cent. of the cases were associated with epidemics of colds and influenza in the vicinity; in 73 per cent. contributory evidence was obtained of a possible infectious factor in the etiology of the jaundice. Incomplete bacteriologic studies of seven cases were unsuccessful in identifying a causative organism.

Pathologic Physiology of Chronic Pulmonary Emphysema.—Two patients with chronic pulmonary emphysema of the so-called "large lunged" type were studied by Scott over a period of several months and compared with normal persons as controls. It was found that the emphysematous patients breathed high percentages of carbon dioxid (from 8 to 10 per cent.) for ten and fifteen minute periods with relatively little increase in the minute volume, and without subjective symptoms of distress. Slightly higher percentages were intolerable and caused a sharp "break," with symptoms of acute distress, such as headache, nausea and dizziness. The concentration of inspired carbon dioxid necessary to produce signs of intolerance was found to vary inversely with the length of the breathing period. There was a definite elevation in the free and combined carbon dioxid of the blood in emphysema, but the ratio $\frac{H_2CO_3}{NaHCO_3}$ was such as to maintain the H-ion concentration within normal limits. It is suggested that the increased buffer of the body fluid in emphysema compensates to some extent for the impairment of pulmonary ventilation and offers a certain protection against undue fluctuations in H-ion concentrations which might otherwise occur.

Chemical Pathology of Blood in Pernicious and Other Anemias.—Human blood from three series of persons was examined by Peters and Rubnitz for its concentration in (*a*) total solids, (*b*) total nitrogen in whole blood, (*c*) total nitrogen in plasma. The first series comprised physiologically normal persons, the second cases of pernicious anemia and severe secondary anemia, the third cases of various pathologic conditions other than severe anemia. The total solids of the blood of pernicious anemia and also of severe secondary anemia show great decrease from normal values or even from that of other chronic hospital cases. This decrease is due primarily to the large diminution in number of the red corpuscles and only in minor degree to decrease in plasma solids. The total nitrogen of the whole blood in pernicious anemia and also in severe secondary anemias shows a great decrease from the normal values. The principal cause here also is diminution in the number of the red corpuscles. The percentage of total solids and of whole blood nitrogen are the essential chemical correlates of the number of red corpuscles, i. e., there is a marked proportionality in these two independently determinable factors. The total plasma nitrogen, in contradistinction to the total blood nitrogen, either maintains its normal limits of constancy or tends to increase in percentage above that of most normal bloods, but in any case it has no tendency to decrease its nitrogen value. Since in all severe anemic conditions the whole blood nitrogen decreases while the plasma nitrogen tends to increase, the resultant ratio of the first to the second, which constitutes a nitrogen index, shows from the direction of variation in both factors a natural tendency to diminish in proportion to the severity of the anemia. The authors suggest that this index may be used as an indicator of the state and progress of the anemic condition.

Hemolytic Streptococcus in Hemorrhagic Smallpox.—In the case of typical purpura variolosa reported by Kempton and Parsons the hemolytic streptococcus was present in the circulating blood as early as the first day of the disease, and continued throughout the course of the disease, a positive culture having been obtained on the thirteenth day. A noteworthy point in this case is the characteristic early appearance of the hemorrhages, the eruption developing and following the normal order through to the crusting stage on the eleventh to the fourteenth day. The case may be regarded as a combination of purpura variolosa and purpura hemorrhagica pustulosa, for as the lesions developed hemorrhage directly into many of them took place. This patient conquered her smallpox in spite of the severe secondary infection, but succumbed to the latter when pneumonia, probably of the hemolytic streptococcic type, developed on the twelfth day of the disease. This lends support to the opinion of Ewing, Councilman and Maurice that the streptococcus infection is of more importance in the fatal termination of variola than the variola virus itself.

Filtrable Agent Cause of Influenza.—The results obtained by Hall seem to give support to the theory of a filtrable agent as the primary cause of influenza. Certain experiments indicate that the active agent concerned is markedly resistant to heat, and probably is mainly intracellular in location.

Archives of Surgery, Chicago

November, 1920, **1**, No. 3

*Report of Tetanus. A. P. C. Ashhurst, Philadelphia.—p. 407.
*Rib Grafting Operations; Repair of Bone Defects and End-Results. L. Eloesser, San Francisco.—p. 428.

*Establishment of Surgical Principles in Treatment of Fracture of Neck of Femur. A. Whitman, New York.—p. 469.
*Twelve Cases of Thrombosis of Cavernous Sinus. J. J. Chisolm, Baltimore, and S. S. Watkins, Louisville.—p. 483.
*Duodenal Diverticula; Report of Case. E. C. Moore, Los Angeles. —p. 513.
*Late Results in Autogenous Internal Bone Splinting. W. H. Thomas, Philadelphia, and W. A. Clark, Pasadena, Calif.—p. 524.
*Chronic Duodenal Dilatation; Its Concomitant and Sequential Pathology. H. Crouse, El Paso, Texas.—p. 538.
*Roentgenologic Study of Course of Postinfluenzal Pyopneumothorax. G. P. Grabfield, Boston, and T. L. Squier, Ann Arbor, Mich.—p. 564.
*Rôle of Cortical Lymphatics in Extension of Tuberculosis within Kidney. E. G. Crabtree, Boston.—p. 581.
*Abdominal Incisions. E. P. Quain, Bismarck, N. D.—p. 585.

Tetanus.—This report on tetanus was made by Ashhurst to the Société Internationale de Chirurgie, Paris, July, 1920. Besides discussing the pathogenesis, prophylaxis and treatment of tetanus, the author analyzes eighteen cases. Seven of these patients died (38.8 per cent.), one from pneumonia, after apparent recovery from the tetanus. In three other fatal cases, treatment was neither early nor efficient enough to be successful, while the death of one patient was clearly due to an overdose of magnesium sulphate intraspinally. This leaves thirteen cases in which treatment may be regarded as early and efficient; only two of these patients died, a mortality of 15.38 per cent. The importance of early and efficient treatment is emphasized. This includes, as stated in one case in illustration, the use of concentrated antitoxin intraspinally by lumbar puncture; by mouth, chloral hydrate and sodium bromid; antitoxin intravenously.

Rib Grafting.—Eloesser discusses the theoretical and practical advantages of the rib graft and the technic of rib grafting. Of a series of twenty-two cases reported, three were failures, thirteen were successes and six were partial successes.

Fracture of Neck of Femur.—A fracture of the neck of the femur, Whitman says, is a fracture like any other fracture, even though it often occurs in subjects that one would not be anxious to treat for any complaint whatever; also that the same standards of treatment and the same judgment of results should be applied to this fracture as to any other. If surgeons do not care to apply treatment in a given case, they must explain to those concerned that the character of the patient makes it inadvisable to treat the fracture, not that the character of the fracture makes it inadvisable to treat the patient.

Cavernous Sinus Thrombosis.—A study of 50,000 surgical histories in the Johns Hopkins Hospital disclosed eight cases of this type. Four other cases are included in this report. The three most common causes of a thrombosis of the cavernous sinus are: marasmus, trauma and infection. The symptoms of cavernous sinus thrombosis may be divided into three groups: (1) those due to venous obstruction; (2) those due to involvement of the neighboring nerves, and (3) those due to general sepsis. Those of the first two groups are the most important and of most diagnostic value. Those of the third group are usually dependent on an associated septicema. A history of chills and severe headache, a septic temperature and an exophthalmos that always begins on one side, but usually involves the opposite eye within twenty-four or forty-eight hours, are pathognomonic of thrombosis of the cavernous sinus. The focus of infection if found should be as thoroughly removed as possible. Only 7 per cent. of these patients recovered without operation. The number of patients that have recovered as a result of operation on the cavernous sinus, however, is less than 7 per cent. Operation was not attempted in any of the cases cited by Chisolm and Watkins, and the percentage of recovery was 8.33. The failure of surgical intervention is undoubtedly due to the fact that a basilar meningitis and a thrombosis of the neighboring venous sinuses occur, as a rule, early in the course of the disease. A lumbar puncture should always be performed, for the patient may manifest the usual symptoms and signs of meningitis and yet have a clear spinal fluid. If examination of the spinal fluid reveals the presence of a septic meningitis, mere drainage of the cavernous sinus is mainifestly inadequate. If, on the other hand, the spinal fluid is clear, the patient has a chance for recovery without operation.

Diverticulum of Duodenum.—In Moore's case a large diverticulum was found on the anterior aspect of the second portion of the duodenum. A scar of an old healed duodenal ulcer was present on the anterior wall of the first part. All symptoms seemed referable to the diverticulum. The diverticulum was amputated. This case is the fourth on record in which this was done.

Cause of Failure of Internal Bone Splints.—The most frequent cause of failure in the sixteen cases cited by Thomas and Clark was sepsis; the next in frequency was slipping of the internal bone splint.

Chronic Dilatation of Duodenum.—Crouse is of the opinion that there is, in all probability, a chronic, preexisting duodenal dilatation in all cases of acute gastroduodenal dilatation. It is cured by surgical intervention. Many patients with gastric ulcer treated by posterior, no loop, gastroenterostomy technic, should have a duodenojejunostomy performed as well.

Roentgenologic Study of Postinfluenzal Pyopneumothorax.—Four cases of postinfluenzal pyopneumothorax were studied roentgenologically by Grabfield and Squier. Their findings are recorded. These cases and roentgenograms demonstrate how completely the normal chest markings may be restored even after the presence of extensive adhesions, marked pleural thickening and pulmonary deformity. In treating cases of this type, it should be remembered that during the acute stage the effusion should not be removed, unless there are definite indications. The procedures which are subsequently employed should be as conservative as possible. The indications for the employment of these should be determined by the clinical course and by frequent roentgen-ray examinations.

Pathologic Anatomy of Tuberculosis of Kidney.—Observations made on a group of twenty-one kidneys, obtained at operation, which showed macroscopically a single small lesion at some point in the renal substance with an attendant tuberculous pyelitis are recorded by Crabtree. In some instances, the cortex was almost, if not entirely, free from gross lesions, yet in most instances there were a few small cortical tubercle tubercles to be seen overlying the gross lesion of the interior of the kidney and connected with it by lines of tuberculous infiltration. In apparently normal portions of the cortex, remote from the region of the primary focus, numerous microscopic tubercles were seen just beneath the true capsule which seem not to be connected with the pelvis by the usual fine lines of round cell and endothelial cell infiltration which is usually found where there is extension to the cortex from an underlying caseating cavity. Also in the one double kidney there was no demonstrable process in the pelvis or medullary poritions of the other half, yet the cortex showed numerous small tubercles beneath the capsule. Crabtree believes that these lesions are due to lateral extension by way of the cortical lymphatics.

Abdominal Incisions.—Quain reviews the anatomy of the abdominal wall and points out how injury of its structures may be avoided when making incisions. He prefers the median incision in most pelvic operations. The Pfannenstiel or transverse incision is sometimes preferred when the round ligaments of the uterus require surgical intervention. It is of special advantage in the presence of a very fat or short abdomen. The two recti should be sutured together to reinforce the linea alba. The anterior aponeurosis will heal most surely if the margins are overlapped one-fourth or one-half inch. Edge-to-edge approximation is not enough. Softening of the catgut and straining of the muscles favor separation from the moment the operation is completed. The side-to-side silkworm-gut sutures, usually depended on for fixation of the wound during the healing process, do not hold the wound firmly together unless they are tied so tightly that they cause injurious pressure on the tissues. A more effective method, and a method less constricting to tissues, is the introduction of a silkworm gut through the overlap of the aponeuroses in a short bite only, the two ends of the suture coming out closely together, well to the side of the wound, and being tied over a suitable button. The two aponeurotic surfaces coming in contact should be free from all intervening tissue, but for the purpose of insuring immediate blood supply to the margins

of the aponeuroses it is advisable not to loosen the undersurface of the under flap from the rectus muscle, nor the upper surface of the upper flap from the fat and subcutaneous tissues.

Boston Medical and Surgical Journal

Nov. 25, 1920, **183**, No. 22

What Should Be the Attitude of State Toward Hospital Standardization? M. F. Fallon, Worcester.—p. 617.
Some Practical Hospital Problems Encountered in an Industrial Community. E. MacD. Stanton, Schenectady, N. Y.—p. 623.
How Can Shortage of Nurses be Met? J. B. Howland, Boston.—p. 628.
Historical Note on Relationship of Digestive Disturbances and Psychoses. C. G. Cumston, Geneva, Switzerland.—p. 632.
Early Orthopedic Treatment of Infantile Paralysis. A. T. Legg, Boston.—p. 635.
New Instrument. A Four-Way Stop-Cock. G. T. Tyler, Greenville, S. C.—p. 637.

California State Journal of Medicine, San Francisco

November, 1920, **18**, No. 11

Roentgen-Ray Diagnosis and Localization of Peptic Ulcer. R. D. Carman, Rochester, Minn.—p. 377.
Nasal Plastic Surgery. H. B. Graham, San Francisco.—p. 383.
*Modern Treatment of Syphilis of Central Nervous System. H. G. Mehrtens, San Francisco.—p. 385.
Quality of Some Drug Preparations Sold in and Around Los Angeles. H. L. White and T. Watson, Los Angeles.—p. 387.

Treatment of Syphilis of Central Nervous System.—The clinical results of 1,500 treatments for syphilis of the central nervous system Mehrtens says has brought out the following facts: To get the maximum results, each case must be treated according to individual requirements—there can be no rigid routine treatment. There is no rigid routine treatment. There is no greater danger in treating syphilis of the central nervous system than there is in treating visceral syphilis when a proper technic is developed. Cerebrospinal syphilis (meningeal type) was arrested in 80 per cent. of cases; intramuscular and intravenous therapy were sufficient in about 40 per cent. of the remainder 35 per cent. were benefited by intraspinous therapy, and 15 per cent. improved somewhat but were not arrested. About 5 per cent. of cases diagnosed cerebrospinal syphilis developed paretic symptoms. Headaches cleared up in 90 per cent. of instances—generally after one or two intraspinous treatments. Tabes—early cases—nearly all did well clinically. Some lightning pains recurred from time. Late tubes showed marked improvement in about 60 per cent., but there was no evidence to show returning function of reflexes—pupillary reaction or Romberg sign. In paresis the results were poor. A few cases went into remissions, but ultimately deteriorated and had to be committeed. Several cases so diagnosed cleared up permanently, but this unusual result tended to cast doubt on the original diagnosis. Arsphenamin, from six to twelve injections of 0.6 gm. each week intravenously combined with intramuscular mercury injections and iodid by mouth was the method of treatment employed.

Georgia Medical Association Journal, Atlanta

November, 1920, **10**, No. 6

Roentgen-Ray Study of Abdominal Organs Following Oxygen Inflation of Peritoneal Cavity. G. M. Niles, Atlanta.—p. 149.
Mental and Nervous Clinic at Macon. N. P. Walker, Milledgeville.—p. 152.
Analysis of Series of Heart Lesions with Special Reference to Etiology and Treatment. R. H. Stovall, Macon.—p. 154.
Uterine and Cervical Radium Holders. C. Swanson, Atlanta.—p. 158.
Breast Tumors; Special Reference to So-Called Cystic Mastitis. C. W. Roberts, Atlanta.—p. 160.
Treatment of Lethargic Encephalitis. S. R. Roberts, Atlanta.—p. 164.
Infant Feeding for General Practitioner. W. L. Funkhouser, Atlanta. p. 167.

Indiana State Medical Association Journal, Ft. Wayne

Nov. 15, 1920, **13**, No. 11

Physician: General Practitioner. F. B. Wynn, Indianapolis.—p. 365.
Legacies of Asset and Liability. C. H. McCully, Logansport.—p. 371.
*Strychnin Poisoning from Hinkle Pills. A. M. Winklepleck, Elnora.—p. 375.
Local Indications for Tonsillectomy and Adenoidectomy. J. W. Carmack, Indianapolis.—p. 376.

Strychnin Poisoning from Hinckle's Pills.—Winklepleck's patient was a 3 year old child. It could not be determined how many tablets the child had eaten of those with which it was playing, but the symptoms were typical of strychnin poisoning. Under appropriate treatment the child recovered.

Iowa State Medical Society Journal, Des Moines

Nov. 15, 1920, **10**, No. 11

Des Moines Health Center. A. D. McKinley, Des Moines.—p. 365.
Practical Value of Cerebrospinal Fluid Examination. M. G. Wohl, Omaha.—p. 369.
Artificial Pneumothorax; Report of Cases. W. H. Ross, Waterloo.—p. 373.
Psychopathic Hospital. R. C. Doolittle, Des Moines.—p. 376.

Johns Hopkins Hospital Bulletin, Baltimore

November, 1920, **31**, No. 357

*Effect of Diphtheria Antitoxin in Preventing Lodgment and Growth of Diphtheria Bacillus in Nasal Passages of Animals. J. Gelien, W. L. Moss and C. G. Guthrie, Baltimore.—p. 381.
Diphtheria Bacillus Carriers. C. G. Guthrie, J. Gelien and W. L. Moss, Baltimore.—p. 388.
*Treatment of Neurosyphilis by Intraspinal Route; Clinical Study of Series of Cases Treated from Point of View of Increased Permeability of Meninges. A. Keidel and J. E. Moore, Baltimore.—p. 404.
*Mononuclear Leukocytosis in Reaction to Acute Infections. T. P. Sprunt and F. A. Evans, Baltimore.—p. 410.
*Case of Pneumococcus Type I Vegetative Endocarditis; Following Lobar Pneumonia. H. M. Thomas, Jr., and D. O'Hara, Boston.—p. 417.

Effect of Diphtheria Antitoxin on Diphtheria Bacillus.—The production of nasal infection or infestation of cats, rabbits and guinea-pigs with *B. diphtheriae* was quite inconstant even when the organisms were introduced directly into the nose. A somewhat higher percentage of animals showed positive cultures among those directly inoculated than among those merely exposed to a "carrier" (66 and 55 per cent.). A much greater discrepancy would not have been surprising. Cats and rabbits became infected with about the same frequency and the indicence of positive cultures was also much the same. Among the guinea-pigs, 66 per cent. developed positive cultures and 26 per cent. of the total number of cultures taken showed Klebs-Loeffler bacilli. The duration of infection was usually quite short but may have been variable in this respect, as some animals still harbored diphtheria organisms at the end of the experiments. The health of the animals was apparently unaffected by the mere presence of the bacilli in the nose. The occurrence and duration of infection were independent of the virulence of the strain of organisms used for inoculation and were wholly unaffected by the previous administration of antitoxin.

Diphtheria Bacillus Carriers.—Guthrie and his associates claim that the diphtheria bacilli present in a majority of healthy carriers are avirulent. Avirulent bacilli cannot produce diphtheria. There is no proof that avirulent diphtheria bacilli can acquire virulence. Hence, the carriers of avirulent diphtheria bacilli do not constitute a menace to any one in particular or the community as a whole, and any interference with their liberties on the grounds of their being carriers is unwarranted and not justifiable. The carrier of virulent diphtheria bacilli occupies quite a different position from that of the carrier of avirulent bacilli. The authors think that the danger from the former has perhaps been overestimated we recognize the fact that diphtheria bacilli derived from him may give rise to the disease in susceptible persons.

Intraspinal Medication in Neurosyphilis.—Keidel and Moore claim that the mode of action of intraspinal medication does not depend on increased permeability of the meninges and that aseptic meningitis produced by intraspinal injection of irritants may prove an untoward rather than a beneficial factor in the treatment of neurosyphilis.

Mononuclear Leukocytosis in Acute Infections.—Six cases exhibiting a mononuclear leukocytosis in reaction to acute infection are recorded by Sprunt and Evans. The symptoms and signs in all were so nearly the same that they apparently constitute a distinct clinical syndrome. Each case ran a febrile course with moderately severe prostration. In four there were evidences of a tonsillitis or other infection of the upper respiratory tract, and a moderate general glandular enlargement. Four of the cases had, in addition, a palpable spleen. The total leukocyte count was normal at first, but later became moderately increased. The differential formula showed a slight increase in the cells of the large mononuclear-transitional group and the presence of many pathologic lymphoid forms. Later there was a leukocytosis which was largely due to an increase in lymphoid cells among which

were many pathologic forms. The prognosis in these cases is good.

Pneumococcus Endocarditis.—An unusual case of Type I pneumococcus endocarditis, namtly, of the tricuspid valve, is reported by Thomas and O'Hara. There is, some cause for believing that pneumococcus endocarditis is usually caused by the Type I pneumococcus. This case suggests the advisability of frequent and early blood cultures during the convalescence from pneumonia whenever a rise in temperature occurs.

Journal of Laboratory and Clinical Medicine, St. Louis

November, 1920, **6**, No. 2

Hemostatic Agents and Spontaneous Changes in Coagulation Time Following Hemorrhage. P. J. Hanzlik, Cleveland.—p. 59.
*Pharmacologic Study of Benzyl Benzoate. E. C. Mason and C. E. Pieck, Cincinnati.—p. 62.
Epidemic of Influenza in Army Post of A. E. F. in France. A. M. Chesney and F. W. Snow.—p. 78.
*Effect of Amino Acids on Growth of Tubercle Bacilli. P. Masucci, Glenolden, Pa.—p. 96.
Variations in Wassermann Reaction. R. A. Kilduffe, Pittsburgh.—p. 98.
Apparatus for Staining and Drying Slides. F. H. Lamb, Davenport, Ia.—p. 101.
*Blood Changes in Case of Hemophilia After Transfusion. H. A. Bulger, Boston.—p. 102.
Simple Method of Isolating Bacteria from Pathologic Material. H. C. Klix, Detroit.—p. 104.

Pharmacology of Benzyl Benzoate.—Mason and Pieck have studied the mechanism by which various conditions are relieved by benzyl benzoate and endeavored to ascertain the concentration of the drug in the blood necessary to produce the desired results. The results of their study are given in detail.

Effect of Amino Acids on Tubercle Bacillus Growth.—Glycerin bouillon containing 1.7 per cent. "Difco" peptone and 0.3 per cent. aminoids has about 30 per cent. more amino acids and 50 per cent. more phosphorus than bouillon made with 2 per cent. "Difco" peptone alone. Masucci found that the amino-acids hasten the growth of *B. tuberculosis* by furnishing the necessary form of nitrogenous matter for the building of the more complex bacterial protein. The increased amount of phosphorus probably increases the quantity of growth as that latter element is an important constituent of nucleo and lecithin protein substances found abundantly in the tubercle bacilli.

Blood Changes in Hemophilia After Transfusion.—In Bulger's case the day following transfusion the blood was practically the same as the control, but the coagulation time and prothrombin time were gradually lengthened. One month later they were still less than before transfusion. There was no marked change in the blood found to correspond to the slight bleeding into the joints found on the elevtnth day.

Kansas Medical Society Journal, Topeka

November, 1920, **20**, No. 11

Profession and Public; Plea for Closer Relationship. H. C. Embry, Hoisington.—p. 317.
Visceral Syphilis. H. E. Marchbanks, Pittsburg.—p. 320.
Surgical Infections of Kidney. R. W. James, Winfield.—p. 323.
Medicine's Economic Future. T. Bachmeister, Chicago.—p. 326.
Reminiscences. C. C. Goddard, Leavenworth.—p. 329.
Indirect Paracentesis for Abdominal Dropsy. V. E. Lawrence, Ottawa.—p. 332.

Medical Record, New York

Nov. 27, 1920, **98**, No. 22

Roentgen-Ray Findings with Delineator in Cases of Pylorospasm. M. Einhorn and T. Scholz, New York.—p. 883.
Diagnostic Methods in Exophthalmic Goiter; Special Reference to Quinin. I. Bram, Philadelphia.—p. 887.
Practice of Medicine as a Vocation. W. J. Mallory, Washington, D. C.—p. 891.
*Treatment of Alopecia Areata with Quartz Lamps (Kromayer and Alpine). H. Fox, New York.—p. 895.
Early Diagnosis of Gallbladder Lesions. R. H. Fowler, Brooklyn.—p. 898.
Applied Anatomy of Pelvic Bowel. C. J. Drueck, Chicago.—p. 900.

Quartz Lamps in Treatment of Alopecia Areata.—Fox claims that the quartz lamps (Krömayer and Alpine) are cleanly and convenient agents for the treatment of alopecia areata. The results in his series of fifty cases, though not brilliant, were at least satisfactory. More than half of the patients were followed to complete recovery, while in 78 per cent. of the cases the new hair had at least begun to grow. The results were gratifying because Fox had never previously succeeded in following any considerable number of cases when using other methods of treatment. The patients would become discouraged too quickly and continue the usual habit of such cases of frequently changing both remedy and physician.

New Jersey Medical Society Journal, Orange

November, 1920, **17**, No. 11

Heart Irregularities; Their Clinical Recognition and Interpretation. C. E. Teeter, Newark.—p. 365.
Obesity. F. C. Horsford, Newark.—p. 375.
Specialist and Family Physician. L. Emerson, Orange.—p. 384.

New Orleans Medical and Surgical Journal

November, 1920, **73**, No. 5

Importance of Early Diagnosis of Rectal Diseases. A. G. Heath, Shreveport.—p. 162.
Science and Practice in Fight Against Malaria. B. Gosio, Rome.—p. 168.
Notes on Tropical Diseases. L. Ambrose, New Orleans.—p. 178.

New York Medical Journal

Nov. 27, 1920, **112**, No. 22

Theory of Pneuma in Aristotle. J. Wright, Pleasantville, N. Y.—p. 833.
Standardized Roentgen Ray in Treatment of Skin Diseases. H. Fox, New York.—p. 837.
Physical Diagnosis Versus Roentgen Ray in Diseases of Lungs. G. W. Norris, Philadelphia.—p. 841.
Roentgenotherapy. J. T. Stevens, Montclair, N. J.—p. 843.
Foods and Races. J. S. Lankford, San Antonio.—p. 845.
Sterility, Sex Stimulation and Endocrines. T. W. Edgar, New York.—p. 848.
Christian Science and Sex. T. Schroeder, Cos Cob, Conn.—p. 851.
Underlying Factors in Good Posture. C. W. Crampton, Battle Creek, Mich.—p. 852.
Cardiac Manifestations in Influenza. C. G. Cumston, Geneva, Switzerland.—p. 857.

New York State Journal of Medicine, New York

November, 1920, **20**, No. 11

Delayed Emptying of Stomach in Infants and Children. C. G. Kerley, New York.—p. 345.
*Mortality Factors of Lobar Pneumonia in Children. LeG. Kerr, Brooklyn.—p. 348.
Intranasal Drainage of Frontal Sinus Through Natural Opening. M. Unger, New York.—p. 351.
Systemic Infections in Relation to Acute Middle Ear Diseases. S. J. Kopetzky, New York.—p. 353.
Development of Cosmetic Rhinoplasty. S. Oppenheimer, New York.—p. 355.
Application of Methods Developed During War to Treatment of Fractures in Civil Life. J. A. Blake, New York.—p. 357.
Health Center Bill. E. MacD. Stanton, Schenectady.—p. 359.
History of Medical Practice in Oswego County. E. J. Drury, Fulton.—p. 362.

Mortality Factors of Pneumonia in Children.—Acute gastric dilatation has occurred in more or less degree in 28 per cent. of all lobar pneumonia cases in children seen by Kerr and in one out of every four he says it becomes a positive danger to the child's life. Undoubtedly, the acute toxemia causes a paresis of the gastric musculature or paralyzes the motor fibers of the vagi and the cervical sympathetic supplying the stomach. It may be further excited by overloading the stomach with liquids when the nervous energy of the body is at a low ebb from the toxemia but is primarily due to the toxemia. The first symptoms are usually those of restlessness, accompanied by an increased thirst and vomiting. Acute epigastric pain may or may not be in evidence. Other symptoms are increased respiration, cyanosis and exhaustion. The objective findings are characteristic: visible and palpable tumor in the upper abdomen. Immediately after vomiting this may be reduced. Usually, after a very few hours, the pinched features and the objective evidence of circulatory shock are marked. Treatment must be prompt and adapted to the immediate condition of the stomach. If percussion reveals much fluid, the foot of the bed should be elevated from 12 to 18 inches, and the left anterolateral abdominal position assumed. The next essential is efficient lavage and then the absolute withholding of everything by mouth for at least twelve hours and often longer. To limit or present a starvation acidosis a solution of sodium bicarbonate with glucose is given by

proctoclysis. For an acute dilatation, firm pressure is made for several seconds with the instrument placed across the spine in the interspaces between the third and fifth thoracic vertebra. This causes an explosive eructation of gases. Another procedure which may be desirable, but not absolutely essential, is the administration by hypodermic of small doses of morphin.

Northwest Medicine, Seattle

November, 1920, **19**, No. 11

*Analysis of End Results of Treated Chronic Septic Myositis, Neuritis and Arthritis Cases. N. W. Jones, Portland.—p. 279.
*Treatment of Septic Arthritis of Knee Joint. E. O. Jones, Seattle.—p. 286.

End Results of Treatment in Chronic Rheumatism.—An analysis of the end results of 138 cases belonging to the group of so-called chronic rheumatisms is made by Jones. These cases have been studied over variable periods of time, in many as long as three, four or five years since treatment was instituted. The cases are grouped: chronic septic myositis and neuritis treated with carefully conducted cultural studies and those without, and chronic septic arthritis treated with and without such studies. Seventy-one per cent. positive muscle and joint lesions were found in the arthritis group, and 100 per cent. positive muscle and tendon sheath lesions in the myositis-neuritis group. No nerve lesions were found. The treatment consisted in the radical removal of all foci of infection, and the use of subsidiary measures: (1) mechanical and hydrotherapeutic, (2) autogenous vaccines, (3) stock vaccines, (4) foreign proteins, (5) radium, (6) dietetic and (7) climatic. Autogenous vaccines gave uniformly better results than did stock vaccines, in fact, better results were obtained from the autogenous vaccines than from all of the other measures combined.

Treatment of Septic Arthritis.—Four cases of metastatic arthritis reported by Jones were treated by aspiration with subsequent injection of liquor formaldehydi and glycerin. Arthritis cases following penetrating wounds of the joint were all treated by long lateral incisions, placed as far back as possible, extending from the head of the tibia up to the upper limit of the subcrural pouch which was freely opened. Two cases of septic arthritis with slight injury of the condyles of the fermur were treated with active mobilization. The routine treatment for cases of this group consisted in the long lateral incisions, the removal of all fragments of necrotic bone, immobilization of the leg in a Thomas splint and usually the application of moderate extension. In suitable cases the Willems method of active mobilization was found to be a most useful procedure.

Public Health Journal, Toronto

November, 1920, **11**, No. 11

*Analysis of Diphtheria Deaths in Ontario. J. G. Fitzgerald, Toronto.—p. 485.
Conservation of Child Life. A. C. Jost, Guysboro, N. S.—p. 503.
Plan for More Effective Federal and State Health Administration. F. L. Hoffman.—p. 513.
Meaning of Poverty. F. Almy, Buffalo, N. Y.—p. 516.

Study of Diphtheria in Ontario.—A statistical study of deaths due to diphtheria in Ontario was made by Fitzgerald. Despite a steady increase in the population from 1880 to 1918, the total number of diphtheria deaths fell from 1,251 in 1880 to 335 in 1918. The death rate among cases treated in hospital was very much lower, as a rule, than among those not admitted to hospital. The most important single factor responsible for the continuance of diphtheria deaths is the neglect of early treatment. Failure in this respect is usually due to delay in calling a physician in cases of sore throat in little children. Every sore throat is potentially dangerous. Only the physician can decide which cases are serious and which are unimportant. Education of the public in this matter is a matter of vital moment. Physicians are advised to administer antitoxin in single rather than in divided doses. Attention is also directed to the desirability of administering at least 5,000 units of antitoxin intravenously in late and severely toxic cases, as soon as they are seen by the physician. In such cases the remainder of the dose which the physician has decided to give, may be injected subcutaneously or intramuscularly. Absorption in ten times as rapid after intravenous, and four times as rapid after intramuscular as after subcutaneous injection. The statement of Park that "the greater the quantity of antitoxin in the blood the more rapid will an appreciable amount pass to the tissues," should be kept in mind. This may decide the issue of life or death in cases of diphtheria where treatment has not been undertaken early.

Surgery, Gynecology and Obstetrics, Chicago

November, 1920, **31**, No. 5

*Relation of Islets of Langerhans to Diabetes; Reference to Cases of Pancreatic Lithiasis. M. Barron, Minneapolis.—p. 437.
*Gunshot Wounds of Brain with Retained Missiles. C. Bagley, Jr.—p. 449.
*Reduction of Old Dislocations of Hip by Open Incision. J. J. Buchanan.—p. 462.
Cancer of Rectum; Analysis of 53 Cases. E. A. Wells, Hartford, Conn.—p. 472.
*Renal Hematuria Symptom of Prenephritic Condition of Kidneys. E. L. Young, Jr.—p. 478.
Dissecting Interstitial Abscess of Cecal Wall. F. Hagler, St. Louis.—p. 485.
Benign Tumors of Labia; Six Cases. W. H. Condit, Minneapolis.—p. 487.
*Cholecystogastrostomy. C. S. White, Washington, D. C.—p. 493.
*Function of Corpus Luteum. E. H. Ochsner, Chicago.—p. 496.
Pregnancy in Rudimentary Horn of Uterus. O. P. Humpstone, Brooklyn.—p. 501.
*Sarcoma of Stomach; Report of a Case. W. D. Haggard, Nashville, Tenn.—p. 505.
Study of Persistent Bone Sinuses. C. W. Peabody.—p. 512.
Abdominal Pregnancy with Fetus Alive at Time of Operation. J. M. Maury, Memphis, Tenn.—p. 523.
*New Operation for Prolapse of Rectum in Women. H. M. Richter, Chicago.—p. 527.
*Value of Position in Operative Treatment of Inguinal Hernia. H. H. M. Lyle, New York.—p. 529.
Inflation of Colon as Aid in Roentgen-Ray Examination. H. B. Philips, New York.—p. 531.
Description of Suprapubic Prostatic Retractor. R. E. Farr, Minneapolis.—p. 532.
Treatment of Procidentia in Nulliparous. G. E. Shoemaker, Philadelphia.—p. 534.

Islets of Langerhans and Diabetes.—Barron states that his study bears out the conclusions that the islets of Langerhans secret a hormone directly into the lymph or blood streams (internal secretion), which has a controlling power over carbohydrate metabolism. The principal clinical findings in cases of pancreatic lithiasis are colic-like epigastric pains often associated with temporary glycosuria, steatorrhea, alimentary glycosuria, incomplete digestion of meat fibers as revealed by the persistence of the nuclei in muscle fibers in the feces, and, occasionally, the presence of whitish or grayish pancreatic stones in the feces; the late stages are often accompanied by diabetes mellitus. Operations on the pancreatic duct are often successful. The danger of fat necrosis as a result of the escape of pancreatic fluid appears to be negligible.

Gunshot Wounds of Brain.—In a series of 192 patients with head wounds, which, except for a few accidents, were war injuries, forty-two had metallic foreign bodies intra or extracranial; in thirty-three cases the metal was superficial or in small particles, so that only nine had retained metal of sufficient size and at a sufficient depth to demand serious consideration. These cases with an additional civilian with a retained pistol bullet, form the basis of Bagley's paper.

Reduction of Hip Dislocations by Open Operation.—In traumatic hip dislocations reduction by manipulation is rarely successful after four weeks Buchanan says, owing to formation of connective tissue, which fills the acetabulum and binds down the head and neck. Reduction by open incision is to be preferred in nearly all cases of old hip luxations and with modern methods is attended with but little danger. Preliminary traction by Buck's extension is of advantage. The actual replacement of the head, after the acetabulum has been emptied and the head and neck released, is best accomplished by manipulation or the use of levers with manual and body traction. The result is often ideal and, in the fifty cases reported by Buchanan has been good in 80 per cent .

Renal Hematuria a Prenephritic Symptom.—From an analysis of thirty-three cases Young concludes that it is reasonable to believe that in a majority of these cases there is an early unrecognized nephritis or a prenephritic condition which can be, and probably often is, the cause of hematuria, and that this condition may or may not go on to a progressive damage of

the kidney, depending on conditions which we do not as yet understand. In certain of these cases the primary focus of damage can be recognized, and when eliminated will prevent the later development of the disease.

Cholecystogastrostomy.—The operation of cholecystogastrostomy White says is indicated in (1) an irremediable obstruction of the common duct or division of the duct which cannot be successfully sutured; (2) for long continued drainage in infective biliary cirrhosis it is superior to cholecystostomy in that nutrition is maintained. It is not a difficult operation, being easier and safer to perform than an anastomosis between the gallbladder and the small or large intestine. There is no danger of an ascending infection. The presence of bile in the stomach, while unphysiologic in a degree, is consistent with good digestion, and offers no argument against the operation. The suture method of anastomosis is the only one to be employed.

Function of Corpus Luteum.—The suggestion is made by Ochsner that an unabsorbed false corpus luteum prevents ovulation and is a common cause of sterility, and that the expression or excision of such a false corpus luteum invariably brings on menstruation. The excision or rupture of a true corpus luteum invariably results in interruption of pregnancy, at least during the early months of pregnancy, and it may be regarded as a common cause of abortion. An injury to either the true or false corpus luteum may simulate ruptured extra-uterine pregnancy.

Sarcoma of Stomach.—Haggard reports one case and analyzes 107 cases in which an operation was performed.

Operation for Prolapse of Rectum in Women.—The essential features of the operation devised by Richter are: first, the suspension of the rectum by passing the board ligament behind it; second, the fixation of the rectum to the uterus and of the uterus outside the abdominal fascia. The operation is limited to women in whom the broad ligaments and uterus can be utilized for the suspension, and must either be performed after the childbearing period is passed or where sterilization is permissible.

Value of Position Following Herniotomy.—In order to secure sufficient relaxation of the inguinal region during the period of healing, Lyle places a pillow under the thigh, and elevates the shoulders, for at least seven days.

Texas State Journal of Medicine, Fort Worth

November, 1920, **16**, No. 7

Need of Systematized Postgraduate Teaching of Ophthalmology and Oto-Laryngology. J. H. Foster, Houston.—p. 285.
Extirpation of Lacrimal Sac in Traumatic Dacryocystitis. J. M. Wheeler, New York.—p. 286.
Nonoperative Management of Cataract Cases. J. O. McReynolds, Dallas.—p. 289.
Operative and Nonoperative Treatment of Squint. E. M. Sykes, San Antonio.—p. 291.
*Case of Intra-ocular Cysticercus. J. A. Mullen, Houston.—p. 293.
Trachoma. H. L. Hilgartner, Austin.—p. 295.
Transplantation of Extra-Abdominal Fat for Relief of Postoperative Adhesions. C. M. Rosser, Dallas.—p. 298.
Heart Murmurs. L. Rice, Galveston.—p. 301.
Doctor's Duty to His Fellow Practitioner. J. S. McCelvey, Temple.—p. 303.
Prohibition and Practice of Medicine. A. W. Acheson, Denison.—p. 305.

Intra-Ocular Cysticercus.—Five weeks after an attack of acute enteritis which had lasted four weeks Mullen's patient became conscious of a decided blur in the vision of the left eye, without any pain or distress. The external appearance of the eye was perfectly normal. Vision reduced to easy finger counting. While the examination was in progress, there floated through the vitreous, across the pupillary space, a partially transparent body, shaped like a sausage balloon, slightly narrowed at the temporal end. The large, rounded end was directed toward the nasal side of the fundus and contained numerous dots or pigmentations, indicating the head of the worm. The bladder worm always entered the field of vision from left to right and with the enlarged or butt end in the lead. It did not manifest any individual movements and its periphery was smooth and devoid of indentations. The patient left Mullen's observation, and further study of the case was rendered impossible.

West Virginia Medical Journal, Huntington

November, 1920, **15**, No. 5

Foreign Bodies in Air Passages and Esophagus. T. W. Moore, Huntington.—p. 161.
Diagnosis and Treatment of Early Syphilis. W. S. Robertson, Charleston.—p. 164.
Congenital Absence of Vagina; Report of Two Cases with Restoration by Baldwin Method. W. H. St. Clair, Bluefield.—p. 170.
Essential Renal Haematuria; Report of Two Cases. O. D. Barker, Parkersburg.—p. 174.
After Care of Patient and His Lenses. C. A. Campbell, Wheeling.—p. 176.
Present Status for Venereal Disease Control in West Virginia. F. F. Farnsworth, Charleston.—p. 178.

Wisconsin Medical Journal, Milwaukee

November, 1920, **19**, No. 6

Clinical Aspects of Pneumonia. L. F. Jermain, Milwaukee.—p. 275.
Abdominal Symptoms in Pneumonia. F. G. Connell, Oshkosh.—p. 279.
Studies in Typhoid Fever. E. Henes, Jr., Milwaukee.—p. 282.
Reflexes and Their Diagnostic Importance. A. W. Sivyer, Milwaukee.—p. 290.
Should State Control and Care For All Its Feebleminded and Epileptics? C. Gorst, Madison.—p. 295.
Subluxations of Crystalline Lenses and Their Treatment. G. N. Brazeau, Milwaukee.—p. 302.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

October, 1920, **25**, No. 5

History of Electrotherapy. H. A. Colwell.—p. 129.
Radiography of Gallbladder. N. MacLeod.—p. 141.

British Journal of Experimental Pathology, London

October, 1920, **1**, No. 5

Value of Simultaneous Testing for Wassermann Reaction with Two Different Antigens and the Ice Box Method. T. J. Mackie and C. C. Rowland.—p. 219.
*Variations in Benzidine Peroxidase Reaction Depending on Fixative, Physiologic Activity and Type of Animal. M. L. Menten.—p. 225.
*Researches on Dysentery. F. W. Twort.—p. 237.
*Respiratory Exchange of Surviving Mouse Tissues, Normal and Neoplastic. R. R. G. Russell and W. H. Woglom.—p. 244.
*Transmission of Experimental Lethargic Encephalitis in Monkeys and Rabbits; Spontaneous Infection in Monkey. J. McIntosh.—p. 257.

Variations in Benzidin Peroxidase Reactions.—The Graham benzidin peroxidase reagent, consisting of a 0.5 per cent. solution of benzidin in 75 per cent. alcohol, plus 0.2 per cent. hydrogen peroxid, produces a yellow brown color in the granules of myelogenous cells in human blood, and, Menten says, is diagnostic for man. The polymorphonuclear leukocytes of lower animals studied differ from those of human blood in their reaction to the Graham reagent in that only a small percentage of them develop the characteristic yellow color. These positively reacting cells are probably eosinophilic. In a 0.5 per cent. solution of benzidin in 75 per cent. alcohol free from hydrogen peroxid practically all of the myelogenous cells of the guinea-pig, dog, white mouse, white rat and rabbit give the characteristic colored granular reaction. Addition of hydrogen peroxid to this solution tends to inhibit the development of the yellow color, which disappears from all except one or two cells when the concentration of the peroxid is increased to 1 per cent. By varying the concentrations of the alcohols in the Graham reagent a series of colors ranging from deep brown through the yellows and the yellow greens to blue may be obtained in granules of human pus aspirated from empyemic cavities. As these samples of pus age, the color reactions are lost. Pus in which the leukocytes become more degenerated give a negative reaction. The blue reaction of pus cells may be duplicated by exposing blood films to weak concentrations of acid, previous to treatment with benzidin solutions.

Dysentery Bacilli.—Twort claims that three types of special forms can be isolated from dysentery and allied bacilli. Type A shows moderately thick but long bacilli, which may twist like a spirochete. Type B shows long thick rods; some swollen in the middle or at one end, and these may break open and set free granules. The bacilli are associated with round forms and many free granules. Type C bacilli are like type B, but shorter. There are many granules and round

forms, also thick branching units. In older cultures most of the units are globular, and the protoplasm may collect as a semilunar mass round the circumference. A filter passing dissolving material may be present in cultures of dysentery bacilli, etc., which breaks down the bacilli into granules. The special types A, B and C are produced by normal bacilli, but some smaller units are always present. The special forms are probably not stages in a true life cycle, as the normal type is not produced in rotation, and it is doubtful if they are mutations. Special types may be produced for performing special work, and types in "pure culture" may be likened to bees in a swarm. They are possibly of importance in connection with incubation period, successful infection, and production of immunity. Sexual multiplication is not proved, but may exist in normal cultures.

Respiratory Exchange of Living Tissues.—Respiratory quotients were obtained by Russell and Woglam for surviving normal and tumor tissues of the mouse by suspending emulsions in alveolar air in the Barcroft blood-gas apparatus. The results agreed very closely in successive experiments with each normal tissue. Greater variability was found with tumors. The tentative conclusion is drawn that the more rapidly growing, undifferentiated tumors draw their energy from carbohydrate, the more slowly growing from fats.

Experimental Transmission of Lethargic Encephalitis.—The successful transmission in series of experimental lethargic encephalitis to monkeys and rabbits, McIntosh says, has completed the experimental proof necessary to show that the disease is caused by a living virus. One spontaneous case is recorded as additional proof.

Dublin Journal of Medical Science

November, 1920, **4**, No. 9

*Case of Unusual Thoracic Injury. W. Doolin.—p. 409.
*Case of Subclavian Aneurysm Treated by Distal Ligation. W. Pearson.—p. 413.
*Case of Postural Hoarseness. J. S. Johnson.—p. 416.

Unusual Thoracic Injury.—A relatively trivial rib fracture produced by direct violence to the lower right side of the chest caused a tear of the lower lobe of the left lung. The lung became fixed to the diaphragm whereby a protective "glissade" of the lung was inhibited. There was complete absence of symptoms of a left sided intrathoracic injury during the first twelve hours of his illness. As a physical examination of the dorsum could not be carried out satisfactorily our diagnostic evidence at this stage was obviously incomplete. There was also complete absence of any hemoptysis during the course of the patient's illness. A postmortem examination of the thoracic cavity disclosed an extensive hemothorax of the left pleural cavity; nearly 1,500 c.c. of fluid blood were present, displacing the heart up into the right chest. The right pleural sac was intact; the base of the lower lobe of the right lung was congested; there was an incomplete (greenstick) fracture of the seventh right rib, with slight extrapleural ecchymosis.

Distal Ligation of Subclavian Aneurysm.—Pearson exposed the first stage of the axillary artery through an incision between the deltoid and pectoralis major muscles, no fibers being divided. The artery was secured as high as possible behind the subclavius muscle by two silk ligatures placed one-third inch apart; the upper ligature only occluded the lumen of the vessel, the lower was tied as tightly as possible. The vessel wall appeared to be healthy in this area, though in such close proximity to the aneurysm. The operation proved exceedingly easy and bloodless. The circulation in the limb remained quite satisfactory, and twenty-four hours later there was no pulsation nor murmur in the aneurysm. The further progress of the case was equally good. Sixteen weeks after operation there was no swelling or pulsation in the subclavian region, the circulation in the limb was good, and the radial pulse was only slightly smaller than on the left side. There was no pain, but the patient complained of slight "feelings of numbness" at the wrist, and his grip was still weak. Cubsequent reports indicate that the cure was permanent.

Postural Hoarseness.—Johnson's patient presented marked huskiness when his head and neck were strongly rotated to the left; in other positions the huskiness was much less. Nothing abnormal was found in the mouth or pharynx. Examination by laryngeal mirror, with head centrally placed, showed a slight degree of laryngitis, probably due to excessive use of cigarets. The man had been a heavy smoker for years. The vocal cords moved well and apparently to their full extent.

Edinburgh Medical Journal

November, 1920, **25**, No. 5

Stumps After Amputation in Relation to Artificial Limbs. C. W. Cathcart.—p. 281.
Anencephalic Syndrome in Its Relation to Apituitarism. F. J. Browne.—p. 296.
Acute Appendicitis and Acute Appendicular Obstruction. D. P. D. Wilkie.—p. 308.
Case of Pellagra. R. C. Low and H. Yellowlees.—p. 315.
Goiter and Exophthalmic Goiter. A. Goodall.—p. 317.

Glasgow Medical Journal

November, 1920, **12**, No. 5

Defects of Medical Practice, Education and Research. J. MacKenzie. p. 257.
Basal Ganglia; Their Functions and Diseases. W. K. Hunter.—p. 277.

Journal of Tropical Medicine and Hygiene, London

Nov. 1, 1920, **23**, No. 21

*Preservation of Antiscorbutic Properties of Cabbage by Drying. A. Holst and T. Frölich.—p. 261.
Roentgen-Ray Motor Ambulance Wagon for Use at Home and in Tropical Countries. J. Cantlie.—p. 264.

Antiscorbutic Value of Dried Cabbage.—Holst and Frölich state that (1) thin slices of cabage which are dried for one week in an incubator at 37 C., and thereupon at the same temperature by means of phosphorus pentoxid, show pronounced antiscorbutic properties when kept at 37 C. for from eighteen to twenty-six months in vacuum bottles. (2) The same cabbage loses almost all of these properties when not treated with phosphorus pentoxid but kept for eighteen months at 37 C. in closed vessels with calcium chlorid. (3) If treated as under (2) the cabbage keeps its properties much better at +4 to +10 to 12 C. (4) The results are better than mentioned under (2), but not so good as under (3), when the cabbage is kept at +4 degrees in closed vessels without any drying remedies.

Lancet, London

Nov. 20, 1920, **2**, No. 21

*Isolation Hospital in General Scheme of Hospital Provision. A. K. Chalmers.—p. 1037.
*Determination of Basal Metabolic Rate; Its Value in Diseases of Thyroid. C. M. Wilson and D. Wilson.—p. 1042.
Diagnosis of Bilharziasis. F. G. Cawston.—p. 1045.
Hidden Sepsis. S. W. Robertson.—p. 1046.
Operative Treatment of Umbilical and Ventral Hernia. R. Warren.—p. 1048.
Three Gastric Cases. R. P. Rowlands.—p. 1050.
Diabetes Mellitus Treated Successfully by Novarsenobenzol. F. J. W. Porter.—p. 1051.
Cesarean Section for Eclampsia: Followed by Pyosalpinx. R. L. Ley.—p. 1051.

Isolation Hospital.—Circumstances, Chalmers states, have compelled the displacement of epidemic hospitals from proximity to the teaching schools, and tended to restrict their functions to isolation and treatment. The increasing variety of diseases already being treated in them makes the development of clinical research a necessary addition to these. In the interest alike of the community, the state, and the training of future practitioners of medicine, it seems desirable to contemplate a time when the epidemic hospital will become an institute for research applied toward the elucidation of the problems with which infectious disease is surrounded.

Basal Metabolism in Thyroid Disease.—The Wilsons show that basal metabolic rate determinations have been found amply to justify the time spent on them in cases of impairment of function of the thyroid. They mark off toxic from nontoxic goiter, establish or refute suspicions of hypothyroidism, and furnish a graphic record of the results that follow the treatment of these conditions, so that the selection of the line of treatment becomes less capricious and comes to rest on exact methods. Moreover, some of observations suggest that these determinations will be found to have an altogether

wider and more important application in general metabolic disorders, particularly where the balance of function between the different glands of internal secretion is impaired.

Practitioner, London

November, 1920, **105**, No. 5

Symptoms and Treatment of Raised Blood Pressure. R. D. Powell. —p. 309.
Orthopedic Surgery. A. H. Tubby.—p. 325.
Removal of Adenoids in Infancy. H. Tod.—p. 335.
Recent Work on Nervous Diseases. H. C. Thomson.—p. 340.
Renal Complications of Acute Lacunar Tonsillitis. H. L. Cronk. —p. 351.
Colloidal Therapy and the Blood Serum. W. E. Boyd.—p. 366.
Dislocations. W. Paulson.—p. 374.
Cancer—A Theory. V. G. Webb.—p. 378.

South African Medical Record, Cape Town

Oct. 9, 1920, **18**, No. 19

Surgery; Good and Bad. C. F. M. Saint.—p. 362.
Excision of Gasserian Ganglion: Three Cases; Injections with Alcohol. C. C. Elliott.—p. 368.

Oct. 23, 1920, **18**, No. 20

Medicine Past and Present. J. Bruce-Bays.—p. 382.
Specific Therapy in Tuberculosis; Preparations of Bruschettini. D. P. Marais.—p. 390.

Annales de Médecine, Paris

August, 1920, **8**, No. 2

*Cholesterinemia. A. Chauffard, G. Laroche and A. Grigaut.—p. 69.
*Epinephrin in Vomiting of Pregnancy. F. Rathery and F. Bordet.—p. 92.
*The Nuclei Test of Pancreas Functioning. M. Labbé.—p. 101.
*The Corpus Striatum. J. Lhermitte.—p. 116.

Cholesterinemia.—Chauffard and his co-workers comment on the great increase in the cholesterin content of the blood after a meal containing fat, the increase being far beyond the amount of cholesterin ingested in the food, which suggests an intra-organic synthesis of cholesterin from the fat ingested. The high cholesterin content of the blood during the first three and the last three months of pregnancy has been confirmed by their tests. In thousands of pathologic cases they noted a drop during the febrile stage of acute infections and a high rise after defervescence in the moderate cases but never in the very mild or very severe cases. These and other data cited apparently indicate that cholesterin has an important antitoxic action and presides in some manner over the production of antibodies. Their research demonstrated further an enormous hypercholesterinemia in chronic nephritis; this may differentiate renal from cardiac edema. It does not parallel any of the symptoms of the nephritis, but there is always an abnormally large cholesterin content in the suprarenals in chronic nephritis of all forms. In sixteen diabetics only one presented much hypercholesterinemia, but in jaundice the hypercholesterinemia reaches high figures when the jaundice is from retention of elements of bile. It is within normal range in hemolytic jaundice. The highest figures for cholesterinemia were found in the cases of xanthelasma and in cholelithiasis, even in the absence of jaundice. They remark in conclusion that the decline in the cholesterin content of the blood in diabetes during a course of treatment with the waters at Vichy is a pregnant fact.

Epinephrin in Treatment of Vomiting of Pregnancy.—Rathery and Bordet report four cases of menacing uncontrollable vomiting in women at the second or third month of their pregnancy. Suprarenal insufficiency was evidently the main factor, as under epinephrin treatment their recovery was an actual resurrection in one or two days. The blood pressure was not altered. The epinephrin seemed to exert an antitoxic action, modifying the nervous system and the nutrition. It was given by various routes once a day, a total of from 4 to 8 mg. in the course of from four to seven days.

Diagnosis of Insufficiency of the Pancreas.—Labbé applied the Schmidt nuclei test in 117 cases of various pathologic conditions in the digestive apparatus, and devotes eight pages to tabulation of the findings. In thirty-seven cases the necropsy findings were compared with the results of the tests. His verdict is favorable for the reliability of the test provided the bag containing the pieces of meat is not passed along too rapidly before the nuclei can be digested. A delay of twenty-six hours is indispensable; under these conditions the findings harmonize with those of chemical examination of the stools. They not only throw light on pancreas functioning but they show the frequent participation of the pancreas in stomach, liver and bowel disease.

Symptoms from Lesions in the Corpus Striatum.—Lhermitte reviews and criticizes the literature on the syndromes for which the corpus striatum seems to be exclusively or partially responsible.

Archives des Maladies de l'Appareil Digestif, Paris

September, 1920, **10**, No. 10

*Dextrocardia from Megacolon. P. Carnot and G. Friedel.—p. 577.
Morbid Inspection of Tongue: Glossomania. G. Linossier.—p. 591.
*Pathogenesis of Membranous Pericolitis. G. Bolognesi.—p. 595.
Measurement of Pressure in Large Intestine and Its Clinical Value. E. Joltrain, P. Baufle and R. Coope.—p. 618.

Dextrocardia from Megacolon.—In the case reported by Carnot and Friedel, the enlargement of the intestine at the left flexure of the colon had pushed the heart over to the right side and displaced also the stomach, spleen and liver. The megacolon was resected, and the displaced organs slid back into place, but this induced such disturbance in the circulation that the man of 55 succumbed to a fatal syncope the next day. The case teaches the necessity for impeding the sudden return of displaced organs after resection of the megacolon; if the cavity left by the resection had been packed with cotton or the peritoneum inflated, so as to allow a more gradual resumption of normal conditions, the outcome might have been different.

Membranous Pericolitis.—Bolognesi has examined for membranes and for a wrapping up with omentum at all his operations on the cecum or appendix during the last two years, and found only two cases with pericolic membranes such as Jackson has described. He examined cadavers also from the same point of view and experimented on two dogs and four rabbits. His conclusions from this material and extensive review of the literature are that pericolic membranes are not due to inflammatory processes but may be congenital or acquired. The symptoms ascribed to them are in reality secondary, due to superposed colitis or appendicitis or mechanical obstruction.

Archives de Médecine des Enfants, Paris

November, 1920, **23**, No. 11

*Retention of Breast Milk. C. Porcher.—p. 625. Begun in No. 10, p. 569.
Hygienic Advantages of Circumcision. C. H. Sztark.—p. 655.
Osteopsathyrosis in Boy of Eleven. E. Lesné and Langle.—p. 662.
Hulls of Grains in Feeding Children. J. Comby.—p. 668.

Retention of Breast Milk.—Porcher tabulates data sustaining his assertion that if the mammary gland is not thoroughly drained of its contents, there is retention of some of the milk, and that this tends to check the secretion of the gland. Less solid matters pass into the milk so that the milk seems impoverished and watery; there is no more water than usual but less of other elements in the milk. The fat and the proteins in the milk which normally drain away in the milk, behave as foreign bodies in the mammary gland when retained. This explains many phenomena observed, and particularly the passage of lactose into the urine. Whenever there is lactosuria, we can be confident there is retention of milk.

Bulletin de l'Académie de Médecine, Paris

Oct. 26, 1920, **84**, No. 33

No Connection Between Peat and Cancer. G. Patein et al.—p. 158.
Calcified Hydatid Cyst of Liver. Chauffard and Others.—p. 160.
*Epidemic Dysentery in the Bible. E. Boinet and J. Sicard.—p. 166.
*Improved Technic for Antiserums. J. W. Howard and S. Rañó (Buenos Aires).—p. 169.
Amebiasis in Egypt. H. Legrand.—p. 172.

Epidemic Dysentery in the Bible.—Boinet and Sicard present evidence that the epidemic disease described in Samuel I, chapter 5, must have been dysentery: "The hand of the Lord was against the city with a very great destruction; and he smote the men of the city . . . and they had emerods in their secret parts." . . . "And the men that died not were smitten with the emerods; and the cry of the city went up to

heaven." They think that by the word translated "emerods" was meant the prolapse of the rectal mucosa which is so common with tropical dysentery in young and old. Hemorrhoids could not have been meant, as these never occur in epidemic form. The "mice that mar the land" mentioned in the next chapter probably represented merely a casual coincidence.

Preparation of Therapeutic Antiserums.—Howard and Raño refer to their method of supersaturation of the animals for production of antiserums, inoculating a series in turn. The technic is not described here, but they report two cases of tuberculous meningitis cured with their antituberculosis serum.

Bulletin Médical, Paris

Oct. 16, 1920, **34**, No. 49

Practical Urology. R. le Fur.—p. 911. Cont'n.
Resection of Peptic Ulcer. E. Mugniéry.—p. 914.

Oct. 23, 1920, **34**, No. 50

*Diagnosis of Pulmonary Tuberculosis. M. Léon-Kindberg.—p. 935.

Early Diagnosis of Chronic Pulmonary Tuberculosis in Adults.—Kindberg insists that only the demonstration of the tubercle bacillus will clinch the diagnosis. A negative verdict is not a diagnosis; the cause for the symptoms must be discovered. Sometimes it may be necessary to examine the sputum again and again, promoting expectoration. The hour must be carefully chosen and the sputum collected by oneself; sometimes another series of examinations at a more propitious time may be necessary. The agreement or disagreement between the clinical, bacteriologic and the radiologic findings will decide whether to persevere longer. The time and efforts will not be considered wasted when a final verdict is reached. "The ideal is close cooperation between the physician and the radiologist and between the physician and the bacteriologist, remembering that one swallow does not make a summer and one tubercle bacillus does not make tuberculosis." The experiences during and since the war have demonstrated that the supposed incipient tuberculous pulmonary process in the adult practically invariably corresponds to lesions which are extensive from the start or rapidly become so, and that these lesions are excreting bacilli.

Bulletins de la Société Médicale des Hôpitaux, Paris

Oct. 15, 1920, **44**, No. 30

*Acute Purulent Pleurisy. M. Renaud.—p. 1225.
*Lethargic Encephalitis. N. Fiessinger and H. Janet.—p. 1230.
*Induced Elimination by the Lungs. V. Cordier.—p. 1236.
Lethargic Encephalitis with Initial Epileptic Seizure. G. Guillain.—p. 1238.
Hysteric Narcolepsy Simulating Lethargic Encephalitis. G. Guillain and P. Lechelle.—p. 1239.
Epidemic Encephalitis and Meningeal Hemorrhage. P. Merklen.—p. 1241.

Acute Purulent Pleurisy.—Renaud denounces the practice of early and extensive operation for acute purulent pleurisy. Opening up the thorax has no favorable influence on the grave situation when the lesion is in the lung and the prognosis depends on the heart. It has the further disadvantage that it diverts attention from the causal disease and the condition of heart and lung.

Blunders in Diagnosing Lethargic Encephalitis.—In the three cases reported the course of the cases corrected the diagnosis to meningeal hemorrhage, diffuse sarcomatosis or cerebral tuberculosis.

Acetone Test of the Functioning of the Lungs.—Cordier has not yet found any practical application of the test he describes, but it permits the measurement of the test acetone eliminated in the expired air and in the excreta. A 20 per cent. solution of acetone is not toxic, and when injected it is eliminated by these routes very evenly. The subject breathes into a gas mask, and the expired air passing into a solution of iodin forms iodoform, recognizable by the odor and by the precipitate.

Gynécologie et Obstétrique, Paris

1920, **2**, No. 3

*Means for Distinguishing a Triple Pregnancy. E. E. Möller.—p. 145.
*Change of Vertex into Face Presentation. P. Couinaud.—p. 147.
Three Cases of Malformation of the Arm. A. Kotzareff.—p. 151.
*Intra-Uterine Treatment of Postpartum Infection. H. Vignes.—p. 161.

Diagnosis of Triple Gestation.—Möller reproduces a roentgenogram which shows three heads in the uterus. It was taken just before delivery. The triplets were all male, and each had its separate chorion and amnion.

Delivery with Kyphotic Pelvis.—The case described by Couinaud confirms that the difficulty is in passing the spine of the ischium. The vertex presentation changed spontaneously to face presentation during forceps extraction. This much facilitated delivery, and he suggests that this should be artificially imitated in case of kyphosis in the lumbar region.

Local Treatment of Uterine Infection After Delivery.—Vignes comments on the change in opinion as to the wisdom of intra-uterine intervention after childbirth. The main reasons for this change have been the war experiences demonstrating that streptococcus infection is peculiarly rebellious to local measures, and that nothing short of excision into sound tissue is able to exterminate it. He reiterates that nothing justifies entering the uterus after the first week. An antiseptic fluid might be injected in case of retained scraps of membranes or clots, but this must be done early and not repeated, and it is usually useless. The curet is likewise useless, and is generally dangerous, as the uterine infection is streptococcal in the majority of cases. It is impossible to scrape away all the mucosa of the uterus, and we know from war wounds that even the minutest scrap of infected tissue left is liable to light up the process anew. He emphasizes, "Remove the whole, or leave it alone altogether." The only exception he admits is in case of retention of a placental cotyledon.

Journal de Médecine de Bordeaux

Sept. 10, 1920, **91**, No. 17

*Primary Actinomycosis of the Conjunctiva. Brunetière.—p. 459.
Pluriglandular Insufficiency with Acromegaly. J. Caussimon.—p. 462.
*Spina Ventosa. Rocher and Lasserre.—p. 466.
*Acute Dysenteric Syndromes. R. Damade.—p. 473.

Primary Actinomycosis of the Conjunctiva.—Brunetière reports a case of a pseudomembranous process in the conjunctiva of a young man in which the correct diagnosis of actinomycosis was not made for two years; bacilli mistaken for diphtheria bacilli had been cultivated from the pus. The purulent conjunctivitis had developed suddenly, and thick pseudomembranes had formed in less than a week and kept reforming after removal. In the course of the two years iridocyclitis and complete atrophy of the eyeball had resulted in the loss of vision notwithstanding antitoxin treatment, antistreptococcus serotherapy and other measures instituted by the various ophthalmologists who had had the case in turn. Finally on suspicion of actinomycosis, confirmed by the microscope, iodid treatment was instituted and the pseudomembrane disappeared and the conjunctiva started on the road to healing.

Spina Ventosa.—Rocher and Lasserre scrape out the spongy tissue from inside the periosteum through a lateral incision under continuous aspiration, with immediate primary suture and continuous extension. The hand is strapped to a small board, the traction applied to a loop of stout silk passed through the center of the nail and pulp of the finger, the loop fastened to a slit in the end of the board. They have applied the treatment in nine hospital cases in which a rapid cure was desirable, the lesion isolated, and heliotherapy or spa treatment out of the question on account of the expense.

Acute Dysentery.—Damade emphasizes the importance of exact differentiation as this alone permits causal treatment. Comparison of the improvement under emetin, antiserums or vaccines with the dragging course when they are not used, imparts great confidence in their efficacy.

Journal de Radiologie et d'Electrologie, Paris

September, 1920, **4**, No. 9

Organic Life. Life of Worlds and of Atoms. A. Broca.—p. 385
Coolidge Tube in Radiotherapy. H. Béclère and Solomon.—p. 395.
Roentgenoscopy of Suboccipital Pott's Disease. Galland.—p. 404.
Radiopelvimetry. G. Haret.—p. 413.
Technic for Contrast Enema. H. Béclère.—p. 415.

Journal d'Urologie, Paris

1920, **9**, No. 5-6

*Incision for Phlegmon Above the Prostate. P. Bazy.—p. 335.
*High Frequency Current in Vesical Tuberculosis. A. Parisi.—p. 341.
*Papillary Tumor in Renal Pelvis. S. Rolando.—p. 381.
Angioma in Bladder Wall. P. Launay and others.—p. 385.

Treatment of Supraprostatic Phlegmon.—Bazy relates that a man of 50 was jolted on the pommel of the saddle, and pain and fever followed, with other symptoms suggesting pelvic cellulitis. It proved to be a phlegmon behind and below the prostate; the doughiness and pain were most pronounced on the right side, and the upper limits of the process could not be determined. Bazy had the bladder emptied and then he reached it by a suprapubic incision, and exposed its right side and part of the posterior aspect, separating the cellular and adipose tissue, keeping close against the bladder wall. He thus opened up a collection of reddish thick fluid. He did not disturb this, but worked curved forceps down through it to the perineum on the right side and pushed up the skin of the perineum. The skin was incised here and the end of a large drain was seized by the forceps and drawn up through the abdominal incision, which was sutured around it. Convalescence was brief and the cure complete.

High Frequency Current in Treatment of Tuberculosis of the Bladder.—Parisi reports ten cured and nine much improved among twenty-one patients with vesical tuberculosis, persisting after nephrectomy in seventeen of the cases. The interval since the nephrectomy varied from six months to six years. The proportion of cures was largest in the ulcerative form. The application was without direct contact with the tissues in all but two cases in which electrocoagulation was preferred. He adds that this spark method of *étincelage* might be applicable to residual tuberculous lesions in the ureter; by curing these, we ward off postoperative cystitis.

Primary Tumor in Kidney Pelvis.—In Rolando's case the pains in the kidney, the pyuria, and intermittent hematuria, with defective functioning of the kidney were explained by the tubular papillary adenoma, the calyx in question possibly having been malformed at this point. The tumor grew to fill the pelvis; hydronephrosis had followed, and then secondary infection.

Lyon Médical

Oct. 10, 1920, **129**, No. 19

Radium Therapy of Tumors in Ears, Nose or Throat. Lannois and Sargnon.—p. 807.
Oral Sepsis and Systemic Disease. J. Tellier.—p. 813.
*Tenderness of Muscles over Apical Lesion. Molle.—p. 838.

Tenderness in Muscles as Early Sign of Tuberculous Lesion Below.—Molle refers to the pectoralis and the trapezius. Reexamination of soldiers who had been suspected of tuberculosis months before has demonstrated that those among the suspects whose muscles in front of and behind the apex were tender, had all developed unmistakable tuberculous lesions in the interim. On the other hand, in those with normal muscles, their suspicious cough and bronchitis had harmlessly subsided and they were apparently healthy. The man is examined in a room alone with two physicians; one at the back palpates the muscles while the other, in front, watches the subject's expression for a grimace of pain or for the dilatation of the pupil which occurs when sharp pain is felt.

Oct. 25, 1920, **129**, No. 20

*Hysteric Pains in the Mastoid. F. J. Collet.—p. 847.
*Grafts of Dead Tendons. M. Durand.—p. 852.
*Sporotrichosis of Frontal Bone. H. Aloin and H. G. Vallin.—p. 859.

Hysteric Pain in the Mastoid.—In Collet's case the girl of 17 had required operative treatment of an acute right mastoiditis. A few months later she developed apparently the same syndrome on the left side, but the course of the case proved that hysteria was responsible for the clinical picture. Her previous experience with true mastoiditis rendered the hysteric syndrome exceptionally deceptive. The continued vomiting yielded only to a sham operation on the mastoid. Transient recurrence later and opening of a furuncle in the meatus restored conditions to clinically normal.

Dead Tendon Grafts.—Durand expatiates on the wide field for tendon implants now that Nageotte and Sencert have demonstrated that the tendons from the embryo taken from the uterus of a slaughtered cow are peculiarly adapted for grafting work, and that the fibrous portion of the tendon is all that is needed or wanted for the implant. This fibrous portion survives the death of the cells like the coral after the death of the coral polyps. The cells of the living organism in which the tendon is implanted grow into this fibrous framework and the new tendon thus becomes alive anew, part of the organism in which it has been implanted. They pass a thread through each end of the tendon and tie it, slightly stretched, to a glass rod, and place the whole in 90 per cent. alcohol, and seal. Eight or ten days later the alcohol is replaced with 60 per cent. alcohol; the tube is sealed anew, and the tendon is then ready for use. Some thus kept for seventeen months answered the purpose perfectly. The alcohol is rinsed out with tepid artificial serum when it is to be used. The implant is sutured in place with fine catgut, and the limb immobilized in plaster to relax the tendon. In Sencert's thirty-five grafts of the kind the implant was never cast off. Tendons with synovial sheaths are the hardest to manage.

Sporotrichosis of Frontal Bone.—The large abscess in the brow of the woman of 51 with spontaneous fistula and good general health suggested a syphilitic lesion, but glandular lesions in the neck and a recently developing pulmonary lesion pointed rather to tuberculosis. The histologic findings in a scrap from a gland were also taken for tuberculosis at the laboratory, but the true diagnosis was evident from the fungi in the sputum.

Nourrisson, Paris

September, 1920, **8**, No. 5

*Choleriform Diarrhea in Infants. A. B. Marfan.—p. 257.
*When the Newly Born Do Not Suck. P. Balard.—p. 277.
Bile Pigments in Putty Stools of Infants with Cow's Milk Dyspepsia. A. B. Marfan and H. Dorlencourt.—p. 286.
The Deficiency Diseases. H. Lemaire.—p. 289.

Choleriform Diarrhea in Infants.—Marfan remarks that this is generally primary. The one feature common to all the choleriform sets of symptoms seems to be the defective functioning of the epithelium lining the intestines. In Asiatic cholera and in cholera morbus, there is desquamation of the intestinal epithelium. In normal conditions this epithelium transforms the poisonous substances in the bowel or destroys them; when this toxicolytic function is arrested or vitiated, the unmodified toxins bring on the choleriform set of symptoms. Even when the source of the poisons is removed, by restriction to water, the damage done may persist for some time. The injury of the intestinal epithelium may be from microbian toxins or from arsenic or other drugs acting on the epithelium, or from the poisons generated in the course of pneumonia or miliary tuberculosis. In short, he concludes, the choleric syndrome is in digestive disturbances what uremia is in kidney disease, or asystoly in heart disease: It is the manifestation of a transient or permanent lapse of the toxicolytic function of the bowel epithelium.

When the New-Born Infant Does Not Suck the Nipple.—Balard has noted that when the woman is delivered in a cold room, it is often impossible to get the infant to suck at first. The generalized muscular atony resulting from the chilling may prevent the effort of sucking. The effort required for this is evident in the increased arterial pressure after nursing. The records of 1,500 infants show that the infants of mothers who had been given chloroform were later in sucking spontaneously than the infants of other mothers, sometimes fully twenty-four hours later. In certain rare cases the infant merely laps and chews on the nipple, without sucking. In such cases, artificial feeding is the only resort as the fluid flows more readily from the bottle than from the breast without the sucking traction. In one such case the child seemed mentally normal when reexamined ten months later. Every effort must be made to keep up the secretion of breast milk until the infant is able to take the breast normally. Sometimes a dose of castor oil will clear out the meconium and

after this the child will take the breast correctly. In others the anorexia may long persist, compelling gavage, and suggesting the possibility of malformation of the brain.

Paris Médical

Oct. 9, 1920, **10**, No. 41

Roentgen-Ray Treatment of Epitheliomas. Dubreuilh.—p. 265.
Iron in Therapeutics. A. Richaud.—p. 268.
*Cartilage Support for Sunken-In Nose. Dufourmentel.—p. 272.

Restoring Sunken-In Nose.—Dufourmentel makes a very small incision in the eyebrow and works a special bistoury through this buttonhole, not more than 1 cm. in length, and detaches, from beneath, the skin of the nose along the back down to the tip. Then through a 4 cm. vertical incision he resects the seventh costal cartilage to obtain a graft to support the skin of the nose. This cartilage implant is worked down into place through the small hole in the eyebrow. If not enough, a second strip of cartilage can be worked down also. The vertical incision permits the muscular fibers to be pushed apart without cutting them, so that no suture is required for the rectus muscle.

Oct. 16, 1920, **10**, No. 42

*Tardy Infantilism in Adults. P. Lereboullet and J. Mouzon.—p. 277.
Pyelography with Hydatid Cyst in Kidney, Forestier and Michon. —p. 282.
State of Mind After an Industrial Accident. P. Benon.—p. 285.

Tardy Infantilism in Adults.—The essential feature of this reversive infantilism is the loss of the sex characters in adults. It differs from abortive forms of myxedema and the adiposogenital syndrome, but the pituitary seems to be primarily at fault, and the frequency of syphilis in the antecedents is striking. There is much to sustain the assumption of injury of the pituitary from a syphilitic lesion in adjacent bone.

Presse Médicale, Paris

Oct. 16, 1920, **28**, No. 75

*Aneurysm of the Aorta. A. Martinet.—p. 733.
*Local Lesion in Vaccination. C. Levaditi and G. Banu.—p. 735.
*Treatment of General Paresis. P. Pagniez.—p. 736.

Aneurysms of the Aorta.—Martinet found only 5 among his 29 patients with aneurysm of the aorta whose history seemed to exclude the possibility of syphilis. It is found four times more frequently in men than in women, and the patients succumb in about equal proportions to cachexia, asystole or asphyxia and to fulminating hemorrhage or syncope. But long survival without much interference with ordinary life is possible even with enormous ectasia. The outcome is not known in 8 patients but 9 are still living after intervals of from sixteen months to twelve years, and the interval before death in the 12 cases with fatal termination ranged from three, ten, and sixteen months to seven years. He remarks that the "ethylate of syphilis" (syphilis plus alcoholism) is particularly dangerous.

Share of Local Lesion in Vaccination.—Levaditi and Banu report experiments on rabbits which demonstrated that the local reaction to inoculation with a vaccine has nothing to do with the production of antibodies but rather detracts from said production. The conclusion is evident that the choice should be given to vaccines which induce the minimum of local reaction. It is still unknown which tissues are engaged in production of antibodies, but they say that there is much to sustain Besredka's view that the intestinal mucosa is prominently involved, at least in the acquired refractory state.

Treatment of General Paresis by Induced Fever.—Pagniez refers to recent attempts in Germany to arrest the progress of general paresis by inoculation with malaria or relapsing fever. (Some of these attempts were mentioned in these columns, April 3, 1920, p. 988.) He thinks, with the writers, that the percentage of remissions is not high enough to be convincing, but that the way in which the remissions occurred seems to indicate something beyond a mere coincidence. Mühlens and Weygandt have had an interval since of only a few months, but in Wagner's case the remission after inoculation with malaria had persisted for three years. Pagniez cites thirty-seven cases in which this treatment has been applied, and mentions also Weichbrodt and Jahnel's experiments on rabbits with induced syphilitic chancres in the scrotum. The chancres retrogressed and subsided completely in a few weeks after the animals had been kept at a temperature of 41 C. for half an hour once or twice a day for several days. The central temperature of the rabbits reached 42 or 44 C. after half an hour in the incubator at 41 C. (105.8 F.). Although this result was not quite constant, yet it is accepted as demonstrating the sterilizing action of high temperatures on the vitality of the spirochetes in experimental syphilis. The deduction seemed clear that in general paresis inoculation of some disease inducing waves of high temperature might have a beneficial effect. Pagniez remarks in conclusion tertian malaria seems to offer the best prospects for success, but that, the patient's tolerance for quinin should be determined beforehand, also that arsphenamin treatment might be pushed at the same time. The German workers are now experimenting in this line, he says.

Oct. 20, 1920, **28**, No. 76

*Serologic Tests in Maternities. P. Nobécourt and Bonnet.—p. 745.
Blood Pressure Not Characteristic in Epilepsy. Hartenberg.—p. 748.

Oct. 23, 1920, **28**, No. 77

Emotions and Exophthalmic Goiter. G. Roussy and L. Cornil.—p. 753.
Pelvimetry with Roentgenoscopy. Haret and Grunkraut.—p. 756.
Present Status of Treatment of Soft Chancre. L. Cheinisse.—p. 757.

Serologic Test in Maternities.—Nobécourt and Bonnet found the response to serologic tests for syphilis parallel in the blood of both mother and babe in 89.69 per cent. of 447 tests. The response was positive in over 4 per cent. of all the women admitted to the maternity.

Oct. 27, 1920, **28**, No. 78

*Peripheral Sympathectomy for Ulceration. R. Leriche.—p. 765.
*Rôle of Calcium in Tetany. R. H. Kummer.—p. 765.

Periarterial Sympathectomy for Ulceration of Stump.—Leriche resected the sympathetic network in the sheath of the femoral artery for a stretch of about 7 cm. hoping to arrest a spontaneous trophic ulceration on the amputation stump. The aspect of the stump was perfect but it swelled when the man attempted to use an artificial limb, so he had been condemned to crutches for a year when the rebellious ulceration developed. After the peripheral sympathectomy the fifty-fourth day, the ulceration healed spontaneously and completely within a month, and the artificial limb can now be worn without the slightest inconvenience. Leriche adds that the patient had been presenting symptoms suggesting a loss of sympathetic balance, periods of vasodilatation with edema, coming and going abruptly, and chilliness.

Rôle of Calcium in Tetany.—Kummer discusses the theory which ascribes tetany to an upset in the metabolism of calcium, and the parathyroid theory, and describes some cases which apparently demonstrate that when there is a predisposition to tetany, ingestion of citric acid (oranges or lemons) causes such losses of calcium that attacks of tetany may follow. He describes two such cases in detail, discussing further the possible guanidin factor.

Oct. 30, 1920, **28**, No. 79

*Mechanical Function of the Appendix. H. Dufour.—p. 773.
*Familial Serotherapy. J. Chalier.—p. 773.
Calmette and Massol Technic in Wassermann Test. G. Vallet.—p. 775.
Temporary Metal Support for Fractured Bone. A. Tzaico.—p. 776.

Mechanical Rôle of the Appendix.—Dufour presents some evidence that stimulating the outside of an intestine or the peritoneum close to it is the most effectual means for starting peristalsis in it. When the appendix fills with feces and straightens out, its free end mechanically irritates the peritoneum and thus sets up peristalsis in the bowel in the region. An adherent or obliterated appendix is of no functional use in this respect, and hence its removal can be only an advantage. But the normal appendix should not be removed unnecessarily, he declares.

Familial Serotherapy.—Chalier calls attention to the prospects for serotherapy opened by cases such as one he describes in which a youth with severe and progressive hemophilia was given eleven intravenous injections of from 25 to 40 c.c. of his mother's blood serum in the course of eight months. This soon restored the practically bedridden patient to active life. A similar successful application of familial serotherapy was in the case of a woman of 30 with chronic hemorrhagic pur-

pura, the erythrocytes dropping to 800,000. A total of 77 c.c. of blood serum from her sister was injected in twenty days, and prompt improvement was soon evident—an actual resurrection. He thinks that this familial serotherapy should be tried in severe chlorosis and pernicious anemia of obscure origin.

Nov. 6, 1920, **28**, No. 81

*Gastrectomy for Cancer. V. Pauchet and M. Delort.—p. 793.
*The Blood Count in Infections. L. Audain.—p. 796.
*Azotemia and Uremia. M. Hélouin.—p. 797.
*Seasickness. L. Cheinisse.—p. 798.

Gastrectomy for Cancer.—Pauchet and Delort emphasize that gastric ulcer with pain, vomiting and hemorrhage is less frequent than the latent form, and it is almost impossible to distinguish between a recent ulcer and a chronic incurable ulcer. They declare that every chronic ulcer calls for operation, and that every active ulcer in persons of 40 or over should be operated on at once without wasting time on internal measures. They describe with thirteen illustrations the technic for gastrectomy with gastropyloric cancer, and the medical care of the patient before and after.

The Blood Count in Infections.—Audain explains how the invading infection is combated by polynuclears which flock from near and far when the region invaded is poor in lymphoid elements. When lymphoid elements abound in the region, these assume the local defense, and mononucleosis is the rule. If the lymphoid elements are not adequate to the task, the polynuclears assume it until the local mononucleosis is ready to take it up. Inflammatory processes in lungs, bladder and other regions with few lymphoid elements are accompanied throughout with polynucleosis, while those in the intestines, glands, spleen, etc., show mononucleosis. If a child with high fever and nothing to call attention to any special organ shows first slight polynucleosis and a few hours later persisting mononucleosis, we can suspect that the infectious process is in the bowel. As the number of leukocytes is an index of the resisting powers of the organism, it throws light on the prognosis as it rises or falls.

Azotemia and Uremia.—Hélouin tests every patient with albuminuria for azotemia, and has never found one capable of leading an active life when there was more than 2 gm. of urea in the blood. He reiterates that urea has a toxic action, and that the sodium hypobromite test shows not only the urea but all the other bodies analogous to urea generated by the reaction to the toxic action from the urea and by the pathologic condition otherwise. The xanthydrol test, on the other hand, shows only the urea.

Seasickness.—Cheinisse compares Nolf's explanation of seasickness with other theories in vogue, emphasizing that nothing resembles so closely the general condition in seasickness as moderate poisoning from pilocarpin, muscarin or eserin. Nolf shows that the symptoms of seasickness can be explained by the irritation of the vestibular nerves, from the movements of the ship, influencing the adjacent centrifugal bulbar nerves. All the manifestations of seasickness can thus be readily explained as a transient state of hyperexcitability of the bulbar autonomic system, and especially of the pneumogastric nerve. Those predisposed to vagotonia are usually the ones that develop seasickness, and by reducing the tendency to vagotonia with atropin, we can reduce the tendency to seasickness. He advises taking three or four pills of 0.5 mg. atropin during the course of the day or when the sea is rough to ward off seasickness on long voyages. But usually 2 mg. taken fractioned at half hour intervals just before and after the boat leaves, are generally sufficient. If this treatment is not begun until after vomiting has set in, the drug may have to be given subcutaneously. [Nolf is professor of physiology at the University of Liége and during the war was chief of the service of infectious diseases in the Belgian army. He read a paper at the 1919 meeting of the American Medical Association, on protein therapy, and is now in South America. Cazamian's endorsement of atropin combined with epinephrin in treatment and prevention of seasickness was mentioned in THE JOURNAL, Sept. 27, 1919, p. 1017. Pron has also commended tincture of belladonna as a preventive: 25 drops before the boat leaves, repeating to 100 drops in the twenty-four hours. Prof. A. Robin's atropin formula has long proved useful in combating vomiting, and might be tried in seasickness. The formula is: picrotoxin, 0.05 gm. with enough alcohol to dissolve it; morphin, 0.05 gm.; atropin sulphate, 1 cg.; extract of ergot purified (ergotin Bonjean), 1 gm., and 12 gm. of cherry laurel water. [Five drops to be taken in a little water ten minutes before the meal.]

Nov. 10, 1920, **28**, No. 82

*Correction of Displacement of Uterus. L. Dartigues.—p. 805.
*Sodium Silicate by the Vein. L. Scheffler and others.—p. 806.
*Improved Technic for Serotherapy. P. Brodin.—p. 807.

To Correct Displacement of the Uterus.—Dartigues shows in nine large illustrations his method for drawing up and holding the uterus in place by shortening the round ligaments. The latter are reached through the inguinal canal, the slightly curving transverse median incision allowing the soft parts to be stretched enough to permit access to the inguinal canal. The loops of the round ligaments thus drawn out on each side are sutured together in front of or just above the pubis, which restores anatomic conditions in the uterus and adnexa. The incision in the peritoneum is vertical. The first illustration shows his method for emptying the pelvis as much as possible beforehand: With the pelvis raised, he takes up a large fold in the abdominal wall on the median line; its action is something like that of a cupping glass, the suction drawing up out of the way the contents of the abdomen.

Sodium Silicate by the Vein.—A deficiency in silica seems to be one of the factors in the predisposition to arteriosclerosis and to tuberculosis. The research here related shows that sodium silicate can be given by the vein at need without harm. The dose generally used was 2 c.c. of a 1:1,000 solution, injected on alternate days, a total of ten injections; recommencing after suspension for a week or two. It was used for patients with arteriosclerosis, cardiorenal disease and angina pectoris as well as in tuberculosis. Among those improving under this treatment was one man of 53 confined to bed by the headache and vertigo of cerebral arteriosclerosis, who was restored to active life and can now read and walk without pains.

Improved Technic for Serotherapy.—Brodin has found that the immediate disturbances sometimes observed with serotherapy can be averted by diluting the serum with nine times its volume of 8:1,000 sodium chlorid solution. This practice is based on the discovery that the severe anaphylaxis which is otherwise almost inevitable in a dog sensitized by a previous injection of horse serum could be entirely prevented when a second injection of the serum was made by diluting the serum at the second injection with nine times its volume of 8:1,000 sodium chlorid solution. If the saline is injected a few minutes before the second injection of the serum, the protection is the same. See first abstract, p. 1755.

Progrès Médical, Paris

Sept. 11, 1920, **35**, No. 37

Globulin in Serum with Cancer. Loeper and J. Tonnet.—p. 397.
Trophic Changes with Lesions of Tibial Nerve. A. Barbé.—p. 397.
*Hermaphrodites in Art and Literature. Laignel-Lavastine.—p. 399.
Pneumococcus Malignant Endocarditis. J. Tapie and Rouquet.—p. 403.

Hermaphrodites in Art.—Lavastine entitles his article "Les androgynes et les gynandres," and reproduces a mural painting from Pompeii, "La toilette de l'hermaphrodite," and the large statue of the hermaphrodite in the National Museum at Rome, and discusses the various types of hermaphrodites, comparing them with two clinical cases described.

Sept. 18, 1920, **35**, No. 38

*Treatment of Myxedema. P. Sainton.—p. 409.
Examination of the Heart in Children. Nobécourt.—p. 410.

Treatment of Myxedema.—Sainton remarks that the treatment of myxedema has to be first tentative, testing the tolerance for thyroid treatment, watching the pulse and excitability. Then, the dose once established, this is kept up regularly, suspending it for one week during the month. Finally, the dose can be reduced and the intervals lengthened, as it rarely happens that the patient can ever get along without a little thyroid treatment. As a rule, he says, thyroid treatment is more effectual the later the myxedema had developed. Change of country, the seashore, and heliotherapy may

have a favorable influence on endemic myxedema. In all forms, calcium, arsenic, phosphorus and iron are useful adjuvants, alternating them.

Revue de Médecine, Paris

1920, **37**, No. 1

Raphaël Lépine (1840-1919). F. J. Collet.—p. 1.
*Anti-Anaphylaxis. P. Brodin, C. Richet and F. Saint-Girons.—p. 7.
*Sciatica and Arthritis. J. A. Barré and P. Le M. Duprey.—p. 16.
*Cardiac Dilatation. C. Esmein.—p 45
Studies of Ferments. H. Godlewski.—p. 56. Conc'n in No. 4, p. 249.

Salt Method of Antianaphylaxis.—Brodin finds experiments on dogs prove that injection of common salt counteracts anaphylaxis, in doses of not less than 0.8 gm. per kilogram body weight. Reference is made to the dechlorination of food in epilepsy and to the fact that salt introduced intravenously, reduces the toxicity of potassium iodid three and one-half times. The specific influence of sodium chlorid on the nerves is discussed, and the mechanism of this new method of anti-anaphylaxis. It is described further in an abstract opposite.

Sciatica and Sacro-Iliac Arthritis.—Barré elucidates the differential diagnosis by a thorough analysis of six cases. The treatment, besides salicylates; aspirin; puncture of tuberculous abscess if present, embraces aconite ionization (1 to 200 parts of distilled water), together with anesthetics injected at the joint, preferably in younger patients (cocain: 0.5 cg. per cubic centimeter of the solution; amount injected, from 1 to 3 c.c., or other anesthetics were used).

Cardiac Dilation.—Esmein describes four cases of cardiac insufficiency beneficially treated with ouabain, which seems preferable to digitalis with extreme dilatation and coupled rhythm.

1920, **37**, No. 2

Tuberculous and Syphilitic "Scrofula." E. Sergent.—p. 65.
Chronic Hemorrhagic Dyscrasia. P. E. Weil.—p. 81.
*Wassermann Reaction Outside of Syphilis. A. Touraine.—p. 103.

The Wassermann Reaction Outside of Syphilis.—Touraine marshals a number of tropical diseases which give a positive Wassermann. Leprosy gives the reaction in 47 per cent. of cases, the tuberculous form even in about 80 per cent. Pulmonary tuberculosis is known to have reacted in 197 out of 848 cases, lupus in 50 per cent. of cases. Even a prolonged ether or chloroform narcosis will give a positive Wassermann in about 25 per cent. of instances. A number of blood diseases (hemoglobinuria, leukemia) occasionally also contribute to the source of possible errors. Author warns against a one-sided conclusion on the basis of positive Wassermanns.

1920, **37**, No. 3

*Typhoid Bacillus in Jaundice. M. Garnier and J. Reilly.—p. 129.
*Pulmonary Echinococcosis. V. Cordier.—p. 151. Conc'n in No. 4, —p. 236.
*Pyelonephritis and Pyelocystitis. C. Richet, Jr., and Langle.—p. 168.
*Gangrene of Limbs. J. Baumel.—p. 179.

Typhoid Bacillus in Jaundice.—Garnier and Reilly attribute a number of epidemics of jaundice to typhoid and paratyphoid infection, supporting this theory on a very exhaustive study of four cases, the only ones of typhoid origin in 1,300 cases of acute jaundice. A number of bacterial analyses were made, yet they do not attribute to the typhoid bacillus a specific icterigenous efficiency, but credit it with a property of causing a biliary retention in the liver, which facilitates the specific splenic infection.

Pulmonary Echinococcosis.—Cordier found in the vicinity of Lyon five cases of hydatidosis. He studied the cysts, their rupture and the incidental injuries to the pulmonary tissue, which may give rise to pneumococcic or tuberculous invasion. This form of infection seems not hitherto to have been recognized.

Pyelonephritis and Pyelocystitis Caused by the Coli-Eberth Group of Bacilli.—Richet and Langle studied four cases of infection where they isolated coli-Eberth bacilli in the urinary passages. This exemplifies an invasion of the renal and vesical passages of an infection originating in the blood, which is a fact of great etiologic significance in disease of the urinary apparatus.

Gangrenous Infection of the Extremities.—Baumel discusses at length the etiology of gangrene in its various forms and the indications for the use of monovalent and polyvalent serums, the methods of injection, and combination of serotherapy with surgical treatment. He regards the results gained by the use of sera as fully conclusive as regards the protection of future armies.

1920, **37**, No. 4

Special Type of Spirochete Responsible for General Paresis. A. Marie and C. Levaditi.—p. 193.
Arsenical Erythema of the Ninth Day. G. Milian.—p. 222.

1920, **37**, No. 5

Paralysis of Hand. A. Pitres and A. Laffaille.—p. 257.
*Infectious Thrombo-Arteritis. J. Minet and M. Pelissier.—p. 287.
Delirious Hyperthymia. R. Benon.—p. 313.

Infectious Thrombo-Arteritis of the Ascending Aorta.—Minet and Pelissier studied the hyaline degeneration of the connective and amorphous tissues due to the disorganization of its elastic tissue. The explanation of the manner of development is the following: In the aorta were found patches of endo-arteritis, some undoubtedly old, others young. This indicates a previous attack of an infection with lesions and aneurysms, the scars of which could be demonstrated. When another infection occurred, it would attack localities of least resistance and cause small aneurisms, or occasionally a thrombus, which, little by little would develop into a polypiform mass, usually the last stage of the disease. The cases quoted show many varieties of these lesions notably the sclero-atrophic aortitis due to syphilis. It is possible, but not conclusively proved that rheumatic infection may give rise at least to the initial lesion.

Schweizerische medizinische Wochenschrift, Basel

Nov. 11, 1920, **50**, No. 46

*Auto-Urine Test for Tuberculosis. O. Imhof.—p. 1033.
Prism Glasses for Cosmetic Purposes. J. Strebel.—p. 1038.
Influenza Pneumonia with Artificial Pneumothorax. Mayer.—p. 1042.
*Lumbar Puncture with Lethargic Encephalitis. R. Fritzsche.—p. 1045. Conc'n in No. 45, p. 1018.

Auto-Urine and Autoserum Biologic Test for Tuberculosis.—THE JOURNAL described, Aug. 9, 1919, p. 456, Wildbolz' intradermal test with the patient's own urine. It is injected like the Mantoux intradermal tuberculin test, and further experience has confirmed its reliability. In this communication from Wildbolz' service, Imhof states that the responses were constantly negative in the nontuberculous and (with a single exception) constantly positive whenever there was an active tuberculous process. In some of the cases there were no clinical manifestations at the time to sustain the positive biologic reaction, but the course of the cases always brought signs of active tuberculosis before long. He applied the double auto-urine and autoserum tests to 100 persons, and usually the Mantoux intradermal tuberculin test at the time or later. The positive response is an infiltration, palpation of a lump in the tissues; redness and necrosis are disregarded. In fact, he examines for the response with shut eyes. The auto-urine reaction naturally depends on the kidneys being functionally capable of secreting; when this is not the case the autoserum answers the same purpose, but the response is never so pronounced as with the urine. Serum obtained after clotting of the blood does not elicit a response, confirming that the antigens are combined with the formed elements of the blood. He regards these auto tests as more reliable and more delicate than the findings with clinical and roentgen-ray examination. To avoid disturbing protein reactions with the blood serum, he precipitates the albumin with alcohol and heating for a minute or two. When the patient is in a condition of anergy, the intradermal test with his urine or serum may have to be applied to another person known to be tuberculous.

Lumbar Puncture in Lethargic Encephalitis.—Fritzsche did not find anything to suggest hypertension in the cerebrospinal fluid in his patients with epidemic encephalitis, and no relief followed lumbar puncture. In one case the condition seemed to have been aggravated by it.

Pediatria, Naples

July 15, 1920, **28**, No. 14

Vaccine Treatment of Typhoid. R. K.-Marinucci.—p. 641. Cont'd.
Desquamating Erythrodermia; Two Cases. A. Gismondi.—p. 665.

Policlinico, Rome

Sept. 20, 1920, **27**, No. 38

*Vaccine for Pertussis. L. Spolverini.—p. 1043.
Neuralgic Angiomas. G. Trogu.—p. 1046.
*Tests for Acetone. E. Pittarelli.—p. 1047.

Vaccine in Prophylaxis and Treatment of Whooping Cough.—Spolverini cites 408 cases of whooping cough reported by eight different clinicians in which vaccine treatment was tried with excellent results in a large proportion, but adds a record of over 100 cases reported by seven others in which no benefit was apparent. He describes the technic for the vaccine he has been using in ninety-eight children with pertussis and in forty-six others to whom it was given for prophylactic purposes. He refers further to 119 other children treated by three other clinicians with the same vaccine. When it was injected during the first ten days, during the catarrhal stage of the disease, marked improvement was the rule, the spasms becoming attenuated and disappearing. In a few instances brilliant results were obtained also at an advanced stage, but in the majority of cases, after transient improvement, the symptoms returned as pronounced as before. His experience suggests that the Bordet-Gengou bacillus starts the disease and opens the portals to other bacteria but the latter by the end of the third week crowd out the former, and hence a Bordet-Gengou vaccine is useless after that date.

Tests for Acetone.—Pittarelli describes some new reactions which reveal the presence of acetone, and calls attention in particular to a simple technic which shows up the acetone by the odor and tint of iodoform or the odor of carbilamin.

Riforma Medica, Naples

Aug. 21, 1920, **36**, No. 34

Chronic Osteomyelitis. L. de Gaetano.—p. 757.
Noncomplicated Anorectal Atresia. G. Bolognesi.—p. 759.
*Appendicectomy by Lumbar Incision. T. Meucci.—p. 760.
Calot's Fluid for Gonococcus Infection of Uterine Cervix. G. Lampronti.—p. 762.

Appendicectomy by Lumbar Incision.—Meucci operates on the appendix through a lumbar incision when there is a movable kidney to be fastened, or the extra long and large cecum has to be shortened. The latter is reached much more easily from the back. He also prefers this route when there is reason to assume that the appendix or an abscess lies far toward the side or back. A special advantage of the lumbar route is the lesser danger of postoperative hernia.

Brazil-Medico, Rio de Janeiro

Aug. 7, 1920, **34**, No. 32

*Reconstruction of Popliteal Artery. L. Renaux.—p. 509.
Polycystic Kidney. J. de Mendonça.—p. 510.
Medical Terms in Otology. J. Adeodato.—p. 511.
Tests for Cerebrospinal Fluid in Syphilis. G. de Moura Costa.—p. 517.

Aug. 14, 1920, **34**, No. 33

Lethargic Encephalitis. Teixeira Mendes and M. Studart.—p. 527.

Reconstruction of Popliteal Artery.—The gap of 17 cm. after resection of the popliteal aneurysm was bridged with a segment taken from the internal saphenous vein. A glass rod lubricated with petrolatum was introduced into each end of the vein, and the projecting end of the rod was worked into each stump of the artery. The implanted vein and the artery were then sutured together with fine silk over the glass rods. The rods were then withdrawn and the suture threads knotted. When the Esmarch bandage was removed there was a little hemorrhage between the stitches, but this was arrested by covering the sutures with a thin sheet of muscle tissue from the vicinity. The operation was a complete success.

Semana Médica, Buenos Aires

July 8, 1920, **27**, No. 28

Myotonic Form of Lethargic Encephalitis. J. Destéfano.—p. 33.
*Causes for Dystocia. E. A. Boero.—p. 36. Cont'n.
Tuberculin Treatment of Tuberculosis. L. K. Wimmer.—p. 44.
*Arsphenamin in Tabes and General Paresis. A. Bergman.—p. 55.
Influenza. M. Beatti.—p. 58.

July 15, 1920, **27**, No. 29

Research on the Phenolanilids. J. A. Sánchez.—p. 65.
Priority in Physiologic Research. F. L. Soler.—p. 71.
Differential Diagnosis of Confusional States. G. Bermann.—p. 87.
Plasmogenesis from Therapeutic Standpoint. V. Delfino.—p. 92.

July 22, 1920, **27**, No. 30

Fatal Case of Lethargic Encephalitis. Valls and Sánchez.—p. 97.
Priority in Physiologic Research. J. Guglielmetti.—p. 100.
Causes for Dystocia. E. A. Boero.—p. 109. Cont'n.
Toxic Action from Morphin and Neo-Arsphenamin by the Vein. E. Albina.—p. 122.

Dystocia from Tetanization of Bandl's Ring.—In the course of his long study of dystocia, Boero says of this type that the woman must be given a general anesthetic until the muscular ring relaxes completely. Any mobilization of the fetus or manipulations before this are liable not only to aggravate the tetanization but may lead to rupture of the uterus wall. The tetanization subsides under chloroform, while mere retraction of the uterus walls does not. The tetanization does not begin until the cervix is well or completely dilated, and dystocia from this cause is more common in multiparas, usually those with a normal pelvis.

Neo-Arsphenamin in Tabes and General Paresis.—Bergman's experience with four cases was disappointing, the tabes or general paresis having been apparently aggravated by the neo-arsphenamin. It was given in small repeated doses and it seemed to have aided in the destruction of nerve tissue.

Deutsche medizinische Wochenschrift, Berlin

Sept. 9, 1920, **46**, No. 37

Effect of Dyes on Bacterial Infections. Neufeld et al.—p. 1013.
*Theory of Chemotherapeutic Action. H. Langer.—p. 1015.
Filling of Lung Cavities with Animal Fat. R. T. Eden.—p. 1017.
Sessile Receptors in Anaphylaxis and Rôle of Autonomic Nervous System in Anaphylactic Syndrome. Arnoldi and Leschke.—p. 1018.
Plexus Injuries in Fractures of Clavicle. F. Lotsch.—p. 1019.
No Recurrence in Eight Years of an Intramedullary Angioma and of an Extramedullary Tumor. F. Schultze.—p. 1021.
Theory of the Lipoid Fixation Reaction. E. Meinecke.—p. 1022.
Occurrence and Staining of Influenza Bacilli. Messerschmidt.—p. 1023.
Contrast Filling of Tuberculous Fistulas. B. Döhner.—p. 1024.
Transmission of Malaria by Blood Transfusion. Oehlecker.—p. 1025.
Appendicostomy in Chronic Dysentery. F. Niklas.—p. 1026.
Flea Bites and Flea-Bite Urticaria. E. Hoffmann.—p. 1028.
The Internal Secretions. Asher.—p. 1028. Conc'n No. 38, p. 1056.
Otologic Hints for the General Practitioner. G. Brühl.—p. 1030.

Theory of Chemotherapeutic Action.—Langer recalls that the efficacy of a bactericidal agent depends on its power to penetrate the exterior of bacteria. The measure of its ability to do this is closely connected with its diffusibility. It is thus dependent on the electrolytic qualities of the semicolloidal solution. Picturing the exterior coat of bacteria as a net, then only such solutions will be able to penetrate the outer covering whose particles are small enough to pass through the meshes of the net. In the interior of the bacteria, under the influence of the substances contained in the body, these particles become enlarged and are thus prevented from being washed out of the bacteria, as they cannot pass through the meshes of the net. If the particles are very small, even though they become enlarged, they may still pass out through the meshes and thus exert only a very slight effect on the bacteria. On the other hand, if the particles are too large, they cannot penetrate the exterior of the bacteria and will therefore have no bactericidal action whatever. Derivatives with greater diffusibility are better adapted for bactericides, and derivatives with less diffusibility for chemotherapeutic antisepsis.

Münchener medizinische Wochenschrift, Munich

Aug. 27, 1920, **67**, No. 35

*Activation of Antigens. H. Much.—p. 1005.
Chronic Influenza. W. Hildebrandt.—p. 1008.
Diagnosis of Pericardial Effusions. K. Traugott.—p. 1010.
Tardy Agglutination in Typhoid. Hüne and Bulle.—p. 1011.
Drug plus Phototherapy in Sexual Diseases. Breiger.—p. 1012.
Cure of Dermatomyositis with Arsphenamin. Kroemer.—p. 1015.
Treatment of Syphilis with Mercury-Arsphenamin. Zirn.—p. 1017.
A Helpful Formula in Phototherapy. L. Zimmermann.—p. 1019.
Vaginal Electrode for Thermopenetration. K. Kayser.—p. 1020.
*Steinach's Attempts at Rejuvenation. B. Romeis.—p. 1020.

Activation of Antigens by Dilution and Distribution.—Much discusses some biologic laws which he thinks govern vaccine therapy. He explains as follows how injection of the same substance that produces the disease can benefit the patient: (1) The animal organism can produce antibodies only when stimulated by activated substances. In the patient the antigens are usually not sufficiently activated, for the reason that they are in an impacted condition and their molecules are not

loosened up. The antigen is locked up, as it were. If unlocked antigens are introduced into the body of the patient he can defend himself against them by the production of antibodies, provided the antigens are administered in an innocuous form and in harmless quantities. (2) The fully potent antigen may furnish too strong a stimulation. Overstimulation causes no reaction, whereas milder stimulation does do so. (3) The isolated position of the focus of infection with reference to the blood and lymph may make the formation of antibodies impossible. The activated antigens, however, that are injected enter the blood and lymph and the body can react to them. Vaccine therapy thus depends to a great extent on the principle that the antigens by being highly diluted exert a greater effect. Another important principle is distribution. A pathogenic agent may act through several of its different elements. Against each substance or partial antigen a partial antibody is formed. Immunity is not complete unless all the partial antibodies are present. There are two forms of immunity: cell immunity and blood immunity. Cellular immunity is the more important. With staphylococcus infection, it may occur that the partial antibodies against the staphylococcus fat are present, whereas those that would act against the staphylococcus protein are absent or insufficient; in this case the immunity would be incomplete. The testing of immunity must, therefore, be done with partial antigens and not with complete antigens. Another important effect of the separation or distribution of the antigens is that they thus become more highly activated. The various partial antigens, when mixed together (whether naturally or artificially), exert an influence on each other. Their effect may be thus much lessened or even destroyed entirely, for which reason distribution into partial antigens is necessary in order to secure a thorough immunologic test.

Steinach's Attempts at Rejuvenation.—Romeis warns against too great optimism in connection with Steinach's experiments. The sexual glands, though they may possess extraordinary importance in the animal organism, are, after all, only a part of the whole, just as is the case with the other organs of internal secretion: the thyroid, thymus, pineal body, etc. The latter, also, undergo senile changes and require rejuvenation if the whole body is to be rejuvenated. The same thing is true of all the organs of the body.

Wiener klinische Wochenschrift, Vienna

March 11, 1920, **33**, No. 11

Oral Auscultation. F. Hamburger.—p. 227.
Periodicity of Manifestations in Gastric and Duodenal Ulcer. F. Brunn and others.—p. 228. Reply. R. Fleckseder. No. 13, p. 272.
Epidemic Encephalitis. L. Dimitz.—p. 231.
Echinococcus Cysts in Lungs. A. Arnstein.—p. 234.

March 18, 1920, **33**, No. 12

Aims of Instruction in Forensic Medicine. F. Reuter.—p. 245.
Diplococcus Pneumoniae Infection of Pharynx. A. Heindl.—p. 250.
Symptomatology of Hemiplegia. H. Faschingbauer.—p. 251.
Diagnostic Import of Lateral Thoracic Glands. Plaschkes.—p. 252.
Resection of Perforated Gastric Ulcers. C. Massari.—p. 254.

March 25, 1920, **33**, No. 13

Restoration of Law Making Measles Notifiable. R. Jahn.—p. 263.
Rhinogenous Origin of Retrobulbar Neuritis. M. Hajek.—p. 267.
Effect of Drugs on Pulse in Heart Block. Strisower.—p. 269.
Scabies Norwegica. L. Kumer.—p. 271.
Periodicity in Gastric and Duodenal Ulcer. R. Fleckseder.—p. 272.

Zentralblatt für Chirurgie, Leipzig

Aug. 28, 1920, **47**, No. 35

Closure of Artificial Anus. Special Technic for Resection of Spur. V. von Hacker.—p. 1066.
*Celluloid in Operations on the Skull. A. Fraenkel.—p. 1072.
*Two-Stage Resection of the Stomach. J. Oehler.—p. 1076.

Use of Celluloid in Plastic Operations on the Skull.—Fraenkel states that his experiments have proved that celluloid implants to cover skull defects show no changes months after their application, nor do they cause any reaction in the neighboring tissues, provided they have been made to fit tightly in place. He mentions in particular two severe cases of cortical epilepsy in which the results were good seventeen and twenty-five years after operation. Cysts and scar tissue cannot form if the implant is not movable. He condemns as pernicious the modification recommended by some of making perforations in the celluloid plates, as this allows growth of scar tissue through the plate, and adhesions. Furthermore, the tissue growing through the plate softens and decomposes the celluloid. Hinterstoisser, who has had wide experience with the method, has never been compelled to remove from a skull defect a depressed celluloid plate. Failures are, however, sure to occur if plates are inserted before the pyogenous infection has completely subsided. The special field of application of this form of heteroplasty lies in traumatic epilepsy. The less the dura has been injured, the greater the tendency to spontaneous regeneration of bone to fill the gap.

Operative Treatment of Gastric Ulcer and Cancer.—Oehler endeavors, in carcinoma of the stomach, to make surgical intervention less dangerous by operating at two sittings whenever possible. In three recent cases of carcinoma of the pylorus region gastro-enterostomy was performed first and resection later, and he was surprised and delighted to see how easily the patients withstood the operation. The fact that they are already much weakened by their sufferings points conclusively to the two-stage operation if such is possible even for gastric ulcer.

Sept. 4, 1920, **47**, No. 36

*Hypertrophy of Mammary Gland After Prostatectomy. E. Kondoléon.—p. 1098.
Peculiar Gunshot Wound of Liver. Von Fink.—p. 1099.
*Operation for Gastroptosis. Vogel.—p. 1101.
*Dilatation of Esophageal Stricture. A. Schröder.—p. 1102.
"Effect of Anesthesia on Inflammations." F. Breslauer.—p. 1104.

Enlargement of the Mammary Gland After Prostatectomy.—Kondoléon reports two cases in which, following prostatectomy in old men (aged 70), some hypertrophy of the mammary gland took place. It remains for further clinical observation and experimental tests to determine whether there is an inner connection between the prostate and the mammary gland.

Operation for Gastroptosis Using Round Ligament of Liver.—Vogel describes his method of operation which resembles that of Perthes, an abstract of whose article appeared in THE JOURNAL, Sept. 25, 1920, p. 905. As compared with the Perthes method of suspending the stomach with the ligament, Vogel claims for his procedure that it provides a simpler way of fastening the ligament to the stomach, and thinks also that the results may possibly be more permanent.

Dilatation of Esophageal Stricture.—Schröder recommends the following procedure in treating difficult cases of stenosis. The patient swallows a silk thread tied to a shot; if the larger sizes of shot cannot be swallowed, smaller sizes must be tried. The silk thread is brought out through a gastrostomy opening, and two medium-sized catgut strings are wound around it, which is the distinguishing feature of the method. The silk thread, thus somewhat enlarged, is drawn through the stricture and left in place for twenty-four hours, during which time the catgut threads in the esophagus swell and thus widen the opening. For the next few days, another catgut thread is added every day, being twisted about the cord passing through the stricture, until it equals the size of a No. 18 sound (6 mm.). The further treatment is continued with sounds passed through the mouth. When the boy of 6, whose case is described in detail, was dismissed as cured, a No. 33 sound, 11 mm. in diameter, could be passed through the esophagus.

Zentralblatt für Gynäkologie, Leipzig

Aug. 28, 1920, **44**, No. 35

*Abdominal Diagnosis. J. Halban.—p. 969.
Multiple Myomas and Bilateral Tubal Tuberculosis with Ovum Embedded in Fimbrial Serosa. Schröder and Rau.—p. 972.
Case of Ileus in Childbed. P. Kreis.—p. 976.
Necrosis of Myosarcoma of Uterus Following Roentgen Irradiation. H. Hinterstoisser.—p. 977.

Diagnosis of Ascites.—Halban states that he has found it much easier to demonstrate the presence of small quantities of fluid in the abdomen when the patient is erect than when in a recumbent position, for in the latter position small quantities of fluid become distributed throughout the abdomen. In the erect posture, on the other hand, all the fluid in the abdomen flows downward, thus forming a single mass of fluid, the upper surface of which is horizontal and plainly demarcated.

Hyperalgesia of the Abdominal Wall.—Halban emphasizes that there may be hyperalgesic areas in the abdominal wall, especially in nervous women, without the slightest alterations in the internal organs. Severe pains in the abdominal wall often lead to the false assumption of inflammation of the adnexa or the appendix. Pinching folds of the skin on either side, comparing the findings, will usually differentiate hyperesthesia of the abdominal wall. To test the musculature he lays his hand lightly on the painful region with the patient in a recumbent position. Then the patient is requested to raise suddenly the upper part of the body. This causes contraction of the abdominal muscles. With the hand, pressure is now exerted on the contracted muscles, which elicits a sharp pain and makes it possible to decide whether the pain has its seat in the skin or in the musculature. If the patients can be assured that the pains are confined to the abdominal wall and that the internal organs are not affected, their mind is set at rest, and the condition can be combated by hydriatic measures and antineuralgics.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Sept. 25, 1920, **2**, No. 13

*Tetanus After Injury of the Eye. J. Van der Hoeve.—p. 1173.
*Artificial Paralysis of the Eye. G. F. Rochat.—p. 1177.
*Malaria Induced by Convalescent's Serum. H. Van Dijk.—p. 1181.
*Danger from Auscultation. G. A. Prins.—p. 1185.
Prosthesis for Radial Paralysis. I. Oljenick.—p. 1188.
Congenital Tumor on Sacrum. J. F. O. Huese.—p. 1191.

Tetanus After Accidents to the Eyes.—Van der Hoeve has encountered two cases of this kind. One proved fatal, but in the case of a small boy the outcome was favorable. In both the injury was from splinters of wood, and tetanus bacilli were found on the splinters, or tetanus toxin rapidly fatal for mice. Tetanus after injury of the eye has proved fatal in about 82 per cent. of the cases, according to Wagenmann's compilation of fifty and Gastelain's quite recent twenty-two cases. Metal splinters are less likely to entail tetanus than wood, as tetanus bacilli can retain their virulence on wood for years. One of the two cases reported is the more alarming as the wood splinter had made merely a slight superficial wound, involving only the conjunctiva and cornea. No case of tetanus after superficial injury from an iron splinter is known. Specialist examination at once in all accidents of the eyes is imperative when the practitioner is unable to investigate the wound thoroughly. In one of the cases reported, the practitioner had failed to discover the splinter of wood. Van der Hoeve emphasizes the necessity for preventive tetanus antiserum treatment whenever the orbit, eyeball or conjunctiva has been injured with wood.

Induced Paralysis of Ocular Muscles for Operations on the Eyes.—Rochat has been much pleased with the results when 1 c.c. of a 2 per cent. solution of procain with epinephrin is injected into the orbicularis. This relaxes the muscle and the eye keeps still, in marked contrast to the movements of the other eye.

Warning Against Malaria in Transfusions.—Van Dijk had an influenza patient develop typical malaria after she had been treated with serum from a convalescent from influenza. It was learned later that the apparently sound donor had been under treatment for recurring malaria a few months before. No parasites could be found in the donor's blood but the malaria plasmodium was cultivated from the blood of the patient injected. She had never presented any symptoms suggesting malaria before. The chill and fever developed the eighteenth day after the injection of serum, and returned every other day for nearly two weeks before they were arrested.

Danger of Auscultation.—Prins remarks that every one is trained to beware of percussion during hemoptysis, but he is convinced that the danger from light percussion is less than from the deep breathing, etc., required for auscultation.

Hospitalstidende, Copenhagen

Sept. 22, 1920, **63**, No. 38

Etiology of Scoliosis. P. Lorenzen.—p. 585.
*Injury of Brachial Plexus from Vertebra. A. V. Neel.—p. 591. Conc'n in No. 39, p. 601.

Symptoms Suggesting Cervical Ribs.—Neel reports five cases in which slowly progressing atrophy of the muscles of hand and forearm and neuralgic pains in the arm and a tender bony prominence in the supraclavicular fossa suggested injury from cervical ribs. In one of the cases the disturbances developed after a joint disease elsewhere. Instead of the expected cervical ribs, however, the roentgen ray revealed an abnormally large transverse process in the seventh cervical vertebra. This pressed on nerves and thus injured the brachial plexus. Under forced feeding to fatten somewhat, with local application of heat and electricity, the pains and paresthesia subsided and the muscles showed less atrophy in some of the cases; others were not modified by these measures. The patients were all women between 32 and 51, and operative treatment was advised for the younger woman. Some of the patients were under observation for a year or two, so that other causes for the disturbances could be excluded. He adds that the preferable technic for operating is the Streissler method, and he advises this without delay when the condition is diagnosed early in young working people.

Sept. 29, 1920, **63**, No. 39

*Pathogenesis of Bromid and Iodid Acne. H. Haxthausen.—p. 606. Conc'n in No. 40, p. 617.

Pathogenesis of Iodid and Bromid Acne.—Haxthausen's extensive research seems to indicate that it is not so much the reaction of the organism itself that is responsible for the acne as the chemical changes which the iodid and bromid undergo in the organism.

Oct. 6, 1920, **63**, No. 40

*Picrocarmin in Contrast Staining. V. Jensen.—p. 626.

Picrocarmin.—Jensen extols the fine differentiation obtained with the technic for contrast staining which he describes. The main feature is the combination of two other technics, using both a salt of picric acid and free picric acid with the carmin. This combination keeps perfectly for months and perhaps years. This stain is also preferable to use instead of the gram stain with the Claudius technic.

Svenska Läkaresällskapets Handlingar, Stockholm

Sept. 30, 1920, **46**, No. 3

Individual, Familial and Racial Predisposition to Tuberculosis. H. Lundborg.—p. 73.
Heredity of Deafmutism, and Mendel's Laws. H. Lundborg.—p. 88.
Peoples and Cultures by Light of Racial Biology. H. Lundborg.—p. 92.
Hydronephrosis Caused by Accessory Renal Vessels. G. Ekehorn.—p. 96.

Ugeskrift for Læger, Copenhagen

Sept. 23, 1920, **82**, No. 39

*Gonococcus Peritonitis. H. O. Wildenskov.—p. 1227.
Fungus Growth in Morphin Solutions. A. Norgaard.—p. 1235.

Sept. 30, 1920, **82**, No. 40

Case of Universal Interstitial Emphysema. E. E. Andersen.—p. 1251.

Gonococcus Peritonitis.—Wildenskov reports the eleventh case of gonococcus peritonitis at a Danish public hospital, all in women, and calls attention to the arrest of menstruation as an early symptom. Tenderness in both iliac fossae, early meteorism, and the lack of stiffening of the abdominal wall are also instructive in the diagnosis of the toxic form. The prognosis is favorable with this toxic form, and even with the infectious form it is more favorable than with peritonitis of other origin. The mortality was only 16.6 per cent. in the thirty-six operative cases on record. He adds, "Expectant treatment at first, but if conditions grow worse instead of better, operate at once."

Oct. 7, 1920, **82**, No. 41

Microscopic Findings in Mucosa During Phototherapy of Lupus. K. A. Heiberg and O. Strandberg.—p. 1281.
Scrap of Bacon Aspirated into Trachea. F. Jensen.—p. 1290.

Oct. 14, 1920, **82**, No. 42

*Tuberculous Meningitis in Adults. C. Holten.—p. 1307.
Chronic Cases in Public Hospital. K. H. Krabbe.—p. 1312.

Tuberculous Meningitis in Adults.—Holten was impressed with the great difference between the clinical picture of tuberculous meningitis in children and in adults as he studied the disease in thirty adults in an institution for the tuberculous. All ages were represented between 16 and 55.

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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, NO. 26 CHICAGO, ILLINOIS DECEMBER 25, 1920

THE NATURE OF ARTHRITIS AND RHEUMATOID CONDITIONS

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Recently there were reported[1] the results of the treatment and intensive study of 400 cases of chronic arthritis in the army. This report dealt with the conditions encountered, the methods of treatment employed, the particular lines of investigation undertaken, and the general recommendations and conclusions that could be dependably based on them.

The wealth of clinical material and the lines of further thought and work suggested by these studies made it difficult to do justice to the opportunity and develop all its possibilities. Apart from the practical conclusions drawn, possibly one of the most important results achieved lay in contributing to an hypothesis on the nature of rheumatoid disabilities at large as a premise from which further effort could profitably proceed. Owing to the conditions under which the work was conducted and the purposes in view, it was deemed inappropriate to include in the above report more than the ascertained facts and closely related material. An attempt will therefore be made here to present certain points of a clinical nature, not included in the previous report, together with certain theoretical aspects, in the effort to narrow our conceptions of the problem, and hence of the field to be studied. In attempting this, some repetition of data already published will be unavoidable. It is desired to classify the general nature of the pathologic processes concerned rather than to attempt further detail at this time, and it is of course to be appreciated that the hypothesis here presented is subject to the modifications of future work now in progress.

It is certain that rheumatoid conditions are among the most common ailments that affect mankind, if indeed they do not take the leading place. It may not be appreciated by most physicians who come in contact with this omnipresent condition that arthritis is one of the diseases of which we have the oldest historical evidence. It has been shown, as one writer has put it, that it was the disease *par excellence* of the old Egyptians, and it is probable that in ages long preceding them it had already induced widespread suffering among the human race. Thus, certain of the human remains of the stone age[2] show advanced arthritic processes.

Notwithstanding the antiquity and omnipresence of this disease, however, it has remained until recently one of those conditions in which all forms of therapy are of small avail. It is true that among the ancients of Greece and Rome the benefits to be obtained from hydrotherapy were already appreciated, and it is alleged that the important influence of focal infection was known to some of the fathers of medicine. This relation was also pointed out in 1819 by Benjamin Rush;[3] but its broad application was delayed until emphasized and expanded, more particularly, by some of the Boston school of orthopedists. Since then it has been worked out in a wealth of detail by many observers. At present, therefore, the most signal individual advance in the treatment of arthritis is probably that based on appreciation of the rôle which focal infection bears to this disease. This rôle is now so widely recognized that it needs no emphasis among the better posted element of the profession. Indeed, the pendulum has swung the other way, and radicalism along this line has reached the point at which not only all cases of arthritis but many other diseases have been assumed on insufficient evidence to be referable to this cause. As a result of this, many surgical operations have been needlessly performed and, for example, not a few sufferers have been caused added disability by extraction of many or all of their useful and sound teeth. The attempt is now being made by physicians to find a mean between these extremes, and the opportunity to study arthritis on a large scale in the army was utilized partly in seeking information on the etiologic and therapeutic limitations of the doctrine of focal infection.

Although the importance of focal infection was abundantly illustrated and is not to be in any sense minimized, the subjects of this study showed an interesting and large independence of it. It became clear that, in these younger subjects, focal infection played an analogous but lesser rôle as compared with its relation to the bulk of cases encountered in civil life. Added importance was given to the view that with chronicity the results of the removal of focal infection become less noteworthy, although there are important exceptions to this. In a regrettable number of chronic cases, and in some early instances the removal of focal infection may be of no avail whatever. The important rôle, as shown by our statistics, played by exposure and wet, and the evidence adduced by studies of the sugar tolerance, to be mentioned later, strongly suggest that this disease is not infrequently referable to causes

1. Pemberton, Ralph, and Robertson, J. W.: Studies on Arthritis in the Army, Based on Four Hundred Cases, I, Preamble and Statistical Analysis, Arch. Int. Med. **25**: 231 (March) 1920. Pemberton, Ralph, and Tompkins, Edna H.: II, Observations on the Basal Metabolism, ibid., p. 241. Pemberton, Ralph, and Foster, G. L.: III, Studies on the Nitrogen, Urea, Carbon Dioxid Combining Power, Calcium, Total Fat and Cholesterol of the Fasting Blood, Renal Function, Blood Sugar and Sugar Tolerance, ibid., p. 243. Pemberton, Ralph, and Buckman, T. E.: IV, Studies in the Relation of Creatin Metabolism to Arthritis, ibid. **25**: 335 (April) 1920. Pemberton, Ralph: V. Roentgen-Ray Evidences, Clinical Considerations, Treatment, Summary, Conclusions and Clinical Abstracts of Cases Studied, ibid., p. 351.

2. Osborn, H. F.: Men of the Old Stone Age, Ed. 3, New York, Charles Scribner's Sons, 1918.

3. Cited by Hammond, R.: Am. J. M. Sc. **156**: 541 (Oct.) 1918.

other than focal infection. Although the last named may generally play the precipitating rôle, there is reason to believe that we are now able at least to outline some of the true pathologic basis of arthritis.

THE PATHOLOGIC BASIS OF ARTHRITIS

Many instances in the large series mentioned above were caused by dysentery, influenza, pneumonia and other conditions which added importantly to appreciation of the fact that infections of diffuse types may inaugurate the same results, although the most frequent type is that resident in teeth, tonsils and so on. It is clear, however, from some of these cases, that the arthritis may be referable not solely to the apparently originating factors of dysentery, influenza or exposure, because some cases in which these were the well punctuated causes made a later significant improvement when demonstrable foci were removed. It therefore appears that foci otherwise inoperative may be made operative by a severe illness. The only alternative to this is that they have themselves been actually produced as the result of this illness. The probable mechanism here is that the original disease or exposure induces the situation which in other cases foci themselves may cause; on the basis of this situation, foci then act to perpetuate conditions for which they were not originally responsible.

Before proceeding to a discussion of the substratum of pathology which these studies have strongly indicated, it may be well to consider some of the other agents that influence the disease.

It has long been recognized by critical students of arthritis and by many of those most familiar with the various clinical applications of the roentgen ray, that exposure of an arthritic subject to this agent is sometimes productive of profound systemic benefit. It was observed by Edsall and Pemberton [4] in 1907 in two cases of advanced chronic arthritis in which the metabolism was studied when under the influence of the roentgen ray, that this benefit ran parallel to the greatly heightened catabolism which this agent produces. Therapeutic use might be made of this observation, although this has as yet been limited in its application because of the associated dangers.

The principle on which this effect depends is further illustrated by the action of radium, another agent which, according to all the evidence at our hand, hastens metabolism. Benefit is sometimes seen from the use of thyroid extract, one effect of which, as clearly proved, is to increase metabolism. Finally, muscular exercise, even in the form of massage, has long been depended on as an adjuvant and can be easily shown to be of real influence therapeutically when it can be employed. Here again the influence of this agent is to increase metabolism. It is probable that arsenic, within limits, acts much in the same way. Finally, attention must be called to one type of stimulus whose effect is not generally known, although long familiar to some close students of arthritis. This is in connection with those changes of metabolism, as yet imperfectly worked out, which follow on periods of excitement or such psychic disturbance as may, in the invalid, accompany a long railroad journey, anticipitation of an operation and the like. It is pretty well accepted that in profound mental disturbances, such as fear and presumably other forms of excitement, there is involvement of the endocrine system. Not a little experimental evidence has been advanced to relate an important rôle in this connection to the suprarenals at least. It therefore must be conceded that some of the foregoing factors may act through the intermediation of the ductless glands; but whatever the mechanism, the net result is that agents which hasten the body metabolism have beyond all possible doubt an influence for the better, especially in certain selected cases of chronic arthritis.

An attempt was made at U. S. Army General Hospital No. 9, at Lakewood, N. J., to investigate this phase of the question by studying the basal metabolism. Twenty-nine cases were investigated by Miss E. H. Tompkins and the writer, and in 20 per cent. of them the basal metabolism was found to be slightly below normal. Taken by itself, this fact can hardly be given much significance; but in conjunction with a number of other small departures from normal, it is probably justifiable to give it more value, as will be attempted later.

Studies were also carried out at the same hospital with Lieut. Goodwin L. Foster of the Sanitary Corps on the urea, nonprotein nitrogen, calcium, total fat, cholesterol and the carbon dioxid combining powers of the fasting blood. These were all found to fall within normal limits. A long series of observations was also conducted on the nephritic functions as measured by the so-called nephritic test meal, and these too were found to fall essentially within normal limits. When compared with a series of normal individuals under exactly comparable conditions, the arthritics showed a slight lag in the elimination of water, nitrogen and salt; but this was so inconsiderable as to make it appear that renal function at large is essentially undisturbed in chronic arthritis. These evidences might be interpreted as showing a very mild disturbance of nephritic function, but so mild, indeed, as to be regarded as only a sequel to underlying pathologic processes and in no sense causative of the symptoms of the disease.

There can now be mentioned, however, a line of investigation which gave more interesting results. The writer has previously demonstrated [5] a definite relation between the intake of food and the incidence and perpetuation of the symptoms of chronic arthritis. This relation can be put to therapeutic application in selected cases. Although the respective rôles of the three foodstuffs protein, fat and carbohydrate have not been entirely worked out, the evidence strongly suggested that at least carbohydrate was caught up in some important way in this connection. With the aim of determining this definitely, studies were therefore undertaken by Lieutenant Foster and the writer on the blood sugar and sugar tolerance in chronic arthritis. Without going into details, which have been fully reported elsewhere,[6] it is sufficient to say that arthritics show a lowering of the sugar tolerance more or less proportional to the severity of the disease. Quite apart from arthritis, a factor which seems frequently to cause a lowered sugar tolerance is precisely that which seems very frequently to cause arthritis, namely, focal infection; and it was possible to demonstrate in certain cases a striking return to normal of a lowered tolerance coincident with removal of the focus and recovery of the subject. The accompanying chart will serve graphically to illustrate the return of a greatly lowered sugar tolerance to nor-

4. Edsall, D. L., and Pemberton, Ralph: The Nature of the General Toxic Reaction Following Exposure to the X-Rays, Am. J. M. Sc. **133**: 285, 426, 1907.

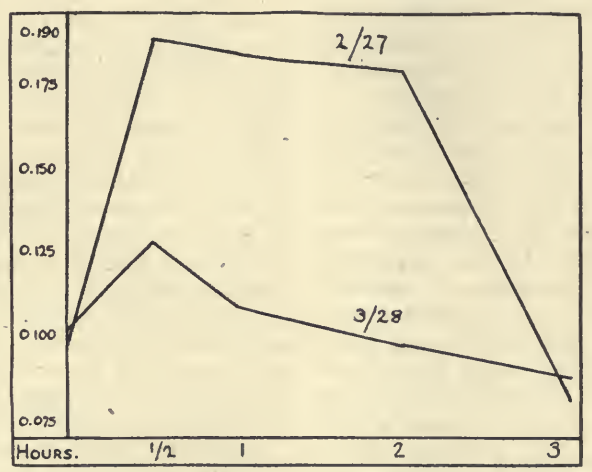
5. Pemberton, Ralph: Am. J. M. Sc. **153**: 678 (May) 1917.

6. Pemberton, Ralph, and Foster, G. L.: Studies on Arthritis in the Army, Basted on Four Hundred Cases, III, Studies on the Nitrogen, Urea, Carbon Dioxid Combining Power, Calcium, Total Fat and Cholesterol of the Fasting Blood, Arch. Int. Med. **25**: 243 (March) 1920.

mal, coincident with the removal of focal infection and cure of the arthritis. It was found, however, that the sugar tolerance was sometimes markedly lowered in cases in which no focal infection could be demonstrated. It was also found that in certain chronic cases from which all foci had apparently been removed, the sugar tolerance still remained greatly lowered. It was furthermore found that in cases of arthritis in which there was a lowered sugar tolerance this tolerance tended to return to normal with improvement of the patient irrespective of the type of therapy employed, even in the presence of apparently causative foci of infection. In other words, a lowered sugar tolerance was pretty clearly indicated to be an intermediary or concomitant step in the pathology of arthritis.

A lowered sugar tolerance is not be interpreted, however, as peculiar to this condition. Apart from the important studies of Hamman and Hirschman,[7] and Janney and Isaacson [8] and others, on thyroid conditions and nephritis, a lowered sugar tolerance has been observed in cancer.[9] A high blood sugar and presumably therefore a lowered tolerance has been observed in furunculosis.[10] Whether it accompanies noninflammatory processes, such as follow traumatism, etc., is yet to be determined, though it very likely does if the involvement is large.

A lowered sugar tolerance is apparently evidence of disturbance, broadly speaking, of some of the oxidative or combustive processes, and it is probable that this is the explanation of its occurrence in arthritis. Reference will later be made to the work of Cole and Blake, who have shown that the action of pneumococcus and *Streptococcus hemolyticus* on blood in vitro is in part to produce methemoglobin. This result may conceivably be one of the factors making for suboxidation of an imponderable kind in arthritis. It is probable that as our knowledge of the conditions accompanied by lowered sugar tolerance become better known, the principle of reducing the intake of sugar-producing substances will be extended with the aim of adjusting the burden to suit the capacity to care for it, and this suggestion is submitted for consideration.



Contrast after twenty-nine days in sugar tolerance of a soldier with severe arthritis who made an abrupt convaleseence after tonsillectomy. The lower curve, showing a normal tolerance, was obtained fourteen days after the tonsillectomy.

There was therefore found in these observations experimental corroboration of the premises on which the dietetic therapy, mentioned above, is based; and a man with a severe case of arthritis, who recovered entirely by the maintenance of a low diet, showed a return to normal of his previously lowered sugar tolerance.

In this connection it is interesting to note that in a very careful study of the creatin metabolism in this disease, Lieutenant Buckman, associated with the writer on the arthritic service at U. S. Army General Hospital No. 9, obtained results which indicate pretty clearly that there is in a large proportion of cases an elevation of the blood creatin which sometimes tends to decline with the improvement of the disease. The topic of creatin metabolism is too large to justify discussion here, but it is now accepted by most leading workers in this field that creatin bears a definite relation to carbohydrate metabolism. A review of the literature is presented in the studies on arthritis already referred to.

For purposes of the later development of an hypothesis it is necessary to mention certain other definite relations between the food intake and symptoms of the disease. It can be clearly illustrated by any one, as the writer has previously reported, that in the period of postoperative starvation which follows many abdominal or other operations on the subject of chronic arthritis, there is generally a sharp amelioration in both subjective and objective symptoms. This may amount sometimes to their entire disappearance. On the return of such an individual to the previous generous diet there is sooner or later a return of the symptoms in their previous severity, although for a time, while depletion is being atoned for, an increased caloric intake may be unproductive of symptoms. It is of the highest interest to note that this improvement has been shown to take place even in the presence of demonstrable and apparently causative infection, although this fact should not be made the excuse for dietary treatment in the presence of removable foci. Illustrative cases will be mentioned later.

Much caution should be exercised in prematurely attributing to operations of various sorts, tonsillectomy, appendectomy and removal of the colon (Lane's procedure), the benefits to an arthritis which are almost sure to ensue in the early stages of convalescence.

It thus appears that successful treatment of chronic arthritis on the basis of a reduced dietary achieves its results by catering to a weakened function, namely, that of which the lowered sugar tolerance is one evidence. It is to be borne in mind that a lowered sugar tolerance is probably the expression of disturbance of a widespread function probably also concerned with the utilization of protein and fat.

At this point can probably best be mentioned a corollary of the preceding general truth which is of much interest and of immediate application to our problem. It has been stated above that the ingestion of carbohydrate in large amounts is sometimes harmful in chronic arthritis. It would therefore seem reasonable to suppose that a subject of diabetes in the later stages, a period when ingested carbohydrate remains nearly wholly utilized and is passed out of the body, would be conspicuously free from rheumatoid symptoms of whatever nature. It is obvious that we are here dealing with only one point of a large problem, and that well marked instances should be selected for test-

7. Hamman, Louis, and Hirschman, I. I.: Studies on Blood Sugar, Arch. Int. Med. **20**: 761 (Nov.) 1917.
8. Janney, N. W., and Isaacson, V. I.: The Blood Sugar in Thyroid and Other Endocrine Diseases, Arch. Int. Med. **22**: 160 (Aug.) 1918.
9. Rohdenburg, G. L.; Bernhard, Adolph, and Krehbiel, Otto: Sugar Tolerance in Cancer, J. A. M. A. **72**: 1528 (May 24) 1919.
10. Gettler, A. O., and St. George, A. V.: The Values of Modern Blood Chemistry to the Clinician, J. A. M. A. **71**: 2033 (Dec. 21) 1918.

ing it. Experience in the general medical wards under the writer's charge at the Presbyterian Hospital, Philadelphia, has suggested that rheumatic affections are at least unusual in well marked diabetes, but an effort was made to control this impression by the wider experience of others particularly interested in this field. Discussion of this point with Capt. Frederick M. Allen, M. C., in charge of the diabetic service at U. S. Army General Hospital No. 9, developed the fact that in his large experience with diabetes he had rarely if ever come across intercurrent arthritis or rheumatism. The matter was then taken up with Dr. Elliott P. Joslin, who has kindly written as follows: "I remember no case of rheumatic fever in diabetes and no case of diabetes for which I ever prescribed a salicylic acid preparation for joint pains. The latter statement is good evidence of my feelings that I have not seen rheumatism, acute or chronic, in diabetes." This point is not lightly to be ignored. In the course of the arthritic and diabetic services at the army hospital, one case was observed in which there was a doubtful or slight arthritis in one ankle and a mild form of diabetes which was easily controlled. It is of course obvious, however, that the diabetic with symptoms so mild that the disease is controlled on a high level of food intake may by the same token develop rheumatism. There is here an equation, the solution of which depends on the value given its variables.

It seems fair to conclude, therefore, that in the presence of conditions which prevent access to the economy, in important amounts, of ingested carbohydrate, arthritis and rheumatic disability are at least unusual.

While discussing matters relating to diabetes, it may be pertinent to mention at this point another consideration arising out of very similar premises. It has long been appreciated by close students that arthritis is a disease whose incidence is markedly greater in the later decades of life, namely, around and beyond 40 years of age. Arthritis in the young is, of course, not a rarity, and some of the most refractory types are seen at this age; but, by and large, the problem in young people is numerically small as compared with that presented by older persons. It is probably justifiable to relate this, in view of the known and suggested facts, to the so-called age curve of metabolism. The operation of this curve in diabetes is succinctly presented by Joslin,[11] who says:

> Greeley[12] has pointed out the analogy between the steadily decreasing severity of diabetes as age progresses and the decrease in the metabolism; and the curve of basal metabolism coincides exactly with the curve of severity in diabetes, being greatest in infancy and childhood, and least in old age. The severity of a mild case of diabetes is at once increased by the incidence of an accident increasing basal metabolism (fever, infections, goiter).[13]

Enough has probably been suggested in the preceding text to indicate that this relation is almost the exact opposite to that which obtains in chronic arthritis. Any critical observer can satisfy himself that the incidence of some conditions falling under the foregoing general head, such as pneumonia and pregnancy, may be followed by temporary improvement or entire surcease of symptoms in chronic arthritis. Indeed, so much is this the case that one of the accepted methods of treating chronic arthritis is to induce fever, heightened metabolism and the picture of a severe infectious process by means of nonspecific protein injections. Reference has elsewhere been made more fully to some of the factors on which benefit from this may depend.[1]

It was earlier remarked that the basal metabolism is slightly below normal in 20 per cent. of cases, and it is much more likely to be below than above normal. This departure was given small significance; but, viewed in conjunction with the truth just mentioned, it is entirely proper to accord it more weight. It is to be borne in mind, furthermore, that the figures representative of the total metabolism are only summation figures, and that much may take place to disturb the intermediary metabolism without expressing itelf in such totals.

CAUSE OF DELAYED ONSET

There can now be considered at somewhat greater length than was appropriate in the report of the studies mentioned above, a theoretical explanation of the delayed onset of arthritis, following an obviously causative systemic infection. This onset was illustrated in an important number of soldiers. Attention was directed to the fact that, coincident with or some weeks after recovery from such conditions as dysentery, influenza, pneumonia and certain surgical accidents, there sometimes developed sharp outbreaks of systemic and severe multiple arthritis in soldiers who in many cases had never had previous attacks. It is improbable that this can be entirely explained at present, but at least one conceivable explanation at hand fits in with certain definitely demonstrated facts of this disease and seems to be corroborated by close analysis of the cases studied. The writer has elsewhere adduced evidence to show that chronic arthritis may have an onset referable to the food intake alone in certain exceptional cases, although the basis for this had probably been laid by some unrecognized circumstances. Certain it is that curtailment of the food intake may have sharply beneficial results. It therefore seems reasonable to suspect that some cases of chronic arthritis that develop contemporaneously with convalescence from a severe disease may do so because of the induction of the condition expressing itself in a lowered sugar tolerance on which an added strain is thrown by the increased and even forced intake of food usual at this time. Indeed, the common experience of a poor appetite coincident with early convalescence from many diseases may be Nature's own attempt to safeguard the individual from placing undue strain on a weakened function, and carries its own moral. In other words, Nature's warning, which we interpret subconsciously and rather grossly as a loss of appetite, may rest fundamentally on the very definite fact that the subject is unable properly to care for large amounts of those foodstuffs that yield substances requiring oxidation.

A clear-cut instance of the recrudescence of an arthritis following recovery from febrile jaundice in the presence of dental infection is given in Case 33, Mrs. K., a Red Cross worker, in the report [1] mentioned above, when she returned to her normal intake of food. This patient for some years had had various arthritic disability and deformity of all finger joints. She had tonsillar and dental foci, March 2, 1919, and gave a high sugar curve (low tolerance) Tonsillectomy was performed, April 2; five days later, after two days of sharp, unintended low feeding, her hands showed marked improvement. When she resumed her full diet, their previous condition returned in all its severity.

11. Joslin, E. P.: Treatment of Diabetes Mellitus, Ed. 2, Philadelphia, Lea & Febiger, 1917, p. 112.
12. Greeley, H. P.: Boston M. & S. J. 175:753 (Nov. 23) 1916.
13. In view of the work reported here and that previously reported, part of the unfavorable influence of intercurrent infections in diabetes is possibly due to further lowering of the sugar tolerance.

She then developed acute catarrhal jaundice with extreme obstipation and fecal impaction. During the ten days of extremely low diet, necessitated by nausea, her joints entirely cleared up again and remained so until she was up and around eating as before. Her phalangeal arthritis then returned. Critical studies of the creatin and nitrogen metabolism of this case were made by Lieut. Thomas Buckman, M. C., and have been reported.[2]

Case 52 of the studies on arthritis in the army also illustrates the same phenomenon, as does more particularly Case 22, in which the same result was intentionally induced. Other cases likewise have been reported.[1] If this phenomenon can occur in respect of a previously existing arthritis, as it unquestionably can, it is more than possible that it may also occur in the production of arthritis de novo, and the writer has observed some such apparent instances.

The attempt has now been made to show, on the one hand, that there is in arthritis a difficulty in the utilization of food as indicated by the therapeutic effect of a reduced diet and by the great frequency of a lowered sugar tolerance; and, on the other hand, that agents which hasten the metabolism as a whole may have a markedly beneficial influence.

SIGNIFICANCE OF FREQUENCY WITH WHICH MUSCLES AND JOINTS ARE AFFECTED

Let us now turn to the sites at which the rheumatic process most frequently expresses itself; with the idea of correlating them with these facts and finding some common denominator. The rheumatoid state at large affects two chief types of structures, namely, the muscles and the joints. Its influence is by no means confined to them, and neuritis is an admittedly frequent manifestation. Furthermore, many of the neighboring joint structures may be involved, such as the tendons, but in general the field of distribution is sufficiently covered by the foregoing statement.

It is perhaps not generally appreciated that the joints are structures whose blood supply is poor as compared with most of the important organs of the body. Apart from the rather meager data in textbooks relating specifically to this point, authority for this statement is found in the exhaustive studies on the gross and microscopic morbid anatomy of arthritis deformans by Nichols and Richardson.[14] These certainly constitute the most complete studies in this country, and probably elsewhere, on the anatomic phases of the problem.

In a personal conversation, Dr. Nichols has made the unequivocal statement that the blood supply of the joints, per se, is definitely poor. In fact, the joint cavities themselves have no blood supply and depend on the synovial fluid, which notoriously lacks the active blood elements that condition nutrition and metabolism. Thus, blood carries about forty times as much oxygen as does the same volume of plasma.[15] It is therefore probable that the oxidative metabolism of the joints or metabolism in the neighborhood of the joints is low and less intense as compared with other structures. If, then, rheumatic disturbances are characterized by a difficulty somewhere in the body in completing metabolic functions; if lessening the burden of these functions by cutting down the food intake is beneficial; if stimulation of these functions to greater activity is also beneficial, it is easy to believe that the rheumatic state would here find one of its expressions. In point of fact, this syllogism is well substantiated by the notorious benefits of hyperemia induced at these sites. This principle is widely utilized in the form of baking, hydrotherapy and electricity, all locally applied. Indeed, local exercise itself under certain conditions is of definite avail. It is also common knowledge that the stiffness and general disability of chronic arthritis are worse in the morning when the parts involved have been long at rest and the whole bodily as well as the local metabolism has been on a lower plane. As the day wears on and activities are resumed, borderland and mild cases show large increase of function or even entire disappearance of symptoms.

The other chief site of rheumatic disturbance mentioned, however—the muscles—presents another difficulty, the explanation of which may at first blush appear paradoxical. There is not here the same question normally of lower blood supply and nutrition. It is generally recognized, however, that the muscles and the liver constitute the chief sites of the body's metabolism, especially of carbohydrate. Enough has been advanced above at least strongly to suggest that the metabolism or oxidation of carbohydrate is importantly involved in the process which results in rheumatism. Carbohydrate is probably not involved alone, and its end-products are probably the active factors concerned in this relation; but since it constitutes one of the three leading subjects of metabolism of the body, and since about half of the ingested protein goes to carbohydrate, this general involvement is most easily considered in terms of it. It is conceivable, therefore, that we have here an explanation of the frequency of myositis as a rheumatic manifestation. The condition which expresses itself in a difficulty of metabolism, such that hastening that metabolism or reducing the necessity for such metabolism is of benefit, would not inconceivably evidence itself at one of the chief sites of that metabolism. Thus, massage, exercise and heat find wide utility in their application to the muscles, and it is generally accepted that exercise (massage) increases the metabolism of only the glycogen (carbohydrate) of the muscle, and within physiologic limits does not increase the metabolism of the nitrogenous elements. There are also other factors operative here which are now the subject of investigation.

We therefore have at least a partial explanation for the occurrence of rheumatoid conditions in the two types of structures in which it chiefly occurs, namely, in the joints, because oxidative metabolism there is necessarily sluggish or slight, and in the muscles, because in them takes place an important part of the metabolism of at least one substance known to stand in some relation to this disease.

FACTORS AFFECTING THE OXIDATIVE FUNCTION

Let us now turn to a consideration of some of the factors that are known to induce a lowering of metabolism or oxidation, as we may tentatively call it. Cole[16] has shown that living pneumococci convert hemoglobin into methemoglobin, and Blake has demonstrated that *Streptococcus viridans* has the same property. This organism, as is well known, plays apparently a large rôle in the infectious origin of arthritis. As Wells[17] points out, this relation may play a part in the effects of infections with these organisms. It is possibly unnecessary, however, to introduce this consideration

14. Nichols, E. H., and Richardson, F. L.: J. M. Res. **21**: 149 (Sept.) 1909.
15. Barcroft: The Respiratory Function of the Blood, Cambridge, 1914.
16. Cole: J. Exper. Med. **20**: 347, 366, 1914.
17. Wells: Chemical Pathology, Ed. 3, Philadelphia, W. B. Saunders Company, 1918, p. 225.

in explanation, as the recent investigations on the respiratory function of the blood by Barcroft, Haldane, Yandell Henderson and others have afforded other and wider bases for hypothesis.

The studies of Barcroft and his co-workers on the respiratory functions of the blood have opened up a wide and fundamental field of thought not only in physiology but also in their application to the phenomena of clinical medicine. The work of Yandell Henderson and his collaborators in this country has further elaborated these studies, which now constitute a highly specialized topic. It is recognized, for example, that the balance of acid and base elements is not constant in the blood but varies according to the areas of different tension of carbon dioxid through which the blood passes. The determination of the hydrogen ion concentration or the alkali bicarbonate establishes only one of the values which the blood may have.[18] The work of Barcroft has abundantly proved that without change in the dissociation curve of hemoglobin or hydrogen ion concentration, there may be in the blood definite amounts of α-hydroxy acids, of which lactic, though not necessarily concerned, is a type. Indeed, this phenomenon makes possible a pretty adaptation to the conditions of high altitudes.[19]

It is therefore appreciated in a considerable wealth of detail that the delivery of oxygen by hemoglobin to given sites is conditioned on recognized physical factors at all times operative normally. Thus, the areas of varying tension of carbon dioxid in the circulation, from whatever cause; the temperature of the blood at a given spot; the barometric pressure; factors within or without the economy making for acidosis, and so on, all affect the oxidative function locally or even systemically.

Once the relation of hemoglobin or the oxidative functions of the blood to arthritis has been established, these considerations find immediate application. The topic is much too large to be presented here, and is now the subject of studies in relation to arthritis. Suffice it at the present time to predicate herewith, subject to later modification, that rheumatic and arthritic phenomena find their chief explanation in these principles.

A WORKING HYPOTHESIS

There have now been presented the necessary facts and theoretical considerations for the formulation of a working hypothesis of this disease. It is possible to indicate why arthritis and rheumatism so frequently jump from one place to another in an apparently meaningless way. It would seem to be because there is a lowered respiratory or metabolic capacity, possibly in the circulating blood. This is able to achieve a certain amount of its normal function, but not all; and those sites at which metabolism is normally most sluggish are among the first to suffer. Hyperemia of a part involved, intended or accidental, suffices often to restore metabolic conditions locally to approximately their normal level; but this does not necessarily relieve the general situation, and the same phenomena may then occur elsewhere. This "quantitative" quality of arthritis is one of its outstanding phenomena. An explanation can also be advanced as to the rationale of mysotis or arthritis when due to exposure. As mentioned above, unmistakable physiologic evidence is at hand to show that reduction of temperature immediately lowers the dissociation curves of hemoglobin for oxygen.[20] By the same token, the well known effect of heat in rheumatism and arthritis finds its explanation in the corollary to this, whereby the dissociation curve is raised. The latter explanation is probably more specific than the usual one of hyperemia induced by heat, though obviously both factors are present.

It is not difficult to believe, therefore, that prolonged exposure or chilling of part of the muscular system would induce a lesser delivery of oxygen by hemoglobin. We would then have a secondary stage in the pathology of arthritis without intermediation of that focal infectious agency which seems usually to exist. This consideration finds some support in the clinical observation on a series of 400 arthritic soldiers referred to above, namely, that this group of soldiers tends as a whole to recover more promptly than do patients at large in civil life, where exposure plays a very trifling rôle. At any rate, in this statistical fact of the induction of rheumatism by exposure there is strong evidence that infectious foci are not the only agents capable of starting the chain of events that result in rheumatism or arthritis. That this chain should be referable to one agent alone necessitates an assumption difficult of defense. It is safer, and it is certainly more reasonable to believe that a variety of factors, many types of infection, exposure to cold and wet, chronic intestinal conditions of which we have only imperfect knowledge, and possibly even less ponderable interglandular disturbances may induce the substratum, partly illustrated by a lower sugar tolerance, which is shown to accompany this disease so closely.

It is also possible to attempt an explanation of certain other well recognized but hitherto inexplicable phenomena accompanying arthritis. It has long been recognized that chronic sufferers from this disease undergo exacerbations that seem to be sharply related to disturbances of the weather. This is so definitely true that certain types of climates are recognizedly detrimental and others equally advantageous in their influence on this disease. If disturbance in the respiratory functions of the blood is a factor in the disease, it is almost axiomatic that wide fluctuations of the barometer and humidity would affect these cases, since the percentage saturation of hemoglobin by oxygen is a function of the partial pressure of oxygen in the alveolar air.

GENERAL LINE OF TREATMENT

It is not the purpose here to emphasize the practical aspects of treatment on the basis of the pathology discussed. It may not be amiss, however, to point out in a general way the line which this must take. As there is no single specific arthritis, it follows that advantage should be taken of the effect of all contributory agents. Treatment should be postulated on the removal of the exciting cause first, when this is possible. This consists in the majority of cases in the removal of some focus of infection. In chronic cases the underlying physiology may become so disturbed that removal of the exciting agent does not suffice to restore it. Under these circumstances, and also when the exciting agent for a variety of reasons cannot be removed, it becomes necessary to adjust the burden to suit the altered metabolism, as the basis on which subsequent therapy can be established. Such agents as arsenic, the iodids and hydrotherapy may then have results which alone are too often disappointing.

18. Haggard, H. W., and Henderson, Yandell: J. Biol. Chem. **39**: 163 (Aug.) 1919.

19. Barcroft: The Respiratory Function of the Blood, p. 272.

20. Barcroft: The Respiratory Function of the Blood, p. 158.

The institution of a reduced diet in suitable cases is best achieved by determining over a period of about ten days the caloric intake of the patient under the average conditions of his invalidism. This gives an approximation as to the degree to which the caloric intake must be reduced in order to spare him a possible surfeit. If the determined intake is high, a rather sharp reduction can be established without detriment to his nutritional needs, and spare him at the same time possibly as much as 1,000 calories. If, on the other hand, the determined intake is low, much caution must be observed, and the procedure becomes more difficult and hazardous. It is not possible to discuss here further details in this connection, as these have been fully given elsewhere.

One of the outstanding lessons derived from the study of arthritis among large numbers of soldiers was to the effect that various accessory lines of treatment could be profitably combined, although often unavailing alone. External measures, such as hydrotherapy, have undoubtedly real value but have fallen in some disrepute because of their frequent failure and because of the injurious consequences from them when pushed in the effort to obtain results. Used cautiously, however, hydrotherapy, massage and various medicinal agents, when administered in conjunction with a cautiously reduced diet, may carry benefit far beyond the point that would otherwise have been reached. It is strongly recommended that no attempt be made to treat cases by the combination of measures here outlined without familiarity with the dangers and limitations that have been discussed elsewhere at length.

CONCLUSION

It is not practicable to discuss at this time a considerable number of other interesting factors standing in close relation to arthritis, but it is desired definitely to indicate in this brief contribution the domain of physiology in which, from the data now at our command, the explanation of this disease is apparently to be found. It is believed that arthritis and rheumatoid conditions have not been heretofore critically referred to definite physiologic principles and facts. It remains to plot more points, so to speak, on the curve of this hypothesis. Virtually all the phenomena of the disease are explainable on the basis outlined above. Apart from this tentative explanation of the etiology and symptomatology of arthritis, various lines of study and treatment are additionally suggested and will be made the subject of later contributions.

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The Insidious Trichina.—The approach of the Christmas season prompts the United States Department of Agriculture to issue a warning against eating pork unless it is well cooked. At this season especially, quantities of pork products are prepared in homes and on farms as well as commercially, and following the holiday comes an increase in the number of cases of trichinosis. We are reminded that no matter how healthy the animal may be, how excellent the meat looks, pork may nevertheless contain trichina. Those products which pass federal inspection are usually safe, but those prepared on farms or in homes are frequently undercooked, the meat has not been inspected, and cases of this painful disease follow. A rule elaborated by a Danish investigator for killing all trichina demands that the meat be cooked from fifteen minutes in summer to eighteen minutes in winter for each pound of weight if put into boiling water, keeping the water boiling throughout the cooking process. If the meat is put into cold water, half the time required to bring the water to a boil may be deducted.

CEREBRAL THROMBOSIS AND ABRUPT SLOWING OF THE CEREBRAL CIRCULATION *

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To the three circulatory catastrophes, hemorrhage, embolism and thrombosis, which suddenly affect the brain, a fourth may be added which, because of its occurrence in weakened states of the circulatory organs, may conveniently be called abrupt slowing of the cerebral circulation. From the therapeutic standpoint, thrombosis and abrupt slowing are most important, for attention to the mechanism of their occurrence in arteriosclerosis may lead to the adoption of measures for their prevention.

Cerebral hemorrhage is preceded by few warning signs, perhaps by none, for the condition of the blood vessels within the cranium can only be surmised. High blood pressure, per se, so popular at present as presaging future attacks of apoplexy, is not the only important factor in the incidence of cerebral hemorrhage. The latter most often occurs in the presence of localized disease of the blood vessels, of which miliary aneurysm and atheroma are common terminal results. The benefit of treatment used for the control of hemorrhage already begun is extremely slight; the damage to brain substance is irreparable, and if important structures are injured the affected individual will show evidences of his disordered nervous system during the remainder of his life.

Cerebral embolism gives no warning; treatment for the condition when the latter is recognized can do nothing more than minimize the damage to brain substance, and if the vessel occluded supplied important structures, some disturbance of function, as a result of the subsequent softening, is likely to remain.

Cerebral thrombosis, in the sense of a clot developing in situ, becomes neither more nor less in effect than an embolus, and when sufficiently extensive blocks the vessel in which it forms. If the collateral circulation is not quickly established, a definite vascular area is deprived of blood. The practical difference between the two lies in the fact that embolism cannot be predicted or prevented, while not only may the liability to thrombosis be foretold, but much can be done to delay, if not permanently circumvent, its occurrence.

ATTACKS CAUSED BY SLOWING OF CIRCULATION

Fortunately, not all of these sudden cerebral attacks are due to hemorrhage, embolism or thrombosis. The more or less mild phenomena characterized by transient attacks of dizziness, amnesia, aphasia, muscle paresis, paresthesias and the like, occurring in patients with generalized arteriosclerosis either with or without associated high blood pressure, seem to depend on a more or less abrupt slowing of the cerebral circulation carried to a degree at which a localized area of the brain is temporarily deprived of its customary amount of arterial blood. Attacks with a more extensive distribution, simulating the hemiplegias due to actual brain destruction but transitory in nature, may occur; and since these have received some especial notice in the literature, a brief discussion of them will be given.

* Read before the St. Luke's Clinical Club, Sept. 24, 1920.

In 1906, Langwill[1] reported the histories of two patients who were the subjects of hemiplegia, one, complete on the left side, the other on the right, with aphasia. The symptoms cleared up suddenly after a few hours, but recurred a number of times, finally remaining absent for several years. Langwill summarized with the statement that "the characteristic features of such an attack would seem to be best explained on the hypothesis of the existence in such patients of a temporary arterial spasm involving a portion of the central vascular supply . . . associated with the condition of hypertonus in sclerosed arteries."

In the same year, Edgeworth[2] reported two cases which "show that phenomena due apparently to temporary arterial spasm in the cerebral circulation may assume forms other than hemiplegia." One of his patients was mentally confused for some hours, and had twitchings of the left face, leg and arm, and hemiparesis from which he recovered by 4 o'clock of the same afternoon.

Reports by other observers along the same line followed. Russell,[3] Allan,[4] Heard,[5] Osler[6] and others report similar cases of transient inhibition of cerebral function, and generally agree that arterial spasm in one of the cerebral arteries best explains the underlying pathologic condition. Parker,[7] in a careful review of the subject in 1909, discussed the various possible causes of these transient attacks, and concluded with the statement that "a great number of transient paralyses in various diseases appear to be caused by acute localized brain anemia."

Notwithstanding the acknowledged authority of the adherents of the vessel-spasm theory, there are several reasons why it seems insufficient to explain all cases of transient cerebral disturbance occurring in cases of arteriosclerosis.

In the first place, the theory rests on a foundation of conjecture only. There is little evidence, either of a pathologic or of an experimental nature, to support the belief that isolated spasm of the cerebral vessels may occur as a result of conditions arising in the body. The view is opposed on anatomic grounds. "In contrast to the arteries of the extremities with their strong muscularis and adventitia, the cerebral arteries show strikingly thin walls with relative poverty in elastic elements."[8]

In the second place, in most of the cases reported the attacks have occurred during sleep, shortly after awakening or on getting out of bed. A number of them came at a time when fatigue was a paramount feature. These circumstances would seem in some way to be immediately responsible for the attacks, and if this assumption is correct it seems strange that the same condition is not more frequently seen in other peripheral vessels where the anatomic conditions suitable for its production are more favorable.

A more satisfactory explanation of the phenomenon in question is gained from a consideration of the nature of the cerebral circulation and of those factors outside the cranial cavity which constantly influence the circulation within it.

The criteria by which the body circulation is judged cannot be used in determining abnormalities in the cerebral circulation, for while the former is to some extent open to direct examination, a knowledge of the integrity of the latter must be based on observation of brain function.

The circulation of blood through the cerebral vessels is more in the nature of a passive flow than of an active current. Leonard Hill[9] states that "the cerebral circulation is controlled by a comparatively weak (if any) local vasomotor mechanism, and passively follows the changes in the general circulation. . . . When in any part of the body the arteries contract, the blood volume in the area diminishes, the veins empty, the whole organ shrinks in size. Since in the closed cranium the brain cannot shrink, the cerebral capillaries must become congested with venous at the expense of arterial blood, if the cerebral arteries are constricted."

It is to this abnormal increase of venous over arterial blood that the name "cerebral anemia" unfortunately has been applied. The phenomenon is in reality an acute passive congestion, or passive slowing of the cerebral venous circulation. It will be, then, not the volume of blood in the brain which determines the proper nourishment of that organ, but rather the proportion of arterial to venous blood. This condition of passive congestion is brought about whenever the quantity of blood discharged into the cerebral arteries in a given period of time is diminished.

One of the important conditions necessary to the maintenance of the normal circulation through the brain is that sufficient blood, per unit of time, be returned to the right heart. Any factor that impedes the return of blood to the right heart decreases the rate of blood flow to the brain, and if this retardation becomes sufficiently marked, a condition of cerebral anemia results.

In many individuals in whom there is long standing arteriosclerosis there exists a marked diminution of general muscle tone and consequently a loss of that support to the venous circulation which firm musculature affords. If, in addition, the normal reciprocal action of diaphragm and abdominal muscles is interfered with, the burden of returning the blood from the abdomen and lower limbs falls on the vessels themselves, and with a failing of vasomotor tone a stagnation in the splanchnic veins occurs, the amount of blood returning to the right heart is diminished, and the quantity of blood in the arteries is reduced. The effect on the brain of this widespread anemia depends to a considerable extent on the condition of the cerebral arteries. In the young and in persons without vessel sclerosis, the result is a widespread slowing of the circulation in the brain, which may be followed by dizziness, tinnitus, fainting, or by a generalized convulsion. But when sclerosis has begun, the effect of the normally abrupt angulation of the cerebral arterial trunks at the base of the brain becomes a determining factor, and that vessel into which the blood is driven with the greatest difficulty bears the brunt of the diminished pressure, and in its terminal branches the flow is excessively retarded.

1. Langwill, H. G.: Transitory Hemiplegia, with Notes of Two Cases, Scot. M. & S. J., June, 1906, p. 509.
2. Edgeworth, F. H.: On Transitory Hemiplegia in Elderly Persons, Scot. M. & S. J. **19**: 414 (Nov.) 1906.
3. Russell, William: Intermittent Closing of Cerebral Arteries, Brit. M. J. **2**: 1109 (Oct. 16) 1909.
4. Allan, G. A.: Arterial Spasm in the Brain Associated with Transient and Permanent Paralyses, Glasgow M. J. **24**: 25 (July) 1910.
5. Heard, J. D.: The Significance of Transient Cerebral Crises and Seizures as Occurring in Arterio-Sclerosis, Edinburgh M. J., Series 3, No. 5, 417 (Nov.) 1910.
6. Osler, William: Transient Attacks of Aphasia with Paralysis in States of High Blood Pressure and Arterio-Sclerosis, Canad. M. A. J. **1**: 919 (Oct.) 1911.
7. Parker, G.: The Causes of Transient Cerebral Paralysis, Bristol M.-Chir. J. **27**: 15 (March) 1909.
8. Bennet and Triepel, in Curschmann's Text Book of Nervous Diseases **2**: 669, 1915.
9. Hill, Leonard: Experimental Pathology of Cerebral Circulation, in Allbutt and Rolleston's System of Medicine **8**: 13, 1910.

It is an observed fact that the bodily distribution of the effects of localized anemia and of thrombosis are similar. In the two conditions the results are due to disturbances in areas supplied by the most distant branches of the affected vessels. Thus, there is rarely seen a thrombosis in a small branch coming off low down, as in the internal capsule or base, unless there is actual local disease of the vessel, such as is seen in syphilis. When pressure fails, the top of the arterial tree feels the loss first. Subsequent attacks of transient local anemia and thrombosis will appear in the same areas, as a rule.

During the years 1910 and 1911, in work on the problem concerned with the relationship of relaxed abdominal musculature to cerebral anemia, it was noticed that in some arteriosclerotics with ptosis and relaxation of the abdominal muscles the customary drop in systolic pressure on standing after lying did not occur.[10] It was assumed that the hypertension served to prevent this fall. Further observation of these patients and of others of the same type has brought out the fact that there is a definite relationship between the occurrence of certain subjective symptoms experienced by arteriosclerotics and a drop in blood pressure. In fact, these symptoms are similar to those complained of in the relaxation cases with persistently low pressure, and consists of subjective sensations of muscular weakness, faintness and dizziness on standing and, as in the relaxation cases, they are relieved by lying down, by support of the splanchnic circulation and by vasomotor stimulants.

One of the early patients has had during the last year one attack associated with threatened syncope and paresthesias of one side of the body. Both systolic and diastolic pressures were found to be lower than she had been accustomed to show, and with a return of the pressures to their former levels the symptoms disappeared. It would seem that in certain types of these arteriosclerotics we are dealing with a condition similar to that which occurs in patients with relaxed abdominal walls, and that with splanchnic vasomotor fatigue a drop into the splanchnic vessels occurs, followed by a diminution in the cerebral arterial pressure and a consequent slowing of the cerebral circulation. In a number of cases transitory attacks of dizziness, sleeplessness, paresthesias and general weakness have followed attempts to lower blood pressure by the methods commonly recommended. Similar experiences have been noted by others.[11]

THERAPEUTIC MEASURES

Treatment directed to the lowering of blood pressure in a patient who has not been for some time under observation may be fraught with disastrous consequences, for the pressure reading obtained at the first examination, while considerably higher than what is supposed to be normal, may be too low for that individual under the conditions existing at the time the examination is made. To relieve the symptoms present at that moment a rise in pressure may be necessary. Russell [3] well says:

> The feeble circulation has to be recognized behind thickened and incompressible vessels; see to it that you are not deluded into thinking that there is a strong heart because there is a high hemomanometer reading.

Whatever may prove to be the primary cause of the cardiovascular degeneration underlying the phenomenon in question, all treatment directed to the prevention of cerebral thrombosis and localized cerebral anemia must have for its ultimate object the prevention of slowing of the circulation within the brain. As with many other conditions that afflict the human body, treatment of a preventive nature should be instituted long before the occurrence of attacks which at once call attention to the fact that the disease is already well advanced. When cerebral arterial sclerosis dominates the picture, these attacks may come only when the limits of compensation are nearly reached and may at once permanently destroy the affected area. But in a great majority of cases there have been suggestive signs, unwarranted by the stage of the disease in the cerebral vessels themselves, which serve to put patient and physician on their guard and lead to the institution of treatment.

Any intelligent selection of therapeutic measures must be founded on a survey of the individual as a whole and must take into consideration heart and kidney function as well as the condition of the vessels themselves. It is coming to be pretty well recognized that medication alone is of little permanent value either in halting the advance of the arteriosclerosis or in averting the crises which are a part of its later symptomatology.

Dietetic treatment, such as the limitation of proteins and salt, care of the overloaded colon, limiting the amount of intensive mental work, avoidance of worry, and exercise in the open, each has its advocates, and each or, better, all combined have some value in combating the influences that further the progression of this disease.

In older persons with flabby muscles and low pressure, in whom compensatory factors are at a low ebb, there are a number of measures which, diligently attended to, may do much toward preventing these circulatory upsets in the central nervous system.

Of first importance is the avoidance of fatigue. Patients should be cautioned against carrying physical exertion to the point at which exhaustion is felt. Exercise or productive labor must be interrupted by frequent periods of rest. The short nap in a chair after meals is a protective measure, for the night sleep will then be less profound and the tendency to that extreme depression of the circulation which accompanies deep sleep will be obviated. Carefully selected food administered in frequent small feedings, rather then in larger meals, will prove of benefit. Animal proteins should be restricted.

The iodids seem to be of some value when given continuously over long periods. Strychnin in full doses, the last one of the day being administered at bedtime, has appeared to be useful in our cases.

On theoretical grounds it would seem that attention to the normal muscular support to the circulation of the lower half of the body would be of value, and in practice the beneficial effect of regulated exercises has amply justified their use. In fact, it is doubtful whether all other forms of treatment combined have the permanent value of systematic exercises especially directed to the development and maintenance of firm muscular support to the circulation of the lower limbs and abdomen.

The first exercises of the day should be performed before getting out of bed in order that, on assuming the vertical position, the splanchnic drop may be pre-

10. Birtch, F. W., and Inman, T. G.: Blood Pressure Observations on Patients with Relaxed Abdominal Musculature, J. A. M. A. **58**: 265-268 (Jan. 27) 1912.
11. Miller, J. L.: Hypertension and the Value of the Various Methods for Its Reduction, J. A. M. A. **54**: 1666 (May 21) 1910.

vented. Alternately raising the body and lower limbs by the action of the abdominal muscles will be sufficient for this purpose. Two or three times during the day the same exercises are to be repeated, with the addition of any of the various systematic "setting up" movements which may seem indicated in the particular case.

If it is a fact that degenerative conditions advance slowest where nutrition is best maintained, it is to be expected that pathologic changes in the cerebral vessels may in some degree also be retarded by an increase in the volume of the cerebral circulation, for with an increased flow in the vessels themselves will come additional nutriment by way of the vessels that supply them.

CONCLUSION

In the care of patients of advanced years we are likely to neglect the common hygienic measures frequently prescribed for the young, and it is with the hope that the too often neglected arteriosclerotics with hypotension may receive the attention they deserve that the foregoing suggestions as to their care are offered.

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PROPHYLAXIS OF SYPHILIS WITH ARSPHENAMIN

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We report a procedure for the prophylaxis of syphilis that has appealed to us as having especial value and, because of the paucity of its literature, as being worthy of publication.

The efficacy of calomel or other spirocheticides in the so-called chemical prophylaxis of syphilis is limited to a period of not more than eight hours after the spirochete has had the opportunity of invading the healthy person. In not every instance is it possible for the exposed person to reach competent medical aid for such treatment, and yet the possibility of infection is known to be very great. In other instances, the number of exposures may have extended over a period of several days, and the chemical prophylaxis is then known to be of little, if any, value. The difficulties of effective chemical prophylaxis in women is another factor that has brought some discussion as to the ultimate value of the procedure.

Recent work by Brown and Pearce [1] at the Rockefeller Institute for Medical Research adds to the evidence against the worth of chemical prophylaxis of syphilis as ordinarily understood. These authors studied the dissemination of spirochetes after inoculation into the scrotum and into the testicle of rabbits. They were able to demonstrate the organism in the regional lymph nodes within a period of less than forty-eight hours from the time of inoculation. They also found spirochetes in the blood stream prior to a period when the local lesion could be recognized at the point of inoculation. In addition, they removed the right scrotum and testicle in ten rabbits, forty-eight hours after inoculating the right scrotum with *Spirochaeta pallida*. In spite of the complete removal of a wide zone of tissue surrounding the area of inoculation, all these animals developed syphilitic lesions, thus showing that true infection of parts outside the zone of operation had taken place within the brief period of forty-eight hours.

Brown and Pearce conclude that:

> While the conditions of these experiments are not entirely analogous to those that obtain in cases of human infection, the general course of events is undoubtedly much the same in the two cases.
>
> It would appear, therefore, that, for practical purposes, there is probably no appreciable time during which a syphilitic infection can be regarded as confined to the focus of entry but that, immediately infection takes place, the spirochetes begin to multiply and invade the surrounding tissues, gaining access to both the lymphatics and the blood stream, and are widely distributed over the body even before the initial lesion can be detected.
>
> The early appearance of a distinctive lesion at the site of infection and the lapse of time required for the development of generalized lesions are to be viewed more as a result of a sequence in localization and concentration of spirochetes at given points than as indications of the time required for their dissemination.

Ehrlich, in proposing arsphenamin for the treatment of syphilis, had been led to believe by his experimental animal studies that one dose would rid the human patient of the disease by destroying all the spirochetes. More extensive use of the drug has proved the fallacy of "therapia sterilisans magna," because the drug as ordinarily administered is never in sufficient concentration to reach effectively every focus and nidus of the spirochete, once the organism has had the opportunity of disseminating itself by way of the lymphatics and blood stream to every part of the body. The treatment of syphilis in the early primary stage of the disease, when the patient presents a syphilitic chancre, a negative Wassermann reaction, and no adenopathy, is relatively simple and yet especially successful, as compared to the treatment of the same disease in the generalized secondary period. It is evident, therefore, that the earlier arsphenamin treatment is instituted, the more beneficial its effects will be.

The opportunity was granted one of us (G.) to use arsphenamin in the prophylaxis of syphilis while in the tropics, where a large proportion of the promiscuous women were affected with syphilis. At that time, he limited the use of the drug to men who had been exposed over twelve hours and frequently as long as three days previously. These men were given three doses of arsphenamin, a total of 0.9 gm., within forty-eight hours. Other patients were treated with arsphenamin who had lesions typical of the so-called soft sore or chancroid, in whom it was not possible to demonstrate the spirochete by the dark field. This group was treated with the idea of preventing the appearance of manifestations of a syphilitic infection which was still in its first incubation period. (The chancroid appears much sooner than the syphilitic chancre, though the two may have been contracted at the same exposure.) Most of these men were under observation only for a period long enough to determine that there was no chancre formed at the close of the ordinary period of incubation time of syphilis, or, in a few instances, as long as six months later.

One of us (M.) has for two years used the injections of neo-arsphenamin in the prophylaxis of syphilis as an occasional measure.

During the last six months, both of us have been more on the alert to use the method, and probably

1. Brown, W. H., and Pearce, Louise: A Note on the Dissemination of Spirochaeta Pallida from the Primary Focus of Infection, Arch. Dermat. & Syph. 2: 470 (Oct.) 1920.

thirty patients have undergone the prophylatic treatment with arsphenamin. The patients that have been selected for this mode of prophylaxis have been, in the main, those in whom it was definitely possible to make a diagnosis of active syphilis in the opposing partner. This is a modification of the "diagnosis by confrontation" of the older writers in syphilis. For example, when the diagnosis of active syphilis is made, those likely to have been exposed to infection, usually the wife, and less often the husband, are examined. In the instances reported in this communication, they have been found free of lesions, but the possibility that they are in the primary incubation period of syphilis is so strong that, rather than wait for the appearance of symptoms clinically or serologically, arsphenamin injections are instituted.

The prophylactic doses have averaged 0.3 gm. of arsphenamin, and the number and interval of the injections have varied with the time since first exposure. In no case has this been less than three doses, and in only one case, now under observation, is it our intention to give six injections, as the patient's husband first came under observation with the generalized eruption of secondary syphilis, and a history of chancre for six weeks. It is our impression that the woman, in this instance, has come almost to the end of the incubation time of the disease, or even that she has passed that interval, and has a chancre which it is not possible to locate (syphilis d'emblée). It is our purpose to treat her as a Wassermann-negative primary syphilitic, and prevent the symptoms of the generalization of the disease.

We have not been consistent as to the interval of injections, varying from an injection every other day to once in five days, depending on the general physical condition of the patient. The women have been awarded the longer interval in the great majority of the cases.

The patients treated in this manner have been under observation long enough to state that the primary incubation time passes without the appearance of a primary lesion. No patient treated in this manner has developed a positive Wassermann reaction, although it has not been possible to repeat the tests in every patient.

We have found no reference in the English language to the use of arsphenamin or its substitutes in the prophylaxis of syphilis. Both the German and the French literature, however, have reports, several of which antedate any work on our part in this direction. No claim to priority is made, and we welcome additions to our bibliography.

The earliest suggestive reference we find is that of Stühmer.[2] He advocated the institution of specific therapy in cases of suspicious genital lesions, even if the modern diagnostic methods did not aid in establishing a positive diagnosis of syphilis. The possibility of thus destroying a focus for further syphilitic infections was thought to be of the utmost importance. The patient was, of course, kept under control by clinical and serologic observations.

Taege [3] goes farther than Stühmer, and proposes the use of arsphenamin during the incubation period of syphilis, when there are no lesions present, if exposure to a known case of syphilis is proved. This is the earliest communication on the subject of prophylaxis with arsphenamin that we have met. Taege used the technic recommended by Scholtz, and gave sodium arsphenamin for three doses within a period of twenty-four hours. Replying to Riecke, [4] who objected to the use of arsphenamin until the diagnosis of syphilis could be established, which he asserted was readily enough done in the chancre stage of the disease to institute the abortive cure, Taege [5] says that the early diagnosis of syphilis was not always feasible early enough to adopt abortive treatment. He maintained that this was especially true in women, for whom the prophylactic treatment was peculiarly adapted.

Fournier and Guenot [6] report on the abortion of syphilis by arsphenamin used during the incubation period. Forty women were exposed to infection by sexual congress with syphilitics having genital lesions. The men were all examined, and the presence of *Spirochaeta pallida* was demonstrated by the dark field. The Wassermann reaction was positive in all except five, who had had the chancre less than ten days. The period since exposure for the women was from a few days to three weeks. The women were free of all suspicious lesions, the history did not lead to the suspecting of a previous infection, and the Wassermann reaction was negative in all. Not one had exercised any preventive measures. Five women who refused all treatment, of the group that were similarly exposed, were later attacked by syphilis.

The forty women were treated by injections of arsphenamin (a total of from 1 to 1.20 gm.), of neo-arsphenamin (a total of from 1.2 to 2 gm.) or of an arsphenamin substitute. Not one of the forty ever showed any syphilitic lesion, and the Wassermann reactions of all have remained negative. Twenty of the women have been under observation over three years. One of the women, who after this treatment continued to receive her lover, who had mucous patches for which he did not take treatment, contracted a chancre of the face.

Lacapère and Laurent [7] are able to report four interesting observations on the preventive treatment of the syphilitic chancre:

Of three officers who had intercourse with one woman who presented a pigmentary syphilid, and numerous mucous patches of the mouth and vulva, two received a dose of neo-arsphenamin (amount not mentioned) intravenously and remained unscathed. The third preferred to take his chances with infection; he refused the injection, and after the usual incubation period, he presented the primary sore of syphilis.

The wife of an officer, who had connection with her despite his having a chancre and a positive Wassermann reaction, was given three injections of neo-arsphenamin, in doses of 1.5, 3, and 4.5 gm., at intervals of six days. She never presented any lesions, and her Wassermann reaction remained persistently negative.

A young man with erosive syphilitic lesions of the glans and prepuce had repeated contacts each night for fifteen days with a young woman who presented no lesion, no history of antecedent syphilis, and a negative Wassermann reaction. She was given eight injections (dosage not mentioned) of neo-arsphenamin, and she has remained free of lesions, and Wassermann negative.

A nursing heredosyphilitic had exposed two wetnurses to infection. One of the two later nursed another infant. About eleven days after the last nursing of the first infant she presented a lesion of the nipple, from which spirochetes were demonstrated by the dark field. The child she was then nursing was certainly not a heredosyphilitic, and the possibility of infection was certain. At intervals of five days, neo-

2. Stühmer, A.: Deutsch. med. Wchnschr. **44**: 41, 1918.
3. Taege: München. med. Wchnschr. **66**: 841, 1919.
4. Riecke: München. med. Wchnschr. **66**: 969, 1919.
5. Taege: München. med. Wchnschr. **66**: 1119, 1919.
6. Fournier, Louis, and Guenot, L.: Presse méd. **27**: 554 (Oct. 1) 1919.
7. Lacapère and Laurent: Bull. méd. **33**: 539, 1919.

arsphenamin, in doses of 10, 15, 20, 40 and 50 mg., was given intravenously. Eighty-five days after the last feeding from the affected breast, no lesions had appeared in the child.

As far as we can ascertain, there are no reports of the failure of arsphenamin to prevent syphilis, when injected during the incubation period of the disease. Theoretically there may be some objection, as Riecke advanced, against the procedure; but in practice the actual prevention of contact cases of syphilis from known cases overcomes any such adverse argument.[8]

SUMMARY

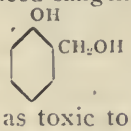
We have called attention to a method of preventing syphilis which we have found efficacious and which has not previously been described in the American literature. The injections of arsphenamin in small doses in persons who present no lesions, and who are definitely known to have been exposed to syphilitic infection, has in all the cases resulted successfully in acting as a prophylactic measure. The time since exposure has little bearing on the result, but must be taken into consideration when the minutiae of the procedure are under consideration. In two reported cases, a single injection has been held to be ample. In a patient under our own care, we intend to use a modification of the abortive cure, although she presents no lesions, because the date of first exposure is longer than the usual incubation time of syphilis. We shall at some future time report our cases in detail. That the method will encounter objection has already been proved; but it will continue to be a procedure that will fill its place in the prophylaxis of syphilis.

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SALIGENIN AS A LOCAL ANESTHETIC FOR THE FEMALE URETHRA*

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Though poisoning from cocain absorbed from the genito-urinary tract is relatively rare, danger from this source is sufficiently imminent to warrant the introduction of less toxic local anesthetics. Hirschfelder, Lundholm and Norrgard [1] have introduced saligenin (salicyl alcohol, $C_6H_4.OH.CH_2OH$, 1:2)



as a local anesthetic. It is about one fifth as toxic to mammals as procain, and about one fiftieth as toxic as cocain. Its low toxicity warranted us in testing it out clinically in cystoscopy in a series of twenty-six cases in the gynecologic outpatient service of the University of Minnesota and in the private practice of one of us (W.).

In all these cases, 2 c.c. of a 4 per cent. solution of saligenin was injected into the urethra, and a pledget of absorbent cotton soaked in the same solution placed over the external urethral meatus for five minutes. Several patients noticed a distinct stinging sensation immediately after the injection. A working anesthesia was obtained in every case, apparently as satisfactory as that produced by a 10 per cent. solution of cocain.

TABLE 1.—RESULTS IN OUTPATIENT SERVICE

Dispensary No.	Date	Age	Race	Diagnosis	Degree of Dilatation
3509*	11/28/19	46	White	Cystitis, general; pyelitis bilateral	Hegar No. 10
	12/ 5/19				
	12/19/19				
	1/ 2/20				
	1/16/20				
	1/25/20				
3901	11/28/19	21	Mexican Indian	Cystitis, ulcerative, acute	Hegar No. 8
2893	11/28/19	56	White	Cystitis, general; urethritis, chronic	Hegar No. 8
4046	12/12/19	41	White	Urethritis and trigonitis, chronic	Hegar No. 8
	6/ 4/20				Hegar No. 8
4237*	12/19/19	30	White	Cystitis, general; pyelitis, left; pyonephrosis, right	Hegar No. 8
	1/ 9/20				Hegar No. 9
	1/16/20				Hegar No. 9
	1/23/20				Hegar No. 9
	3/ 5/20				
5735	1/15/20	33	White	Urethritis, chronic	Hegar No. 8
					Hegar No. 10
0518	2/27/20	59	White	Urethritis, chronic	Hegar No. 8
	3/12/20				Hegar No. 8
7154	3/ 5/20	38	White	Cystitis, general; urethritis, chronic	Hegar No. 10
	3/22/20				Hegar No. 10
2179	3/ 5/20	38	White	Hydronephrosis, right	Hegar No. 10
	3/26/20				Hegar No 9
0928	3/12/20	22	Negro	Cystitis, ulcerative	Hegar No. 8
	6/ 4/20				Hegar No. 9
6475	3/22/20	31	White	Urethritis, chronic	Hegar No. 8
4673	3/22/20	23	White	Urethritis, chronic	Hegar No. 8
4868	3/22/20	20	White	Urethritis, chronic	Hegar No. 10
3025	3/22/20	22	White	Urethritis, chronic	Hegar No. 8
5713	3/26/20	54?	White	Urethritis, chronic	Hegar No. 8
8666	4/ 6/20	60?	White	Urethritis, chronic	Hegar No. 10
9819	5/14/20	35?	White	Urethritis, traumatic	Hegar No. 8
9738	5/14/20	45	White	Cystitis, general	Hegar No. 9
11101	6/15/20	34	White	Urethritis, chronic	Hegar No. 10

* Cocain, 10 per cent., had been used previously; patient stated that saligenin was equally satisfactory.

In a few cases we tried a 2 per cent. solution, but it was not satisfactory. In a few other cases a 6 per cent. solution was used. However, the 4 per cent. solution seems to be sufficient.

There is a great advantage in using this anesthetic of low toxicity, for a considerable quantity of the solution can be injected into the bladder after catheterization. This reduces the spasm so that a rapid and satisfactory examination can be made. Many of the patients had very sensitive urethras. Some of them had previously been anesthetized with cocain and stated that the saligenin anesthesia was as satisfactory as that obtained with cocain.

TABLE 2.—RESULTS IN PRIVATE PRACTICE

Name	Date	Age	Race	Diagnosis	Degree of Dilatation
Mrs. J. H.	12/ 6/19	32	White	Cystitis, mild	Hegar No. 10
	12/30/19				
	1/ 6/20				
	1/17/20				
Mrs. D.*	1/10/20	59	White	Stricture of urethra; eversion of urethral mucosa	Hegar No. 6
	2/ 2/20				Hegar No. 9
	3/ 2/20				Hegar No. 9
Mrs. M.	3/13/20	29	White	Urethritis, chronic; stricture of urethra, early	Hegar No. 7
Mrs. G.	3/18/20	31	White	Urethritis, chronic	Hegar No. 7
Miss H.	3/18/20	19	White	Urethritis, chronic	Hegar No. 7
Mrs. T.	4/ 4/20	25	White	Cystitis, chronic	Hegar No. 10
Mrs. C.	4/14/20	24	White	Cystitis, general; pyelitis, right	Hegar No. 9

* An unusually tender urethra; patient states that cocain, 10 per cent., is no better anesthetic.

A summary of the cases is given in the accompanying tables.

It would therefore appear that saligenin is a practical, nontoxic, local anesthetic which is distinctly useful in work on the female urethra and bladder.

8. In addition to the references already given, the following may prove of interest:
Goodman, Herman: The Diagnosis and Treatment of Syphilis in Men, Am. J. Syph. **2**: 344 (April) 1918; The Diagnostic Demonstration of Spirochaeta Pallida, Interstate M. J. **26**: 61 (Jan.) 1919; The Prostitute in Jail, M. Rec. **97**: 483 (March 20) 1920 (contains bibliography).

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* The researches described in this report were made possible through the availability of by-products developed in connection with investigations on phenolic alcohols supported by the United Sates Interdepartmental Social Hygiene Board for the discovery of more effective medical measures in the treatment and prevention of venereal diseases.

1. Hirschfelder, A. D.: Lundholm, A., and Norrgard, H.: The Local Anaesthetic Actions of Saligenin and Other Phenyl Carbinols, J. Pharmacol. & Exper. Therap. **15**: 261 (June) 1920.

THE SURGICAL TREATMENT OF TYPHOID CARRIERS *

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Recent work on the detection of chronic carriers of *Bacillus typhosus* has eliminated almost all of the "carriers" except those harboring the infection in the gallbladder and cystic duct. It is true that persistent "urinary" carriers have been encountered, and that their infectiousness can be cured by the removal of the offending kidney. "Kidney carriers" are exceedingly rare, and develop only when the kidney has been previously involved in some other pathologic process, such as pyonephrosis, hydronephrosis and nephrolithiasis, and on which the infection with *B. typhosus* is secondary. A kidney, otherwise normal, is incompatible with persistent urinary infectiousness of renal origin. A primary urinary carrier, that is, one having normal kidneys, would excrete typhoid bacilli from both kidneys. The fact that an infectious kidney is usually, if not invariably, an otherwise pathologic kidney, indicates that the urinary carrier state is a secondary one.

Apparently, with the gallbladder this is not so. The gallbladder or its contents is notoriously susceptible to infection in typhoid fever. Cholecystitis is a far more frequent complication during typhoid fever than is generally supposed. Post-typhoid cholecystitis, with or without stones, has been noted as occurring from one month even to twenty-one years after the original fever. Living typhoid bacilli have been obtained in cultures from the gallbladder as late as twenty-one years after the original infection. It is most probable that the cholecystitis that occurs in typhoid fever is due to *B. typhosus,* and gallstones are extremely prone to form in such an infected gallbladder. Although the complicating cholecystitis in typhoid fever is usually too mild to require surgical intervention, the fact that gallstones and a chronic cholecystitis are the usual sequelae of this complication makes it debatable whether the treatment should always be palliative, particularly as virtually all persistent carriers owe their infectiousness to an involved gallbladder. Moreover, certain of the relapses are attributed to reinfection from the gallbladder. All of these facts would suggest radical intervention in typhoid cholecystitis in spite of the systematic disease, because experience in intestinal perforation has proved that operations are not too forbidding.

In the summer of 1918, I was able to profit by an unusual opportunity to study typhoid fever, particularly in respect to complicating cholecystitis and continued infectiousness. One hundred and eighty-three patients who had contracted typhoid fever at the detention camp for interned alien enemy Germans at Hot Springs, N. C., were sent to U. S. Army General Hospital No. 12 at Biltmore, N. C., where I was on duty, for observation and treatment. The duodenal tube was being used at the hospital in the detection of gallbladder infections, and the Surgeon-General's Office urged systematic investigations of the problems involved in the continued infectiousness in typhoid fever. The careful and detailed studies that were made seem to justify these conclusions:

1. So-called "urinary" carriers are exceedingly rare, and when the condition does occur, preexisting pathologic lesions of one or both kidneys are responsible for the continued infectiousness of the urine.

2. So-called "intestinal" carriers, that is, those in whom cultures from the feces are persistently positive and repeated cultures from the duodenal contents are persistently negative, probably do not exist.

3. Persistent infectiousness from the bowel is directly attributable to an infected gallbladder.

4. All patients who have suffered from a complicating cholecystitis in the course of typhoid fever are to be carefully and repeatedly examined to determine continued infectiousness of gallbladder origin.

5. Nearly all patients with complicating cholecystitis (unless operated on early) will develop cholelithiasis.

6. Persons who continue to give positive duodenal or fecal cultures six months after the onset of the disease should be considered persistent carriers.

7. A positive duodenal culture of *B. typhosus* indicates infection from the feces, and the bacilli will invariably be found in the stool if the proper bacteriologic technic is employed.

8. Postoperative cultures from the gallbladder in patients who previously showed a positive duodenal culture will usually be positive for typhoid bacilli.

9. Cultures from recently formed stones (crushed) found in a gallbladder obtained from a person in whom a positive duodenal culture had been previously obtained will usually be positive for typhoid bacilli.

10. Biliary calculi usually form quickly (three months) after a complicating or post-typhoid cholecystitis.

REPORT OF CASES

The accompanying cases are presented to show the efficacy of the surgical treatment of typhoid carriers and to confirm the observations of Nichols, Simmons and Stimmel.[1]

CASE 1 (33).—A man, aged 31, taken ill, July 31, 1918, and admitted to General Hospital No. 12, August 14, had not received prophylactic antityphoid inoculations. Four blood cultures, taken August 26 and September 5, 11 and 22, were negative, but a positive Widal reaction was obtained, September 9. On the fifty-sixth day of the disease the temperature was normal, the illness having run a moderately severe course. No subjective symptoms referable to the gallbladder were complained of, and the past history gave no suggestion of previous gallbladder trouble.

TABLE 1.—DAY OF DISEASE AND RESULT OF CULTURES IN CASE 1

Cultures from urine	46 +	47 —	53 —	61 —		
Cultures from stool	46 —		53 —	61 —	213 —	
Cultures from duodenal contents	67 +	95 +	125 +	160 +	195 —	198 —

As will be noted (Table 1), the duodenal cultures continued positive until the one hundred and sixtieth day, and were negative thereafter. Two such negative duodenal cultures are not conclusive evidence of freedom from infectiousness unless the duodenal tube is permitted to stay in place for twelve hours or more and repeated aspirations and examinations are made. It is to be regretted that cultures of the stool were not taken between the sixty-first and the one hundred and sixtieth days; with the improved technic subsequently employed, typhoid bacilli would doubtlessly have been found in the feces.

It has been suggested that vaccines and alkalis be used therapeutically to clear up infectiousness. I do not believe such treatment especially efficacious: the majority of infected gallbladders clear up without treatment. Surgical intervention to clear up continued infectiousness is not to be resorted to sooner than six months after the onset of the disease. In the case

* Read before the Tri-State District Medical Association, Waterloo, Iowa, Oct. 5, 1920.

1. Nichols, H. J.; Simmons, J. S., and Stimmel, C. O.: The Surgical Treatment of Typhoid Carriers, J. A. M. A. 73: 680 (Aug. 30) 1919.

under consideration it was, apparently, not necessary to perform a cholecystectomy.

Case 2 (53).—A man, aged 42, taken ill, August 4, and admitted to the army hospital, August 16, had not received antityphoid vaccination. The blood culture was negative, August 18, but the Widal reaction was positive, September 9. The disease ran a moderately severe course.

The patient developed an acute cholecystitis on the twenty-fifth day of the disease, and a cholecystectomy was performed on the forty-fifth day. It is my belief that the great majority

TABLE 2.—DAY OF DISEASE AND RESULT OF CULTURES IN CASE 2

Cultures from urine	25 +; 35 +; 46 —; 52 —; 58 —; 79 —
Cultures from stool	25 —; 35 +; 46 —; 52 —; 58 —; 79 —
Cultures from duodenal contents	66 —; 139 —; 146 —

of cases of typhoid fever will show a positive duodenal culture at some stage of the disease; examinations made to determine gallbladder infectiousness are to be made soon after the febrile period of the disease. In this instance, the stool showed bacilli on the thirty-fifth day. The gallbladder was also infected during the disease because the cultures taken from the gallbladder at operation showed typhoid bacilli; positive cultures were also obtained from the stones that the gallbladder contained. Duodenal cultures taken on the sixty-sixth day (three weeks after the cholecystectomy) and on the one hundred and thirty-ninth and one hundred and forty-sixth days were negative, and these are proof that the cholecystectomy had cleared up the infectiousness.

TABLE 3.—DAY OF DISEASE AND RESULT OF CULTURES IN CASE 3

Cultures from urine	60 —; 66 +; 67 —; 72 —; 78 +; 85 —; 92 —; 99 —; 105 —; 112 —; 115 —; 123 —; 130 —; 143 —; 235 —; 240 —; 255 —; 278 —; 285 —; 304 —; 311 —; 316 —; 319 —
Cultures from stool	60 —; 66 —; 67 —; 72 —; 78 —; 85 —; 92 —; 99 —; 105 —; 112 —; 115 —; 123 —; 140 —; 178 —; 240 +; 255 —; 278 —; 285 —; 304 —; 311 —; 316 —; 319 —
Cultures from duodenal contents	92 +; 183 +; 186 +; 218 +; 221 +; 305 —; 312 —; 319 —

Case 3 (57).—A man, aged 34, taken ill, July 27, and admitted to the army hospital, August 13, had not received prophylactic inoculation. The blood culture was negative, August 18, but was found to be positive, August 30, during a relapse. The Widal reaction was positive, August 30. The course of the disease was very severe, and normal temperature was reached on the sixty-eighth day.

The patient developed an acute cholecystitis on the ninety-fifth day, and a cholecystectomy was performed on the ninety-

TABLE 4.—DAY OF DISEASE AND RESULTS OF CULTURES IN CASE 4

Cultures from urine	57 —; 63 —; 69 —; 74 —; 86 —; 93 —; 100 —; 107 —; 119 +; 126 —; 133 —; 140 —; 159 —; 171 —
Cultures from stool	57 —; 63 —; 69 —; 74 —; 86 —; 93 —; 100 —; 107 —; 119 —; 126 —; 133 —; 160 —; 170 —
Cultures from duodenal contents	74 —

seventh day. Previous to operation, typhoid bacilli were found in the duodenal contents, but repeated examinations of the stool failed to reveal the organisms until the two hundred and fortieth day. At operation, gallstones were found; and cultures from the gallbladder contents, bile and stones, were positive for typhoid bacilli. Despite the removal of the gallbladder, cultures of the duodenal contents continued positive until the two hundred and twenty-first day. On the three hundred and fifth day the cultures showed that the infectiousness had disappeared, for subsequent cultures of the stool and duodenal contents continued negative.

Case 4 (54).—A man, aged 48, taken ill, July 25, and admitted to the army hospital, August 13, had not received antityphoid inoculation. Blood cultures, taken August 18 and 30, September 20, October 12, November 21 and January 17 were all negative. The Widal reaction, however, was positive, August 30.

In this case it will be noted that typhoid bacilli were not found in either the stool or the duodenal contents. On the one hundred and nineteenth day after the onset of the disease a cholecystitis (and probably a relapse) developed; the patient never returned to complete convalescence, eventually developed influenza, and died of pneumonia on the one hundred and eighty-ninth day. It is of interest in this case that the patient had frequently complained of symptoms referable to the right upper abdomen, before an outspoken cholecystitis had manifested itself. It is to be regretted, also, that only one culture of the duodenal contents was taken. A postmortem examination revealed chronic cholecystitis; the contents of the gallbladder were positive for typhoid bacilli, and the stones it contained, when crushed, also showed typhoid bacilli.

The case just presented is exceedingly interesting. The cultural findings at necropsy are sufficient proof that additional examinations of the duodenal contents would have resulted in finding the bacilli, unless the cystic or common duct had become occluded. Furthermore, typhoid bacilli would most certainly have been found in the stool. It is necessary to emphasize the fact that the usual, routine examination of the stools for typhoid bacilli must be replaced by a careful technic in which a large amount of stool is emulsified and cultivated and at least six to ten plates poured. It has been our experience, gained toward the end of our studies, that a positive duodenal culture will precede the finding of the organisms in the stool, provided the proper technic is employed.

Case 5 (51).—A man, aged 27, taken ill, July 25, and admitted to the army hospital, August 14, had received one antityphoid inoculation, August 6. The blood culture was negative, August 19. The disease ran an uneventful course, normal temperature was reached on the forty-eighth day, and no symptoms referable to the gallbladder were complained of during the course of the disease.

TABLE 5.—DAY OF DISEASE AND RESULT OF CULTURES IN CASE 5

Cultures from urine	43 —; 49 +; 55 —; 61 —; 67 —; 165 —; 171 —; 181 —
Cultures from stool	44 +; 50 +; 61 —; 66 —; 73 —; 99 +; 159 +; 161 +; 165 —; 171 —; 181 —; 187 —; 194 —
Cultures from duodenal contents	78 +; 99 +; 130 +; 161 +; 194 —; 200 —; 203 +

By the authority of the Surgeon-General's Office, this patient was subjected to a cholecystectomy to cure a persistent carrier. The operation was performed on the two hundred and thirty-sixth day, at which time a culture from the gallbladder and from the stones it contained were both positive for typhoid bacilli. This patient died three days after operation from a supposed intra-abdominal hemorrhage: a postmortem examination was not made.

Case 6 (48).—A man, aged 25, taken ill, July 21, and admitted to the army hospital, August 13, had not received prophylactic inoculation. The blood culture was negative, August 18 and 19, but the Widal reaction was positive, September 9. The disease ran an uneventful course and was of moderate severity, the temperature returning to normal on the thirty-eighth day. No symptoms referable to the gallbladder were complained of during the course of the disease.

This is another patient on whom a cholecystectomy was performed to cure persistent infectiousness. It is to be noted that the stool was found quite persistently positive for typhoid bacilli until the two hundred and twentieth day, while the

duodenal contents were found to be positive until the one hundred and sixty-seventh day, and presumably up to the time of operation. A cholecystectomy was performed on the two hundred and forty-sixth day, at which time the gallbladder contents and biliary calculi both showed typhoid bacilli. Subsequent cultural examinations were negative, and we have every reason to believe that the patient was cured of his carrier state.

At the time of operation, cultures from the stool were negative; while the last preoperative duodenal culture was positive (one hundred and sixty-seventh day). The last positive culture from the stool was obtained on the two hundred and twentieth day. It is to be presumed, therefore, that the duodenal contents were infectious up to that day, at least. It was decided to perform a cholecystectomy because typhoid bacilli had been previously found in the stool and duodenal contents so frequently and so persistently. Under the circumstances, we were justified in believing that the gallbladder was infected.

TABLE 6.—DAY OF DISEASE AND RESULT OF CULTURES IN CASE 6

Cultures from urine	51 —;	60 —;	66 —;	73 —;	81 —;
	89 —;	169 —;	175 —;	184 —;	220 —;
	241 —;	249 —;	264 —;	271 —;	290 —;
	297 —;	302 —;	305 —		
Cultures from stool	51 —;	60 —;	66 +;	73 —;	81 —;
	89 —;	163 +;	165 +;	169 +;	175 +;
	184 +;	191 +;	198 +;	205 +;	211 +;
	220 +;	226 —;	241 —;	264 —;	271 —;
	290 —;	293 —;	305 —		
Cultures from duodenal contents	66 +;	99 +;	134 +;	167 +;	291 +;
	298 —;	305 —			

It is to be admitted that an infected gallbladder does not necessarily imply a positive culture of the duodenal contents, especially in the event of the occlusion of the cystic duct. But I am of the opinion that a gallbladder, infected with living typhoid bacilli, and failing to drain into the duodenum because of occlusion of the cystic duct, will soon give trouble and direct attention to the gallbladder.

CASE 7 (50).—A man, aged 50, taken ill, August 2, and admitted to the army hospital, August 13, had received one antityphoid inoculation, August 1. The blood culture was negative, August 18. The disease ran a mild course, and normal temperature was reached on the twenty-third day. No symptoms of cholecystitis were manifest during the course of the disease.

In this case a cholecystectomy was performed on the two hundred and thirtieth day of the disease, infectiousness from the duodenal contents and therefore from the stool having been fairly consistent up to the time of operation. At operation, as in all the cases in this series, the contents of the gallbladder, and the stones it contained, were found positive for typhoid bacilli. It is of interest to note that, although subsequent examinations of the stool were negative for forty days after operation, the bacilli were, nevertheless, eventually found again on the two hundred and ninety-third day, while all postoperative cultural examinations of the duodenal contents continued positive for typhoid bacilli. Here, then, is a case in which a cholecystectomy did not cure the infectiousness. We had occasion in this case to perform another laparotomy to repair a ventral hernia. At the second operation, the site of the original operation was carefully explored and an attempt made to isolate and puncture the hepatic duct. But the original field of operation was matted down with adhesions, and the surgeon deemed it unwise to continue the exploration. This patient was transferred to another hospital when General Hospital No. 12 closed, Sept. 1, 1919.

TABLE 7.—DAY OF DISEASE AND RESULT OF CULTURES IN CASE 7

Cultures from urine	40 +;	43 —;	59 —;	69 —;	71 —;
	151 —;	153 —;	163 —;	172 —;	210 —;
	229 —;	231 —;	245 —;	252 —;	259 —;
	278 —;	285 —;	290 —;	293 —	
Cultures from stool	25 —;	40 —;	43 +;	52 +;	71 +;
	78 +;	86 +;	93 +;	100 —;	107 +;
	114 —;	121 +;	129 +;	136 +;	144 +;
	152 +;	163 +;	172 +;	179 —;	186 +;
	193 +;	199 +;	208 +;	214 +;	245 —;
	259 —;	278 —;	285 —;	290 +;	293 +
Cultures from duodenal contents	44 ;	88 ;	122 +;	153 ;	160 +;
	186 +;	279 +;	286 +;	293 +;	

NOTE.—I have been informed by the Surgeon-General that this patient, who had continued infectious long after the removal of the gallbladder, and who was transferred to General Hospital No. 6, at Fort McPherson, Ga., when General Hospital No. 12 was closed, was discharged and allowed his freedom, Nov. 18, 1919, apparently free from infectiousness. The Surgeon-General failed to state how freedom from infectiousness was determined. I had asked him to do so.

COMMENT

Apparently the majority of persistent typhoid carriers (and I believe all) can be cured of infectiousness by the removal of the gallbladder. The detection of carriers is of paramount importance. It must be taken for granted that in all cases of typhoid fever the gallbladder may be involved. Cultural examinations of the duodenal contents are absolutely indicated in all patients convalescent from typhoid fever, and these bacteriologic examinations are far more important in detecting continued infectiousness than are those of the stool.

Irregularities and inconsistencies in the cultural findings of the duodenal contents indicate that at least three consecutive, negative examinations, at intervals of a week, are to be obtained before a chronic carrier can safely be dismissed. Our studies at Biltmore prove that the positive and negative results may be obtained at one examination if the duodenal tube remains in place for twelve hours or more, and aspirations and cultural examinations are made every two hours. It has been shown that not all specimens obtained during the twelve hour period from a duodenum, when the gallbladder is known to be infected, will show typhoid bacilli. No chronic carrier, with or without a cholecystectomy, should be given his freedom on the basis of two consecutive, negative cultures of the duodenal contents. There can be no possible objection to permitting the duodenal tube to remain in place for twenty-four hours in order to allow for the intermittent emptying of the gallbladder. Periodic cultural examinations of the duodenal contents during a whole day will give much more accurate and dependable results, and will the more definitely establish the fact of cure of infectiousness. Three such negative examinations made at weekly intervals should be regarded as the criterion of a cure.

CONCLUSIONS

1. Cultural examinations of the duodenal contents are indicated in all cases during convalescence from typhoid fever.

2. Cholecystitis is a frequent complication of typhoid fever.

3. Persistent infectiousness following typhoid fever is usually the result of cholecystitis.

4. A gallbladder may continue to be infectious without the usual manifestations of a cholecystitis.

5. Cholecystectomy, with complete excision of the cystic duct, will cure the great majority of typhoid carriers.

6. Radical (surgical) treatment of complicating cholecystitis is to be considered. The likelihood of a carrier state is thereby greatly diminished, and the probability of future gallbladder trouble obviated.

7. Examination of the duodenal contents should imply an examination of the contents periodically aspirated and cultivated during the course of twelve or twenty-four hours. Three such consecutive, negative

examinations, made at weekly intervals, are the criterion of a cure of persistent infectiousness.

8. Typhoid fever is a preventable disease. The incidence of the disease has been astoundingly decreased by the use of prophylactic inoculation, and more can be accomplished along these lines. But endemic typhoid will continue to exist just so long as we fail to detect persistent infectiousness. Our researches at Biltmore show conclusively that the gallbladder is the seat of continued infectiousness, and an intelligent cultural examination of the duodenal contents can definitely detect this infectiousness. No case of typhoid fever is to be judged free from infectiousness until it can be conclusively shown that the gallbladder and its contents are free from typhoid bacilli. In the event of persistent infectiousness, the indication is definite and absolute—cholecystectomy.[2]

445 Milwaukee Street.

SOLITARY AMEBIC ABSCESS OF THE LIVER

REPORT OF A CASE OCCURRING THIRTY YEARS AFTER RESIDENCE IN THE TROPICS

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REPORT OF CASE

A civil engineer, aged 53, who was referred by Dr. Edward Hiram Reede and who for many years was a resident of Canada, of good family history and moderate habits, at the age of 17 had had a left sided pneumonia and at the age of 22, while resident in Central America, suffered from an attack which he described as "diarrhea" and not dysentery. This was not severe or of long duration, and thereafter his health remained good till May, 1919, when he had a mild febrile attack which was supposed at that time to be malaria.

Dec. 15, 1919, after a brisk walk, he felt sick and had a fever ranging from 101 to 102. With intermissions of about ten days of well-being, the malaise and slight fever continued till February, 1920. At that time, after a roentgen-ray examination, several abscessed teeth were extracted; February 6, diseased tonsils were removed.

There was some improvement, but mild fever of irregular, remittent type continued. A Widal test and a Wassermann test of the blood, examination of the sputum, roentgen-ray examination of the digestive tract, analysis of the gastric contents, and examination of the genito-urinary tract were made, with negative results.

When first seen by me, March 22, 1920, the patient complained of discomfort in the epigastrium beginning immediately after dinner and continuing with increasing severity till midnight or 3 o'clock in the morning. Occasionally there was slight pain between the scapulae, and once or twice bile was vomited, but no food. The patient had lost 20 pounds in weight in the last three months; the pulse was 92; the temperature was of irregular, remittent type, reaching 99.5 or 101.5 at some time in the afternoon or evening. There were no rigors or sweats. The leukocyte count was 10,000.

The first impression was that the subjective symptoms were due to some secondary focal infection following the known previous involvement of teeth and tonsils. The patient was therefore placed on such hygienic, dietetic and medicinal treatment as would alleviate the symptoms, increase nutrition, and improve the secondary anemia that was present, while an attempt was made to locate and determine the character of the infection.

Reexamination of the gastric contents, feces, blood, urine, and another roentgen-ray study of the gallbladder and duodenal region elicited no additional information of value; but on physical examination there could be demonstrated by percussion an increased area of dulness over the gallbladder. As the temperature rose a little higher, to 102.5, and the leukocyte count increased to 13,000, a tentative diagnosis of pus in or near the gallbladder was made, and Dr. C. S. White operated.

The enlarged and distended gallbladder contained normal bile; there were no stones or adhesions. On palpation of the liver there was found on the superior, anterior surface a soft area surrounded by slight induration, but no bulging or tumor. The characteristic chocolate-colored material was aspirated, and the abscess later treated surgically.

The pus was examined by two pathologists, but no amebas were found, and on culture no growth was obtained. After operation, emetin hydrochlorid was given hypodermically, the patient's appetite returned, the anemia improved, and there was a rapid gain in weight, with prompt and complete recovery.

COMMENT

In this case, presenting malaise, loss of weight, pain in the epigastrium, an intermittent fever of long duration, secondary anemia and moderate leukocytosis, the problem was to locate and determine the character of an infection. Clinicians emphasize the importance of tuberculosis, typhoid fever and syphilis as three common causes of fever of long duration. To these, in considering such a case as this, must be added septic endocarditis, hepatic intermittent fever of Charcot, pyelitis, certain types of malaria, neoplasm with typhoid symptoms, and abscess of the liver. By means of physical examination and laboratory tests, all of these could be excluded except tuberculosis, neoplasm, Charcot's fever and liver abscess.

On the usual clinical considerations it seemed that if tuberculosis and neoplasm could not be excluded they could be considered very improbable. The history of diarrhea while in the tropics was repeatedly reverted to, and an attempt was made to elicit evidence of recurrent dysentery, the feces were repeatedly examined for amebas, and the liver was examined for signs of enlargement or tenderness; but it was not until the patient had been under observation for fifteen days, and at least two months after the onset, that moderate tenderness and increase in the area of dulness over the gallbladder indicated the location of a lesion with sufficient definiteness to warrant an exploration.

Usually, abscess of the liver, as it occurs in the tropics, presents such signs and symptoms that diagnosis is simple and easy.

CONCLUSIONS

The foregoing case is reported for the purpose of giving emphasis to these not yet sufficiently recognized facts:

1. Amebic dysentery, and therefore amebic abscess of the liver, may occur in persons who have never been in tropical or subtropical countries.

2. Amebic abscess of the liver occasionally occurs a great many years after the primary and single attack of amebic dysentery.

3. Amebic abscess of the liver should be remembered as a cause of obscure fevers; for, as Dr. Richard P. Strong wrote, "Liver abscess is frequently overlooked, and this is not strange, for sometimes its development takes place so insidiously that perforation may be the first indication. . . . In the diagnosis of liver abscess there is not a single symptom that is constant, and proof that the liver is involved may be very doubtful."

1720 Connecticut Avenue.

2. Henes, Edwin, Jr.: Studies in Typhoid Fever, Wisconsin M. J., to be published.

AN EXTRAORDINARY CASE OF SITUS INVERSUS VISCERUM TOTALIS

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An approximately full term fetus was selected from the dissecting room material for the purpose of studying the arteries of the colon. A simple abdominal incision was made to approach the inferior mesenteric artery. As no descending colon on the left side was found, further dissection was made, with the result that not only the abdominal viscera but the thoracic structures as well showed a remarkable reversion and anomalous development.

HISTORICAL

Karashima,[1] in 1912, described a case of situs inversus totalis, and also gave a catalogue of such cases up to his time. His catalogue began with Aristotle, who mentioned two cases of reversal of the liver and spleen in animals. Fabricius, in 1600, related a case of reversed liver and spleen. Frochel, in 1745, made brief citation of partial inversion of abdominal viscera in a wider discussion on general malformations of the viscera. Cornelius Gemma of Antwerp, in 1769, was the first to make special study of such cases. Küchenmeister, in 1824, was the first to discuss such cases after examination by auscultation and percussion. Gruber, in 1865, catalogued sixty-seven cases in man and one in the horse. F. Küchenmeister, in 1883, was able to catalogue 149 cases, forty of which appeared before 1819, the year of the discovery of auscultation. Schelens, in 1909, found, since 1883, sixty new cases in the literature. Up to Karashima's time, 1912, something more than 200 cases had been catalogued. According to this author, cases of partial situs inversus are more rare than those of total inversion. This seems illogical in the light of other findings; however, he cites only twenty-two such instances that had been gathered. Eddy,[2] in 1912, described a case of arrested development of the pancreas and intestine which was evidently not included in Karashima's list. Naguchi,[3] in 1912, described an interesting case of unrotated intestinal tube in a new-born infant, in connection with other malformations. Deselaers,[4] in 1912, described a case of situs inversus totalis in which was found, in addition to reversion, a number of malformations. Cases are not wanting of total or partial reversion, found in the dissecting room or at necropsy, which are not on record, and it is felt that Karashima's percentage of partial and total cases would be different if records of all cases were carefully kept. After investigating the literature cited, I feel that the present case is sufficiently unique to be presented.

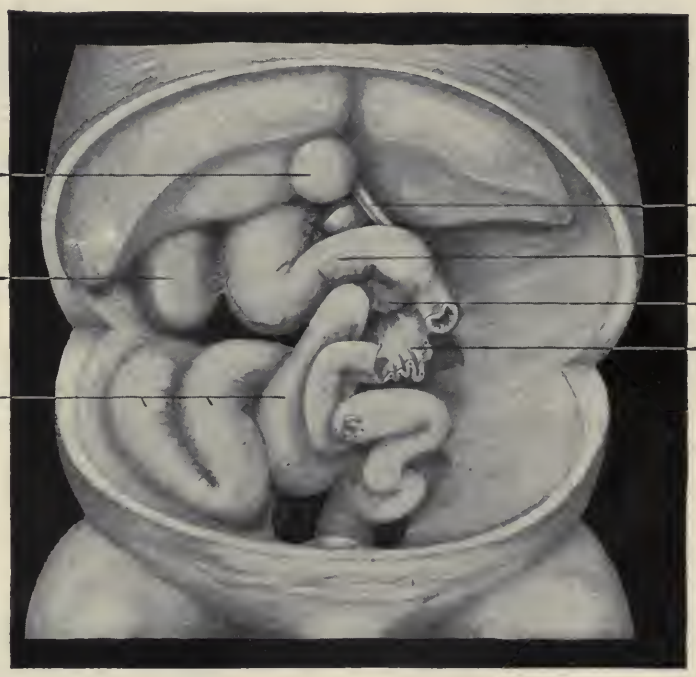


Fig. 1.—Anterior abdominal wall cut away, exposing the viscera in place; the small intestine has been removed: *C*, coils of the colon; *D*, common bile duct and cystic artery; *G*, gallbladder; *M*, mesentery; *P*, pancreas; *S*, spleen; *St*, stomach.

DESCRIPTION

The specimen, a near term female fetus, was selected from the dissecting material at the University of Chicago, for the purpose of making a special study of the arteries of the colon. Its chief value was its well developed state and good preservation. No data could be found of its history; but its weight, at the time of study, was 3,000 gm., and all general outward appearances were good. As the dissecting progressed it became more and more evident that here was a case of situs inversus of a remarkable type, not paralleled by any in the available literature. Not only is reversion encountered, but several instances of striking abnormalities appear, a greater number of anomalies, indeed, than can be found in recorded cases. There was a strong desire to go into a detailed discussion of these anomalies, but it seemed best to merely present a general report of the case.

Neck.—The structures in the neck of main interest are the arteries, which are abnormal in their origin from the arch of the aorta. As will be discussed later, the aorta is exactly reversed in position throughout its entire course. The first of its branches is the left common carotid artery, the next, the right common carotid, the third, the right subclavian, and the fourth, the left subclavian.

Here is a case of reversion of an abnormality. Cases are not rare in which the right subclavian artery arises from the arch of the aorta as a separate branch, the fourth, and crossing behind the esophagus, passes to the right arm. This anomaly arises from a readjustment of the embryonic aortae and their arches. The fourth arch on the right side normally forms the first part of the subclavian and, with the subclavian branch, it eventually forms the brachial. The part of the right dorsal aorta between the subclavian branch and the junction of the two aortae normally degenerates. In the anomaly, the arch degenerates and the aorta persists, and by unequal growth its point of attachment to the fully formed aorta comes to lie on the left side of the midline as the fourth aortic branch. In the present case this readjustment occurred, but exactly in reverse position (Fig. 2 *A* 1, 2, 3, 4). The veins of the neck are normal but for being reversed.

Thorax.—There is complete reversion of the viscera of the thorax. The descending vena cava lies on the left side of the

1. Karashima, I.: Ein Fall von Situs inversus viscerum totalis, Inaug. Diss., München., 1912.
2. Eddy, N. B.: A Case of Arrested Development of the Pancreas and Intestine, Anat. Rec. **6**: 299 (No. 8) 1912.
3. Naguchi, Y.: Ein Beitrag zur Pathologie des kongenitalen partiellen Darmdefektes, Virchows Arch. f. path. Anat. **209-210**: 220, 1912.
4. Deselaers, Hubert: Anatomische Untersuchung eines Falles von Situs viscerum inversus totalis, Inaug. Diss., Strasbourg, 1912.

median line and is formed by the union of the innominate veins, in reversed position. It is joined by the azygos vein after this vessel arches over the root of the left lung. The formation of the azygos vein is essentially that of a normal vein except for being reversed. It should be noted here, however, that the left first intercostal vein empties into the

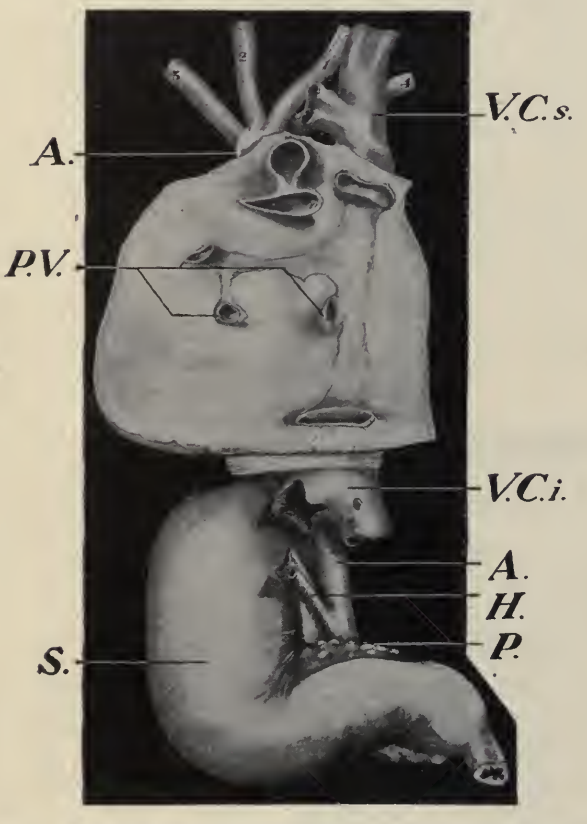


Fig. 2.—Here the heart has been removed, exposing the posterior wall of the pericardium and the large blood vessels; the lower portion shows the stomach and its related structures more in detail: *A*, aorta; 1, left common carotid artery; 2 right common carotid artery; 3, right subclavian artery; 4, left subclavian artery.

azygos vein instead of the innominate. The lungs show an absence of clefts, dividing them into the typical lobes; but the roots show the characteristics typical of the two sides. The left root has the eparterial bronchus which normally belongs to the right side, and although there are no distinct lobes, three are indicated on the left side, by the bronchial divisions, and two on the right side. The lung substance, while appearing spongy, would not float.

Heart.—The heart shows remarkable abnormalities. It is completely reversed, and in addition shows several anomalies, being in an early embryonic state of development (Fig. 4). It has a flattened cone shape with the apex of the cone formed by the aortopulmonary trunk, and has its base flattened against the diaphragm. Two indistinct apexes are seen on the surface, in a bilateral position, with a broad, shallow depression between them. The pulmonary artery leaves the ventricles directly behind the aorta. This vessel in turn has the anterior position and passes by a sharp arch, to the right of the vertebral column, along which it descends, obliquely, till it passes into the abdomen directly in front of the column. From its arch it gives off its carotid and subclavian branches, as noted above. The sinus venosus and the two venae cavae lie on the left side, the superior vena cava being organized as formerly mentioned. The inferior vena cava passes through the diaphragm a little to the left and in front of the aortic opening. The atrium lies directly behind the ventricle and is entered by three short pulmonary veins (Fig. 2 *P. V.*). The interior of the heart shows the most striking anomalies. The primary foramen ovale and secondary foramen ovale are both present. There is only one ventricular cavity, no sign of an interventricular septum being present. The cavity is entered from the atrium through the atrioventricular foramen, which is guarded by a typical arrangement of bicuspid valves. There is no other opening into the ventricle, such as exists in a later state of development, when the ventricles become separated by the interventricular septum. The exit from the ventricle is into the aortopulmonary trunk, guarded by the typical group of valves. Fischer[5] in 1912, reported the case of a man, aged 21, who died of renal abscess following angina. At necropsy the heart was found to be quite similar to the present case, having only one ventricle discharging the blood into an aorta and a pulmonary artery.

There is here very clear evidence of an early embryonic heart functioning adequately in late fetal life. It is essentially a simple tube twisted into a single loop, terminating in an aorta and a pulmonary artery. The blood flow was through the vena cava into the sinus, then into the atrium, then into the ventricle and finally into the lungs through the pulmonary artery and into the systemic vessels through the aorta. The ductus arteriosis is present and functioning; indeed, it is a rather large structure. There is evidence of a free pulmonary circulation, since this artery is quite as well developed as the aorta, and clotted blood may be found in the pulmonary veins well into the lung region. What would have been the outcome had this individual lived, if indeed it could have lived with such a cardiac condition, is wholly a matter of speculation. It is noteworthy, however, that the fetus is well formed, there being no evidence, with a few exceptions, of retarded development. The state of development here is entirely compatible with such a heart, since the maternal circulation would compensate for any cardiac abnormality. As to the possibility of postnatal life for this individual, unpromising as it would seem, it must still be remembered that cases are not wanting in which the foramen ovale remained open even into adult life. I recall two such cases coming under my original observation, wherein the foramen had a diameter of some 15 mm. Fischer's case of a single ventricular cavity, functioning successfully in an adult, is a valuable contribution to a favorable prognosis for such a case as this. The abdominal aorta terminates in two unequal common iliac arteries; the right is the larger. The renal arteries are also unequal in size; here again the right artery is the larger.

Thoracic Wall.—The thoracic wall on the left side presents a very striking anomaly. The vertebral column is markedly scoliotic in this region, and there are only nine ribs on this side. Four of these have attachment to the sternum by cartilage; and the last, the ninth, is only rudimentary. The first is normal, but the second and third show marked variations from the normal. The second does not reach the sternum, but ends freely in the interval between the first and third, being only about one third as long as the normal (Fig. 5). A peculiar formation is seen at the bases of the second and third, in the form of two cross connections or arches passing between them. The smaller, which, in reality, is an intimate part of the bodies of the vertebrae, lies nearer the vertebrae and on a plane anterior to the second. It forms two loops, in a cephalocaudal position, which encircle the



Fig. 3.—First portion of the duodenum, split to show its connection with the pancreas: *D*, opening of the common bile duct; *P*, opening of the two pancreatic ducts.

5. Fischer, B.: Demonstration, situs inversus totalis, München. med. Wchnschr. **59**: 555, 1912.

intercostal vessels. The second, which lies posterolaterad to the first and posterior to the intercostal structures, is the larger of the two and unites the two ribs proper. The first intercostal artery can be seen distributing branches to the first and second spaces, and in like manner the first intercostal vein receives a tributary from the second space also. Furthermore, the second space has two additional veins and an artery (Fig. 5).

Abdomen.—The liver attracts more than passing attention, as it is strictly normal and occupies its proper side. This is noteworthy; for here, where there is so complete reversion,

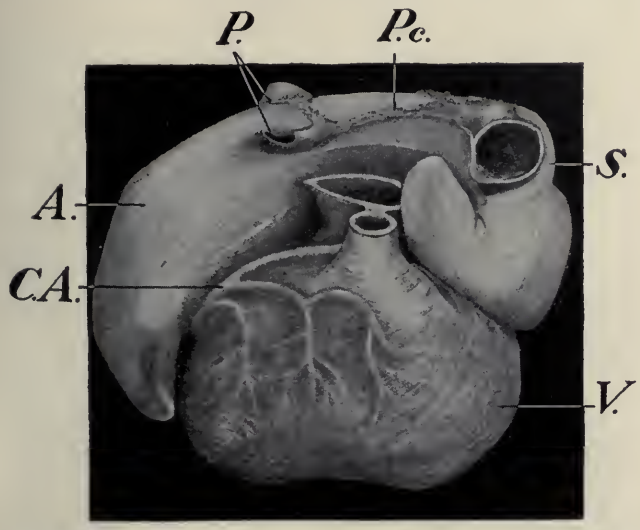


Fig. 4.—Heart seen from almost a straight cephalic view: *A*, atrium; *CA*, coronary artery; *P*, pulmonary veins; *Pc*, pericardium, line of attachment; *S*, sinus venosus; *V*, ventricle.

the one structure which is most commonly reversed remains unchanged. The two cases recorded by Aristotle showed reversion of the liver and spleen only. Many of the citations in subsequent literature have mainly this organ in mind. I again recall six cases of original observation in which the liver was the only structure reversed. The strictly normal state of the liver here lends added interest to the case.

Stomach.—The stomach has its typical shape and size, but lies on the right side, under cover of the liver (Fig. 1). The lesser curvature faces the midline; the greater curvature and fundus come into contact with the right lobe of the liver and make an impression on its under surface. The pylorus lies on the left side about 10 mm. from the midline. The cardia lies on the right side, where the esophagus passes through the diaphragm, to the right and slightly posterior to the passage of the vena cava. The lesser omentum and its structures present very striking anomalies. The ligament, which normally passes from the stomach to the liver, passes to the vertebral wall instead. The hepatic artery arises from the celiac axis and goes directly to the portal fissure. In its course it is accompanied by the portal vein, lying at first to its left and then passing in front of the vein at their entry into the liver. The common bile duct has a separate and isolated course. The hepatic and cystic ducts unite near the gallbladder, and the common duct then passes straight to the pyloric end of the stomach. In its course it is removed from the two vessels by about 10 mm. distance, the interval being filled by a pedunculated nodule of liver, attached to the processus caudatus. The cystic artery reaches the gallbladder by way of the duct. The duct enters the duodenum, on the posterior side, just distal to the junction of this structure and the pylorus (Fig. 1).

Pancreas.—This gland lies in close relationship to the pylorus and greater curvature of the stomach. What would otherwise be its head is very indistinct, since this part of the structure is intimately incorporated in the duodenal wall. This brings about the phenomenon of the two pancreatic ducts entering the duodenal canal separately (Fig. 3). The pancreatic artery arises directly from the abdominal aorta.

Spleen.—The spleen lies on the right side, between the liver and the stomach. It is somewhat elongated, resembling the pig spleen, but is otherwise normal (Fig. 1).

Intestines.—There is lack of rotation here as well as reversion. The small intestine shares the subphrenic fossa with the left lobe of the liver and kidney, and fills the remaining abdominal cavity on the left side. The colon occupies the portion of the right abdominal cavity not taken by the liver, stomach and spleen. There are no typical ascending and transverse portions of this tube. These are represented by a number of coils occupying the midplain position, where also may be seen the cecum and the appendix (Fig. 1). A very delicate membrane, the great omentum, could be identified stretching across from the greater curvature of the stomach to the coils of the colon. The descending colon and sigmoid have the normal characteristics, but for reversion. The mesentery is attached to the vertebral wall in an almost straight midplain line. It suspends the first portion of the colon as well as the small intestine.

Kidneys.—Both kidneys show the fetal lobulations, the left more distinctly than the right. In addition, it is much smaller than the right; its artery is also much smaller than is the right renal artery.

Genitalia.—The external genitals are normal in every way, as is also the vagina. The uterus, however, shows only the right tube and ovary. The body of the uterus is normal in shape and occupies its normal position, but the left tube is present only as a rudimentary cord, which is attached laterally to the rim of the pelvis. The left ovary is entirely wanting, and the right fimbria and ovary are smaller than the normal and lie within the abdominal cavity.

CONCLUSIONS

This case is interesting because of its great number of anomalies. Some are anomalies in reversion, as seen in the instances of the heart and aortic branches. In this connection, of especial interest is the fully developed body served by a heart of an early embryonic state. The real value, however, of this case lies in the positive data it offers to the problem of placing the causative factor for such anomalies. In his summary, Karashima offers two possible causes for inversion. One is that trauma, from various sources, in late

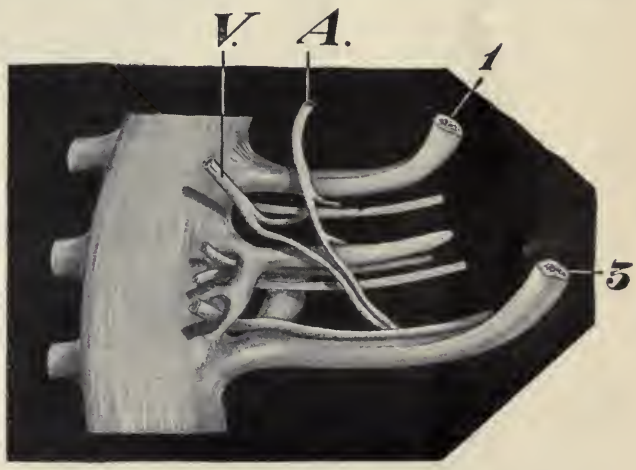


Fig. 5.—Portion of vertebral column; first, second and third vertebrae, showing scoliosis and deformities: *A*, superior intercostal artery; *V*, superior intercostal vein; 1, first rib; 3, third rib; the second rib is seen ending freely between the two.

embryonic life, may cause malformations. This might easily explain external deformity, and some kinds of internal derangments, but it is difficult to see its effect on reversion. Nor would Mall's [6] expression of "dissociation" and his enunciation that "it is perfectly

6. Mall, F. P.: On the Frequency of Localized Anomalies in Human Embryos and Infants at Birth, Am. J. Anat. **22**: 49 (July) 1917.

clear that monsters are not due to germinal and hereditary causes, but are products from normal embryos by influences which are to be sought in their environment" be applicable here. More to the point is the term, used by many, "cytoplasmic variation," in which it is suggested that in the germ cell there is a predilection for the ultimate form of the body, which at least influences these malformations. The expression leaves the problem practically untouched, except that it tranfers its consideration to an early period in development. The present case offers proof, as instanced by the reversed anomalous aortic branches, the primitive heart, the reversed root of the lungs and azygos veins, the relationship of the pancreas and the unrotated intestines, that these anomalies have their causative factor operating at a very early embryonic period.

NOTE.—The specimen is the property of the department of anatomy of the University of Chicago, where it remains and may be seen.

INTERVENTRICULAR CARDIAC ANEURYSM WITH HEART BLOCK*

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While aneurysms of different parts of the heart have been reported many times in the literature, their occurrence is much less frequent than in the aorta. The left ventricular wall near the apex is the most common site, 144 out of 147 cases in Bourland's [1] analysis of cases, although sacs filled with blood and communicating with the cavities of the heart have also been reported in the auricles and in the interventricular septum, as well as sacs formed from dilated valve leaflets. An aneurysmal dilatation may form whenever the elasticity of the wall is lessened, as in the fibrosis of interstitial myocarditis, in fatty degeneration, or where the wall is injured from new growths, gummas or disturbed circulation, whether syphilitic or not.[2] As with the aortic aneurysms, the cardiac variety may be a bulging of the entire thickness of a wall or the septum [3] or a valve leaflet, or the sac may result from dissection of the layers of the region itself. Of the 135 cases referred to by Osler,[4] 102 were in men.

There are no typical symptoms or signs, and diagnosis is usually made at necropsy. The area of relative cardiac dulness may be enlarged, but often the other lesions present may be of such a nature that enlargement may be otherwise explained if an aneurysm is not suspected. A marked discrepancy between the large size of the heart, the force and wide area of the impulses, and the small size of both radial pulses may suggest a cardiac aneurysm. There are no characteristic murmurs, and the blood pressure is not distinctive. There are apparently no references to changes in the electrocardiogram. The varying positions sometimes give signs characteristic of mechanical interference with the function of the part involved, such as murmurs from distorted valves or abnormal pulsations from unusual parts coming in contact with the chest wall, with dyspnea, cough and precordial pain from the disturbed function. Both acute and chronic cases have been reported, some as the result of trauma, others as the result of slower pathologic degenerative processes.

An unusual case of aneurysm in the interventricular septum of the heart, with associated heart block, was observed in the medical wards of the Cincinnati General Hospital.

REPORT OF CASE

History.—A colored man (E 4407), aged 36, was brought to the hospital complaining of "shortness of breath and swelling of the legs." During the last two years the patient had had difficulty in breathing, with hemoptysis after coughing, and precordial pain during the last year. About nine months before, while working as a railroad laborer, he found it so difficult to breathe that he had to stop work and rest for awhile before he could go ahead. Vertigo and headache came on with exertion, and the frequency of the attacks increased. He managed to continue working for about four months longer, when he had to stop work and go to bed. His physician was unable to relieve him. This was about five months before his admission to the hospital.

The patient had measles, mumps and whooping cough during childhood, and a syphilitic infection eight years before admission. He was a moderate drinker, and smoked about one package of cigarets a day. His father and mother died at 70 and 60 years of age, respectively, of "dropsy."

Examination.—The patient was well developed and well nourished. He sat upright with a back-rest at about 90 degrees most of the time. Breathing was rapid and somewhat shallow, about once to each two beats of the heart. The heart rate was 54 on admission. The patient had a harsh, irritating cough and profuse, bloody sputum. The head showed no lesions of note. The pupils were equal, small and reacted, but not perfectly, to light. There was no nystagmus.

The right ear drum was perforated, and there was a slight discharge. The nasal mucosa was injected. There was a slight congestion of the throat and tonsils, and the tongue was heavily and unevenly coated. The teeth were in fairly good condition. A marked pulsation was noted in the neck along the carotids.

The chest was well developed and symmetrical, and the nourishment was good. There was slight myotactic irritability. There was impairment over the left side of the chest in the base, anteriorly, but the rest of the chest appeared clear to percussion. The relative cardiac dulness and retrosternal dulness were:

First	interspace:	3 cm. to right,	4 cm. to left
Second	interspace:	3 cm. to right,	5 cm. to left
Third	interspace:	4 cm. to right,	8 cm. to left
Fourth	interspace:	5 cm. to right,	10 cm. to left
Fifth	interspace:		13 cm. to left
Sixth	interspace:		12 cm. to left

The apex beat was not visible, but was palpable 11 cm. to the left of the midline in the sixth interspace. A blowing systolic and a diastolic murmur were heard over the apex, aortic and pulmonary valve areas. The sounds were rather distant over the apex, with an occasional arrhythmia.

Over the base of the left lung, anteriorly, the sounds were almost suppressed, but higher up crackling râles were heard during inspiration, with the sounds harsh in the apex. On the right side inspiration was harsh and sonorous, while expiration was marked by fine, moist râles. Dry, crackling râles marked inspiration posteriorly.

The abdomen was about on the chest wall level. There was tenderness over the liver and epigastrium, and in the subcostal areas posteriorly. The liver edge was palpable about 4 cm. below the lower costal border in the midclavicular line. There was no evidence of much increase in fluid in the abdomen. No rigidity or masses were noted. There was hard edema of both legs, from the knees down.

Clinical Course.—On the following day the apex was palpated 14 cm. to the left of the midline, in the sixth interspace,

* From the University of Cincinnati College of Medicine and the Cincinnati General Hospital.

1. Bourland: Aneurysm of the Heart, Am. J. Med. Sc. **128**: 323, 1904.
2. Woolley, P. D.: Cardiac Aneurysms, J. Lab. & Clin. Med. **2**: 223 (Jan.) 1917.
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4. Osler and McCrae: Modern Medicine, Ed. 2, Philadelphia, 1915, **4**: 482.

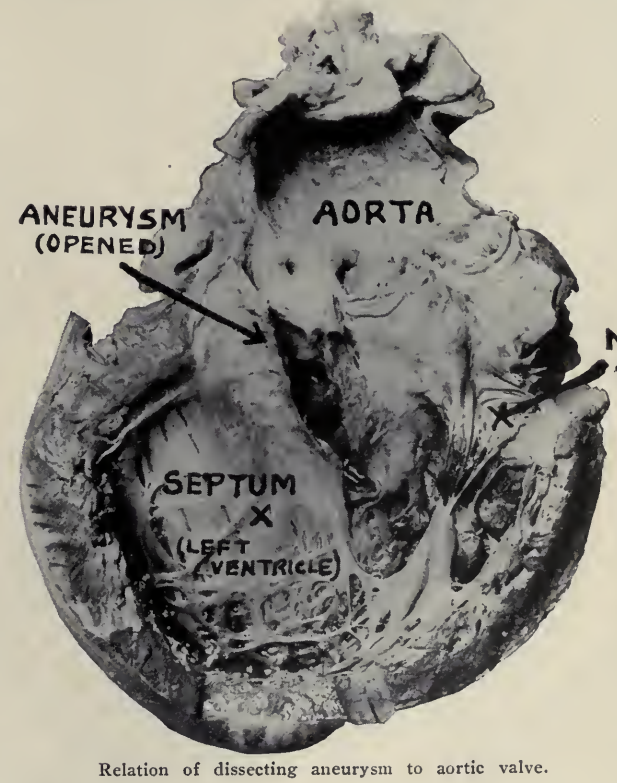
and the relative cardiac dulness was 4 cm. to the right in the fourth space, and 15.5 cm. to the left in fifth space. There was no thrill or abnormal shock. At the apex, a diastolic murmur was heard, which was most intense over the mid-sternum. The murmur replaced the second sound at the aortic area. On holding the breath, a faint systolic murmur was heard at the apex. There was no arrhythmia. The radial pulse (64) was very compressible, and there was no pulse deficit. A venous pulse of 100 was noted in the neck. Systolic pressure was 138; diastolic, 60.

At this time, a small area of impaired resonance (about the size of the palm of the hand) was noted in the right base. There was bronchovesicular breathing, and fine râles at the end of inspiration. The bloody expectoration continued, and the temperature rose to 100. The impression of a pulmonary infarct was recorded.

On the following day a definite 3-1 partial heart block was recorded on the polygraph. During the stay at the hospital, the pulse varied from 52 to 100. The patient was too sick to be moved to the electrocardiograph room.

About eight days later the patient's condition was much worse. He sat up in a semistuporous condition, breathing rapidly, and groaning with each expiration. The lower jaw was dropped, the lip sagging and the tongue protruding. He complained of pain in his hands, legs and abdomen. The heart sounds were distant and weak. A relative cardiac dulness of 5 by 15+ cm. was mapped out, but the apex beat was palpable 10 cm. in the fourth space. The impression of pericardial effusion was recorded.

The urine became alkaline to methyl red, and showed a trace of albumin, with a few pus cells and red blood corpuscles, and a specific gravity around 1.020. The leukocyte count was 10,200, with 75 per cent. polymorphonuclear leukocytes, 4 per cent. large lymphocytes, 18 per cent. small lymphocytes, 1 per cent. eosinophils and 2 per cent. transitionals. The red cell count was 3,600,000. The blood Wassermann reaction was strongly positive. Stereoscopic roentgenograms of the chest revealed the cardiac shadow grossly enlarged in the transverse diameter. The aortic shadow showed a slight widening.



Relation of dissecting aneurysm to aortic valve.

Treatment.—This consisted in rest, sedatives, alkalis, carminatives, cathartics and stimulants when needed. Periods of marked dyspnea were often quickly relieved, following the administration of 8 c.c. of peppermint water, with belching of gas. After fourteen days in the hospital, the patient became weaker and more dyspneic, with continued abdominal pain, and finally died.

Diagnosis.—A clinical diagnosis of aortic insufficiency, relative mitral insufficiency, heart block (cause not known), pericardial effusion, pulmonary infarct, and chronic passive congestion of all viscera with general anasarca, from cardiac decompensation and syphilis, was made.

Necropsy.—This disclosed pericardial effusion, pulmonary infarction, thickened pleura, chronic splenitis, acute cystitis, chronic passive congestion of all viscera, syphilitic aortic endocarditis, cardiac hypertrophy and dilatation with myocardial degeneration, syphilitic mural endocarditis, syphilitic mesaortitis and a dissecting aneurysm in the interventricular septum of the heart.

In Dr. Robert Kehoe's necropsy report on the heart, he notes that "the heart is extremely large, about 20 cm. in the transverse diameter. The musculature is pale and quite flabby. On opening the heart, the tricuspid orifice is dilated so as to admit four fingers. The musculature is slightly thickened. The medial leaflet is dilated and adherent to the interventricular septum, over an opaque area of mural endocardium. The pulmonary valves present no abnormalities. The mitral leaflets are slightly thickened, but not retraced. The aortic valves are markedly thickened and contracted. The median leaflet having a large perforation at its base, the the endocardium beneath being dissected loose, so as to form a cavity within the interventricular septum, just opposite the point of attachment of the median tricuspid leaflet. (The aneurysmal cavity was roughly oval, measuring about 4.5 by 6 cm.). Over this entire area of the septum, over the leaflets of the aortic valves, and extending up into the aorta, there are numerous pearly white plaques, with a great thickening of the endocardium and the intima of the aorta, with much wrinkling. The condition extends into the aorta well below the diaphragm. At one point in the aorta there is a very small dilatation, about the size of a split pea. The mitral valve admits three fingers. The musculature of the left ventricle is of about normal thickness, even though the ventricle is dilated almost to twice the normal size."

COMMENT

In the illustration, the relation of the dissecting aneurysm (cut open) to the aortic valve can be seen. The sac is lined by well developed fibrous tissue, having an appearance similar to that of the endocardium, showing the process to be of some duration. Although the patient complained of dyspnea, the acute attack, which may have corresponded to the development of the aneurysm, was about nine months previous to his death.

The case is interesting since there seems to be a definite anatomic lesion—the aneurysm in the interventricular wall related to the heart block observed clinically. The dilatation and decompensation ordinarily would have been treated clinically by means of one of the digitalis preparations, but in the absence of a definite history it was considered inadvisable to use them in the presence of a pulse of from 40 to 60 per minute.

On admission, the possibility of a digitalis heart block was considered, but this did not seem probable after a week or more in which it was known that the patient did not receive the drug.

SUMMARY

In a case of dissecting aneurysm in the interventricular septum of the heart, and associated with heart block, the diagnosis was clouded during life by an associated aortic and mitral insufficiency and a pericardial effusion. The process was continuous with and related to a syphilitic endocarditis and aortitis. The possible duration of the aneurysm was about nine months. The symptoms present were not abnormal for the other lesions found at necropsy.

MALIGNANT ADENOPATHY OF BONES OF FOOT, PROBABLY OF THYROID GLAND ORIGIN

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History.—A woman, aged 40, complained of throbbing pain in the leg and great toe when extended. She felt "run down," without apparent cause. She was born and had always lived



Fig. 1.—Appearance of leg and foot with muscles dissected away, showing tumor growths in fibula and fifth metatarsal bone.

in the United States, and came from Irish parentage. She had lived in the country or a village during her whole life. The environment and food appeared to have nothing to do with the development of the disease reported here. Chronic constipation had been noticeable, but caused no more than ordinary discomfort. The common contagious and infectious diseases noted were measles at 4 or 5, parotitis at 9 or 10, and pertussis at 4 or 5 and again at 39, when there was an accompanying attack of diphtheria. She had one child at 35, and had had no miscarriages. Menstruation began at 12; the periods were sometimes irregular and occurred at two weeks intervals. Slight dysmenorrhea had always been present.

In the fall of 1911 she had the thyroid gland removed, and was told that the gland contained a tumor. Her health was good until May, 1916, when she had lumbago and had a very tired feeling. Shoes worn at about this time were too small, and the toe was pinched. Later the toe became inflamed and then "broke down," but finally formed granulation tissue and healed. In September, 1916, throbbing, dull pains were noticed in the toes of one foot, and a roentgenogram at that time disclosed a distinct loss of bone substance of the toes, four of which were removed at two operations.

For a brief interval there were no new developments; but after about a year and a half a swelling was noted on the dorsum of the foot and on the right ankle. The tumor mass was soft and painless to palpation and also to the needle. The roentgen ray disclosed a definite loss of bone substance of the fibula and the fifth metatarsal bone, with little or no involvement of the joints. Microscopic examination of the blood revealed a slight secondary anemia; the blood culture was negative; the Wassermann test of the blood was negative, and the blood urea, creatinin, uric acid and blood sugar were all normal. The urinary analysis was normal and tests for Bence-Jones bodies in the urine were negative.

Roentgenograms of all the other bones of the body were negative, and this finding was supported by the negative physical examination. The systolic blood pressure was 116. Temperature, pulse and respirations were normal. Because of the continued dull pain in the leg and great toe, after seeing several men, her physician referred her to Dr. Howard Prince of Rochester, N. Y., who made a clinical diagnosis of a bone tumor of probable thyroid origin. The great toe was amputated for pathologic diagnosis, and sections showed a malignant and rapidly growing adenoma. Consultation with Dr. F. B. Mallory of Harvard Medical School confirmed the diagnosis; in view of the history the opinion was that the origin was probably from the thyroid gland. Histologically it is impossible to say positively that such is the case.

Following the histologic studies, the leg of the patient was amputated by Dr. Prince at a point several inches above the tumor masses shown in the roentgenograms in the hope that the neoplasm might be primary at this site rather than metastatic from the thyroid gland tumor that was reported to have been removed some seven years previously. At the time of operation the patient reported that she felt a tingling sensation in the toes of the other foot similar to that felt in the early development of the neoplasm in the toes affected. This was probably unimportant, for the patient reported to Dr. Prince at the end of one year, and no new developments had taken place and she was apparently in good condition.

Description of Tumor.—The tumor masses appear to have developed in the shaft of the bone in the cancellous tissue or bone marrow, and to have grown by peripheral development up to a diameter twice that of the bone itself. There was a slow erosion and absorption of bone substance, and the tumor mass was encased in a firm fibrous tissue covering. The fibula was involved at a point midway between the head and the external malleolus and a portion of the shaft normally covered by skin and subcutaneous tissues. The bones of the foot involved included the cuboid, the fifth metatarsal bone and all the phalanges of the foot affected.

The tumor mass was soft, glandular and cream pink, and was encased with a firm fibrous tissue covering. The blood supply was of small blood vessel and capillary types.

The microscopic sections show in parts typical adenomatous arrangement of a cuboidal epithelium containing reticular chromatic nuclei. In most parts of the section the tissue is divided into a general reticular or fenestrated arrangement

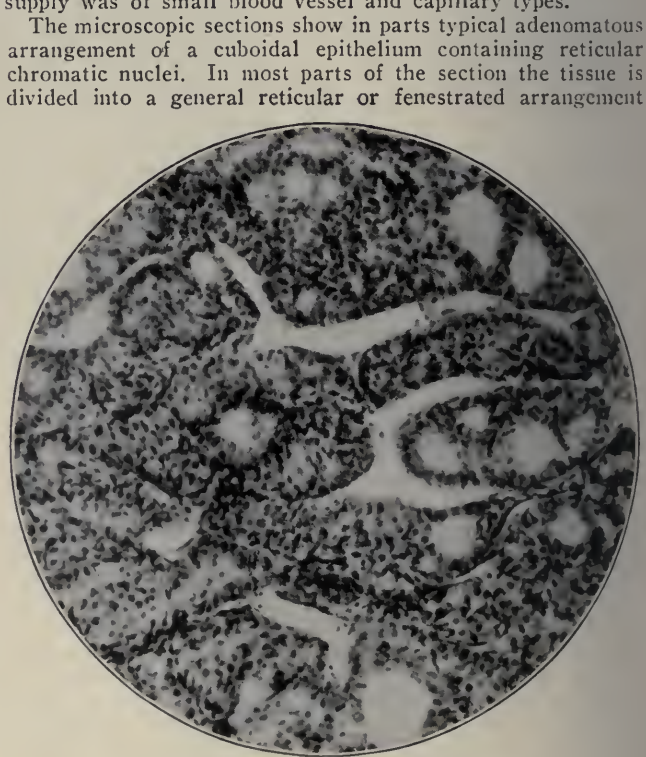


Fig. 2.—Malignant adenoma, × 140.

by single rows of fibrous connective tissue cells with overlapping ends, and within the spaces so formed are found masses of epithelial cells undergoing rapid proliferation. Numerous karyokinetic figures in the spirem and diaster stages were found. In none of the sections has it been possible to find colloid deposits, and it is impossible to state that the neoplasm is derived by metastasis from the tumor of the thyroid reported to have been found in 1911.

Gland structures of similar reticular arrangement are commonly found in cases of exophthalmic goiter, in which the outlines of the follicles are present and the cells form massed layers which fill the spaces.

A review of the literature shows that similar bone tumors of thyroid gland origin have been noted from time to time; but none have been so fortunately located as to do a minimum amount of damage to the health of the patient, as is found in this case.

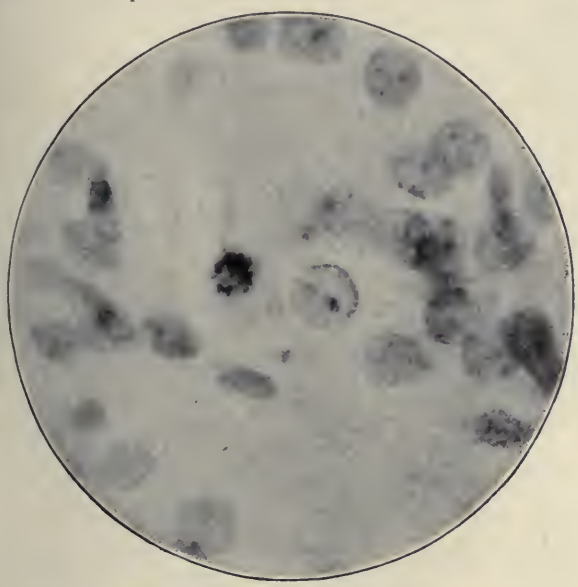


Fig. 3.—Photomicrograph, × 1,000, showing mitotic figure.

Semon,[1] in 1892, reported an extension of thyroid growth to the trachea. Willett,[2] in 1891, reported a case at the St. Bartholomew Hospital in which the tumor of true thyroid structure had lodged in the bodies of the fourth and fifth cervical vertebrae and laid in and partly replaced the bone substance. Martin-Durr,[3] in 1894, reported a neoplasm showing metastases in the pleura and humeri which fractured spontaneously. Mignon and Bellot,[4] in 1910, reported an interesting case of a metastatic thyroid tumor 4 by 5 cm. that lodged in the dorsolumbar vertebral column. The neoplasm was red, and the structure was glandular, friable and showed extensions into the muscles. Sections contained typical thyroid gland colloid, and the histologic examinations showed the tumor to be of a low grade, indolent character.[5]

1. Semon: A Case of Malignant Disease of the Thyroid Gland with Most Unusual Course, Med. Chir. Tr. London, **76**: 375-390, 1892-1893.
2. Willett, E.: Case of Malignant Disease of Thyroid Gland Involving Oesophagus and Cervical Vertebrae with a Deposit of Thyroid Tissue in the Bone, Tr. Path. Soc. London **43**: 144, 1891-1892.
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5. In addition to the references already given, the following will be found of interest:
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RECONSTRUCTION OF HARD PALATE WITH CARTILAGE TRANSPLANT

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ST. LOUIS

It is perhaps to the late Dr. Morestin of Paris, more than to any other surgeon, that we owe the popularization of the use of cartilage transplantation for the repair of defects of the hard parts, particularly about the head and face.

When repair of a defect is undertaken for none but cosmetic reasons, if the defect involves even in only slight degree the skeletal structures, it is my opinion that any process for the repair of the defect which does not comprise measures for the repair of the underlying skeletal defect is a faulty process and is not likely to be followed by the best results.

In the repair of cleft palate—that most common of congenital defects—repair of the bony part of the palate is hardly ever considered. This is as it should be, for its consideration is hardly ever necessary. The reason is that repair of the bony defect does take place (in most of the cases) even though the surgeon when operating makes no attempt to close the opening with bone. However, as said above, in all of those repaired, more or less new bone forms from the mucoperiosteal flaps, and in those repaired very early in infancy it is the rule for complete bony restoration to occur.

Certain wounds of the head or face have resulted in the total loss of the upper jaws. These patients have up to the present been obliged to depend on the ingenuity of our dental colleagues for some form of mechanical contrivance to replace the lost maxillae. And although these devices are very skilfully designed and

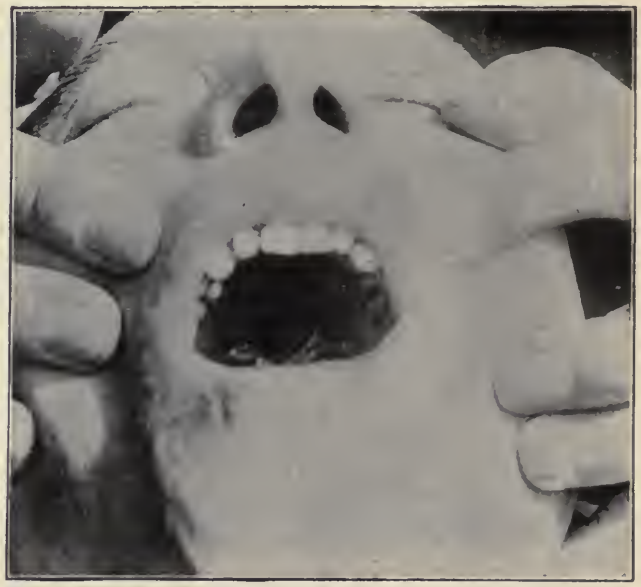


Fig. 1.—Width of opening as compared with widths of palate processes.

cleverly made, they yet leave much to be desired, and it seems to me that the method of cartilage transplantation here described could in many of those cases be utilized to great advantage.

Defects in the lower jaw were repaired with cartilage by Morestin, and he considered the results excellent. Defects in the upper jaw he repaired with

cartilage or bone, but he was not enthusiastic for either cartilage or bone transplantation in any case in which the wound had entrance to the oral cavity.[1]

The method here described and illustrated in the accompanying case report may be used to transplant cartilage from a distance into the mouth without the usual danger of losing the graft should suppuration supervene, or wherever it is necessary to repair hard and soft parts together.



Fig. 2.—The skin and platysma was dissected up leaving it attached at both ends. Its edges were then sewed together and the defect in the neck was closed. At the lower end of the pedicle the outline of the cartilage under the skin can be seen.



Fig. 3.—The flap has been freed from its attachment below and is now fastened to the defect in the palate. The jaws were blocked open and the patient bore the inconvenience of this for a little more than two weeks, at the end of which time the pedicle was gradually cut through.

REPORT OF CASE

First Operation.—Private B., aged 23, brought to me by my dental colleagues at A. R. C. M. H. No. 1, in 1918, had the widest congenital cleft palate that I have ever seen. My colleagues wanted to know whether I would attempt the closure of the soft palate, for if I would they would make him an obturator for the opening in the hard palate. I had not much heart for the operation, but since the patient knew it was likely to fail and yet was anxious to have it done I undertook it and under local anesthesia closed it in the usual way, but broke the hamular process on each side in order to relieve the pull of the palatal tensor muscles. The patient was very anxious for success, and for two weeks he introduced his food and drink through a tube well down to the bottom of his pharynx, kept his breath sweet by frequent mouth washing, and did not even whisper. The result was entire success.

The patient now became anxious that I should make some attempt to close the defect in the hard palate. The opening was 20 mm. wide in the premolar region, and the distance from the teeth to the edge was 10 mm. on the right side and 12 mm. on the left. The ordinary procedures were thus not to be considered. Of course, one could obtain a flap from the cheek, but the patient had perfect teeth and I did not care to sacrifice any of them; therefore, after complete explanation to the patient he decided to have a flap of skin instead and I suggested that we try also to insert cartilage to take the place of the missing bone.

Second Operation.—Under local anesthesia, the sixth cartilage on the right side was exposed and a portion about 40 mm. long was removed from its anterior surface. The piece removed was about 6 mm. thick. The perichondrium was not removed from it and the piece was then trimmed to correspond roughly to the shape and size of the cleft, but a little larger, and through a small incision implanted under the skin (and very close to it) about an inch to the right of the sternum in the region of the second interspace. The periosteal surface was placed next to the skin. All wounds closed. Healing occurred by first intention and the next step was taken.

Third Operation.—For the purpose of making a tubed pedicle for a flap, a flap, base upward, was outlined over the buried cartilage, care being taken that the line for incision should lie at least 18 mm. away from the cartilage and should pass through the scar of the incision through which the cartilage was inserted. The outlining of this flap was done in pencil in order that we might properly place the pedicle. Under local anesthesia, two incisions were now made parallel to and from 40 to 45 mm. from each other, beginning in the right submaxillary region and ending at the base of the flap outlined in pencil. The intervening strip of skin *and platysma* was dissected up but left attached to each end. Its edges were sewed together with interrupted silkworm-gut sutures. The skin of the neck and chest was now undermined and the defect closed with silkworm-gut sutures. Healing occurred by first intention.

Fourth Operation.—Under local anesthesia, again a flap was outlined over the cartilage as in the third operation, but this time it was turned up toward the tubed pedicle but was not entirely lifted up as I was not yet sure that blood enough would come so far—6 inches—through the tubed pedicle. This flap consisted of skin and from 8 to 1 mm. of fat, and contained the implanted cartilage. Another flap just as large as this with its base toward the right side of this and 1 inch away from it was dissected up and turned over backward, and passed under the first one, their raw surfaces in apposition. Their edges were sewed together and both defects closed.



Fig. 4.—Present appearance. Result perfect. Some short hairs are seen growing from the new palate.

Healing occurred as before, and after ten days I began to cut the pedicle of the last flap, cutting a little each day until in about ten days it was quite free.

The patient was then evacuated and I did not see him again until May, 1919. He had in the meantime passed through many hospitals, and, thanks to my colleagues Drs. Dorrance of Philadelphia, Schaefer of Columbus and Potts of Chicago,

1. Personal communication to the author.

he had been sent to me. However, when he reached me I was about to be discharged; and as permission to finish the case was not granted me, the patient secured his discharge and the case was completed at St. John's Hospital here.

Fifth Operation.—Under local anesthesia, the edges of the palatal defect were pared and the mucoperiosteum separated from the bone back 5 mm. from the edge on both sides. The edges of the flap were now pared until the flap would just fit in the opening. The edge was split a little so that the skin could be everted into the nose and mouth, respectively. The flap was then sutured into the defect and the mouth blocked open.

Again the patient cooperated. The mouth was kept clean, and in two weeks union was firm. The pedicle was then cut through a little every day till finally it was cut off. A small fistula persisted in front, but after one cauterization it closed. The rhinologist, Dr. Pfingsten, reported the condition perfect in the nasal floor some time in the fourth week.

Result.—At present the condition is perfect, and the bit of cartilage is firm in position and seems to be just as large as it was when I implanted it in 1918.

This is reported, not as an example of "trick surgery," but to illustrate the fact that cartilage may by this method be transplanted into the mouth and thus a foundation for a prosthesis be established in cases of loss of the upper jaw. And it was such cases I had in mind when I undertook this work.

405 University Club Building.

Clinical Notes, Suggestions, and New Instruments

A CASE OF METHYL SALICYLATE POISONING

HAROLD B. MYERS, M.D., PORTLAND, ORE.
Professor of Pharmacology, University of Oregon Medical School

J. W., aged 2, obtained a bottle containing 1 ounce of methyl salicylate and drank the contents. A druggist advised giving olive oil as an antidote, assuring the mother that the dose was not dangerous. Services of a physician were therefore not requested as soon as they would have been if the danger had been appreciated at the start.

Gastric discomfort soon manifested itself, followed by nausea and vomiting about one hour after the salicylate had been taken. The vomitus contained some cereal eaten about two hours previously, with considerable mucus having a strong odor of wintergreen. Nausea continued for several hours, with occasional vomiting of tenacious mucus. No blood was observed at any time in the vomitus. Diarrhea did not occur, but there was frequent and copious urination. The odor of the urine was not noticed during the first twenty-four hours. The odor of methyl salicylate was present in the urine voided during the second day of the poisoning. This urine was of amber color and without a trace of albumin.

The child was restless during the first night and complained of hearing noises. A specialist in children's diseases was called twenty-four hours after the salicylate was swallowed. He found the child drowsy, though rational when pressed with questions. The eyes were rotated upward when the patient was allowed to lie undisturbed. There was no evidence of visual impairment. The temperature was normal. Physical examination revealed nothing abnormal except a slight acceleration in the rate of respiration and of cardiac pulsation.

Between the twenty-fourth and twenty-seventh hours after the salicylate was taken, the rate and amplitude of respirations increased until the picture of air hunger was present. The ventral wall from clavicle to pubis rose and fell from forty-eight to fifty-four times a minute. The expired air had a distinct odor of acetone. Analysis of the urine revealed an amount of acetone similar to that found in diabetic coma.

Sodium bicarbonate was given by mouth and by rectum. The respiratory distress decreased, though no apparent decrease was noticed in the acetonuria. The respiratory rate and excursion were normal forty hours after taking the salicylate. A few hours later, sudden symptoms of dyspnea occurred, followed by cessation of voluntary respirations. Artificial respiration was performed for several minutes, following which voluntary respiratory movements returned. Respiratory distress soon disappeared, and the patient's recovery thereafter was uneventful.

COMMENT

The outstanding feature of this case of methyl salicylate poisoning is the symptomatic evidence of a marked stimulation followed by a pronounced depression of the respiratory center, accompanied by acetonuria.

Clinical reports of salicylate poisoning, and experimental results on animals, indicate that the poisoning is essentially similar, irrespective of the form in which the salicylate is taken.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

TYPHOID VACCINE (See New and Nonofficial Remedies, 1920, p. 291). Lederle Antitoxin Laboratories, New York.

Typphoid Glycerol-Vaccine (Prophylactic)-Lederle. — A suspension of killed typhoid bacteria (Rawling's strain) in a vehicle composed of glycerol 66 per cent., physiologic solution of sodium chloride 33 per cent. and cresol 1 per cent. The product is supplied in packages of 3 vials containing the glycerol-vaccine and of 3 vials of sterile diluent with which to make the proper dilution of the vaccine at the time of injection. Each dose consists of 0.1 Cc. of typhoid glycerol-vaccine (the concentration of the killed bacteria for the first dose is one-half as great as for the second or third dose) and 0.9 Cc. of sterile physiologic solution of sodium chloride. After dilution, the first dose contains 500 million killed bacteria; the second and third doses contain 1,000 million killed bacteria each.

Typhoid Combined Glycerol-Vaccine (Prophylactic)-Lederle. —A suspension of killed typhoid bacteria (Rawling's strain), paratyphoid A and paratyphoid B (one-half portion typhoid bacteria, one-fourth portion paratyphoid A and one-fourth portion paratyphoid B) in a vehicle composed of glycerol 66 per cent., physiologic solution of sodium chloride 33 per cent. and cresol 1 per cent. The product is supplied in packages of 3 vials containing the glycerol-vaccine and 3 vials of sterile diluent with which to make the proper dilution of the vaccine at the time of injection. Each dose consists of 0.1 Cc. of Combined Typhoid Glycerol-Vaccine (the concentration of the killed bacteria for the first dose is one-half as great as for the second or third dose) and 0.9 Cc. of sterile physiologic solution of sodium chloride. After dilution, the first dose contains 500 million killed typhoid bacteria, 250 million of killed paratyphoid A and 250 million killed paratyphoid B bacteria; the second dose and third dose each contain 1,000 million killed typhoid bacteria 500 million killed paratyphoid A and 500 million paratyphoid B bacteria.

The Antiquackery Monthly.—A small monthly is published at Amsterdam, now in its fortieth year, which is devoted to the exposure of quackery of all kinds. The subscription price is 1.25 florins per year, and the address of the secretary is Dr. W. Binnendijk, Marnixstraat 182, Amsterdam. The latest issue reports the annual meeting of the Antiquackery Society, and the recent sentencing to two months' imprisonment of the quack Eilers. Members of the society send in queries and information about quacks, the correspondence department filling considerable space. Any one making a contribution of 3 florins to the work is entitled to membership.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - - Six dollars per annum in advance

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SATURDAY, DECEMBER 25, 1920

FUNCTIONAL ACTIVITY OF THE CAPILLARIES AND VENULES

The distribution of blood throughout the body is dependent not only on the pumping mechanism of the heart but also on peripheral factors that are centered in the blood vessels themselves. The latter are subjected to influences, designated as vasomotor in character, which alter the peripheral resistance and correspondingly the blood supply to the tissues concerned, by variations in the caliber of blood vessels. In the early development of the knowledge of this chapter of physiology, these vasomotor functions were conceived to be controlled essentially by nervous influences. The nervous control of the peripheral resistance was alleged to take place through the action of vasoconstrictor and vasodilator nerve fibers on the musculature of the arteriole walls.

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Best Wishes
For a Merry Christmas
And a Happy and Prosperous New Year

Subsequently, the possibility of a chemical regulation of the blood vessels began to be brought into the domain of consideration in explaining the blood flow through various organs. It was recognized that their vessels exhibit a sensibility to products of cellular activity. Local vascular dilatation in particular was often explained in this way, without any clear-cut conclusions as to the precise location of such change. The implication continued, however, that metabolites or drugs which produced a vasomotor action not clearly attributable to an effect on well known vasomotor nerve factors might act on a local nervous mechanism in the arterioles, or perhaps even directly on the musculature of the latter.

More recently, however, as has been pointed out before in THE JOURNAL,[1] the ability of the capillaries themselves to undergo changes in caliber actively rather than merely passively has attracted attention. The evidence is accumulating to show that they can dilate or contract individually and independently of the larger blood vessels with which they are in uninterrupted connection. Hooker[2] of the laboratory of physiology at Johns Hopkins University has lately contributed further evidence that the functional peripheral resistance is not limited to the arterioles, but includes the capillaries and venules as well. It is inferred that this resistance is subject to chemical as well as nervous control. He has described an ingenious method whereby the capillary circulation may be observed and even photographed in the living mammal. Hooker's findings, which are quite in harmony with many conspicuous facts of the physiology of the circulation, and likewise with Krogh's recent publications on the "capillariomotor" mechanism of the body,[1] are contrary to the present widespread belief that the active functional peripheral resistance is to be found wholly in the smaller arterioles with smooth muscle in their coats. The evidence given indicates that nerve impulses along vasomotor fibers may play upon the caliber not only of the arterioles but also of the capillaries and venules. In accord with these views we must therefore modify our conception of the peripheral resistance in the matter of functional activity to cover the whole peripheral vascular bed, including the arterioles, capillaries and venules.

The conception that all parts of the vascular apparatus, including the arterioles, capillaries and venules, can be affected by both nervous and chemical factors greatly complicates the conception of the regulation of the circulation in definite organs and tissue areas. It suggests the possibility of specific control for what were before supposed to be merely passive parts of the circulation. In the light of the newer knowledge, Hooker[2] writes, we may conceive of a highly organized nervous mechanism adapted to quick and efficient response superimposed upon the primitive chemical methods available to the organism. There is doubtless a happy coaptation between these two major processes of control; but on the body surface, exposed to noxious environmental factors, and in the voluntary muscles where quick adjustments of blood supply are constantly demanded, we might expect the nervous regulation to play a significant teleologic rôle. In the glands and deeper body tissues generally, on the other hand, where reaction time is of less significance, responses may largely depend on chemical factors for their instigation.

1. Vasomotor Changes and the Capillary Mechanism, Current Comment, J. A. M. A. **75**: 1209 (Oct. 30) 1920.

2. Hooker, D. R.: The Functional Activity of the Capillaries and Venules, Am. J. Physiol. **54**: 30 (Nov. 1) 1920.

The reorganization of our current beliefs and the conferring of new physiologic powers on the capillaries and venules suggest new consideration of clinical phenomena admittedly of a capillary nature. What is the bearing of alterations in "capillary tone" on those instances of vasomotor instability that have been described as vasomotor or capillary ataxia? Will the newer information furnish an explanation of Marey's tache, the peculiar appearance of the skin which follows the application of a blunt instrument across its surface in certain cases, notably those of so-called irritable heart?[3] Perhaps, as Hooker points out, in a highly organized device for the disposition and partition of the blood by which extensive capillary beds may be largely emptied of or packed with corpuscular elements or plasma, an explanation is readily found for the uncertainties of blood cell counts and blood volume determinations. At any rate, hereafter attention must be focused on more localities in the vascular bed than those which were thought of foremost if not sole significance only a few years ago.

SURVEY OF EXECUTIVE GOVERNMENT WITH VIEW TO REORGANIZATION

The House of Representatives, December 14, passed by a unanimous vote Senate Joint Resolution 191, which passed the Senate, May 10. This resolution creates a Joint Committee on Reorganization, to consist of three senators and three members of the House, which is to make a survey of the administrative services of the federal government; to secure pertinent facts regarding their powers, duties and distribution, with any overlapping or duplication which may exist, and to recommend what redistribution of activities should be made so that the largest amount of efficiency and economy may be secured. The passage of the resolution is the first step in the reorganization of the executive government. It has long been recognized that there exists a large amount of overlapping and duplication of function, as well as a lack of orderly and systematic grouping, in the various bureaus and divisions making up the ten departments.

In no instance is this more striking than in public health matters. An unofficial survey, recently made, showed that there were thirty-four independent government organizations carrying on some kind of work directly relating to public health. These organizations, instead of being closely correlated, are scattered throughout the different departments. In the Treasury Department are the U. S. Public Health Service and the War Risk Insurance Bureau. The Children's Bureau is in the Department of Labor. The Division of School Hygiene and Physical Education of the Bureau of Education, the Indian Medical Service and the Government Hospital for the Insane are under the Department of the Interior. The Department of Agriculture has Bureaus of Chemistry, Animal Industry, Entomology and Biology, all of which are performing some health functions. In the Department of Commerce, the Bureau of the Census conducts the Division of Vital Statistics, the human bookkeeping system of the federal government. The War Department and the Navy Department has each its own medical service. Independent commissions and boards, such as the Interdepartmental Hygiene Board, the Federal Board for Vocational Training, the Bureau of Safety of the Interstate Commerce Commission, and the medical service of the government printing office, are unrelated to any of the other health agencies of the government. An enumeration of the work of these thirty-four separate organizations, even in general terms, would require pages of space. Regardless of the possibility or desirability of any increase or extension of federal public health work, the need of organizing and correlating these numerous agencies is too evident to require discussion. Entirely aside from its public health aspect, readjustment of the federal machinery is necessary purely for administrative reasons.

It has been evident for some time that a general rearrangement of the entire executive government is inevitable. The unanimous adoption of this resolution by both houses of Congress shows that this need is recognized by both parties, and that the coming change of administration is regarded as the best time for such reorganization. In the program of this committee, public health should be one of the first and most important subjects considered. The hearings before this committee will afford an opportunity for every one interested in the development and expansion of federal public health work to present his views for consideration. Out of the discussion and investigation that will result should come a well planned and coordinated federal health organization.

HELMINTHIASIS AND ANEMIA

The nature of the harm that is attributable to intestinal helminthiasis, the result of infestation with parasitic worms, has by no means been definitely determined for the various types of invading organisms. Indeed, there is at present no guarantee that the damage which they cause is of the same character in each case. Explanations have included the possibility that mechanical and nervous as well as chemical factors may have some responsibility for the untoward consequences of harboring such worms. In some cases the symptoms of the hosts are similar to those of anaphylactic intoxication, thus suggesting the presence of antigenic substances in the parasites and the occasional liberation of these compounds. Sometimes the suspicion of a more direct intoxication from secreted poisons is aroused in the clinical observer; for it is easy to conceive of the discharge of highly toxic products, resem-

3. Ryan: Am. J. Physiol. **45**: 537, 1918. Cotton, T. F.; Slade, J. G., and Lewis, T.: Heart **6**: 227, 1917.

bling alkaloids in potency, directly into the bowel in which the parasites are present and may even be disintegrating.

Since the chief pathologic effect of certain parasitic worms seems to be an anemia, the presence in them of hemolysins is at once brought to mind. Such products have, in fact, repeatedly been extracted from certain types of intestinal parasites that produce anemia. Whipple,[1] who has observed a weak hemolysin in the American hookworm, considers it too ineffective to be of practical importance. Recently, Schwartz [2] of the Bureau of Animal Industry has examined a number of common parasites, such as species of *Ascaris,* of *Ancylostoma,* a hookworm belonging to the genus *Bustomum,* species of *Trichuris,* species of two genera of anoplocephaline cestodes, and several other forms. From these, hemolysins, not specific to the blood of the hosts alone, have been obtained in each case. At one time the hemolytic effect of such parasitic worms was ascribed, largely as the result of the studies of Faust [3] and his co-workers, to oleic and perhaps other fatty acids. The new American results seem to show, however, that different agents must be involved.

It is not easy to demonstrate that the hemolysins separated in the laboratory from the parasitic organisms are the determining factors in the actual pathogenesis of helminthiasis. Nevertheless Schwartz believes that the view that parasitic worms secrete toxic substances that are absorbed by the host not only affords a better explanation of the toxic symptoms of helminthiasis than the theory of "reflex action," but also affords an explanation of certain aspects of the pathology of helminthiasis that are inexplicable on the basis of any other view that has thus far been advanced.

STATUS OF THE ABDERHALDEN REACTION

Few novelties in clinical medicine have received more extensive discussion than the so-called Abderhalden reaction, which was first introduced as a method for the diagnosis of pregnancy and was subsequently applied to cancer, degenerative changes in the nervous system, and some other forms of organic disease.[4] The underlying idea is that "the animal body reacts to the presence of foreign proteins by providing specific means of destroying them through proteolysis." Applied in the case of pregnancy, this was interpreted to mean that the chorionic cells of the placenta enter the maternal circulation, whereupon their foreign proteins provoke the formation of the protective enzymes —"Abwehrfermente"—which can in turn be detected by the ability of serum containing them to digest suitably prepared placental protein in vitro.

Obviously, the importance of these claims and discoveries rests above all on the specificity of the reactions. Proteolytic enzymes may occur widespread in the tissues and fluids of the body; but the presence of special types which react with only a single group of protein substrates involves something of biochemical novelty. The reactions are at best not rapid or conspicuous, being in this respect quite unlike what the student of digestive proteolysis might expect. Accordingly, it became necessary for the champions of the new mechanism of immunologic defense to devise a highly refined technic for the detection of the specific serum enzymes.

It would be unprofitable to review here the enormous literature which this subject has produced.[5] Claims of noncorroboration and nonspecificity by experimental critics have usually been countered with the charge that the demonstration demands a special technic and proper chemical manipulation to elucidate the subject. Nevertheless, skilled investigators have failed to secure evidence of specificity, the placenta-digesting reaction often being reported to be quite as conspicuous with the serum of males and nonpregnant women as with that of pregnant persons. Papers that were published in Europe during the war now bring the news that experimentalists trained in Abderhalden's own laboratory can no longer endorse his views. Thus, Oppler [6] has subjected the underlying hypotheses as well as the experimental possibilities to an elaborate reinvestigation at the Medical Policlinic in Munich. His results and deductions alike are adverse to any further support of the widely heralded and intensely debated Abderhalden reaction. Wells,[7] who also has had large experience in the study of this alleged immunity reaction, has pointed to the "absolutely nonspecific and hopelessly paradoxical results" now so frequently recorded. He, too, insists that the diagnostic value of the Abderhalden reaction for either clinical or scientific purposes must be considered at present unproved, whatever the final decision as to its standing as a specific reaction may be. The unwarranted enthusiasm which it once aroused should serve as a lesson and warning against the too ready acceptance of novelties in any domain of science.

1. Whipple, G. H.: J. Exper. Med. **11**: 331, 1909.

2. Schwartz, B.: A Blood Destroying Substance in Ascaris Lumbricoides, J. Agric. Res. **16**: 253 (March 3) 1919; Hemolysins from Parasitic Worms, Arch. Int. Med. **26**: 431 (Oct.) 1920.

3. Faust, E. S., and Tallqvist, T. W.: Ueber die Ursachen der Bothriocephalusanämie, Ein Beitrag zur Pathogenese der perniziösen Anämie auf physiologischchemischer Grundlage, Arch. f. exper. Path. u. Pharmakol. **57**: 367 (Nov. 21) 1907. Faust, E. S.: Ueber experimentelle Anämien, Berl. klin. Wchnschr. **45**: 2121 (Nov. 23) 1908. Flury, F., and Schmincke, A.: Ueber das Verhalten der Erythrocyten bei chronischer Oelsäuervergiftung, Arch. f. exper. Path. u. Pharmakol. **64**: 126, 1911. Flury, F.: Zur Chemie und Toxikologie der Ascariden, ibid. **67**: 275 (March 26) 1912.

4. Abderhalden, E.: Abwehrfermente des tierischen Organismus. Several editions have already appeared.

5. Reviews are given by: Bronfenbrenner, J.: On the Present Status of the Abderhalden Reaction and Theory of the So-Called Abwehrfermente, J. Lab. & Clin. Med. **1**: 79, 1915. Wallis, R. L. M.: The Protective Ferments of the Body, Quart. J. Med. **9**: 138 (Jan.) 1916. Abderhalden, E.: Fermentforschung **1**: 315, 1916. Van Slyke, D. D.: The Present Significance of the Amino-Acids in Physiology and Pathology, Arch. Int. Med. **19**: 56 (Jan.) 1917.

6. Oppler, B.: Kritisch-experimentelle Untersuchungen über Abderhaldens "spezifische" Abwehrfermente, Biochem. Ztschr. **75**: 211 (July 6) 1916.

7. Wells, H. G.: Chemical Pathology, Ed. 4, Philadelphia, W. B. Saunders Company, 1920, p. 205.

Current Comment

IS OLEIC ACID A CAUSE OF ANEMIA?

As anemias frequently attend infestation with certain intestinal parasites, notably several species of worms, and as hemolytic substances have actually been isolated from the bodies of the parasitic organisms, the characteristic decrease in red corpuscles has naturally been ascribed to the hemolysins thus discovered. It must be admitted, however, that in some instances at least, the anemias thus encountered are directly attributable to hemorrhages from the bowel. This is true after infestations with hookworm. Among the chemical products held responsible for the anemias following parasitic invasion, oleic acid and some of its compounds have been in the forefront of discussion for more than a decade. This is due especially to the studies of the intestinal cestode worm *Bothriocephalus,* from which Faust [1] and his collaborators isolated oleic acid esters which they regarded as the noxious principle. They believe, further, that the ingestion of considerable quantities of oleic acid could give rise to distinct anemia in animals. The hypothesis, with the submitted evidence, was at first widely accepted because of its specific and striking character; but the investigations of Beumer [2] of Duesseldorf have failed to substantiate the harmfulness of oleic acid, particularly as a hemolytic cause of anemia. Animals were fed daily with considerable doses for long periods without permanently untoward effects, which, after all, is what one might expect. The diet of man commonly contains not negligible amounts of fats that yield oleic acid by digestion. It would be surprising to find that a potential menace was thus being included day after day in what is usually regarded as a normal and wholesome diet.

CHLOROFORM AND EPINEPHRIN

It is well known that heavy doses of chloroform may produce a toxic effect on the heart, manifesting itself in weakness and consequent dilatation. The degree of danger, why it arises, and how it may be averted are topics that have been answered in various ways.[3] Nevertheless, it is generally admitted that even with the most careful administration of chloroform, the blood pressure may fall progressively, and the heart tends to suffer weakness in consequence. To counteract this, particularly in emergencies of consequent circulatory failure, the intravenous injection of epinephrin has been proposed with the object of restoring the arterial pressure in the now well-known manner characteristic for this potent drug. Heinekamp [4] of the University of Illinois College of Medicine has now joined others in warning against the simultaneous use of chloroform and epinephrin. The latter, by increasing the peripheral pressure, causes a high aortic pressure against which a weakened and frequently dilated heart damaged by chloroform cannot empty itself. The added load thrown upon a weakened organ may induce further dilatation and even fibrillation. The two drugs, chloroform and epinephrin, should accordingly not be administered at the same time. Each is contraindicated when the other has been used.

1. Faust and Tallqvist: Arch. f. exper. Path. u. Pharmakol. **57**: 367, 1907.
2. Beumer, H.: Zur pathogenetischen Bedeutung der Oelsäure bei Anämien, Biochem. Ztschr. **95**: 239 (July) 1919.
3. Hatcher, R. A., and Wilbert, M. I.: Pharmacology of Useful Drugs, Chicago, American Medical Association, 1915, p. 108.
4. Heinekamp, W. J. R.: The Action of Adrenalin on the Heart, III, The Modification of the Action of Adrenalin by Chloroform, J. Pharmacol. & Exper. Therap. **16**: 247 (Nov.) 1920.

MEDICAL LITERATURE

In the realm of medicine, what to read and what not to read is a serious problem that confronts every physician. Too often he reads without thoughtful discrimination. He gives more thought to the quality of the food he eats than to the character of the medical literature he consumes. Cheap postal service, cheap printing and the greed of commercialism have united to corrupt and deceive the unwary physician. Quick to resent the brazen quackery flouted from the pages of the lay press, he is slow to recognize the same commercial wolf in sheep's clothing, disguised in a medical journal. Brochures from pharmaceutic houses are so skilfully cloaked in the guise of science that the commercial animus back of it all is unobserved. Some of the literature emanating from such sources is highly scientific and trustworthy. Taken all in all, however, the conclusions drawn are usually insufficiently supported by data worthy of credence. Let the physician always suspect the commercial motive of the appeal. He should scan hastily and with a critical eye, reserving time for medical literature that emanates from entirely trustworthy sources.

THE LIFE PROTECTION ASSOCIATION OF CANADA

Commercializing medical practice seems to be in the air and spreading—even into Canada. As evidence we cite the prospectus—just received—announcing the incorporation of "The Life Protection Association of Canada." The "diagnostic board" of this association, we are told, is composed of "outstanding members of the medical profession." It is claimed to be patterned after a similar organization in this country—presumably referring to the Life Extension Institute. "The main object of the Association," so reads the prospectus mentioned, "is by means of a national, continuous advertising campaign to bring home to the public mind the fact that the human machine needs periodical examination as much as an automobile or a piano." However, the real attraction of the circular is financial. On the basis of a stock issue of $300,000, one half common and one half 8 per cent. cumulative preferred, we have the following estimate of earnings: "gross income first year of operating, 20,000 members at $15 each, $300,000"; various expenses, amounting to $227,000, leaving "net earnings, $73,000; dividend preferred stock, $12,000; net to common, or at the rate of over 40 per cent., $61,000." All in the first year! What an attractive investment! It reminds one of the renowned Colonel Sellers and his eye salve!

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

New Officers of Society.—At the annual session of the Mobile Medical Society, December 4, the following officers were elected: president, Dr. William H. Oates; vice president, Dr. Edward S. Sledge; secretary, Dr. Willis W. Scales (reelected), and treasurer, Dr. Edly W. Cawthon (reelected).

Medical Inspector of Prisons Resigns.—Dr. Mack C. Hawkins, Greenville, has resigned his position as medical inspector of the state prisons and convict camps. The work has been placed under supervision of Dr. Glenn Andrews, Montgomery, state prison inspector, who will have full charge of all prisons and prison camps. He will be assisted by Dr. Charles H. Smith, physician at Flat Top prison camp.

CALIFORNIA

Physicians' Annual Tax.—In California there is an annual tax on physicians which is payable January 1 of each year. The penalty for nonpayment after sixty days is automatic revocation of the certificate which requires a $10 fee for reinstatement. On the basis of this annual registration the licensing board prepares a directory of all who are practicing the healing art in the state.

Malpractice of Chiropractors.—Two definite instances showing the menace from chiropractors due to their inferior training have been reported from California. In one instance a chiropractor was treating a child for "a sprain of the arm" which a roentgenogram showed to be a fracture of both bones of the forearm. In the second instance, a tuberculous patient under treatment by a chiropractor grew progressively worse and a roentgenogram showed a right-sided pleural effusion.

FLORIDA

Tuberculosis Society Elects.—The Escambia County Anti-Tuberculosis Association has elected Dr. Fritz A. Brink, Pensacola, president, and Dr. John Turbeville, Century, vice president.

Meeting of County Society.—At the annual meeting of the Hillsborough County Medical Society, held December 7, the following officers were elected: president, Dr. John C. Vinson, Tampa; vice president, Dr. Leland Francis Carlton, Tampa, and secretary, Dr. Charles R. Marney, Tampa.

GEORGIA

Addition to Sanatorium. — The Piedmont Sanitarium, Atlanta, is building an addition of sixty-five rooms to meet increased demands on the institution.

Battey Memorial Committee.—The Seventh District Medical Society, at a meeting held December 1, appointed a committee to secure funds for a memorial to Dr. Robert Battey. The committee is composed of Drs. J. C. Watts and William J. Shaw, Rome, and Dr. Howard Felton, Carterville.

ILLINOIS

Chicago

Personal.—Dr. Ethan A. Gray, superintendent of the Chicago Fresh Air Hospital, has been engaged by the LaSalle County Tuberculosis Sanitarium Board to conduct the monthly clinic, to investigate the work of the sanitarium, and to make recommendations for improving the care of the patients.

Community Trust to Make Survey.—The Chicago Community Trust announces the appointment of a medical plan commission under whose auspices there will be undertaken at once a study of the local institutional facilities devoted to the treatment of the sick and disabled. The commission is headed by Dr. James B. Herrick, and includes a number of representative physicians and institutional and social workers. The sum of $15,000 has been set aside for this purpose.

INDIANA

Personal.—Dr. Merrill Steele has been appointed superintendent of the Methodist Hospital at Fort Wayne.

Leper Under State Care.—The state board of health has assumed responsibility for the care of Robert Burdine, a leper recently discovered in Indianapolis. The Indianapolis City Board of Health will cooperate in maintaining quarantine of the leper and his family.

County Offered Sanatorium Site.—The Smith farm, near Richmond, has been given to Wayne County by Mr. and Mrs. David Esteb, and $50,000 has been promised if the county in turn will appropriate $50,000 in cash for the establishment of a sanatorium as a memorial to the parents of Mrs. Esteb, Mr. and Mrs. George Smith.

County Society Holds Meeting.—A farewell reception was given to Dr. George W. Willeford, dean of the Washington physicians, who is retiring after fifty-two years of practice, at the annual meeting of the Daviess County Medical Society, held at Washington, December 2. The following officers were elected for the new year: president, Dr. William O. McKittrick, Plainville; vice president, Dr. Charles P. Scudder, Washington, and secretary-treasurer, Dr. Austin I. Donaldson, Washington.

LOUISIANA

Personal.—Dr. Warren P. Morrill, formerly superintendent of the University Hospital, Augusta, Ga., has been appointed superintendent of the Charity Hospital at Shreveport.——Dr. John Callan has been appointed superintendent of the New Orleans City Board of Health.

Officers of Ouachita Society.—At the annual session of the Ouachita Medical Society, held at Monroe, December 8, the officers were elected for the ensuing year as follows: president, Dr. Courtland P. Gray; vice president, Dr. George W. Wright, and secretary-treasurer, Dr. James E. Walsworth, all of Monroe.

MARYLAND

Inspect Johns Hopkins Hospital. — To study methods employed in the clinics of Johns Hopkins Hospital, a group of prominent Bohemian physicians recently spent several days in Baltimore. The physicians were under the guidance of Dr. C. W. Wells, New York, and included Drs. Antonin Kolinsky, B. Vacek, Ivan Halek, Vladimir Basika, Vladimir Petrik.

Personal.—Dr. Hugh Hampton Young, Baltimore, director of the James Buchanan Brady Urological Institute of Johns Hopkins Hospital, is now a patient in the medical department of the hospital, suffering from dilatation of the heart. ——Dr. J. Whitridge Williams, Baltimore, dean of the Johns Hopkins Medical School, has resigned as a member of the Board of Supervisors of City Charities, which has control of Bayview Hospital.

Lecture Courses.—A lecture was delivered at the School of Hygiene and Public Health of Johns Hopkins University, December 13, by Dr. Charles Wardell Stiles, U. S. P. H. S., on "Some Practical Aspects of the Subject of Soil Pollution."——Dr. Edward C. Schneider, professor of biology of Wesleyan University, delivered a lecture, December 20, on the "Influence of High Altitude on Man," at the School of Hygiene and Public Health of Johns Hopkins University.

MINNESOTA

Election of Officers.—At the meeting of the Southern Minnesota Medical Association, held at Mankato, Dr. William J. McCarthy, Madelia, was elected president, and Drs. Edward D. Keys, Winona, and Walter R. Ramsey, St. Paul, vice presidents.

Tuberculosis Fellowships Offered University.—Two fellowships for research in tuberculosis have been offered to the University of Minnesota, according to a recent announcement. Dr. H. Longstreet Taylor, St. Paul, has offered an annual fellowship of $1,000, and the Hennepin County Tuberculosis Association has offered a fellowship of $750.

Medical Officers' Reunion.—At a meeting in St. Paul, December 8, it was decided to call a reunion of all former medical officers resident in the Northwest, during clinic week, to be held in St. Paul, Jan. 10-15, 1921. The committee, consisting of Drs. P. J. Maloney, F. J. Savage, Charles Freeman and Knox Bacon, all of St. Paul, has accepted the invitation of Lieutenant-Colonel Rutherford, surgeon at Fort Snelling, to partake of an army mess and to hold the reunion at the

Fort, Tuesday evening, January 11. An informal discussion will be held on the possibility of organizing a Medical Officers Society of the Northwest.

MONTANA

Personal.—Dr. Dan J. Donohue, Butte, has been reappointed physician for Silver Bow County.

Hospital Staffs Appointed.—The board of directors of the Deaconess Hospital at Great Falls has appointed as members of the medical board the following physicians: Drs. Gowan Ferguson, Edward M. Larson, Leroy Southmayd, Earl Strain, Enoch M. Porter and C. C. Counter.——Drs. James H. Irwin, LeRoy Southmayd, William A. Hulbush, James B. Reynolds, Charles J. Bresee, Donald K. Woods, William J. Lakey, George Putney, Aloysius Dolan, Albert F. Longeway, James C. MacGregor and Donald A. McLennan have been appointed members of the advisory staff for Columbus Hospital, Great Falls.

NEW YORK

Mental Hygiene Clinic.—The department of health of Glens Falls has established a clinic in mental hygiene; the clinic will probably be conducted once every month.

Plattsburgh Votes Water Supply Funds.—The voters of Plattsburgh at a recent referendum approved an appropriation of $90,000 for the establishment of a chlorination plant and for extensions of the water supply system.

New York City

Personal.—Prof. Sutherland Simpson, Ithaca, has been appointed professor of physiology in the Ithaca Division of Cornell University.

Addition to Hospital.—Plans have been filed for an addition and alterations to the present Broad Street Hospital. The new building, located at 123 and 125 Broad Street with a frontage of 40 feet, will be erected at a cost of $300,000.

Home for Mental Convalescents.—A campaign is in progress to raise $50,000 to augment the building fund of the Home and Farm Institution for Mental Convalescents. It is planned to erect an institution on Long Island where the mentally afflicted may be restored to health and vigor through proper environment and treatment.

Police Oppose Hospital Plans.—New York policemen do not want the $5,000,000 hospital planned by Commissioner Enright and deputy commissioners, and the Patrolmen's Benevolent Association recently held a meeting to discuss the advisability of launching a department fight against it. It is claimed that there is not sufficient demand to warrant the expenditure of so large a sum, and that the patrolmen prefer to be taken to hospitals of their own selection. Orders have been issued discontinuing the solicitation of funds for such an institution.

NORTH CAROLINA

Officers of Mecklenburg Society.—At the December meeting of the Mecklenburg Medical Society the following officers were elected for 1921: president, Dr. John P. Munroe; vice president, Dr. Robert F. Leimbach, and secretary-treasurer, Dr. John L. Ranson (reelected), all of Charlotte.

OHIO

University Receives Rockefeller Foundation Grant. — The general education board of the Rockefeller Foundation has offered to contribute $700,000 to the Medical College of the University of Cincinnati, on condition that the balance of $400,000 to complete the $2,000,000 endowment fund be subscribed.

County Societies Elect Officers.—At the annual meeting of the Hancock County Medical Society the following were elected officers for the ensuing year: president, Dr. William J. Zopfi, Findlay (reelected); vice president, Dr. Alvin E. King, Mt. Cory; secretary, Dr. Nelia Kennedy, and treasurer, Dr. Earl J. Thomas, Findlay.——Greene County Medical Association, at its regular meeting, December 2, elected the following officers: president, Dr. William A. Galloway, Xenia; vice president, Dr. Frank W. Ogan, Jamestown, and secretary-treasurer, Dr. Clarence Hugh Denser, Columbus.

PENNSYLVANIA

Board of Health at York.—The city council of York has appointed the following members of the board of health: Drs. Martin L. Barshinger, Herman H. Farkas, and Homer D. Baird, Miss Anna M. L. Huber and J. Calvin Strayer.

County Societies Elect Officers.—At the annual meeting of the Somerset County Medical Society, held in Lakewood, the following officers were elected for the ensuing year: president, Dr. Charles B. Korns, Sipesville; vice president, Dr. Henry S. Kimmel, Somerset; secretary, Dr. Henry C. McKinley, Meyersdale, and treasurer, Dr. Carl W. Frantz, Confluence.——At the annual meeting of the Columbia County Medical Society held in Bloomsburg, December 8, Dr. Charles B Yost, Bloomsburg, was elected president, and Dr. Luther B. Kline, Catawissa, secretary-treasurer.

Philadelphia

Wills Hospital Ophthalmic Society.—It is proposed to revive the meetings of the Wills Hospital Ophthalmic Society which were discontinued during the war. The first meeting will be held Tuesday, Jan. 4, 1921, at which cases from the clinics and wards will be exhibited and discussed.

Health Courses Planned in Schools.—The need for courses in health was discussed by Dr. Thomas E. Finegan, state superintendent of public instruction, at an educational meeting and reception at the Philoumusian Club. Good health is as necessary as good education and it is planned to give a course that will teach health from the first grade.

Personal.—Dr. Lester J. Unger, New York, addressed the section on general medicine of the College of Physicians of Philadelphia, December 13.——Dr. Lewis Webb Hill, Boston, delivered an address before the Philadelphia Pediatric Society, December 14, on "Nephritis in Childhood."——Dr. John H. W. Rhein has been appointed visiting physician to the psychopathic wards of the Philadelphia General Hospital.——Dr. Samuel D. Ingham has resigned as clinical professor of neurology in the School of Medicine of Temple University and has gone to Los Angeles to join a medical diagnostic unit.

WISCONSIN

Personal.—Dr. Charles E. Ide, Redlands, Calif., has been appointed superintendent of the Muirdale Sanatorium, to succeed Dr. Glenford L. Bellis, resigned.

New Tuberculosis Society.—The Washburn Tuberculosis Association was formed at a meeting held late in November and the following officers were elected: president, Dr. Bernard Schlossmann; vice president, Miss Anna Thompson, and secretary-treasurer, Rev. D. W. Davis.

County Society Elections.—At a meeting of the Fond du Lac County Medical Society, held December 8, the following officers were elected: president, Dr. Frank M. McGauley; vice president, Dr. David V. Meiklejohn, and secretary-treasurer, Dr. David N. Walters, all of Fond du Lac.

CANADA

Alberta Association Elects Officers.—At the annual meeting of the Alberta Medical Association, held at Edmonton, under the presidency of Dr. William F. Gershaw, Medicine Hat, the following were elected officers for 1921: president, Dr. Walter S. Galbraith, Lethbridge; vice presidents, Drs. Robert B. Wells, Edmonton, and Albert E. Archer, Lamont; secretary, Dr. John E. Palmer, Calgary, and treasurer, Dr. Fuller S. Macpherson, Edmonton.

Canadian Medical Association Journal.—For some months there has been in contemplation enlargement of the official organ of the Canadian Medical Association, and if the project receives ample support from the members of the association and the physicians in general, the organ will soon be published bimonthly, and eventually weekly. The editorial management is proceeding energetically despite the increasing costs of production and diminishing receipts from advertising and patronage. Since the official organ of the Ontario Medical Association, in existence for less than a year, has suspended publication, there will now be organized a separate editorial board for Ontario; the other provinces have also signified a willingness to render greater cooperation.

GENERAL

Physiologic Society Meeting.—The American Physiological Society will hold its annual meeting in Chicago, December 30.

Bacteriologists' Meeting.—The annual meeting of the Society of American Bacteriologists will be held in Chicago, December 28-30.

Rockefeller Foundation Program for Central Europe. — For the purpose of assisting medical schools in central Europe, the Rockefeller Foundation has announced a cooperative program embracing aid in procuring scientific equip-

ment for teaching and research, and in furnishing medical journals to universities throughout Europe. An invitation has been extended to the authorities of Belgrade University Medical School to study medical education in America and England, as guests of the Foundation. Dr. Frederick F. Russell, who has been serving as technical advisor in public health laboratory organization to the Czech Ministry of Hygiene since August, will arrange the details of the Foundation's program.

Sheppard-Towner Maternity Bill.—With material modifications from its original form, the Sheppard-Towner bill, which makes provision for maternity and infant welfare through Federal cooperation with the states, has been passed by the Senate. The bill appropriates $1,480,000, of which $10,000 is to be distributed annually to each state, and $1,000,000 is to be used annually by the Children's Bureau. During the three days' debate on the bill in the Senate the provision for home nursing at government expense was eleminated; an amendment was added that the members of the state advisory committees should not receive a salary, and is was stipulated that no part of the appropriation should go to any state until an amount equal to the sum to be supplied by the Federal Government had been appropriated from the state treasury.

The All-America Conference on Venereal Diseases.—The All-America Conference on Venereal Diseases, held in Washington, D. C., December 6-11, consisted of two bodies conducting some of their meetings independently, but cooperating throughout the session and holding joint meetings every evening. The first of the bodies, designated as the general conference committee, consisted of nearly 100. Its membership was selected by the president of the conference, Prof. William H. Welch, on nomination of the administrative committee. An attempt was made to choose those who would be able to discuss with authority certain phases of the many problems presented to the conference. So far as possible the administrative committee endeavored to secure representatives of divergent views on important questions to the end that all such questions should be fully discussed from various points of view. At the first meeting the conference was divided into twelve groups, each dealing with certain interrelated problems. These problems were presented to the various groups in the form of questions which had previously been prepared by the administrative committee and others. There were no set papers. At the conclusion of the conference authoritative answers in almost all of the various phases of the problem presented by the control of venereal diseases were given so far as this was possible.

The afternoon session was held as a committee of the whole and to this each section chairman reported the conclusions arrived at by his section in the morning meeting. These conclusions were reported in the form of resolutions presented to the entire conference committee and were then open to general discussion. In some instances conclusions presented by one section and sharply combated by members of another section were referred to a joint meeting of the respective sections and of such others as were interested with instructions to submit a report on the following day. In some instances conclusions presented to the general conference committee by one section were adopted with only minor verbal changes and in many instances the conclusions were adopted by the general conference committee unchanged. While these meetings were going on all the other delegates to the All-America Conference on Venereal Diseases assembled in meetings held in the auditorium of the New National Museum. These meetings were conducted under the auspices of the American Social Hygiene Association and consisted of formal papers followed by discussions and by the discussion of matters brought up by the delegates themselves. At some of these meetings resolutions were adopted for consideration by the general conference committee. An important feature of the conference was the evening meetings of delegates at the New National Museum at which the resolutions adopted in the afternoon by the general conference committee were presented for discussion and adoption. At these meetings an opportunity was given for still further change in the form of the resolutions presented and these changes having subsequently been approved by the general conference committee became the pronouncements of the All-America Conference on Venereal Diseases. Among the problems presented to the conference were:

Have we any evidence of the establishment of immunity to gonorrhea and syphilis?

Should the Wassermann test be standardized?

How should the Wassermann test be used in dealing with syphilis and to what extent should it be relied upon as evidence of syphilis in the absence of clinical symptoms.

In the treatment of syphilis what is the relative value of arsphenamin, neo-preparations, other arsenicals and non-arsenicals?

Is it scientifically and medically practicable to determine a standard for declaring that a case of gonorrhea is cured? If so, what criteria should be used?

What effective methods have we for treating gonorrhea in the female, vulvovaginitis in infants and young children?

What measures should be taken with persons stopping treatment before cure? While still in infective state?

What place has so-called "medical prophylaxis" in controlling venereal disease?

What methods of "medical prophylaxis," if any, have given evidence of practical utility?

On what basis, from a public health point of view, should the state attempt to govern the issuance of marriage licenses?

What are the relative advantages or disadvantages of having venereal disease clinics separate from other clinics?

Should cases of venereal disease be admitted to general hospitals? If so, what special facilities, if any, do they require?

Should all hospitals receiving any aid from the public funds be compelled to remove their present restrictions against the admission of the venereal patient, or not?

For informational purposes in venereal disease campaigns what statement does our present knowledge of syphilis justify in regard to its approximate relationship to

Prevalence in civil population?

Disability with resulting economical loss to industry and to families?

Cost to tax payers of caring for the end-results of insufficiently treated cases?

Is the appeal to fear of venereal diseases in pamphlets, motion pictures and other materials adequate? Is there danger of causing psychoses in using the appeal to fear of venereal diseases?

Is it possible to evaluate the effectiveness of various materials and measures used in educational work? If so, by what methods may we evaluate them and what is the relative value of pamphlets, placards, motion pictures, exhibits, lectures, magazine and newspaper advertising (paid) and magazine and newspaper articles (free publicity)?

What methods, if any, of instructing persons about to marry can be devised that will be effective and not subject to abuse?

Should fines ever be imposed on persons convicted of prostitution?

Are the reformatory methods used with prostitutes effective in relation to the control of venereal disease?

What practical modifications of existing methods of sex education should be made in view of our knowledge of the stages of sex development?

Is there any danger that increasing success of programs of repression of prostitution will bring about psychological or psychiatric damage through sex repression?

Is continence compatible with health?

It is not possible to present all of the resolutions adopted by the conference. Preparation of this material has been begun and should be available within a few months. The general form of the manner in which some of the questions have been answered is shown by the following resolutions adopted by the conference.

In reply to a question as to the establishment of immunity to gonorrhea and syphilis, the committee presented the following resolution:

"With reference to gonorrhea, there is no evidence of the establishment of any immunity to disease beyond that of a more or less temporary immunity in the case of existing, individual infections. Such a temporary relative immunity may be lost either as the result of disturbed relations between the infecting organism and the host or through the introduction of a new gonorrheal infection.

"With reference to syphilis there is no evidence of an absolute and permanent immunity to syphilis unless it be that due to an existent infection. There is evidence to show that infection may exist without obvious manifestations of the disease. The immunity ensuing in such an infection may extend even to the degree of a commensal or symbiotic adaptation."

With respect to the use of the Wassermann test, among other things, the following may be of interest:

"Resolved that: The blood Wassermann reaction should not be used as a sole guide to the duration of a syphilitic infection. The blood Wassermann reaction should not be used as the sole evidence of the effectiveness of a particular drug or method of treatment. The blood Wassermann reaction should not be used as the sole evidence of "cure" no matter how many times repeated."

Laboratory workers and clinicians may be interested in the following:

"Resolved that: The complement fixation test has not yet been shown to be of value in the diagnosis of doubtful cases of gonorrhea. It is possible, however, that the precipitin test recently reported by Meader and Robinson may be of great value."

The committee enumerated some of the advantages of having venereal disease clinics operated in conjunction with other clinics and pointed out that such a plan "promotes recognition by the public that venereal diseases are being dealt with exactly like other diseases." It also pointed out that under this plan "the treatment of venereal diseases in the same insti-

tution with other diseases promises a better understanding on the part of young physicians especially among interns and medical students regarding the importance of these diseases and of the true relation established between them and other pathological conditions."

In promoting education with respect to the venereal diseases, it was resolved that:

"Fear should not be deliberately stressed as a deterrent. The element of fear should appear only to the extent that it is inherent in the presentation of the facts themselves. Any morbid tendencies resulting from such unavoidable fear should be corrected by positive and constructive teaching as to the prevention and cure of the disease."

In dealing with law enforcement, it was resolved that:

"The establishment and maintenance of high standards of sex conduct is the best protection of public health from venereal diseases.

"That up to the level of the highest standards which can be sustained by public opinion, laws penalizing the promotion of and the indulgence in illicit sex relations constitute sound and practicable public health measures."

In dealing with sex offenders, it was resolved that:

"The establishment of reformatories with standard equipment for examination, classification, training, recreation and parole is the most hopeful method of rehabilitating the old offender."

The psychological aspect of the venereal disease problem, at least in one of its phases, was touched on in the following resolution:

"Resolved that: Although there is danger that a superficial and erroneous interpretation of the Freudian psychology in regard to the repression of the sex instinct may be detrimental to the successful development of the program for the control of venereal disease, a more thorough-going, complete and scientific interpretation, however, tends to aid such a program in that it places the emphasis upon the practical means for guiding the sex instinct into socially useful and constructive activities."

The committee emphasized the importance of social service, recreational facilities and measures for dealing with feebleminded delinquents and a host of other questions.

In connection with the meetings of the All-America Conference, interesting exhibits and demonstrations were offered by the various interested institutions. Thus at the Hygienic Laboratory of the Public Health Service a demonstration of the method of the government control of arsphenamin was given. A demonstration of selected cases of syphilis in the government hospital for the insane was given by Dr. William A. White. A visit was paid to the Washington Police Station in order to observe the method of applying police functions to social hygiene. At the U. S. Naval Hospital, methods for the adequate treatment and diagnosis of syphilis and gonorrhea were demonstrated. In the Army Medical Museum there was a display of interesting wax models dealing with various phases of venereal disease and the library of the Surgeon-General had on view a special collection of books, manuscripts and other materials relating to venereal diseases. The American Social Hygiene Association exhibited a social hygiene field car used at present in conducting educational work in social hygiene in North Carolina. The U. S. Public Health Service showed a model clinic and an exhibit of placards and pictures used in its campaign against venereal diseases. In the new Navy Building the morale division displayed its exhibit dealing with venereal diseases.

Altogether the conference was attended by over 400 delegates, including representatives from Argentine, Brazil, Chile, Ecuador, Cuba, Honduras, Mexico, Paraguay, Porto Rico, Canada, Czecho-Slovakia and England.

The organization of the All-America Conference on Venereal Diseases was in the hands of the following officers: president, William H. Welch; administrative committee, William F. Snow, chairman, Thomas A. Storey, C. C. Pierce, and Livingston Farrand; executive officer, Allen Winter; director of public information, Charles Bolduan, and treasurer, John Poole.

LATIN AMERICA

Personal.—Dr. A. B. Vasconcelos, the editor of the *Gaceta Médica de Mexico,* who represented his country at the All-America Conference on Venereal Diseases in Washington, is now visiting medical centers in this country, including Chicago.——Dr. T. G. Perrín, a noted Mexican bacteriologist, who also attended the same conference, has returned to his country.——Dr. C. Masi of Asunción, Paraguay, the Paraguayan delegate to the conference, expects to spend several months in this country to study medical matters.——Dr. E. E. Jumper of Torreón, Mexico, is taking a postgraduate course in Chicago.——Dr. P. García Medrano has been appointed acting Mexican consul to Chicago.

Meeting of Porto Rican Medical Association.—The Porto Rican Medical Association held its annual meeting at the Sport Club, Ponce, December 11-12, under the presidency of Dr. Pedro Malaret. Papers were presented on neurology by Dr. E. Font Guillot, San Juan, on the treatment of external tuberculosis by Dr. I. González Martínez, San Juan, on moniliasis by Dr. Bailey K. Ashford, San Juan, on sprue by Dr. P. Gutiérrez Igaravides, San Juan, on syphilis by Dr. M. Quevedo Báez, San Juan, renal fragility by Dr. Guillermo Salazar, Ponce, and on surgery in Porto Rico by Dr. Jorge del Toro, San Juan.

Sale of Certain Nostrum Forbidden in Buenos Aires.—The *Semana Medica* of Buenos Aires relates that the public health service of the province of Buenos Aires has officially forbidden the sale of Radiosol Vegetal throughout the province, claiming that it is practically merely tap water, not conforming to the published formula. Our exchange extols this action of the provincial Consejo de Higiene, under the heading "A Lesson for the National Public Health Service," continuing, "While the provincial public health service is thus arresting the sale of a quack nostrum, the national public health service, the chief institution in the land, with culpable silence is allowing advertising and sale of a numerous series of pharmaceutic products which are nothing but preparations of narcotic drugs, prepared with the most elementary therapeutic indications, when they are not directly harmful. . . ." "At the same time the Departamento Nacional de Higiene, forgetting thus deplorably its task of watching over and safeguarding the public health, is consenting to the sale of certain specifics at fabulous prices, such as certain foreign vaccines which are being most unconscionably exploited by profiteers."

FOREIGN

The Legendre Prize.—A prize has been endowed in the name of Dr. Paul Legendre at the Société médicale des hôpitaux de Paris to confer 3,000 francs every third year on the best work on the ethical and social aspects of the medical profession, published or presented during the preceding years, or for the best competing articles presented on a special topic. The first prize will be awarded in December, 1923, and a topic has been selected for this competition, namely, "A statistical and critical study of the French civilian and military medical and surgical rôle during the war, 1914-1918, and the resulting consequences for physicians and conclusions for the future."

Institution to Investigate Pharmaceuticals Proposed in Germany.—The *Medizinische Klinik* brings word that the commission appointed years ago by the organized German internists, the Arzneimittel-Kommission, has been transformed to found an institution to investigate new pharmaceutical articles and supply information thereon to physicians on demand. An information bureau and bibliographic center is planned, and it is proposed to test new inventions for the manufacturers. This will not be necessary for the larger manufacturers, as they are well equipped for the purpose, but it will apply to the products of less thoroughly standardized makers and to remedies of doubtful value. "The members of the commission say that they are well aware of the extremely difficult and responsible task which they are undertaking, and realizing this to the full, they have decided not to restrict their investigations to the chemical, pharmaceutical and pharmacologic side of the matter, but in given cases will conduct tests and investigations at the bedside to decide on the harmfulness of the article. . . ." "With this program," the editorial continues, "the task undertaken goes far beyond that of the Council on Pharmacy and Chemistry of the American Medical Association, which limits its work to the chemical analysis of the proprietaries and nostrums which are so numerous and are advertised on such large scale in North America. It may well be questioned whether it would not be better to restrict the work to the purely chemical and pharmacologic analysis. Even this limited field represents a mighty task for the institution that is being founded. . . ." "It has been decided to accept the offer of the Berlin Pharmakologische Universitätsinstitut, in charge of Heffter, to make this the headquarters of the new prüfungsamt. Considerable funds will be needed to call into existence an institution planned on such a comprehensive scale and with so many fields of work. Adequate subsidies from without cannot be expected. Hence, it is planned to appeal to German physicians and urge them to contribute to this purpose. The aim is to create an institution to advise and guide the physician in the choice and criticism of new remedies. The efforts of the Arzneimittel-Kommission should be regarded with grate-

ful appreciation. This appreciation will be all the greater if they succeed in working the rather unmalleable material into a living organism. The former efforts in this line have not been very encouraging. The newly founded institution will certainly understand how to profit by the lessons of former experience, and to outline its work in a correct and efficient manner. . . ." It is hoped that each German physician will give at least 10 marks toward the organization fund.

Deaths in Other Countries

Barão de Pedro Affonso, professor of surgery at Rio de Janeiro for twenty-five years, and long director of the Rio public health service, aged 75. The introduction of vaccine lymph for smallpox, the vaccine institute, and the institute for preparing antiplague serum, to which he called Oswaldo Cruz, were fruits of his efforts.——Dr. **R. Vidart,** member of the Argentina lower house, from the province of Córdoba, aged 43. ——Dr. **J. Cuesta** one of the victims of influenza which is said to have reappeared in the Almeria region, Spain.——Dr. **Boset,** one of the leading physicians in Luxembourg.——Dr. **R. Zeri,** director of the Italian hospital at Constantinople.—— Dr. **W. Schütz,** professor of pathologic anatomy at the Berlin veterinary college, and a pioneer in the study of diseases of domestic animals.——Dr. **Hugo Ribbert,** professor of pathologic anatomy at the University of Bonn and a prolific writer on pathology and histology, aged 65.——Dr. **Sabourin,** chief of the sanatorium at Durtol, France, and author of works on pulmonary tuberculosis.——Dr. **Alvaro Graça,** for a time sanitary inspector at Rio de Janeiro.

Government Services

Reserve Officers' Training Unit

An application has been received at the Army Medical Corps headquarters from the University of Minnesota Medical School for the establishment of a reserve officers' training unit. The enrolment of the necessary fifty students has been completed in accordance with the Army Reorganization Act, and an officer will be assigned to the university at once to inaugurate the course for the training of reserve officers.

Inquiry Into Walter Reed Hospital Fire

The destruction of two frame wards at the Walter Reed Hospital by a fire which caused the death of a former soldier suffering with mental disorder has resulted in independent investigations by Congress and the War Department. It is expected that Congress will grant the necessary appropriations to complete the Walter Reed Hospital and to abolish all wooden structures where patients are now being housed under perilous conditions.

Special Hospital for Disabled Soldiers

Senator Wadsworth of New York has introduced a resolution in the senate authorizing the Treasury Department to lease from New York state a $3,000,000 hospital for the care of nervous and mental cases among disabled soldiers. The resolution proposes to place the hospital under the jurisdiction of the Public Health Service, and gives the Treasury Department authority to lease any other hospitals built for similar purposes by other states of the Union.

Hospital Facilities for War Risk Patients

In its annual report to Congress the Public Health Service requests appropriations to provide additional hospital facilities to meet the growing needs in connection with the care and treatment of Bureau of War Risk Insurance beneficiaries. The report shows that 20,000 patients are under treatment this year, in comparison with 2,000 last year, and attention is called to the fact that many of the hospitals are in a dilapidated and unsatisfactory condition. It is proposed to put these in good condition, and to reconstruct antiquated structures.

Precautions Against Introduction of Epidemic Diseases

Restriction of commerce during the war prevented the spread of typhus, plague and cholera, which were prevalent in countries of central Europe, but since the resumption of commercial intercourse these diseases have again begun to invade neighboring countries. Precautions have been taken by the Public Health Service to prevent importation of epidemic diseases into the United States, and officers have been stationed at practically all the important ports of Europe to inspect vessels and their crews and passengers prior to their departure for American ports. Stringent measures have also been adopted along the Mexican border to prevent the introduction of typhus fever.

Coordination of Government Activities

The Smoot-Reavis resolution, which has passed both houses of Congress, provides for a survey of the administrative services of the government, to study their powers and duties, and overlapping and duplication of authority, and to determine what redistribution should be made for proper correlation of the efforts of executive departments. If approved by the President this measure will permit hearings to be held for the purpose of consolidating certain medical activities of the government. and to secure greater economy in the functions of the Public Health Service, the medical departments of the Army and Navy, the Interdepartmental Social Hygiene Board, Children's Bureau and Women's Bureau.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 29, 1920.

Dependents' Right to Compensation for Workman's Suicide

Attention has often been drawn in previous letters to the breadth of the Workman's Compensation Act which renders an employer liable for accidents arising to a workman "in or out of his employment." The latest application of the act establishes the precedent that the employer may become liable to the dependents for the suicide of a workman. The case came before the court of appeal to decide whether the dependents of a workman who had committed suicide through mental depression, as the result of an accident, could recover compensation. The workman, a miner, received a severe injury to the hand, Nov. 17, 1919. He suffered great pain and was much affected in his spirits by the accident, informing his wife that he knew that his hand would never be right again. He was paid compensation until February 11, but during the whole time was in a depressed condition and suffered from insomnia. About February 15, his physician advised him to return to work and endeavor to shake off the depression. He did so, but came back in the evening greatly worried by his inability to carry on as before the accident. February 28, he committed suicide. On a claim for compensation, the evidence of the physician was that his mind was perturbed by the accident; that the perturbation became worse, and that the condition was neurotic. A specialist deposed that he had not seen the workman, but from the facts submitted to him he judged that he was suffering from insanity. In his opinion the accident had given the man a shock, and the shock and suffering had resulted in melancholia, which had been the first stage of insanity. The judge found that the workman committed suicide by reason of the insanity resulting from the accident, and awarded compensation. The employers now appealed.

The master of the rolls (the president of the court of appeal) in giving judgment said that to justify a finding of the sort it must be shown that the suicide was the result of the accident and not a result of the brooding over the injury received. In other words, it must result from the injury and not from the state of mind caused by the injury. Further, it must be remembered that the question was not whether the judge of the lower court was right but whether

there was evidence on which he could find as he did. It seemed to him that there was distinct evidence of a mental shock which was followed by melancholia, a progressive state of things which went on until it culminated in insanity. Now, a mental shock, if sufficiently serious in its effects, might be the subject of compensation although there was no actual physical or structural injury; and without saying what he (his lordship) might himself have found, there clearly was evidence on which the judge could have found that the melancholia arose through the shock of the accident and not merely through the man's mind brooding over the accident. If there was evidence of that, there would be the authority of Lord Cozens-Hardy in deciding a previous case that that would be ground for compensation. That judge said: "It has been said that there is some doubt whether suicide can be the result of an accident within the Workman's Compensation Act. I confess I do not feel that doubt at all. I have no doubt that it may be an accident of such a nature that there is a lesion of the brain, a structural injury to the brain itself, which accident may lead to unsoundness of mind, which may directly lead to suicide." When once established that the shock and suffering of the accident, without any structural injury, might give rise to right to compensation, it could not be said that the judge of the lower court had no grounds for deciding as he did. The appeal must therefore be dismissed. The other judges of the court of appeal (Lord Justices Warrington and Scrutton) delivered judgment to the same effect.

Breeding from the Worst Stocks

The dean of St. Paul's, Dr. Inge, is well known for his fearless and outspoken, as well as philosophical utterances on questions of the day. For the Eugenics Education Society he has delivered an address on "Eugenics and Religion." He said that little interest was taken in the subject in religious circles, and the notion that it was part of our duty to think of the physical, intellectual, and moral improvement of the human stock was still strange to the vast majority. Nevertheless, religious people were willing to accept eugenic principles provided they were fortified by long tradition. The prejudice against the marriage of first cousins, whether well or ill founded, was accepted as readily by religious as by irreligious persons, and if a similar tradition were established against the marriage of deaf mutes and epileptics there would be no opposition on the part of the churches. If religion were their enemy they would find an active enthusiasm for eugenics in those large sections of society which were not directly influenced by religious traditions. For example, they would find politicians taking some interest in race improvement. But notoriously they took none whatever. The enemy of eugenics was not religion, but the antiscientific temper.

The Prophylaxis of Venereal Disease

The problem of venereal disease still continues to attract a good deal of attention. The National Birth Rate Commission has appointed a committee consisting of prominent men in the churches and the medical profession, including Sir Arbuthnot Lane, Sir F. W. Mott, Sir H. D. Rolleston and Sir G. Sims Woodhead, to consider the questions: 1. Whether sexual continence before marriage is consistent with normal health. 2. Whether self-disinfection as a method of preventing the development of venereal disease in persons who have exposed themselves to the risk of infection is more efficient or less efficient than medical treatment at venereal clinics and early treatment centers. 3. The possible advantages and disadvantages of the various suggested methods of disinfection (*a*) before and (*b*) after sexual intercourse. 4. Whether methods of self-disinfection involve any serious disadvantages of a moral kind—that is to say, whether they are calculated to weaken moral control, and thereby lead to an increase in promiscuous sexual intercourse. 5. If so, to what extent these disadvanages should render the use and advocacy of self-disinfection undesirable when considered from the point of view of ultimate national welfare.

The Axolotl Changed Into a Salamander by Thyroid Feeding

The occasional change of a Mexican axolotl, a purely aquatic newt breathing by gills, into the ambystoma, a terrestrial salamander, with spotted skin, breathing by lungs, has long been known. The animal usually breeds in the axolotl stage and misses out the final stage in its life history. By placing it on damp moss for an increasing time every day, the final transformation has been artificially induced. More recently the discovery has been made that feeding the axolotl on thyroid gland produces the metamorphosis very quickly, even if the axolotl is kept in water. In the reptile house at the Zoological Gardens, full-grown examples of the common black axolotl and the pretty white variety are exhibited. Some are nearly 3 inches long. Alongside are shown several examples of the ambystoma stage, produced in the laboratory of the Oxford University and at the gardens by thyroid feeding. These are all of the white variety. These ambystomas are much paler than the normal form, but are spotted to a certain extent. What is more remarkable is their very small size. When the metamorphosis is produced by other methods, or occurs spontaneously, the change takes place in well grown axolotls. Thyroid gland has the same effect on axolotls a little more than an inch long.

PARIS

(From Our Regular Correspondent)

Nov. 19, 1920.

The Poison Act

The poison act, which was passed in 1916, has given rise to numerous protests and lively criticisms. It is becoming more apparent every day that the law works greater hardship on the sick than on the opium smokers and cocain habitués, for in the absence of international agreements on the subject, the addicts can readily satisfy their craving by procuring supplies in nearby foreign countries. Dr. Perrin of Nancy lately presented further criticism before the Société française de prophylaxie sanitaire et morale, claiming that the law was a serious obstacle in the ambulatory treatment of syphilis.

In France the classic ambulatory treatment of syphilis includes the administration of Dupuytren's pills or Ricord's pills, both of which contain a small amount of opium to correct the intestinal irritation caused by the mercuric chlorid or protiodid. The Codex français of 1908 gives the composition of Dupuytren's pills as mercuric chlorid, 0.01 gm., and extract of opium, 0.02 gm., and of Ricord's pills as mercuric chlorid, 0.05 gm., and powdered opium, 0.02 gm. In the majority of syphilis clinics it is customary to give the patient a blanket prescription for these pills with directions that they take two pills daily at meals on twenty consecutive days should they find it impossible to report regularly for the mercurial or arsenic injections, or as an adjuvant between the series of injections. This course is to be repeated monthly during the first year, bimonthly during the next, and quarterly during the third and fourth years.

Under the act of July 12, 1916, it is no longer possible to prescribe Dupuytren's or Ricord's pills. In fact, the regulations defining the application of the law prohibit the prescribing of any preparation of opium for more than seven days, except in cases in which the total amount of extract of opium does not exceed 0.12 gm. Even though the physician should

prescribe the customary dose for a twenty days' course, the druggist must decline to fill the prescription on the threat of incurring a penalty of a fine of from 1,000 to 10,000 francs, and imprisonment for from three months to two years. A physician can, of course, give a renewable prescription for six Dupuytren's pills, but it is difficult to conceive that the syphilitics, who as a rule are inclined to neglect systematic treatment even in the absence of vexatious difficulties, will submit to a course which forces them to renew their supply of pills once or twice a week. Besides this, they must always go to the same druggist, for the latter is obliged to preserve the prescription for three years. One of the principal advantages of these pills is that they are convenient to carry and easy to take even on a journey, a matter of importance to the great number of syphilitics whose occupation forces continuous travel, as commercial travelers, for instance.

Still greater difficulty is occasioned by another regulation which compels the patient to enter his name, occupation and address in a special register kept by the druggist. This requirement destroys the confidential relation which is absolutely indispensable from every point of view.

These criticisms were brought to the attention of the Académie de médecine, and on motion of Dr. Siredey, it was resolved (1) that the regulations of Sept. 14, 1916, dealing with the sale of poisonous substances cease to be applicable to mercurial preparations containing opium, and that the physician be permitted to prescribe at one time a sufficient quantity of such preparations to last for a four weeks' course of treatment; (2) that the practice of inscribing the name and address of the patient in a special register be discontinued in connection with those medicines that of themselves suggest the nature of the disease and that, instead, the name of the physician be entered; (3) that the druggist be authorized in entering prescriptions containing antisyphilitic remedies to substitute for mercury the word hydrargyrum or its chemical symbol, or, better still, the number of the prescription, and (4) that a complete revision of the regulations be undertaken with the least possible delay, as some of the requirements are incompatible with the exigencies of medical practice.

VIENNA

(From Our Regular Correspondent)

Nov. 24, 1920.

Midwives in Austria

In the course of preparing new regulations for the midwives in this country, statistical data were collected from which it appears that there are in Austria about as many midwives as physicians, or even more, viz., 6,500 against 6,006 physicians for a population of about 6,225,000. The distribution, however, of these "wise women" is most unsatisfactory. While in cities and towns their numbers are more than plentiful, the country districts are insufficiently provided with midwives. It is the more to be regretted that qualified midwives flock together in towns and cities, because there the physicians are also called to attend normal childbirths, so that on an average not more than from thirty to forty cases fall yearly into the domain of each midwife. The figures vary between twenty-one in Vienna, thirty in Graz, and fifty-eight in Innsbruck. In the country districts the figures are even lower; a great number, if not the majority, of births are attended not by the qualified midwife but by a more or less benevolent old woman. This produces undesirable results both to the family and to the public health. The new "Midwives Act" now in preparation provides for the regular employment by the municipality, local board or country council of one duly qualified midwife for each 2,000 inhabitants. Such a distribution would mean about sixty births per year to each midwife, a figure corresponding to the present average birth rate in the country and sufficient to keep the women busy. At the same time a fee is fixed for each labor, varying according to the economic position of the family and the work and time required. As only 3,000 women would thus be recipients of a fixed salary—these would have to go out into the country—the remainder, over 3,000, would have to find their living as hitherto in the towns or change their occupation. It may be added that among the instructions issued to the midwife and already in force, the care of the eyes of the newly born infant occupies a prominent part. Each midwife is therein ordered to instill into the eyes of the baby two drops of a 1 per cent. solution of silver acetate, explaining to the family the reason for so doing. If the family objects to it, the midwife is bound to report the fact within twenty-four hours to the local board of health. Gonorrhea is very prevalent here as a sequel of the war. The midwife has to record on the card of notification of birth whether she has instilled the drops or not, in the latter case stating why she did not do so.

The "Yellow Cross" System of Medical Insurance

The increasing pauperization of the middle classes in this country is a real menace to the development or even existence of an independent medical profession, especially as there is a distinct tendency on the part of the government to turn the physician into a public health officer. Thus it gave great satisfaction that a plan brought into existence by a private corporation was adopted by the medical organization and promoted on a large scale. The principal features of this plan are as follows: The "Yellow Cross"—a society originally founded for the purpose of insuring its members, chiefly public and civil service officers, against illness—undertakes to pay its members, in case of severe illness or operation, a certain sum of money, varying according to the nature of the illness, but generally sufficient to meet moderate expenses. The insured is at liberty to choose his own physician. A minimum insurance of 3,000 kronen can be secured for monthly or yearly premiums, but one may be insured for two or more of these "units" by a proportionate increase of the premiums. If a person who is insured for two "units" has to undergo an operation for appendicitis or mastoiditis, he can choose his own surgeon and be received in any hospital or surgical home he may fancy. The surgeon's fee together with the hospital costs up to 6,000 kronen (two units) are paid by the "Yellow Cross." If the expenses run up to more, the patient must pay the difference. Now the income of a middle class man amounts to about 60,000 or 70,000 kronen a year. Only few of the brain workers, except several with independent means, earn anything approaching 100,000 kronen. Surgical operations cost between 2,000 and 10,000 kronen, and a two weeks' stay in a home or hospital costs from 4,000 to 10,000 kronen. Thus a protracted illness or operation would either spell ruin for the average man if it were to consume from 15 to 25 per cent. of his annual income, or it would force him to go to a public hospital. In the latter event, however, he cannot choose the physician in whom he confides and cannot find the comfort or quiet surroundings to which people of the middle class are accustomed. If, however, he is insured against such an eventuality, he has either no extra expenses or he may have to pay 2,000 or 3,000 kronen, which sum is not too great a burden for him. The premiums are moderate. The system offers, in fact, the only means for the practitioner to retain his patients. It keeps patients from drifting into the dispensaries and public hospitals, because they can continue to call their physicians in spite of the rise of fees generally adopted. The "Yellow Cross" has made arrangements to extend the benefits of its insurance to the members of the professions, artists, and teachers, in short, to all classes of the population not bound by law to belong to a "sick club" or krankenkasse. As the prosperity of this society is earnestly

to be desired, the medical organization of Vienna decided to enter it corporatively, and urged its members to induce their patients to join by explaining the advantages of the society.

Surplus of Women of Marriageable Age

The census of population taken Jan. 31, 1920, shows that the number of females has markedly increased, both absolutely and relatively, and in all age groups. There are 1,087 females for every thousand males in the whole of Austria, but for Vienna alone the figures are 1,163 to 1,000, an increase of seventy-seven males as compared to 1910. But if we take into consideration only those persons classed as of a marriageable age—all unmarried females or males over 19 years—we get quite a different aspect. In Vienna we find 1,413 females to 1,000 males at present, whereas ten years ago it was 1,227 to 1,000. In the rural districts the picture is not so appalling, but even there the ratio is never under 1,100 to 1,000, meaning that fully one tenth of the females cannot hope to marry. Very striking is the change in the industrial and mining districts of our country. While in 1910 there was in these places a distinct surplus of males, now the females outnumber their mates by from 42 to 117 per thousand. In the purely agricultural districts the difference is not so pronounced. Even in peace times there was an excess of females, 1,153 to 1,000, which has risen to 1,262 to 1,000.

Hypnotic Suggestion and Crime

Professor Wagner, director of the Vienna clinic for mental diseases, was recently the object of a startling experiment. A girl called at his office and handed him a letter pretended to be written by her medical adviser. While reading the letter, he suddenly noticed that the visitor leveled a revolver at his head. However, the woman dropped the weapon without firing. She was handed over to the police in a state of complete indifference, and nothing could be gotten out of her. At 10 a. m. on the next day she suddenly awoke from what seemed to be a hypnotic sleep, and gave correct answers to all questions. On the same day there appeared in the papers a letter in which a certain man explained that he had put the girl under hypnotic suggestion that Professor Wagner was responsible for the death of her fiancé and that she should take vengeance on the "murderer." He had also provided her with the pistol but had taken care to make it absolutely unfit for doing harm and had ordered his medium not to shoot at the professor, but simply to aim at him and to awake next day at 10 a. m. All this he did because the professor staunchly adhered to the opinion that it is impossible to make a person commit a crime while under hypnotic influence. The professor was taken completely unawares and the crime could have been committed, if so ordered. The incident brought the hypnotist into the police court. The professor maintains that the whole thing was a bluff because a crime is impossible. The opposing faction contends that the crime was averted only by the strict order of the hypnotist. The police will stop all public performances of this kind. Only scientific researches by competent men will be permitted hereafter.

Marriages

HENRY M. VAN HOOK, Mount Pulaski, Ill., to Miss Bessie Scroggin of Lincoln, Ill., November 19.

WILLIAM C. VANDIVER, Mena, Ark., to Miss Iva Conseer of Lequire, Okla., December 3.

HENRY SIMONS to Señorita Maria Cristina Quiroz, both of Colon, R. P., November 27.

WALTER FALKE JONES to Miss Marguerite Martini, both of New York, December 4.

Deaths

Nathan Smith Davis ⊕ Chicago, son of the illustrious founder of the American Medical Association, died in California, December 21, after a long illness from lymphosarcoma, aged 62. Dr. Davis was graduated from the Chicago Medical College in 1883, and early began a teaching career as associate professor of pathology in his alma mater, holding this position from 1884 to 1886. He later became professor of the principles and practice of medicine and clinical medicine in the Northwestern University Medical School which succeeded the old Chicago Medical College. For some years he served also as dean. In association with his teaching position he was attending physician to Mercy, Wesley and St. Luke's hospitals. Dr. Davis showed great interest in the improving of the pharmacopeia, acting as vice president of the U. S. Pharmacopeial Convention, 1910-1920, and contributing many articles to medical literature on this subject. He served the American Medical Association in several capacities, acting as secretary of the Section on Practice of Medicine in 1887, as chairman of the Section on Pharmacology and Therapeutics in 1900, and as a member of the House of Delegates in 1902 and 1903. His interests were broad, including membership in the Ninth International Medical Congress and Pan American Congress, several offices in the Illinois State Medical Society, chairmanship of the board of scientific governors of the Chicago Academy of Sciences, and membership in the Chicago Neurological Society, the Chicago Pathological Society and the Institute of Medicine of Chicago. Several years ago, failing health compelled his retirement from practice and ultimately necessitated removal of his residence from Chicago to California. However, even during his declining years he kept up an active interest in medical progress.

Hyman Climenko ⊕ New York; Long Island College Hospital, 1904; aged 45; chief of the neurologic clinic of Mount Sinai Hospital, and attending neurologist at the Neurological Institute, Beth Moses, Central Neurological, Beth David, Brownsville and East New York hospitals, died, December 16, following an abdominal operation.

William Park Mills ⊕ Missoula, Mont.; Bellevue Hospital Medical College, 1879; aged 63; president of the Medical Association of Montana in 1913; for many years a member and one time president of the Montana State Board of Medical Examiners; died, December 6, from pneumonia.

Richard A. Pyles, Washington, D. C.; George Washington University, Washington, D. C., 1883; aged 58; a member of the Medical Society of the District of Columbia; a veteran of the Spanish-American War; died, December 5, from heart disease.

Charles H. Raley, Wrens, Ga.; University of Georgia, Augusta, 1883; aged 67; local surgeon for the Georgia and Florida Railroad; was instantly killed, November 30, when he was struck by a passenger train while crossing a railroad track.

Alfred Eugene Spalding ⊕ Luverne, Minn.; Jefferson Medical College, 1874; aged 69; local surgeon for the Chicago, Rock Island and Pacific, and Chicago, St. Paul, Minneapolis and Omaha railroads; died, December 4, from pneumonia.

Enos C. Kinsman, Saginaw, Mich.; Chicago Homeopathic Medical College, 1895; aged 66; a member of the board of health of Saginaw; local surgeon for the Pere Marquette and Michigan Central railroads; died, December 5.

Richard Shepard Bryan, St. Louis; Washington University, St. Louis, 1897; aged 50; a member of the Missouri State Medical Association; captain, M. C., U. S. Army, and discharged, Dec. 31, 1918; died, December 7.

John W. Hanna, Winfield, Iowa; State University of Iowa, Iowa City, 1873; aged 73; at one time mayor of Winfield; for forty years local surgeon of the Burlington Railroad; died, December 2, from cerebral hemorrhage.

Robert Wade Brown, Washington, D. C.; Howard University, Washington, 1891; aged 58; a colored practitioner, visiting physician to Freedman's Hospital; was shot and killed at his home, November 27.

David Gordon, Chillicothe, Mo.; University of Louisville, Ky., 1877; aged 70; a member of the Missouri State Medical Association; for two terms mayor of Chillicothe; died, October 6, from cerebral hemorrhage.

Byron E. Dixon, Texarkana, Ark.; Marquette University, Milwaukee, 1913; aged 35; a member of the Arkansas Med-

⊕ Indicates "Fellow" of the American Medical Association.

ical Society; died, December 6, from a self-inflicted gunshot wound of the head.

James Burrow, Bristol, Tenn.; University of Pennsylvania, Philadelphia, 1919; aged 27; surgeon at the Government Hospital, Ancon; died in that institution, December 5, from cirrhosis of the liver.

Joseph Edwin Hite, Kansas, Ill.; University of Pennsylvania, 1885; aged 62; for thirty years a practitioner of Kansas; died suddenly, December 4, from organic heart disease.

William J. Burnett, Long Island City and Woodmere, N. Y.; Detroit Medical College, 1869; aged 77; a member of the Medical Society of the State of New York; died, December 6.

Edward Moore, Colorado Springs, Colo.; St. Louis University School of Medicine, 1905; aged 44; a member of the Colorado Medical Society; died at Monrovia, Calif., November 23.

Kathryn Lorigan Devlin, Pittsburgh; University of Bishop College Faculty of Medicine, Montreal, 1897; for nine years medical inspector in the public schools; died, December 4.

John H. Ferguson ⊕ Colorado Springs, Colo.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; aged 67; died suddenly, December 4, from cerebral hemorrhage.

Vincent D. Lockhart, Maysville, Ga.; Atlanta (Ga.) Medical College, 1871; aged 71; died, at the Hardman Sanatorium, Commerce, Ga., November 14, from carcinoma.

Charles M. Hamilton, Holdenville, Okla.; University of Vermont, Burlington, 1877; aged 64; also a druggist; died, November 15, from cerebral hemorrhage.

Simeon I. I. Battiste, Louisville; Louisville National Medical College, 1898; aged 60; a colored practitioner; died, December 4, from cerebral hemorrhage.

Cyrus M. Stewart, Memphis, Tenn.; Memphis Hospital Medical College, 1883; aged 89; a veteran of the Civil War; died, December 6, from pneumonia.

L. P. Harrington, Waynesboro, Ga.; University of Georgia, Augusta, 1884; aged 60; a member of the Medical Association of Georgia; died, November 6.

Forrest L. Lightfoot, Cloverport, Ky.; St. Loius College of Physicians and Surgeons, 1898; aged 44; died, December 6, from heart disease.

George Clarence Horne, Black River Falls, Wis.; University of Vermont, Burlington, 1886; aged 60; died, November 28, from heart disease.

Edwin S. McDonald, Cameron, Mo.; Northwestern Medical College, St. Joseph, 1882; aged 71; died suddenly, recently, from angina pectoris.

William M. L. Weills, Harrisburg, Pa.; Long Island College Hospital, Brooklyn, 1870; aged 81; also a druggist; died, December 8.

Samuel Corley, Clarksville, Texas; University of Louisville, Ky., 1888; aged 57; died, November 27, from cerebral hemorrhage.

Charles B. Miller, Somers, Mont.; Medical College of Ohio, Cincinnati, 1867; aged 77; a veteran of the Civil War; died, December 1.

Edward F. Backmann, Philadelphia; Jefferson Medical College, Philadelphia, 1890; aged 60; died, December 6, from diabetes.

Frank Ring ⊕ St. Louis; St. Louis College of Physicians and Surgeons, 1892; aged 65; died, November 19, from endocarditis.

Gustav G. Brudi ⊕ New Haven, Ind.; Toledo (Ohio) Medical College, 1886; aged 57; died, December 6, from heart disease.

Angelo Orin Squier ⊕ Springfield, Mass.; Long Island College Hospital, 1876; aged 66; died suddenly, November 18.

George Wenzel Padiera ⊕ Rochester, N. Y.; University of Breslau, Germany, 1864; aged 83; died, December 2.

John M. Duvall ⊕ Springfield, Md.; Baltimore University School of Medicine, 1894; died, December 3.

Jeremiah D. Donovan, Lovington, Ill.; University of Louisville, Ky., 1868; aged 84; died, December 6.

C. C. Brown, Chickalah, Ark.; University of Nashville, Tenn., 1875; aged 74; died, December 1.

John D. De Liguori, Waterbury, Conn. (License, Connecticut, 1893); aged 74; died, November 2.

Henry L. Bollman, Robesonia, Pa.; Jefferson Medical College, 1885; aged 58; died, December 9.

Correspondence

THE QUESTION OF POSITIVE WASSERMANN REACTIONS CAUSED BY THE INTRAVENOUS ADMINISTRATION OF ARSPHENAMIN

To the Editor:—In the recent paper by Strickler, Munson and Sidlick (THE JOURNAL, Nov. 27, 1920, p. 1488), evidence was presented tending to show that the administration of arsphenamin to nonsyphilitic human beings may result in such changes that the serum yields positive Wassermann reactions. If these findings are correct and receive confirmation, new light and an entirely different interpretation are thrown on the provocative Wassermann reaction; furthermore and of much greater significance, the Wassermann reaction cannot be used as a serologic guide to treatment. The questions raised by this report are worthy of further study.

If the administration of arsphenamin to nonsyphilitic persons results in changing the serum from Wassermann negative to Wassermann positive, a similar change can reasonably be expected to occur among persons infected with syphilis; yet the great preponderance of evidence indicates conclusively that the serum of syphilitic patients gradually becomes Wassermann negative under treatment with arsphenamin or neo-arsphenamin, with or without mercury. Of course, the amount of treatment required before the serum of a syphilitic is changed from a positive to a negative reaction varies with the technic of the Wassermann test and especially according to the sensitiveness of the antigens employed; these variations directly concern the technic of the Wassermann test without affecting the widely adopted belief that under specific treatment the strength of the Wassermann reaction with the serum of syphilitic persons, is gradually reduced. Exceptions occur, and it is well known that the serum of a small percentage of syphilitics yields persistently positive Wassermann reactions despite vigorous and prolonged treatment; these "Wassermann fast" persons frequently show evidences of syphilitic involvement of the tissues of the central nervous system, and constitute a group requiring intermittent observation and treatment and further investigation bearing on our methods of treatment of syphilis.

While there is a divergence of opinion regarding the practical value of the provocative Wassermann reaction, I am sure that syphilographers have frequently noted an increase of the strength of the Wassermann reaction after the institution of treatment with arsphenamin and other antisyphilitic drugs; in other words, the serum of a person with latent syphilis giving a weakly positive reaction before treatment may yield stronger reactions after treatment has begun, constituting a "serologic Herzheimer reaction" and occasionally accompanied by an exacerbation of the symptoms of the disease. So far as the Wassermann reactions are concerned under these circumstances, I know of no reason for doubting that their enhanced strength is due to the influence of the drugs on increasing the activity of *Spirochaeta pallida.*

Furthermore, it is commonly believed that the serum of a syphilitic may give a negative Wassermann reaction if tested during or immediately after an intensive course of treatment with the arsphenamins or mercurials, whereas positive reactions may be observed after cessation of treatment for a period of two weeks or more; according to the report of Dr. Strickler and his colleagues, just the reverse would be expected. As a matter of fact, I have occasionally observed that the serum of some syphilitic patients may yield stronger reactions when tested during or immediately after an inten-

sive course of treatment with the arsphenamins than after a period of rest; this may be due to the influence of arsphenamin alone, as reported by Dr. Strickler and his colleagues in a large percentage of nonsyphilitics; but, on the other hand, it may be due to the presence of the reagin responsible for the Wassermann reaction in syphilis and frambesia, which gradually disappears after the destruction of spirochetes and the cessation of treatment.

Test tube experiments which I have conducted show that the mere addition of arsphenamin and neo-arsphenamin to normal human serum does not result in changes producing positive Wassermann reactions. The addition of 0.005 gm. or more arsphenamin to 0.2 c.c. of normal or syphilitic serum renders the latter strongly hemolytic; the addition of from 0.001 to 0.0003 gm. of arsphenamin and from 0.0006 to 0.0002 gm. of neo-arsphenamin renders a serum anticomplementary in tests conducted with 1 c.c. of 1:20 guinea-pig complement, that is, results in the complete or partial destruction of complement in a hemolytic system with partial or complete inhibition of hemolysis. This condition, however, should not be confused theoretically or practically with a positive Wassermann reaction. The intravenous injection of 0.6 gm. of arsphenamin or 0.9 gm. of neo-arsphenamin to a person of such weight that the drugs are diluted with 2,000 c.c. of blood and tissue juices would result in each 0.2 c.c. of serum containing 0.00006 or 0.00009 gm. of the drugs, provided the blood was drawn immediately after injection and if the proposition could be reduced to such simple terms, which is obviously not the case; these amounts added to normal serum in vitro have no demonstrable influence on the activity of complement or the Wassermann reaction.

While Dr. Strickler and his colleagues have exercised commendable care in efforts toward excluding syphilitics from their series of cases, yet the possibility exists that some cases of latent syphilis may have been included, particularly since the patients were selected from a public clinic. In order to exclude this factor, several months ago I conducted a similar set of experiments employing normal rabbits, under which conditions the question of syphilis could be definitely excluded and the influence of arsphenamin on the serum in relation to the Wassermann reaction studied under more ideal circumstances.

Due care was exercised in excluding animals yielding positive Wassermann reactions, as it is proved that normal rabbit serums sometimes yield positive Wassermann reactions, especially after the serums have been heated at 55 C. for thirty minutes. As shown by Dr. Pearce and myself, this quality of the serum of a rabbit remains constant for the animal; that is, if the serum of an animal reacts negatively it continues to do so over an indefinite period of time.

Preliminary Wassermann tests yielded negative reactions, each serum being tested unheated and by two methods: my routine method (the same as that employed by my assistants in testing the series of serums submitted by Dr. Strickler) and my new quantitative technic based on the results of a series of studies on the standardization of the Wassermann reaction conducted during the last five years. In the former test, each serum was used in amounts of from 0.1 to 0.2 c.c.; in the latter test, which is far more delicate, the serums were used in amounts ranging from 0.005 to 0.00001 c.c., with refrigerator incubation.

One series of animals received from six to ten intravenous injections of alkalized solutions of arsphenamin in dose of 0.01 gm. per kilogram of weight, equivalent to 0.6 gm. per 60 kg., or the weight of a young adult; a second series received from six to ten intravenous injections of solutions of neo-arsphenamin in dose of 0.02 gm. per kilogram of weight, equivalent to 1.2 gm. per 60 kg. A third series received from six to ten intravenous injections of mercuric chlorid in dose of 0.00033 gm. per kilogram of weight, equivalent to 0.0193 gm., or a little over 1 grain per 60 kg.

These injections were given at intervals of one week, blood being drawn for the Wassermann tests just before each injection, which was one week after the preceding dose of each drug. The conditions of the experiment were therefore almost identical with those surrounding the investigation of Strickler, Munson and Sidlick except that rabbits were employed and the Wassermann tests conducted under my immediate supervision and observation.

The results were entirely negative; the serum of no rabbit in any of the three series acquired the property of yielding positive Wassermann reactions with either technic.

Several years ago Miss Trist and myself found that single large doses of arsphenamin (0.07 gm. per kilogram of weight) had no influence on the Wassermann reaction with normal rabbit serums; that is, the serums of normal rabbits did not acquire the property of giving positive reactions, nor were the serums of rabbits yielding positive reactions so changed that negative reactions were induced. The present series of experiments have yielded exactly similar results. Of course, it is possible for arsphenamin and neo-arsphenamin to have a different influence on human tissues than on those of the normal adult rabbit, but I believe that these results are quite significant.

Despite the evidence here presented, the observations of Strickler and his colleagues are not to be lightly dismissed and should be held *sub judice;* the studies of Dr. Lucke and myself bearing on the histologic changes produced by arsphenamin, neo-arsphenamin and mercury in rabbits have shown that some tissue changes are induced, and it is possible that these may influence the physiochemical properties of the serum and result in producing such alterations in some serums as would result in a positive Wassermann reaction.

At present, I am unconvinced that arsphenamin produces such changes in nonsyphilitic individuals as would result in their serums yielding genuine positive Wassermann reactions; on the other hand, additional evidence is furnished for the necessity of further studies on the mechanism of the Wassermann reaction and additional safeguards against error in conducting the tests.

JOHN A. KOLMER, M.D., Philadelphia.

TREATMENT OF TRICHURIS INFESTATION

To the Editor:—In an editorial in THE JOURNAL (Aug. 21, 1920, p. 543) the statement is made that "there is no treatment of proved efficacy against the whipworm, *Trichuris*," a statement also made in "The Practical Medicine Series **4**:150, 1919. The same statement is made by many other authors. My purpose in this communication is to call the attention of American physicians to the valuable vermicidal action against this parasite of the latex of the plant known in Colombia under the name *"higuerón"* (*Ficus glabrata H. B. K.*, after Santiago Cortés, Flora de Colombia, p. 227). The doses vary naturally, according to age, being 50 c.c. for an adult, followed two hours afterward by a laxative, generally a saline. The treatment possesses definite value and has been used for a long while by Colombian physicians. As references, I may mention: *Repertorio de Medicina y Cirugía de Bogotá* **3**:3, 99, 135, 1911, and *Gaceta Médica de Bogotá* **2**:40, 1912. It has also been stated to possess some value for the treatment of other parasites (hookworm); but for these it is inferior to thymol, which, I may say by the way, is superior to chenopodium.

JORGE H. TASCON, M.D., Buga (Valle) Colombia, S. A.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 11. Sec., Dr. Samuel W. Welch, Montgomery.

ARIZONA: Phoenix, Jan. 4-5. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

COLORADO: Denver; Jan. 4. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, Jan. 11-13. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

HAWAII: Honolulu, Jan. 10-13. Sec., Dr. J. E. Strade, 1041 Alakea St., Honolulu.

INDIANA: Indianapolis, Jan. 11. Sec., Dr. W. T. Gott, Crawfordsville.

KANSAS: Topeka, Feb. 8. Sec., Dr. Henry A. Dykes, Lebanon.

MINNESOTA: Minneapolis, Jan. 4-6. Sec., Dr. Thomas McDavitt, 539 Lowry Bldg., St. Paul.

MINNESOTA: National Board of Medical Examiners, St. Paul, Minneapolis and Rochester, Feb. 23-March 2. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

MISSOURI: St. Louis, Jan. 18-20. Sec., Dr. George H. Jones, Jefferson City.

NEW MEXICO: Santa Fe, Jan. 10-11. Sec., Dr. R. E. McBride, Las Cruces.

NEW YORK: New York City, Albany, Syracuse and Buffalo, Jan. 24-27. Asst., Professional Examinations, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, Jan. 4. Sec., Dr. George M. Williamson, Grand Forks.

OKLAHOMA: Oklahoma City, Jan. 11-12. Sec., J. M. Byrum, Shawnee.

OREGON: Portland, Jan. 4-6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia, Jan. 11-15. Sec., Dr. Thomas E. Finnegan, Harrisburg.

RHODE ISLAND: Providence, Jan. 6-7. Sec., Byron U. Richards, Providence.

SOUTH DAKOTA: Pierre, Jan. 18. Director, Division of Medical Licensure, Dr. H. R. Kenaston, Bonesteel.

UTAH: Salt Lake City, Jan. 3-4. Acting Sec., Dr. C. L. Olsen, Salt Lake City.

VERMONT: Burlington, Feb. 8-10. Sec., Dr. W. Scott Nay, Underhill.

WASHINGTON: Spokane, Jan. 4-6. Sec., Dr. William M. O'Shea, Spokane.

WEST VIRGINIA: Charleston, Jan. 13. Sec., R. T. Davis, Charleston.

WISCONSIN: Madison, Jan. 11-13. Sec., Dr. John M. Dodd, Ashland.

Maryland June Examination

Dr. J. McP. Scott, secretary, Maryland State Board of Medical Examiners, reports the written examination held at Baltimore, June 22-25, 1920. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 95 candidates examined, 87 passed and 8 failed. Forty-three candidates were licensed by reciprocity. Four candidates were licensed by special examination. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Howard University....(1918) 81, (1920)		79
Johns Hopkins University....(1914) 82, (1917) (1918) 80, 84, 86, 89, (1920) 77, 78, 79, 79, 79, 80, 80, 81, 81, 82, 83, 83, 83, 83, 84, 85, 85, 85, 85, 85, 86, 86, 86, 86, 86, 87, 89, 89, 89, 90, 91, 91, 91, 92, 92, 92		82,
University of Maryland....(1908) 75, (1916) 75, (1917) 80, 82, (1920) 76, 76, 78, 79, 80, 80, 80, 80, 80, 82, 82, 83, 83, 83, 83, 83, 84, 85, 86, 86, 86, 87, 87, 87, 87, 87, 88, 88. 89, 90, 91, 93, 93, 96		79,
University and Bellevue Hospital Medical College....(1911)		88
Jefferson Medical College....(1920)		79
Meharry Medical College....(1920)		75
FAILED		
Baltimore University....(1899)		23
Johns Hopkins University....(1920)		66, 67
University of Maryland....(1917) 72, (1920)		71, 72
Temple University....(1917)		69
Meharry Medical College....(1920)		63
SPECIAL EXAMINATION		
George Washington University....(1908)		*
Harvard University....(1893)		*
University of Michigan Homeo. Medical School....(1905)		*
McGill University Faculty of Medicine....(1900)		*

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
College of Medical Evangelists....(1916)		Dist. Colum.
Cooper Medical College....(1893)		California
Columbian University....(1898), (1900)		Dist. Colum.
Georgetown University School of Medicine....(1909)		Dist. Colum.
George Washington University....(1916), (1917, 2) (1918)		Dist. Colum.
Howard University....(1904), (1907), (1919)		Dist. Colum.
Atlanta Medical College....(1889), (1914)		Georgia
Chicago College of Medicine and Surgery....(1910)		Penna.
Hahnemann Medical College, Chicago....(1903)		Illinois
Northwestern University Medical School....(1911)		Illinois
Bennett Medical College....(1913)		Illinois
University of Louisville....(1905)		New Jersey
Baltimore Medical College....(1904)		Penna.
College of Physicians and Surgeons, Baltimore....(1910), (1911), (1915, 2) West Virginia, (1914)		Kentucky
Maryland Medical College, Baltimore....(1903)		Tennessee
University of Maryland....(1894), (1909) (1916) W. Virginia, (1917) District of Columbia		Virginia
Harvard University, Boston....(1914)		Penna.
University of the City of New York....(1886)		Penna.
Leonard Medical School....(1912)		Georgia
University of Pennsylvania, Department of Med....(1894) (1901) Pennsylvania		Ohio
Western Pennsylvania Medical College....(1892)		Penna.
Meharry Medical College....(1902)		Kentucky, (1906) Georgia
University of Vermont College of Medicine....(1919)		Vermont
Medical College of Virginia....(1913)		W. Virginia
University of Virginia....(1898)		West Virginia, (1908) Dist. Colum.
Royal College of Surgeons, England....(1915)		Dist. Colum.

* No grade given.

California June and July Examination

Dr. C. B. Pinkham, secretary, California State Board of Medical Examiners, reports the written, oral and practical examination held at San Francisco, June 28 to July 1, 1920. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 109 candidates who took the physician's and surgeon's examination, 94, including 1 osteopath, passed, and 15, including 5 osteopaths and 1 chiropractor, failed. Seventeen candidates received drugless practitioners' certificates. One hundred and fifty-six candidates, including 4 osteopaths and 1 undergraduate, were licensed by reciprocity. Eight candidates were licensed by endorsement of credentials. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
College of Medical Evangelists....(1920) 85, 85.6, 86.4, 88.8, 89.2, 89.3, 89.6, 89.6, 89.7, 90.3, 92.5,*		82.7,
College of Physicians and Surgeons, Los Angeles....(1920) 83.6, 85. 85.7. 86.2, 87.6, 89.5 *		82.7,
College of Physicians and Surgeons, San Francisco..(1920) 80.3, 82.3, 83.2, 83.4, 83.5, 83.6, 84.5, 85, 86.7, 88.1. 89.6. 90, 92.3		76,
Leland Stanford Junior University School of Med....(1920) 83.1, 84.6, 86.3, 86.8, 86.6, 87.5, 87.5, 88.3, 89.1, 90, 91.1. 91.5, 91.7, 93.1		82.5,
Oakland College of Medicine and Surgery....(1920) 86.2 87.1, 87.6		
University of California Medical School....(1920) 83, 83.3, 83.8, 84.7, 86, 86.2, 87.2, 87.3, 89.4, 89.6, 89.9, 90.6, 90.9, 92.4, 94.4, 95,* ,*		76.7,
George Washington University....(1917)		87.8
Northwestern University....(1920)		90
Rush Medical College....(1917) 92.1, (1919)		88.3
University of Illinois....(1920)		87
State University of Iowa College of Medicine....(1919)		87.5
Harvard University....(1920)		87.1
University of Minnesota Medical School....(1920)		78.6
St. Louis University School of Medicine....(1920) 80.8,		85.5
Washington University Medical School....(1920)		91.5
Western Reserve University School of Medicine....(1919)		80.3
Jefferson Medical College....(1918) 77.1, (1919)		91.6
University of Pennsylvania....(1917)		85.8
University of Pittsburgh School of Medicine....(1919)		90.2
Vanderbilt University Medical Department....(1914)		86.4
University of Texas Department of Medicine....(1917)		83.1
University of Vermont....(1919)		83.5
Kyoto Prefecture Special Medical School....(1912)		*
Nippon Special Medical School, Tokyo....(1907)		*
FAILED		
College of Physicians and Surgeons, Los Angeles....(1920) 68.5,		71.7
College of Physicians and Surgeons, San Francisco...(1918) (1920) 73.5		62,
Oakland College of Medicine and Surgery....(1920)		72.2
Johns Hopkins University Medical School....(1917)		67.1
Aichie Prefecture Spec. Medical School Nagoya....(1907)		63.4
Tokyo Charity Hospital Special Medical School....(1914)		*
University of Glasgow....(1884)		62.2

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
University of Arkansas Medical Department....(1916)		Arkansas
California Medical College....(1905, 2)		Texas
Denver and Gross College of Medicine....(1904)		Washington
University of Colorado School of Medicine....(1917)		Colorado
Georgetown University....(1895)		S. Dakota
George Washington University....(1908) (1910) District of Columbia, (1916) Tennessee		W. Virginia
Atlanta College of Physicians and Surgeons....(1907)		Georgia
University of Georgia Medical Department....(1890)		Washington
Bennett College of Eclectic Medicine and Surgery..(1886) (1905) Indiana		S. Dakota
Chicago College of Med. and Surg..(1908), (1913), (1915)		Illinois
Chicago Homeopathic Medical College....(1895)		New York
College of Physicians and Surgeons, Chicago....(1897) (1903, 2) Illinois, (1904) Minnesota, (1907, 2) Illinois, (1908) Utah. (1900) South Dakota		Texas
Hahnemann Med. Coll. of Chicago..(1891), (1902), (1903) (1912) Iowa		Illinois
Northwestern University....(1897), (1902), (1912)		Illinois
Rush Medical College....(1884) Kansas, (1890) (1893), (1896) Illinois; (1900), (1901) Washington; (1904) Illinois; (1906) Utah; (1909) Illinois; (1910) Washington; (1911), (1913) Illinois; (1913) Washington; (1916) Illinois		Minnesota
Drake University College of Med...(1909) Illinois, (1910)		Iowa
Keokuk Medical College....(1908)		Iowa
State University of Iowa Coll. of Homeo. Medicine..(1908)		Iowa
State University of Iowa Coll. of Medicine....(1895) (1915) Iowa		Iowa

Indiana Medical College	(1906)	Indiana
State College of Phys. and Surgs., Indianapolis	(1907)	Indiana
College of Physicians and Surgeons, Kansas City	(1898)	Illinois
University of Kansas School of Medicine	(1918)	Missouri
University of Louisville Medical Department	(1884) (1909)	Utah Arizona, (1916) Kentucky
Flint Medical College of New Orleans	(1906)	Louisiana
Tulane University	(1901) Oregon, (1912)	Louisiana
Baltimore Medical College	(1903) Washington, (1898)	Vermont
College of Physicians and Surgeons, Baltimore	(1895)	Texas
Johns Hopkins University	(1901) Connecticut, (1914)	Wisconsin
University of Maryland	(1909)	Maryland
Boston University School of Med.	(1903) Illinois, (1914)	Mass.
Harvard University	(1902) Arizona, (1911) (1916) Massachusetts, (1919) Massachusctts	Illinois
Detroit College of Med. and Surg.	(1900), (1910), (1913)	Michigan
University of Michigan Medical School	(1906) (1910), (1915), (1917)	S. Dakota Michigan
Hamline University	(1897) Oregon, (1903) (1907) North Dakota	N. Dakota
University of Minnesota Medical School	(1895), (1908) (1915) Oregon	Minnesota
Barnes Medical College	(1907)	Illinois
Ensworth Medical College	(1892) Kansas, (1908) (1914) Missouri	Wyoming
Homeopathic Medical College of Missouri	(1890)	Illinois
Missouri Medical College	(1895)	Illinois
National University of Arts and Science	(1915)	Missouri
St. Louis College of Physicians and Surgeons	(1910)	Missouri
St. Louis University School of Medicine	(1906), (1907) (1908) Illinois. (1918) Missouri	Missouri
University Medical College of Kansas City	(1909)	Kansas
Washington University Medical School	(1911), (1912)	Missouri
John A. Creighton Medical College	(1911), (1915), (1918)	Nebraska
Lincoln Medical College	(1906), (1910)	S.Dakota
University of Nebraska College of Medicine	(1898)	Nebraska
Bellevue Hospital Medical College	(1890)	Iowa
Columbia University	(1898) Connecticut; (1904), (1910)	New York
Long Island College Hospital	(1900), (1909), (1911)	New York
New York Homeo. Med. Coll. and Flower Hospital	(1909)	New York
New York University Medical College	(1881)	New York
Syracuse University College of Medicine	(1905)	New York
University of Buffalo Department of Medicine	(1895)	New York
Cleveland College of Physicians and Surgeons	(1910)	Ohio
Ohio Medical Univ.	(1897) Indiana, (1898) Ohio, (1903)	Oklahoma
Western Reserve University School of Medicine	(1902)	Illinois
Hahnemann Med. Coll. and Hosp. of Philadelphia	(1909)	Penna.
Jefferson Medical College	(1881) Illinois; (1907)	Utah
Medico-Chirurgical College of Pennsylvania	(1906) (1908), (1910), (1915)	New Jersey Pennsylvania
Temple University Department of Medicine	(1910)	Penna.
University of Pennsylvania	(1899) Iowa; (1906)	Penna.
University of Pittsburgh School of Medicine	(1909) (1910) Iowa	Penna.
Western Pennsylvania Medical College	(1905)	Penna.
Meharry Medical College	(1916) Missouri; (1916)	Alabama
Vanderbilt University	(1899)	Tennessee
Marquette University School of Medicine	(1913)	Washington
Milwaukee Medical College	(1901)	Wisconsin
Wisconsin College of Phys. and Surgs., Milwaukee	(1901)	Wisconsin
University of Vermont College of Medicine	(1896) (1907)	Mass. Vermont
Queens University Faculty of Medicine	(1902)	N. Dakota
University of Toronto Faculty of Medicine	(1910)	Montana
University of Naples	(1907)	New York
Tokyo Charity Hospital Special Medical School	(1907)	Nevada
Royal College of Surgeons, England	(1901)	Missouri
National University, Athens	(1900)	Utah
Undergraduate		Vermont

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Georgetown University		(1901)	U. S. Navy
Tulane University		(1916)	U. S. Army
Johns Hopkins University		(1908)	U. S. Army, (1907) U. S. Navy
University of Michigan		(1899)	U. S. Army
St. Louis University School of Medicine		(1905)	U. S. Navy
Medico-Chirurgical College of Pennsylvania		(1916)	U. S. Army
University of Pennsylvania		(1907)	U. S. Navy

* Grade not given.

Kansas June Examination

Dr. Henry A. Dykes, secretary, Kansas State Board of Medical Examiners, reports the written examination held at Kansas City, June 15, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Twenty-six candidates were examined, all of whom passed. Fourteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined
Univ. of Kansas School of Medicine	(1917) 1, (1920) 22		23
University of Pennsylvania School of Medicine	(1920)		1
University of Pittsburgh School of Medicine	(1920)		1
University of Texas Department of Medicine	(1920)		1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Loyola University		(1916)	Illinois
Northwesetrn University Medical School		(1918)	Missouri
University of Illinois		(1918)	Illinois
College of Physicians and Surgeons, Keokuk		(1887)	Wyoming
State University of Iowa College of Medicine		(1918)	Iowa
University of Kansas School of Medicine		(1906)	Missouri
Beaumont Hospital Medical College		(1902)	Illinois
St. Louis University School of Medicine		(1917)	Missouri
Washington University Medical School		(1909)	Missouri
University of Nebraska College of Medicine		(1918) (1920)	Nebraska
Physio-Medical College, Cincinnati		(1914)	Ohio
Jefferson Medical College of Pennsylvania		(1894)	Missouri
University College of Medicine, Richmond		(1905)	W. Virginia

Book Notices

INGUINAL HERNIA: THE IMPERFECTLY DESCENDED TESTICLE AND VARICOCELE. By Philip Turner, M.S., F.R.C.S., Assistant Surgeon, Guy's Hospital. Cloth. Price, $3 net. Pp. 104, with 22 illustrations. Philadelphia: P. Blakiston's Son & Co., 1919.

The author presents in an interesting, readable manner the anatomy and pathology of the inguinal canal and scrotum in relation to inguinal hernia, maldescent of the testis, and varicocele. He then points out the objections to the ordinary surgical management employed for their cure, and describes in detail the technic that he has successfully used. The results are based largely on operations he performed while serving with the British during the war, his subjects being healthy young adults, who were carefully observed during convalescence, and many of whom were followed and examined several months after their return to duty. The author considers the congenital sac as the potential cause of most inguinal hernias, and its complete removal the most important step in the operative technic. In young persons and in early hernias in well developed adults he considers repair of the posterior wall of the inguinal canal not only unnecessary but an interference with the normal action of the internal oblique muscle. When the canal has been distorted and weakened by long continued pressure of a large sac or truss, the usual methods of repair are indicated. But in every case, the intercolumnar fibers of the aponeurosis at the external ring, unless found to be abnormal, should be preserved intact. The author's treatment of maldescent of the testis, the pathology of which is admirably discussed, is unique in that he plants the testis in the opposite side of the scrotum through an opening in the scrotal septum. In the repair of varicocele, after removal of the segment of varicosed veins, the low lying position of the testis is overcome, not by tying together the stumps of ligated veins, but by a transverse closure of the longitudinal incision in the fascial and muscular coverings of the cord. The end-results of the author's technic as reported appear highly favorable.

LEHRBUCH DER PERKUSSION UND AUSKULTATION. Mit Einschluss der Ergänzenden Untersuchungsverfahren der Inspektion, Palpation und der Instrumentellen Methoden. Von Dr. Ernst Edens, A. O. Professor an der Universität zu München Z. Zt. St. Blasien. Paper. Price, 64 marks. Pp. 498, with 249 illustrations. Berlin: Julius Springer, 1920.

The major portion of this work is taken up with an admirable exposition of the anatomic and physiologic conditions that underlie auscultation and percussion of the chest in health and disease. Thus, among other subjects, dulness on percussion as it pertains to the heart and lungs, the varieties of râles, the origin of the normal heart tones and how and why they may be altered are exhaustively considered. The physical examination of the blood vessels is also discussed in a satisfactory manner. The references that are made to the use of the roentgen ray, the polygraph and the electrocardiograph are too scanty to be of much value. There is a brief chapter on the examination of the abdominal organs. This is so incomplete that it might well have been omitted. The book is to be commended, therefore, for its excellent summary of the fundamental principles of auscultation and percussion as applied in diseases of the chest.

A TEXT-BOOK OF HUMAN PHYSIOLOGY, INCLUDING A SECTION ON PHYSIOLOGIC APPARATUS. By Albert P. Brubaker, A.M., M.D., LL.D., Professor of Physiology and Medical Jurisprudence in the Jefferson Medical College. Sixth Edition. Cloth. Price, $4.25 net. Pp. 795, with 356 illustrations. Philadelphia: P. Blakiston's Son & Co., 1919.

This textbook, prepared for the guidance of medical students and practitioners, may fill adequately a local want; but it certainly does not measure up to the standard of other well known texts in which less space is devoted to anatomic considerations, more space to the advances in biochemistry, and the subject matter of mechanical physiology itself presented in a more critical and less descriptive manner. America may justly be proud of its contributions to the science of nutrition. Reference is made in this book to the work of Folin and others on intermediary protein metabolism. On the other hand, no mention is made of the beautiful work of Mendel and Osborne on the specific value of certain amino-acids in

growth and nutrition. The Journal has done its utmost in calling the attention of the medical profession through its editorial columns to these matters as well as to the enormously important rôle of the accessory substances, or vitamins, referred to by some as fat-soluble A, water-soluble B, and water-soluble C. Even the educated layman speaks with some intelligence about deficiency diseases due to a faulty diet because of the absence of one or several of these substances. And yet this textbook absolutely ignores these matters; for the author must certainly be familiar with the facts and their practical importance. We expect a modern textbook to discuss diseases due to a deficiency of the diet not referable to its caloric value or its carbohydrate, fat or protein, salt or water content. We expect to find in it some discussion of antibodies, basal metabolism, the functional control of the capillaries, and a better discussion of the more striking advances in the field of internal secretion. There are no direct bibliographic references to the original literature.

Epidemic Encephalitis (Encephalitis Lethargica). By Frederick Tilney, M.D., Ph.D., Professor of Neurology, Columbia University, and Hubert S. Howe, A.M., M.D., Instructor in Neurology, Columbia University. Cloth. Price, $3.50. Pp. 252, with 58 illustrations. New York: Paul B. Hoeber, 1920.

This brochure is divided into two parts. The first is devoted to the clinical description of the various types of the disease as manifested by twenty cases observed by Drs. Tilney and Riley. There is a somewhat condensed description of the cases grouped under the eight headings: lethargic, cataleptic, paralysis agitans, poliencephalitic, acute anterior poliomyletic, posterior poliomyelitic, epileptomaniacal and acute psychotic, and infantile types. There is a discussion of the symptoms, with chapters on prognosis and diagnosis, nature and treatment. There are a few illustrations. The second part deals with eleven cases of Howe's. The illustrations are more numerous, and the case reports are more complete. There are three necropsy reports. No novel conclusions are drawn from this material. The book may be considered as a valuable contribution to the accumulation of the data on this disease.

Dr. G. Herschell's Textbook of Indigestion. Revised and Rewritten by Adolphe Abrahams, O.B.E., M.D., M.R.C.P., Assistant Physician to Westminster Hospital. Fourth edition. Cloth. Price, $3.75. Pp. 228. New York: Longmans, Green and Co., 1920.

This is a complete revision of the original textbook with the exception of the appendix on the preparation of foods for dyspeptics, which remains substantially unaltered. The book contains nothing that is new; it is not based on careful scientific investigation; furthermore, it contains numerous statements not in accord with the accepted facts. While many references are made to English and a few to German literature, there are virtually none to American studies and reports. The work is of no particular value to the medical profession.

The Development of the Human Body. A Manual of Human Embryology. By J. Playfair McMurrich, A.M., Ph.D., LL.D., Professor of Anatomy in the University of Toronto. Sixth edition. Cloth. Price, $3.25. Pp. 501, with 290 illustrations. Philadelphia: P. Blakiston's Son & Co., 1920.

This manual of embryology, now in its sixth edition, has become recognized as a standard textbook and is used in many of our best medical schools. The present edition is brought up to date and contains the results of recent contributions on the subject. Embryology is here considered particularly with reference to the requirements of medical training. The manual is complete and at the same time compact.

Lectures on Surgery to Nurses. By Alan H. Todd, B.Sc., M.S., F.R.C.S. Cloth. Price, $2.75. Pp. 270, with 17 illustrations. New York: Longmans, Green & Co., 1920.

In the belief that the nurse should have sufficient knowledge of medicine to know the reason for doing things, and thus to be an intelligent cooperator with the physician, Dr. Todd publishes these lectures, originally delivered at Guy's Hospital, London. They read as if they might have been taken down by the stenographic method, and do not seem to be especially prepared for publication. The whole field of surgery is covered in very brief form.

Medicolegal

Liability in Operating Without Proper Consent

(Moss et al. v. Rishworth (Texas), 222 S. W. R. 225)

The Commission of Appeals of Texas, Section A, says that the authorities are unanimous in holding that a surgeon is liable for operating on a patent, unless he obtains the consent of the patient, if competent to give such consent, or, if not, of some one who, under the circumstances, would be legally authorized to give the requisite consent. If a person should be injured to the extent that he is unconscious, and his injuries are of such nature as to require prompt surgical attention, a physician called to attend would be justified in applying such treatment as might reasonably be necessary for the preservation of his life or limb, and consent on the part of the injured person would be implied on the ground of an existing emergency.

In this case, a child 11 years old, who was visiting an adult sister 60 miles from where her parents lived, was taken by the sister to defendant Moss to be examined to ascertain whether an operation was needed for the removal of adenoids, explaining that the child had difficulty in breathing and was subject to attacks of rheumatism. An examination by Dr. Moss disclosed badly diseased tonsils and the appearance of adenoids, and he stated that a real necessity existed for an operation to remove the diseased tonsils and adenoids. A date for the operation was agreed on, and the child returned with that sister and another one, who, like the first one, had had training as a nurse. After an examination of the child's heart, an anesthetic was administered, and the tonsils and adenoids were removed; but, before coming from under the influence of the anesthetic, the child died. The child's father, plaintiff Rishworth, therefore brought this acton to recover damages. By amended pleading, he abandoned all allegations of negligence and unskilfulness, and relied for recovery solely on the ground that the operation was without his consent. The trial court instructed the jury that if the defendants, without the consent of the parents, operated on the child, using an anesthetic, and she died as the result of the operation or the effect of the chloroform or both, to find for the plaintiff, without regard to any question of negligence or unskilfulness; but the jury returned a verdict for the defendants, and a judgment was rendered in their favor. On an appeal, that judgment was reversed by the court of civil appeals, which reversal meets with the approval of the commission of appeals, which says that the judgment of the court of civil appeals should be affirmed.

The evidence, the commission says, showed that there was an absolute necessity for a prompt operation, but not emergent in the sense that death would likely result immediately on failure to perform it. In fact, it was not contended that any real danger would have resulted to the child had time been taken to consult the parent with reference to the operation. Therefore the operation was not justified on the ground that an emergency existed. The physicians, acting in good faith, in assuming that the sisters had authority to give consent, undertook to perform the operation, and, although the operation was skilfully performed and without negligence, death ensued, either as the result of the operation or of administering the anesthetic, or both. The sisters were but the temporary custodians of the child, and as such temporary custodians had no authority to give consent to perform the operation in the absence of an emergency. The parent was the only one who could legally give consent to perform it, and, if not given, the physicians' act in performing it was a legal wrong. If performed without the consent of the parent, it would amount to a technical assault for which the child could have recovered damages, and it follows that, under the Texas statute, the cause of action would survive to the plaintiff, not dependent on the extent of the injuries to the minor child. It was insisted that the paramount interest of the child alone must be considered in determining whether such an operation should be performed, and that if her health demanded an operation and it was skilfully performed, no

cause of action arose, even though it resulted disastrously. But the law wisely reposes in the parent the care and custody of the minor child, and neither a physician nor those in temporary custody of the child, will be permitted, in a case of this character, to determine those matters touching its welfare.

Immunity in Charging Insanity

(Reade v. Halpin et al. (N. Y.), 182 N. Y. Supp. 45)

The Supreme Court of New York, Special Term, Albany County, in granting a motion for a judgment in favor of the defendants, who were sued far malicious prosecution because of certain lunacy proceedings against this plaintiff, says that public policy and the dictates of humanity require, for the protection of those of unsound mind and of society in general, that such persons be cared for. On the other hand, the liberty of a citizen and his good name must be jealously safeguarded. A charge of insanity does hold a person up to pity, and has a tendency to cause him or her to be shunned or avoided. Such a charge may be fraught with most mischievous and oppressive consequences. The law therefore permits a certain limited number of persons, standing in intimate relationship to the alleged insane person or certain public officers, to petition in insanity proceedings. Accompanying this petition there must be a certificate by two physicians specially qualified to make it. Where the physicians and the petitioner enter into a conspiracy with each other, or with others, to institute such proceedings maliciously and without probable cause, there should be a right of action for the damage suffered. Otherwise there would be little protection from the unscrupulous. When, however, two qualified medical examiners, independently and not in pursuance of a scheme and conspiracy on their part with others to accomplish an improper purpose, make a certificate in lunacy, it ought to furnish reasonable and probable cause to those who set on foot the proceeding under the insanity law, irrespective of their motives. The wise public purpose to be served in the protection of the public from those who by their apparent irrational acts have given rise to the necessity of an examination into their sanity should not be curtailed by subjecting the person privileged under the statute to initiate the proceeding to an action for malicious prosecution, when the proceeding has been terminated by a judicial finding of sanity, in the absence of proof of a conspiracy on the part of such actor with others maliciously and without probable cause to vex and harass and injure the person charged with insanity, or in the absence of any improper interference with the liberty of the individual during the course of the proceeding. In the case of such a conspiracy, or if the liberty of the person is improperly interfered with during, or as a result of, the proceeding, a different question is presented. In that event an action for false imprisonment or for malicious prosecution would arise.

Not Liable for Shortening of Leg One Inch

(Ayala v. King-Ryder Lumber Co. (La.), 83 So. R. 799)

The Supreme Court of Louisiana, in affirming a judgment in favor of the defendant, says that the plaintiff, a Mexican, who had his right leg broken between the knee and the hip while he was in the defendant's employ, sought to recover damages from the defendant for the alleged negligence and malpractice of the physician employed by the latter, which resulted in the shortening of the leg 2½ inches. The plaintiff described the treatment by the physician as first sticking a needle into his thigh, and then tying a board to the outside of his leg with some string and bandages. He said no weights were used. His testimony was supported by that of the nurse and four other witnesses, all of whom testified in Spanish with the aid of an interpreter. They all said that there was but one board used, and that was tied on the outside of the leg. Five physicians, who had heard the testimony of the plaintiff and the other witnesses, gave it as their opinion, as experts, that, according to the testimony which they had heard, the treatment accorded the plaintiff was unusual and inefficient. They testified further that a complete anesthetic, such as chloroform or ether, should have been used; that the injection of one-half grain of morphin and one-hundredth grain of scopolamin (hyoscin) administered was insufficient for all the purposes. If the testimony of the plaintiff and his five witnesses could be accepted as the truth, the opinion of these physicians would be accepted by the court as final. But the physician who attended the plaintiff denied positively what the witnesses had sworn to in connection with his treatment of the case. He testified that he had used the Linton splint, consisting of three boards, a model of which was with the record in the case, and that the Linton splint had been in general use for a long time for such fractures. His testimony was corroborated by the carpenter in the employ of the defendant, on whom he called at the time of the accident to make for him the Linton splint. The carpenter testified that the physician drew the plan of the apparatus; that he executed the work in exactly the way indicated by the physician, in his presence, and that it was finished within half an hour; and that he assisted the physician in adjusting the splint to the plaintiff's leg. The evidence of the physician and of the carpenter was direct, conclusive and convincing. The plaintiff's witnesses were unskilled Mexican laborers, who perhaps did not pay sufficient attention to the apparatus on the plaintiff's leg to know whether it consisted of one or of three boards, and they were testifying with the aid of an interpreter about a scientific subject and the manner in which it was being operated. Then, three physicians called as witnesses by the defendant testified, in support of the attending physician, that a complete anesthetic was not always necessary in treating a broken femur; that it depended largely on the condition of the patient, and that the physician in attendance was the best judge of whether relaxation of the muscles had taken place or not. They were of the opinion that the administration of morphin and scopolamin, as explained by the attending physician, was sufficient in some cases. They also testified that the use of the Linton splint was general throughout the hospitals in connection with a broken femur, and that it was used without weights. Moreover, the plaintiff's leg was measured, and, instead of being 2½ inches shorter than the other leg, it was found to be practically 1 inch shorter, while it would further appear from the evidence that with the most skilful treatment the shortening of an inch, or an inch and a half, might result. The court cannot, therefore, hold that the shortening of the plaintiff's broken leg was due to the fault, neglect or lack of skill of the physician in the employ of the defendant company. The trial judge was of the opinion that the plaintiff had failed to make out his case, and its judgment, rendered for the defendant, is affirmed.

Evidential Use of Memoranda Made by a Physician

(Willitts v. Chicago, B. & Q. R. Co. (Mo.), 221 S. W. R. 65)

The Supreme Court of Missouri, Division No. 1, says that a physician was called as a witness for the defendant in this personal injury case. He had treated the plaintiff on the night on which she was injured and for the ten days that she was in a hospital. During that time he made two written memoranda as to the condition of the plaintiff and the treatment. He noted down the injuries found on her in the first one, and in the other he noted the condition of the wounds when she left the hospital, as well as the troubles of which she then complained. He was permitted to use these memoranda while testifying, and after being so used the defendant offered them in evidence, but they were excluded. Their exclusion was alleged to be error, but the court does not think that it was. The physician had testified as to all matters covered by his written memoranda. He had used them to refresh his recollection to the end that he might testify fully. When so used they had served their whole and only purpose in the course of the trial, so far as the defendant was concerned, whose witness the physician was. They could not be used as independent evidence of the facts recited therein. There was nothing to show these instruments to have been kept, as books are kept, in the regular course of business. They were both used to refresh the recollection of the witness, who, having his recollection refreshed, testified fully. There was therefore no error in the ruling excluding them from adminission in evidence.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

December, 1920, **20**, No. 6

*Pathology of Nutrition in Infancy. W. McK. Marriott, St. Louis.—p. 461.
*Studies on Heart in Nutritional Disturbances in Infancy. H. McCulloch, St. Louis.—p. 486.
*Infantile Spinal Progressive Muscular Atrophy (Werdnig-Hoffmann); Report of Case with Necropsy Findings. E. J. Huenekens and E. T. Bell, Minneapolis.—p. 496.
Congenital Atresia of Esophagus; with Report of Case. H. L. K. Shaw, Albany, N. Y.—p. 507.
Capacity of Stomach in First Ten Days of Postnatal Life. R. E. Scammon and L. O. Doyle, Minneapolis.—p. 516.
Studies in Spasmophilia. II. Electrical Reactions of Older Children. L. von Meysenbug, Minneapolis.—p. 539.
*Empyema in Infants and Young Children. R. C. Spence, New York. p. 545.
*Urine Sugar in Infants. R. M. Greenthal, New York.—p. 556.

Nutritional Disturbances in Children.—Two types of nutritional disturbances are considered by Marriott, one an acute toxic-like condition usually following severe diarrhea; the other, a chronic state of failing nutrition commonly known as "marasmus." The prominent symptoms of each condition are mentioned and the cause of these symptoms is discussed.

Heart in Nutritional Disturbances in Infancy.—Electrocardiograms were made by McCulloch from a group of sixteen athreptic infants, and in the case of two of these infants, alterations of cardiac mechanism were observed. The alterations consisted of a delay in auriculoventricular conduction, and changes in the form of the Q R S complex. McCulloch suggests that these disturbances are the result of alterations in the blood and body tissues in these infants suffering from nutritional disorders. It is probable that the changes which have taken place in the blood result in a deficient supply of oxygen to the heart, with incomplete or delayed removal of metabolic products (acid metabolites) from the cardiac tissue. When improvement takes place in these athreptic infants the alterations in cardiac mechanism disappear. Measures adopted to relieve the nutritional disturbances seem to be the rational treatment for the cardiac condition as well. McCulloch has not observed any phenomena indicating heart failure in these infants.

Infantile Spinal Progressive Muscular Atrophy—From a review of the literature and of their own case, Huenekens and Bell believe the conclusion seems justified that amyotonia congenita (Oppenheim) and infantile spinal progressive muscular atrophy (Werdnig-Hoffmann) are extreme types of the same disease; that they are probably both related to the group of myopathies represented by Erb's juvenile form of muscular dystrophy and the hereditary form of Leyden and Moebius.

Empyema in Infants.—Approximately 11 per cent. of all pneumonia patients admitted to the Babies' Hospital during the last seven years either had empyema at the time of admission or developed it during the stay in the hospital. Empyema was the sequel of pneumonia in every case. Pneumococcus in pure culture was present in the pus from the pleural cavity in 70 per cent. of these cases; the mortality for this type of infection is the lowest in the series. Spence states that the degree of leukocytosis is no guide to prognosis or to diagnosis. Siphon drainage has given better results in the treatment of empyema in infancy than any other method of treatment employed.

Sugar in Urine in Infants.—Greenthal states that the urine of all normal infants contains a determinable amount of reducing sugar. The amount of sugar excreted is not dependent on the volume of urine but is directly proportional to the amount of sugar ingested. As the amount of sugar in the diet is increased, the total urine sugar increases. This increase is chiefly in the fermentable portion and as a result the percentage of nonfermentable sugar becomes less. Sugar excretion in infants, both fermentable and nonfermentable, is fairly constant when the intake of sugar is constant.

American Review of Tuberculosis, Baltimore

November, 1920, **4**, No. 9

*First Infection with Tuberculosis by Way of Lungs. E. L. Opie and H. Anderson, St. Louis.—p. 629.
*First Infection with Tuberculosis by Way of Intestinal Tract. E. L. Opie, St. Louis.—p. 641.
Case of Artificial Pneumothorax Complicated by Hydropneumothorax and Pleurisy with Effusion in Untreated Side. M. Fishberg, New York.—p. 649.
Roentgenologic Study of Influenza, with Recovery in an Advanced Case of Pulmonary Tuberculosis. L. T. Black and M. Moore, Denver.—p. 654.
*Masked Juvenile Tuberculosis. J. V. Cooke and T. C. Hempelmann, St. Louis.
Comparison of Gross Tuberculous Lesions in Whites and Negroes. J. L. Rogers, Cincinnati.—p. 669.
Tuberculosis Among Negroes. H. G. Carter, Burkeville, Va.—p. 676.
*Experimental Lesions of Lungs Produced by Inhalation of Fluids from Nose and Throat. W. V. Mullin and C. T. Ryder, Colorado Springs. —p. 683.
Relative Influence of Constitutional Factor in Etiology of Tuberculosis. R. Pearl, Baltimore.—p. 688.
Environmental Factors in Tuberculosis. A. K. Krause, Baltimore.—p. 713.

First Infection with Tuberculosis by Way of Lungs.—Study of the lesions of first infection with tuberculosis is urged by Opie and Andersen as being essential to an understanding of the mode of tuberculous infection and the conditions under which it occurs. With few exceptions roentgenograms of the lung of an adult demonstrate the presence of conspicuous calcified nodules in the lung and in adjacent lymph nodes, whereas in approximately half of all adults the healed pulmonary nodules, which are usually multiple, are from 0.5 to 1 cm. in diameter, and the more numerous nodules of the lymph nodes are from 1 to 2 cm. across. It is probable that these lesions were considerably larger and more numerous in their active stage, for tuberculous lesions tend to resolve when recovery occurs and persist as calcified masses only when caseation has been present. In more than one in every ten individuals the calcified lesions present in the lung at necropsy show that the individual has suffered with widely disseminated tuberculosis of the lung and massive tuberculosis of the adjacent lymph nodes. Evidence of extension of the tuberculous infection to distant organs is not uncommon and healed tubercles in the liver and spleen, usually in both, have been found by the authors in ten of fourteen instances of extensive healed tuberculosis of the lungs.

In one instance, in association with healed tuberculosis of the lungs and adjacent lymph nodes, more advanced than in any other instances and with healed tubercles of the liver and spleen, similar calcified nodules have been found in the pia mater. Tuberculous meningitis has been followed by recovery, with calcification of those meningeal tubercles which have undergone caseation. The distinction between latent and clinical tuberculosis, which is not infrequently made, has no other basis than the limitations of diagnostic methods and the tendency of tuberculosis to proceed to recovery.

First Infection with Tuberculosis by Way of Intestinal Tract.—Observations are recorded by Opie in order to explain the significance of tuberculous infection which occurs in childhood and at times in adult life and is recognizable subsequently as encapsulated and calcified foci of healed or healing tuberculosis. In a series of ninety-three necropsies made in 1917 on children and fifty necropsies made on adults no instance of healed mesenteric tuberculosis was found. Caseous or calcified mesenteric nodules were found in eighteen instances among sixty-six young male adults whose age with few exceptions varied from 20 to 30 years. Among fifteen necropsies the proportion of mesenteric tuberculosis was approximately the same. In a number of instances roentgenograms were made from both the mesentery and the lungs; and they serve to show with considerable accuracy the size and position of the calcified lesions which were present. In three instances the tuberculous lesion was still obviously caseous though it was encapsulated and doubtless localized. Calcification was so advanced that it had given the caseous material a mortar-like consistency. In thirteen instances the mesenteric lymph nodes contained completely healed firmly calcified tuberculous lesions. In a series of necropsies, evidence of first infection with tuberculosis was found in the lungs of every adult examined. Apical tuberculosis, which usually pursues a chronic course and in most persons under-

goes complete healing, has been found in the lungs of 22 per cent. of adults above the age of 18. In two of the eighteen instances of partially or completely calcified tuberculosis of the mesenteric lymph nodes described (and perhaps in a third), there has been apical tuberculosis of the lungs, which, unlike the primary focal lesions of the lung, is unaccompanied by evidence of tuberculosis of the adjacent lymph nodes at the hilum of the lung. When healed lesions are present in the mesentery focal tuberculosis of the lungs is seldom found. First infection with tuberculosis may occur by way of the lungs or by way of gastrointestinal tract; and the occurrence of one lesion tends to prevent the other.

Masked Juvenile Tuberculosis. — Cooke and Hempelmann state that masked juvenile tuberculosis presents a sufficiently distinctive clinical type to deserve a prominent place in the category of tuberculous affections in childhood. The characteristic clinical picture consists of: a history of frequent coughs and cold, with or without known exposure to tuberculosis, attacks of unexplained fever, often with afternoon elevations, anorexia, loss of weight and asthemia. On physical examination, there is found more or less malnutrition, occasionally anemia, and chest signs referable to enlarged tracheobronchial nodes. In certain instances there may be, in addition, phlyctenular disease or skin tuberculides. The von Pirquet or intracutaneous tuberculin tests are positive, and in those over four years of age, three-fourths of the children give a positive complement fixation test for tuberculosis. The chest findings may be verified by the use of the roentgen ray which not infrequently reveals unsuspected lesions of varying size and age in the lung parenchyma as well. The diagnosis must rest on a review of all the findings; and there the authors emphasize the value of the complement fixation test in calling attention to this class of cases.

Experimental Lesions of Lungs Produced by Inhalation.— By allowing rabbits to inhale suspensions of carbon or of tubercle bacilli from their upper air passages, Mullin and Ryder found that pigmentations or tuberculous lesions are produced which correspond very closely in distribution to the lesions of pulmonary tuberculosis in man.

Annals of Medicine, Hagerstown, Md.

July, 1920, **1**, No. 2

*Epidemic Encephalitis: Study of Cases with Necropsies. W. Boyd, Winnipeg, Canada.—p. 195.
*Early Diagnosis and Treatment of Choledochitis, Cholecystitis and Cholelithiasis. B. B. V. Lyon, Philadelphia.—p. 222.
Syphilis of Colon and Lower Bowel; Report of Three Cases. C. F. Karshner, Chicago.—p. 237.
Edema of Heart Muscle as a Cause of Cardiac Enlargement. A. Frick, Chicago.—p. 249.
*Acute Infectious Aortitis: Report of Cases. G. E. Brown, Miles City, Mont.—p. 254.
Infection of Digestive Tract; Late Radiographic Appearance of Digestive Tract in Chronic Enterocolitis. C. G. Stockton and C. F. Dewitz, Buffalo, N. Y.—p. 266.
*Value of Esophagoscopy in Diagnosis of Diseases of Esophagus. E. B. Freeman, Baltimore.
Etiologic Factors in Pulmonary Tuberculosis. R. S. Berghoff, Chicago. —p. 276.
Epigastric Hernia with Symptoms of Pyloric Obstruction. A. McGlannan, Baltimore.—p. 281.

Epidemic Encephalitis.—A study of seventy-five cases with sixteen necropsies was made by Boyd. The pathology may be summarized as interstitial inflammation of the central nervous system with secondary parenchymatous degeneration. In a number of cases of cranial nerve disturbance the corresponding nerve fibers were pressed on by greatly dilated vessels, the nuclei being comparatively normal. In seven cases peculiar hyaline bodies apparently the result of degeneration, were found in the central nervous system. Widespread hemorrhages were present in the serous membrances in three cases, pointing to a general septicemic condition. Vascular and degenerative changes were present in the kidneys in many of the cases.

Duodenal Medication in Disease of Bile Passages.—Direct observation and the local use of magnesium sulphate solutions in the duodenum of human beings are the subjects discussed by Lyon. He says that simple catarrhal jaundice may be treated very satisfactorily by this method. Choledochitis and cholangeitis may be treated successfully in favorable cases, especially where they have not been preceded by surgery. In the early cases of cholecystitis, as those complicating typhoid fever (potential typhoid carriers) and the "masked" focal infections of the gallbladder, the results are good. Empyema of the gallbladder has been treated successfully during its acute phases in patients who presented severe cardiorenal contraindications for surgery. Cholelithiasis remains entirely beyond the scope of this method, although stones have been made to pass through the common duct. The one field where this method is strongly recommended by Lyon is in the treatment of "biliary stasis," or faulty retention of gallbladder bile. It is also very important to search back for primary foci of matched bacteriology in the teeth, tonsils, sinuses, bronchial tract, stomach or duodenum and remove them. Many of these cases of biliary stasis are associated with various forms of migraine.

Acute Infectious Aortitis. — Retrosternal pain or distress, varying in degree from a mild stenocardia to a complete angina pectoris, is said by Brown to be an important symptom of acute aortic dysfunction. Minor changes in the aorta, as shown by roentgen-ray proof of its lengthening and elevation, may be the earliest demonstrable sign. The prognosis is not grave in the young. It depends on several associated factors; the type of infection, involvement of aortic valves, blocking of coronary arteries, and the degree of myocardial damage.

Value of Esophagoscopy. — Freeman urges esophagoscopy as a routine examination in all cases with symptoms referred to the region of the esophagus. By so doing, it will be possible in many cases to make an early diagnosis in diseases of the esophagus which, at present are not diagnosed until the disease is far advanced. Freeman warns against esophagoscopy in compression stenosis.

Boston Medical and Surgical Journal

Dec. 2, 1920, **183**, No. 23

*Leukocytic Reaction in Paratyphoid Dysentery and Following Vaccine Inoculations. G. Tryon, Boston.—p. 643.
Combined Operative and Radium Treatment of Malignant Disease of Nasal Accessory Sinuses. H. A. Barnes, Boston.—p. 648.

Leukocytic Reaction in Paratyphoid Dysentery.—The basis of Tryon's report are twelve cases of dysentery which appeared as an epidemic in 1915 in the Boston State Hospital. The organism which caused the disease belonged to the paratyphoid enteritidis group, but could not be identified with any of the well known members. Clinically, the disease appeared in three forms: a dysenteric-pneumonic, a dysenteric and a diarrheal. The duration of the disease was from five days to three weeks. The majority of the cases occurred among old and feeble women patients. The blood picture varied somewhat in different patients and in the same patient during the course of the disease. The total leukocyte counts were between 5,100 and 13,300. The differential count was not quite so variable as the total count, in that it remained more constant to the form of the disease. The percentage of polymorphonuclears was relatively higher, and that of the lymphocytes lower in the pneumonic than in the pure dysenteric form. In the dysenteric cases uncomplicated with pneumonia, the lymphocytes persisted rather high during the first two weeks, between 27 and 40 per cent.; in two recovered pneumonic cases, the lymphocytes showed a high percentage in the third week during convalescence, 37 and 43 per cent., respectively. A count made in one case of an acute arthritis following a short severe attack of dysentery resembled the pneumonic cases. Eosinophils were found in any case during the first week; in the second week they reappeared in from 5 to 2 per cent. Transitionals gave a higher percentage in the first than in the second week. In all cases blood platelets were much increased throughout the disease and in early convalescence. There was no evidence of an anemia judging from the hemoglobin percentage and the character of the red blood cells.

New York Medical Journal

Dec. 4, 1920, **112**, No. 23

*Parathyroid and Convulsive States. S. E. Jelliffe, New York.—p. 877.
More Adequate Provision for Epileptics. W. T. Shanahan, Sonyea.—p. 879.

*Comparative Study of Phenomena of Epilepsy. C. A. Marsh, New Castle, Ind.—p. 885.
*Mentality in Epilepsy. W. H. Kidder, Oswego, N. Y.—p. 889.
*Epilepsy Treated with Luminal. H. M. Watkins, Palmer, Mass.—p. 891.
Practical Experience in Training Treatment of Epileptics. T. E. Uniker, Stamford, Conn.—p. 892.
*Injections of Cerebrospinal Fluid in Cerebrospinal Fever. N. A. Cooper, Bombay, India.—p. 896.
Venesection: A Lost Art. D. W. Kramer, Philadelphia.—p. 898.
Relationship Between Diseased Tonsils and Pulmonary Tuberculosis. Wichita Falls, Tex.—p. 902.

Parathyroid in Epilepsy.—Jelliffe suggests the use of parathyroid in the treatment of epilepsy. Just to feed parathyroid to every epileptic and expect him to get well is silly he says behind the type of cases of possible action there should be present the specific features of the "hair trigger" synaptic activity. Careful study of the patient for all of the tetany reactions is needed. Interestingly enough, it has seemed that parathyroid given by rectum in its crude state is its most effective form. Given in other ways, by the gastro-intestinal canal, it undergoes destructive digestive changes; even hypodermic use seems to alter its composition, but taken by way of the rectum it would appear that no such deterioration takes place, and some very surprising and striking results have been obtained, not in the cure of an epileptic specially, but in the help of this one particular factor which Jelliffe emphasizes.

Nature of Epilepsy.—Epilepsy is considered by Marsh as an abnormal muscular expression of strong mental states. It is a particular type of reaction which occurs when purposeful efforts of mind and body come to defeat. It is seen in an individual who, possessing a poverty of interests in his environment, cannot, as the normal man does, escape strong emotional feeling by entertaining conflicting thoughts which weaken strong mental states.

Mentality in Epilepsy.—Kidder predicts that the time will be when the place of mental therapy in the treatment of epileptics will be firmly established.

Luminal in Epilepsy.—Watkins states that cures are not to be expected from the use of luminal in epilepsy. It is at best a palliative remedy. It is not virtually a specific. It reduces the total number of convulsions in all classes 66 per cent., although a small proportion of patients have an increased number of convulsions during its use. It has practically no effect on some patients, and about 10 per cent. show untoward symptoms from its use. It has all the bad effects of bromids with the exception of the rash. The drug must be used over a long period of time and continually, as once its administration is discontinued the epileptic habit returns with increased severity.

Injections of Cerebrospinal Fluid in Cerebrospinal Fever.—Cooper reports the case of a boy, aged 14, suffering from a severe form of cerebrospinal fever, who recovered completely from the malady, as well as all its concomitant adverse symptoms, nervous, sensory and muscular, under the injections of his own cerebrospinal fluid. The boy was admitted to the hospital April 7. All treatment failed to give relief. A lumbar puncture was made May 12 and 10 c.c. of fluid was withdrawn. It was sterile. Of this fluid 0.75 c.c. was injected subcutaneously, and it was repeated every day till the seventeenth. Gradually, the temperature fell and meningeal symptoms abated with every injection until May 18, when the temperature dropped to 97 F. The boy recovered slowly and left the hospital July 26 in perfect health and without the slightest defect.

Surgery, Gynecology and Obstetrics, Chicago

December, 1920, **31**, No. 6

John B. Murphy—Surgeon. B. Moynihan.—p. 549.
Immobilization of Proximal Fragment in Fracture of Jaw Above Angle. W. T. Coughlin, St. Louis.—p. 574.
Management of Cervical Stump and Round and Broad Ligaments When Performing Supravaginal Hysterectomy. D. Bissell, New York.—p. 578.
Tumors of Breast. M. F. Porter, Ft. Wayne, Ind.—p. 584.
*Two Unusual Nerve Lesions. A. Gibson, Winnipeg, Manitoba.—p. 588.
*Blastomycosis. J. T. Moore, Houston, Tex.—p. 590.
*Subphrenic Abscess; Report of Case with Cure. A. Ullman and C. S. Levy, Baltimore.—p. 594.
Analgesia and Anesthesia in Labor. E. P. Davis, Philadelphia.—p. 601.
Treatment of Abortion. D. S. Hillis, Chicago.—p. 605.
Pregnancy Complicated by Influenza. S. A. Durr, Chicago.—p. 610.
Parasaccular or Sliding Hernia. C. H. Criley, Los Angeles, Calif.—p. 611.
Two Hundred Fifty Operations on Gallbladder and Ducts. E. R. McGuire, Buffalo.—p. 617.
*Retroperitoneal Sarcoma. H. H. Trout and G. E. Meekins, Roanoke, Va.—p. 622.
Instrument for Application of Radium to Tumors of Bladder. W. H. Woolston, Chicago.—p. 627.
*Finger and Toe Nail Extension. J. E. M. Thomson, Lincoln, Neb.—p. 629.
*Use of Tendon of Psoas Parvus and Fascial Transplants in Treatment of Prolapse of Pelvic Viscera. G. C. Bryan, Walla Walla, Wash.—p. 630.

Unusual Traumatic Nerve Lesions.—In one of the cases cited by Gibson a piece of shell entered the right cheek and was removed by the stretcher bearer. The wound suppurated for a few days. No facial paralysis or even paresis resulted, and the wound, being satisfactorily healed, was ignored. Later the patient complained of twitching of the muscles of the right side of the face, with a tendency to lacrimation in the right eye when exposed to cold, to wind, or to bright sunshine. In addition to this, the skin on the right side of the face under the right lower eyelid, and at the root of the nose, was somewhat sensitive. He complained of a tickling sensation, this being pronounced even with a slight touch. By pressing his tongue against the buccal aspect of the upper lip and the right upper cheek he produced a tickling sensation in the face. Examination revealed a hole of some size filled in partly by scar tissue. This scar tissue involved branches of two sensory nerves: (1) the twigs from the infra-orbital branch of the maxillary division of the trigeminal, (2) the buccinator branch of the mandibular division of the same cranial nerve. The irritation of this scar has produced heightened sensibility of other sensory branches supplying the conjunctiva, and this reflexly induced increased secretion of the right lacrimal gland along with motor irritability of the facial muscles which are closely associated with the trigeminal sensory distribution. The second patient complained of weakness of the left hand, been present for six or seven months and gradually increasing. He had had no accident, and no injury to the back, left shoulder region, or left upper limb. His occupation was that of a butcher. The electrical reactions of the muscles of the hand were normal both to faradism and galvanism. There was, however, distinct atrophy of all the interossei, and when full extension of the hand was attempted, some hyperextension was noted at the metacarpophalangeal joints, along with less complete extension than normal of the two distal phalanges, this condition being more distinct in the little and ring fingers. The appearance of the hand was that of the typical ulnar nerve lesion, though not in pronounced degree. What had happened was that the deep branch of the ulnar nerve, traversing the palm of the hand from ulnar side to radial just proximal to the heads of the metacarpals, was the seat of a traumatic neuritis, the result of direct pressure.

Blastomycotic Abscess of Brain.—Moore reports a case in which death resulted from abscess of the brain. The infection in this case was probably introduced through the mouth from the splinters habitually carried in the mouth. The infection of the brain was possibly through the ophthalmic vein or through the veins of the scalp and emissary vein through the skull. The study of the organisms in the different lesions and tissues showed a considerable variation in their size; those from the abscesses of the face, neck and orbit, showing the large forms, while no large forms could be found either in the pus or the tissue from the brain.

Cure of Subphrenic Abscess.—Ullman and Levy report the case of a patient who developed a subphrenic abscess while under hospital supervision; the patient having been operated on for a pelvic appendiceal abscess which was walled off and from which about 3 quarts of pus were evacuated. The roentgenologic findings were those of an abscess with gas formation.

Retroperitoneal Sarcoma.—Two cases are reported by Trout and Meekins and a review is made of the literature on retroperitoneal sarcoma to April 1, 1920.

Finger and Toe Nail Extension.—To make use of finger or toe nail extension, small hole is bored through the center of the nail, just beyond the skin, care being taken not to injure the soft tissues or cause any hemorrhage under the nail. Through this hole is drawn a strong silk thread.

Use of Psoas Parvus Tendon in Prolapse of Uterus and Rectum.—In the methods described by Bryan the psoas parvus tendon is used to pull up on the round ligament by being carried around it, thus holding up the uterus. In cases of rectal prolapse it is sutured into the longitudinal line of the rectum.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Nov. 20, 1920, **2**, No. 3125

Orthopedic Surgery in Relation to Hospital Training. R. Jones.—p. 773.
*Ulcerating Granuloma of Pudenda Cured by Intramuscular Injections of Antimony Tartrate. H. L. Cumming.—p. 775.
*Seven Cases of Essential Pentosuria. P. J. Cammidge and H. A. H. Howard.—p. 777.
*Treatment of Cutaneous Erysipelas with Brilliant Green. J. E. Adams. —p. 779.
*Intravenous Protein Therapy in Epilepsy. F. H. Edgeworth.—p. 780.
Pathology of Dementia Praecox. F. Mott.—p. 781.
Lethargic Encephalitis. E. F. Buzzard and J. G. Greenfield.—p. 782.
Sensory Disturbances in Hand Following Injuries of Cerebral Cortex. H. Head.—p. 782.
Degeneration and Regeneration of Peripheral Nerves. J. G. Greenfield. —p. 783.
Inscriptions of Speech. E. W. Scripture.—p. 783.

Antimony Tartrate in Ulcerating Pudendal Granuloma.—In Cumming's case about 3 grains of antimony tartrate were injected intramuscularly over a period of thirty-six days. Only twelve injections were given. Cumming began with 9 minims (about ⅐ grain) antimony tartrate, and gradually went up to 1.2 c.cm., or ⅓ grain, antimony tartrate, for the last five injections. By mouth, roughly, from 27 to 30 grains of antimony tartrate were taken over the same period. How much of the care can be attributed to the oral administration of the drug is difficult to calculate, but it was noted that although the patient was taking from 5 to 20 minims of antimony wine three times a day, in gradually increasing doses, for a period of seventy-one days, without any appreciable effect on the condition of the sore, it is reasonable to conclude that only a very small amount of the drug subsequently given by mouth, had any definite effect on the process of healing. On the other hand, very definite improvement took place after the fourth intramuscular injection, that is before the drug given orally could have had time to have much constitutional effect. All other local treatment was suspended while the injections were being given, with the exception of an antiseptic wash, night and morning, for the sore, followed by the application of a little dusting powder composed of equal parts of calomel, boracic acid, and iodoform, which had been previously used without the slightest effect.

Essential Pentosuria.—Five of the cases seen by Cammidge and Howard proved to be examples of simple essential pentosuria, inactive arabinose being the only sugar present in the urine; in the remaining cases small quantities of dextrose and pseudo-levulose were found in addition. One of the patients with pure pentosuria had been treated for diabetes for twenty-six years, two patients had been dieted along orthodox lines for the same complaint without any improvement for several months, a fourth patient was referred as a case of lactosuria, presumably because the sugar in the urine did not ferment with yeast, and in the fifth patient the presence of sugar had been discovered accidentally, although its nature was not determined, previous to an operation. The remaining two patients had been rejected for life insurance owing to the presence of glycosuria.

Brilliant Green in Erysipelas.—Picric acid, iodin and brilliant green have been tried by Adams and his associates in parallel cases of about the same degree of virulence and all favor brilliant green. In a dozen cases so treated the average time for subsidence of the attack was just over five days. There has been no mortality in the whole series of forty cases, but recrudescence occurred in two cases, once on the tenth and once on the twelfth day. The method has been to paint the affected area with a 5 per cent. aqueous solution once a day in mild cases and twice a day in severe cases. No dressing has been applied, except a piece of lint on some parts of the body to prevent staining of the bedclothes. When the eruption has subsided the discoloration can be removed in three or four days by vigorous washing, preferably with ether soap.

Intravenous Protein Therapy in Epilepsy.—In a series of twenty-three cases of epilepsy a 5 per cent. solution of peptone was used, made up according to the prescription of Auld; that is, dissolve the peptone in three-fourths of the required volume of physiologic sodium chlorid solution, shaking and warming to 37 C. Add 1 c.c. of a 2 per cent. solution of sodium-carbonate for each 5 grains of peptone present. Make up volume by adding more salt solution. Add phenol, so that its percentage in the solution is 0.25. It was injected into a vein at the elbow once a week. The initial dose was 5 minims. In succeeding weeks 7, 10, 15 and 20 minims were given unless toxic symptoms occurred. No dose greater than 20 minims was injected. If a fortnight went by without the occurrence of a fit, the dose was not further increased. If no results were obtained after three doses of 20 minims the treatment was given up. In four cases toxic symptoms were observed, rigor, vomiting, temporary pyrexia, either as an isolated phenomenon, or in any combination. If this happened, the next dose was lessened. In such cases it was found that the dose could be increased later to the old figure or even beyond without the occurrence of any untoward symptoms. In three cases of posthemiplegic epilepsy no improvement occurred. In eleven cases of epilepsy without signs of any gross cerebral lesion no permanent arrest was produced. In eleven cases of epilepsy without signs of any gross cerebral lesion no permanent arrest was produced. In four of these the fits ceased but subsequently recurred, though in lessened severity, and in two cases the frequency was lessened. The average age of the patients was 18 years, the average duration of the disease ten years, and the average frequency of fits once a week. In nine cases of epilepsy without physical signs of any gross cerebral lesion the fits ceased. This arrest has now lasted more than a month in all cases, and in some as long as three months. Five of the patients were mentally defective—in one of these cases no mental improvement occurred, in three some improvement, and in one considerable improvement was noted. The average number of injections given was five and one-half.

Bulletin Naval Medical Association, Tokyo, Japan

November, 1920, No. 31

Urea and Amino-nitrogen in Blood and Urine of Beri-Beri. K. Shinkai.—p. 1.
*Experiments Concerning Antiscorbutic Property of Some Food Stuffs in Japan. T. Koga.—p. 2.

Antiscorbutic Property of Foods.—Koga made a series of animal experiments with the purpose of finding foodstuffs which could be preserved without losing their antiscorbutic property. Guinea-pigs were fed on bean cellulose mixed with foodstuffs selected for examination. When 15 gm. cabbage were given daily with bean cellulose, the animals were healthy up to the forty-first day of the experiment, while animals fed exclusively on bean cellulose were generally attacked on the fifteenth day by a morbid condition resembling scurvy and died on the twenty-fourth day. Pickled radish, pickled plums, bean paste, salt pork and salted salmon could not protect the animals from the disease. Twenty gm. sprouting red beans, given daily, had an antiscorbutic effect like cabbage. The red beans could be stored for a long time and easily be sprouted at any time by suitable moisture and warmth.

Journal of Tropical Medicine and Hygiene, London

Nov. 15, 1920, **23**, No. 22

Asiatic Cholera in Syriam Municipality, Burma, in June-July, 1920. J. C. Tull.—p. 273.
Some Infections Due to Freshwater Snails and Their Eradication. F. G. Cawston.—p. 274.

Archives Médicales Belges, Liége

June, 1920, **73**, No. 6

*Basal Metabolism. A. M. Snell, F. Ford and L. G. Rowntree.—p. 467.
*Bronzed Diabetes. H. Koettlitz.—p. 494.
The Diphtherin Skin Reaction. J. Michiels.—p. 506.
The Ration of the Belgian Soldier. F. de Block.—p. 509.

Basal Metabolism.—This is a translation of a paper read at the last meeting of the American Medical Association and published in The Journal, Aug. 21, 1920, p. 515.

Bronzed Diabetes.—Koettlitz describes a case in a man of 57 which proved fatal in five months. The main features were the rapid and progressive cachexia, asthenia, bronzed jaundice, with enlargement of the liver, especially of the right lobe, polyuria, and diabetes, with continuous slight fever, but the liver region was not tender. From the necropsy findings in such cases he explains the condition as a general dystrophy of the cellular elements of the body from loss of the ability to consume carbohydrates, plus the acquisition of two abnormal properties, namely the faculty of attracting the pigment of the blood, and the faculty of increase in connective tissue which assumes, particularly in the liver, the aspect of pronounced interstitial inflammation. The liver is found pathologic in from 35 to 60 per cent. of cases of diabetes, but the bronzing is not the work of the liver or the diabetes. One or the other of these three may predominate, such as the hepatitis in Murri's case, the diabetes in Letulle's and de Foax' cases, and the hemochromatosis as in Hoppe-Seyler's and the case here reported.

Bulletin de l'Académie de Médecine, Paris

Oct. 12, 1920, **84**, No. 31

Anemia from Multiple Infections in Indo-China. A Thiroux.—p. 130.
*Test for Lactic Acid in Organic Fluids. E. Pittarelli.—p. 132.

Test for Lactic Acid.—Pittarelli states that in organic fluids only lactic acid, ethyl alcohol and mannite yield acetic aldehyd when in contact with potassium permanganate. On this he bases a sensitive test for the presence of lactic acid. His reagents are saturated solutions of the permanganate, of phenylhydrazin hydrochlorate, of diazosulphanilic acid and of magnesium sulphate, with a 30 per cent. solution of sodium hydroxid. The lactic acid is transformed into acetic aldehyd by the permanganate, kept constantly neutral by addition of the magnesium sulphate. Then adding to the filtrate the other reagents in turn reveals the acetic acid by the bright red tint.

Nov. 2, 1920, **84**, No. 34

*Spurious Tuberculosis of Psychopathic Origin. M. de Fleury.—p. 179.
*Auscultation of the Digestive Canal. G. Hayem.—p. 184.
Physical Signs of Closed Pneumothorax. E. Rist.—p. 199.

Spurious Tuberculosis of Psychopathic Origin.—De Fleury refers to progressive emaciation, agitation, anorexia, insomnia and spasmodic constriction of the esophagus and of the respiratory apparatus, without fever, as forming a clinical picture liable to be mistaken for tuberculosis. The variable tachycardia, moist palms and night sweats confirm its nature as an emotive psychoneurosis. There may be a dry cough but when the attention is diverted there is no coughing. Tonics only aggravate the condition. Treatment has to be addressed to calm the agitation and conquer the spastic anorexia and the insomnia, with repose as for true tuberculosis.

Auscultation of the Digestive Tract.—Hayem discusses in turn the information to be derived from the sounds heard in the pharynx, esophagus, stomach, intestines and peritoneum and the transmitted sounds. Subacute and chronic peritonitis may yield sounds like those heard in pleurisy. One unexpected discovery was the frequency of tympanism of the stomach from swallowing of saliva produced in excess. He ascribes ordinary flatulence in most cases to the air swallowed with the saliva in this sialophagia, but in other cases gas is generated in the stomach itself, even in normal conditions.

Bulletin Médical, Paris

Nov. 6, 1920, **34**, No. 52

*Hydropneumothorax with Small Effusion. C. Mantoux.—p. 979.
*Thornwaldt's Disease. Baillet.—p. 979.

Diagnosis of Small Effusion with Hydropneumothorax.—Mantoux bends the patient's trunk far back to collect the effusion in the culs-de-sac where it can be detected by the dulness on percussion. When this fails, he has the patient bend far forward and then bend abruptly backward. The effusion is thus thrown abruptly back, and the ear on the watch can detect its presence.

Thornwaldt's Bursitis.—Baillet expatiates on the evils almost inevitably following pus in Luschka's tonsil, and urges prompt curetting with a small curet after exploring the region with the finger to ascertain the shape and depth of the cavity.

Journal de Médecine de Bordeaux

Sept. 25, 1920, **91**, No. 18

*Myxedematoid Pains in the Legs. H. Verger.—p. 487.
Tuberculosis of Uterine Cervix. Verdelet and Daraignez.—p. 491.
Hygroma of Prepatellar Bursas. A. Baudrimont.—p. 493.
Large Doses of Tincture of Iodin Internally. L. Boudreau.—p. 495.

Myxedematoid Pains in the Legs.—Verger refers to pains accompanying changes in the skin suggesting myxedema. Both are inclined to be chronic, the pains in leg, knee or thigh coming on during walking and standing, but sometimes also during repose, but they are never paroxysmal. Rheumatism or internal varices is the usual diagnosis; analgesics by the mouth have little or no effect. Rubbing aggravates the pains, and elastic stockings cannot be borne. The pains are usually bilateral but may suggest sciatica on one side. There is tenderness on the back of the thigh, at the bend of the knee and at the ankle, and Lasègue's sign is positive. The skin and subcutaneous tissue are the seat of the pain, not the path of the nerve. The patients have always been females, and the pain on squeezing a fold in the skin differentiates the type. The differential diagnosis is confirmed by the success of endocrine therapy, especially thyroid treatment. It has to be long and persevering, but the benefit from it far surpasses that from any other treatment tried to date. Among his patients was one woman of 45 with this left pseudosciatica and pronounced myxedematous state which had developed six months before. No benefit was apparent under thyroid treatment until after seven months, but in five months more she was completely cured. He gives it for twenty days each month.

Oct. 25, 1920, **91**, No. 20

Prophylaxis of Scoliosis in the Young. J. Gourdon.—p. 539.
Suppuration of Simple Fracture. R. Villar.—p. 541.
*Aerophagia and Vomiting in Infants. Dargein.—p. 542.

Aerophagia.—Dargein fastened the infants' sleeves or hands to prevent their sucking fingers, and had an attendant watch two infants at a time during the bottle feeding so that the nipple did not slip out of the mouth; the bottle was also removed the moment the last drop had been taken. A little sodium bromid was given the more restless infants. By these means aerophagia was warded off, and there were no more "big bellies" among the infants. The infants that kept on sucking after the bottle was withdrawn were given a little more food until fully satisfied.

Vomiting Infants.—Conquering the aerophagia put an end to the incessant vomiting of some of the infants, but others vomited with surprising regularity and tenacity until Dargein gave them one drop of 1 : 1,000 solution of atropin before each bottle. This arrested the spasm of the stomach responsible for the vomiting in certain cases. Those with putrid stools or diarrhea were given treatment according to the chemical findings in the stools. When there was evidence of a sluggish liver, with putrid stools, great benefit followed the use of abundance of kefir. The kefir proved life-saving also for several prematurely born infants with defective nutrition. The kefir was prepared in the institution.

Paris Médical

Oct. 23, 1920, **10**, No. 43

Proofs of Acquired Immunity to Influenza. C. Dopter.—p. 289.
The Campaign Against Malaria in Algeria. L. Brodier.—p. 293.

Oct. 30, 1920, **10**, No. 44

*Meningococcus Purpura. P. Lereboullet and J. Cathala.—p. 305.
Diagnosis of Cancer of Rectum. R. Savignac.—p. 307.
Training Stump for Permanent Prosthesis. Roederer.—p. 313.
Auto-Observation of Lethargic Encephalitis. Delater.—p. 316.

Purpura in Meningococcus Septicemia.—Lereboullet and Cathala as well as Netter have noticed that cerebrospinal meningitis of recent years has often assumed a septicemic and purpuric character. It may seem to be merely an ordinary infectious purpura until the meningitis develops; it is usually fatal in such cases. In a case described the meningococcus was not suspected although the pains in the spine, sudden onset, headache and retention of urine might have warned that the purpura was atypical. The diagnosis for five days was simple rheumatoid purpura, apparently confirmed by defervescence, but two days later fulminating meningitis developed. The case reaffirms the necessity for seeking for the meningococcus in every case of primary purpura. The spinal fluid may be clear at the first puncture and yet be swarming with meningococci; the purpura is the work of the septicemia, and the meninges may not be involved at first. Meningococci may exceptionally be detected in the fluid from a patch of purpura or from a suppurating joint or choroiditis, but even if it is not possible to isolate them, no time should be lost in giving an intramuscular injection of antiserum, injecting it likewise into the spinal canal. It came too late to save the young woman in the case here described.

Presse Médicale, Paris

Nov. 3, 1920, **28**, No. 80

*Excessive Functioning of the Parotids. P. Dalché.—p. 785.
*Appendicular Asthma. R. A. Gutmann.—p. 787.
Gangrenous Process in Angina Ludovici. E. L. Peyre.—p. 789.

Enlargement of the Parotid Glands at the Menopause.—In one of the two cases reported by Dalché, the parotid and submaxillary glands enlarged and subsided again alternately every month or two, but in the other the enlargement was chronic and accompanied symptoms suggesting exophthalmic goiter. The enlargement of the salivary glands had accompanied the woman's two pregnancies, but never at other times until the menopause became installed. Other data cited confirm this connection between the salivary and the endocrine glands, and suggest the possibility of organotherapy. As such cases usually present evidence of deficient ovary or testicle and thyroid functioning, thyroid treatment might be tried or other gland extracts, alone or combined, supplemented possibly by radiotherapy, with treatment for syphilis if there is any hint of this disease.

Reflex Asthma.—The form discussed by Gutmann is that accompanying appendicitis. The diseased appendix charges the battery, but some casual toxic action presses the button that starts the attack. This may take the form of migraine, sciatica, vertigo, excitement or asthma according to the predisposition. It may even simulate pulmonary tuberculosis.

Progrès Médical, Paris

Sept. 25, 1920, **35**, No. 39

Management of Delivery with Deformed Pelvis. L. Cleisz.—p. 419.
Chronic Jaundice. Lereboullet.—p. 423.
*Luminal in Treatment of Epilepsy. H. Codet.—p. 425.

Luminal in Epilepsy.—Codet reviews the results of treatment with phenobarbital (luminal), of sixteen epileptics several months ago and of fifteen more recently. The work issues from Maillard's service; a previous report from the latter was reviewed in these columns, Sept. 25, 1920, p. 902. The doses found most suitable were 0.3 gm. per day for two days and then 0.2 gm., returning to the larger dose if the seizures are not attenuated, and reducing the dose if there is disquieting torpor. Sometimes it was found useful to alternate these doses, giving 0.2 one day and 0.3 gm. the next. The doses must always be fractioned, and this treatment should never be stopped abruptly. Hot baths might be useful in case of excitement, and a tonic if the torpor is too profound and the pulse is weak. The above doses are for adults.

Oct. 2, 1920, **35**, No. 40

*Migraine. G. Didsbury.—p. 429.
Lecture on Impermeability of the Kidneys. Loeper.—p. 431.
Fel Bovis in Therapeutics. G. Faroy.—p. 436.

Oct. 9, 1920, **35**, No. 41

Emphysema of Nontuberculous Origin. C. Roubier.—p. 439.
Hermaphrodism and Sexual Inversion. Laignel-Lavastine.—p. 441.
Sodium Salicylate. G. Faroy.—p. 444.

Oct. 16, 1920, **35**, No. 42

Ovarian Cyst and Pregnancy. J. Stiassnie.—p. 451.
Alkaptonuria. Lereboullet.—p. 452.
Ipecac and Emetin. G. Faroy.—p. 454.

Treatment of Migraine.—Didsbury comments on the restriction of the pain in migraine to one side of the head, the spasmodic, radiating pains, and the vasomotor disturbances, ascribing the whole to a local, superficial hyperesthesia, although the provocative factor may be a reflex from stomach, ovary, organs of sense, or elsewhere. The points of hyperesthesia are found along the superficial nerves of the back of the neck, of the skull and of the face, and especially at the emerging points of these nerves. These painful points can be located during quiescent periods, between attacks, and the physiologic treatment is to put an end to the hyperesthesia. This, he says, can be accomplished by massaging the points of hyperesthesia between the thumb and other fingers. The massage should be repeated daily for half an hour at a time; it is painful at first but grows less so. After fifteen sittings, on an average, the patient sleeps better, the migraine recurs less frequently, and the pain is less intense and of shorter duration, and yields to measures previously ineffectual. Children and thin persons are the best subjects, and it may be wise to apply the massage once a year. An old chronic case is naturally hardest to cure.

Schweizerische medizinische Wochenschrift, Basel

Nov. 4, 1920, **50**, No. 45

*Three Years' Measurements of the Thyroid. H. Hunziker.—p. 1009.
*Accidental Wounds and Infections. J. Dubs.—p. 1014.
Lumbar Puncture in Lethargic Encephalitis. R. Fritzsche.—p. 1018.
Conc'n in No. 46, p. 1045.
Calorimeter Estimation of Mountain Climate. E. Peters.—p. 1022.
Congenital Diverticulum in Small Intestine. A. Glaus.—p. 1024.

Food as Responsible for Goiter.—Hunziker added 1 gm. of potassium iodid to the barrel containing the fertilizer for his vegetable garden. In this way from 17 to 22 gm. potassium iodid were distributed over the garden, 300 and 1,200 square meters in extent, in the course of the season, and no vegetables or rhubarb, etc., from other source were used in the family. The circumference of the neck of his five children was recorded systematically during the three years of the experiments, and also the measurements of a corresponding group from another family not getting the iodized vegetables. He says of his experiences: "Herewith I have demonstrated that the food by its greater or less iodin content must have a capital influence on the prevalence of goiter in a community. . . ." "Of at least equal importance is the local and familial combination of foods for the daily dietary." Of special interest was the abrupt decline in the size of the neck in the noniodized group in a certain month. There had been no change in the conditions in any way except that the mother was employed at that time at a community kitchen, and she fed her children there, which meant almost exclusively on soup, a complete change from their previous home diet. This he cites as "drastic evidence of the dependence of the size of the thyroid on the nature of the food."

Common Blunders in Treatment of Wounds and Infections.—Speaking to general practitioners, Dubs emphasizes that crushed and torn tissues scarcely ever heal by primary intention, however early the surgeon gets the case. Primary suture can be attempted when the wound is on the scalp, eyelids or face, to ward off disfigurement, but we must appreciate the risk we are taking, and supervise the case with special care. Under all other circumstances primary suture should not be attempted unless we can count on having excised every atom of devitalized tissue. "For the present, it is safer for the general practitioner to suture too seldom than too often." He adds that we can always amputate or exarticulate, but we can never bring back a too hastily sacrificed segment of a finger or skin flap. He advises to trephine the nail for a hematoma below, and not try to reach it from the edge of the nail. The warning against seeking to extract foreign bodies in an office consultation is reiterated. Even with the aid of the roentgen rays it is by no means an easy task, and yet needles, scraps of metal, bullets, etc., often seem so accessible that the practitioner cannot resist the temptation to seek to

remove them by a simple incision. He usually succeeds only in driving them farther in and out of reach.

There is still a difference of opinion in regard to the wisdom of early incision for phlegmons and felons, but Dubs insists that the practitioner should make it his rule to incise at once if the symptoms from the felon do not show signs of retrogressing under twelve or twenty-four hours' passive hyperemia. He adds that a convenient means for inducing passive hyperemia is with an ordinary rubber cot drawn over the finger. Its base provides just the right amount of constriction for relief of pain in the throbbing finger. Many an incipient paronychia has been thus aborted. Local anesthesia is advised for the incision of a felon. "The local anesthesia may be one of the imponderables which explain So-and-so's larger practice." Notwithstanding the dorsal appearance of the lesion, the necrotic focus is always volar, and the unconditional early incision is the best means to arrest it. It is important further to go over the entire finger and the hand with a probe every day, at every change of dressings, to detect any tender point suggesting involvement of tendons, and to incise at once when such is detected. Multiple incisions at the side are better than a median incision, with a loose strip of gauze drawn through to drain, and long hot baths of soft soap after the incision, always bearing in mind that the "treatment of a tendon sheath panaritium is the treatment of the sound fingers."

Policlinico, Rome

Sept. 27, 1920, **27**, No. 39

*Etiology of Lethargic Encephalitis. D. Ottolenghi, S. d'Antona and F. Tonietti.—p. 1075.
*Acute Myelitis. L. Schiboni.—p. 1081.
Typhoid in the Vaccinated Troops. C. Garosci.—p. 1085.

Etiology of Lethargic Encephalitis.—Ottolenghi and his co-workers report findings which confirm those of Maggiora in respect to the filtrability of the virus found in the blood and spinal fluid of patients with lethargic encephalitis, and that this virus will transmit the disease to guinea-pigs when injected into the peritoneum or brain. The disease is also contagious for guinea-pigs when washings of the nasopharynx are instilled in the nostrils. This occurs also in rabbits, but only when the nasal mucosa has been first scarified. Cats are also susceptible, and the brain substance of the infected cats is virulent for the guinea-pig. The bacteriologic findings were constantly negative except in one case in which a streptodiplococcus was found resembling that described by Wiesner in 1918. They have now two strains of virus which have stood twelve and eight passages. The experimental disease lasted for from five to thirty-five days and proved fatal in all but thirteen of the 215 guinea-pigs inoculated.

Acute Myelitis.—Schiboni has recently encountered some cases of ascending spinal paralysis which are evidently forms of lethargic encephalitis. This latter disease has been epidemic at Rome but seems to have died out there now, but is still prevailing in other regions. He describes a case in a student, fatal in six days.

Riforma Medica, Naples

Aug. 28, 1920, **36**, No. 35

*Abrams' Splenic Reflexes. L. Scalas.—p. 781.
*Cultivation of Rabies Virus. R. Pirone.—p. 782.
Primary Sarcoma of Descending Colon. S. Dalmazzoni.—p. 784.
Bacteriology of Lethargic Encephalitis. Durand.—p. 789.
Rational Treatment of Urethral Stenosis. D. Taddei.—p. 790.

Abrams' Splenic Reflex.—Scalas writes that his attempts to elicit the splenic reflex, according to Abrams, in nine children and ten adults were negative, except in five children in whom there was a slight increase in the mononuclears and transitional forms compared with the count before and after the percussion of the spine. But in no instance was a febrile attack elicited, or the parasites appeared in the blood. It is possible, however, that the spleens were too pathologic to respond, as Cagliari is a hotbed of malaria.

Cultivation of Rabies Virus.—Pirone tabulates his findings with rabies material kept in glycerin. He was able to cultivate the virus through three generations.

Sept. 4, 1920, **36**, No. 36

Pathologic Anatomy of Lethargic Encephalitis. P. Guizzetti.—p. 806.
*Acute Form of Fibrous Bronchiolitis. D. de Conciliis.—p. 814.
*Diffuse Neurofibromatosis. G. Castronuovo.—p. 817.

Acute Form of Fibrous Bronchiolitis.—De Conciliis refers to the necrotic process in the bronchioles which follows gassing.

Diffuse Neurofibromatosis.—Castronuovo's patient, a man of 34, succumbed to pulmonary tuberculosis. The diffuse neurofibromatosis had developed at about the same time as the tuberculous process. The onset had been accompanied with asthenia, subnormal blood pressure, diarrhea and gastric disturbances, and zones of pigmentation of the skin. Under epinephrin treatment, marked improvement in these symptoms was realized but the lung process progressed unmodified. Endocrine therapy, arsenic and thiosinamin are the main reliance in Recklinghausen's disease, with excision of tumors causing compression or suggesting malignant degeneration.

Anales de la Facultad de Medicina, Montevideo

July-August, 1920, **5**, No. 7-8

*The Pulmonary Heart. Olinto de Oliveira.—p. 297.
*Pathologic Anatomy of Pulmonary Syphilis. P. I. Elizalde.—p. 315.
The Interning of the Insane. B. Etchepare.—p. 340.
Lethargic Encephalitis. A. Ricaldoni.—p. 353.
*Entero-Bacteriotherapy. E. M. Claveaux.—p. 411.
Chronic Postpartum Inversion of Uterus. M. Becerro de Bengoa.—p. 436.
Anatomy of the Muscles of the Thumb. F. Abente Haedo.—p. 445.

The Pulmonary Heart.—By this expression is meant the disordered heart action from disturbances in the venous cardiovascular system for which some patch of sclerosis entailed by a chronic tuberculous or other process in the lung is responsible. The symptoms from the heart in these cases form a special clinical type, extremely slowly progressive but leading up finally to auricular fibrillation and asystole. The history of the case shows the preceding pulmonary lesion although it may be latent or clinically cured, and the impeded circulation. The apex beat is weak; there is pulsation in the epigastrium, and the area of dulness is enlarged around and to the right of the heart, with double rhythm and other signs of dyschronia, dilatation or hypertrophy of the right ventricle; arrhythmia; low arterial tension; increased venous tension but no edema as a rule; changes in the size of the veins; dyspnea continuous or only after effort and without orthopnea, and oliguria without albuminuria but with lower tension coefficient. Fatigue starts a vicious circle. Oliveira does not know of any previous attempt to correlate auricular fibrillation with fibrous degeneration of the lung.

Pulmonary Syphilis.—Elizalde describes a case with multiple syphilitic lesions in the lungs which seemed to offer every variety and grade of the lesions and changes which syphilis is capable of inducing. He compares them with the findings in seven years' study of syphilitic cadavers.

Enterobacteriotherapy.—Clavaux accepts Danysz' dictum that the intestinal flora plays the preponderant rôle in chronic pathologic conditions, and that it does this by a kind of anaphylactic sensitization of the organism. This conception permits causal treatment by anti-anaphylaxis with an autovaccine, and he reports the outcome in fourteen cases from his extensive experience with eczemas, psoriasis, dermatitis of various origin, prurigo, etc., as well as in asthma, mental derangement, colitis, and inveterate constipation. Pruritus with skin diseases was almost invariably favorably modified and the outcome was very good in the eczema and prurigo cases even in cases of several years' standing. In some cases the suppurating itching disease over practically the entire body, refractory to all treatment, from unguents to radium, healed in the course of three or four weeks under the enterovaccine. Recurrence was not infrequent, but it was milder and yielded anew to the treatment. He gives illustrations showing the remarkable improvement in a case of diffuse dermatitis exfoliativa of twenty-four years' standing in a young woman, and in a girl of 10 with diffuse, fetid, weeping eczema for nine years. Another patient was a man of 64 with actual pachydermia for five years. Under twenty daily subcutaneous injections of 1 c.c. of the autovaccine, the infiltration inducing the pathologic hardening subsided almost completely.

Sometimes no benefit was apparent until twenty or thirty injections had been made, or even not until after the close of the course. He was impressed with the prompt preventive action when the vaccine was injected at the early signs of recurrence. Habitual constipation is usually favorably influenced, but in one case no improvement was evident even after two courses of the treatment. He refers constantly to Danysz' communications. They were summarized in these columns April 10, 1920, p. 1054.

Brazil-Medico, Rio de Janeiro

Aug. 21, 1920, **34**, No. 34

*Respiration as Defense Against Heat. M. Ozorio de Almeida.—p. 545.
Carcinoma of the Prostate with Metastases in Bones. Clark.—p. 546.
Seasickness. J. Drummond.—p. 548.
Aneurysm of Aorta. Thibau Junior.—p. 550.

Aug. 28, 1920, **34**, No. 35

Hodgkin's Disease at Bahia; Two Cases. O. Torres.—p. 565.
Brazilian Leeches. C. Pinto.—p. 567.
Organized Welfare Work for Children. Moncorvo, Jr.—p. 574.

Sept. 4, 1920, **34**, No. 36

Epidemic Encephalitis; Three Cases. C. de Rezende.—p. 585.
Appendicular Peritonitis. J. S. Passeron.—p. 590.
Nomenclature of Fungi. J. Silvado.—p. 591.

Thermic Exaggeration of Respiration.—Ozorio refers to the panting of dogs when heated, as they thus expel the moisture which in man passes off in sweat. The breath of dogs in these conditions is saturated with moisture and the breathing rate may reach 300 per minute. The Hering and Breuer reflexes cannot be elicited during this thermic polypnea.

Sept. 18, 1920, **34**, No. 38

*Histopathology of Senile Dementia. U. Vianna.—p. 621.
The Hookworm Campaign. J. de Barros Barreto.—p. 621.
Some Brazilian Leeches. C. Pinto.—p. 624.
Marriage from Eugenics Standpoint. R. Kehl.—p. 626.

Histologic Findings in Senile Dementia.—Vianna presents evidence to show that the histopathology of senile dementia runs a cyclic course from the neurofibrillar changes) Alzheimer) in the horn of Ammon to patches (Redlich-Fischer) in the cortex; then patches in the horn of Ammon, and finally neurofibrillar changes in the cortex.

Revista de la Asoc. Médica Argentina, Buenos Aires

April-June, 1920, **32**, No. 186-188

Cerebral Polyuria in the Rabbit. J. C. Galán.—p. 57.
Protosystolic Enlargement of Heart. B. A. Houssay et al.—p. 60.
Histamin Antagonistic to Epinephrin. J. B. Llosa.—p. 62.
*Action of Snake Venom. C. F. Velarde and J. Miravent.—p. 64.
*Sarcoma of the Pituitary. A. Sacco and Delfor del Valle.—p. 53.
*Acute Postoperative Peritonitis. P. Escudero.—p. 66.
*Radiography of the Sella Turcica. C. Donovan.—p. 72.
*Reflexions on Tuberculosis. J. J. Vitón.—p. 95. Cont'n.
Gas Gangrene of Appendicular Origin. P. Chutro.—p. 105.
*Rheumatismal Nodes. J. C. Navarro and E. Beretervide.—p. 112.
*Endocrine Dwarf Growth. M. R. Castex and C. P. Waldorp.—p. 126.
*Complications of Inherited Syphilis. T. Padilla.—p. 162.
*Spirochetal Bronchitis. R. A. Vaccarezza.—p. 173.
Auricular Bigeminal Beat. R. A. Bullrich.—p. 182.

Snake Venom.—The venom of the various snakes investigated contracts the isolated uterus and intestine of rabbits. It thus affects smooth and striated muscle alike, but a concomitant action on the nerves is evident. The contracting influence and the toxicity of the venom did not seem to parallel each other.

Sarcoma of the Pituitary.—Sacco and Delfor del Valle removed a round cell sarcoma from the pituitary of a woman of 28 restoring her to active life, free from symptoms during the nine months since, except a well tolerated glycosuria which has developed since. Ten illustrations show the access through the brow and the intracranial and photomicrograph findings. Menstruation had not returned after the birth of a healthy child, and within the year left frontal headache developed, keeping up night and day, with fluctuations in intensity but never complete freedom during four and a half years. At the third year she noticed that hands and feet were growing large and there were attacks of vomiting. At the operation the curving incision in the eyebrow and the parallel incision in the edge of the hair were connected by a perpendicular incision on the median line, and this allowed ample access. The tumor was drawn out whole with a vacuum suction glass, and weighed 5 gm. The technic was simple and easy.

Acute Postoperative Peritonitis.—Escudero reported in 1918 three cases of fatal postoperative obliteration of the mesenteric vessels. He here reports a fourth case but he operated at once and corrected conditions in the mesenteric vessels. The diagnosis was based on the intense pain experienced on rousing from the anesthesia, keeping up day and night, rebellious to morphin, with hiccup the second day, persisting for sixteen hours, tachycardia to 120, paralysis of the intestines but no physical signs of peritonitis till the thirty-sixth hour, and no rise in temperature. The operation for duodenal ulcer had shown that the diffuse arteriosclerosis involved the mesenteric vessels. The laparotomy at the fifty-second hour confirmed the assumption of defective circulation in mesenteric vessels but it had not progressed to mortification, and under stimulants and drainage the disturbances subsided. There was abundant profuse melena after this second intervention, but the health has been good during the year since. In all four cases there was a history of syphilis.

The Sella Turcica.—Roentgenograms are given of seven cases, including some with tumor, and one idiot.

Reflexions on Tuberculosis.—Vitón discusses in this instalment the sets of symptoms from endocrine derangement for which the tubercle bacillus is responsible. He asserts that the functions of any and every organ may suffer the consequences of an intoxication at some remote point, with or without the organs showing visible changes. There is a wide range between the typical lesions and syndrome of Addison's disease with its well defined tuberculous lesions, and the suprarenal asthenia symptomatic of a tuberculous lesion in some other organ. A chronic character is more readily accepted as the attribute of tuberculous and syphilitic infection, but acute pathologic conditions are likewise traceable at times to this etiology, and may benefit by treatment for one or the other. He reports further some cases in which under tuberculin treatment by his method of minutest doses, excessive thyroid functioning was reduced to normal. The weight is the most reliable gage of the improvement in hyperthyroidism. The thyroid retrogressed, but never completely in his cases.

Rheumatismal Nodes.—Navarro and Beretervide do not regard the nodes as pathognomonic of rheumatism but it is certain that the latter is the habitual if not the exclusive cause. They have never found them unless the rheumatism had attacked the heart, and then only in the severer cases. The nodes call for intensification of the treatment. In one of their three cases in children of 11 and 13, salicylate treatment by the vein and by the mouth was kept up for seven months with slow improvement but final apparent complete recovery, even the heart functioning seemingly normal, and the child increasing 10 kg. in weight. The extremely numerous nodes persisted for three months. The girl of 11 was given by the mouth in four months 130 gm. of the salicylate besides intravenous injections with a total of 9.5 gm. They ordered the treatment discontinued then, but the parents continued it for three months longer, thirty-two injections by the vein with a total of 16 gm. She seems now the picture of health.

Endocrine Dwarf Growth.—Forty-two illustrations accompany this report with necropsy findings of a female dwarf of about 25, with inherited syphilis, multiple malformations of bones and viscera, Raynaud's disease and dementia praecox.

Congenital Heart Defect.—Padilla's patient presents besides the congenital heart defect, hemolytic jaundice, cirrhosis of the liver with hypertrophy, pluriglandular dysfunction of several of the endocrine glands, and backward growth, on a basis of inherited syphilis.

Spirochetal Bronchitis.—Vaccarezza has been examining for spirochetes all the specimens of sputum sent to the laboratory, seeking for evidence of pulmonary syphilis. He found spirochetes in one case in which there had been recurring hemoptysis during four years without modification of the general health. The physical signs suggested echinococcus disease, but the spirochetes differentiated it as Castellani's bronchospirochetosis. On account of the spitting of blood, these cases

are generally classed as tuberculous. As the spirochetosis is contagious, isolation is necessary. A cure was realized in his cases and in a number on record under iodized oil, up to 10 c.c. daily for ten days or more, continuing then the iodin treatment by the mouth.

Semana Médica, Buenos Aires

July 1, 1920, **27**, No. 27

The First Cases of Epidemic Encephalitis Were Published in France April 27, 1917. R. Cruchet.—p. 1.
Causes for Dystocia. E. A. Boero.—p. 3. Cont'n.
Lethargic Encephalitis. J. A. Petrocchi and A. Hardoy.—p. 13.
Chronic Osteitis of Upper Jaw. A. M. Cavazzutti.—p. 17.
Artificial Production of Cells. A. L. Herrera.—p. 20.
Puerperal Inversion of Uterus. S. Cerruti.—p. 21.

Siglo Médico, Madrid

Aug. 14, 1920, **67**, No. 3479

Postinfectious Phenomena. B. González Alvarez.—p. 605.
Congenital Cyst in Neck Infected from Throat. J. M. Barajas de Vilches.—p. 608. Begun in No. 3478, p. 587.
Acute Cardiac Insufficiency with Permanently High Blood Pressure. Elizagaray.—p. 611. Begun in No. 3476, p. 549.

Beiträge zur klinischen Chirurgie, Tübingen

1920, **120**, No. 3

*Coagulation of the Blood in Jaundice. G. Petrén.—p. 501.
*Reconstruction of Thumb. O. Kleinschmidt.—p. 589.
Anatomy for Reconstruction of Thumb. W. Müller.—p. 595.
Accessory Bone Formation at the Patella. W. Müller.—p. 599.
*Deep Roentgen-Ray Treatment of Sarcomas. A. Schlegel.—p. 605.
Iodin Treatment of Mucosa at Laparotomies. L. Frankenthal.—p. 614.
Experimental Gas Gangrene. S. Weil.—p. 627.
Subserous Hematomas. R. Sommer.—p. 641.
Luxation of Joint at Base of Finger or Toe. W. Strube.—p. 646.
*Primary Benign Tumors in Muscles. E. König.—p. 656.
Migration of Projectiles. M. Flesch-Thebesius.—p. 663.

Coagulation of Blood in Jaundice.—Petrén foretells the cases in which there is liable to be postoperative cholemic hemorrhage, and its intensity, by estimation of the coagulation property of the blood. He thinks it is indispensable to ascertain the coagulation time of the blood in all persons who have been having jaundice for three or four weeks, before attempting a laparotomy. A simple test for the purpose is with what he calls "bile acid alkali." This is made by drawing 9 c.c. of blood from the vein into a syringe containing 1 c.c. of a 1 per cent. solution of ammonium oxalate. The fluid is then transferred to a reagent glass and shaken up, allowed to stand for a few hours and then centrifuged. The oxalate plasma thus obtained is treated with different amounts of a solution of crystallized fel bovis or human bile, and the coagulation time is recorded after addition of a little calcium (0.05 c.c. of a 1 per cent. solution of calcium chlorid to each 0.2 c.c. of the plasma). The findings are tabulated from seventy-seven healthy controls and twenty-eight jaundice patients. They show that from 0.55 to 0.66 per cent. of the bile acid alkali is necessary to prevent coagulation in the healthy. When this amount is required there is little danger of cholemic hemorrhage. But if coagulation occurs with 0.45 or 0.40 per cent. there is danger of hemorrhage, and with 0.30 per cent. or less there is such grave danger of cholemic hemorrhage that the operation is contraindicated. The bile acid content of the blood was low in three fatal cases of cholemic hemorrhage which had responded positively to the bile acid alkali test, testifying that the cause for the hemorrhage must be sought elsewhere than in the bile acids in the blood. He commends this principle of testing the concentration at which a coagulation-checking substance acts, as freer from sources of error than other methods.

Reconstruction of the Thumb.—Kleinschmidt's illustrations confirm his statements as to the superiority of the method for reconstructing the thumb by transplanting the middle finger to the stump of the thumb. The hand is very little disfigured, while functioning is most satisfactory.

Deep Roentgen-Ray Treatment of Sarcoma.—Schlegel reports brilliant success in six cases of sarcoma in different parts of the body.

Primary Tumors in Muscles.—The tumor in one of the two cases reported by König was a soft lipoma in the lateral head of the triceps; in the other, a mixed lipoma and angioma in the semimembranosus.

Deutsche medizinische Wochenschrift, Berlin

Sept. 16, 1920, **46**, No. 38

Toxin-Destroying Effect of Lecithin. H. Leo.—p. 1045.
Toxins and Antitoxins of Cholera Vibrio. R. Kraus.—p. 1046.
Treatment of Diphtheria with Normal Horse Serum. Meyer.—p. 1048.
Osteomyelitis of the Hyoid Bone. F. Lotsch.—p. 1049.
Cerebral Disturbances Following Ligation of Common Carotid Artery. H. Moses.—p. 1050.
Anthelmintic Effect of Certain Phenols. W. Schulemann.—p. 1050.
Mediastinal Emphysema and Stenosis in Influenza. Gehrt.—p. 1052.
Blood Platelets. E. Brieger.—p. 1053.
Lavage Preceding Treatment with Ultraviolet Rays. Ladebeck.—p. 1055.
A Modern Type of Neon Lamp. Axmann.—p. 1056.
Present Status of Endocrinology. L. Asher.—p. 1056. Begun in No. 37.
Otologic Hints for the General Practitioner: Care of Partially Deaf Schoolchildren. G. Brühl.—p. 1057.

Monatsschrift für Geb. und Gynäkologie, Berlin

September, 1920, **52**, No. 3

*Management of Brow Presentation. B. Schwarz.—p. 153.
*Obstetric Examination Through the Rectum. F. Jaeger.—p. 160.
Bactericidal Properties of Wound Secretions for Bacteria of Amniotic Fluid at Delivery. F. Schreiner.—p. 166.
*High Retroperitoneal Cystomas. B. Schweitzer.—p. 171.
Loose Dermoid Cystoma in Abdominal Cavity. K. Kayser.—p. 180.
*Hypoplasia and Tumor. Tschirdewahn.—p. 186.
Case of Malformation of Müller's Ducts. Samson.—p. 190.
Dicephalous Monster. R. Zimmermann.—p. 194.

Management of Brow Presentation.—Schwarz reports six cases of brow presentation which confirm him in the advocacy of subcutaneous symphyseotomy when it is impossible to modify the presentation and haste is imperative. He introduces the forceps, but if moderate traction twice applied does not answer the purpose, he leaves the forceps in place and proceeds to subcutaneous symphyseotomy, supplemented by pubiotomy in case of primiparae. Conservative measures can thus be carried to the extreme.

Obstetric Rectal Examination.—Jaeger presents a number of arguments in favor of restricting examination to what can be learned from without, and through the rectum. But he does not advise teaching it to students, as it requires a thorough knowledge of examination through the vagina to start with. The physician must learn the rectal technic himself, but once mastered, it is as instructive as the vaginal.

Retroperitoneal Cystomas.—In Schweitzer's two cases the genitals were normal but the high retroperitoneal tumors had the aspect and structure of ovarian cysts. The patients were women of 41 but cases are known in men. The tumors were as large as a man's head and one had been six years in developing; the other had grown more rapidly.

Hypoplasia and Tumor.—Tschirdewahn removed a large hard tumor from the pouch of Douglas of a woman of 26. It had developed from the ovary, and the internal genitals were of a pronounced infantile type. He implanted parts of an ovary just removed from another patient before suturing the abdomen. The young woman had never menstruated. He discusses whether the hypoplasia was the result of the tumor or vice versa.

Münchener medizinische Wochenschrift, Munich

Sept. 3, 1920, **67**, No. 36

*Structure of the Dermal Epithelium. W. Frieboes.—p. 1031.
Mushroom Poisoning. G. Blank.—p. 1032.
Wassermann and Sachs-Georgi Reaction in Syphilis. Baumgärtel.—p. 1034.
Mode of Action of Psychotherapy. Von Hattingberg.—p. 1037.
*Primary Seronegative Syphilis. Meirowsky and Leven.—p. 1040.
Deep Thermometry. V. B. Zondek.—p. 1041.
*Kineplastic Operations. M. Cohn.—p. 1042.
Foot and Mouth Disease in Man. H. Kopf.—p. 1043.
*Vomiting at Onset of Appendicitis. V. E. Mertens.—p. 1043.
Urticaria Tuberosa (Willan). F. Reiche.—p. 1044.
Primary Actinomycosis of the Tongue. Kockel.—p. 1044.
Mercury Inunctions. K. Tacge.—p. 1045.
Effect of Combined Radium Preparations. W. Lahm.—p. 1045.
Apparatus for Deep Roentgenotherapy. Baumeister.—p. 1047.
Staining of Spirochaeta Pallida in Thick Drop. Saphier.—p. 1047.
"Therapeutic Effects of Induced Pneumoperitoneum." Fuld.—p. 1048.

Epithelial Covering of the Skin.—Frieboes discusses the embryonic structure of the epithelium, endeavoring to show that it is not of purely ectodermal origin, but that it is derived from the ectoderm and the mesenchyma, and that these two germinal layers have an equal part in its composition.

Unsuccessful Abortive Treatment of Primary Seronegative Syphilis.—The fact that three of their patients with a negative Wassermann reaction during the primary stage had recurrences of neurosyphilis in spite of so-called abortive treatment, leads Meirowsky and Leven to state that, although the Wassermann test applied to both the blood and the spinal fluid may be negative, syphilis may still persist. For this reason it is evident that we have as yet no absolutely reliable means of knowing whether or not our treatment has been successful. The problem to be solved now is to find some means of ascertaining the cure beyond all question. In the meantime we must give up trying to establish a definite schedule of treatment, and must treat each case on its merits on the basis of our previous experience.

Kineplastic Operations.—While Cohn does not approve of the kineplastic operation as the procedure of choice, he emphasizes that the method introduced in Germany by Sauerbruch more fully meets the demands, from a technical standpoint, than the Italian procedure as recommended by Vanghetti. Sauerbruch, himself, admits that to Vanghetti belongs the honor of having been the first to consistently advance the idea of kinetic prosthesis. This was some twenty years ago. Only recently, as already mentioned elsewhere, the academy of Turin awarded Vanghetti the Riberi prize of 20,000 liras for his work in this field.

Significance of Vomiting with the Onset of Appendicitis.—Mertens emphasizes that if appendicitis begins with pain and vomiting the indications for operation are incontrovertible, as gangrene or suppuration must be present. The fact that pulse and temperature are not alarming is not a contraindication for operation.

Sept. 10, 1920, **67**, No. 37

Diagnosis and Treatment of Influenza. Much et al.—p. 1057.
Course of Leukemia After Spleen Extirpation. Toenniessen.—p. 1059.
Biologic Effects of Vitamins. Freudenberg and György.—p. 1061.
Examination of Undernourished German Children. Bloch.—p. 1062.
Accelerated Coagulation of the Blood as Result of Thermopenetration Applied to the Spleen. Nonnenbruch and Szyszka.—p. 1064.
Thermopenetration in Neuritis. Schwalbach and Bucky.—p. 1065.
General Narcosis Much Facilitated by Induced Relative Anemia in Brain. Hofmann.—p. 1065.
Effect of Types of Gonococcus on the Infection. Jötten.—p. 1067.
Thiosinamin. W. Stoeltzner.—p. 1070.
The Three Centuries of Treatment of Gunshot Wounds After Pfohlspeundt (1460). Kritzler.—p. 1070.

Wiener klinische Wochenschrift, Vienna

Sept. 2, 1920, **33**, No. 36

Gonorrhea in Women. Bucara.—p. 789.
Behavior of Typhus Virus in Guinea-Pigs. Weil and Felix.—p. 794.
Influenza in Relation to Syphilis. P. Neuda.—p. 796.
Relation of Influenza and Syphilis. M. Strassberg.—p. 797.
Protein Therapy. H. Hayek.—p. 798. Begun in No. 35, p. 768.

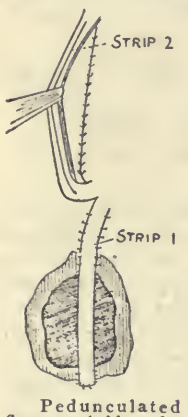
Zentralblatt für Chirurgie, Leipzig

Sept. 11, 1920, **47**, No. 37

*Steinach's Rejuvenation Operation. E. Payr.—p. 1130.
*Skin Flaps to Bridge Defects. Hammesfahr.—p. 1139.
Fastening of Retention Catheter with Suture. Schultze.—p. 1141.

Steinach's Rejuvenation Operation.—To certain portions of genital glands Steinach applies the term "puberty gland," which corresponds to Leydig's cells—the interstitial cells of the testis—and to the interstitial substance of the ovary (lutein cells). Through experimentation we have learned that the endosecretory portions, the "puberty gland," are much more resistant to outside harm than are the generative portions of the genital glands. By the successful transplantation of the endosecretory portions from one individual to another, important facts in regard to the secondary sexual characters have been learned. Here we have, then, the basis for Steinach's procedure. By stimulation of the endosecretory action of the puberty gland at the expense of the generative function it is his idea to bring about a rejuvenating process in older people by the resuscitation and renewal of the weakening secondary sexual characters. In his latest communication Steinach describes two types of intervention: (1) ligation of the vas deferens where it merges with the epididymis, and (2) ligation of the ductuli efferentes (coni vasculosi) between the head of the epididymis and the upper pole of the testis. The latter leaves the blood vessels supplying the testis unimpaired. Payr remarks that, owing to gonorrhea or trauma adhesions are often present which render the second type of operation difficult. He gives what he would consider at present the contraindications for the Steinach operation: (1) well preserved power to produce spermatozoa; (2) need of special caution in excitable, depressed or mentally disturbed subjects; (3) enlargement of the prostate (prostatectomy, also a rejuvenating operation, being indicated instead); (4) other organic causes for premature old age, with marked changes in the heart, blood vessels, kidneys, pancreas, intestine, etc.; (5) occlusion of the vas deferens due to previous disease (gonorrhea), and (6) gradual deterioration of the secondary sexual characters owing to chronic disease of a different nature; for example, dystrophia adiposo-genitalis. Steinach's operation might be regarded as indicated in the case of subjects with healthy internal organs who are growing prematurely old and who, at the same time, show evidence of loss of function by their impaired secondary sexual characters. In doubtful cases roentgen irradiation should be tried before surgical operation is decided on. Only by such precautions can the threatening dangers, which Payr describes in detail, be avoided.

Narrow Pedunculated Skin Flaps to Bridge Large Defect.—A feature of the method described by Hammesfahr seems to be that from the same site as many flaps as needed can be taken without leaving a gap. He cuts a skin flap about 3 cm. wide from the healthy area adjoining the defect, seeing to it that the flap is of good thickness and well supplied with blood vessels, sometimes including fascia and muscles. The end of the flap farthest from the defect is first notched and later severed entirely from its connections, and on the end nearer to the defect as a pedicle it is swung around and laid across the middle portion of the wound area, being sutured at both ends in a groove that has been prepared in the healthy, well vascularized tissue surrounding the defect, as shown in the illustration. The site from which the flap is taken must be sutured at once, exactly and without tension, so that in two weeks another flap can be taken from the same place, and two weeks later a third, and so on until the defect is sufficiently covered. Flaps up to 20 cm. in length can be prepared at one sitting. If longer flaps are required, it is best to form the flap in two or more stages by lengthening the end more distant from the defect by about 15 cm. at each sitting. It is well to make the end of the flap next to the defect somewhat hookshaped (illustration) to prevent its crumpling when it is swung around.



Pedunculated flaps to bridge defect.

Zentralblatt für Gynäkologie, Leipzig

Sept. 11, 1920, **44**, No. 37

Relation of Diphtheria Bacilli in Vagina of Healthy Prospective Mothers to Infection of Newborn. Lönne and Meyeringh.—p. 1018.
Cure of Bladder Fistula by Uterovaginal Interposition of Plica. E. Solms.—p. 1022.
Plastic Changes in Body of Uterus. J. Schiffmann.—p. 1028.

Zentralblatt für innere Medizin, Leipzig

Sept. 11, 1920, **41**, No. 37

Mechanicophysical Aspects of the Spinal Fluid. E. Becher.—p. 633.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Aug. 28, 1920, **2**, No. 9

Individuality and Mental Derangement. Van Valkenburg.—p. 762.
*Malaria in Netherlands Indies. N. H. Swellengrebel.—p. 770.
*Bilateral Paralysis of Femoral Plexus from Abdominal Tumor. J. J. H. M. Klessens.—p. 787.

Malaria in Netherlands Indies.—This report from the section for tropical hygiene of the Colonial Institute at Amsterdam summarizes and tabulates the results of research most of which has been reviewed in these columns as published from time to time in the quarterlies issued by the public health service in the Netherlands Indies. The outlook for eradication of "ludlow malaria" in the zones where this species of mos-

quito is responsible, is more promising than with the aconita and maculatus. The breeding habits of these two render their extermination almost hopeless. The indefinita seems to be harmless, and there is hope that the annulipes is also. To reenforce all other measures, extensive quininization, especially of schoolchildren, is urged. To eradicate the severe endemic malaria the fight has to be against *M. ludlowi,* and *aconita; N. maculatus* and possibly *S. aitkeni.*

The Early Symptoms from a Suprarenal Tumor.—Klessen's patient was a woman of 50 who for a year had complained of paresthesia in the front of the right leg, and it became impossible to bend the hip and knee. Other nervous symptoms developed indicating pressure on both femoral nerves at the level of the pelvic inlet. The enlarged veins in the skin confirmed the assumption of a tumor, and the enlargement of the regional lymph glands suggested its malignant character. The ureter seemed to have escaped pressure but cystitis had developed. These early complex neurologic symptoms from the suprarenal cancer are described in detail. Some benefit was derived from roentgen-ray exposures but it proved transient, and this had to be abandoned. The bronzing suggested that the suprarenal was the site of the tumor, confirmed also by lack of symptoms from other organs, but necropsy was not allowed.

Hospitalstidende, Copenhagen

Nov. 5 to Dec. 10, 1919, **62,** Nos. 45-50

*Precancerous Dermatosis. A. Korsbjerg.—p. 1233.
Influenza-Encephalitis. G. Neve.—p. 1257.
*Chronic Serous Meningitis. V. Christiansen.—p. 1281.
*Achylia After Cholecystectomy. M. Fenger.—p. 1305.
Phototherapy in Ophthalmology. C. Lottrup-Andersen. — p. 1316. Begun in No. 44, p. 1217.
*Weiss' Test for Circulatory Apparatus. K. Secher.—p. 1329.
Diplococcus Infection and Meningitis. H. Seidelin.—p. 1336.
*Case of Acute Hemorrhagic Pancreatitis. J. Henrichsen.—p. 1353.
Massage. P. Lorenzen.—p. 1361.

Precancerous Dermatosis.—Korsbjerg gives a description of a skin disease which after eight years developed malignant characteristics and which he retrospectively diagnosed as Bowen's precancerous dermatosis. This makes the eighth case of the kind to be published; the interval from the first manifestations was from four to forty years in the different cases. The dermatosis resembles certain forms of lichen and syphilids as also Paget's disease, and it occurs in one or more foci, not symmetrical, and with no predilection for any special region. Epithelioma developed in four of the eight cases. No internal or roentgen-ray treatment seems to have any effect. Carbon dioxid snow was used in two cases but the dermatosis returned in one, sixteen months later. Darier destroyed the patch with superheated air in one case but the outcome later is not known. The microscope reveals the similarity to Paget's disease. The single lesions are round, flat, generally hard, sometimes with a slight central depression, reddish or yellowish, without a halo. They range from 1 or 3 mm. to 0.5 cm. in diameter, and progress with a serpiginous course and film-like scales, with crusting. In the case described the papular lesions partially subsided under local mercurial treatment, but as new patches developed elsewhere, excision has been advised. Darier calls the disease *dyskératose lenticulaire et en disque,* but Korsbjerg prefers Bowen's name for it as featuring its eventual malignant degeneration.

Chronic Circumscribed Serous Meningitis.—Christiansen has never encountered serous meningitis in the posterior cranial fossa as an isolated pathologic condition; it always accompanied a tumor in the cerebellum or pontine angle. He found it constantly in the twenty cases of tumor in this region which he has diagnosed in the last six years, but it occurs also with tumors elsewhere in the skull. It should always impose a search for intracranial tumor even when no other symptoms suggest the latter, and thus may lead to discovery of an incipient tumor.

Achylia After Cholecystectomy.—Fenger tabulates the findings in 115 gallstone patients and in seventy-five before and after cholecystectomy. They fail to demonstrate any influence on the gastric secretion from obstruction of the bile ducts or from removal of the gallbladder, any more than from cholelithiasis in general.

Weiss Test of Functional Capacity of Circulatory System.—Secher's experience failed to confirm the assertions of Weiss.

Acute Hemorrhagic Pancreatitis.—The symptoms suggested peritonitis from perforation, but as there was nothing in the antecedents to suggest gastric ulcer or gallstones, and as the sudden onset and collapse pointed to the pancreas, the necrotic pancreas was removed three weeks after the first symptoms. It lay like a loose sequester, and Henrichsen is inclined to regard the loss of this important organ as responsible for the fatal outcome. No gallstones could be palpated at the operation but over a dozen were found at necropsy. The pancreatectomy improved conditions remarkably at first, instead of increasing the shock, and death did not occur till three weeks later. A special feature of the case was the intense response to tests for sugar in the urine before the operation.

Hygiea, Stockholm

Oct. 16, 1920, **82,** No. 19

*Pathologic Anatomy of Congenital Stridor. W. Wernstedt.—p. 609.
*Turgidization of Placenta. W. Gejrot.—p. 622.

Congenital Stridor.—Wernstedt compares the necropsy findings in two infants with congenital stridor with the findings in other infant cadavers. One seemed to be a functional disturbance; in the other case the lumen was abnormally narrow.

Injection of Fluid Into Placenta to Aid in Its Separation.—Gejrot ascribes the priority for turgidization of the placenta to B. Mojon, a professor at Genoa in 1826. It was rediscovered by Gabastón of Buenos Aires, as was described at the time in The Journal, May 2, 1914, p. 1443. Gejrot has been applying the measure systematically for a year in all cases of retention or severe hemorrhage in the third stage of labor. He injected into the umbilical vein from 300 to 600 c.c. of cool water. It proved successful in 5 of the 7 retention cases; in the others the patient was too exhausted to respond. In 4 of the 7 severe hemorrhage cases the desired result was obtained; in the others it failed. In the 9 cases in which it succeeded, the placenta became turgid and in erection, and vigorous contractions of the uterus followed at once. The temperature of the water was about 14 C. or 57 F.

Ugeskrift for Læger, Copenhagen

Oct. 21, 1920, **82,** No. 43

*Syphilis of the Outer Ear. R. Lund.—p. 1335.
Wassermann Reaction in Children. R. Hertz.—p. 1343.

Syphilis of the External Ear.—Lund encountered 13 cases of this kind in the last year. The syphilis was in the second or third phase in all; most of the patients were women. In 30 cases on record the primary chancre was on the ear. In one of his cases the papulous eruption in the external ear, without otitis media, was the only manifestation of the syphilis to be discovered. The diagnosis was based exclusively on the aspect of the eruption and the improvement under specific treatment. Among his 4 tertiary cases, in 2 there were gummas in the skin of the ear which left scars as they healed; in one the gummatous chondritis was very destructive, the gummas following close on the secondary eruption, the infection less than a year old. These lesions on the ear differ from such lesions elsewhere only in the disfigurement liable to result.

Oct. 28, 1920, **82,** No. 44

*Sugar Content of Blood Under Ether. D. H. Bøggild.—p. 1365.
Treatment of Status Epilepticus. E. Toft.—p. 1370.

Sugar Content of the Blood During Ether Anesthesia.—Bøggild tabulates the findings before and after an operation under ether in thirty-three cases and in five under local anesthesia. More or less of an increase in the reducing power of the blood after the ether anesthesia and the operation was evident in all but two. The increase was from 0.85 to 1.47 per thousand immediately after the operation in one case, but the previous figure was regained by the seventh hour. In another case the increase was from 0.87 before to 1.35 the fifth and 1.46 the tenth hour. He theorizes to explain this postnarcosis hyperglycemia, adding that it suggests a resemblance between the effects of ether and diabetes mellitus.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JULY-DECEMBER, 1920

The following journals have been abstracted in the Current Literature Department of THE JOURNAL during the past six months. Any of the foreign journals, except those starred, will be lent by THE JOURNAL to subscribers in the United States and to Fellows of the American Medical Association for a period not exceeding three days. Only one journal may be borrowed at a time. Requests for periodicals should be addressed to the Library of the American Medical Association and six cents in stamps should be enclosed. This covers the average expense of mailing a journal. Domestic journals can be obtained by sending the approximate amount direct to the respective publishers. Thus most of the journals indexed are accessible to the general practitioner, no matter where he may be located.

Acta Medica Scandinavica. Irregular. 20 kronor. Stockholm.

Acta Scholae medicinalis universitatis imperialis in Kioto. Irregular. 2.30 yen. Kioto.

American Journal of Anatomy. Bi-m. $7.50. 36th St. and Woodland Ave., Philadelphia.

American Journal of Diseases of Children. M. $4. American Medical Association, 535 N. Dearborn St., Chicago.

American Journal of Insanity. Q. $5. Johns Hopkins Press, Baltimore.

American Journal of the Medical Sciences. M. $5. Lea & Febiger, 706 Sansom St., Philadelphia.

American Journal of Ophthalmology. M. $10. 7 W. Madison St., Chicago.

American Journal of Physiology. M. $5. Johns Hopkins Medical School, Baltimore.

American Journal of Public Health. M. $4. 169 Massachusetts Ave., Boston.

American Journal of Roentgenology. M. $6. 69 E. 59th St., New York.

American Journal of Syphilis. Q. $6. C. V. Mosby Co., St. Louis.

American Review of Tuberculosis. M. $5. Williams & Wilkins Co., Baltimore.

Anales de la Facultad de medicina, Montevideo. Bi-m. $2. Montevideo.

Anales de la Facultad de medicina, Universidad de Lima. Bi-m. 6 soles. Lima, Peru.

Annales de médecine. M. 40 francs. Paris.

Annali d'igiene. M. 20 lire. Rome.

Annals of Medical History. Q. $8. Paul B. Hoeber, 67 E. 59th St., New York.

Annals of Medicine. Q. $10. W. F. Prior Co., 22 East 17th St., New York.

Annals of Otology, Rhinology and Laryngology. Q. $6. Times Bldg., St. Louis.

Annals of Surgery. M. $7.50. J. B. Lippincott Co., 227 S. 6th St., Philadelphia.

Annals of Tropical Medicine and Parasitology. Q. $5. Liverpool.

Arbeiten aus dem Anatomischen Institut der Kaiserlich-Japanischen Universität zu Sendai. Irregular. Price varies. Tokyo.

*Archiv für Gynackologie. Irregular. Berlin.

Archiv für Kinderheilkunde. Irregular. 30 marks. Stuttgart.

*Archiv für klinische Chirurgie. Irregular. Berlin.

Archiv für Verdauungskrankheiten. Bi-m. 36 marks. Berlin.

Archives of Dermatology and Syphilology. M. $6. American Medical Association, 535 N. Dearborn St., Chicago.

Archives of Diagnosis. Q. $3. 141 W. 36th St., New York.

Archives of Internal Medicine. M. $5. American Medical Association, 535 N. Dearborn St., Chicago.

Archives des maladies de l'appareil digestif et de la nutrition. M. 28 francs. Paris.

Archives des maladies du cœur, des vaisseaux et du sang. M. 22 francs. Paris.

Archives médicales belges. M. 18 francs. Paris.

Archives de médecine des enfants. M. 30 francs. Paris.

Archives of Neurology and Psychiatry. M. $6. American Medical Association, 535 N. Dearborn St., Chicago.

Archives of Ophthalmology. Bi-m. $6. G. P. Putnam's Sons, 2 W. 45th St., New York.

Archives of Radiology and Electrotherapy. M. 30 shillings. London.

Archivos españoles de pediatria. M. 18 pesetas. Madrid.

Archivos Latino-Americanos de pediatria. Bi-m. $3. Buenos Aires.

Arquivos do Instituto bacteriológico Camara Pestana. Price varies. Lisbon.

Boston Medical and Surgical Journal. W. $5. 126 Massachusetts Ave., Boston.

Brain. A Journal of Neurology. Irregular. $4. London.

Brazil-medico. W. 20 milreis. Rio de Janeiro.

Bristol Medico-Chirurgical Journal. Irregular. 3 shillings per issue.

British Journal of Children's Diseases. Q. 7 shillings, 6 pence. London.

British Journal of Experimental Pathology. Bi-m. £2. London.

British Journal of Surgery. Q. $6.50. William Wood & Company, 51 Fifth Ave., New York.

British Journal of Tuberculosis. Q. $2.50. G. E. Stechert & Co., 151 W. 25th St., New York.

British Medical Journal. W. 8d per issue. London.

Bruns' Beiträge zur klinischen Chirurgie. Irregular. Price varies. Tubingen.

Bulletin de l'Académie de médecine. W. 23 francs. Paris.

Bulletin médical. Semi-w. 14 francs. Paris.

Bulletin of the Johns Hopkins Hospital. M. $3. Baltimore.

Bulletin of the Lying-In Hospital of the City of New York. New York.

Bulletin of the Medical and Chirurgical Faculty of Maryland. M. (except June, July, August and September) 25 cents. 1211 Cathedral St., Baltimore.

Bulletin of the Naval Medical Association of Japan. Irregular. Tokio.

Bulletin of the Porto Rico Medical Association. Q. San Juan, Porto Rico.

Bulletins et mémoires de la Société médicale des Hôpitaux de Paris. W. 40 francs. Paris.

California State Journal of Medicine. M. $1. Butler Bldg., San Francisco.

Canadian Journal of Mental Hygiene. Q. $2. 121 Bishop St., Montreal.

Canadian Medical Association Journal. M. $5. 836 University St., Montreal.

China Medical Journal. Bi-m. $5. Shanghai.

Chirurgia degli organi di movimento. Bi-m. 35 lire. Bologna.

Colorado Medicine. M. $2. Metropolitan Bldg., Denver.

Correspondenz-Blatt für schweizer Aerzte. See Schweizerische medizinische Wochenschrift.

Crónica médica. Semi-m. 15 francs. Lima, Peru.

Delaware State Medical Journal. M. $1. Wilmington.

Deutsche medizinische Wochenschrift. W. $6. Leipzig.

Deutsche Zeitschrift für Chirurgie. Irregular. 28 marks. Leipzig.

Deutsches Archiv für klinische Medizin. M. 24 marks. Leipzig.

Dublin Journal of Medical Science. M. £1.5s.

Edinburgh Medical Journal. M. 40 shillings.

L'Encéphale. M. 70 francs. Paris.

Endocrinology: Bulletin of the Association for the Study of Internal Secretions. Q. $5. 1100-1103 Title Insurance Bldg., Los Angeles.

Finska Läkaresällskapets Handlingar. Bi-m. Helsingsfors.

Gaceta médica de Caracas. Semi-m. 16 bolivares. Caracas, Venezuela.

Gaceta médica de México. Irregular. $6. Mexico City.

Gann. Irregular. Tokio.

Glasgow Medical Journal. M. 30 shillings.

Grèce médicale. Semi-m. 12 francs. Athens.

Hospitalstidende. W. 27.5 kronen. Copenhagen.

Hygiea. Semi-m. $5. Stockholm.

Illinois Medical Journal. M. $3. 155 N. Ridgeland Ave., Oak Park.

Indian Journal of Medical Research. Q. 10s. Calcutta.

Indian Medical Gazette. M. Rs. 16. Calcutta.

International Journal of Psycho-Analysis. Q. London.

International Journal of Public Health. Bi-m. $5. Geneva.

Jahrbuch für Kinderheilkunde und physische Erziehung. Irregular. 32 marks. Berlin.

Japan Medical World (Nippon No Ikai). W. Tokio.

Journal of the American Medical Association. W. $6. 535 N. Dearborn St., Chicago.

Journal of the Arkansas Medical Society. M. $2 Boyle Bldg., Little Rock, Ark.

Journal of Bacteriology. Bi-m. $5. Williams & Wilkins Company, Baltimore.

Journal of Biological Chemistry. M. $3. 2419 Greenmount Ave., Baltimore.

Journal of Cancer Research. Q. $5. Williams & Wilkins Company, Baltimore.

Journal de chirurgie. M. 44 francs. Paris.

W.—Weekly; M.—Monthly; Semi-m.—Semi-monthly; Bi-m.—Bi-monthly; Q.—Quarterly. * Cannot be loaned.

Journal of Experimental Medicine. M. $5. Rockefeller Institute for Medical Research, 66th St. and Avenue A, New York.
Journal of the Florida Medical Association. M. $1.50. P. O. Box 136, Jacksonville, Fla.
Journal of General Physiology. Bi-m. $5. Rockefeller Institute for Medical Research, 66th St., and Avenue A, New York.
Journal of Immunology. Bi-m. $5. Williams & Wilkins Company, Baltimore.
Journal of the Indiana State Medical Association. M. $2. 406 W. Berry St., Fort Wayne, Ind.
Journal of Industrial Hygiene and Abstract of the Literature. M. $6. Harvard University Press, Cambridge, Mass.
Journal of Infectious Diseases. M. $5. 637 S. Wood St., Chicago.
Journal of Iowa State Medical Society. M. $2.50. Des Moines.
Journal of Kansas Medical Society. M. $2. 303 Commerce Bldg., Topeka, Kan.
Journal of Laboratory and Clinical Medicine. M. $6. C. V. Mosby Company, St. Louis.
Journal of Laryngology, Rhinology and Otology. M. 40 shillings. London.
Journal of Maine Medical Association. M. $2. Portland, Maine.
Journal of Medical Association of Georgia. M. $3. Healy Bldg., Atlanta, Ga.
Journal of Medical Research. Bi-m. $4. 240 Longwood Ave., Boston.
Journal of Medical Society of New Jersey. M. $2. 12 Cone St., Orange, N. J.
Journal de médecine de Bordeaux. M. 15 francs.
Journal of Mental Science. Q. 20 shillings. London.
Journal of Michigan State Medical Society. M. $3.50. Powers' Theatre Bldg., Grand Rapids, Mich.
Journal of Missouri State Medical Association. M. $2. 3517 Pine St., St. Louis.
Journal of Nervous and Mental Diseases. M. $10. 64 W. 56th St., New York.
Journal of Neurology and Psychopathology. Q. 30 shillings. Bristol, England.
Journal of Oklahoma State Medical Association. M. $3. Muskogee.
Journal of Orthopaedic Surgery. M. $4. Lincoln, Nebraska.
Journal of Parasitology. Q. $3. Urbana, Ill.
Journal of Pathology and Bacteriology. Irregular. £1.1s. Cambridge, England.
Journal of Pharmacology and Experimental Therapeutics. M. $6. 2419 Greenmount Ave., Baltimore.
Journal de radiologie et d'électrologie. M. 28 francs. Paris.
Journal of South Carolina Medical Association. M. $2. Greenville, S. C.
Journal of State Medicine. M. 2 shillings. London.
Journal of Tennessee State Medical Association. M. $2. 601 Cedar St., Nashville, Tenn.
Journal of Tropical Medicine and Hygiene. Semi-m. 21 shillings. London.
Journal d'urologie médicale et chirurgicale. M. 42 francs. Paris.
Journal of Urology. Bi-m. $5. Williams & Wilkins Co., Baltimore.
Kentucky Medical Journal. M. $2. State and Twelfth Sts., Bowling Green, Ky.
Kitasato Archives of Experimental Medicine. Twice a year. 60 cents. Tokio.
Lancet. W. 10d per issue. London.
Laryngoscope. M. $6. 3858 Westminster Place, St. Louis.
Lyon chirurgical. M. 25 francs.
Lyon médical. Semi-m. 15 francs.
Médecine. M. 18 francs. Paris.
Mededeelingen van den Burgerlijken Geneeskundigen Dienst in Nederlandsch-Indië. Irregular. Price varies. Batavia, Java.
Medical Journal of Australia. W. 6 d. Sydney.
Medical Journal of the Siamese Red Cross. 5 ticals. Bangkok.
Medical Journal of South Africa. M. £1.5. Johannesburg.
Medical Record. W. $5. W. Wood & Co., 51 Fifth Ave., New York.
Medizinische Klinik. W. 60 marks. Berlin.
Mental Hygiene. Q. $2. National Committee for Mental Hygiene, 50 Union Square, New York City.
Military Surgeon. M. $4. Army Medical Museum, Washington, D. C.
Minnesota Medicine. M. $3. Lowry Bldg., St. Paul.
*Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie. Irregular. Jena.
Mitteilungen aus der medizinischen Fakultät der Kaiserlichen Universität Kyushu. Irregular. Price varies. Fukuoka.
Mitteilungen aus der medizinischen Fakultät der Kaiserlichen Universität zu Tokyo. Irregular. Price varies. Tokio.
Modern Hospital. M. $3. 22 E. Ontario St., Chicago.
Modern Medicine. M. $3. 22 E. Ontario St., Chicago.
Monatsschrift für Geburtshülfe und Gynäkologie. M. 40 marks. Berlin.
Monatsschrift für Kinderheilkunde. M. Berlin.
Münchener medizinische Wochenschrift. W. $6. Munich.
National Medical Journal of China. $2.50. Shanghai.
Nebraska State Medical Journal. M. $2.00. 468 Brandeis Bldg., Omaha.
Nederlandsch Tijdschrift voor Geneeskunde. W. 10.50 florins. Amsterdam.
Neurological Bulletin. M. $5. Paul B. Hoeber, 69 E. 59th St., New York.
New Orleans Medical and Surgical Journal. M. $2.50. 1551 Canal St., New Orleans.
New York Medical Journal. W. $6. A. R. Elliott Publishing Co., 66 W. Broadway, New York.
New York State Journal of Medicine. M. $2. 17 W. 43d St., New York.
Norsk Magazin for Lægevidenskaben. M. $5. Christiania.
Northwest Medicine. M. $2. Cobb Bldg., Seattle, Wash.
Nourrisson. Bi-m. 14 francs. Paris.
Ohio State Medical Journal. M. $3. Physician's Bldg., Columbus.
Paris médical. W. 16 francs.
Pediatria. Bi-m. 20 lire. Naples.
Pennsylvania Medical Journal. M. $2. 212 N. Third St., Harrisburg.
Philippine Journal of Science. Monthly. $5. Manila, P. I.
Policlinico. W. 32 lire. Rome.
Practitioner. M. $6.50. London.
Presse médicale. Semi-w. 15 francs. Paris.
Progrès médical. W. 12 francs. Paris.
Psychobiology. Bi-m. $5. Williams & Wilkins Co., Baltimore.
Public Health Journal. M. $2. York Publishing Co., 169 Bay St., Toronto.
Quarterly Journal of Medicine. 25 shillings. London.
Revista de la Asociación médica argentina. M. Buenos Aires.
Revista de la Universidad de Buenos Aires. M. $5. Buenos Aires.
Revista del Instituto bacteriológico. Q. Buenos Aires.
Revista médica del Uruguay. M. 30 francs. Montevideo.
Revue de chirurgie. M. 33 francs. Paris.
Revue de médecine. M. 23 francs. Paris.
Revue médicale de la Suisse romande. M. 14 francs. Geneva.
Rhode Island Medical Journal. M. $2. 219 Waterman Street, Providence.
Riforma medica. W. 35.50 lire. Naples.
Revue mensuelle de gynécologie et d'obstétrique. M. 15 francs. Paris.
Revue neurologique. M. 45 francs. Paris.
Rivista critica di clinica medica. W. 16 lire. Florence.
Rivista di clinica pediatrica. M. 18 lire. Florence.
Schweizer Archiv für Neurologie und Psychiatrie. Irregular. Price varies. Zurich.
Schweizerische medizinische Wochenschrift. W. 17.20 francs. Basel.
Seale Hayne Neurological Studies. Irregular. 21 shillings. London.
Sei-I-Kwai Medical Journal. M. $2. Tokio.
Semana médica. W. $5. Buenos Aires.
Siglo médico. W. 20 pesetas. Madrid.
Social Hygiene. Q. $3. American Social Hygiene Association, 105 W. 40th St., New York.
South African Medical Record. Semi-m. 31 shillings 6 pence. P. O. Box 643, Capetown.
Southern Medical Journal. M. $3. 807 Empire Bldg., Birmingham, Ala.
Southwest Journal of Medicine and Surgery. M. $1. El Reno, Okla.
Southwestern Medicine. M. $2. El Paso, Texas.
Surgery, Gynecology and Obstetrics with International Abstract of Surgery. M. $12. Surgical Publishing Co., 30 N. Michigan Ave., Chicago.
Svenska Läkaresällskapets Handlingar. Q. 7.50 kroner. Stockholm.
Texas State Journal of Medicine. M. $2.50. Texas State Bldg., Fort Worth.
Therapeutische Halbmonatshefte. Semi-m. Berlin.
Tohoku Journal of Experimental Medicine. Issued six times a year. 5 yen. Sendai.
Tubercle. M. 25 shillings. London.
Ugeskrift for Læger. W. 20 kroner. Copenhagen.
United States Naval Medical Bulletin. Q. $1. Washington, D. C.
Upsala Läkareförenings Förhandlingar. Irregular. 10 kroner.
Virginia Medical Monthly. M. $2. Richmond.
Washington Medical Annals. Bi-m. $1. 2114 Eighteenth Street, N.W., Washington, D. C.
West Virginia Medical Journal. M. $2. Huntington, W. Va.
Wiener Archiv für innere Medizin. Irregular. Vienna.
Wiener klinische Wochenschrift. W. 40 marks, with foreign postage. Vienna.
Wisconsin Medical Journal. M. $2. Wells Bldg., Milwaukee.
Zeitschrift für Geburtshülfe und Gynäkologie. Irregular. 16 marks, Stuttgart.
Zeitschrift für Tuberkulose. Bi-m. Price varies. Leipzig.
Zeitschrift für Urologie. M. 30 marks. Leipzig.
Zentralblatt für Chirurgie. W. 60 marks per year. Leipzig.
Zentralblatt für Gewerbehygiene und Unfallverhütung. M. 18 marks. Berlin.
Zentralblatt für Gynäkologie. W. 60 marks per year. Leipzig.
Zentralblatt für innere Medizin. W. 60 marks per year. Leipzig.

W.—Weekly; M.—Monthly; Semi-m.—Semi-monthly; Bi-m.—Bi-monthly; Q.—Quarterly. * Cannot be loaned.

SUBJECT INDEX

This is an index to all the reading matter in THE JOURNAL. In the Current Medical Literature Department only the articles which have been abstracted are indexed.

The letters used to explain in which department the matter indexed appears are as follows: "E," Editorial; "C," Correspondence; "T," Therapeutics; "Ml," Medicolegal; "P," Propaganda for Reform; "ME," Medical Economics; "ab," abstract; the star (*) indicates an "Original Article" in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths" and "Society Proceedings" are indexed under these titles at the end of the letters "B," "D" and "S." Matter pertaining to the Association is indexed under "American Medical Association." The name of the author follows the subject entry in brackets.

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SOCIETIES

A.—Association
Acad.—Academy
Am.—American
Coll.—College
Conf.—Conference
Cong.—Congress
Conv.—Convention
Dist.—District
Hosp.—Hospital
Internat.—International
M.—Medical or Medicine
Nat.—National
Phar.—Pharmaceutical
Phys.—Physicians
Ry.—Railway
S.—Society
Surg.—Surgical or Surgeon, Surgery

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vol.75

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